

Modelling The
New York Pilot Boat
Phantom
1868



A guide to building the Model Shipways kit
Chuck Passaro

Introduction



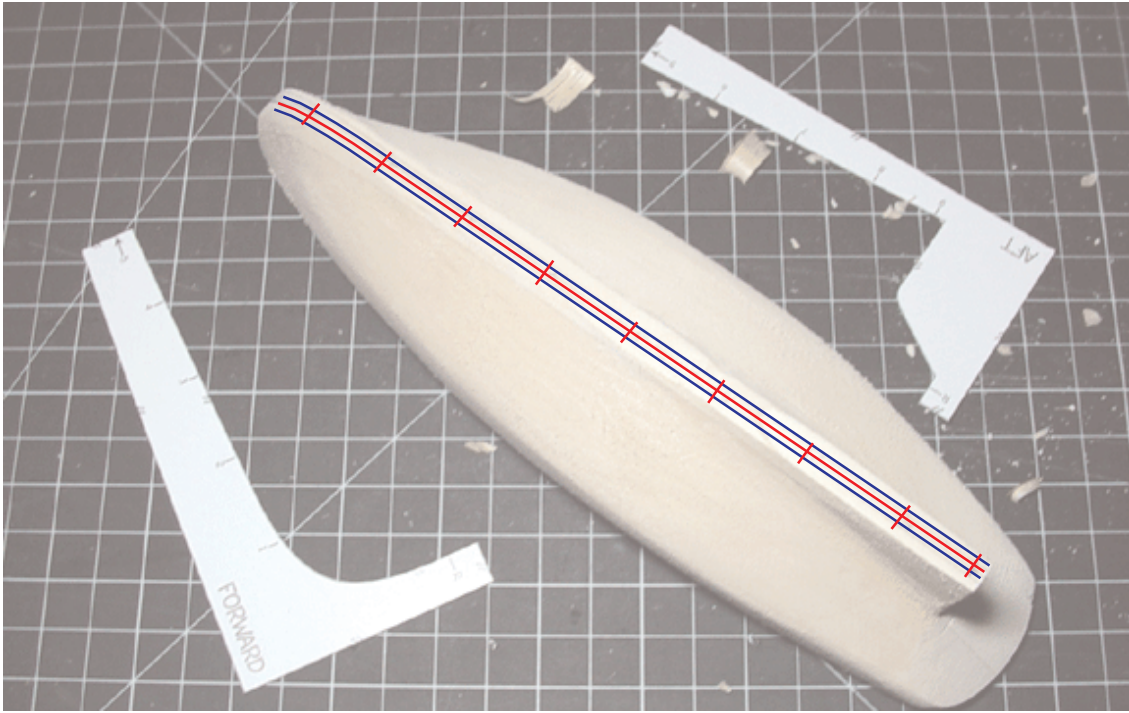
Building a model ship can be both educational and enjoyable. Sadly, many enthusiasts quickly get discouraged and give up their pursuit of the hobby. They often choose the wrong subject for their first project. The ambitious beginner will choose a very expensive and elaborate kit as their first modelling endeavour.

Most kits at this advanced skill level, are European manufactured and their instructions, once translated into English, are rarely adequate. This being said, I understand first hand, that the desire to build a large scale model of the frigate Constitution can be hard to suppress. But as you can see by the photographs above and on the cover, an entry-level kit can be just as impressive and satisfying to build. With some basic understanding of modelling techniques along with clarified instruction, the goal of creating a museum quality model can be easily achieved.

The *Model Shipways* kit of the mid 19th century pilot schooner *Phantom* will be built using the bread-and-butter technique or “solid hull” method of construction. This method of modelling the hull of a ship is well suited for the first-time modeler just entering the hobby. *And* it can produce a spectacular model.

In addition to the plans and instruction manual provided by the kit manufacturer, I have documented my own construction of the *Phantom*. I took many photographs, and made some modifications to the kit along the way. You will use these shop notes as a companion while building the model during this 14 week ship modelling class. It is my hope, that with this additional information, I might inspire you to pursue the hobby once you have completed building your own *Phantom*.

Chuck Passaro



GETTING STARTED...

Before we begin, I must bring to your attention one of the most important skills you will need to acquire. This would be learning the logical order in which to proceed building. The step-by-step progression is crucial. For this reason, it will be necessary to deviate from the progression as presented in the kit-supplied instructions. Years of model building experience have made me aware of the pitfalls that can be encountered, the “corners one can paint themselves in” if each step isn’t methodically planned out in advance. The lack of any ‘detail’ as described in the kit-supplied instructions makes this planning all but impossible. I am not suggesting that my methodology is “all-knowing” and can not be deviated from. I am just pointing out that I have a routine that works for me. You would think that since this model is designated as a ‘beginner’ project, it would have come supplied with more detailed instructions. Even more detailed than those supplied with advanced kits. But if you haven’t already noticed, the instructions that came supplied with this kit dedicate only eight pages to the actual building process. Hardly detailed enough for a beginner to learn and establish an effective process.

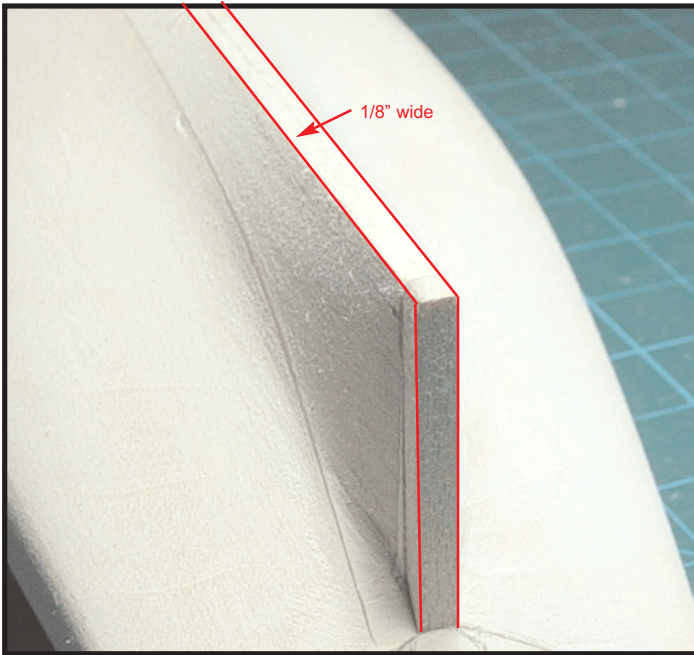
We will begin with cutting out the templates provided in the kit for the profiles of the hull. Begin with the two shown in the photo above. As mentioned in the booklet, use a hobby knife to carefully cut out the templates because a scissors will distort them along the more severe curves. Rather than cut out all of the templates and have them floating around your workspace, I might suggest only cutting out those templates needed for the procedure you are currently working on.

Hold the two templates along the keel to check that the

length of the hull is correct. You will quickly see that a gap of about 1/8” will remain between the two templates. If we are to make the hull its proper length it would seem like a lot of carving and sanding is ahead of us.

But fortunately for us that is not the case. During the manufacturing process extra wood is left in the areas vulnerable to damage during shipping. Hold those same templates against the drawing of the hull as shown on the plans. Against the blueprints you will see that the templates have been drawn to the profile of the hull without the stern post, keel or stem in place. It fits perfectly. But the hull provided with the kit is too long because extra wood was left at the stern to prevent it from getting damaged, lengthening the hull by 1/8”. Simply remove this extra 1/8” of wood from the stern and you will have the proper hull length. After doing this, some sanding is all that is needed to complete this procedure. Be sure to use a sanding block when leveling out the bottom of the hull. The next step requires a smooth and level surface to draw some reference lines for the width of the keel.

You will notice that on page 8 of the manual, figure 8 shows the addition of the keel, sternpost and stem which need to be added later. They will be 1/8” wide. Because we know this to be true, it will be necessary to reduce the thickness of the hull to 1/8” along these areas of the hull. To avoid carving “blind”, a series of reference lines need to be drawn along the face of the hull where the sternpost, stem and keel will be mounted. Draw a line down the center of the keel as shown in the photograph above in red. Continue this line all the way up the stem and also on the face of the sternpost. Then indicate with smaller lines the intervals numbered one through nine which will be used to



position the remaining hull templates (used to establish the profiles for the shape of the hull). These are also shown in red. Finally measure a distance of $1/16$ " from each side of this center line to establish the overall width of the keel which will be $1/8$ " and draw those lines as shown in blue in the same photo. It is now time to begin carving the hull to remove all of the excess wood up to these blue lines. Using the 9 remaining templates is not important at this time because they can't be used effectively until the true keel width is established.

Shaping the Hull...

We can now begin to reduce the thickness of the hull at the keel. Unfortunately, the best way to carve the hull is difficult to describe in writing. Using a flat blade on your hobby knife, start slowly removing small amounts of wood along the keel. Stop just short of the reference line that you created as this remaining wood will be removed using sand paper. Remember to always carve with the grain of

the wood. You will begin to alternate the use of the flat tipped blade with the addition of a standard #11 pointed blade. Start carving midship and work your way towards the bow, then reverse towards the stern. When completed the keel should be $1/8$ " thick and look similar to the photograph to the left.

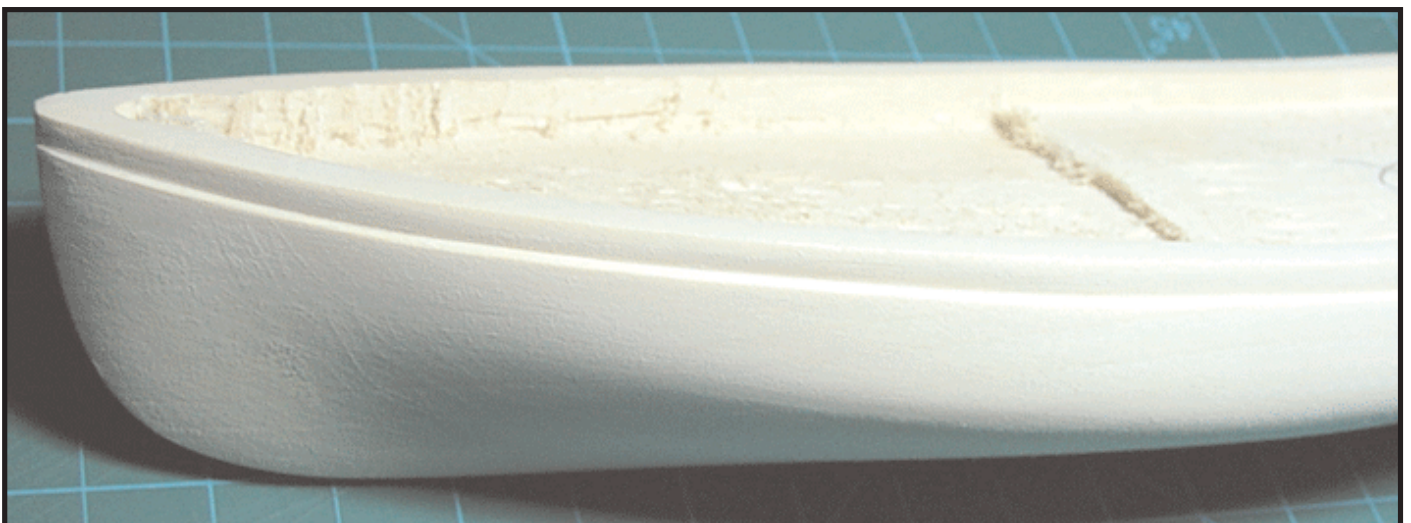
Only after completing this initial carving, should you begin to use the remaining templates to define the proper hull shape. You will notice that the "step" present along the hull is not shown on the templates. This is not important for the initial hull shaping because we will come back later and add this distinctive feature as our final task toward defining the shape of the hull.

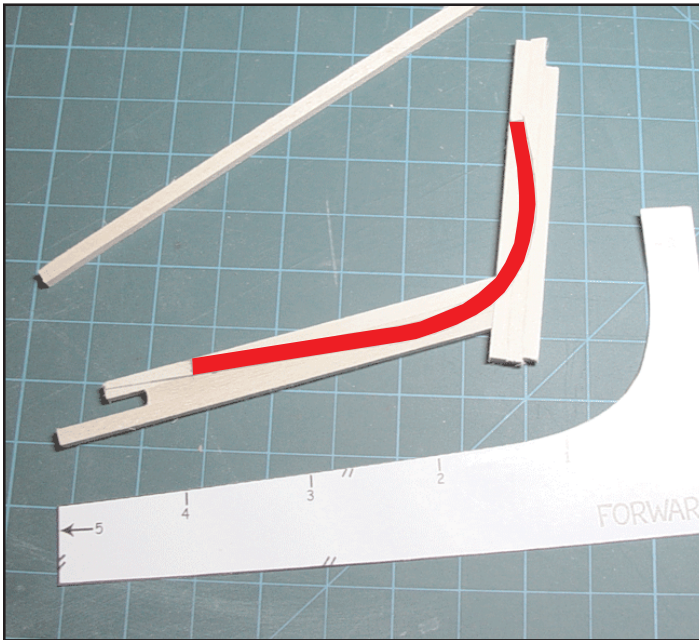
The "step" is created by drawing a line $1/8$ " below the caprail all along the length of the hull including all the way around the stern. In order for this reference line to be a smooth graceful curve from bow to stern, you must first sand the top of the bulwarks smooth. Hold the hull at various angles and use your eyes to check its smooth run and symmetry from both sides of the hull.

When you are satisfied, you can proceed to measure $1/8$ " down from the top edge of the bulwarks and draw some "tick marks". Draw a series of "tick marks" about $3/4$ " apart along the hull and after you have finished, draw your line along them. Use a piece of flexible stripwood (a batten) as your guide, holding it firmly against your tick marks while you draw the line.

Carving this "step" into the hull is a slow process, but it is not difficult. It should look like the completed hull as shown in the photograph below. To carve this step, use a standard pointed #11 blade to score along the reference line you just created. Score it to a depth of about $1/32$ ". Then begin to remove the wood up to this scored line by shaving small amounts of wood at a time.

Sand this "step" smooth when completed including around the stern. Afterwards, I think you will agree, that it sounds more difficult than it actually is.





needed. You can see how I positioned them in the photo to the left. The angles do not need to be precise. It only needs to be as such that the template used to create the shape of the bow can fit on it. The cardboard template will be traced onto the surface of this wood to produce the inside curve of the stem. Draw another line on the outside of this one to create a stem that is 1/8" wide. This shape is shown in red in the photograph. The wood we are using is very soft and can be cut with your hobby knife. Make a series of gentle passes along the outlines rather than try to cut it straight through on the first pass. Cut the stem a little wider on both sides of your lines so we can adjust the fit if necessary. You will notice on the blueprint that the stem does not extend above the "step" created along the sides of the hull and should be trimmed to that level before gluing it into place permanently. Use the blueprint to find the exact measurement.

Last; we will cut the keel to length from another strip of 1/8" square wood. Test fit this strip on the hull before gluing it on permanently. On the blue print you will notice a small lip at the base of the keel, directly under the rudder. This detail is highlighted in the photo below. This little detail can be notched out of the wood strip before measuring its overall length and mounting it.

After all of the pieces have been added to the hull, sand it smooth. Some wood filler can be used to fill any large gaps where the stem may not have fit snug against the hull.

Now would be a good time to drill the hole into the stern of the model to accept the rudder which we will be building shortly. I used a 3/16" diameter bit and very carefully created a hole that was only an 1/8" deep. Be careful not to drill entirely through the hull. Remember that this wood is extremely soft.

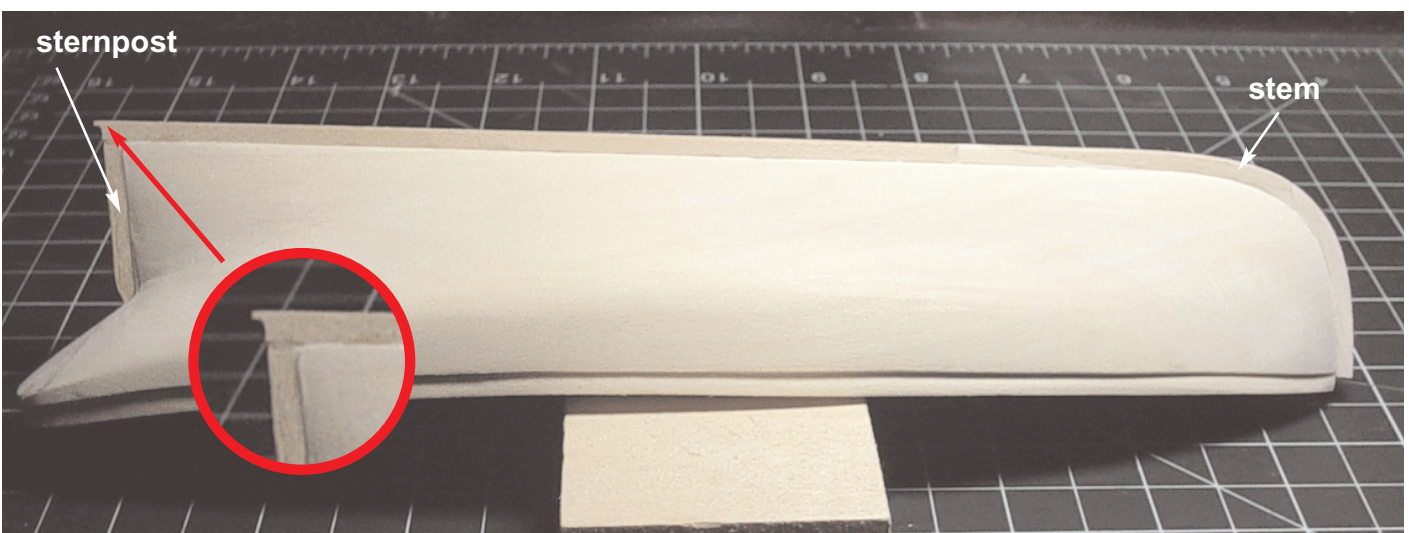
There are two more steps to complete before we begin thinning the bulwarks. You can create the rudder now even though we will not be mounting it until later. Use the same process we used for the stem. You will need to glue

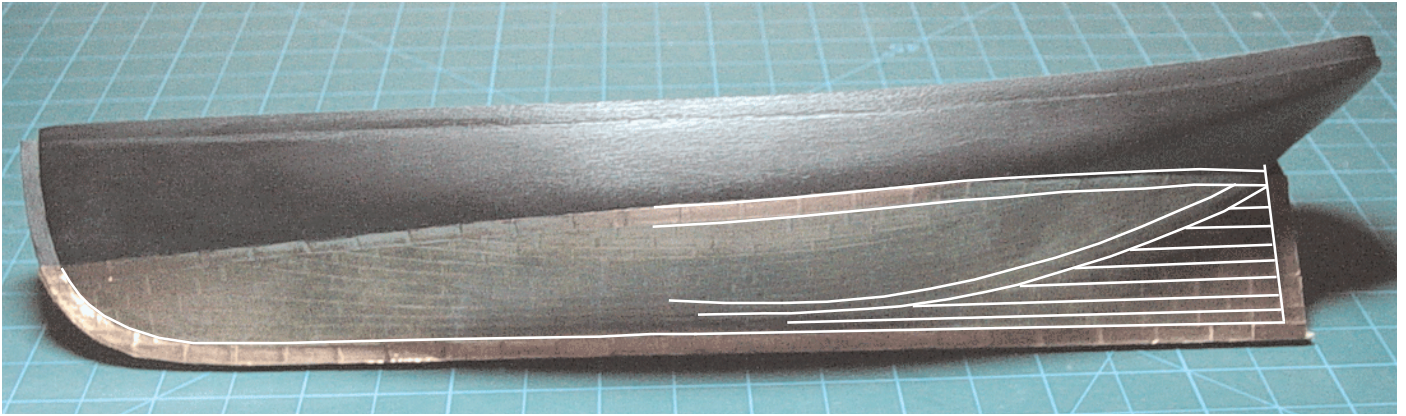
Completing the exterior of the hull....

The overall shape of the hull exterior is now completed. This is where we will begin to deviate from the kit supplied manual. The manual instructs us to begin thinning down the bulwarks to a thickness of 1/32". If we were to do this now, the possibility of crushing the delicate structure during a later stage is great. Too much work remains to be completed on the hull before we can even consider thinning the bulwarks.

First, we will mount the sternpost, stem and keel. If you examine the plans, you will notice that the stern post has a slight curve (tapered angle) just below where the rudder would enter the hull. Using a 1/8" square strip of wood, cut the sternpost to length. You can sand this taper into the stern post before gluing it onto the hull.

Next, shape the stem. You will need to glue three 1/8" strips together. This will give you a working surface wide enough to draw the pattern for the stem onto it. Two pieces will be





several strips of the 1/8" square wood together in order to have a piece wide enough to trace the shape of rudder onto it. You can trace the shape from the blueprints. Carefully cut it out and sand it to the proper shape. The edge of the rudder which rests along the stern post needs to be rounded as shown by the crude drawing (fig. 9) on page 8 of the kit supplied manual. The thickness of the rudder also tapers aft as shown by the cross section in the same drawing.

Coppering the bottom the hull...

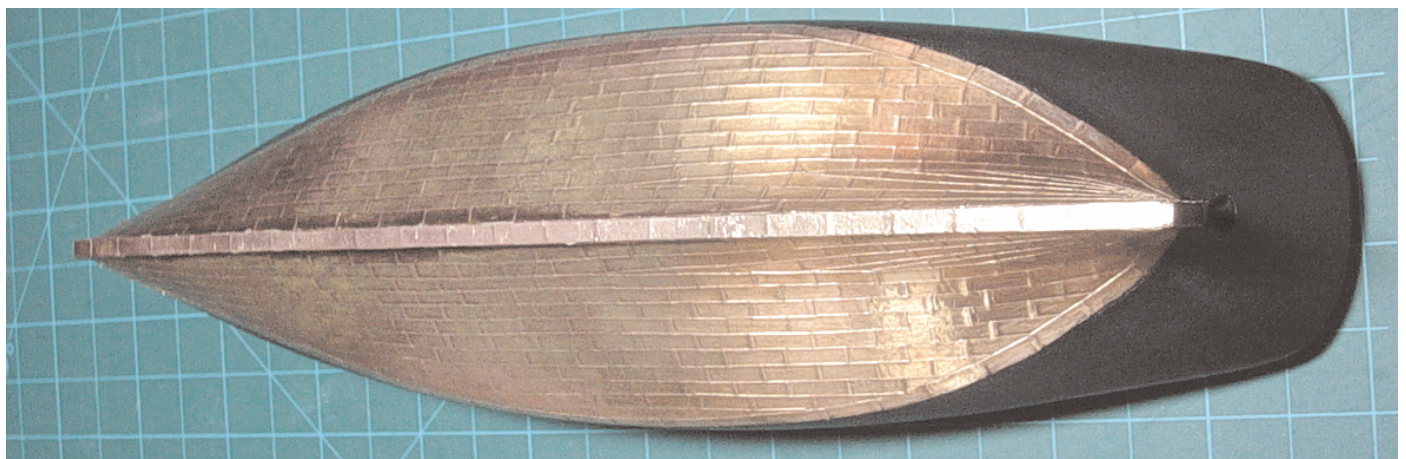
Copper plates were used on the bottom of a wooden ships hull to prevent it from getting fouled by sea growth and eaten by sea worms. The actual copper plates used on the model need to be created. Self-adhesive copper tape is provided in the kit but is too wide for the model in this scale. This tape needs to be cut down the middle into two 1/8" wide strips. This is most easily achieved by cutting it into 10" long strips first. The resulting strips can then be cut into plates which are 1/4" long. This is a tedious task and does take some time to complete, but the finished results on the model are undeniable. It is what elevates a model from being merely average to spectacular in appearance.

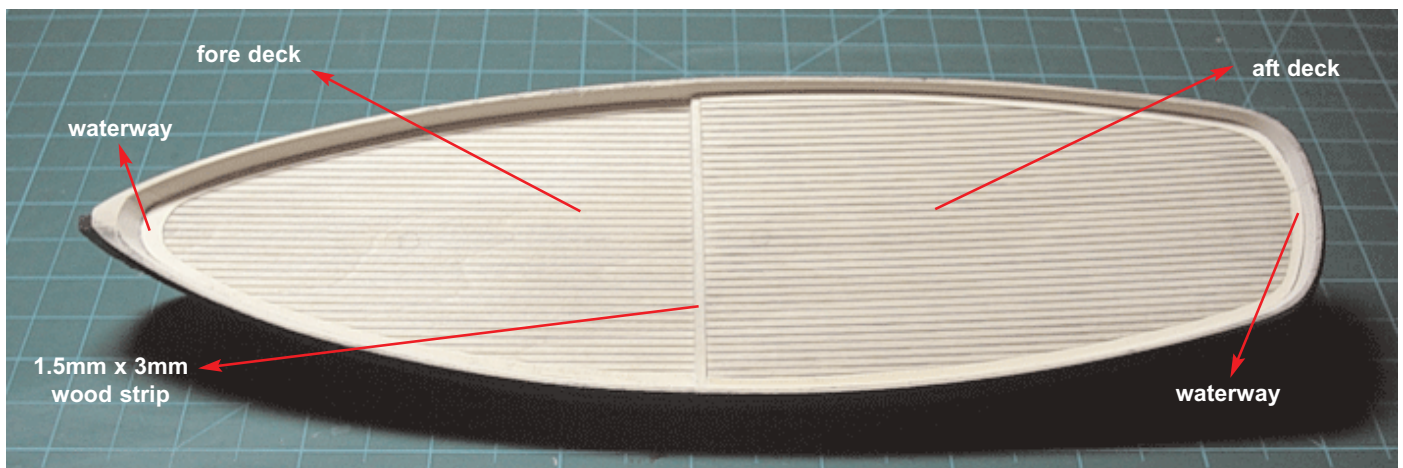
Before applying the plates to the hull, the waterline needs to be drawn onto it. A working cradle was made out of scrap wood and molding I found in my basement. The bow of the ship was elevated to give me the appropriate angle to create the waterline. Take this angle from the plans. A

simple homemade tool was used to draw this onto the hull after carefully taking the time to establish the proper height of the water line along the hull from bow to stern. This procedure will be demonstrated in class. Once drawn on the hull, another line was drawn 1/8" immediately beneath it to indicate the top band of plates. This will be the final belt of plates adhered to the hull.

Apply the plates to the hull first by covering the underside of the keel, up the stem and sternpost to the waterline. Then begin applying the plates working from the stern towards the bow overlapping the plates slightly as you proceed. The second row of plates will then overlap the first, and so on as you progress. Be sure to stagger the joints from row to row as indicated on the blue print. The hull at the midsection of the ship has a larger surface area to cover from keel-to-waterline than that of the stern and bow areas. This is due to the curved profile of the hull. This means that the creation of two belts of copper plates need to be established at the stern of the ship. It is much easier to draw these belts onto the hull before adhering the plates to it. The belts are shown on page 9 of the manual illustrated in figure 14.

The rows of copper plates will be taken up the hull only as far as the line drawn beneath the waterline. Trim the plates with your knife after they are applied using this line as your guide. The final row of plates will be added in a continuous band along the waterline to finish this procedure. The rudder also needs to be copper plated and can be done now for mounting on the model later.





Thinning the Bulwarks...

Thinning the bulwarks is probably the most difficult part of this modeling project. In fact, it is probably the number one reason that the beginner fails to complete their model. Some folks would even argue that a "solid hull" model is truly not appropriate for the entry-level hobbyist. If you were to search EBAY on any day of the week you will certainly find more than one partially completed Phantom kit model for sale. When you examine the images carefully you will see that the bulwarks are crushed and split. Usually in the stern area because carving here is against the grain.

Well, if I haven't scared you off, the task at hand is really not that difficult. It is only that the instructions for carving the thickness of the bulwarks to 1/32" as presented in the kit-supplied instructions are fatally flawed. Even the most skilled craftsman would certainly crush the thin sides of the hull if carved according to these directions. But before you begin, square off some of the rounded edges left on the deck by the machinery used to rough cut its shape. Figure 7 (page7) illustrates this procedure.

The "step" at mid-ship should be finished to 3mm high. The deck is also very rough at this point and needs to be sanded smooth before proceeding. Be sure to allow for the camber of the deck while sanding. The camber refers to the gentle slope of the deck's surface as it gets closer to the bulwarks from the center line. This allows water to drain towards the bulwarks so it can flow through the scuppers. Special care needs to be taken when sanding the deck camber into the decks surface. Be sure to measure the height of the bulwarks on both sides of the hull for consistency and symmetry. You may have to remove more of the decks surface on one side of the hull in order to make the bulwark higher. Take the measurements for the bulwark's height from the plans. When completed you can begin to thin the bulwarks.

In Figure 6 (page 7) it shows a rounded bladed chisel being used to carve the bulwarks. If downward pressure is

applied to the thin walls in this fashion, it would surely cause the bulwarks to crumble. Even using a smooth chisel as shown would result in the same fate. It is much wiser to use the standard #11 xacto blade (which is pointed). Rather than applying downward pressure as shown, slowly slice the insides of the bulwarks to a thickness of about 1/16" Always work with the grain when possible. Don't try to remove large pieces of material on the first slice. You will only be shaving thin slices off with each pass. before you realize it, the bulwarks will have been whittled away to the appropriate thickness.

Once it has been reduced to 1/16" all around, use a medium grade of sand paper to reduce the thickness even further. It is not crucial to achieve the 1/32" thickness but it shouldn't be to far off. See the photo above which shows the final thickness I achieved for the bulwarks.

Installing the Deck Planking...

Once the bulwarks have been sanded smooth to the proper thickness, it will be time to install the deck planking. The kit comes supplied with a sheet of decking which is pre-scribed to simulate the individual planks. The planks on this sheet do not accurately represent how the planks were actually laid for the aft deck. Towards the stern, the planks would have curved to follow the shape of the bulwarks. Each plank would have also tapered to a smaller width as it made its way aft. (Check the blueprints)

Even though this is the case, the kit was produced for the first-time modeler. We will not modify the deck planking by using individual planks instead of the pre-scribed sheet provided. The finished result in this scale will look fine. Especially since many deck structures and fittings will cover a good portion of it.

The shape for each of the two decks (fore and aft) were traced from the blueprint and transferred to the pre-scribed sheet of decking. Care was taken to ensure that the run of the planks was straight along the center line. The aft deck was cut out first. It was not crucial to have an exact fit along the bulwarks. We will be installing the waterway on

top of this decking which will conceal any gaps as long as they are not too big. Once glued into place, sand the edge of the aft deck along the step at mid-ship. Then I took a sharp pencil and drew lines into every scribed groove to simulate the caulking between each plank. Do this carefully without applying too much pressure because the sheet is very thin in these grooves.

Cut a 1.5mm x 3mm strip of wood and place it along the face of the step at mid ship. You may have to apply some pressure to the ends of the strip to bend it so it conforms to the camber of the deck. The kit-supplied manual shows the placement of an "edge plank" on the top of the step (fig 11-page 9). This will not be necessary to include. You can install the fore deck using the same methods we just described after adding this piece.

Adding the Waterway....

It is time to install the waterway along the bulwarks. Towards the bow, the water way would have been "nibbed" as described in the kit-supplied instructions. If you want to add this feature, please do. For those of you building your first model, if you chose not to nib the deck planking it wouldn't be awful. As you can see in the photo on the previous page, I didn't and the end results are just fine. At this early stage of developing skills as a hobbyist, it is more important to focus on your craftsmanship. As your skills improve you will be able to add more and more features to improve the quality of your projects. If you attempted to add too much detail, too early; (as I have seen too often), it may prove to be discouraging and make it that much harder to complete your first project.

Rather than use wood to make the waterway. I used an alternative material. In this scale, I often use plain manila office folders. The color is quite consistent with the wood already being used. It accepts paints and stains well, and can be adhered easily with almost any glue. Using some liquid glues tend to wrinkle the manila when applied. Elmers works great. Again, as you can see in the photo on the previous page, the waterway looks as if it were made of wood and is a perfect match. No one has ever discov-

ered any of the elements I have made from manila folders. Had I not mentioned it, you would never have known either. You will soon learn about many alternative materials that can be used throughout this project.

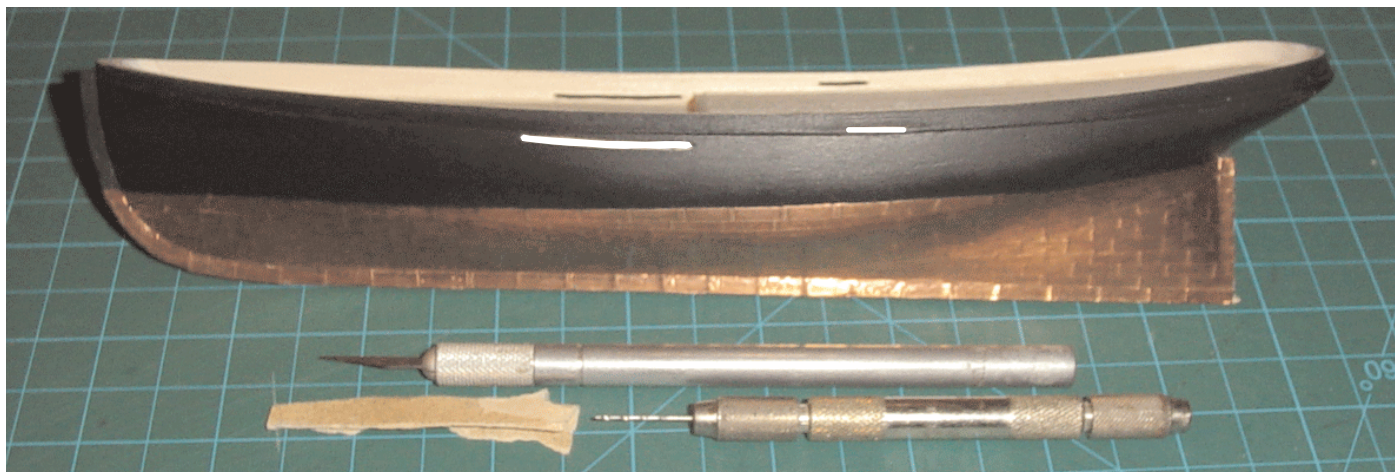
The easiest way to make the waterway is to turn the hull upside down on top of the manila folder. Press the folder gently against the bulwarks. Trace the outside shape of the hull onto the folder. Then indicate the overall width of the waterway by making another line on the inside of that one. The waterway will be 1/16" wide as shown on the blueprints. Cut the waterway out using a sharp blade. Do not use scissors. Dry fit them in place for both decks before gluing them into position permanently. You may have to make some adjustments. I glued the waterway down in four pieces. Two pieces for each deck, port and starboard. They are quite flexible and can be adjusted easily.

If you are not satisfied with how they fit, throw them away and start over. After all, it's only an inexpensive manila folder. If you did decide to show the deck "nibbing" along the bow, simply cut those nibs into the waterway before gluing it into place. You can also run the point of your pencil along the edge of the waterway to simulate the caulking as we did earlier.

Drilling the Scuppers...

There are five scuppers at mid-ship on each side of the hull, and two more on each side of the aft deck. These scuppers would let water drain off the deck during heavy seas and stormy weather. Each scupper is 5mm long. You can take the measurements from the blueprints. They are actually created by the bulwark stanchions that we will install later. One continuous slot needs to be carved through the sides of the hull now before that can be done.

The tricky part is trying to place the scupper slots at their proper height off of the deck. If drilled too low along the sides of the hull, you would surely damage the surface of the deck. If placed too high, they would have been incapable of letting water drain off of the deck. Take some stiff cardboard and cut it into thin strips. We will use them to



make some disposable measuring strips. Hold one on the inside of the bulwarks where a scupper would be located. The end of the strip should rest on the top of the waterway. Draw a reference line to indicate the top of the bulwarks. Now you know the distance from the top of the bulwarks to the surface of the deck. Flip the measurement strip to the outside of the hull where that scupper is to be located. Line up the reference point you drew with the top of the outside of the bulwarks. The bottom edge of that strip will show you where the surface of the deck lies and you can mark this lightly in pencil. With these reference lines drawn on the outside of the hull for the locations of all of the scupper slots you can accurately place them 1/32" higher than the decks surface. Actually, drill them as close to the deck's surface as you feel comfortable attempting. 1/32" would be the maximum height off of the deck to keep the model historically accurate.

When I write "drill" the scupper slots into the sides of the hull, I am not suggesting that you use a power drill. Most of the holes you will drill into your model should be done by hand with very small bits placed into a pin vice (similar to the handle of your hobby knife).

For each scupper slot, I drilled several holes along its length. (see the blueprints for their exact lengths) One at each end and many more in between. Each hole drilled nearly touched the preceding hole. It was easy to cut the excess wood away between these holes with a sharp blade. All that is left to do at this point is to clean up these slots with some needle files or sandpaper. Some light sanding on the inside and outside of the hull might be required as well.

Painting the outside of the hull...

To complete the major work to the outside of the hull before moving our attention to the deck, paint the hull above the waterline black. Use "Mars Black" acrylic paint applied in successive coats. Sand the hull with a very fine sand paper between coats to ensure a smooth and even finish. This is best achieved by thinning the acrylic paint with water and not applying it straight out of the tube. As for the surface of the deck and the waterway, it will be left natural and untreated. You could use some matte finish

sealer if you wanted to, but it is not really needed. You may also want to prime the wood's surface before painting it. Some folks do this while others don't feel that it is necessary. I fall into the later category.

The Bulwark Stanchions...

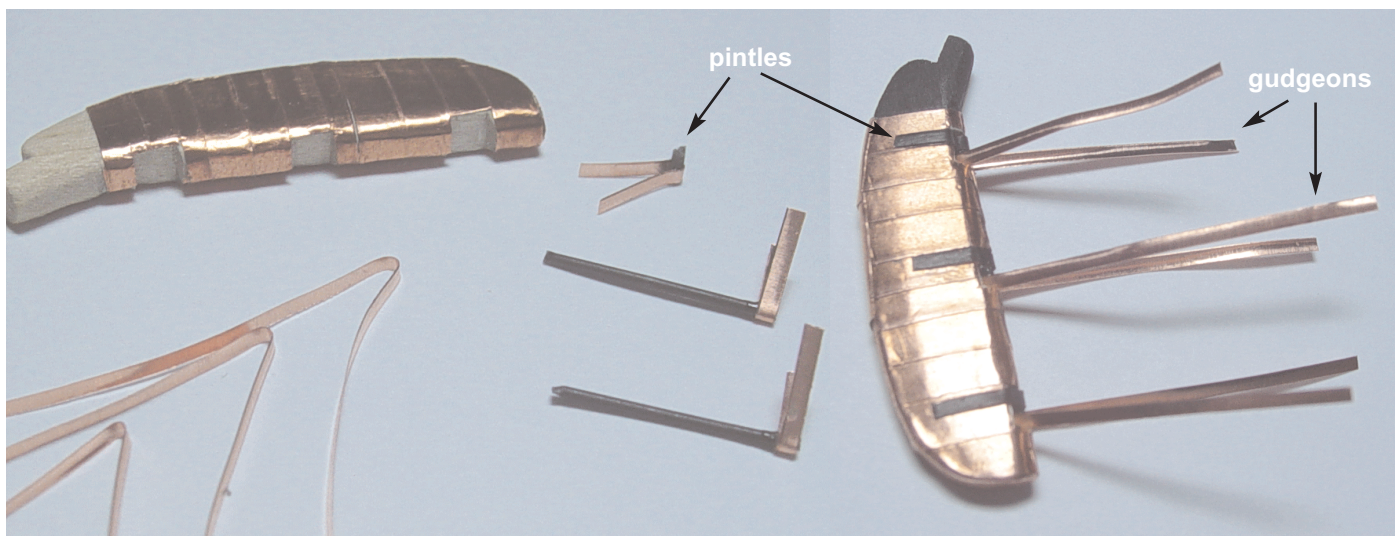
Installing the bulwark stanchions is fairly easy. Use the blueprint to find the measurement of the distance between them. This distance is the same for all of them. Place reference marks along the inside of the bulwarks where each stanchion will be placed.

I used 2mm x 2mm strips of basswood for the stanchions. I must also mention that the kit did not come supplied with any wood that comes close to the dimensions required. I just happened to have some 2mm wood left over from a previous project. The blueprints show that the stanchions should actually be about 1.25mm wide. It is common for most commercial kits to be missing building materials. It is not surprising at all and should be expected. Realizing that the 2mm wood I have is too large, I could either order some on the internet and wait for its delivery, or make do with what I have. You could also contact Model Shipways directly. They stand by their kits and would promptly ship you the missing materials.

I decided to make do. Taking some sand paper and running it along the strip of wood, I reduced its size to 1.25mm on all sides. I tried to keep the thickness as consistent as possible but it really isn't necessary to obsess over it. The stanchions will be so short that minor variations would not be noticed. I cut each stanchion a bit longer than needed and glued them into position. I was careful not to use much glue to avoid having it squeeze out under pressure. Once all of the stanchions were in place, they were sanded to the height of the bulwarks. (See the photo below)

The blueprints mention that the bulwarks should be painted a "light cream" color. I am quite satisfied with the creamy color of the wood when left unfinished. Because I was careful with the amount of glue used, there was no mess that needed to be concealed with paint. You may opt to paint the bulwarks, but I prefer to use as little paint as possible.





Installing the Rudder...

If you have already created the rudder, now would be a good time to install it. It should be copper plated up to the waterline as shown. The rudder will be attached to the stern post with hinges called "pintles and gudgeons". This refers to the two halves of each hinge. The pintle being that which is attached to the rudder and the gudgeon is attached to the hull.

The kit-supplied instructions suggest that these hinges could be made from cardboard. This simply won't do the job. It also says that the brass strip supplied with the kit can be used. This strip is a little wide and out of scale to be seriously considered. It is also reserved for later use as the material for the chain plates which secure the dead-eyes to the cap rail. There isn't enough of it for both jobs.

I had purchased some sheets of copper years ago and have enough to last me a lifetime. I have many different thicknesses available. I chose an appropriate thickness and will use this to create the gudgeons and pintles. Unfortunately, you will need to buy some sheets of raw material or strips of brass at the correct scale. I cut the copper sheet into strips just under 1/16" wide as measured from the blue prints. I also made note of the lengths needed for each pintle and made these first.

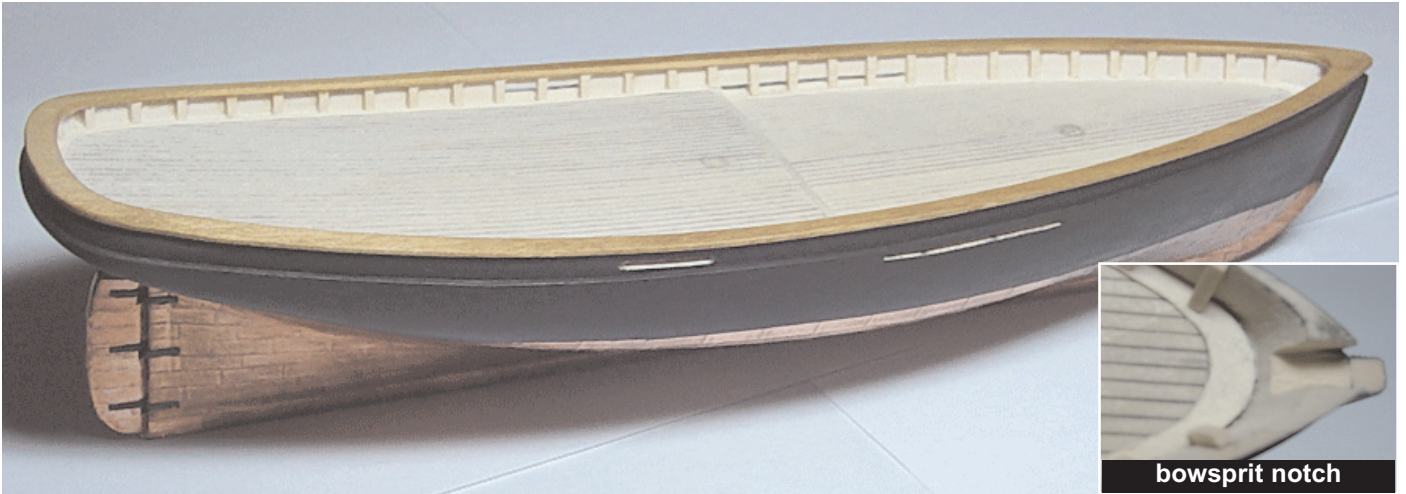
I bent these strips around a length of 22 gauge black wire to shape them. Then I glued some of that same wire into to bend of each (as shown above). I left the wire extra long at this point because it makes these little pieces easier to handle. They will be cut to the proper length later so they can fit into the carved slots located on the rudder. Three pintles are needed.

The wire should really be soldered into position. I am not particularly fond of soldering, and when it's not absolutely necessary use "super glue" (cyanoacrylate) instead. When the glue has dried, cut the wire to the proper length. Glue them onto the rudder as shown in the photo. The pintles

can be painted black now before moving on to build the gudgeons. I used black acrylic paint. These pieces could also be blackened with chemicals. But I try to stay away from chemicals that have skulls and crossbones on their bottles. Paint works just fine for this project but you may want to try some commercial blackening agents for other projects where there are hundreds of metal parts to be blackened.

You should be able to easily slide the strips created for the gudgeons behind the pintle pins and into place on the rudder assembly. As you can see in the photo (top right) they were left longer than needed. The finished assembly can be test fit in place on the hull where the lengths for each gudgeon are measured and marked. These were cut to length with scissors because the copper isn't very thick. Glue the rudder assembly to the hull being careful to properly lining up the three gudgeons. Keep them evenly spaced and angled. Don't use too much glue. It is difficult to clean the excess glue from the copper plates on the hull. Paint the gudgeons black and touch up the pintles to finish this step. (see below)





bowsprit notch

The Cap Rail...

The cap rail is also quite easy to make and install. But before you begin, carve the slot that will accept the bowsprit. The cap rail is actually placed over the bowsprit which will be seated in this notch cut out of the bulwarks. (photo inset) The bowsprit will be made from 1/8" square stock. Therefore, the notch at the bow should be cut to 1/8" wide and just as deep (maybe a little deeper and angled). The slot must be big enough to allow the bowsprit to slide into it after the cap rail is fixed in place. Check out the close-up drawing of this area on one of the blue prints. Once you are satisfied that the bowsprit will easily slide into place, start building the cap rail.

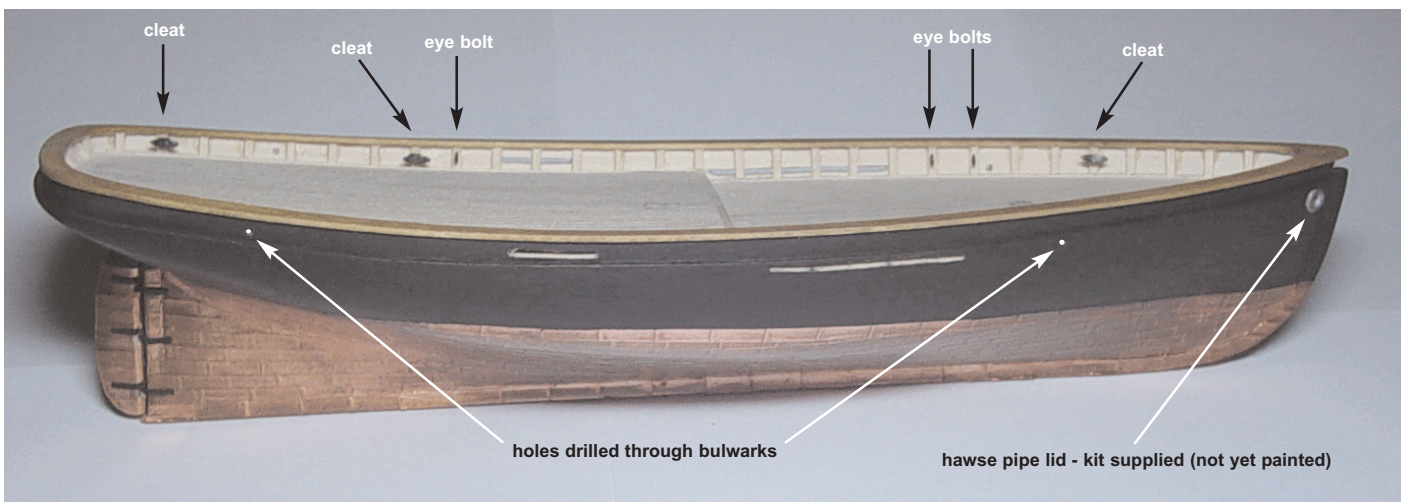
The kit supplies 3/32" wide strips of wood for the cap rail. They are supposed to be steam-bent to establish the curves at the bow and stern. It suggests that it be held in place with nails until the glue dries. Forget that! There is a much easier way. I purchased a 4" x 24" sheet of bass wood that was 1/32" thick. It cost me \$1.89. I placed the hull on top of this sheet and pressed the sheet firmly against it. The same method we used to trace the hull shape for the waterway. Trace the shape of the hull.

The cap rail is 1/8" wide as measured from the blue prints.

It also hangs over the bulwarks slightly inboard and outboard. Draw a second line 1/8" inside the traced outline to establish the cap rail width. Use a sharp blade to cut out the cap rail in one piece. Don't cut along your lines exactly. In fact, cut about 1/16" outside of these lines to create a 'much oversized version of the cap rail'. After gluing it to the top of the bulwarks and stanchions, you can use some sandpaper to narrow the cap rail to its actual width. Keep the overhang inboard and outboard consistent while sanding. The plans also indicate that the cap rail should be painted dark brown. I decided not to use paint and stained the cap rail instead. I chose a shade that was not too dark but still created a pleasing contrast with the unfinished bulwarks. Thinking ahead, I figured that the tops of the companion ways and hatches will need to be the same color. I did not want them to collectively overwhelm the model if a darker shade was chosen.

Bulwark Details...

From this point on I will be finishing several tasks at a time. After they are completed I will take a photo of that progress and explain in detail how it was accomplished. The first of these photos is presented below. It shows the bulwark cleats and eye bolts in place and the holes drilled through the bulwarks which include the hawse pipe lids.



cleat

cleat

eye bolt

eye bolts

cleat

holes drilled through bulwarks

hawse pipe lid - kit supplied (not yet painted)

I drilled all of the holes through the bulwarks that were shown on the plans. Including those needed for the hawse pipe lids. This was a pretty straight forward procedure. Three holes will need to be made on each side of the hull. I took careful measurements from the plans to determine their position. Use a strip of paper to measure the distance from the top of the bulwarks. The same method we used to establish the proper height for the scupper slots.

I must confess, when I drilled the hole for the starboard hawse pipe, it was made too low and at a bad angle. The drill bit damaged the deck and waterway. I did my best to correct and conceal the error. It happens to all of us at one time or the other. Anyway, it wasn't so terrible and I pressed on with the work.

Lightly sand the kit-supplied hawse pipe lids that will cover the holes. Glue them into position and paint them black. The four remaining holes don't have pre-cast fittings to place over them. They just need to be drilled with care and cleaned up with a little sandpaper and paint.

Moving inboard, three eyebolts were secured to each side of the bulwarks. The eye bolts were cut to a reasonable length and the excess brass wire saved for future use. Paint them black and insert them into pre-drilled holes on their respective bulwark stanchions. The eye bolts supplied with the kit are too large. Should you want to keep the model to its proper scale, you can create your own eye bolts by using 28 gauge black wire. They are easy to make and a smaller size would look more authentic. The eye can be shaped with a needle-nosed pliers.

The cleats are a different story. Only six 5mm cleats come supplied with the kit. Examination of the plans clearly show that many more will be needed to complete this project. We will either have to buy more on the internet or fabricate our own. But for the task at hand the six cleats will be sufficient. There are 3 on each side of the hull. If you look at the plans, it shows the cleats mounted to the stanchions in the horizontal position. If you test fit one against a stanchion you will see that the base of the cleat will have to be filed down on both sides so they don't stick out. They should resemble the letter

"T" when finished instead of the letter "H".

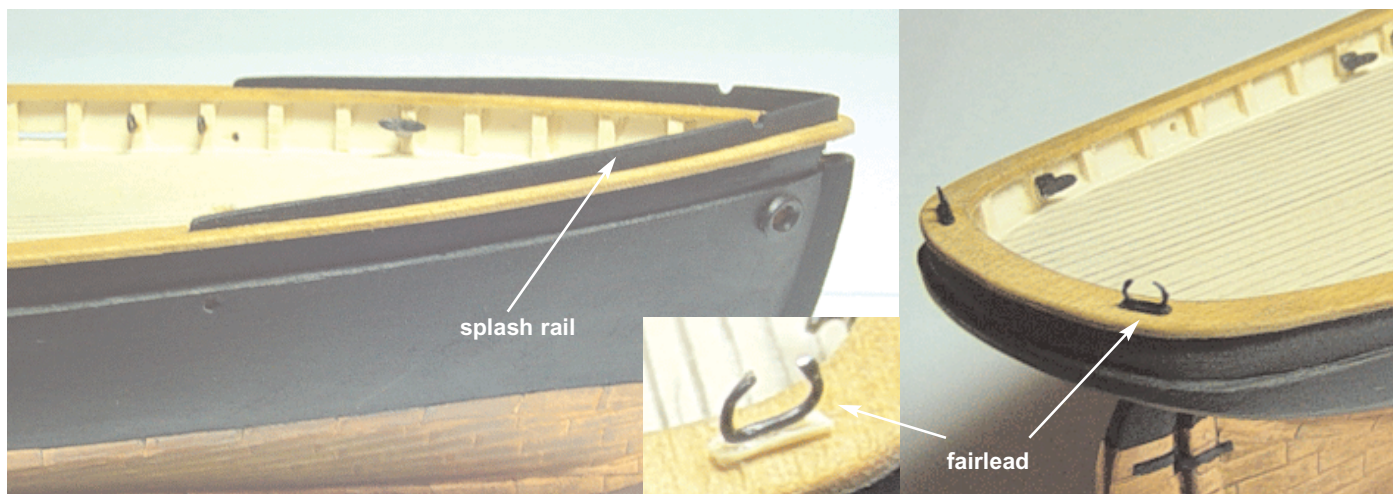
The base should be filed down to the same width as the stanchion it will be mounted to. Unfortunately, glue alone will not have the bonding strength to keep them in place. If the rigging that is belayed to this cleat is too tight it would make the cleat break off. I don't care how small your fingers are. A crowded deck with a maze of hatches and rigging and fittings, would make it impossible to navigate through. You would have a tough time gluing it back into position.

Extra insurance is needed to make sure it stays right where you put it. You will need to drill a small hole into the bottom of each cleat base. Insert and glue the excess brass wire that you saved after cutting the eyebolts earlier. Then drill a small hole into the stanchion and glue the cleat into it. I am sure that it won't break free after all this. It does take a lot of time to modify each cleat but "better safe than sorry". Paint the cleats black after they are all installed.

Splash Rail, Fairleads and Mast Holes...

Wood is supplied for the splash rails in the kit. They are the strips that are 1mm thick and 3mm wide. Rather than bending the splash rail as you are gluing it onto the model, I pre-formed the curve before hand using a simple jig. I traced the curve of the splash rail from the plans and glued it onto some scrap wood. I inserted some large nails along the path of this curve. After soaking the wood to be used for the splash rails, clamp them into this jig. Let them dry overnight in the jig. When dry, the strips will hold the shape of the curve.

Now you can cut them to length and sand them to the proper profile. The notch for each splash rail can be made with a small round needle file. Paint them black before gluing them into place. Once mounted simply touch up the paint where its needed.



I thought this would be a good time to drill the holes for the two masts. I wanted to do it now before the deck gets to crowded with fittings. You can use a home made guide similar to the one described in the kit-supplied instructions. You could also just cut the angle for each mast into some cardboard and use them for your guide. Don't make these holes too large. It is better to drill the holes with a smaller diameter than needed. The base of each mast can be notched (tenon) to fit into these smaller holes. Use the actual wooden dowels supplied for the masts to find the correct diameter.

The fairleads are located on top of the caprail at the stern. These fittings are not supplied with kit and need to be scratch-built. Examine the photo on the previous page for the unpainted fairlead. A tiny piece of manila folder was used for the base of the fairlead. The thin black wire supplied with the kit (28 gage) was cut and shaped as shown. It was glued to the base with super glue (cyanoacrylate). When dry, paint them black and glue them in place.

You could buy these 'ready-made' on the internet. They are not that expensive on their own but if many fittings and additional raw materials are bought, the costs can add up quickly. There are many different ways to fabricate these fittings. I chose this method because I thought it would be the easiest. Especially for those of you who have never made parts this tiny before. Feel free to experiment with different materials and techniques. Depending on your skill level I am sure you can find another way.

Chainplates and Deadeyes...

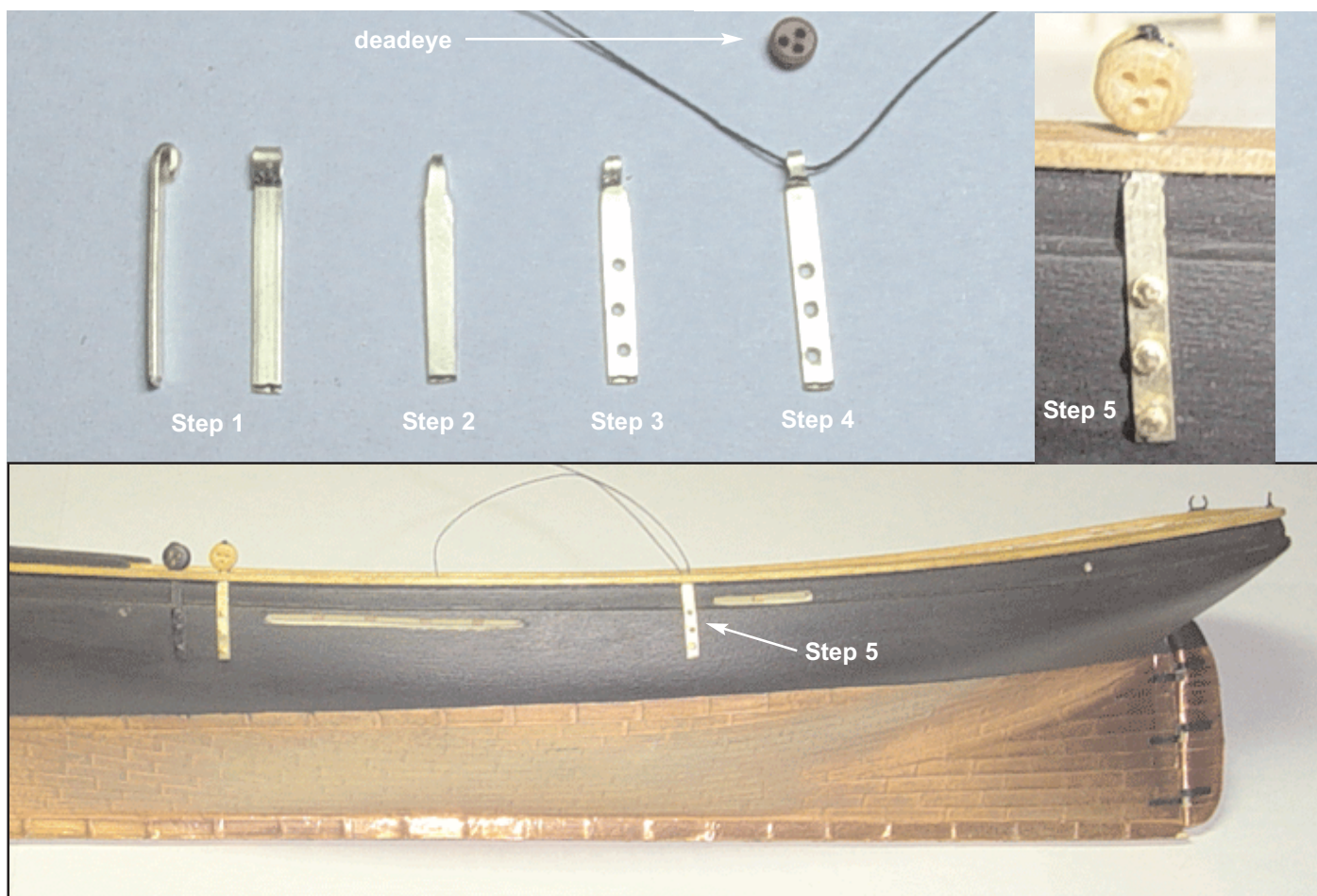
Six chainplates will need to be made which will secure the deadeyes along the cap rail. We will be using the strip of brass that came supplied with the kit. Cut six pieces that are 9/16" long. The photo below shows the 5 steps used to complete and install the chainplates and their deadeyes.

STEP 1- Bend the top of each strip as shown. Do not crimp it tightly together. It should form a 'hook' with some space in between. This hook will become the top of each chainplate which should measure 1/2" long after the hook is formed.

STEP 2- File both sides of the 'hook' portion of the chainplate. It should be narrowed considerably. It will need to fit into a hole that will be drilled through the caprail.

STEP 3- Drill three evenly spaced holes through the chainplate. The top-most hole should not be placed too high. When bolted to the hull, this hole should be positioned below the 'step' carved into the ships side. (see the photo inset of step 5)

STEP 4- Use the thinnest black rigging line provided with the kit. Place it under the hook as shown. This thread



will be used to tie the deadeyes and secure them atop the caprail.

STEP 5- Drill small holes through the cap rail taking their actual positions from the plans. Be sure that the holes on each side of the ship are aligned port and starboard. You may want to drill the holes at an angle so they are sure to exit the bottom of the cap rail outboard. The holes need to be large enough to allow the 'hook' of each chainplate (with rigging) to rest inside of them. Push the hook of each chainplate up into the hole after feeding the rigging line through first. It should be a snug fit. It should look similar to the photo on the previous page before the deadeye is tied off. The hook should not be pushed through the hole. In fact, it should not protrude above the surface of the cap rail.

Little brass nails are supplied with the kit. Use these to secure the chainplates to the hull. They will obviously need to be shortened before use. They shouldn't be so long that they will penetrate through the inside of the bulwarks. Holes for these nails should be pre-drilled into the hull before inserting them. I placed a tiny bit of glue on the tip of each nail before inserting them into place. Please study the plans for the proper angles of each chainplate. They aren't simply placed straight up and down on the hull. They are placed on an angle that follows the run of the shroud being secured to that chainplate. This angle is very slight but should be addressed and replicated. You can insert a 'dummy mast' into the holes on deck with a string tied to it. This can be used to find the angle for each chainplate. It will be demonstrated in more detail during class.

The deadeyes should be tied off as shown with a double knot and secured with a drop of super glue. The glue will actually turn the thread into a hard plastic. Don't use too much. Paint the chainplates black. I also decided to paint the deadeyes black. Not because this was actual practice on pilot schooners during the mid 19th century, but because I like how it looks. I will be painting all of the blocks black as well. This is my preference and you don't have to paint them if you don't share my artistic opinion. I have always painted the blocks and deadeyes black on my models regardless of how many people tell me it's wrong to do so. A ship model is just as much ART as it is an HISTORICALLY FAITHFUL and ACCURATE COPY. You can learn more one way or the other, no one should judge otherwise.

Belaying Pins and Eyebolts...

A few more details need to be added to the cap rail before we start building the deck structures and companionways. Examine the plans for the positions of the belaying pins and eyebolts. You will find them along the cap rail next to the deadeyes you just installed.

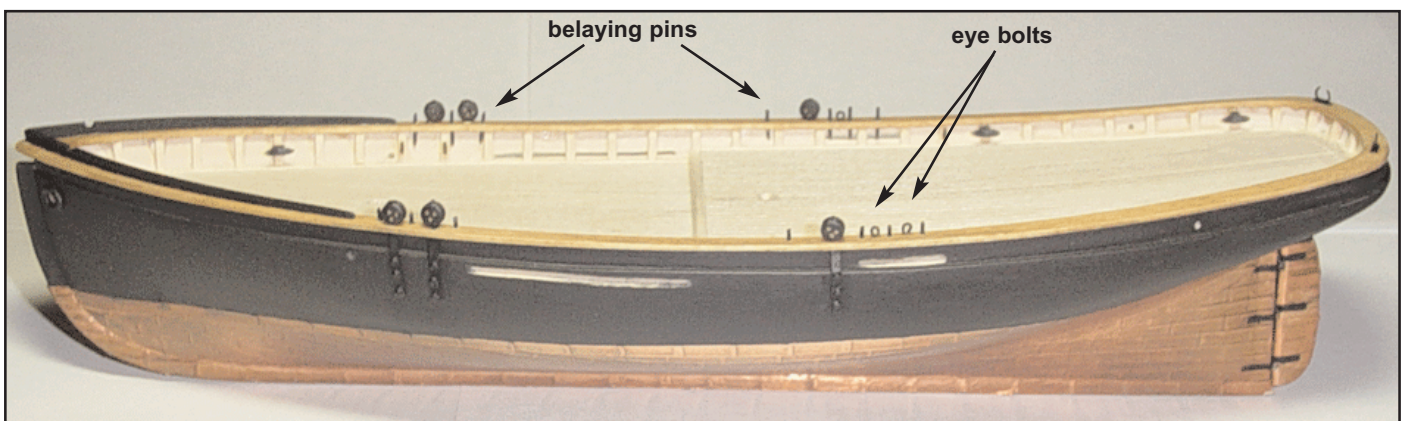
There are only 18 brass belaying pins supplied with the kit. Once again, many more will be needed in order to complete this model. As you can see, this is a consistent problem. Why not just supply the 30 or so that the plans call for? So rather than use the ones supplied with the kit, I will fabricate my own for those positioned along the cap rail. They were made from 22 gage black wire. I cut them to the length specified on the plans. Holes were drilled along the cap rail where they will ultimately be placed. A tiny bit of glue was used to secure them into position. I touched them up afterwards with some black paint.

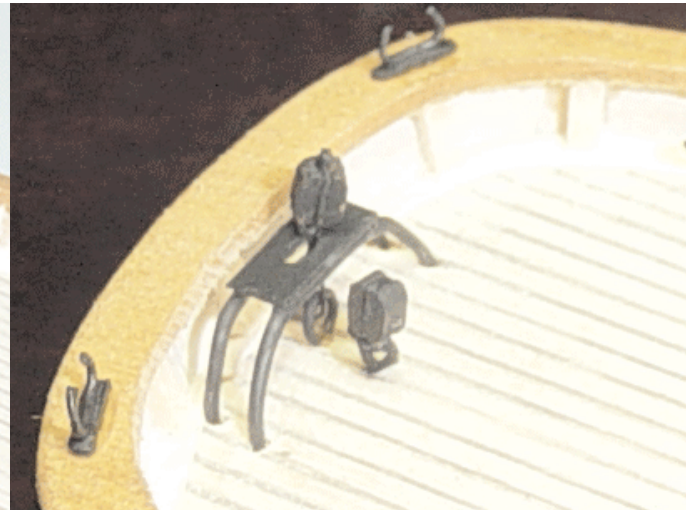
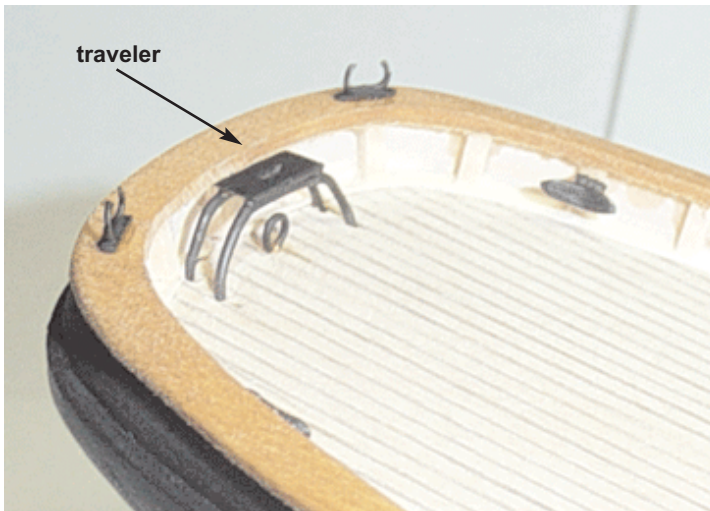
Install the eyebolts in the same manner. The ones supplied with the kit are too big and out of scale. So more were created using a needle-nosed pliers to make the eyes smaller. Install and paint them black. Once again cut them to length before you glue them into the holes. The 'stems' should not protrude through the bottom of the rail where they can be seen.

Traveler for the Boom Sheet...

The boom sheet refers to the rigging used to keep the boom from swinging wildly while the ship is at sea. The blocks for the boom sheet will be rigged to a fitting at the stern that looks like a little stool. This is the traveler. It is not kit-supplied and needs to be made.

Examine the plans for the size and proportions of the traveler. I used a strip of brass for the top of the traveler. It was 1/8" wide and cut to length. A small slot needs to be cut into the top of the traveler. The strope of the block will pass through this slot. I drilled several small holes through the brass along what will be this slot. The brass material left between these holes was carefully removed with a sharp blade.





A pair of legs were shaped out of 22 gage black wire. The top of the traveler was glued to these legs. Once again, they should really be soldered together. I managed to avoid this and used more super glue. I truly must spend some time getting comfortable with soldering. Paint the entire assembly black.

Place the traveler in position at the stern and mark the position of each leg with a pencil. Drill holes into the deck at these reference points. An eyebolt needs to be placed directly beneath the traveler for securing a single block. Do this before mounting the traveler permanently. (see the photo above)

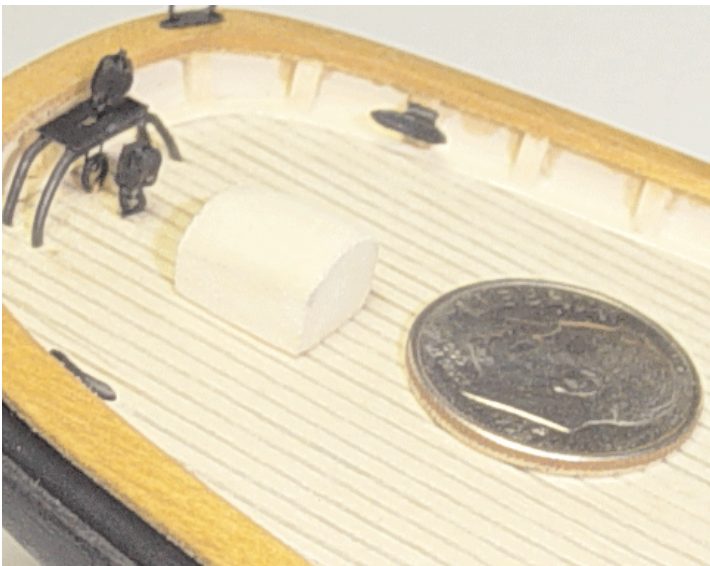
An additional eyebolt should also be placed directly in front of the traveler where another single block will be needed. Both of these blocks should be put into place before moving on to the next step. As I mentioned earlier, I will be painting these blocks black. These blocks are incredibly small. It will take a lot of patience to get comfortable rigging them to the eye bolts. There is no trick to this, and everyone needs to find the best way that works for them. I tie the blocks to the eyebolts first and then mount them on the model. Except in the case for the eyebolt underneath the traveler.

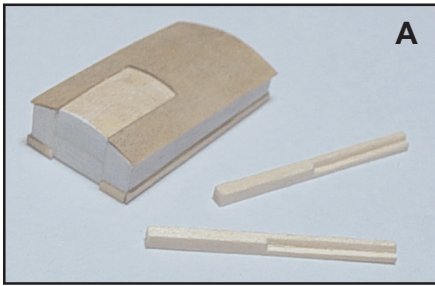
The Wheel House...

Making the wheel house is fairly easy. The only difficult part will be getting comfortable handling such small pieces. Start by cutting a strip of wood to size. You will find that an appropriate sized strip is provided with the kit. It should end up being 5/16" long x 1/4" high x 1/4" wide. Take the exact measurements from the plans. As you can see in the photos below, the block of wood is only about the size of a sugar cube. It needs to be sanded to the correct shape as shown in the plans. The roof will need to be curved and it should slope downward as it works its way to the stern.

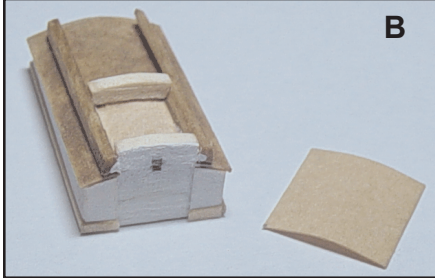
When you are satisfied with the shape of the wheelhouse, paint it white. Sand it between multiple coats for the best finish. Any dents or scratches can be filled with wood filler and sanded before you paint.

We will be using more of that 'manila' folder to finish it up. Cut some very thin strips from the manila folder and use them to simulate the molding around the base of the wheel house. It should be about 1/32" wide. Once again,

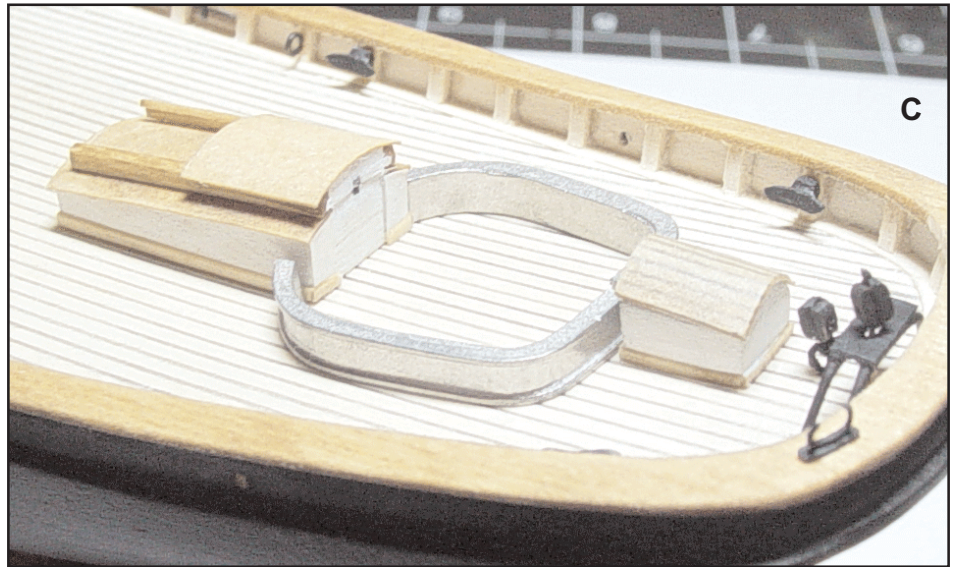




A



B



C

take the exact measurements from the plans. Stain the strips before gluing them onto the wheel house.

An additional piece of manila will be cut and used for the roof. Allow for a slight overhang all around the roofline. Draw some pencil lines on the roof to represent individual planks of wood and stain it the same color that you used for the molding and cap rail.

You could have used a thin sheet of wood to create these elements, but it would have most likely been out of scale. Even a sheet of wood that is 1/32" thick would look to thick and chunky. The manila takes the stain well and is closer to the appropriate scale.

Drill a small hole in the forward side of the wheel house which will ultimately accept the ship's wheel. Don't glue the wheel into position yet because it will only get in the way when we work in the cockpit area. You can prepare and paint the wheel now if you wanted to, but hold off on gluing it into position. Instead, glue the wheel house onto the deck without it.

Companionway for the Aft Deck...

You might have expected that the cockpit coaming would be fitted in the next step. Instead, we will be building the aft companionway. If we had glued the cockpit into position first and positioned the two halves incorrectly, the companionway would certainly be more difficult to prepare and install.

Take the proportions and measurements from the plans. Cut a piece of wood to those specs. Shape it in the same way that you did for the wheel house. More manila was cut and used for the molding around its base. But before gluing them onto the companionway, two additional pieces were cut and glued on both sides of the entrance. The entire companionway was then painted white. See the photos above for more detail. Only after this has been completed should you apply the pre-stained molding around the base of

the companionway as shown. The roof was also cut to the shape shown in the first photo (A). The area under the sliding top was cut out. Stain it before gluing it on the companionway. Depending on the glue you are using, when it dries, it could change the porosity of the manila and cause the stain to cover unevenly. So stain it before gluing it into place.

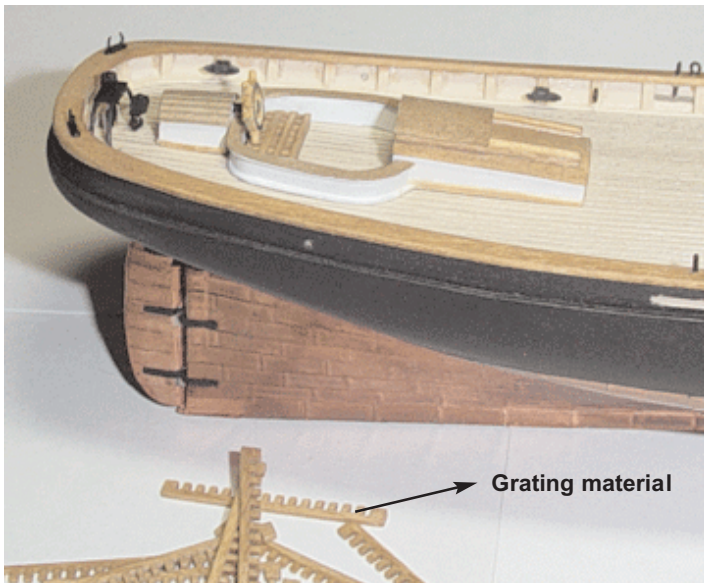
Two strips of wood (1/16" x 1/16") were carved to represent the runners for the sliding top. The carved portion will be visible as shown. Glue them on the roof of the companionway. Stain them the same color as the roof. Photo (B) shows these two pieces in place with the front and back of the sliding top also completed. Some black paint was used to simulate the hinge/lock on the entrance of the companionway. Finally the roof for the sliding top was cut and stained. Glue it to the top of the runners allowing for a slight overhang.

When mounting the completed companionway onto the deck, use the cockpit coamings to help find the correct position (Photo C). You can always add more detail than I just described. I chose a simplified design for the companionway for those of you building your first model.

Cockpit...

The cockpit coaming can now be painted and mounted onto the model. I must first point out that schooners of this time period would have had the cockpit floor lowered. It would normally be about one foot lower than the surface of the aft deck. We will not be modifying the model to reflect this detail. If we were going to show this feature, the area of the cockpit would have needed to be carved down to the proper level before applying the sheet of decking. To do so now would be extremely difficult.

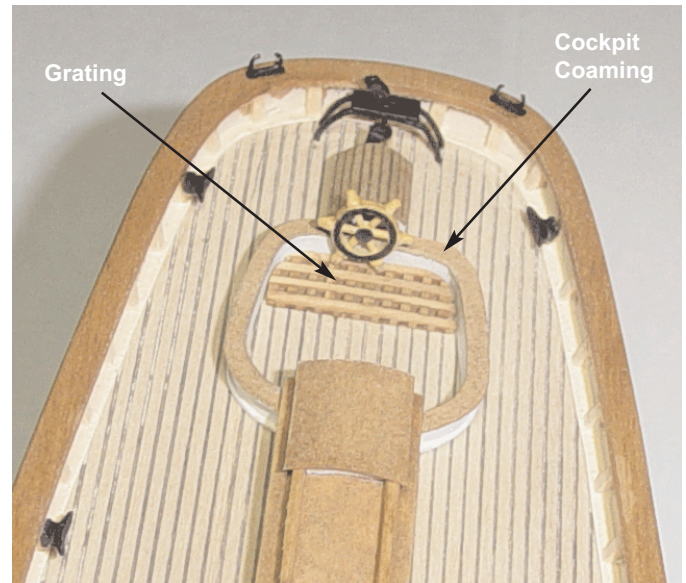
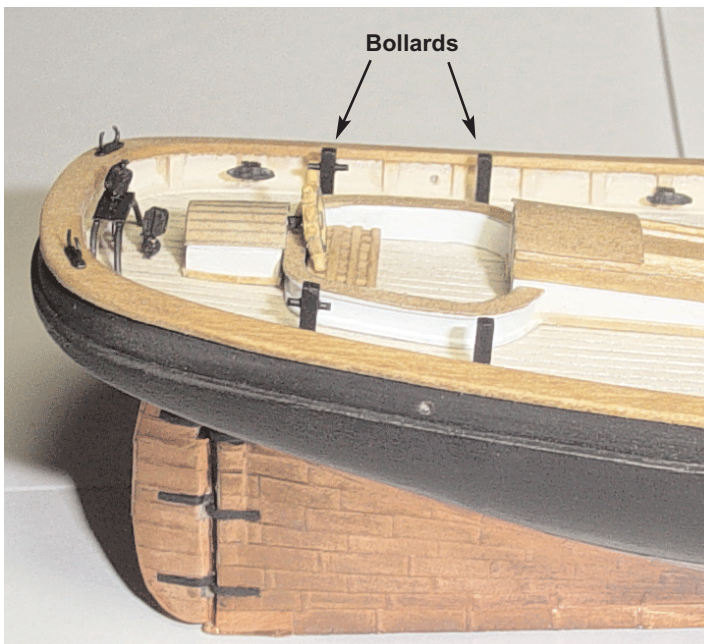
Sand any imperfections smooth on both halves of the cockpit coaming. They will need to be painted white. The metal used to cast these pieces is very soft. They are



easily bent and may not be the correct shape. Place them on top of the blueprint to see if they need to be adjusted before you paint them. Trace the shape of each half onto a manila folder. These pieces should be cut out with a sharp blade and stained. These will be used to represent the wooden seat on top of the coaming. Glue them to the top of each.

You can glue these two coamings onto the model but test fit them first to find the best position for each half. There should be an equal amount of space on each side of the cockpit. The ship's wheel can now be placed into the hole you drilled into the wheel house. But don't glue it on permanently yet. We need to create the grating that is located under the wheel. This will help us determine how thick the finished grating will need to be in order to fit underneath the wheel.

The material needed for constructing the grating is not supplied in the kit. This feature is noted on the plans. Rather



than building the grating from scratch, I used grating strips that are available commercially. I bought the smallest scale available where the individual holes in the finished grating are .75mm square. They are pretty small but still look a bit oversized on the model. If you are building your first model, this would be the way to go. In order to create a grating from scratch to the proper scale, you would need a mini table saw to do so. It is probably safe to assume that you would rather spend \$2.79 on one package of grating strips than several hundred dollars for a good table saw. I will say that if you do plan on sticking with the hobby after you finish the Phantom, it would be money well spent. I do wish that Model Shipways would have supplied the 10 strips required.

The finished grating will be too thick to fit under the ship's wheel. It will need to be sanded down on both sides to about half of its original thickness in order to be used. You will now realize that if the cockpit floor was lowered about 1/8" as they were typically done in real practice, the grating would have ample room to slip under the wheel.

When it has been sanded to the correct thickness, stain the grating and glue it into position. The ship's wheel can finally be glued into place as well. Even with the scaling problems and not modifying the depth of the cockpit, the results are quite good. Much more attention to historical accuracy and scale will be made in the next '*companion*' I am preparing to write. If you are thinking about pursuing the hobby further, please do look for it. I have yet to choose the subject (ship) for the next project, but it will most likely be an intermediate level project which will be heavily modified for accuracy and detail. This was not my intention or goal for the Phantom guide.

Bollards...

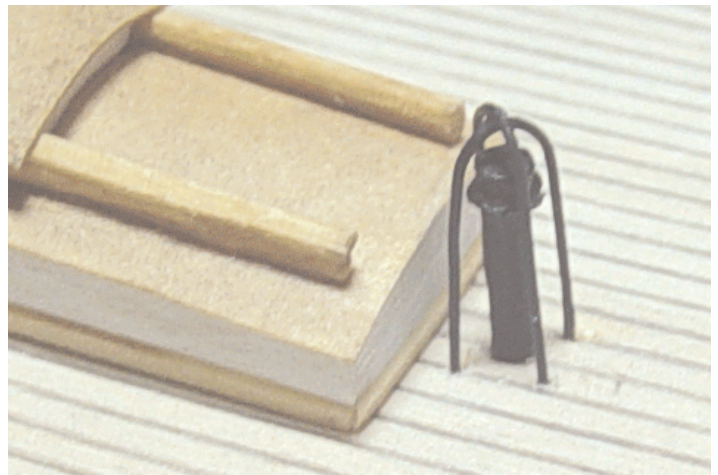
The bollards have been supplied with the kit as metal castings. I chose not to use them and will build them

from scratch instead. There are four of them located on the aft deck on both sides of the cockpit coaming. The bollards supplied with the kit are too short. Using a strip of 1/16" x 1/16" basswood, cut four pieces to the correct length. Take these measurements from the plans. The two aft-most bollards will have a small piece of 22 gage wire passed through them as shown in the photo on the previous page. Drill the appropriate sized hole through the bollard to accept the wire and glue it into place. All four bollards also had a small piece of 28 gage wire inserted into the bottom of their bases. These pins were used to secure the bollards firmly to the deck with some glue. Pre-drill the holes into the deck where each bollard will be secured.

The bollards were all painted black before gluing them into place. You might also opt to stain them the same color as the companionway roof. But paint the wire black that passes through each of the two bollards towards the stern. It is not clear from the plans how they should be treated. Another acceptable color to paint them would be white. This is one of those times where not enough information is known and you will have to make a decision based on your own personal preference. There were many varieties of bollards in use at the time.

The Stove Pipe...

The stove pipe is supplied as a Britannia metal casting. You only need to clean up the stove pipe with some sand paper where its needed. Paint it black and glue it into a pre-drilled hole just forward of the companionway. Use the plan of the deck layout to find its exact position. Then take some of the thin black wire (28 gage) supplied with the kit and bend them to create the protective cage that surrounds the stove pipe. Two pieces will be needed. These will be placed into additional pre-drilled holes as shown in the photo above. A tiny drop of super glue was applied where the two wires cross each other. Touch up any areas with black paint before moving on to the next step.



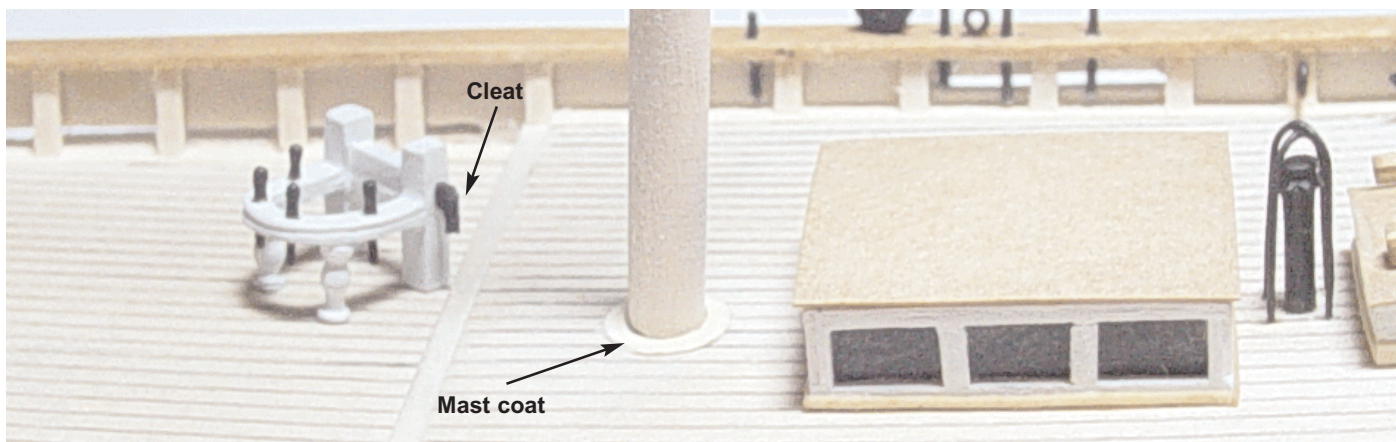
Building the Skylight...

The skylight will be made similar to the way we built the companionway. Take the measurements from the plans, Cut a piece of wood to the correct proportions. We will be adding some 1mm thick strips of wood to frame out the windows so this block of wood should be 1 mm smaller than the actual finished dimensions (on each side). Sand the gentle curve (camber) of the roof. There are three windows on each side of the skylight and two more at the front and back. The kit-supplied instructions suggest painting the windows light blue. They would have had iron bars across the front of each window for protection. I didn't want the windows to be the only feature on the model painted a color other than black. I thought it would stick out like a sore thumb. I decided to paint them black but wanted the resulting texture to be more characteristic of glass.

So I painted all four sides of the skylight black without even measuring for the individual panes. Then I took a roll of shiny packaging tape and covered the four sides with it. The tape is extremely glossy and when placed over the black paint looked very much like glass. It is hard to see this in the photos below, but you can see the roll of tape in the left hand corner of the first photo.

When that was completed, I took some 1mm thick wood





and cut it into strips 1/32" wide. I used these strips to frame the windows on each side of the skylight. They were cut to length and super glued to the taped surface. I was very careful to use the smallest amount of glue necessary. See the first photograph shown. The wood strips were painted white. To finish up the skylight, I cut some strips from the manila folder to use for the base molding. I also cut and stained the appropriate sized piece which was used for the roof. The same process that we used for the companionway. When I was finished, I thought about adding small pieces of wire to create the bars in front of each window. The kit supplied instructions suggest painting these bars on the window panes directly. Either way, the task would be difficult. The pictures do not adequately show how small the skylight windows actually are. My experience over the years made me realize that if done poorly the results would hurt the overall appearance of the model. But omitting the bars all together would not. I also agree that if well done, the bars would enhance the look and value of the finished piece.

That considered, I opted to omit them. I can assume that the majority of you are building your very first ship model and I must try not to lose sight of that. If it is your first model, these will be the questions you must ask yourself as you proceed. I hope you will agree, after examining the photos of the completed model that it was the correct decision. But try if you must. The worst thing that could happen is that you will have to throw the skylight away and build another one. Just hold off on gluing the skylight onto the deck until it is completely finished.

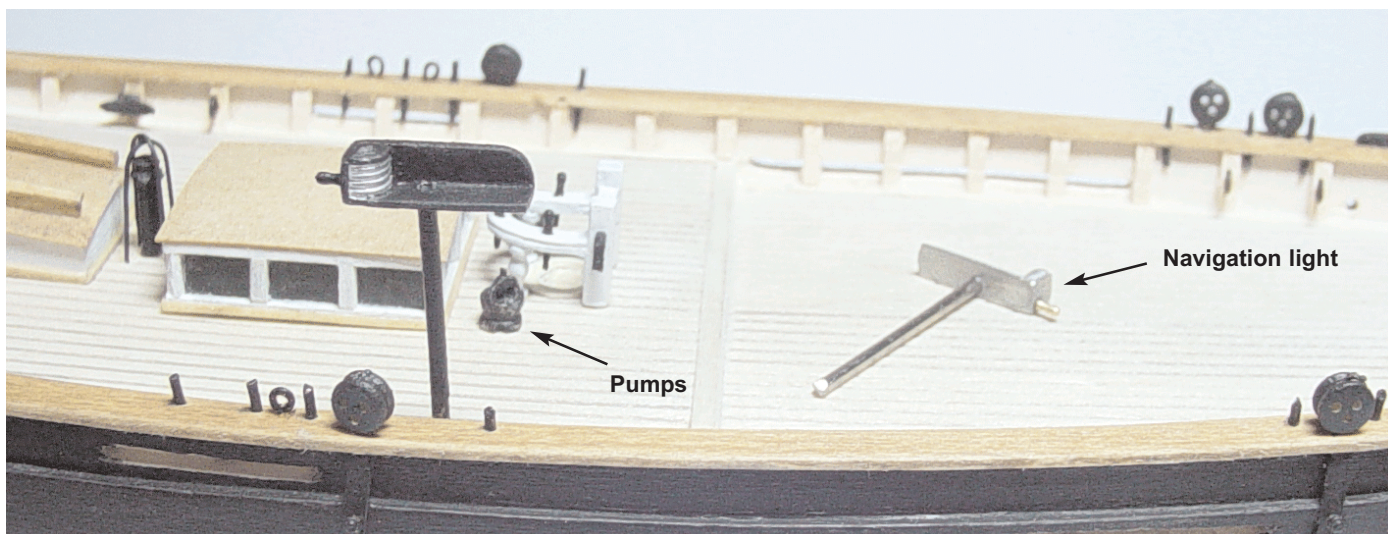
The Fife Rails...

The fife rail is also supplied as a casting. There are three pieces to assemble. The fife rail has two stanchions that need to be glued into little holes along the rail. The castings will need some considerable cleaning up with some sandpaper and files. Be sure to drill the holes clean along the fife rail that will accept the 4 kit-supplied belaying pins. When you are satisfied with the appearance of the three pieces, glue them together. The pins for each stanchion which need to be placed into the fife rail were to long. Trim them and test fit before gluing them into place. Paint the entire assembly white. There were actually more than four

belaying pins on the fife rail. The plans show a true-to-life drawing of how it looked on the actual ship. You could drill additional holes along the rail where the other pins would be, but that would be impossible along the rail between the two uprights. Unless you decide to scrap the supplied fife rail all together and build a new one from scratch, I would suggest using them as is. This is what I decided to do.

Glue the four belaying pins into their holes and paint them black. Examine the plans and you will notice that both fife rails on the model have cleats mounted on one side of the uprights. Each fife rail has one, but they are on different sides. I carved it out of a small piece of stripwood and glued it onto the fife rail. This cleat was also painted black. You can see the completed fife rail assembled in the photo above. It has not been glued into position over the hole for the main mast yet.

In fact, before doing so, the mast coat needs to be made and glued onto the deck. You will notice in that same photo that the mast has been temporarily placed into the hole. I wanted to show you how the mast coat would look after the mast was inserted. The mast coat is the small washer-like piece of manila folder that was glued to the deck around the base of the mast. In real practice this would have been made of wood and wrapped in a heavy canvas material and tarred over. Its purpose is to provide extra support for the mast so it fits tightly into the hole in the deck. They were actually made of many individual wedges that are forced into the hole along the diameter of the mast. As I mentioned earlier, the manila folder was used to create a simulated mast coat. I traced the diameter of the actual mast onto the folder and cut it out with a sharp blade. The width of the finished mast coat is 1/16". Glue it over the hole, but remove the mast. This will not be added until much later. It should only be placed into the hole so you can check that the fife rail is placed in the correct position. The main mast is raked toward the stern and you must make sure that the angle needed will not be problematic because the fife rail was placed to far forward. Glue the fife rail onto the deck over the location of the mast coat. Do this while you have the mast temporarily in place at its proper angle. You can see the fife rail installed in photo on the next page.



Navigation Lights and Pumps...

The pumps were glued into position next. They are also supplied as castings in the kit. They were cleaned up and painted black. Pre-drill holes into the deck after finding their proper locations on the plans. Simply glue them into place on both sides of the fife rail.

The castings for the navigation lights were cleaned up but some additional work was required before they could be painted. A small hole should be drilled into the bottom of each light. Insert a piece of wire cut to the proper length into each hole to create the light's pole. This is not supplied in the kit and after a lot of searching I ended up using an extra large paper clip. The paper clip was made out of wire that was the diameter I was looking for. It needs to be strong enough so it won't bend in the unlikely event of an accident.

Another hole was drilled into the side of the light into which a brass belaying pin was inserted. This is the handle used to direct the light. The entire assembly was painted black except for the light itself. See the photo above.

Drill a small hole into the deck along the waterway where the navigation light will be placed. Again, check the plans for the exact location. Glue the light into the hole. There

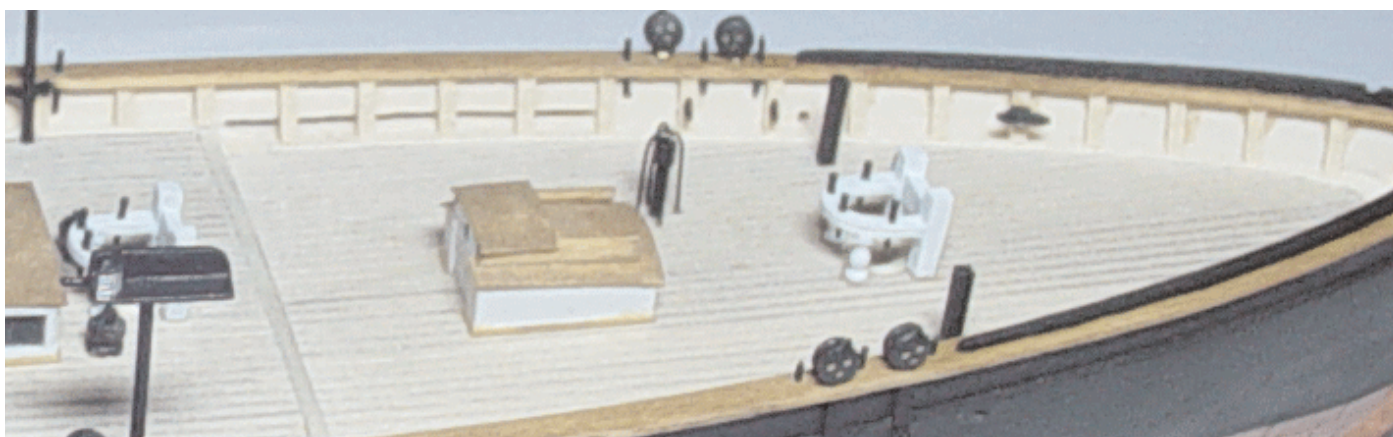
would have been an iron strap that secured the pole along the inside of the cap rail. They were made from the extra copper tape that was used to make the plates for the bottom of the hull. A very small piece was cut and glued to the inside edge of the cap rail. This was also painted black.

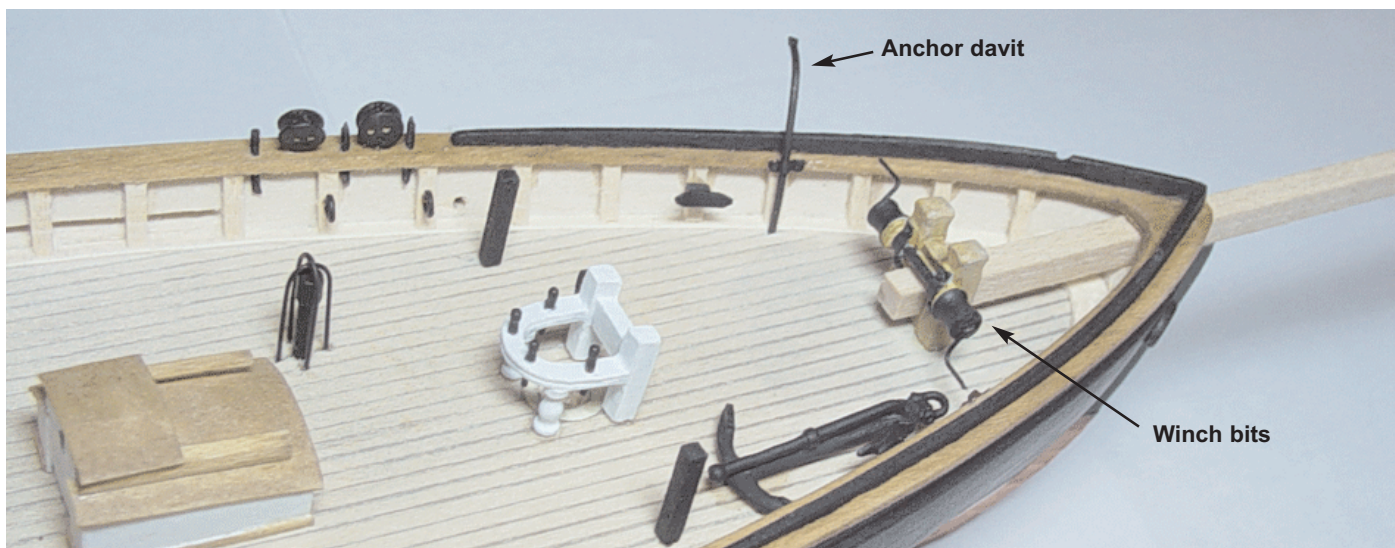
Fore Deck Fittings...

To begin building the fittings on the fore deck, simply repeat the methods previously described in order to complete the fife rail, companionway, ventilator and bollards. There is no need to repeat the instructions. The companionway is built in the same fashion as before except the proportions are different. Take these measurements from the plans. Also make note of where each of these fittings will be placed on the fore deck.

The fife rail for this deck is the same as the one we made for the aft deck. The only difference being that the cleat is located on the opposite upright. Don't forget to add the mast coat at the base of the fore mast before gluing the fife rail into place. The ventilator is treated in the same way as we did for the stove pipe. A protective cage is made out of wire and secured into holes drilled in the deck.

See the photo below for details.





Finishing the Fore Deck Fittings...

There are only a few fittings that need to be completed before we move ahead to the next phase of this project. That will be the creation of the masts and bowsprit and finally the rigging of the Phantom. Start by fabricating the anchor davit out of 22 gauge black wire. Simply bend the wire to conform to the shape of the davit as it is shown on the plans. A small bead or drop of super glue was placed on the tip of the davit and allowed to dry. It formed a nice round bead when dry which after being painted black, finishes it off very nicely.

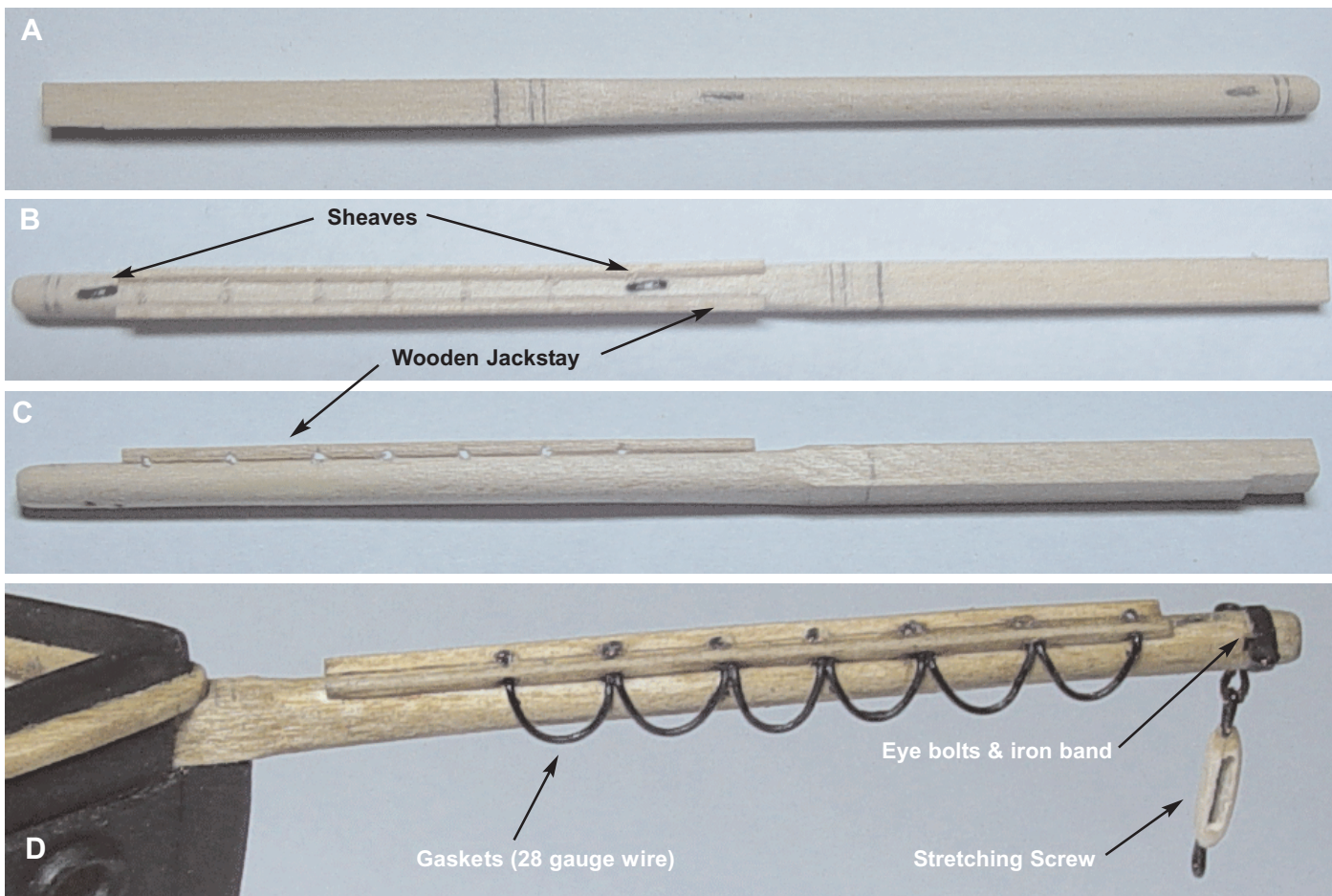
The davit is glued into a hole that was pre-drilled in the proper location on deck. An iron bracket was simulated by using a small piece of copper tape (left over from coppering the hull) and glued against the inside of the cap rail. This boat would have carried only one anchor davit but would be movable for use on either side of the ship. For this reason, we need to create an additional iron bracket and place it on the

inside of the opposite cap rail. This bracket can be seen in the photo above. They will be painted black.

The winch bits are supplied as a casted piece which needs to be painted. I decided to paint the bits to match the color of the stained wood used throughout the model. It was sanded and filed first to clean it up. The elements of the winch itself were painted black. Handles were added as shown on the plans. They were shaped out of 28 gauge black wire and glued into pre-drilled holes on the sides of each winch drum. The entire assembly was glued onto the deck in its proper location as taken from the plans. The bowsprit will seat into these bits as you can see in the photo above.

Finally, paint the anchor black after cleaning it up with some sandpaper. Glue it onto the deck. We are now officially finished with the first half of this project. The model as completed up to this point is shown in the photo below.





The Bowsprit...

The bowsprit will be made from a length of 1/8" square diameter wood. The bowsprit inboard will retain its square shape. Outboard it will be rounded (Picture "D" above shows how the square portion of the bowsprit stops at the end of the stem). Cut a piece to its proper length using the plans to find the exact measurement.

There are many ways to shape the square portion of the bowsprit and make it round. The easiest way for me was to sand it by hand. There are only a few masts and spars that need shaping for this model and it isn't very time-consuming to shape them all by hand. I started by using a sharp #11 blade to rough carve it to an octagonal shape. Sand paper was used to round it off. When that was completed, the rounded portion of the bowsprit was tapered slightly towards the outboard end. (See photo "A" above)

The inboard end of the bowsprit will be seated into the square space provided in the winch bits. It probably won't fit without reducing its thickness. Photo "C" shows how I cut away a small portion of it on the underside of the bowsprit. It was cut so after the end was inserted into the winch bits it protruded 1/16" out of the other side of the bits.

The locations for the sheaves and iron straps were drawn onto the bowsprit for reference. They were taken from the blueprints.

The sheaves were made next. They were simulated by drilling a small hole through the entire bowsprit on both ends of the sheave slot. The slot was then carved a little deeper with the pointed end of a very small, round needle-file. The sheave itself was made to look rounded, after which, I used a lead pencil to draw on it because the graphite adds a nice touch of authenticity. Photo "B" shows the sheaves as completed.

Next, the wooden Jackstays were made from 1mm square strips of basswood cut to length. They were glued to the top of the bowsprit. A series of tiny holes were drilled through these for the gaskets. This can be seen in photo "C". There are seven holes along each jackstay.

At this point it would be a good idea to test fit the bowsprit to see if it will slide easily under the cap rail and sit comfortably into place. If it fits well, remove it from the model so the gaskets can be added. The gaskets were used to secure the furled sails to the bowsprit. They should be made out of rigging line but I used 28 gauge black wire instead. The gaskets need to hang with a gentle curve. On the real ship they would have been heavy enough for gravity to take care of it. This is not the case on our little model. Threaded rigging line would not hang properly and is difficult to work with on small details like this one. Pieces of the wire were bent around the base of a drill bit that was the proper diameter. The ends were glued into the holes along the jackstay. The results are displayed in

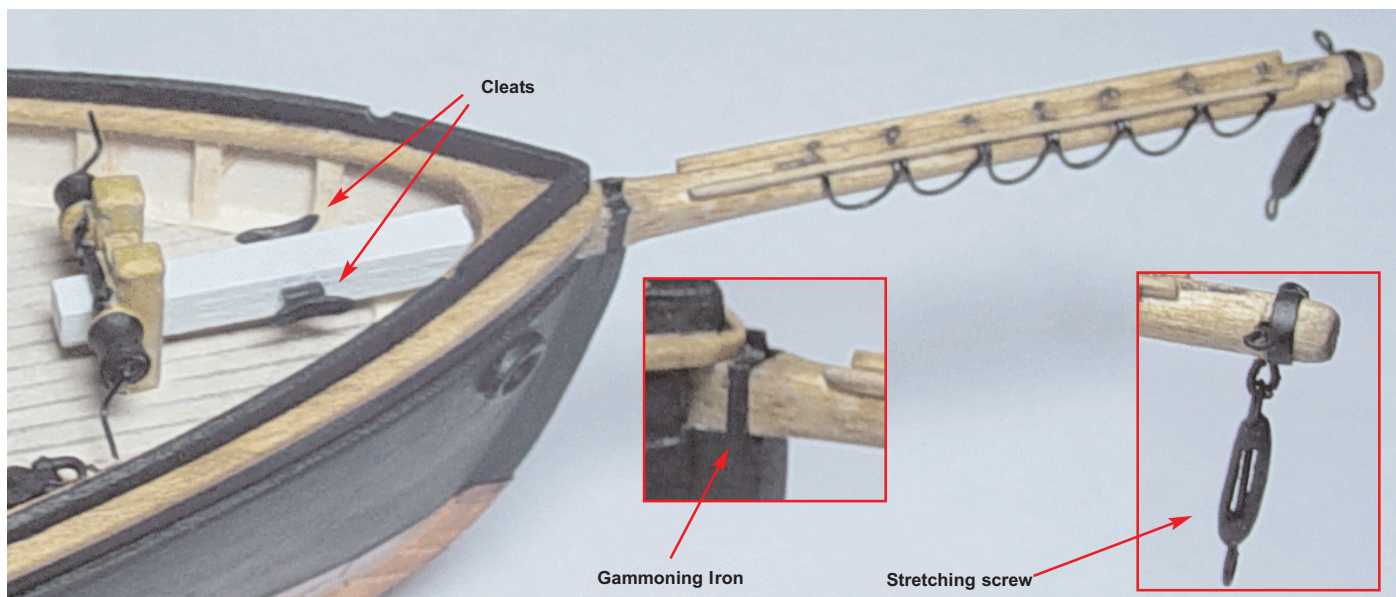


photo "D". The ends of these "U" shaped wires were bent at a right angles with a needle-nosed pliers so the gaskets would hang correctly.

Completing the Bowsprit...

The outboard end of the bowsprit has an iron band around it with three eye bolts. The eye bolts will be used for the standing rigging (Bobstay, footropes and bowsprit guy). You could use a strip of left over adhesive copper for the iron band. I used some automotive pinstripe tape. It comes in many colors and is usually 1/8" wide. It is also self-adhesive. There are many options here and these are only two that you can try. I took some of this and cut a strip to 1.5 mm wide. I wrapped it a few times around the bowsprit and painted it black. Even though it was already black, I didn't like the glossy finish and painted over it with acrylic paint.

Three eye bolts were made from 28 gauge black wire. I made my own even though the kit comes supplied with them. Those supplied are too large and not to scale. It doesn't take long to make them as they are needed. They were glued into pre-drilled holes on the bottom and sides of the "iron band". The drill bits needed for such small holes are very tiny. They are no bigger than the diameter of the wire being used. You will probably break quite a few of these and having a small supply on hand is a good idea. The photo above (and on the previous page) shows this band with eye bolts in place.

Paint the bowsprit white inboard and stain it outboard.

It is easier to make the stretching screw now before gluing the bowsprit into place permanently. The kit supplied instructions describe how to make this using 28 gauge black wire. I have never been satisfied with the finished results. Instead, I carved a stretching screw out of a toothpick. I drilled a hole in each end of the length of toothpick

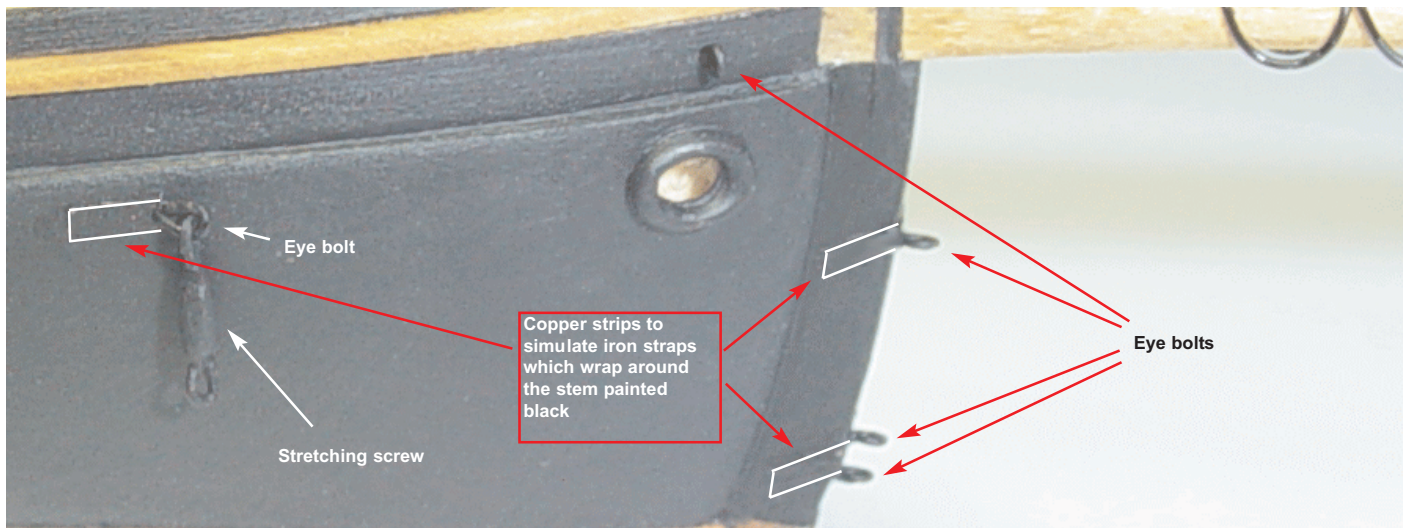
and glued some small eyebolts into them. After they were dry, the wooden toothpick was carefully carved and sanded, thinner and thinner, until it looked the appropriate scale. A small slot was made through the middle and painted black afterwards. These are not easy to make. You should give it a try, but if it proves to be difficult there are other options. You can make them out of wire as mentioned in the instructions, or omit the stretching screw all together. Omitting this little detail will not hurt the overall appearance of the finished model. Small turnbuckles and stretching screws are also available commercially. You will need three of them for the Phantom. If you should decide to buy them, be prepared to pay a lot of money for them. I am far too cheap to buy them. I will admit that the stretching screw shown in the photos (see the previous page for the unpainted stretching screw) is a little large for the model. I am willing to live with it. Each time I make one of these I manage to make them smaller and smaller. Eventually I will be able to fabricate them to the proper scale.

After placing the stretching screw on the bowsprit, we are almost ready to glue it into place permanently. Before doing so, pre-drill a small hole on both sides of the bowsprit inboard. These will be used to secure the cleats after the bowsprit is glued into place. The cleats should be treated the same way that was mentioned earlier. Insert a pin into the bottom of the base of each, and glue them into these pre-drilled holes. (see the photo above)

The gammoning iron is all that remains. This was made from some left over copper tape. It was bent to the shape shown on the plans and glued around the square portion of the bowsprit outboard. The ends on each strap stopped on the stem 1/16" below the bowsprit. It was painted black when completed. (see the photo above)



Bend a copper strip 1mm wide to this shape for the gammoning iron.



Fittings for The Bowsprit Rigging...

Some eye bolts and additional stretching screws need to be made for the outside of the hull. The footropes, bowsprit guy, bobstay etc. will be secured to them. The photo above shows in detail the locations for all them. Two more stretching screws were made but these were even smaller than the one we made earlier. So small that I didnt attempt to create the slot through them at all. These will be used for the bowsprit guys. They were hung from eye bolts glued into both sides of the hull. A small piece of copper tape was glued into place behind it to simulate an iron strap. This feature is clearly shown on the plans. It was painted black which didnt show up very well in the photo. A white outline was used to show its size and placement.

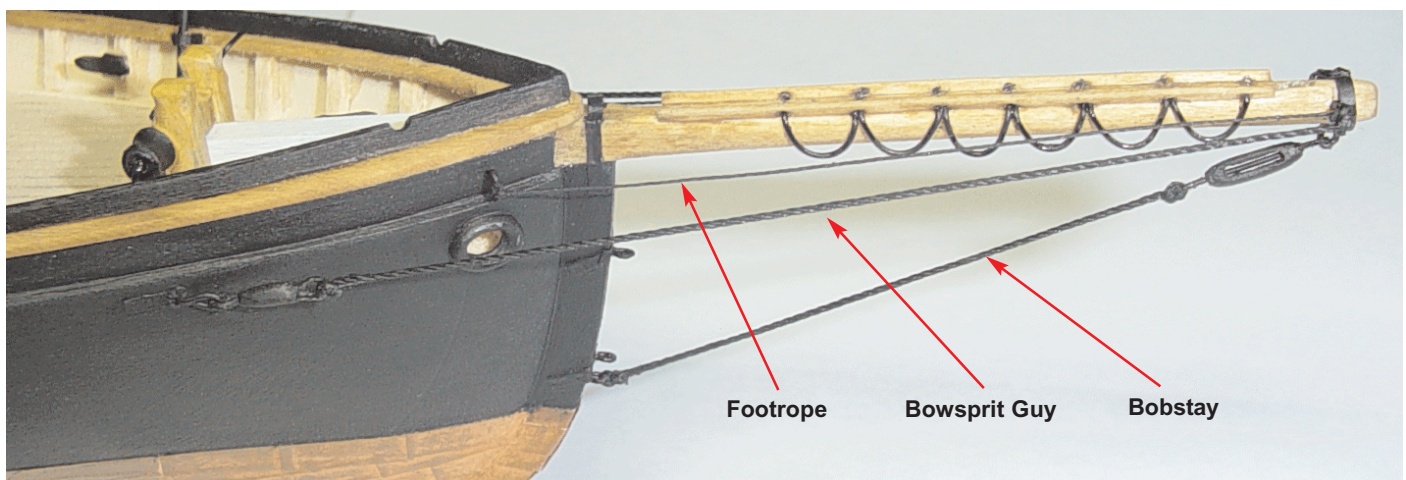
An additional eye bolt was placed above the hawse holes on both sides of the hull. These will be used to tie off the ends of the footropes. Three remaining eye bolts were placed along the front of the stem. Before gluing them into position, some copper tape was cut and wrapped around the stem to simulate the iron straps. A fantastic detailed drawing of this area exists on the blueprints. With a model this small it would be impossible to recreate the actual fittings used on the real ship. This drawing shows the use of shackles and the such. We will be simplifying these details a little bit. If this is your first attempt at building a model

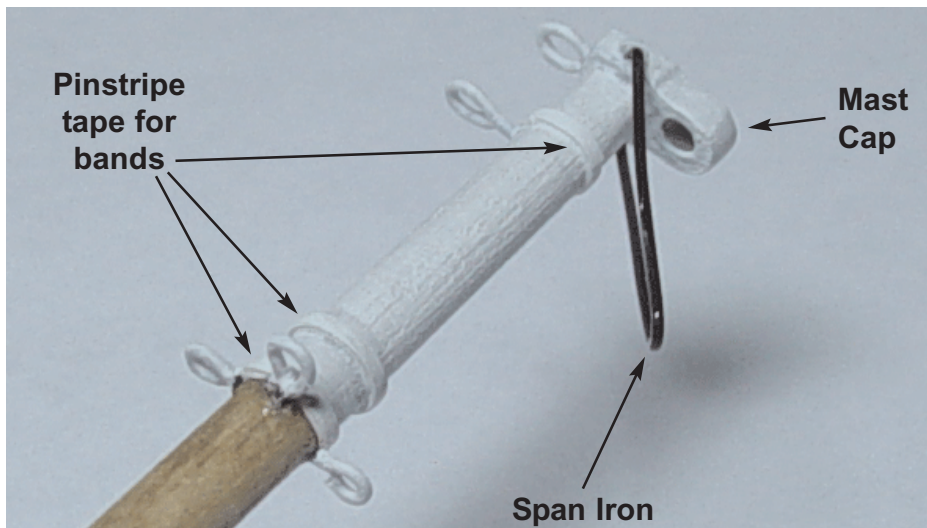
(especially in this scale), simplifying these smaller details is an acceptable practice. As you gain more experience, the goal of historical accuracy will probably lead you to experiment with how to acheive even more realistic results.

The footropes were added to each side (as shown below) using the smaller diameter black rigging line supplied. The ends were tied to the eyebolts on both sides of the bowsprit using a simple double knot. Put a little super glue on these knots before you cut off the excess rigging line. Trust me on this one.

The bowsprit guys were rigged next. Use the larger diameter black rigging line for these. They will be secured to the same eye bolts on both sides of the bowsprit (as the footropes). Their opposite ends will be secured to the stretching screws along the hull.

Finally, the bobstay will be secured to the stretching screw hanging below the bowsprit. It's other end will be tied to the eye bolt shown in the photo below. All of these knots should be touched up with some black paint before moving on to the next step. The two remaining eye bolts on the stem are for the jlb stay and fore stay which we will be adding later.





The Fore Mast...

The fore mast will be made by shaping the appropriate sized dowel provided with the kit. Cut the dowel to the correct length using the plans to get the measurement. Be sure to allow 1/8" of extra length for the shaping of the tennon which will secure the mast into the hole you drilled into the deck. Carve this tennon as shown in the photo at the left. The mast will taper gently towards the top. This can be sanded by hand or you can place the dowel into the chuck of a drill and run the drill at medium to low speed while shaping it with some sandpaper. The top of the mast will be squared off and another tennon carved for the mast cap. These caps are supplied as metal castings in the kit.

Stain the entire mast and paint the base white. The white-painted base should extend 1/2" up the mast. The top portion of the mast will also be painted white. This will extend down to where the lowest mast band will be placed. (see the photo above) Take this location from the plans.

Next, the mast cap should be glued atop the mast. Then the iron mast bands where created. These bands were made by using white automotive pinstripe tape. The tape was cut with a sharp blade to a width of 1mm. It was wrapped around the mast several times until an acceptable band thickness was achieved. Holes were drilled through these bands where the plans indicate the placement of eye bolts. The eyebolts were made and glued into these holes as shown above. The entire top portion of the mast was then repainted white including the eye bolts. Finally, a length of 28 gauge black wire was shaped to make the 'span iron' as shown on the plans. Holes were again drilled into the sides of the mast cap where the ends were glued.

The fore top mast was then cut from the appropriate sized dowel supplied with the kit. It was actually tapered on both ends. The entire top mast was stained and inserted into the hole in the mast cap. It was pushed through until the base was just lower than the band we made on the lower mast. See the photo at the right. Some pinstripe tape was used to secure the top mast to the lower mast. Just wrap more tape around the existing band on the lower mast along with the top mast. This is more than sufficient to hold the top mast in place. The entire area can now be painted white as shown. The span iron will however remain black.

It will also be easier to add the blocks for the rigging to the the mast assembly now, instead of waiting until after it is glued onto the model. The appropriate sizes for each is shown in yellow at the right. "S" =single block, "D" = double, "T" = triple. Unfortunately, no triple blocks came supplied with the kit. You will



have to make them or buy them. Before you can glue the fore mast onto the model, the mast hoops need to be made. Again, there are many ways that you could make them. The mast hoops for the Phantom were made of wood. Therefore I will not use wire to make them. I used 15 hoops on the fore mast even though more were used on the actual ship. At this scale more than 15 might look to clumsy. The hoops were created by cutting strips of manila folder to less than 1mm wide. These are tiny. The strips were stained and left to dry. 3/4" lengths were wrapped around a wooden dowel and their ends glued together to form a ring. The dowel was 5mm in diameter. The hoops are not difficult to make. The first few will take some getting used to, but once you get a routine going this task will go quickly. An additional 15 hoops of this size will be needed for the main mast as well, so if you get into a groove, make them all. Slip these hoops onto the mast from the bottom and then glue the mast onto the model.

Both the fore mast and the main mast are raked towards the stern. The main mast will have a greater angle of rake than the fore mast (however its very slight). Be sure to take these angles into consideration before you glue the mast into position. It will be very difficult to force the rake later when we start the standing rigging.

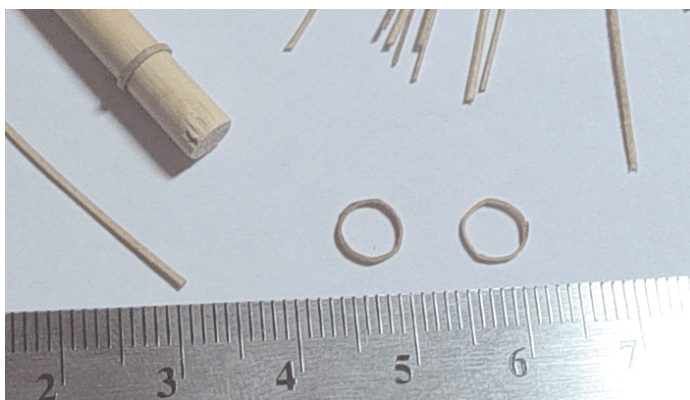
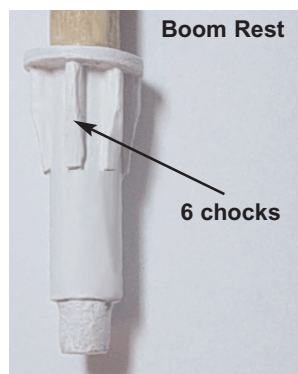
The Main Mast...

The main mast is made exactly the same way as the fore mast. Both are the same diameter at their bases. So use the same sized dowel and cut it to length. Once again, be sure to leave an extra 1/8" to carve the tennon at its base.

Taper the mast as before. See the photo at the bottom of this page. The base of the mast was painted white to 1/2" up the mast. The top was painted from the lower band upward. The area remaining was stained. The boom rest was made next. A small piece of 1/32" thick birch sheet was used to make the top of the rest. It is basically a washer made out of wood. The diameter of the mast was used for the center hole measurement. The overall

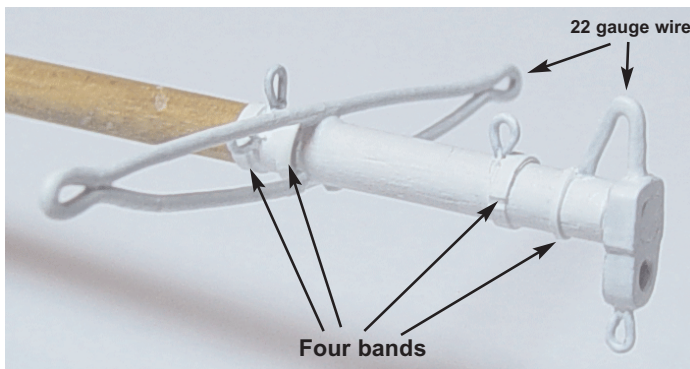
width of the rest was around 1/32". This washer was glued into place on the mast as shown in the photo. The boom rest needs to be angled on the mast so it is level with the deck after compensating for the rake of the mast. This detail is seen on the rigging plan. It is an important little detail and should not be overlooked.

To complete the boom rest, 6 small chocks were cut from 1/32" square strip wood and glued under the boom rest.



They were evenly spaced around the diameter of the mast. Each chock was carved with a bevel as shown after the chocks were glued onto the mast. It was painted white when completed. Before you begin to make the spreader, iron bands and eye bolts for the top of the mast, slide the 15 mast hoops you made onto it. They would be impossible to put on after the details on the top have been completed.

The four iron bands were made for the mast with pinstripe tape. One band was made directly under where the spreader will be positioned. The spreader will actually rest on top of it. The upper-most band will be thinner than the other three. The photo below shows the completed assembly. The mast cap was glued into place and 5 eye bolts were made and added appropriately. The entire top was painted white before I began to add the final two pieces which will be shaped out of 22 gauge wire. The "V"



shaped wire should be glued into pre-drilled holes, one of which is drilled through the aft side of the mast cap. This is a much-simplified version of the apparatus used to secure the block for the main boom topping lift. Finally, the outrigger (spreader) will be made. This is shaped out of one continuous length of wire. It is simple to make using a needle-nosed pliers. It will be glued onto the mast and rest on top of the band we created. Super glue will be enough to hold it in place securely.

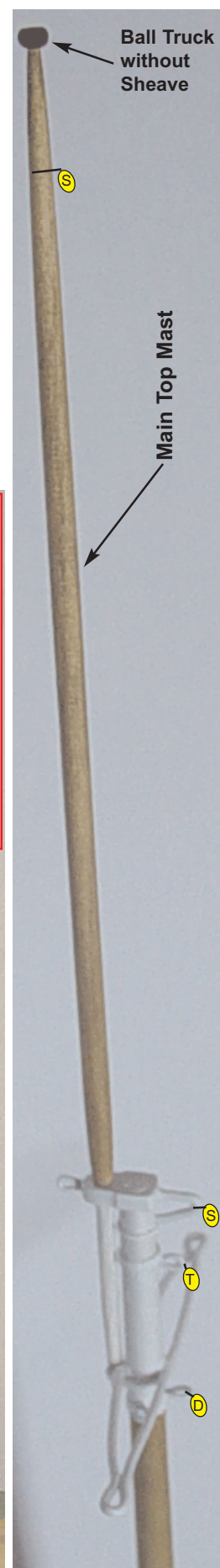
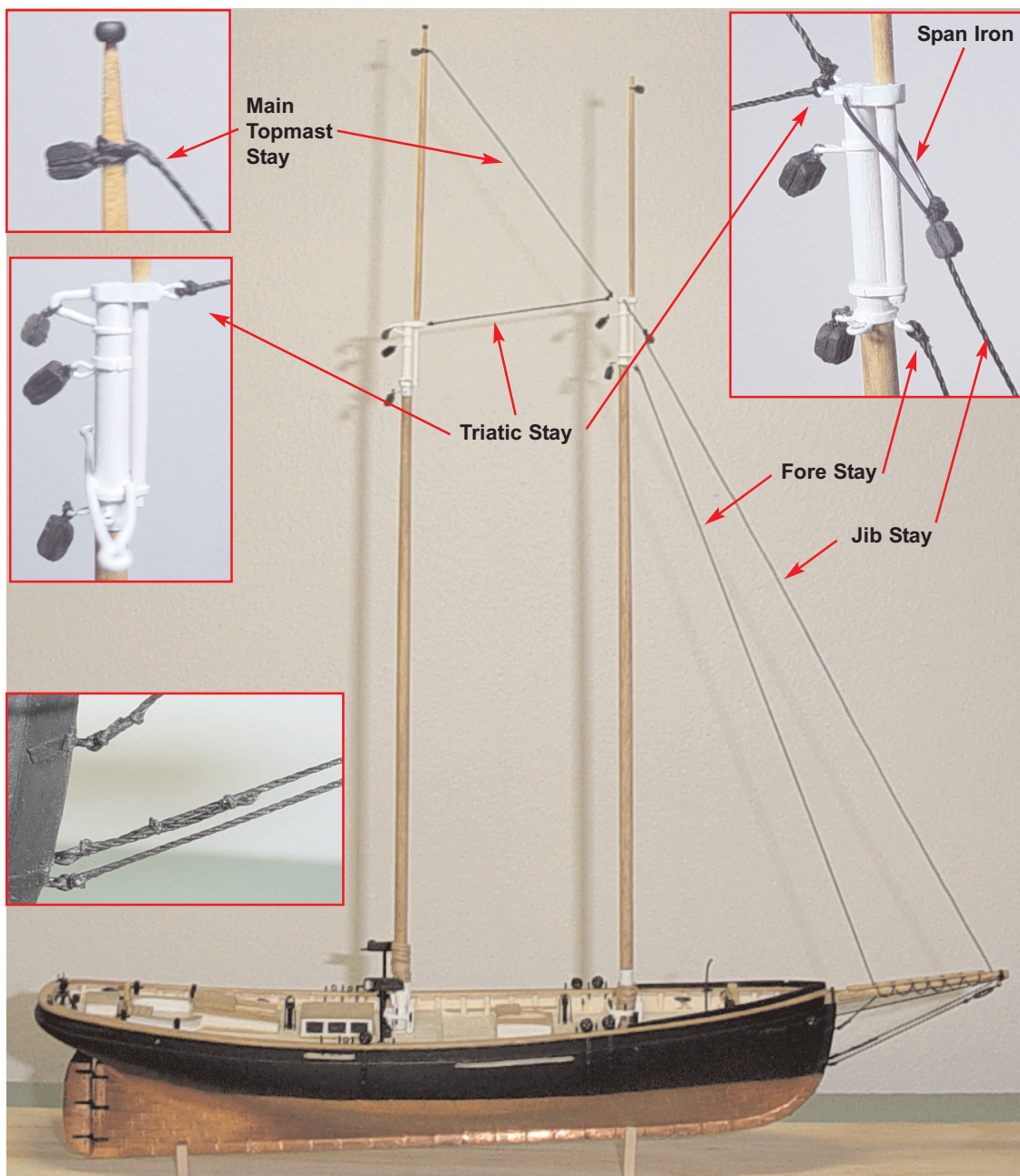


Bend the wire to this shape for the outrigger (spreader)

Now shape the appropriate-sized dowel to create the Main Topmast. It needs to be tapered at both ends. Place it through the round hole in the mast top and secure it to the main mast as we did with the fore top mast. A ball truck was carved and glued to the tip of the main top mast. It was made without a sheave for the flag halliard as shown on the plans. the topmast was stained and painted where needed. The appropriate-sized blocks were also stropped and placed into position. The photo at the left shows their location. I painted these blocks black. Once completed the Main Mast was glued into position on the model.

Standing Rigging (the Stays)...

The first two stays I placed on the model were the the fore and jib stays (in that order). Use the heavier black rigging line supplied. The fore stay was neatly tied (seized) to the eyebolt and a drop of super glue added to the knot before the excess was snipped off. The other end was run through the sheave in the bowsprit and seized to the eyebolt along the stem. This was not simply tied off with a knot, it was seized with some sewing thread in two places as shown in the detailed drawing on the plans. The Jib stay was tied to the span iron next to the single block we placed there for the jib halliard. It was run through the remaining sheave in the bowsprit and seized to the appropriate eye bolt in three places as shown in that same detailed drawing.



The triatic stay and the main topmast stay were rigged next. However, before that was started, I noticed that I had forgot to add the mast hoops for the Main Topmast. Eight hoops should be made in the same way that the others were constructed. The only difference is that these hoops should be smaller than the ones created for the lower masts. The single block that was tied to the main topmast (for the top-sail halliard) had to be removed so the hoops could be slid onto the mast. Only after this back-tracking, did I replace the single block and rig the two stays. Once again, they were neatly tied (seized) to the eye bolts provided for them and secured with some super glue. Be careful not to make the stays very tight. This would cause the two masts to pull into each other or bend. The rake of each mast must be maintained with just the correct amount of tension while rigging these stays.

Rigging the Shrouds...

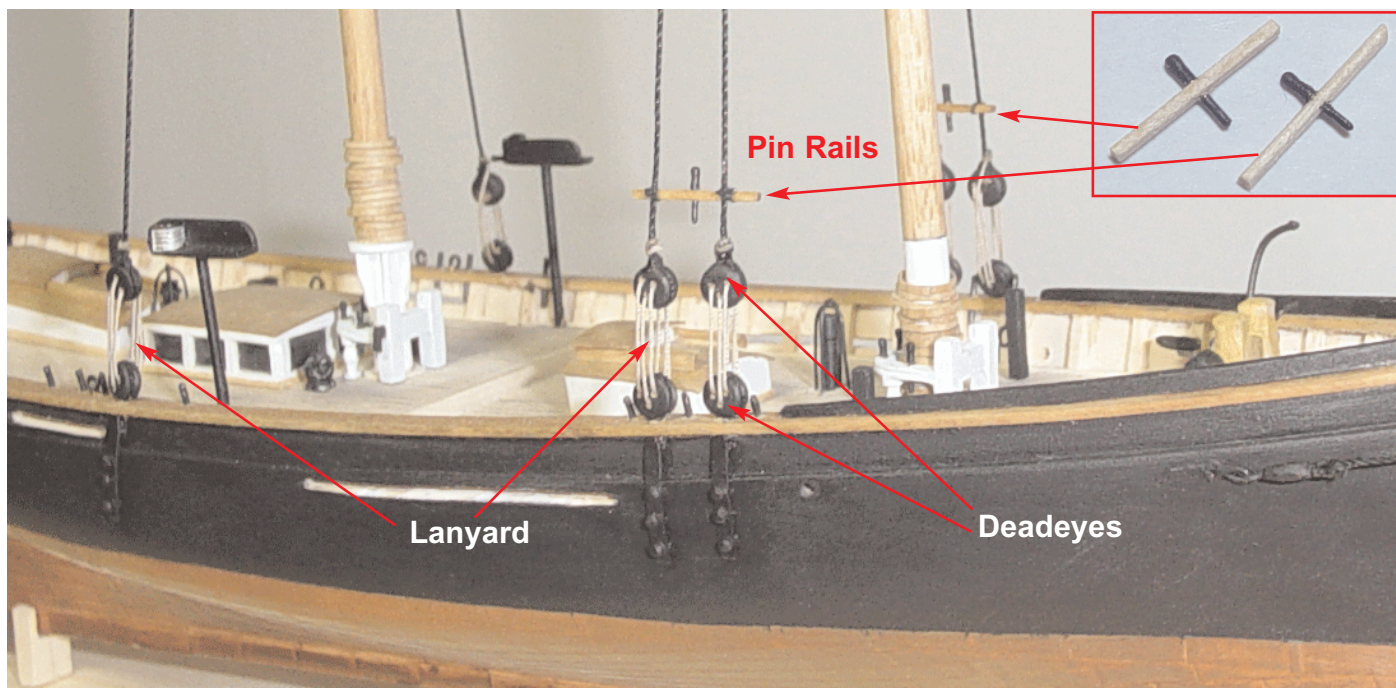
The heavier black rigging line will also be used for the shrouds. Almost everyone who has built a ship model has their own preferred method of completing this task. The Phantom only has six shrouds and shouldn't be a problem to rig. A jig could be created as shown in the kit-supplied instructions to evenly space the deadeyes. I however, prefer to use a different method. Especially on smaller models like this one.

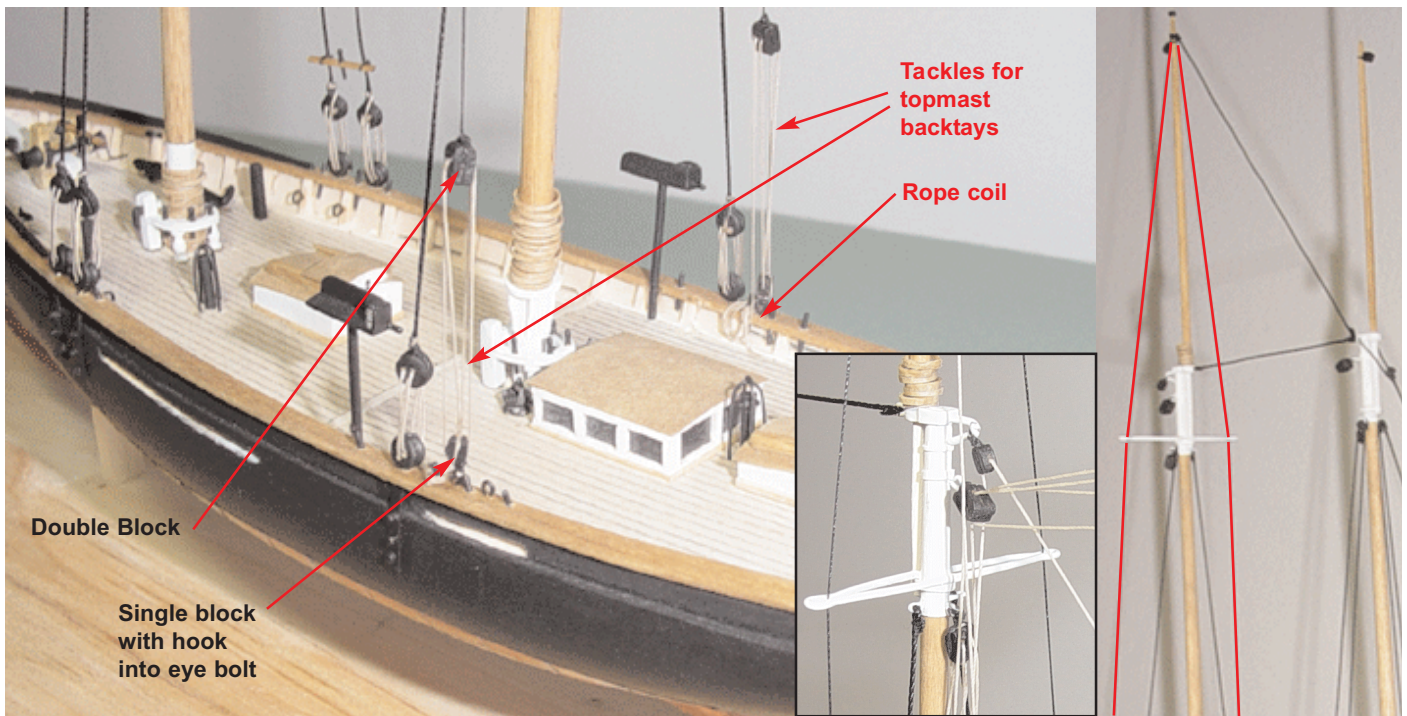
I tied a shroud to the appropriate eye bolt on the mast using some super glue to secure the knot. The length of that rigging line was left extra long (extra, extra long). After the excess was trimmed from the knot, a small clamp was used to hold a deadeye in a small loop at the loose end of the shroud. The location of the dead eye was adjusted and readjusted until an acceptable distance was established between the deadeye on the cap rail and the one held in the loop by the clamp. When I was happy with its place-

ment, I seized the loop closed with some black sewing thread and used some super glue on the knot. Using a clamp (alligator clamp, clothes pin, etc) will give you plenty of opportunity to make any adjustments before making it permanent. The photo below shows the deadeyes and shrouds in place. All of the measurements for the deadeye spacing were taken from the rigging plan.

You can see in the photo that the deadeyes are set up with a lanyard using the tan rigging line provided with the kit. A detailed drawing of this lanyard setup is shown on the rigging plans. This lanyard was simplified by omitting the seizings shown on this drawing. Don't pull the first shroud too tightly while setting up the lanyard. The mast may be pulled to one side and out of alignment. The lanyard should be made only tight enough to prevent the shroud from falling slack. Immediately after the first shroud has been completed, its "partner" should be rigged on the opposite side of the hull. The lanyard for this shroud can be tightened while keeping an eye on how it affects the alignment of the mast. You can usually correct small errors in the alignment by adjusting the tension created by this (partner) shroud's lanyard. All of the deadeyes were painted black before reeving the lanyards. All of the knots were also touched up with black paint where the super glue had left any shiny areas.

The fore shrouds have a pin rail seized to them. Each pin rail has one belaying pin inserted into a pre-drilled hole. The pin rails were made from a strip of 1mm square wood that was cut to the correct length. These measurements were taken from the rigging plan. The pin rails were stained and the pin painted black before it was seized to the shrouds as shown in the photo. I placed the pin rails a little higher on my model than was shown on the plans. This was just a personal preference and not done for historical accuracy. The halliard for the signal flags will be belayed to these pins.





Main Topmast Backstays...

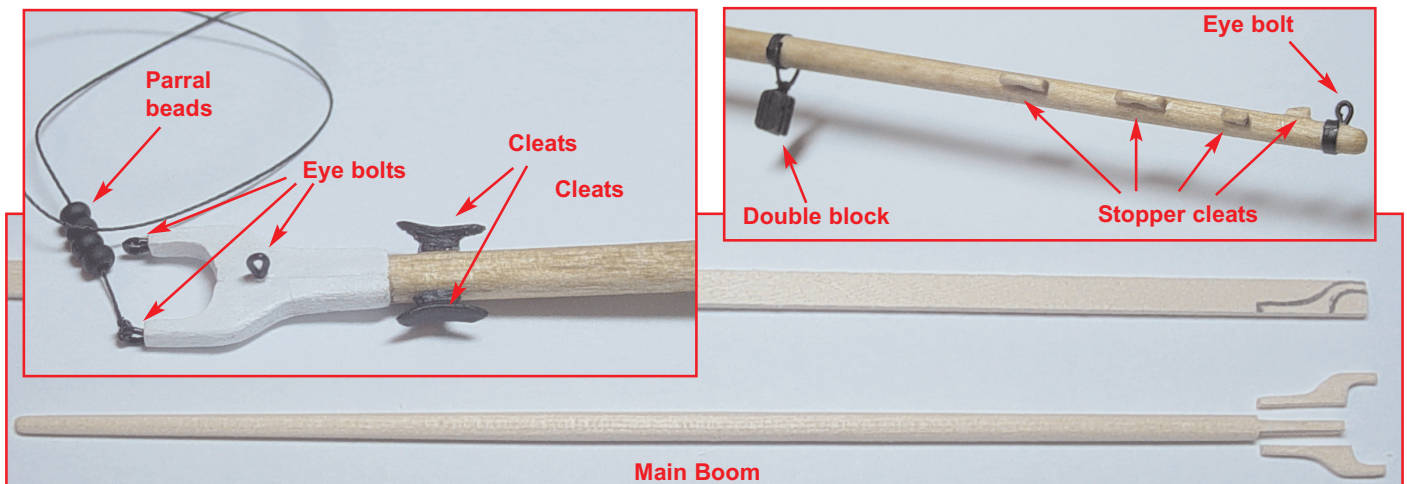
The backstays were rigged using the thinner black rigging line supplied in the kit. A generous length of this line was seized to the topmast at the location where the single block was tied. (see the photo above and the rigging plan) The line was slipped through the loops created on the ends of the wire spreader. A double block was seized to the loose end of each backstay. The same technique was used to establish its position on the stay as was used to establish the positions for the shroud deadeyes. Be careful to establish that these double blocks are the same height off of the deck on each side of the model. If one block is higher than the other it would hurt the overall appearance of the finished model.

A single block will be used for the other end of these tackles. You must create a small hook from 28 gauge black wire and glue it into the bottom of the block. This takes some getting used to. The blocks are very small but

can be pre-drilled with a small bit so the hook can be inserted. This block will be hooked into the eye bolt on the cap rail. All of these blocks were painted black.

Seize a length of tan rigging line to this single block with its knot on the opposite side of the hook. The line can be run through the double block and back down through the hole in the single block. Then reeve it through the remaining hole in the double block and tie the line off on the belaying pin next to the single block. This knot should be hit with a little super glue. This tackle is now complete, and all of the remaining tackles for the model will be handled in the same manner.

A rope coil was made and glued over that belaying pin as shown in the photo above. These rope coils should not be too neat and uniform. Their appearance should be natural. A little drop of super glue may be needed to help shape the coils so they hang correctly. This procedure is described in the kit-supplied instructions on page 14.



The Main Boom...

The main boom will be shaped and tapered in the same fashion as the masts. Take the lengths from the plans and use the appropriate sized dowel. Once the dowel has been tapered, the end of the boom that will have the jaws should be shaped. See the photo on the previous page for details. The end should be notched as shown using a sharp blade. The jaws will be glued here.

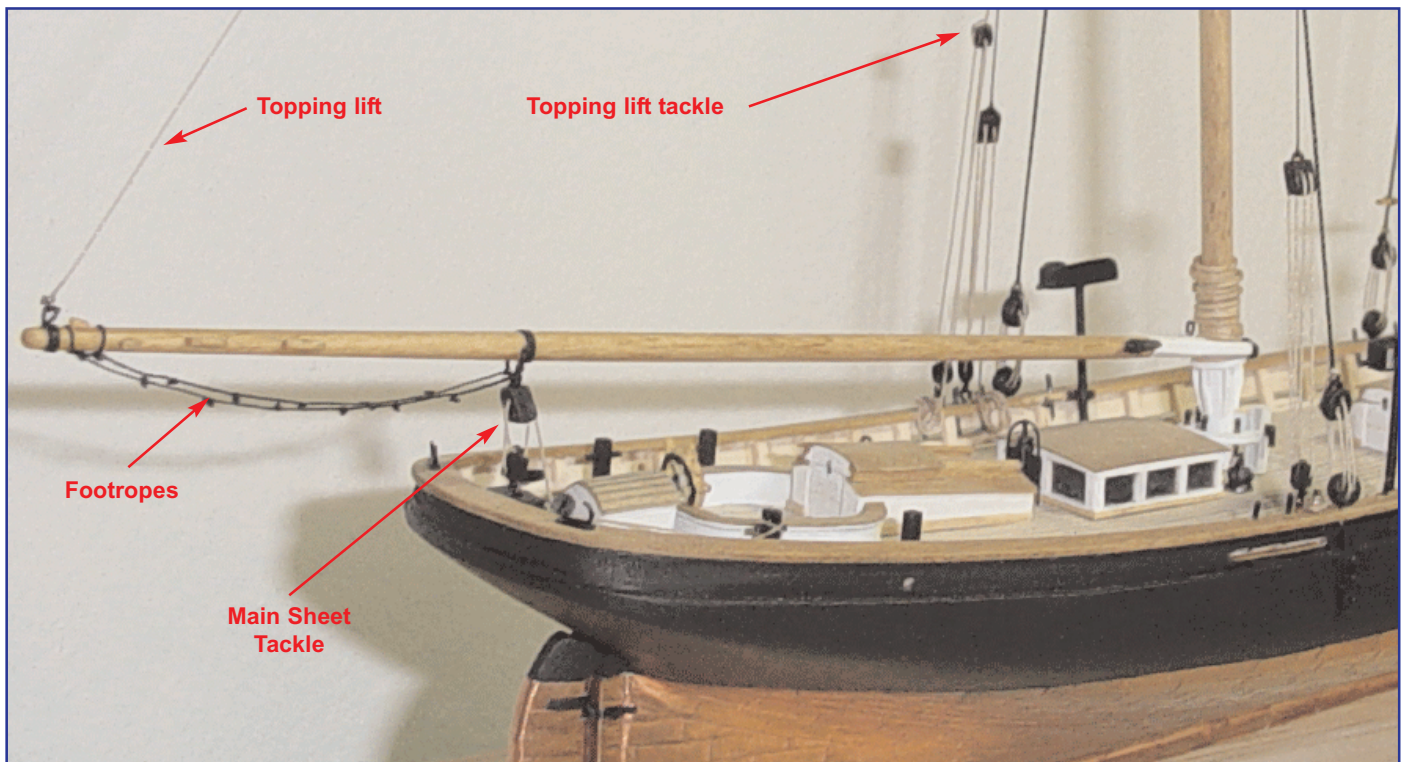
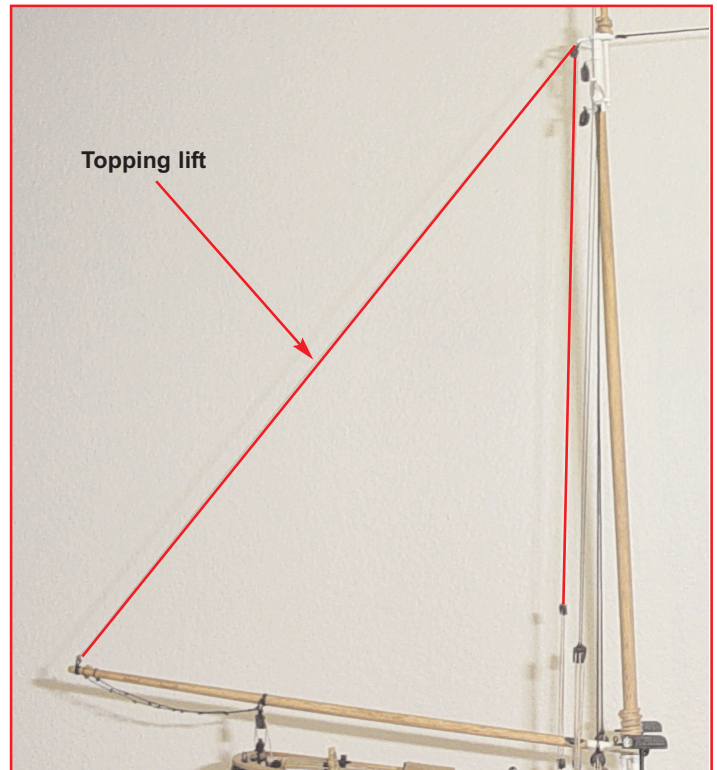
The shape for the jaws was drawn onto a 2mm thick strip of wood. It was carefully cut free with a hobby knife. Sand each jaw to a smooth finish, rounding all of the edges. A hard edge should not be left on these pieces. When you are satisfied with a matching pair of jaws, glue them onto the boom. The boom was stained and the jaws were painted white.

When dry, the various eye bolts and cleats can be added. Black pinstripe tape was used for all of the iron bands. The plans have a great detailed drawing of the locations and sizes for all of these features. The boom sheet band was simplified by bending some 28 guage black wire to the proper shape and gluing it into pre-drilled holes on the sides of the iron band. Adding all of these details should be routine for you at this point in the project. The only tricky part will be shaping the stopper cleats at the boom end. They are incredibly tiny. Those used for the reef pendants in particular.

Eye bolts were place into the ends of each jaw. Some sewing thread was tied to one of them. The parral beads are not supplied with the kit and were purchased separately. They are very cheap and when you buy them, they will last a lifetime. I believe the package contained

1000 beads. The boom jaws should be rested on the boom rest of the main mast and the loose end of thread tied to the eyebolt on the opposite jaw.

But before you do that, seize a double block to the boom sheet band and add the footropes. It is easier to add these details while the boom is off of the model. The footropes have evenly spaced knots tied across their spans as shown in the photo below. These knots should be treated with a small drop of super glue.

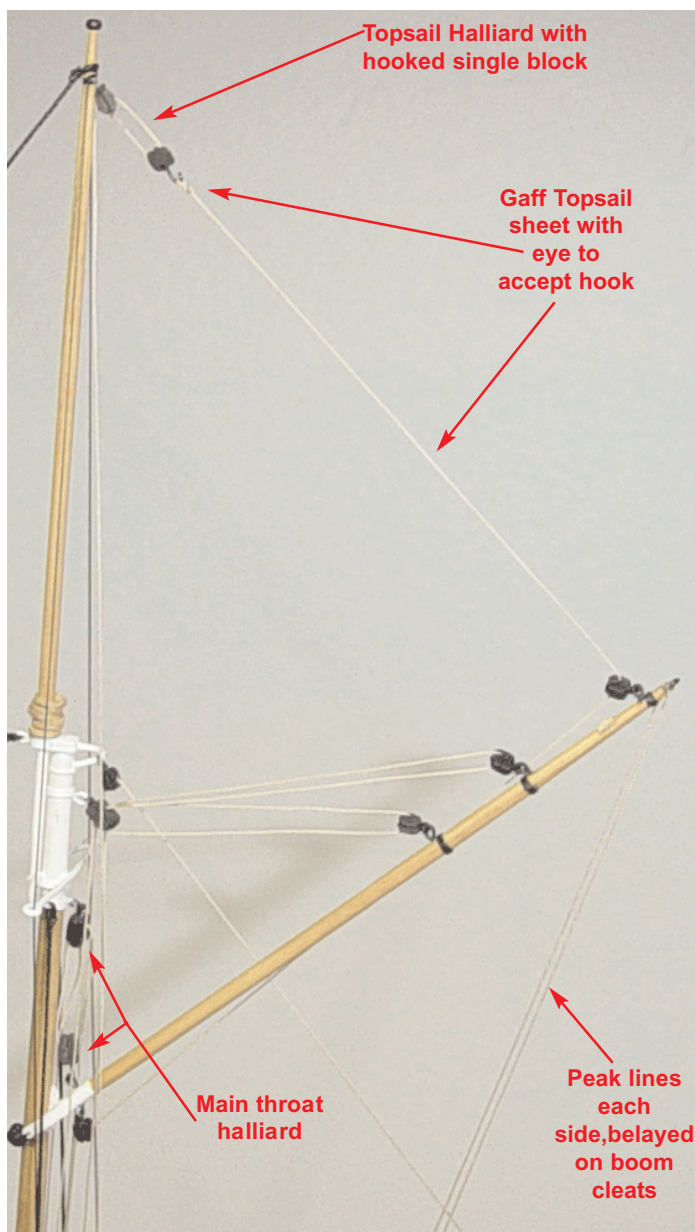


Once the boom has been placed on the model, the topping lift needs to be rigged. It will be belayed to the port side cap rail. Use the eye bolt aft of the tackle we set up for the backstay. The topping lift will be set up in a simple tackle using two single blocks. A small hook in the block is used to secure this tackle to the cap rail. Take a look at the photo on the previous page for details. The tackle for the main sheet also needs to be rigged. There is no need to describe this procedure in great detail because the plans have a great close up drawing of exactly how this should be done. After all, a picture is worth a thousand words. This drawing is not only on the rigging plan (sheet 2), you can also find one on page 13 of the kit supplied instructions. Secure the sheet to the bollard. Let some excess line fall gracefully to the deck and glue a rope coil over the end of it.

The Main Gaff ...

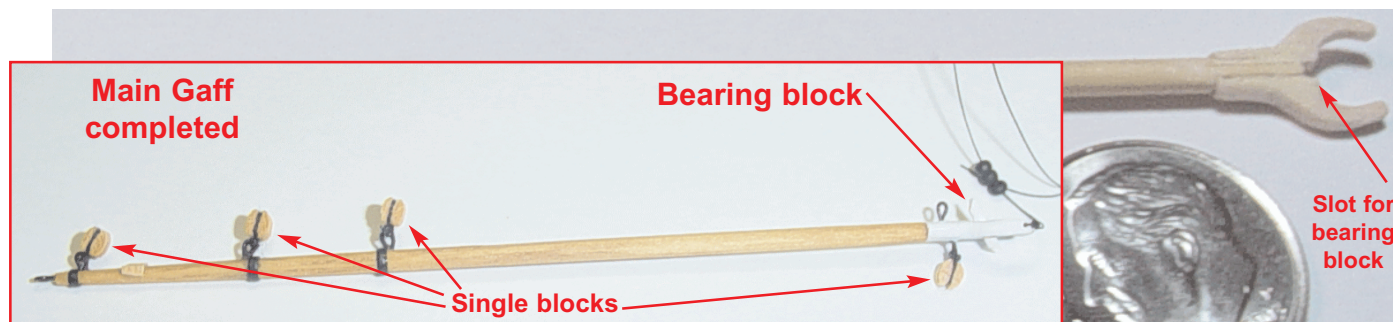
The main gaff should be made similar to how the boom was created (only smaller). Take all of the measurements from the rigging plan. The gaff is shown below. Once again it will be easier to include all of the blocks and eye bolts before you mount it on the model. I will point out one feature of the gaff that is not present on the boom. This is the bearing block. The bearing block or clapper is normally held between the jaws with a pin that would enable it to pivot according to the angle of the gaff. But for our model we will employ a much simpler approach. Make the clapper out of 1mm x 1mm stock and shape it as shown on the rigging plan. There is a detailed drawing in the upper right hand corner. Instead of using a pin, it will just be glued into a slot left between the two jaws at the proper angle needed. The photo below shows this detail before and after the bearing block is added.

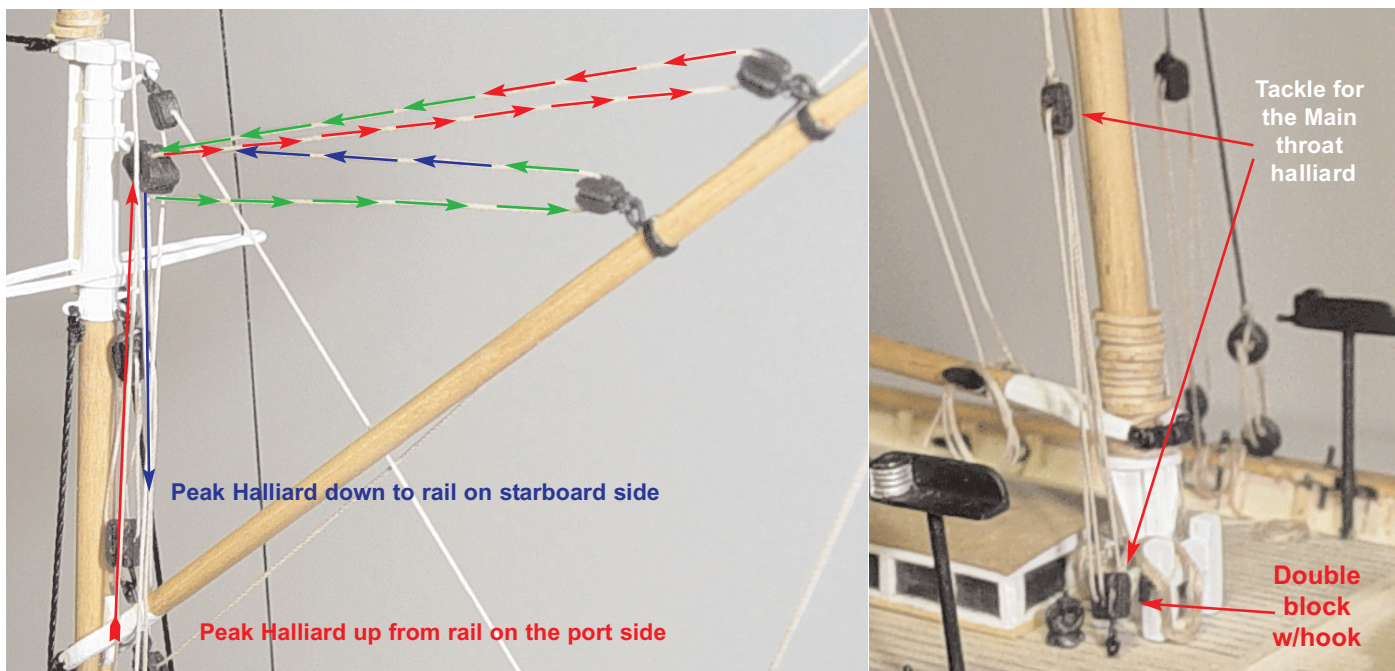
Mount the gaff onto the main mast once it has been painted and stained and all of the little details are finished. The gaff's height on the mast can be stabilized by rigging the *topsail sheet* to the *topsail halliard*. Connect the two with a hook in the topsail halliard's single block. Hook it into an eye spliced into the end of the topsail sheet. Belay the ends of both of these lines to the main fife rail. Finish these off with some rope coils as we did for the other lines earlier. But before you super glue the ends of these lines permanently, test and readjust the height of the gaff. This is just trial and error until you are satisfied with the angle of the gaff established after applying some gentle downward



pressure to the peak end of the gaff.

The gaff is not completely stabilized at this point. The topsail halliard and sheet will look slack but that is OK. Once we add the peak lines and pull them taught, all of the gaff rigging should tighten up nicely. See the photo above for the details. Add the peak lines. There will be two lines secured to the eyebolt you glued into the gaff's end. Belay these to their respective cleats on each side of the boom





below it. All of these knots should be touched with a spot of super glue. If any of these lines should pull free it will get harder and harder to fix them as we continue to spider more rigging throughout the model. Finish it off with some more rope coils.

The Phantom has a relatively simple rig. If you have started to utter some explicatives at this point, you can only imagine the colorful language your family might hear if you were building a 3 masted ship-of-the-line such as the HMS Victory. If this is your first attempt at rigging a model I can relate to what you are feeling. But it does get easier. You will, like all of us who continue to perfect our skills, find those techniques and short cuts that work best for you. For example, you may find it easier to strope a block with a rigging line by first sticking the block to some double-sided tape. Adhere the tape to a piece of scrap cardboard and use the tape to hold the block in place so you can easily tie the rigging line to it.

You will also find yourself collecting a wide array of needle threaders, tweezers and the such. Sometimes the tools that are most effective are the ones that you make yourself. Attach a common needle-threader to the end of a dowel about 6 inches long and you will find it easier to reeve lines through the blocks already mounted on your model. This is easier than trying to navigate your fingers through a maze of standing and running rigging.

Anyway, there are two additional lines that we need to run to complete the rigging of the main gaff. The main throat halliard needs to be rigged next. Create and glue a hook into the bottom of a double block. Set this block aside for the moment. Seize the end of a considerable length of tan rigging line to the double block already mounted to the main mast. Reeve it through the hooked block and then back through the other block twice. The hooked block will be placed into the eye bolt on the throat of the gaff as shown

in the photo on the previous page. The *fall* of this halliard will have a tackle secured to an eye bolt in the deck on the starboard side. It looks as though I overlooked the need to place this eye bolt into the deck earlier. It would have been much easier to do this before the masts were glued onto the model. None the less, the hole was drilled and an eye bolt was glued into it. The tackle will have a single block and a double block. The double block will need a hook so it can be inserted into the eye bolt on deck. See the photo above to see how this tackle was set up. The loose end of the tackle should be belayed on the post of the fife rail. Wrap it under the cleat on its side and around the top of the post. Fasten it permanently with some super glue. Hang a large rope coil over the post as shown in the same photo. There is a drawing showing this tackle on the rigging plan.

At last, only the peak halliards remain. This halliard will be



How it looks
up to this point
in the project

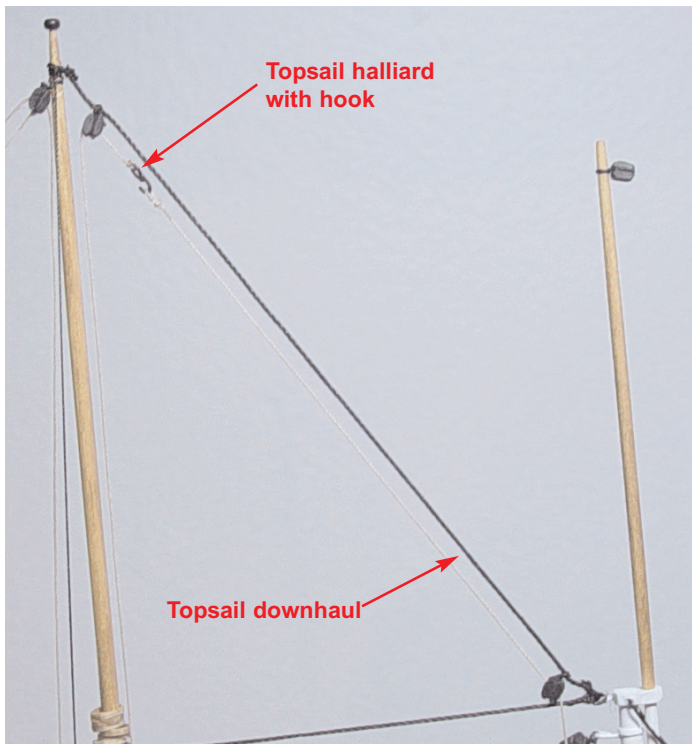


made from one extra long piece of tan rigging line. Start by belaying the line to one of the remaining pins along the cap rail or on the main fife rail. This will be done on the port side. Don't bother with a rope coil at this stage. Bring it up to the triple block on the mast. Reeve it through the port side of the block following the path illustrated in the photo on the previous page. Follow the path of the arrows shown in red. The halliard will be completed on the starboard side following the arrows shown in blue. The *fall* of this halliard should be belayed to a pin on the starboard side. Either on the cap rail or the fife rail. Which ever you choose, just make sure that it is consistent port and starboard for both ends of this halliard. Finish it off with some nice rope coils.

By now you probably realize that you won't have enough single and double blocks to finish rigging the model. You

will have to buy some more of them. If you plan on continuing with the hobby (and I hope you will), you might want to consider buying them in bulk from *Model Expo*. Most kits almost always lack the correct quantity you will need. I will also mention that I have been a customer of *Model Expo* for many years; and by simply giving them a call and explaining how there aren't enough blocks, they will promptly ship you enough to finish the job at no additional cost. They have fantastic customer service and stand by their kits. Model Shipways is a division of Model Expo.

Their website is www.modelexpo-online.com. This is where I originally purchased the "Phantom" kit. Be sure to order the correct sizes (2.5mm for the single blocks and 3mm for the double blocks).



Rigging for the Main Topmast Staysail...

Hook made from



28 guage wire

Because we are not rigging the model with sails, the staysail downhaul and halliard will be connected. Two single blocks will have to be tied to the main topmast stay. The photo shows their positions along the stay. These, like all of the other blocks were painted black. A small hook was made out of 28 guage black wire. There is no block to glue it into this time because some tan rigging line will be seized directly to the end of it. Form a small eye in the end of the hook where you will tie the line. Reeve the line through the block tied to the stay and belay it to the main fife rail.

Create an eye on the end of another length of tan rigging line. The hook of the staysail halliard will fit into it. This line will become the downhaul. Reeve it through the block on the stay closer to the fore mast as seen in the same photo. Belay that running end of the downhaul on the fore fife rail. Place some rope coils on both and secure them with a drop of super glue.



Gaff on the Foremast...

The gaff on the foremast is made the same exact way as the gaff for the main mast. They are almost identical. This gaff is however, made without an eyebolt for a topsail sheet. The signal pole on the foremast is much to frail to allow the addition of a topsail. It was only used as a means to hoist the signal flags. Only eye bolts will be needed for the peak halliards. It will also not be necessary to place an eye bolt on the underside of the jaws. This was also used for the topsail sheet. The photo above shows the gaff as built. It does not yet have any single blocks for the peak halliards. These should be added before mounting the gaff onto the foremast. The bearing block is not shown in the photo either. This should also be added before mounting.

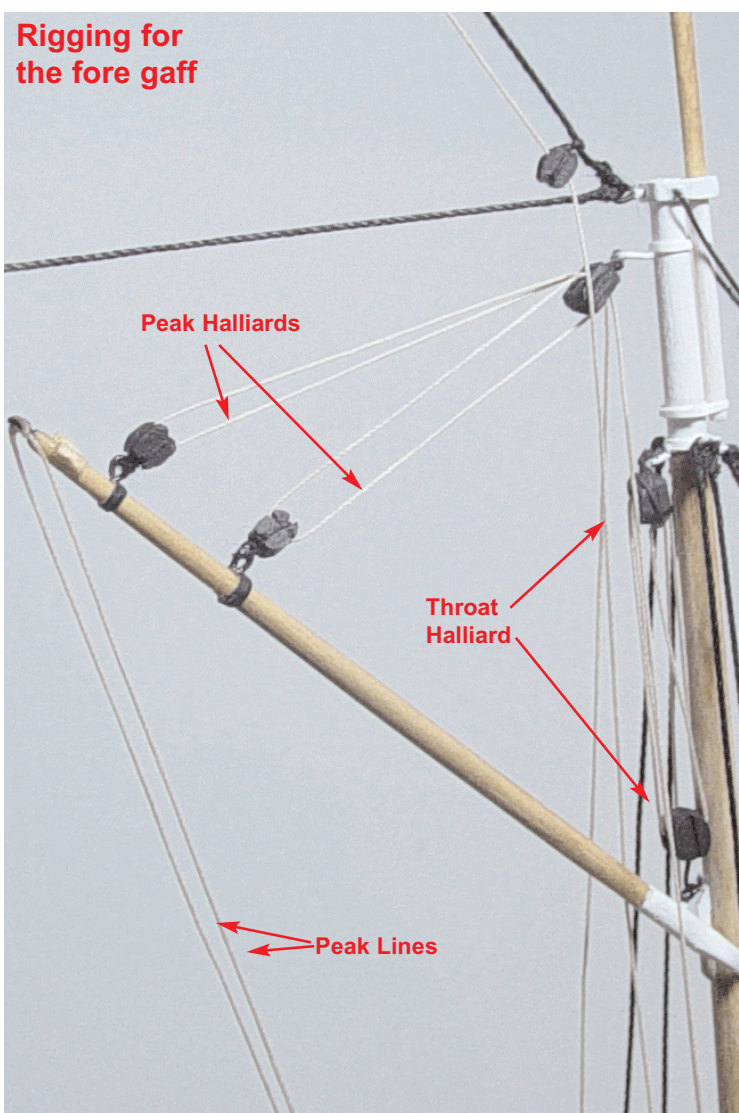
Once the gaff was painted and stained, it was mounted onto the foremast. The parral beads were tied to the mast securing it into position. Super glue was used on all of the knots to ensure that they would not come loose while tending to the running rigging.

The peak halliards were rigged first. The path for these halliards were identical to those on the main mast. The falls were belayed to pins along the cap rail. One on each side of the hull. You can re-examine the path for these halliards as was described with colorful arrows for the main gaff. That photo appears on page 32. More rope coils were placed over these belaying pins once the falls were secured with some glue. The easiest way to rig the peak halliards is to belay one end to the cap rail first, then reeve the free end through all of the blocks as described. Then belay this free end on the other side of the hull. It is actually one line that should be left extra long so you can be certain to have enough length for the entire distance.

The peak lines were added next. These are once again tied to the eye bolt on the end of the gaff. For the main gaff, the loose ends were made fast to the cleats on the boom jaws. This time, those ends will be brought down to the fife rail and belayed there. Don't forget to include some rope coils.

Last, the throat halliard was rigged. A hook was added to a double block which will be hooked into the eye bolt on the gaff's jaws. Tie the end of a rather long length

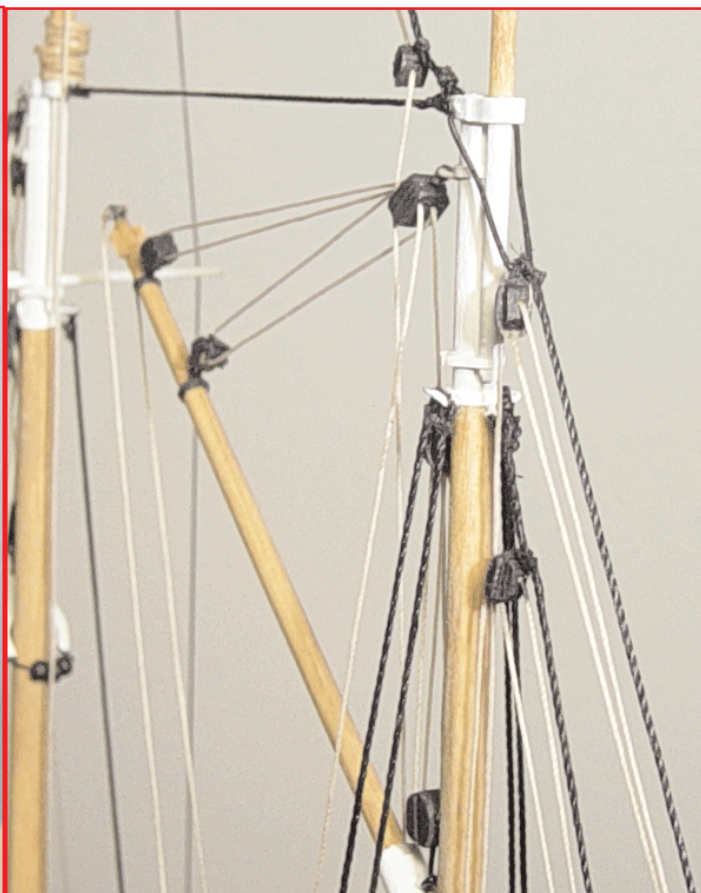
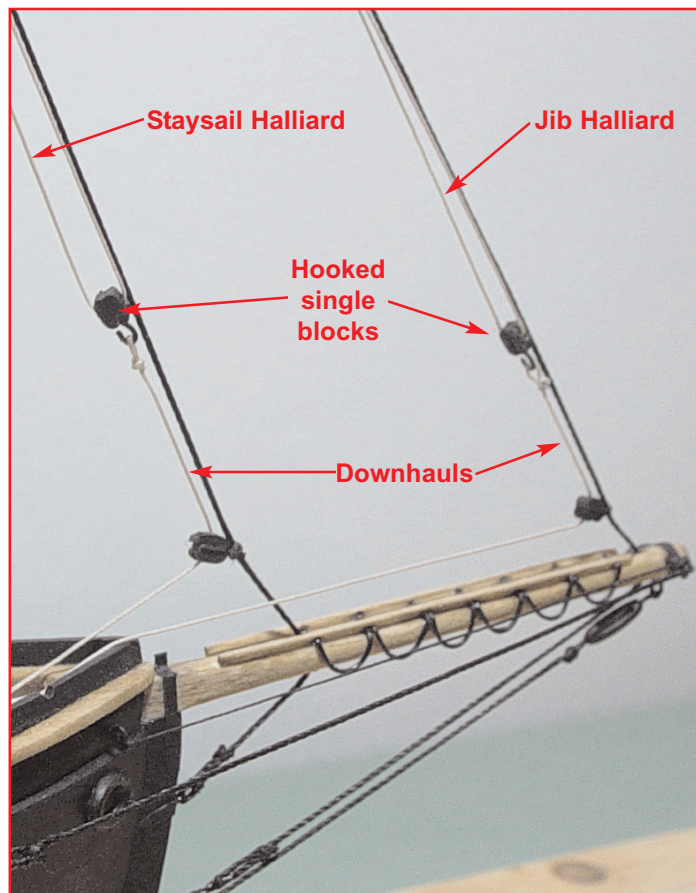
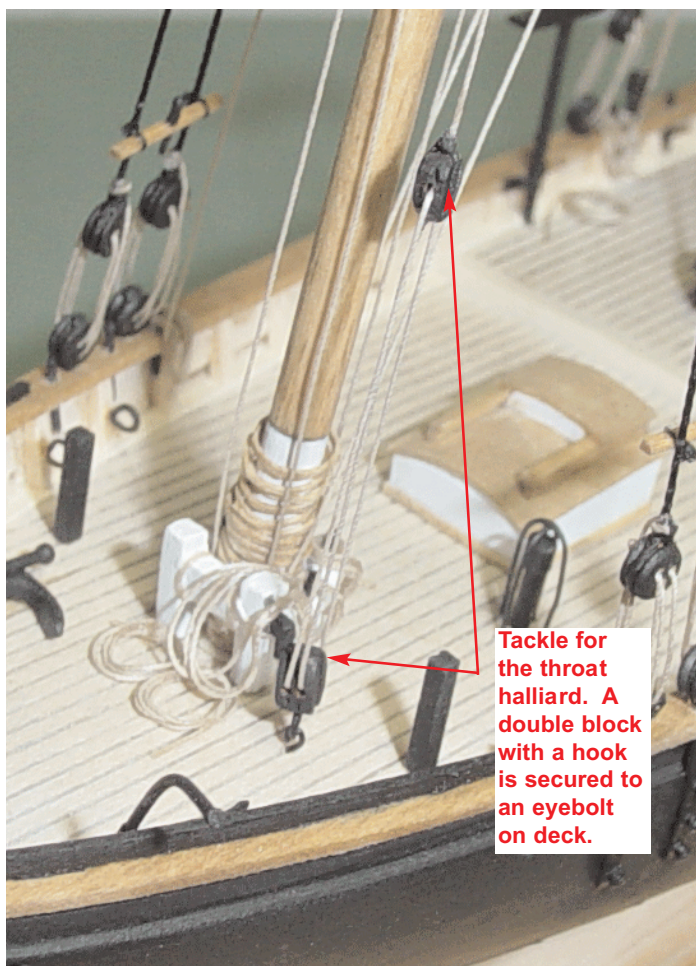
of tan rigging line to the double block already seized to the mast head. Just as we did for the *main* throat halliard, reeve the line through the double block hooked to the gaff and back through each a second time. The fall will be taken down to a simple tackle set up with both a single block and a double block. The double block has a hook in it which will be secured to an eye bolt on deck. The only difference with this tackle is the fact that it will be set up on the opposite side of the fife rail than was done for the main throat tackle. See the photo on the next page. Use the cleat on the fife rail's post to belay the line. A larger rope coil should be draped over the top of that post. The single block for this tackle should be the same height off of the deck as the single block used for the main throat halliard's tackle.

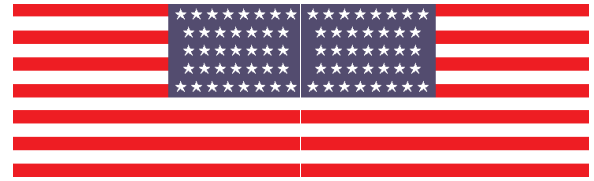
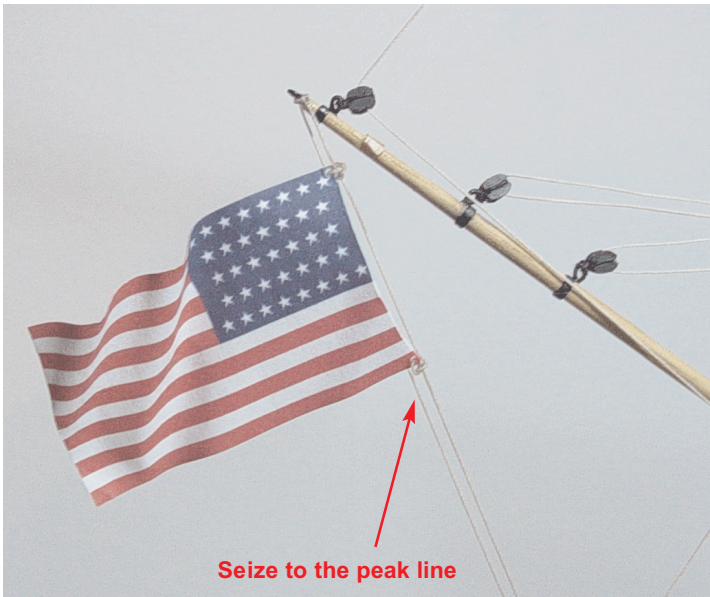
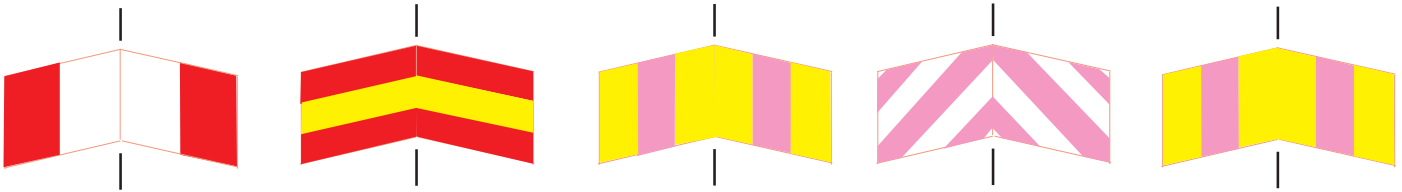


Rigging for the Jib and Fore Staysail...

Both the jib and the staysail have halliards and downhauls. The model is being rigged without sails so these two lines will need to be joined. A small hook needs to be made out of 28 gauge black wire and inserted into two single blocks. These blocks will be used for the halliards. The halliards were rigged first. Set these blocks with hooks aside for now. Then seize a single block to the span iron for the jib halliard. Another single block was seized to the forestay for the staysail halliard. The location for these blocks is clearly shown on the rigging plan. See the photo below (right).

A long length of tan rigging line can be tied to these two blocks. The loose end is reeved through the hooked single blocks then back up through the blocks secured to the stay and span iron. The falls for both of these halliards will be belayed to the fife rail below. But before you glue them permanently and add some rope coils, the hooked blocks should be brought down to the bowsprit. See the photo below (left). The halliard and downhauls would remain close to the bowsprit once connected. This would have made it easier for the men to connect the ends of the halliard and downhaul to the sails when they were needed. Establish an acceptable distance of 1" from the bowsprit for these hooked halliard blocks. Now you can glue the loose ends permanently to the fife rail and add the rope coils. The halliards will hang loosely until they are inserted into an eye created on the end of each downhaul. The downhauls will be reeved through another single block which





has been seized to each stay. These blocks were tied to each stay about 3/16" above the bowsprit. This feature is also shown in that photo on the previous page. The down-hauls, once reeved through these blocks are secured to the cleats on the inboard portion of the bowsprit. Rope coils were then made and draped over these cleats.

The Flags...

All of the rigging is now completed. At least as it is shown on the cover of the box. The model in this state looks very good but can be improved upon even further with the addition of some flags. Flags were not supplied in the kit but can be made or purchased separately. I have taken the liberty of making them for you. The flags shown on the top of this page are presented to scale. Simply print this page using the cheapest, thinnest, low weight paper you can find. The stock shouldnt be too thick. Cut them out using your hobby knife and they can be added to your model.

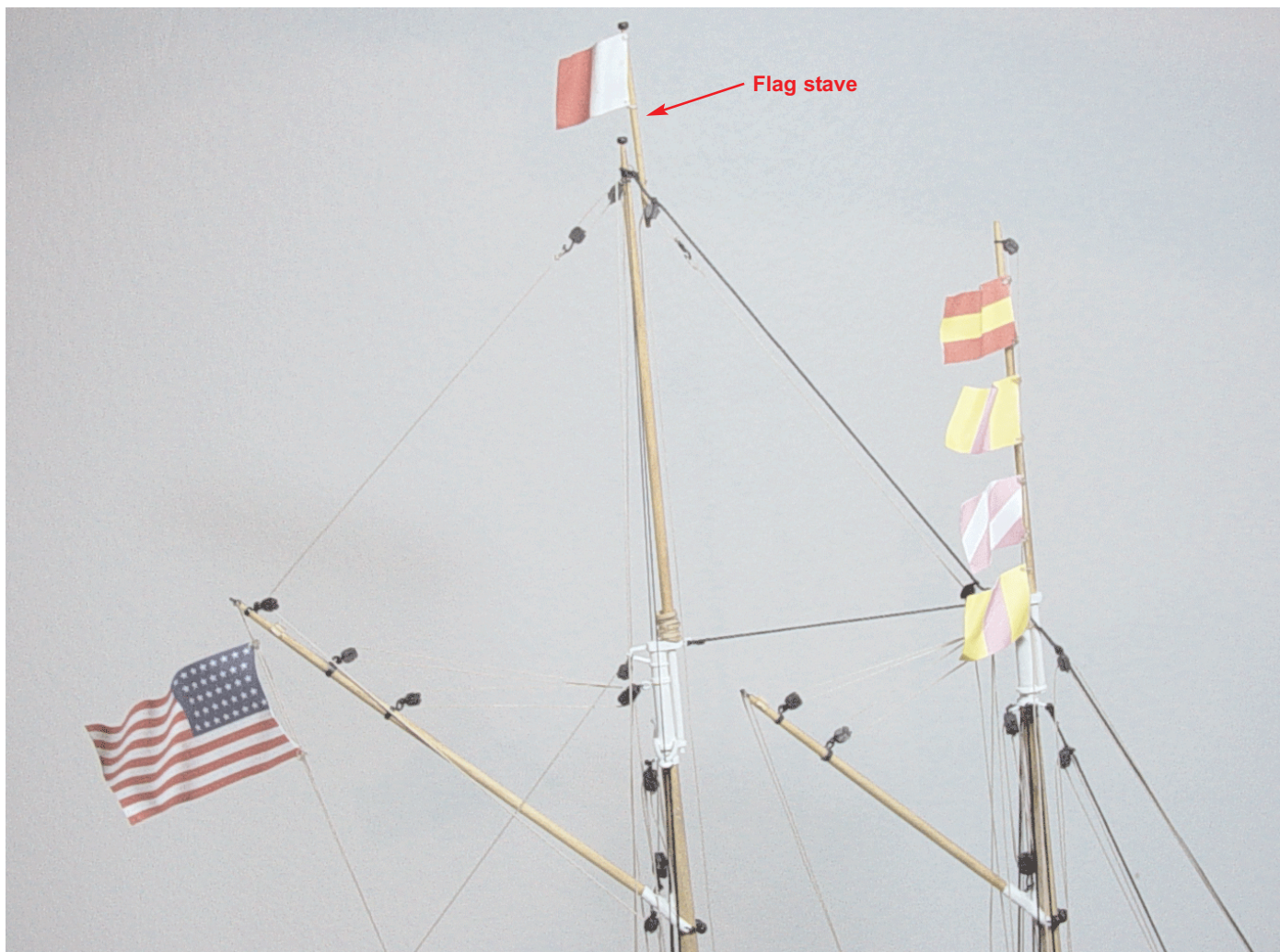
You will notice that the smaller signal flags were created on an angle. This helps the flags look more natural after they are placed onto the model. It wasnt necessary to do this to the 37 Star American Flag. It will be seized to the peek lines at the stern. The peek lines are already at an angle and as such, do not require the flag to be.

Start with the 37 Star American Flag. This is the flag that would have been used at the time when this ship was launched in 1868. Fold the flag along the center line (between the two mirrored halves). These two halves can be glued together. I used a simple glue stick. It was actually my daughters. She is 6 years old and I borrowed it

from her for this task. An Elmer's glue stick works just fine. Sometimes the two halves don't line up exactly. The edges can be trimmed if needed after you glue the two halves together. Using a small drill bit, place some small holes through the corners of the flag as shown in the photo above. These holes will be used to seize the flag to the peak line. Before you do that, the flag needs to be shaped. It should be shaped so that it looks natural. (As if it were blowing in a gentle breeze) The folds would hang horizontally and diagonally. Use different sized wooden dowels to bend the paper flags and establish these natural looking folds. One of the worst things you can see, is a flag that is poorly constructed on a model. One that is left to hang on a model looking like a rectangle that has been starched.

The smaller red and white signal flag was added next. This flag was used to signal that a pilot was on board the vessel. This flag will be seized to a stave. The stave is then rigged to the main topmast with a halliard and down-haul. This feature is shown on the rigging plan. Make the flag stave first by shaping the appropriate sized dowel. You can take the length for the stave from the rigging plan. It was tapered using the same methods that were used for the masts and gaffs. A single parral bead was glued to the top of the stave to simulate the ball atop the stave. It was painted black.

The plans show the flag halliard reeved through a sheeve in the ball atop the main topmast. It would be very difficult to drill a small hole through that ball without crushing it. So we will drill a hole through the topmast instead. Once the flag has been completed and seized to the flag stave, you



can tie a length of tan rigging line to the stave. It should be tied below the flag but not too close to the bottom of the stave end. Run the loose end of the halliard through the hole you just made through the topmast. The fall of this halliard can be taken down to a belaying pin on the cap rail (port side). You know the drill at this point. Add a rope coil after securing the line with some super glue.

The downhaul for the flag stave is seized to the bottom end of the stave. The downhaul does not reeve through any blocks or sheeves. Simply take the downhaul to a belaying pin on the starboard side and secure it along the cap rail. See the photo above.

Finally, the remaining signal flags should be cut out and glued as the others were. Drill holes in the corners which will be used to seize them to a flag halliard on the signal pole. The halliard can be rigged first and the flags seized to the fall of the halliard on the starboard side. The halliards will be belayed to the pin rails lashed to the shrouds. This is most easily achieved by securing one end of the halliard to the pin on the starboard side first. Don't worry about adding a rope coil yet. Reeve the loose end through the single block seized to the signal pole. Take the fall to the pin on the port side shrouds. Add some rope coils.

The four remaining signal flags are numeric signals. They represent the date of the *Phantom's* launch. From top to bottom (as shown in the photo above) 1,8,6, and 8. These flags can now be seized to the halliard on the starboard side. Be careful to space them evenly distanced apart.

CONGRATULATIONS, you are finished. Well, not quite. If you want to add some additional rope coils on deck it will make your model look even better. These little schooners would have a lot of rope lying on deck which would be used for the tacks and other rigging. **NOW YOUR DONE**. Photos of the completed *Phantom* are shown on the following two pages.

I hope you are happy with the results. It's a fine model. It should be displayed in a case for its protection. Place it in an area of your home where it can be appreciated in its full glory. I also hope that this project has inspired you to continue with the hobby. I am already eager to start my next project. What should it be? So many ships, so little time. I am at times very hard on the kit manufacturer (Model Shipways). But in my opinion they offer the best value for the money as compared to all of the others available. As you can see, with a little ingenuity and modification, any shortcomings can be improved upon.



