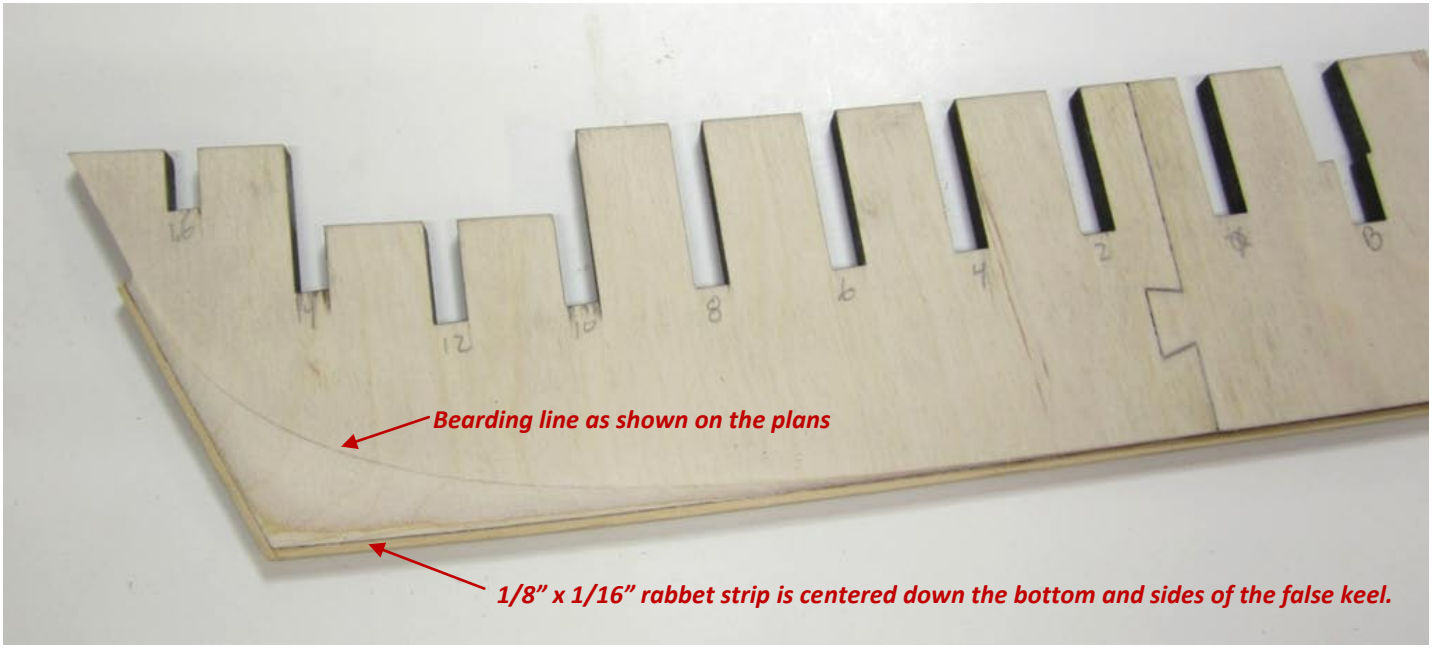


Chapter One

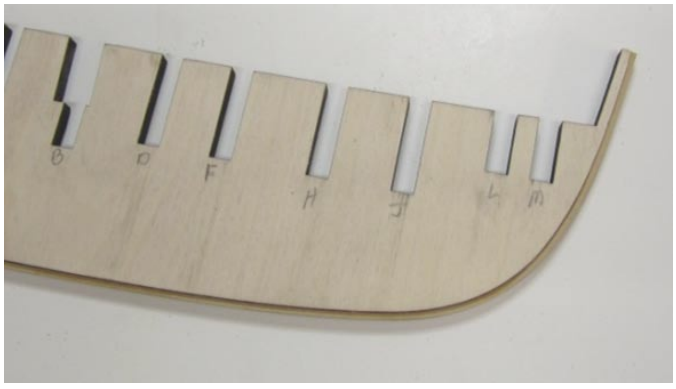
Building the ship model skeleton…

The first two pieces to be made for the model will be those for the false keel. These should be cut from ¼" thick plywood. Not all plywood is made properly and of good quality. Use only top grade ply that is known to be consistent in thickness with more than just a few layers. I used the ¼" thick plywood made by Midwest. After checking out many other sources I found the Midwest plywood to be the best quality.

You can see on the plans that I prefer to cut the false keel in two sections. It's not because it is a very long piece, but instead, it is done to help prevent warping and twisting. Having a long length of plywood with so many slots cut out of it makes it more prone to twisting and bending. By keeping the pieces shorter it minimizes the chances of this happening. I created a simple puzzle piece joint and glued the two sections together on a flat surface. I used Yellow carpenter's glue to do this.

When you are cutting these pieces out using a scroll saw, pay close attention to the width of your bulkhead slots. Measure the actual thickness of your plywood first and make any adjustments to your slot widths before you begin. Not all ¼' plywood is thicknessed properly and you can make small adjustments to your slots without causing any problems down the road.

After the two false keel sections are glued together, transfer the curved reference line for the "bearding line" onto both sides of the FK. See the photo above. The bearding line is shown as a dashed line on the plans. I also marked each slot with the proper letter or number which helps when the time comes to insert the bulkheads in position.



It is now time to add the rabbet strip to the bottom edge of the FK. The rabbet strip is a 1/8" x 1/16 strip of boxwood. It is glued down the center of the false keel's edge. This should leave 1/16" on both sides of the rabbet strip. As shown in that

first photo, the rabbet strip is also extended up the back edge of the FK to where the small notch is located.

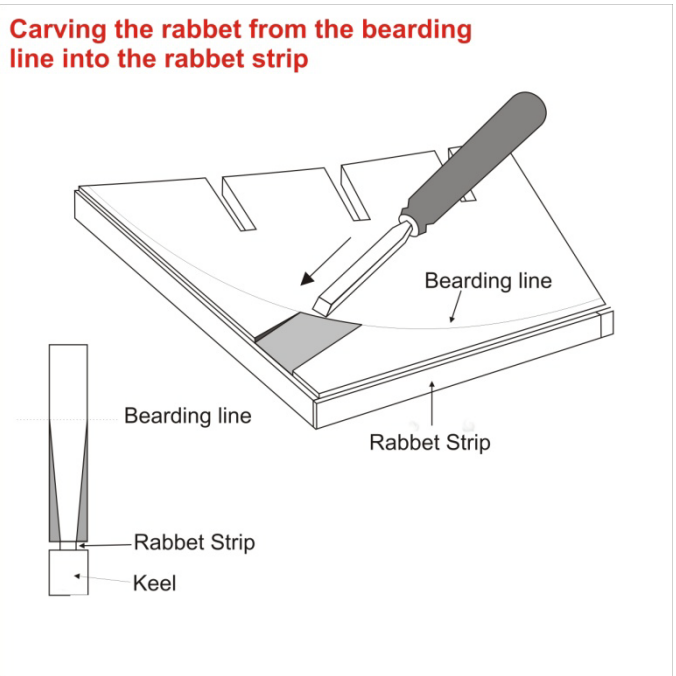
Tapering from the bearding line to the rabbet strip at the stern…

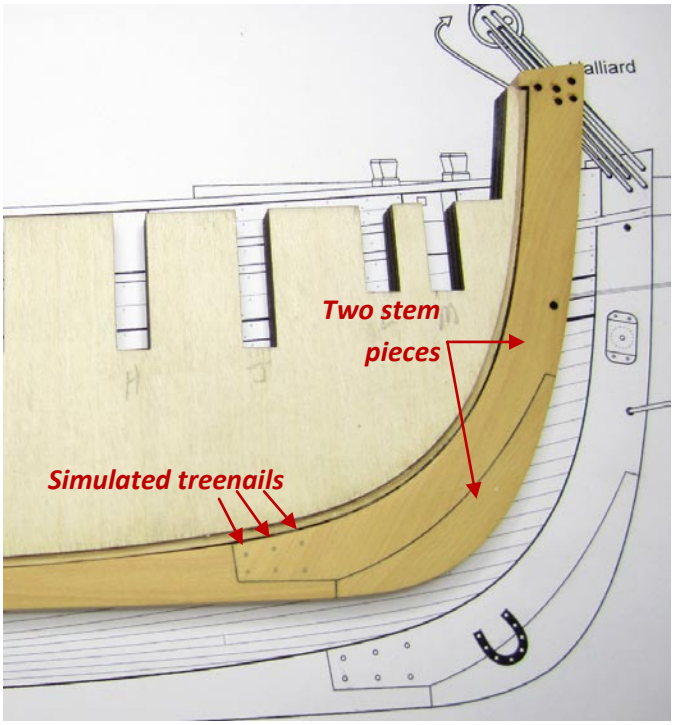
As shown in the illustration to the right, you must taper the false keel from the bearding line to the rabbet strip. Gradually taper the *FK* so it is flush with the rabbet strip. You can use small chisels or even sandpaper. *Whichever you prefer.* This will create a simulated rabbet all along the actual keel once it is added later. The planking will slide into it so it will be flush with the actual keel along the stern post, etc. This something not usually shown on traditional kits and makes it very difficult to plank the hull correctly. If you examine that first photo again you will see that the bevel into the rabbet strip has already been completed. Notice how the angle changes as it works its way forward to the bow. There is no taper at all mid ship at this time. The taper actually stops at or slightly past the slot for bulkhead four.

Adding the stem and Keel…

The stem and keel are made by cutting the pieces from 7/32" thick boxwood. This can be done with a scroll saw. In my case however, I am using laser cut pieces. I am fortunate to have a laser cutter and it saves a great deal of time. But if you are cutting them by hand with a scroll saw, cut them just outside of the line so you can sand and file each part of the stem until you get really tight joints. Patterns for these pieces can be found on sheet one of the plans. Let us begin with the two stem pieces.

When I was satisfied with the how the joints fit together, I darkened both edges of each joint with a soft pencil to simulate the tarred paper/felt that was used in actual practice. You can see in the photo (right) how the seams stand out after a coat



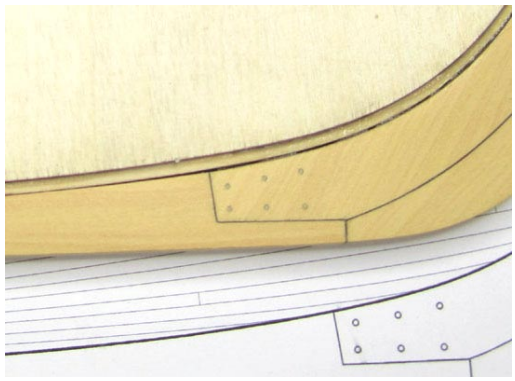


of Minwax Wipe-On-Poly was applied. I prefer to use the wipe-on-poly rather than a wax or other product. I chose the satin finish rather than the glossy. It is available in both, but avoid the gloss at all costs. It really makes the simulated joints look nice after the first application. The W-O-P is applied with a soft, lint-free cloth and immediately buffed before it dries.

Also note that the holes were drilled for the halliard and bobstay before assembling both

pieces. Before you drill the hole for the bobstay, please keep in mind that at this time they were transitioning away from using a hole through the stem. In its place, a metal fitting or strap was attached to the front of the stem with an eye bolt. This was less prone to rot. I decided to stick with the drilled hole because this is what is used on the contemporary model in the Rogers Collection. It is also a much simpler approach for first time scratch builders. But you may opt for the iron strap and eyebolt. Both would be acceptable. The Cheerful model in the Rogers Collection is shown below.

To finish it up I added the treenails. The six treenails are simulated on both sides of the stem. Rather than use wood dowels drawn through a draw plate, they were simulated using wood filler. Small holes (#76 bit) were drilled part way through. There is no need to drill them all of the way through. These are only simulated and I would doubt that anyone could tell the difference if they were looking at a real boxing joint with actual treenails. Before filling the holes, I took a sharp pencil and inserted it lightly into each hole. I twisted it to apply some graphite to the inside walls of the hole. This will make the treenails more prominent after they are filled. I used some Elmer's wood filler to fill in the holes with my finger. After it dried I sanded it smooth and applied some wipe-on-poly. The wood filler is water based and comes in many colors. I am using a natural color. You wouldn't be able to see them if I had not used the pencil to accentuate the outline of each hole.



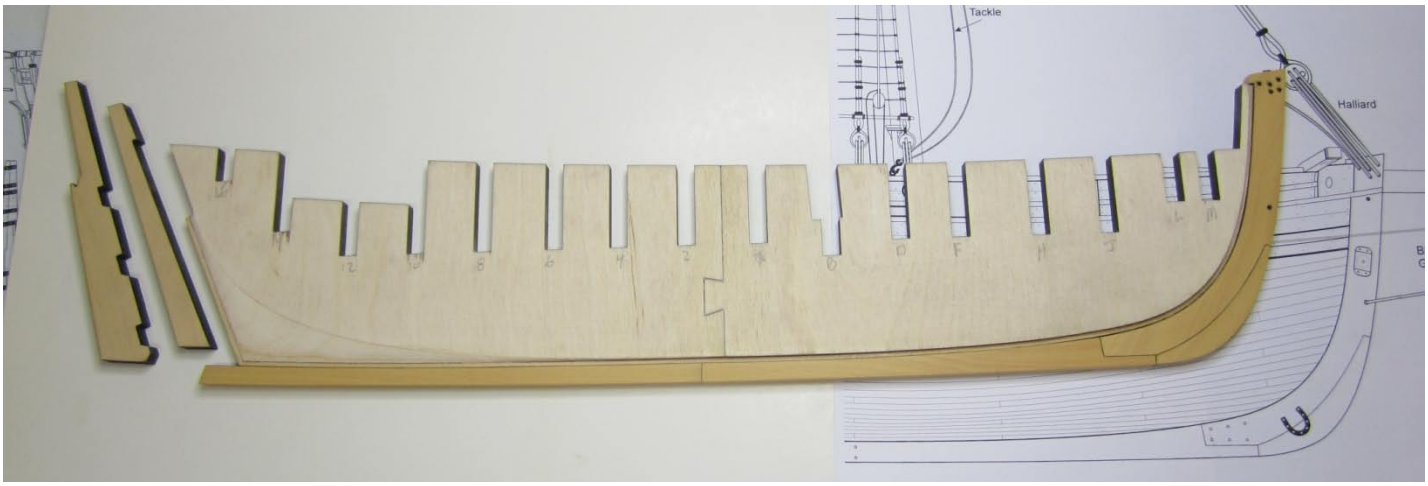
Next, the stem was glued to the rabbet strip. Be careful to line it up and center it along the rabbet strip. You should have a nice rabbet formed afterwards with equal space on both sides after it is centered properly.

The two keel lengths were finally cut from boxwood of the same thickness. These were also glued to the rabbet strip. Treenails were added as described earlier. Check the plans for these details. Please note that the aft section of the keel was allowed to run off the false keel quite a bit. It will be trimmed back after the stern post is added. But this will not be done until after the hull is planked. See the photo on the next page that shows the keel sections completed and treenailed. The rudder and stern post has been laser cut in my case but set aside for much later in the project.

Any iron work or other details will be added much later. I would certainly scuff them up if I added them at this early stage of the project.

Cutting Out the Bulkheads…

The Model is designed with 16 bulkheads. This is nearly double the number of bulkheads seen on the typical mass-produced kit of this size. The planking will lie across these bulkheads and create a very smooth hull shape with no



abrupt bends or creases. They usually occur when the bulkheads are placed more than 2" apart. This is especially true at the bow and stern.

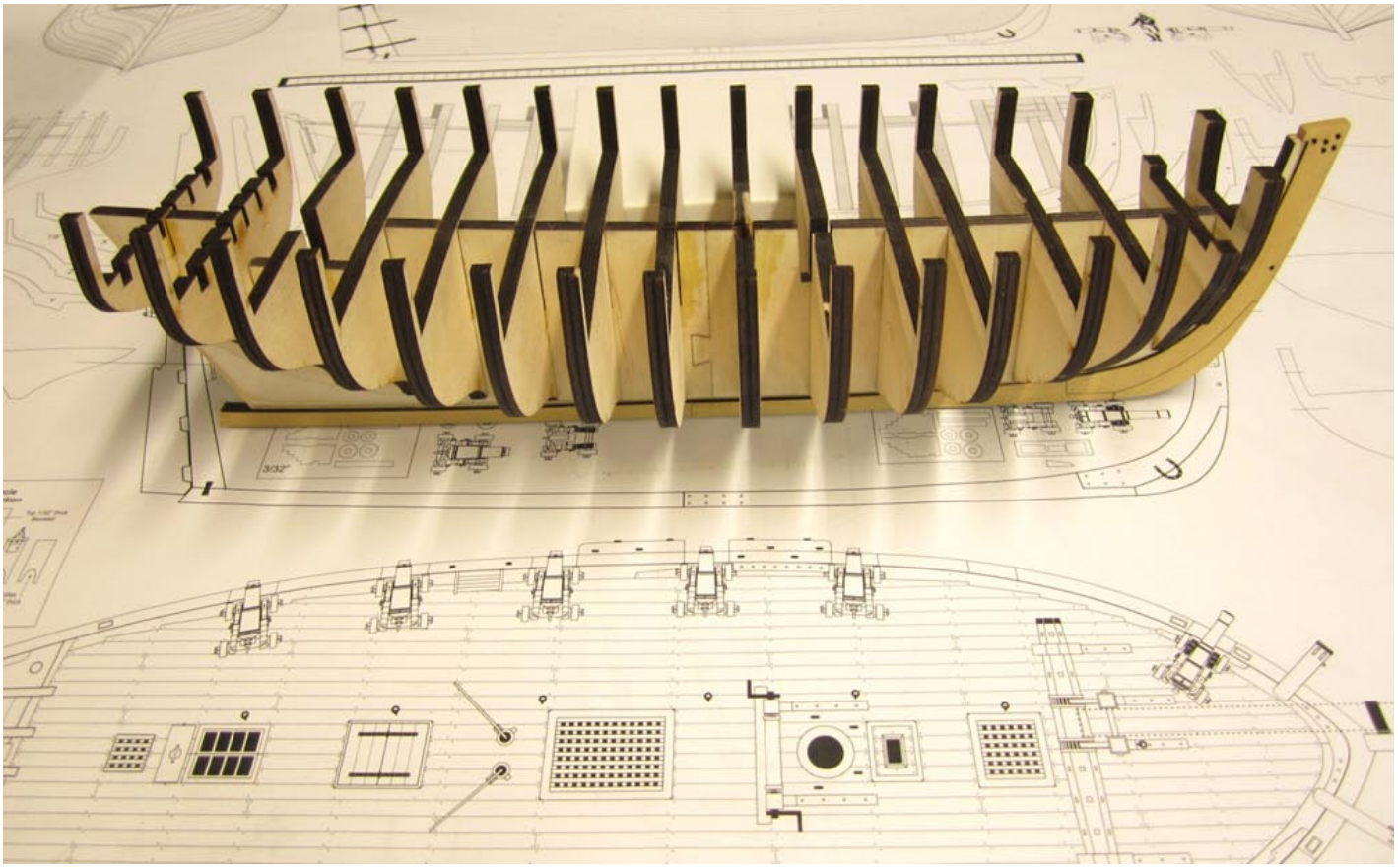
The bulkheads should be cut from 1/4" thick plywood. You will notice several reference lines on each bulkhead. They reference the locations for the top of the gun port sills and the bottom of the wales.

Glue the templates for each bulkhead on your plywood and cut them out with the scroll saw. Then sand them close to the outlines when you are done. If you are a heavy-handed builder, you may run the risk of breaking the bulwark extensions over the course of the project. You might want to cut the bulkhead extensions so they are wider if you think this will be an issue. The *bulkhead extensions* are the long, thin sections of each bulkhead above the gun deck level. If you want to widen them, please adjust the inboard lines of each bulkhead extension rather than the outboard side.

Before removing the templates from your wood, you should transfer the reference lines to your bulkheads. An easy way to do this would be to score the reference line with a sharp #11 blade. Be very precise with these cuts since they will determine your placement for the wales and gun ports. If you score through the template with enough pressure it will also score the surface of the wood marking the locations nicely. You could darken the scored lines later by wiping the area with some wood stain. They will show up better if you feel the need to do so.

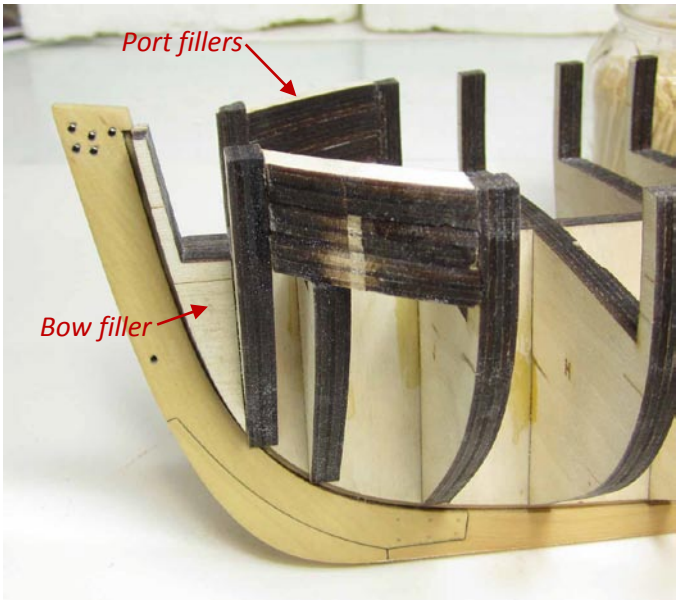
This may seem like common sense to most of you folks but I cannot stress how important this is. When you are placing the bulkheads into the slots, make sure they are perfectly squared to the bulkhead former. The sides of the bulwark extensions will become the sides for the gun ports. Examine sheet one of the plans. If your bulkheads are not squared then your port openings will not be lined up port-to-starboard. This would certainly ruin an otherwise well-executed model. Use a small machinist square to ensure they are squared with the bulkhead former. I prefer to use yellow carpenters glue when installing the bulkheads. This gives me plenty of time to make sure they are perfectly squared up before the glue sets.

There is one additional thing to keep in mind as you are gluing the bulkheads into position. This is just as important. Make sure that the scored reference lines on each bulkhead face forward for all of the numbered bulkheads. The opposite is true for the bulkheads with letters. The side with scored lines should face aft for all of these bulkheads. This will insure that the gun ports and wales are set at the correct level on the hull. You would be surprised how much this would impact their



positions if they were placed in the opposite directions. On the prototype they were drawn on both sides but that is misleading and should be ignored if seen in any of the photos…so be careful when aligning yours.

Bow filler for planking…



There are several fillers that you need to place on the model before you begin fairing the hull. You will find them on sheet one of the plans.

The first are the bow fillers. These should be cut from ¼" ply as well. Remember to transfer the reference lines. Glue them on either side of the false keel as shown in the photo provided.

In that same photo you will also notice the port fillers. These will block out the area between the first three bulkhead extensions (J & M). Note how bulkhead "L" is shorter and the filler pieces sit on top of it. A template is shown on sheet one of the plans but may require some adjustments. I recommend cutting them a little longer and trimming them to suit. They were also ¼" thick and three were used on each side of the model. The chase ports will be cut through these filler pieces later in the project.

I also included a template for additional filler pieces that would extend from bulkhead "M" to the bow filler. These are optional if you think

you will need more backing to plank the model. I didn't find them necessary so you won't see them used on the prototype.

Fairing the hull…

This is a good time to fair the hull. Getting most of this done before you start adding the gunport sills will make the task easier. *Fairing the hull* is the process of beveling the outside edges so the hull planking will sit flat against them. "Fairing" creates the final shape of the hull.

Take a 1/32" x 1/16" strip of wood that is as long as the hull. Place it against the bulkhead edges as if you were planking the hull. This "batten" will help you determine when the hull is properly faired. Initially you will find that the batten doesn't come close to sitting flat against the bulkhead edges. This is especially true at the bow and stern.

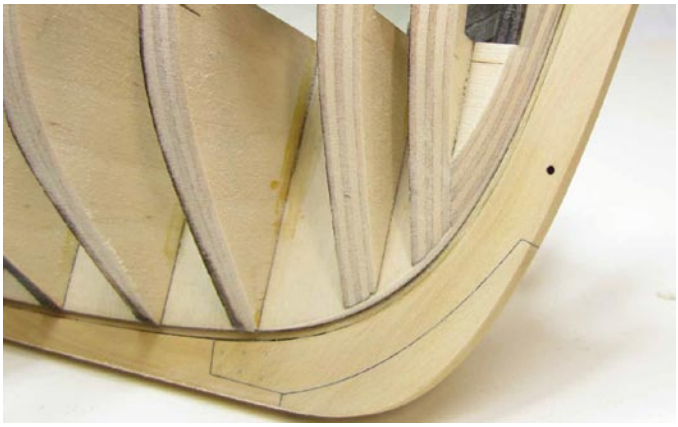
I use a fairly coarse sandpaper to fair the hull initially. Then I switch to a 220 grit paper. I will use a piece that is long enough to stretch across five or six bulkheads. A sanding block would be useful but a curved one that mimics the contour of the bow and stern is even better. Then just start sanding. While fairing the bulkheads, the sandpaper will not touch the aft edge of the lettered bulkheads initially. Especially at the extreme part of the bow. You will be reducing the forward edge of each bulkhead until the sandpaper just starts to make contact with the aft edges. Then stop and test the batten strip along the hull again. You should be pretty close now to achieving a faired hull towards the bow.

The opposite is true at the stern (numbered bulkheads). Reduce the aft edges of each bulkhead to create the taper. When your sanding block finally makes contact with the forward edges of the numbered bulkheads…test the hull shape with a batten.

Test the hull using a batten strip at varying levels along the model. Test it close to the keel as well as up along sheer line. Slide the strip up and down along the bulkhead edges carefully looking for areas that are not faired properly. You might even consider temporarily pinning several battens onto the hull so you can examine them even more closely. Try and match closely the general run for the actual hull planking if you do this. Look for areas where the batten reveals unsightly dips or waviness when viewed from at different angles.

I may sound like a broken record at this point, but there is one thing I always notice about POB models. When a hull is not faired properly, the planking just does not sit properly against the hull and you will see abrupt bending of the planks across any bulkheads not faired enough. I do understand that this part of the project is not fun. It makes a huge mess and lots of dust. It can also be awkward at times to hold the hull in order to fair the hull close to the keel. It also takes a considerable amount of time. But do take your time and try not to rush through it.

It will be easier to fair certain areas of the hull if you turn it upside down. But be careful not to break any bulkhead extensions. I have two large blocks of wood that are 4" x 6" x 6". I will set the hull upside down on top of these blocks to make sure the bulkhead extensions are lifted higher than my table top. Then sand away until you are satisfied. It took me several days to fair the outside of the hull and the results can be seen in the photos provided. You can see how the bow is starting to take shape. Notice the aft edge of each bulkhead at the bow. As I work my way towards the stern, you will see less laser char on the aft sides of the bulkhead edges. Syren Ship Model Company will be making laser cut bulkheads and the bulkhead former and fillers available soon!! But it is much cheaper to source a good quality ply and cut them out with a scroll saw.



Framing the port sills…

Once your hull is faired, you can start adding the gunport sills. To begin, take a thin batten and pin it to each bulkhead edge. The top edge of the batten represents the top of the port sills. It should line up with the higher reference line on each bulkhead extension. Remember to line it up with the side of each bulkhead that has the reference line. Line it up with the forward side for the numbered bulkheads and the aft side for the bulkheads with letters.

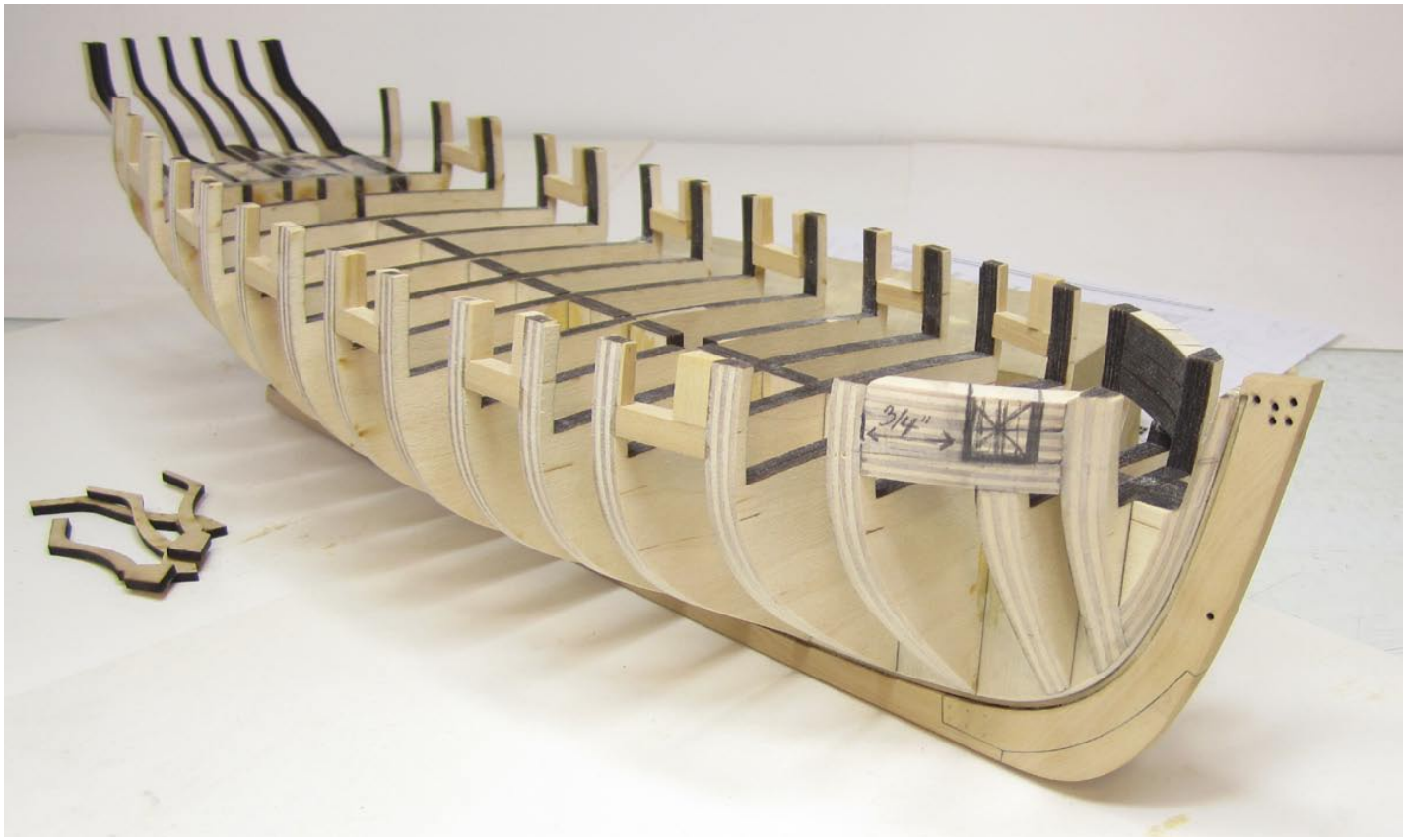
You will notice right away that the batten won't have a smooth run from bow to stern. It will have a few dips and bends. You need to correct these before moving forward. Make little adjustments with the placement of the batten strip until you no longer see those dips and bends. It should run smooth from bow to stern. See the photo (right).

Duplicate this effort on both sides of the hull being careful to keep it symmetrical and even on both sides. View the hull at many angles so you can see every instance where the battens need adjusting. When you are satisfied, mark the top of the batten on each bulkhead edge with a sharp pencil line. Then remove the batten strips. The pencil lines will be your references when installing the port sills.

The port sills are cut from a ¼" x ¼" boxwood strip. The ends will need to be beveled so the fit properly between the bulkhead extensions.

Take your time with these. The sills should all flow nicely from bow to stern. Take a look at the framing plan on sheet one of the plans.

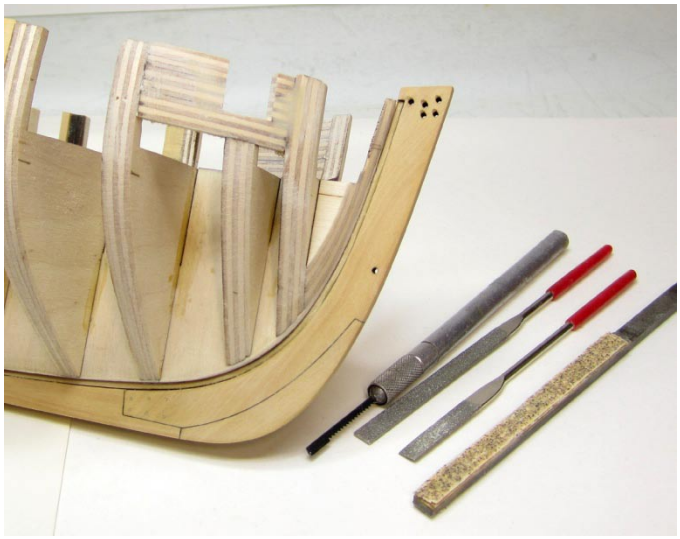
The port uprights are various widths and you can take their measurements from the plans. Each port upright was ¼" deep. Both the port sills and the port uprights are wide enough to stand proud of the faired hull on the outboard side. This is done so you can sand them to



match the faired contour of the hull once they are all in position. Examine the photo above and you will see the port sills and uprights in position and faired.

That same photo will show the inboard side of the bulkhead extensions. You can see what a mess they are. But don't worry about it at this stage. The inboard bulwarks will be sanded down very thin after the hull is planked. It will be sanded quite thin with the bulkhead extensions being reduced to 1/16" in thickness (maybe even more).

Also shown is the forward chase ports drawn onto the filler pieces at the bow. The port is basically centered above bulkhead "L". You can measure ¾" from the forward edge of bulkhead "j" to start. This will be the aft side of the port. You have already referenced the top of the port sill by tracing the top of the batten earlier. That just leaves the forward side of the port to be established. Because we know that the width of each port (17/32" wide between uprights) we can easily measure and mark the forward side of the port.



All that remains is to cut the port using whatever tool you feel most comfortable using. I prefer using a scroll saw blade. I snip it into smaller lengths and place it into the handle of a hobby knife as shown above. Its slow work but does the trick. Then I used various sanding sticks and files to make it look sharp and pretty.