

Assembling the three laser cut rudder sections...

Chapter Five

The Rudder...

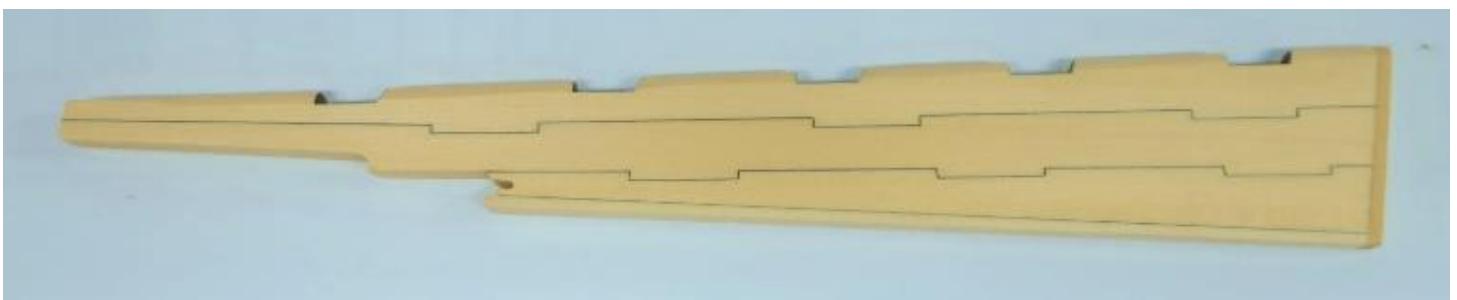
Since we want to turn the hull over so we can drill the rudder port, I thought this would be a good time to make the rudder. This should be the last safe opportunity we have to turn the hull upside down. Once chapter five is completed it would be too risky with so many deck fittings and other structures in place.

To begin, glue the three main pieces of the rudder together with PVA (above). Don't sand the tabled joints between these sections at all because they are precision laser cut for a snug tight fit. No need to use pencil on the seams either. The laser char will simulate the seams nicely. You can see in the photo above just how tight the pieces fit.

Then add a 1/4" by 3/64" strip along the aft edge as shown on the plans. That is followed up with a small length of 1/4" x 1/16" strip along the bottom of the rudder. So far easy-peasy. See the photo below.

Now you must sand and shape the rudder to the typical shape. Meaning the rudder blade tapers narrower towards the aft lower edge. Quite a bit actually to around 5/32" thick at the bottom aft corner.

The forward edge where the rudder hinges will go...this edge needs to be chamfered on both side almost its entire length. But not all the way. Again...you should follow the plan on the next page.





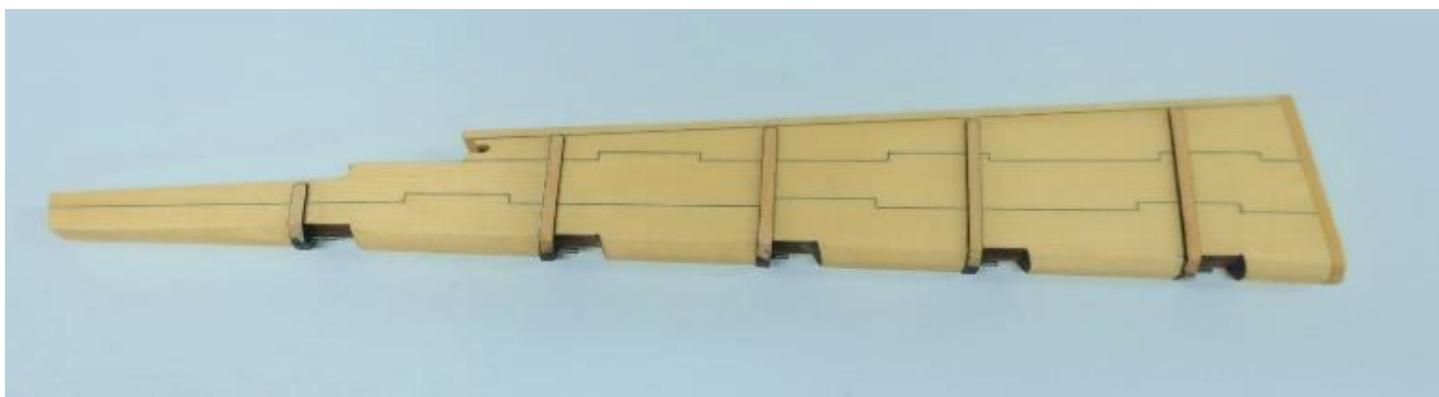
When satisfied with the shape of the rudder, you can start working on the pintels and gudgeons. They will be laser cut from boxwood. They may be fragile to handle but once glued onto the rudder they are just as strong as brass. Don't bother sanding any laser char off them at all. They may break. I painted the top and bottom edges black straight away however. This will make a nice crisp edge when you glue them onto the rudder. Painting these small edges ahead of time will only require a bit of touch up later. I hope that makes sense. Painting them after gluing them on the rudder would otherwise make for a sloppy paint job.

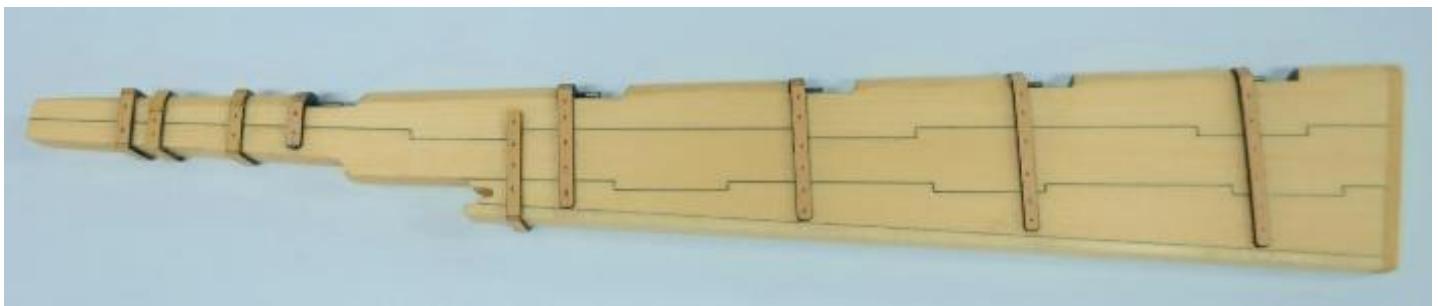
I also inserted the pins into the pintels ahead of time. Don't make the pins too long. The straps of these hinges are too thick initially. Don't worry about that at this time. Just glue them onto the rudder as shown on the plan. There are five of them with the longest one positioned at the bottom of the rudder. Keep

the angles consistent. You can see one of them temporarily slid into position on the rudder. Photo above.

Once glued on, Sand the straps of the hinges so they are thinner. I sanded mine gradually to about 1/32" thick or slightly thinner towards the aft edge. See the photo below. Note how the pre-painted edges are nice and crisp after sanding these straps free of laser char on their outside surfaces.

There are a few more iron bands to add and the spectacle plate as well. These are located above the top hinge. See the plans for the details. To make these, I just used 1/16" x 1/32" strips of boxwood which is provided with the chapter five parts. These are much easier to work with than brass strips. All of these details are shown on the plan. Just take your time. The edges of the strips were painted black first just like you did with the





pintels. Then the outside surfaces were sanded thinner after the strips were glued all around the rudder head. I also sanded the sharp corners so they were softened up a bit. Take this time to mark the locations for the bolts along the straps with a sharp pencil. See the photo above.

Then I drilled the holes for the simulated bolts with a #73 bit so I could insert some 20 pound black monofilament in them. This was used to simulate the bolts. Short lengths were inserted into each hole and snipped clean so the ends stood proud of the straps a bit simulating the bolts heads.

To finish it up, the wood hinges and straps were carefully painted black. Then I used a bit of weathering powder to help them look like metal. See below. Lastly, I added the two ring bolts to the spectacle plate made from 22 gauge black wire. I finally cut a really short tiny portion of $1/8" \times 1/8"$ strip to simulate the aft end of the tiller sticking through the rudder head. You can see that below. It is just $3/64"$ thick. I did soften all the aft edges before gluing that on as well.

That's it!!! A down and dirty laser cut rudder with tabled joints and wooden pintels. There is no reason why you couldn't use brass for the metal work if you prefer. But I know most of you don't have the equipment to do the soldering and that is a whole additional skillset you need to learn. But you can use brass if you want to. This is just a great way to simulate the same results however.

Now it's time to drill the rudder port in the lower counter. Don't be nervous about this. Carefully turn the hull upside down. Make sure you prevent the bulwarks from getting damaged. Because you have the frieze glued onto the lower counter you have an idea of how large the hole must be. I did not create a hole as large as the black area of the frieze. I opened it up a little at a time, using the actual rudder to check that it fit properly. It should fit with plenty of room to allow the rudder to swing side to side. There was still about $1/16"$ of the black pattern from the frieze surrounding the rudder port when I was finished.

To install the rudder, it is just a matter of repeating the process of placing the hinges on the rudder post. They are also wooden and



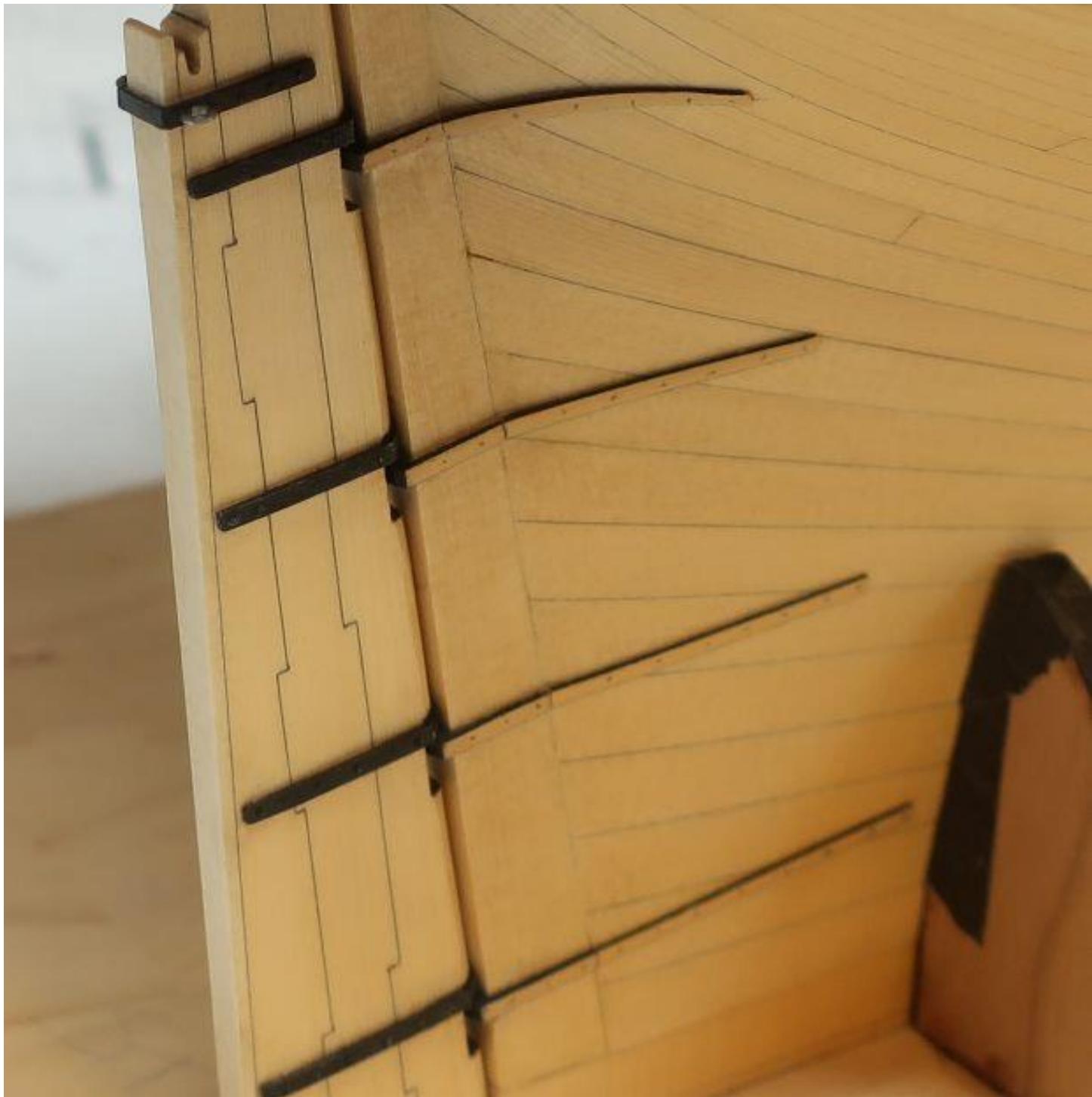


laser cut from boxwood. Just make sure you are careful to line them up with their partners on the rudder and angle them properly. See above. Once again the edges were painted black ahead of time.

Interesting is the fact that you will have to line up the holes in these so you can hang the rudder in place. That is not an easy feat. But here is a good cheat or trick. You only really need two pins on the rudder to engage the hinges on the hull. Just the top and bottom pintels on the rudder really need to have pins

engaged. So you can literally snip them off the other pintels or not add them to begin with. They are not seen and on the model one the rudder is in position and don't really serve a purpose. They just make it ten times more difficult to align them all and hang the rudder. I did this and I bet you can't even tell!!!

Then add long strips of 1/16" x 1/32" boxwood just ahead of the hinges to use as the straps. Take their lengths from the plans. This is just as we did on the rudder itself. Paint the edges of the strips black first.



Once glued onto the hull with all of the angles matching, you can sand them all down thinner so they look in scale. Again, once painted and weathered they will look like metal pintels and gudgeons.

But look at the photo above. At this stage I marked in pencil where the bolts should be. Then I drilled holes for the black monofilament. I used a #73 bit. Insert the black

20lb fishing line into the holes and snip the ends off leaving them stand proud to simulate the bolt heads.

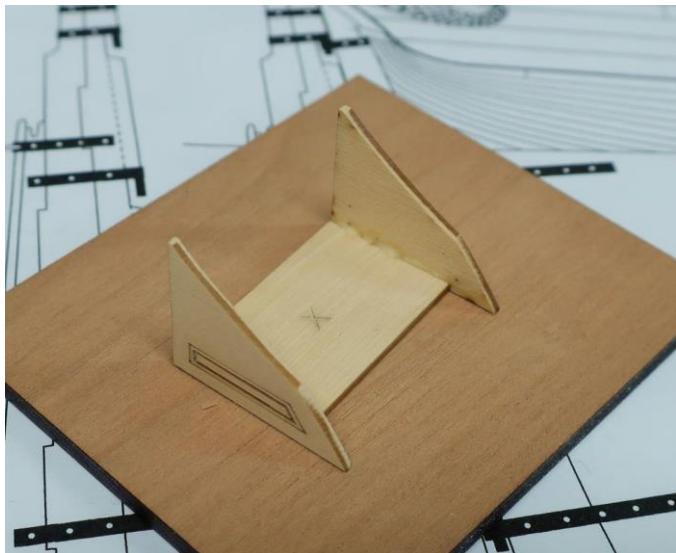
See the finished rudder with bolt heads on the next page. The straps are painted black and weathered a little bit. Also notice the small bowtie plate under them. This is laser cut for you out of laser board. The bolts were simulated on that as well.



I also added the horse shoe plate at the bow along the gripe. This is also laser cut for

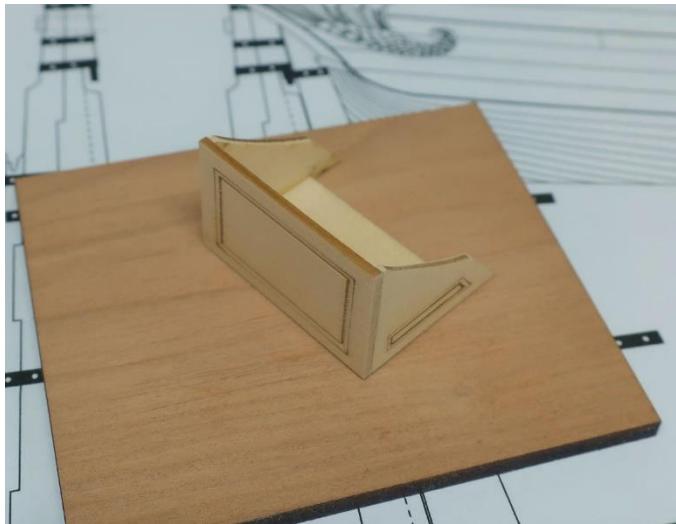
you. A bit of weathering powders were used there also. See the plans for its exact position.





Time to work a bit inboard....The rudder trunk is pretty straight forward. Parts are all laser cut but will probably require minor tweaking to fit everyone's model perfectly. There is a laser cut rectangular build jig marked with an X. This is to help you build it so it is squared up. The two sides are glued to this first as shown above. But before you do....test fit each side panel at the stern to make sure they fit. Make adjustments to the curved aft edges in order to get them snug against the inboard side of the counter. Then glue them to the side of the base jig.....keep the sides at right angles.

Then add the front panel....easy - peasy.



Then add the top. Keep in mind that the aft edge of the top is beveled so it fits snug against the curved counter planking. The top

also has the slightest overhang and the edges were softened a bit. No hard edges. There will be two benches on each side of the trunk which I will make next.



The benches are pretty simple as well. You just want to follow the curve of your transom. This might be different slightly from model to model. First, you add one of the bench sides to the side of the rudder trunk. See below. Note how the top aft point of the side is even with the break along the inboard counter.

At the same time, assemble the front panel for the bench with the other side. Have it ready to glue into position. It will sit on top of the lower counter. But you can see how the front panel is actually up on the lower counter and not actually on deck. This is correct. The benches will not extend all the way to the bulwarks on





their outboard sides. This leaves enough room for people to enter the quarter galleries.

Keep in mind that the bottom of the front panel is beveled so it will fit snug along the forward edge on top of the curved counter. To finish it off, add the tops of the benches. Bevel the back edge so it fits the counter. It really finishes off the great cabin nicely. The bench tops overhang ever so slightly along the front edge and of course the ends as well.

With the benches all done, it's finally time to permanently glue those stern windows in position. This includes the acetate for the simulated glass. Just a tiny drop of glue was used to glue the wooden window frames in position permanently. Then the acetate...is placed on top from the inboard side.

As you might know, you can't use CA glue. It will fog up the acetate awful and look pretty bad. You want to use as little glue as possible or even no glue at all. We will be positioning window sills inboard to finish off the look. They will also hold your acetate in position. So you may get away with a tiny drop

of white glue on the top of edge of each piece of acetate.

With the acetate in position I proceeded to cut lengths of 1/4" x 1/32" Yellow Cedar strips to fit between each window as a sill. This is tricky slow work but well worth the effort. It gives the whole stern/bench area a clean look. You will cut these to shape just like we did for the transom cap. Just notch them out and leave a slight over hang. You can see my final piece yet to be positioned below.





No solder-easy-brass working gun port hinges.....

I prefer to get the port lids done early before I put the cannons in position. The main reason is that I build the lids within their respective port openings. This would of course be impossible after the cannon are in place.

So first the lids...

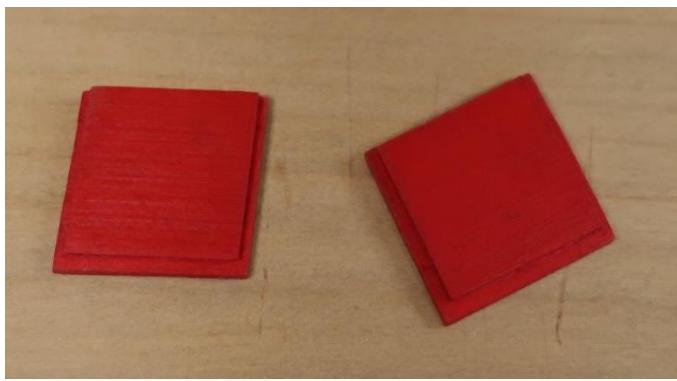
I am asked this question many times. When you see a port lid on a contemporary model, it isn't just a flat square piece of wood. It is actually conformed to the shape of the hull. A port lid can and will likely be curved which is something you rarely see on a kit model. Usually they just instruct you to cut tiny square chunks of wood the same size as your port openings. Fortunately for us the lids aren't that extremely shaped or curved. But the one at the bow will need to have each layer or

strake of the lid pre-bent just like the hull planking as you make it.

To explain....you must keep the run of the hull planking in each port lid. Thus it is best to use 1/4" x 3/64" strips to build the lids up strake by strake. In the photo above, you can see how I cut the first two strakes and trimmed them so they fit tight in the port opening. Then I glue them together edgewise right in the port opening. I do simulate the seam between each segment with a pencil just like we did when planking. The last piece for this lid is sitting on top of the sheer rail.

With the outer layer of strakes for the lid glued up, I remove it and sand the outside and inside surfaces smooth. Don't do this while it's in position because you will screw up the finish on the outboard hull planking. It will be hard to get the finish to match in the area you recently sanded. Then there is the matter of

the second inboard layer or the lid lining. This is done with strips too....or you could just cut one piece that fits. In the case of the lining it is 1/32" thick. It's cut to shape so a rabbet is left on the bottom edge and the sides. To finish it up paint the inboard side red along with the edges of the port lid.



Then put each lid back in position on the model....make sure it still fits nice. Apply a finish of wipe on poly to the outboard side. In some cases the frieze will need to be added as well. Just like hanging wallpaper, you must match the pattern. There are only five port lids on each side of the hull. The four aft ports have lids along with the bridle port at the bow.



Making the port lid hinges...

There are many advantages to making brass hinges from scratch. Mostly because the photoetch ones available are either shaped

funny or two wide and chunky looking. They just never look right to my eye. So here is how I make them. You will need a brass strip 1/16" wide and 1/64" thick. K&S used to sell these. You can cut strips from a brass sheet if needed as well. Looking at the photo below from top to bottom....here is how I made the port lid hinges.....there are some completed hinges on the top of that photo.



Then step one....on the top of the lineup...

The first thing I do is drill a hole through the end of the brass strip. Use a #74 drill bit. Then I round off the end around that hole which will become the bottom of the hinge.

Step 2...Using a flat file, I file a tapered angle into the strap just above the drilled hole. You don't have to file too deep. Just enough to make a gradual taper in the hinge. Then I round off the end so it looks like a small circle on the bottom of the hinge around the hole. This step is also optional. You can go with a straight hinge that just has the bottom

rounded. It's up to you. But I think these look nicer.

Step 3...Measure the length of the hinge by using the plans. Mark this on the brass strip. Now its time to file a little tail into the top end of the hinge. This is easy enough. Using a flat needle file just file half of the width of the brass strip away. This resulting tail should be about 5/32" long.

Step 4...Use a needle nose to roll up the tail to make a loop. Just like you do when you are making an eye bolt. Make the resulting hole in this pretty small so a 24 gauge wire can snugly fit into it....more on that later. But here is the real trick to this. Before you bend that tail into a loop, file the tail down even thinner. Just the tail. This makes it easier to get a nice small loop on the top of the hinge. It also keeps the finished hinge from looking too bulky and chunky. Hope that makes sense.

That's it.....repeat to make 20 hinges. But remember to make left and right pairs. Each lid gets a left and a right hinge as you will see in the photos. It just means that you have to make the loop in the tail in the other direction on the top of the hinge. Blacken all of the hinges when you are done.

Then... in the photo below...with the port lid in position, you can glue the hinges onto each lid. Try and keep them even. Try and keep them the same height etc.

Then remove the lid as shown on the next page. Time to add the eyebolts with split rings. This is where you will drill a hole into the lid through the hole you made in each port hinge. I made the very tiny eyebolts with 28 gauge black wire. On these I added split rings that I made from 24 gauge black wire. I made the split rings by wrapping the wire around the shank of a #50 drill bit. Then I sawed them down the shank to part off nice split rings all to





a very uniform size. These split rings were carefully inserted into the tiny eyebolts I made and were ready to glue into the holes in the bottom ends of the hinges. I was careful not to drill through the lid or push the tail of the eyebolts through the lids. I didn't want them breaking through to the inboard side.

Lastly....create some tiny "L" shapes from 24 gauge wire which will be used to secure the lids in position. But before you place them into the hinge straps.....place the lid back in the port opening so you can drill the holes where those little "L's" will go. Drill the holes close to the



hinge straps. Note the left and right hinge straps on the lid. This is done so the little "L's" are both on the inside. Then your lid will never fall off after you glue it on the hull.



So now let us make the two ladders for the gun deck. The thing about ladders on commercial kits is they are usually really out of scale. You must consider that the ladders or steps were made much as they are today. They are made from 2" thick stock. So that translates to just 1/32" thick at this scale. Most kits provide parts double the thickness so it's like they used a 4 x 4 to make the stairs which looks pretty horrible. I was also never happy with their shape which was usually very generic and not at all like they are shown on good contemporary examples and plans.

So I worked up a simple design, but they can be finicky to build. So this is how I managed these.

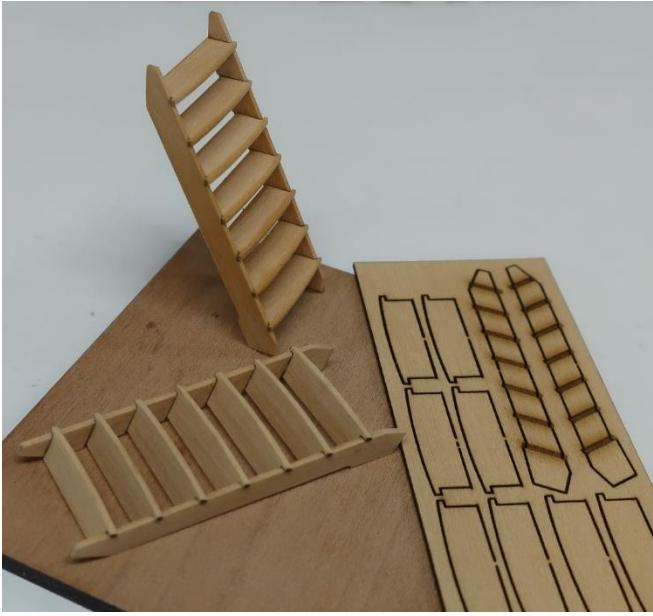
First I sanded both sides of the sheet to remove any char before the parts were removed from the sheet. The photo below shows the prototype ladder already finished and now I will make another to show you how it's assembled. The edges were sanded free of char.....these are made from boxwood. I have laser etched mortices to accept the steps. So

first thing you should check is the fit of the sides of the steps in the mortices. If they are too thick....simply knock off the corner or bevel the edge of the steps ever so slightly top and bottom. Not too much and don't touch the little "wings" protruding from the front of each step. I also did not remove any char from the side edges of the steps as I want them all the same length exactly. This is important. I started by adding the top and bottom step to one side of the ladder. I got a nice fit into the mortice after just lightly beveling the edge of the steps. Photo bottom left.

Then I added the other side of the ladder and made sure the glue was dry before handling it further.....otherwise it could fall apart easily. Remember these are just 1/32" thick.

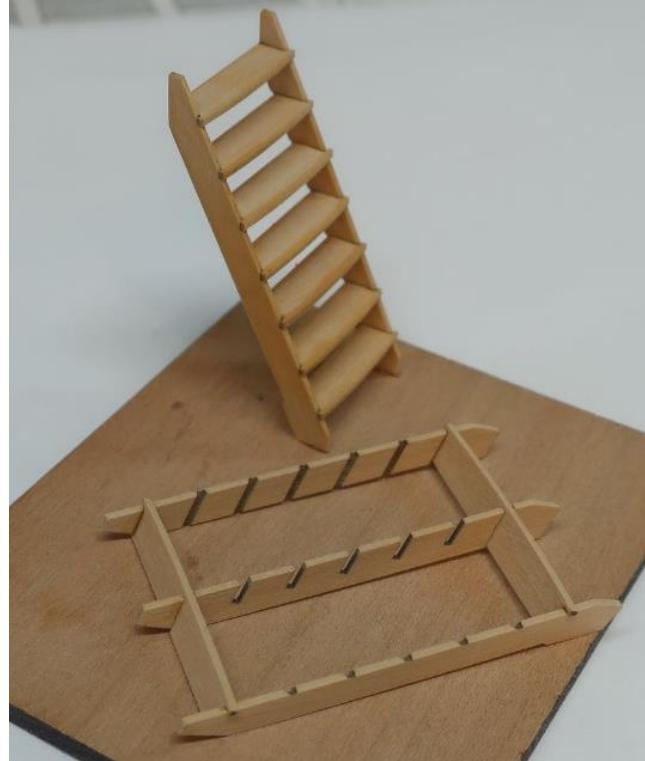


Finally I slid the remaining steps in position after applying a small drop of glue to each side. They slid right into place without much trouble. Once you do one or two it gets easier.....carefully push them straight in and back.



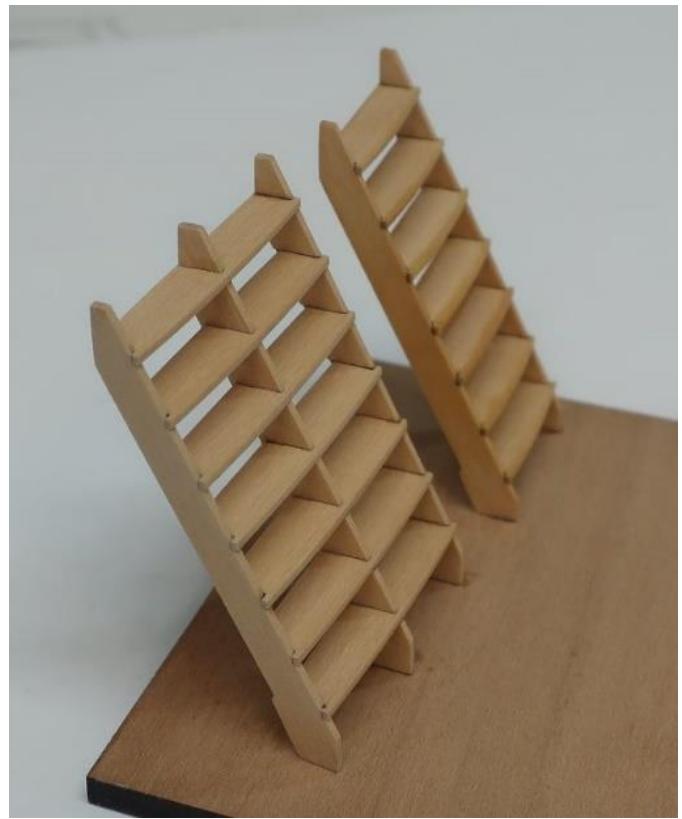
The top step is a bit deep which you will soon discover, so at this stage I used a sanding stick to sand it flush on the back side of the step. Then to finish it off I sanded the sides of the ladder to make those little "wings" on each step flush with the sides of the ladder. I hope that makes sense... as I left them a bit longer so they would need to be finish-sanded.

The larger hatch mid-ship has a double ladder. It's built basically the same way. The

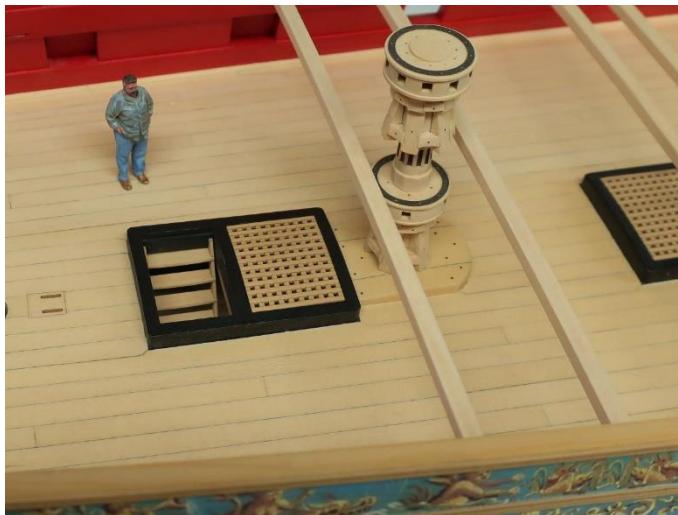


top and bottom step first. But then I slipped the center riser in position as well.

Then it is just a matter of slipping the remaining steps into position. With each step added, the entire assembly gets stronger. Finish sand the sides and that top step and it is all done. You can see how the front of each step has just a slight curve to it.....not too much. When finished these are light and elegant. It is important to have them look this way.



Apply some WOP and then glue them into position in each companionway. Pictures follow.....

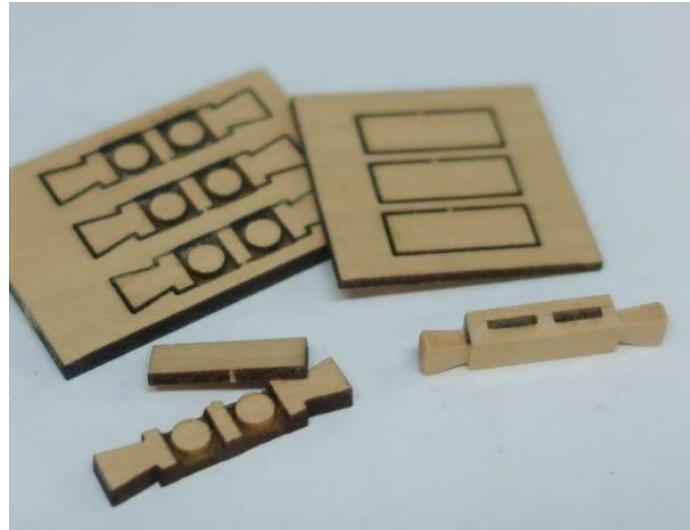


On the bulwarks you will see several cleats and a staghorn....shown on the plans.

The cleats are self-explanatory. Laser cut cleats were cleaned of laser char and painted red. Then they were glued onto the bulwarks. You can peg them with some 24 gauge wire for extra security.

There is one other feature on the bulwarks. I believe it's called a staghorn or basically it's a fancier cleat with some sheaves.

These are also laser cut for you from boxwood. They are quite small but add a nice detail seldom seen on most kits. But they are used in a bunch of places. But one is needed on the bulwarks on each side.



Basically the first thing you do is add the backing piece which will enclose the simulated sheaves. Those are laser etched as you can see above. The two "horns" (for lack of a better word) need to be shaped afterwards. These are the ends which need to be shaped like a typical timberhead on each side. I used a #11 blade to do this. Otherwise it would be flat ...you can see the front of the finished piece above. Then I lightly chamfered the edges...again like you would do with a timberhead.

These were painted and glued on the bulwarks. Just check the plans for their locations. It's hard to see but below you can see one side of the bulwarks with some cleats and this "staghorn".





Here is a shot of the cheeks and hair brackets on the port side. Let me detail how they are made next. It's quite a long process even with most parts laser cut for you.

You start with the hair brackets....

These are the pieces on the stem, while those on the hull above and below the hawse holes are called the cheeks.

The hair brackets are laser cut for you. The first thing you do is lightly sand the laser char on the face of the sheet before you remove any of the parts. You can see in the photo that I tried something new. Cheeks and headrails always look pretty crappy on kits so here goes nothing. Hopefully a better result and not too difficult to build.

They are laser etched with a channel down the center of each piece. It's not very deep but then it doesn't have to be. In this channel will

be a precision laser cut insert. The hair brackets are $1/16"$ thick while the inserts are $1/32"$ thick. Once the inserts are shaped and positioned, they will stand proud of the hair brackets just slightly. To pull this off properly, you must first sand all the laser char from the edges or sides of each hair bracket. Then round off the outside edge. Just knock off the hard edge as it doesn't need to be over-sanded. Don't worry about touching



the laser etched channel. It doesn't have to be sanded.



Then carefully with a light touch sand the char from the edges of the inserts. These are thin and fragile. Then round off the edges of these along their entire length if that makes sense. In the photo (previous page) you can see an extra set of pieces not touched....note the flat inserts etc. But below that you can see the pieces all finished and being dry fit into the etched channels. If you do break one of these inserts it really doesn't matter. You should still glue them into the channel of the hair brackets. They will eventually be covered with a frieze so it doesn't matter if they are broken along the grain or in a few pieces. The important thing is to round of the sides and give it a nice shape.



To finish these up after you glue in the inserts, add the tiny laser cut "button" to the scrolls. These are 1/32" thick which are too thick. So once glued into position you must sand them thinner until the look right. They should be pretty thin. These are the tiny circles on that laser cut sheet. Lastly, I applied some WOP and then glued the friezes on. These are

printed on regular paper like the other friezes. I used a glue stick. You can slide them around before they set. Then take the point of a toothpick and lightly burnish or "tuck" the edges of the frieze into the crease along the sides so it's nice and neat.

That's it for the hair brackets. Set them aside for but keep them close by!!!

Here is a photo of the contemporary model. We will try and make the hair brackets and cheeks look like this.



Next up...the cheeks need to be made. These are connected to the hair brackets. Building the cheeks is very different than building the hair brackets. There are three layers to each cheek. There are two of them. The lower cheek is actually slightly longer than the upper cheek. So remember to select the right laser cut pieces when you put them together. The middle layer is thicker (5/64"). The two outer layers are 1/32" thick. The top layer has a laser etched reference line that is very important. It indicates the bevel line. You will be beveling the edge not just to get a snug fit against the hull but also to establish the correct angle for the little end of the cheek that wraps onto the stem.

Now all of this always looks easier than it actually is. You will need to get in touch with your creative side here a bit. Each of these pieces will need some shaping and testing.....and repeat many many times the shaping and testing. Let me explain. The cheek on the top is completed. It is the upper cheek for the starboard side. Photo below. But the frieze hasn't been glued onto it yet. The other three layers below that are for the second lower cheek on the starboard side.



You should start shaping the middle layer first. Make sure it fits in position. Make sure it sits against the hull planking reasonably well and also against the stem. Everyone's model will be different because these are pretty

complex. You may have to adjust the angle to get them to sit snug, then round off the outside edges. Remember this center layer will need to match the center layer of your hair brackets. They will be joined and you want them to look as seamless as possible.

Then take each outer layer and round off the outer edges of those. These outer edges will be the continuation of those on the hair brackets when joined.

In the photo below you can see both cheeks have been made and I took some care to make sure that they would look nice when joined with the hair brackets. They need to look like one continuous piece. Remember the center layer of the cheeks should stand proud a bit from the top and bottom layers....just like the profile you ended up with for the hair brackets. This can be complex but remember...you don't want it to look like one of the horrible kit-like details you see even in the newest supposedly innovative designs. They simplify these parts too much and they look almost toy - like. But I know you guys can do this. Let's make some head rail details that will stand up alongside any contemporary model or the best scratch built models out there. You should constantly check the connection between the hair brackets and cheeks as you



assemble the cheeks. Check that they will be able to join together seamlessly.

Now once you have the cheeks built and the hair brackets, we can start adding them to the model.

But how will you now where they go??? It gets tricky because you have to leave enough room between the cheeks for the hawse holes and you need enough room between the hair brackets to put the carvings. And yes the figurehead needs to fit after you get done with all this.

So you will use the templates provided. Cut them out and place them on the stem. Line up the top edge of the template along the top edge of the stem. Not the gammon knee, but the top edge of the stem. Also temporarily add the figurehead too. Make sure everything is going to work before you start gluing these pieces into position. Then carefully mark the bottom of the template on the stem with a sharp pencil. This will be where you place the lower hair bracket....but it will also tell you where the cheek needs to be so you wont place it too low or too high. The lower cheek will be first.





Using your reference line.... place the lower cheek in position. You should pick the longer one. The lower cheek is slightly longer than the upper cheek. If you beveled the back side correctly, it should fit snug in position against the planking and also along the stem. The cheek should follow the run of the wales.....but also as it wraps onto the stem.....match with the reference line you drew from the template. Makes sense? Hopefully you can see the pencil line I drew from the template and how the cheek sits on that line on the stem. See photo above.

Then at last, it is time to connect the lower hair bracket. I made the hair brackets quite a bit longer than you will need, so place the figurehead in position and determine how much you should trim the hair bracket. Test it

in position. Note how the scroll touches the foot of the figurehead. Photo on next page. This will get messy and you will no doubt have to touch up the black paint later. I also discovered that many of you may find it easier to add the friezes after you put the cheeks and hair brackets together on the model. Because you have to work on the seam between the two pieces you may damage the friezes. Live and learn. But try and hide the joint as well as you can. This is tricky work so take your time and try not to get frustrated, do the best you can.



The area between the cheeks has three laser cut layers. They are very thin. They vary in length. Note in the photo (left) how the top edge of these three layers runs along the top of the black strake. This might vary because I have no idea where your black strake is and if it deviated from the plans a bit. You may need to get creative. But it's not the end of the world. Hopefully you guys will read through the entire process and take more measurements before you get this far. These pieces along with the headrails are probably some of the most complicated parts of a model project. That is if you want them to look authentic.

All three layers were pre bent with heat (hair dryer). I sanded off the laser char and softened the aft edges of all the layers. Each layer was added one at a time. The final layer has the size and location for the hawse holes. More on that later...



If you have to adjust the length of the middle layer to get the correct "stepped" look on the outside edge go ahead and do so. That may also differ from model to model and you may need to shorten the middle layer to achieve the right look.



Next is the upper cheek...You should have beveled this like the lower cheek. This one should go easier. Note how it wraps onto the stem. It doesn't extend above the top of the stem. This upper cheek is also shorter on the hull as you can see. You can also use the trailboard carving to help you position this. Make sure you have enough room for the carving.

You can sense the repetition....

Then the upper hair bracket. Again it was designed a lot longer than you need. Add the figure head and determine its length. Cut the aft end so you get a clean tight joint with the cheek while making sure the scroll on the fore end is in the correct spot. It should fall right behind the shoulder of the figure.

Double check your work.....do or die so to speak. If your measurements worked out the

carving should fit perfectly with a bit of room to spare between the hair brackets. If not you



could always tweak the carving so it fits as best it can. Also see the larger photo on the next page.



Almost done now....

In the next photo (above) you can see three more parts I added. I will explain each to you but please refer back to this photo below for its position etc.

First is the short decorative molding along the front of the figurehead's leg. This is laser cut for you. Round off the edges along its length. Clean up the char as usual. It's a little long and once again it's best to put the figurehead in position. Then test the fit of this molding. Cut it to fit and glue it in position while the figurehead is temporarily in place as a guide. It goes from the foot up to just under the skirt.

Next up is the bolster. The bolster is pretty thick and laser cut for you. It's 1/8" thick. This piece is too short and too thick to pre-bend. That's why it was lazer cut 1/8" thick. You will need to sand it to the curved shape so it fits against the hull. You can see where it goes in that photo above. It sits between the cheeks on top of the lower cheek. Start by sanding the back side to fit snug against the hull. Get it nice and snug with no gaps. The photo below shows one bolster shaped. It will get pretty thin by the time it's all shaped correctly. Probably just a bit thinner than 3/32". It depends on how deep your cheeks ended up after your beveling and shaping of those.



Then shape the forward side keeping it a consistent thickness. To finish it up round off the top edge as shown. **IMPORTANT NOTE:** Do not glue this in position. Just make sure it fits and looks good sitting on the cheeks. You don't want this glued on when you drill out the hawse holes. We will be doing that next. They would certainly get damaged.

And then the wash cant....The wash cant is rarely seen on any kit. If you look at that larger photo on the previous page you can see it temporarily tacked in position. It sits on the underside of the lower cheek.in the corner where the hull and stem meet. It helps deflect the water and waves as it splashes up on the hull. You need to sand this odd shaped piece. It's hard to describe. The front edge is like a knifes edge. Sand the entire piece by rounding it off to a knifes edge along the front edge. This will be painted black but I show it natural in the photo because you wouldn't have been able to see it. I have since painted it black and glued it back into position.

The photo above right shows one of them shaped and ready for painting.

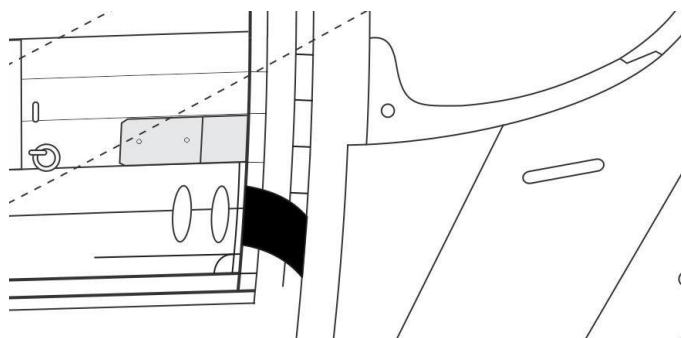


Now I know this looks complex. That's because it is. You will not see any other kit with this much detail. Even those Chinese POF kits that everyone raves about do a rather crappy job with their headrails and cheeks. But this is a pretty close representation to any contemporary model you might examine for an English frigate. I know you guys can do it.

I could have cut many corners and gone with something simplified and kit-like. But I think it's something you will be proud of once you finish. Just take it slow and do lots of measuring.....lots of testing.....repeat and repeat again. Just wait till we get to the head rails....good times!!! And before anyone asks, yes replacement parts are always available should you need them.

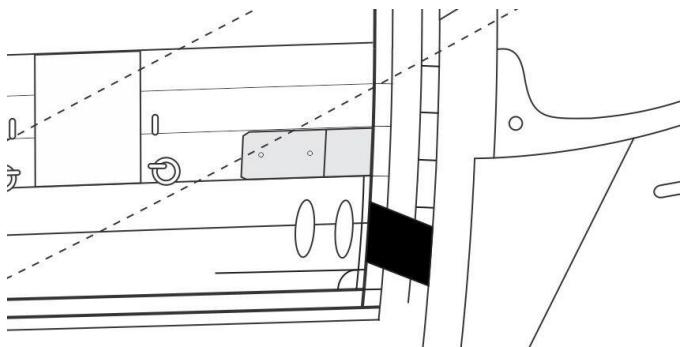
Drilling your hawse holes...

Hawse holes on actual ship....curved hawse pipes below.



But we can't drill on a curve so we have to drill the hawse holes straight through.....parallel to the keel but at an upward angle like shown below. The

slight upward angle as drilled from the outside is crucial. Otherwise.....you guessed it....you will drill straight into the waterway and maybe even into the deck inboard. So real important.....drill at a slight upward angle to try shoot for the hawse holes inboard being centered on the spirketting. Also note the large knee right above the spirketting.



Its a little tricky but the reason why I wanted to mention it is because it's a detail often overlooked. In fact I am sad to say that I indeed also forgot to adjust my angle upward when drilling that first hawse hole. Now it wasn't a catastrophe by any means....but it does make me feel stupid. Of all people to forget to adjust the angle even after I went through the trouble of showing it on the plans....

Anyway, this just means that my hawse holes are about $3/64"$ too low inboard as I drilled straight and level. So this should serve as a reminder to in fact remember to do this.

So to drill the hawse holes, I used a much smaller drill bit than the size of the hawse holes. You can clearly see how large you need to make them after you finish the cheeks. Just try to make them parallel to the keel. Then use a small needle file to open them up larger to the finished size neatly.

I touched up the edges inboard and out. Then I used graphite from a sharpened pencil to color the inside of the hawse pipe. Some people like to roll up paper but if you do a clean job drilling and filing then a pencil works nicely. Here is a view outboard.....note that the

bolster was not glued on when drilling but as soon as the holes were finished up I glued them on permanently. I also used the graphite on the holes of the bolster. Some like to use paint instead of a pencil....they paint the inside of the hawse holes a dark gray. But I stick with a pencil.



On the inboard side, I touched up the red paint and colored the hawse pipes with graphite as well. Then I sanded the large knee that you see above them to remove the laser char. This knee is laser cut in two halves (port and starboard) as it makes getting the shape easier. You can more easily get this large knee to fit snug against the bulwarks with it in two pieces. The outside edges were beveled slightly as I didn't want the knee to have sharp edges. Then one side was glued in position atop the spirketting. Then the other side... getting a nice tight joint between the two halves. Finally it was also painted red. Note: Yes you can show the bolts on this knee inboard if you want to. But once again, as some of you might call me a minimalist with regard to this model, I have decided not to show them. You can use some 20lb black line to use as your bolts if you like that look.

You can see the hawse holes just above the waterway.....they are about $3/64"$ too low. They should be higher and almost centered on the spirketting. I can live with it though as after



drilling the first one I had to follow by doing the same to the remaining three. Once the f'castle deck is on you will never be able to even see the hawse holes under that knee.

So all of you.....remember to drill with a slight angle upward so as to have your hawse holes not so low on the waterway inboard.

As an addendum....on the actual ship the area inboard around the hawse holes was much more complex with upright timbers and rollers, etc. But this is as far as we will take it unless you want to bash it. This area as I mentioned will be impossible to see so it's not worth adding all that stuff and was rarely, if ever shown on a contemporary model. For all of those details, should you want to include them....have a look at the Fully Framed series

for the Swan Class sloops. All of those bells and whistles are described there.

