Chapter Eleven

Finishing up the deck fittings…

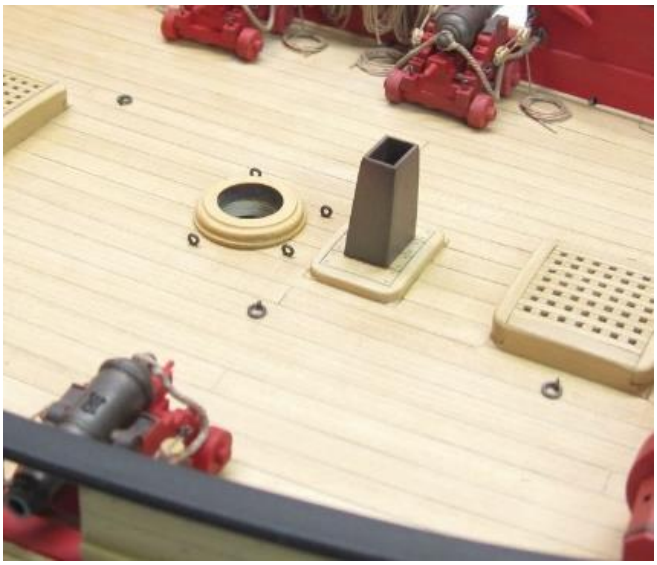
Now that the guns are competed you can concentrate on finishing up the remaining deck fittings. Even though I haven't built the long guns for the bow yet, you could make them at any time. They are made the same way that the carriages and carronades were made. I haven't installed them yet because I have decided to wait until the bowsprit step and bowsprit is completed. This will give me a good sense of what space remains for them and I will be able to position them better.

There are plenty of other deck fittings to build as we continue with the project.

All of the rings and eyebolts were added on deck for the carriage inhauls and other rigging. These were made with 24 gauge black wire.

Galley Stack

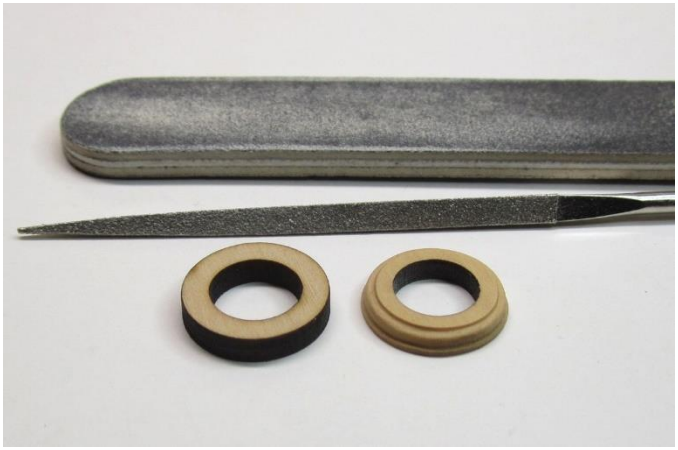
The galley stack is easy to make. All of the measurements for the four sides of the stack can be taken from the plans. All of the various views presented will give you the dimensions to create the shape for each side.



The galley stack sides were cut from 1/64" thick boxwood sheets. As this was a metal stack, it was painted black. But as was done for the other metal elements, some weathering powder was used to make it look different in texture than the wooden black parts of the model. A rusty brown weathering powder was used.

The Mast Coat

Just aft of the galley stack is the mast coat. This is the base of your lower mast. In reality it would not have looked like this. But the actual mast coat is rather dull and just plain ugly. They were tarred over and dark. Rather than replicate actual practice, I was inspired to use the same creative license that the contemporary model builders used.



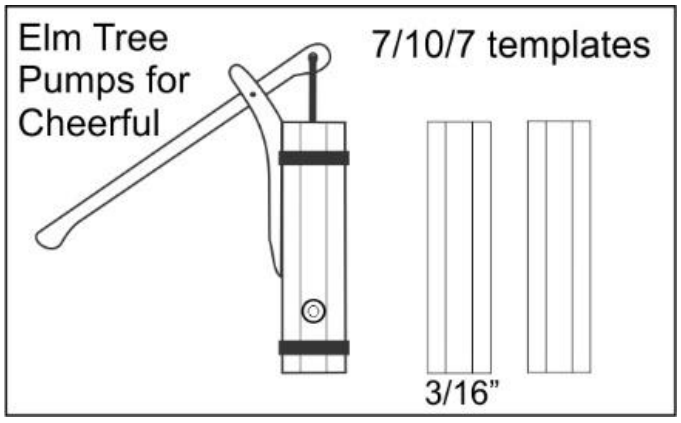
Many contemporary models have stylized mast coats with a fancy profile. A small washer of 1/8" thick boxwood was made. Now if you are fortunate enough to have a lathe or even a vertical milling machine, there would be countless ways that you could make the mast coat. But if by chance you do not, the mast coat can be shaped by hand by careful use of needle files, emery boards and sanding sticks. This is the method I chose to use and the photo above shows the results.

The Elm Tree Pumps

The pumps were made next. I used the laser cut mini-kits available from Syren Ship Model Company for these.

You can see the parts for the mini-kit above.

Examining the plans you will notice that I have only used one reinforcing band on my pumps. Yet on the plans there are two. I have once again seen so many variations of elm tree pumps I figured I would show it both ways. Those building Cheerful can decide which they prefer.



1. Transfer the 7/10/7 template lines to each side of the 3/16" square pump tubes. Carefully file the tube to an Octagon using the lines as a guide. Drill and bore out the top of the tube to a depth of about 3/8". Carefully use a bit that will leave the pump tube walls not too heavy.

2. File and shape the bracket for the handle. The part that sits against the pump tube is tapered thinner so it fits on one facet of the octagon. Use a slotting needle file 1/32" thin or less to file the slot in the top to a forked shape. This will accept the handle. See the photo at the top of this page.

3. Place a 1/16" x 1/16" strip in a Dremel rotary tool to round it off. Using an emery board this takes only a minute or two. This will become your pump spout. Drill a hole into the end before parting off a 5/64" long spout. Glue it to the pump tube. All pieces can be painted first.

4. Using some card stock strips wrap it around the tube as shown on the plan to simulate the metal reinforcement band. One or two is fine. The top band should be carefully placed so the notch in the bracket accepts it at the right height on the tube. So measure its location from the plan.

5. Glue the bracket into position.

6. Insert a length of 24 gauge black wire into the hole on the end of the handle. Shape it like an eyebolt with a long end. Insert the end of this long wire into a pre-drilled hole in the bore of the pump tube. Adjust the length of the wire until the other pivot-hole in the handle sits in the bracket nicely. The handle should be in the downward position to be correct.

7. Finally insert a small length of 28 gauge black wire into the bracket hole and through the handle to lock it in position. Snip it off on both sides so it stand proud of the bracket's surface just a little bit.

The completed pumps are shown below.

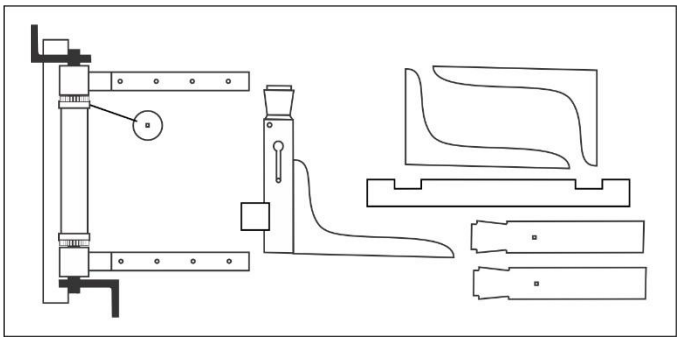
Making the Winch

The winch is fairly straight forward to make. All of the measurements can be taken directly from the plans. The uprights were made first followed by the cross beam shown painted red above. They were assembled being careful to get the width of the winch correct. You must be conscious of the ring bolts alongside the standards. Don't make the winch to wide or they will certainly interfere with them.

The standards were added soon after the glue dried. Then these parts were painted red before I fabricated and installed the winch drum. The bolt heads can be simulated with 24 gauge wire as well.

The winch drum was made using a square stick of boxwood cut to length. Then using the 7/10/7 ratios is was filed to an octagon shape like the pump tubes. Then I chocked it in my hand held drill to round it off. Round end caps were cut from 1/64" thick boxwood sheet and glued on each end along with small sprockets of the same diameter. For these, I just took circles of the same diameter and filed some teeth along its outside edge. If for some reason the teeth didn't line up properly when I got around to the other side, I made sure to face this part of the sprocket on the bottom where it wouldn't be seen.

It was glued into position between the uprights. The drum doesn't actually turn. No need to have it do that. It was glued directly between the uprights.

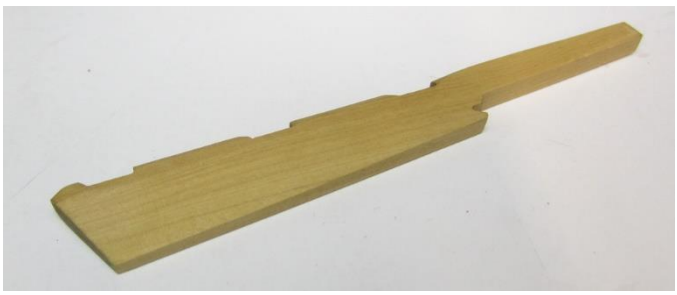


The only remaining parts of the winch were its handles. There are many ways to make these. I used a small thin piece of boxwood with a hole drilled through its end. Then a piece of 24 gauge wire was inserted into this hole to simulate the crank handle. To finish it off, a small (very tiny) length of micro tubing was glued onto the end of the crank handle wire. This gave it more detail and finished it off nicely.

The winch was glued permanently on deck afterwards.

Completing the Rudder and tiller…

It is a good time to start thinking about finishing up the rudder and installing it. I have cleaned up the laser cut rudder, removing the laser char from its



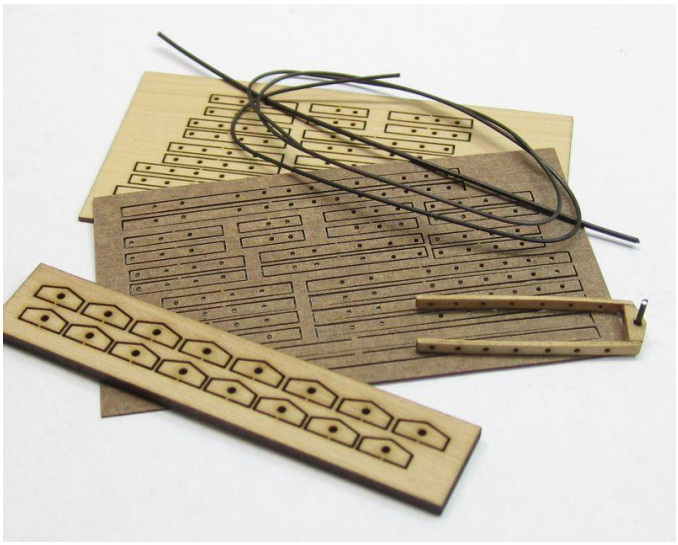
edges. The rudder is tapered as it works its way aft. The profile for this tapering is shown on the plans. The taper also exists as the rudder proceeds down to the bottom edge. The photos also show the shape.

The forward edge that sits along the stern post is chamfered on both sides. This chamfered edge doesn't extend all the way up to the top of the rudder head. It stops just below the top of the rudder head below the metal bands shown in the photo above.

The rudder hinges or pintels and gudgeons were simulated using materials other than brass. I don't have the tools to solder brass versions and I hate working in metal anyway. So I made mine from wood. I also made a version using laser board for the straps. This is sold as a laser cut mini kit so you folks can do the same if you prefer. It worked just as well metal. These are very sturdy rudder hinges.

They are made in three pieces. All laser cut. The boxwood center is sanded to the width of the stern post and rudder. Then the straps are added after being cut to length. I used thin boxwood straps but the laser board versions work just as good. They are pre-cut with holes. Some 24 gauge black wire was inserted into those holes after drilling them a bit deeper into the rudder. Then the wire was pushed into the holes and snipped off. It was snipped off so the end would stand proud of the straps by just a hair simulating the bolts. These laser cut "cheat hinges" did a great job in my opinion and they are so easy to work with. Then they are painted black after the wire is inserted into all of the holes.

For the "hinge pin" a small length of 22 gauge wire was used. It was glued into the hole in the center section of this mini-kit. As a tip for those who will start fabricating theirs out of wood....paint the edges of the straps black ahead of time and you will have a nice neat edge before you glue them onto the rudder or stern post. You can see the ones on my hull which haven't been completed yet. I still have to add the simulated bolts with wire. They are unpainted. Once this is done I will create the tiller.



The rudder was hung as a test so I could mark the area of the rudder head that was to be painted red. I also used some weathering powder on those pintles and gudgeons so they would more realistically look like simulated metal. The same thin material was used to simulate the two metal band around the rudder head.

The tiller can only be added after the rudder is positioned on the model. To make tiller, rough cut it from a 1/8" thick sheet of boxwood. Then carefully round it off and shape it using files and sanding sticks.

I could have left it natural but it just looked to bright and "blah" looking. So I painted it red and highlighted some parts of the handle on tiller. I like this much better. I am sure everyone has their preference but I have also seen the tiller painted black on contemporary models. I don't think I would have liked it like that. So please choose the color scheme you prefer best.

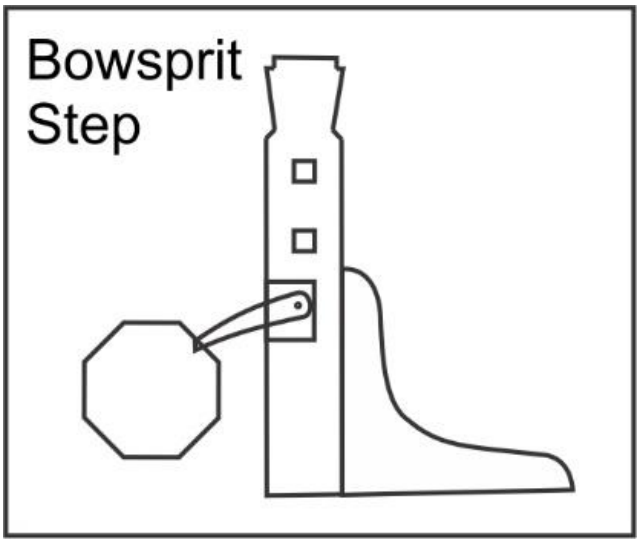
The tiller is actually positioned between the two metal bands on the rudder head. It was pegged and glued securely to the rudder head as shown in the photo below.

Making the Bowsprit step…

The bowsprit step also contains the pawls that engage the windlass sprockets. It is positioned forward of the windlass. But it won't be glued into position permanently as it needs to be positioned in conjunction with the bowsprit. Both need to be tweaked and tested until they fit properly together.

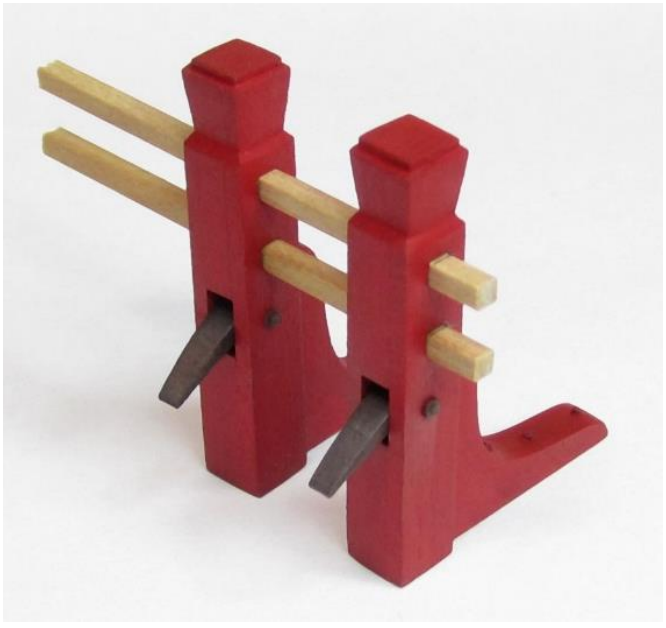
If you don't have a mill or a drill press, think in terms of layers for ways to make parts for your models. If you are fortunate enough to have a mill, making the mortises for the pawls would be easy enough. But if you don't have one, always think about how an item could be made in layers like these. You don't need a laser cutter to do this. It would be simple enough to cut out each layer. This is a great way to go especially if the item is to be painted like these. You would never see the layers after it is painted.

But in this case, I have created yet another mini-kit available from Syren. It contains all of the elements you will need to assemble the bowsprit step. The photo on the previous page shows all of the parts needed.



Assemble the three layers for the uprights. Then use a needle file and sharp chisels to finish shaping the top of both of them. They will look like the timberheads along the cap rail and the top of the winch uprights when you are done.

The laser cut standard was cleaned up and glued to the uprights. I painted them red before simulating the bolts along the standard with some 24 gauge black wire as before.



The pawls were painted black and weathered to look like metal. Placing them in the mortice of each upright, they were held in position with a small length of black wire fed through the holes laser cut in each piece. This actually makes the pawls movable so you can adjust them as you position the bowsprit step alongside the windlass.

Two lengths of boxwood left natural were slid through the square openings so both assembled uprights were the proper distance apart. But they weren't glued into position. You still need to make the bowsprit. It also has square holes along the side of the inboard end. The bottom strip slides through it to anchor the bowsprit in place.

The bowsprit step was tested in position as shown

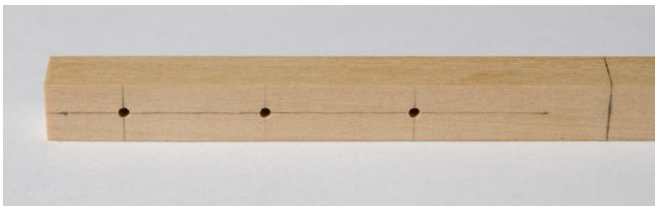
above. The two boxwood strips left a bit long for the time being. They will be cut to their proper length after the bowsprit is made. For now however, just set the bowsprit step aside and begin making the bowsprit.

Making the bowsprit…

In most kits, you are given round dowels made from birch. Although this saves time it makes it more difficult to achieve the various shapes on the masts, bowsprit and yards. The transition from round to octagon or square on the finished parts doesn't look as nice and is much harder to develop while keeping the diameters correct.

For this reason, I will be making all of the masts and spars from square stock. I will be using boxwood strips cut to the correct size. This includes the bowsprit. The steps needed to fabricate the bowsprit from square stock are detailed below. To begin you will need a square stick of boxwood that is 5/16" wide on all sides. You could even make it slightly larger to give you some wiggle room when shaping it.

Step one - The inboard section of the bowsprit will remain square. The outboard side is rounded off and tapered. There are three square holes on the inboard sides. But these start out as round holes made on the drill press while the entire stick is still square. You could also make these three holes with a pin vise if you don't have a drill press. Just be careful to line them all up properly.



There is also a sheave on the outboard end. The holes for this sheave is simulated also. It is also drilled while the stick is square. Make sure you drill through the right side of the stick. Study the plans carefully.

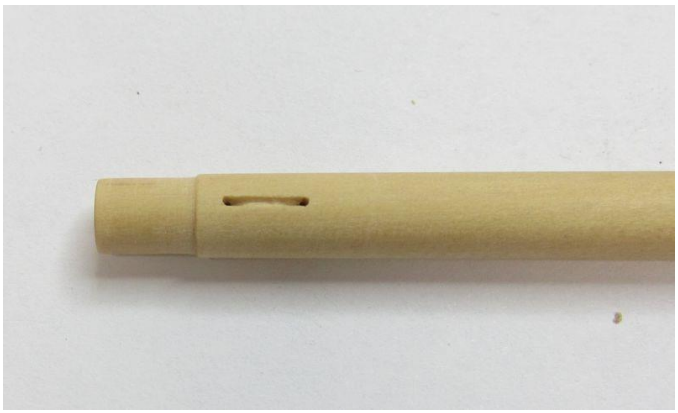
Step two – prepare the outboard end of the bowsprit for rounding. To do this, use the 7-10-7 ratio just like we did when making the octagon pump tubes. The outboard end of the bowsprit will be planed, or filed to an octagon before you can make it round. So mark each side of the stick with lines using the 7-10-7 ratios. See below.

Then choose whatever method you feel most comfortable with to shape the outboard end into a neat octagon. I prefer to just use a #11 blade and slice off the heavy stuff just a bit outside of the lines. Then I use a sanding stick to finish it off.

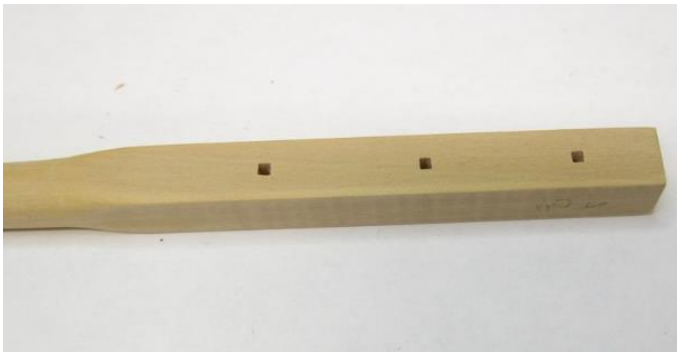
Step three – I then chocked the square end in my power drill and proceeded to make the octagon section round. Running sandpaper up and down along its length as the bowsprit turned at high speed. At the same time I carefully tapered the outboard end smaller to match the shape shown

on the plans. Note the transition from square to round.

Step four – the outboard tip of the bowsprit has a small step. This is shaped by hand using some files while the bowsprit was still spinning in the drill. But after removing it, the simulated sheave just behind it was finished up. A thin slot was carved between the two holes. It doesn't have to be very deep. Then the inside was rounded somewhat with a needle file to better simulate the actual sheave.



Step five – The three inboard holes (currently round) need to be squared off. As with everything else, there are so many ways you could do this. I just picked up my #11 blade again and carefully cut away what would become the four corners. The carving into a square isn't very deep. It is only squared off about 1/16" deep into the holes. The inboard section of the bowsprit will eventually be painted black and you won't be able to tell that the square holes aren't square all of the way through.



Step six – Test the bowsprit in the hole you made for it through the bulwarks. You should be able to slide it all the way up from the inside. But be aware of all of those deck fitting you worked so hard on. You don't want to break any of them.

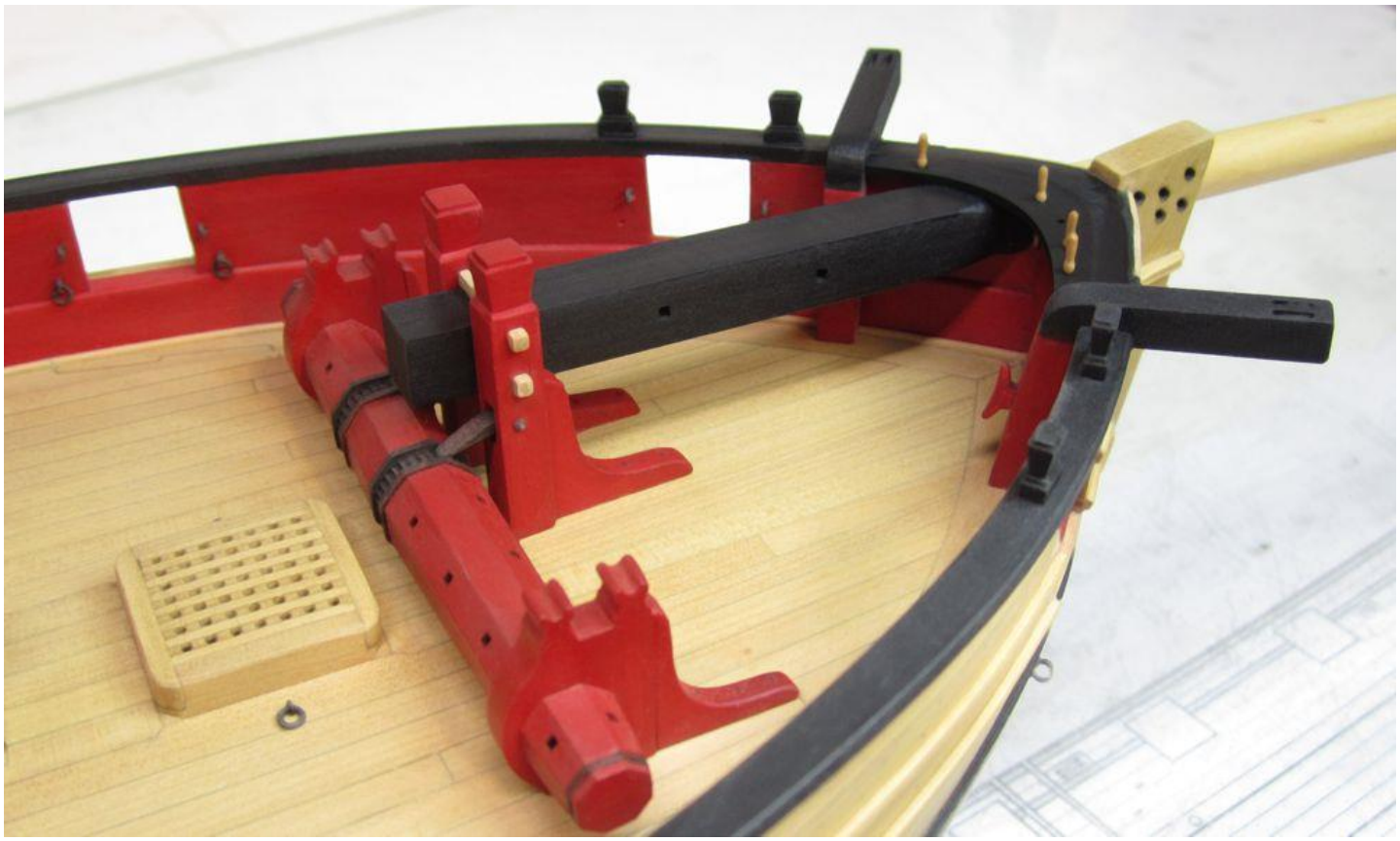
Tweak the hole until the bowsprit slides all the way up and in position. But keep the hole sung with no gaps around it. This would look awful. So approach this carefully a bit at a time. Don't enlarge the hole too much at one time. Once it slides up enough so the inboard end is where you want it…in relation to the windlass…and where the bowsprit step will be, start testing it along with the bowsprit step.

Now, the bottom stick through the bowsprit step can be a real pain. It doesn't actually have to slide through the square hole of the bowsprit as well. Yes, it would have done so in real life, but it is far easier to simulate this while trying to position it along with the bowsprit.

With the inboard end of the bowsprit finished I could slide the uprights of the step apart correctly. Leave just enough room between them so the square end of the bowsprit fits snug. Then glue the top cross stick of the step in position permanently. Snip of the ends and sand them down neatly.

The lower cross strip won't actually slide through the bowsprit. In fact…I just cut that strip in half. I inserted one in each hole of the step uprights only part-way in. They didn't come through the inside of the upright at all. They only made it about half-way. Then I sanded the outside ends neatly.

I did this because it will be much easier to position the bowsprit step over the square end of the bowsprit. I basically slipped it down over the top so the uprights were straddling it. I used that last hole on the inboard end of the bowsprit to help me visually position it. I took my time making sure everything was where it needed to be. Then I glued it all together afterwards.



Note that in the photo above, the bottom cross beam of the bowsprit step looks like it goes through the bowsprit. But it does not. It's only simulated because it was easier to slip it over the top of the bowsprit.

Step six is a tricky one….so feel it out with plenty of testing before you glue anything in position permanently.

Step seven - Silly me!!!…I forgot to add the metal band with four eyebolts to the outboard tip of the bowsprit before mounting it. This made it about ten times harder to do. So please make sure you add the metal band to the tip of the bowsprit before you slide it through the hole and mount it. It will fit through the hole in the bulwarks. If it doesn't, then you made the eyebolts too large.

I used paper to simulate the iron band. It was painted black. Then I pre-drilled the four holes to accept the eyebolts. The eyebolts were fashioned from 22 gauge black wire. They were glued into place and painted again. As done so many times before, I applied some weathering powder to make it look more iron-like.

NOTE: if you haven't done so yet, this would be a great time to make those long guns. I was waiting until after I mounted the bowsprit so they could be positioned properly in the remaining space available. It's just like making and installing the carronades. There is no need to describe the process again. Because now it's time start rigging and making masts and spars. Fun fun fun!!!