

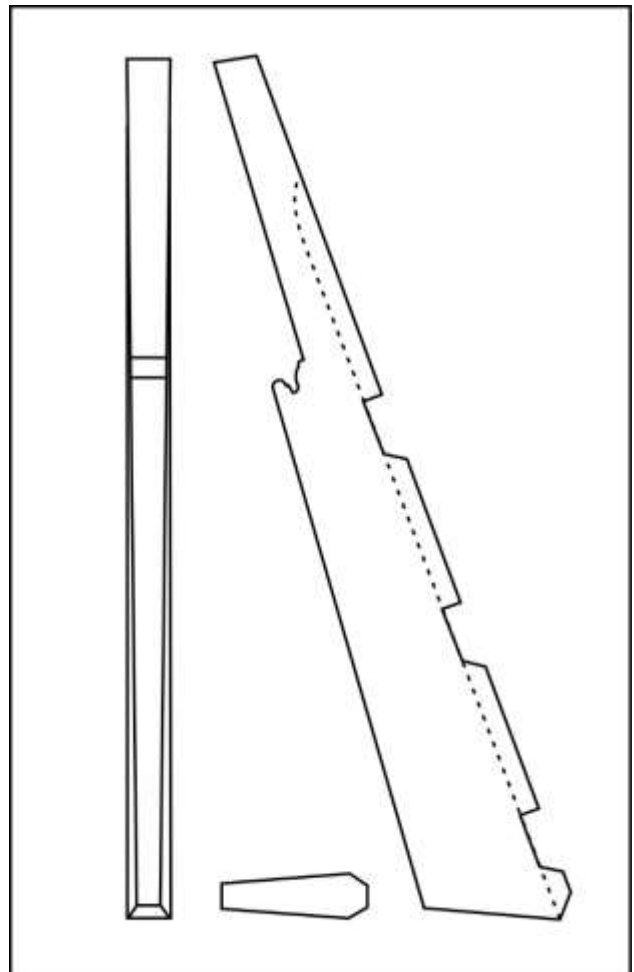
## Chapter Nine

### *Making the Rudder and Rudder Port...*



To prepare for shaping the rudder, I carefully reviewed the plans. There are many angles and tapers to consider. Using a sanding stick, I first created the taper that works its way aft. This taper is most apparent at the bottom of the rudder. It will taper to around 1/8" thick. This taper becomes less pronounced as you work your way up the aft edge of the rudder. See the drawing to the right. Once this was done, I started shaping the forward edge. This is the edge which has the notches cut out for the Pintles and Gudgeons. The edges are tapered as shown in the same drawing. The edge will become 1/8" thick here as well. But not all the way to the top of the rudder head. You can see the dashed lines that show where this taper should end. Above this point, the rudder head is basically rectangle in shape.

This is as far as I went with the rudder because I wanted to just use it as a guide to help me create the proper sized rudder port. To create the rudder port, I flipped the hull upside down and drilled a small pilot hole where the rudder port should be located.



The hole was slowly enlarged to match the shape shown on the plans. I was careful not to mar and scrape the sides of the two stern frames inboard. I used various needle files to enlarge the rudder port. The red paint was touched up when I was satisfied.



If you take a look at the inboard plans you will see that the rudder post extends upward above the deck level. This will just be simulated on our model. To do this, a small section of rudder post was shaped and glued into position. I used the laser cut piece from the starter set which is purposely over-sized. I taped the rudder in position temporarily so I could use it as reference so I would find the correct angle for this small piece.

The bottom will need to be shaped to fit your counter shape while the back edge sits at the correct angle. Having the rudder head there makes it easy to see when you have achieved this. You can see the original over-sized piece in the photo above along with a second version after it was shaped to have the correct angles.

The second photo above right shows the simulated rudder post glued into position and painted red. If done carefully nobody would ever know that the whole effect is simulated.

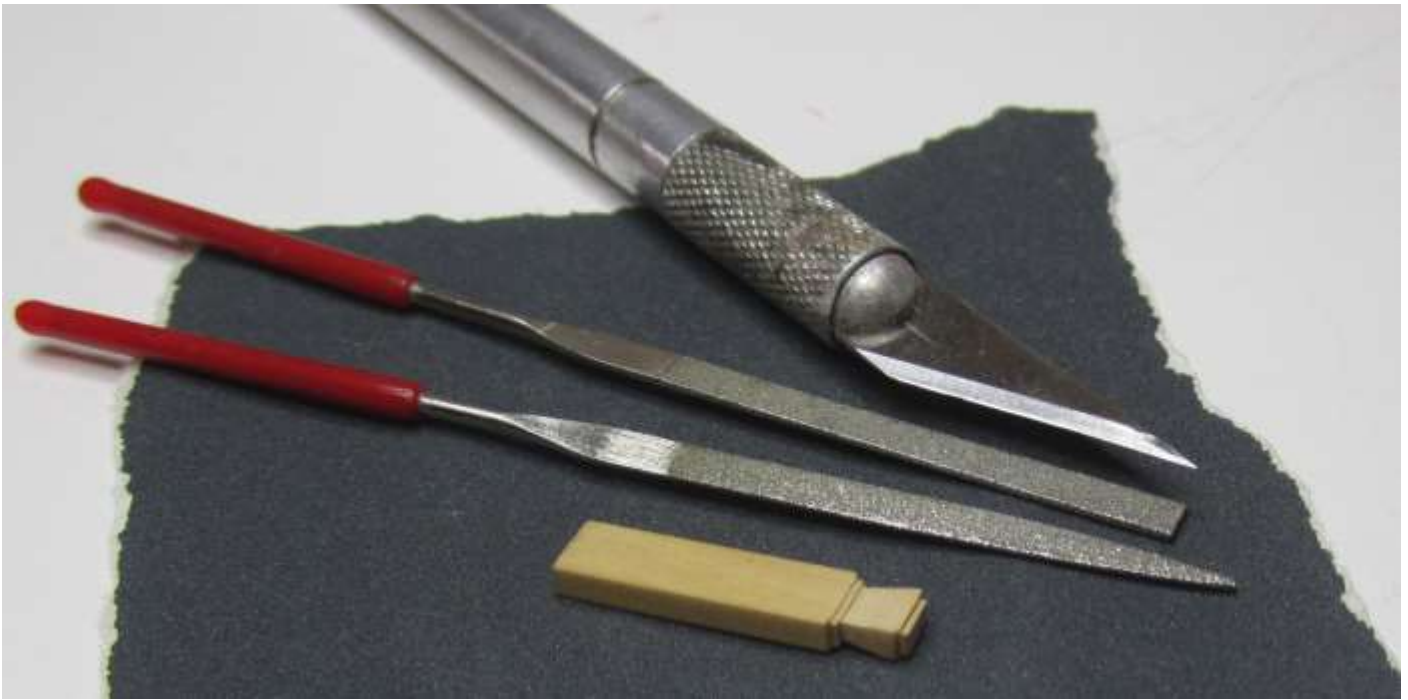


### The Windlass....

The windlass was made well in advance but I had yet to glue it into position. So I decided to paint it red and do just that. There are separate instructions already available on the website for building the mini kit of the windlass. Those were the instructions that I followed to build it.



You may prefer to leave it unpainted however and it's just a matter of your own personal preference. The photo above was taken at a later point in the project.



### Details along the cap rail...

There are six timberheads positioned on top of the cap rail. Two are shown on either side of the forward-most gun port. Another appears aft near the stern. This one in particular has a very distinct angle to it which should match the sheer of the cap rail. The two on each side of the gun port are not

as difficult to make because the angles are not as complex.

There are really no shortcuts here. Basically I took a  $3/32$ " thick strip of boxwood as wide as needed. The measurements were taken from the plans. I drew the approximate shape for these timberheads onto the wood strip and started shaping them.





I used a sharp #11 blade and some needle files to shape the top of each timberhead. You can see the actual tools I used in the photo on the previous page. They were glued into position and painted black.



### The boom crutches...

Not that I want to alarm you, but I can honestly say that the boom crutches are one of the trickiest parts for this project to make. Once again there are really no shortcuts. It is best to just proceed very slowly and accept the fact that you will probably find yourself making many versions of these before they are looking like they should be.

The boom crutches are there so the boom can sit in them. If you think about it, this means they must be turned inboard slightly and angled appropriately. But the shape of the stern and transom is such that the angles are completely opposite of those that you are trying to create for the boom crutches.

So the easiest way I could wrap my head around all of these complex angles was to attack them one at a time.

The photo above right shows one boom crutch completed and another blank ready to be shaped to match.



The boom crutches are basically extensions of the fashion pieces. So to begin, I sanded the tops of the fashion pieces down so they were flush with the top of the cap rail. See below.



I cut an over-sized version of the boom crutch out of boxwood. I used a  $\frac{1}{4}$ " thick piece to cut it from but really should have gone a bit thicker. I made sure there was a lot of extra meat on it so I could slowly sand and file it to shape, creating the four proper angles needed. The tail or the stem of the blank crutch was purposely made wider and longer to start.

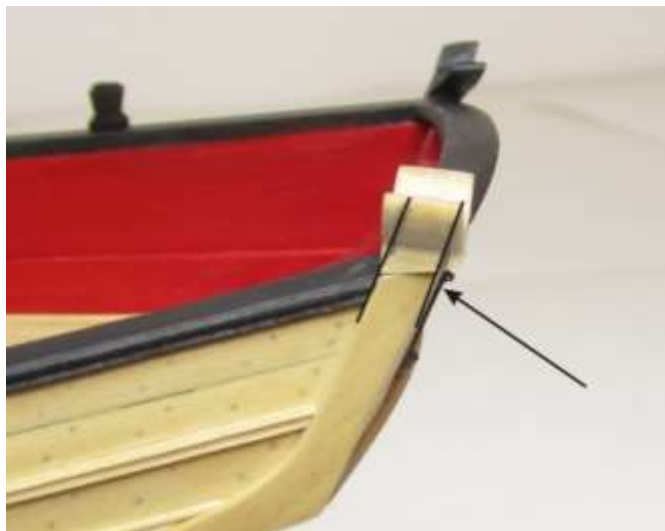
The first angle I tried to match was the angle of the fashion pieces. When you view the model from the stern you want the stem of the boom crutch to match the angle of the fashion piece. After all, it is supposed to be all one piece.



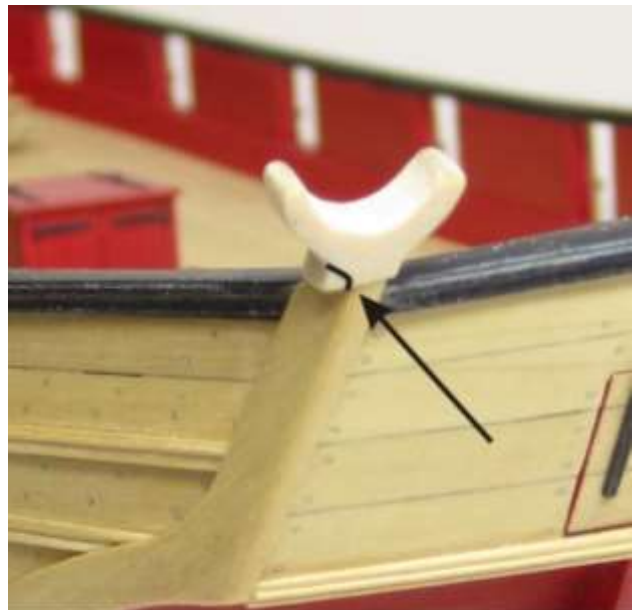
The photo above shows the angle you are trying to match. Cut the stem so the crutch is the correct height above the transom...but make sure it is at the correct angle when viewing it from directly behind as above. The angle is shown in green.



Third.....we have to make the boom crutch face the lower mast. On most models I see they are facing forward or even outboard. This wouldn't serve its purpose to well. The reason for making the stem of the crutch wider is so you can turn the crutch to face the mast. In the photo above, note how the fore edge of the crutch is flush with the fashion piece...BUT the aft corner hangs off the fashion piece. Mark the aft side of the boom crutch as shown below and file this bevel into the outboard edge. The round crutch remains untouched. You are only beveling the stem. Then also bevel the inboard edge of the stem to complete it.



The second angle you need to establish is the crutch as viewed from the side. There are black lines in the photo above that show I will try to finally shape it. You can see how important it is to make the initial piece much thicker and larger than it will eventually become. I drew reference lines with pencil and slowly started filing down the forward and aft sides to match.



It was at this stage where I glued it in position permanently. Then I filed and sanded it further to shape. I filled the joint with wood filler and sanded it smooth so the crutch and fashion piece looked like one piece. Thank goodness it is going to be painted black. The last angle we should concern ourselves with is the angle of the top of the crutches when viewed at the side. This is easier done while it is glued into position.



See the angles established in red (above) so the crutches match the sheer or are at least level rather than slanting upwards. This is important and the bottom of the crutch....inside the crutch... should also be addressed and angled downward slightly or at least leveled off if need be. Think about how the boom would REST in each crutch when establishing the angle inside the crutch.

When you are done....do it all over again on the other side and try very hard to get a matching pair. Note how the stems are not very long and the crutches are so very close to the top of the transom. If you hide the seam well and paint it, the results are very convincing. You will no doubt have many parts added to the waste pile as I did when making these. But that is OK. They are a bit tricky.

### Completing the remaining outboard details

There are a few remaining outboard details to complete so I figured I would start on those before returning inboard.

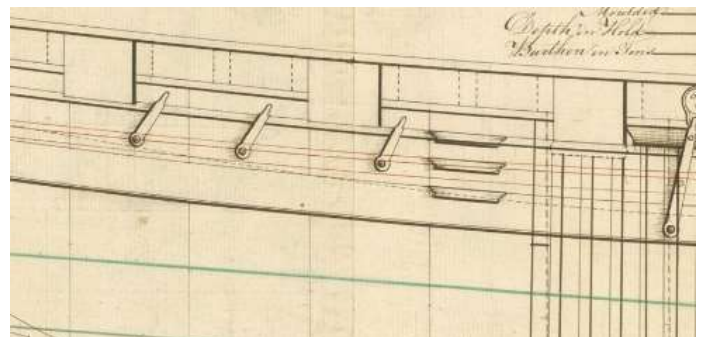
### Boarding ladder...

The steps for the boarding ladder are made from 3/32" x 3/32" boxwood strips. I took a longish strip about eight inches long and scraped the fancy profile into it. This was done exactly like the fancy molding on the hull. I used a small piece of brass sheet and cut the profile into it. Then I scraped the profile into the strip.



The steps were cut to length following the plans. But I did make them a hair longer and the ends were cut on an angle. I used a small needle file to continue the profile on each edge. This took a bit of time to do but wasn't very difficult. The hardest part was trying to make all six steps for both sides of the hull look the same.

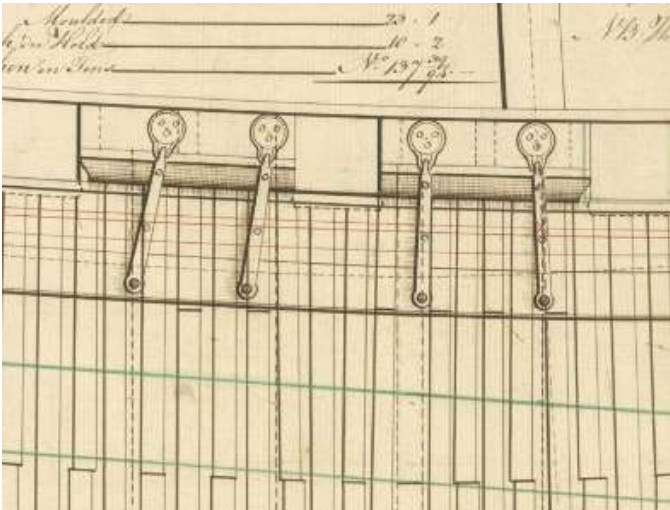
They were glued into position with the bottom step being placed on the wales. So this last step was then painted black. The top step was placed in line with the hull molding. I removed a section of molding first so I could insert the step into the space I made.





## The Channels...

The channels on each side of the hull are made in two sections with a gun port between them. See the small detail below from the original draft.



Each segment fits between the moldings on the hull and fills that space. Based on this fact the channels need to be 5/32" thick. They are very narrow and not like most channels you may have made for larger frigates and ships.



When viewed from the side they gradually get thinner buy a little bit. The bottom is beveled or angled so the outboard edge is just 1/8" thick. Maybe a hair thicker. But it is not as thick as the edge that fits against the hull.

Note how the usual cover or cap molding isn't shown along the outside edge of the channel. Instead, small notches are filed into the edge and the chainplates will be bolted to the

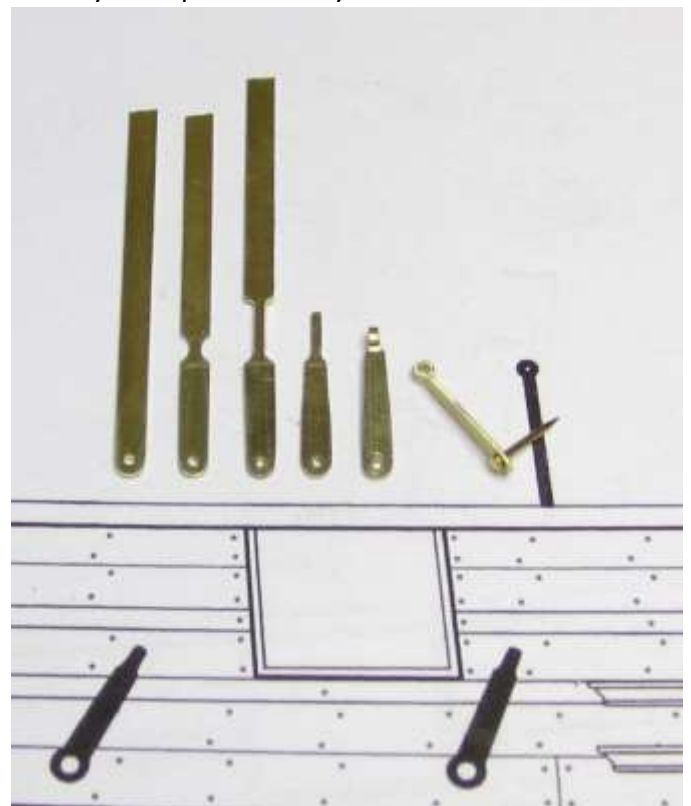
edge. Many cutters show this feature but there are other arrangements too. But this follows the original draft. It is an interesting feature.

The profile along the edge is made "old school" with a round file, sanding sticks or whatever you are comfortable with. Note how the gun port splits the channel in two lengths and the edges in the break are not profiled.

There are several eyebolts on top of the channels as can be seen on the plans. These were made from 24 gauge black wire and glued into position. I also took this time to make the additional eyebolts that are required on the top of the cap rail and sides of the hull. These were made the same way.

## Backstay plates and chainplates...

You can see the chainplates in the photo to the left on the original draft. Rather than start with these I decided to make the backstay plates first. They will be made exactly the same way but without any deadeye strops or deadeyes.



The photo above shows the five steps I used to form these from a brass strip. They are basically rounded at the bottom with a hole drilled through

them so you can pin them to the hull. The top is bent into a loop which will be used to hook the backstays into them.

Step one involves just cutting a 1/64" x 3/32" brass strip about an inch long. Then I rounded off the bottom after drilling a hole through it.

In step two I used a round file to make a circular notch in each side. The bottom of the notch depicts the length of the plate NOT including the eye we will form later.

For step three I elongated the notch on both sides quite a bit which left a thin strip of brass. This thin strip is what I will use to bend into an eye.

Step four started by tapering the entire plate so it was narrower as it worked its way toward the notched area. Then I cut off the excess which you can see in the photo on the previous page.

The last step is where I formed the eye on top with a needle nose pliers after determining (guessing) how long that thin strip of brass need to be in order to form it. They were painted black and glued into position. I used those typical tiny brass pins that are so common in every commercial kit.

You probably have a whole bunch of them left over somewhere too.

You can see them in the photo below. You might also notice in that same photo that the scupper holes were drilled. These were drilled through the outboard layer of planking only. I darkened the edges of the holes with a lead pencil. I matching hole will be drilled along the inboard waterway later on....but there is really no reason to do it now if you desire.

I also weathered the black backstay plates ever so slightly. This was just a matter of brushing on some weathering powder and buffing it off. I prefer to make all of the metal elements have a different texture and look than the black painted areas of the hull such as the wales. Its very subtle and can be overdone very easily. So if you want to give this a try it's a lot of fun and you might just like how it looks too.

My weathering powders come from Micro-Mark and there are several colors to choose from. I decided to use Rusty Brown. I will use this for all of the metal work on the Cheerful. The photo on the next page shows the powder being added to a carronade later in the project. Grimy black is





another color I sometimes use but in this case I decided to go with just the rusty brown. After the



parts have been painted black, just apply a generous amount to the piece with a soft brush....apply it all over. Then buff it off with another soft clean brush. Repeat this process to suit your preferred level of color and appearance.

### **Chain plates and deadeye strops...**

The chain plates are made just like the backstay plates. No difference at all except for the fact that they are longer and have more holes in them.

Assuming that this isn't your first ship model, the angles for each chain plate were found in the usual way. Placing a dummy lower mast in position and pulling a string down to represent the shrouds. The location was marked on the wales for the bottom of each chain plate. This means that each chain plate will need to be a different length. After marking the wales it was easy enough to determine the length of each piece.

The deadeye strops were made using 22 gauge black wire. The shape for the strops was formed as the wire was bent around a 6mm deadeye. The deadeyes were made from the Syren Ship Model Company Deadeye Kits. The chain plates were painted black and weathered.



You could paint the deadeyes black too. This is often the case on many contemporary models. But I prefer to leave them natural as shown above.

