



The Rudder Trunk

Chapter Twelve

Gun Deck Fittings and Deck Framing

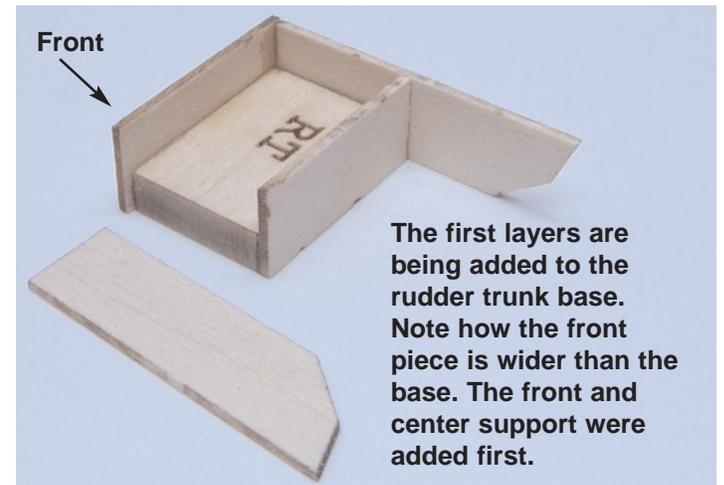
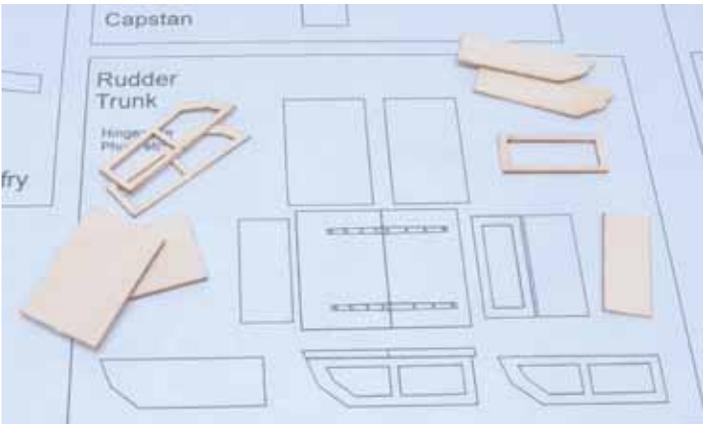
With the cannon completed you can start building the various fittings found on the gun deck. On the prototype for the kit, work progressed from the stern towards the bow. This is just a personal decision and it really doesn't matter which fittings are built first. The systematic approach from stern-to-bow made it possible to also install the quarter deck beams a little at a time as the work progressed. Take your time on each deck fitting and treat them all as if they were mini projects. You might decide to paint certain details red as well, or just leave them natural. It's up to you.

The Rudder Trunk

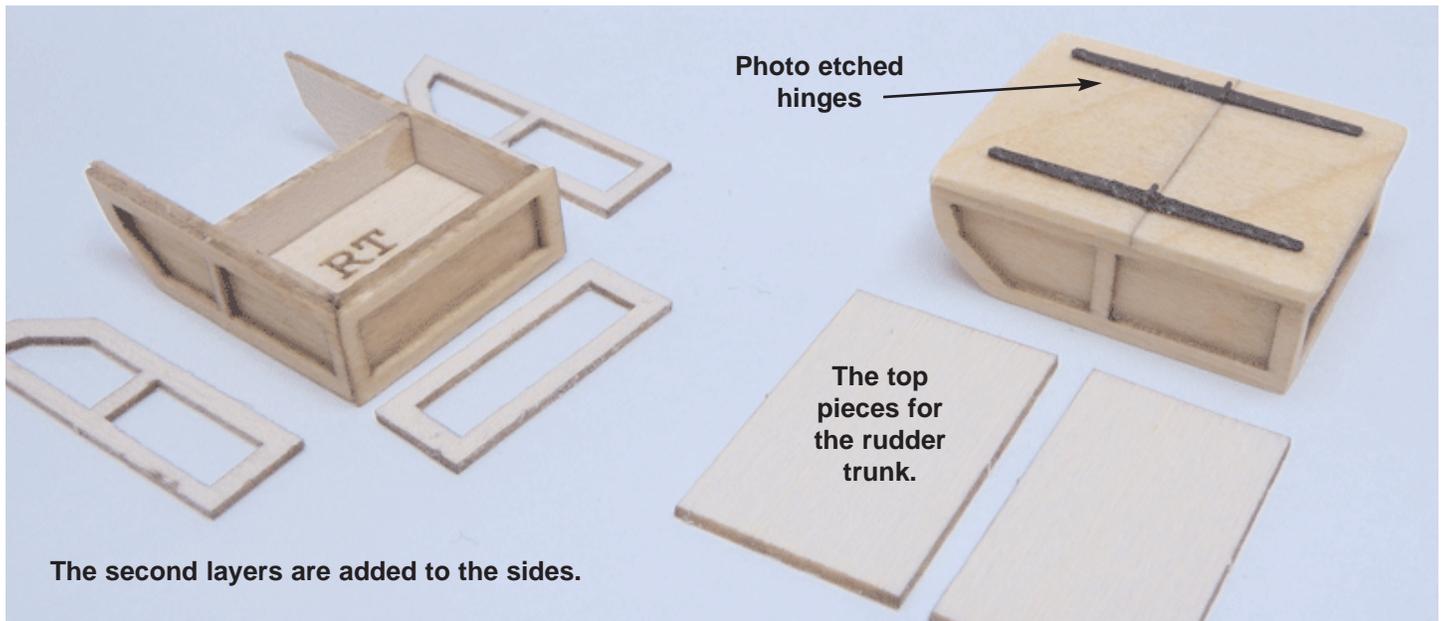
The rudder trunk is made using several laser cut parts which are shown on the plans. Examine

the plans carefully before you begin. The sides of the rudder trunk are made in two layers. This will simulate the look of raised panels. This design feature will be used many times throughout this project.

To begin, use the laser cut piece RT (1/8" thick) as your base. The first layer of each side is glued around the base (1/32" thick laser cut). See the photo below. The front piece and center support were added first. Note how the front piece is slightly wider than the center support. It should extend past the sides of piece RT equally on both ends. The two laser cut side pieces were added next. Sand the outside surfaces well so they can be stained and have a smooth surface. You should do this now before adding the second layer of paneling. This will help prevent a blotchy finish if the glue penetrates the first layer. All of the fittings have been stained with MinWax Golden Oak stain. But the stain was thinned



The first layers are being added to the rudder trunk base. Note how the front piece is wider than the base. The front and center support were added first.



The second layers are added to the sides.

down before using. A 50/50 mix of Golden Oak and MinWax Natural stain was used. This helps create an even finish on the soft basswood and wont darken the wood too much.

The second layer can be glued be on next. The two front corners were mitered so the end grain would not be visible. To do this, simply sand the edge at an angle using a sanding stick. Glue some 220 grit sand paper onto a 1/8" x 1/16" strip to make the sanding stick. These pieces are quite fragile. It also helps to place them on a block of wood so the edge to be beveled is supported by the edge of the block. Slide the piece right up to the edge of the block and use the sanding stick to bevel the corner to approximately 45 degrees. Only sand on the down-stroke so the piece doesn't lifted off of the block and break. Stain the outside of the rudder trunk when you're done.

Take the two laser cut pieces for the top of the trunk and glue them into position. These have been laser cut slightly larger than you need them to be. This will give you the opportunity to sand all four sides so you create a slight and consistent overhang. Round off the front corners. Stain the lid when you are finished. Then add the photo etched hinges. Paint them black and glue them into position. A small length of 28 gauge black wire was used to simulate the hinge pins. See the photo provided that shows the complet-ed rudder trunk. It can be glued on deck when

you are ready. Place it in front of the center stern window. You may have to adjust the shape of the rudder trunk so it fits flush against the surface of your stern counter.

The Aft Bulkhead

The two bulkheads are constructed in three layers to simulate the paneled look. They are laser cut (1/32" thick). Depending on how you faired the bulwark planking and positioned your deck clamps, minor variations will exist from one model to another. Because this was anticipated, the bulkhead panels were cut slightly larger than needed. Sand and stain all three layers before you sandwich them together. The center layer is quite fragile on the doors so be careful. Glue all three layers together.

The finished bulkhead section will be 3/32" thick





at this point. They should be thinned down considerably. Sand the outside surfaces of each section to reduce the thickness of the outside layers. On the prototype they were reduced to half their thickness. This will create a more elegant look that is less "chunky" and "kit-like". The finished sections will now be 1/16" thick. Stain them again and set them aside.

Before you can test how the five bulkhead sections will fit, you will need to install the deck beam it will fit under. This is the first 3/16" thick quarter deck beam shown on the plans. There are two deck beam sizes (1/8" and 3/16" thick). Sand all of the laser char from the deck beam and cut it to length. Glue it into the deck clamp slots permanently after you stain it. Then...

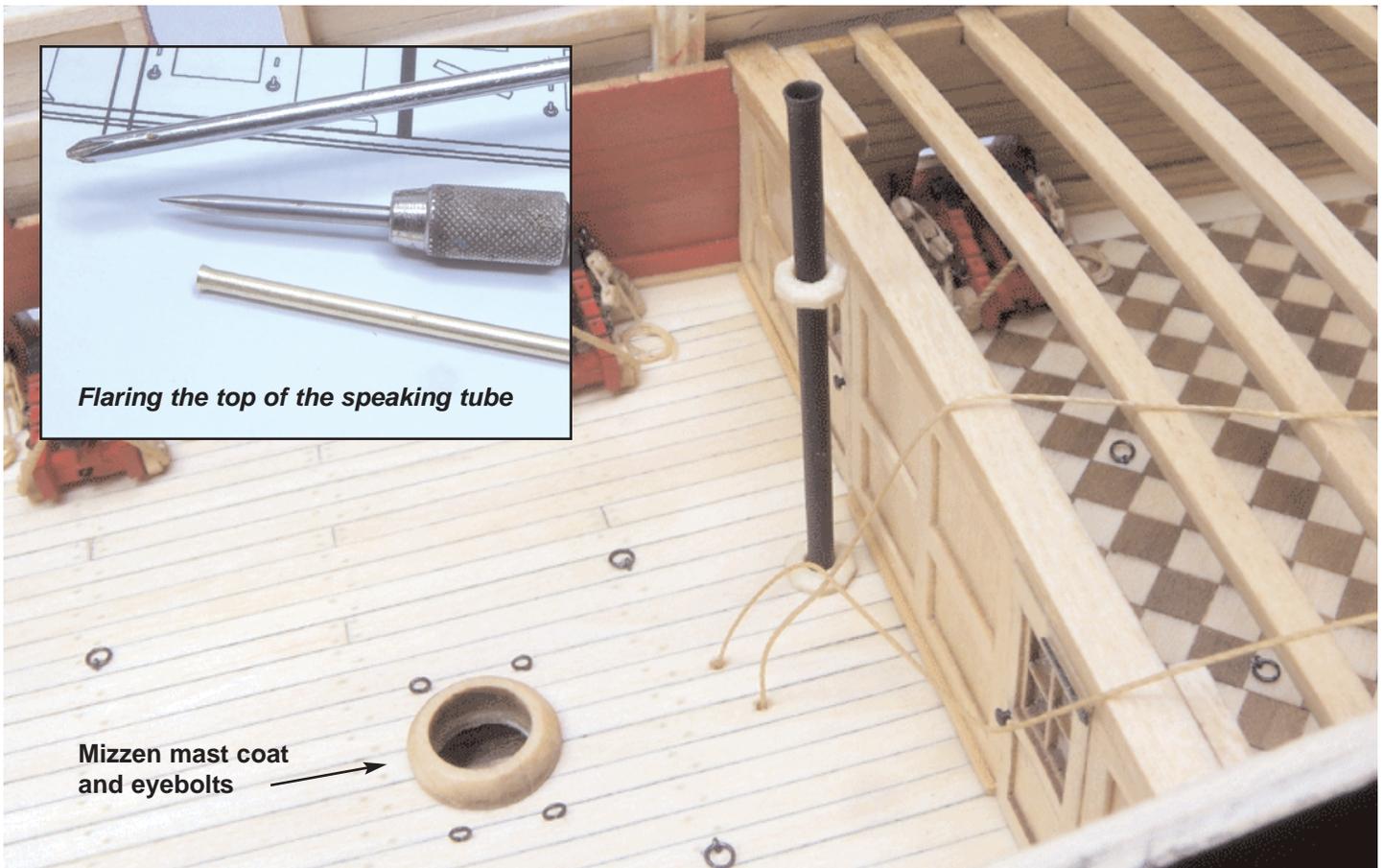
1. Place the center bulkhead section against the deck beam to test its height. It will be slightly taller than needed. Remove a little bit from the top AND bottom until it fits under the beam properly. Make sure it's not a tight fit. If the bulkhead sections don't fit perfectly they may push your deck beam upwards. This is a bad thing. If your deck beam has been raised up, the planking surface will not be flush across all of the other quarter deck beams. So make sure it fits nicely. Don't glue it in yet. Just leave it temporarily positioned under the beam.

2. Repeat this same exercise with both doors. Leave them temporarily in position.

3. The last two sections are those that fit against the bulwarks. These are the trickiest ones to shape. You should first adjust the height of these sections so they will fit under the deck beam. Then gently push each section against your bulwarks. Enough "meat" was left on this side of these pieces to allow you to shape them to fit flush against the bulwarks. You will need to notch this section around the waterway and spirketting to fit properly.

4. Hopefully at this point, all five bulkhead sections now fit properly. They should fit snug against each other as shown in the photos provided. If not, they will most likely be too wide. Small adjustments can be made by removing a little at a time until all five sections fit.

When you are satisfied, the small details can be added to the doors so you can glue them into position permanently. Glue the photo etched hinges to the "fore" side of each door after painting them black. The door knobs can be simulated by using the heads of the tiny brass nails supplied in this kit. Just cut the heads off leaving a short length of the nail to be inserted into the door. Pre-drill the holes for the door knobs and glue them into position. Lastly, glue a piece of acetate on the aft side of each door to simulate the window glass. Try and keep the acetate as clean as possible but make sure it is secured well. It would be really tough to add another one after the quarter deck is framed. You will also notice in the larger photo that a toe kick molding



Flaring the top of the speaking tube

Mizzen mast coat and eyebolts →

was added at the base of both sides of the bulkhead. This was shaped from 1/32" x 1/32" strip. Simply round off one corner and glue it in front of all bulkhead sections except the doors.

When the bulkhead is completed, you can install all of the 1/8" thick deck beams aft of the bulkhead. Just cut them to length and glue them into position. Make sure they fit well. If they are too tight it will force them to bend out of shape. This would also create an uneven surface to plank later. You may want to temporarily position all of the beams first. Then lay a plank on top to test how well it sits across all of them. Make any necessary adjustments before you glue them in.

The Speaking Tube...

Just forward of the bulkhead you will see the speaking tube. A 3/32" diameter brass tube should be cut to length. Use the plans as a guide (you should cut it slightly longer). The top of the tube is flared. To create this, push a screwdriver or an awl into the tube. Work it around slowly to flare the top of the tube. Only a slight flare is needed to achieve the look we are shooting for. Drill a hole on deck for the speak-

ing tube. There will be a deck coat at the base of the speaking tube. Another one will be needed for the quarter deck as well. Its basically a round washer made of wood. These can be made from a 3/16" x 1/16" strip. Drill the hole in the plank first so the speaking tube will fit through it. Then cut the piece free as a tiny square. You can slowly cut the outside to create the round shape. Round off the top. You will need two of these.

Glue one of the tube bases on deck over the hole you drilled for the speaking tube. Paint the tube black. Examine the photo that shows the speaking tube in position. The second base has been slipped onto the tube and allowed to slide up and down. This will be positioned later after the quarter deck is planked. To be safe, don't glue the speaking tube in position yet. Set it aside and add it later after you plank the quarter deck.

In that same photo you will also notice the mizzen mast coat. This is the washer-like piece that forms the base around the mizzen mast. This has been laser cut for you (1/8" thick). Round off the top of the mast coat and glue it into position. Four eyebolts should be painted black

The laser cut hanging knees with six bolts made from 28 gauge black wire.

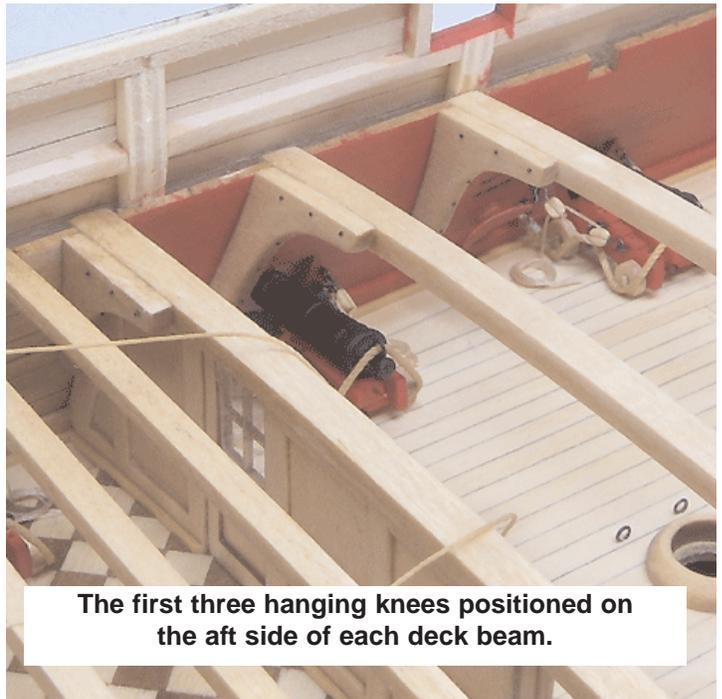


and glued around the mast coat as shown. To finish off this step, drill the two holes for the ship's wheel rigging. The ropes (.018 tan) need to be glued into the holes now. It will be very difficult to do this later. These ropes will eventually be wrapped around the drum of the ship's wheel. Cut two VERY generous lengths of line and glue them into the holes. Make sure they are glued into the holes securely. These two lines can be draped over the stern for now which will keep them from getting in your way. We won't be adding the ship's wheel for a while and they should be carefully tucked aside.

The Second Bulkhead...

The second bulkhead is made just like the first. It is positioned under a deck beam in the same manner. Install the next two deck beams (3/16"). The second bulkhead will be positioned under the second beam. But before you add the bulkhead, you might want to install the hanging knees and lodging knees for all three (3/16") deck beams you added up to this point. There will be easier access at this point and getting them done a little at a time makes the job less tedious.

The hanging knees (1, 2 and 3) and lodging knees (28 and 29) are an optional detail. If you plan on fully planking the quarter deck and fore-castle they won't be visible anyway. It's entirely up to you. You can also leave a portion of the deck open to show them. This will make the fittings below more visible as well. Only half of the quarter deck and fore-castle will be planked on the prototype. The port side will be left unplanked. This will give the observer a good view of the great cabin and all of the gun deck cannons and fittings below. It's a trade-off how-



The first three hanging knees positioned on the aft side of each deck beam.

ever. Leaving the entire port side of the quarter deck open will mean that the 6 pounders on that side cannot be installed. There wouldn't be any deck planking to sit them on top of. Only the starboard side cannons will be displayed on the quarter deck and fore-castle. There are so many possibilities. You should take a look at photos of contemporary models to see how many different arrangements are possible. Choose the one you like the best.

The knees are all laser cut (3/32" thick). They have been shaped to fit as tightly against the bulwarks as possible, but they will still require some sanding, shaping and beveling. The hanging knees are added first. You should work on only one pair of knees at a time to avoid mixing them up. Remove the first pair of hanging knees (1) and sand the laser burn from their edges. Test it to see how it fits. The hanging knees for the quarter deck will be positioned on the aft side of each deck beam. You may have to bevel the lower leg of the knee so it will fit flush against the bulwarks. When you are satisfied with how it fits, drill six holes for the bolts that would have secured them in position.

Three of the holes will be drilled along the side of the upper leg of the knee. These bolts would have secured the knee to the deck beam. The other three should be drilled down the front of the



Lodging knees positioned on the model with 5 or 6 bolts.



lower leg. These bolts secured the knee to the bulwarks. The bolts will be simulated like those made for the cannon carriages. 28 gauge black wire will be pushed into each hole. Cut off the excess so the bolt protrudes slightly "proud" of the knees surface. This is a great way to simulate these bolts. They should absolutely be added to each knee before you glue them into position. You might also decide to touch up the "head" of each bolt with some black paint. The wire will be shiny after you snip off the excess. Stain the hanging knees and glue them into position. See the photos provided.

NOTE: Make sure the top of the hanging knees are flush with the top surface of each deck beam. If you examine the plans, you will notice that some of the hanging knees will need to be angled. They should be angled clear of any gun ports. This is true for the second pair (2) of hanging knees you will be installing. The three bolts for these knees should be positioned lower on the upper leg of the knee. You will have to sand the top of the angled knees flush with the top of the deck beams. Once these knees have been angled away from a gun port the aft side of the upper leg will be higher. You need to leave enough room for this by lowering the three bolts. This will become clearer once you test fit the angled knee. Test fit the second pair of knees before you add the bolts...just to be safe. Look at where your bolts would need to be positioned

after you sand the top of the knee flush with the top of the deck beams.

The lodging knees (parts 28 and 29) can be added after the three pairs of hanging knees (1, 2 and 3) are completed. These are similar to the hanging except the bolt pattern is different. Each lodging knee will receive five or six bolts depending on its length. The leg of the knee that sits against the bulwarks can have either two or three bolts depending on its length. This leg of each lodging knees has been left slightly longer so you can cut it to be a perfect fit. Don't add the bolts until after you shape it to fit. Examine the plans for the orientation of the lodging knees.



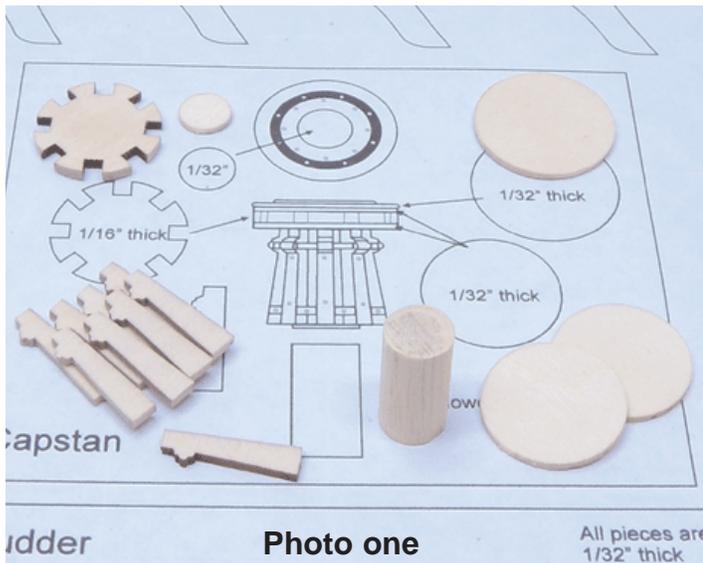


Photo one

The top of each knee should be positioned/sanded flush with the top of the deck beams. See the photos provided.

When the two pairs of lodging knees are completed you can assemble and install that second bulkhead. Remember to sand both sides of the bulkhead pieces to reduce its thickness.

Building the Capstan

Prepare all of the laser cut pieces that will be assembled for the capstan. See photo one. Sand them free of laser burn. If you plan on leaving the completed capstan with a natural finish vs. painting it, you should also stain each piece before assembly. This will reduce any blotchiness caused by glue staining.

Assemble the four components for the capstan

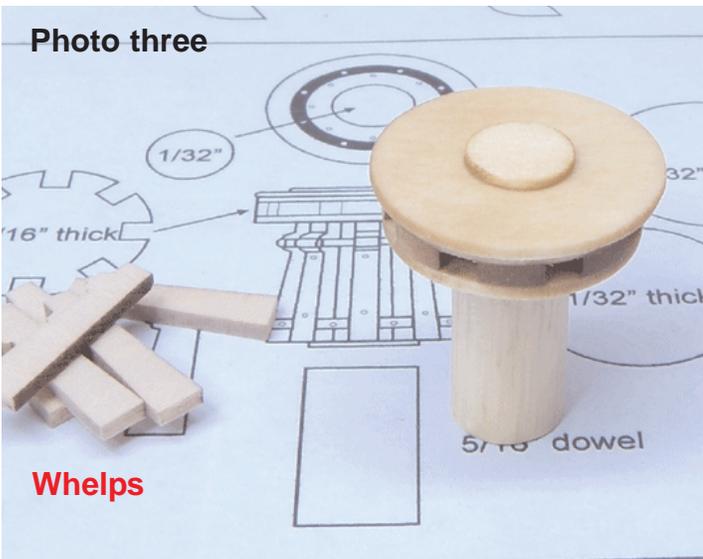


Photo three

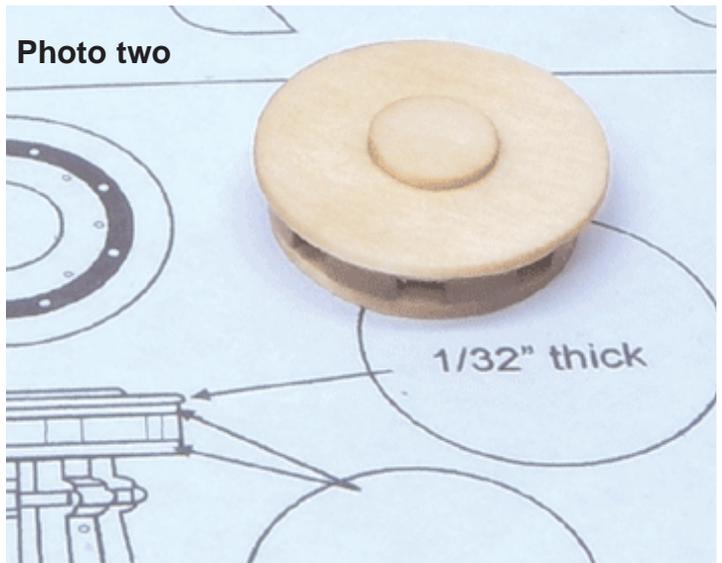


Photo two

drumhead. These are the circular 1/32" thick pieces and the sprocket-like piece. See photo (2) provided. Then cut a 5/16" dowel to length as shown on the plans. Glue the capstan drum on top of the dowel (photo 3).

Take eight laser cut whelps and glue them around the dowel. Carefully position the whelps consistently around the dowel.

Small chocks should then be added between each pair of whelps. These are small pie-shapes pieces that you must cut from a 1/32" x 1/8" strip. The chocks must be custom fit between each pair of whelps. There are two chocks between each pair of whelps as shown on the plan. This completes to initial capstan construction. (Photo 4)

At this point, only a few more details need to be added. You can simulate the bolts that would

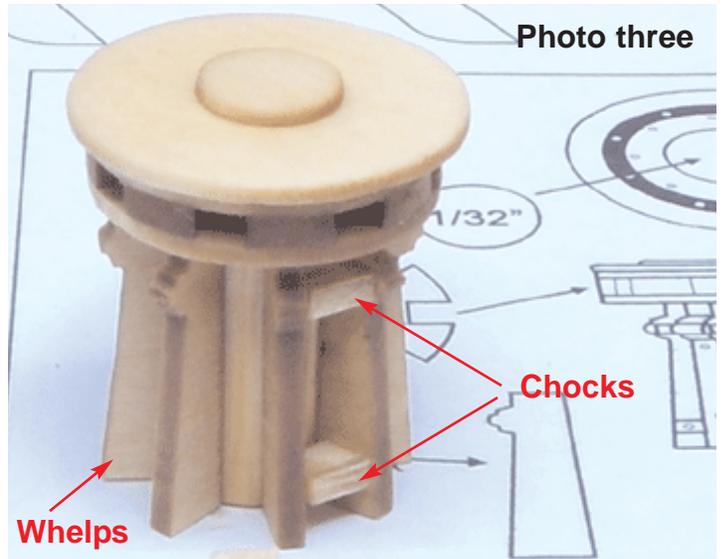
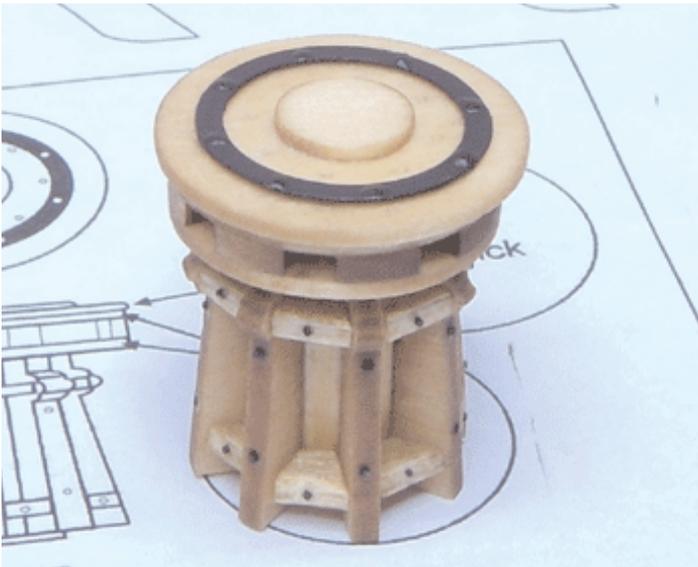
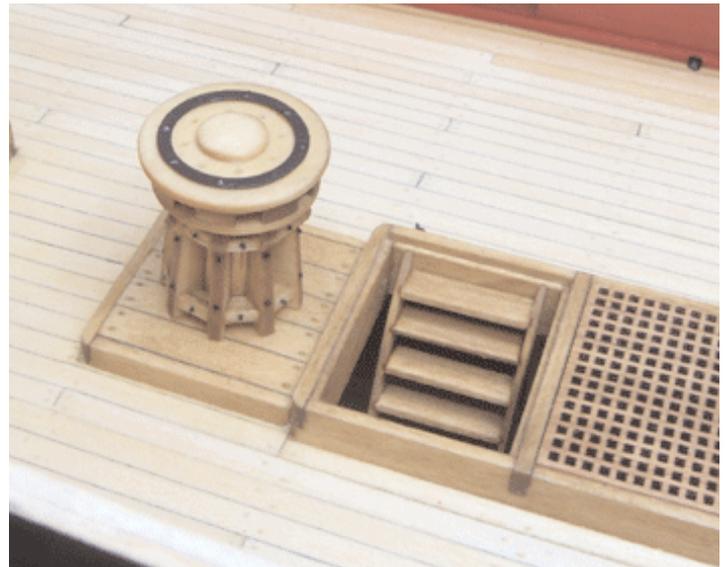


Photo three



have held these pieces together by using 28 gauge black wire. This is the same technique you used several other times throughout the project. They are located on the front of each whelp and on the chocks. A photo shows the completed capstan with bolts installed prior to painting. A photo etched ring should also be painted and glued to the top of the drumhead. You can simulate the bolts on the top of this ring just like you did for the rudder pintels and gudgeons.

Finally, drill eight small holes into the top of the drumhead just inside the iron ring. These holes should be left open. A pin was inserted into them to help secure the capstan bars when it



was being used. You can see another photo of the capstan painted red. After you decide on the finish you like best, glue the capstan into position.

Make two capstan pawls from strip wood as shown in the photos. Glue them on the platform on the fore side of the capstan. They should be painted black.

The Companionway Railings

Paint and glue four photo etched stanchions around the two companionways. These are the two companionways on either side of the capstan. Be sure to use the right length since sever-





al stanchions of varying lengths are used throughout the kit. Compare them against the plans. The two stanchions at the back of the companionway are glued on the diagonal to make positioning the railing easier. All four should be glued into the top of the coamings. Be careful drilling the holes. The coamings are quite thin. Only a small hole is needed.

The railings are shaped using 28 gauge black wire. You could simply use black rigging line, but the wire creates a more finished look. Individual lengths of wire are used on all three sides. Measure the distance between each

stanchion and cut your wire slightly longer than needed. Then bend the ends at a right angle. That's all there is to it. Then insert the bent ends into the holes of each stanchion. You can see one segment of the railing that has yet to be positioned in the photo provided. Touch them up with some black paint after you glue all three into place.

More Deck Beams and Knees

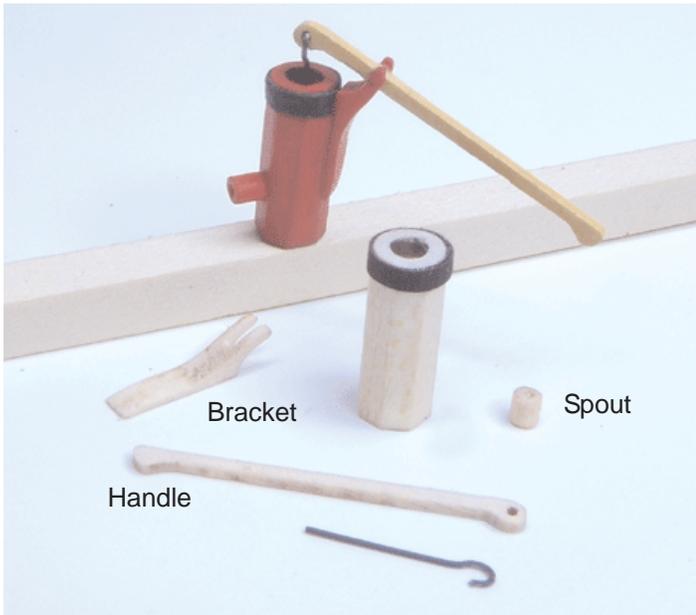
You can now add eight more deck beams over the work you just completed. Finish them with hanging and lodging knees. See the photo provided.

Main Jeer Bitts

The main jeer bitts will be placed directly beneath the last deck beam you added. These are laser cut for you. Since the laser cutter can only cut the sides of the jeer bitts to shape, you should file the profile on the front and back to match. This is optional but will be a nice detail. It's also more historically accurate. Just use a needle file to shape the moldings to match the side profiles. This can be done while removing the laser burn from the sides of each piece. The jeer bitts were supplied just a little longer than needed to compensate for small differences model-to-model.



The main jeer bitts



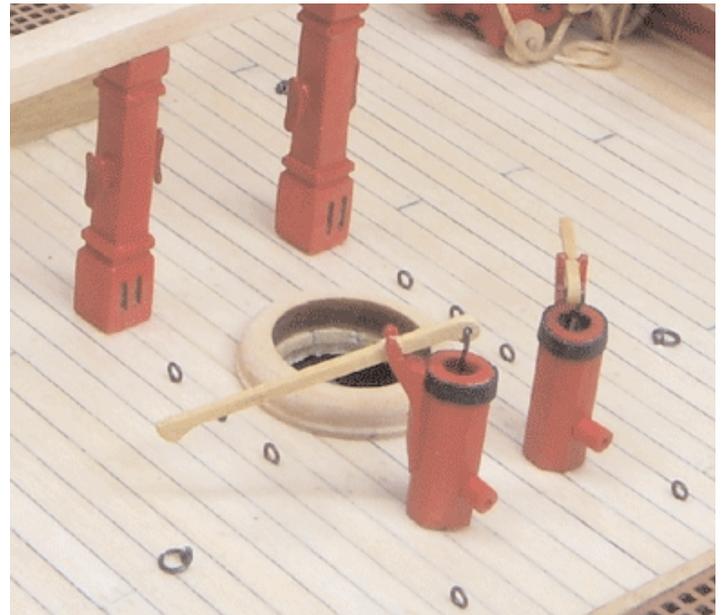
Hold them against the beam to determine how much needs to be cut from each piece. Remove a little from the top and the bottom.

Two sheave slots were also laser cut through the base of the jeer bits. The actual sheaves need to be glued into each slot. The sheaves have been laser cut from 1/64" plywood. This will add a level of authenticity to the jeer bits. Glue the sheaves into each slot.

A 5mm metal cleat was glued to each side of the jeer bits. Once completed, the jeer bits were painted red for the prototype of this model. Depending on your preference they could be left natural as well. See the photo provided that shows the jeer bits installed.

The Brake Pumps

The base of the pump is made from a 3/16" x 3/16" strip of basswood. Cut it to length using the plans as a guide. The brake pumps are eight sided. You will need to file/sand the four corners of this strip to make the eight sided pump tube. Drill a 1/8" hole into the top of the piece when you are done. This hole doesn't have to be very deep. You are only simulating that it is a hollow tube. Wrap a length of black paper (1/16" wide) around the top of the pump to simulate the iron band. Black pinstripe tape would also be good for this purpose.

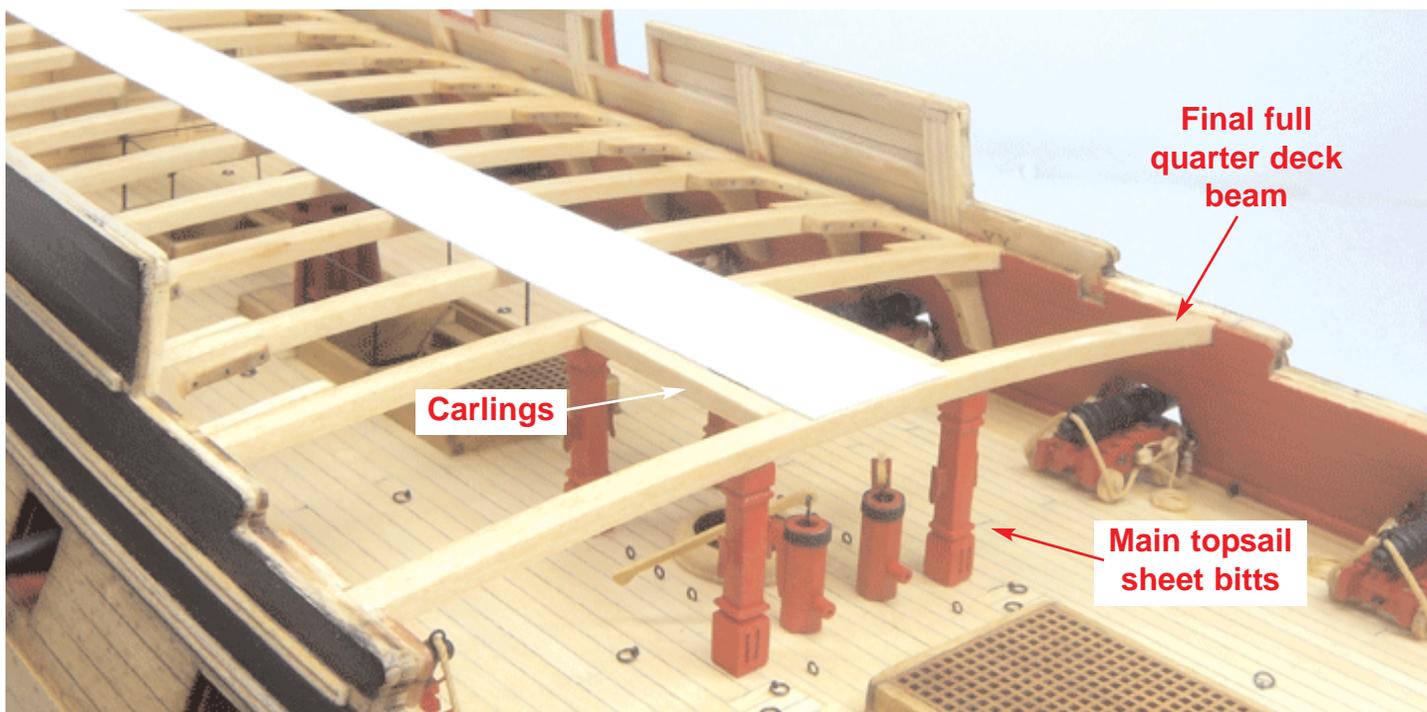


Carefully sand the two laser cut pieces for the pump handle and bracket. These are very delicate so be gentle. Remove as much of the laser char as possible or you could simply paint them as is. But the bracket needs to have a small slot filed into the top to accept the handle first. Use a small needle file to make the slot. It only needs to be 1/32" thick to accept the handle. Glue the bracket to the pump tube. You may need to notch it so it fits flush against the tube and iron band.

The spout will be made from a 1/16" diameter dowel. Cut it to length and drill a small hole into the end of it. Glue this to the pump tube as well. On the prototype model the pump was painted red at this point in the construction.

The pump handle was painted to simulate natural wood. A length of 28 gauge black wire was shaped as shown in the photo provided. It was hooked to the hole laser cut through the pump handle. Then the pump handle was glued into position. The wire was pushed into another small hole drilled into the bottom of the pump tube.

Glue the pumps on deck when you are finished. See the photo provided that shows the pumps glued into position. You will also notice that the main mast coat and some eyebolts were added. Examine the plans for the locations of the eyebolts. The mast coat is laser cut (1/8" thick).



This was sanded to shape like the mast coat for the mizzen mast. But an additional lip or groove was filed around the base of the main mast coat. This type of detail is often seen on contemporary models. It is shown here as an optional detail that you can add. It all depends on whether you feel comfortable filing and shaping such a detail.

NOTE: With these elements completed, the final *FULL* quarter deck beam can be glued into position. You can see how one segmented beam is

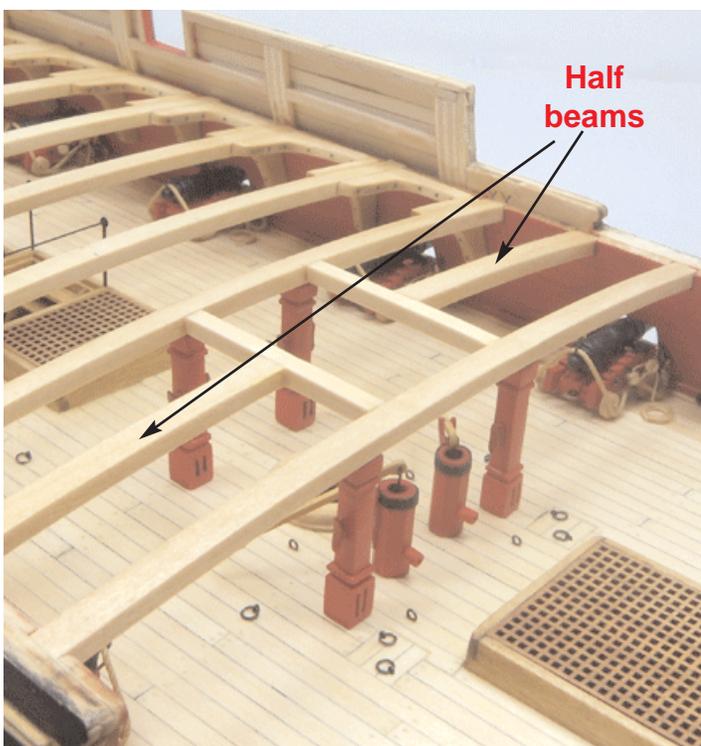
also needed but this will be added later. Examine the plans carefully. So remember to glue the last *FULL* deck beam into the correct notches of the deck clamps. You will need to leave the next pair of available notches unoccupied for now and place the full deck beam into the last open notches in the quarter deck clamp.

The Main Topsail Sheet Bitts

The main topsail sheet bitts are exactly the same as the main jeer bitts. They are just a little shorter. Refer to the instructions for the main jeer bitts to complete them. The main topsail sheet bitts should be glued under the last quarter deck beam. They are positioned just alongside each brake pump. A photo is provided that shows them in position.

Adding the Carlings

The carlings are timbers that run bow to stern between the deck beams. In actual practice the end of these beams would have been mortised into the deck beams. This feature is shown on the plans. However, depending on your comfort level, you may opt to simply butt them against the side of each deck beam. This is how the carlings were installed on the prototype. Before you begin adding them, plot where the carlings should be located. They are not placed between



every pair of deck beams. They should be carefully centered down the hull from bow to stern. The distance between each pair of carlings can vary depending on where they are used. Examine the plans carefully.

To help position them down the center of the deck properly, you can cut a strip of paper to be as wide as the space between each pair of carlings. Most of the carlings are the same distance apart. Then lay the strip on top of your deck beams and carefully center it. Then place a reference mark on each deck beam where a carling needs to be added.

The carlings on the prototype were made using a 1/8" x 1/8" strip. Each pair was carefully cut to length. When you glue them into position avoid forcing a carling between two beams if it is too long. You will force the beams apart and distort the final appearance on your model. When setting the carlings between pair of deck beams, don't set them flush with the top of each deck beam. The carlings weren't as deep as the deck beams. Only set them down about 3/32". Let the tops of the carlings sit higher than the deck beams for now. Once they are all in position, sand

or plane them down to sit flush. This will ultimately send quite a bit of dust down onto the gun deck. A good way to remove the dust would be to blow it away using a can of compressed air. This is a good tool for the job as long as you don't spray it too close to delicate pieces. If you are nervous about creating too much dust, you can use 1/8" x 3/32" strips instead. But you will still have to sand them somewhat, and it is inevitable that saw dust will accumulate on the gun deck before you complete the project anyway.

NOTE: The pair of carlings directly over the mizzen mast coat is not positioned as far apart as the others. Examine the plans carefully. There is also another small strip of 1/8" x 1/8" wood that needs to be added between these two carlings. It runs port to starboard. This piece is known as a "ledge".

Once all of the carlings are in position, you can add the two remaining half-beams that still need to be installed. See the photo provided. Then add the remaining hanging and lodging knees (38, 39, and 12). This will complete the quarter deck framing and the fittings below it.

