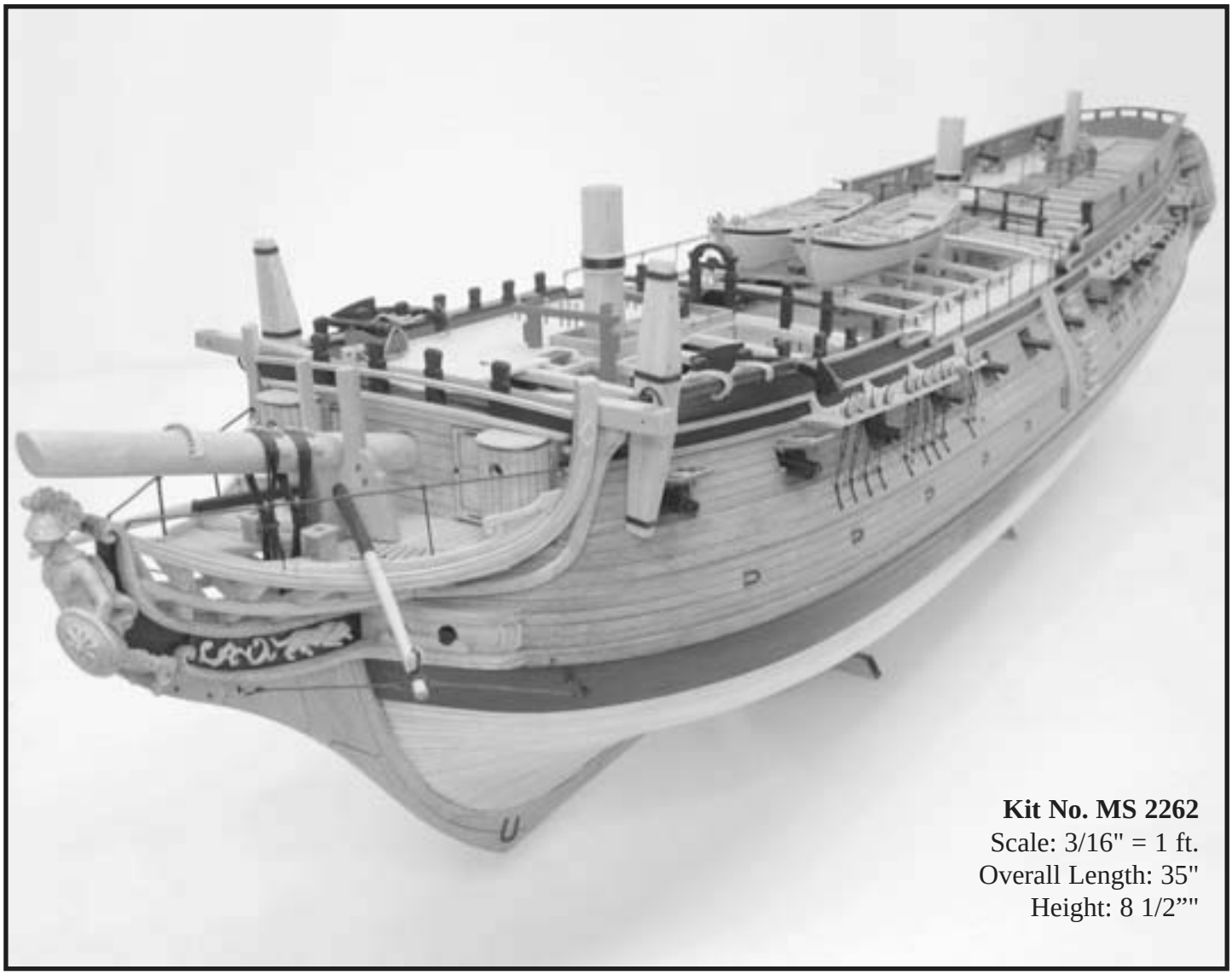
**INSTRUCTION MANUAL**

MODEL SHIPWAYS
• QUALITY KITS SINCE 1946 •

# *Modeling The US Frigate Confederacy 1778*



**Kit No. MS 2262**
Scale: 3/16" = 1 ft.
Overall Length: 35"
Height: 8 1/2""

Instructions and model prototype prepared by **Chuck Passaro**

**Manufactured by Model Shipways, Inc - Hollywood Florida**
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# A Short History of the Continental Frigate Confederacy

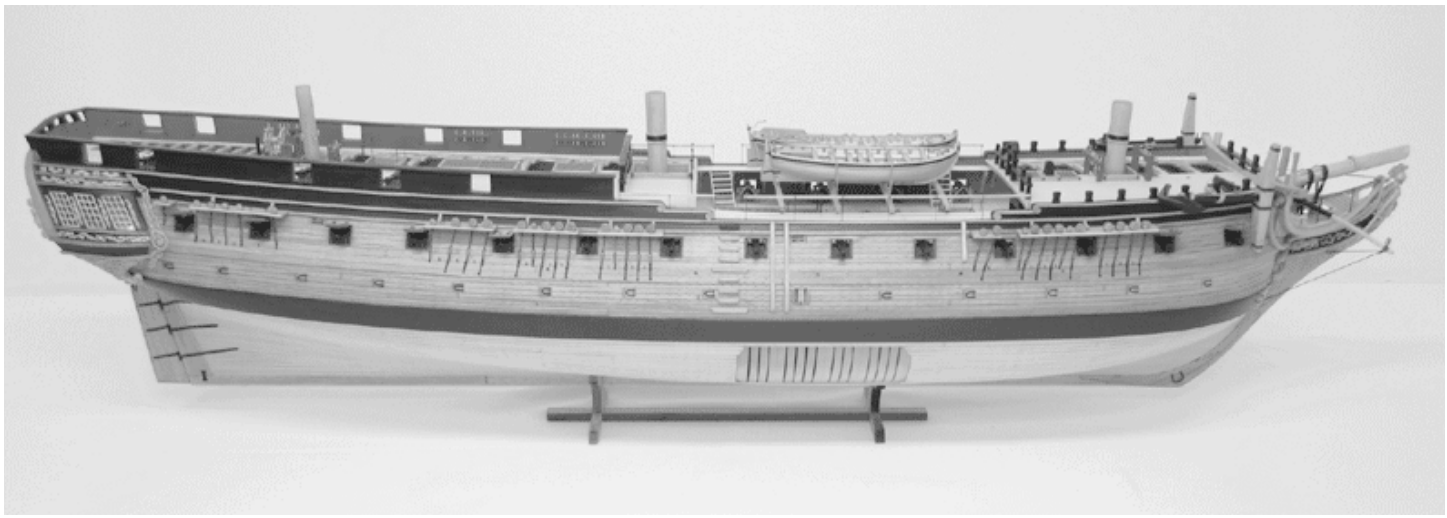
## An introduction by Naval Historian Russell Barnes

Among the frigates built for the American Continental Navy was a 36 gun frigate built at Norwich Connecticut during 1777-78. On January 23, 1777, Congress "Resolved, that two frigates, one of 36, and the other of 28 guns, be immediately undertaken in the state of Connecticut." Construction began in February 1777 with Joshua Huntington overseeing the building of the new frigate. On February 18, Huntington's papers note "began to work".

Although the designer is unknown, it is possible to speculate who actually built the ship. Three names have been mentioned over the years. Howard Chapelle credited Jedidiah Willets, although he did not quote a source for that claim. Douglas Robinson believed that Joshua Huntington was the builder, because it was his shipyard where the ship was built. However, a 1779 Continental Congress Marine Committee report refers to a "Mr. Tolman who built the Confederacy…." Dr. Robinson also mentioned that Benjamin Talman's widow credited him as the builder. Although Robinson gave no source for the widow's claim, a Rhode Island shipbuilder named Benjamin Tallman was possibly the "Mr. Tolman" in the Marine Committee report, building the ship under Joshua Huntington's supervision.

As construction continued into the summer and fall of 1778, Congress made several decisions regarding the new ship. Congress declared "That the new frigate building at Norwich, in Connecticut, and now nearly ready to be launched, be named the Confederacy." The choice of captain followed quickly. In late September, Richard Henry Lee wrote Connecticut Governor Trumbull that his friend, Seth Harding, was chosen "for the command of the Continental ship of war building at Norwich, in Connecticut." In early November, the Norwich Packet reported, "The ship CONFEDERACY, of 36 guns, built at Norwich River, was launched on Saturday last. By the best judges she is pronounced the finest ship yet built on the continent." The ship was launched on November 8, 1778, after nearly two years of construction.

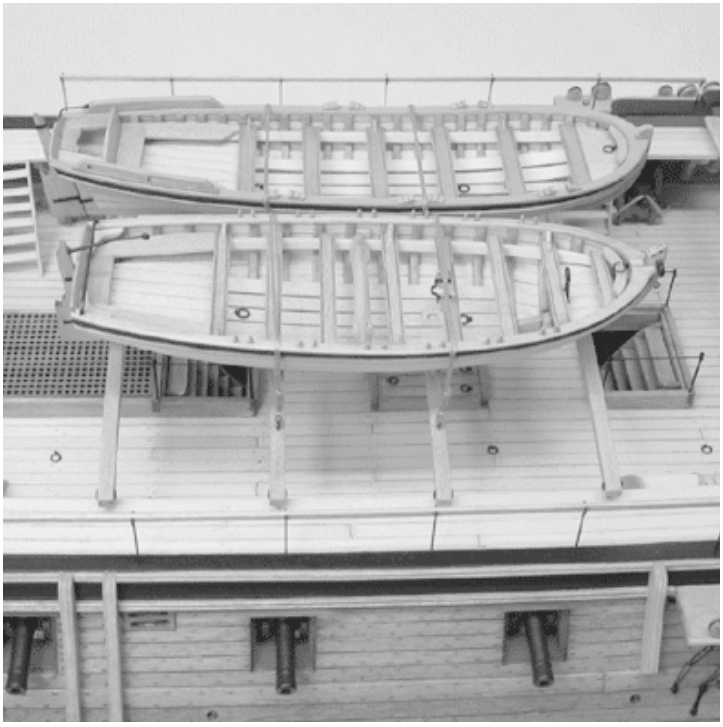
Modern observers have studied the Confederacy's design and agree that she was an

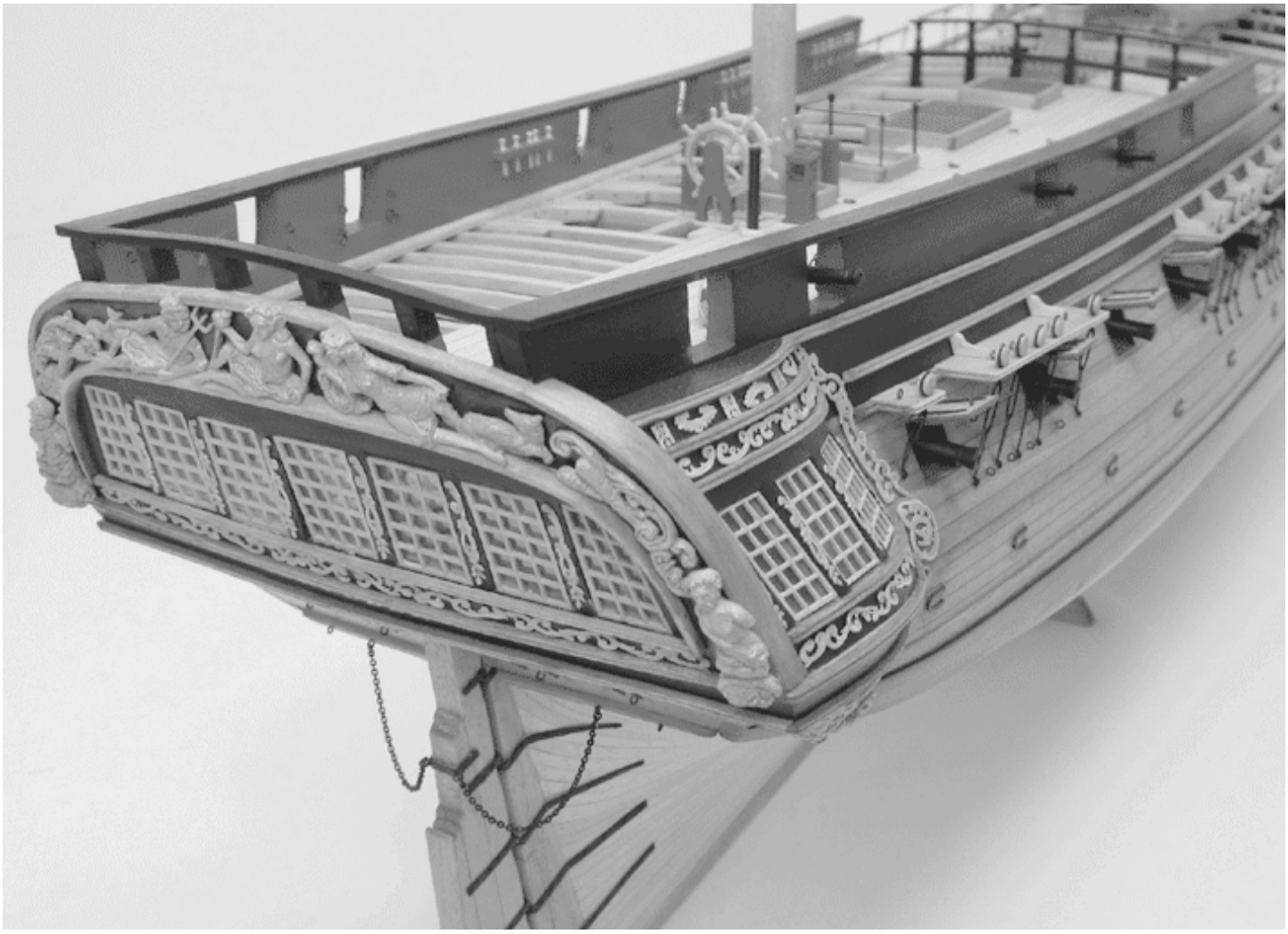


interesting vessel. Chapelle called her "a remarkable vessel", noting she was "very long for her rate" with a "narrow beam and shoal draft" and was "an ornate ship, profusely carved." She measured nearly 160 feet on the gun deck, 23 feet longer than a comparable British 36. John F. Millar wrote, "Although the hull form was quite sharp, making her potentially fast, she still retained the beakhead bulkhead which had been discarded by other frigate designers a long time previously." Robert Gardiner called "this highly unusual ship" a "throwback to the galley-frigates of the previous century" because of her numerous lower deck row ports.

Confederacy 's active career did not begin until the spring of 1779. In May, Captain Clarke of the brig Joseph reported seeing Confederacy and that "the frigate sails admirably well." Although her fitting out had been delayed, Confederacy was given a series of important missions throughout the remainder of the year. In August, she was ordered to meet the American brig Eagle and escort her into port, the brig carrying a cargo "of much consequence to the public." In October, she was tasked with carrying a political delegation to Europe on an important diplomatic mission. John Jay and his family sailed in Confederacy only to see the ship dismasted by a hurricane near Newfoundland on November 7. Captain Harding managed to work the ship southward. She made Martinique in mid-December with six feet of water in the hold and "in the midst of perils." She would remain at Martinique for several months trying to make repairs.

The following year proved difficult for Captain Harding and his ship. After an extended stay at Martinique, on March 17, 1780, the ship's chaplain reported to Benjamin Franklin that "the frigate Confederacy is now sparred, and rigged, and almost ready for sea." However, even after making jury repairs at Martinique, Confederacy was hardly in condition for any further action. Upon reaching Philadelphia on April 20, it became obvious that she would need extensive repairs. She did not return to sea for several months. She was reported in action in August when she captured several vessels near Newfoundland. In October, she was damaged in a collision with the newly launched ship Shelaly, "having her head carried away" in Philadelphia harbor.





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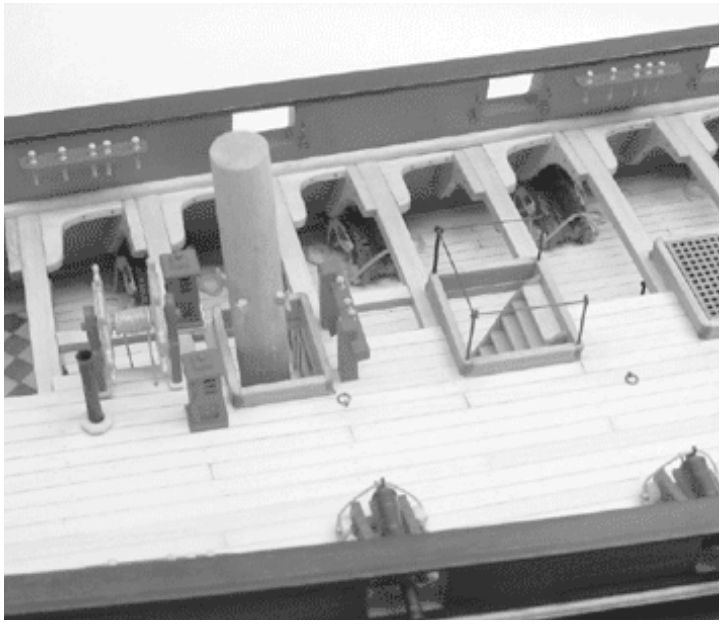
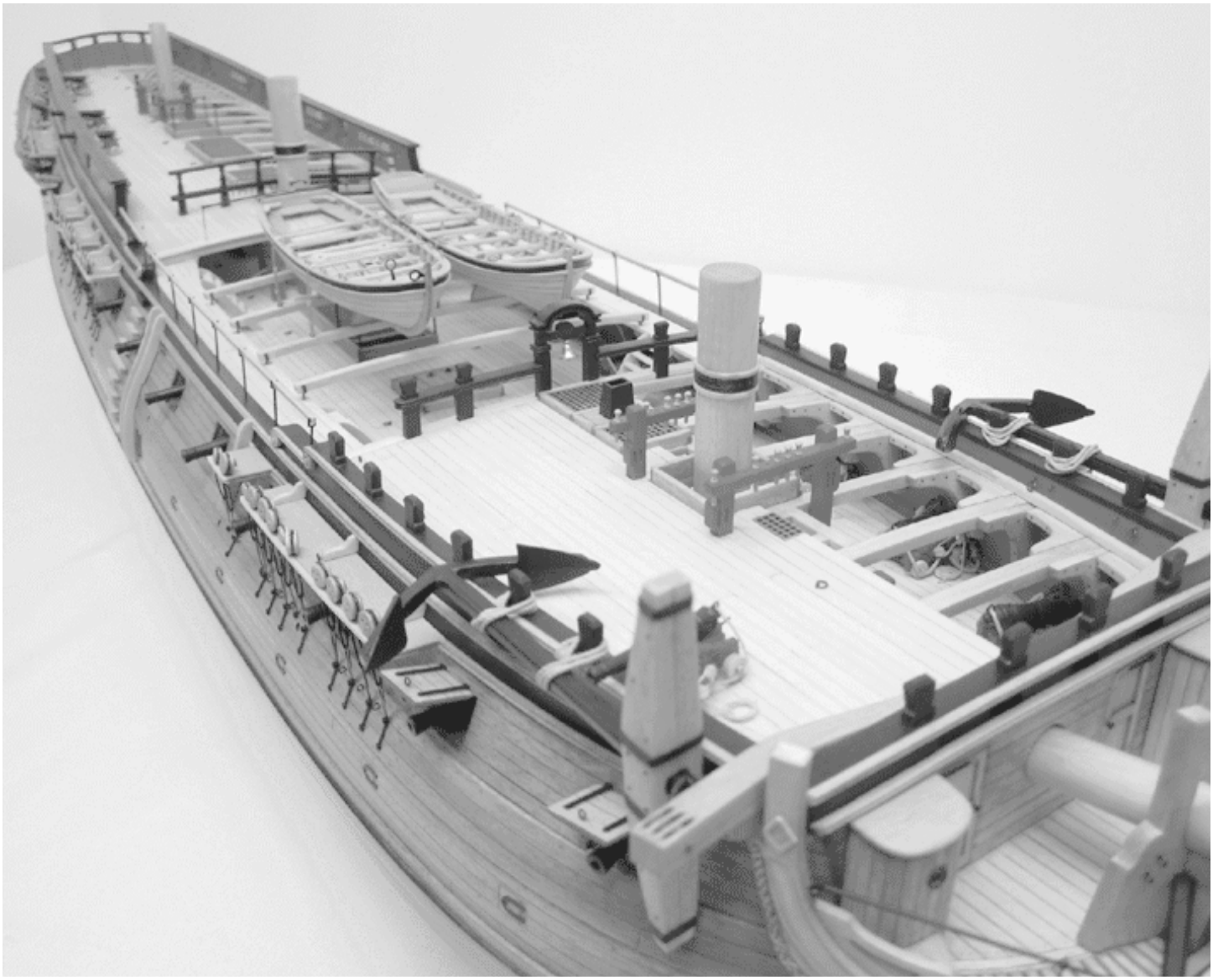
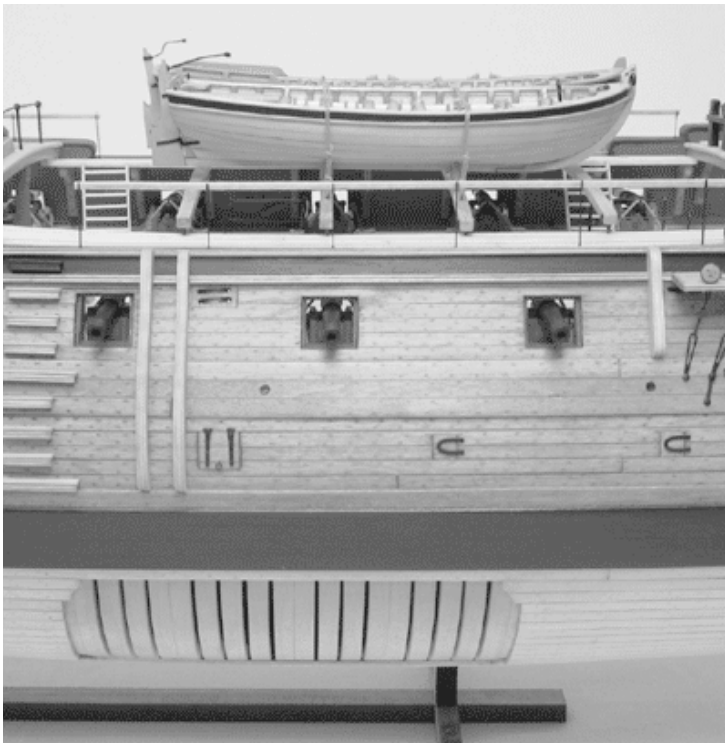
The year 1781 began with some success when, in March 1781, Confederacy and the sloop Saratoga captured a 32 gun ship. The Connecticut Journal reported that this ship was the Stag, carrying 200 slaves "and a large quantity of plunder" from St. Eustatius. However, bad luck soon followed. In April, she was escorting a convoy of 32 merchant ships bound for Philadelphia when they encountered a British warship off the American coastline. Captain Harding ordered the merchant ships to scatter and he cleared for action, sailing straight for the British ship. Soon, another British ship appeared and Confederacy was now hopelessly outnumbered. Captain Harding ordered Confederacy's surrender. The first ship he encountered was the 44 gun Roebuck, while her consort was the new Amazon class 32 gun frigate Orpheus.
The initial reports of Confederacy's capture indicated that she would be a useful addition to the Royal Navy. Vice Admiral Arbuthnot reported that the ship "is well constructed and proportioned, and only two years old." The ship was taken into the Royal Navy under the name Confederate. The suggestion was made to add to her upper works to make her a two-decker since she had the necessary keel length.

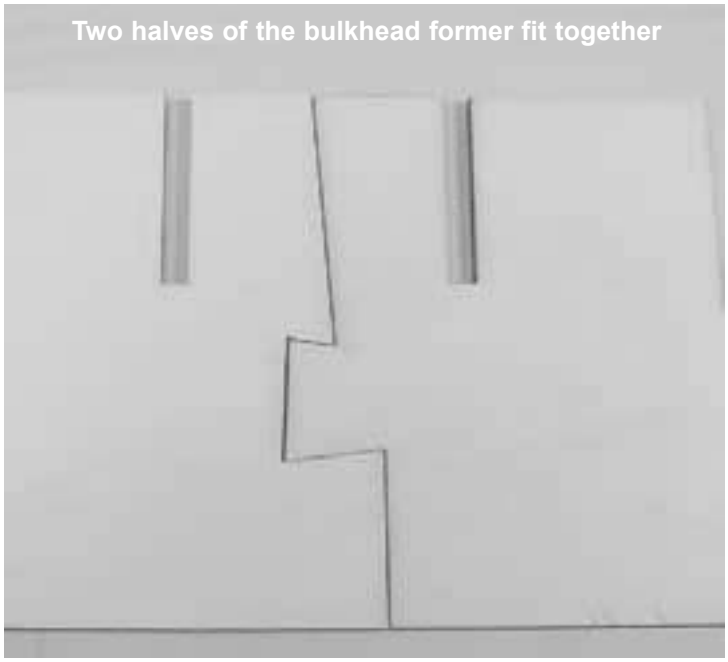




However, a subsequent survey found extensive rot and other problems in her hull and suggested breaking her up. Dr. Robinson wrote that green timber used in her construction was the cause for her poor condition upon her capture.



Although a very attractive ship, Confederacy's career was typical of the American naval effort during the Revolution. There were great plans and beautiful ships, but in the end, it was a failure. She was, as Dr. Robinson noted a "beautiful, but unlucky ship." Fortunately for future generations, the British took her lines and preserved them. We can now study these designs and build models of these ships to celebrate the history they represent as well as the ingenuity of the American colonial shipwrights and their unbounded faith in the American dream of freedom.



Two halves of the bulkhead former fit together

# Chapter One

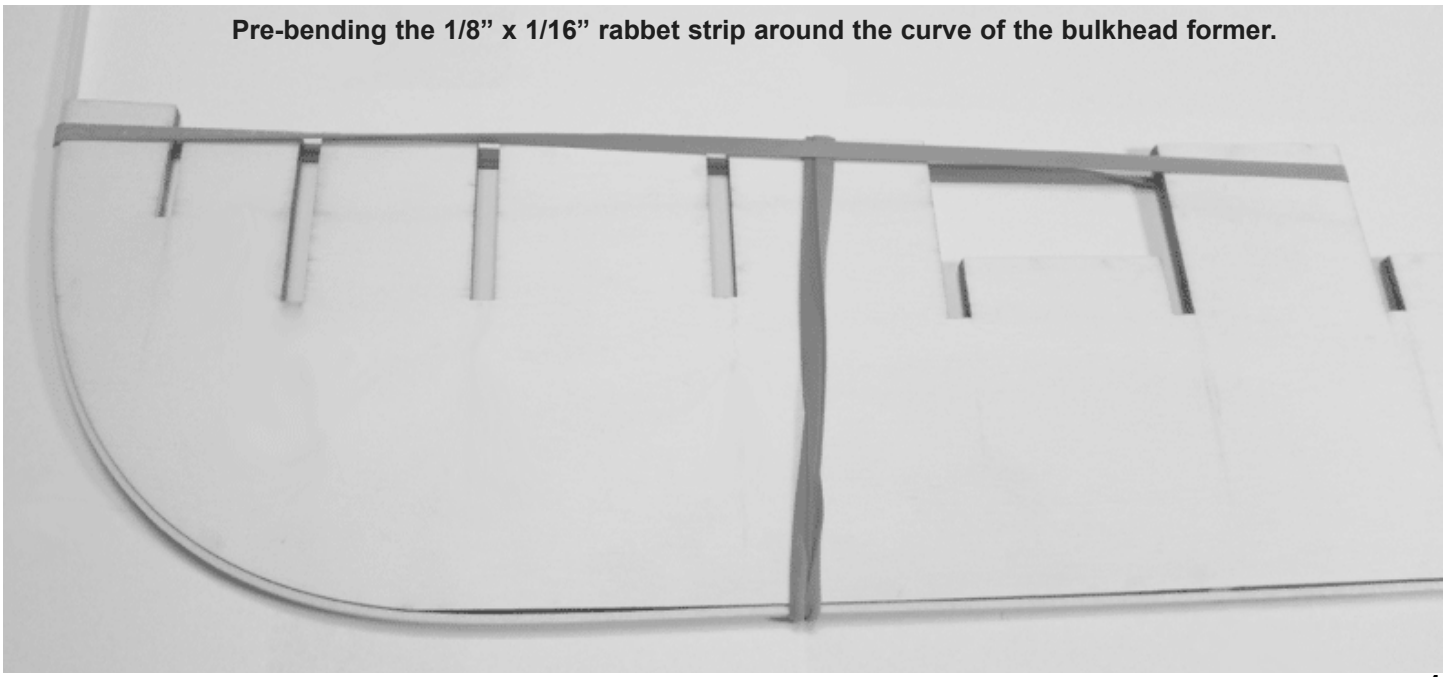
## Assembling the bulkhead former, keel and stem…

Before you begin building your model we recommend that you read several chapters ahead in this instructional guide. You should also familiarize yourself with the plans by examining them very closely. Examine plan sheet two in particular, as this sheet contains the framing plan. The first few chapters will cover the assembly of Confederacy's framing or "skeleton" and plan sheet two will be your blueprint for building it.

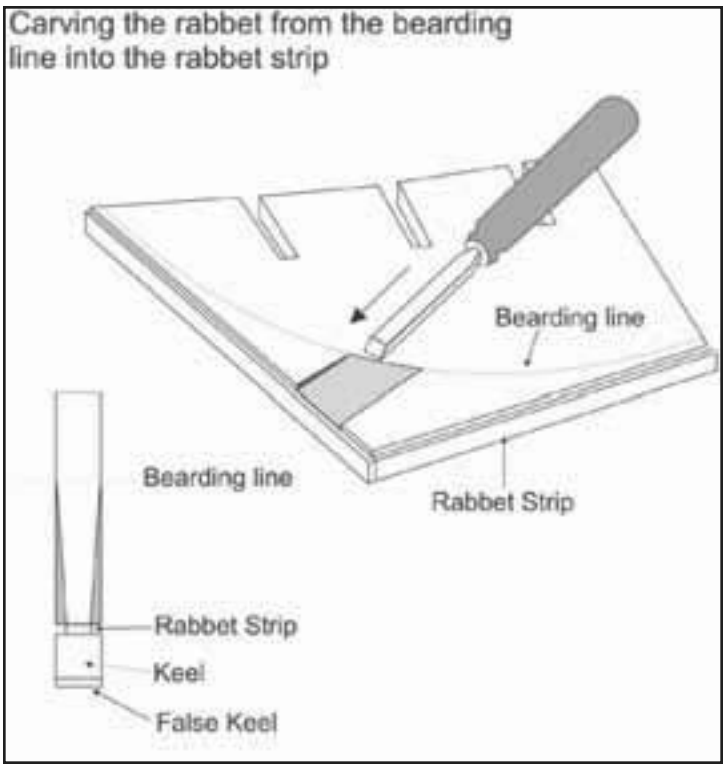
Building the skeletal foundation for any ship model is the most important part of the project. A poorly framed foundation can only lead to other problems down the road. It is understandable that most model builders prefer to work on those wonderful little details like assembling the gun carriages or adding the decorative carvings. But take your time building the skeleton for Confederacy. Go slowly and double check your measurements and part placement before you glue anything into position permanently.

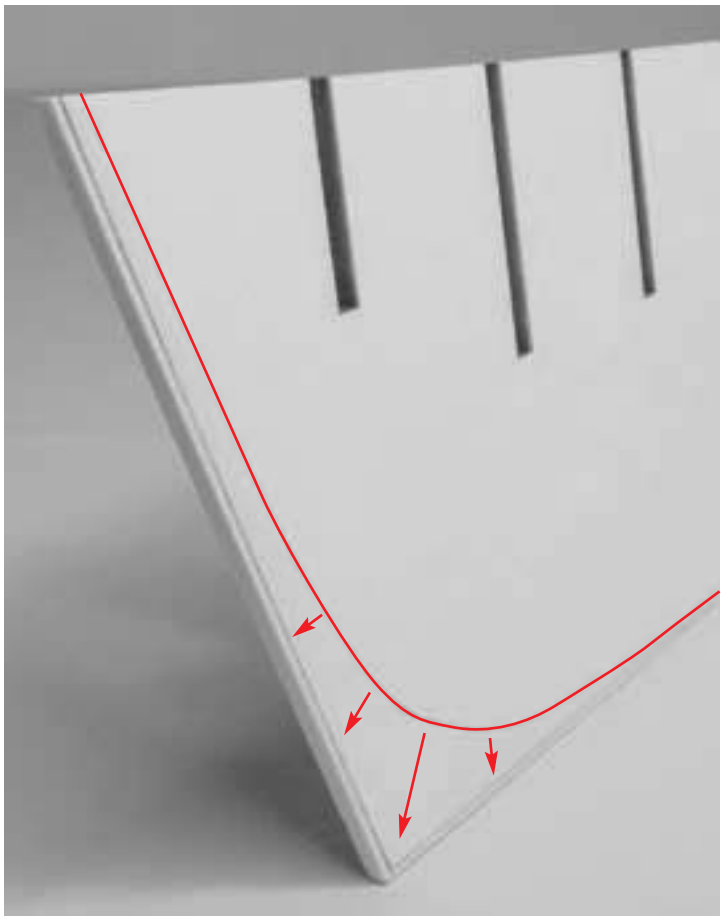
To begin, remove the two halves of the bulkhead former from the laser cut sheet (3/16" thick). Use a sharp blade in your hobby knife to cut the little tabs that hold them in the sheet. Do not try and simply push them out of the sheet as this may damage the pieces. Glue the two halves together. But before you do so, test how well the "puzzle piece" joint fits together. It may need some light sanding to fit together properly. A light sanding will also remove some of the burn residue left behind by the laser cutter. Your parts will accept the glue better if you sand this laser char off the edges of each piece first. Don't sand the parts to aggressively though. You don't want to change the shape of that joint to the extent that it will no longer fit together well. Only a light sanding is really needed.

When you glue the two halves together it is best to do so on a very flat surface. You want the



**Pre-bending the 1/8" x 1/16" rabbet strip around the curve of the bulkhead former.**



*Sand or carve a taper from the bearding line into the rabbet strip. This taper should be gradual as shown in the photo above.*

"back bone" of your model straight and true. Using a sheet of plate glass is the ideal surface for assembling the two halves of the bulkhead former. See the photo on the top of the previous page. Sand the joint lightly after the glue dries.

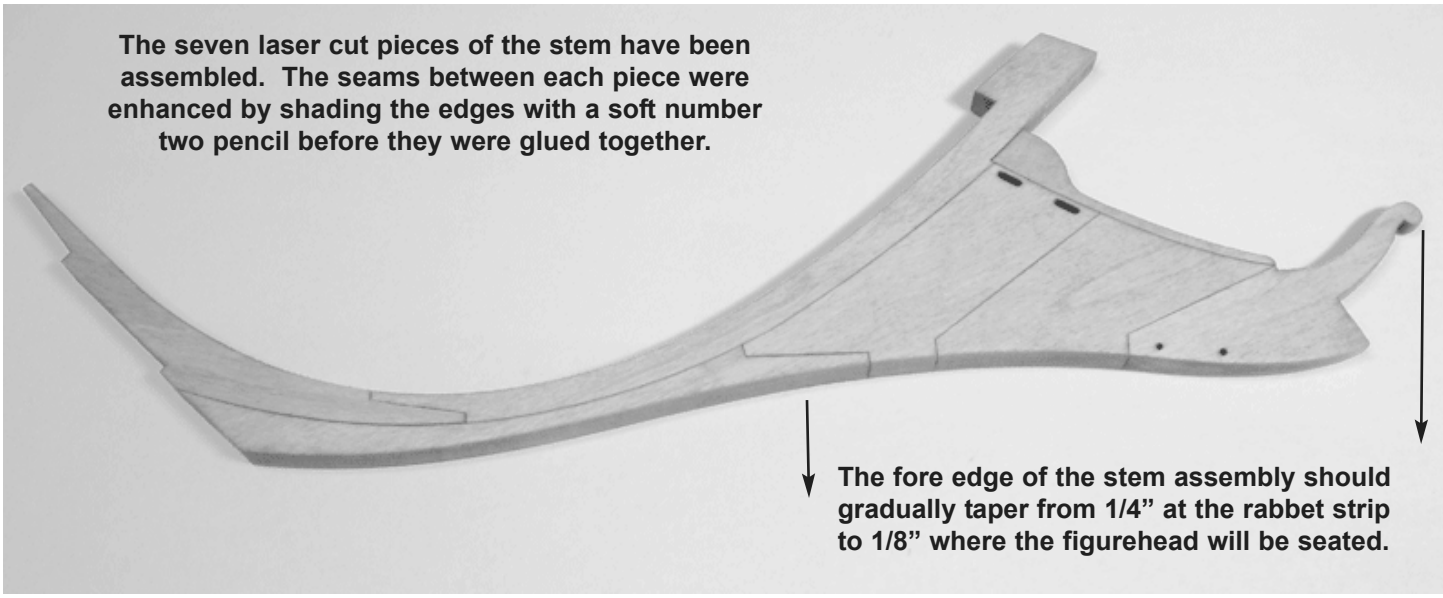
The next step will be to add the "rabbet strip". You will be using a 1/8" x 1/16" basswood strip as the rabbet strip. This strip is glued to the bottom edge of the bulkhead former. An additional piece should also be glued onto the back (or stern post) edge of the former. Check plan sheet two for the details. The rabbet strip is not as wide as the thickness of the bulkhead former. The strip should be centered along the edge leaving a 1/32" rabbet on both sides.

Bending the strip up the "bow" of the bulkhead former while you are trying to glue it into position can be tricky. It will be easier if you pre-bend the strip to conform to the curve before you attempt to glue it on. To do this, soak the strip in some warm water for about 5 minutes. Then carefully and slowly bend the strip around the curve of the bulkhead former (remember…no glue yet).

Secure the strip tightly against the curved section of the bulkhead former with some elastic bands. See the photo provided. Set it aside for a couple of hours until the strip has dried thoroughly. Once the rabbet strip dries you can remove it. It should hold the curved shape with only a minimal amount spring back. Not having to forcefully bend the strip while at the same time trying to glue it exactly on the center of the former's edge should make this step a lot easier. You will need to use more than one strip to cover the entire length of the bulkhead former. The Confederacy was a very long ship.

**Tapering the bulkhead former into the rabbet strip…**

You have probably already noticed that there are two curved reference lines laser etched on one side of the bulkhead former. They are close to the edge at the bow and stern ends of the former. You will see these etched reference lines on many parts of the kit as you move forward. Unfortunately the laser cutter can only etch these




lines on one side of the pieces being cut. In this case, the two reference lines represent the "bearding line". The bearding line marks the location where the bulkhead former should begin to gradually taper into the rabbet strip. It needs to taper into the strip so there is no longer a hard rabbet along the edge in these areas. When you are planking the hull this will allow the planks to smoothly transition into the keel, stern post and stem. You must first copy the reference lines onto the other side of the bulkhead former. After you are finished transferring the bearding lines you can start tapering.

You can carve or sand the bulkhead former into the rabbet strip. Both methods will work and you should choose the one that you feel most comfortable with. See the illustration and photo provided that shows the stern tapered into the rabbet strip. The farther the bearding line is away from the rabbet strip the more gradual the taper becomes.

**Assembling the stem…**

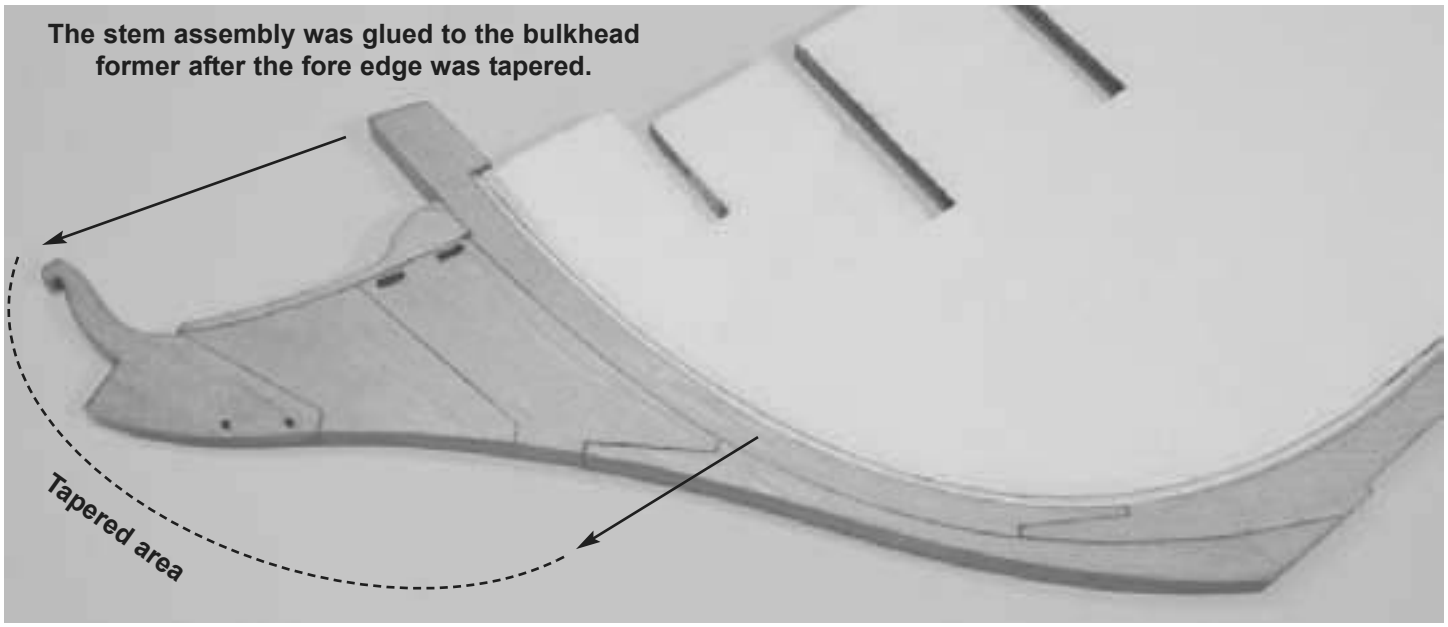
The stem for this model is assembled using seven ¼" thick laser cut pieces. Once they are assembled, the stem will closely resemble the "built-up" stem configurations used on the actual ship. This is however a more simplified version.

Carefully remove the laser cut pieces (S1, S2, S3, S4, S5, S6 and S7) from the sheet. The pieces are not laser etched with the part numbers, as this would have damaged the surface of each piece. But they are so uniquely shaped you shouldn't have a hard time locating them. Lightly sand the laser cut edges to remove some of the burn residue. Dry fit the pieces together to ensure a tight fit along the seams of each stem element. When you are satisfied with how they fit together, stain each piece with the finish of your choice. MinWax Golden Oak stain was used to finish the stem pieces on the prototype. You want to stain the pieces before you glue them together. Any glue residue left on the surface of the stem will soak into the soft wood and change the way the wood absorbs it. This can lead to a blotchy uneven finish if the assembly was stained after gluing the pieces together.

You might also consider darkening the edges of each piece to hi-light the seams between each section. Simply darken the stem edges with a soft #2 pencil before you glue them together. You can see the results by examining the photo provided which shows the stem assembly glued together.

**Tapering the stem assembly…**

The stem should be tapered in the area shown in that same photo. It should gradually be reduced in thickness from ¼" to approximately 1/8" where the figurehead will eventually rest. The easiest way to taper the stem would be to use a large sanding block. Sand both sides carefully to achieve the same taper on both sides of the stem

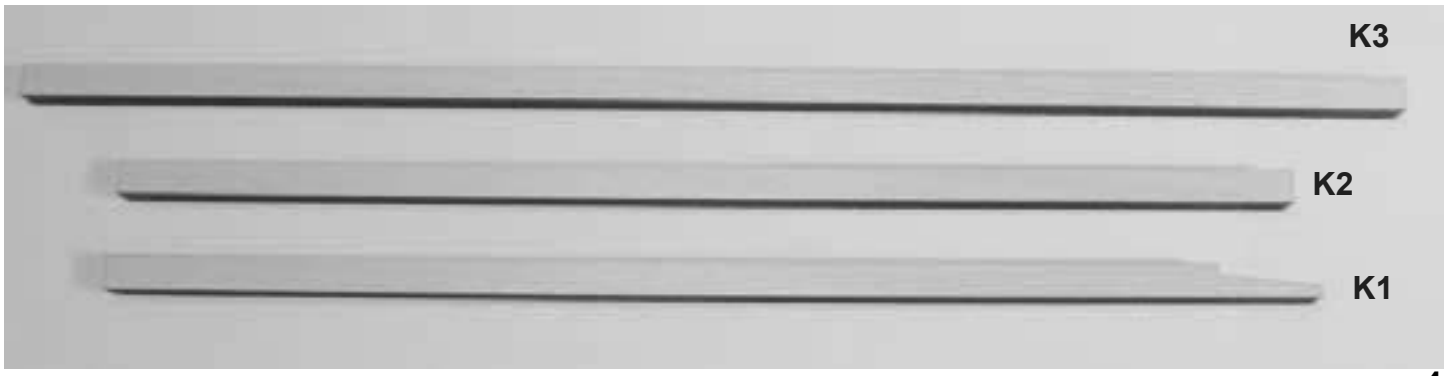


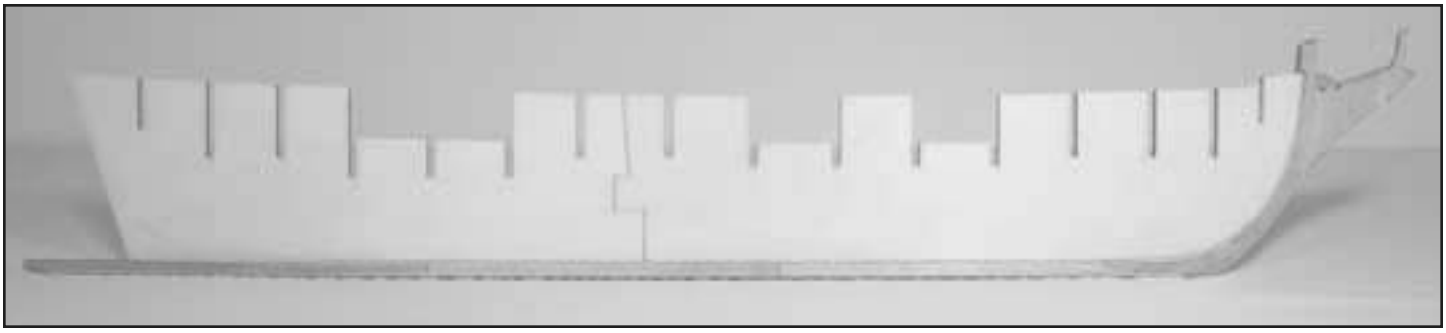

assembly. Do not reduce the thickness of the stem along its aft edge. This should remain ¼" thick. The tapering will of course remove the stain from stem's surface so once you have finished apply another coat. Once it's dry, glue the stem assembly onto the front of the bulkhead former. Carefully center the stem along the edge of the rabbet strip leaving 1/16" on both sides. See the photo provided.

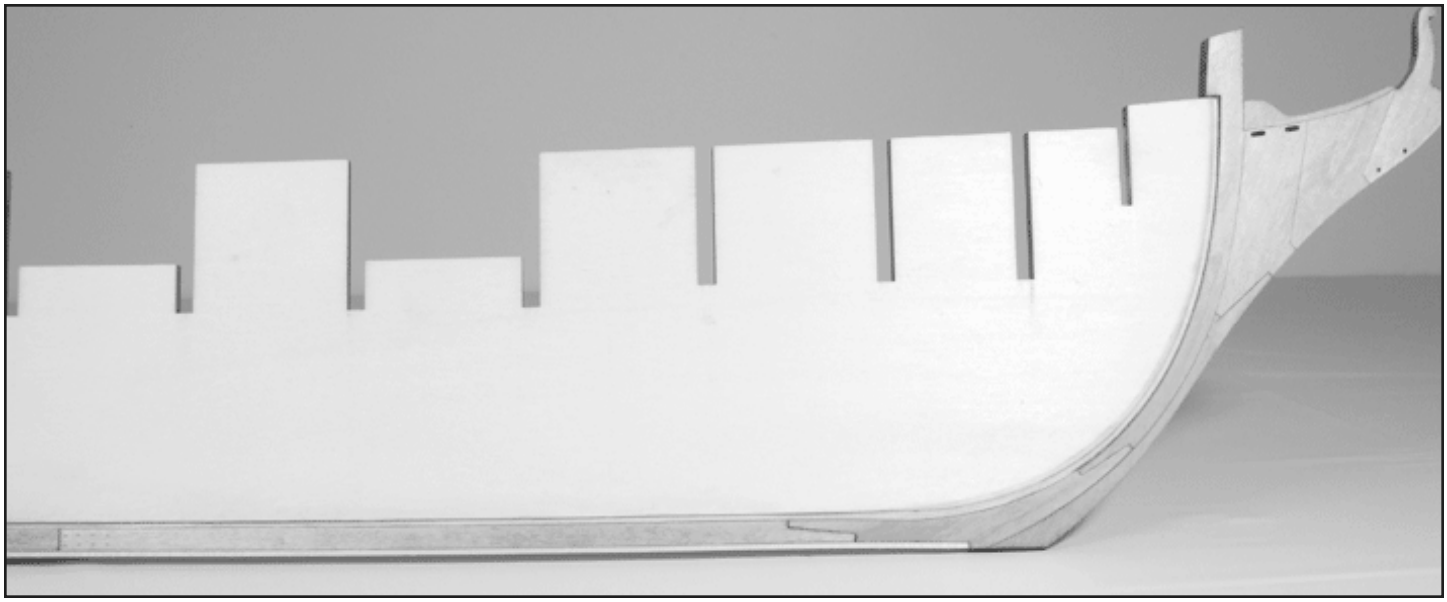
**Adding the keel…**

Remove and lightly sand the three laser cut keel pieces (K1, K2 and K3). See the photo provided. You will notice that K1 has been designed with a scarf joint on one end. This should be test fit to see how well it joins with the corresponding scarf on the stem assembly. It should fit well with minimal sanding. Glue this keel section to the rabbet strip. Once again, carefully center it along the rabbet strip leaving a 1/16" overlap on each side. Then glue the remaining keel pieces into position. These pieces would also have a scarf joint between each section. But this time the scarf was actually vertical rather than horizontal. Seeing as only one side of the model can be viewed at a time, a simple butt joint will do the job of simulating this well enough.

You will notice in the photos provided that the last piece (k3) was left extra long and continues off the back of the bulkhead former. Leave this section longer as shown. You will not be adding the stern post at this time. That will be done after the hull is planked. This last section of the keel will be trimmed to length at that time. It will be much easier to run your hull planking off the back of the stern rather than cut them to fit into the rabbet. This would have been the case if the stern post was positioned now. Once you complete the hull planking, it will be trimmed flush with the rabbet strip and then the stern post will be added. This will create a tighter/cleaner seam. The keel will be trimmed shortly after.

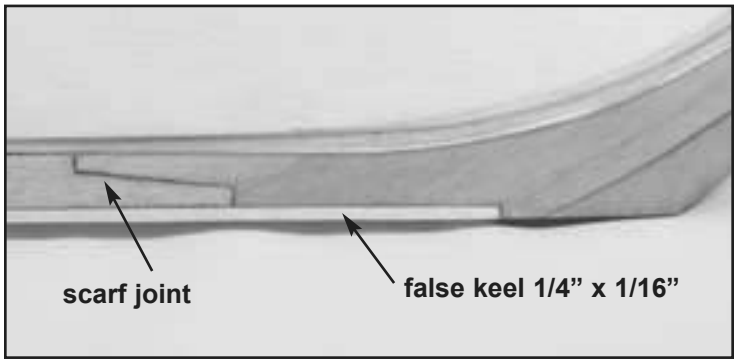


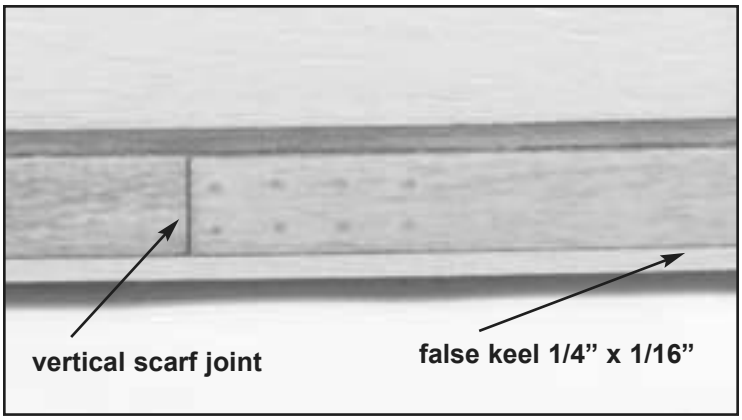




Each arm for these vertical scarf joints would have been bolted together. Eight bolts were commonly used and they would be a nice detail to show on your model. The bolts were roughly 1 ½" in diameter. On the prototype model a #70 drill bit was used to drill the eight holes. Don't drill all the way through the keel as this technique only simulates the bolts. You don't need to go very deep. Drill the eight holes on each side of the keel. Lightly sand the holes and fill them with some wood filler afterwards. This will do a good job of simulating the eight bolts along each keel scarf joint. Examine the photos provided which show this detail completed.

To complete this step a false keel (1/4" x 1/16" strip) is glued to the bottom of the keel. It fits into the notch at the bow and continues the full length of the keel. This strip is also left longer than needed. The false keel was used to protect the actual keel from damage. It was lightly fastened to the underside of the keel and easily replaced should the need arise.



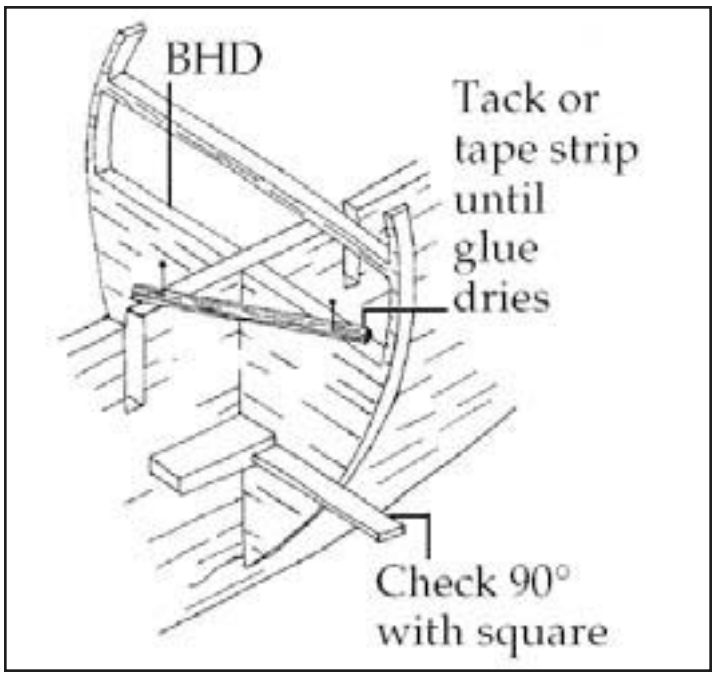

*Note the eight simulated bolts that fasten the two vertical scarf joints.*

# Chapter Two

## Adding the bulkheads, fillers pieces and cut-away frames…

Carefully remove the 16 laser cut bulkheads from the 3/16" thick plywood sheet (8,7,6,5,4,3,2,1,0,A,B,C,D,E,F and G). Lightly sand the laser "char" from all of the bulkhead edges. Test fit them into their corresponding slots of the bulkhead former. The bulkheads should fit snuggly. They shouldn't be so tight that you would have to force them into position. If they are too tight, sand the slots a little more until they do fit properly. Try to avoid making them loose by over sanding them. The slender bulkhead extensions are quite fragile at this stage so be very careful when handling them. They will break if excess force is applied to them. Some safety timbers will be made shortly to help protect them from sudden breakage but until that time "handle them with care".

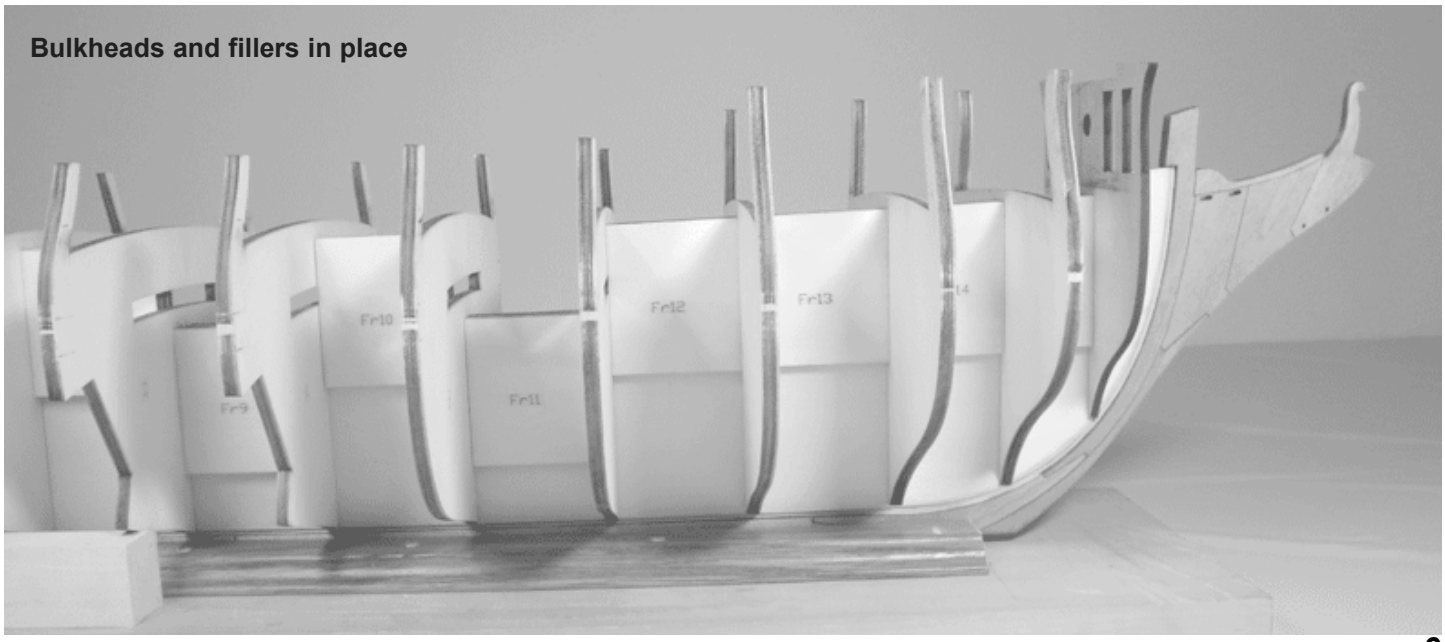
The bulkheads must be perpendicular to the bulkhead former. Use a machinist square to ensure they are as close to a 90 degree angle as possible. Keep this in mind as you glue the bulkheads into position permanently. See the diagram provided. This is most important with bulkhead number 8. Bulkhead 8 will be used to determine the positions of gun ports and sweep ports. A template will be lined up with bulkhead 8 so you can

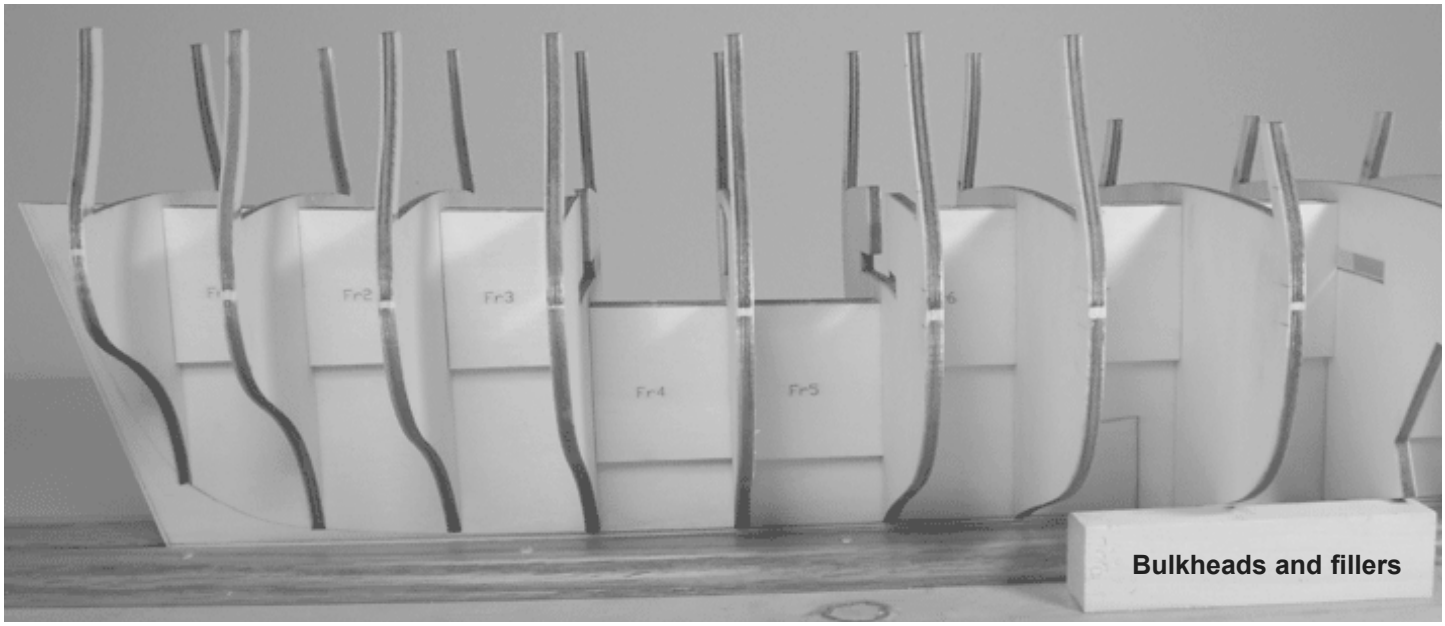



mark their locations along the hull. Having bulkhead 8 square with the keel will ensure that your port openings are spaced consistently along the hull on the port and starboard sides.

All of the numbered bulkheads should have the etched reference lines facing aft. Except for the center bulkhead. The lettered bulkheads should have the etched reference lines facing forward. This is very important.

Once the bulkheads are glued into position, a series of laser cut fillers needs to be added. These are 3/16" thick and will strengthen the bulkhead former significantly. They are laser


**Bulkheads and fillers in place**



**Bulkheads and fillers**

etched with part numbers FR1 through FR15. Start adding them at the stern and work your way forward. FR1 should be inserted between bulkheads 7 and 8. There are two of each filler. Place them on each side of the former before moving to the next space forward. The filler pieces are laser cut so they fit snuggly between the bulkheads. Make sure they are not too tight as this will force the bulkheads out of square with the BH former. Line up the top of each filler with the top of the BH former. See the photos provided. When you're finished, it would probably be a good time to construct some sort of working cradle or stand. It will help keep the hull stationary while you work on the model moving forward. On the prototype, a simple cradle was made using some scrap wood and molding. Two lengths of molding were nailed down the center of a 1" x 6" board. The space between the molding strips was 5/16" wide. The keel will fit nicely in this slot. Two blocks were used mid ship on both sides of the hull to stabilize it. You will see this work cradle in the photos throughout this guide. There are many types and styles of work cradles. You should select the style that makes it most comfortable for you to work with.

**Assembling the bow fillers…**

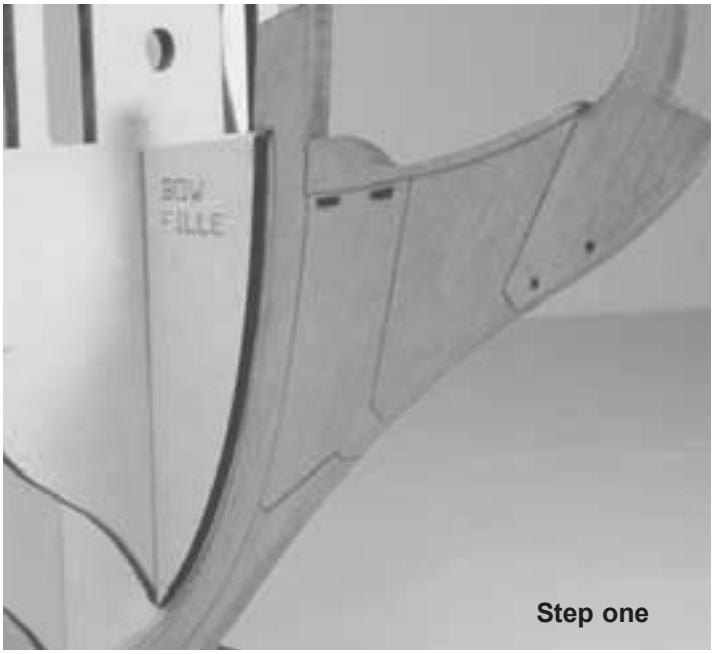
There are three filler pieces which will be positioned on both sides of the bow. Two are laser cut from 1/8" thick basswood (bow filler and BFD). The remaining filler is cut from 3/16" thick plywood (G1). These filler pieces can be assembled in the following order. Corresponding photographs show each piece being added.

*Step one*- Glue the "bow filler" against the bulkhead former (1/8" thick). Its aft edge should rest against bulkhead G. The top edge should be flush with the top of the bulkhead former. You will see in the corresponding photo how the front edge of this filler finishes the rabbet. You should end up with a 1/16" wide rabbet down the stem assembly which will accept the ends of your hull planking.

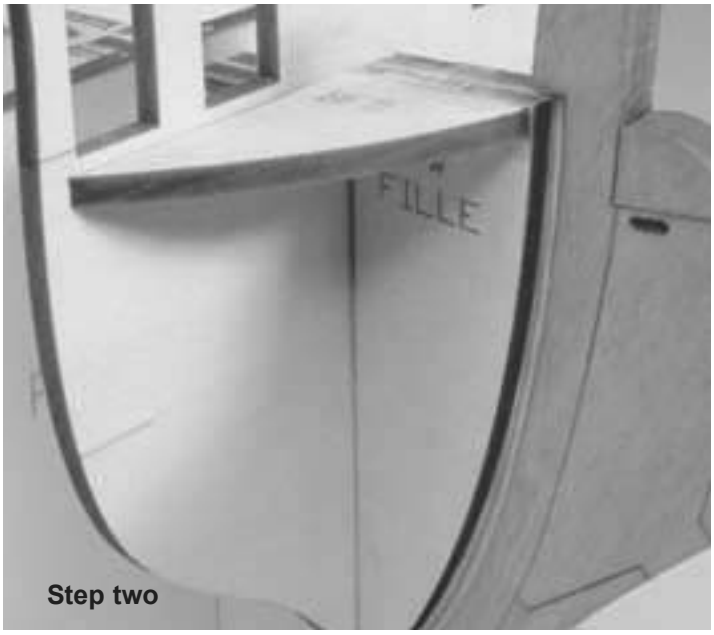
*Step two*- Glue the piece "BFD" into position (1/8" thick). This piece forms the deck surface for the beak head. The aft edge of this filler should rest against bulkhead G. The top surface should be 1/16" below the openings in bulkhead G. When the decking is added on top of this filler, it will be flush with the bottoms of those doorways. The inner edge of this piece should sit against the "bow filler" (flush with the top) that you added in the previous step.

*Step three*- Glue the laser cut piece G1 (3/16" thick) against the first bulkhead. This should be glued under the "BFD" filler you added in the previous step. Examine the framing plan and photos provided.

*Optional step* – Some model builders also like to add a solid block of balsa or basswood at the



Step one



Step two

bow. It would fill the space up completely and give you more support while planking the bow. If you prefer to have a solid block at the bow to plank over, then now would be a great time to add it. The hull will be faired shortly and sanded to shape.

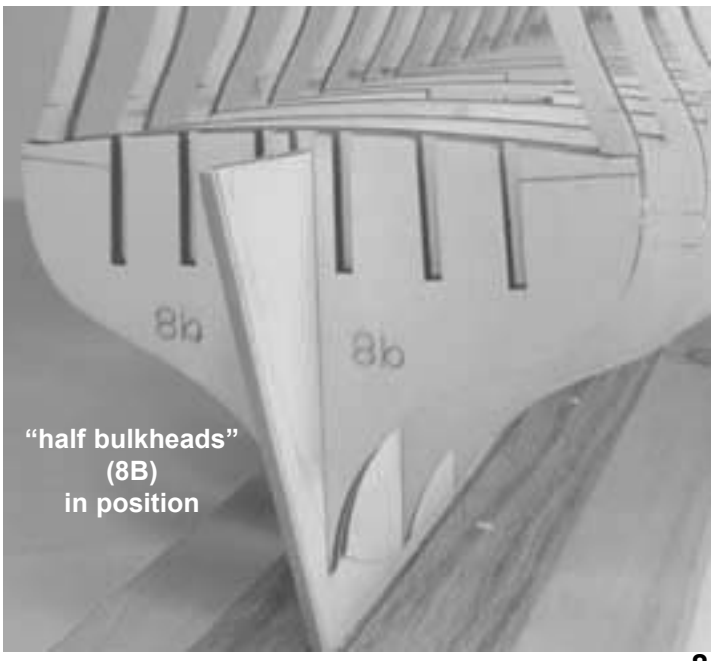
**Adding the stern "half bulkheads"…**

Two laser cut pieces (8B) are provided for the stern. These two pieces will help you establish the correct angles for the stern framing. They have slots cut in them and other laser etched reference lines to assist you later when you start the stern framing. Glue them against bulkhead 8. Make sure the top edge is flush with the top edge of bulkhead 8. The inner edges of 8B should also rest against the bulkhead former. The laser etched reference lines should face outward so you can see them.

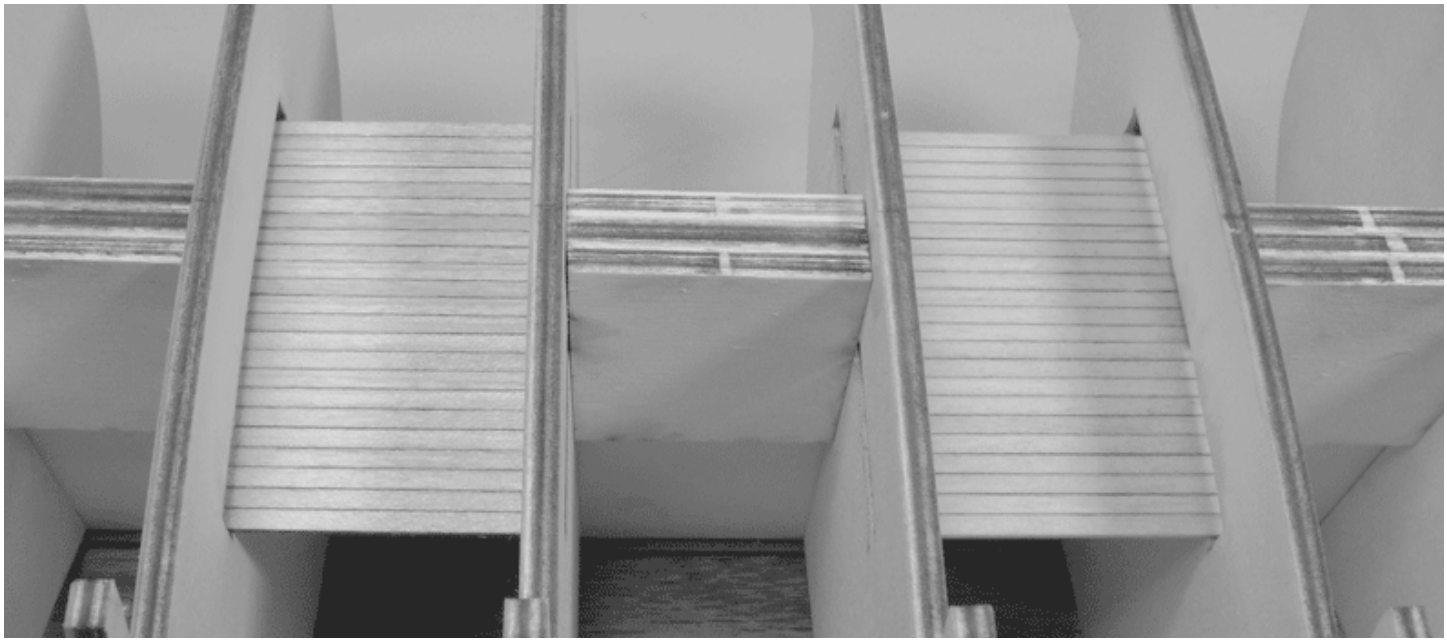
**Planking the sub-gun deck platforms…**

There are three sub-deck platforms which can be planked at this time. They will only be partially visible through the open hatches of the gun deck. These platforms will provide a place to rest the ladders on. They should be planked with 1/8" x 1/16" basswood strips. Even though these platforms will only be partially visible it is still a good idea to simulate the caulking seams between

Step three



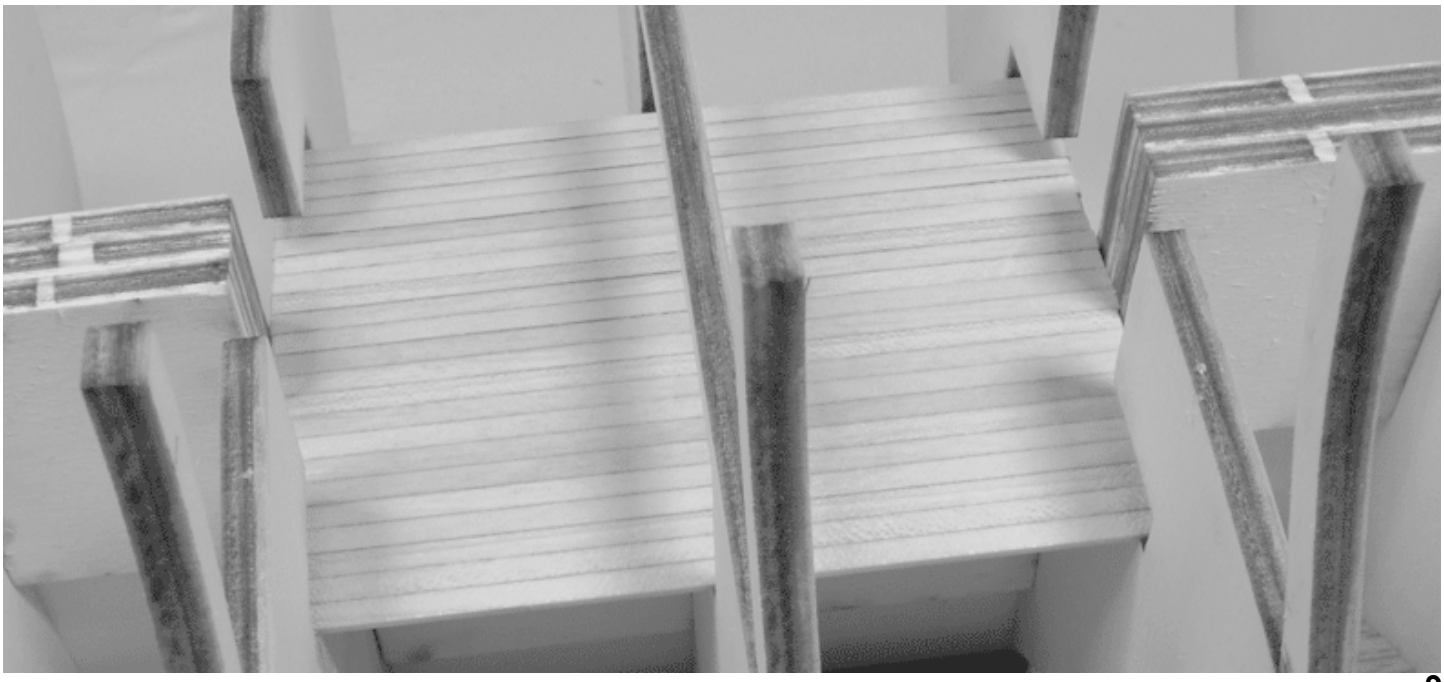
"half bulkheads"
(8B)
in position

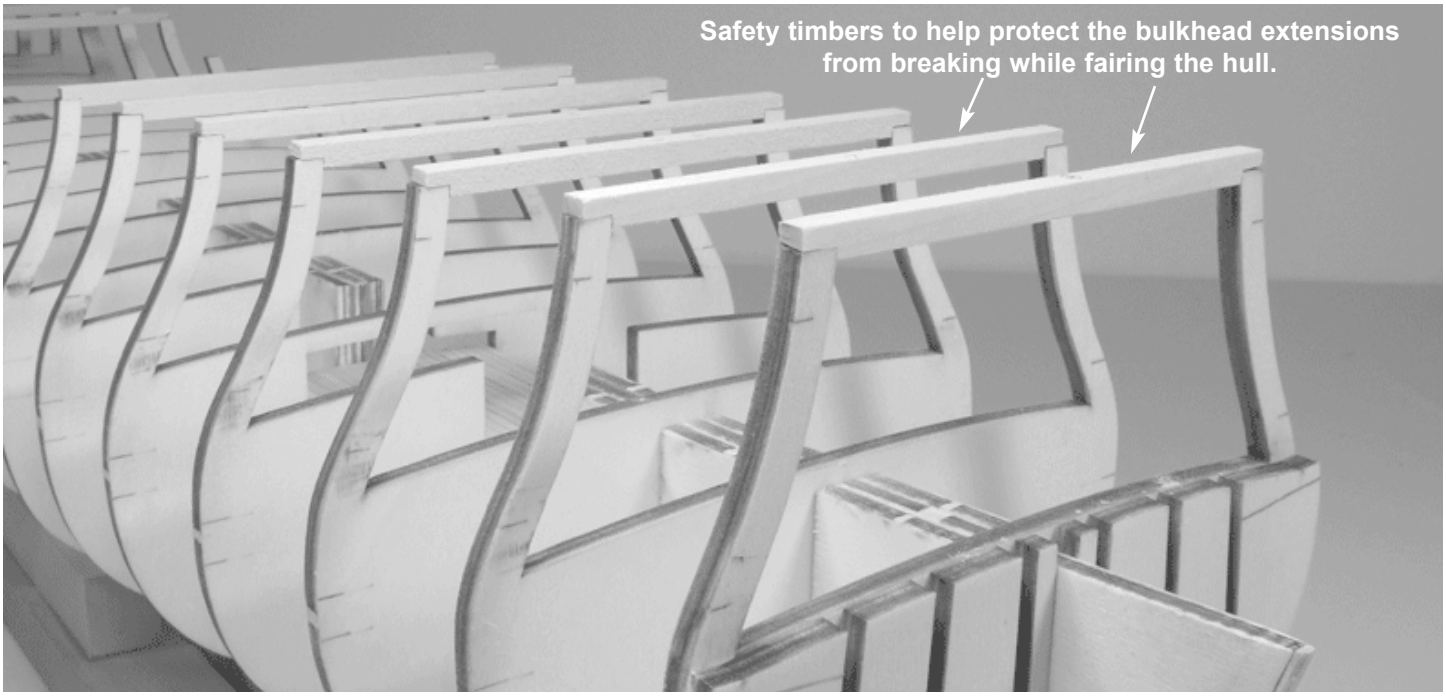


each plank. Ships of this period had caulking inserted between the deck planks to make them waterproof. It would be good practice to simulate this effect on these platforms since you may also want to show this feature on the planked decks that are more visible.
To simulate the deck caulking, simply run a soft #2 pencil across both edges of each plank. If you prefer a lighter, less distinct caulking line, then only run your pencil down one side of each planking strip. Try both methods so you can choose the one you like best for the more visible decks later on.

When selecting the basswood strips to plank any area of the model, you should take your time and select the strips that are of similar color and texture. You are sure to find many slight variations in any bundle of wood. Even though the color differences may be really slight with the unfinished wood, after a stain or varnish is applied the differences can be more noticeable. To avoid a multi-colored striped look choose the planking strips with this in mind.

You will need 23 strips of planking cut to length for each platform. The first plank can be centered over the bulkhead former. You can use the bulkhead former as a guide to ensure that your first plank is straight and in line with the keel.

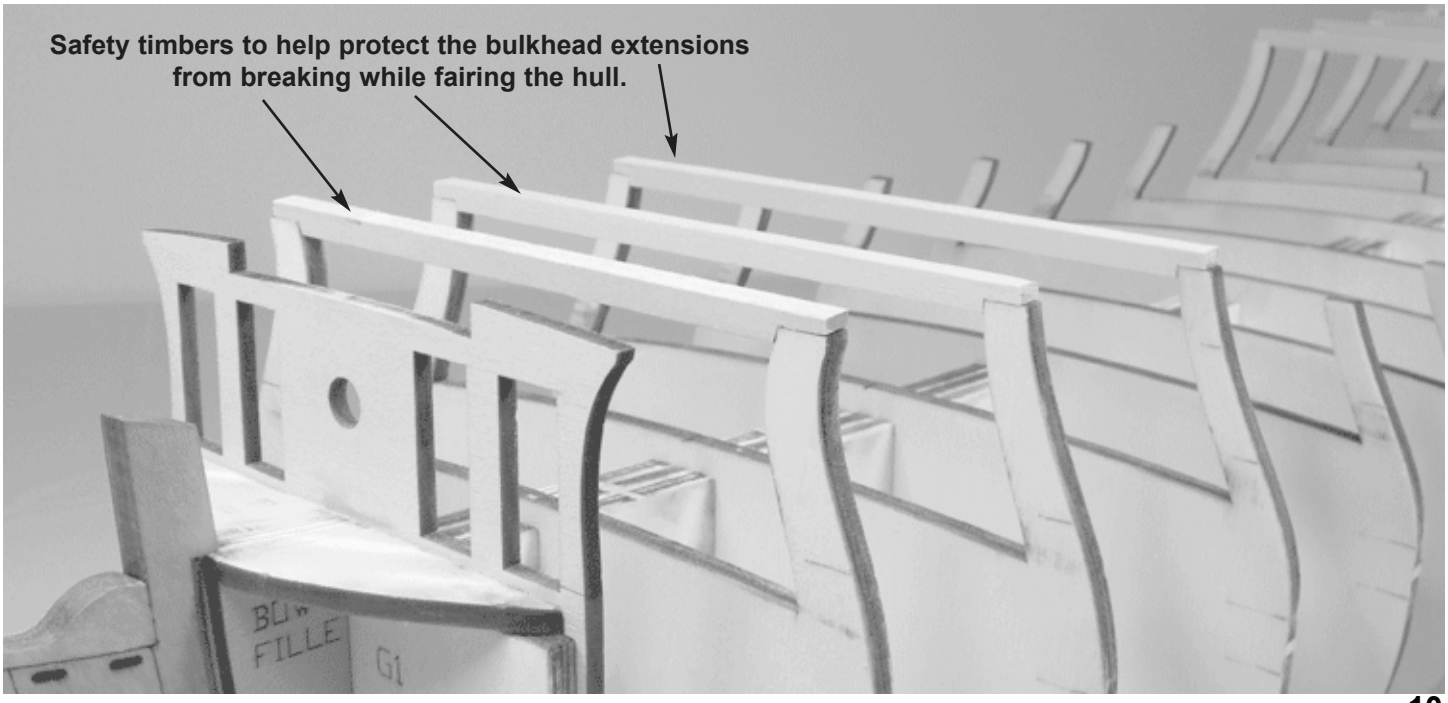


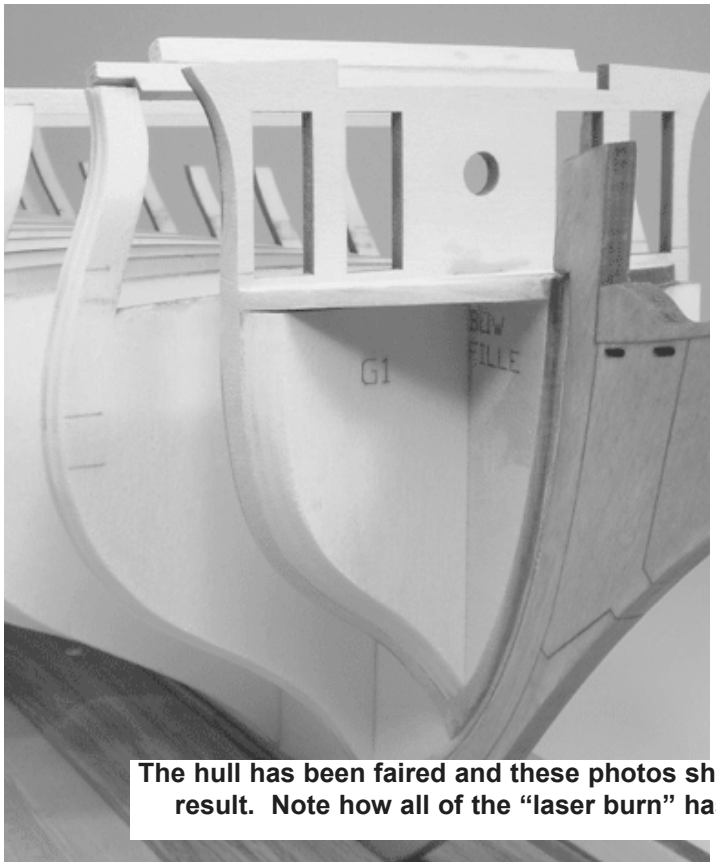


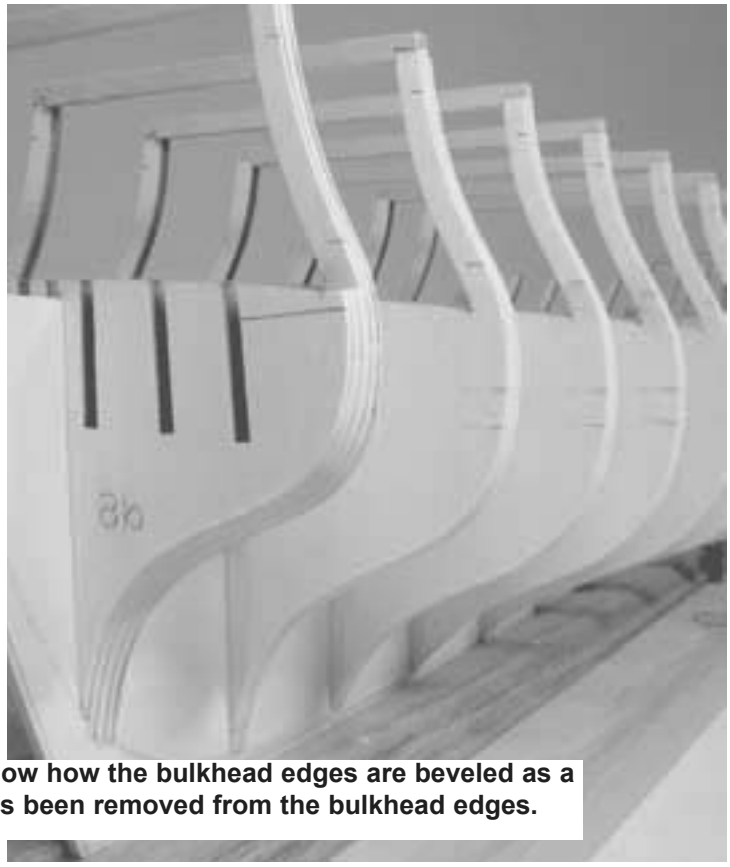

Then place eleven additional planks on both sides to complete the process. See the photos provided that show the three platforms completed. There are two smaller platforms in the waist and one larger platform aft of those. On the prototype model these decks were left natural. This means that they had no “colored” stain applied to them. Instead, only flat acrylic polyurethane was use to seal them. On ships from this period the deck planking was often lighter than the hull planking. By only sealing the deck planking with a flat clear varnish, it will remain lighter than the other planking which will be stained with a Golden Oak color. This is a subjective personal decision and you should choose the finish that you prefer. Since these decks are barely visible, they were not treenailed. We will talk more about treenails/trunnels and other hull fastening later on in the project.

**Optional safety timbers for the bulkhead extensions…**

You have probably already noticed that the bulkhead extensions are quite slender. This is especially true for those that frame the quarter deck.



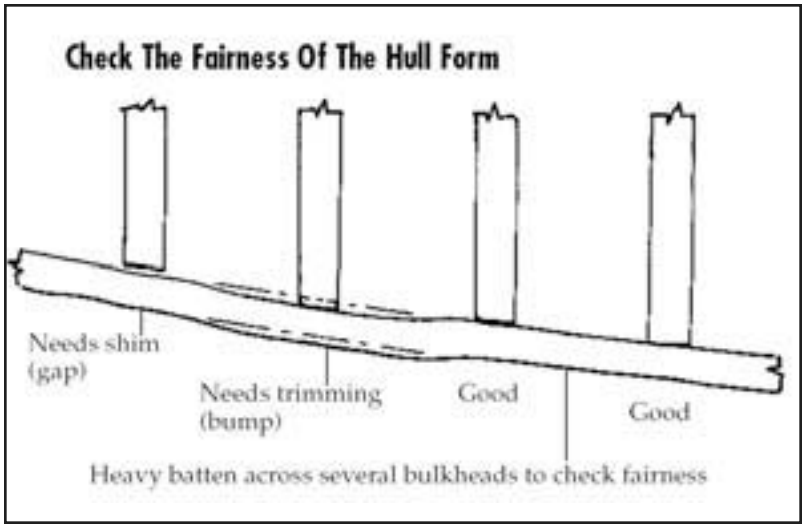


**The hull has been faired and these photos show how the bulkhead edges are beveled as a result. Note how all of the "laser burn" has been removed from the bulkhead edges.**

Care must be taken not to exert excessive pressure on them to avoid breakage. To help keep this from occurring, you could create safety timbers for each of your bulkheads or at a minimum for those that do frame the quarter deck as they are most likely to break.

The safety timbers can be made using 3/16" x 3/16" strip wood. They are cut to length with some small notches carved onto each end. These timbers are not glued or pinned to the bulkhead frames. They are just cut to fit snuggly in position. This will make it easy to remove them should you need to gain access to any inboard areas of the model. Once the exterior of the hull is planked, the timbers will no longer be needed. But the strip wood can be reused for other projects or even this one. See the two photos provided that show these safety timbers in position. It will give the hull more stability as you begin to sand the outside edges of the bulkheads to "fair' the hull.




**Fairing the hull…**

"Fairing the hull" is a term used when referring to the process of shaping the hull properly to prepare it for planking. The hull for the Confederacy is now at the stage where this process can be started. How will you know when the hull has been faired successfully? While shaping the outboard edges of the bulkheads, periodically use a 1/16" x 1/8" strip to check your progress. The hull will be faired properly when the strip lays flat and smooth across

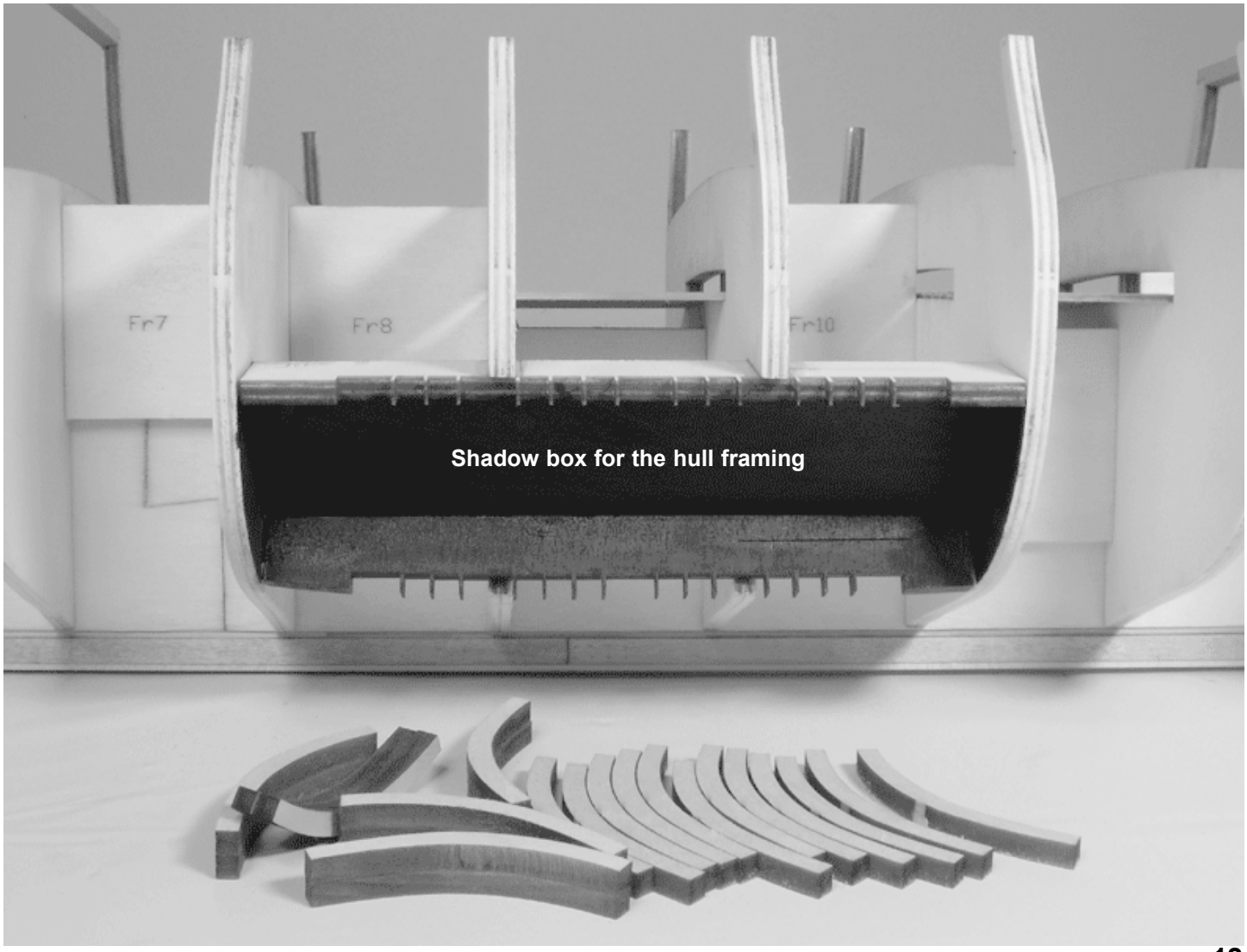
all of the bulkhead edges. See the diagram and photos provided. A properly faired hull will make planking so much easier. The exterior can be sanded to shape using a piece of sandpaper that is long enough to span the distance over three bulkheads. Sand the edges until the sandpaper rests flat along the entire edge removing all of the “laser char” that was visible before you started. The laser char can actually help you determine when you are getting close to achieving the faired hull you desire.

*TIP:* As you are shaping the hull while sanding, try and imagine that it is a solid piece of wood. Imagine that you are sanding this solid hull block so the sides are smooth without any dips or bulges.

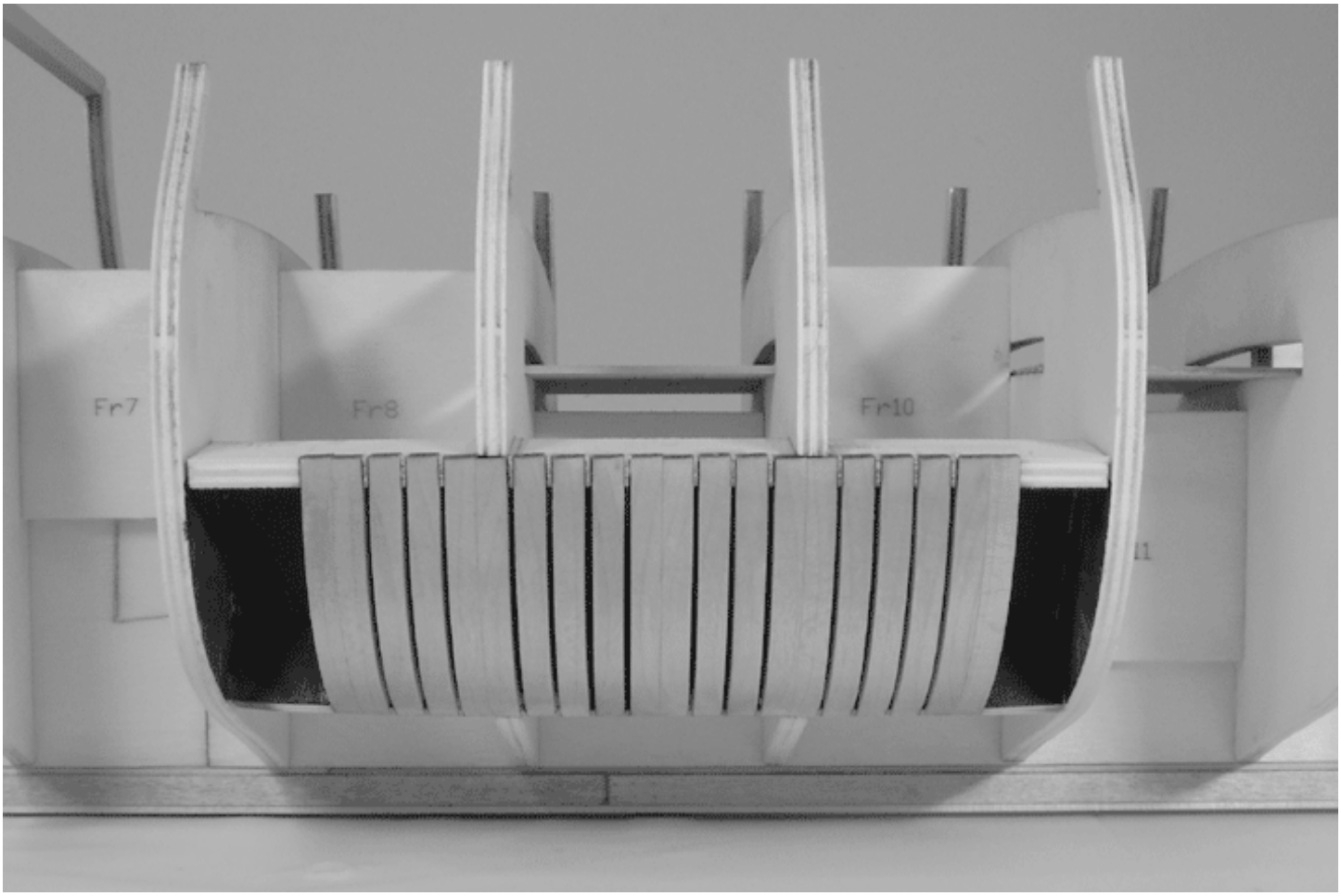
The interior of the hull will not be faired at this time. It is recommended that you wait until after the hull is fully framed and planked above the wales. The hull will be strong and rigid at that time and you will be less likely to break any bulkhead extensions. Fairing the hull will reduce the thickness of your bulkhead extensions further, making them even more fragile. The bulkhead extensions will end up being significantly thinner by the time you're through framing it. After planking above the wales later in the project, this thickness will be reduced even more after the inboard side is faired. The bulwarks for your model will ultimately be reduced so they are thin and slender which will give the frigate an elegant and “in scale” appearance. The actual scale thickness of the bulwarks after planking was approximately 12” give or take. This translates to 3/16” for our model after planking inboard and outboard.

**Assembling the ship’s frames for the cut-away…**

This model of the Confederacy was designed with



**Shadow box for the hull framing**

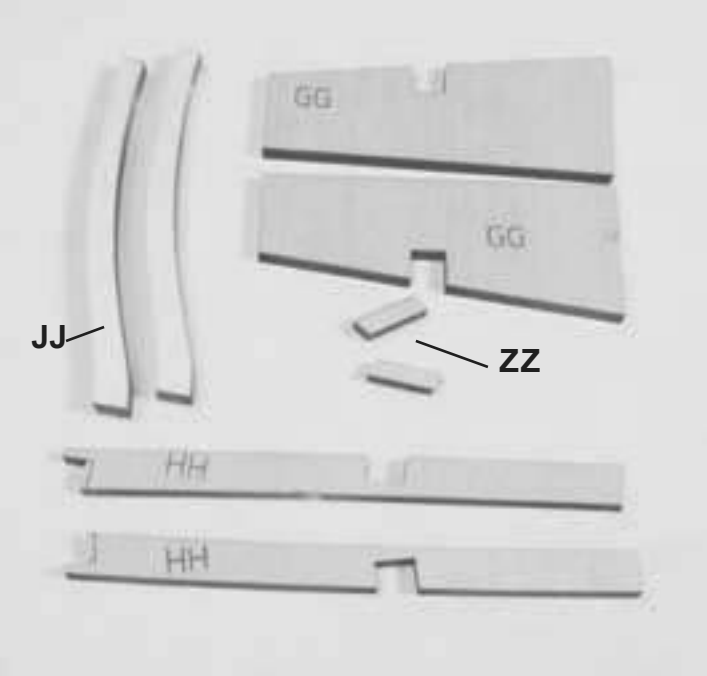


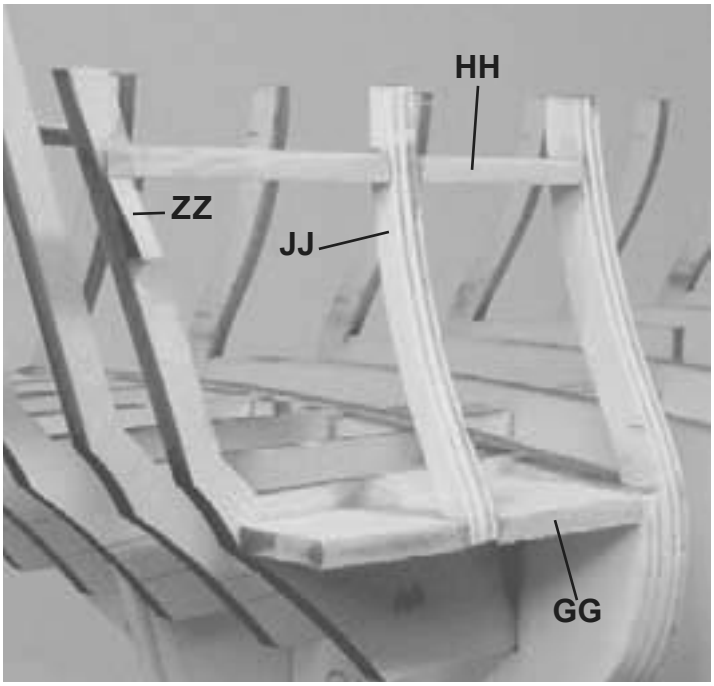

a cut-away section of the hull to show how a ship from this time period was framed. It's an optional feature that can be planked over entirely, should you decide not to display this feature. However, it is recommended that you add the framing anyway so the outboard planking will have a structure to accommodate it.

First take the laser cut "backing piece" that is provided and glue it to the two bulkheads that form the cut-away. Glue this 1/32" thick backing to create the "back" of what will become a shadow box for the framing.

Then take the two laser cut pieces 30 (top) & 31 (bottom) to complete the shadow box for framing. To orient them correctly, the laser etched part numbers should face up and be on the aft side of each piece when installed. Paint the interior of the shadow box black.

There are many frames laser cut for you on a 3/16" thick basswood sheet. All of these frames are identical in shape. They have been designed to stand slightly proud of the hull shape as defined by the bulkheads. The frames should be faired with the hull after they are glued into the pre-cut slots in pieces 30 and 31. You will notice that both "full frames" and "half frames" are shown. See the photos provided. The full frames are actually made by gluing two laser cut pieces together before you glue them into position. The half frames are used as is. Examine plan sheet two carefully before gluing any pieces into place permanently.




# Chapter Three

## Framing the Stern…

Remove the 1/8” thick basswood stern frames (AA, BB, and CC) and lightly sand the laser burned edges. Be careful because these pieces are somewhat fragile. Once the entire stern is framed, they will be significantly stronger. Position the stern frames into the slots of bulkhead 8B. The slots are slanted, which will establish the proper angles for them. The laser etched reference lines on each stern frame should face outboard.

Then remove the laser cut pieces ZZ, JJ, HH, and GG (see the photo provided). Glue the small piece (ZZ) onto the outboard side of the stern frame AA. You will see a laser etched reference line on frame AA. Line up the bottom of ZZ with this reference line. Examine the framing plan carefully before you glue any of these pieces into position.

Next, position the laser cut piece GG (1/8” thick). Use the laser etched reference lines on bulkhead 8B and stern frame AA to help you establish the proper angle. This piece should not lay flat. Instead, it should be angled upward as the reference line on bulkhead 8B suggests. Line up the bottom edge of GG along the etched reference line.

Test fit the laser cut piece HH (1/8” thick) on the model. The notched end of the piece sits on top of ZZ. The flat end rests against the bulwark extension of bulkhead number 8. The top of HH is lined up with the laser etched reference line on the bulwark extension. You will soon see that the notched end does not sit against stern frame AA properly. In fact, it pushed the stern frame aft and is an awkward fit. This is because the inside edge of the notch needs to be beveled to match the angle of the stern frame. It should sit flat against the angled edge of the stern frame. Another reference line was etched onto the BOTTOM of HH as a guide. You can see this etched reference line near the notch in the photo provided. It approximates the amount of wood you need to remove from the slot to create the correct beveled angle.

Glue the laser cut piece HH into position after you establish the correct bevel on the slot. The top of piece HH should be perfectly flat when positioned. It should not be sloped inboard or outboard. This piece will become the port sill for the aft-most gun ports.

To complete this stage of the stern framing, take the laser cut hull frame JJ and glue it into position. This frame fits into the notches cut into the outboard edge of pieces HH and GG. Carefully line up the bottom of the frame with the bottom

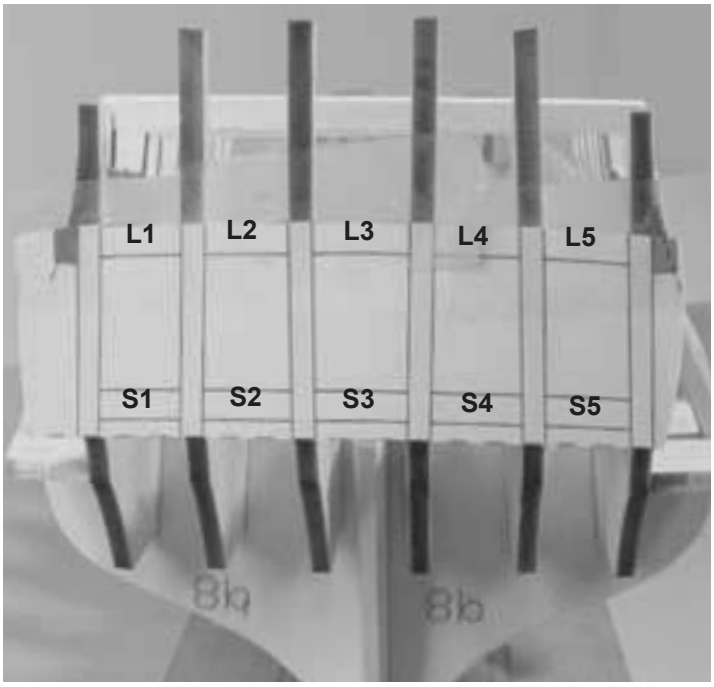
edge of GG. Examine the photo provided that shows this step of the stern framing completed. When you are finished, the outside of the hull should be faired again. Sand these pieces to match the shape of the hull just like you did while fairing the other bulkheads. Test how well these pieces are faired by using planking strip. Hold it against the hull to determine if it lays flat against all of these framing elements. That same photo shows the four parts on the starboard side after the hull was faired.

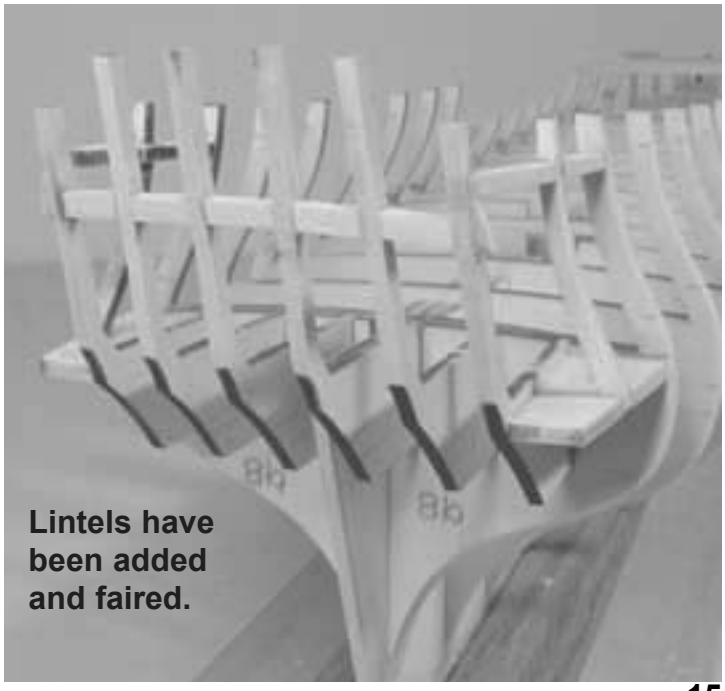
**Sills and Lintels for the Stern Windows…**

This plank and bulkhead model was designed so you could easily frame the ports using various paper templates. The templates will help you determine the correct placement of these openings along the stern and hull. Use the templates in conjunction with the laser etched reference lines you have already been using. The paper templates have been placed on a separate plan sheet for your convenience. This was done purposely so you can cut them out without destroying the other plan sheets. We know that folks would prefer not to cut any ship model plan apart. But if you decide to make copies of the templates instead, make sure you carefully check them for distortion before using them. They must be the same size and scale as the originals.

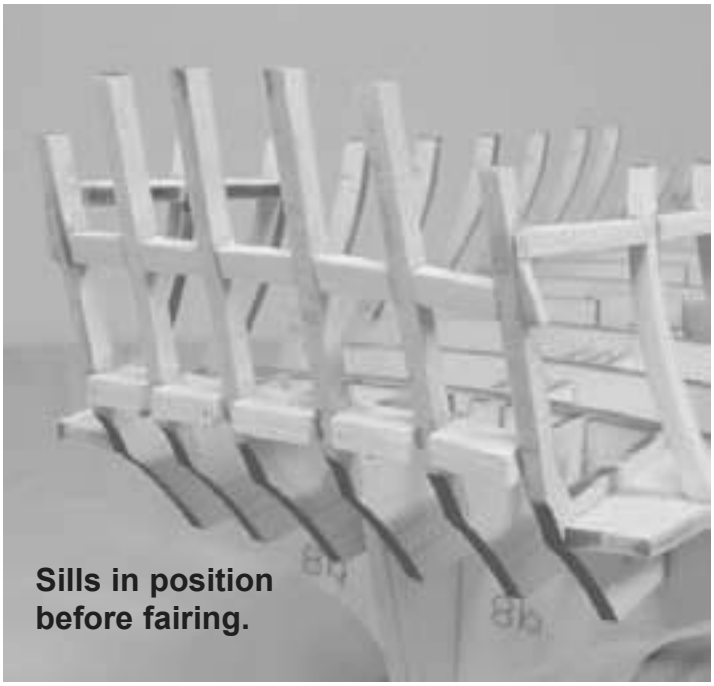
Cut out the stern template using a sharp blade. The stern template has a dashed line running across it. The template should be cut along this dashed line. See the photo attached which shows the template taped to the stern frames. The template is also cut along the top edge of the lintels for the window framing. These are the timbers that frame the tops of the stern windows. Line up the dashed line of the template with the bottom of the stern transom. Use the pieces ZZ and HH which should help you align the template correctly. Be careful while taping the template to the stern frames. It should be level so avoid tilting it lower or higher on either side. The stern frames are quite flexible at this stage. You can adjust them left to right pretty easily. Tape the template to each stern frame while holding them in line with the template. You can see in the photo that the stern frames line up perfectly with the frames shown on the template. When you are satisfied, trace the top of the template onto each of the frames. These reference marks will determine where you place the laser cut lintels (L1, L2, L3, L4 and L5).

The laser cut lintels are 3/16” thick. When placing them between the stern frames, the top and bottom of each lintel should be perfectly level and flat. They should not be sloped inboard or outboard. You have probably noticed that the transom is a very complex shape. It is angled aft while at the same time having a gentle convex

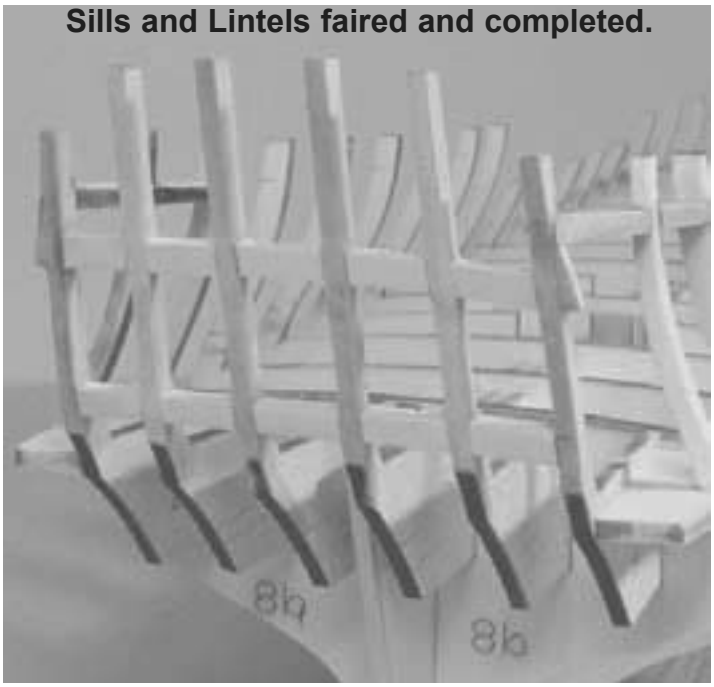



**Lintels have been added and faired.**



**Sills in position before fairing.**



**Sills and Lintels faired and completed.**

curve port to starboard. If you tried to use just one 3/16" thick lintel with the top and bottom flat, the outboard and inboard edges would not be flush with the stern frames. To solve this problem, two laser cut lintels were provided for each stern window. Glue them together ahead of time to make a lintel that is 3/8" thick. When you glue them between each stern frame, allow them to stand proud of the frames inboard and outboard. Glue the lintels into position. Line up the top of each lintel with the reference marks you made using the template. Then fair the lintels inboard and outboard so they are flush with the stern frames. Keep in mind that the stern does have a graceful convex curve to it while fairing.

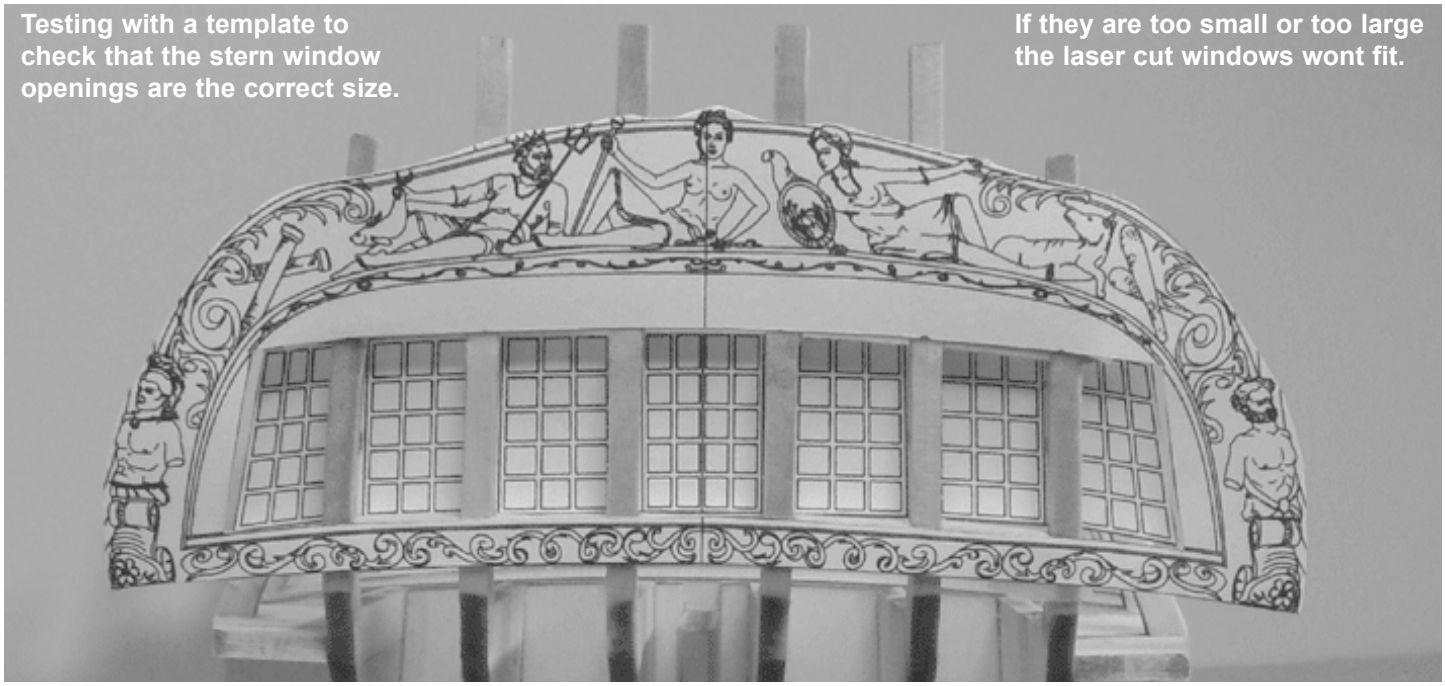
**VERY IMPORTANT NOTE:** Before you glue them on permanently, check each lintel against the template to make sure they are the correct length. You don't want to force the stern frames apart if the lintels are too long. And you don't want to push two stern frames together if the lintels are too short. This will enlarge or reduce the space between the stern frames. The stern windows that will be placed within these openings later are also laser cut for you. When it's comes time to add them, they won't fit properly if the spacing between the stern frames is not correct. So proceed slowly and always double check the openings using the template. See the photo on the next page. A copy of the stern from plan sheet one was also used after all of the sills and lintels were completed. It shows the windows, and how they will fit, when it comes time to add them later.

**The Stern Window Sills…**

Use the same template to mark the placement of the stern window sills. This time however, you should cut the template along the bottom edge of the window sills. Then line up that same template with the port lintels you just completed. Tape the template into position and mark the bottom edge of the sills along each stern frame. The laser cut window sills (S1, S2, S3, S4, and S5) should be doubled up like the lintels. There are two of each piece provided in the kit. Just like the lintels, the sills should be oriented with their tops level. You can see in the photo provided how the doubled thickness of the sills allows them to stand proud of the stern frames. An additional photo shows the sills after they were faired with the stern frames inboard and outboard. Don't forget to periodically use the template to ensure that your window openings are the correct size and shape.

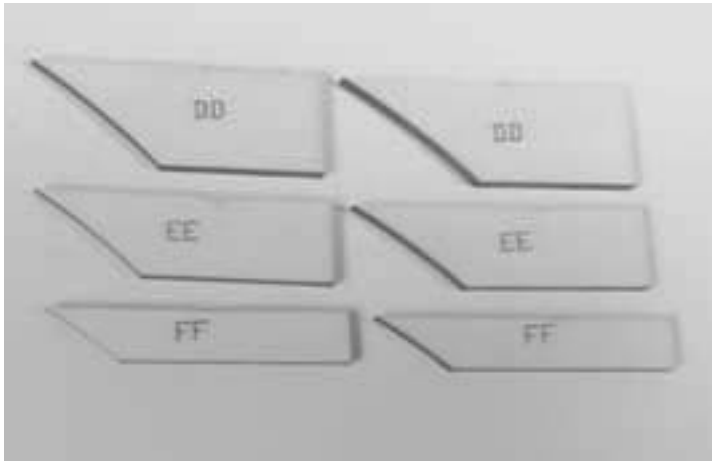
**Stern Quarter Fillers…**

You must add three filler pieces under each stern quarter so you will have sufficient surface area to

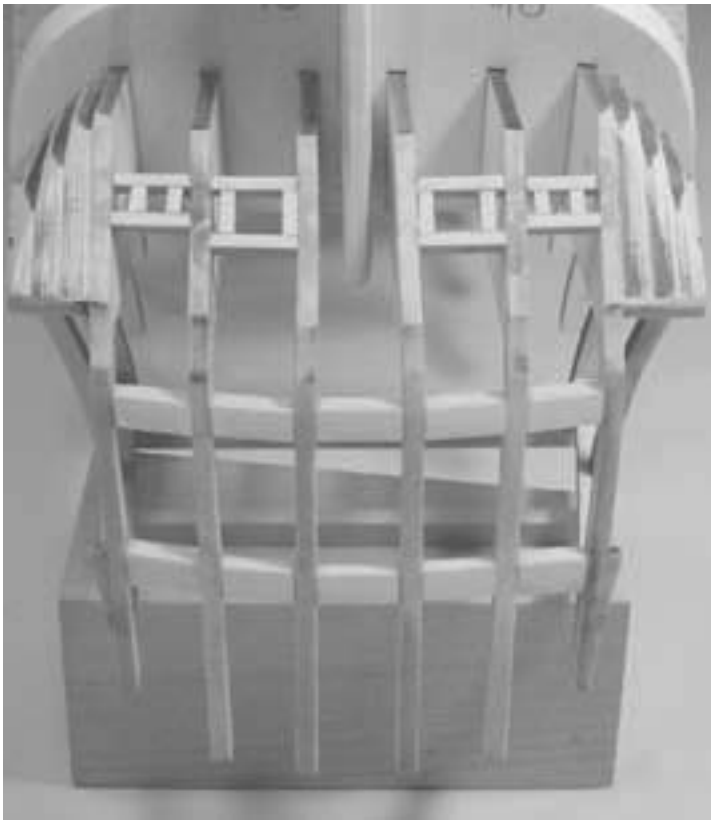


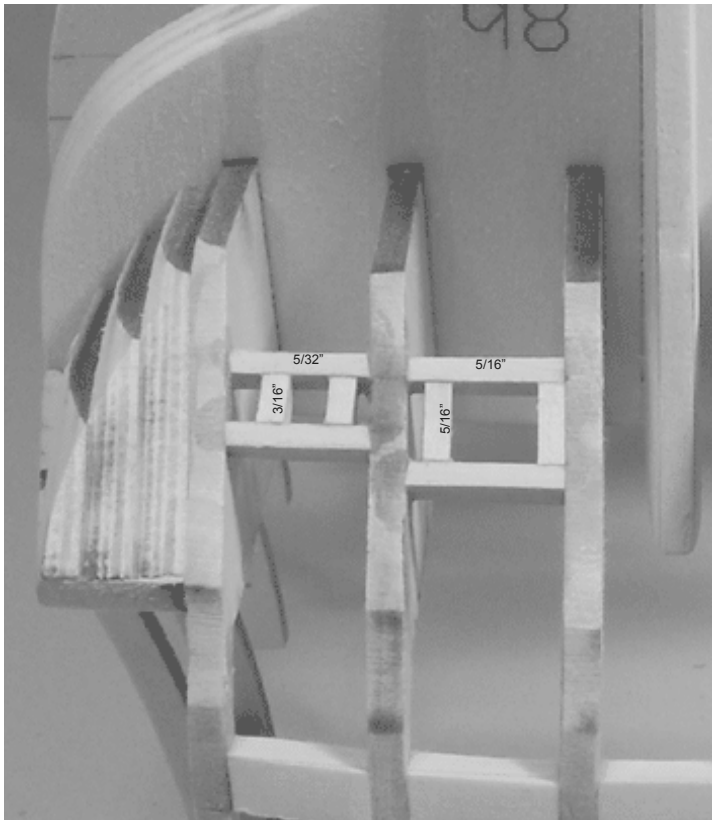
**Testing with a template to check that the stern window openings are the correct size.**

**If they are too small or too large the laser cut windows wont fit.**




glue your hull planking onto. These three pieces (DD, EE and FF) will be glued under the laser cut piece GG. Examine the framing plan before you glue them into position. The piece DD is glued into place first and rests against stern frame AA. It fits right up against the bottom of the stern quarter piece GG as well. The two remaining pieces EE and FF will follow suit. A photo (below left) shows all three ready for fairing. A second photo (below right) shows how they will look after being faired. To establish the correct shape, use a long sanding block so you can run it over the






last two bulkheads and the filler pieces while fairing them.

**Stern ports on the lower counter…**

There are four ports that need to be framed on the lower counter of the stern. Two appear on each side of the rudder post. One is larger than the other. There are a few laser etched reference lines on the sides of each stern frame to help you position the port lintels and sills for them. Use 3/32" x 3/32" strips to frame these ports. It will be easier to frame these ports if you turn the model upside down while you are working. But please prop up your model so it doesn't rest on the bulkhead extensions. They are too fragile to support the weight of the hull and any rough handling at this point will break them. Support the hull by positioning some wood blocks under the gun deck so it lifts the bulkhead extensions off of your work surface.

Begin the framing process by using a flexible strip/ruler to mark your port sills on the outside of the stern frames. Note how all of the sills (for both sizes of ports) are lined up across the counter. Examine the framing plan and the photos provided. They follow the gentle curve of the counter as well. Keep in mind that you are now working upside down, so the sill will appear to be above the lintels in those photos.

You should complete the sills first. Hold the ruler against the laser cut reference lines on the stern frames so you can mark the top of the sills in pencil. Then cut your sills to length and glue them into position. When all four sills are completed, you can fair the counter so the sills are flush with the stern frames.

The larger ports should be 5/16" high and the smaller ports should be 3/16" high. Since you know these measurements, take a ruler and mark the heights along the stern frames by measuring the distance from the top of the sills. These will be your reference marks for the bottom of each port lintel. Then measure and cut your lintels. Glue them into place and sand the counter so the lintels are flush with the stern frames.

The larger ports are 5/16" wide and the smaller port openings are 5/32" wide. Use the framing plan or the stern template to mark the locations for the port uprights. The uprights frame the sides of each port opening. Use the same 3/32"

**Filler strips added under the counter and along the stern post rabbet strip**

x 3/32” strips for the uprights. The sides of the ports should be perfectly vertical. They are not angled. So avoid using the stern frames as a guide since these are on an angle. Once the port uprights are in position you can fair the counter for the last time. This also includes fairing the quarter filler pieces. (DD, EE and FF) They should also be faired so the gentle convex curve is evenly established across the entire lower counter.

**Final filler strips under the stern counter…**

The outboard planking needs to have a surface to adhere the planks to under the lower counter and against the stern post. If you have previously built a typical kit, you are probably familiar with the solid balsa wood blocks that are used in this location. If you are comfortable with that approach, then absolutely use it on this kit as well. But you can also substitute some 3/8” x ¼” strips in this location as well. It creates more than enough surface area to glue your planking to, and at the same time reduces the amount of sanding and shaping you would have to do.

Cut the strips to length and add the first piece along the underside of the counter. The outer edge of the strip should be flush with the edge of the lower counter (as defined by the stern frames). Add a second strip down the stern post. Its outer edge should be lined up with the edge of the rabbet strip. Don’t cover up the rabbet strip. This length of wood does not have to extend all of the way to the keel. You can stop it at the base of the last bulkhead 8B. See the photo provided.

You will see in that photo how the port side looks before it was faired. The starboard side is completed and has been shaped to give the planking a smooth run into the lower counter. The strips can be carved first to remove larger amounts initially. But as you get close to achieving the correct bevels and shape, switch to sandpaper to complete the process. Check that the shape will allow a planking strip to easily bend into position. The end of the hull plank should lay flat along the filler strips. The bevel you established on bulkhead 8B should also allow the plank to bend gradually. If bulkhead 8B is not beveled enough, the plank will break under the pressure of bending against a hard edge. This will not happen if that edge is faired/beveled properly so the planking strip lays flat across the entire edge of bulkhead 8B.

**The False Decking…**

You will soon be turning you attention to framing the ports along each side of the hull. But before doing so, glue the four false deck pieces into position. They are laser cut (1/32” thick) with reference lines showing the locations for the hatches and masts etc. You will notice that there are notches cut along the sides of each piece where a bulkhead would be. These notches are not intended to be a close fit. They are used to ensure that the false deck spans the entire deck's surface and even between each bulkhead extension. If you need to widen the slots because one of your bulkheads was not properly squared with the keel, it would be fine. The most important thing to consider when gluing these pieces down would be that each half (port and starboard) runs down the center of the deck. Use the bulkhead former as a guide when gluing down each section of the false decking on the port side first. Adjust

the slots along the edge of each piece if needed. Note: The two sections of the false decking for the port side should meet along bulkhead #1. They should share the top of the bulkhead edge.

With the port side glued into position, complete the same steps for the starboard side. This time however, carefully match the laser etched pattern down the center of the false deck. Make any adjustments to the slots (for the bulkheads) to ensure a proper fit and tight seams between all four sections. You may want to dry fit all four sections in position first after tweaking the notches, and glue them into position afterwards. See the photos on this page showing the false decking in position.

# Chapter Four

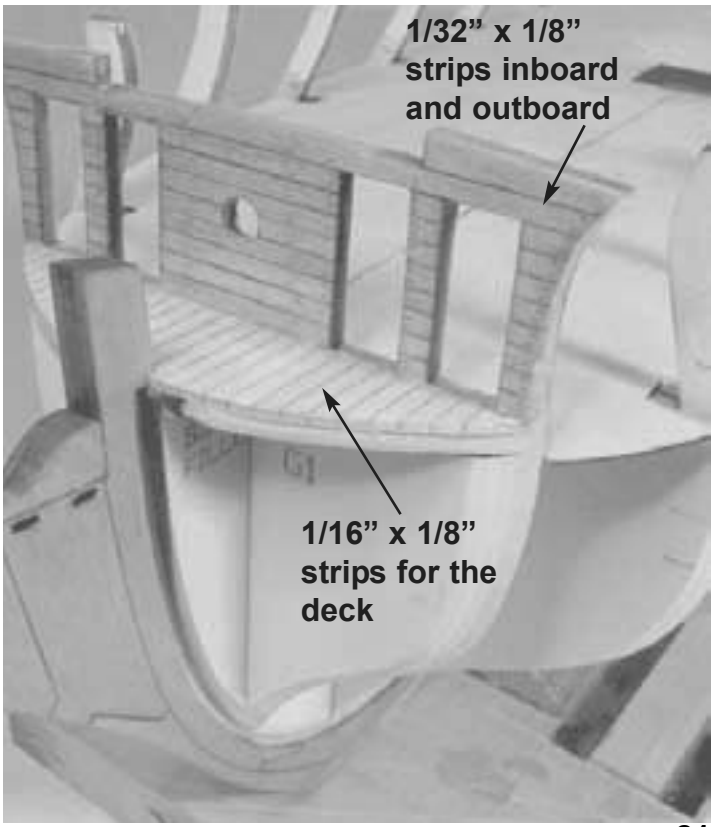
## Preparing the hull for the gun port framing…

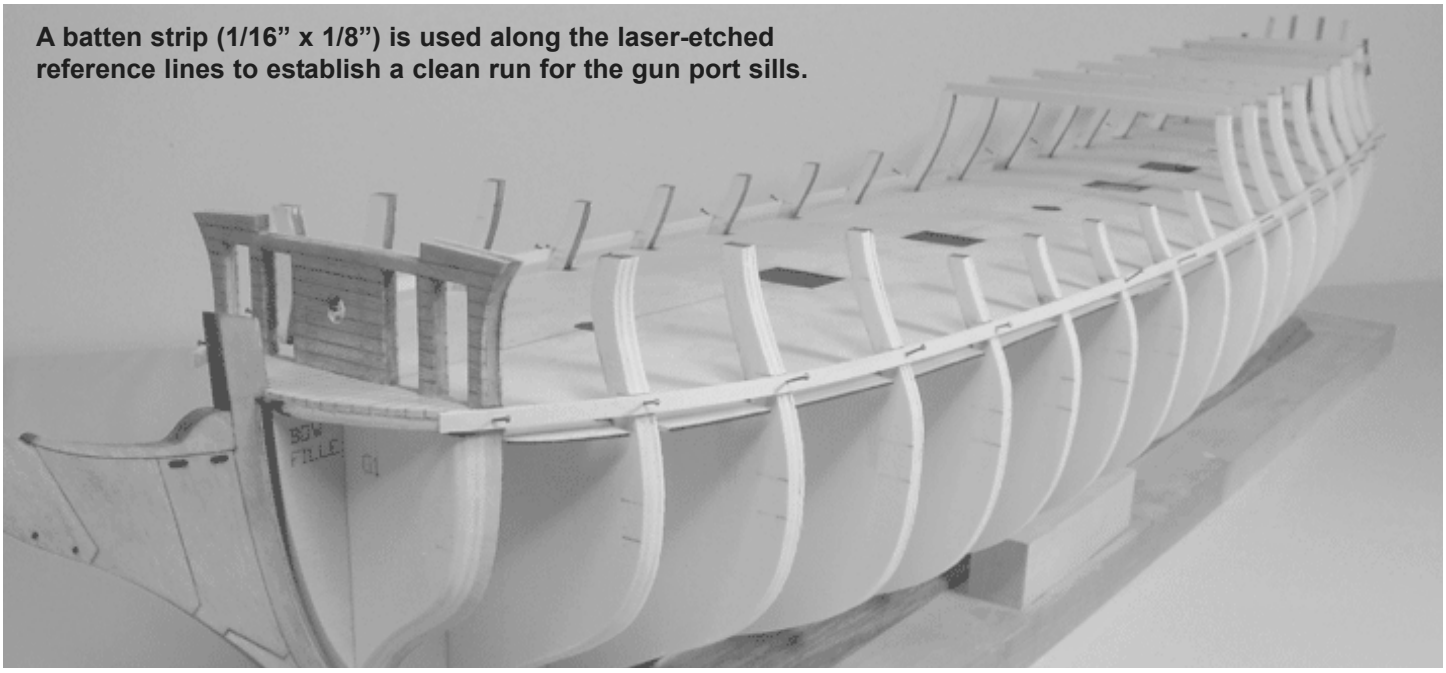
Before you begin framing the ports on both sides of the hull, it would be a good time to plank the beakhead bulkhead at the bow. It will be easier to plank the inboard side before the port framing makes access to it more difficult. Start by planking the deck with 1/8" x 1/16" basswood strips. If you chose to show the caulking seams between each plank, remember to color the plank edges black with a soft pencil first. The top of the planked deck should be level with the top of the threshold sill for each door opening. Once again it would be good to mention how the deck would be a lighter color than the hull planking. After the deck is sanded, you can apply the finish of your choice. In the case of the prototype model, the decks were simply finished with satin polyurethane. You can also treenail the deck planks but it would be best to wait until the beakhead bulkhead is planked before doing so.

The beakhead bulkhead will be planked with 1/32" x 1/8" strips. Plank the inboard and outboard sides of the bulkhead. See the photo provided. Cut the planks flush with the openings for each doorway. If you want to add some extra detailing to the model at this point, you could line the top and sides of each doorway with thin strips of wood for the door jambs. Run a 1/64" x 1/32" strip down the center of the door framing to simulate the door jambs. On the prototype model, the planks were stained with MinWax Golden Oak wood stain. This color created a nice contrast against the lighter deck color.

Treenails were wooden pegs that helped secure the planks to the ship's frames. There were wooden plugs that covered recessed bolt heads in some areas as well. Simulating this look will add an interesting texture and richness to your model. Drill some tiny holes into your deck and beakhead bulkhead planking. The treenail pattern is shown on the plans. You may opt for a simplified approach for your treenail pattern and create only one hole for each plank rather than the two shown for each frame on the plans. Proceed slowly and try your best to keep your holes lined up in a row as you proceed. You can draw some light pencil lines as a guide before you start to drill your holes.

There are several ways to create the treenails that will fill these holes. One method would be to pull small strips of wood through a metal draw plate. The holes in the draw plate would get progressively smaller. You would pull the wood through many holes working your way to the smallest so the strips will fit into the tiny treenail holes. Place a small amount of watered down white glue onto the end of each wooden treenail and insert it into each hole. Then snip it off close to the hull with a nail clippers. When all of the holes are filled, sand the treenails down flush with the hull planking. Stain the surface with the color of your choice to finish it up. This method works well but can be very time consuming. Another alternative (which was used on the prototype) would be to fill the holes with some water based wood filler. Then sand the planking and stain. Elmer's wood filler works well for this application. Be careful not to make the treenails too large or too dark. A 0.65 bit was used to drill the holes on the prototype.



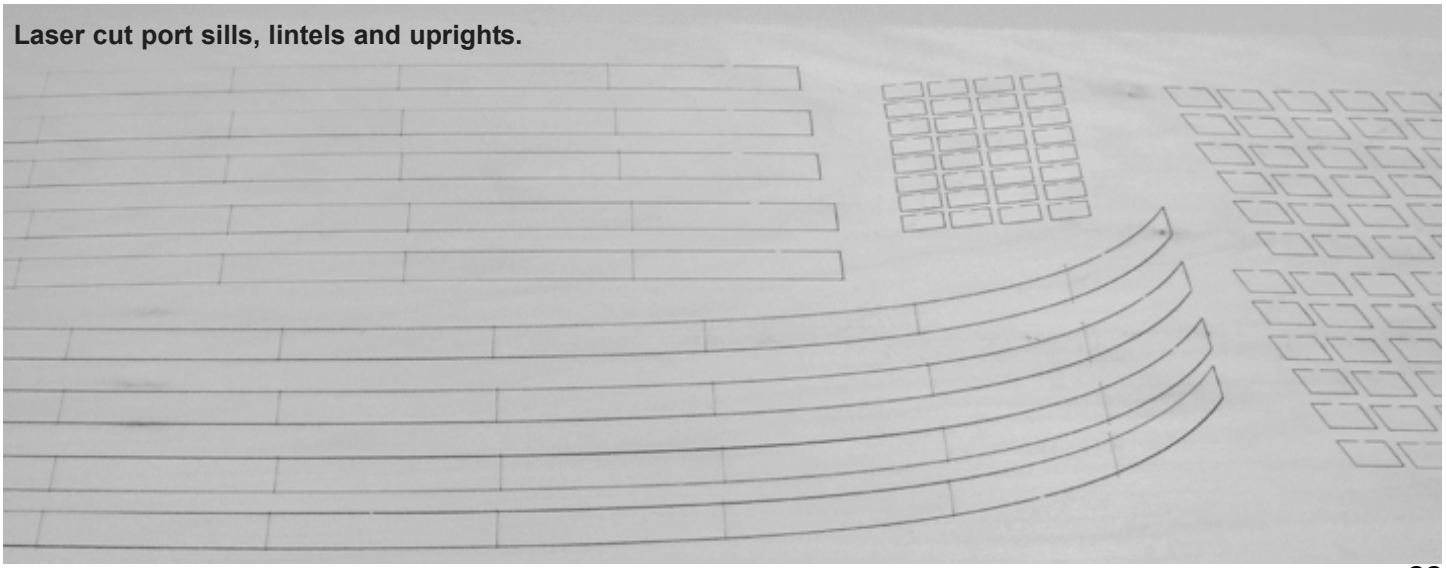


**A batten strip (1/16" x 1/8") is used along the laser-etched reference lines to establish a clean run for the gun port sills.**

**Framing the Gun Ports…**

The sills for the gun deck ports will be framed first. There are laser etched reference lines on the bulkheads that approximate the top of the port sills. In order to make sure that the sills are placed at their proper height, a batten should be utilized first. You will soon see that this model makes extensive use of the temporary batten to make sure the ports and planking run smoothly across the hull. Take a planking strip and use it as your temporary batten. Pin it into position at each bulkhead using the laser etched reference marks as a guide. Once pinned into place, you should view the batten at many different angles. Check for dips. When looking at the strip from the stern you should see a smooth run for the batten as it works its way towards the bow. You may have to tweak the batten a little bit here and there. When you are satisfied, mark each bulkhead along the top of the batten. Then remove the batten strip.

The port sills and lintels have been laser cut for you. The sills are the bottom frames for each port opening. The lintels are the top frames for each port. Each segment has been laser cut a little longer than needed and you will have to trim them to fit between the bulkheads. They are 3/32" thick. You can see in the picture that the sills and lintels have been cut on a curve that matches the shape of the hull. Start placing the sills into position at the stern between bulkheads 7 and 8. Hold the appropriate section against



**Laser cut port sills, lintels and uprights.**

**The gun port sills are completed for the gun deck.**

the hull using the reference marks you made. Mark each side of the sill with pencil and cut it to length. Don't make the sills too tight or you will force the bulkheads out of alignment. They should be a good close (snug fit). Line up the top of the sill pieces with your reference marks. When all of the sills have been glued into position, you can fair them until they are flush with the bulkheads. See the photo provided.

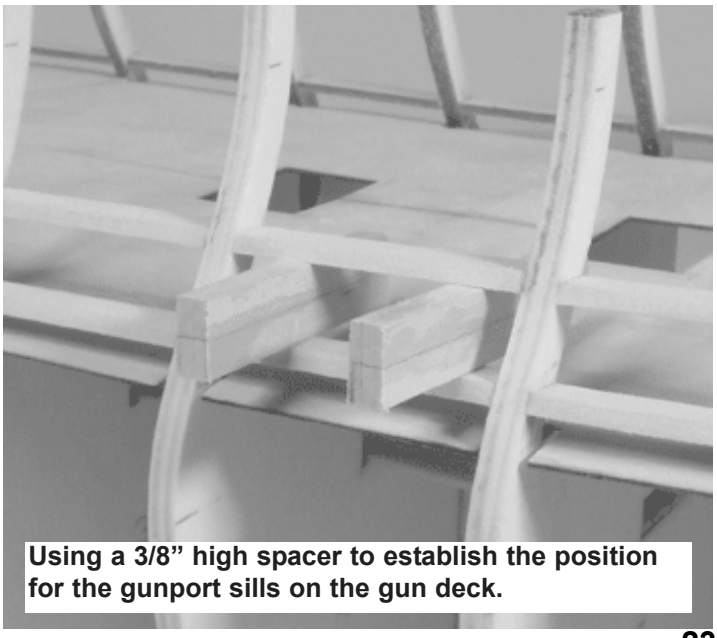
**Gun port lintels…**

Once the sills are completed on both sides of the hull for the gun deck, you can add the lintels for the ports. Use the same laser cut pieces for them. You will have more than enough pieces to complete the port framing. The gun ports are 3/8" high. If you were to just use a ruler to measure the height for the ports they would end up too short. The curvature of the hull makes it very difficult to consistently and properly measure the height. The best way to establish the height would be to use a spacer.

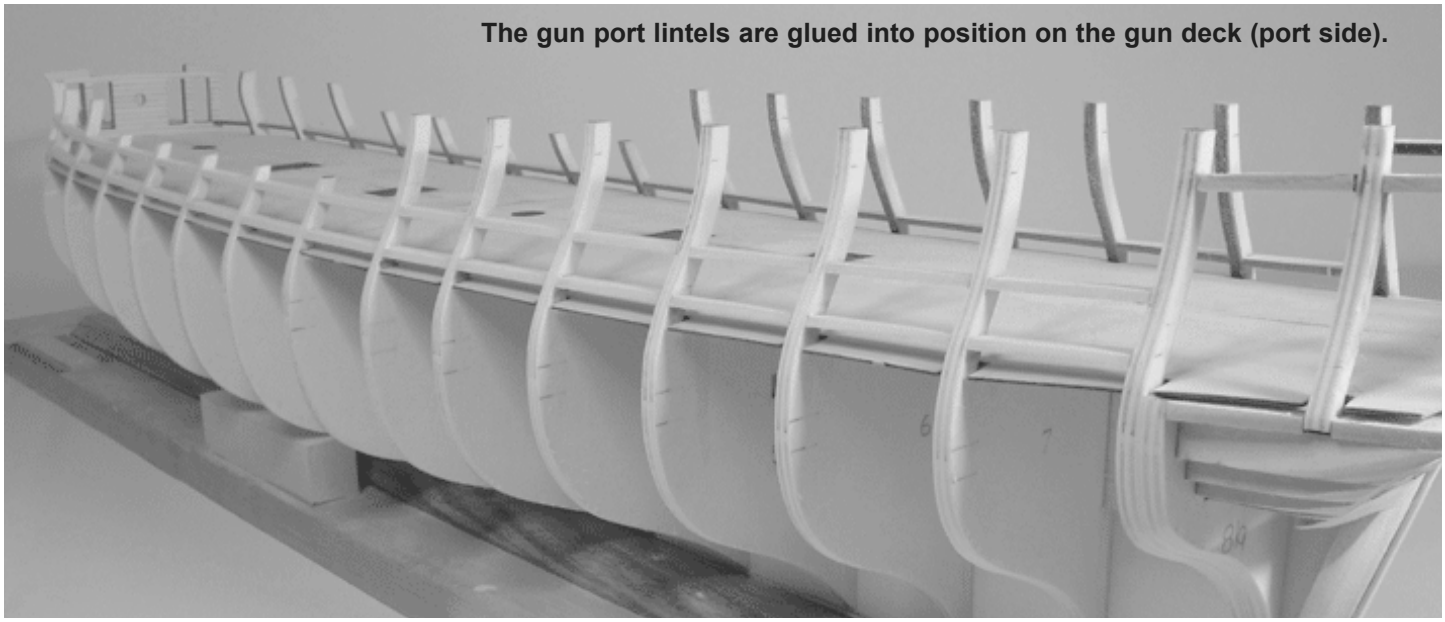
A 3/8" x 5/16" strip is provided for you to use as a spacer. See the photo provided. On the prototype, two 3/16" strips were glued together but the 3/8" strip provided makes it even easier. You can actually cut the strip to length so it is long enough to sit on top of both sills port and starboard at the same time. Using two spacers will make positioning the lintels even easier. With the spacers positioned on both ends you can glue the lintels into place fairly quickly. Be careful not to glue your spacers to your port sills or lintels in the process. Your port openings will be very consistent using this technique. See the photo that shows all of the port lintels glued into position on the port side.

**Quarter deck sills and lintels…**

The quarter deck sills are done the same as those for the gun deck. Use a batten first to establish a smooth run for the sills. See the photo provided. Then glue the sills into position.



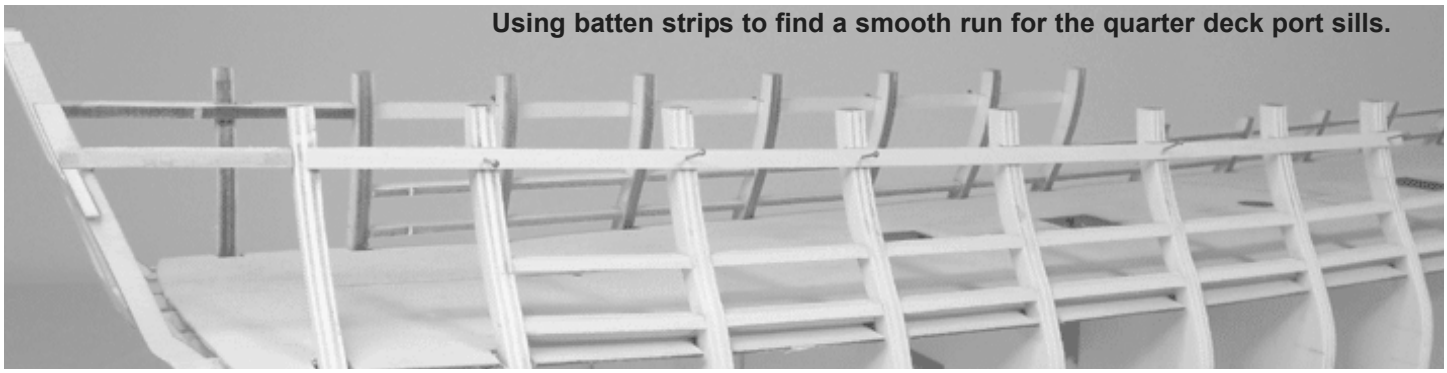
**Using a 3/8" high spacer to establish the position for the gunport sills on the gun deck.**



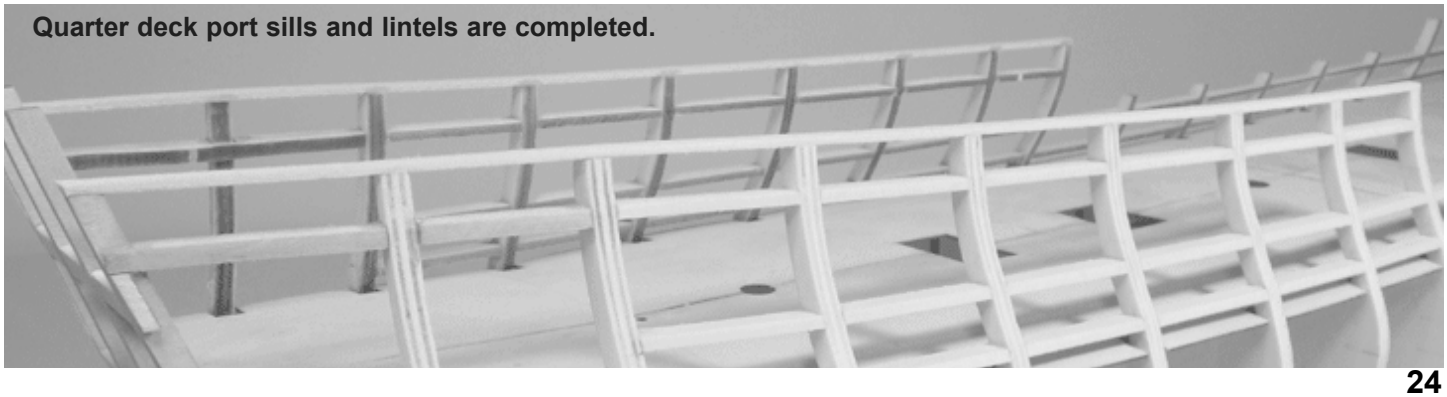
**The gun port lintels are glued into position on the gun deck (port side).**

You will notice how the batten lines up with the laser cut piece HH that was used while framing the stern. That will become the sill for the two aft-most port openings. You only need to put the sills between the bulkheads where there will be a gun port on the quarter deck. But you will see in the other photos that follow that they were used between all of the bulkheads on the prototype. The extra framing will help strengthen the entire hull. The extra sills are optional but highly recommended.

The lintel for the quarter deck is made by placing a 3/16" x 1/16" strip on top of the bulkhead extensions. You can see this in the photo provided. Before doing so, a batten can still be used to establish a smooth run for the strip. The tops of the bulkhead extensions need to be sanded on an angle in order to establish the correct, smooth run for the lintel strip. A batten will help you establish how much of each bulkhead needs to be sanded down. Don't sand too much. The aft side of each extension should remain unsanded. The bulkhead extensions should slope downward toward the bow. Fair all of these pieces so they are flush with the hull afterwards.

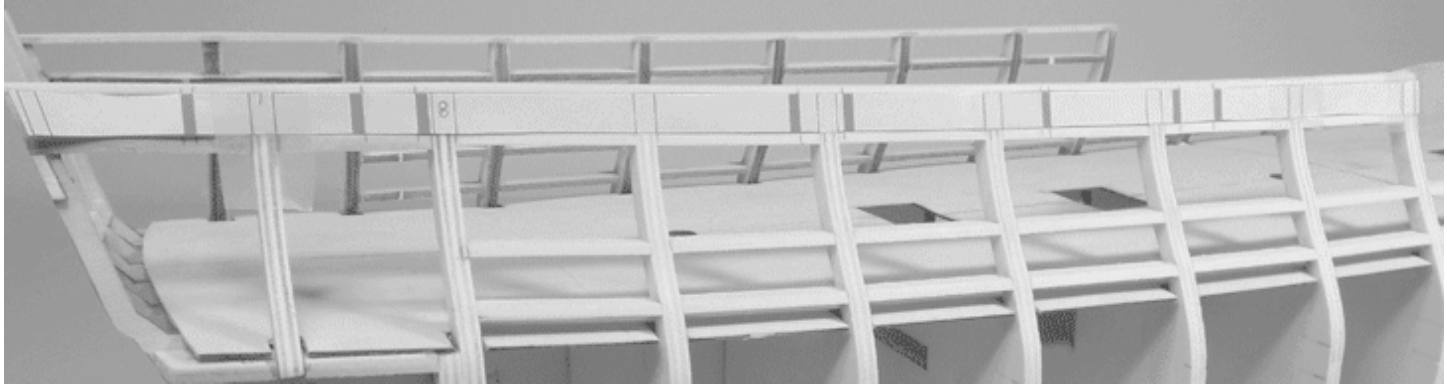


**Using batten strips to find a smooth run for the quarter deck port sills.**



**Quarter deck port sills and lintels are completed.**

Using the quarter deck gun port template to find the locations for the port uprights.



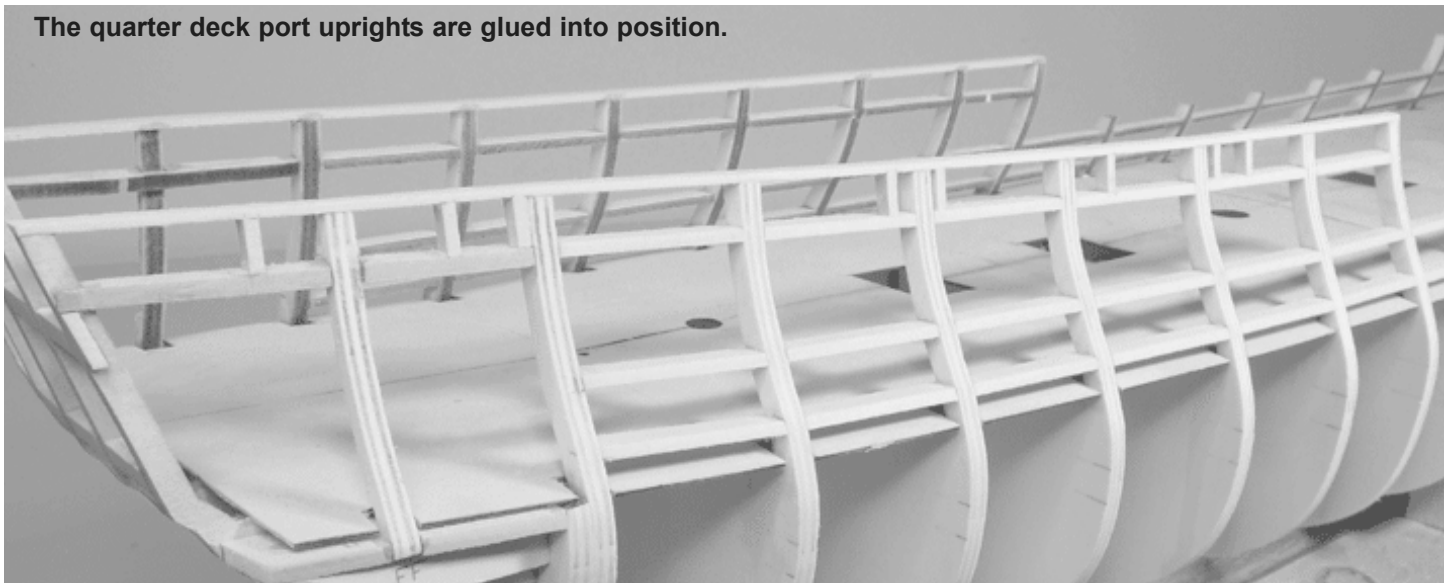
**Framing the sides of each Gun Port…**

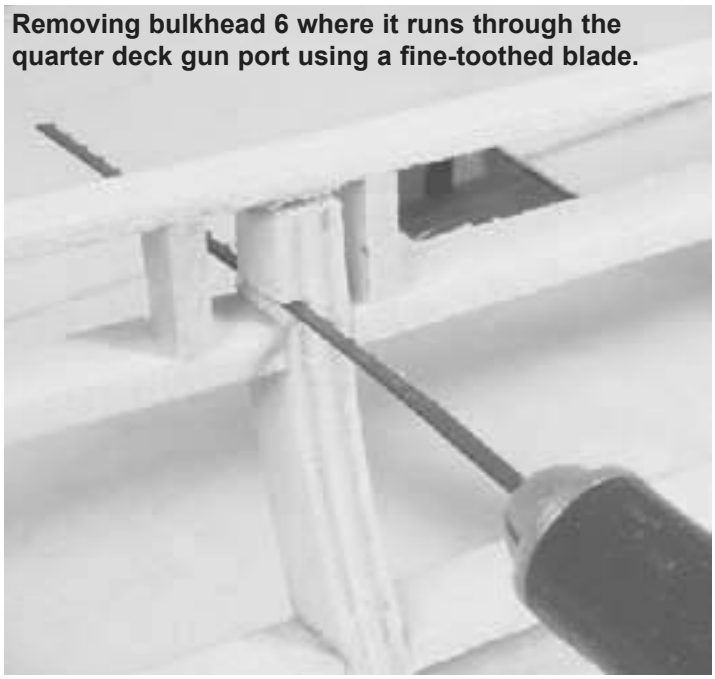
The uprights that frame the sides of each gun port are also laser cut for you. The thicker ones are for the gun deck ports. You will be using the printed templates provided to establish the locations for each upright frame. Two templates are provided for each deck (one each for the port and starboard sides). Cut the templates out with a sharp blade. While doing so, cut the templates out without the sills and lintels showing. You should have a thin strip with only the uprights showing.

Start by using the quarter deck framing templates. Tape them to the hull. Line up the template on the hull with bulkhead number eight. Lining it up with bulkhead number eight will ensure that your port openings are consistently spaced port and starboard. The only way this would not work is if bulkhead #8 wasn't squared with the bulkhead former. If it is squared with the bulkhead former then your ports will be spaced properly, even if the remaining bulkheads are not squared with the keel. See the photo provided that shows the quarter deck template taped to the hull.

Use a pencil to mark the locations for each port upright. Place the reference marks on the port sills and lintels. In some cases a bulkhead will actually be used for the port upright. Remove the template and start positioning the laser cut port uprights. They have been cut a little longer than needed so they can be trimmed for a perfect fit. When you glue them into position, make sure they stick out a little bit on the outboard side. This way you can fair them flush with the rest of the hull when you are finished. The uprights are cut on an angle that closely matches the hull shape. Another photo provided shows the port framing completed for the quarter deck gun ports.

The quarter deck port uprights are glued into position.





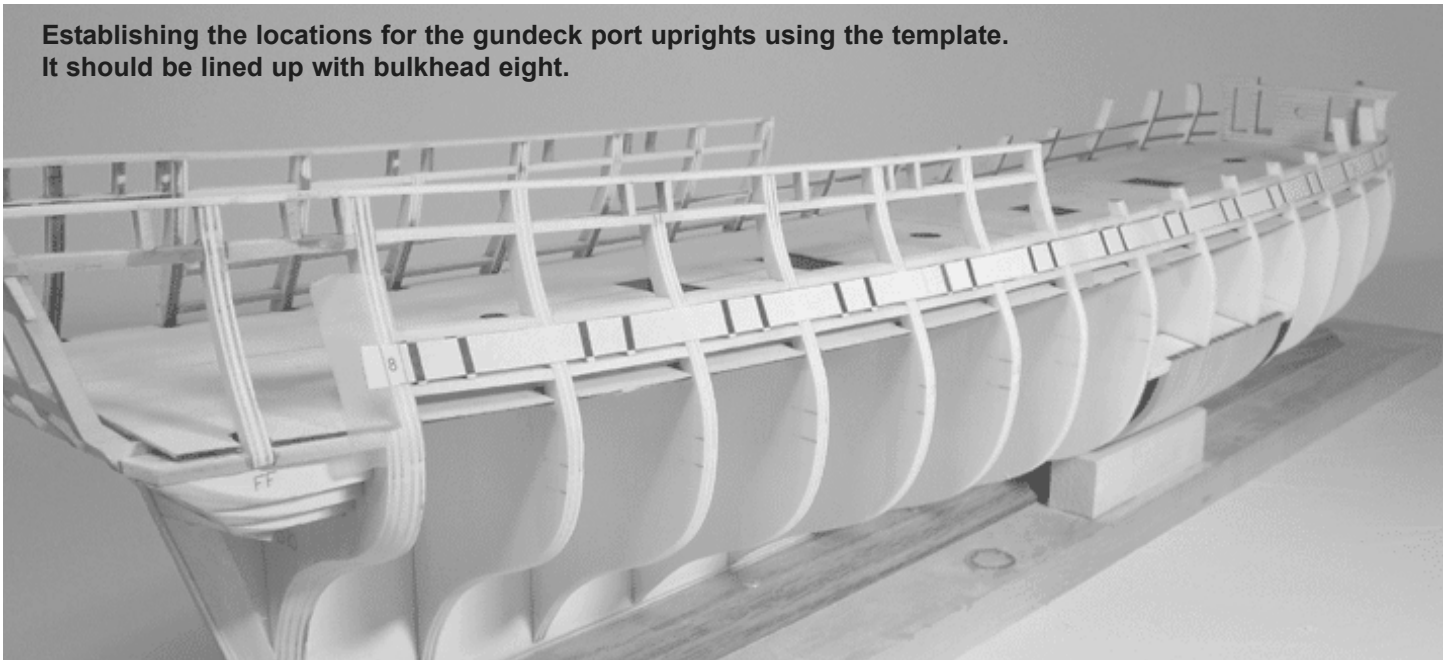
**Removing bulkhead 6 where it runs through the quarter deck gun port using a fine-toothed blade.**

**The same port opening after it was cleaned up with a sanding stick.**

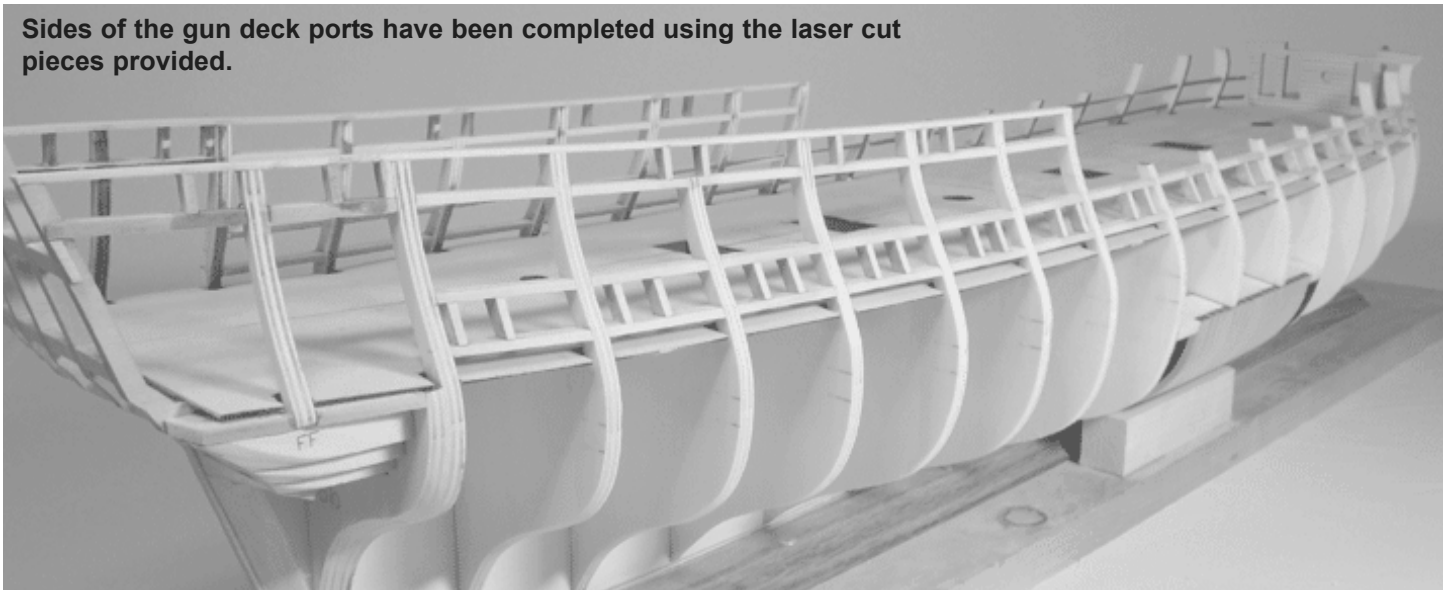
You will notice that bulkhead #6 is actually running through the center of one of the quarter deck gun ports. This portion of the bulkhead needs to be removed and cut away. As scary as that may seem, it is really not at all difficult. With the port uprights in position, the framing has become quite sturdy. An easy way to cut the bulkhead out would be to use a fine-toothed scroll saw blade. Cut a blade in half with some wire cutters. Then place half of the blade in the handle of your hobby knife. You can see this being done in a photo provided. Don't try and cut the bulkhead close to your sills or lintels. Leave a little room for yourself. The excess material can be sanded away later once the bulkhead has been cut away. The trick is to go slow. Don't apply too much pressure. Make slow, gentle and deliberate strokes with the blade. Before you know it the bulkhead will pop free. Start by cutting the top of the extension first.

When the bulkhead has been removed, you can sand the sill and lintel with a sanding stick. You can make a sanding stick very easily and they work fantastic. Glue a strip of sandpaper to a 1/8" x 1/8" strip of basswood. When it dries you will have made yourself a sanding stick. It has a perfectly flat edge and should be used to sand down the remaining part of that bulkhead extension. Sand it flush with the sill and lintels. You can see in the second photo what the port opening looks like after it was cleaned up with a sanding stick. There will be a need to repeat this process for another port opening on the gun deck as well.

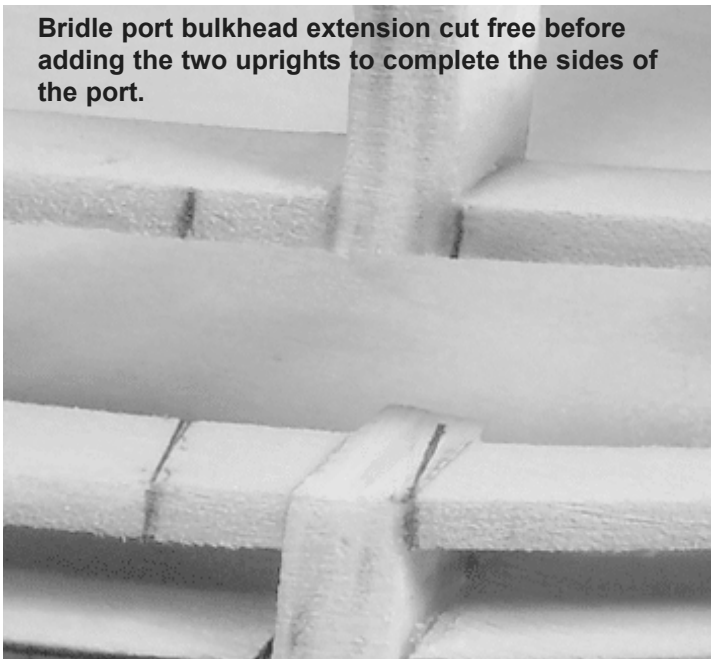
Frame the gun deck port uprights the same way. Line up that template with bulkhead #8 as well. Mark the positions for each upright along the sills and lintels. Then trim the laser cut uprights to fit between them. Be sure to position each upright as vertically as possible. All of the port uprights are perfectly vertical. Check the framing plan for details before you start. The very first gun port (the bridle port) will also need to have a portion of the bulkhead extension cut way. You can do this after the uprights are glued into position or even do it ahead of time. You can see in the photo provided that the bulkhead on the prototype model was actually removed before the uprights were glued into position. Either way, the framing is strong enough to hold together. Just remember to go slowly and not apply too much pressure on the scroll saw blade while sawing. Use your sanding stick to clean it up after you are finished. Also note that the uprights for the bridle ports are not aligned with the bulkheads. All of the other uprights are perpendicular to the bulkhead former. The uprights for the bridle ports, however, are angled so the port faces outward along the curvature of the bow. Examine plan sheet one for clarity. You can see that the cannon is angled while run out



**Establishing the locations for the gundeck port uprights using the template. It should be lined up with bulkhead eight.**



**Sides of the gun deck ports have been completed using the laser cut pieces provided.**

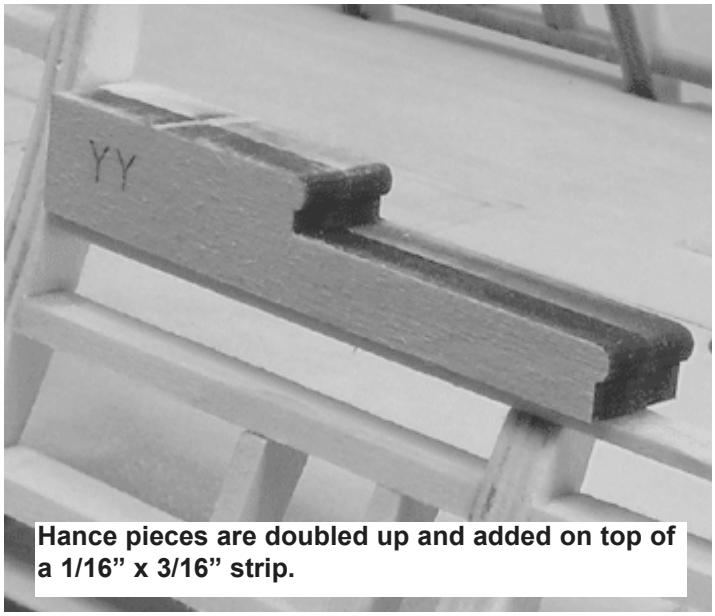


**Bridle port bulkhead extension cut free before adding the two uprights to complete the sides of the port.**

and the sides of the port are shown at the same angle when viewed from above.

**Adding the Hance Pieces…**

With the gun port framing completed, you can now add the hance pieces (XX and YY). These pieces will be added to the waist of the model (port and starboard). They create the underlying shape for the sides of the hull where the scroll-work will eventually be added. Remove the laser cut pieces from the basswood sheet. You will notice that there are four copies for each laser cut piece. You must glue two pieces together for XX and YY first before gluing them into position. This will give you the overall thickness you need. Set these pieces aside for the moment.



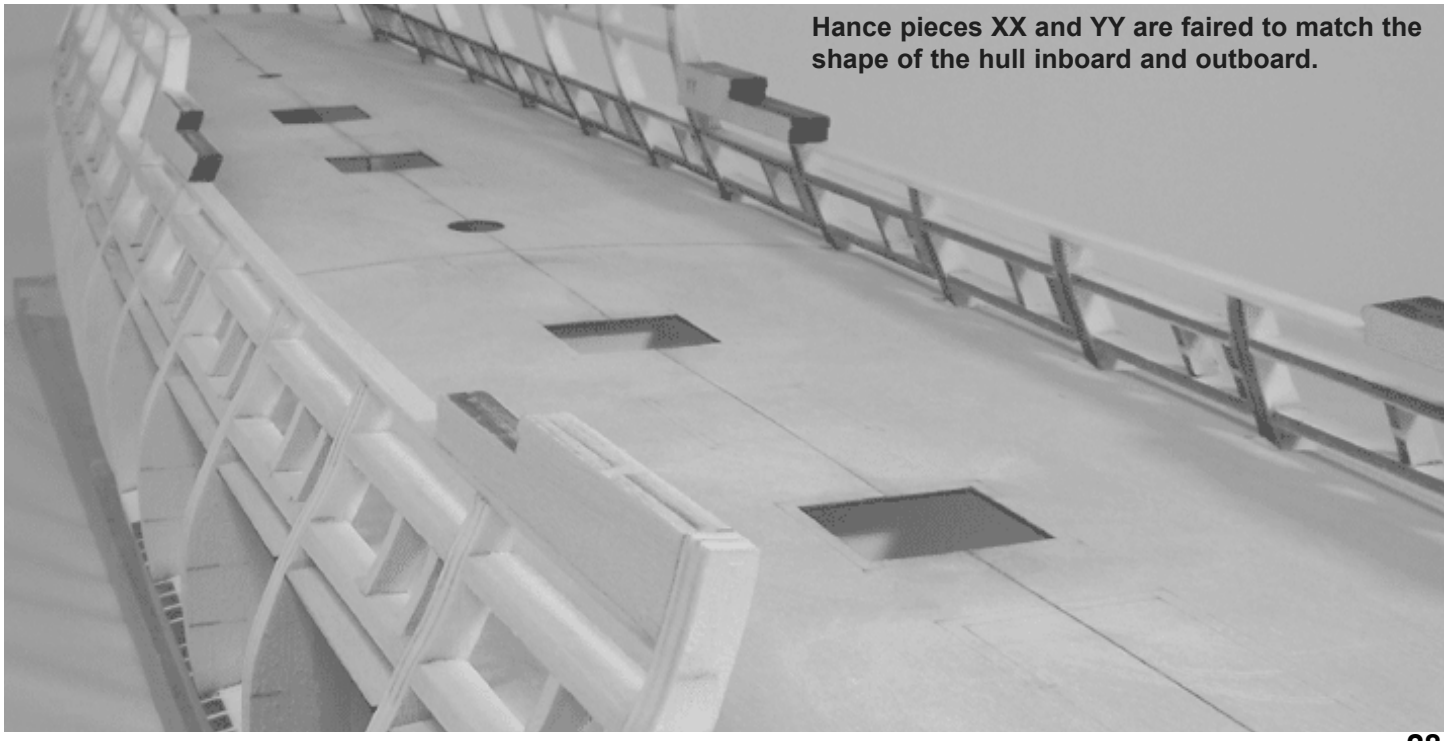

**Hance pieces are doubled up and added on top of a 1/16" x 3/16" strip.**

Before gluing the hance pieces XX and YY into position, you must first add a 1/16" x 3/16" strip along the tops of the bulkhead extensions at the waist. Just as you did when adding the strip along the quarter deck bulkheads, you will need to bevel the tops of these so the strip lies nicely on top of them. The beveling is not as severe as was needed on the quarter deck, but it must still be done to ensure that the strip lies with a nice smooth curve. Once the strip is in position you can add the hance pieces on top of that strip. Glue the hance pieces YY on the aft side of the waist. The pieces marked XX should be glued on the fore side of the waist. See the photo provided that shows YY in position before it was faired. You will see that it sticks out outboard and inboard. You must fair these pieces flush with the hull shape afterwards. Another photo shows the pieces faired properly on the starboard side. Also examine the framing plan before completing these steps.

**Framing the Sweep Ports…**

Examine sheet one of the plans and the framing plan. Just above the wales you will see a row of sweep ports. Because this deck will not be detailed on our model, there is no need to frame these ports like the gun ports above them on the gun deck. You will see that two laser etched reference lines remain on each bulkhead. The lower reference line represents the top of the wales. The reference line above that marks the location for the BOTTOM of the sweep port frames. As you have done numerous times, run a batten across these reference lines to ensure a smooth run for these sweep port frames. Make your adjustments to the batten to ensure a smooth run across the hull. Then mark the outside of each bulkhead with a pencil when you're satisfied.

The sweep port frames are 3/8" x 5/16". The 3/8" side should face outboard when you are glu-



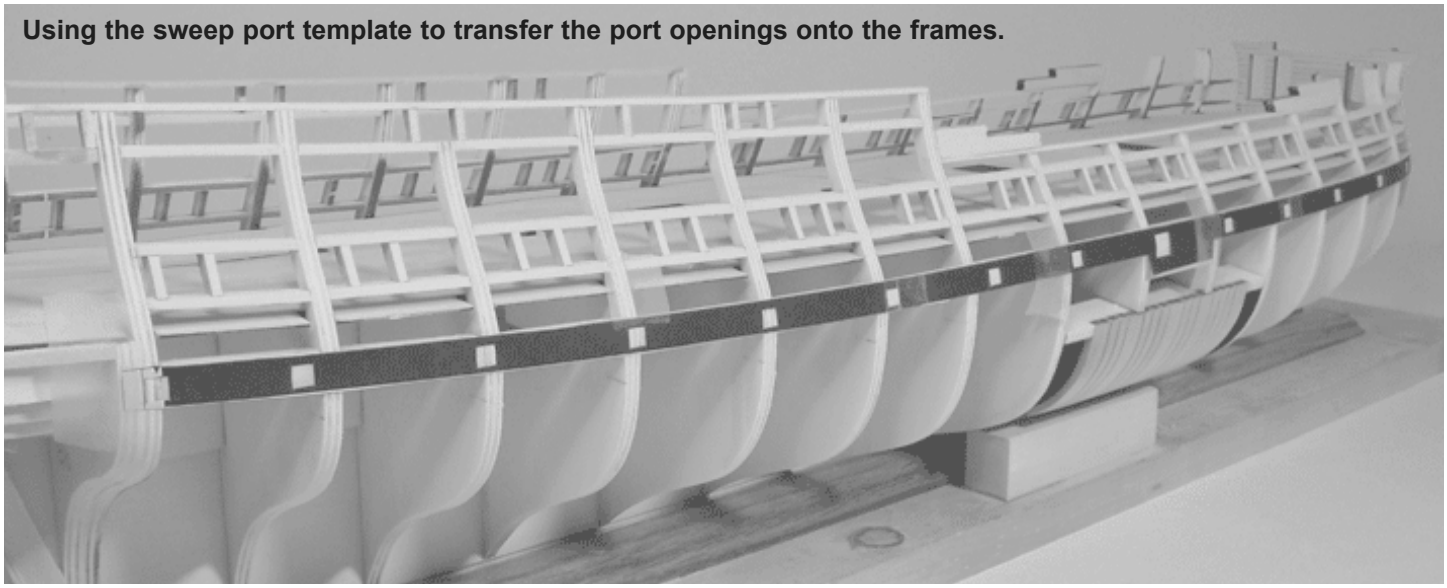
**Hance pieces XX and YY are faired to match the shape of the hull inboard and outboard.**

**Measuring the sweep port strips to fit into position after establishing a clean run for them with a batten.**

ing them into position. Hold the strip against the hull following your reference marks. Then indicate the angle that you will need to cut the strip so your sweep port frames fit properly. See the photo provided that shows a sweep port frame being measured. Glue the frames into position on the port and starboard sides of the hull. Remember, the reference marks on each bulkhead represent the BOTTOM of these sweep port frames. Glue them into position accordingly. You will also notice that there is a larger port opening mid-ship. This port was called the ballast port. It was used to load ballast directly into the hull so it didn't need to be taken down the hatches from above. An additional sweep port frame will be needed to accommodate this larger ballast port. Place a second frame under the strip already in position. This should be done between bulkheads 0 and A. When you are finished, the frames should be sanded flush to the

**Using a batten to establish a smooth run for the sweep ports.**

**Using the sweep port template to transfer the port openings onto the frames.**

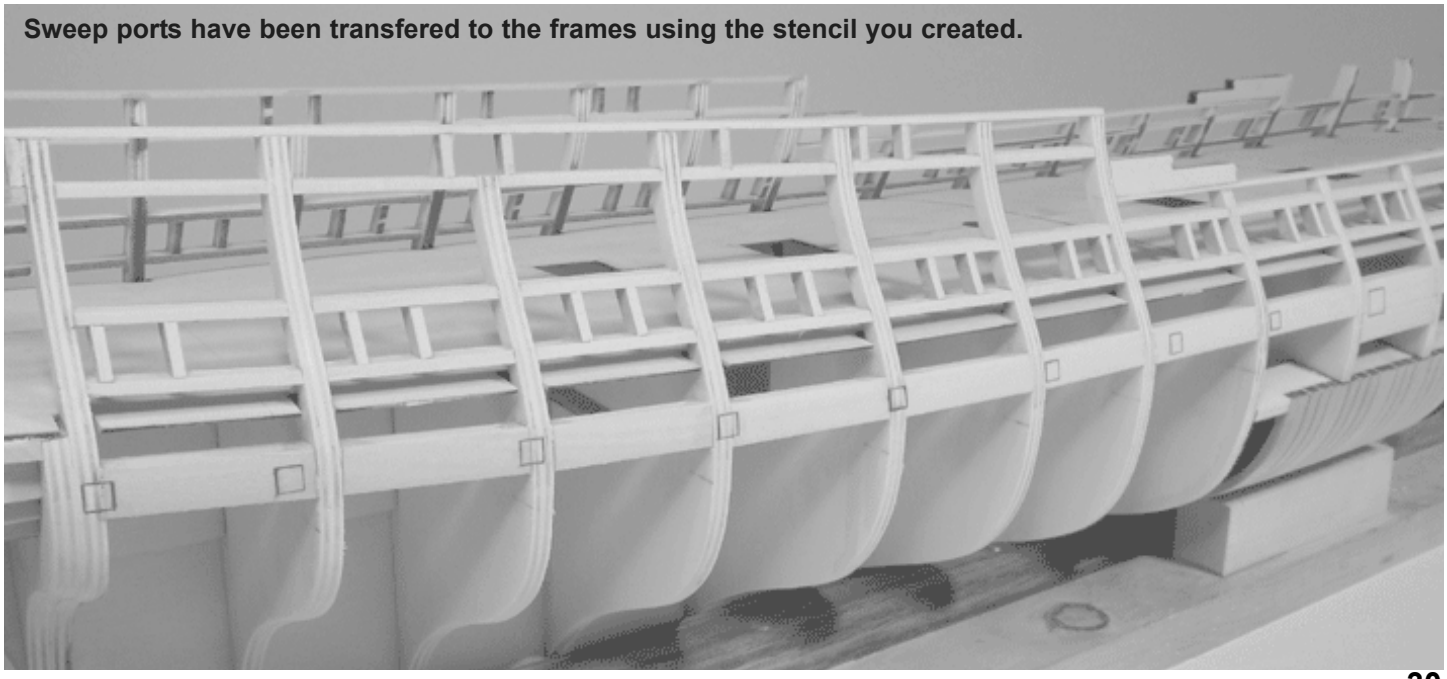


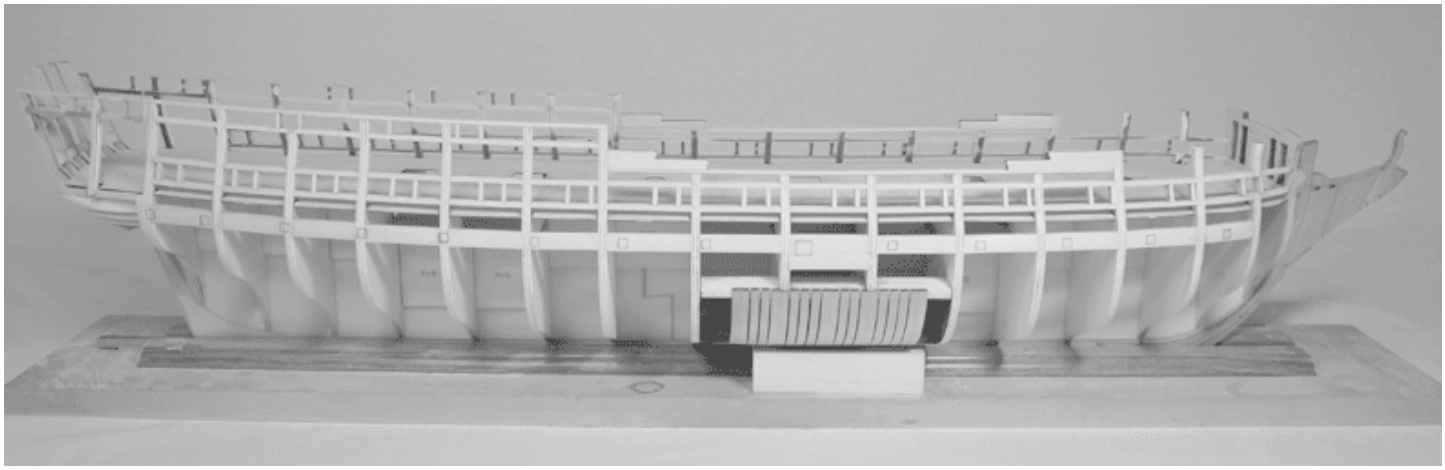
bulkhead edges. Take your time here. This will be the last time you have to fair the hull before planking begins.

**Using the Sweep Port templates…**

Additional templates are provided so you can mark the locations for each sweep port. You will be using these templates as a stencil to draw the port openings onto the sweep port framing you just completed. Before you cut the template from the plan sheet, you should remove all of the sweep ports from the template first. Cut the sweep ports out so you have a series of open boxes along the template. This will be harder to do if you try and cut the boxes out of the very thin strip of paper. So create the openings first using a sharp blade and steel ruler as a guide. Then cut the entire strip from the plan sheet. Tape the template to the hull as shown in the photo provided. Like all of the other templates, this one will be lined up with bulkhead #8. Tape it down securely at intervals along the sweep port frames. It will need to be very secure so it doesn't move around while you are tracing each port opening onto the frames. You can see the results in the second photo provided. There are a series of port openings drawn along the sweep port frames. When you start planking the hull later, you will need to cut the planking around these sweep ports. Then the port lids will be added by popping them into the openings creat-

**Sweep ports have been transfered to the frames using the stencil you created.**





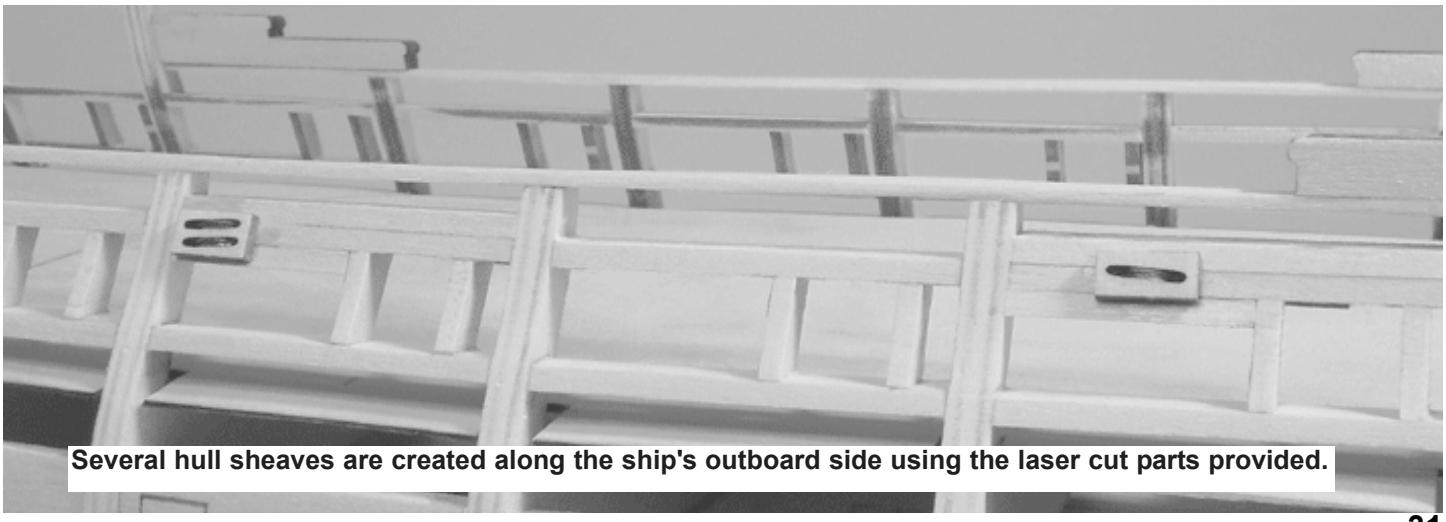
ed. These are very important reference lines. Be very careful while drawing them. Draw them dark enough to see. Make sure the lines are straight with crisp, hard corners to make planking around them easier.

**Adding the Hull Sheaves…**

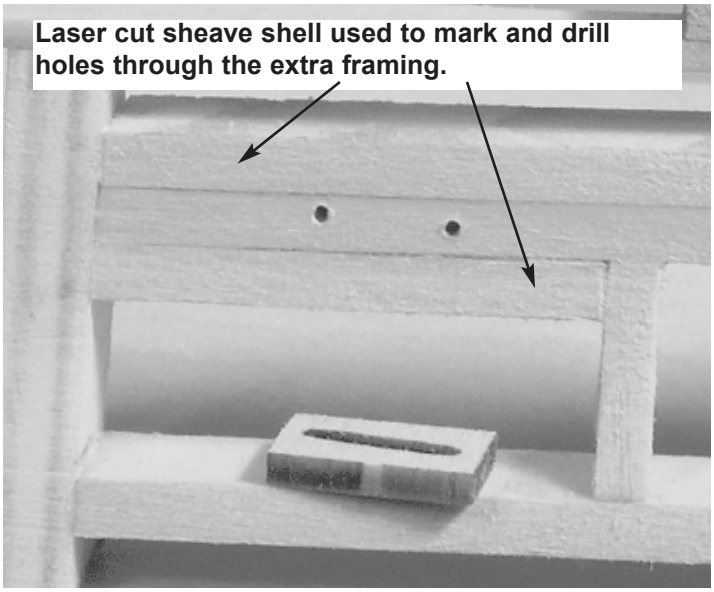
Examine plan sheet one and the framing plan. You will see that there are three hull sheaves shown along the hull. There are two double hull sheaves and one single hull sheave. These are usually created on most kits after the planking is completed. The builder simply drills a hole through the bulwarks to allow the rigging lines to pass through. In actual practice, the sheaves were created separately. The shells for them were let into the hull frames before the planking was started. This is how the Confederacy kit was designed, although it will only simulate the shells for the sheaves. This will add an extra level of authenticity and detail to your model. The shells for the sheaves have been laser cut for you. They are 1/16" thick. Match the shells against the framing plan to ensure that you are using the correct ones in each location. The shapes for each shell are different for the two double hull sheaves.

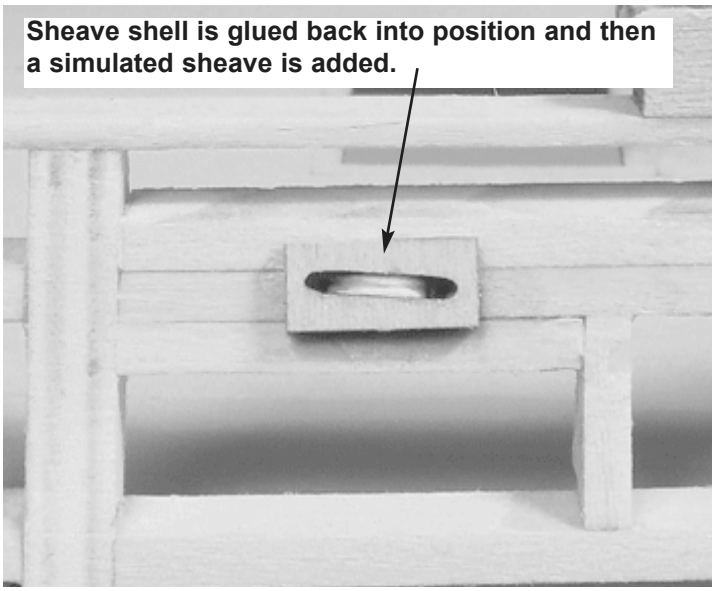
You will also notice that some additional framing will be necessary to create a foundation for each sheave. You should have some laser cut lintels and sills left over which can be used for these additional frames. Examine the photos provided and you will see the additional frames in position. These should be added first, following the framing plan. Sand them flush with the hull when you have finished.

To begin, hold the shell for the sheave against the hull. Mark the location of the sheave slot with a mechanical pencil. Concentrate on marking the locations for the ends of the sheave slots. A small dot on each end of the slot will do the trick. You will need to drill some holes through the frames in these locations. See the photo provided. Drill the holes all the way through the hull.



**Several hull sheaves are created along the ship's outboard side using the laser cut parts provided.**




Then glue the shell onto the hull permanently. Carefully line up the holes you drilled with the slot in the sheave shell. An additional photo shows the sheave shell glued into position. A second corresponding shell will be glued on the inboard side of the hull later. That will be done after you fair the inboard side of the bulkheads much later in the project.

To finish it up, a simulated sheave should be fit into the slot of the shell. For this, use a 1/32" x 1/16" strip. Cut a small piece of the strip and round off the outboard side. You are trying to shape this tiny piece of wood so it looks like a portion of the circular sheave that would have actually been placed in the slot. You're just trying to fake the look of a round sheave. Push this sliver of wood into the slot. Center it so it looks like an actual sheave. See the same photo of the completed hull sheave. Double-check that your holes are not obstructed and a rigging line can still pass easily through them. When planking the sides of the hull later, you will plank around the sheave shells. This will look much more authentic than simply drilling a hole through your planking. If you skip ahead in these instructions you are sure to see how good they look after the hull planking has been completed. See the many photos that show the hull sheaves detailed.

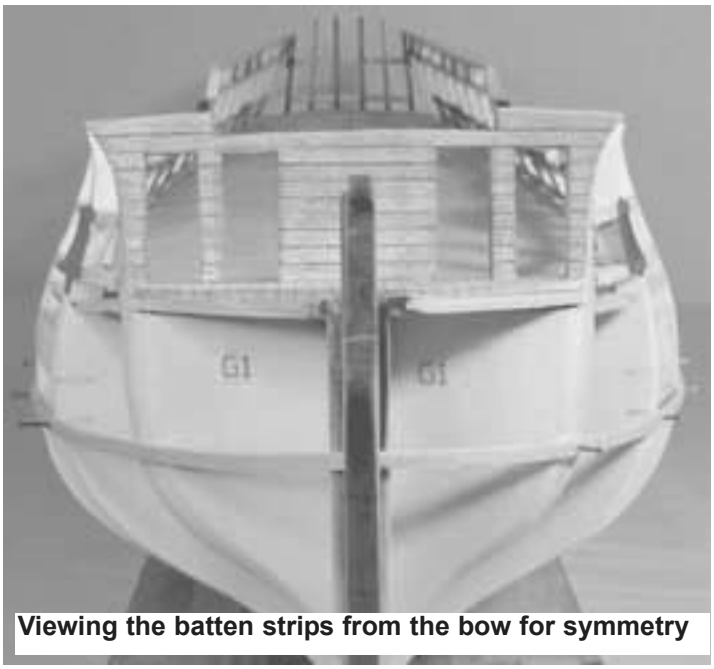
Batten strip in position which references the top of the wales.

# Chapter Five

## Planking the hull above the wales…

Planking any ship model can be a challenge. In order to make the process more manageable, it will be broken down into smaller steps. The first thing you need to consider is whether or not you will paint your inboard bulwarks and gun ports. If you have decided to paint them bulwark red, then this would be the best time to paint them inside and outside. Paint the inboard faces red and the outboard area surrounding each port opening. The prototype model will be painted and you will see that this step has been completed in the photos that follow.

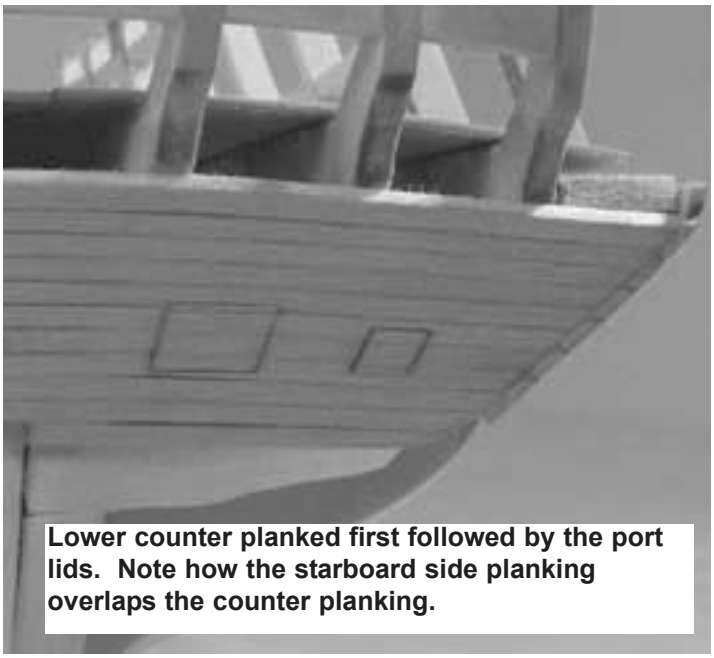
Each bulkhead has one more laser-etched reference line that hasn't been used yet. These are the reference lines below the sweep port framing. It represents the top of the wales. Use a batten strip like you have done many times throughout this project. This is probably the most important batten strip you will need to use. In addition to creating the smooth run for the wales from bow to stern, it will also establish the run of the planking across your entire model. It will create the sheer line for the profile of your model. Place the batten on both sides of the hull so you can check it from the bow and stern. You should make sure that the wales are symmetrically located so your planking will be at the same heights on both sides of the model. You can see the battens being used on the prototype in the photos provided. Note how they are lined up evenly when viewed from the bow. Mark your reference lines in pencil after you tweak them and are satisfied.



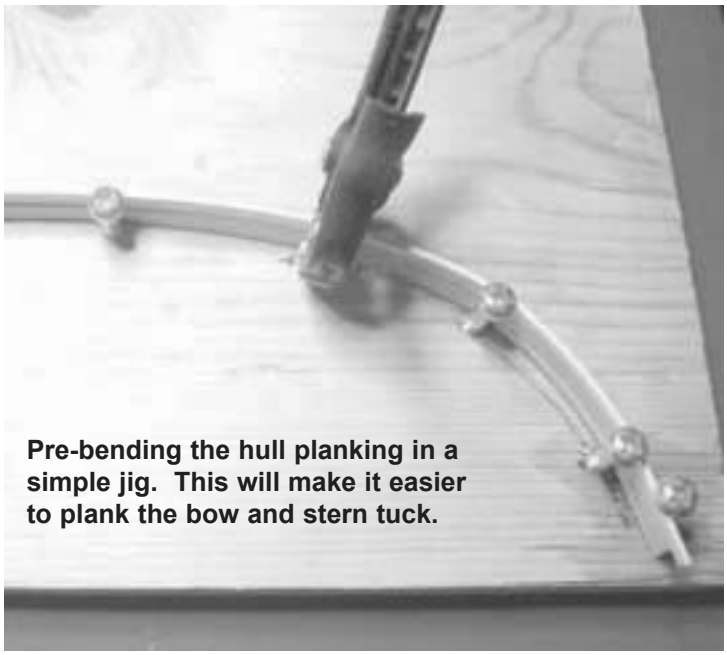
Viewing the batten strips from the bow for symmetry

### Planking the lower counter first…

Plank the lower counter first. Use 1/8" x 1/16" strips. If you want to show the caulked seams between each plank, then run a soft pencil down their edges. It will be easier to plank the counter if you turn the model upside down. Remember to support the bulkhead extensions and stern frames by propping your model up so it is not resting on your work surface. This will help stop your bulkheads and stern frames from breaking as you plank the lower counter. Apply the first plank on the top of the lower counter following the curve created by the break/transition onto the upper counter.



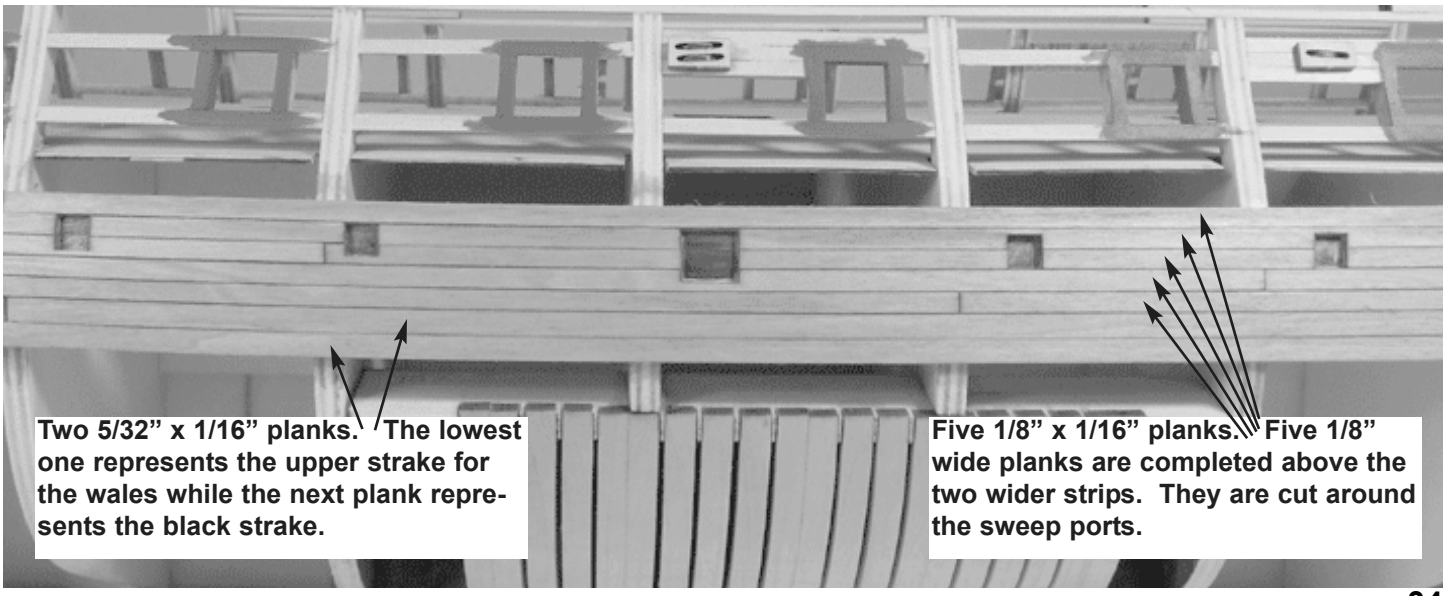
**Lower counter planked first followed by the port lids. Note how the starboard side planking overlaps the counter planking.**



**Pre-bending the hull planking in a simple jig. This will make it easier to plank the bow and stern tuck.**

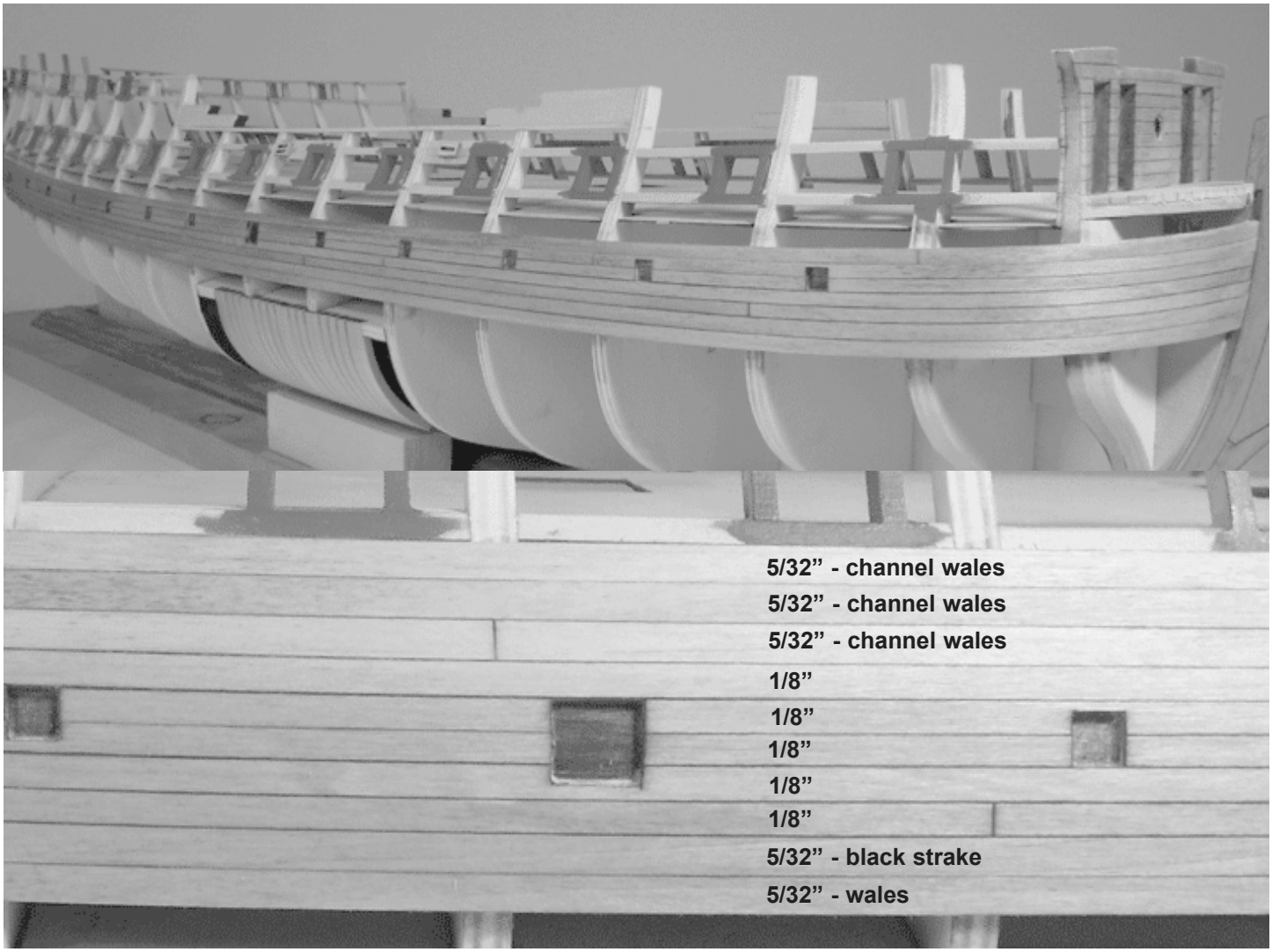
Continue to apply additional planking until you reach the gun port openings along the counter. You must notch the planking around these ports. Hold a planking strip in position and mark the locations that need to be notched out. Leave approximately 1/32" rabbet around each port opening. This 1/32" reveal around each port will be used as a stop when you add the port lids afterwards. These four ports will be modeled with their lids closed. Even so, try to create a consistent rabbet around each port opening in order to get some practice for planking around the gun ports on the port and starboard sides later. Those ports will have open lids and the rabbet (port stops) will be very visible. Continue the planking process until you reach the bottom of the lower counter. Don't worry about cutting the opening for the rudder yet. This will be done later in the project. See the photo provided which shows the lower counter planked and the port lids completed. You can see a few planks that were added to the sides of the hull. Note how these planks overlap the counter planking.

To create the port lids for the lower counter, glue four (1/8" x 1/16") strips together edge to edge. This will create a strip that is ½" wide. Hold this strip against each port opening, lining up the seams with the planking surrounding each gun port. Try and match the pattern of the planking seams when you create the port lid. Mark the sides of the port with a pencil to get the correct angles in order to match the planking seams. Then cut the strip so you have a piece that will fit



**Two 5/32" x 1/16" planks. The lowest one represents the upper strake for the wales while the next plank represents the black strake.**

**Five 1/8" x 1/16" planks. Five 1/8" wide planks are completed above the two wider strips. They are cut around the sweep ports.**

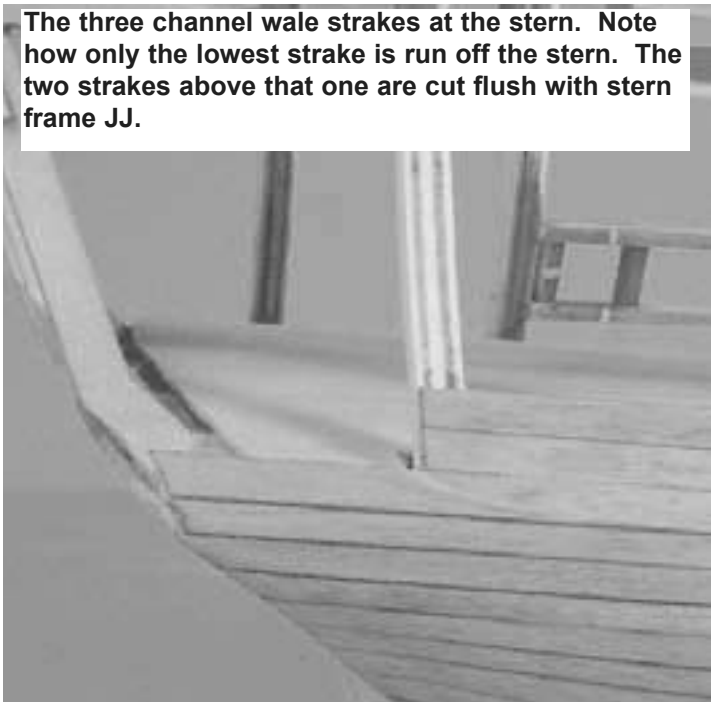



into the width of the opening. Then hold that piece against the hull so you can mark the height in pencil. Trim it to fit neatly into the opening. Push the lid into the opening so it rests firmly against the rabbet you created in the port framing. If you are satisfied with the results, glue it into position. Repeat the process for all four gun port lids. Sand the lower counter smooth and stain it with the finish of your choice. The lower counter will be left “bright” on the prototype. The port hinges will be added later in the project, which should prevent them from being damaged while planking the hull. If you chose to treenail your hull planking, that could also be completed at this time.

NOTE: On the prototype, a single port lid was used for the two larger ports on the lower counter. You will notice that on the plans, split port lids are shown. Either type is historically plausible. You can choose either style depending on which one you find more attractive. No one really knows for sure which style was used on the Confederacy and both styles were a common occurrence.

**Pre-bending your hull planks using a simple jig…**

Once the lower counter planking is completed, you can start planking the port and starboard sides of the hull. To make the planks bend easily around the curved bow, you can create a simple jig like the one shown in the photo provided on the previous page. The jig should approximate the curve of the bow and even be slightly more pronounced. Soak your planks for a short time and place them in your jig while they are still wet. Wait until they are 100% dry before you remove them. They should retain the curved shape with minimal spring back. It will be much easier to glue them around the bow if you don’t have to



**The three channel wale strakes at the stern. Note how only the lowest strake is run off the stern. The two strakes above that one are cut flush with stern frame JJ.**

worry about the planks snapping or creasing under the pressure. You should create an ample supply of ten to twelve 1/8' x 1/16" strips and ten to twelve 5/32" x 1/16" pre shaped strips. The wider strips will be used to plank the lower wales, black strake, and channel wales. These pre-formed strips can also be used to plank the "tuck" at the stern.

**Adding the first two planks…**

The first plank positioned on the hull will represent the TOP STRAKE for the main wales. It will be 5/32" x 1/16". The top edge of this strip should be aligned with the reference marks you created along the bulkhead edges. Take one of your pre-formed strips and insert the bow end into the rabbet formed along the stem. Glue it into position along the hull. Each strip will not be long enough to cover the hull in one length. The Confederacy has a very long hull. Hull planking on the actual ship would have been cut to 25' to 30' lengths depending on the timber available. You should try and simulate these plank lengths along your hull as well. But our model will have a second layer of planking added for the wales and black strake. So it isn't necessary to show the scale plank lengths for these. Don't forget to darken the plank edges with a pencil if you have decided to simulate the caulking.

The second strake added to the hull will represent the black strake. It will also be 5/32" x 1/16". Glue it onto the hull above the wale strip you just completed. Don't use so much glue that it will seep out between the planks and ruin the finish of the planking surface. Most of this can be scraped or sanded off afterwards but it will change the porosity of the wood in those areas. The stain will not coat the wood evenly and appear to be blotchy. NOTE: The plans are drawn to scale and show the true dimensions for every plank above the wales. Examine them for the number and placement of the different planking sizes being discussed.

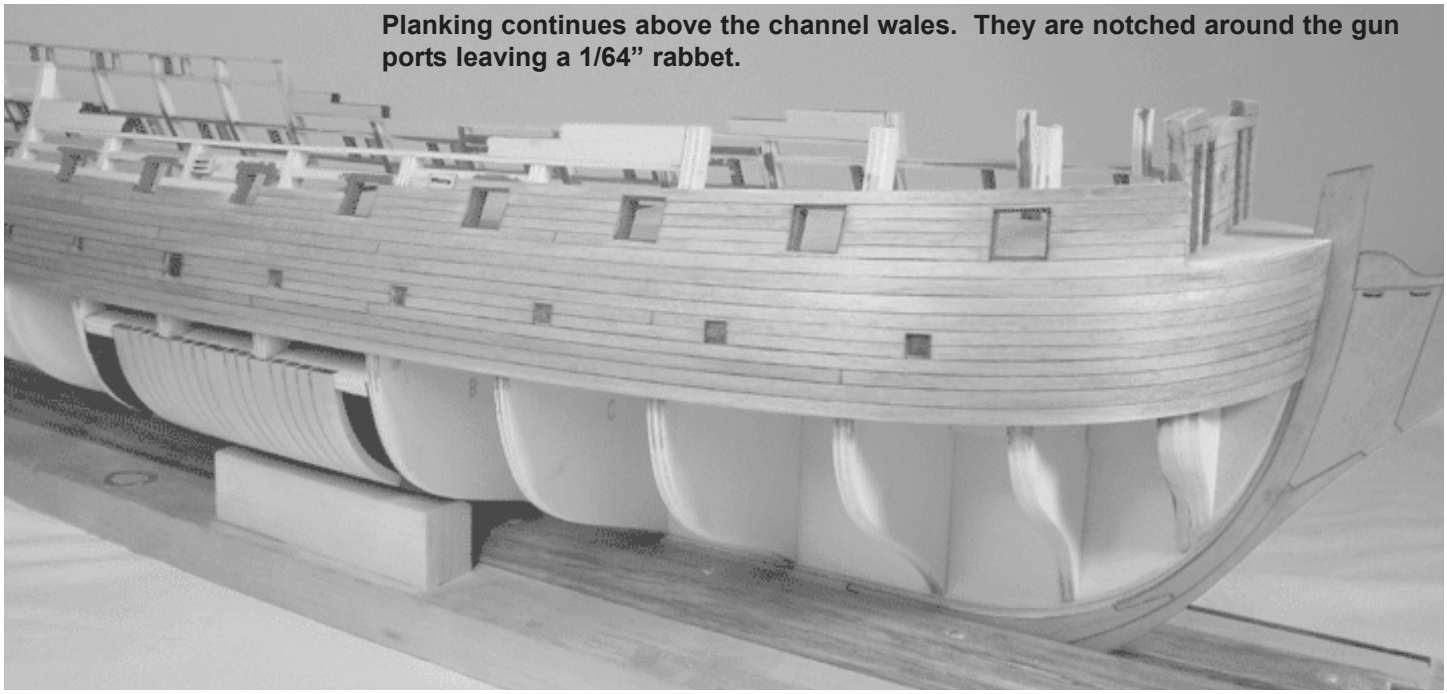
**Adding the next 5 strakes of planking…**

The next five rows of hull planking will be 1/8" x 1/16". Glue them above the two wider strips you initially completed. As the photo provided shows, these planks should be cut around the sweep port openings. Test a strip against the hull before you glue it into position permanently. If it runs through the outlines for the sweep ports you drew along the hull, then the planks need to be marked and notched around them. That same photo shows the five strakes added to the hull which were carefully cut around each sweep port. The lids for these will be added later.

**The channel wales..**

The next three strakes you will add to the hull represent the first layer of the channel wales. The channel wales (or gunwales) were a thicker, wider band of planking above the main wales. The chain plates were secured to these thicker, heavier planks. Use 5/32" x 1/16" strips for the channel wales. The last of these three strakes should clear the gun ports and not require any notching around them. If by chance the upper strake does overlap any of the gun ports, they need to be notched to leave a 1/64" wide rabbet around them. This may only happen with the aft-most ports or the bridle port at the bow.

NOTE: The first strake of these three strips will extend off the stern as shown in the photo provided. The next two strakes should be cut flush along the last bulkhead piece "frame JJ". This will



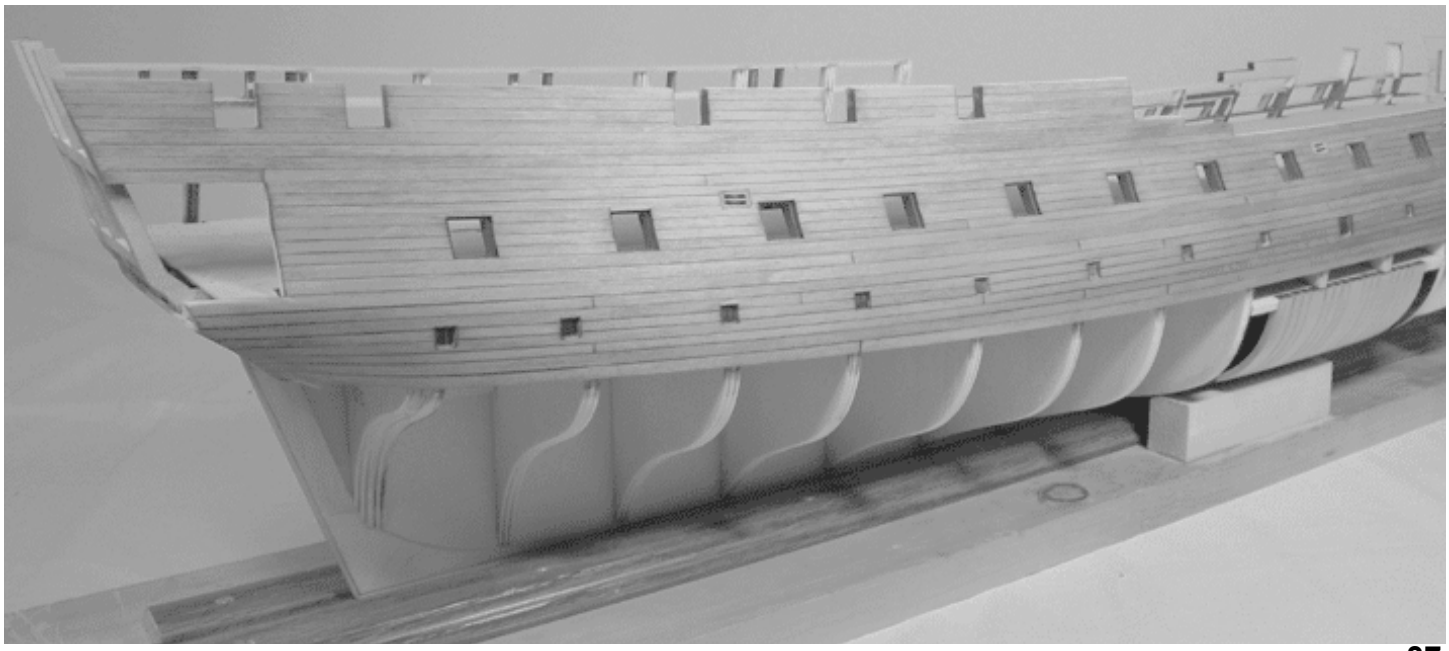
**Planking continues above the channel wales. They are notched around the gun ports leaving a 1/64" rabbet.**

begin the forming of the doorway to the quarter galleries.

**Completing the planking above the channel wales…**

Use 1/8" x 1/16" strips to complete all of the remaining hull planking above the channel wales. You will certainly need to notch these planks around the port openings on the gun deck. Carefully test each plank in position before you glue it onto the hull permanently. While cutting the planks around the gun deck ports, you need to create a 1/64" inch rabbet around each of them. This will form the "stop" for the port lids. A corresponding rabbet will be created on the lids, which would have produced a tight waterproof seal when they were closed. Mark and cut each piece accurately and if one section doesn't fit properly, you should throw it away and create another one. This rabbet detail will be very visible and care should be taken to make it clean and consistent. There are a few additional notes listed below that explain some of the details for your hull planking above the gun deck port openings.

**NOTE:** While planking upwards towards the sheer, the eighth plank above the channel wales should no longer be cut flush along bulkhead



frame “JJ”. It should be continued off the stern to complete the forming for the entrance to the quarter galleries. See the photo provided. When extending this plank off of the stern it should flow nicely onto the small stern piece “ZZ”. Above this eighth plank all of the remaining strakes will run off the stern and be sanded flush against the stern frame. See the photo provided.

**Note 2:** The waist - Carefully trim the planking around the hance pieces on either side of the waist. The top of the last plank that runs between the hance pieces (XX and YY) should also be sanded down until it is flush with the sheer of the waist.

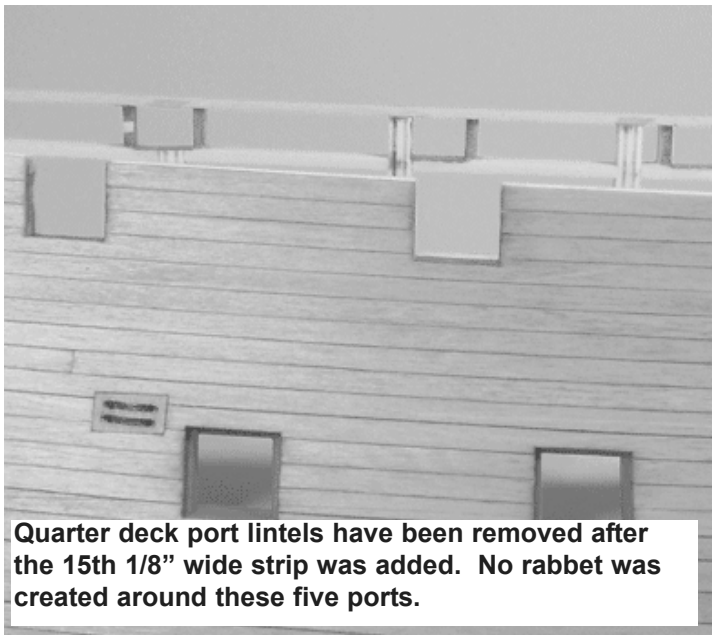
**Note 3:** The forecastle – Sand the last plank to create the sheer line of the forecastle. It should run from the top of the beakhead bulkhead smoothly towards hance piece XX in the waist. The top edge of that last plank should be sanded so it is flush with the top of hance piece XX. It should create a smooth gentle curve that mirrors the run of all of the hull planking at the bow.

**Note 4:** The quarter deck hull planking – When planking the hull around the five quarter deck port openings you should NOT create a rabbet around them. There is no need to create a “stop” for a port lid because there weren’t any gun port lids used on these. Just cut your planking flush to the top of the port sills and the port uprights. Continue planking towards the sheer line of the quarter deck. The top of the fifteenth 1/8” x 1/16” strip will become the sheer. Do NOT sand the top of this plank flush with the lintel strip for the port openings. In fact, you may need to add another 1/16” thick lintel strip on top of the one already there. If for some reason the run of your planking is higher than the single lintel strip at the stern or towards the waist, you should add another lintel strip as support for it. The fifteenth plank will define the sheer. It will run along the hull with a smooth gentle curve. This creates a nice pleasing sweep to the profile view of the model and should not be altered. It will also match the run of your wales and the hull molding that will be added later.

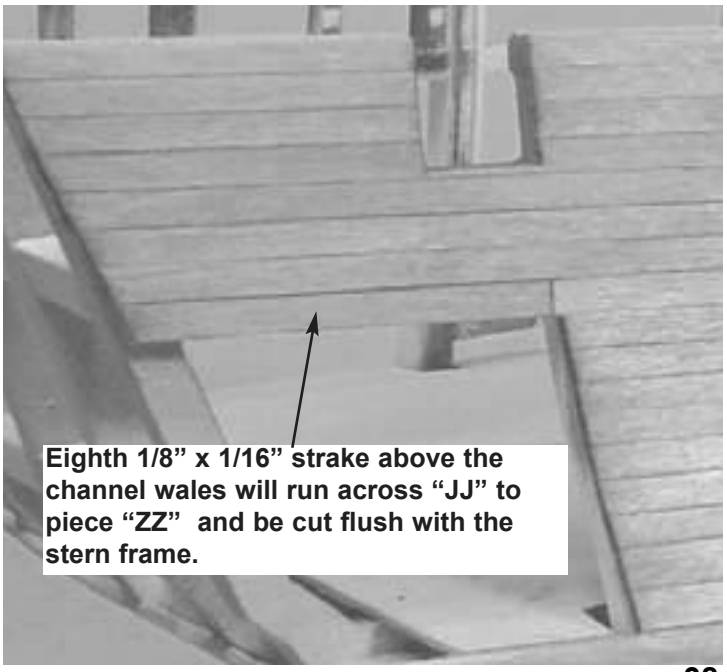
If you needed to add another lintel strip to create some support at the stern and in the waist, then sand the top of this additional strip down flush to match the gentle curve created by that last plank. Sand the lintel strip down flush with the top of the fifteenth plank. See the photos provided.

**Removing the quarter deck port lintels…**

Once the hull planking above the channel wales is completed, sand it smooth and apply the finish of your choice. The sides of your hull should be significantly stronger at this time. To complete this step, the lintels need to be cut away for the quarter deck gun ports. Use a fine-toothed blade like the one you used to cut the bulkhead exten-



**Quarter deck port lintels have been removed after the 15th 1/8” wide strip was added. No rabbet was created around these five ports.**



**Eighth 1/8” x 1/16” strake above the channel wales will run across “JJ” to piece “ZZ” and be cut flush with the stern frame.**

sions earlier. Remove the portion of the port lintels that intersect the openings. The lintel strips were only used to create support for gluing the port uprights into position earlier. There won't actually be a lintel for these gun ports. Instead, the cap rail will sit on top of bulwarks and span across each gun port opening. This won't be added until much later. After you cut the lintels away, use a sanding stick to sand the ends flush with the sides of each opening. You will probably need to touch up the red paint on the inside of each port opening afterwards. See the photo provided.

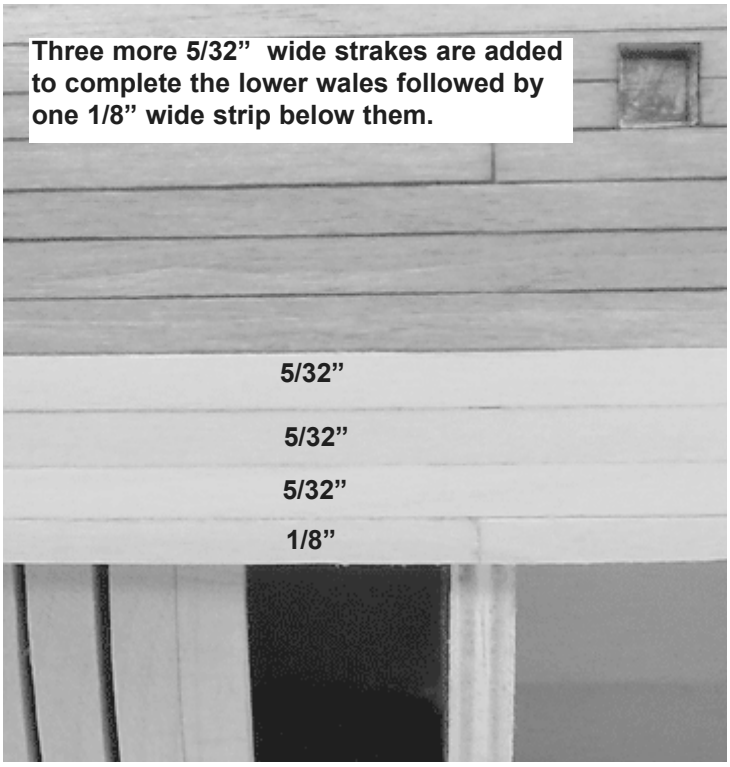
**Completing the first layer of the main wales…**

Add three more strakes of 5/32" x 1/16" strips to the hull. These will be added below the two 5/32" wide strips already there. You will now have a total of five 5/32" wide strakes in this band across the hull when completed. The top strake will become the black strake (not painted black on our model) and the four remaining planks below it will become the first layer of the main wales. To complete this step, also add one 1/8" x 1/16" strip below the wales. See the photo provided.

*OPTIONAL breather from planking:* You could continue planking the hull to the keel. But some builders prefer a change at this point to avoid "planking-overload". For those who would rather complete the first layer of planking you can skip ahead to chapter six which documents it in detail. If however, you need a break from planking, the following items can be completed instead. This was how the prototype model progressed. Those who choose to complete the planking first can double back to complete these intermediate steps afterwards.

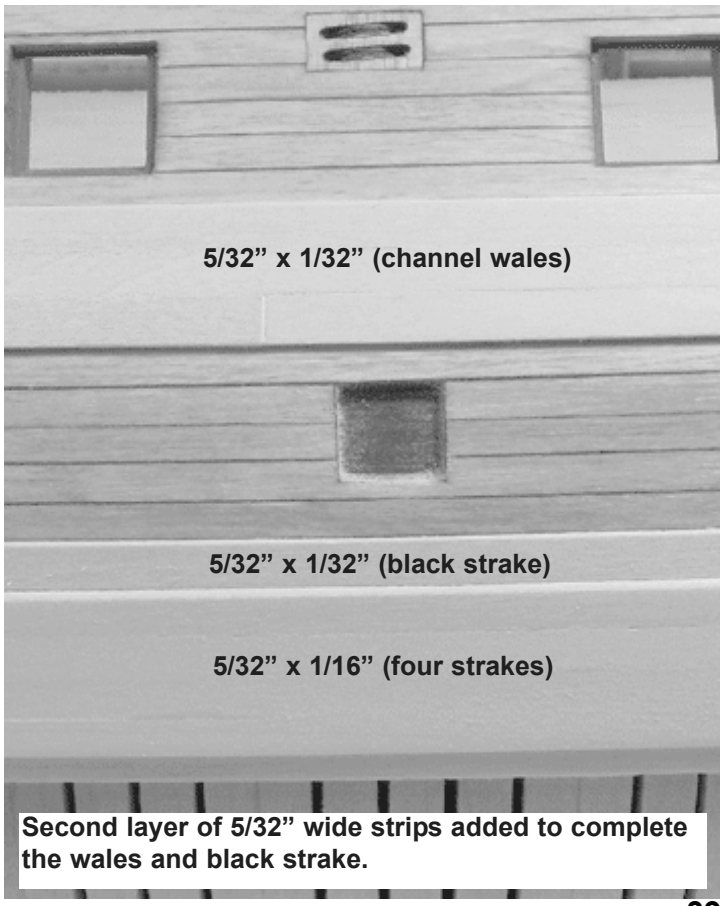
**Adding the second (final) layer for the main wales and channel wales…**

Starting with the main wales, add a second layer of 1/16" x 5/32" strips over the four strakes that make up the main wales. These strips should be glued on top of the first layer and you can use the seams as a guide to ensure a smooth run across the hull. If, for whatever reason, your first



**Three more 5/32" wide strakes are added to complete the lower wales followed by one 1/8" wide strip below them.**

layer was not positioned to your satisfaction, you can tweak the second layer to correct minor problems that disrupt the gentle curve of the wales. Chamfer or slightly round off the bottom and top edges of the wales after all four strips have been added. See the photo provided.



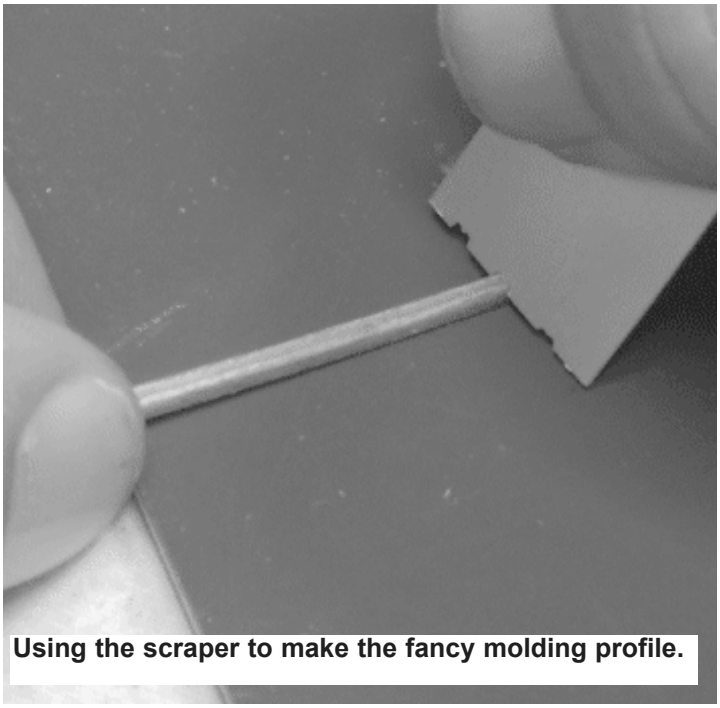
**Second layer of 5/32" wide strips added to complete the wales and black strake.**

Then add one 5/32” x 1/32” strip along the top of the wales. This is the black strake. It will not actually be painted black on our model. Chamfer the top edge of the black strake after it is added. To complete the second layer for the channel wales, simply add three 5/32” x 1/32” strips on top of the first layer. Once again, slightly chamfer the top and bottom edge of the completed channel wales. The top and bottom of the wales should not have a hard, sharp edge.

Stain the black strake and the channel wales to match the hull planking added so far. The main wales should be painted black. The single 1/8” x 1/16” strip added below the wales has been left natural on the prototype. Only satin polyurethane was used. The bottom of the hull below the waterline (shown on sheet one of the plans) would have been painted a tallow color. Sometimes called “white-stuff”, this layer of paint created some protection against worms and rot below the waterline. Copper plates were slowly being introduced in England for better protection, but in America this was still uncommon until after the American Revolution. We know that the Confederacy was not plated with copper. To simulate the white/off-white color on the prototype, all of the planking below the wales will be left unfinished except for the application of a satin polyurethane. It will be significantly lighter than the planking above the wales The deck planking will be treated the same way. This is purely a subjective decision and you may opt for a different color scheme below the wales or only below the waterline. If you decide to actually paint the bottom of the hull white/off-white, it should be done only below the waterline.

**Adding the “FANCY” molding along the hull…**

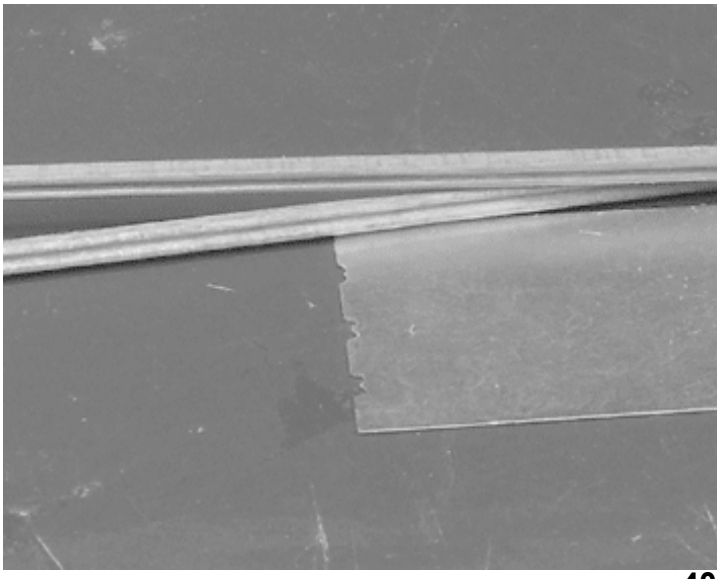
There are several options available for creating the fancy molding for the hull. Ships of this period had several molding strips along the hull with sometimes very complex profiles. Depending on your level of experience, you can simply add a strip of 1/16” x 1/16” basswood to the hull as is or create a simplified molding profile. The choice is yours. A set of photo etched scrapers has been provided for you in this kit. They can be

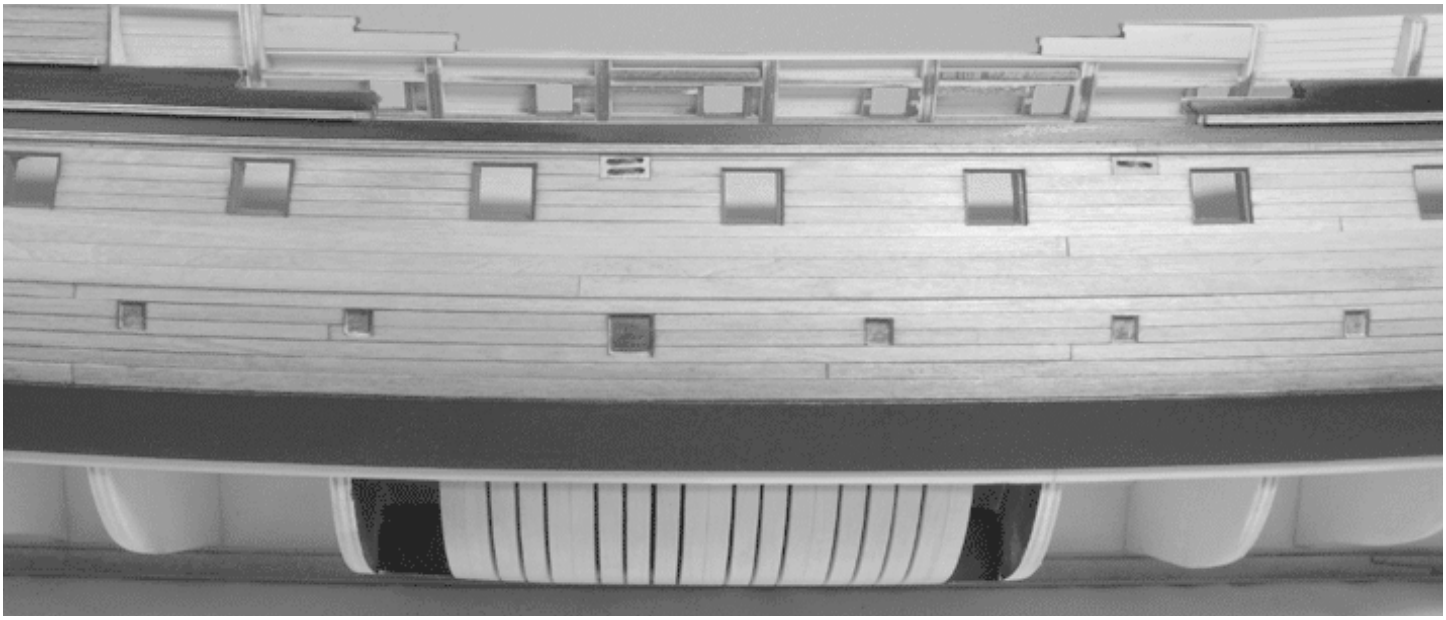


**Using the scraper to make the fancy molding profile.**

used to create a simple profile. For all of the hull molding, select the scraper with the double beaded profile. It is 1/16” wide. It will dull quickly so you will see three etched profiles on the end of the correct scraper. It also has a circle in the center of the scraper to make identifying it easier. A few other profiles are included and will be used on other areas of the model. This double beaded molding matches the cast scrollwork in the kit which will be added later along the waist, so it is important that you select the correct profile scraper. More will be discussed about that later.

To create and scrape the profile into a 1/16” x 1/16” strip, you must prepare the strip first. The basswood in the kit is very soft. It can tear easily

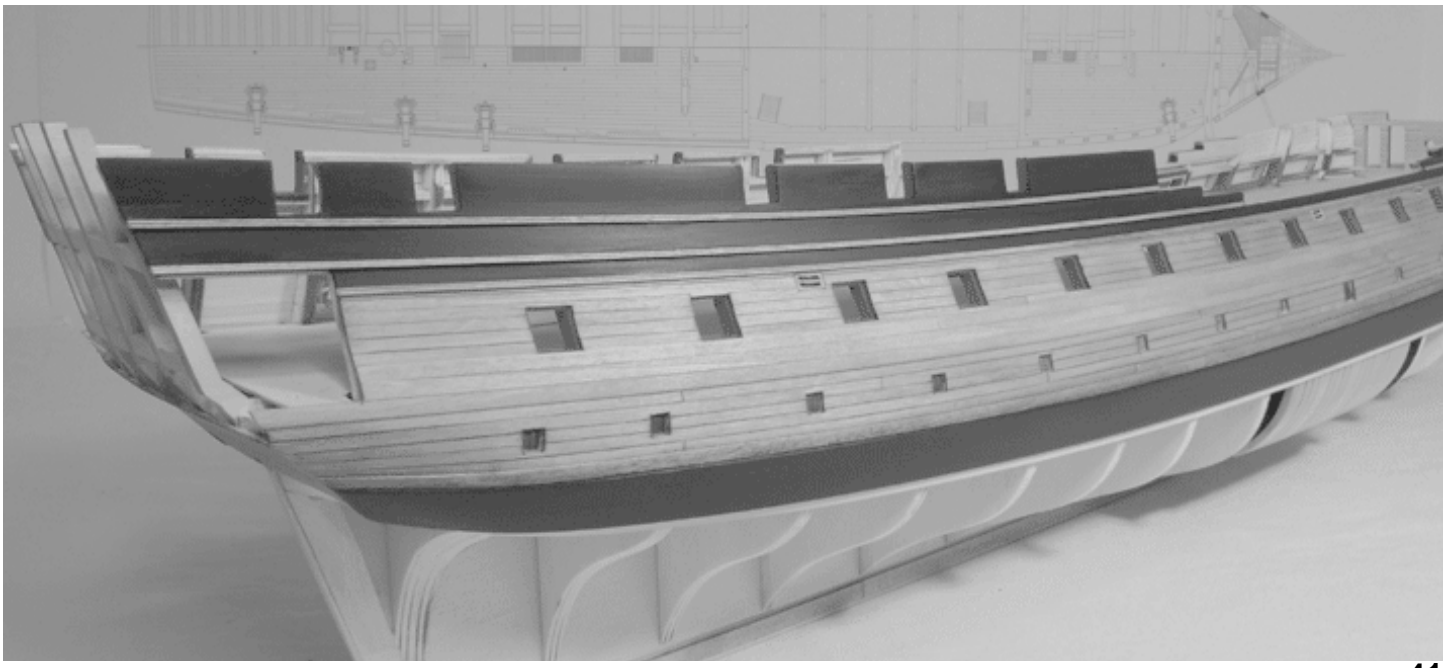


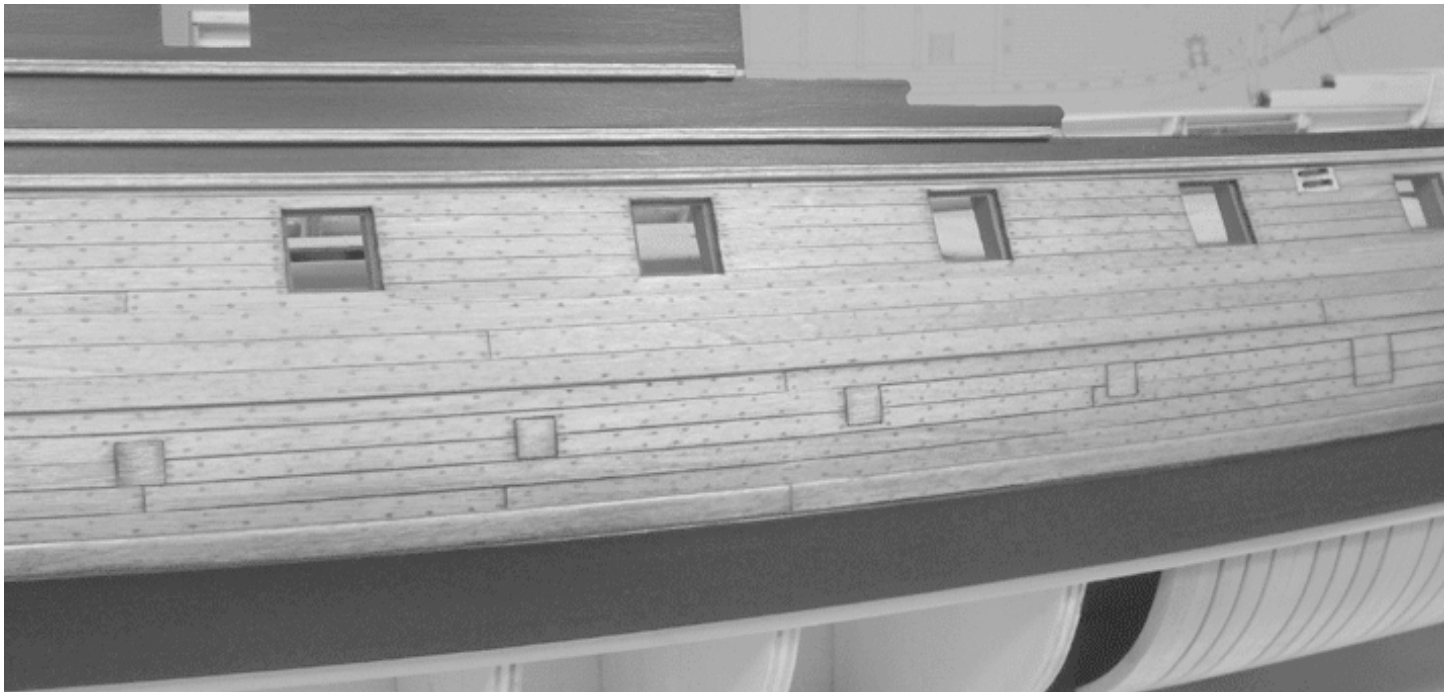


while pulling the strip through the scraper. To prevent this from happening, run some sandpaper down all four edges of the strip first. Try and remove any rough spots. You can even slightly round off the two front edges with the sandpaper, which will make the scraper perform that much better.

Hold one end of the strip down on your work surface and place the scraper profile on top of it with your right hand. See the photo provided. Don't push down too hard on the scraper. You will be holding the scraper completely stationary at about a 60 degree angle. Then pull the strip out to the left slowly at first. Remember, the first few passes (pulls) will be with light pressure to establish a subtle imprint of the profile. The last 4 or 5 pulls through the scraper can be quicker and with slightly more pressure. This technique takes a little practice but after a few attempts you will get the hang of it. You will soon find the right amount of pressure and the right amount of speed to pull the strip through the scraper.

Because the wood is so soft, the cutter on the scraper has been intentionally created as a shallow profile. The beaded profile can be made deeper by using some small files. This will create more depth in your molding strips. The molding profile of the scraper was filed a little deeper on the prototype. Remember, that the profile of this double beaded molding matches the profile of the





cast scrollwork. These will be positioned as a continuation of the molding, so try and match the profile as closely as possible. Examine the plans carefully to see where the molding is positioned. Note how the molding terminates in the waist with the scrollwork.

For those of you with more experience using scrapers to make molding, you can actually alter or create new more sophisticated profiles. Just remember that you will need to carve your own scrollwork to match your molding design. Using harder woods like boxwood or Swiss pear would be a better choice for the more complex molding profiles. They will hold an edge better and be less likely to splinter and shred while scraping. See the photo showing some completed molding strips.

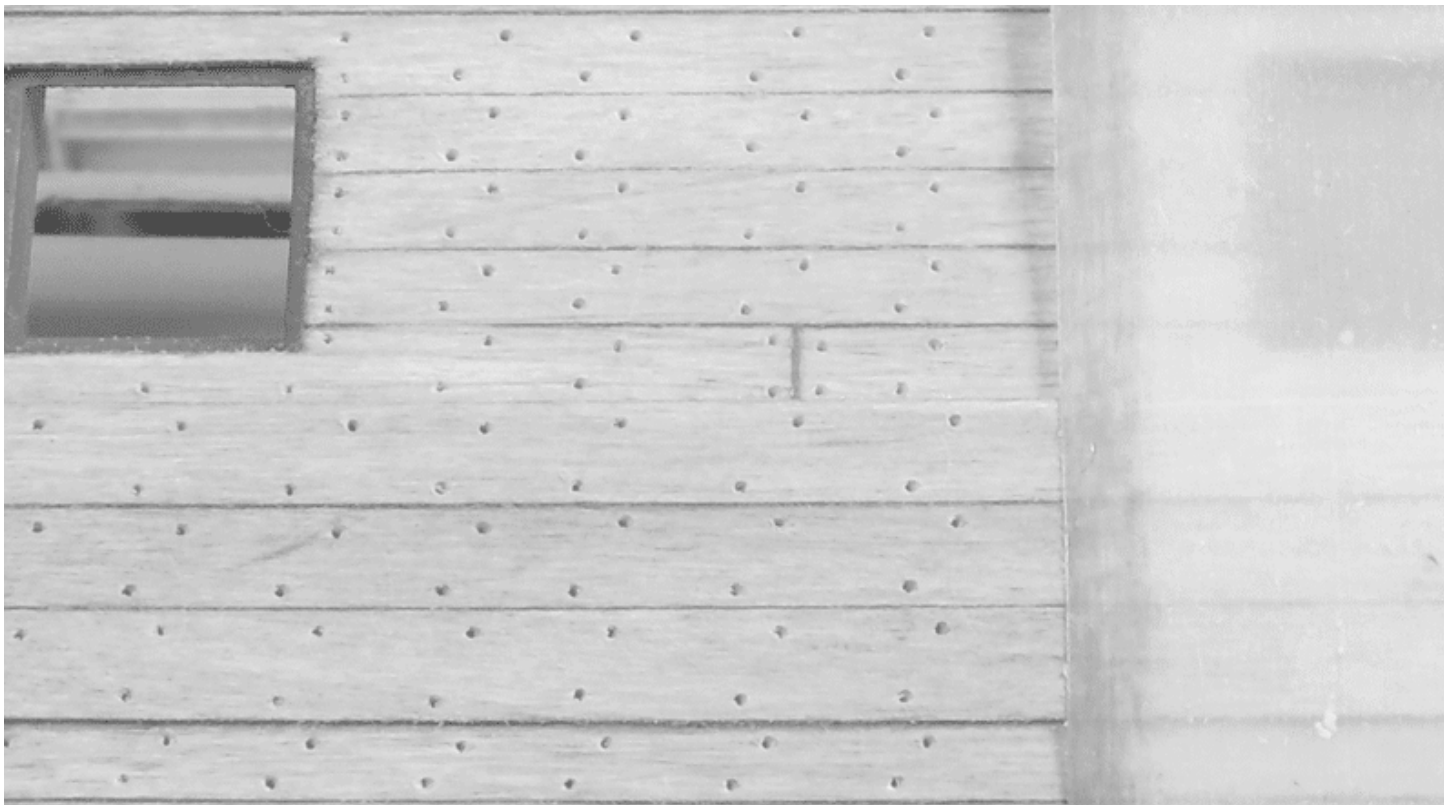
Apply the molding strips to the hull. Use the run of the planking as a guide so you keep them running smoothly along the hull. The lowest molding strip will run along the tops of the hull sheaves. You will need to use two lengths of molding to span across the entire hull. Just butt the ends together while maintaining the smooth run. Choose two strips with a matching profile so the seam will be nearly impossible to locate.

The two remaining strips should be stopped just short of the break in the waist. The molding actually runs along the side of the cap rail in the waist and that won't be added until after the inboard bulwarks are planked. See the photo provided that shows where the molding was stopped on the prototype model. This is also true for the last strip on the quarter deck bulwarks. It will be terminated at the waist with the decorative scroll work and also runs in line with a cap rail to be added later. The cap rail will be placed on top of the hance pieces and will be 1/16" thick. To help find the right position for the molding along the waist, you can hold a 1/16" thick basswood strip on top of the hance pieces (and along the waist) so you see where the break for the molding should be established. In fact, you could start gluing the strips onto the hull at the breaks in the waist and proceed in the direction towards the stern and the bow. This is the easiest way to ensure a smooth run for the molding strips while being sure they will be situated correctly at the break in the waist.

**Painting the hull between the molding strips…**

This is a subjective decision. Choosing what to paint on any ship model is a difficult choice. As was common for this period, the prototype model will be painted as shown in the photos that follow.

**Adding the sweep port lids…**

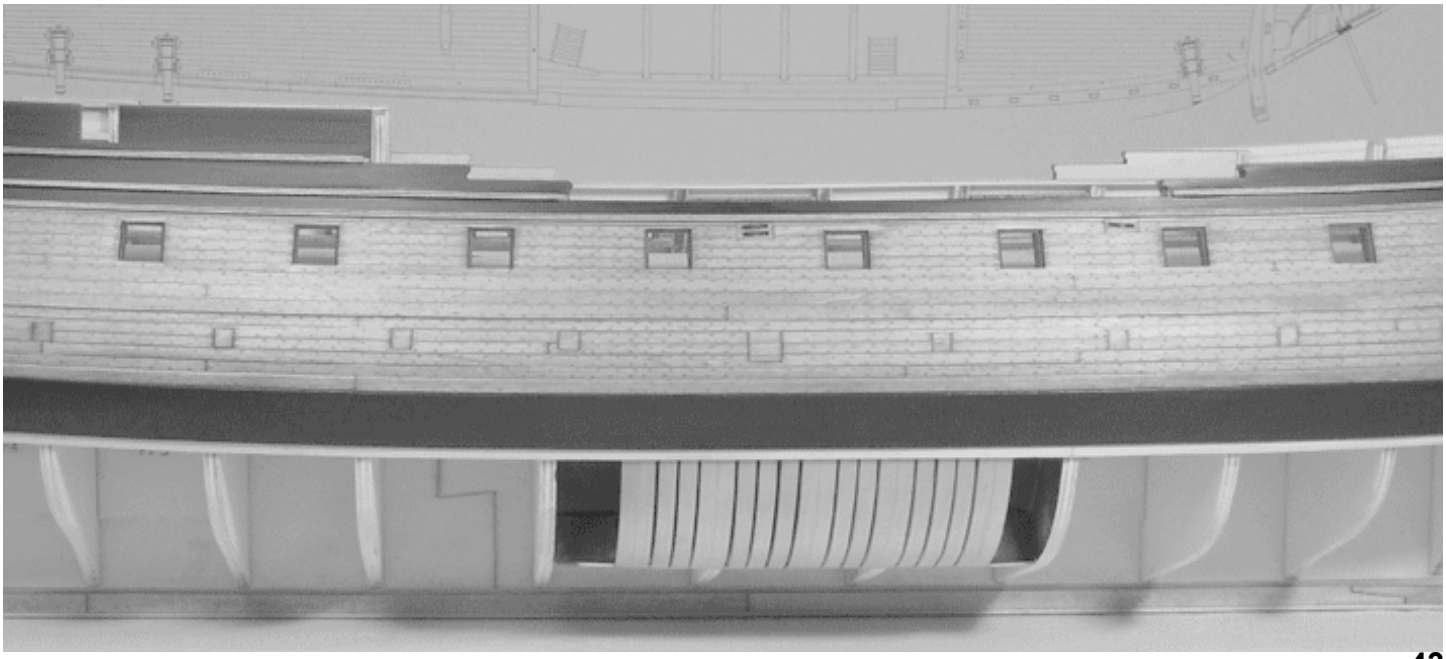


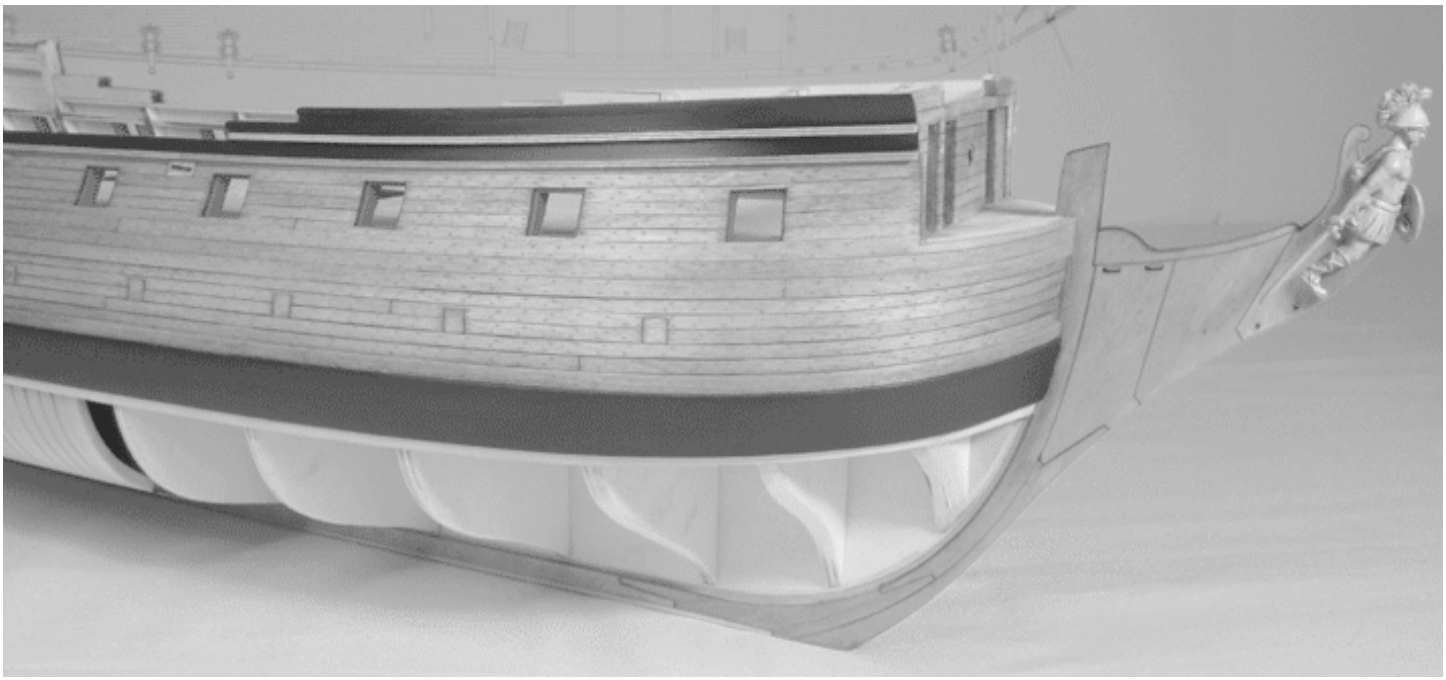
This would also be a good time to add the lids for the sweep ports and ballast ports. Use a ¼" x 1/16" strip to create your sweep port lids. Hold it against each sweep port opening with the grain running left-to-right. Mark the strip to establish its width. Then cut the lid from the strip. The 1/4" wide strip will be too large to fit the height of the port opening. You will need to trim it to fit tightly into the opening. Pop the lid firmly into position and then sand the outside flush with the hull planking. Apply the finish of your choice when you complete them all.

The lids for the ballast ports (the larger port opening in line with the sweep ports at the waist) will be made like the stern port lids. Use 1/8" x 1/16" strips to create them. Line up the seams of the port lid planking with the seams for the hull planking. See the photo provided.

**Tree nailing the hull above the wales…**

Tree nailing a hull as large as the Confederacy's

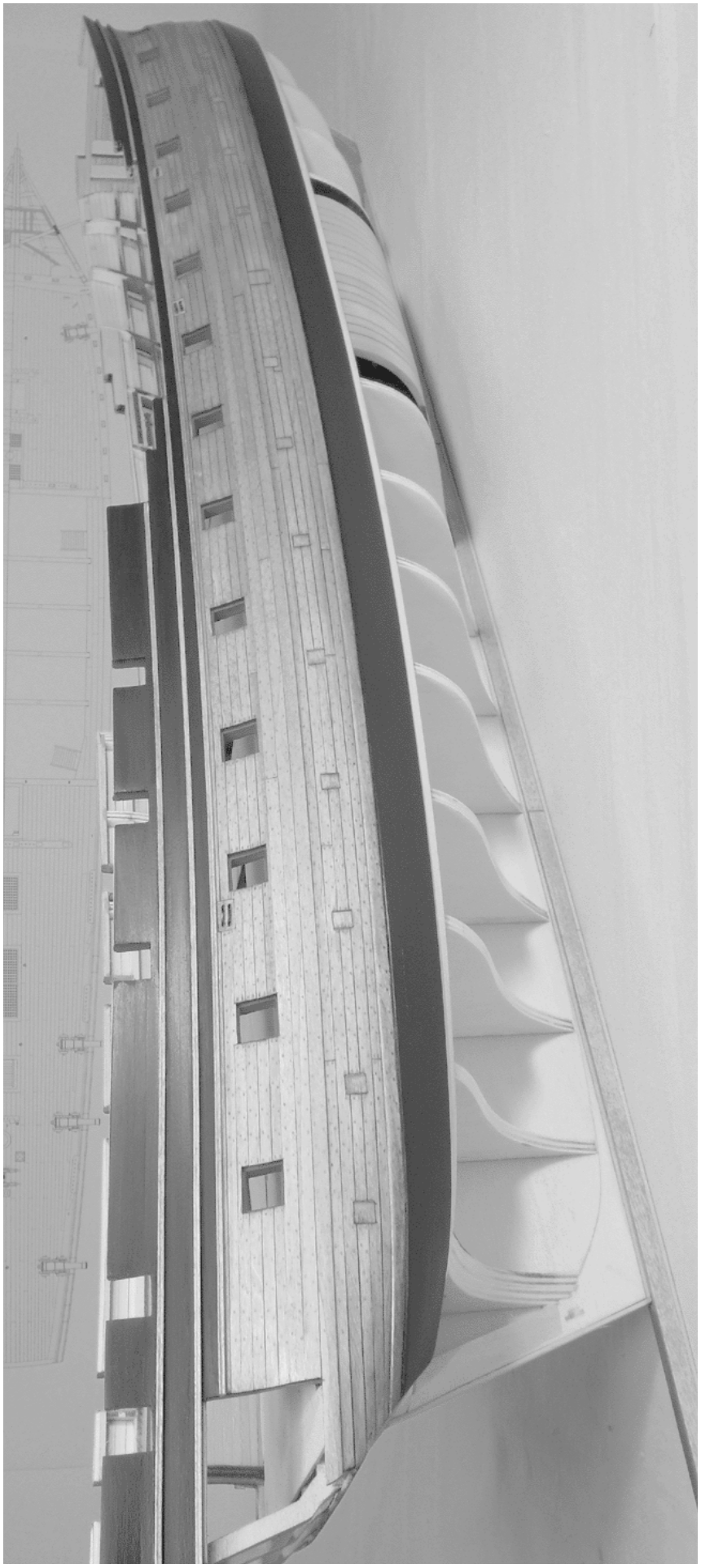


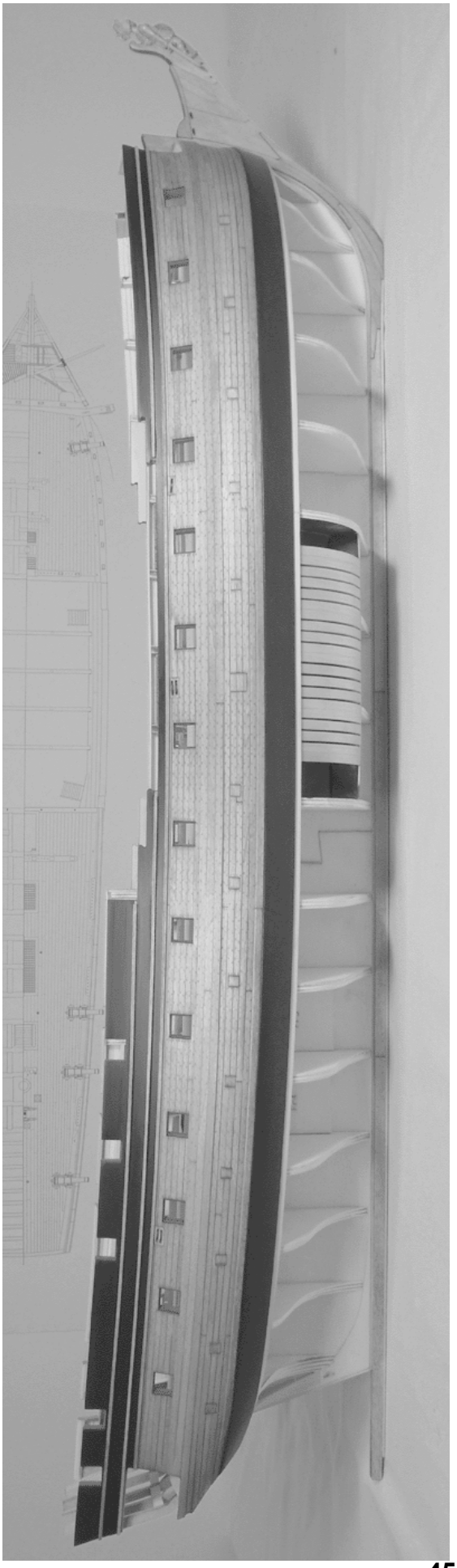


can be time consuming. The added texture and detail make the time spent well worth the effort. Tree nailing the hull now above the wales will help split the task up into smaller modeling sessions. The techniques for tree nailing were already discussed but there are few tips that may be help you get the job done with less hassle. Start tree nailing on the starboard side of the hull because that is where the cut-away shows the exposed frames. Start tree nailing along the waist so you can line up the columns of treenails with the exposed frames of the cut-away. Then continue that pattern towards the stern and bow. Try and keep your columns of treenails vertical and lined up with the bulkheads and exposed frames.

To help you keep the tree nail columns vertical and spaced evenly, you can use a piece of tape as a guide. Use low tack tape. Place the tape onto the hull so you can use its edge as guide while drilling your holes. Drill your holes carefully with a #75 bit (or close to that size) along the edge of the tape. When you finish one row, move the tape over and repeat the process. See the photo provided. Examine the plans for the tree nail pattern. Tree nailing the hull is optional and many model builders prefer the look of their models without them. It's a subjective decision and you should choose the look that you prefer.

On the prototype model, the treenail holes were filled with Elmers wood filler. A small section of the hull (about 3 inches long) was completed at a time and repeated until finished. It made the whole process more manageable. The holes were drilled. Then the small section was sanded lightly. Each hole was cleaned out by lightly twisting the tip of an awl in each of them. Don't push the awl into each hole with force. It will enlarge it. You just want to clean up its edges. Then the wood filler was pushed into the holes and the entire section was sanded after it dried. Once the starboard side was finished another coat of MinWax Golden Oak stain was applied.





# Chapter Six

## Planking the hull below the wales…

Before you begin planking the hull below the wales, there are many things to consider and prepare for. Seeing as this kit was designed for the experienced builder, there is little need to go into much detail about the planking process. One can assume that you have planked a few hulls previously and are at least aware of the basic process and techniques. With this in mind, information about the process of planking any hull could fill up an entire book. One terrific book written on this subject would be "Planking the Built-Up Ship Model" by Jim Roberts. This book is available from Model Expo and delves into the planking process in incredible detail. In contrast, the steps documented below will cover the basic process used to create the "planking plan" for Confederacy. If you would like more detailed info, we recommend you read Jim Robert's book before you start planking the remainder of the hull.

The remainder of the hull will be planked using 1/8" x 1/16" strips except for the garboard plank. The garboard plank is the widest plank on the hull. It is the lowest plank that sits in the rabbet along the keel. The placement of the garboard plank will be discussed in more detail later. It will be 3/16" wide mid ship. Now that we know the widths for the planking to be used, a "planking plan" can be established.

**Step one** – Determine how many 1/8" wide planking strips will be needed to cover the port side of the hull below the wales at mid-ship. To do this, hold a small 1" long piece of 3/16" x 1/16" planking along the keel at mid-ship. This represents the wider garboard strake. Make sure it is sitting firmly in the rabbet along the keel. Then place a reference line on the center bulkhead to indicate the top of this strip. The remaining space between this reference line and the wales will be planked using 1/8" wide strips. Measure the remaining space to determine how many 1/8" wide strips you will need to plank the hull along the center bulkhead. You can use a long strip of paper to make this exercise easier. Cut it to fit along the center bulkhead between your reference mark and the wales. Then divide the strip into 1/8" increments along it to see how many planks will be needed. You will soon see that 32 (give or take as every hull differs slightly) planking strips will be needed to plank the hull mid-ship.

**Step two** – You may already know that the area being planked from the wales to the keel at mid-ship is different than that at the bow and stern. At the bow, there is less distance from the wales to the keel. If you needed 32 strips to fill that

space at mid ship, then you must reduce the width of these planks as they work their way towards the bow. Each plank should be gradually tapered to fit into the reduced area. You can estimate the amount of taper required by measuring the distance between the wales and keel at every bulkhead. Then divide that space by 32 (or however many planks you determined were needed in Step 1). Use paper strips again for this exercise as well. As you measure and work your way closer to the bow, your measurements for each plank width will get smaller.

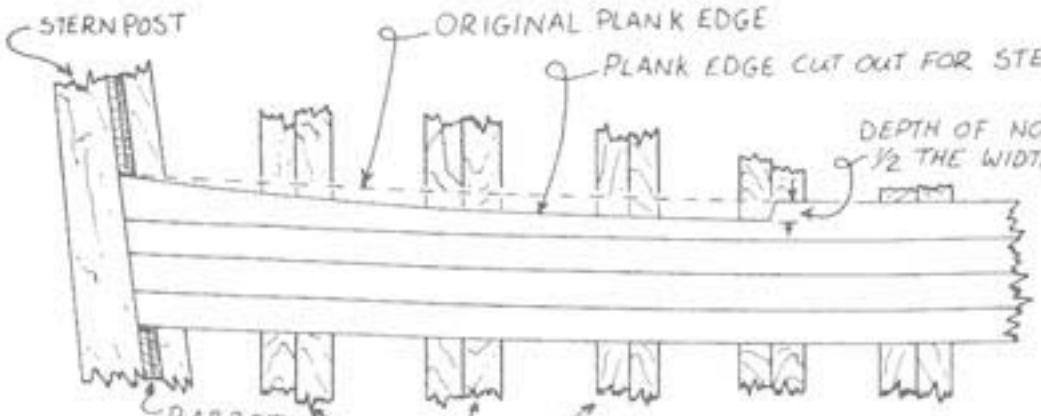
The taper used for each planking strip on the prototype was 1/64" (actually just a hair more if you want to get picky). The end of each planking strip was tapered so it was 1/64" smaller at one end. The taper is gradual and started 4" from the end of each plank. You can now taper the ends of about a dozen strips as described. There's no need to taper more than that ahead of time because as your planking progresses, you may determine that the amount of taper should be increased or decreased. Use a steel ruler and a sharp blade. Hold the ruler down firmly on top of your planking strip. Then make several "LIGHT" passes with your blade to cut the taper. Don't rush this by trying to cut each plank in one stroke. You might lose a finger tip or at a minimum, cut the plank incorrectly.

Planks should never be tapered by more than 35% of their original width. Even after tapering all of your planks as mentioned, you may soon discover that your planks were not tapered enough. Knowing that they should never be over-tapered and come to a sharp point, you may need to use drop planks at the bow to complete your hull planking. Drop planks will be discussed in more detail later.

**Step 3** – The area to be planked at the stern is larger than the space to be planked at mid-ship. This is the opposite dilemma that you faced in step two. You can use the same technique to determine how much the 32 planking strips should widen at the stern to cover that space. But you would discover that each plank would end up being too wide as they sit along the stern post and under the tuck of stern. It would be more historically accurate to use stealers at the stern to cover the larger area of the hull. Stealers increase the number of planks that will fill up the space at the stern. You will need to use two or three stealers in order to plank the Confederacy at the stern. Stealers will also be discussed in more detail later. Even though stealers were used to plank the stern on the Confederacy prototype, you may also consider using a few wider (3/16") planks periodically to cover the hull at the stern. There is absolutely no reason why you couldn't use both methods, but most of the planks should be 1/8" wide. If you decide to use a few wider planks, they should be gradually tapered to 1/8" wide as they meet the planking mid-ship.

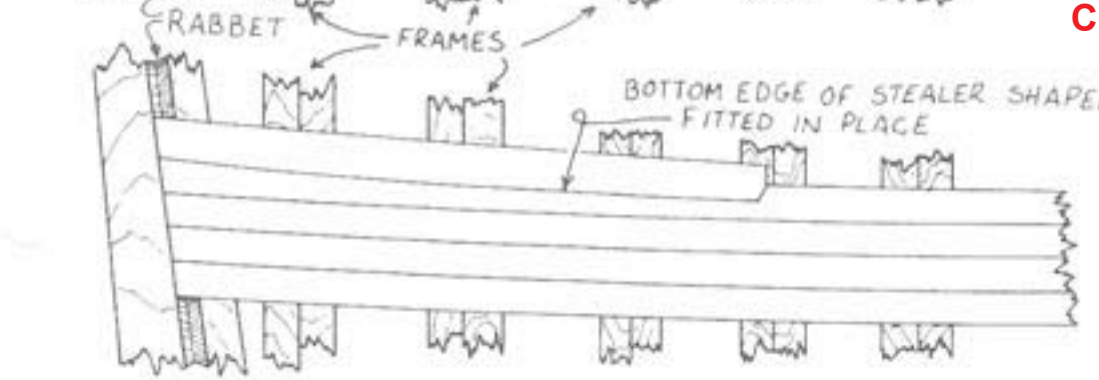
Instead of planking the hull from the wales to the keel in one stretch, it may be easier to manage if you divided the remaining space into three belts. Concentrate on completing one belt at a time. This was the process used to plank the Confederacy prototype. The first belt will consist of 10 or 11 planks under the wales. Once completed, the planking will continue from the keel upwards. Another 10 or 11 planks (including the garboard plank) will be used in this second belt. This will leave an area of the hull unplanked between the first two. Before planking this (3rd) final belt, it would be a good time to take some new measurements. Use the process described in steps 1, 2 and 3 to determine how many planks you would need to complete this last belt. Do you need to adjust the amount of taper towards the bow? Would it be better to use a drop plank instead? How many additional stealers do I need at the stern? Depending on how your planking went on the first two belts, the answers to those questions will no doubt vary from model-to-model.

Now that you have a "planking plan" established, you can begin preparing the 1/8" x 1/16" basswood strips for installation. Planking at the bow will proceed much easier if the tapered planks are pre-bent in a jig as mentioned earlier. This is also true at the stern where the planking strips will bend under the tuck of the lower counter. You should consider creating a jig similar to the other one being used to pre-bend non-tapered planks so they conform to the bend of the tuck. These strips will be used in the first belt of planking under the wales.

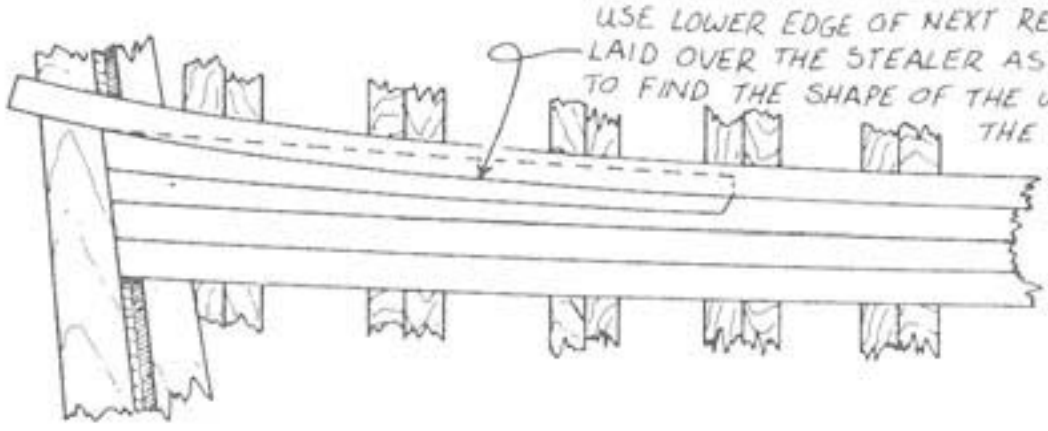




**Step One**

## Shaping and Cutting Stealers




**Step Two**




**Step Three**

The planking should be done in 25’ to 30’ foot lengths like the planking above the wales. The seams between each length of planking should be staggered as well. See the illustration provided.

At the stern, the planks in the second and third belts should run off the end of the bulkhead former. Once you complete the 2nd and 3rd belts of planking, you can trim the strips flush with the edge of the bulkhead former (false keel). Create a nice straight edge so the stern post (which will be added later) sits neatly against it.

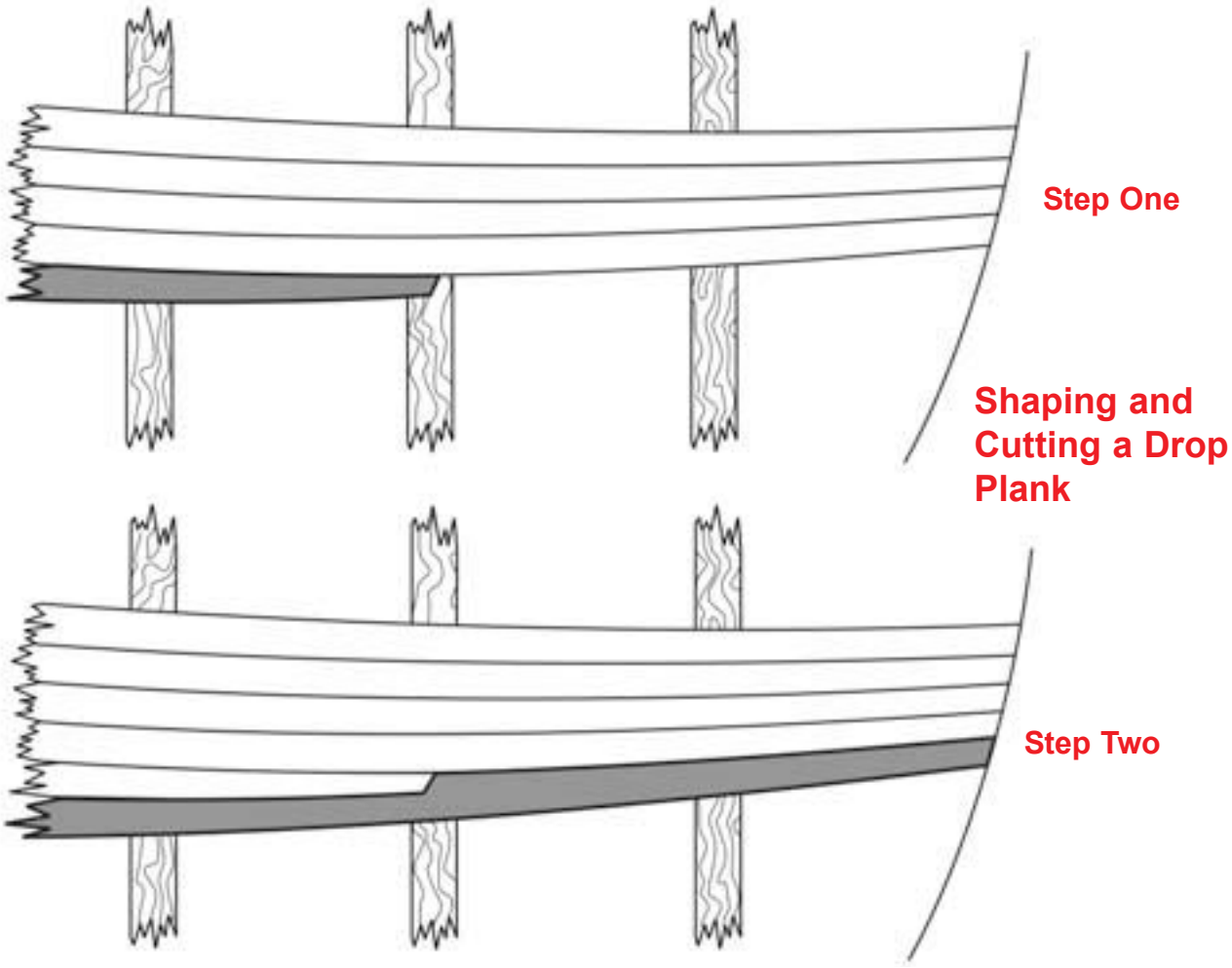
Creating a stealer at the stern is not that difficult. Stealers will increase the number of strakes at the stern. Follow the steps below to create a simplified stealer. You must visualize where a stealer might be needed at the stern. In all likelihood, 2 or 3 stealers will be needed. You should evenly distribute them along the hull, placing one in each planking belt as you proceed.

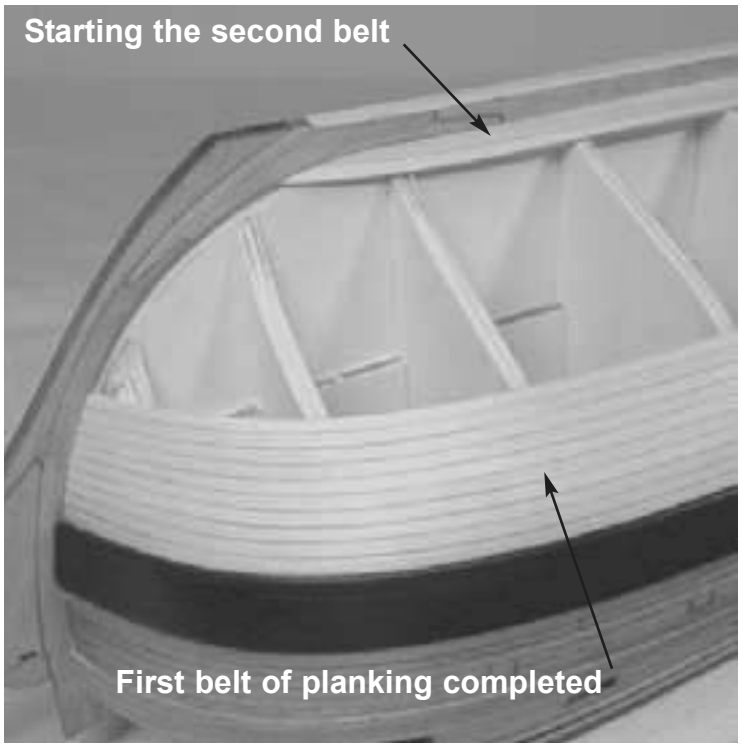
**Step one** – Dry fit a length of 1/8” wide planking that will complete the strake at the stern. Do not glue it into position yet. Cut it flush with the edge of the bulkhead former as it runs off the stern. Remove the plank and notch it as shown in the drawing provided. Glue it into position.

**Step two** – Dry fit a 1/8” wide strip in the notch of the previous plank. Trim it flush with the end of the bulkhead former as it runs off the stern. Cut the stealer to the shape as shown in the same drawing. The inboard end should taper to 3/32” wide. Glue it into position.

**Step three** – Repeat step one to notch the last plank around the stealer.

Creating a drop plank at the bow is not difficult either. Drop planks will decrease the number of strakes at the bow. They are essentially made using the same principles used to make a stealer. Follow the steps below to create a simplified






drop plank. You may only need one drop plank at the bow for this model. Tapering the planks will have reduced the need for many of these. After you complete planking belts one and two you can determine if a drop plank is needed in the final belt. Follow the steps below to create a drop plank.

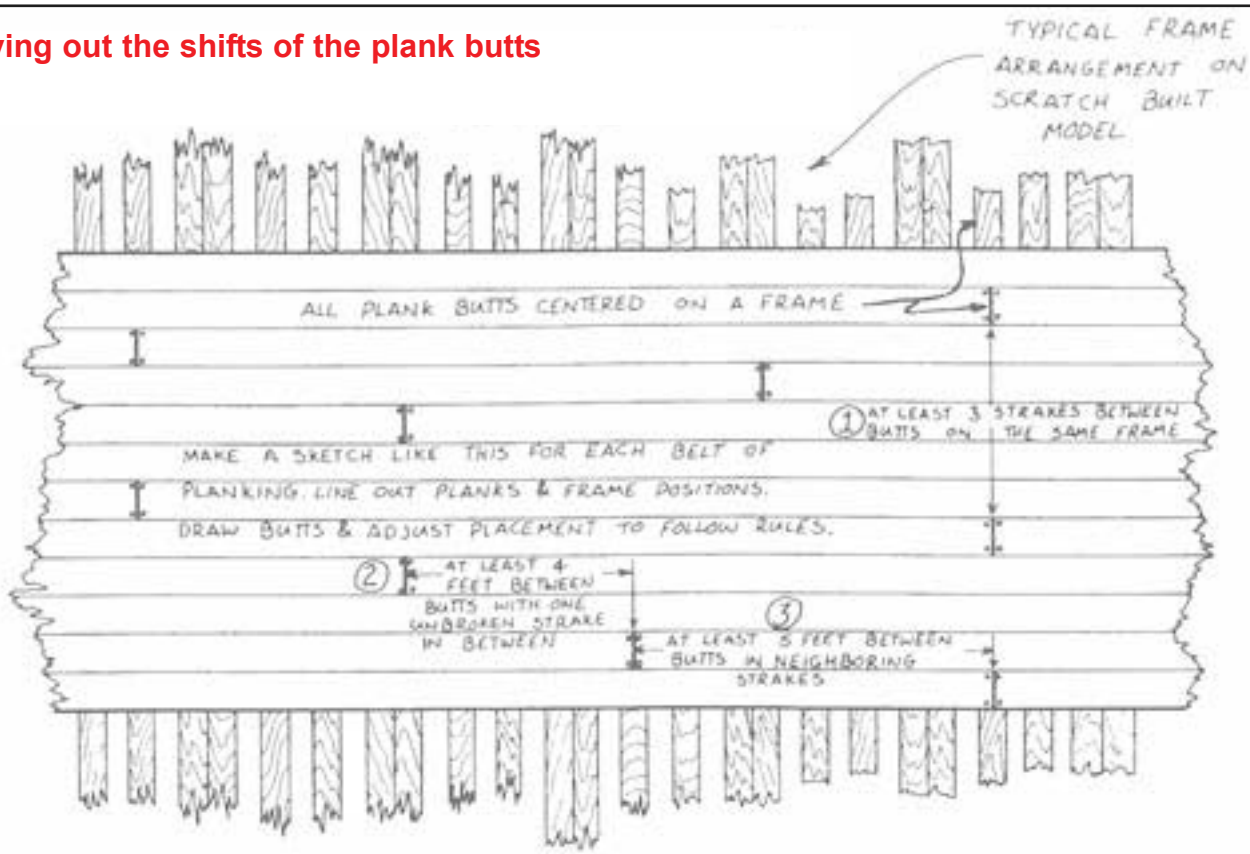
**Step one** – Glue a tapered plank into position so the tapered end terminates on bulkhead E or F. You will need to determine which bulkhead would be better, depending on the amount of space left to plank at the bow on your model.

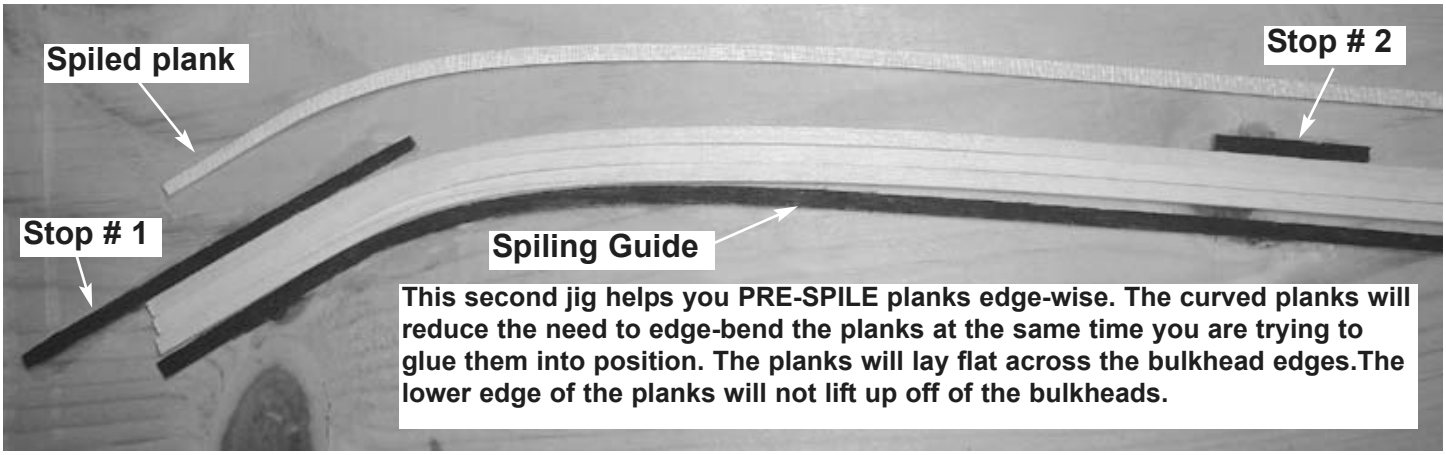
**Step two** – Place another tapered plank in the rabbet along the stem. Test fit this strip at the bow so it sits on top of the plank you glued into position in step one. Create some reference lines on this plank as a guide, so you can cut a notch into the plank as shown in the drawing provided. Glue it into position afterwards. It may be better to use a wider plank for this strake. Use one that is tapered from a 3/16" or 1/4" wide strip.

## Planking the First Belt –

Pre bend the first few strips in your jig so it is easier to plank around the curve at the bow. Cut the tapered ends of your basswood strips (1/8" x 1/16") on an angle so they fit into the rabbet along the stem. Remember to darken the edges of each plank as you glue them into position if you want to simulate the caulking between each strake. After planking about 4

## Laying out the shifts of the plank butts



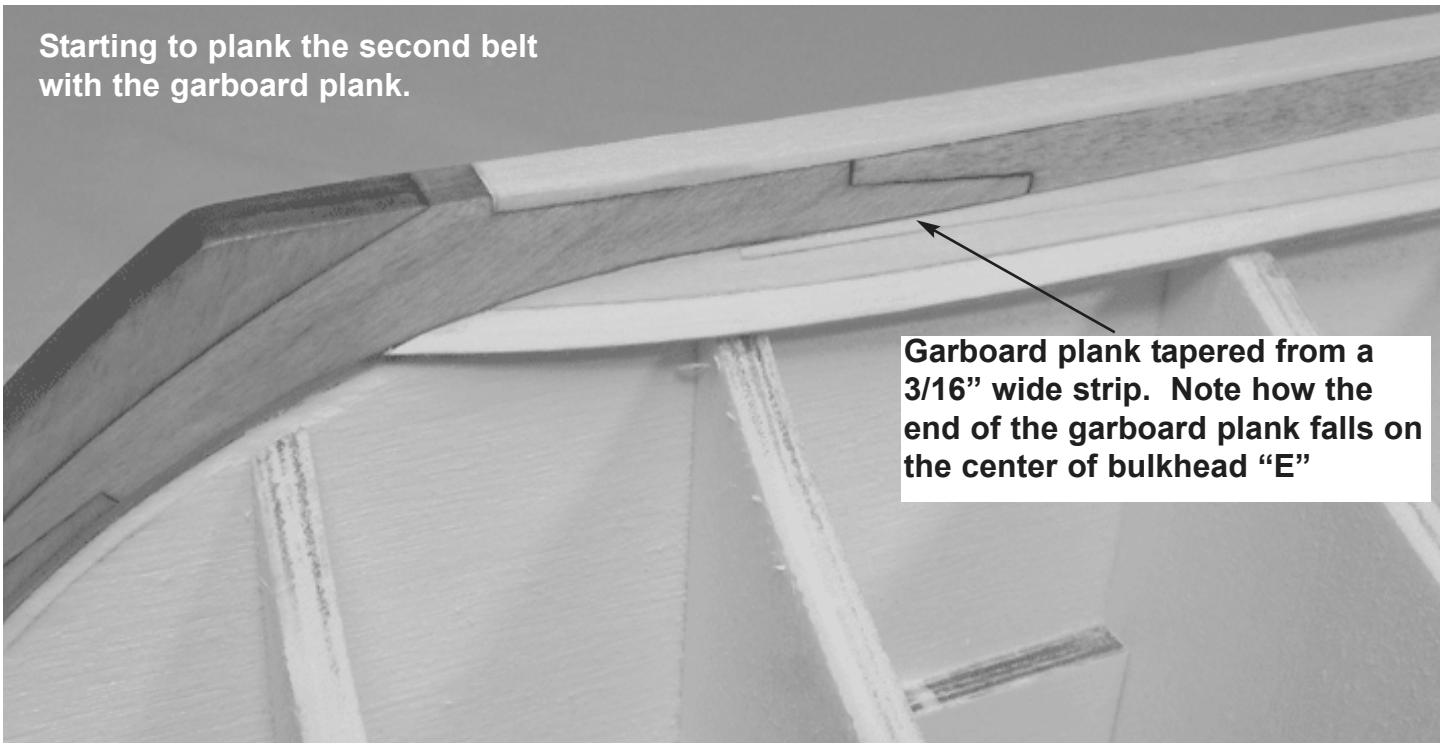



**This second jig helps you PRE-SPILE planks edge-wise. The curved planks will reduce the need to edge-bend the planks at the same time you are trying to glue them into position. The planks will lay flat across the bulkhead edges.The lower edge of the planks will not lift up off of the bulkheads.**

strakes below the wales there will be a few things which you are probably starting to notice. As you progress further down the hull, you will no doubt notice how the planks at the bow are no longer sitting flat against the edges of the bulkheads. Even though you took the time to pre-bend these planks in the jig, when you position them at the bow they seem to also need to bend edge-wise in order to get a tight seam with the previous row. By trying to force this edge bending, the bottom of the plank lifts up and doesn't sit flush against the bulkhead edge. To address this issue, you will no longer need to pre-bend the remaining planks in the first jig you constructed. The bend around the bow is less severe now after finishing about 4 or 5 strakes in the first belt.

A second jig built to pre-bend the planks edge-wise will correct these issues at the bow. It will make it easier for you to get the planks to sit flat against the bulkhead edges. In real ship building practice, this phenomenon was prevented by "spiling" each plank to its proper shape. The planks would not be straight across the bow and would instead be curved edge-wise so they would fit properly. You would need to start with a plank three times as wide as those provided in this kit. After you determine the correct curve for a plank and trace its shape onto this strip, it would be cut from this wider strip. This method creates a huge amount of waste and takes a considerable amount of time and practice to master. This new jig offers an alternative to this process. This second jig will "pre-spile" each plank to the approximate shape you need without having to trace, cut and trim them. A laser cut "spiling" guide has been provided for this purpose. It is 1/16" thick. The curve for the remaining planks has already been determined.
Simply glue this spiling guide to a scrap length of 1" x 6" inch lumber. Then position the two "stops" as shown in the photo provided. The stops are positioned so three tapered planks will fit snugly into the jig. Each stop was cut from a scrap length of 1/16" x 1/8" strips. That same photo shows the jig with three planks being pre-spiled to shape. The spiling guide and stops have been painted black so you can see them in that photo. A pre-spiled plank is also shown and you can see how it retains its shape. Soak the strips and push the three tapered ends into the jig together. Then carefully bend each plank slowly, edge-wise until it is firmly against the spiling guide. Bend one strip at a time back towards the guide. Hold it down flat against the jig's surface as it will want to twist and spring free. The last strip will be bent back and held in position by the 2nd "stop".

Before you stop holding the three planks down firmly against the jig's surface you should place a heavy book, brick or item on top of them. This is the reason why the spiling guide and stops are the same thickness as the planks being shaped. The book needs to lay flat across the spiling guide and the planks. They will always want to spring free because of the tension created. But after they are fully dry and you remove the planks, they will retain the artificially "spiled" shape. Hold a pre-spiled plank along the bow and you will see how it mirrors the run of your planking already completed. This process takes a little practice but once you get the hang of it you will appreciate how much easier it will be to plank the balance of the




Confederacy hull (any hull for that matter). You should hold the plank up to the hull and determine where along the pre-spiled plank the curve mirrors your planking the best. You may have to cut the plank shorter so the appropriate section of the curved plank will fit best without having to be forcefully bent into position. The lower edge of the plank should now lay flat across all bulkhead edges. Experiment a little bit until you feel comfortable with the technique. You should use this jig to complete the remainder of planks at the bow in belt one. You should also use it to pre-spile the planking at the bow for belts two and three.

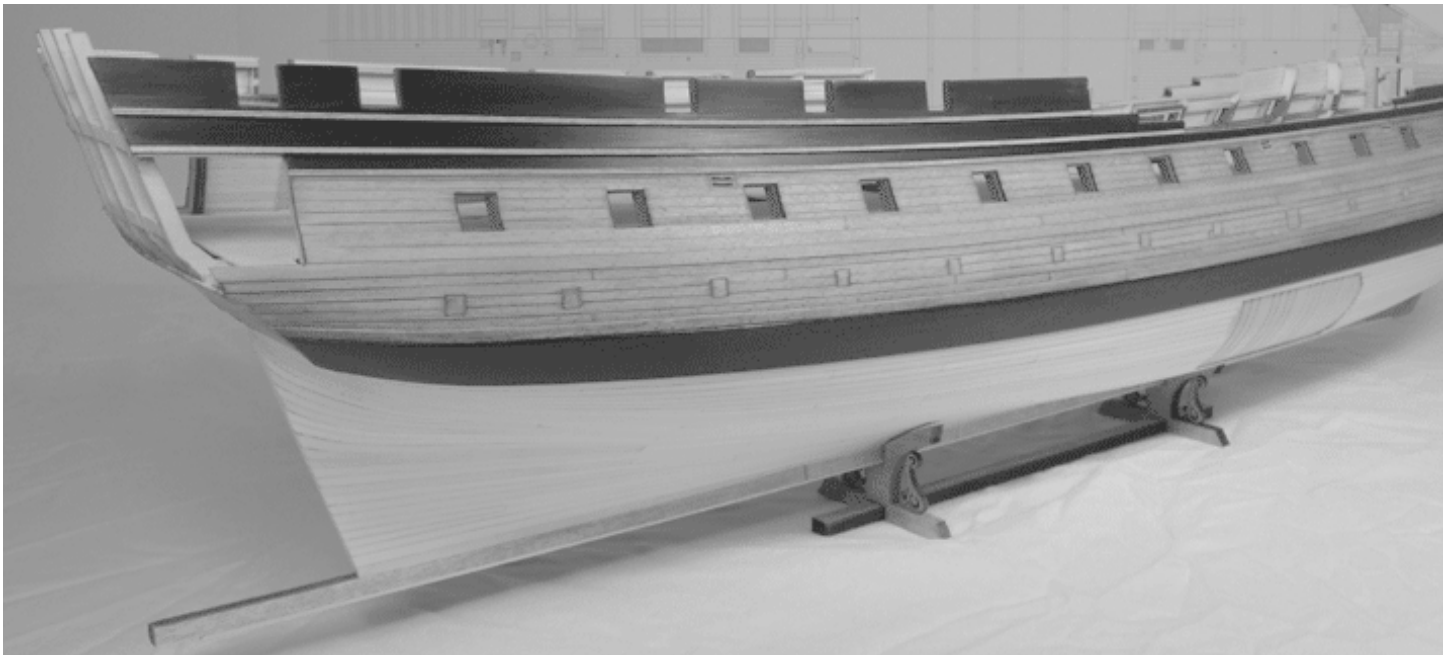
## Planking the second belt

In the second belt, you will be planking from the keel upwards toward the wales. The first plank you will complete is the garboard plank. This was the widest plank used on the hull. For our model you will use a 3/16” wide strip for the garboard plank. Taper the forward end of this plank like you did the others at the bow. The forward end of the garboard plank should be glued to the center of bulkhead “E” as shown in the photo provided. It should not start forward of this bulkhead. The garboard plank should sit firmly into the rabbet along the keel. As it works aft towards the stern, it will twist significantly. You should terminate with a butt joint for this plank on the center of bulkhead (7). Then use a new strip to complete the garboard strake. Run it completely off the stern. Trim it flush with the false keel (bulkhead former). This last segment of the garboard plank could even be cut from wider stock than a 3/16” wide. You could use a ¼” wide piece that is tapered to 3/16” where it meets the butt end of the original plank. This will help fill the larger area of the hull from the keel to belt 1 at the stern.

When the garboard is completed, you can plank an additional 10 strakes upward to complete belt two (1/8” x 1/16” strips). You may want to add a stealer at the stern somewhere in the middle of this belt. The stealer will most likely start from bulkhead (7) and work its way of the stern. Cut all of your planks in this belt flush with stern after initially running them over the edge of the bulkhead former.

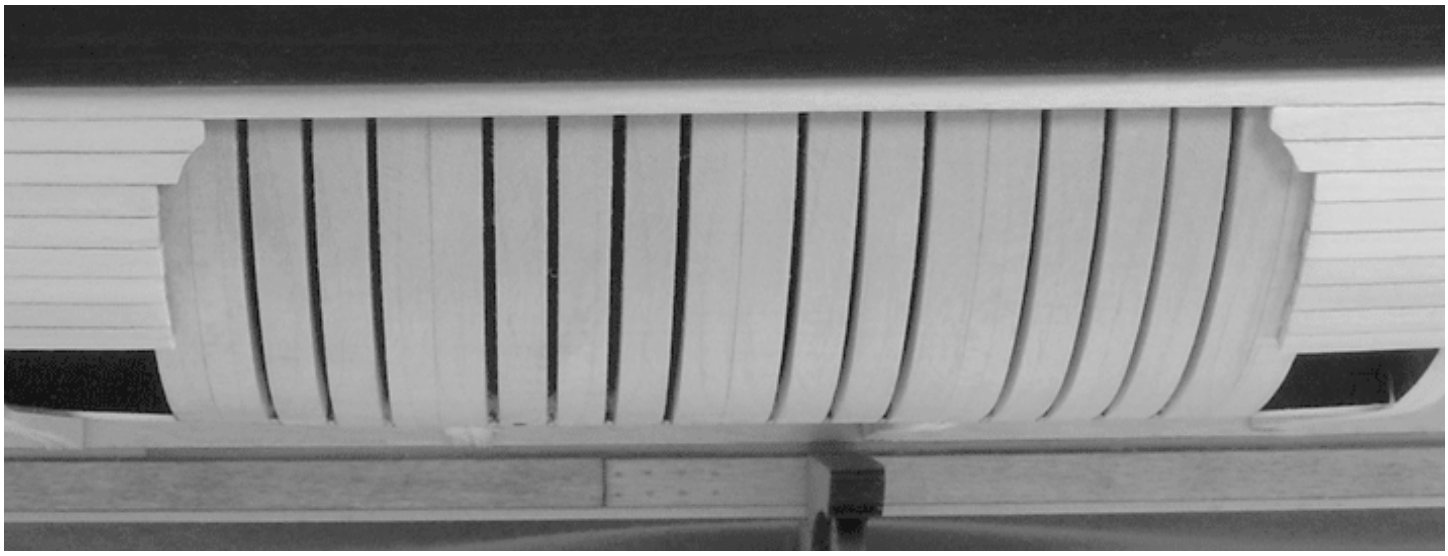
## Planking the Third Belt

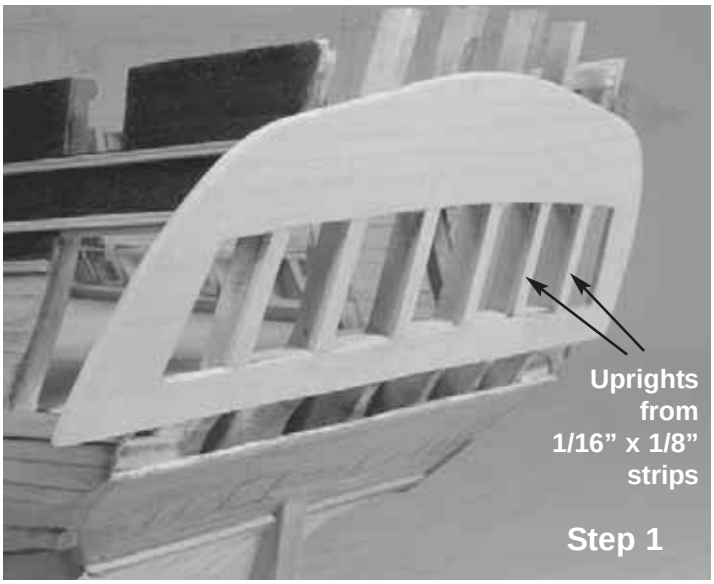
Before starting this final belt of planking, you should measure the remaining space between belt one and two. Determine how many more stealers you may need or if a drop plank is required at the bow. Other than this, you can approach this belt as you did the others to complete the hull planking.



## A Note About the Cut-away on the Starboard Side

If you decided to show the cut-away on the hull to expose the Confederacy frames, then any shape for the opening can be used. See the photo provided, which shows how the corners for this opening were shaped on the prototype. You might prefer a different style, or you may decide to plank over the entire starboard side all together. The choice is yours.





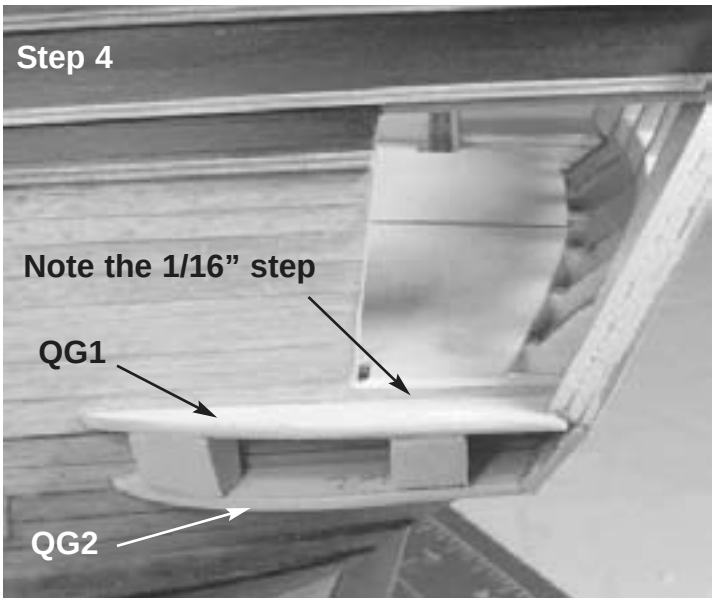


# Chapter Seven

## Constructing the Stern and Quarter Galleries…

***Step One***- Glue the 1/16” thick laser cut transom into position. You will notice two reference lines etched on one side, which were provided to help you align the transom. They should be lined up with the two center stern frames. You should carefully position the transom using the opening for the stern lights as a guide. The term “light” is the proper name for the stern windows. The opening on the laser cut transom should line up with the sills and lintels for the stern lights. Try not to sand the opening taller because the seven laser cut stern lights will no longer fit properly when the time comes to install them. Instead, adjust the spacing between your lintels and sills if you need to so they match the opening created by the laser cut transom. See the photo provided. Once the transom is in position, you can cut and glue the uprights (1/16” x 1/8” strips) onto the outboard side of each stern timber to finish it off.


***Step 2***- Increase the thickness for the outer ends of the stern transom. There are many ways to do this, but because the transom is curved, two layers of 1/16” x 1/8” strips were built up to thicken the areas on the prototype. You will need to cut away a portion of your double beaded hull molding first. Add your strips on the fore side of the transom working from the bottom upward. Complete one layer at a time. The strips can simply run into the openings of outer-most stern lights. After each layer is completed, file the strips flush with the sides of those outside stern lights. Note in the second photo provided, how the ends of the lower strips butt against the last stern frame. You will also notice that the two layers are completed but they are still not as thick as the stern frames. Before moving ahead, the stern frames, lintels and sills must be sanded down to match the thickness you achieved on the outside ends of the transom. Carefully reduce the thickness and fair the stern frames so they are flush with the two extra layers of planking strips. The stern transom should be about 3/16” thick when you are done.





***Step 3***- Plank the upper counter of the stern with 1/8" x 1/16" strips between the transom and lower counter. See the photo provided. You will notice how the outside ends of the upper counter extend beyond the sides of the transom. The ends of the upper counter will be shaped after the counter of the quarter galleries is framed in the next step. You should extend the stern's upper counter past the ends of the transom by about 1/8". DO NOT build the up the thickness of the upper counter on each end like you did the transom. Only one layer of planking will be used for the upper counter of the stern. Examine the detailed drawing on plan sheet four carefully before moving forward.

***Step 4***- Framing the counter for the quarter galleries. Two 1/16" thick laser cut pieces (QG1 and QG2) will be used to frame the counter of the quarter galleries. The piece QG1 should be glued to the hull as shown in the photo. Important note: See how this piece is 1/16" below the entrance to the galleries? QG1 is also glued so its aft end is placed below the two layers of thicker transom planking. Examine that detailed drawing on plan sheet four. Both laser cut pieces QG1 and QG2 will follow the run of your hull planking. This will help you establish the correct angle for these pieces when gluing them to the hull. Once QG1 is in place, glue QG2 into position under it. The aft edge of this piece (QG2) should line up with the bottom of the upper stern counter. Carefully position this piece so there is equal spacing between it and QG1 along its entire length. Then cut a few scrap pieces of wood to use as filler between them. These packing pieces will be a big help when you plank the counter in the next step. Sand them to match the shape of the counter after you glue them into position. With the QGallery counter framing completed, you can now shape the ends of the upper stern counter. Sand them to shape using the outside edge of QG2 as a guide. It will ensure that the angles you create for the ends of the upper stern counter are consistent and correct on both the port and starboard sides.

***Step 5***- Plank the counter of the quarter galleries with 1/8" x 1/16" strips. Then make a few strips of 1/16" double bead molding using the photo etched scrapers provided with the kit. Glue the molding along the top and the bottom edges of the upper counter of the stern first. Then do the same for the counter of the quarter galleries, trying to keep the distance between them consistent. You can miter the corners that transition from the stern onto the quarter galleries. See the two photos (5a and 5b) that show the counter completed and painted. The upper counter should be painted black between the two molding strips.

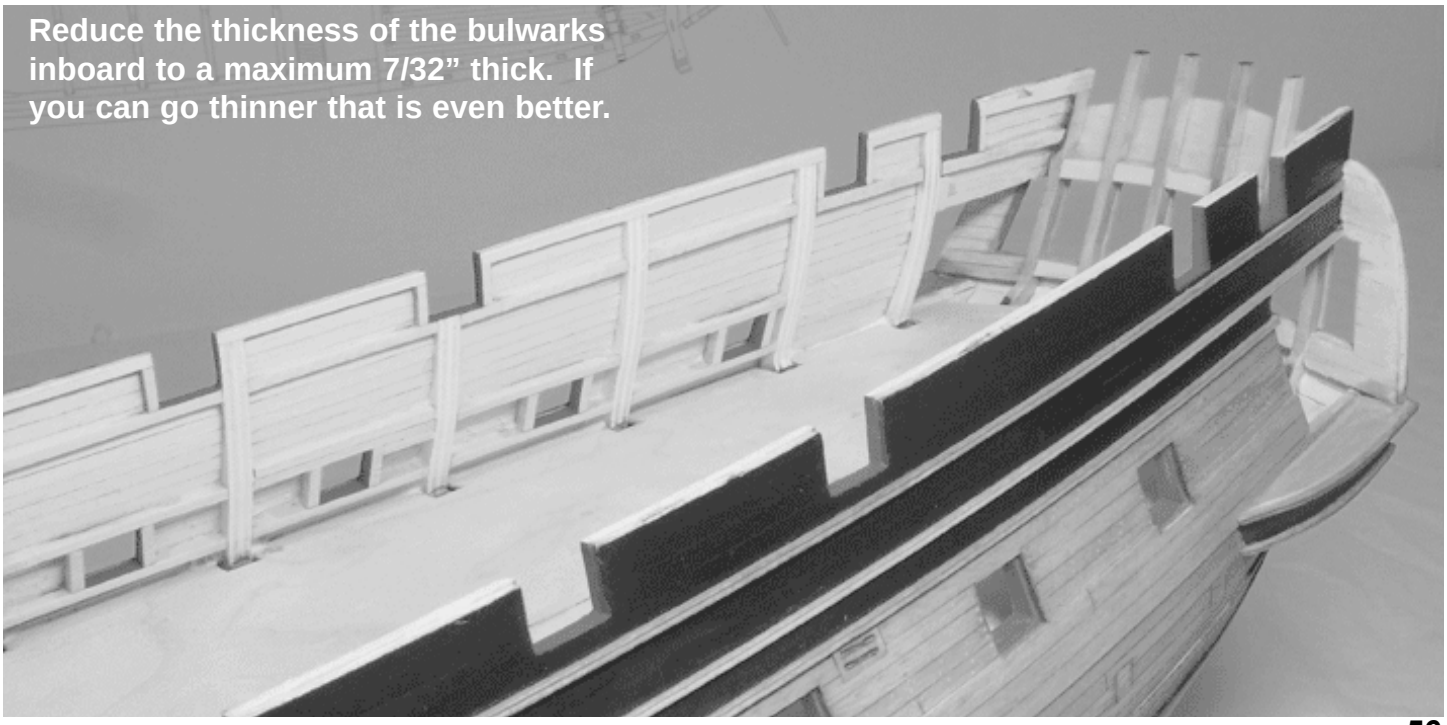
*SIDE NOTE*: Examine the second photo where you can see that the stern frames were sanded down flush to match the thickness of the transom (3/16") as instructed in step 2.

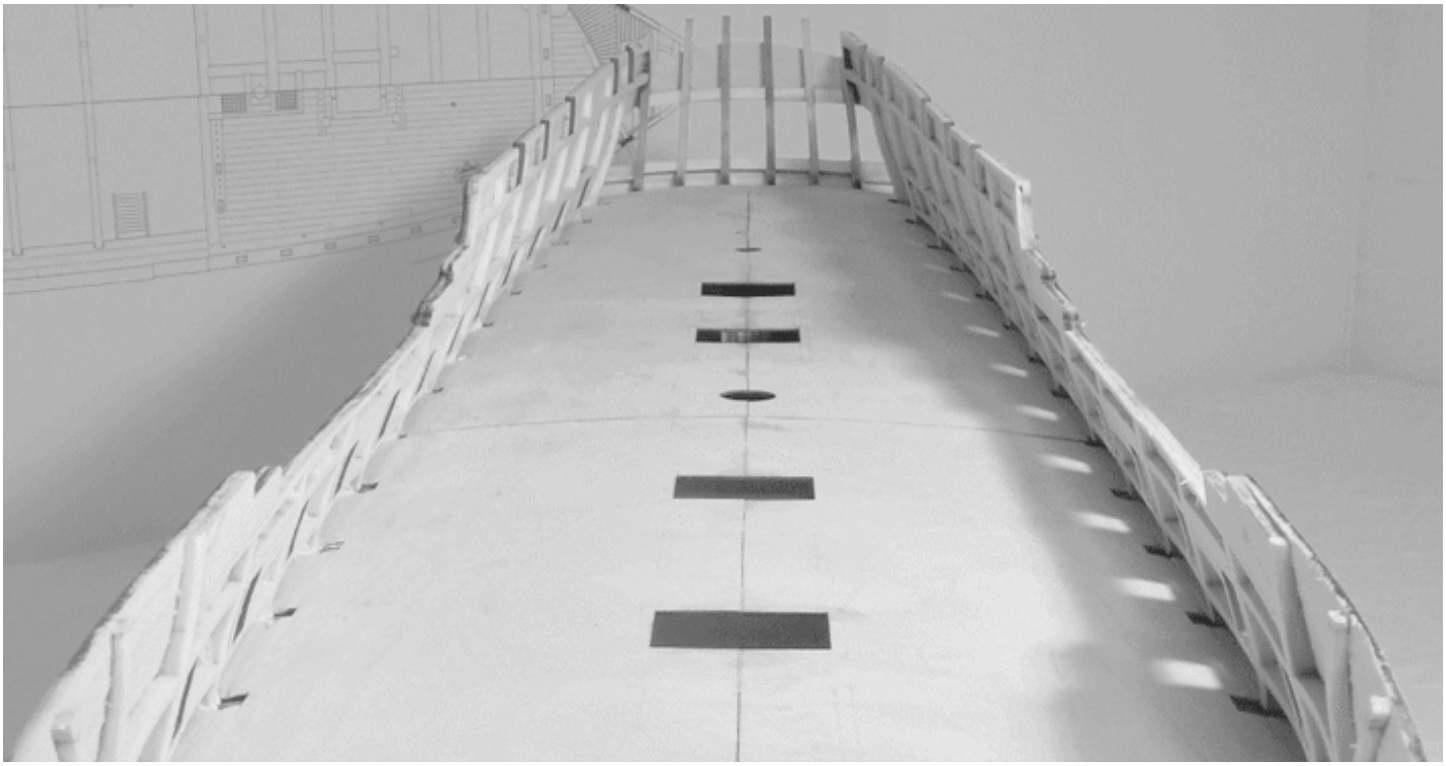
In fact, this is probably a great time to fair the inside of hull completely. Before you add any more details to the stern, start reducing the thickness of the bulwarks and fair the inboard sides of the hull. The inboard side of the stern frames should already be reduced to about 3/16" thick as stated. Fairing the inboard bulwarks now will prevent the outboard details from getting damaged or scuffed later. Don't be afraid to use a very coarse sand paper to INITIALLY reduce the thickness of the bulwarks. They should gradually taper to a maximum thickness of 5/32" wide at the cap rail. The unplanked bulwarks don't need to be this thin at deck level. They should however gradually taper to the final thickness. The prototype was sanded to 1/8" thick including the external planking. See the photo provided that shows the reduced and faired hull interior. It will make a lot of dust and this is the reason why it should be done now before moving ahead with more finished details.

The bow area will be the most challenging. Proceed slowly and don't apply too much pressure while you are sanding. You don't want to break the bulkhead extensions at this point in the project. Using a long piece of sandpaper folded in half is helpful. Use a piece that is long enough to span across several bulkhead edges. This step will take some time and effort and it shouldn't be rushed. Thicker bulwarks will not give the finished model its delicate and elegant look that was so common with contemporary models of the time. Once the inboard side of the hull is planked, it will be between 3/16" and 7/32" thick. On the real ship, this would translate to 1 foot – 14" thick along the cap rail. When you finish fairing the hull inboard, you can move ahead to step six below in order to complete the stern and quarter galleries.


Step 5b

***Step 6***- Adding the Cap Rail to the Stern Transom. There are many ways to shape the cap of the stern transom. You could cut the curved pieces for the port and starboard sides from a solid block of wood. You could also laminate two


**Reduce the thickness of the bulwarks inboard to a maximum 7/32" thick. If you can go thinner that is even better.**

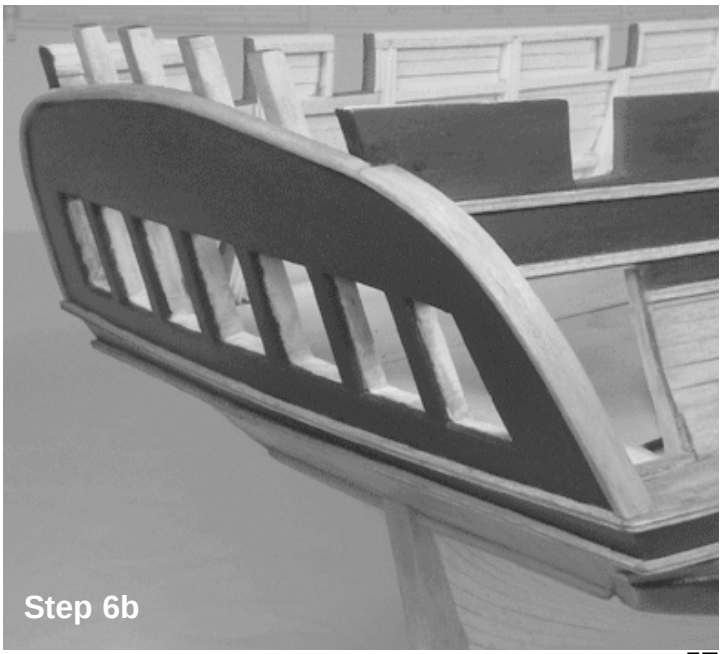


thinner strips of wood together with some glue. With the bend established, it would hold its shape after the glue sets. On the prototype, however, the two side pieces were bent to shape. A ¼" x 1/16" strip of basswood was soaked in water. It was then bent over the transom as shown in the attached photo. Two strips were used (one for the port and one for the starboard sides). The lower ends of each strip were clamped securely. Then each strip was SLOWLY and carefully bent towards the center of the stern. A piece of string was used to secure it in position. Both strips were allowed to dry overnight. When released, they held their shape with a minimal amount of spring back.

This technique could get finicky. Several of the strips split while trying to bend them to the extreme curve of the transom. But after several attempts, two intact strips were secured in position and allowed to dry.

The curved pieces will only cover the outer ends of the stern. You can see a seam in the second

Step 6a



Step 6b

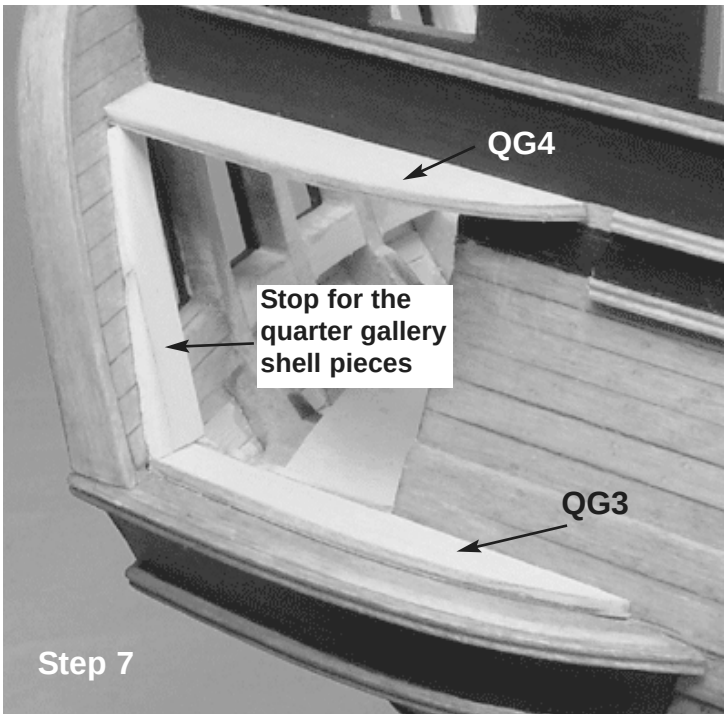




photo (6B) where the curved section was cut to butt against the hull planking. It was glued along the top edge of the stern with a 1/32" overhand on the aft side. The forward side of the cap rail was sanded flush to the transom afterwards. While sanding, you should be careful to keep the cap rail a consistent width. The finished width of the cap rail should be 7/32" wide (maybe just a hair less if you wanted to).

Once the two end pieces are completed, a strip of 3/32" x 1/16' basswood was cut to fit between them. Try to create a nice tight seam between this middle section of the cap rail and the two curved sections. Maintain a consistent overhang on the aft side. The forward edge of this center strip will sit flush against the stern frames. The completed cap rail was sanded smooth and stained afterwards. Then the entire outboard side of the stern was painted black as you can see in that same photo.

NOTE: After much consideration and contemplation a decision was made to laser cut the two outer sections of the cap rail. You will see two laser cut pieces named SCR (1/4" thick sheet), which are cut to the approximate curve of the transom. They were provided slightly longer than needed to compensate for small difference from model-to-model. Hold them in position and mark them to fit your model. Glue them on permanently afterwards with the same small overhang described earlier. They have also been laser cut slightly thicker than needed so you can sand off any laser burn marks while matching the thickness to the center section of the cap rail. This can be done after you glue them into place.

***Step 7*** – Continued construction of the quarter galleries. Remove the two laser cut pieces (QG3 and QG4) from the 1/16" sheet. Glue QG3 into position on top of the counter of the quarter galleries. The top of this piece should sit flush with the bottom the hull opening. This was the reason for leaving that little gap while completing step four earlier. Then glue QG4 along the top of the gallery opening following the run of your hull planking. You will need to remove more of the beaded molding to do this. See the photo provided.

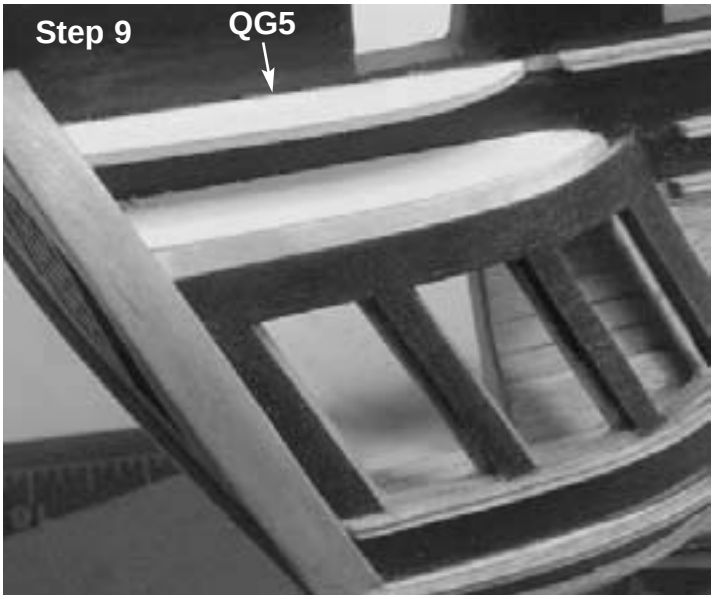
Then, take some scrap basswood strips and glue them together edgewise. You will need a piece that will be at least 3/8" wide when you're done. It will also need to be long enough to fit between the two pieces (QG3 and QG4). You are creating a "stop" against the inboard side of the transom so you can glue the quarter gallery shells into position in the next step. Test this extra wide piece so you can slide it between QG3 and QG4. Line up the inside edge of this "stop" with the side of the outermost stern window. Then draw

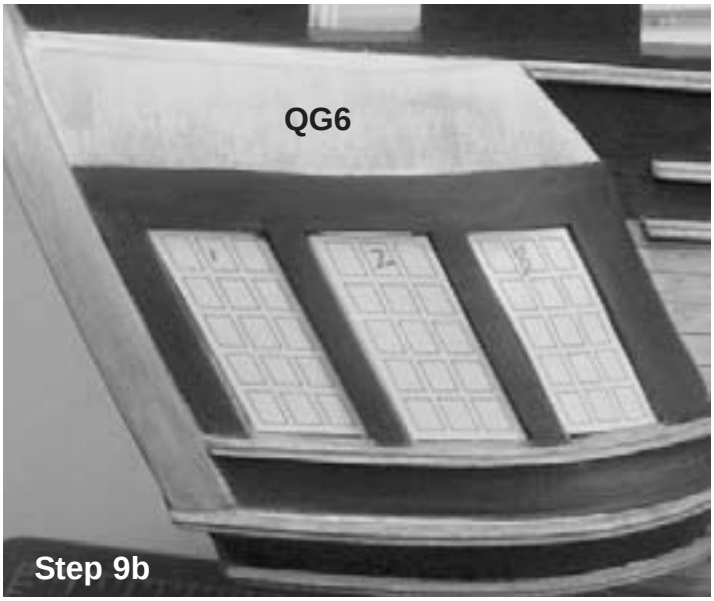


a straight line from the corner of QG3 up to the corner of QG4. Remove the piece and cut it along this reference line. Glue it permanently into position to complete this step. All of these pieces should be stained before moving forward to step 8.

***Step 8*** - Closing in the Quarter Galleries. You will be closing in the quarter galleries using two laser cut layers. The first layer (QG7) is 1/32" thick. Be careful with these, as the wood grain runs up and down so they will bend very easily. Both layers are cut to the approximate shape you will need. This is a very complex curve and every model will be slightly different. The fit will differ depending on how well the hull was faired, and what the run of you planking is, along with the established angle of the counter for the galleries. All these elements and many others will make it impossible for the laser cut shell to fit precisely without tweaking it to fit your model. You should test the first layer (QG7) in position so its aft edge sits flush against the stern transom and the "stop" you made in the previous step. Then bend it gently so the forward edge can be marked and shaped properly. It should be notched over the gunwales and sit flush against the hull. Try to maintain a consistent space (width) under and over the gallery windows. The first shell layer was cut a little taller than needed so you can sand it down flush with the top of piece QG4 after the glue dries. See the photo for step 8 that shows this first layer glued in position. You should stain the inboard side of this first layer before you glue it onto the model permanently. It will be very difficult to do afterwards.

The window openings are cut somewhat smaller than the actual windows on that first shell layer (QG7). These same openings on the second layer (QG8) were cut larger and are the actual size of the quarter gallery lights. When this second layer is placed on top of the first, it will create a rabbet on all four sides of each opening. This will prevent the windows from falling into the galleries when you glue them into position later. At this time, however, you should position the second layer (1/16" thick) so the rabbet on all four sides of each window opening is REASONABLY consistent. Shape the forward edge of QG8 just like you did for the first layer. Then glue it into position. In photo 8b, note how second layer also leaves a rabbet along the top of the quarter galleries. This will be addressed later, but was mentioned now so you are aware that it is OK and intentional. You can see in photo 8c that the galleries were painted black at this point and a double beaded molding strip was added along the bottom of the window openings. You don't have to paint your galleries at this point but it was done on the prototype to make the

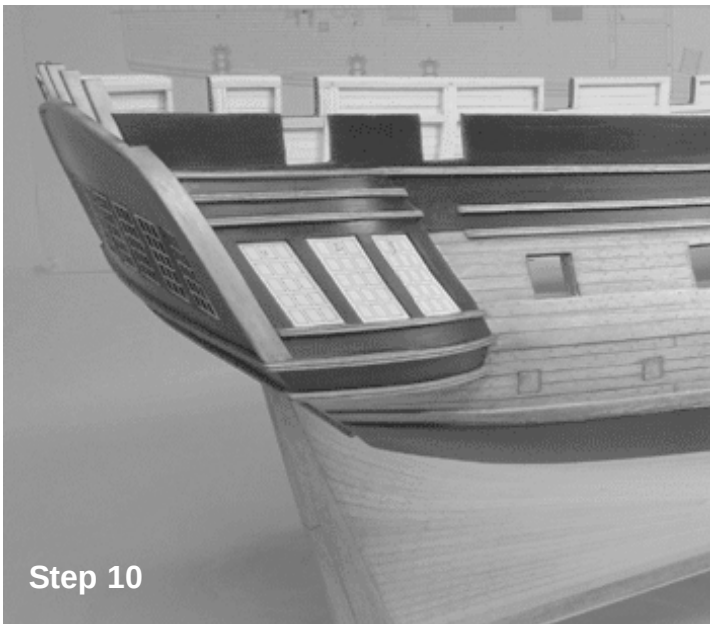


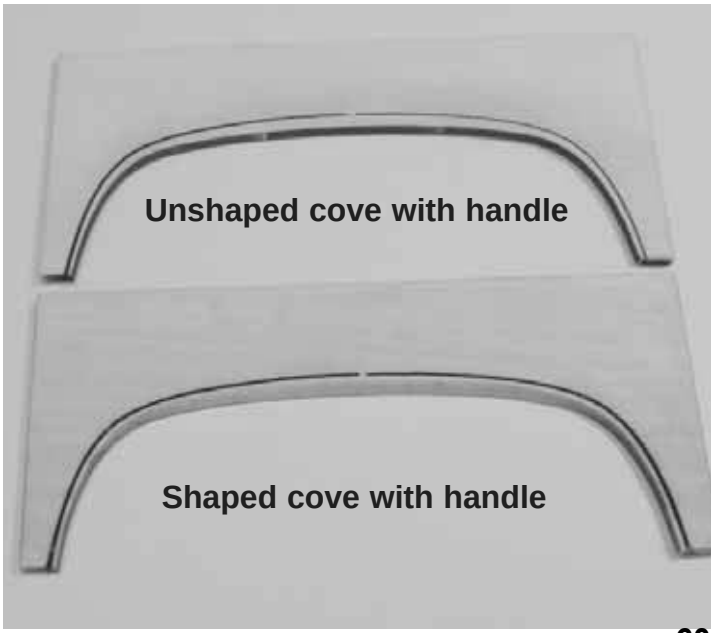



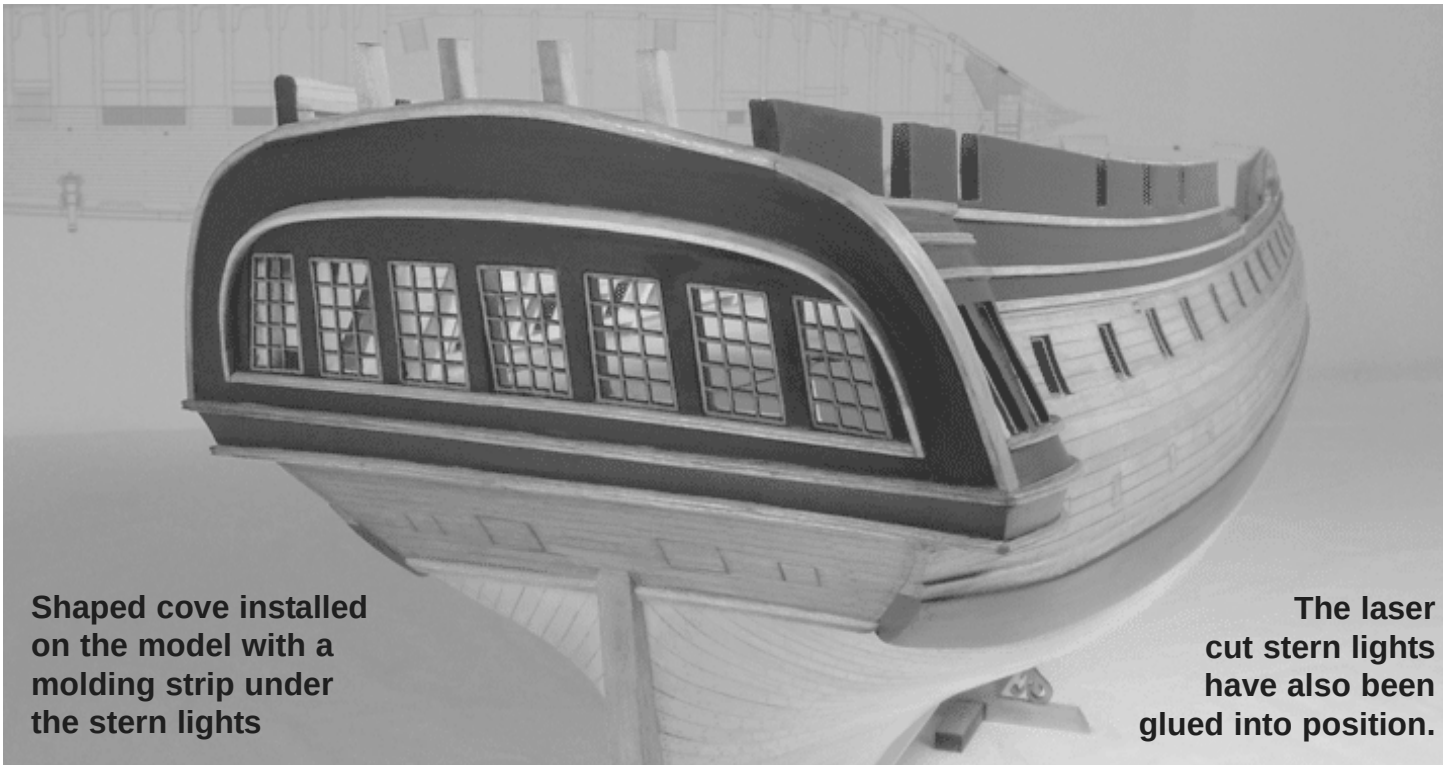

details in the next group of photos easier to see. A photocopy of the quarter gallery windows was made and they were popped into the openings to test their fit. Small adjustments were made to the gallery shells if they were needed.

***Step 9*** - Building the roof for the quarter galleries. Laser cut piece QG5 is also 1/16" thick. This should be placed against the hull following the run of the double beaded molding. It forms the top of the quarter gallery roof. Once you remove a portion of the molding as shown in photo 9 it will leave an unpainted hull stripe that you can use as a guide when gluing it into position. The last laser cut piece (QG6) is 1/16" thick. This is the shell that will enclose the roof of the quarter galleries. Just like the two shell layers earlier, this piece will need to be tweaked in order to fit nicely against the hull. Shape the forward edge so it sits flush against the hull. Then glue it into position. Sit this piece into the rabbet that runs along the top of the quarter gallery. Once again this piece has been cut a little taller so you can sand its top edge flush with the roof after the glue dries. See photo 9B. You can use wood filler to hide any gaps or seams between any of the quarter gallery pieces before you paint them.

***Step 10*** – In this final step, three more strips of double beaded molding are glued across the quarter gallery roof. Add the top stretch of molding first. This is important. It should connect with the beaded molding already on the hull. See photo 10. Then measure the height of the photo etched decorations that will be glued in





**Shaped cove installed on the model with a molding strip under the stern lights**

**The laser cut stern lights have also been glued into position.**

that top section of the roof. When you glue the next strip of molding along the roof, you need to make sure that you leave enough room so these decorations will fit between them. You should do the same before you glue the lowest strip of molding into position as well. Make sure the photo etched decorations will fit between these molding strips before you glue them onto the galleries. The galleries are painted all black with the molding strips stained Golden Oak. This completes the initial construction of the quarter galleries and stern.

**Adding the final details to the stern and quarter galleries –**

After the initial construction for the stern and quarter galleries is completed, you can add some of the finer details to finish it up. First, you will add the cove on the stern. The cove is the thicker piece of molding that the carved stern figures will sit on. It defines the area between the stern lights and the carved figures around it. This has been laser cut from an 1/8" thick basswood sheet. Note in the photo provided, that the

cove has been laser cut so it will have a handle still attached to it after you remove it. The cove needs to be beveled along its lower edge. Note in that photo that the cove shown on top has not been beveled yet. The one below it has been beveled and shaped. It was sanded on an angle almost creating a concave profile. Do not cut the cove free of its handle until after you have shaped it. The handle was provided to help prevent the cove from breaking while you shape it. It will be very delicate and could split along the wood grain. The cove would have been hard to hold while sanding without the handle assisting you. After you shape it like the lower example in the photo, you can cut it free of its handle. Don't attempt to sand the top of the cove until after you glue it onto the stern transom. It may still break, as it is very fragile. Sand the top of the cove to remove the laser "char" after the glue dries and stain it golden oak.

Then add a 1/16" thick strip of double beaded molding along the bottom of the stern lights between the ends of the cove. The thickness of the cove should gradually be reduced to match the thickness of the double beaded molding strip. The top of the cove should remain 1/8" deep. But as it curves downward along each side it should be sanded to match the 1/16" depth of the molding under the windows. You will also notice in the photos provided that the laser cut windows (stern lights) have also been glued into position. Be careful with these, as they are only 1/32" thick. Sand them on both sides to remove the laser burn BEFORE you cut them free from the laser cut sheet. Don't worry about sanding the laser char off the inside edges of each window pane. The windows are far too delicate for that and the difference in color won't be noticeable after everything is glued into position and stained.

Do not throw the empty laser sheet away after you remove the stern windows. You will use the openings from the windows on this sheet as a stencil. To simulate the glass panes of the stern lights, trace the window openings onto a piece of paper. Then tape a sheet of clear acetate over the traced window outlines. Use the tracing as a guide to cut the acetate to shape. You should now have perfectly sized pieces of acetate that can be glued into position to simulate the glass window panes. Apply just a little bit of glue to the inboard side of your laser cut windows. Then pop the acetate into position from the inboard side. Make sure they are firmly glued into position and can't fall out. But be careful with the glue so you don't stain and smear the acetate. You should try and keep the windows as clean as you can.

**Quarter Gallery Windows and Drops**

The laser cut windows for the quarter galleries can now be glued into position as well. This time however, the acetate that simulates the glass should be inserted first. Remove the laser cut windows from the 1/32" thick ply sheet. Set them aside for the moment. Use the empty sheet to trace the window openings and cut your acetate windows as you did earlier for the stern lights. Then take the acetate windows and position them in their proper gallery openings. The rabbet around each window opening should prevent them from falling into the quarter galleries. These don't have to be glued in place. Just place them in each opening. Then take each laser cut window and glue it into position right on top of the acetate. You only need to use glue along the outside edges of each laser cut window. That should be enough to keep it secured, while making it less likely that the acetate becomes smeared with glue.

The decorative drops are provided as metal castings. These may need minor clean-up to remove any mold flashing before you paint them. Test how they fit under the quarter galleries and against the hull. The back of each drop is notched to fit over the wales and black strake. But as mentioned many times previously, everyone's model will vary slightly and the back of each drop may need to be filed down so it fits properly. When you are satisfied with how they fit, prime and paint the drops to look like stained wood. Glue them into position and fill any seams between them and the hull. Do any paint touch up that might be needed after a final examination.


**Photo etched details and figurative stern castings**

You can now add some of the photo etched details to your stern and quarter galleries. Examine the photos provided to see how they look on the prototype. All of the photo etched garlands and scrollwork was painted to look like wood. The etched garlands were glued between the stern lights and quarter gallery lights. Additional etched details were glued between the molding strips on each quarter gallery roof and below the quarter gallery windows. These pieces should be pre-bent before being painted to prevent the finish from getting scuffed. Bend them so they fit well and can be glued easily into place after they are painted. The decorations along the top row of the quarter gallery roof are very small. They are provided as individual pieces. Carefully and evenly position them across the quarter gallery roof. The photo etched carving just forward of the quarter gallery is supplied in three

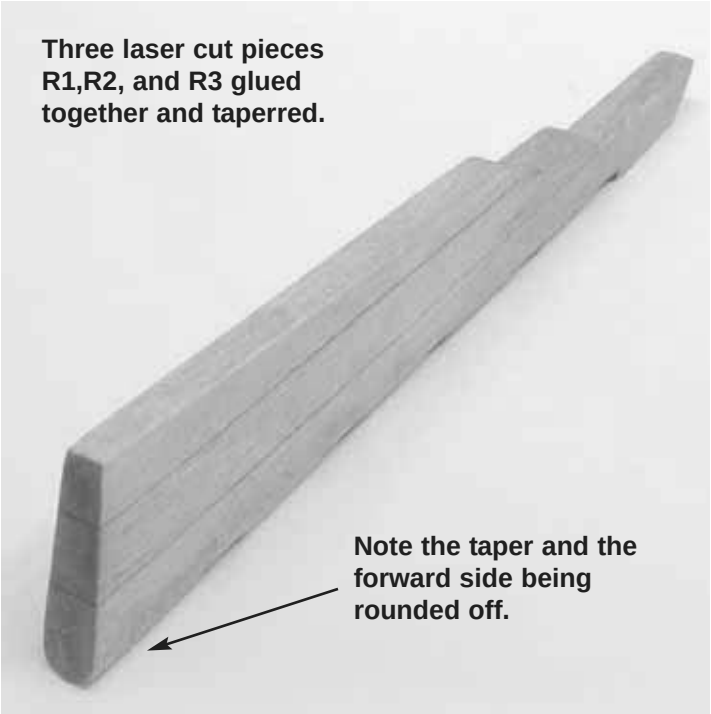
pieces. Pre-bending the lowest section is important.

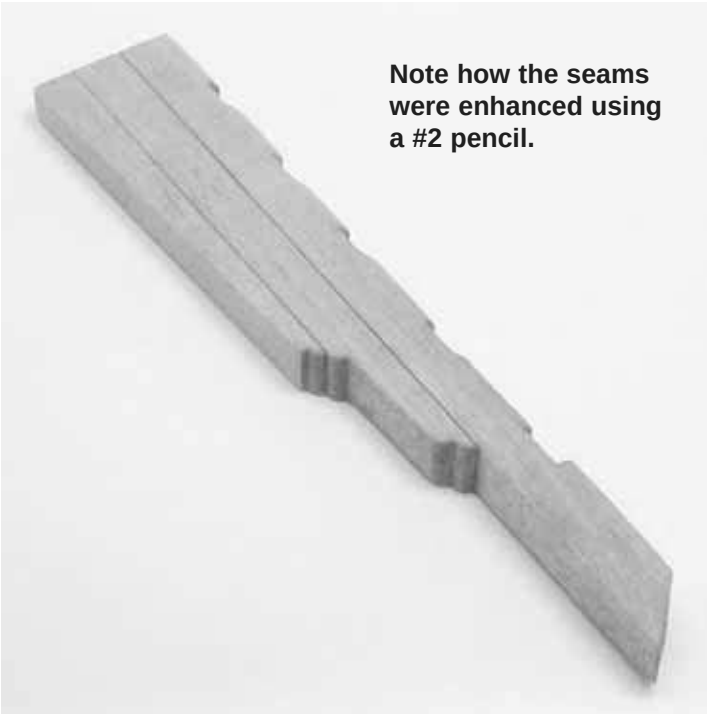
The last length of photo etched detailing is the long strip placed below the stern transom lights. It should fit between the molding strips as shown in the photos provided. You could also add the ship's name to the upper counter at this time. I would not, however, apply the stern port hinges until after the rudder is installed in the next chapter. This will decrease the chances that those painted surfaces will get scratched wile mounting the rudder.

It may be easier for some folks to glue these stern elements into position if the model is turned upside down. Make sure you support and raise the model properly so the stern frames and bulwarks don't break. Many of the details will be easier to add with the model upside down. It is recommended that you add these pieces now so you wont have to flip your model over again when there are more elements that could get damaged in the process.

The stern figures and castings were also painted to look like carved wood. There are 7 castings that make up the decorative sculpture on the stern. Once painted, position them as shown on the plans. The three central figures were glued into place first. But before you add them, test them in position so you can mark the locations where their heads overlap the cap rail. Then notch out the overhang of the cap rail so the three figures sit flush against the stern. You can fill in any gaps with wood filler. You should note in the pictures provided that the figure of NEPTUNE is holding a trident. This element has been photo etched for you. Paint the trident and then glue it into position so it looks like Neptune is naturally holding it. It should rest against his left shoulder at the appropriate angle.

Then add the four remaining castings. The two figures should overlap the edge of the stern transom just a little bit. You may decide to notch out the cap rail for these two figures as well, although it wasn't necessary on the prototype.

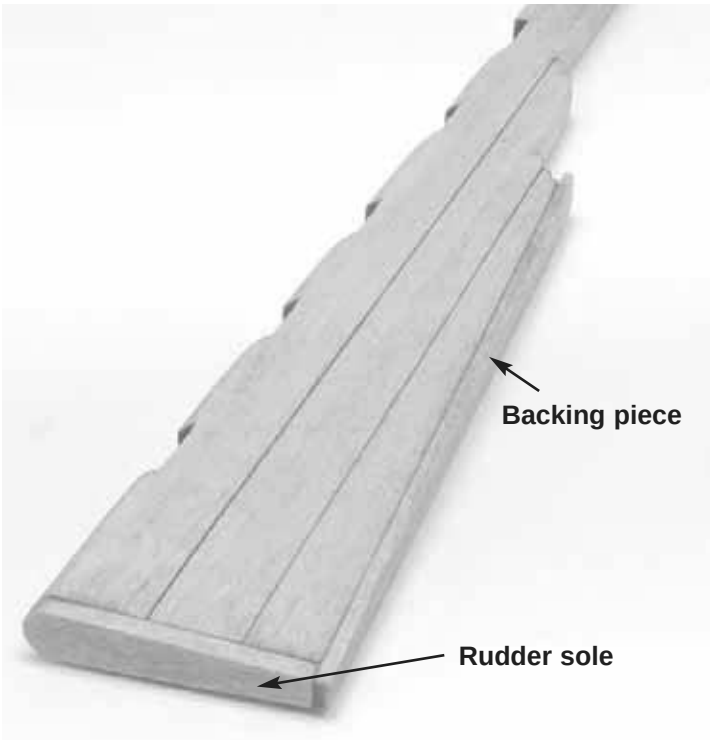



# Chapter Eight

## Constructing and Installing the Rudder

There are three laser cut pieces for the rudder. They are ¼" thick (R1, R2, and R3). Sand off the laser char and glue them together as shown in the photos provided. You should accentuate the seams between the three pieces with a pencil just like you did when assembling the stem parts. Once assembled, the rudder should be tapered as it progresses aft. This taper should also slowly transition from ¼" to around 1/8" thick as it works its way to the keel. The rudder is tapered from the top and the forward edge (1/4" thick) down to approximately 1/8" thick at its lower aft edge.




The forward edge of the rudder should be rounded off where it will sit against the stern post. You can see this clearly in the photos. This would allow the rudder to more easily swing port to starboard on its hinges (pintels and gudgeons).

### Adding the Backing Piece and Rudder Sole-

Add the backing piece first. This will be added to the aft side of the rudder. Use a 1/4" x 1/32" basswood strip. Cut it to length and glue it into position. Note how the top of the backing piece extends above the top of R1. This creates a nice detail that can be seen on plan sheet one. Then sand the backing piece flush with the edges and bottom of the rudder.

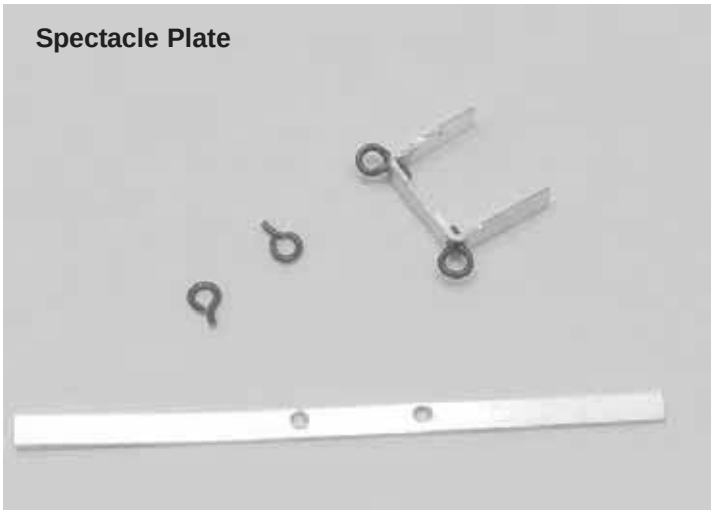
The rudder sole is added next. It protects the bottom of the rudder much like the false keel does on the keel. Use a ¼" x 1/16" basswood strip. Sand it flush to match the shape of the rudder.

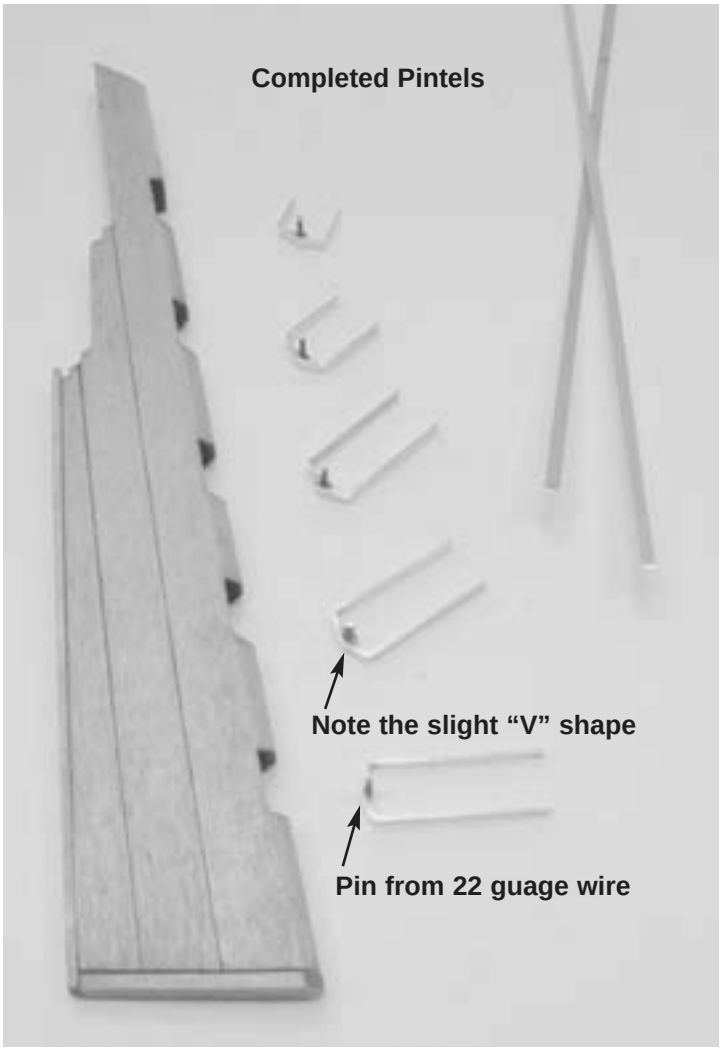
**Creating the Pintels-**

The half of the rudder hinge that attaches to the rudder is called the pintel. The gudgeons are the other half. The gudgeons are secured to the ship's hull. The pintels are made using the wider brass strips supplied with the kit. There will be five pintels attached to the rudder. Cut five extra long strips from the brass. Make them a lot longer than you need them to be. After you shape them initially, you can cut each side of the pintels to their correct length using the plans as a guide.

Use a scrap piece of wood that is ¼" thick to bend the pintel strips into shape. Bend the strips around the wood being careful to create a nice sharp bend. Note in the photo that there is a slight "v" shaped profile for the inside edges of the pintels. You can leave the legs (straps) of the pintels extra long and cut them evenly only after you are satisfied with their overall shape.

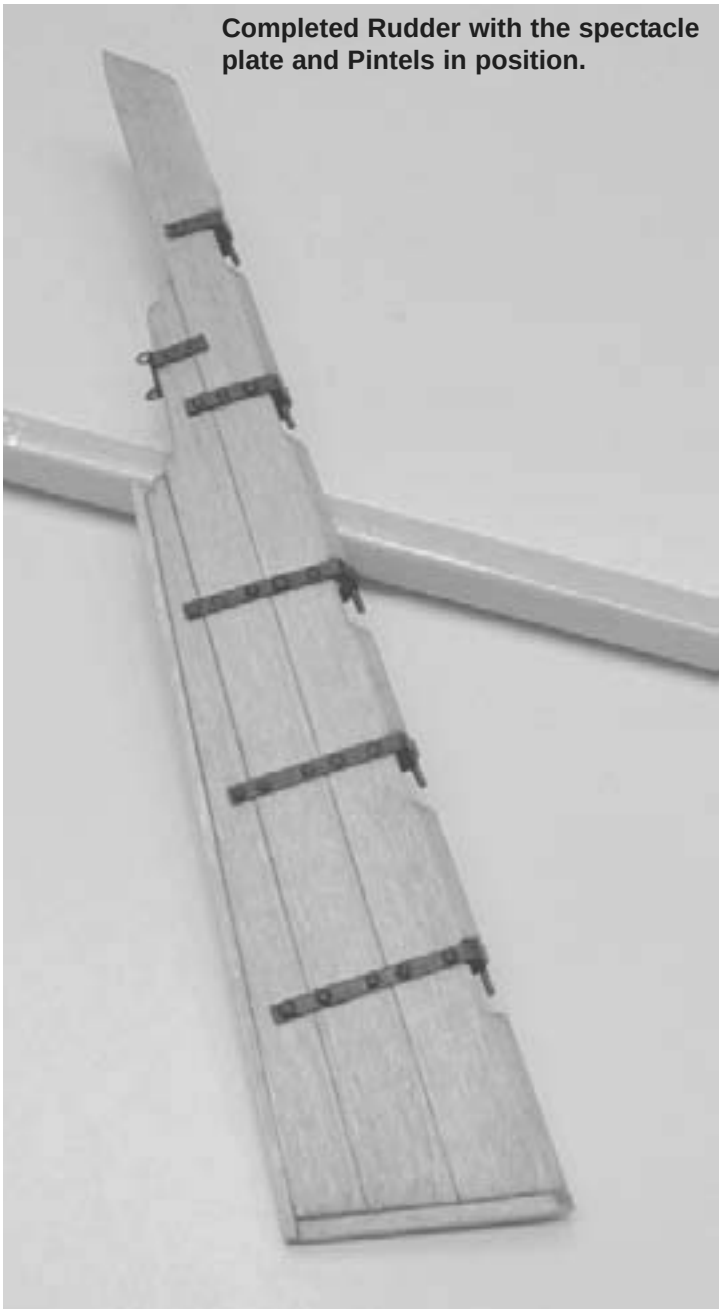
The pintels have a small hinge pin glued or soldered on their inside edge. They should be positioned in the "bend" or "V" shape you created which should be centered on the inside edge. The hinge pin was made from 22 guage black wire. Cut a small length of wire and glue/solder it into position. See the photo provided. Paint the pintels black before you glue them onto the rudder. When gluing the pintels on the rudder, position them carefully so that they are all at the same angle. They should be aligned at a right angle to the forward edge of the rudder. There are small notches along the forward edge of the


Spectacle Plate

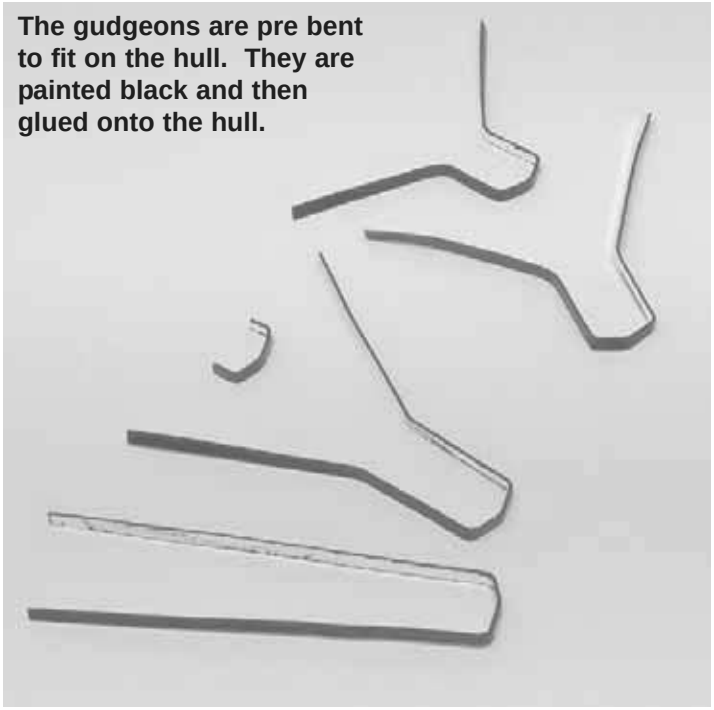



rudder. The pintels are glued against the top of each notch with the "pins" facing downward. Examine the plans and the photos of the completed rudder for the details.

You might also decide to simulate the bolt heads that hold the pintels and gudgeons onto the hull. To do this, simply use an applicator like a sharpened toothpick or a length of 22 guage wire. Dip the end in some CA (super glue) and then dab a small droplet on top of the pintel. The droplet will dry in the shape of a round raised dot. Once painted over it does a good job of simulating the bolt heads. Wait until the droplets are completely dry before you paint them. You can use a CA accelerator to speed up the process. The accelerator comes in small spray bottles and can be sprayed onto the droplets to instantaniously cure them. This technique does take some practice. Experiment on some scrap and try to form droplets that are evenly spaced and consistent in size and shape. If you are happy with the results,



**Completed Rudder with the spectacle plate and Pintels in position.**



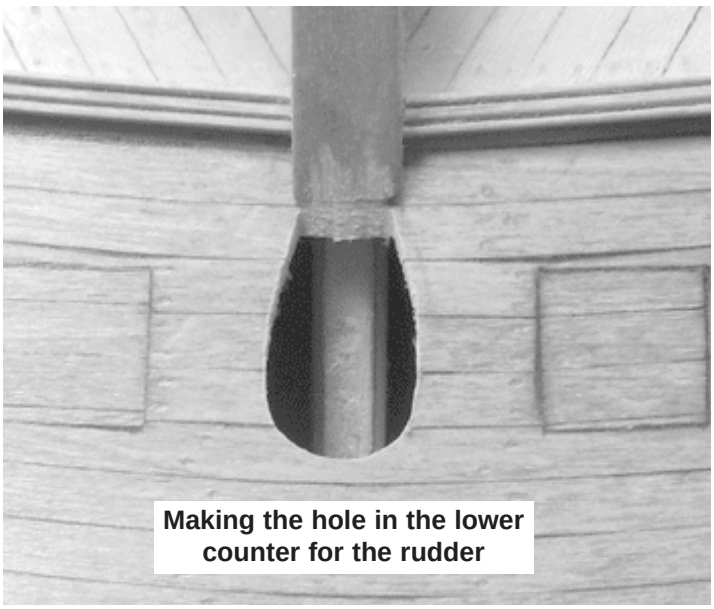
**The gudgeons are pre bent to fit on the hull. They are painted black and then glued onto the hull.**

you can give it a try on your pintels, gudgeons, spectacle plate, and gunport hinges, etc.

**The Spectacle Plate –**

The spectacle plate is shown on the aft side of the rudder. The rudder pendants (rudder preventer chains) are attached to it as a safeguard. Should the rudder lift free from hull in rough seas, the pendants prevent it from drifting away. The spectacle plate is basically an iron strap with two eyebolts on each corner. See the photo provided. To make the spectacle plate, use the same brass strip you used for the pintels. Before you bend it however, drill two small holes through the strip. The holes are located in each corner (or at each bend) of the strip. Just hold the strip against the rudder where it will eventually be placed. Mark the location for both holes (they will probably be ¼" apart).

Bend your strip along the holes and "test fit" the spectacle plate on the rudder. You can solder two eyebolts into each hole now or add them after the strip is glued onto the rudder. If you choose the later method, simply drill into the rudder itself - through the holes you made in the brass strip. Then glue the eye bolts into those holes. The spectacle plate should also be painted black. See the photo of the completed rudder. Set it aside while you prepare the hull in order to mount it.



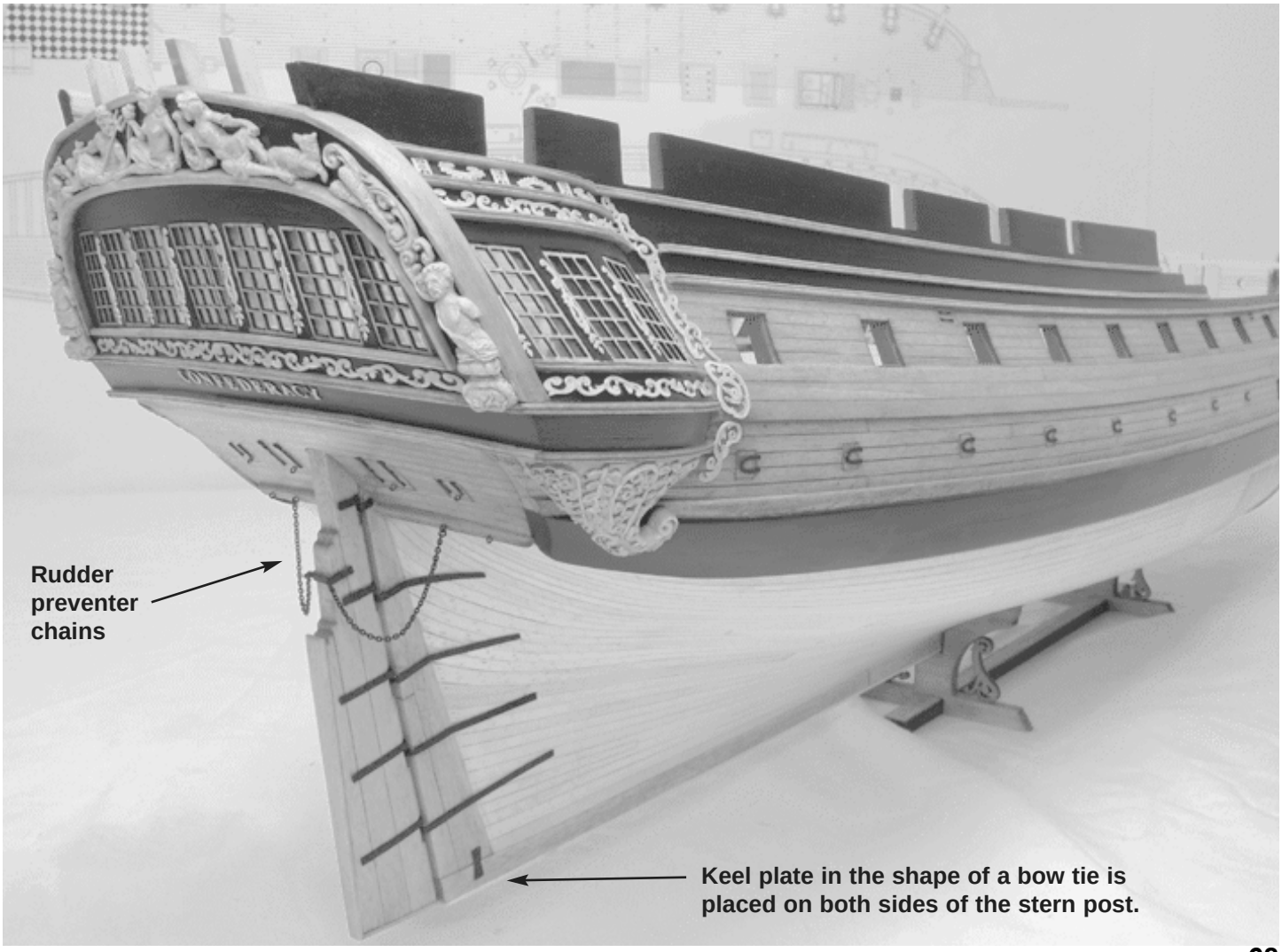
**Making the hole in the lower counter for the rudder**

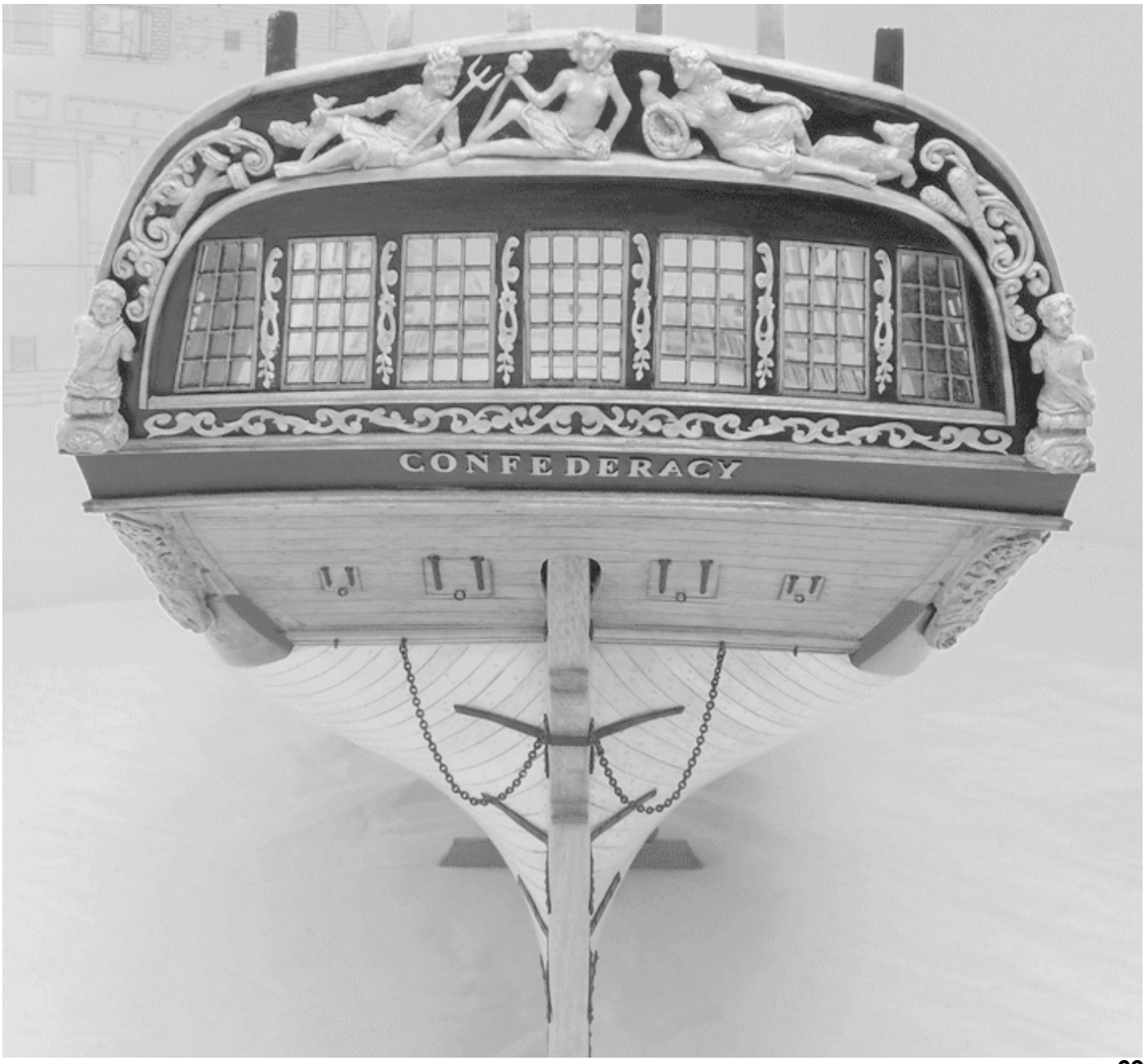
**Drilling the hole for the rudder into the lower counter-**

The rudder will fit into a hole that must be made in the lower counter. Turn the model upside down to make this hole. Make sure you support the model properly when doing so. Start by drilling a smaller hole in the center just abaft the stern post. Then use a round needle file to enlarge the hole and shape it. See the photo provided. Periodically check that the rudder fits well enough into the opening. The opening should be large enough that the rudder can swing freely from side-to-side.

**Making the Gudgeons –**

The gudgeons are made the same way as the pintels. Use the same size brass strips. Bend them around the scrap piece of wood and create the same v shaped end. When that is completed, take each gudgeon and bend its legs to the approximate shape of the hull where they will be glued. You can find the locations for them by holding the rudder against the stern post so you can mark their positions. You should also mark the angle for each gudgeon as well. Then you can test-fit each one in position and pre-bend it so it will fit properly. This is especially important where the legs of each gudgeon transition from the stern post onto the hull. See the photo provided that shows all of the gudgeons for the prototype painted and pre-bent. Glue them onto the hull afterwards. The hinge pins on your pintels should be short enough that you can place them into the gudgeons once the gudgeons are glued into place. You should be able to lift the rudder up and off the model once the gudgeons are in position as well. Make any adjustments to your pintel pins so this is possible. The rudder should swing freely back and forth. Examine the photos of the model with the rudder in position.




CONFEDERACY

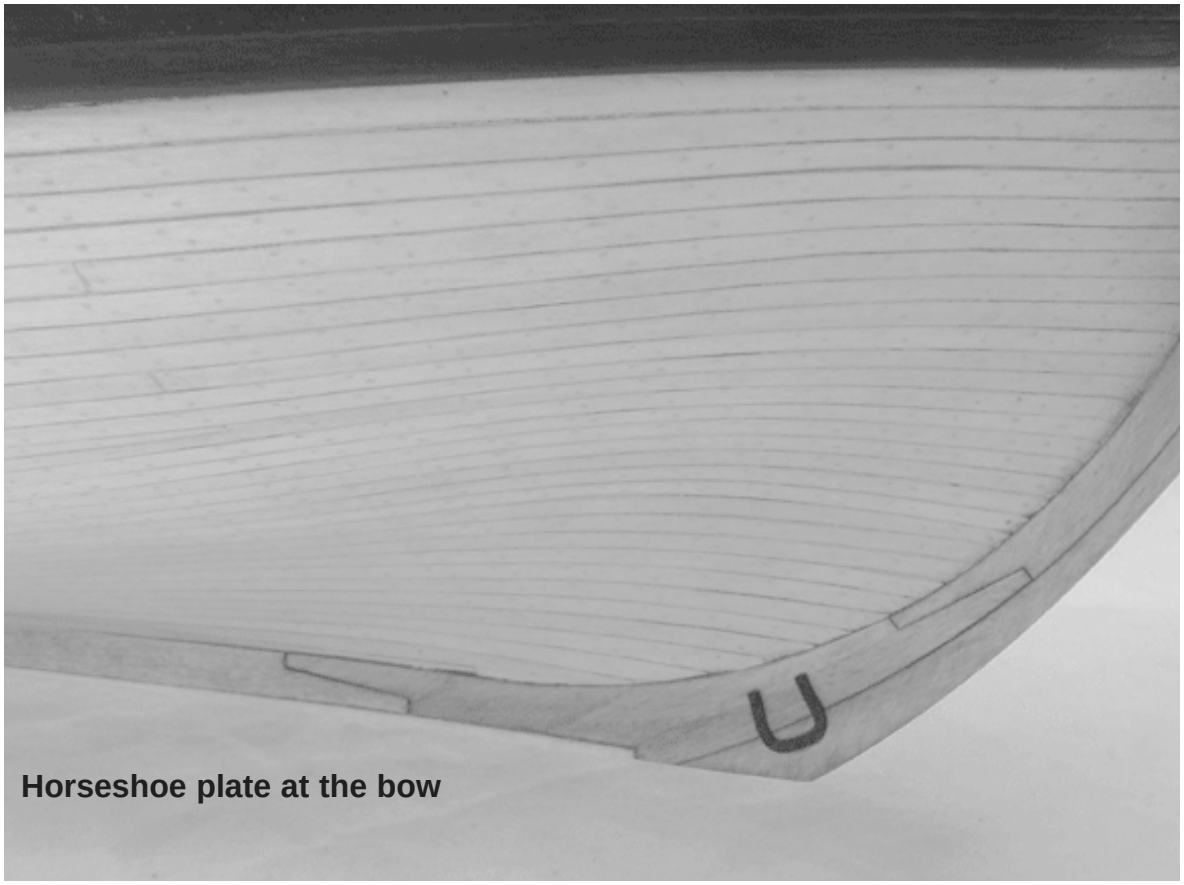
**Adding the Rudder preventer chains –**

A small length of chain is supplied with the kit. The chain is brass and will need to be chemically blackened or painted black. Cut it into two short lengths as shown in the photos. One end of the chain is attached to the eyebolt on the spectacle plate. From there, the chain is taken up to another eyebolt glued into the molding of the counter. Make the chain long enough that you create a nice "drape" in it as shown. Try and keep the drape of both preventer chains even and consistent. Also note in the same photo that an additional eyebolt is glued into the same molding (under the smaller stern ports). These additional eyebolts were used for various things and are a nice additional detail to show.

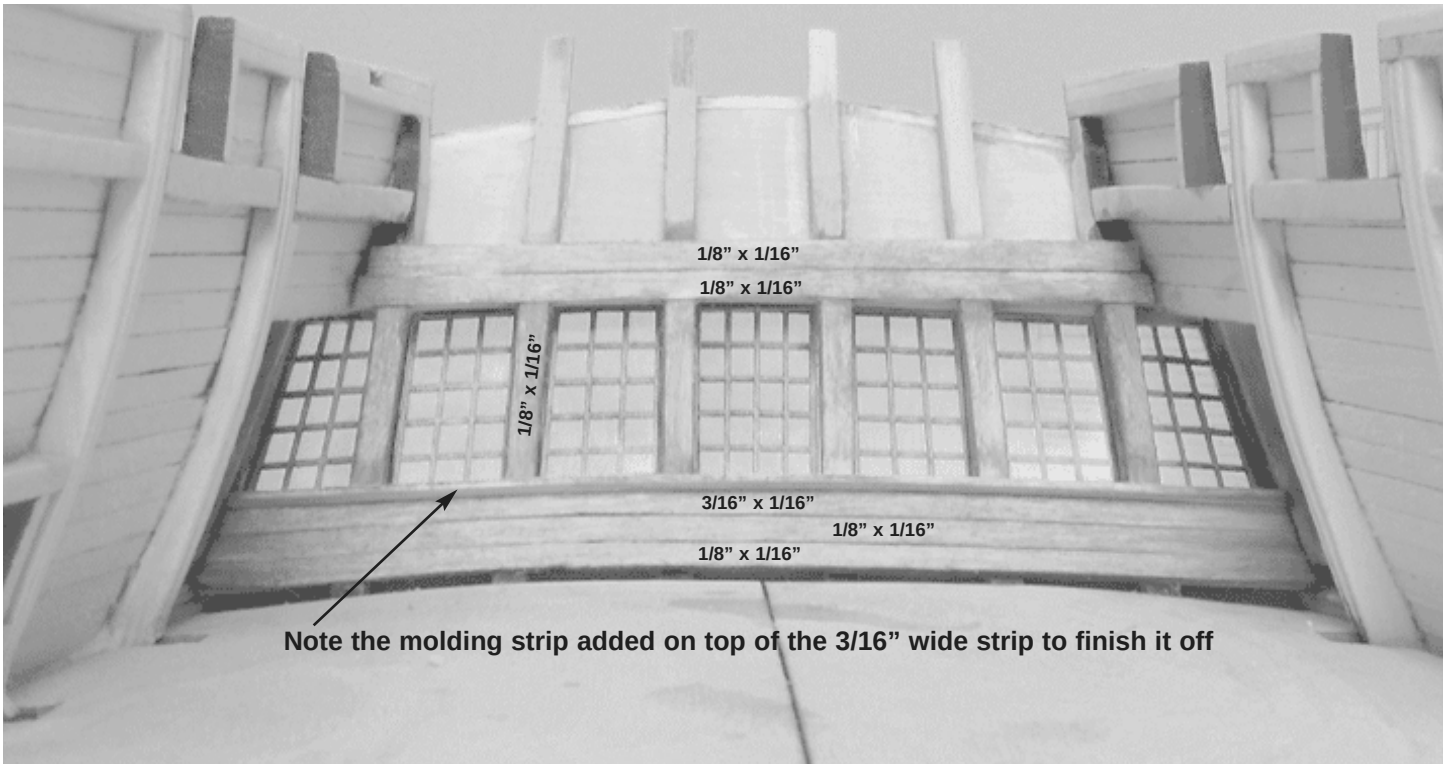
**Adding more photoetched details –**

With the rudder completed, you can now add some additional photoetched details. The stern port hinges can be painted black and glued into place. Also glue an eyebolt on the bottom of each stern port lid. If you decide to show this feature, a small length of rope (.018 tan rigging line) can be seized to the eyebolt and then inserted into a small hole drilled above each port. There is also a small "bow-tie-shaped" plate that can be painted black. This keel plate should be added to both sides of the stern post as shown on the plans. Another "horse shoe" plate can be added at the bow. Paint it black and position it as shown in the photo provided. These plates helped fasten the various pieces of the stern post and stem together.

Finally, to finish off this chapter, you can add the sweep port hinges along the sides of the hull. Note how the open end of the sweep port hinges faces the bow. The hinges for the ballast port lids should be painted black and glued into place. Add an eye bolt on the ballast port lids as well. After you glue them into a pre-drilled hole, bend the "eyes" downward. These rings would normally be attached to smaller eye bolts and allowed to fall naturally with gravity. Bending them downward will simulate this look. Should you want to show the halliard (.018 tan rigging line) used to open the lid, seize it to the eyebolt and insert the other end into a little hole drilled above the port. Examine the photos provided.



**Horseshoe plate at the bow**




# Chapter Nine

## Planking the Bulwarks

To start planking inboard, the stern will be addressed first. Planking below the stern lights, you will need to use three strakes. The first of these (3/16” x 1/16”) will be placed directly beneath the stern lights/windows. The top of this strip should be flush with the top of sills. It would be best to pre-bend these strips to acquire the curved shape needed. It will be easier than fighting to form the strip to the curved shape in such a confined area as you glue it into position. These three strakes could also be placed along the stern in two pieces. Just remember to stagger the butt joints of each strake if you choose to add them this way. You should also simulate the tarred seams between each strake by running a graphite pencil down each edge of the strip.

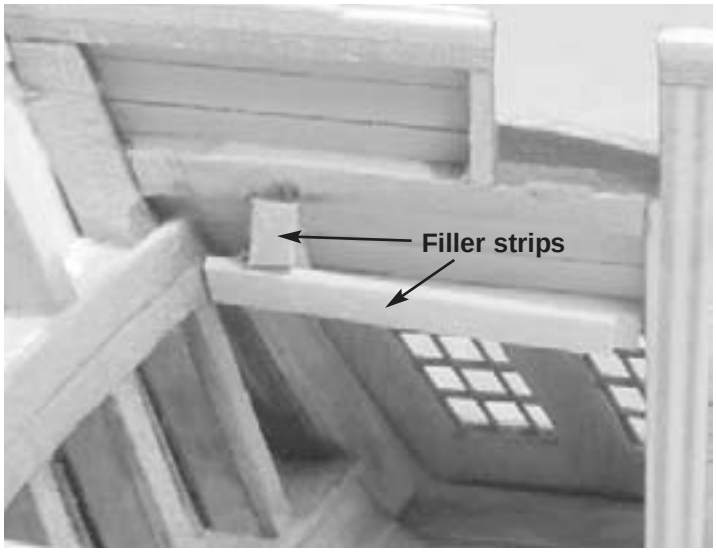
The next two strips will be placed just below the previous one but they should be 1/18” wide.

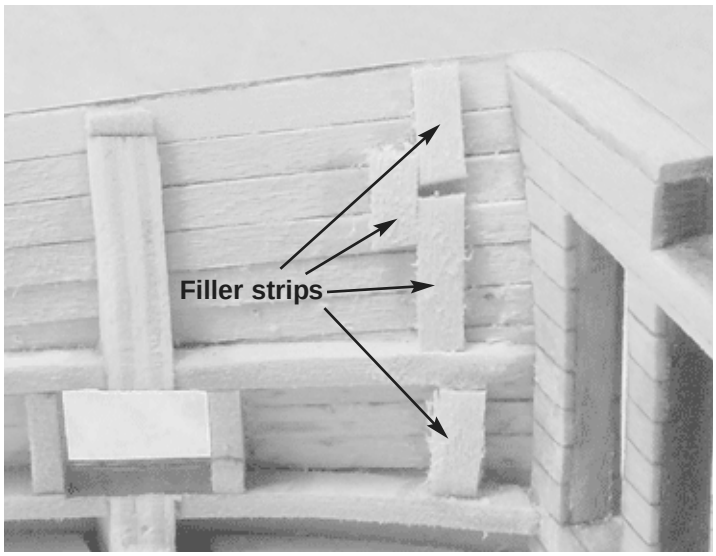
Once completed, add two more strakes of 1/8” x 1/16” strips above the stern lights in the same manner. This will leave the frames between each stern window ready for the next step. Measure and cut 1/8” x 1/16” strips to fit over the stern frames. This will finish off the internal stern planking. You might choose to add a 1/16” x 1/16” strip along the bottom of the stern lights. This molding will add a nice detail. Simply round off the outside edges to create a nice profile on the strip before you glue it into position. The top edge of the strip should fit flush with the top of the window sills.

*Prepare the bulwarks before you start planking…*

This model of the Confederacy was designed to show a fully framed quarter deck and forecastle deck. In order to make sure that the deck beams for the quarter deck and forecastle are placed the same height off of the gun deck, extreme care should be taken while planking the bulwarks in this chapter.

Before you begin, it will be necessary to glue a few filler strips against the bulwarks at the bow and stern. The filler strips will give you a surface to glue to bulwark planking onto in these areas. At the stern, you will need to place a strip along the top of the entrance to the quarter galleries. This strip should be the same thickness as your bulkhead extensions. You can use 1/16” x 1/8” strips. Once glued into position, you can fair these filler strips to match the inboard shape of the hull. Another small length of wood is also




needed between this strip and the quarter deck gun port sill. See the photo provided that shows these two filler strips glued and sanded.

At the bow, a few filler strips are needed as well. The bulwarks have a distinct curve there so it may be better to add the filler strips in several short pieces. See the photo provided. It doesn't have to look pretty. These strips are purely functional and will be covered up entirely by your bulwark planking. You can see in the photo how four pieces were used on the prototype and staggered to best match the curve (flare) of the bulwarks at the bow. They were sanded afterwards to match the shape and thickness of the bulwarks.

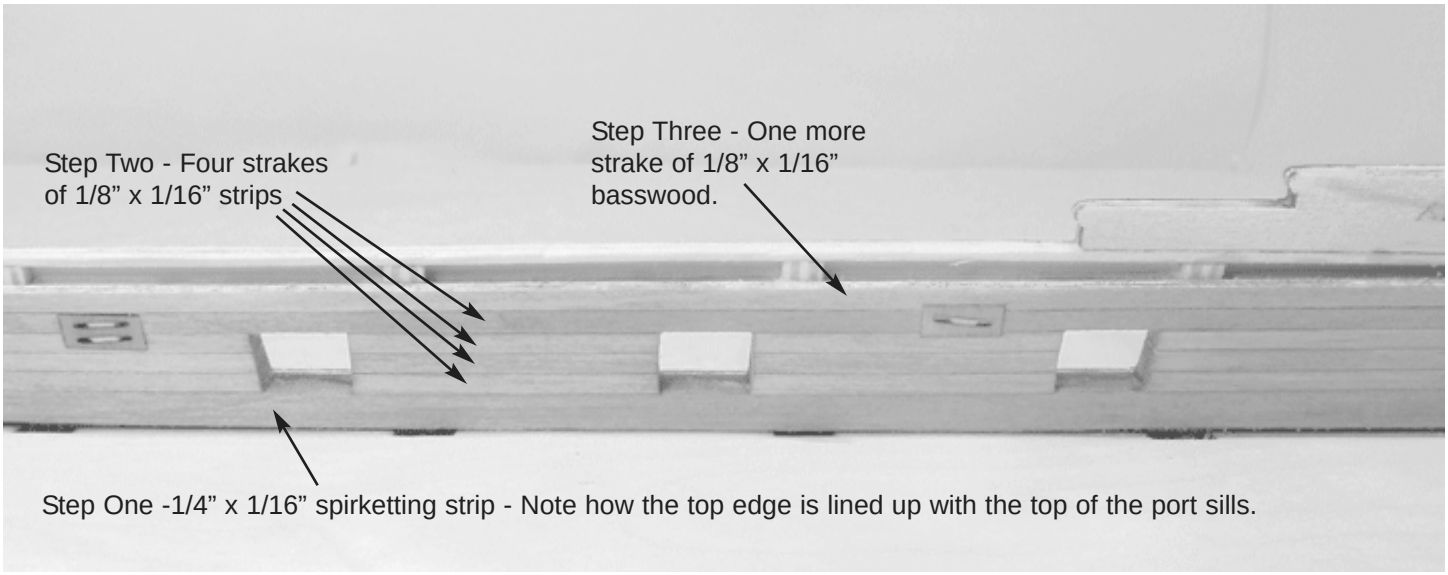
**Sheaves for the fixed blocks…**

You can add the sheave shells inboard now as well. They should be aligned with the sheaves

on the outside of the hull. Use the corresponding laser cut sheave shells as you did before you planked the outboard side. To help you align them with their outboard partners, you can stick two lengths of wire through the sheave holes you drilled through the bulwarks earlier. This will help you register the inboard shell correctly in position in relation to its other half on the outboard side. Then use some scrap wood to simulate the actual sheave in the slot of the shells. See the photo showing one of the "fixed blocks" completed along the bulwarks.

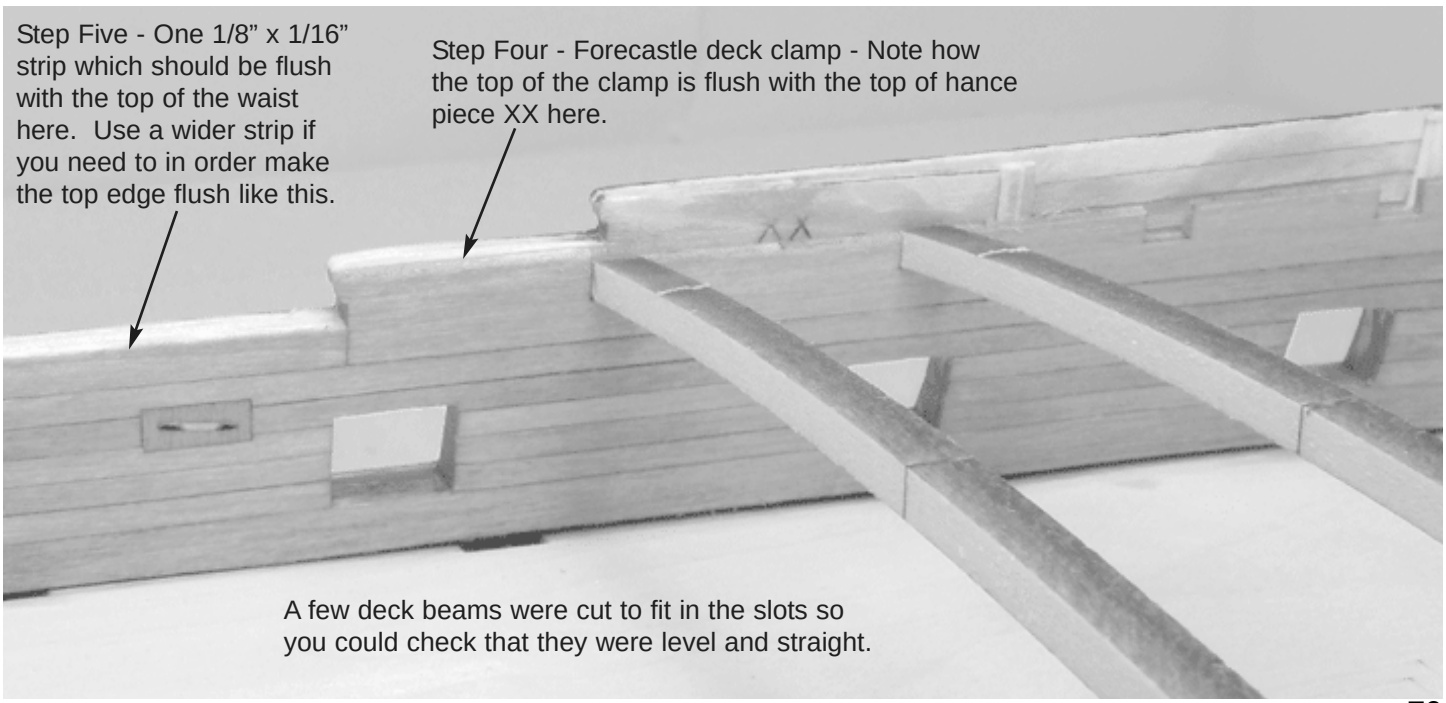
**Planking the inboard bulwarks…**

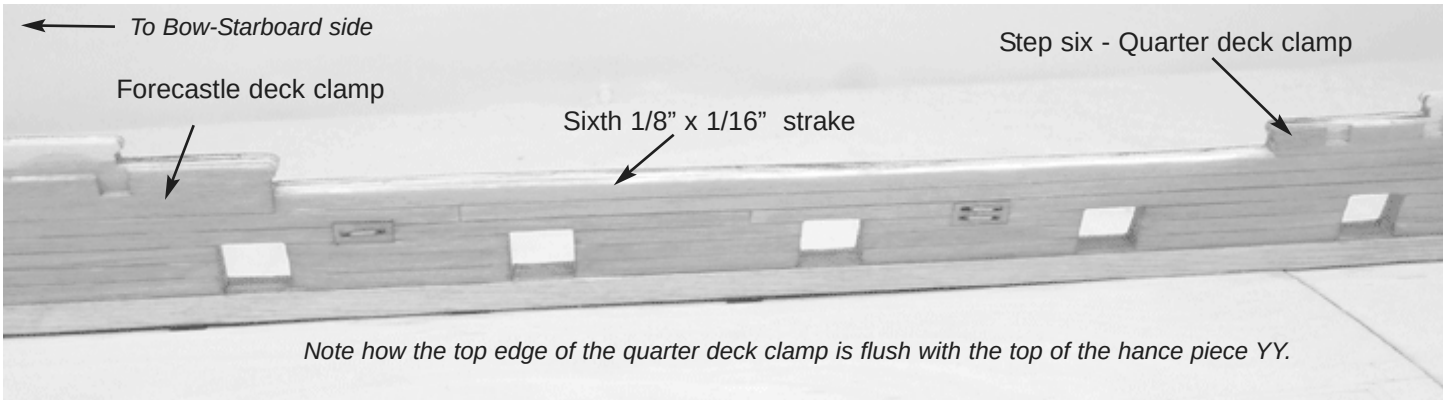
***Step 1*** - The spirketting – The spirketting is the thicker planking that runs directly below the gun ports inboard. Just like the wales, we will address its thickness in two layers. For now though, only one layer will be added. Use a ¼" x 1/16" strip for your first layer of spirketting. The top edge of this strip should be flush with the top of the gun port sills. This is very important, so proceed carefully. If the ¼" strip is too wide (it really shouldn't be) then cut it down until it fits comfortably flush with the tops of the sills. If it is too wide, then that probably means that you placed your gun port sills a little lower than called for. This won't have a huge negative impact on the model other than the fact that your cannons will probably sit "higher" through each port opening. It will however, mean that you might have to make some adjustments in step three.




***Step 2*** – Four strakes (rows) of 1/8” x 1/16” strips – Add four strakes of planking above the spirketting. Cut them to fit around the port openings as needed. These planks should be cut flush with the sides and top of each port opening. On the prototype, they were cut slightly longer and filed down flush with the port openings afterwards. The bulwarks will eventually be painted red once completed, except for the area in the great cabin. Even though this is the case, you should run a graphite pencil along both edges of each plank to simulate the caulked seams. The seams may show through the paint and some folks find this detail appealing. It will not be necessary to treenail these bulwark planks but in reality, they would have been.

***Step 3*** – You will need to add one more strake of 1/8” x 1/16” planking on top of the previous four. But before you do, it is REALLY important that you take some measurements first. Hold a length of planking against the bulwarks at the bow. In addition to this strip, also take the bow deck clamp and position it on top of that planking strip. The bow deck clamp has been laser cut for you. It has notches cut along the top edge to receive the forecastle deck beams. It is crucial that this deck clamp be positioned the proper height off the deck. It is also crucial that the deck clamp on the opposite side of the hull be at the same height as well. Otherwise your deck beams will be crooked.





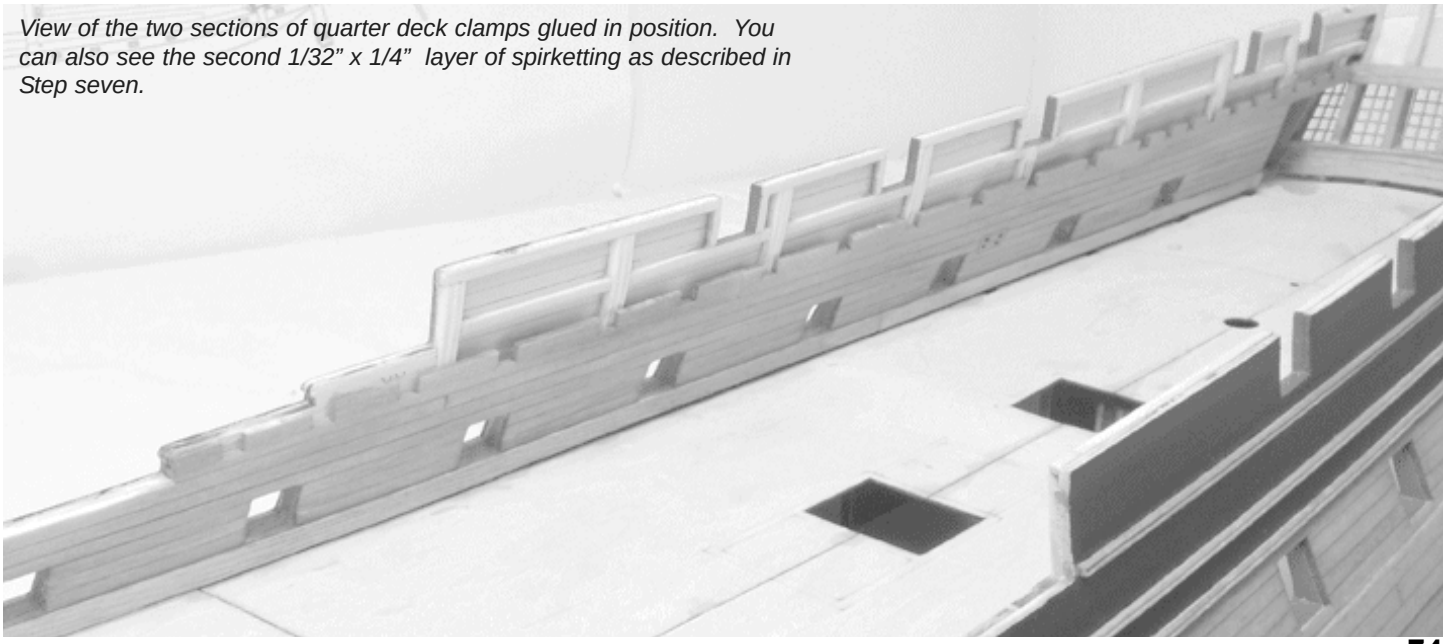

*Note how the top edge of the quarter deck clamp is flush with the top of the hance piece YY.*

The forecastle deck clamps should be lined up perfectly with the forward hance pieces (XX) along the waist. The deck clamp was left a little long on the other end so you could trim it to fit snug against the beakhead. As you hold these two pieces against the bulwarks, check that the fifth plank is wide enough so the top of the deck clamp sits perfectly flush with the top of the hance piece (XX). If it doesn't, you may need to use a wider or narrower plank for that fifth strake. Take your time here. Cut a planking strip to the width you would need to make the top of the forecastle deck clamp sit flush with the hance piece (XX). Then glue that fifth plank into position along the entire length of the hull. See the photos provided.

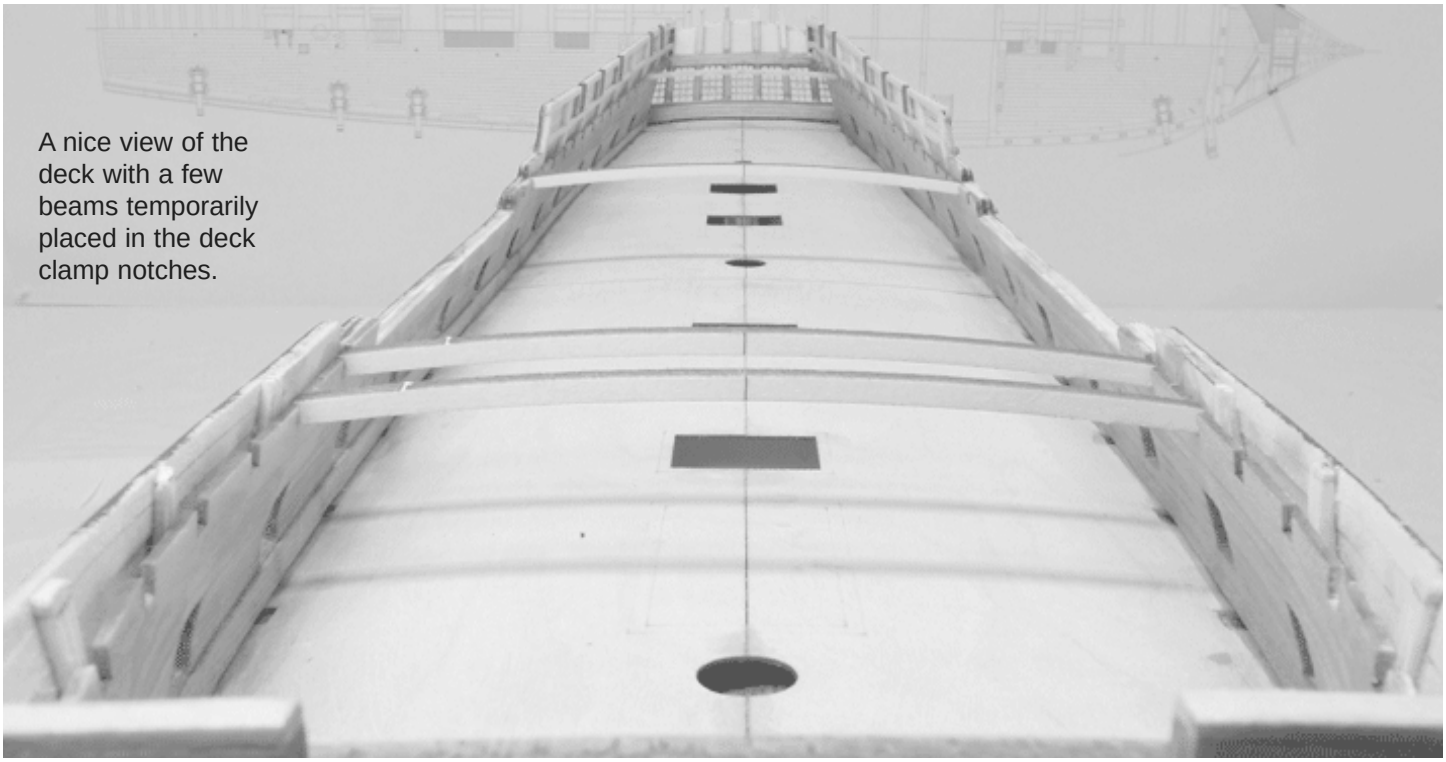
***Step 4*** – Glue the forecastle deck clamp in position on top of the fifth planking strip you added in the previous step. It would be a good idea to repeat steps one through four on the other side of the hull before you move ahead to step five.

Before you permanently glue the forecastle deck clamp on the other side, just clamp it temporarily to the bulwarks. Take a deck beam (or just a strip of 3/16" x 3/16" basswood) and test it in a few deck clamp slots. Check to see that the beam is level port-to-starboard. Also check to see if it is perpendicular to the center line of the deck. When you are happy with how the beam sits in the slots of the deck clamps, you can glue the forecastle deck clamp into position permanently.

***Step 5*** – Add one more (your sixth) 1/8" x 1/16" planking strip along the top of the fifth strake you added in step 3. This time the forward end of the plank will butt against the edge of the forecastle deck clamp. It should run the entire length of the hull. The top edge of this strip should be flush with the top of the waist. If the top of the strip doesn't sit flush with the top of the waist, you should custom cut a planking strip so it does. It is very important that this plank fit flush with the



*View of the two sections of quarter deck clamps glued in position. You can also see the second 1/32" x 1/4" layer of spirketting as described in Step seven.*

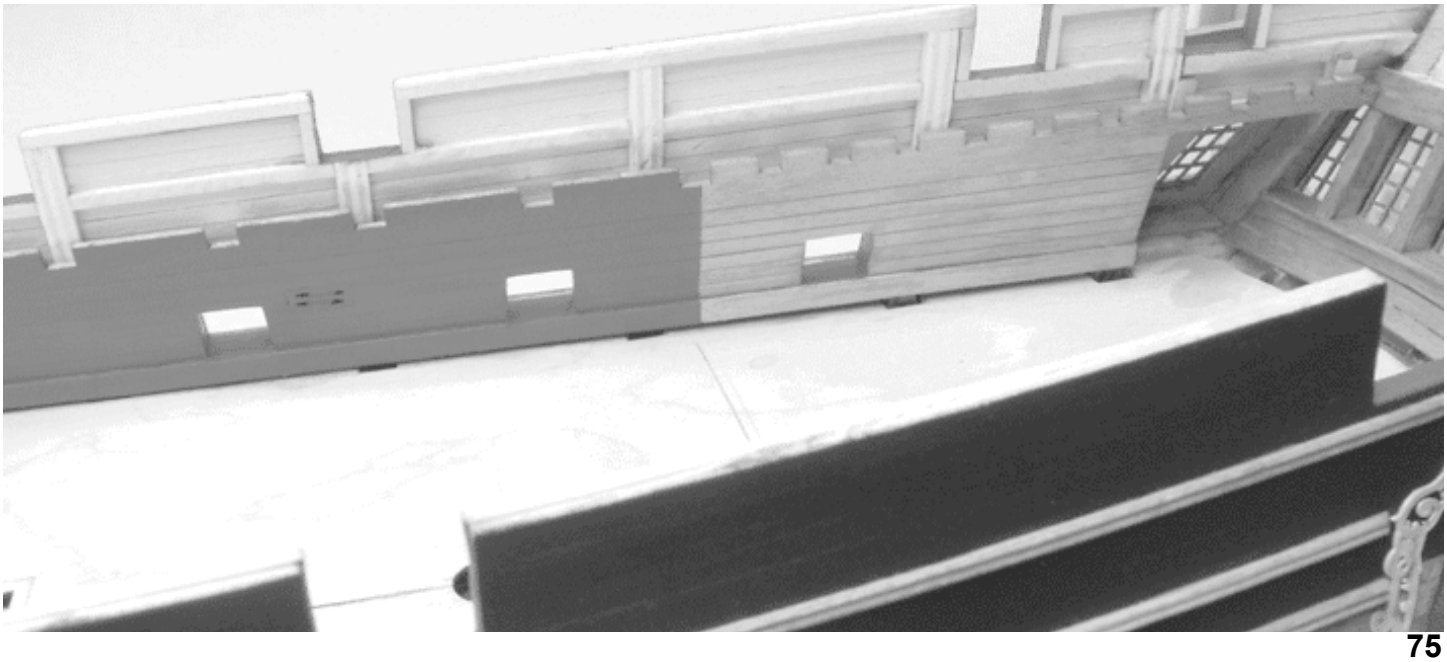


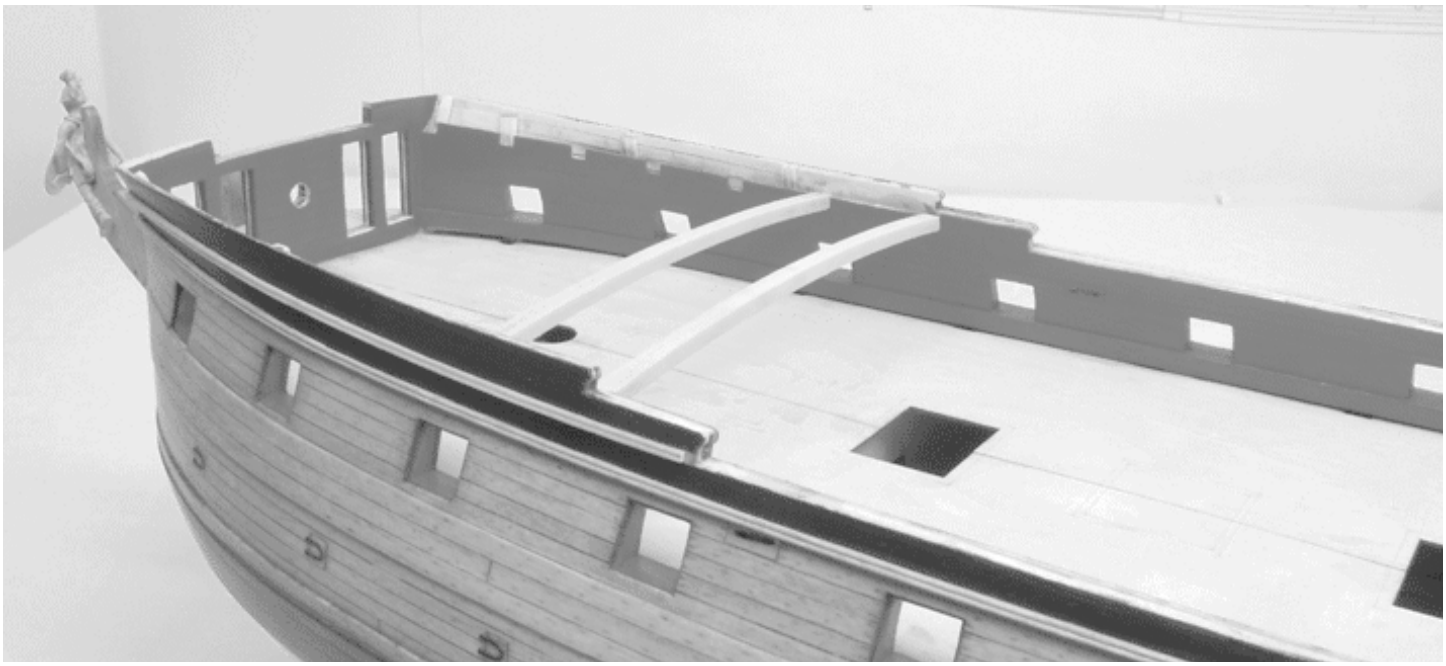
A nice view of the deck with a few beams temporarily placed in the deck clamp notches.

top of the waist. The reason for this is simple. The quarter deck clamp will be positioned with hance piece YY in same way that the forecastle clamp was positioned over hance piece XX. The quarter deck clamp is much longer than the forecastle deck clamp. It has been laser cut in two sections. Take the first section of the quarter deck clamp and test it in position before you commit to gluing this sixth plank into place permanently.

***Step 6*** - Take the two quarter deck clamp sections and glue them atop the sixth strake you added in the previous step. The top of the quarter deck clamp should sit flush with the top of the hance piece YY. Sand all of the bulwark planks smooth when you are finished. Be sure to check that the quarterdeck clamps on the opposite side of the hull are consistent port-to-starboard. Clamp them in position temporarily first and place a few deck beams in the notches to see if they are level and perpendicular to the center line.

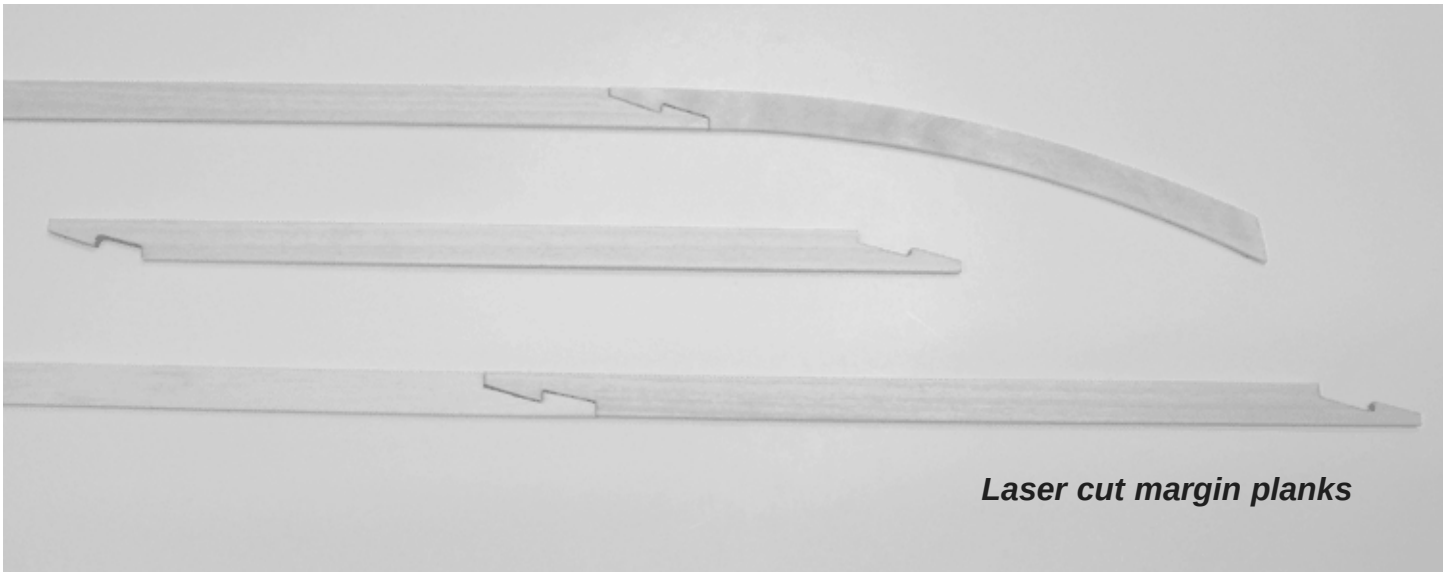
***Step 7*** – Add the second layer of spirketting. With the bulwark planking finished for the time





being, glue a ¼" x 1/32" strip on top of the first layer of spirketting you added in step one. Be sure to align the top of this second layer with the top of each gun port sill just like you did for the first layer. Soften the top edge of the spirketting so it doesn't have a hard edge. Just run some sand paper down the top of it to knock off/round off the sharp edge.

***Step 8*** – Paint the bulwarks red. The bulwarks in the great cabin will be left natural and was stained "Golden Oak" on the prototype. There is a laser etched line across the false deck which delineates the bulkhead for the great cabin. This line should fall directly beneath the quarter deck beam above it. Place a 3/16" x 3/16" strip in the deck beam notches above that line and verify that it is indeed directly beneath the beam. If it is not, then redraw another line to reference the bulkhead for the great cabin so it is actually centered under that beam. Then continue that line up the unpainted bulwarks to the beam notches. This will give you a line marking where you should stop the red paint along the bulwarks. You can see this in the photo provided.



***Laser cut margin planks***

# Chapter Ten

## Planking the Gun Deck

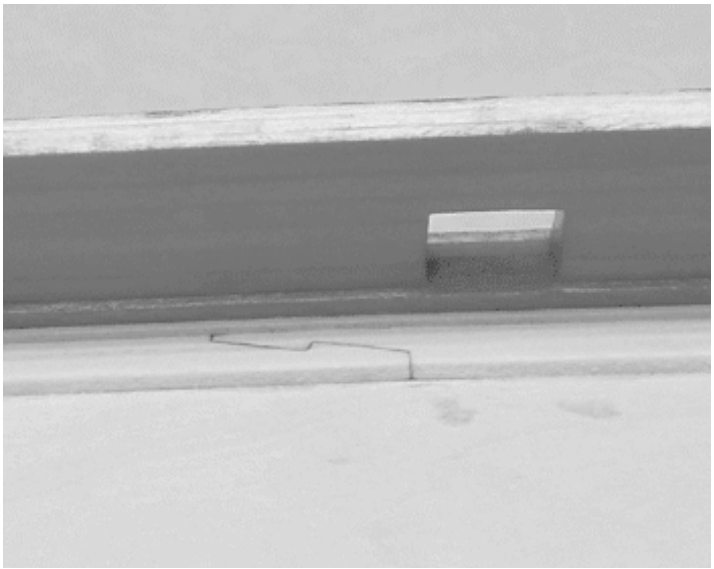
There are a few ways that you can plank the gun deck and create the hatchways for Confederacy. You can choose any method based on your experience and comfort level. The kit was produced to show the most historically accurate details as seen on many contemporary models from the period. For example, many contemporary models show the "checkerboard" pattern of the floor in the great cabin. This is an optional detail that you might not choose to model. Other features that will be discussed in more detail later would be the technique used to "nib" your deck planks into the margin plank. The margin plank is the laser cut strip of wood that is placed along the bulwarks on both sides of the ship. This will be the first feature addressed in this chapter.

### Adding the Margin Planks

There are five laser-cut pieces for the margin planks on each side of the gun deck. They are listed as parts MP1, MP2, MP3, MP4 and MP5 and are 1/16" thick. The ends for each section have been cut with scarph joints for authenticity. Lightly sand the edges of each margin plank section and test fit them along the bulwarks. The aftmost length of each margin plank is longer than needed and should be cut to fit snug against the stern. See the photo provided. Once you are satisfied with how they fit, run a pencil down the edges to simulate the caulking and glue them into position along the bulwarks.

*NOTE: There will be a small gap left between the margin plank and the floor of the quarter galleries. This area should be filled with the appropriately shaped 1/16" thick strip.*

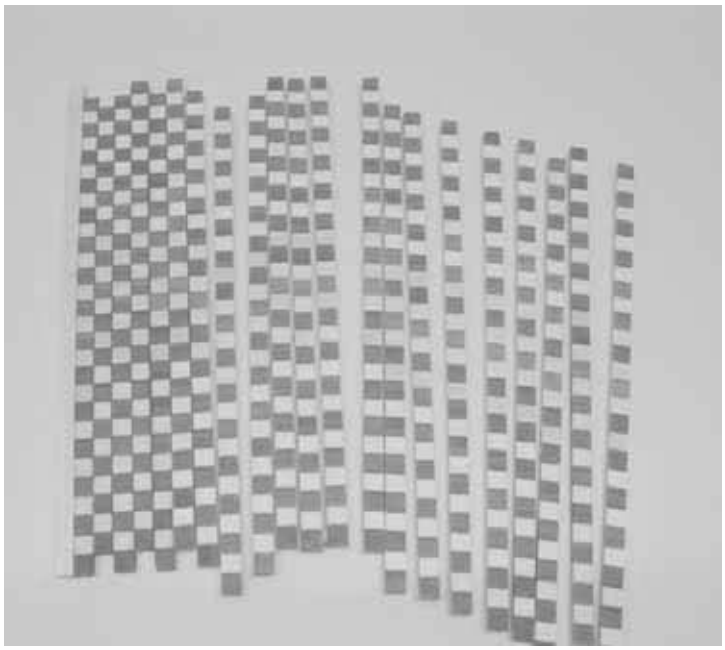
To finish up this step, add the waterway on top of the margin plank and against the bulwarks. The waterway is a strip of 1/16 x 1/16" basswood that is rounded off to the profile shown in the photo provided. The deck planking and margin plank will be left natural on the prototype model. It will not be stained since the deck would have been lighter than the hull planking above the wales. It will be treated just like the planking below the wales and ONLY sealed with wipe on poly. This



is of course a personal decision based on your own likes and dislikes. You may opt for a different finish than shown on the prototype.

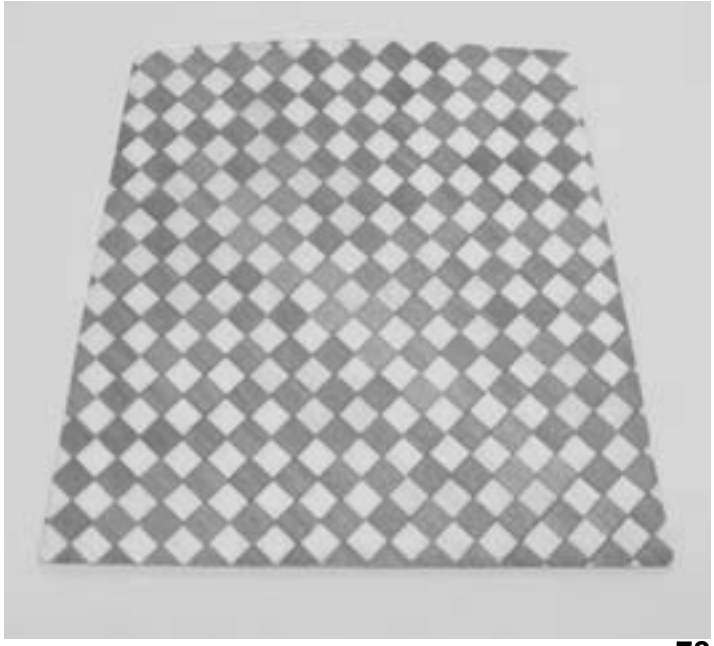
**“Checkerboard” Floor Pattern in the Great Cabin (optional)**

As mentioned earlier, this is an optional detail you can add to the model. To create the checkerboard pattern, the darker squares will be made using 3/16” x 1/32” walnut strips. The lighter squares will be made using the same sized basswood strips. Glue the strips onto the 6” x 6” x 1/32” plywood square provided. Alternate the strips so you end up with the striped pattern shown in the first photo below.



Then, use a steel edged ruler and a sharp hobby knife to cut the assembly into strips. Cut the strips 3/16” wide and across the pattern. You should end up with many strips with little 3/16” squares of alternating color. If you are fortunate enough to own a hobby sized table saw with a 4” blade, cutting these strips will be that much easier. To make the checkerboard pattern, simply glue the strips edge to edge after shifting the squares in each row to achieve the pattern. Don’t be shy with the glue because you don’t want these strips to pull apart in the next step. You should now have a checkerboard sheet approximately six inches square.

Use the plans to cut a paper template for the great cabin floor. It should be adjusted to fit perfectly on your model. The floor extends from the laser etched line on the false deck to the stern. Cut the paper pattern so it’s a snug fit along the margin planks and along the stern. Once you are satisfied, take the paper template and position it on top of your checkerboard. Trace the shape of the great cabin floor so you can cut it out. The squares should be aligned as shown in the accompanying photos. One photo (below) shows the cabin floor cut from the checkerboard sheet before being glued onto the model. It would be a good idea to cut it a little larger than you need so it could be sanded for a perfect fit. The aft edge of the cabin floor should be beveled to fit snug



against the stern planking (as the stern is angled). Sand the floor smooth and finish it with a coat of MinWax wipe on poly. You will see the contrast between the two types of wood even more after applying the sealer.

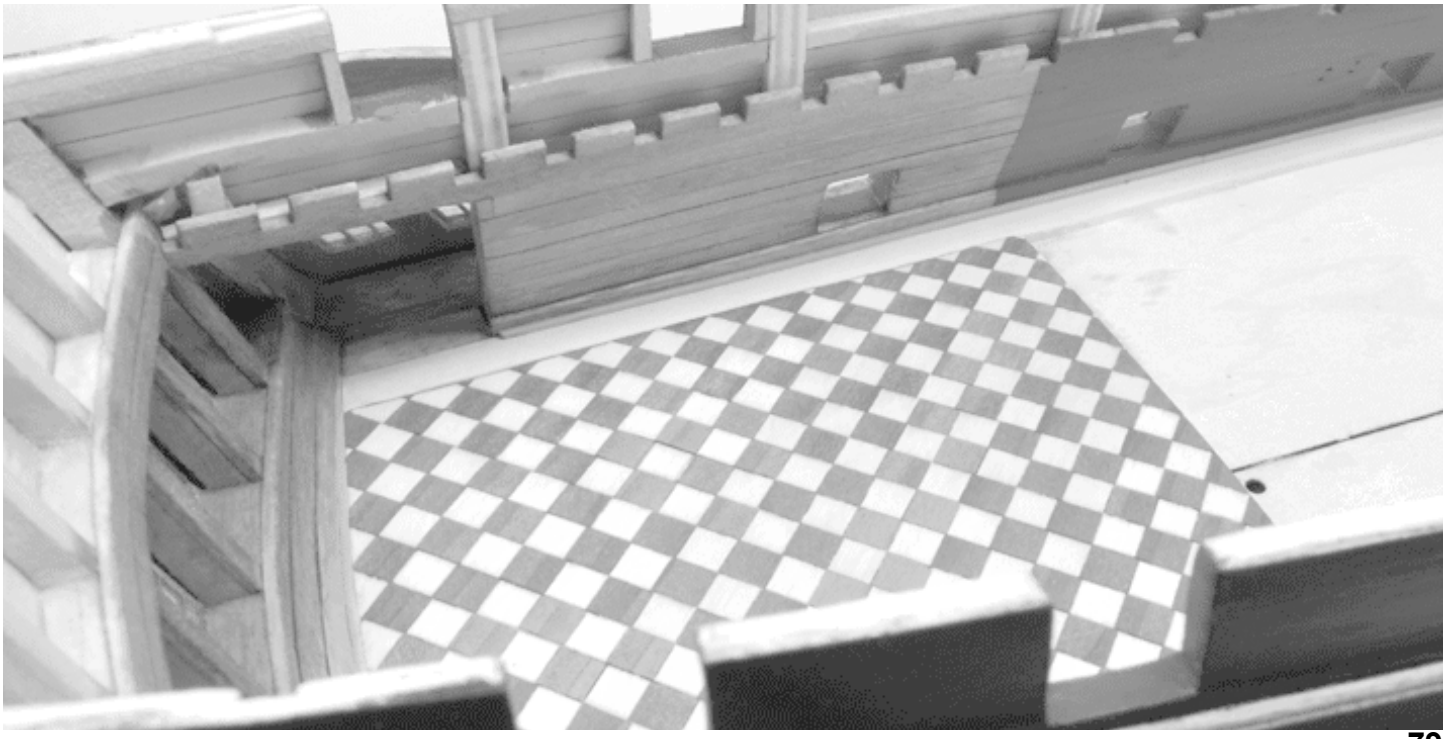
**Hatch Coamings, Gratings, Scuttles and Companionways**

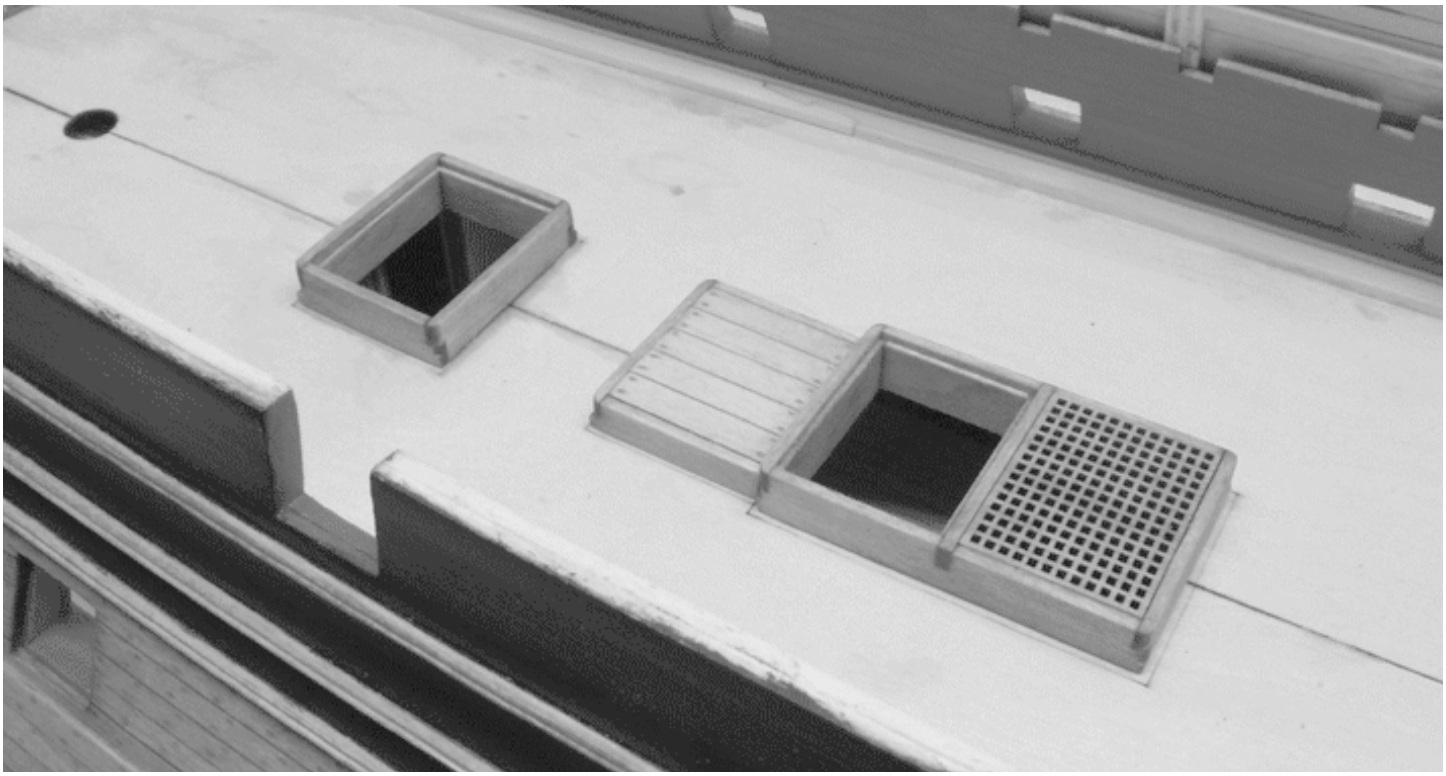
The gun deck will be planked "around" the hatches and gratings. Therefore, they will need to be built first before you can start planking. The positions for the hatches are laser etched onto the false deck. The frames for the hatches and companionways (referred to as a coaming) will be built with lap joints in the corners. This is a simplified version of how the coamings were actually built on the real ship. But depending on your experience, you could simplify it even further by simply mitering the corners or butting the edges up against each other. The coamings for the hatches and companionways are either ¼" high or 3/16" high. Examine the plans carefully to ensure you build each set of coamings using the correctly sized strips of basswood. The strips will be 1/16" thick x ¼" for the first coaming you will build (working from the stern towards the bow).

Use the plans as a guide to cut your ¼" x 1/16" strips as shown in photo one on the next page.

Note how the ends were notched to form the lap joints in the corners after they are assembled. When gluing them together, keep the hatch "squared up". To help you keep the coamings square, you can create a simple jig. Use a 1/16" thick piece of scrap sheet wood to make the jig. Just form a right angle as shown in photo 2. You could stain the coaming strips before you glue them together. This will help prevent blotchy coverage of the stain due to any glue seepage. The coamings on the prototype were stained "Golden Oak" to match the hull planking above the wales.

Note in photo 2 and photo 3 how the corners of the coaming were rounded off. The corners would only be rounded off above the deck planking. You can use the same jig you created to keep the coaming square as a guide while rounding off the corners. Place the coaming in the jig and use a sharp blade to trim off the sharp corner down to the top of the jig. Then round off the corners with some sandpaper. This is why the jig was made using 1/16" thick scrap wood. The deck planking will also be 1/16" thick. You can see in those photos how the corner remains sharp where the deck planking will rest against it. This will ensure a tight fit around each hatchway. It is very close to how it was done in actual practice at that time.





If you examine the photo above, you will see how the inside of each hatchway was lined to form a rabbet. Even the open companionways would be covered with boards during rough weather to keep the water out. The rabbet is formed so gratings and cover boards could be placed in each opening. To form the rabbet, line the inside of each coaming with 1/32" thick strips. The rabbet should be 1/16" deep. Use 3/16" x 1/32" strips to complete the lining of this first coaming.

The coaming just forward of the companionway is slightly more complex. It has three sections as shown in the above photo. It has one open companionway and one hatch that is covered with a laser cut grating. This portion of the assembly is built using ¼" wide coaming strips. It also has a third section that forms the platform for the capstan. This is only 3/16" high. This smaller platform was built separately and then glued to the taller coaming afterwards. The

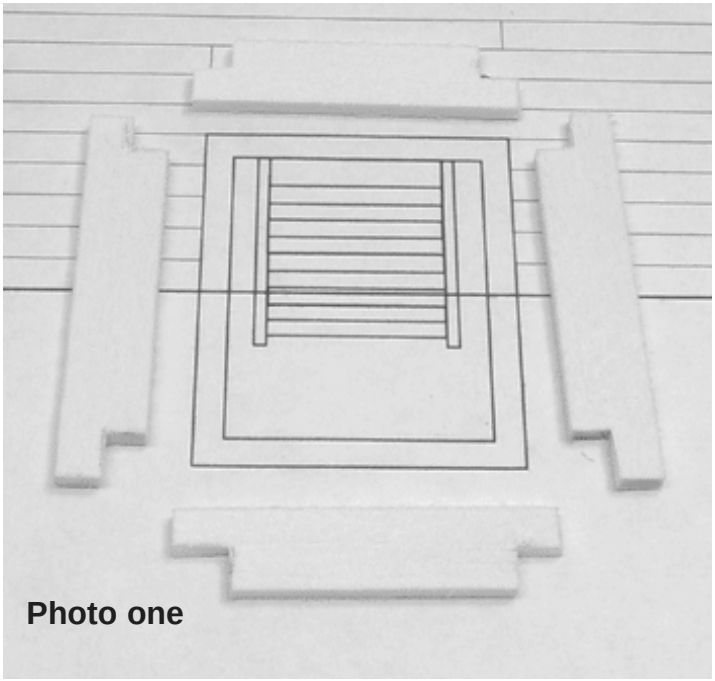


**Photo one**

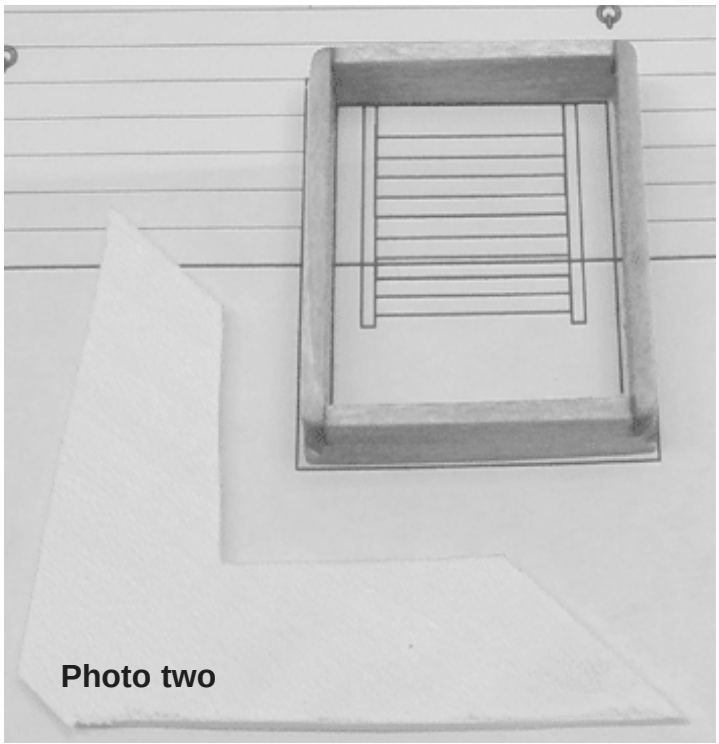


**Photo two**

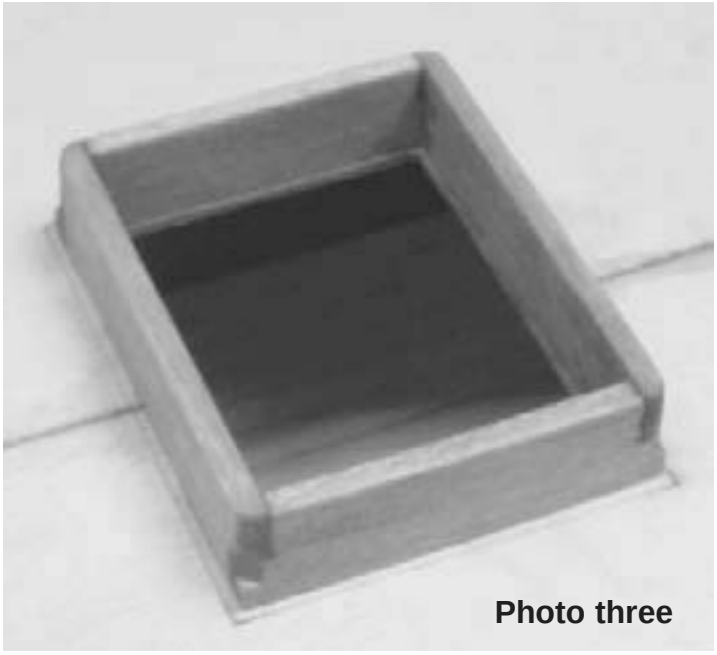


**Photo three**

same basic principles are used to make this assembly. As you can see in photo 4, the ¼" high section of this coaming was created first. Note how a small notch was filed into the longer, "side" strips to accept the center "cross-beam". This center strip will separate the two hatches. You can actually use the laser cut grating as a guide while building this coaming. All of the gratings are laser cut from 1/16" thick ply. If you build the coaming around each laser cut grating, they will fit perfectly.

Round off the corners and line the two openings like you did for the first companionway. Then glue the grating into one of the openings. The grating should sit nicely on top of the rabbet formed by the lining. See photo 5. Remember that the rabbet should be 1/16" deep.

In that same photo, you can see that three 3/16" wide coaming strips were notched to create the platform for the capstan. The two corners have lap joints and are rounded off. Since this platform will be planked over, two 1/8" x 1/16" strips were used to line it on the forward and aft sides. The rabbet formed is also 1/16" deep since the cover boards will be made using strips that are also that thick. This platform was assembled and then glued to the taller coaming afterwards. Use 3/16" x 1/16" strips to plank up the capstan platform. See photo 6 on the next page. A graphite pencil was run down the edges of the cover boards to simulate the caulking between them. The ends of each plank were treenailed to finish it up.

Moving forward along the deck, the balance of hatches were built the same way. You just need to check the plans to determine if the coamings should be ¼" or 3/16" high. Some will have gratings while others will have "coverboards". See the photo provided on the next page that shows the hatches along the waist. The center hatch is covered with planks. Small eye bolts were used to simulate the handles for the "coverboards". Just bend them over so they look like "pull-rings". Paint the rings black. No treenails were used as the boards were not permanently fastened.

**Bricked Platform for the Ship's Stove**

The coaming for the stove's platform is 3/16" high (3/16" x 1/16" strips). It was built just like

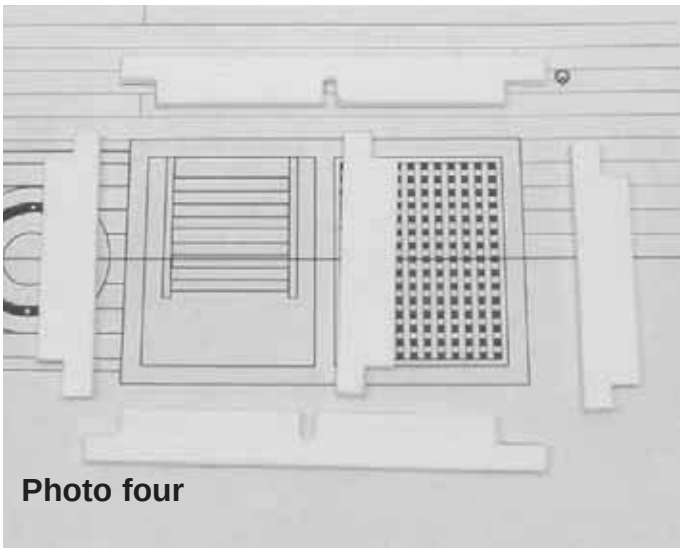


**Photo four**

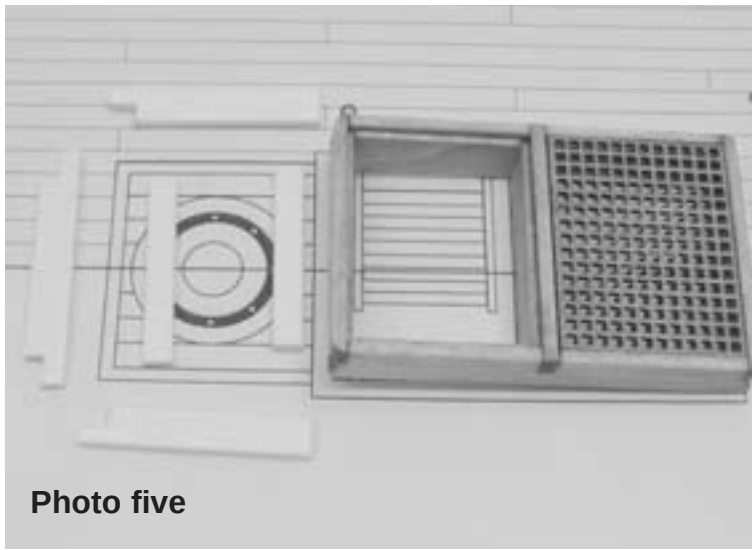


**Photo five**

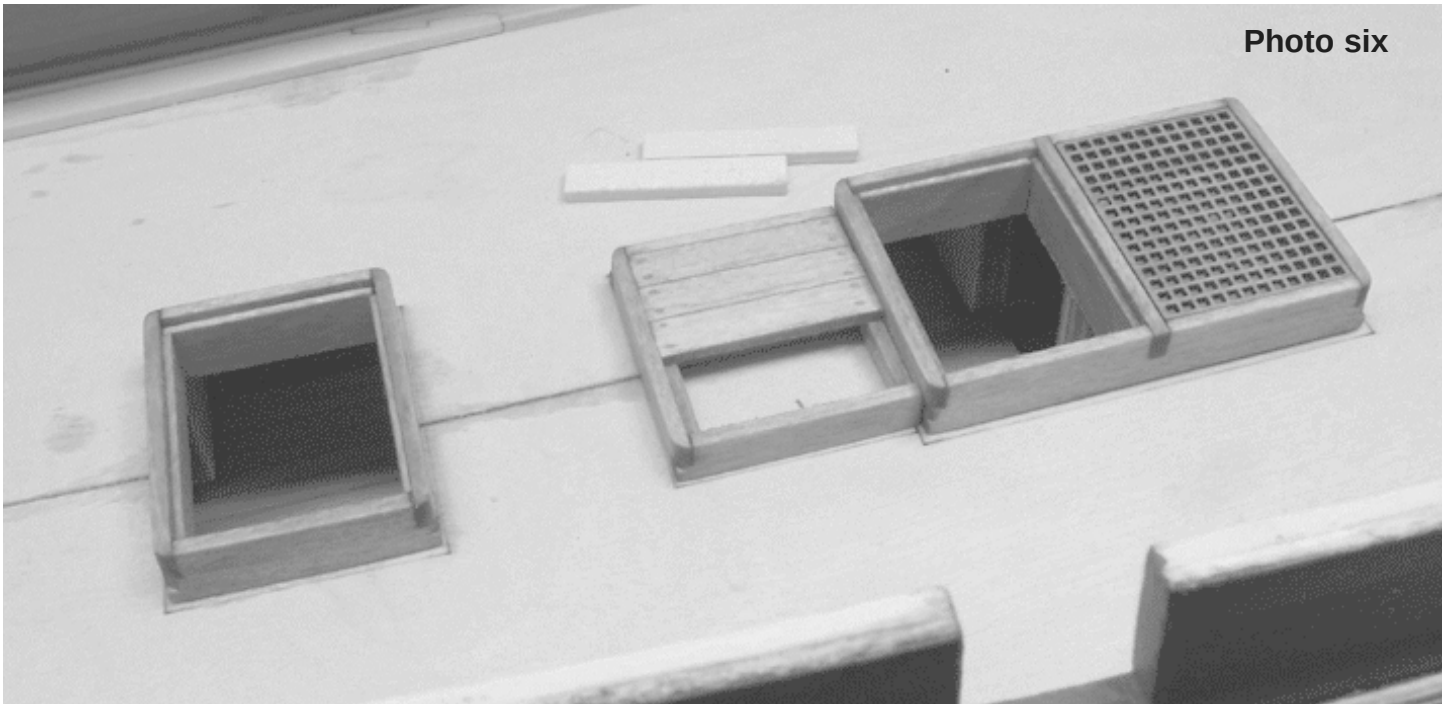
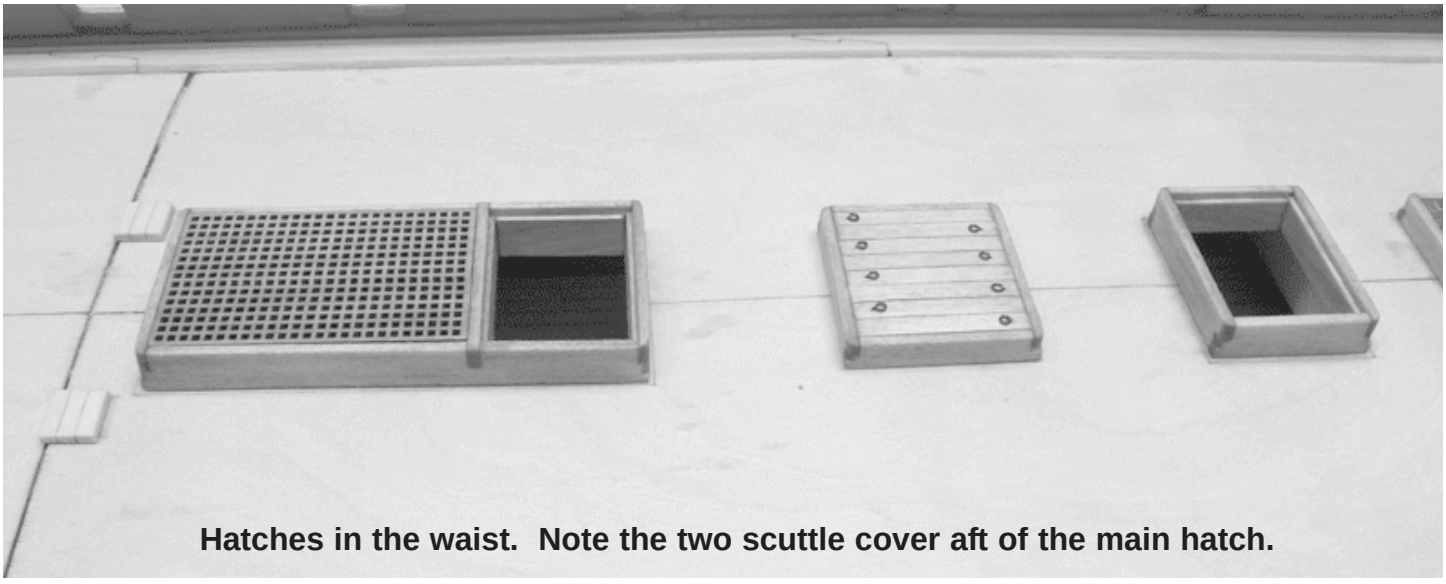


**Photo six**



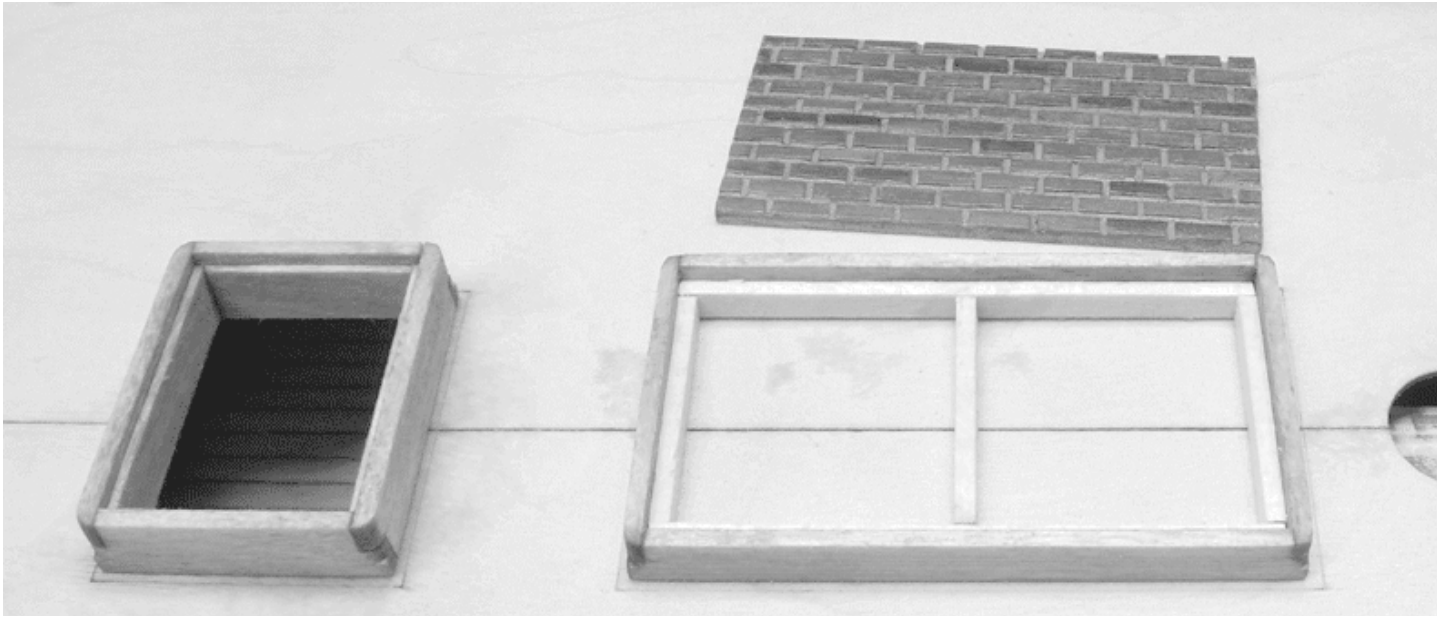
**Hatches in the waist. Note the two scuttle cover aft of the main hatch.**

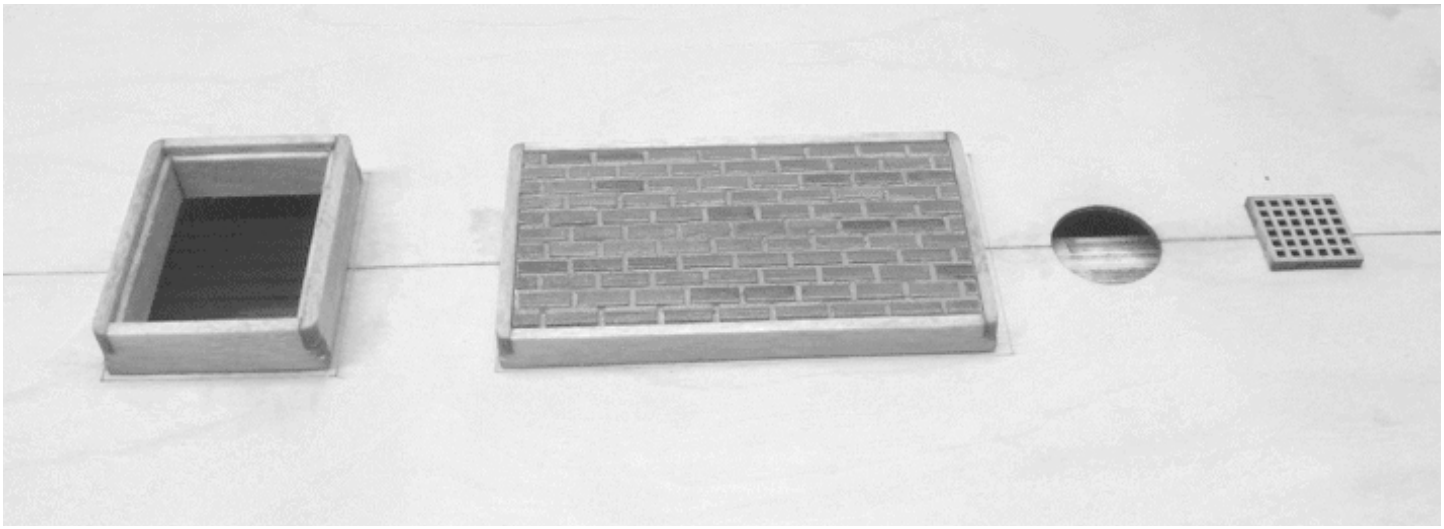
the others with 1/8" x 1/16" strips for the internal lining. This left a 1/16" deep rabbet around the top edge. A center support beam was also added to help level the "bricked platform" after it was set into the coaming. See the photo provided (next page) that shows the coaming just before the bricked platform was glued into position. It may be easier for some of you to create the bricked platform first, and then build the coaming to fit around it. This will ensure a better fit when you set your platform into the finished coaming.

The bricks are simulated using wood strips (3/32" x 1/16"). You will need 11 strips that are 2 ½" long. File small grooves across the strip at 3/16" intervals. This will determine the length of each brick. The photo provided (next page) shows the needle file that was used to do this on the prototype. The edge of the file is also abrasive and it was easy to create uniform, flat grooves across the strip. Then bevel/chamfer both edges along the length of each strip. This bevel will become the mortar joint between each row of bricks once they are glued together edge-to-edge. When gluing the strips together edge-to-edge, remember to stagger the joints of your bricks to create the typical pattern you would expect. In that same photo you can see how the bottom three strips show the pattern you are shooting for. The grooves and bevels don't need to be very deep.

The mortar joint between each strip will be “v-shaped” after the two beveled edges are butt together. It is better to show a flat groove to simulate the mortar line between each row of bricks. After the strips are glued together, you can run the edge of the file between each row to flatten it out somewhat. The basswood is very soft and this will emboss the groove rather than file it down to a squared shape. Be gentle while running the file down each row. Only light pressure should be applied. The “v-shaped” groove will act as a guide and keep the edge of your file from wandering. If you use too much pressure, it will be more likely that the file will wander out of the groove and ruin the surface of your bricked platform. It is always better to make multiple passes while applying gentle pressure.

After all 11 strips are glued together edgewise, cut the platform to size using the plans to determine the exact dimensions. Then build the coaming to fit around it. Paint the bricks before you glue the platform into the coaming. For the prototype, the entire sheet was painted light gray to simulate the color of the mortar joints. Then the bricks were carefully painted different shades





of red and brown. A small flat brush was used to individually paint each brick. If you carefully paint only the top surface of each brick, the gray paint in each groove will remain untouched and resemble mortar.

You can see the finished results in the photo provided above.

**Remaining Air Scuttles and Small Gratings**

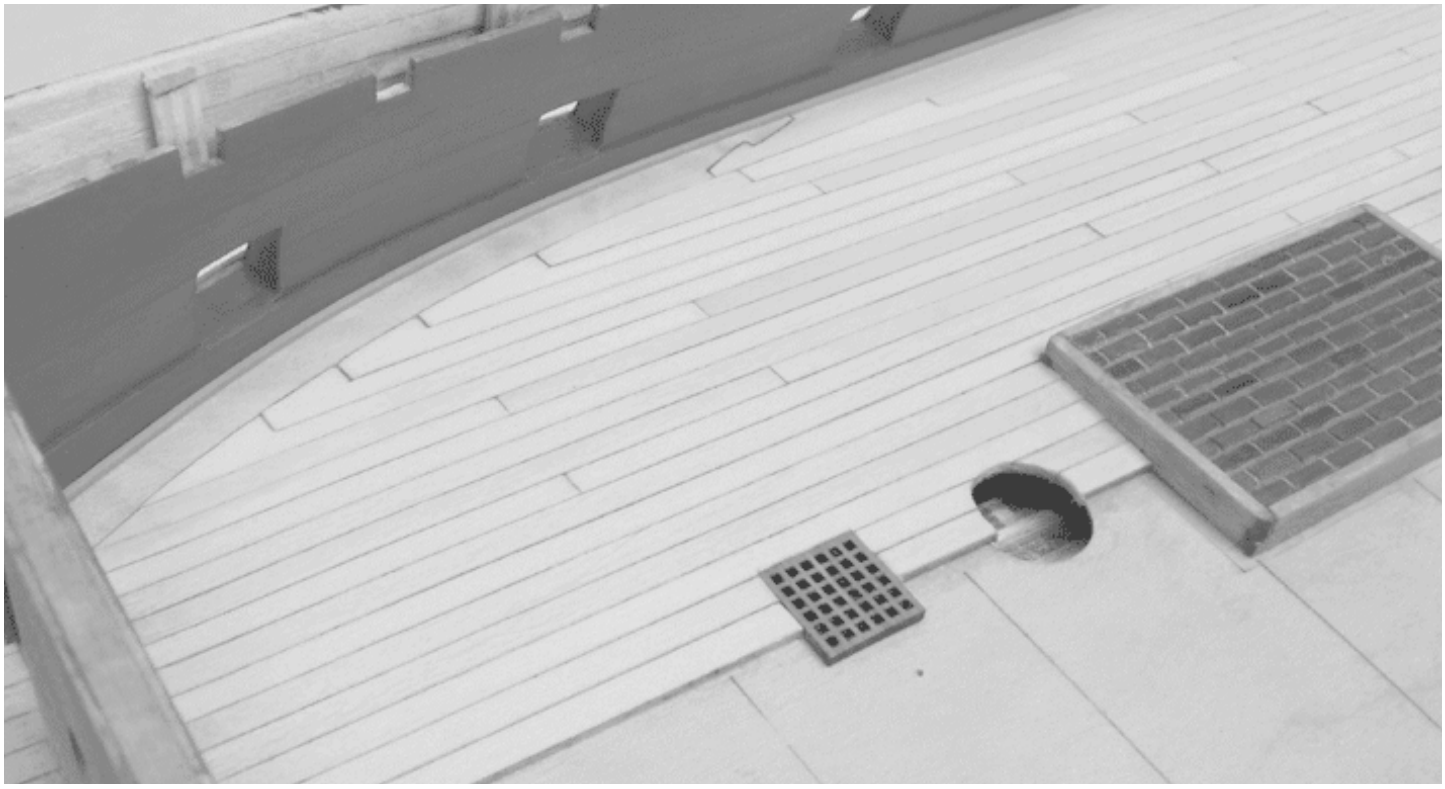
You will see a small laser etched square just in front of the fore mast. This is a small ventilation scuttle. There is no coaming for this. Simply glue the 1/16" thick laser cut grating to the false deck. You will be planking the deck around this scuttle. You might want to color the square in with a permanent black marker before you glue the grating on top of it. This will help disguise the false deck underneath the grating.

There are two more scuttles just aft of the main hatch. These are covered with planked lids rather than gratings. Use 3/32" x 1/16" strips to make these lids. Glue three small lengths of the strips (about 1" long) together edgewise. Run a pencil down each edge first to simulate the caulking between each strip. Then cut two identical-sized lids from this strip. Their locations are also laser etched onto the false deck. Just glue them into position. We will be planking the gun deck around these as well. There should be two small handles on each lid, which you can see on the plans. But don't install them yet. It will be easier to sand and finish the deck planks without the eye bolts getting in your way.

**Planking the Gun Deck…**

After all of that, you can now actually start to plank the deck. To help you position the plank seams properly, you can draw reference lines across the false deck. Draw your pencil lines from port to starboard where the gun deck beams would have been located. These will mark the locations for your butt seams when planking the deck. If you examine plan sheet one, you can see where the butt joints fall and this indicates where your reference lines need to be drawn.

Use 1/8" x 1/16" basswood strips to plank the deck. Remember to run a pencil down the edges of each plank to simulate the deck caulking. Begin by gluing the first plank down the center of the gun deck. The seam of the false deck can be used as a guide to place it properly down the center line. With this plank completed, you can continue planking towards the bulwarks. Stagger you butt joints using a "3 or 4 plank shift" pattern as shown in the attached drawing. Please note however, that there were no plank joints between the hatches and coamings. The distance between each coaming is short enough that one length of planking would have been used. You only need create and stagger your plank joints from the sides of each coaming out towards the bulwarks. The photos provided show half of the deck planked at the bow and stern. Note how the deck planking is cut around the gratings, scuttles and coamings. Examine the plan sheet carefully before you begin.



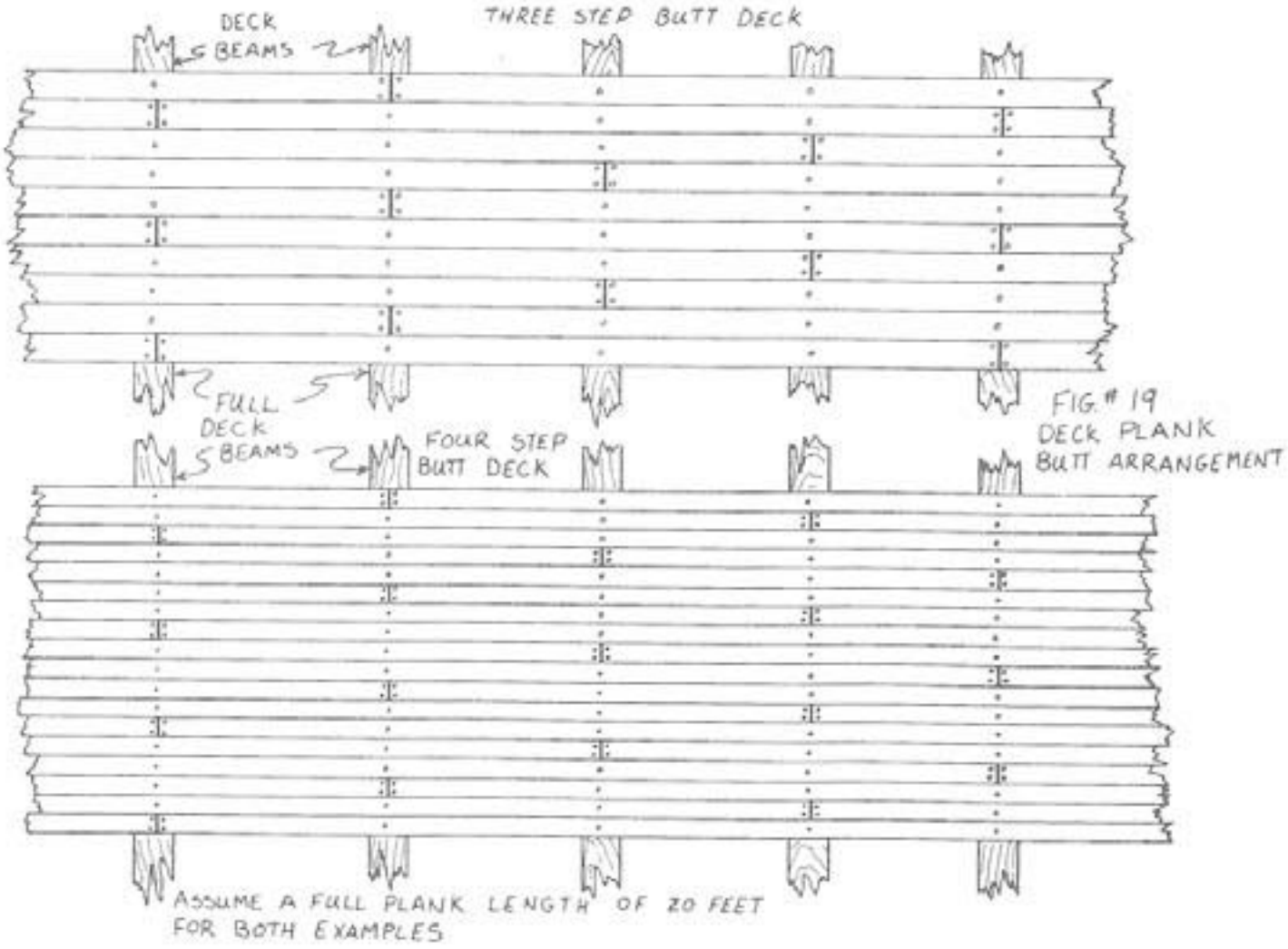
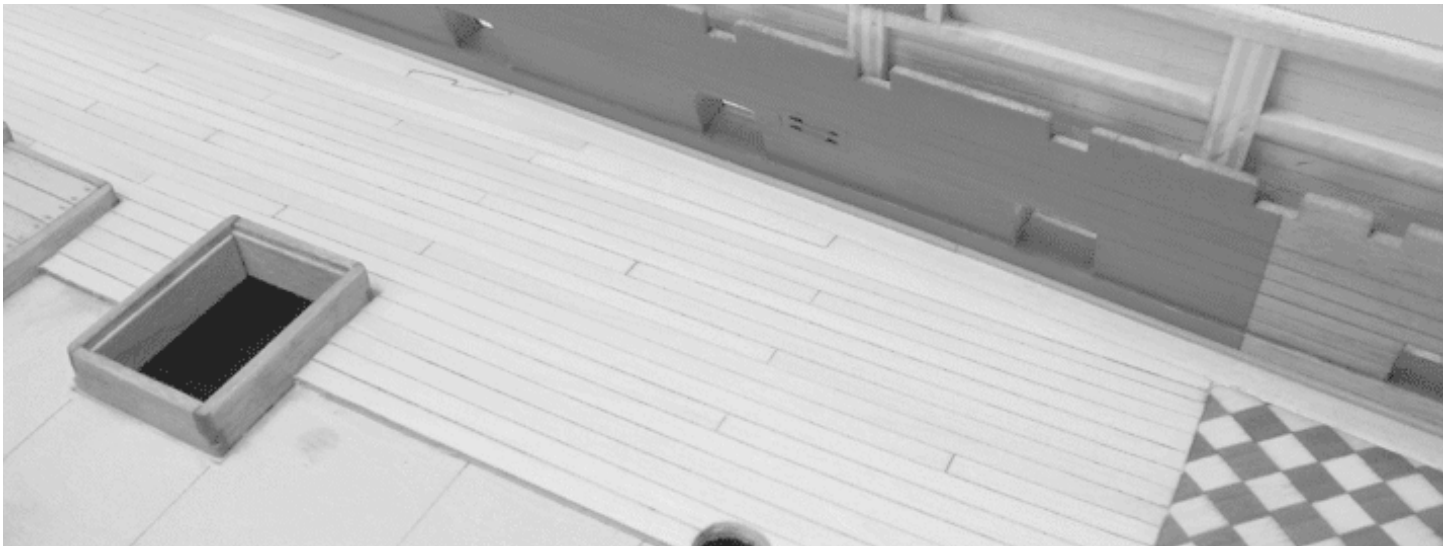



FIG. # 19
DECK PLANK BUTT ARRANGEMENT



When the deck planks butt against the margin plank along the bulwarks, they can be terminated in many ways. You can select the method you prefer depending on your experience level. The first method would be to simply cut the ends of each plank flush against the margin plank at the bow and stern. This is not historically accurate however. The planks would never terminate with a sharp point on their ends. The pointy ends were subject to rot, so shipbuilders preferred to cut the ends flat. It was sturdier and the planks were less likely to rot so quickly. This prevented the need to replace them as frequently.

The second method would be to "nib" each end of the plank into the margin plank. This is the most common method used by model builders. It is probably also the most difficult. Examine plan sheet one. The gun deck shows the planks nibbed into the margin plank. The issue with this common practice would be that it didn't start until roughly 1800. The Confederacy was launched more than 20 years earlier. You would need to notch each plank into the margin plank. To do this, a sharp blade is used to cut the notches as your planking progresses. The ends of each plank are then custom cut to fit into each notch.

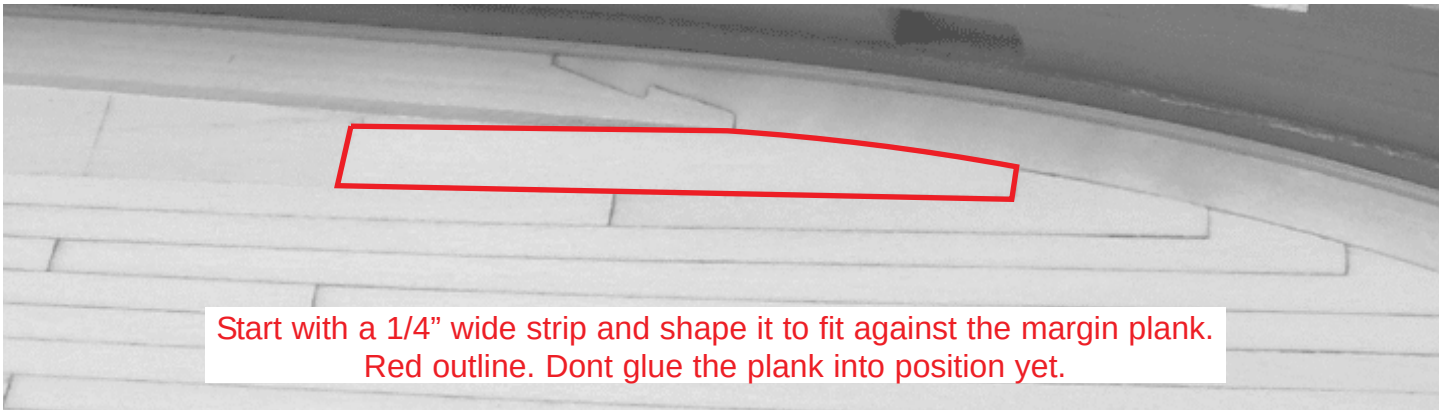
The most accurate way to plank the decks against the margin plank would be to create hook scarfs in the planks. This was the more common method up to around 1800. If you examine sheet one again, you will see that the quarter deck and forecastle show the deck planking with hook scarfs terminating along the margin plank. This was the method used on the kit prototype. In order to create a hook scarfed deck plank, a wider plank is needed. This is only true for the segment of the plank that will be shaped with the scarf joint. You can use a ¼" x 1/16" strip to cut these if you choose this method. They are not very difficult to shape.

Three photos have been provided (next page) that show the sequence to follow in order to shape the scarfed end of a deck plank. The photos show a scarfed plank being shaped at the bow. A simar plank will need to be shaped at the stern as well.

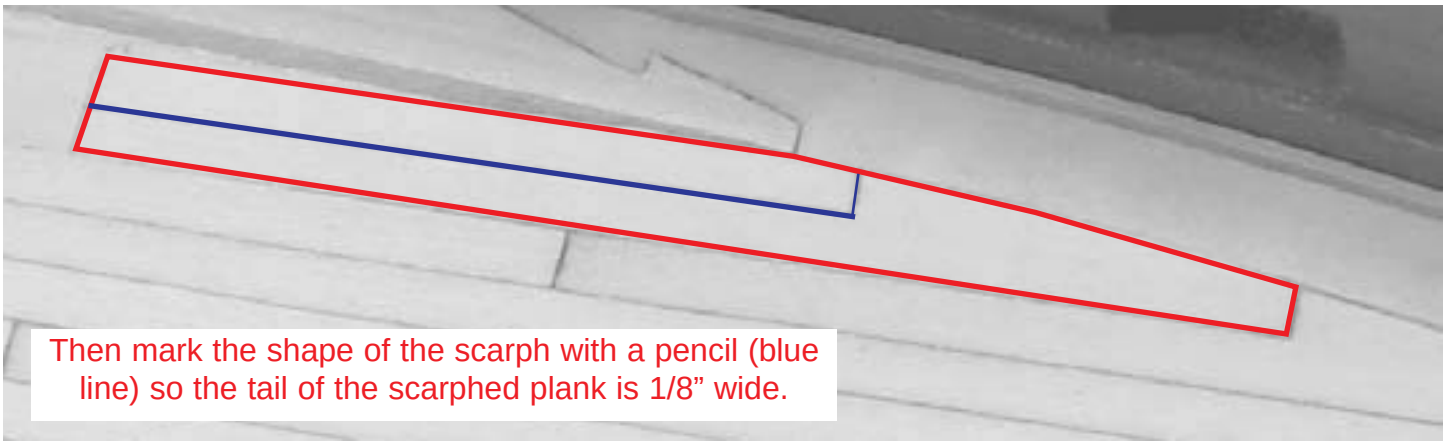
*Photo one* – Cut a length of ¼" x 1/16" strip to fit against the margin plank. The outside edge should be cut so the plank fits tightly into position. Don't glue it down yet. The photo shows the plank outlined in red.

*Photo Two* – Remove the plank once you are happy with how it fits. Then draw a reference line that creates the shape of the scarf. The tail of the plank should be 1/8" wide. You will then be able to continue planking the deck with 1/8" wide planks until you reach the great cabin. You will need to create a scarfed plank along the margin plank back there as well. Examine the plans carefully. At the widest part of the scarf, the strip should be about 7/32" wide. Once you draw the shape, you can remove it to be cut. The reference line is shown in blue.

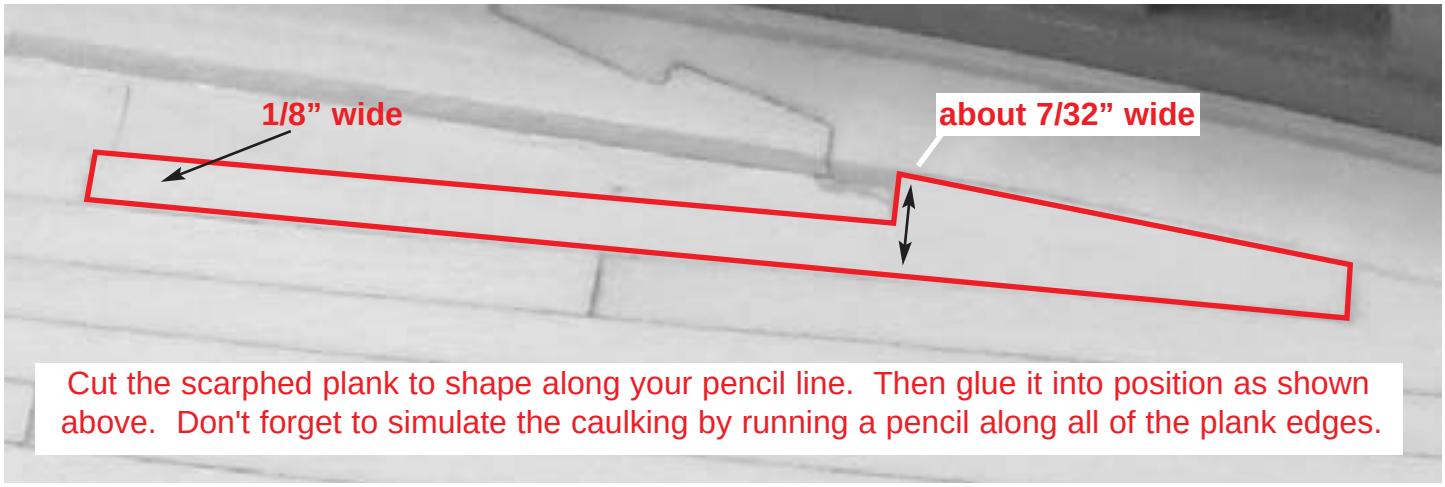
*Photo Three* – The plank has been cut and is



Start with a 1/4” wide strip and shape it to fit against the margin plank. Red outline. Dont glue the plank into position yet.



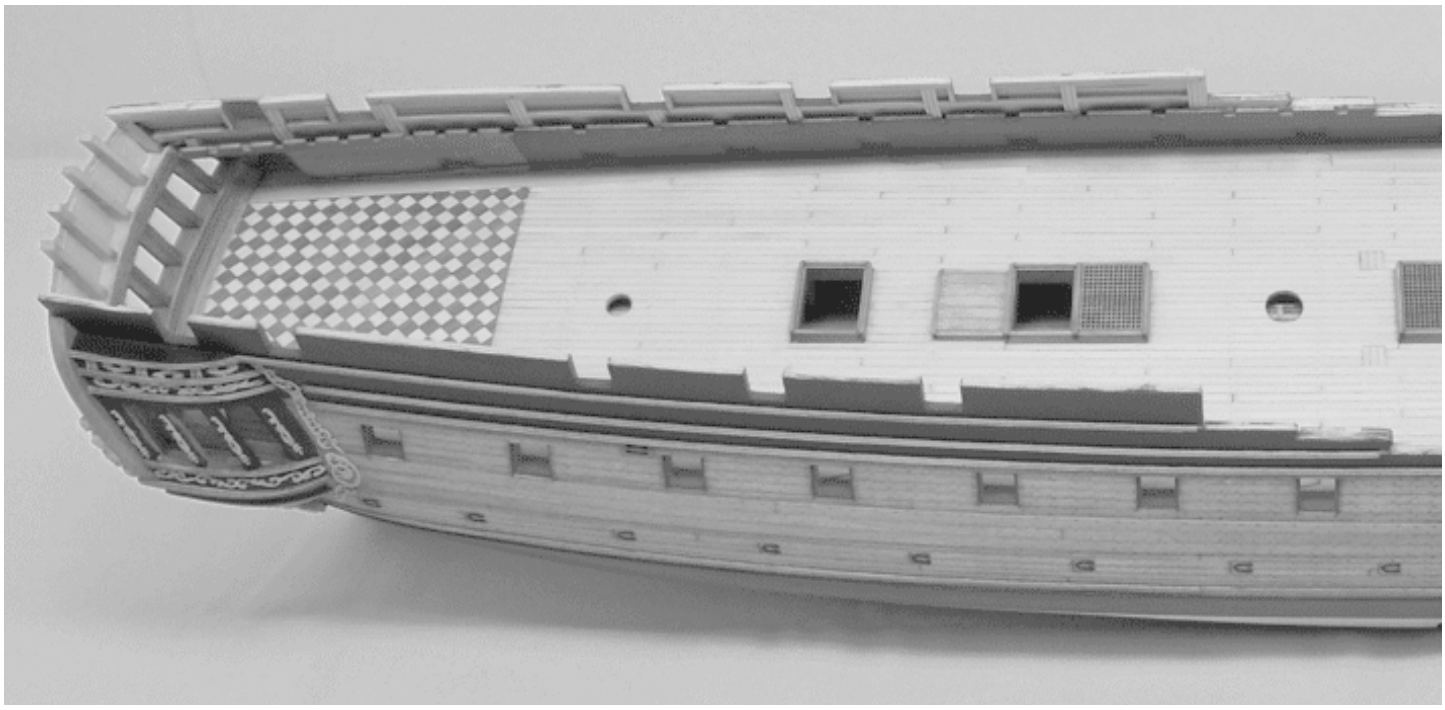
Then mark the shape of the scarph with a pencil (blue line) so the tail of the scarphed plank is 1/8” wide.

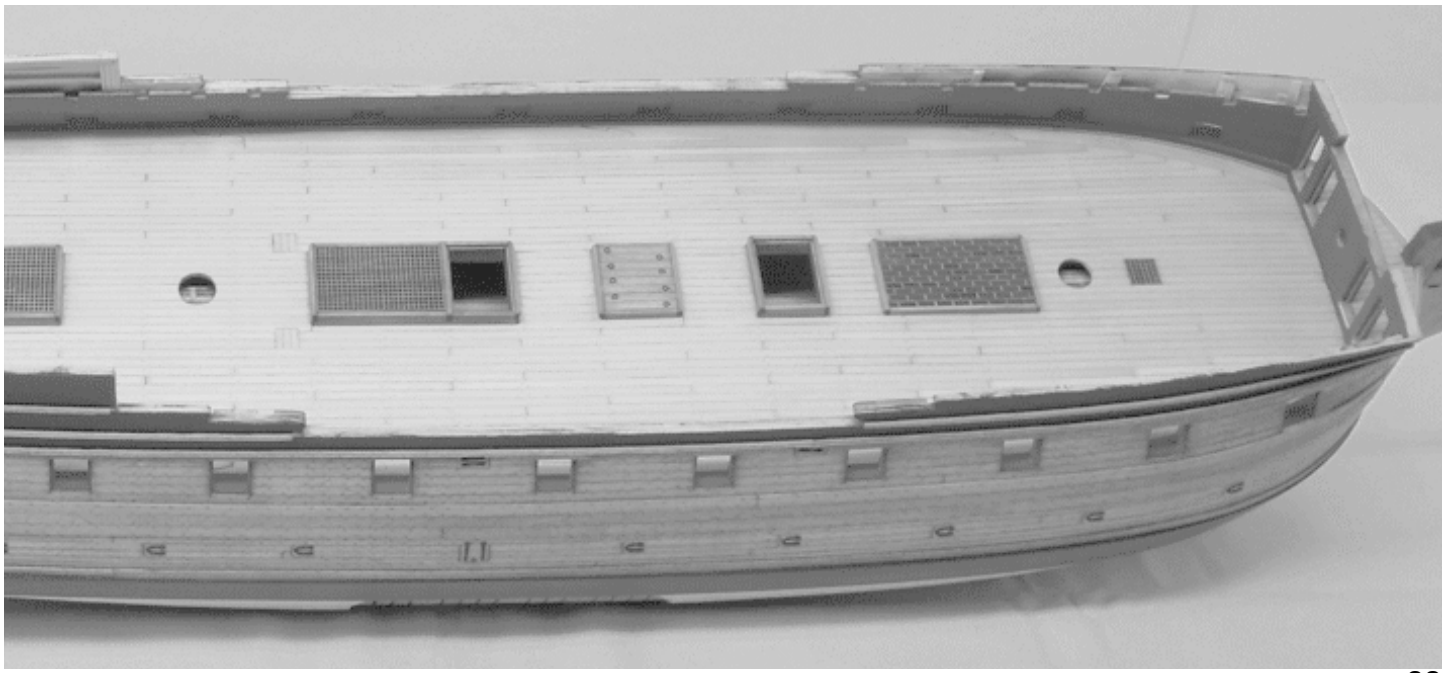


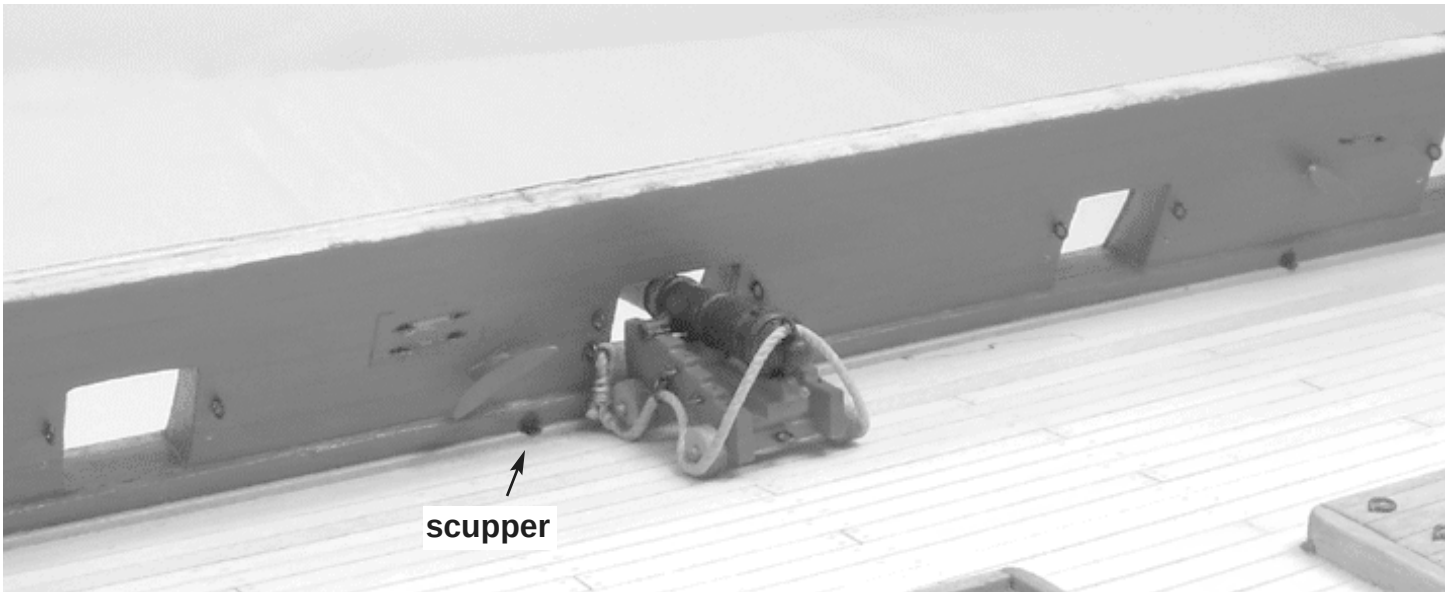

Cut the scarphed plank to shape along your pencil line. Then glue it into position as shown above. Don't forget to simulate the caulking by running a pencil along all of the plank edges.

shown positioned on deck. You may have to tweak its fit slightly but glue it down after you are satisfied. Once again, don’t forget to run a pencil down all of the edges to simulate the caulking between each plank. You should also check that the tail of this hook scarfed plank is actually 1/8” wide so the remainder of your planking will fit against it. The tail needs to be the same width as the 1/8” wide planking strips. If you cut the tail too narrow then you must throw it away and make another one. Don’t glue it down until you are sure. Proceed with this approach until the deck is fully planked. Then you can install the treenails just as you did on the outside of the hull. The treenail pattern is shown on sheet one for reference. On the kit prototype, the deck was finished with MinWax wipe-on-poly. No stain was used. The color matched the underside of the hull. Normally the deck would have been lighter than the hull planking above the wales. You can see the completed deck planking in the photos provided.

To finish up this chapter, create the handles for the two scuttle covers forward of the main mast hole. The kit supplied eyebolts were used. Paint them black before gluing them into pre-drilled holes. Then bend them over to simulate the handles on the scuttle lids.





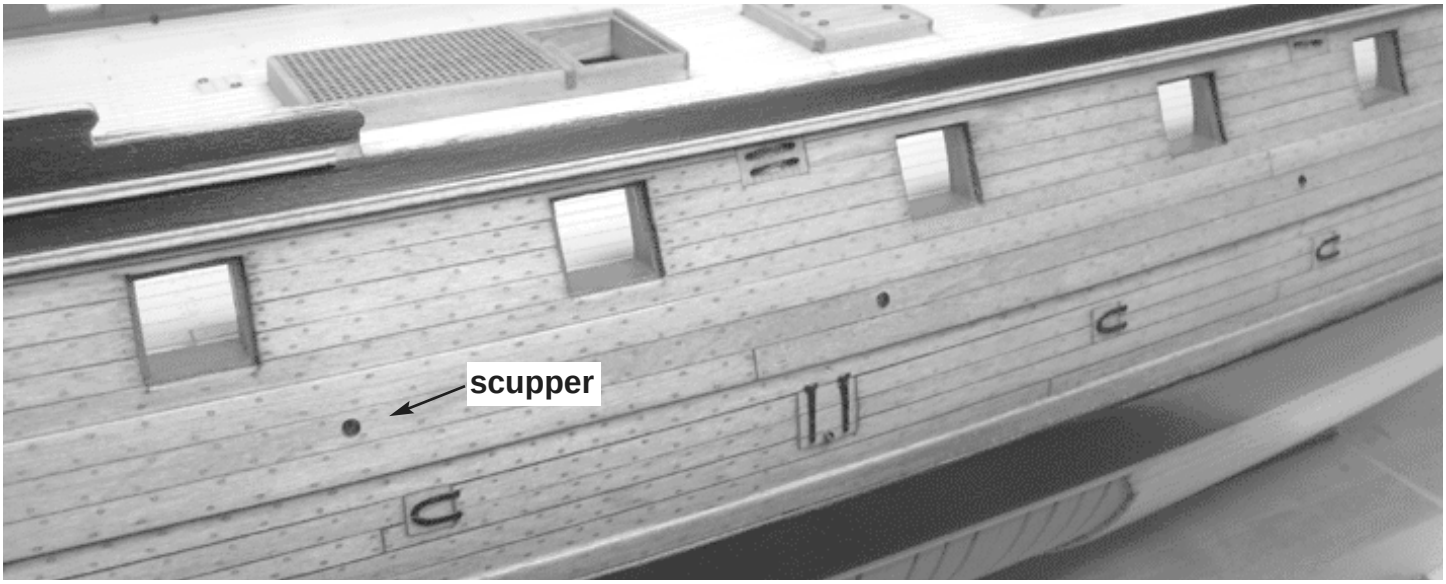


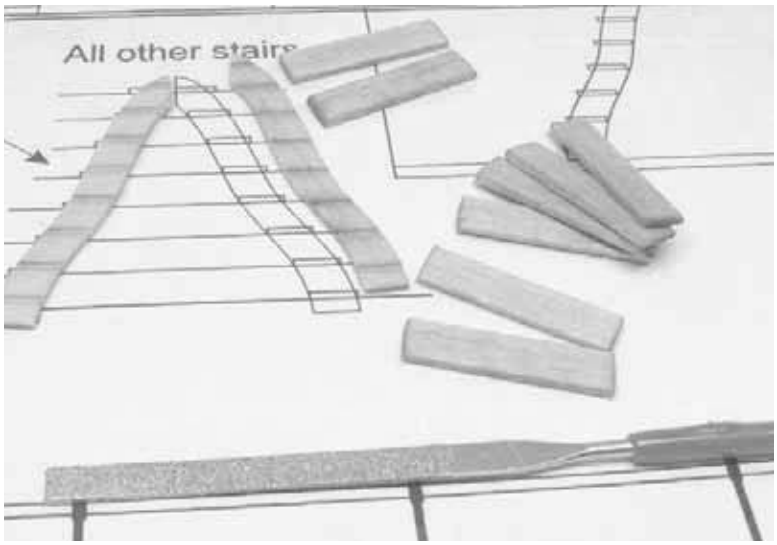

# Chapter Eleven

## Building and Installing the 12 Pounder Cannon

In this chapter you will prepare the model so you can install the 28 twelve pounder cannon. A few other details can also be completed before you start. Then you can assemble the cannon and carriages so they can be placed on deck and rigged with their breech lines and gun tackles. First, drill the holes for the scuppers along the outside of the hull. Five scuppers are shown along each side of the hull. The scuppers are pipes that allow the water on deck to drain through the bulwarks. They can be drilled with any bit ranging from 1/16" thru 3/32". Once the scuppers are drilled, use a soft pencil to coat the inside of each hole. This will simulate the lead lining of the scupper.

The scuppers don't need to be drilled all of the way through the hull. Just make them deep enough so they will look like they are drilled all of the way through. The same is true for the inboard side along the waterway. The opening for this end of the pipe should be drilled the same way. These openings are slightly higher than the outboard ends you just finished. The scuppers were angled downward as they worked their way through the bulwarks. Drill these five holes through the spirketting AND the waterway. The hole should straddle both. You can see this detail in the photo above. Use a pencil to simulate the lead lining on these as well.






There are also three 10mm cleats positioned along the bulwarks. You can check their exact positions on the inboard plan sheet. These will be painted red like the bulwarks. Clean up the Britannia metal castings and paint them before you glue them into place.

Adding the eyebolts for the cannon tackles and breech lines to the bulwarks - There are two eyebolts on each side of the gun ports. The eyebolts on top will be used for the gun tackles. The eyebolts below these will be used to secure the breech line of the cannon. You won't be gluing the eyebolts for the breech line into position at this time. Only the eyebolts for the gun tackles should be glued into position now. BUT, please do drill all of the holes for the lower eyebolts ahead of time. Make sure they are deep enough to fully secure them when we do add them later. Start by drilling the holes for all of the eyebolts as shown on the inboard plan. Then paint the eyebolts black that will be used for the tackles and glue them securely into the top holes. The lower holes for the breech line eyebolts should be left empty for now.

It would be difficult to seize the breech lines to the eyebolts if you glue them into position first. For the prototype, the breech lines will be set up and rigged on the cannon, "off of the model". You should read a few pages ahead to see those details. Then when you are ready to install the cannon, the eyebolts for the breech lines can simply be pushed into the pre-drilled holes.

Assembling the ladders for the gun deck companionways - This can be done at any time, but they were added now on the prototype. You may choose to do this as well and get this out of the way while the deck is less cluttered.

There are four ladders that need to be completed. The sides of the ladders have been laser cut for you (1/32" thick basswood). Building the ladders can be tricky. Most model builders develop their own technique for doing this that makes the process easier for themselves based on experience level. Some use jigs to glue each step into position between each side of the ladders. Others simply glue the steps to one side of the ladder first and then they add the other side afterwards. You can choose any method that works best for you. The method described below details how it was done on the prototype.

**Step one -** The two laser cut sides for the ladder were positioned on the plan sheet so the locations for the steps could be marked on them.

**Step two -** Using the edge of a file that was 1/32" thick, slots were filed into the sides to accept each step. They don't have to be very deep. The slots can be made 30% or 40% the thickness of each side.

**Step three -** the steps were cut from 1/32" x 3/16" strips. Care was taken to make sure each step was exactly the same length. Use the deck plans to determine their length. Some ladders are wider than others depending on which com-

panionway they are being used for. Make sure the ladders will fit into each companionway when you are ready to install them.

**Step four -** The top and bottom steps were glued into the slots you made on one side of the ladder. The two steps were carefully checked to make sure they were squared up with the side of the ladder properly.

**Step five -** The other side of the ladder was glued into position.

**Step six -** The remaining steps were slid into the slots of the ladder. Each step was carefully sanded if it was too long so the steps wouldn't force the sides of the ladder apart. Any steps that weren't a perfect fit were discarded and new ones were made to replace them.

**Step seven -** each ladder was cleaned up somewhat and stained with Golden Oak.
Once the ladders are assembled they can be glued into each companionway. See the photos provided.

**Preparing and painting the cast cannons**

The castings for the 28 twelve pounder cannon should be cleaned up for painting. Any mold marks and surface problems should be addressed before painting them black. Drill a hole and insert and eyebolt for the breech ring. You can see one glued into the cannon in the picture provided. Paint the cannon black when you are finished.

As mentioned earlier, the breech line will be made and rigged to the cannon now rather than

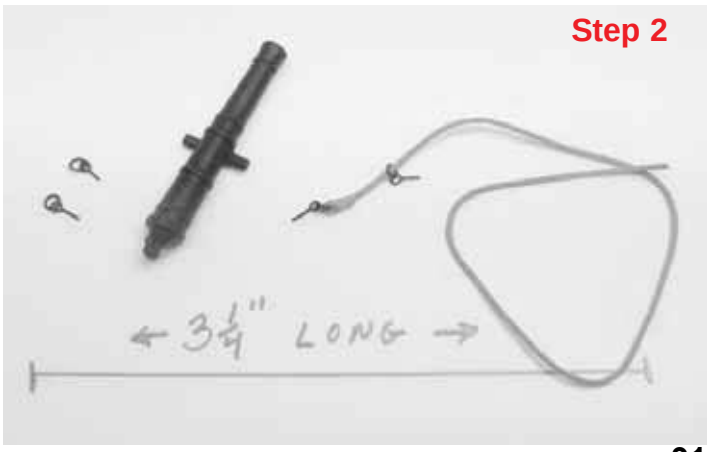
*Preparing the cannon for painting*

rigging it after the cannon is positioned on deck. The breech line will be 3 ¼" long when completed. Take a length of .028 tan rigging line that is about 6" long to start. Take the kit-supplied eyebolts and add a split ring to them as shown in the following photos. Paint them black. You will need four of these on each breech line. Seize one of these split ring/eyebolt assemblies to the end of the breech line. You can use some tan sewing thread as the seizing. Then…

*Step two* **-** slide one more ring assembly onto the breech line. (See the photo called step two)

*Step three* - run the line through the breech ring of a cannon. Then slip the third ring assembly onto the loose end on the other side. (Photo step three)

*Step four* - Draw a line that is 3 ¼" long on a piece of paper. Use this as reference to check that the completed breech line is as close to that length as possible. Seize the fourth and final ring assembly to the other end of the breech line.



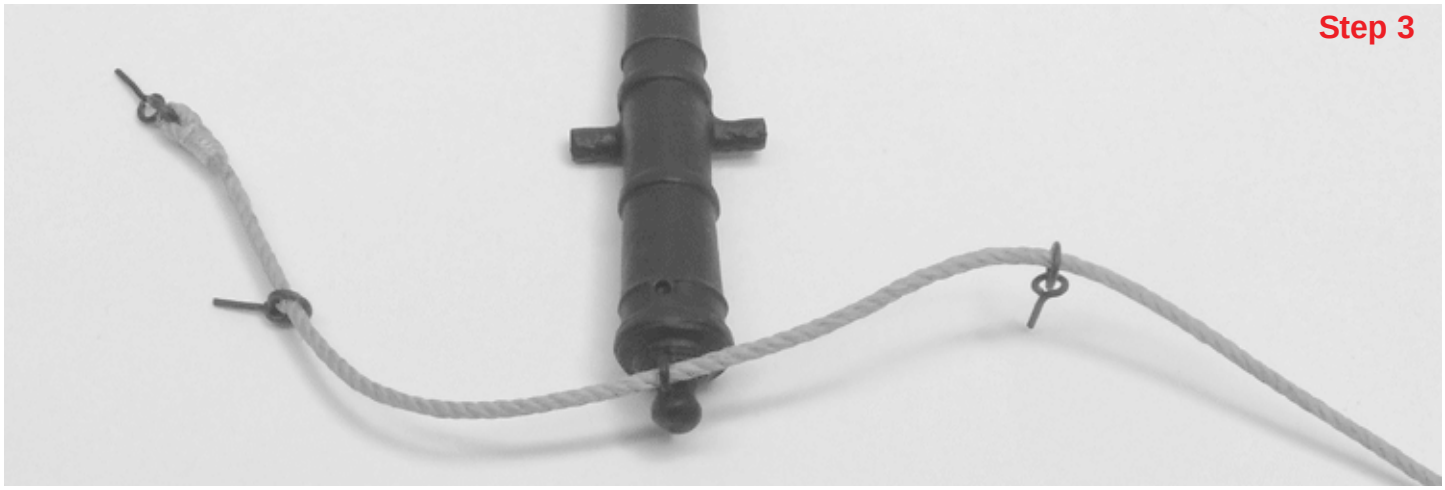
Carefully determine the length of the completed breech line by holding it against your reference line before using any glue to make the seizing permanent. Make any adjustments if need be.

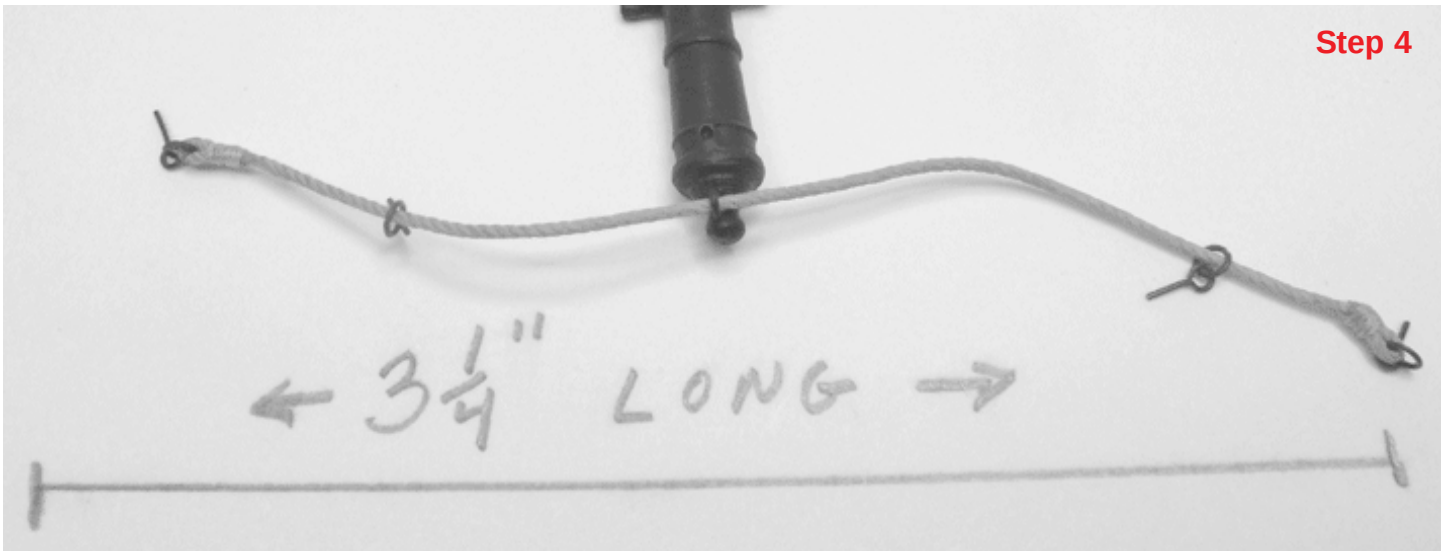
The final picture shows a completed breach line rigged to the cannon barrel. The two inner eye-bolts that are "sliding-free" at the moment will eventually be inserted into the sides of each gun carriage. You will do this after gluing the cannons onto each gun carriage later. For now, complete all 28 cannons as just described and set them aside while you begin building those carriages.

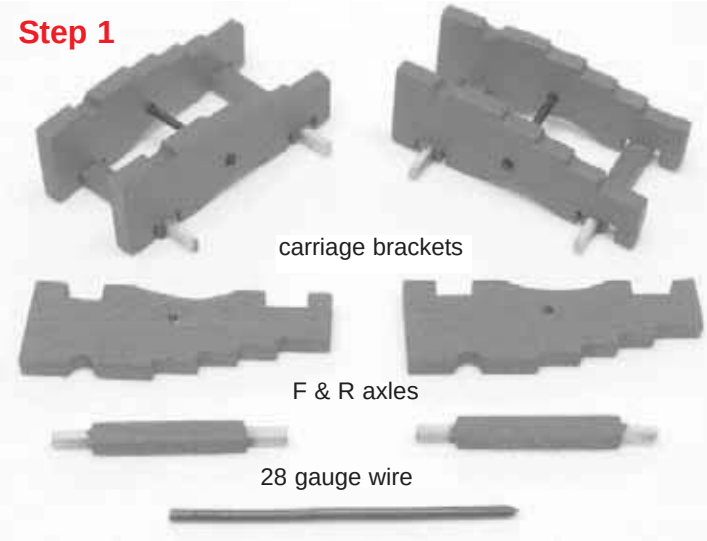
**Making the gun carriages**

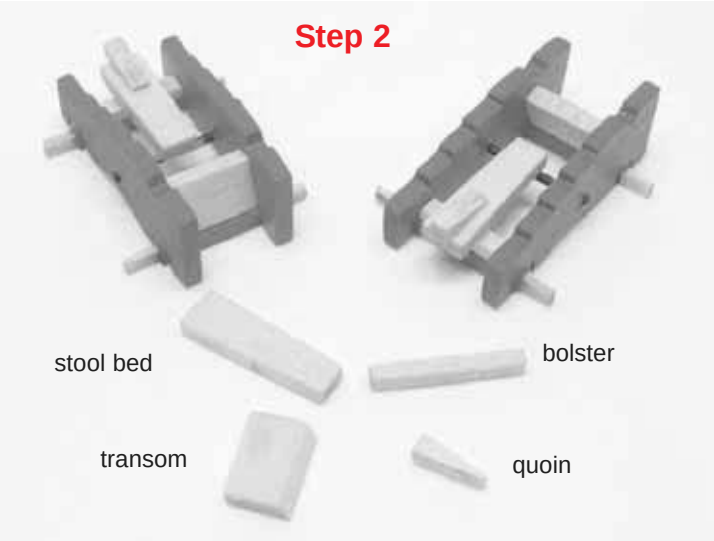
The gun carriages in this kit will be made using several laser cut pieces. All of these elements are laser cut from 1/16" thick basswood. Carefully remove ONLY the pieces you will need for each step to avoid losing any. Some are quite tiny. Sand and paint each piece before you glue them together. This was not done in the photos that will follow because it made each piece easier to see. You will also need the 22 and 28 gauge black wire supplied with the kit for some of the stages of the carriage construction.

*Step one* - You will need two carriage brackets (sides of each gun carriage), the front and rear axles and a small length of 22 gauge wire for this step. Paint the axles and carriage brackets RED as shown in the first photo. Use the diagram shown on the plans for the twelve pounders to help you assemble these five pieces. The rear axle is longer than the front. This makes the carriage narrow towards the front. When you glue the brackets and axels together be sure to check that it is assembled symmetrically and evenly by checking it against the plan. Finally, slide the 22 gauge wire through the holes laser cut on each carriage bracket. Snip off the excess with a good pair of flush cutters on both sides. You should





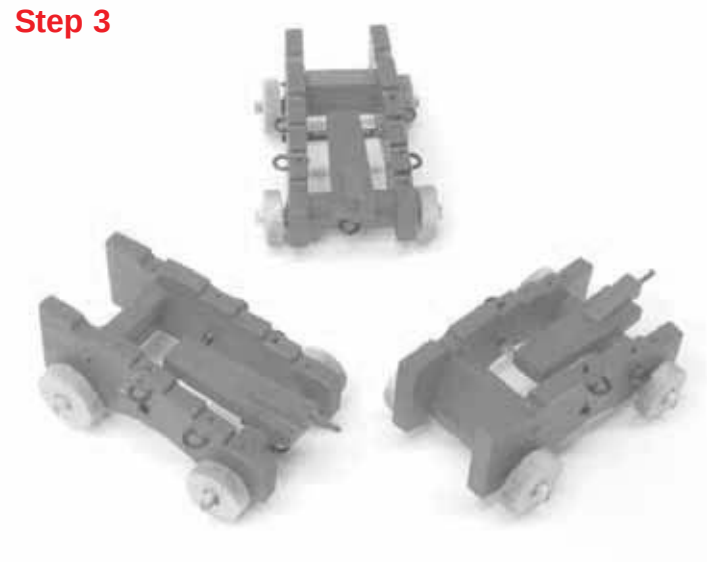




leave the ends of the wire just a little long so they stand proud of each side by about 1/128". Make all 28 of these and proceed to step two.

*Step two* - You will need these four laser cut parts… the transom, quoin, bolster and stool bed. Paint all four pieces red after cleaning them with sandpaper to remove the laser char. The bolster is glued on top of the rear axle. Then the stool bed is glued on top of that and spans across to the 22 gauge wire. Examine the photo for this step. The aft end of the stool bed should be even with the back of each carriage bracket when viewed from above. It is also centered between the carriage brackets. The quoin is glued on top of the stool bed. The wider back-end of the quoin should hang over the stool bed about 1/32". The quoin was used to change the elevation of the cannon. A handle on the back of the quoin was used to move it forward or back. This will be added in the next step.

Finish off step two by adding the transom to the front of the carriage. The bottom of the transom should be beveled as shown on the plans. The transom should be a snug fit when inserted between the brackets. It should be angled as shown in that diagram as well.

*Step three* - The wheels for the carriages (called trucks) are added next. The front trucks are larger than those on the rear of the carriage. This was done to compensate for the camber of the gun deck. They are laser cut from 1/16" thick basswood. Sand off the laser char carefully while maintaining the round shape of each wheel. Glue the trucks onto the carriage. These will be stained.




You can examine the plans and the photos carefully to find the ironwork details needed to complete each gun carriage. Some of these small features are optional. The bolts along the top of each carriage bracket for example are optional but add an interesting visual detail.

This is a complete list of the ironwork on each gun carriage.

*-Bracket bolts* - There are three bolts on the top of each bracket. You can locate them on the top of each "step" of the brackets. To make these, simply drill tiny holes into the top of each bracket where the bolts are shown. Examine the plan for

their exact locations. Then insert a length of 28 gauge wire into the hole. The holes don't need to be very deep at all. Then snip off the exposed wire with a pair of flush cutters. The wire should stand proud of the surface a little to simulate the bolt head. You may need to touch up the bolt heads with some black paint when you are done. These don't have to be glued into each hole. Especially if the holes are made so the wire fits snuggly into them.

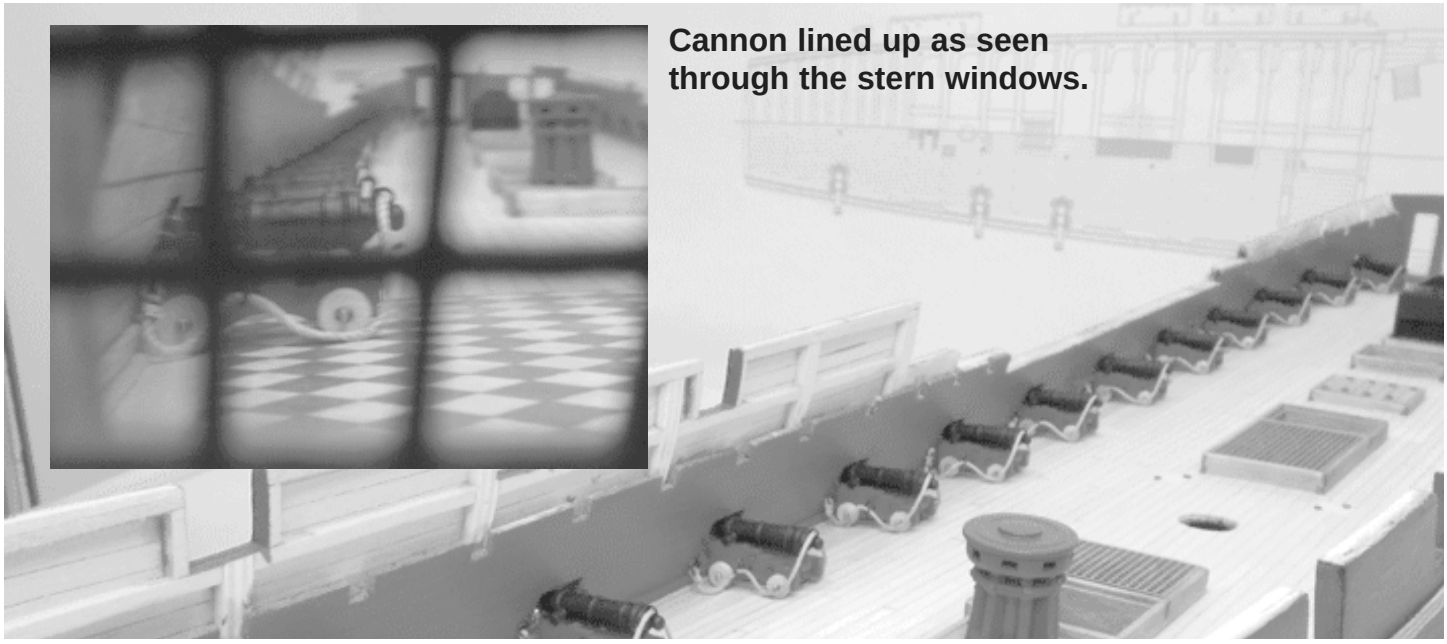
- Transom bolts - There is another bolt that goes through each side of the carriage into the transom. These are made the same way as the bracket bolts. Use 28 gauge wire.
- Quoin handle - The quoin handle would have been made from wood. But for our model we can use the 28 gauge wire. Drill a tiny hole into the end of the quoin. Glue a small length of wire into the hole. Snip off the exposed end creating a handle about 3/16" long. The handle should be painted red to match the carriage.

- Five eyebolts - There will be five eyebolts inserted into each gun carriage. Two are glued into each side of the carriage. The last eyebolt is glued into the rear axle. This one should be centered under the stool bed as shown in the photos. Refer to the plans for their exact locations. Each eyebolt should be let into the side of the carriage if possible. You can see this in the photos as well. In actual practice this prevented the eyebolts from twisting around. You can add this detail if you would like to more accurately display the eyebolts on the carriage.

NOTE: The two eyebolts for the breech line shouldn't be added. But you will still need to drill a hole for them through each side of the carriage. Remember, we added the breech line to the cannon barrels already along with their eyebolts and split rings.

The carriages for the 12 pounder cannon are now completed. It's time to mount the cannon onto each of them. A photo provided shows a cannon glued onto its carriage. Once the cannon are glued into position, push the eyebolts from the breech line into the holes you drilled through the sides of the carriage. To finish up this step, use some thick black paper or black tape to make the cap squares. The cap square is the little iron strap that is placed over the trunnions of the cannon to secure it in the carriage. The trunnions are the small protrusions on both sides of the cannon which should sit in the notches of the carriage brackets. The cap squares can be made from any material, but using black card stock or artist tape will make the job easier. The cap squares are 1/16" wide to cover the thickness of each carriage bracket.

You can also adjust the breech line so it hangs naturally at this point. Adjust the breech line so

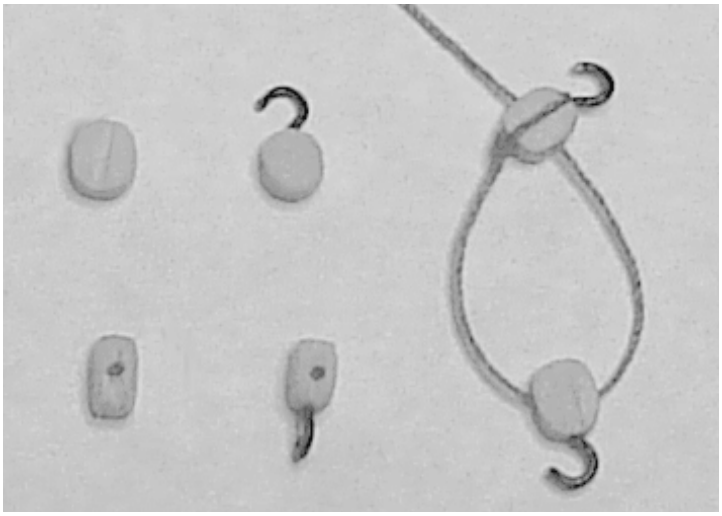


**Cannon lined up as seen through the stern windows.**

you have an equal length on both sides of the carriage. Then drape the aft portion of the line as shown in that same photo. On the prototype, the breech line was actually glued to the rear trucks under the axle so the "natural swag" in the line can be locked into shape permanently. Leave the front of the breech line as shown because that will make it easier to insert the eyebolts into the bulwarks.

Positioning the cannon on deck - Glue the cannon on deck with the guns run out. You should not push the carriages right up against the bulwarks but instead, back them off by about 1/32". Once they are secured, insert the eyebolts on the ends of the breech line into the lower set of holes you made (on both sides of each gun port). This could be tricky at first, but try using a long needle nose pliers or tweezers to make this procedure easier.

**Gun tackles -** As you probably just found out, setting up the breech line on the 28 twelve pounders can be challenging. The same can be said of the two gun tackles rigged to each gun. Although challenging, it is far from difficult. At this scale, rigging the gun tackles is optional. You will need to shape 112 - 3/32" single blocks for the gun tackle. A photo provided shows four unshaped blocks in the top row. The blocks should be rounded off to better reflect their true shape for the period. You can see in that same photo how the blocks were held with an alligator clip and sanded to shape. The shaped, "round-

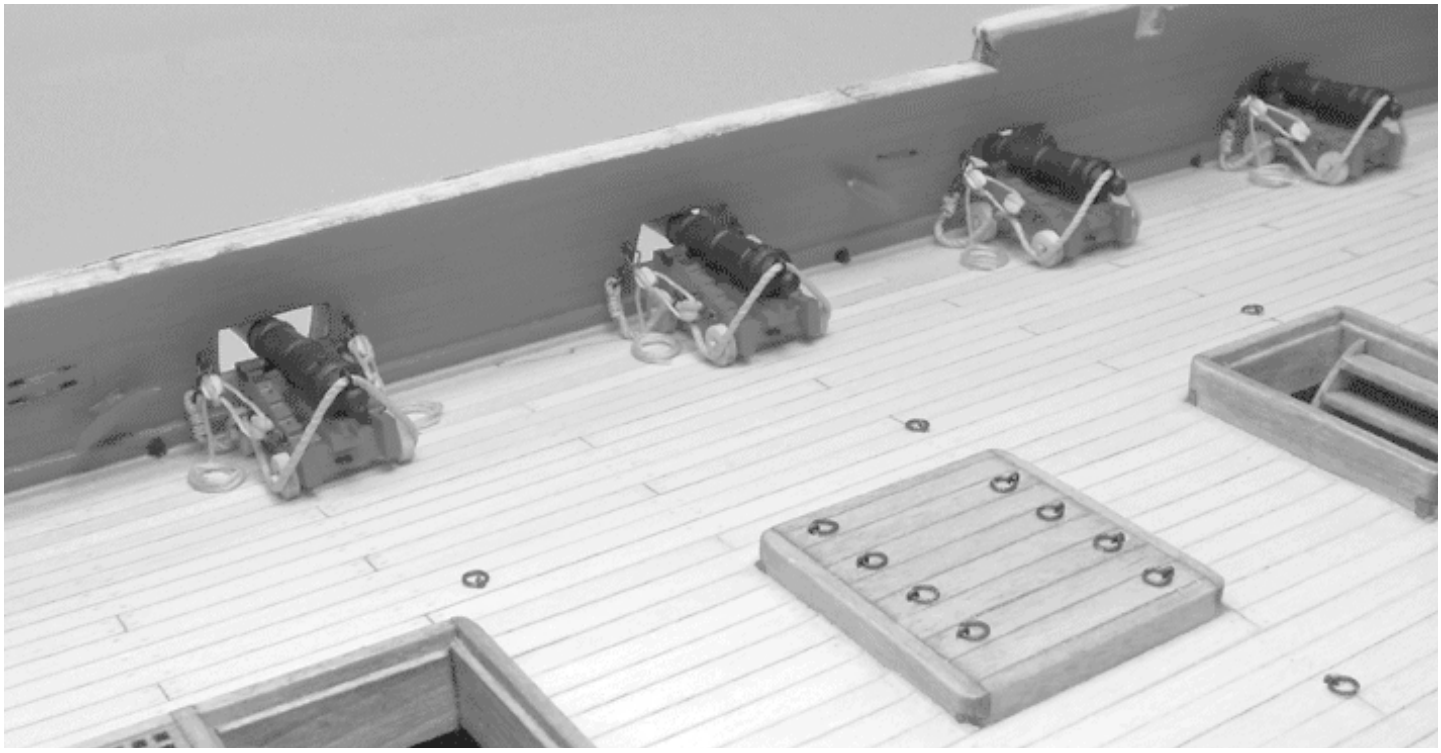


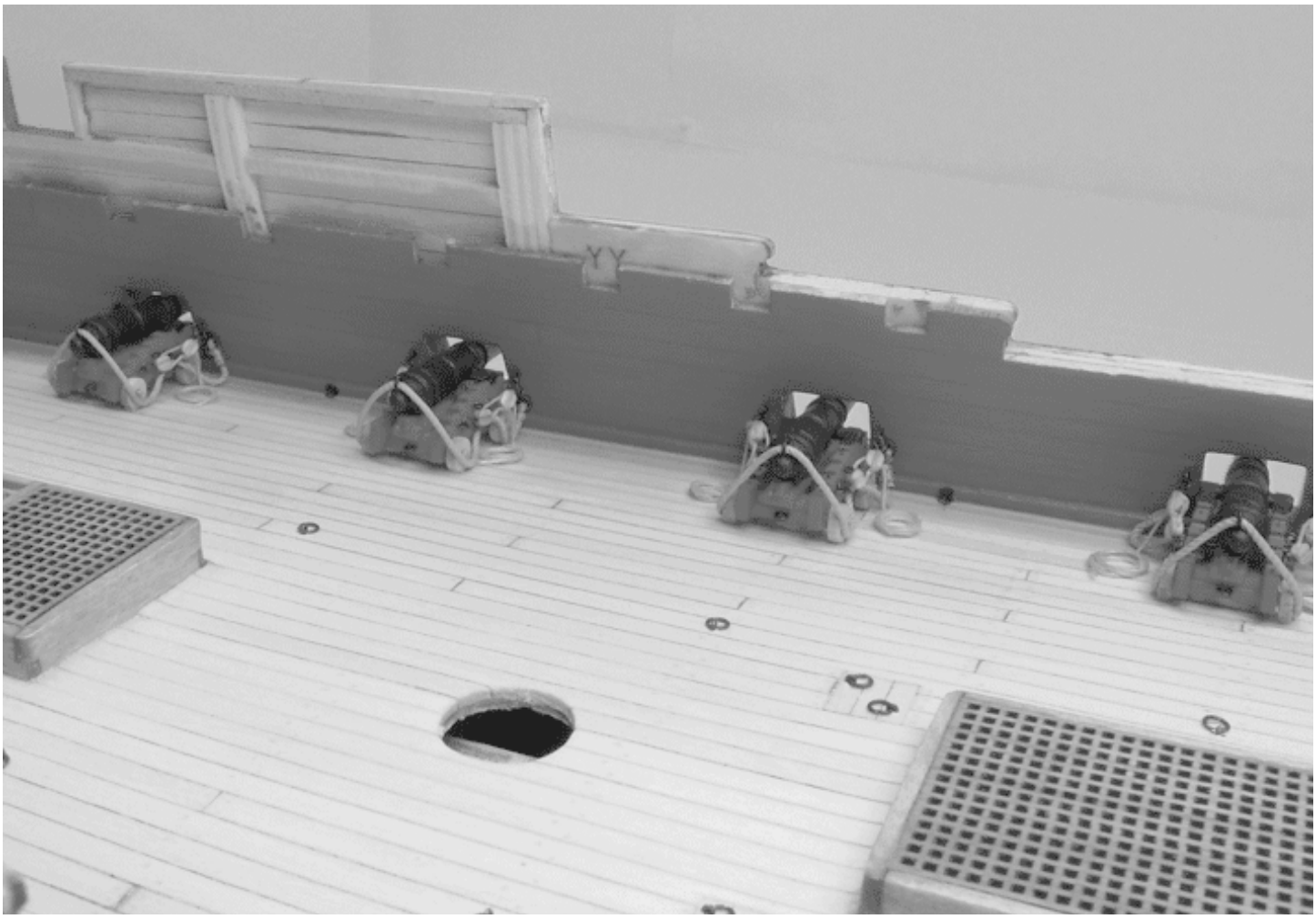
ed" blocks are shown in the second row. You will also need to create 112 small hooks from the 28 gauge black wire supplied with the kit. These can be made using a pair of needle nose pliers to bend the wire into a hook shape. The hooks are inserted into a small hole that must be drilled into the top of each single block. Glue them into position being careful not clog the sheave hole in each block that the rigging line will pass through. These tackles can be set up off the model and then installed. They will actually be working tackles (albeit with a non-working sheave); therefore you can set up the 56 tackles ahead of time. See the photo provided. The gun tackles will be set up using .008 tan rigging line. Use a generous length of rigging line for each gun tackle.

Simply hook the tackle to the bulwark eyebolt and the rear-most eyebolt on the gun carriage. Then carefully pull the loose end to work the tackle and tighten it up. At this stage you might even place a drop of glue on the sheave of the block hooked to the bulwarks. This will ensure the tackle stays taught. Don't pull the tackle so taught that it might pull the eyebolts out of the bulwarks and the gun carriage. It only needs to be tight enough that it hangs naturally and stays securely hooked in place. Then take the loose end and glue it to the deck beside the gun carriage. Trim off the excess line and glue a rope coil on top of the loose end. The final photos in this chapter show the guns rigged with their tackles. Rope coils have been made and neatly glued on the deck. They were positioned in such a way that they didn't look too perfect or too "evenly" distanced from the bulwarks or carriages. The distances and positions were varied a just a little bit from gun carriage-to-gun carriage.

To finish up this chapter, split rings were secured into the deck behind each carriage for the train tackles. The train tackles won't be shown but the eyebolts w/split rings should be glued into predrilled holes on deck. Refer to the deck plans for their locations directly behind each gun carriage. To make these, some 28 gauge wire was bent around a split ring and squeezed tight with some pliers. See the photo for details.

You might have noticed that a few other deck fittings are shown in some of the photos. You can see the capstan and the stove. Building and rigging 28 cannon may get repetitive and tiresome. If you want break up the manotony, simply skip ahead to build some of the other deck structures. But don't glue them intoposition permanently. Just set them aside so they won't interfere with the rigging of the guns. They may get damaged while you rig the guns.

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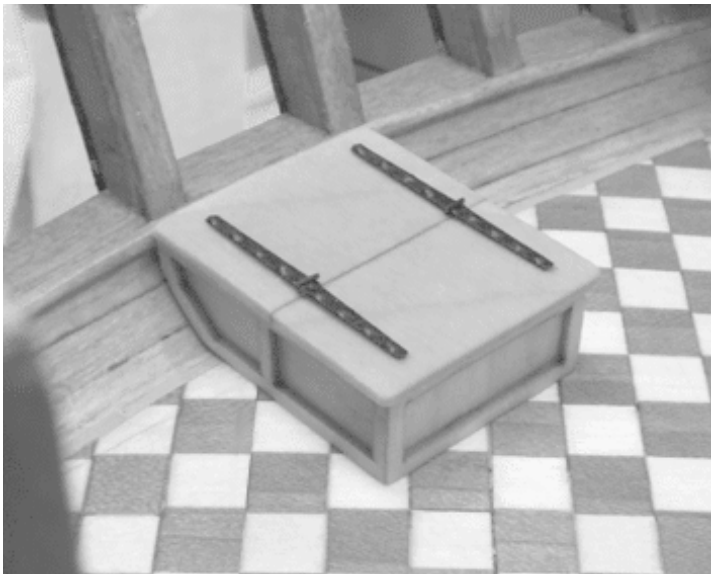
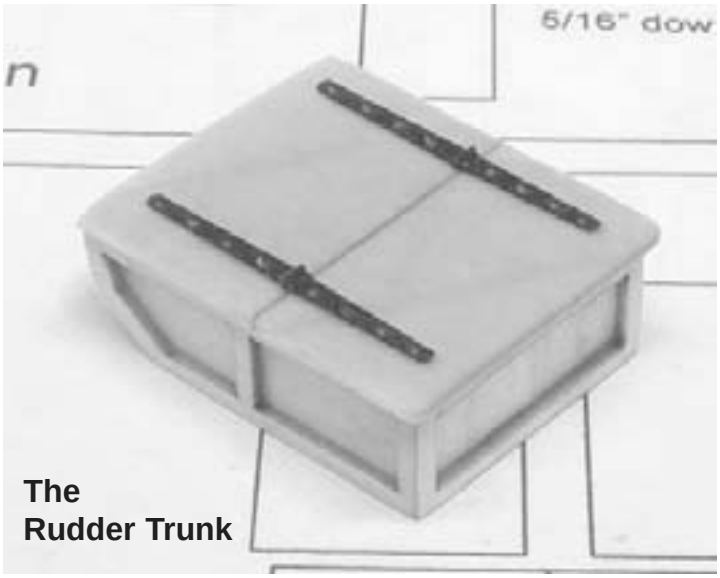





**The Rudder Trunk**

# Chapter Twelve

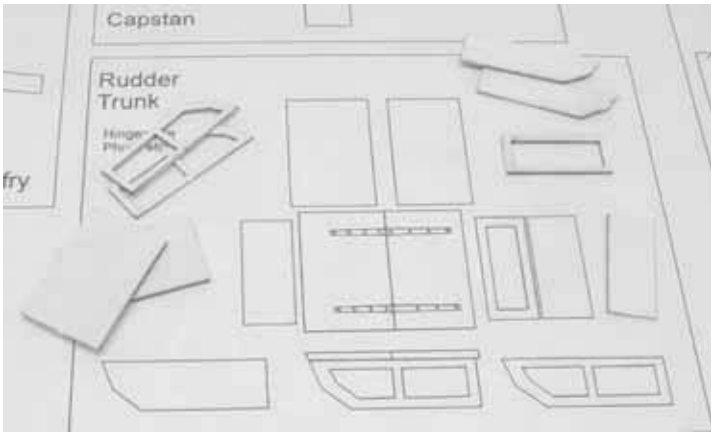
## Gun Deck Fittings and Deck Framing

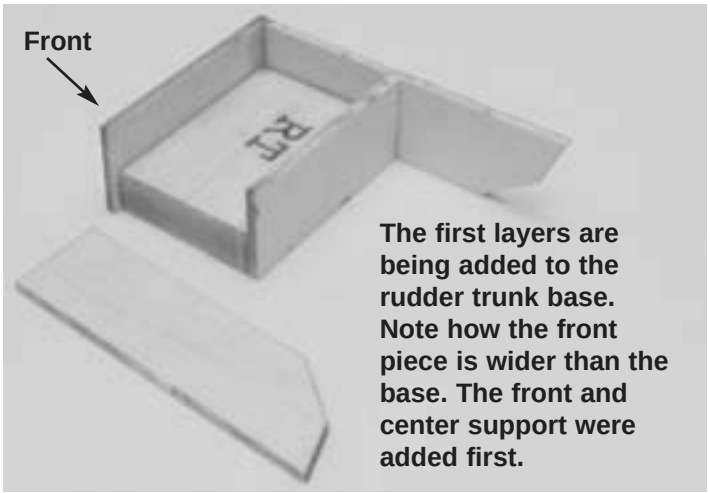
With the cannon completed you can start building the various fittings found on the gun deck. On the prototype for the kit, work progressed from the stern towards the bow. This is just a personal decision and it really doesn't matter which fittings are built first. The systematic approach from stern-to-bow 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

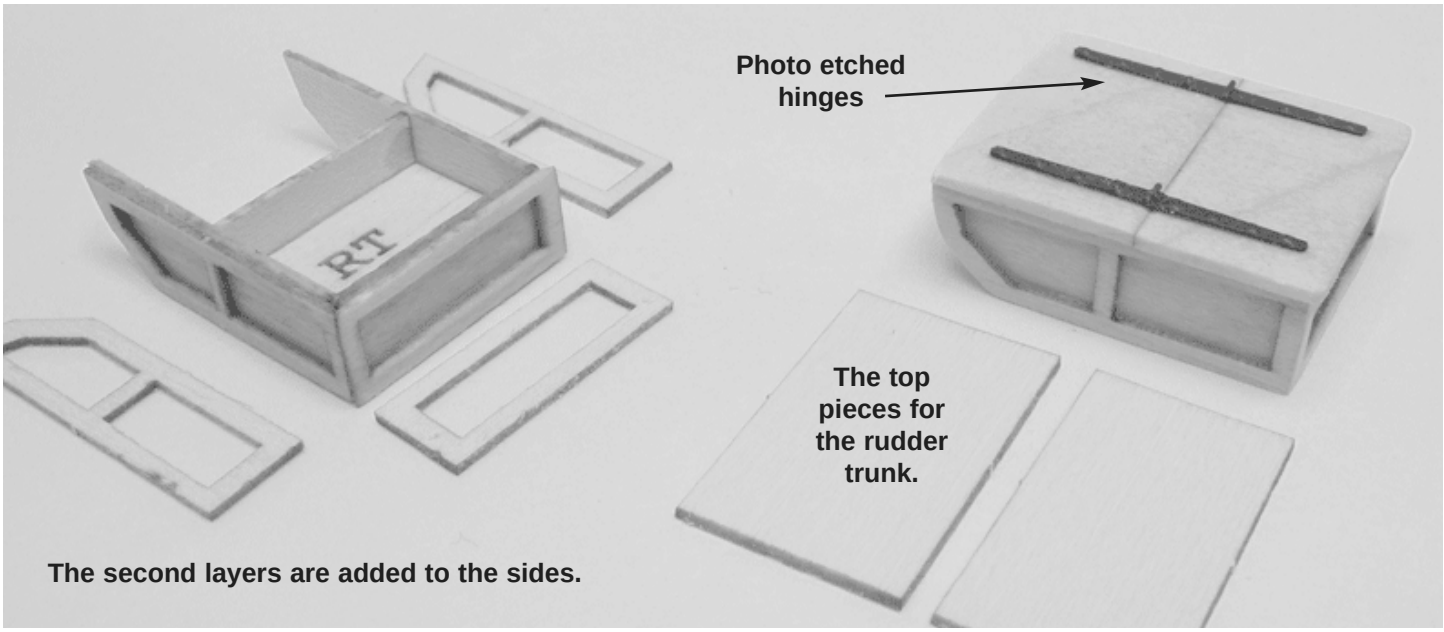
The rudder trunk is made using several laser cut parts which are shown on the plans. Examine the plans carefully before you begin. The sides of the rudder trunk are made in two layers. This will simulate the look of raised panels. This design feature will be used many times throughout this project.

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.**




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.

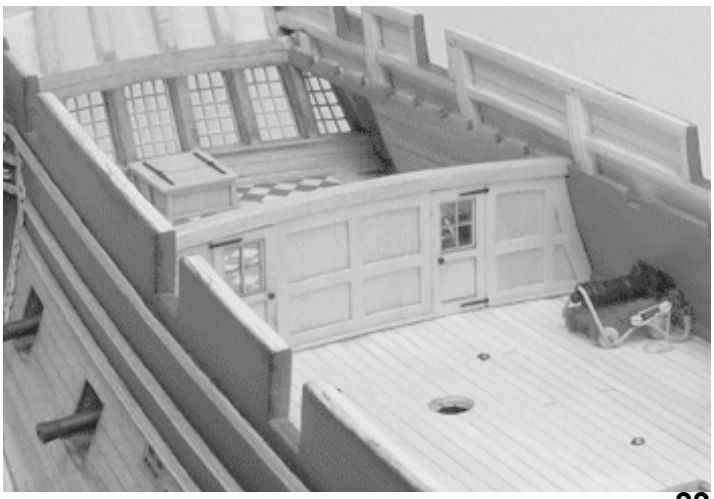
The second layer can be glued be on next. The two front corners were mitered so the end grain would not be visible. To do this, simply sand the edge at an angle using a sanding stick. Glue some 220 grit sand paper onto a 1/8" x 1/16" strip to make the sanding stick. These pieces are quite fragile. It 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.

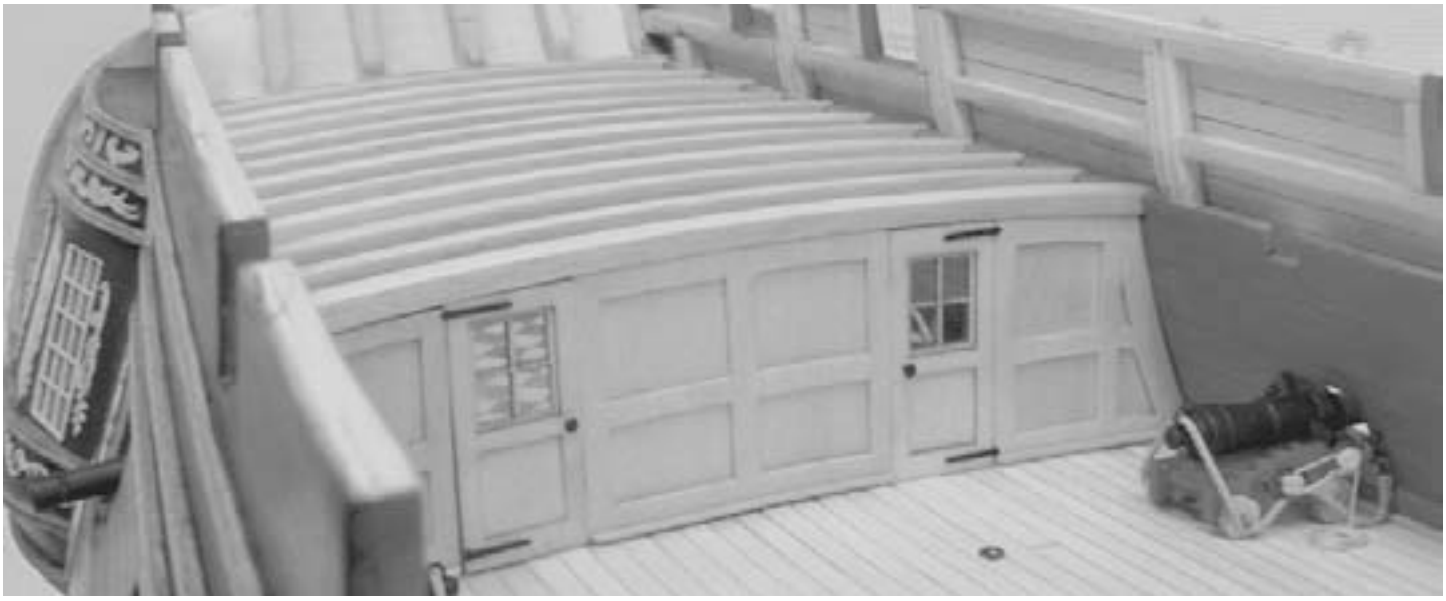
Take the two laser cut pieces for the top of the trunk and glue them into position. These have been laser cut slightly larger than you need them to be. This will give you the opportunity to sand all four sides so you create a slight and consistent overhang. Round off the front corners. Stain the lid 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 completed 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. It 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…

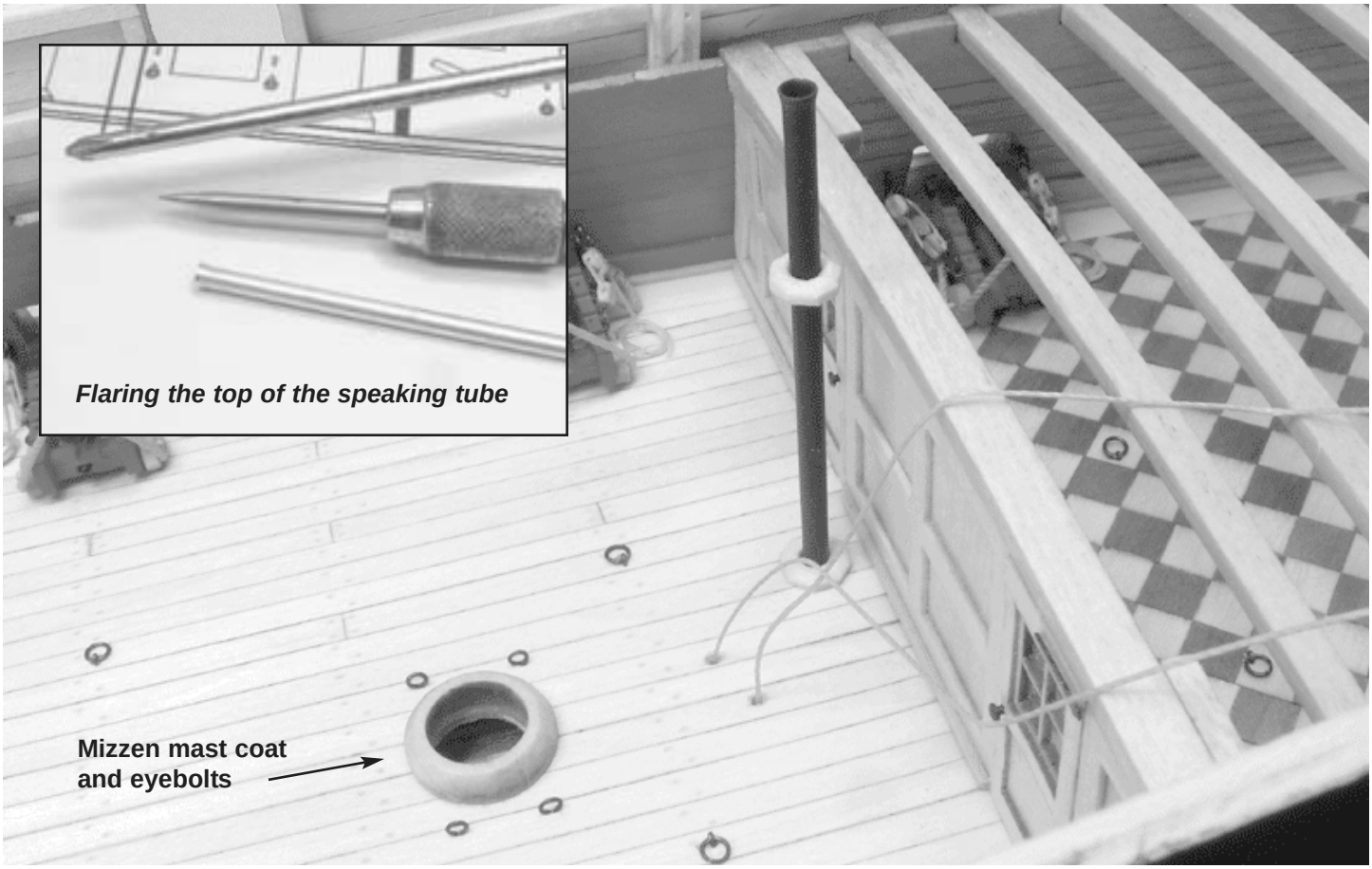
1. Place the center bulkhead section against the deck beam to test its height. It will be slightly taller than needed. Remove a little bit from the top AND bottom until it fits under the beam properly. Make sure it's not a tight fit. If the bulkhead sections don't fit perfectly they may push your deck 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 snugly 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



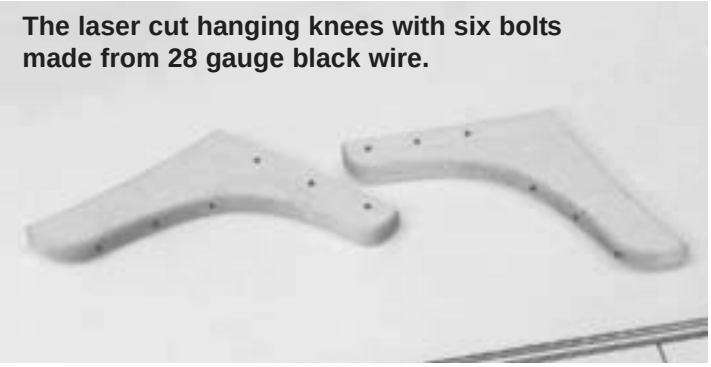

was added at the base of both sides of the bulkhead. This was shaped from 1/32" x 1/32" strip. Simply round off one corner and glue it in front of all bulkhead sections except the doors.
When the bulkhead is completed, you can install all of the 1/8" thick deck beams aft of the bulkhead. Just cut them 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 speaking 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. It's 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 to keep them from getting in your way. We won't be adding the ship's wheel for a while and the lines should be carefully tucked aside.

**The Second Bulkhead…**

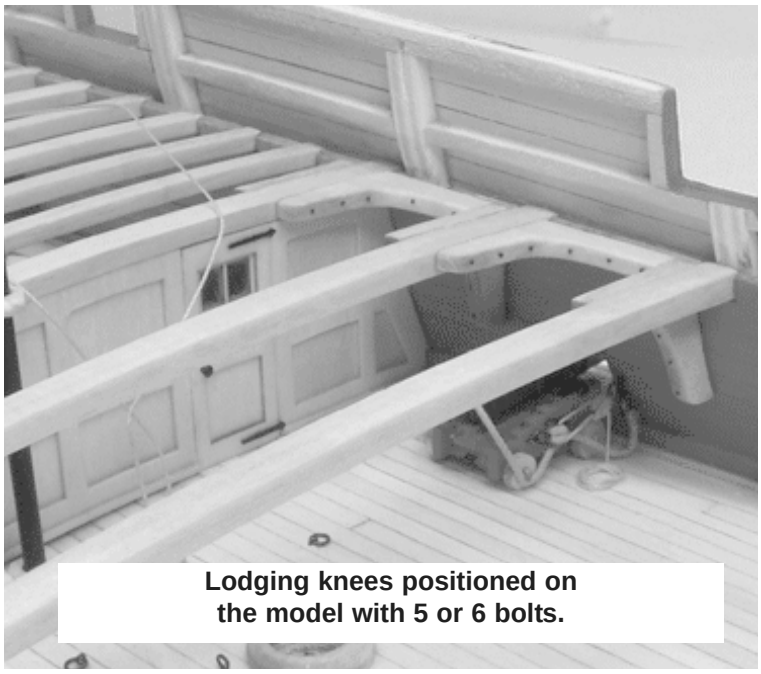
The second bulkhead is made just like the first. It is positioned under a deck beam in the same manner. Install the next two deck beams (3/16"). The second bulkhead will be positioned under the second beam. But before you add the bulkhead, you might want to install the hanging knees and lodging knees for all three (3/16") deck beams you added up to this point. There is 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 forecastle 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 forecastle 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 however. 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 forecastle. 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.

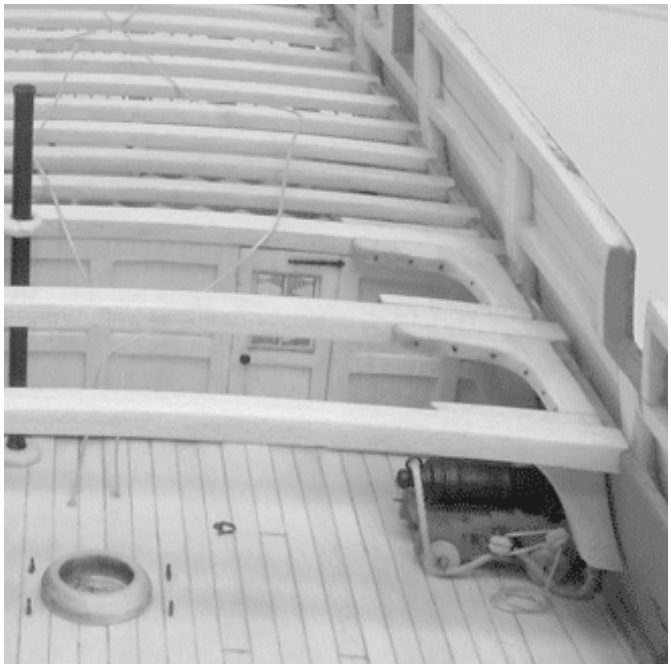
**The first three hanging knees positioned on the aft side of each deck beam.**

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



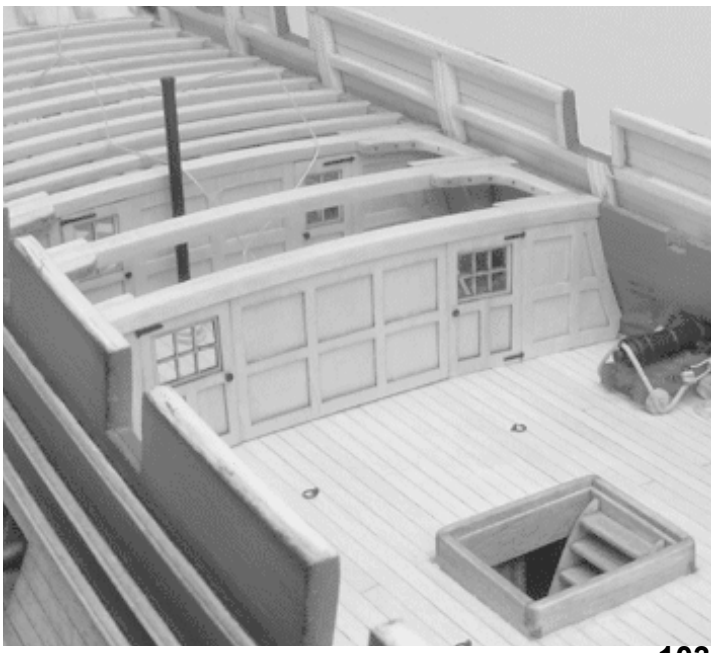
**Lodging knees positioned on the model with 5 or 6 bolts.**



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 tops 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 knees 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 knee has been left slightly longer so you can cut it to be a perfect fit. Don't add the bolts until after you shape them to fit. Examine the plans for the orientation of the lodging knees.



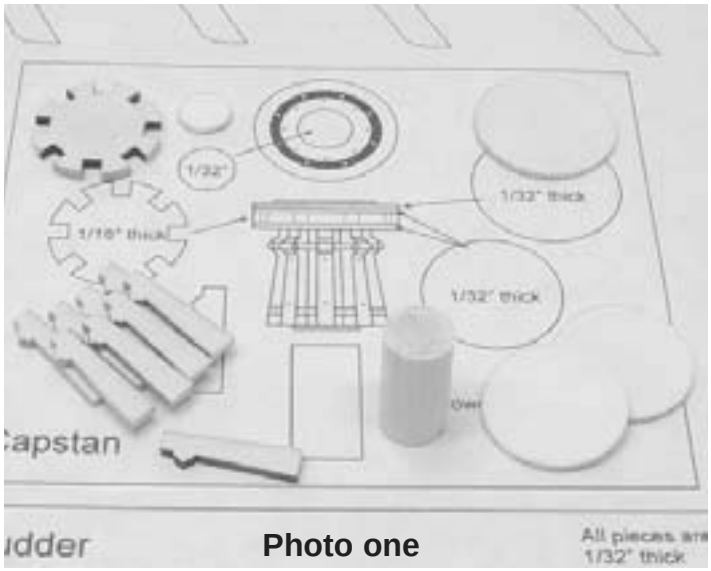
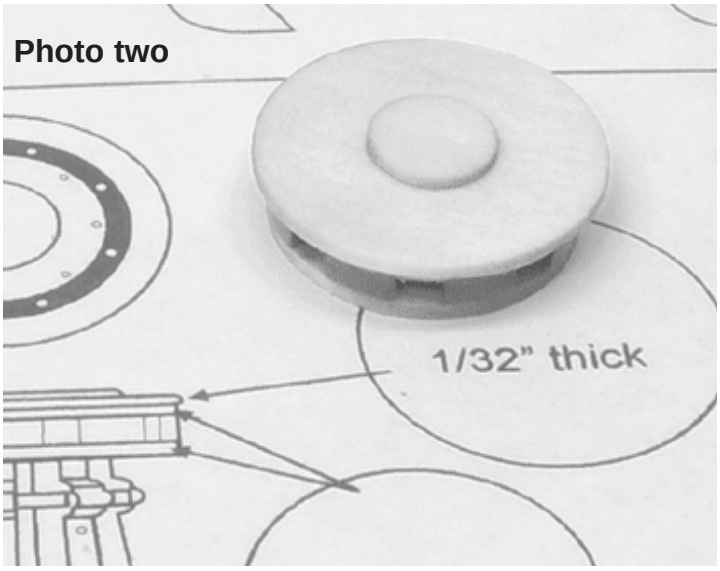



**Photo one**




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 their thickness.

**Building the Capstan**

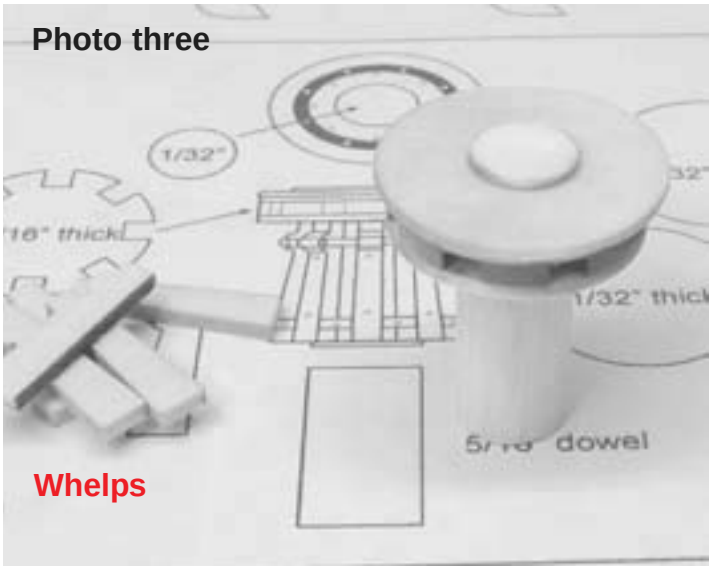
Prepare all of the laser cut pieces that will be assembled for the capstan. See photo one. Sand them free of laser burn. If you plan on leaving the completed capstan with a natural finish vs. painting it, you should also stain each piece before assembly. This will reduce any blotchiness caused by glue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

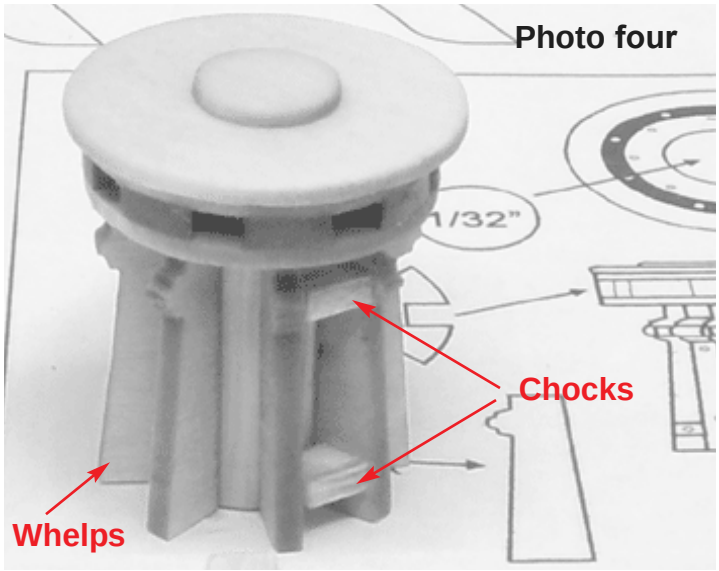
Assemble the four components for the capstan drumhead. These are the circular 1/32" thick pieces and the sprocket-like piece. See photo (2) provided. Then cut a 5/16" dowel to length as shown on the plans. Glue the capstan drum on top of the dowel (photo 3).

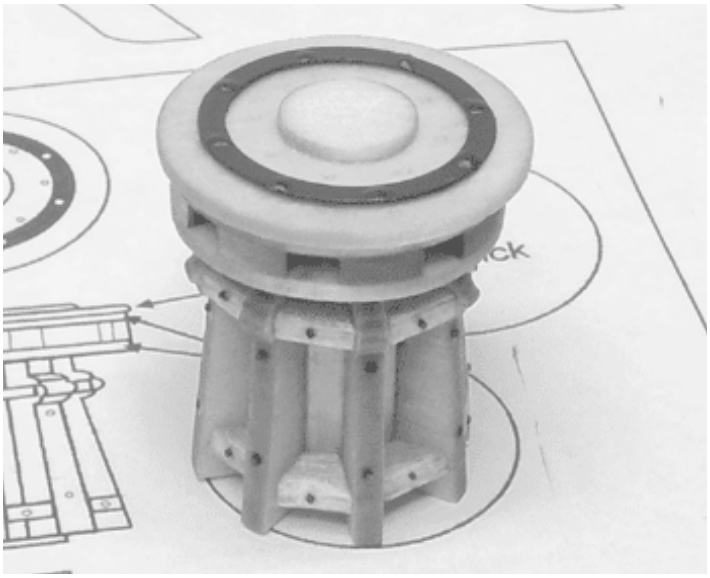
Take eight laser cut whelps and glue them around the dowel. Carefully position the whelps consistently around the dowel.

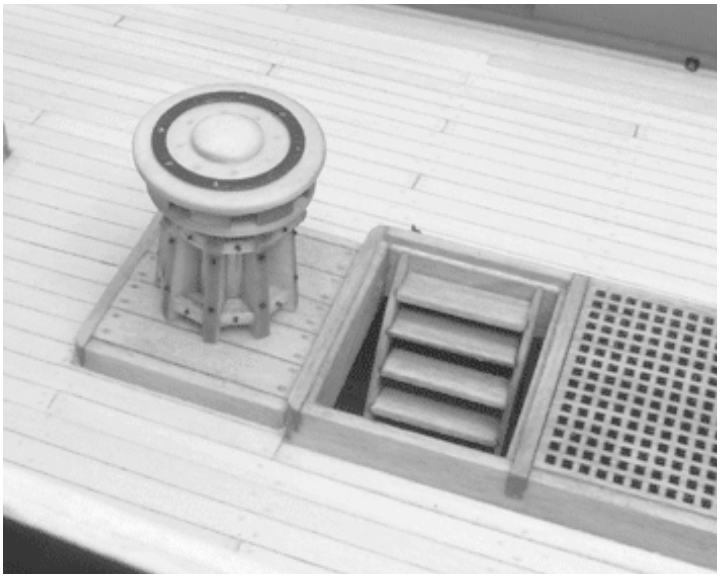
Small chocks should then be added between each pair of whelps. These are small pie-shaped pieces that you must cut from a 1/32" x 1/8" strip. The chocks must be custom fit between each pair of whelps. There are two chocks between each pair of whelps as shown on the plan. This completes to initial capstan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

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







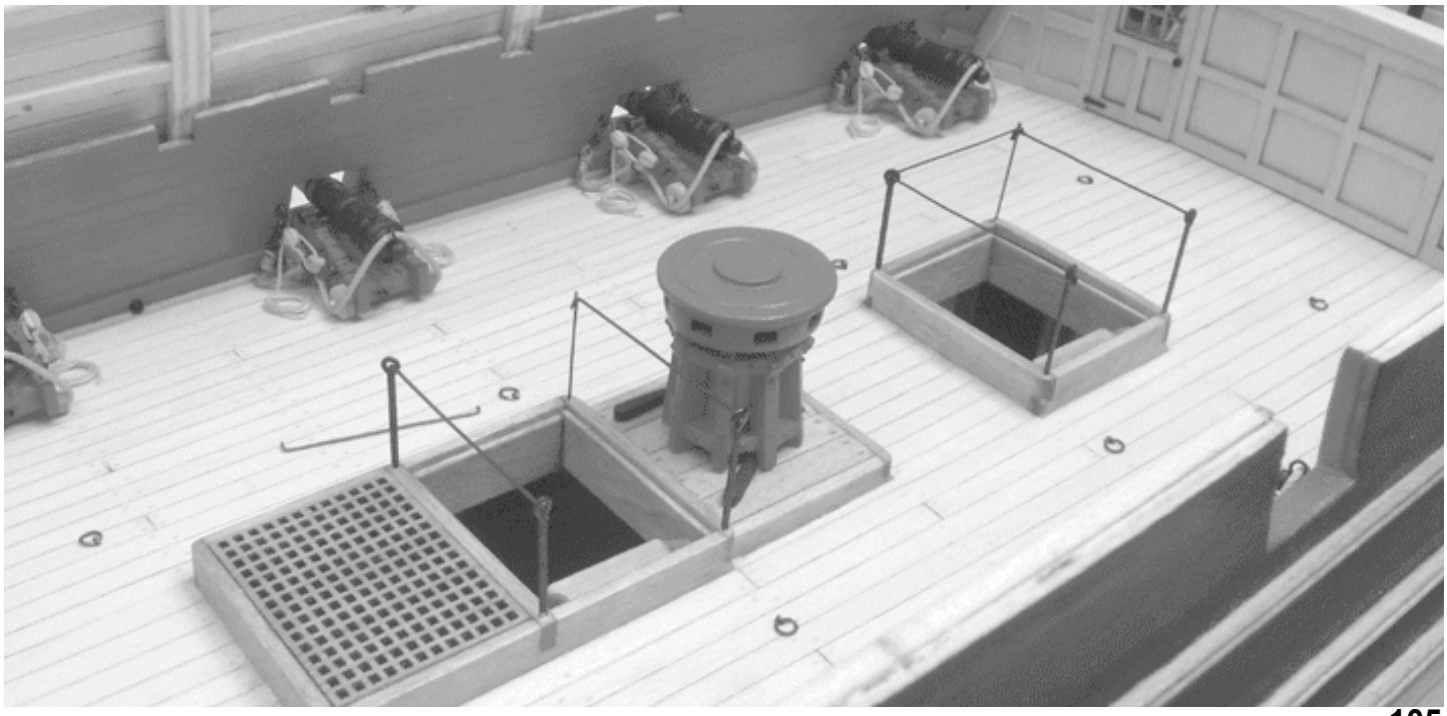
have held these pieces together by using 28 gauge black wire. This is the same technique you used several other times throughout the project. They are located on the front of each whelp and on the chocks. A photo shows the completed capstan with bolts installed prior to painting. A photo etched ring 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.

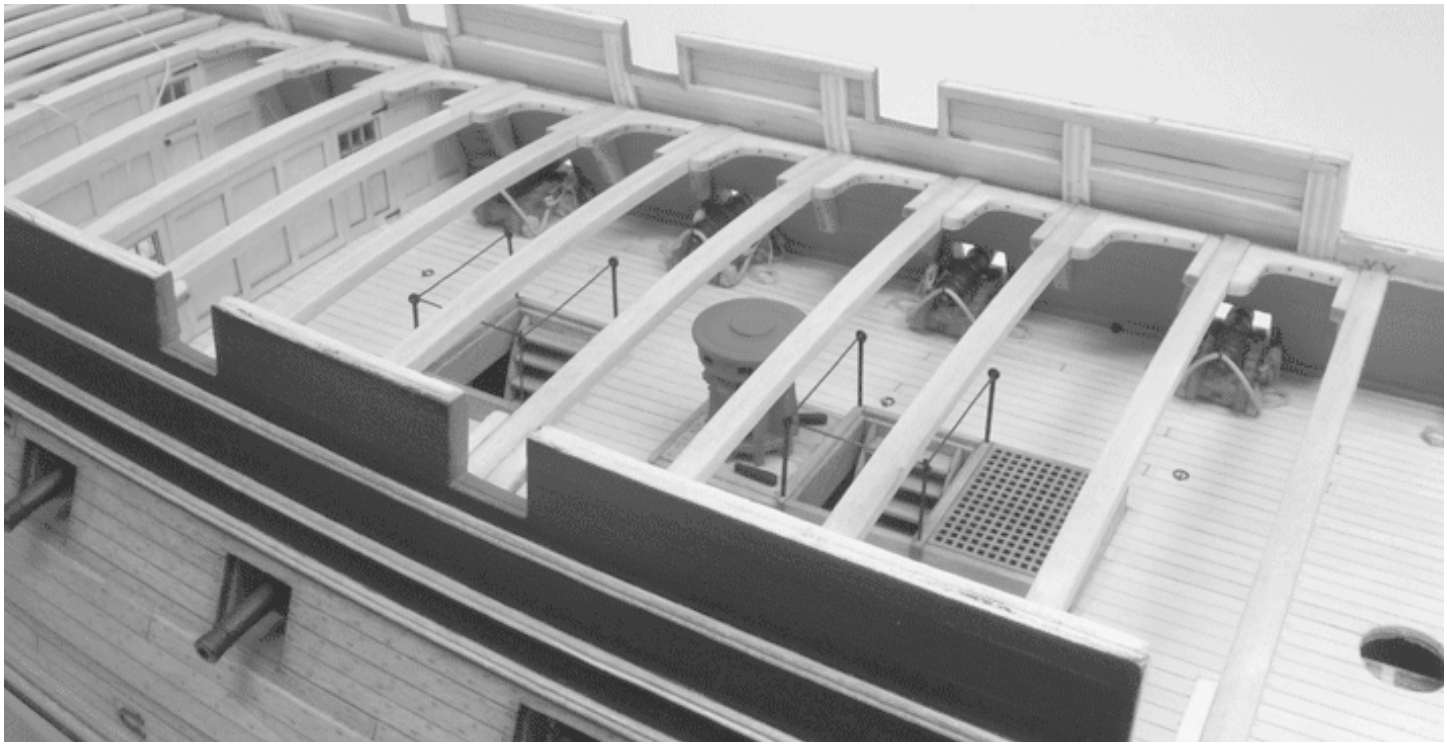
Finally, drill eight small holes into the top of the drumhead just inside the iron ring. These holes should be left open. A pin was inserted into them to help secure the capstan bars when it was being used. You can see another photo of the capstan painted red. After you decide on the finish you like 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.

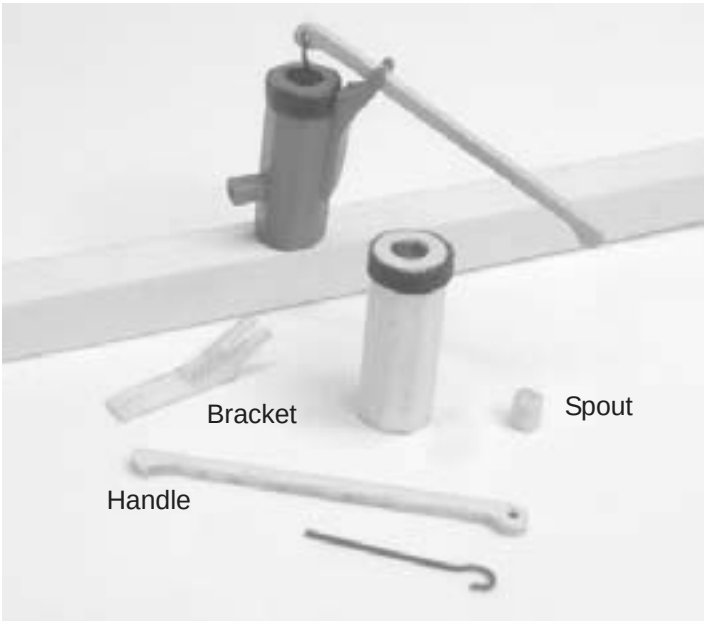
The main jeer bitts

**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.



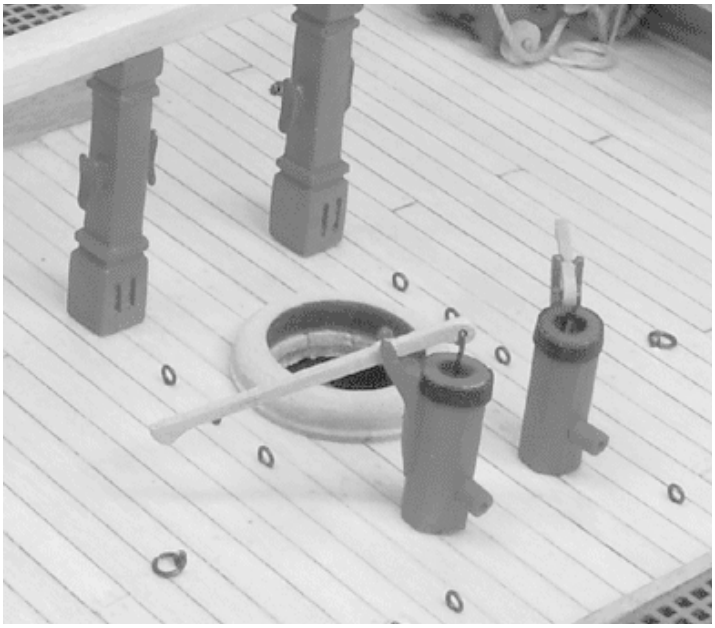

Hold them against the beam to determine how much needs to be cut from each piece. Remove a little from the top and the bottom.

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 bitts. Once completed, the jeer bitts 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 bitts 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.

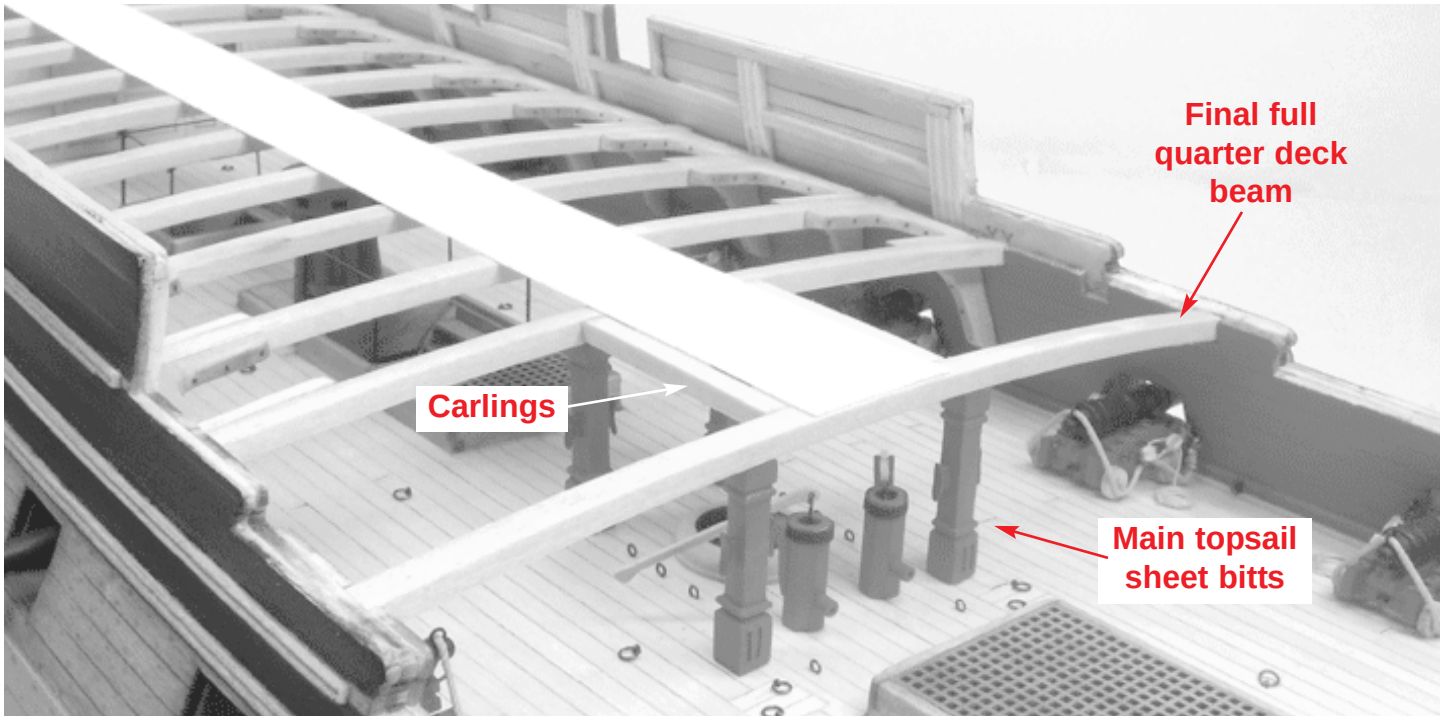


Carefully sand the two laser cut pieces for the pump handle and bracket. These are very delicate, so be gentle. Remove as much of the laser char as possible or you could simply paint them as is. But the bracket needs to have a small slot filed into the top to accept the handle first. Use a small needle 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.

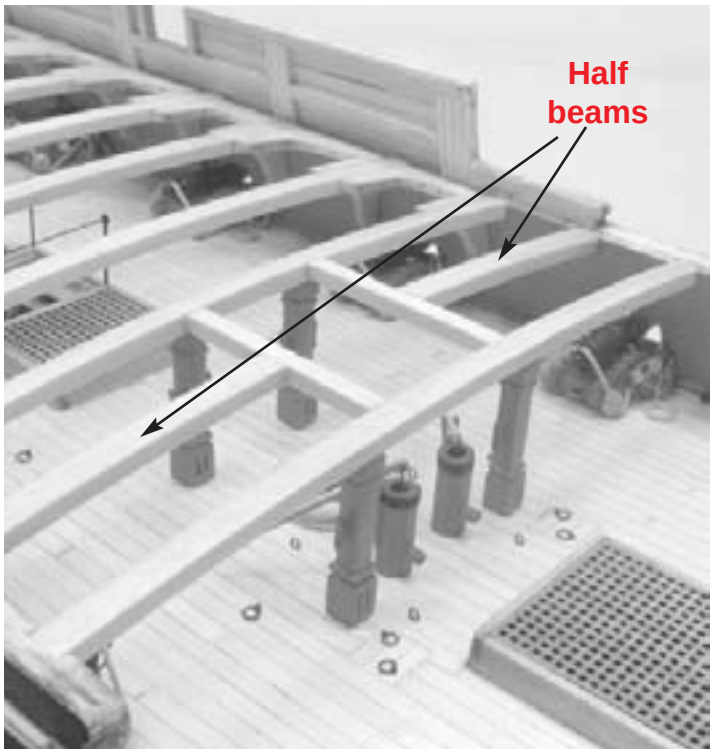
The pump handle was painted to simulate natural wood. A length of 28 gauge black wire was shaped as shown in the photo provided. It was hooked to the hole laser cut through the pump handle. Then the pump handle was glued into position. The wire was pushed into another small hole drilled into the bottom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

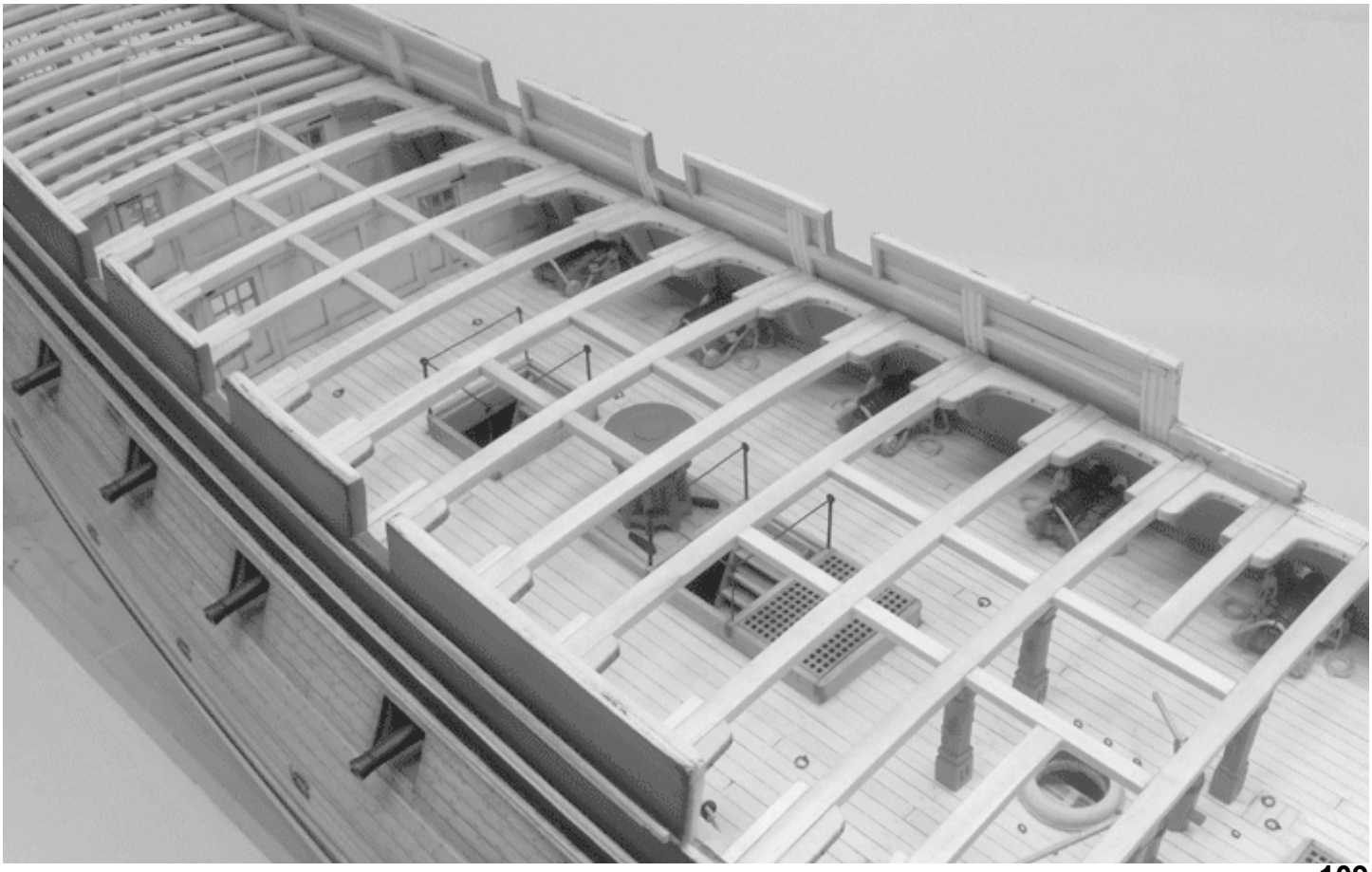
every pair of deck beams. They should be carefully centered down the hull from bow to stern. The distance between each pair of carlings can vary depending on where they are used. Examine the plans carefully.

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 pairs 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.



# Chapter Thirteen

## Finishing up the Gun Deck Fittings and Forecastle Framing

You can now start working on the fittings under the forecastle. On the prototype, work progressed from the bow towards the stern. The forecastle deck beams were added a little at a time as the fittings were completed.

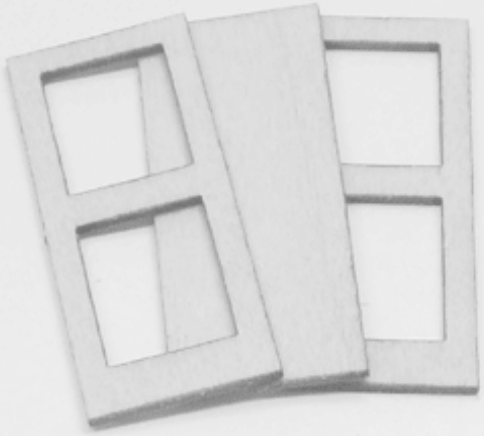
**Beakhead Doors…**

The beakhead doors are made just like the two bulkheads. They are made in three layers as shown in the photos below. Each layer is 1/32" thick and laser cut for you. Only the 'outer-most' doors need to be made at this time because they will be inserted into the openings from the inboard side. Assemble the three layers and thin down the outside. They should be treated just like the two bulkheads you made under the quarterdeck. The outside layers need to be reduced in thickness so they don't look too heavy. Paint both sides red and add the photo etched hinges and doorknobs. Glue them into position when you're done.

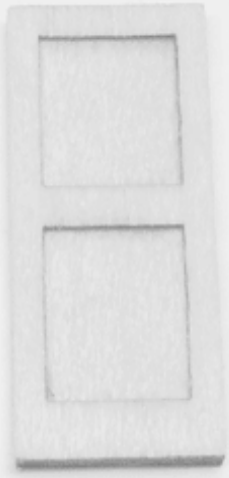
**The Bowsprit Step…**

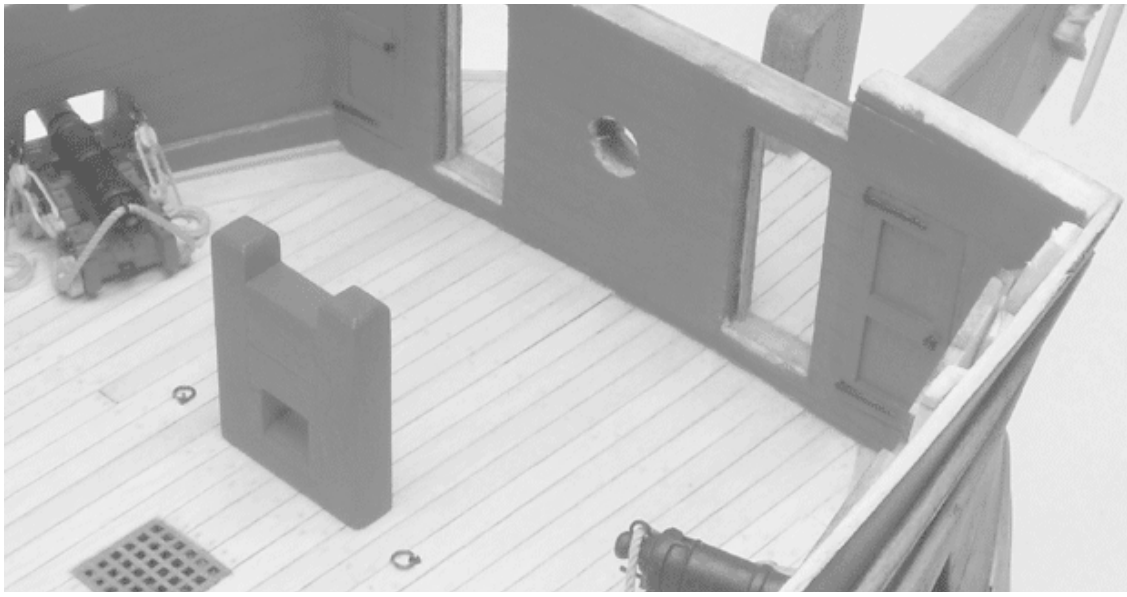
The bowsprit step is 3/16" thick. It is made using 3/16" x 3/16" strips. Cut the uprights to length first. Bevel the top on all four sides to add a nice detail. Examine the plans carefully and you will see that the opening for the heel of the bowsprit is angled. You basically need to cut the strips to the correct length and insert them horizontally

*Three laser cut layers of the beakhead doors*



*Beakhead door assembled and sanded*

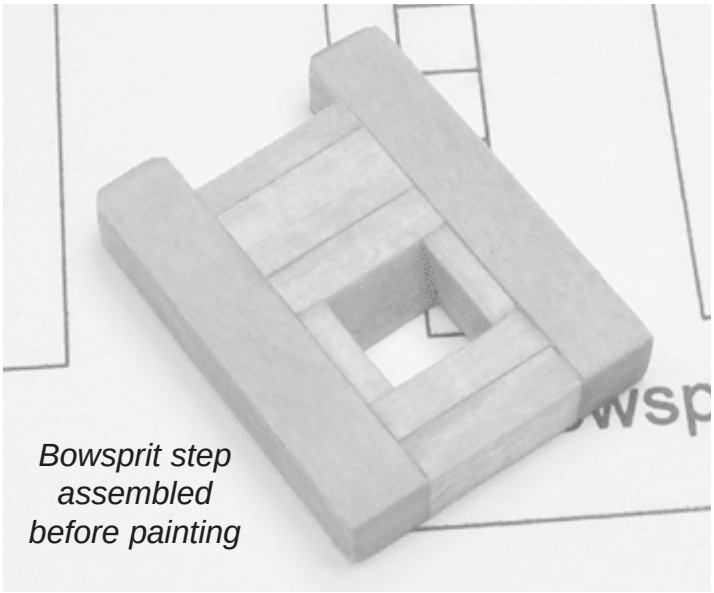




*Beakhead doors are installed with hinges and door knobs. The bowsprit step is also shown painted and glued on deck.*

between the uprights. You can use as many of these packing pieces you need as long as the angle of the opening matches the plans when you are done. To finish it up, add two more strips along the inside edge of each upright so the opening is the correct width. Paint the bowsprit step red when you're done. See the photos provided.

You can glue it onto the deck but be very careful to position it correctly. Make sure the angle you created is facing the correct way. To secure it firmly on deck, you could also use some 22 gauge wire to create "pegs" and pin the bowsprit step in position. Pre-drill some holes on the bottom of each upright. Then glue a small length of wire into each hole leaving the wire about an 1/8" long to form the"peg/pin". Drill corresponding holes on deck. Then glue the pegs firmly into the holes. This will create a much stronger bond than simply using glue alone.

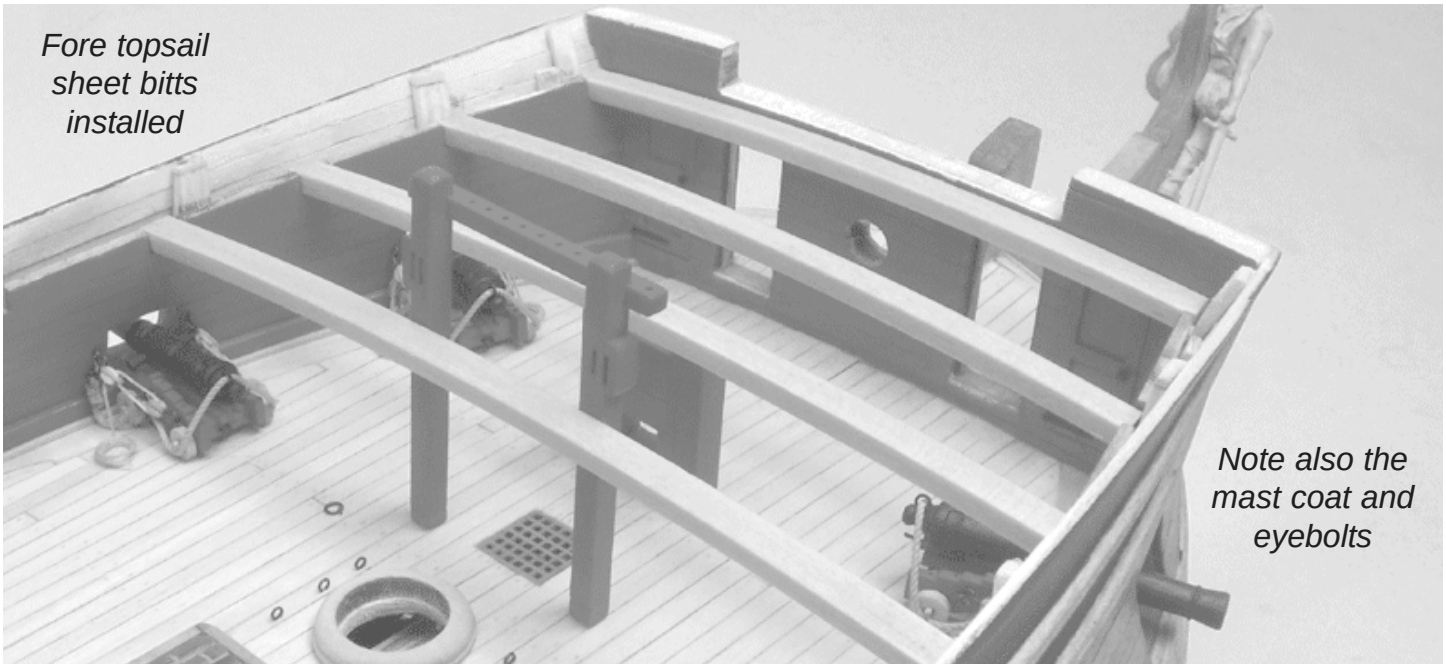


*Bowsprit step assembled before painting*

When the bowsprit step is secured on deck, you can add four of the forecastle deck beams. Next, build the fore topsail sheet bitts. They are secured to the forward side of the fourth beam. You can also add all of the hanging and lodging knees for these initial deck beams as well. Simulate the bolts as you did earlier. Note how the hanging knees are positioned on the FORE side of the deck beams.

**The Fore Topsail Sheet Bitts…**

These are built the same way as the main topsail sheet bitts. The uprights are laser cut for you and so are the sheave slots. Just insert the laser cut sheaves into the slots. The cross beam is also laser cut with all of the holes for the belaying pins. Add the belaying pins to make sure they fit in each hole. You may have to drill them larger. Use the plans as a guide to make sure the assembly is the proper width. Glue the cross beam into position. You may want to add the belaying pins to the cross piece before you glue the bitts into position. It will be easier to paint the topsail sheet bitts red and the belaying pins while they are off the model. The belaying pins should be painted to look like wood. When you're done painting them, glue the topsail sheet bitts to the fore side of the deck beam and secure it on deck with some 'pegs'. See the photo provided. Note:




The belaying pins are not shown installed yet, but it will be easier to add them and paint them ahead of time. Don't add all of the pins. There would always be a few holes left empty and not all of them should be shown. You should leave one or two holes empty.

**Fore Mast Coat and Eyebolts…**

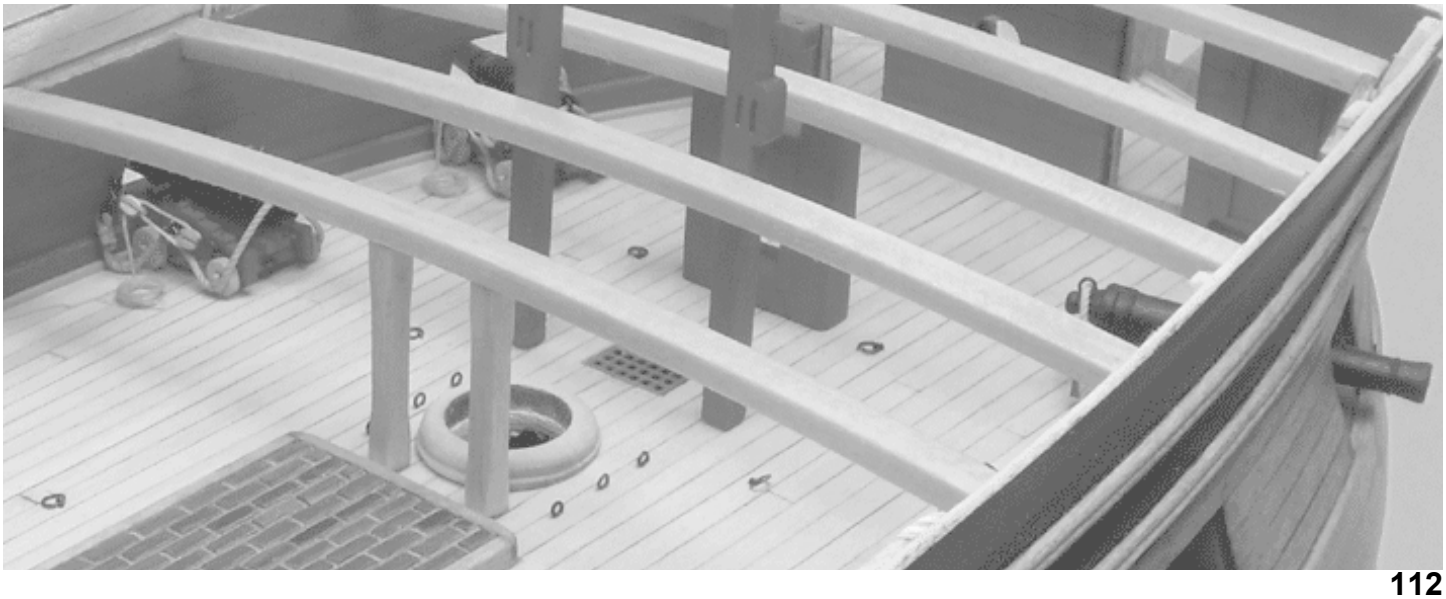
The mast coat for the fore mast is made just like the one for the main mast. It is laser cut for you. Install the three eyebolts on each side of the mast coat as well. Then install the next (fifth) deck beam.

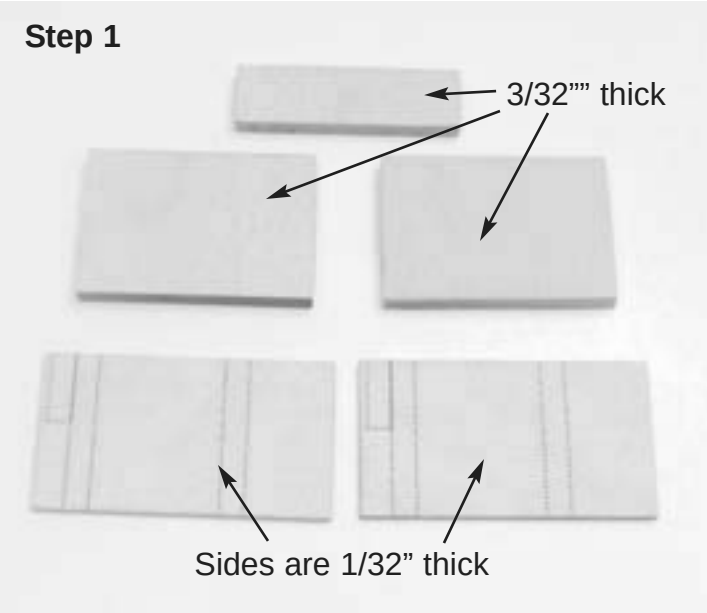
Under this beam you will see two columns. These are made using 5/32" x 5/32" strips. The four edges can be chamfered to add some detail. Shape them and glue them into position under the beam.

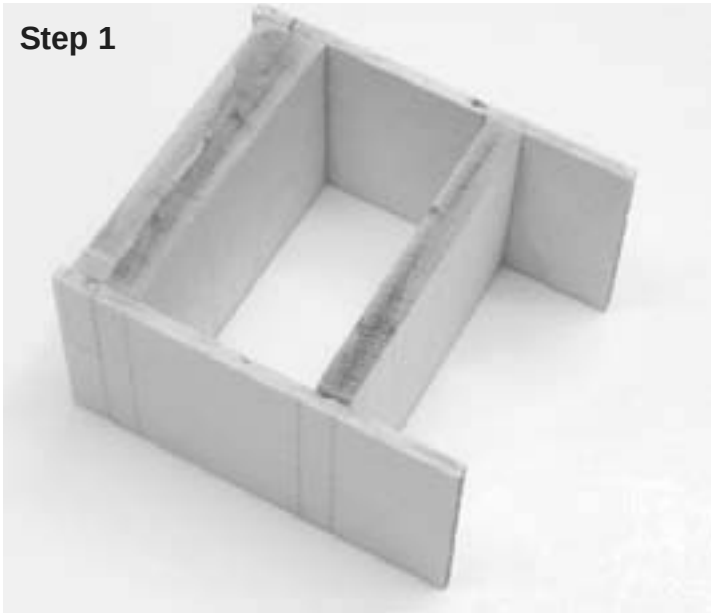
**Building the Ship's Stove…**

The stove has been designed with many small details. It will be partially covered by the deck planking above it. Even so, this is a fun little mini-kit to build. You might decide to omit some of the detail if you like, but take your time as many of the details will add to the beauty of the finished model.

*Step 1* – The initial structure of the stove is made using five laser cut pieces. Examine the plans for the details before you start gluing them together.





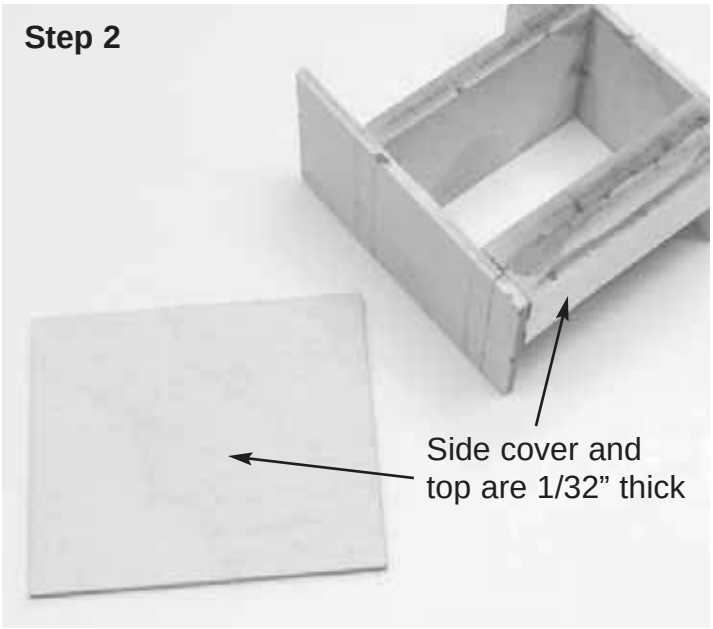



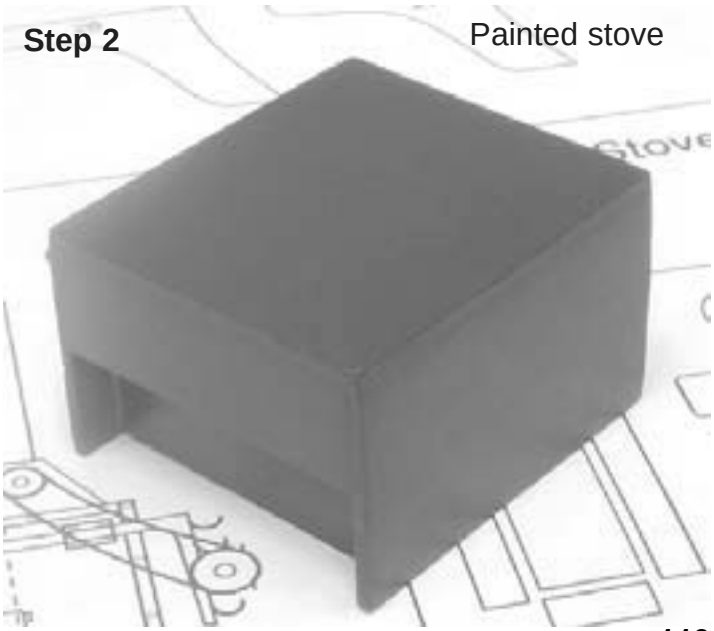

The two sides of the stove are laser cut (1/32” thick) with etched reference lines. The three reaming pieces are 3/32” thick. Of these, the two larger pieces create the initial shape and firm up the entire structure. Position them using the etched lines on each side of the stove. The last smaller 3/32” thick piece can then be added. See the two photos for step one.

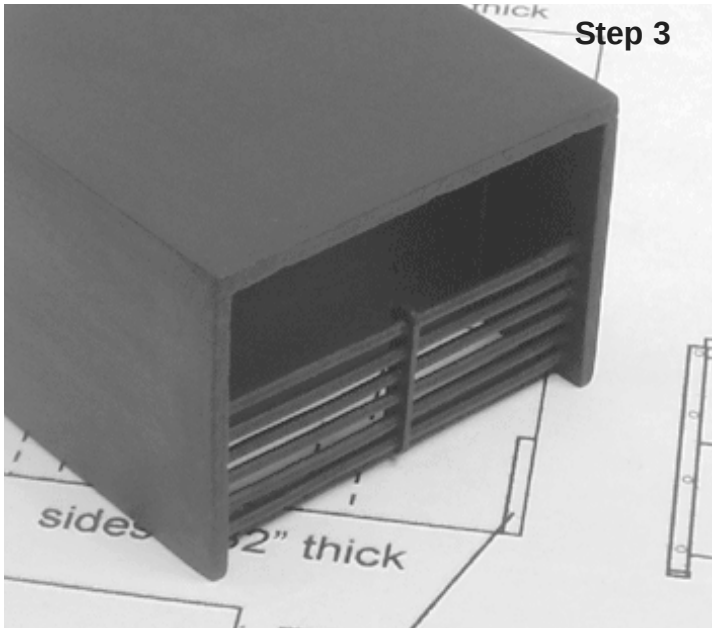
*Step 2* – Add the side cover on the aft side of the stove. This piece is laser cut from 1/32” thick basswood. It essentially covers the smaller 3/32” piece you added in step one. It should be larger though and hang lower on the stove when you set the top edge flush with the sides. See the photo which shows this piece added to the assembly.

To finish off step two, glue the laser cut top in place. This has also been laser cut and is 1/32” thick. Fill in any gaps with wood filler so you can paint the entire assembly. Remember; the stove wasn’t made from wood. It was metal. Take your time sanding the assembly smooth and then paint it black. The wood should be conditioned first if you want a perfectly smooth finish. Otherwise the basswood might appear “fuzzy” after painting. You can seal the wood prior to painting it with some sanding sealer or polyurethane. This will harden the wood grain and sand smooth prior to painting.

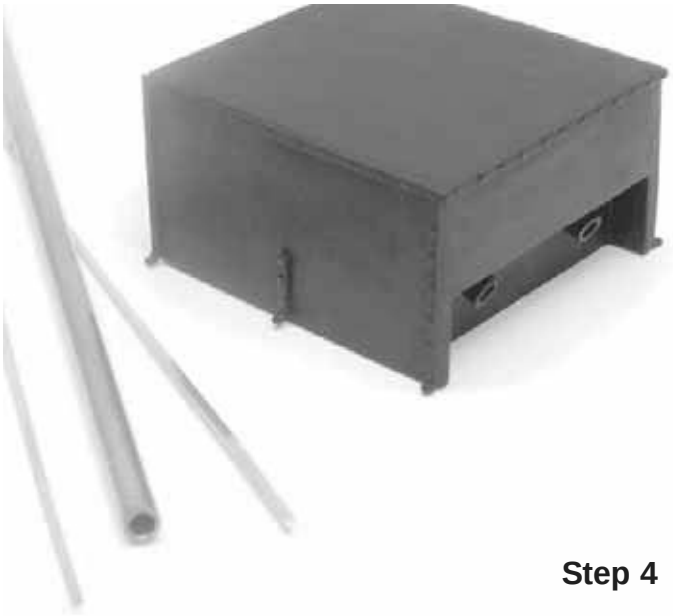
Apply the paint in thin coats sanding lightly between coats for the best finish. Use fine wet/dry sandpaper for this. Upwards of 10 coats






**Step 3**



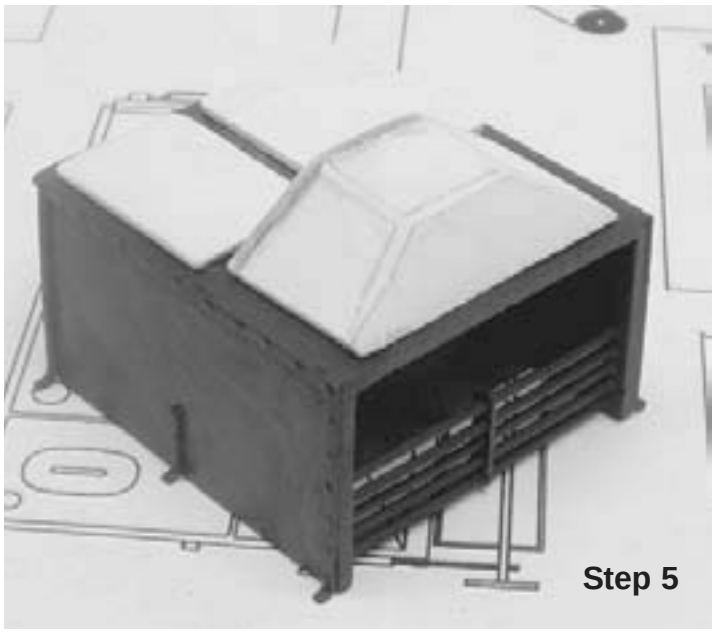
**Step 4**

were applied to the prototype before a satisfactory finish was achieved.

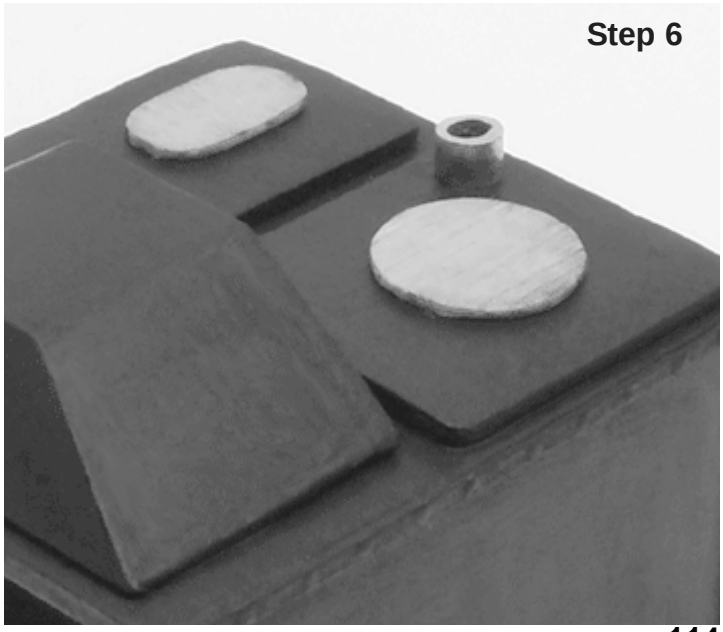
*Step 3* – Add the photo etched grill to the fore side of the stove. Paint it black before you install it. You can also add a strip of 22 gauge wire down the center of the grill (on both sides) to give it some dimension. The grill can be glued just inside the stove cavity. See the photo for step three.

*Step 4* – Apply thin strips of brass along the top edge of the stove. Use the thinnest strips supplied with the kit. Paint them black. You can simulate rivets along these strips using droplets of CA. This was the same method you used to simulate them on the rudder hinges. Then glue additional strips down the sides of the stove (on all four corners). Bend the bottom of these strips to form the legs of the stove before you glue them on. You can see this detail on the plans. Smaller legs are also shown in the center of each side. Paint them black and simulate the rivets on these as well.

There are two drains on the aft side of the stove. Cut a 3/32" diameter brass tube to length for these. Use the same size tube you used for the speaking tube earlier. You can cut them a little longer and then just glue them into pre-drilled holes. Drill the holes into the stove on an angle as shown on the plans. Paint the drains black.



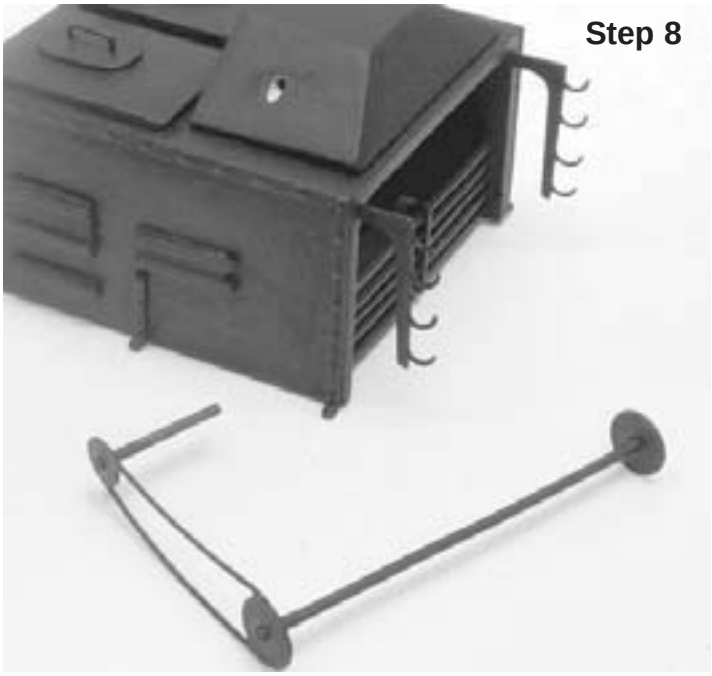
**Step 5**



**Step 6**

**Step 7**

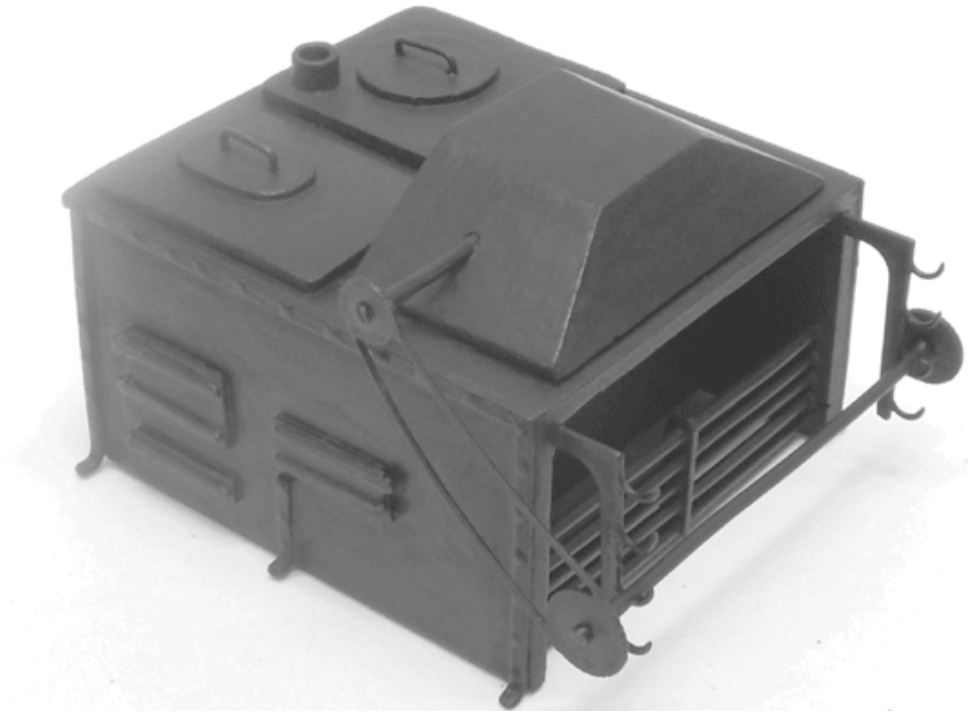
**Step 8**



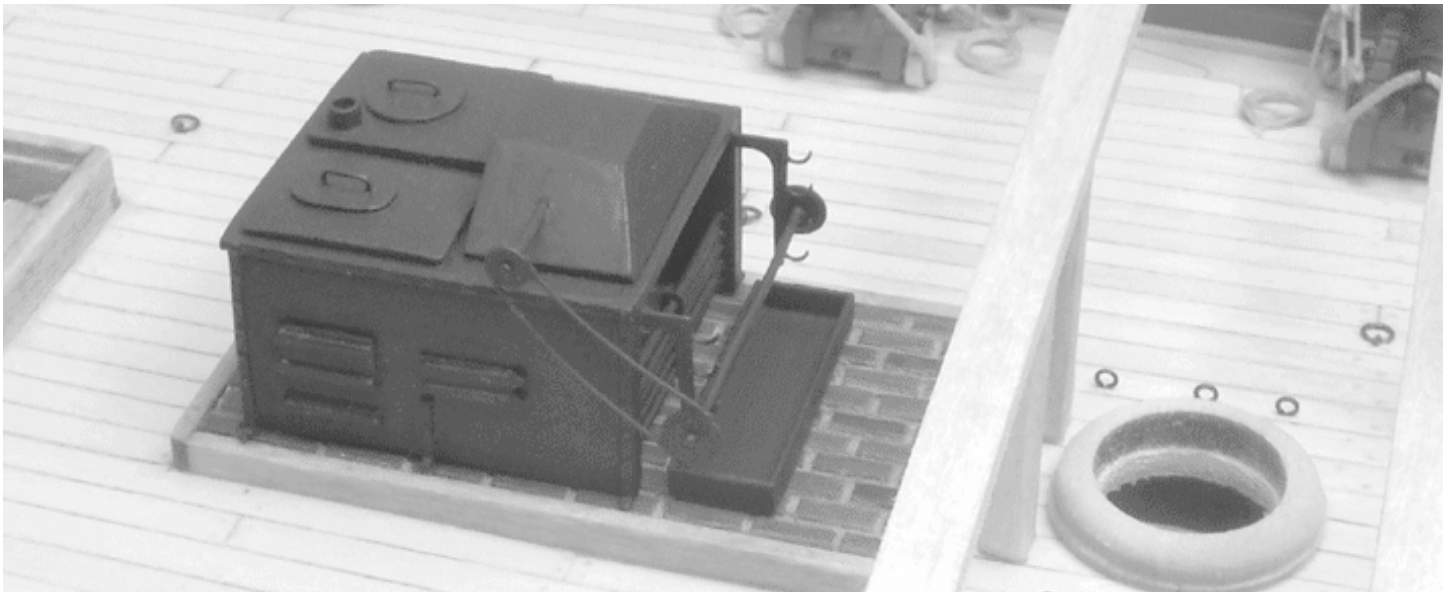
*Step 5* – Assemble the exhaust hood using the 5 laser cut pieces (1/32” thick). This is the pyramid-like structure on the top of the stove. This can be a little tricky so take your time. If you prefer, a solid piece of wood could be used as well. Sand it smooth and condition the wood before you paint it black. Glue it into position when you are finished. The stack for the stove won’t be added at this time. You will add that after you build the coamings on the forecastle deck.

Two additional laser cut pieces should be glued on top of the stove as well. You can see them in the photo for step 5. These are also 1/32” thick. None of these elements was painted so they would be easier to see in the photos. You might prefer to paint them first before you glue them onto the stove.

*Step 6* – Glue the two lids into position. They are laser cut (1/64” thick ply). Use some 28 gauge wire to make the handles for these lids. Examine the photos and plans for their shape. A vent pipe can also be seen on the top of the stove. Use another length of 3/32” diameter



The completed stove is painted and ready to be glued on the brick platform on deck. Note the completed rotisserie.

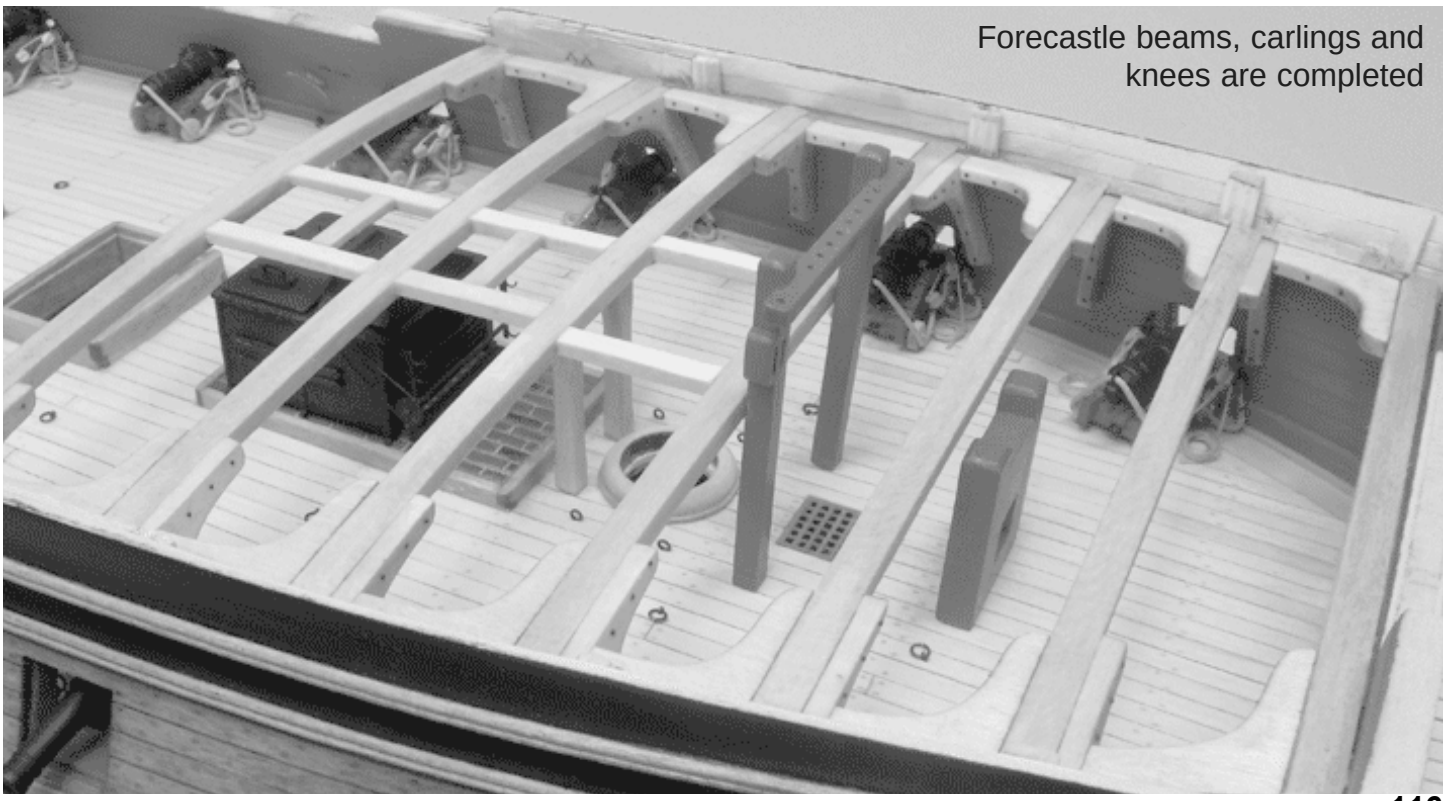


brass tubing for this. Glue it into position and paint it black.

*Step 7* – There are three doors on each side of the stove. They are laser cut (1/64" thick ply). Glue the photo etched hinges to the doors and paint them black. Glue the doors onto the stove when you are done.

*Step 8* – To assemble the rotisserie, first glue the photo etched brackets to the stove. They are glued to the inside edge of the stove (right up against the top). See the photo for step 8 which shows these brackets in position and painted black.

The sprockets for the rotisserie are also photo etched. One side shows two sprockets with a chain. The other side consists of just one sprocket. Cut two pieces of 22 gauge wire to length using the plans as a guide. Glue the sprockets on each end. You can see that the shorter length of wire is glued into the smaller sprocket. Your finished assembly should look like the one in the photo. You can test fit the rotisserie in position. Place it on the bracket and let the



Forecastle beams, carlings and knees are completed

Cap rail for the quarter deck and stern are completed and painted black.

smaller length of wire rest on the hood. This will give you the position on the hood to drill a small hole. You can see that small hole in the photo for step 8. The smaller length of wire needs to be inserted into this hole. Once glued into position, touch up any paint that may have been scratched off. This completes the construction for the stove.

Two photos are provided that show the stove completed. One shows the stove placed on top of the brick platform. In that same photo, you will also see the drip pan. This is rather simple to make. Assemble the five laser cut pieces (1/64" thick ply). Paint it black when you're done.

Add the remaining deck beams for the forecastle along with the hanging knees, lodging knees and carlings.

**Planking the Bulwarks and Cap Rail…**

Before moving on to the next chapter, you can plank what remains of the bulwarks. Use 1/8" x 1/16" strips. Cut the planking flush around the gun ports on the quarterdeck. Paint the bulwarks red when you are finished.

**Quarter Deck Cap Rail…**

The cap rail molding will be installed in two pieces on the port and starboard sides of the quarterdeck. The first piece will be a 3/16" x 1/16" strip that is glued on top of the bulwarks. This strip should be sanded flush with the inboard and outboard hull planking. Then create a double-beaded molding strip using the scraper included with the kit. Use a 1/16" x 1/16" strip for this fancy molding. Glue the molding strip to the outside edge of the cap rail. This will create an "overhang" on the outboard side of the cap rail. You can also put a piece of this beaded molding on the fore side of the break in the quarter deck rail. Sand the top smooth and fill any cracks between these two cap rail pieces. Then paint it black. Don't forget to paint the underside of the cap rail for the quarterdeck gun port openings. See the photo provided.

**The Stern Cap Rail…**

Once the cap rail is completed for both sides of the quarter deck, another length of cap rail must be placed on top of the stern frames. This section will be a little trickier but it isn't overly difficult. The stern frames were designed slightly longer than you will need them to be. To establish the correct height for each stern frame, take a strip of wood (1/8" x 1/16") and bend it against the inside of the stern frames. Cut the strip longer than you need it. It should be positioned so the ends are even/flush with the quarterdeck cap rails. Flex the wood strip so it creates a gentle curve as shown on the plans. If you position


the ends of the strip against the inboard sides of the quarter deck cap rail, it should stay there. The spring action will force it tightly in place. If not, you could tape it or temporarily peg it in position. The whole point is to continually tweak the length of this strip until it flexes, giving you the proper curve you need. Examine the curve from many angles to see if it looks appropriate and matches the plans.

When you are satisfied with the curve the strip established, you can mark the height of each stern frame. Draw a reference line on each stern frame. Then sand each stern frame to the proper height.

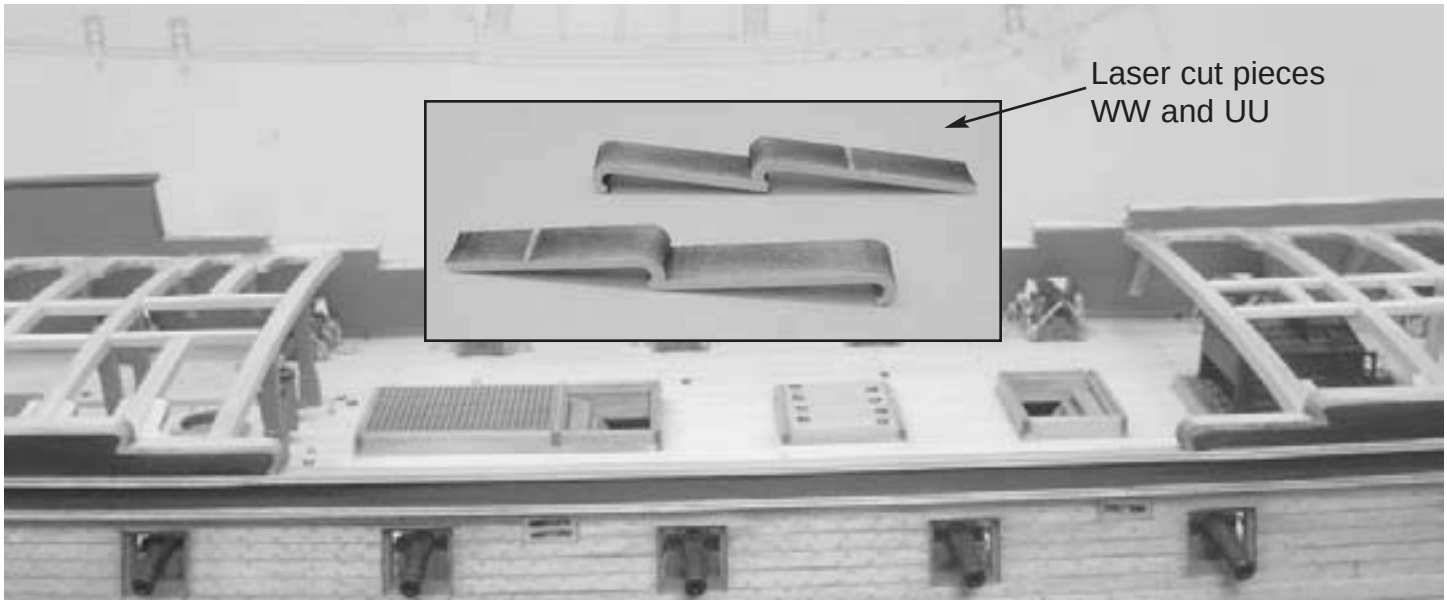
The actual strip you will be using for the cap rail needs to be extra wide. A ¼" x 1/16" strip was used on the prototype. As you can see, the stern of the model has a convex curve to it. Rather than try to flex your strip in two directions, it is easier to just use a wider strip. It should have a slight overhang inboard and outboard for the time being. Once the strip is glued into position, you need to sand the inboard and outboard edges to create that convex curve. There should be no overhang inboard or outboard when you are finished. Keep the width of the cap rail consistent as you shape the curve along its length.

Once the strip is shaped, add a strip of double beaded molding to the outboard edge so it matches the rail along the quarter deck. You may have to tweak or blend the "beaded-profile" from the stern onto the quarter deck molding. Use a needle file for this and round off the corner while creating the beaded profile there. You can see a photo of the completed cap rail for the stern of the prototype model.

**The Waist Cap Rail and Volutes…**

Along the waist you can see the decorative scrollwork or 'volutes'. They will be added after a little preparation. Before they can be added, glue a 3/16" x 1/16" strip down the waist. It should be sanded flush inboard and outboard just like the quarter deck cap rail. Then add the decorative beaded strip to the outboard side. Use care when trying to match the beaded profile to the molding already on the hull. It will be very important that this molding have a consistent smooth run from bow to stern. The seam between the molding sections should not be too noticeable. Take your time matching up the different sections of the molding. Examine the photo provided that shows the cap rail completed along the waist.

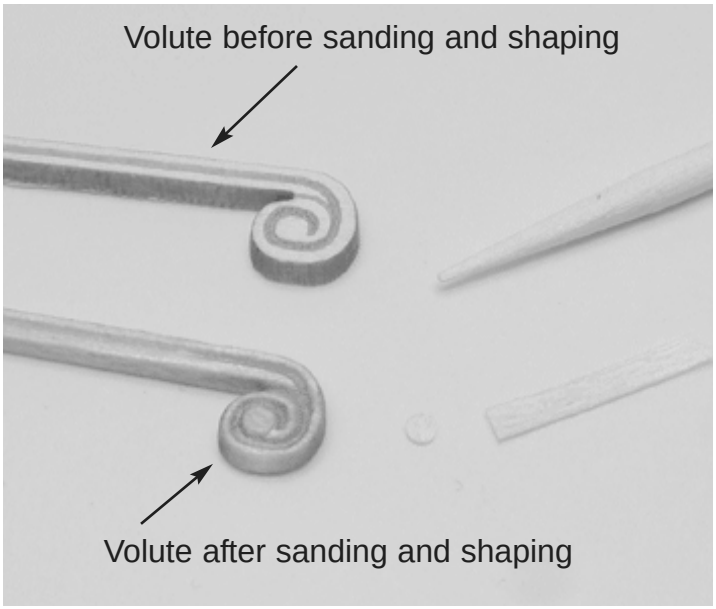
The initial hance/cap rail pieces that fit over the stepped portion of the waist have been laser cut

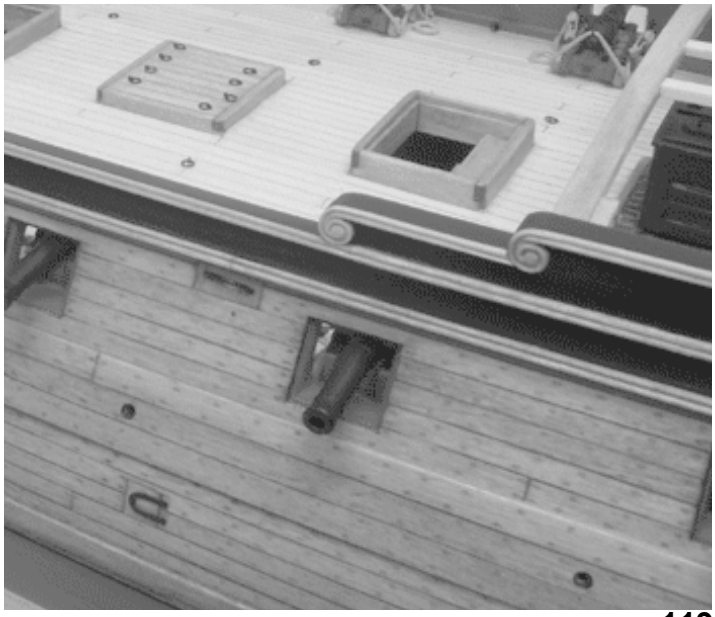



for you. They should be a pretty close match to the shape you will need. They are the pieces labeled as WW and UU. They are also shown in that same photo. Glue these into position and sand them flush inboard and outboard.

Now its time to shape the volutes. They have also been laser cut for you and are 1/16" thick. Several extra volutes are provided as they will require some shaping. If you are not satisfied with how they look, simply prepare another one. Sand the laser burn from the edges of the volutes. Each one has a long molding section that will be matched to the molding already on the hull. Sand the laser burn until the molding is slightly wider than the beaded molding already on the hull. Then use the scraper to match the profile to the molding already on the hull. Do not use the scraper on the volute itself. Only scrape the tail section or strip of molding.

You will notice that a laser etched line was made to help aid you in creating the correct profile for the molding. The etched line is carried through the volute as well. It has already created a slight profile although the etched line is not very deep. It will be difficult to run the scraper around the volute like you did for the molding. Instead, use the tip of a round toothpick. Simply indent the laser etched line with the toothpick. The bass-wood is soft and you won't have to apply too much pressure. Do this in several passes rather than try to shape it by applying to much pressure in one pass. This will create the finished profile



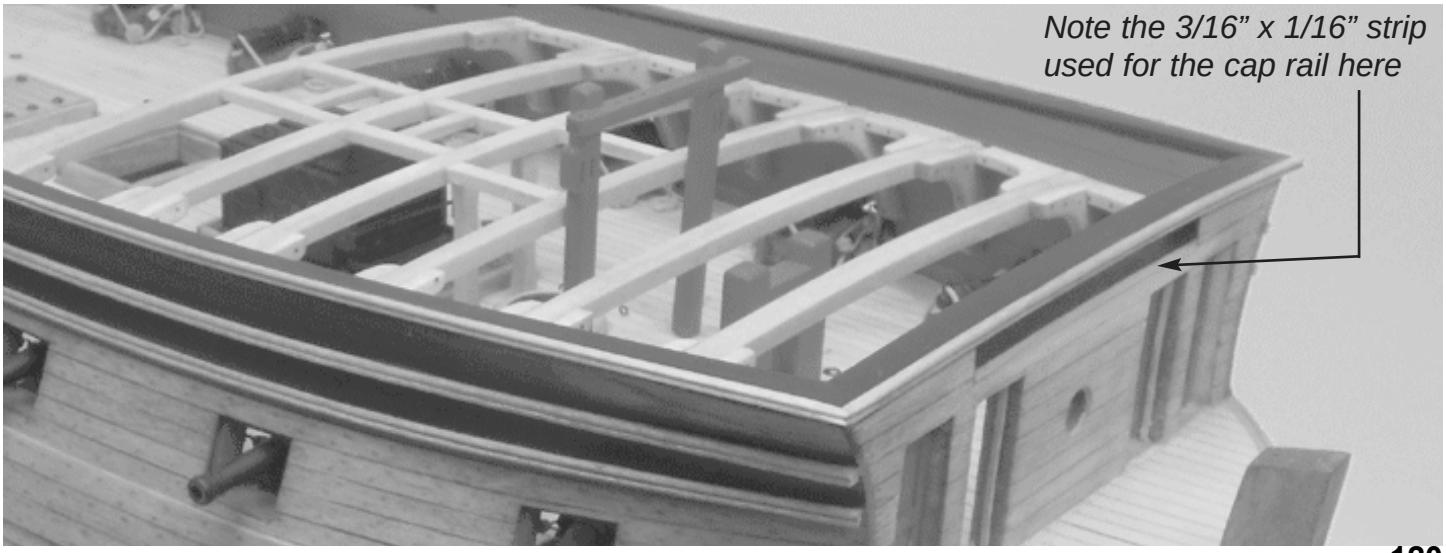
you need. You won't be able to remove all of the laser char from the etched line. That's OK. Once stained, it will actually add greater dimension to the carving. A photo provided shows a close-up of the volutes. The top shows a volute before being scraped and shaped with the toothpick. The bottom piece shows the completed results. To add extra dimension, you could also add a small round shaving on the 'button' of the volute. Just shave a slice of wood from a 1/16" x 1/8" strip. It should be fairly thin. Create some round discs from this strip as shown in the same photo. Then glue them on top of the button of each volute.

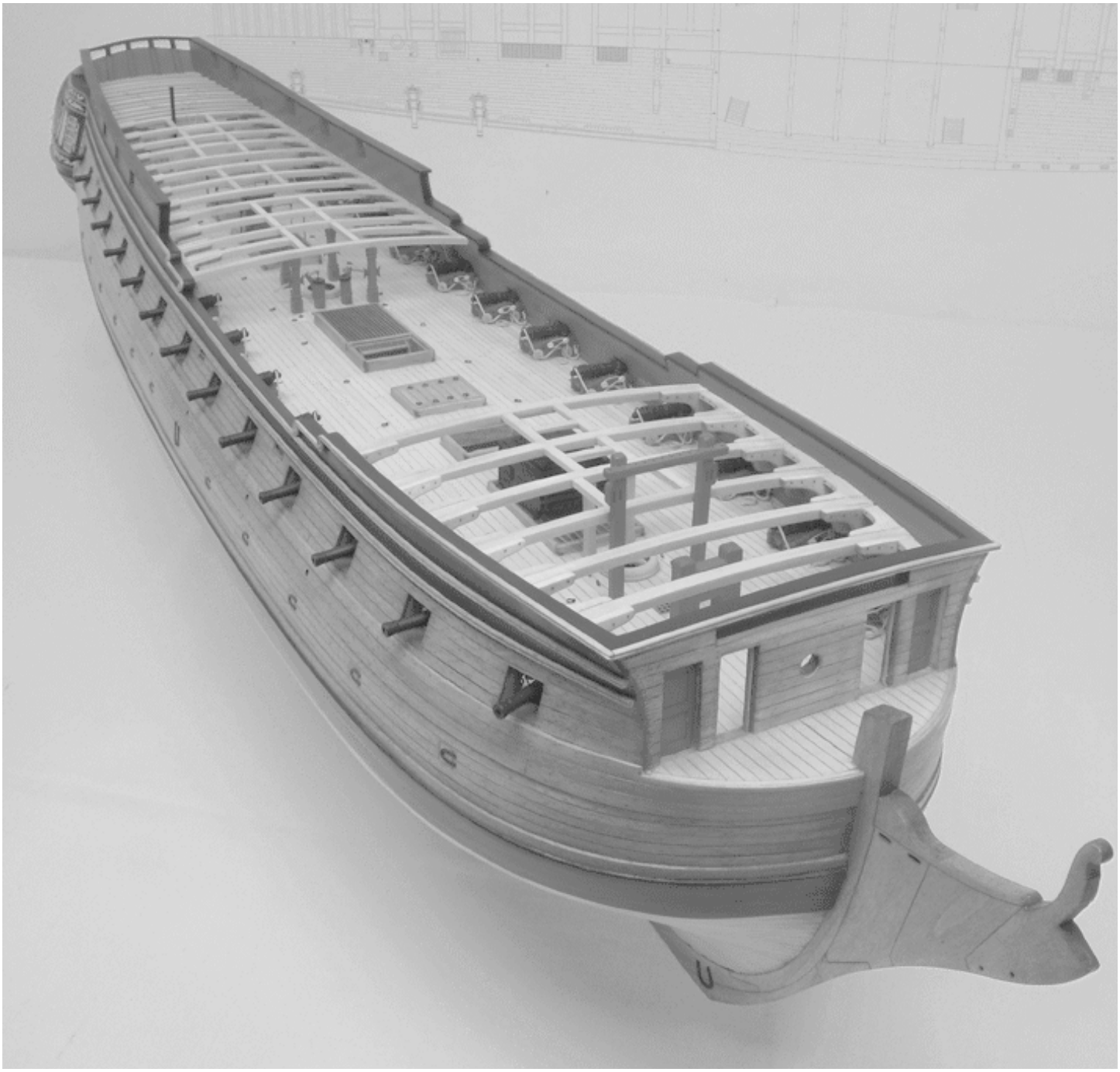
NOTE: The laser cut volutes were cut with a lot of extra meat on them. They are wider than you will need and should be sanded to fit your unique model. Note in that close up photo how much of the outside edges of the volute were sanded as compared to the top image. It is noticeably smaller after it was sanded clean of laser burn. After you shape the volutes to fit on the model, glue them into position. Two more photos shows the volutes glued onto the model.

You will also notice in those photos how the molding strip and volutes were left natural. This was a personal preference and you might choose to go with a different color scheme.

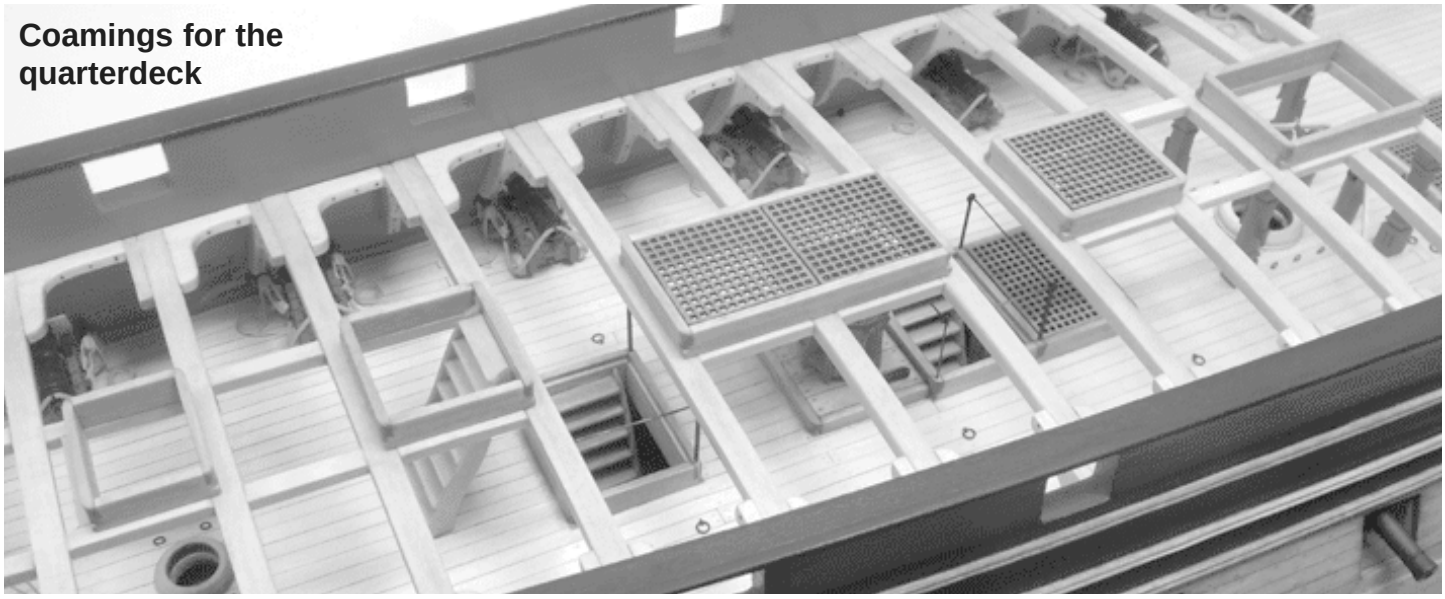
**The Forecastle Cap Rail…**

The forecastle cap rail is no different than the others. Use a 3/16" x 1/16" strip initially. Sand it





flush inboard and outboard. Then add the double-beaded strip to the outboard edges. The only additional thing you should do before starting is add a 3/16” x 1/16” strip to the lower break of the beakhead. This is the open area you see in the photo provided. Sand it flush inboard and outboard. But don’t add the decorative molding strip to the outboard side yet. That molding strip will be added after you build the round houses. Just paint the top black and the inboard edge. It is easier to add this piece before you put the other cap rail sections on the model that will close up the opening. Don’t forget to paint the underside of the cap rail in that opening at the bow. When attaching the outboard beaded molding to the cap rail, take your time matching the profile to the volute pieces. The molding should have a smooth, continuous run. Make the seam as invisible as possible.



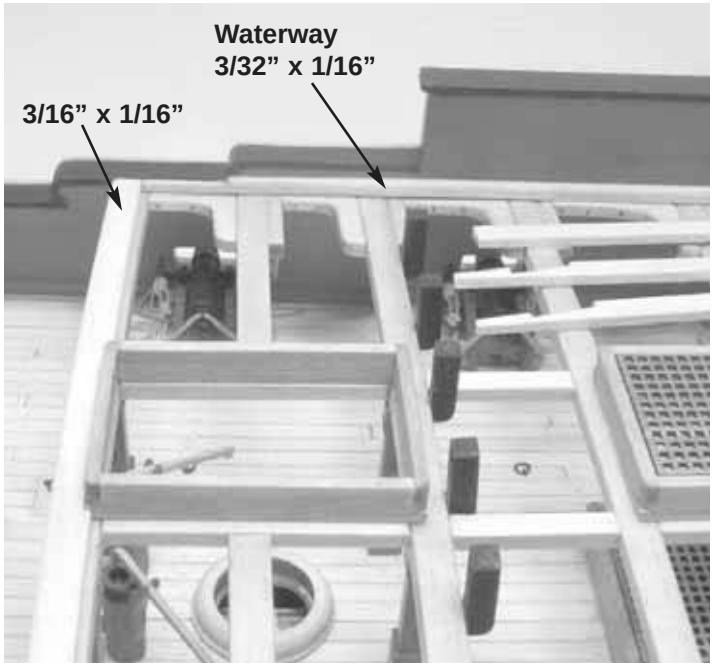
Coamings for the quarterdeck

## Chapter Fourteen

# The Quarterdeck planking and fittings

### Quarter deck Coamings and Companionways…

The coamings and companionways on the quarterdeck should be completed first so you can plank around them later. They are constructed just like those on the gun deck. There is no need to repeat the construction methods over again as they are the same. There are a few things worth noting however:




- The width of the basswood strips (or height of the coamings) is slightly less than those for the gun deck. Use 3/16" x 1/16" strips for them.

- Create the lining around the interior of each coaming except for the two openings over the main and mizzen masts.

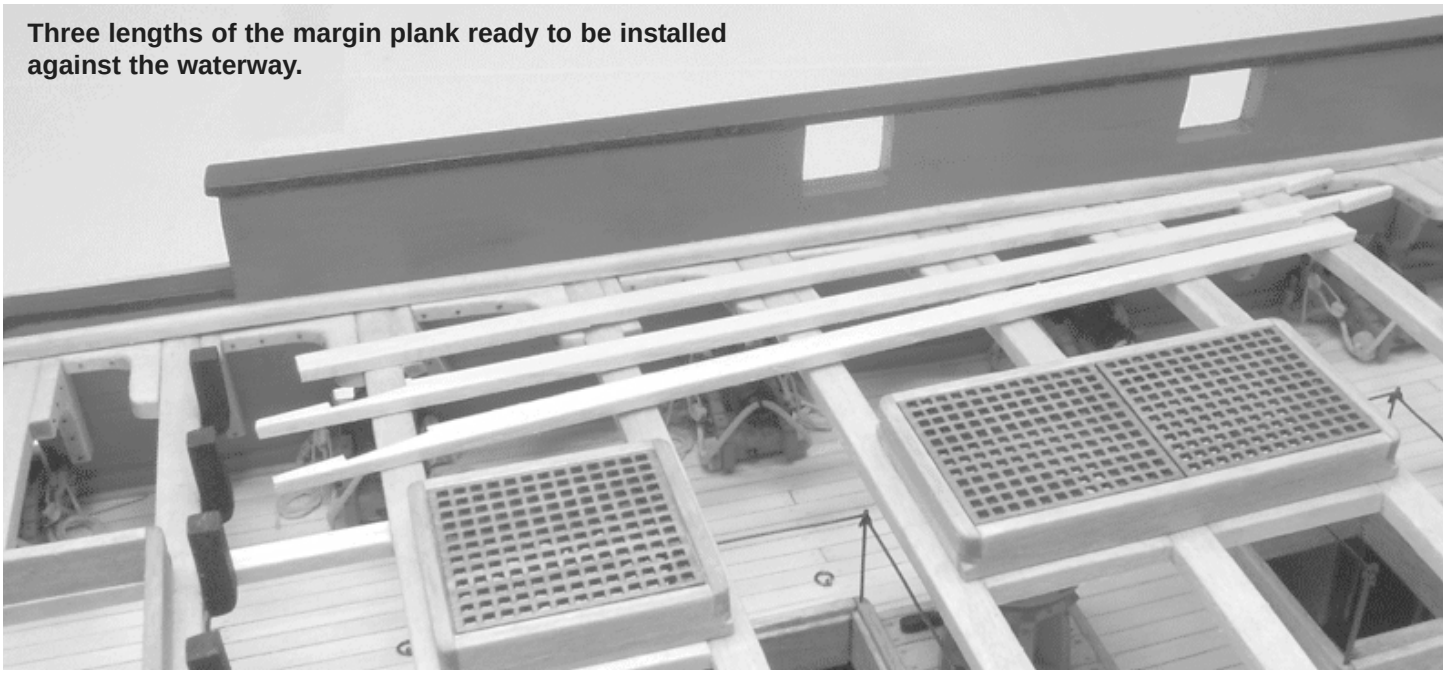
- Create the ladder for the one companionway as shown on the plans.

- Glue all of the gratings into their respective coamings to finish off this step.

### The Quarterdeck Waterway and Margin planks…

In preparation for planking, first install a 3/16" x 1/16" strip along the first quarterdeck beam. You will need to notch this beam to fit around the coaming for the main mast. The fore side of this strip should be rounded and will hang over the edge of the deck beam. It should hang over by 1/16". This will create a rabbet on the aft side of the beam which will be used to support the deck planking. See the photo provided.

In that same photo, you will notice that the waterway has been installed. This will be done differently than the waterway on the gun deck. This time, the waterway is added before the quarterdeck is planked. It is made using a 3/32" x 1/16" strip. Round off one of the top edges. After the



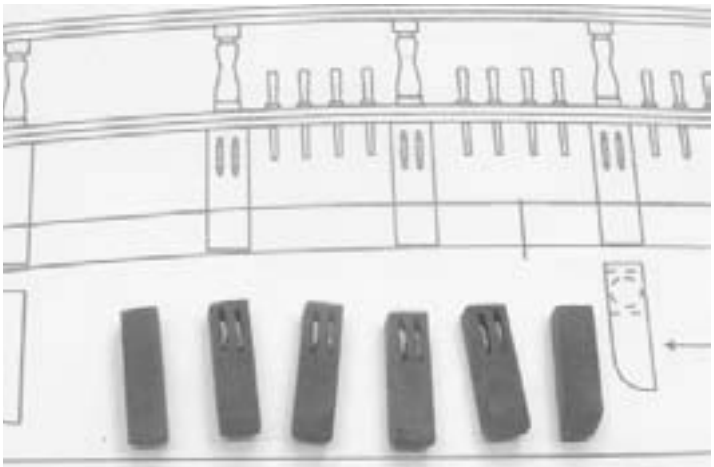
**Three lengths of the margin plank ready to be installed against the waterway.**

margin plank (1/16” thick) sits flush against it, the waterway strip should stand 1/32” higher. To achieve this, the waterway strip is set against the bulwarks so it sits 3/32” high. It can be added in one piece or several shorter lengths. The seams won’t be very noticeable after it is completed. The waterway is left natural. Place the waterway on both sides of the quarterdeck.

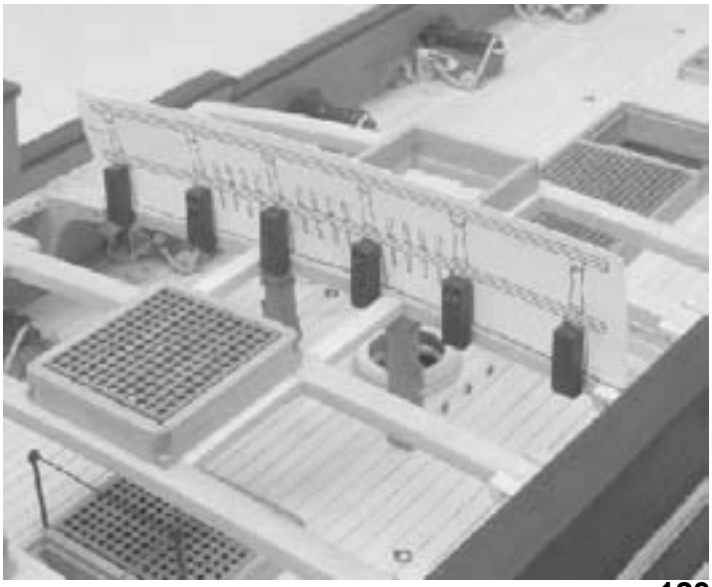
The margin plank will butt against the waterway. There are three lengths of 1/16” thick margin planks. They are joined with scarph joints. All three pieces are laser cut for you. A photo is provided that shows the 3 laser cut margin planks before installing them. Test fit the scarph joints to see if they need any adjustments so they fit together well. On the prototype, the margin planks were not added on the port side of the quarterdeck. The margin planks would have covered up too much of the deck framing and knee details. Only the starboard side of the quarter deck will be planked to allow maximum viewing of the gun deck detail below. You may prefer a different configuration, and that decision is entirely up to you.

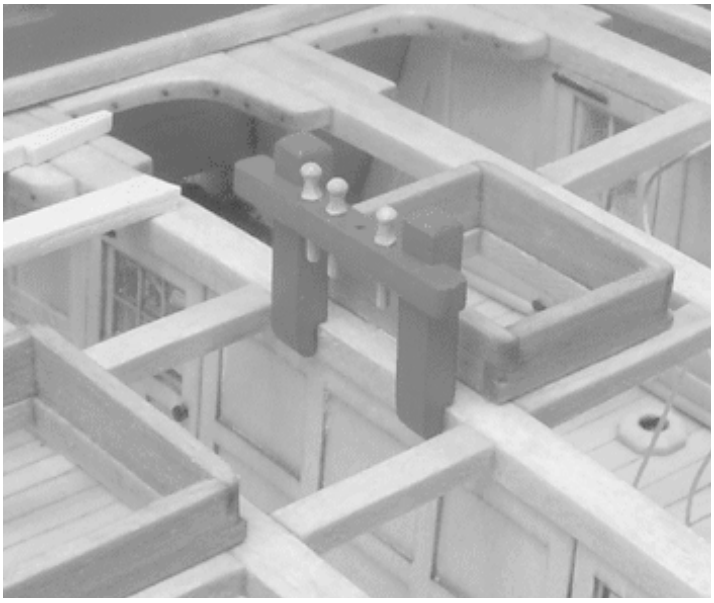
**The Main Quarterdeck and Mizzen Rails…**

The lower uprights for the main rail will be secured to the aft side of a deck beam. For this reason, they must be glued into position before the deck is planked. The entire rail does not have to be built at this time. You only need to prepare the lower uprights and glue them into



**Uprights for the main rail with the sheaves glued into position. Note the rounded side of the bottom of each upright shown on the plans.**





**Quarter deck is planked. Note how the planking is handled against the stern.**

position. Building the entire rail will make it more difficult to plank the deck, as it will limit the space you need to work in that area.

The lower uprights of this rail are laser cut for you. The sheave slots have been created for you as well. Simply glue the laser cut sheaves into these slots after you paint the uprights black. The sheaves are 1/64" thick. You will have to round off the bottom of each upright as shown on the plans and in the photos. Sand them to shape as shown.

To help you position the uprights correctly against the deck beam, you might consider using a photocopy of the rail. A photo provided shows the photocopy taped to the deck beam. This will make it easier for you to position the uprights at the correct distance apart along with the proper angles and heights in relation to one another. View them from various angles to ensure that the rail will sit on top of the uprights properly.

**The Mizzen Rail…**

The mizzen rail is also laser cut for you. The uprights are 1/8" thick and the rail is 3/32" thick. You may choose to assemble the rail in its entirety before gluing it into position against the fore side of the deck beam. The rail was painted red on the prototype but you may opt for a different approach. The belaying pins were also added and painted before the rail was glued into position.

**Planking the Quarterdeck…**

Plank the quarterdeck with 1/8" x 1/16" strips. As mentioned earlier, the prototype will be planked on the starboard side only. Only half of the deck will be planked, leaving the deck beams and knees visible on the other side. The prototype was planked from the center line towards the margin plank. A pencil was used to simulate the caulking between planks. It was finished to match the color used on the gun deck planking below it.

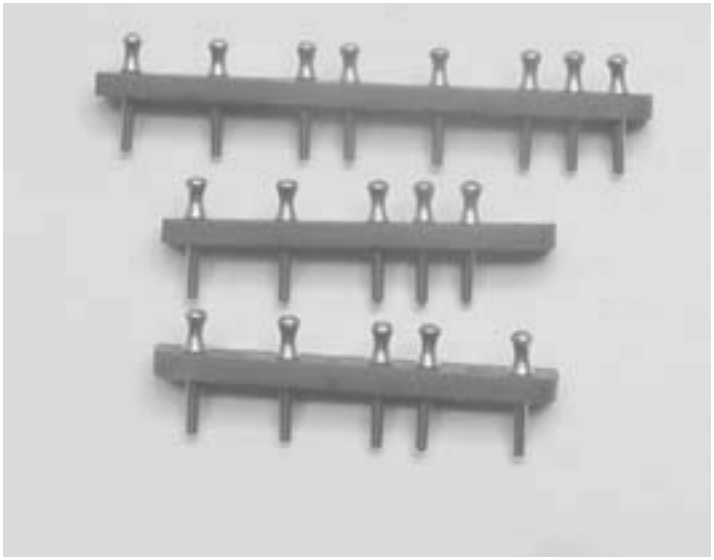
Note how the planking was completed at the stern to create a clean appearance, yet leave the great cabin visible. Short lengths of planks cover the last deck beam and are cut flush against the transom. You can also see how planks were notched to accommodate the speaking tube. The second base for the tube was slid up to rest on top of the planking afterwards. See the photos provided.

The deck planking should be "nibbed" or scarphed along the margin plank. Choose the same method that was used to plank the gun deck.

**Detailing the Quarterdeck Bulwarks…**

There are several pin rails, eyebolts and cleats positioned along both sides of the quarterdeck bulwarks. Examine the plans and install them. The pin rails on the prototype were painted red. The belaying pins were added and painted before gluing them into position along the bulwarks. They were painted to look like wood. Carefully line up the pin rails consistently port to starboard.

The cleats shown near the stern were also painted red. Since the quarterdeck is not planked on the port side, the 6 pounder cannon will only be displayed on the starboard side. Install all of the eyebolts for the cannon tackles and breech lines. If you are displaying all of the guns, remember not to install the eyebolts for the breech lines. These will be attached to the breech lines in advance just like they were for the gun deck cannon. You can drill the holes for them now in



preparation for adding the cannon later in the project.

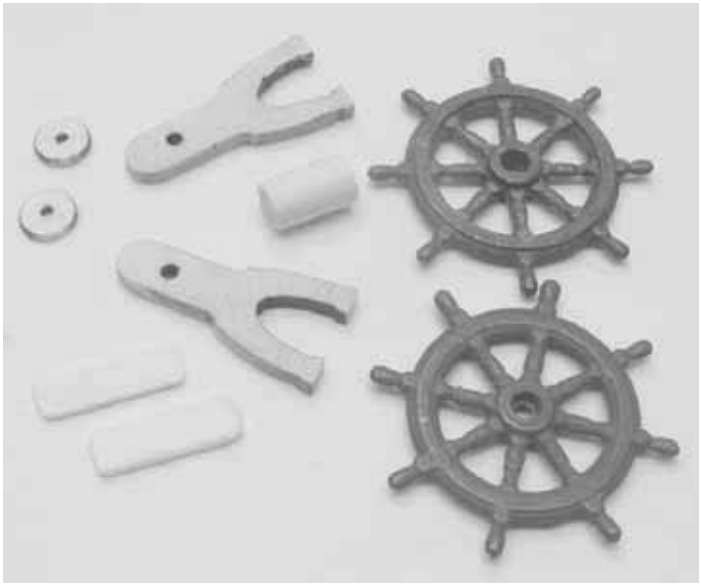
**The Ship's Wheel…**

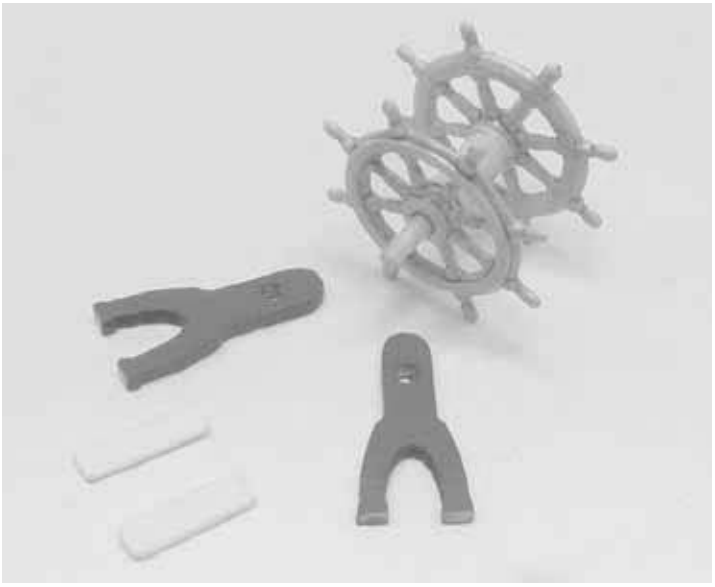
The ship's wheel is provided as a casting. There are two of them. Clean up any flashing on both of them and paint them to look like wood. The stand for the wheels is made up of several laser cut parts. A photo is provided that shows them all before assembly.

*Step one* – the drum is made by cutting a 5/32" dowel to length using the plans as a guide. Then attach the two circular end pieces. They are laser cut (1/32" thick). These discs have a laser cut hole in them as well. You may have to enlarge them a bit. Insert a 1/16" dowel into this hole on both sides of the drum. It doesn't have to go straight through the drum. Cut two lengths (one for each side) and leave them extra long initially.

*Step two* – Slide the wheels into position on the drum. See the photo provided. The two sides of the stand can be painted red. Then glue them on top of their bases. The bases are shaped using 1/8" x 1/32" strips cut to length. Just round of the four corners and glue each side on top of them. Slide these onto the wheel assembly and glue them into position. Cut any excess from the 1/16" dowel that remains. They should stand proud of each side by about 1/32".

Position the completed wheel on deck. Don't





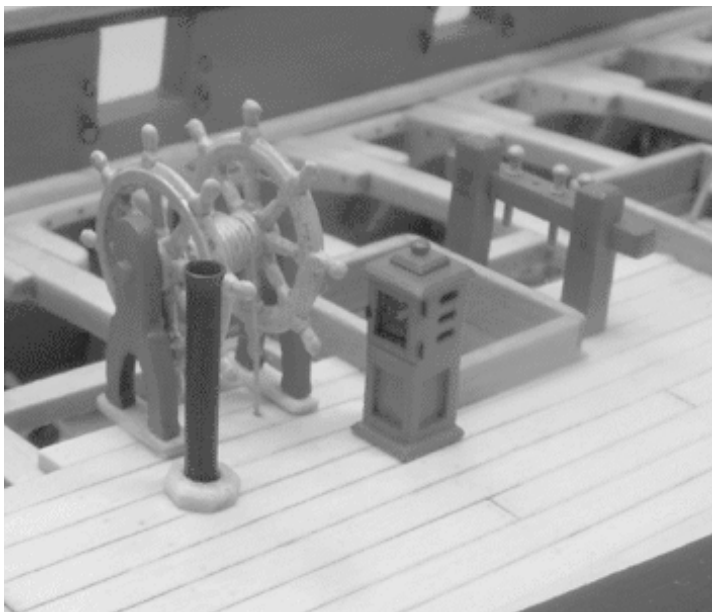
glue it into place yet. Just mark the location. If you only planked the starboard side like the prototype, you must mark the location in order to drill a hole through the deck. This hole will be used to bring the rigging up through it and around the wheel's drum. Note the orientation of the hole on the plans. Only one hole is needed for the starboard side. The rigging line on the port side will clear all of the planking.

Bring each rigging line up to the drum and wrap it around the drum four times. The port side will be wrapped from the stern towards the bow. The starboard rigging line runs in the opposite direction along the drum. Both lines come up through the deck and are taken around the top of the drum. To simulate that this is actually one length of rope, the ends should terminate under the center of the drum. Glue the ends firmly into position before cutting off the excess rigging. Both lines should be wrapped so they meet in the center under the drum. Do what you can to tuck the ends up against the drum to hide the seam. It should not be visible.

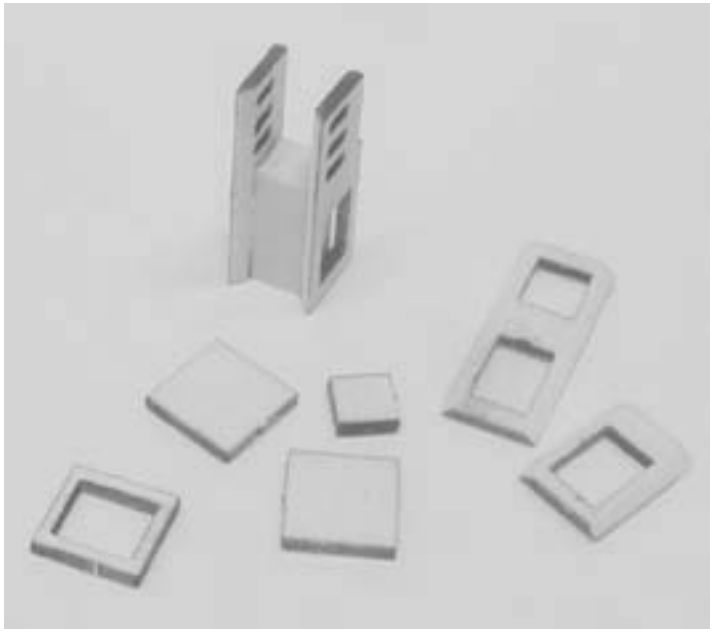
See the photo provided that shows the wheel rigged and glued into position. Note how the wheel hangs over the deck planking on the port side. The completed binnacles are also shown in that photo.

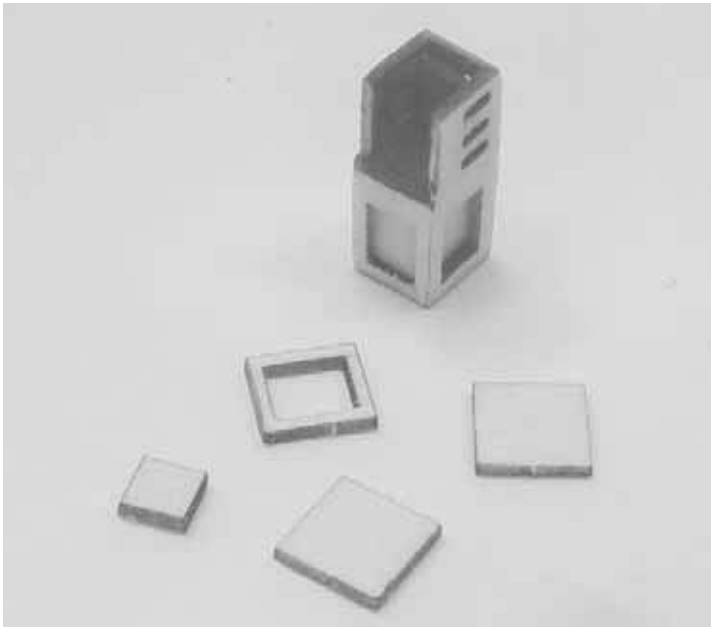
**Building the Binnacles…**

There are two binnacles on the Confederacy. Both were painted red on the prototype model. They are made using the laser cut pieces sup-



*Completed Binnacles....*

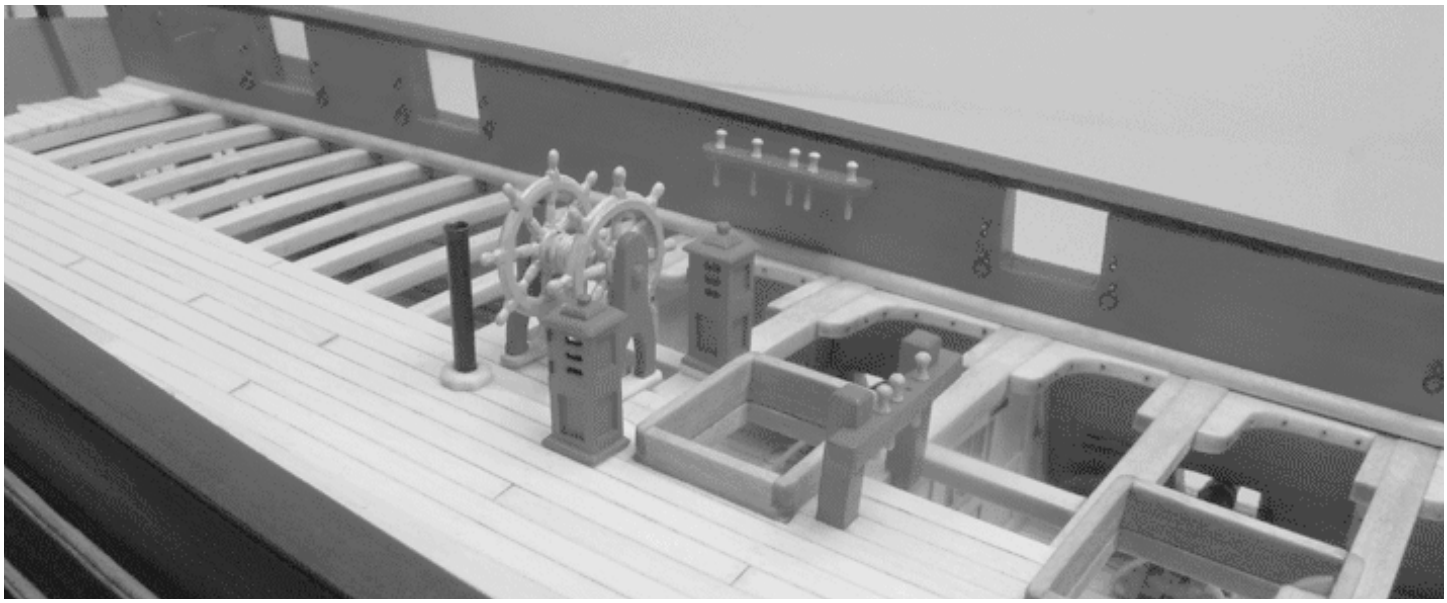




plied. These pieces are quite tiny, so be careful not to lose them after you remove them from the laser cut sheet. The laser cut sides will be glued around a 1/8" x 1/8" strip. Cut the strip to length using the plans as a guide.

*Step one* – The four sides of each binnacle are 1/32" thick. The corners should be mitered for the best results. It is best to use a sanding stick to bevel the edges on each corner. Examine the first photo and you will see how the corners were beveled before the sides were glued around the 1/8" x 1/8" strip. Glue the two sides with the vent holes into position as shown in that photo. Note that the bottoms of these pieces are angled. Make sure that the angles are consistent on both sides. The quarter deck is sloped and in order for the binnacles to stand properly vertical, the bottom was angled to compensate for it.

*Step two* – Then glue the front and back panels into position. You can see how the open areas on each side simulate raised panels after they are glued into position. The top panel on the "fore" side of each binnacle will still be open. You must close it up using the small laser cut square provided. Sand it to fit against the opening from the inside. This will make the top and bottom panels match on the fore side of the binnacle. The exterior layers will be a little thick. You should carefully sand them down thinner, just like you did for the beakhead doors and bulkheads. This will make the raised panels look



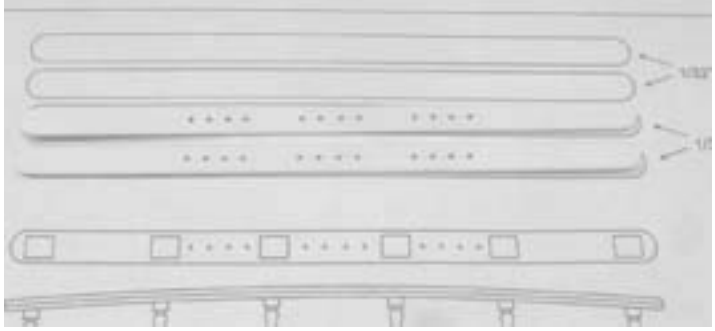
more to scale. In the second photo provided, the sides have not been thinned down yet.

*Step three* – Glue the binnacle door into position. Don't sit it on top of the lower panel. Leave a small gap between the lower panel and the door. See the photo that shows the completed binnacle for this detail. Paint the interior of the binnacle black. Once the paint dries, glue a small square of acetate on the inside of the binnacle door. This will simulate the glass panel on the cabinet door.

*Step four* – Glue the binnacle on top of its laser cut base. Then glue the top on as well. Both pieces are the same size. Round off the edges first before you glue them on. One smaller laser cut square is glued on top to finish it off. The edges of this piece were also beveled to add some detail. Lastly, the head of a brass nail was glued on top. Snip the heads off the little nails supplied in the kit. Glue them into position. A small bead can be used as well. It's entirely up to you.

*Step five* – Paint the binnacle red. A small (really tiny) length of 28 gauge wire can be used to simulate the hinges for the cabinet door. Another tiny length can be inserted into a pre-drilled hole to simulate the door handle. Just let it stand proud of the door's surface a little bit. They should be painted black. Glue the binnacles on deck when you are done. Note: in order to make both binnacles the same height on deck, you must glue some 1/16" thick planking strips to the bottom of one of them. If you only planked one half of the quarter deck, this extra planking is need to even them out. On the prototype, a small square of planking was made that was 1/32" larger than the binnacle's base. Then it was glued on top of the deck beam so it matched the height of the binnacle on the starboard side.

**Two 1/32" thick layers for the main rail**

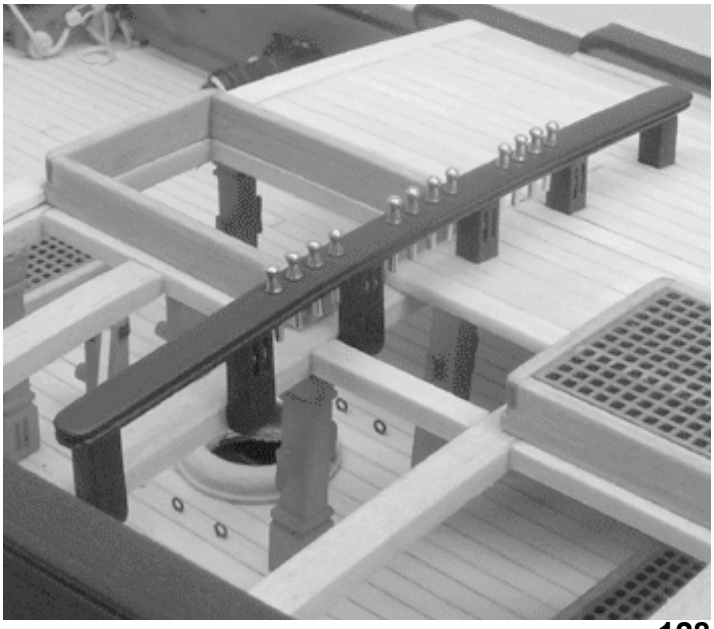


**Finishing up the Main Quarterdeck Rail…**

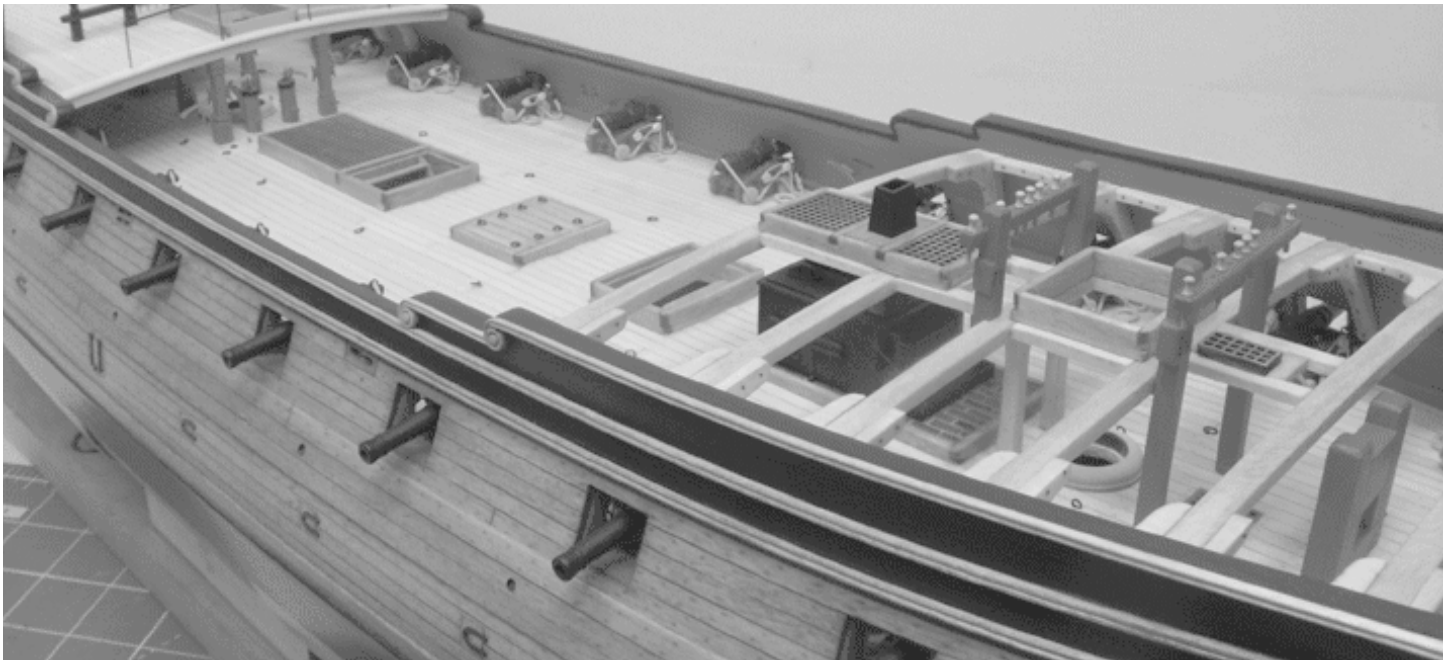
The horizontal rail has been laser cut for you. There are two layers that are 1/32" thick. Round off the edges for both the top and the bottom layers. This will create a nice double beaded profile when the layers are glued together. Paint the rail black and glue it on top of the lower uprights. See the pictures provided. Then install the belaying pins and paint them to look like wood.

There are six fancy round pilasters supplied with the kit. Paint them black and glue them into position on the top of the rail. Make sure you line them up properly over the lower uprights. Then glue the top rail in position on top of the round pilasters. The top rail can be made in two layers like the lower rail. This is optional. You may prefer a lighter more elegant rail. In this case, only one layer is needed. The edges should be rounded off before you paint it black and glue it into position. A photo is provided that shows the quarterdeck rail completed.

To complete this chapter, add the photo etched stanchions around the quarterdeck companionway. Use 28 gauge black wire to create the



hand rail for it just like you did for those on the gun deck. Another rail is shown along the forward edge of the quarterdeck. Use the same photo etched stanchions for this rail. But instead of using 28 gauge wire; this time you should use the heavier 22 gauge wire. Cut it to length and run it through the eye of each stanchion. Snip off the excess on each side. Place a drop of CA glue on each eye to help keep the wire from shifting.



## Chapter Fifteen

# The Forecastle Deck Planking and Fittings

### Building the Coamings and Gratings…

At this stage of the project, building the coamings and gratings for the forecastle should pose no challenges. Build them the same way as all of the earlier examples you produced. Just examine the plans for the proper measurements. Note in the photo above how the small scuttle under the jeer bits was handled. Only half of the grating was placed on deck. The deck planking is the same thickness and will butt against it.

Before you add the cover boards to the coaming above the stove, you should build and install the galley stack. Four laser cut pieces are provided for you. Glue them together edge-to-edge to form the stack and paint it black. Glue it on top of the stove, centering it in the opening. Then cut some cover boards to close up the coaming around it. 1/8" x 1/16" strips were used to make the cover boards. They should be beveled to fit snug around the galley stack.

### The Fore Jeer Bitts…

This is prepared like the other bitts. It is placed just aft of the fore mast coaming. You will have to notch each upright to sit against the aft side of the deck beam. Paint it red and add the belaying pins. Then glue it into position.

### Starting the Belfry and Rail…

The belfry and the lower uprights for the rail should be installed before you plank the forecastle deck. It should be handled much like the quarterdeck rail. A photo has been provided that shows the elements of the belfry. Many have been laser cut for you.

The lower uprights for the belfry are laser cut with notches in them. These notches will be used for the rail to be installed after the planking is finished. Two layers of 1/32" squares are glued together and added on top of the uprights. Round off the edges of each layer to create the molded profile before you glue them together.

Cut small lengths of 3/32"" x 3/32" strips for the next sections of the uprights. Glue these on top of the previously added sections.

The belfry roof is made up of three laser cut layers. They are quite delicate so don't sand them too much before assembling them. The two wider layers are the top and bottom. The three layers are all slightly different and will only fit together if they are stacked in the right order.

Once they are glued together, it should be strong enough for a more thorough sanding. It should be painted black.

The center bracket is also laser cut for you. Glue a tiny length of 28 gauge wire on each end. Then drill small holes on the inside of each upright for them. It will be easier to glue the bell in position under the bracket before you glue the bracket into position between the two uprights. Paint the casting of the bell to look like brass. The entire belfry should be painted black. Glue it onto the model when you are done. It should be glued on top of the deck beam and against the coaming. See the photos throughout this chapter.

Before you can start planking the deck, the four uprights for the belfry rail should be glued into position as well. They have been laser cut for you and are 3/32" thick. Use a photocopy of the belfry to find the correct locations and angles. See the photo provided.

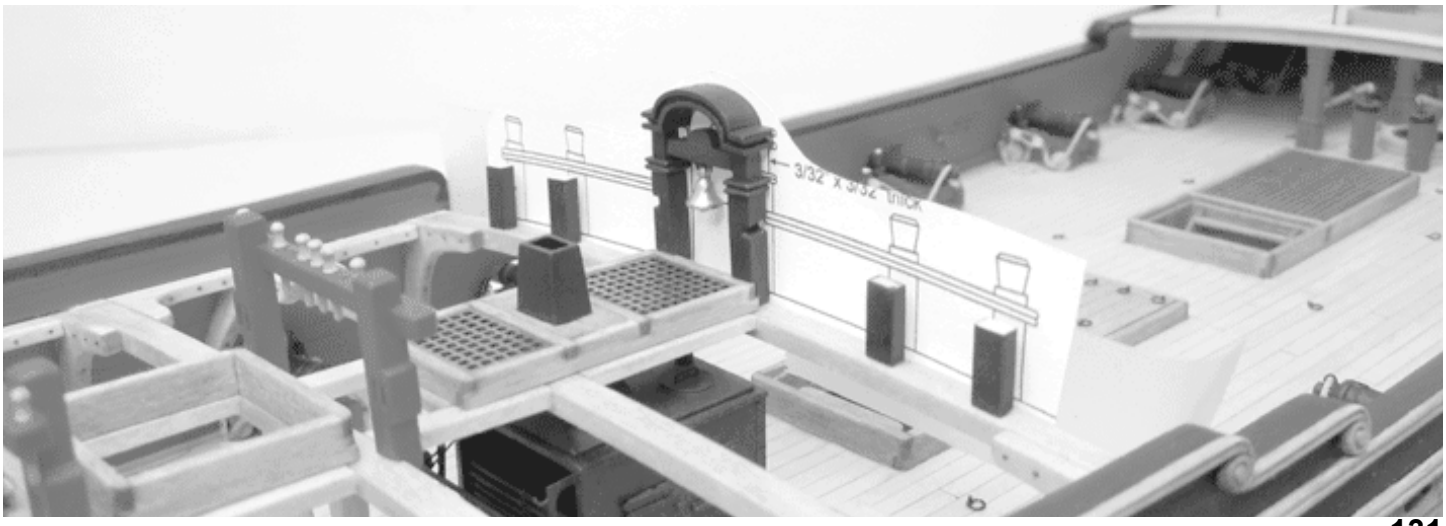
**Planking the Forecastle Deck…**

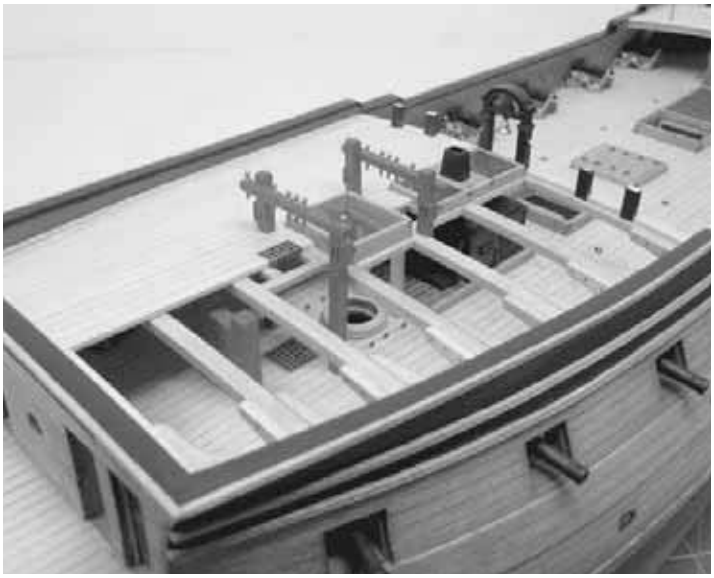
Prepare the forecastle deck for planking just like you did for the quarterdeck. Place a 3/16" x 1/16" strip across the deck beam along the waist. It should hang over the beam just a bit and be rounded off on that edge. This strip will need to be notched out to fit around the belfry, coaming and uprights on top of that beam.

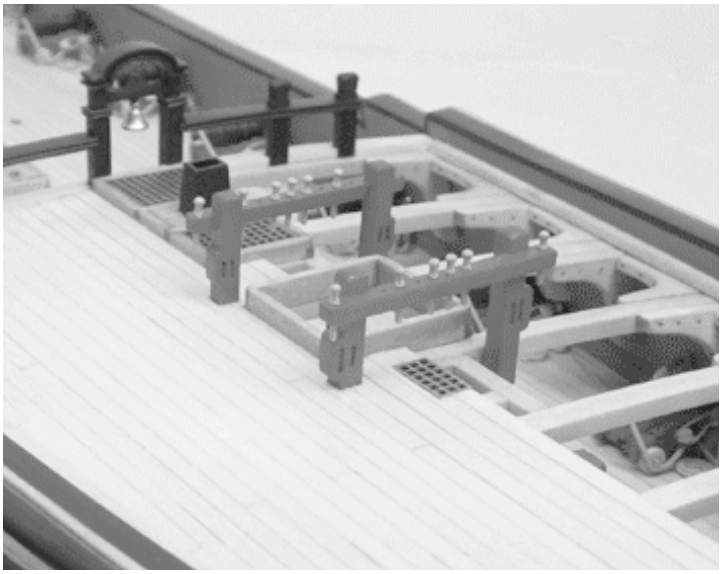
Now add the waterway on the port and starboard sides. Use a 1/16" x 3/32" strip like the one you shaped on the quarterdeck.

Finally, add the margin plank against the waterway. These are not laser cut this time because there are no scarph joints. Use one length of 5/32" x 1/16" basswood. The bend at the bow is not that severe. You should soak the planks and pre-bend them so they fit against the waterway tightly. The margin plank was only added on the starboard side for the prototype so it matches the quarterdeck.

Plank the deck with 1/8" x 1/16" strips. Create the hook scarphs on the forward ends for the strips that sit against the margin plank. Carefully cut the planks around all of the coamings and bitts. Then add the treenails to finish it up. See the many photos provided that show the forecastle planking completed. The cat-beam should be







planked on the port side. The cat-beam is the first deck beam that sits against the beakhead. You need to cut small lengths of planking to cover this beam. This will make the surface one the port side level with the starboard side so the catheads (cat tail) can be installed properly.

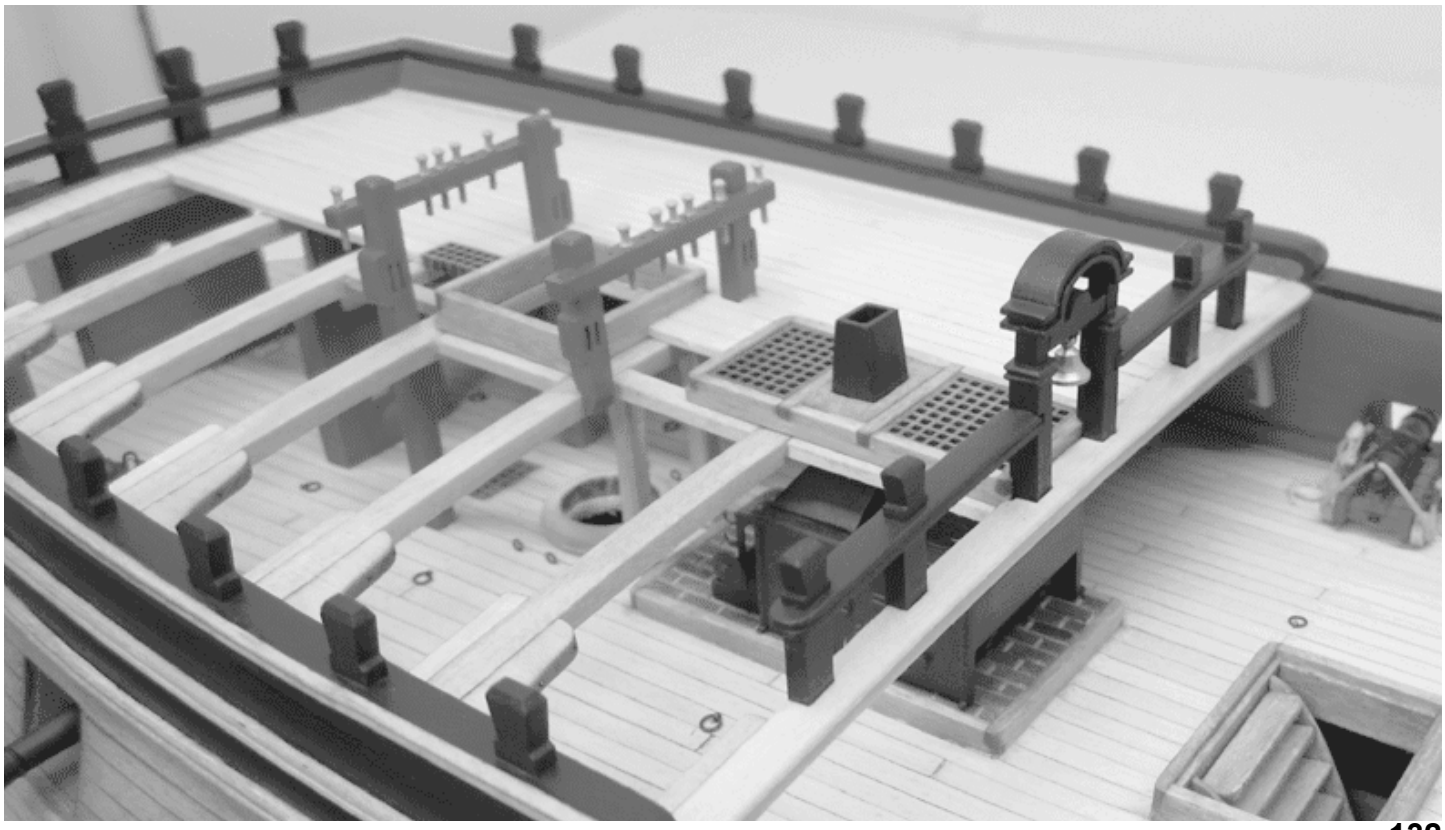
**Finishing off the Belfry Rail…**

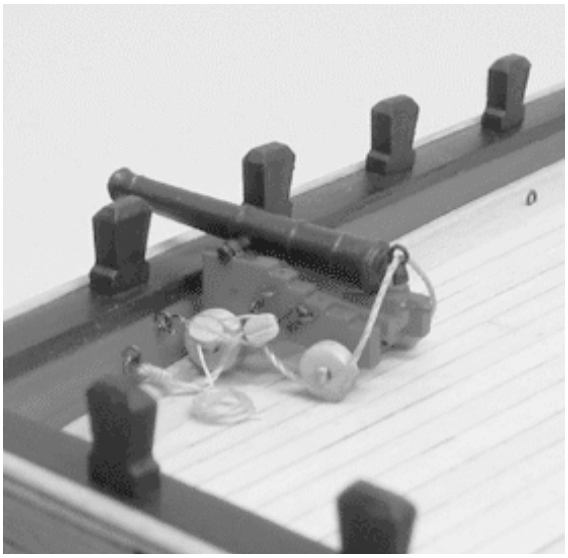
The rail is laser cut for you in two 1/32" thick layers. It should be handled just like the rail for the quarterdeck. Paint it black and glue it into position on both sides of the belfry. Slide the inboard end of the rail into the slot of each belfry upright.

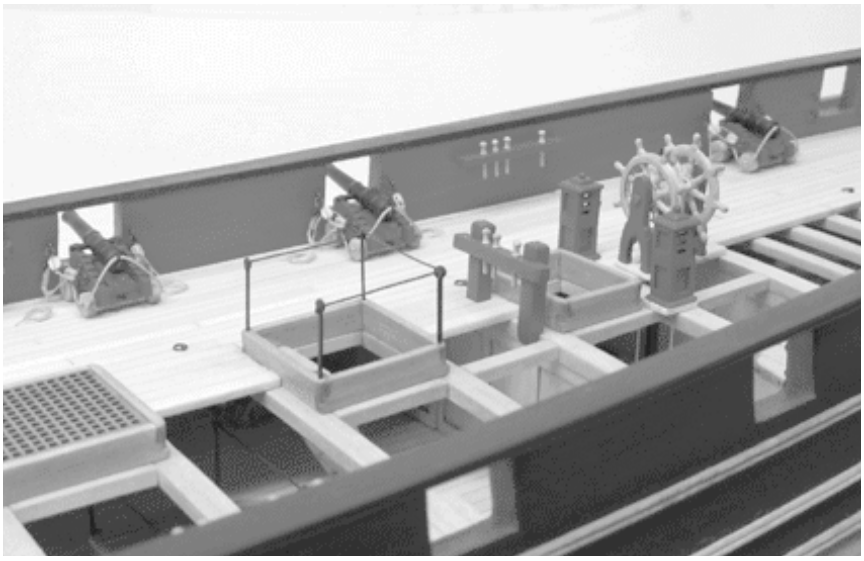
Then paint the four timberheads that should be glued on top of the rail black. Sand them smooth before you paint them. Carefully line then up above the uprights.

**Timberheads along the Cap Rail…**

It's now time to add the timberheads on top of the cap rail. The timberheads along the beakhead were added first on the prototype model. Strips







of basswood that are the same width as the timberheads were cut to length. You only need two pieces. They were carefully glued under the cap rail and centered (fore-aft) in the opening. Then add the four laser cut timberheads. Glue them on top of the beakhead cap rail and paint them black.

Add the remaining seven timberheads along the port and starboard sides of the forecastle. You can use a photocopy of that section of sheet one to help you space them evenly on both sides.

**Adding the Six Pounder Cannon…**

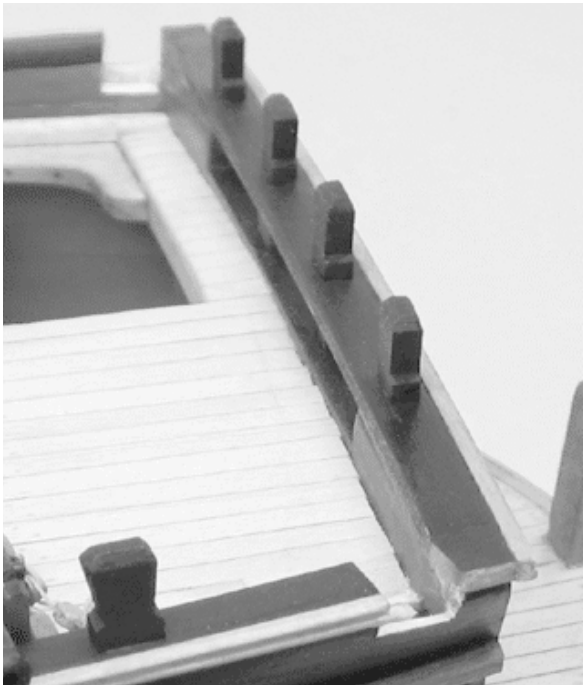
Only four six pounder cannon were added to the prototype model. They are on the starboard side of the forecastle and quarterdeck. You may have opted to show all eight. They don't need to be added at this time but they were on the prototype. All of the eyebolts were added along the bulwarks and on deck. Check the plans for their locations. Then the four cannon were built and installed. They are built exactly like the 12 pounders on the gun deck. The only difference for the six pounders was the length of the breech line. The breech line is .021 tan rigging. Instead of making them 3 ¼" long, they should be made 2 ¾" long for these smaller cannon. Read through the section on constructing the twelve pounders and make these the same way. Then install them on the model as before. See the photos provided that show the six pounders completed and installed.

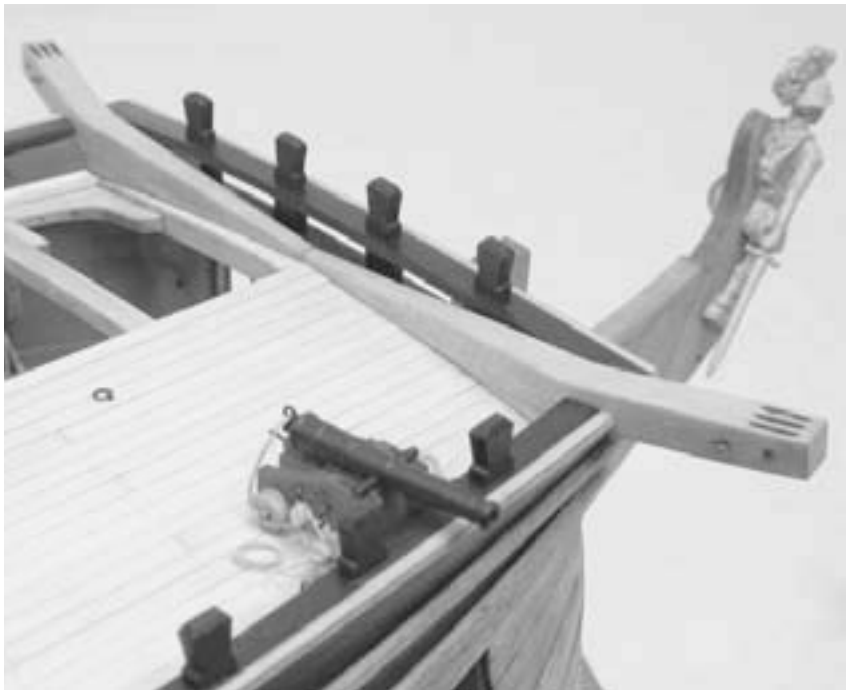
**Shaping and Installing the Catheads…**

To complete this chapter, the catheads will be shaped, detailed and installed. They have been laser cut for you and are ¼" thick. In actuality, they should not be a ¼" thick. The catheads should be thinned down slightly and made 7/32" thick. Keep this in mind when you are removing the laser char from these pieces. Carefully reduce the thickness as mentioned, as this is very important.

Place them on the model so you can place some reference marks on the cap rail. The cap rail needs to be notched out to receive the cathead. Temporarily place both of them in position lining up the cat tails (inboard ends of the cathead) on the centerline of the deck. The cat tails were left a little longer than needed so you can shorten them based on how they sit along the cap rail. Adjust the ends of the cathead until you are happy with how they look. Then mark both sides of the cat head on the cap rail so you know how wide to make the notch for them. Remove the beaded molding on the outside of the cap rail first.

First, use a razor saw to cut both sides of the notch. Cut the notch narrower than you will ultimately need it. You can fine tune the width of the notch so you get a perfect fit later. Use a sanding stick to fine tune the sides of the notch. The notches should be slightly more than half the depth of the cathead. The bottom of the notch should be sloped inboard. Se the photo provided



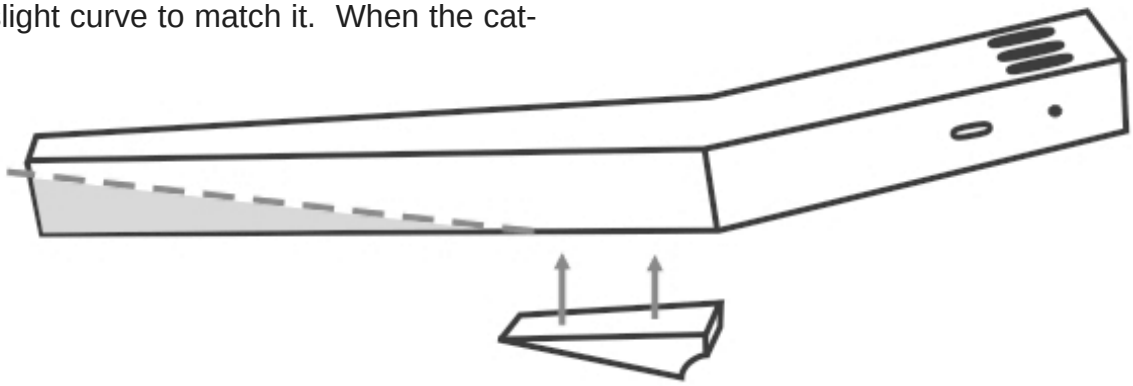


that shows the completed notches for the catheads. Once the sides are cut to the correct depth, use a sharp blade to cross cut small shavings free. Start slicing in the center of the notch towards the cuts you made for the sides of the notch. Remove small slivers of the wood with each pass until you have it roughed out. Then sand it smooth and fine tune the notch with a sanding stick. Test fit the catheads in position.

When the catheads fit well, you can shape the cat tails properly. The bottom of each cat tail needs to be cut on an angle. Review the diagram provided for details. About 2/3rds of the cat tail should be angled. The end of the cat tail will be approximately 1/16" thick at the center line on deck. When you cut the initial angle on the bottom of the cathead, leave some extra meat on it. This way you can sand it more carefully to the finished shape. The bottom of the cathead should sit flat on the deck. Since the deck is cambered, the bottom of the cathead will actually have a slight curve to match it. When the cathead is placed in position, there will still be a small opening under it along the bulwarks. This small triangular opening should be filled with a small piece of scrap wood. It is easier to attach a small piece of wood to the bottom of the cat tail and sand it to shape so there is a smooth transition between the two pieces. The entire assembly should fit snug against the bulwarks and waterway. See the photo provided.

Once you are satisfied with how the catheads fit, you can add the small details to them. Add the three laser cut sheaves in each slot. Then simulate the sheave pin on the outside of each cathead using a small length of 22 gauge wire. Drill a small hole and insert the wire. Then snip off the end so it is slightly proud of the surface.

A small eyebolt should also be placed on the aft side of the cathead. This will be used for the anchor tackle. The catheads were stained on the prototype and then glued in place permanently.



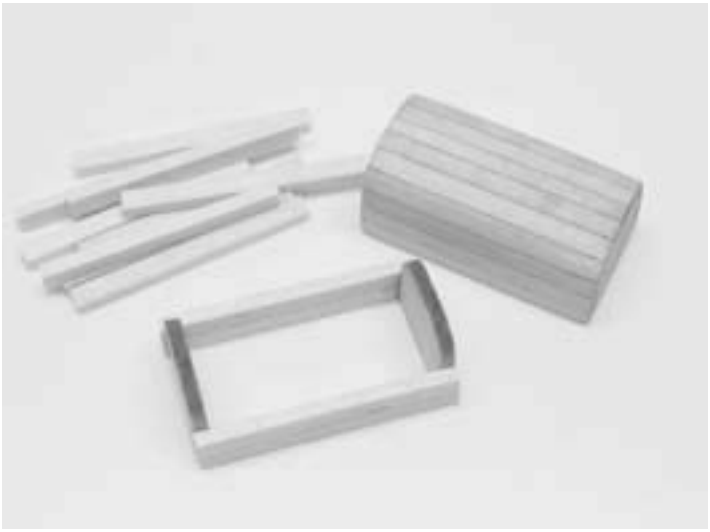
## Chapter Sixteen

# Building the Headrails

Before you start work on the headrails, the roundhouses and other details on the beakhead should be completed first. The two remaining doors on the beakhead can also be added. These are built using the three laser cut layers, just like you built the other two doors earlier. Glue them into position when you are done.

### Building the Two Roundhouses…

The roundhouses are built by planking around two laser cut guides. The two guides are used on the top and bottom of each roundhouse. They are 1/16" thick. See the picture below that shows the vertical planking being added to create the initial roundhouse structure. Each plank will require some degree of edge beveling so they fit flush against each other's edges. The seams are darkened with a pencil to simulate caulking between the planks. You should use 3/32" x 1/16" strips for the vertical planking. Sand and stain the outside surface when you are done.



Then glue the laser cut roof into position which is 1/32" thick. It has been cut slightly larger than you will need so you can sand a consistent overhang all around the top of the round house. The back of the roof should be flush, however, so it sits flush against the beakhead bulkhead. To add some extra detailing to the roundhouse, a length of 28 gauge black wire was glued just under the overhang of the roof. A small ventilation scuttle was drilled through the front of each roundhouse as well. This was also detailed by making a ring of 28 gauge black wire to fit around it. The roundhouses are glued into position so the bottom hangs over the edge of the beakhead. See the photo provided on the next page. The last double beaded molding strip was then glued above the roundhouses across the beakhead bulkhead. This detail can also be seen in that same photo.

**Filing and Enlarging the Hole through the Beakhead for the Bowsprit….**

You can build the stump bowsprit now in order to temporarily place it in position as you work on other various aspects of the head. It will be good to have it in position to reference certain areas in relation to it as you work. Only a portion of the full bowsprit is being used on this admiralty model for Confederacy. All of the measurements and details can be taken from the inboard plan sheet to complete it. Start with a dowel that is 7/16" in diameter. The bowsprit will taper inboard and outboard. Take your time to get the initial tapering on both ends of the bowsprit correct. This is especially true for the inboard end. The taper is what will allow you to slip that end of the bowsprit through the hole in the beakhead bulkhead. Once the tapering is completed you can create the tenon on the aft end of the bowsprit so it seats into the bowsprit bitts properly.

Don't add the details to the bowsprit just yet. The hole through the beakhead needs to be filed larger and the angle should be adjusted so the bowsprit seats in the bitts properly. Only after you are satisfied with how the bowsprit fits, should you add the gammoning cleats, iron bands and fairlead (laser cut with several holes). You should also temporarily position the figurehead to ensure that the bowsprit clears the warrior's head when it is positioned. Make any adjustments needed to ensure the bowsprit angle is correct. The iron band on the inboard section of the bowsprit can be made with heavy card stock painted black. Each band is 1/6" wide. Once completed, set the bowsprit aside while work is being done on the other areas of the head. It shouldn't be glued in position now, as it will just get in the way and make working on the headrails more difficult.

**The Figurehead…**

The figurehead is cast for you in three pieces. Glue the arms onto the warrior's body and fill any gaps before painting it. You can paint the figurehead to look like wood as shown in the pictures

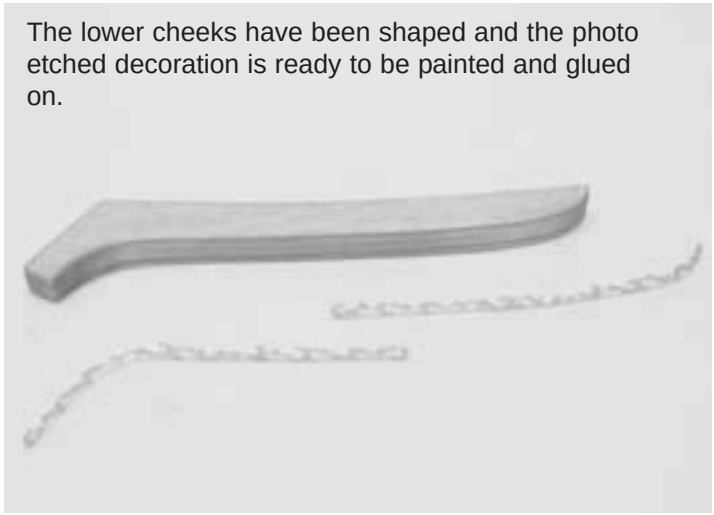
throughout this chapter. Don't glue the figurehead into position yet. You will need to temporarily place it on the stem from time to time while working on the headrails. Only after the headrails are completed should you glue it into place permanently.

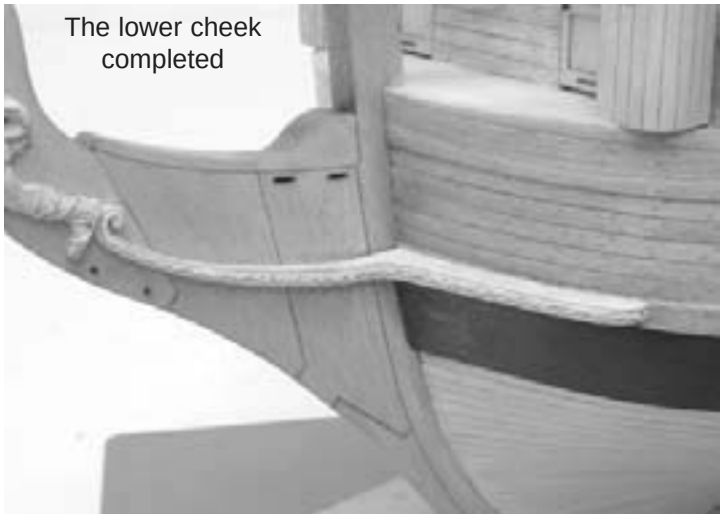
**The lower Cheeks…**

The cheeks are the first elements of the head to be constructed. There are two of them on each side of the stem. They are the upper cheek and the lower cheek. The hawse holes and trailboard will be placed between them. The lower cheek will be added first. It is made up of two laser cut pieces (1/8" thick). The first piece sits against the bow of the model and determines the placement for all of the other elements of the head. It should be carefully positioned against the black strake and literally sit on top of the edge of the main wales. See the photo provided on the next page.

You will notice in that photo (and on the plans) that the outboard side of the cheeks have a molded edge on them. This molded profile runs along the top and bottom of entire cheek. It extends up to the scroll on the forward edge of the stem. This edge profile is created in a similar way to how the molding strips for other parts of the hull were made. Only this time you will not be using a scraper tool. That has a tendency to tear the wood when the grain runs against the scraper and the results are quite poor. The technique used to make this molding edge takes a little practice. We recommend that you try the

The lower cheeks have been shaped and the photo etched decoration is ready to be painted and glued on.





The lower cheek completed

technique on some scrap pieces of wood of the same thickness before attempting it on the actual laser cut cheeks. This is an optional detail and you may even consider omitting it if you are hesitant. Follow these steps to create the molded profile along the edges of your cheeks and headrails.

**STEP ONE:** Sand all of the surfaces of each cheek piece to remove the laser char. Then take a new/sharp #11 blade and score a shallow cut down the edge of the cheeks where the groove should be located. The groove that creates the molded profile should be very close to the edge (about 1/64" if you can!!). This light score does not have to be very deep at all. In fact you only need the shallowest of cuts. Just barely break the surface of the wood as you run the point of the blade across the wood. It is more important to go slow and make your cut a consistent distance away from the edge. The purpose of this cut is to create a path through the wood grain so your tool won't tear through the grain or accidently follow it and wander as you finalize it in the next step. You want to avoid a wavy groove if at all possible.

**STEP TWO:** Instead of using a photo etched scraper, use an awl with a slightly blunt point. Run the awl several times down the shallow cut you made in step one. Again, the purpose of that cut was to prevent the awl from wandering while you run it across the edge of the cheeks. Use a very light touch initially, but the goal is to gradually increase depth and width of the groove. It should still remain shallow, however, and resist the urge to make it too deep. When you are satisfied, you can switch to a round toothpick. The point is soft and even blunter. This will create a softer edge to your groove. Finally, to clean it up, you can cut some fine sandpaper into little squares. Run the freshly cut edge of the sandpaper down the groove to even it out and remove any tears that may have developed. You can even sand the inner edge of the groove so it is rounded off slightly. This is only one technique that you can try to create the molded profile. Stain the cheeks when you are done.

*NOTE:* The forward half of the lower cheek should taper towards the figurehead. They wouldn't have been 1/8" thick and should be thinned down gradually to 1/16" as they near the scroll on each forward end. This should be done prior to creating the molded edges described above. The forward halves of the lower cheeks were also laser cut longer than you will need them. Before you start creating the grooves and adding the photo etched details, hold them against the stem and cut them to fit your model. It's a good idea to complete the half of the lower cheek that is placed against the bow first. Glue it into position and then begin work on the forward half. Hold it against the other half and determine its proper length. Cut it to fit and then proceed to shape the molded profile and add the photo-etched detailing.

Carefully try and match the molded profiles on the two halves of each cheek. When they are butted together, the seam should be as invisible

as possible.

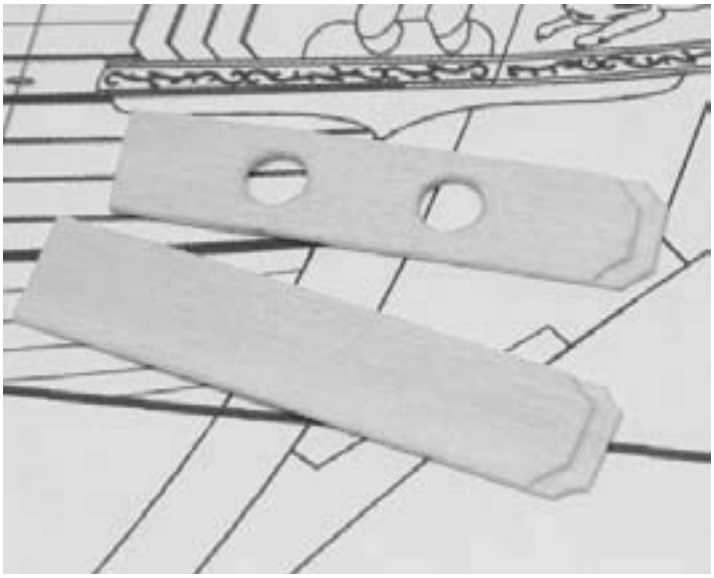
**Adding the Photo etched carved details to the cheeks…**

The carved surface of the cheeks you see on the plans and in the photographs are supplied as photo etched detailing. The portion of the lower cheek that rests against the bow can be applied in two sections. Paint the photo etched carving strips to look like wood before gluing them to the cheeks. Try and match the color of your stained cheeks as closely as possible. Bend them to match the profile and glue them in-between the grooved edges you created. You can then give the entire surface another coat of stain to help match the coloring even further. See the photo provided that shows the photo etched sections before they were painted and added to the cheek.

Repeat this process on the forward half of the cheek and glue them onto the model. Place the section of the lower cheek on top of the wales first to establish the correct placement. Then glue the forward half into position while trying to create a neat and disguised seam between both halves. The figurehead should be temporarily placed in position to help you line up the scroll-work with the heel of the figure.

**Hawse holes and Trailboards…**

Before the upper cheeks are added, the hawse holes and trailboards will be completed. They will establish the height for the upper cheeks in the next step. The hawse pieces are laser cut for you. There are two layers cut from 1/32" thick basswood. Hold one layer against the bow, don't worry about bending it. You are just checking the height of the hawse pieces against the height of the trailboard. Then temporarily place the cast trailboard along the stem. Sit it on top of the lower cheek. You may have to adjust the curvature on the lower edge of the trailboard in order to get it to sit flush on top of the cheek. The goal here is to make sure that the trail board and the hawse pieces are the same height after you shape the bottom of the trailboard as mentioned. Make any adjustment to the two hawse piece layers.

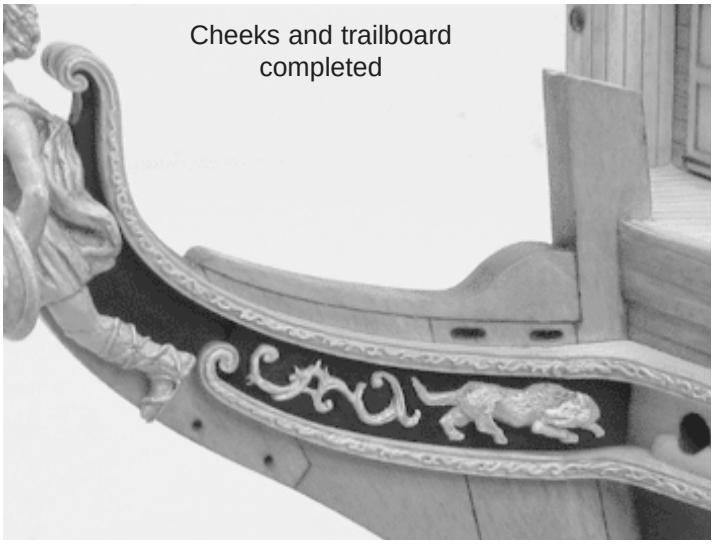


Each layer of the hawse pieces needs to have a carved detail filed into to outer edge. Basically, you need to repeat the shape of that edge to make each 1/32" layer look like it's actually 2 1/64" thick layers. A photo is provided that shows both layers with their ends already filed. The outer layer already has the hawse holes laser cut so their size and position is standardized. Glue the first (inner) layer onto the hull. Sit it on top of the lower cheek. You might need to pre-bend this layer so it conforms to the shape of the bow. If the black strake prevents you from positioning the 1st layer flat against the hull, you should cut away the top of the black strake so it does. Then glue the second layer on top of it.

Drill the hawse holes through the hull. Be careful not to mar the laser cut holes in the second layer. Drill smaller holes and then carefully enlarge them with a round needle file. The bolster is then added as the last layer. This is the small piece that sits under the hawse holes.

The top edge is rounded off so the anchor cables don't get chaffed as they rub against the lower cheeks. Use a piece of 1/8" x 1/16" basswood cut to length. File to round off the top and sides. Then create the half circular notches to match the hawse hole positions. Glue it into position. See the photo provided that shows the hawse pieces and bolster completed. The first half of the upper cheek is also shown in that photo. The interior surfaces of the hawse holes were colored with a graphite pencil to simulate the lead lining typically used at this time period.

Paint the trailboards. The background should be black while the wolf and filigree is painted to look like wood. Glue it into position. Then paint the forward area of the stem black just behind where the figurehead will be placed. See the photo provided that shows the painted trailboards and upper cheeks completed. Note that the figurehead is not glued into position yet. The upper cheeks can be completed just like the lower ones. The forward half of the upper cheeks is laser cut slightly longer than needed. Once the first half of the upper cheek is glued into position on top of the hawse holes, you can cut the forward section to its proper length. The scroll at the end should match up with the shape of the stem. This forward half of the upper cheek is also known as the "hair bracket". It has this name because the scroll on the end lines up with the hair of the figurehead. The hair bracket should gradually taper to 1/16" thick as it nears the scrollwork. The upper cheeks are made and detailed just like the lower cheeks. Once they are glued on the model, the figurehead can be permanently glued on as well. Take your time completing the cheeks and trailboards on BOTH the port and starboard sides. Make sure they are the same height and angled properly. It will be that much harder to complete the headrails if they are not consistent port-to-starboard.



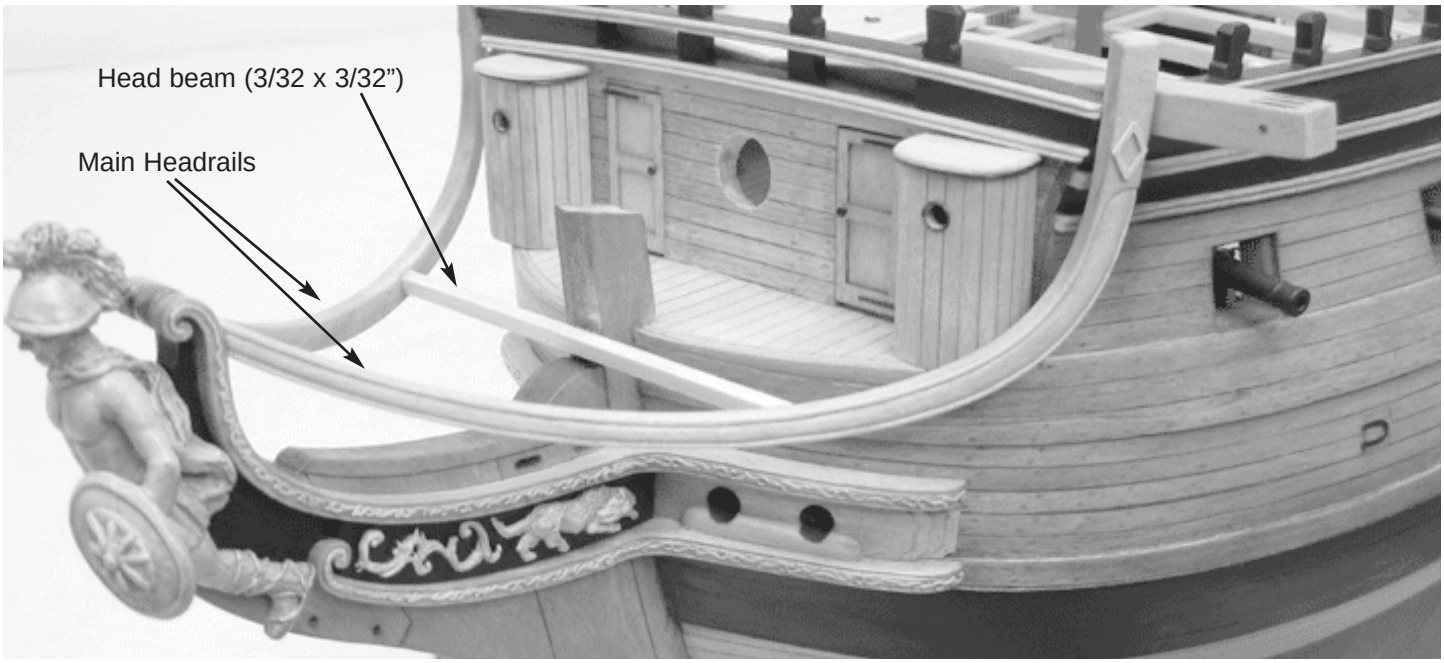
Cheeks and trailboard completed

**The Main Headrails…**

Constructing the headrails for any ship model can be a challenge. There are many ways to approach the headrail construction. What follows is one method, which was used to create them on the prototype.

The main headrail is the upper-most rail. They have been laser cut for you and are 1/8" thick. Sand the laser "char" from each piece. The main headrail has been laser cut slightly longer than you will need. Test fit the rail against your model to determine how much should be trimmed off the fore side. The aft side of the headrail should sit against the front side of the cathead. It can be positioned so that it touches the cathead OR place it so it is about 1/16" away from it. This would be the correct range. It will sit flush against the hull.

While testing it in position, be very conscious of the relationship of the rail to the front of the beakhead's deck. Remember that the head grating will need to be flush with the beakhead deck and the sides of the headrails. After cutting the rails to length you can start detailing them. These rails will taper in thickness from 1/8" at the aft end to 1/16" thick by the figurehead. It's a very gradual taper that starts in the middle of the headrail. Create the molded profile as described earlier. You can also add the photo etched "diamond" shape to the head rail. This detail is shown on the plans and in the photo provided.




The diamond shape should be painted to look like wood. Try and match the color to the head-rails as closely as possible.

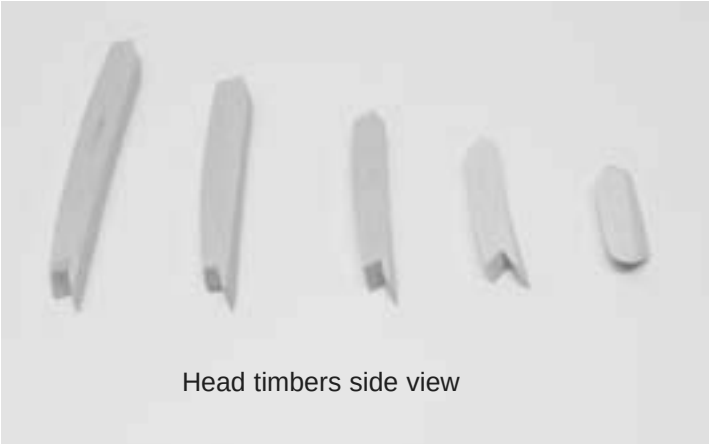
You can glue them into position when you are done. A small length of the hull molding will need to be removed so the main rail sits flush against the hull. You may also sand this area of the hull flatter so you will have more surface area to glue the beams directly to the hull. In that same photo you will notice another beam that stretches across the gap between both main headrails. This beam is called the "head beam". It is made using a 3/32" x 3/32" strip. The head beam is glued to the front of the stem. It should be positioned so the top of the beam is flush with the top of the beakhead deck. The top of this beam (on each end) should also be flush (or almost flush) with the top of each main headrail. It will help strengthen the head rails so they don't flex while you work on the remaining head parts. It will also help you align both rails so they are at the correct height. It will ensure that the head grating is angled correctly as it originates from the beakhead and joins with this beam and the head rails on each side.

**The Head Timbers…**

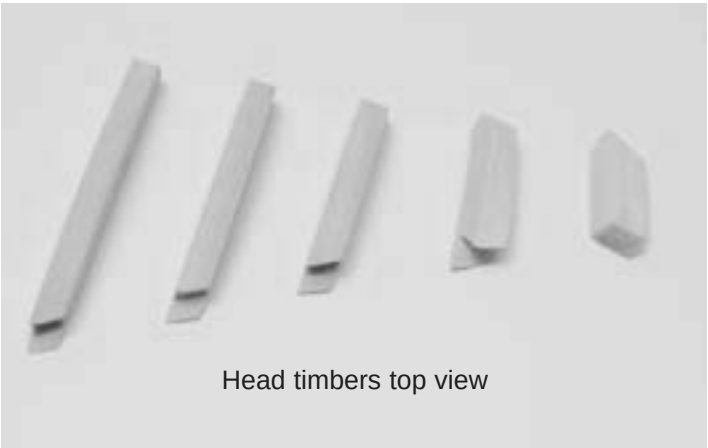
The head timbers are probably the most difficult and fiddly parts of the head structure. Take your time with these. There are six head timbers on each side. Five full timbers and one half timber. The five full timbers will be made first. Initially they will be made without the notch for the middle head rail. This will allow you to concentrate on their lengths and overall angles.

Pictures are provided that show the five full head timbers from the side and the top views. They are made using 1/8" x ¼" basswood strips. Examine the plans which contain a template for each head timber. Transfer the shape to a basswood strip and cut it out. You will absolutely need to tweak these timbers to fit. There are some complex angles involved but once you have completed a few of them, the process gets easier. The (bottom) inboard and outboard faces of each timber will be flat against the stem. However, the (top) inboard and outboard faces will be beveled to match the angle of the main headrail. You will find yourself periodically testing and tweaking each head timber until it fits properly. The top of each head timber is notched so it can be positioned both UNDER the main headrail and AGAINST the inboard side as well. Space them evenly along the head using the plans as a guide. A picture is also provided that shows the five full head timbers temporarily tacked into position. DO NOT glue them into position yet.

Tack or pin them temporarily in position. You can use any means possible to do this. By tem-



Head timbers side view



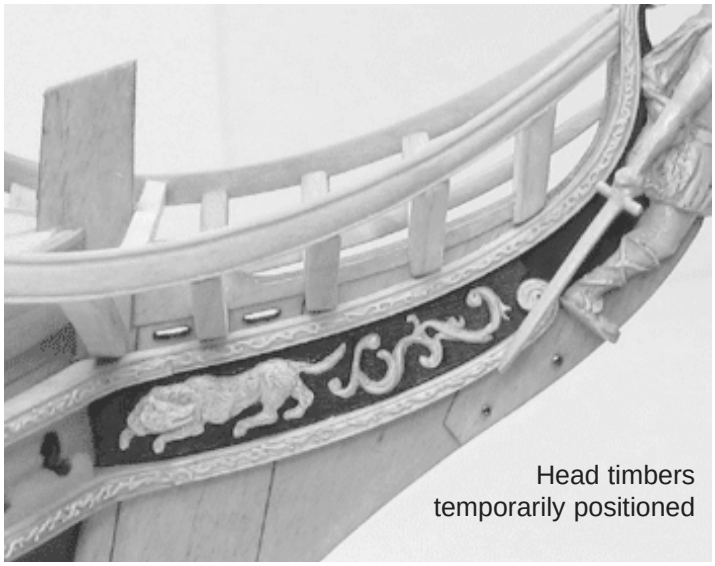
Head timbers top view

porarily securing the head timbers to the stem and main headrail you will be able to ensure they are positioned consistently on the port and starboard sides. More important though, you will now be able to hold the "middle rail" against them and mark the locations for the notches on each head timber. Leave the head timbers temporarily tacked in position and start working on the middle rail.

**The Middle Headrail…**

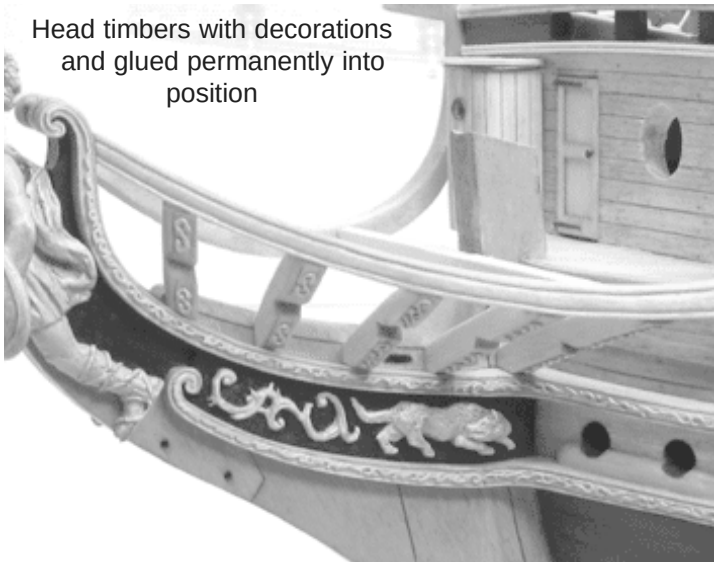
The middle headrail is also laser cut slightly longer than needed. Hold it against the head timbers to approximate its proper length. The aft end should sit against the bow and probably land on the bottom of the channel wales. Cut it to suit. The middle rail also tapers to 1/16" thick as it nears the figurehead. Add the molded profiles along the edges of the middle rail. Then hold it against the head timbers again so you can mark locations for the notches. The notches in each head timber should be shaped like a "V" (more or less). A photo is provided that shows the five head timbers after the notches for the middle rail have been cut into each of them.

Once the notches are completed, you should tack the head timbers in position temporarily once again. Then check to see that the middle rail fits properly. Make any adjustments needed. Then remove the head timbers so they can be detailed. The head timbers should be detailed with a molded profile down the edges of each outboard face. Then add the photo etched carving details. There are several "S" shaped photo etched decorations. They are supplied in different sizes. Depending on the space remaining between each headrail, you should place one, two, three or even four "S" shaped details on each segment of the head timbers as needed. Place them above and below each notch you made for the middle rail. They should also be painted to look like wood. Once completed, you can finally the glue the five head timbers into position permanently. Then

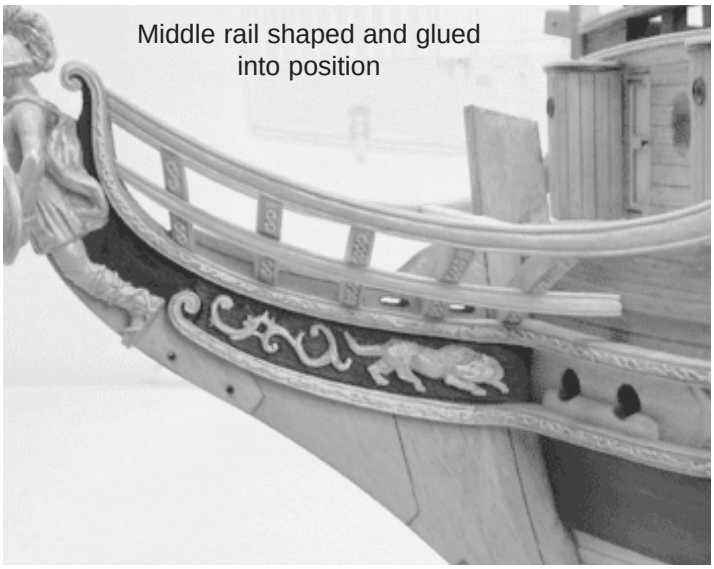


Head timbers temporarily positioned

Head timbers notched for the middle rail



Head timbers with decorations and glued permanently into position



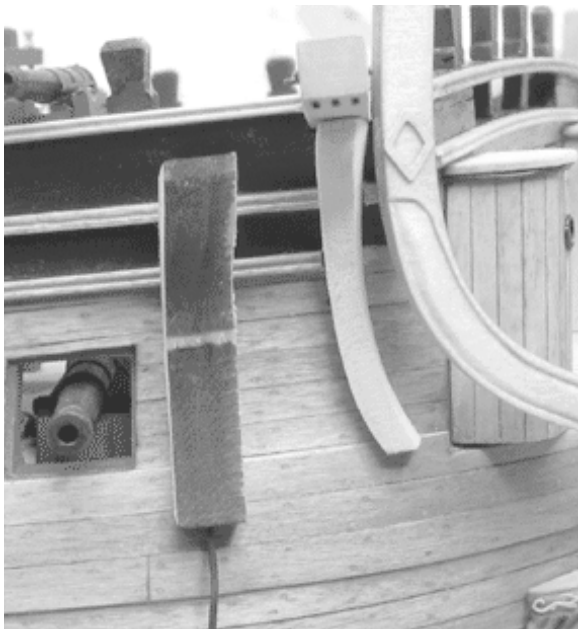
Middle rail shaped and glued into position

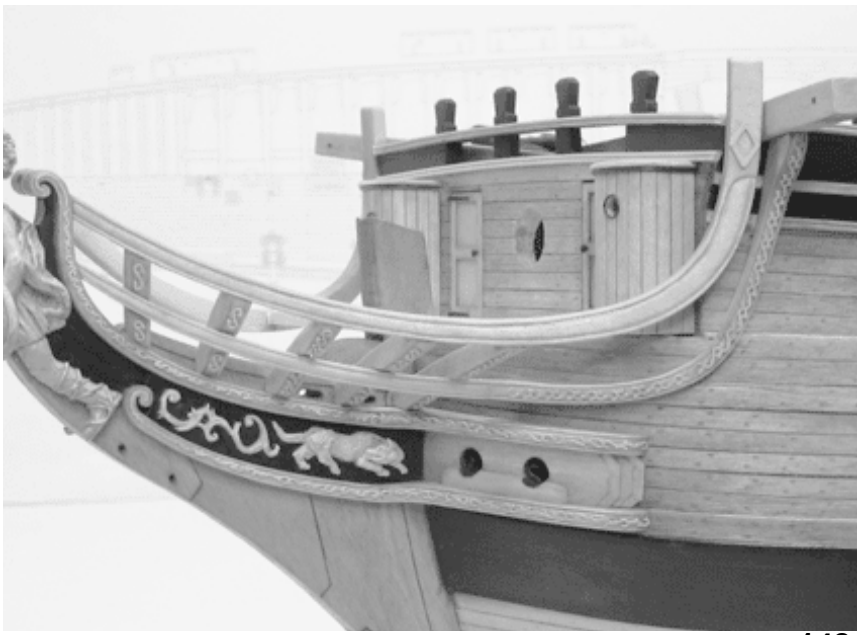
glue the middle rail permanently into each notch. Make sure they are symmetrical port and starboard. See the photos provides that show the completed head timbers glued into position and then the middle rail completed as well.

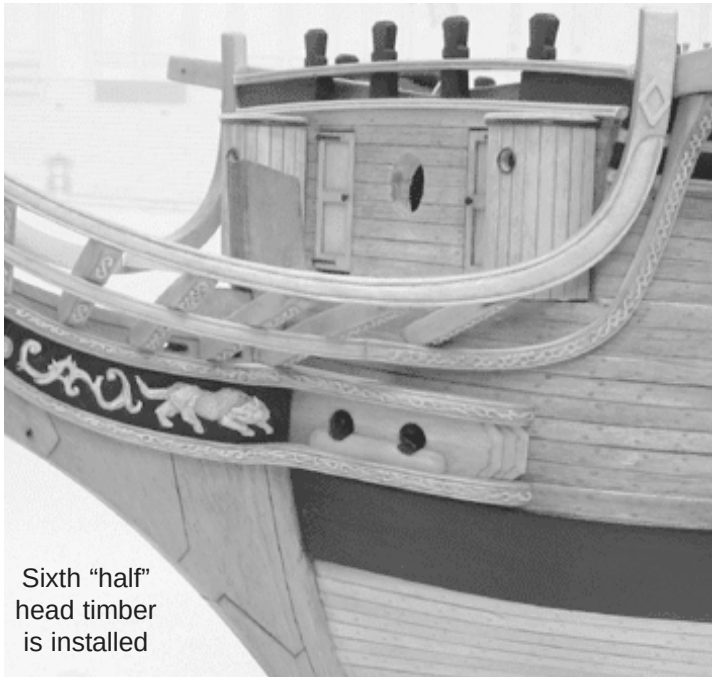
**The Cathead Support Knee…**

A support knee was placed under each cathead. For decorative purposes, the support knee was curved forward and continued against the bow until it attached to the middle rail. On our model this will be accomplished by shaping two laser cut segments. The first segment will be the support knee itself. It has been laser cut for you and is ¼" thick. The actual support knee needs to be sanded much thinner. But it is also curved. A photo provided shows the cathead support after it has been shaped. To the left of it, the unshaped laser cut knee is shown. You will need to shape this piece so it fits flush against the hull and also curve elegantly forward. You will have to remove small portions of the hull molding so it will sit flush against the hull. Examine the plans as they show the approximate shape for these pieces. You may want to draw some reference lines with a pencil to approximate the shape before you begin sanding them.

Don't glue them into position permanently yet. Just temporarily pin it or glue it under each cathead. You may need to tweak its shape once you've started shaping the remaining segment that will join the knee with the middle rail. Your ultimate goal is to have both segments form a







Sixth “half” head timber is installed

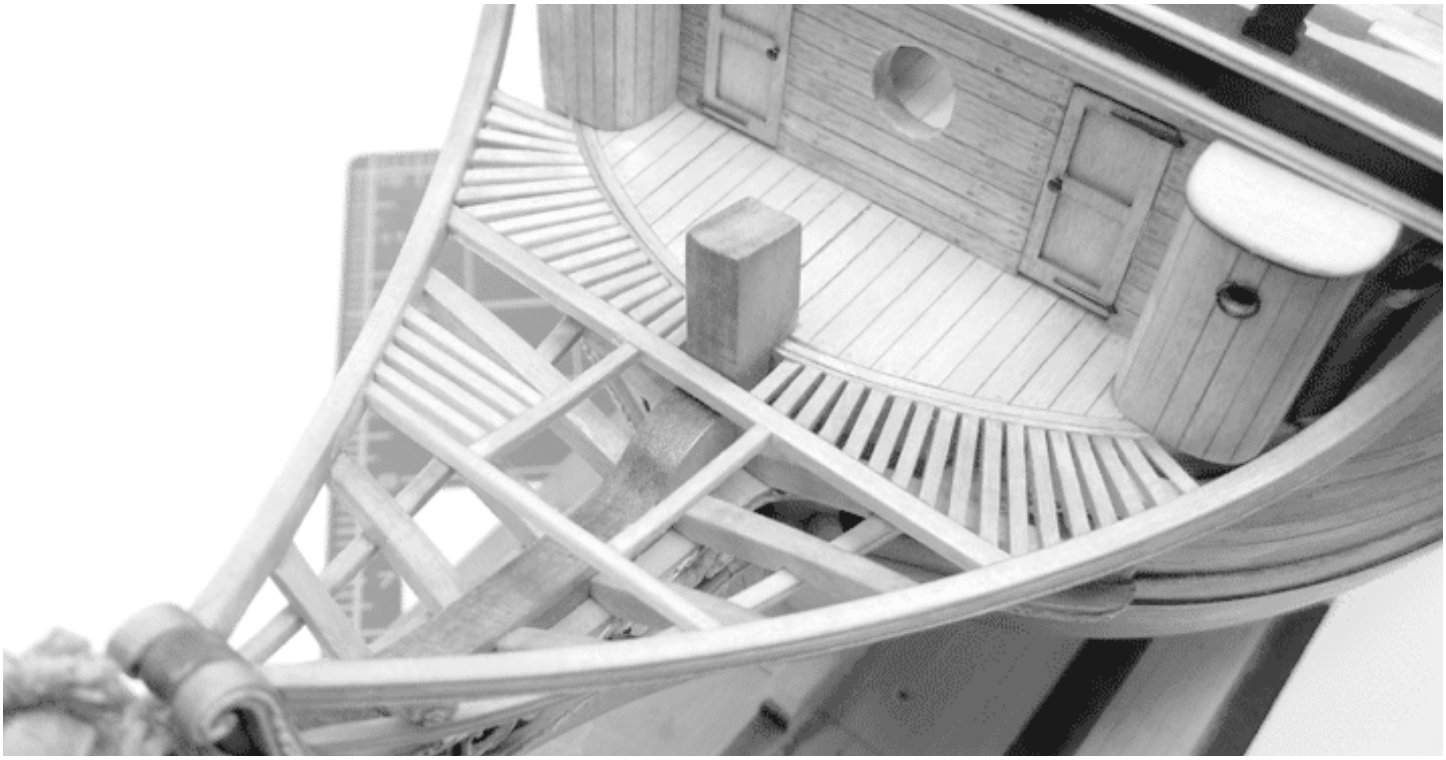
slender graceful curve and then terminate into the middle rail. Examine the photos provided that show these pieces completed on the prototype. The "connecting" segment is also laser cut. It is longer and thicker than needed as well. It should be sanded to shape so it fits flush against the hull. The connection with the cathead support knee should be smooth and continuous. As done with the prototype, both segments will need to be continually tweaked, tested and tweaked again until they fit well. When you are satisfied, create the molded profile along both edges as you have done before.

Photo etched decorations are provided and will run along both segments. The middle rail does not receive any decorative photo etching. It will only be added to the support knee and middle segment.

This photo etched detailing can be added BEFORE or AFTER you glue them into position permanently. It doesn't really matter and you should choose the method you are most comfortable with. The photo etched decoration should be painted to look like wood and match the color of the support knee as much as possible.

**The Sixth Half Head Timber…**

Now that the cathead support and middle rail is completed, you can finally add the last remaining head timber. This "half" head timber is the aftmost head timber and can be seen on the clearly on the plans. A template is also provided for them. These are made using the same ¼" x 1/8" strips. Shape them to fit as the templates will only give you the approximate overall shape without bevels. Each piece should be beveled to sit against the hull and on top of the middle rail as shown in the photo provided. Add the photo etched decoration and paint it to look like the other head timbers.



## Chapter 17

# Completing the Head Grating and Head Details

**The head grating can be approached in two steps…**

For the first step, add the remaining framing that creates the opening for the bowsprit gammoning. The head beam you added earlier was made using 3/32" x 3/32" strips. BUT, the remaining framing in this step should be completed with 1/16" x 1/16" strips. Add the beam that stretches across the span from port to starboard first. Use the plans to find the exact location. Then add the two timbers that run from the head beam to that last beam you just completed. These two "head grating beams" are actually laser cut for you. The profile for these is shown on sheet four of the plans. They have been laser cut longer than you will ultimately need them. You will notice that they are curved to match the curve of the main headrails. See the photo provided.

Once completed, you can proceed to step two.

Using 1/16" x 1/16" strips, start adding the grating between the beakhead and the head beam. In that same photo you can see this portion of the grating completed. The strips are cut to length and glued into position. Note how the strips fan out to create the pattern shown on the plans.

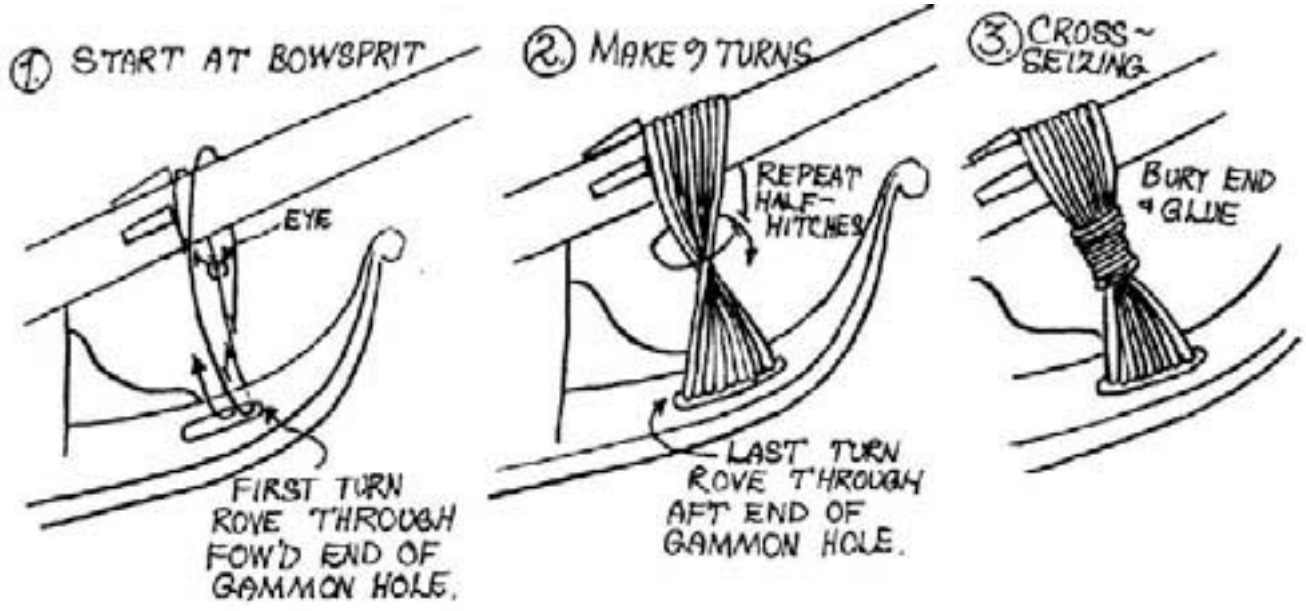
To complete the head grating, additional strips of the same size span across the headrails. Note

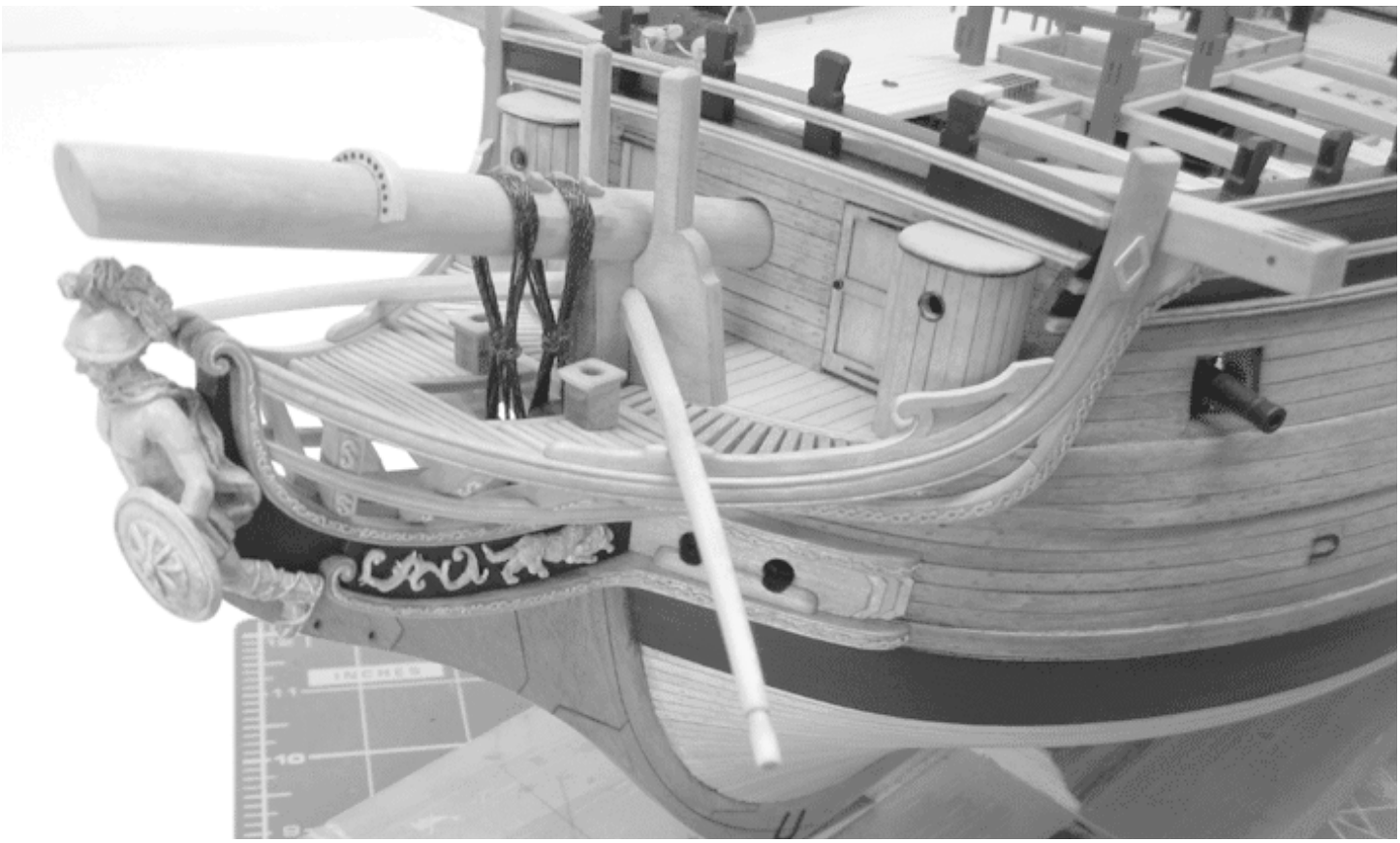
how two small openings were framed for the seats of ease. See the photo provided that shows the head grating completed. The forward-most beam will be a 3/32" x 3/32" basswood strip. You can see this featured on sheet one of the plans.

**Adding the Seats of Ease…**

There are four seats on the top of the head grating. The two seats forward of the stem are built using laser cut components. The base for each seat is laser cut from ¼" thick basswood. Sand off the laser burn and bevel the bottom of the base to suit. The bottom of the base should be beveled so the seat stands vertically on the grating after it is installed. The top of each seat is laser cut for you and is 1/32" thick. Glue them into position to finish off these seats.

Two remaining seats are shown against the headrails and tucked in between the roundhouses. The components for these seats are not laser cut for you. The angles may differ significantly from model-to-model and the components need to be made from scratch. The base of each seat can be fashioned from a scrap piece of ¼" thick basswood. The base is curved to match the forward edge of the seat as seen from above it. You will essentially be creating a curved piece that is 1/16" thick. The space behind this curved piece is left entirely open. Create an angle on the bottom edge so the top of the seat will be flat. The top of the seat should be perfectly flat and not sloped in any direction. The top of these seats can be cut from a 1/32" sheet of basswood. You will find enough room on the sheets supplied with the kit surrounding the other laser cut parts. The tops are very small and should be cut to fit snugly between the head rail and the roundhouse. Once you are satisfied with how the top fits, create the hole in the top of the seat. It should be the same size as the holes on the other seats. Drill a smaller hole than needed and then enlarge it using some needle files.





**Permanently Install the Bowsprit…**

You can permanently install the bowsprit at this time. Carefully slide it through the hole in the beakhead. Slide the tennon on the heel of the bowsprit into the bowsprit bitts. Once it is seated firmly in position you can rig the gammoning. The gammoning is completed using black .028 line. Refer to the illustration provided which shows how to rig typical gammoning from this time period. There are two gangs of gammoning as shown on the plans. See the photos that show the gammoning completed on the prototype model.

**Shaping and Installing the Knightheads…**

The knightheads have been laser cut for you. They are 1/8" thick. Examine sheet one of the plans carefully. You will notice how the sides of each knighthead are beveled so they sit flush against the stem. For this reason, the laser cut knightheads were cut extra wide to give you the extra "meat" on each piece for shaping. Sand the sides of each knighthead appropriately so they sit flush against the stem. Both knightheads should "lean" slightly forward and match the angle of the stem. The rounded portion on the inboard side of each knighthead will require extra attention. Creating the appropriate bevel here is tricky. Test their fit periodically by sanding the angles a little at a time until you are satisfied. This rounded area should fit snug around the bottom of the bowsprit. The bottom/base of each knighthead will also need to be beveled. It should sit flat on top of the beakhead deck after it is positioned with the slight forward lean described earlier. Take your time with these pieces. Extra laser cut knightheads are provided just in case you need them.

Two small ringbolts are glued into each knighthead as shown on the plans. It is easier to add them before you glue the knightheads permanently into position.

**The False Rails…**

The false rails are made using two laser cut layers. The false rail was used to screen the sailors from the elements when they were using the seat adjacent to the roundhouse. The bumpkins were also secured into a notch in the false rail. They are assembled just like the doors and

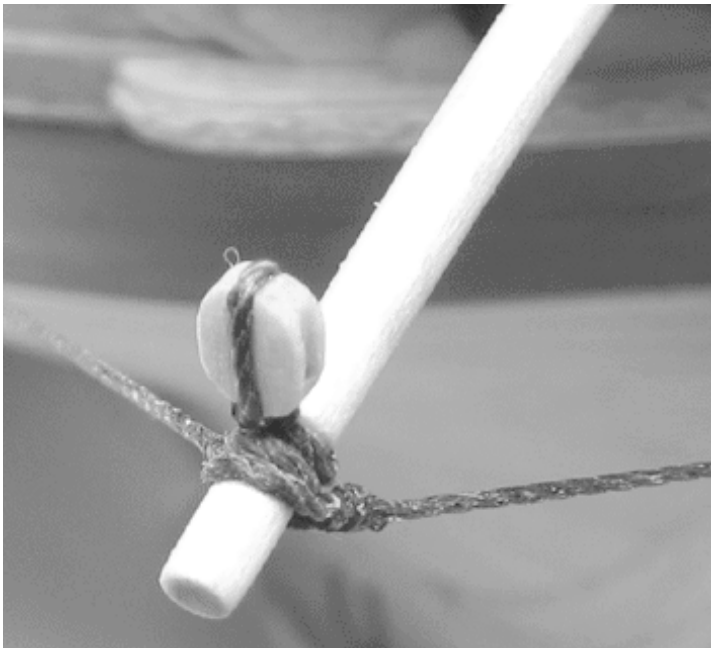
bulkhead panels earlier in the project. Examine the photos provided which show the false rail assembled and positioned on top of the main head rail. Glue the two layers together. You can paint the top edge of the false rails to look like wood if you want to hide the fact that they are made in two layers. Try and match the overall color of the false rails when trying this optional technique.

**The Boomkins…**

The boomkins are long booms that extend outboard of the headrails. The outboard end had a block seized to it that was used to haul the fore tack through. In this time period the bumpkin or "boomkin" was curved downward outboard of the headrails. For this reason, the boomkins were laser cut for you. They are 1/8" thick. Although you have the general shape laser cut for you, the boomkins need to be rounded off and sanded to shape. The inboard end was eight-sided. You can see the boomkin on the plans and can use the drawing to help you shape them correctly.

Start by sanding the heel of the boomkin to fit against the stem and knighthead. The heel needs to be beveled on two sides so it fits into the corner where the two intersect. At the same time it should sit in the notch on the false rail made especially for it. Once the heel is shaped, sand the inboard portion of the boomkin so it is eight-sided. Then finish it off by rounding the outboard end. The outboard end will taper to 1/16" in diameter. The outboard end is also shaped in a way that fore tack block can be seized to it. It is notched and flared as shown on the plans. Examine the plans carefully. A photo is provided showing the shaped boomkin glued into position. It is also secured to the false rail with a capsquare. On the prototype, the capsquare was made with a piece of black card stock. It was cut into strips and glued into position. It is made much like the capsquares that hold the cannon into their carriages. You can then add a small length of 28 gauge wire across the top of the aft end of the capsquare. This will simulate the hinged end of the iron capsquare. The inboard side of the boomkin was sometimes painted black. This is an optional personal decision that is up to you.

With the boomkin glued into position you can seize the block on the outer end of it. The block is a 3/16" long single block. Shape it so the block is rounded off on the edges as shown in the photo provided. It was seized to the end of the boomkin with .021 black rigging thread.



The boomkin also had two shrouds that held it securely in position. The first shroud (.021 black) is seized around the outer end of the boomkin (against the seizing for the block). The shroud is then taken down to the bow and hooked into an eyebolt there. It may be easier to fabricate the hook from 28 gauge black wire. Seize this to one end of the shroud first. Leave the shroud extra long to start with. Hook the shroud into the eyebolt in the bow. Then run the other end around the boomkin. Secure it with an alligator clamp while you create the seizing for the shroud on the end of the boomkin. Release the alligator clip and trim off the excess. See the photo showing the hooked end of this shroud.

The second boomkin shroud is set up in a similar fashion. Only this time, the end is not hooked into the "triangular" eyebolt on the stem. Instead, that end of the shroud has a tiny heart seized to it. This tiny heart has been laser cut for you. It's a tiny little piece that can get finicky to work with. You may opt to not show this heart and just create a hook on the end like the other shroud. It is not as historically accurate but the choice is yours.

File a small groove around the entire edge of the heart. This will be for the seizing the shroud (.021 black) around the heart. Then lash the heart to the triangular eye bolt on the stem. Use tan sewing thread for the lashing or the .008 tan rigging line supplied with the kit. See the photo provided. Then seize the other end around the boomkin as described before.

**The Birthing Rail…**

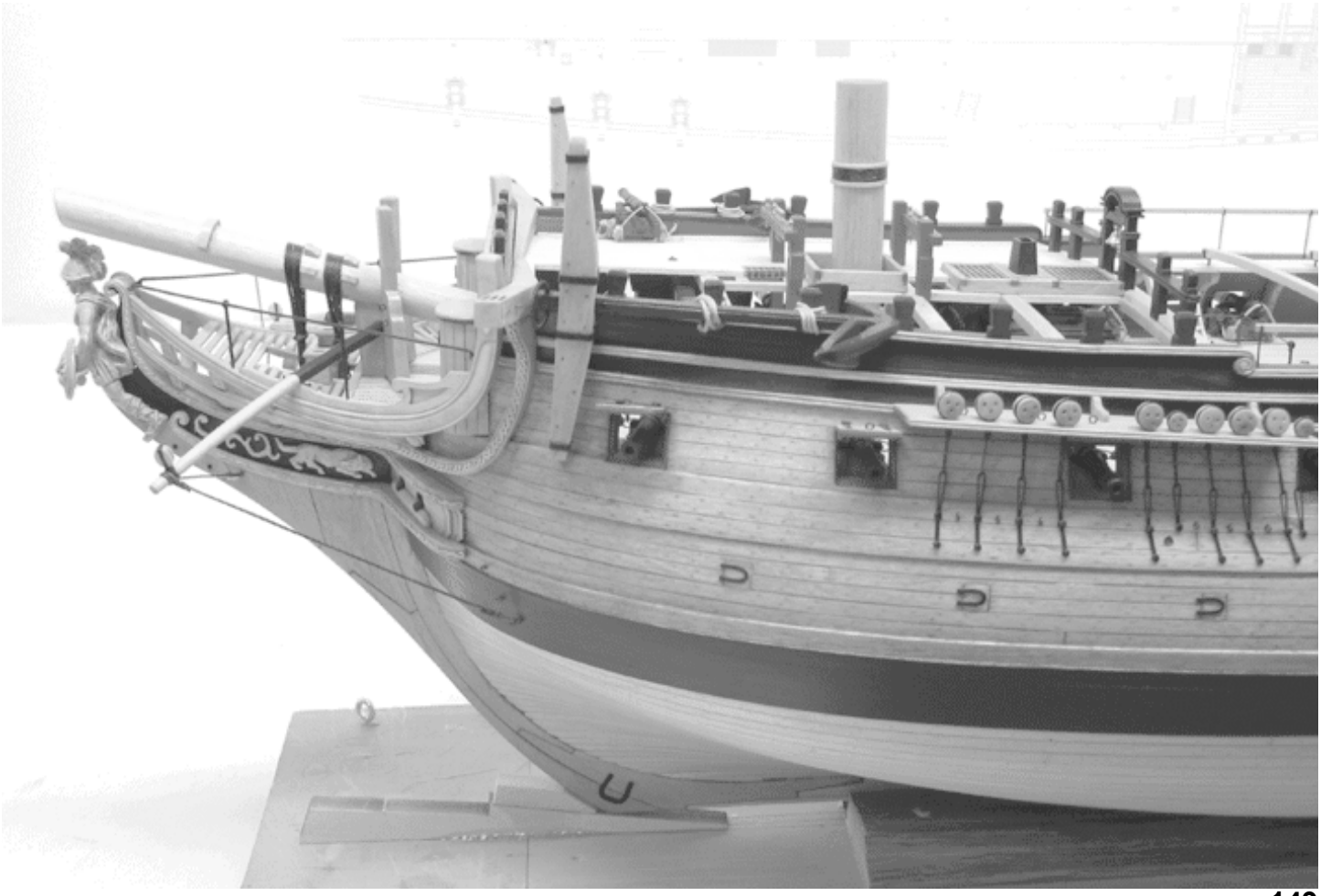
The birthing rail was an iron rail on each side of the head. It was covered with netting as well. But our model will not show the netting, as this feature was rarely shown on contemporary models. You can always add that detail as an option if you want to.

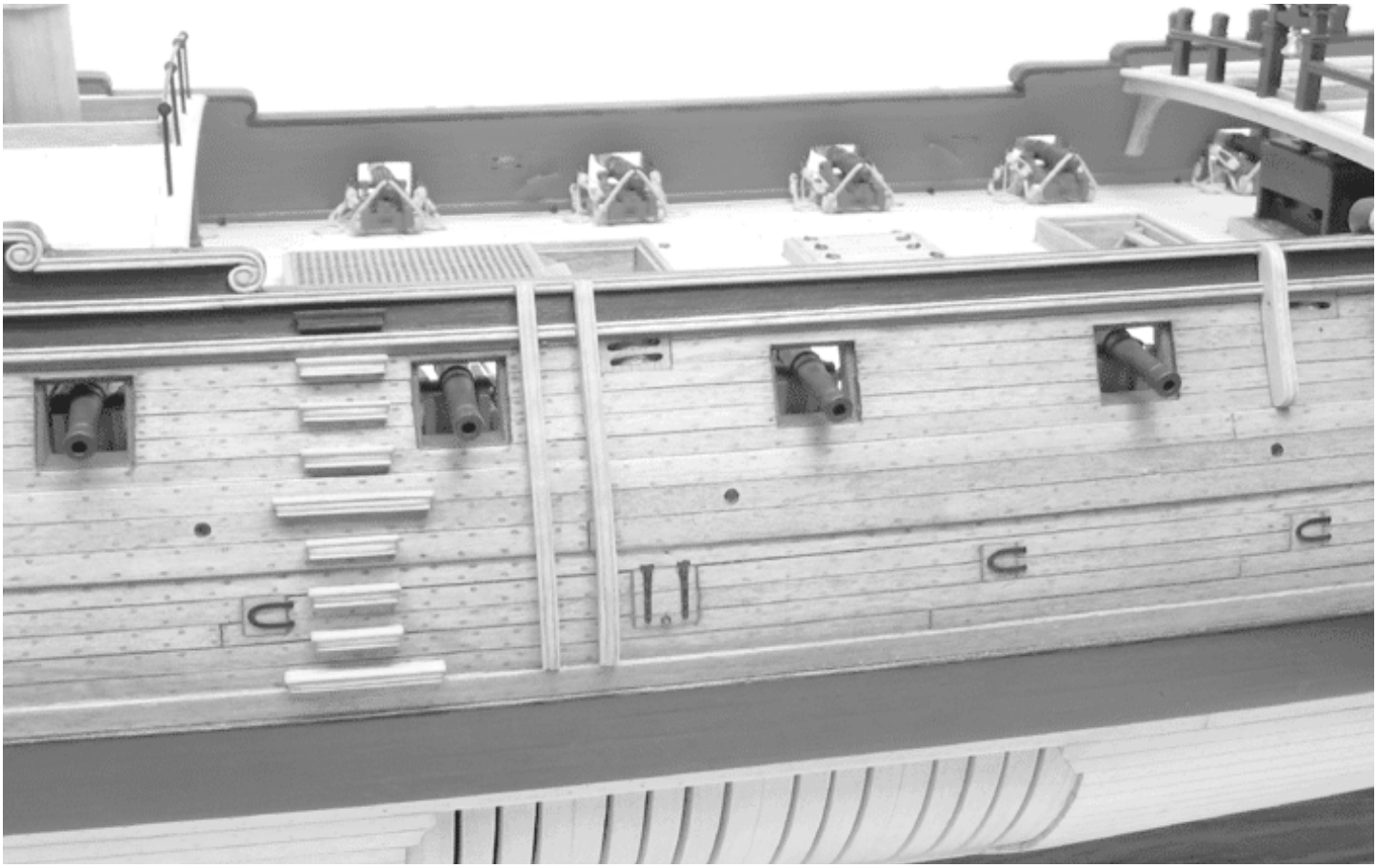
The rail is made from 22 gauge black wire. Simply glue an eyebolt on both sides of where the birthing rail will be located. Keep the height

of these eyebolts consistent on the port and starboard sides. Then bend the end of the wire so you can insert them in the eye bolts. Don't glue the wire into position permanently yet.

Take two of the photo etched stanchions and slide them onto the birthing rail. They are longer than you will need them to be. Place the rail in position and slide the stanchions along the wire until they look evenly spaced. Do this on both sides of the head at the same time so you can line them up port and starboard. They will hang below the main headrail since they are too long. Mark them for the true length you will need. But make them about 1/16" longer so you can insert the bottom of each stanchion into a pre drilled hole on top of the main rail and the false rail. Mark the location on the top of the rail where the holes should be drilled. The main head rail and especially the false rail are very thin. The false rail being made up of two thin layers will be especially prone to splitting when you drill it. Therefore, it is recommended that you file the bottom of each stanchion on both sides. This will create a thin pin on the bottom which can be inserted into a very tiny hole to prevent splitting.

You really don't have to use any glue to secure the pins of these stanchions. It's just a means to keep them secured so they won't shift. Paint them black. Then slide them back onto the birthing rail wire. Insert the pins of the stanchions in the holes you drilled and seat the ends of the birthing rail in the eye bolts. Place a drop of glue on the eyebolts to secure the wire in position. Touch up the black paint to complete this step.





## Chapter Eighteen

# Finishing up the Outboard Hull Details

### The Boarding Ladder...

The boarding ladder has nine steps. There are seven short steps and two longer ones. They were made using 3/32" x 3/32" strips. There are many ways to make the fancy profile for these steps. On the prototype for the Confederacy they were shaped by hand using various needle files. The steps were cut to length first and then each step filed down to create the molded profile. When installing these against the hull, be sure to bevel the back side of each step. You must create an angle that will allow the top of each step to be level and flat. The top of each step should not slope down or up after you hold them against the hull. Paint the top step black after you are finished. Carefully line them up so they are evenly spaced and oriented. Any slight deviations will be very noticeable.

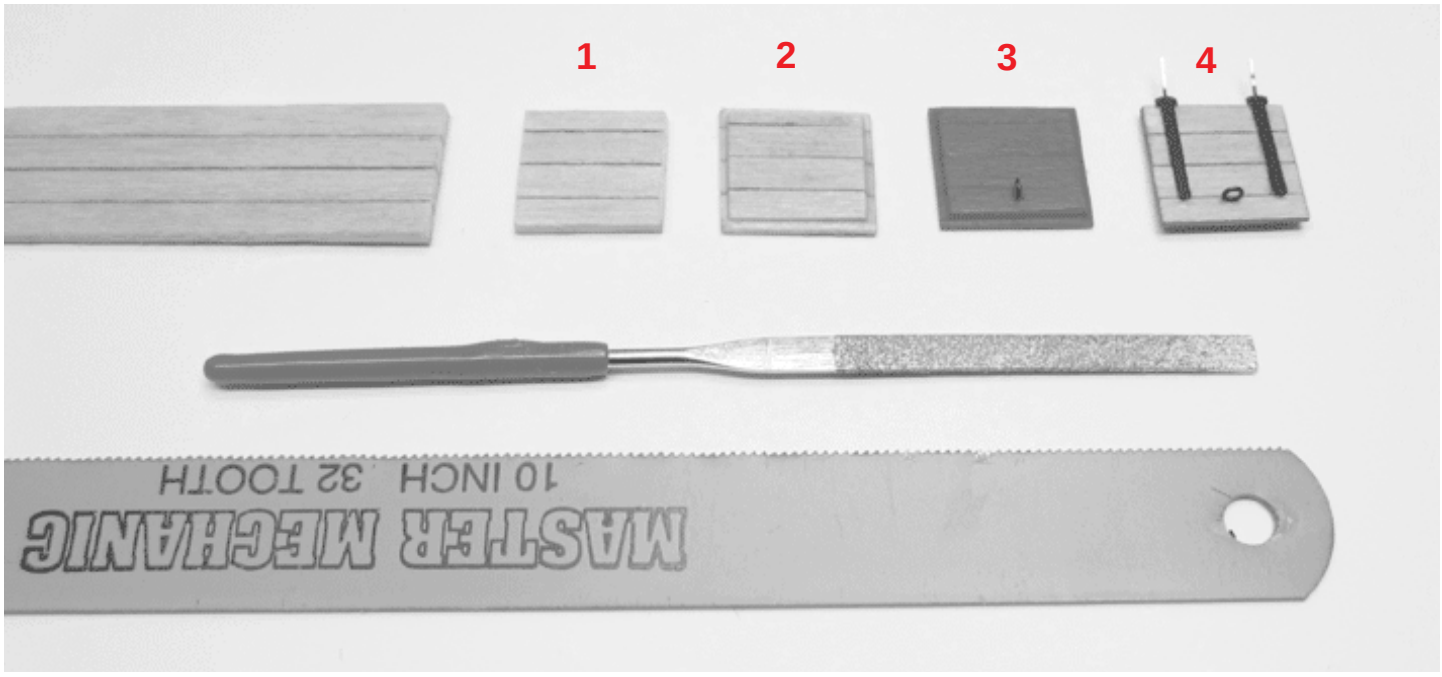
### Fenders and Chesstrees…

Just forward of the entry ladders, you will find two fenders. They are laser cut for you and are 3/32" thick. They also have molded edges that run down both sides. After you sand them to fit against the hull, you can create the grooves down each side. The same techniques you used to make them for the headrails can be applied here. The double-beaded hull molding will need to be notched away to accept the fenders.

The chesstree is made similarly to the fenders, although it's much shorter. Cut away the hull molding and sand the back of the chesstree so it sits flush against the hull.

### Making the Gunport Lids…

It would be easier to make and fit the port lids at this time. However, they will not be glued into position permanently. That will be done after the channels and chainplates are completed. It will be easier to shape each port lid so it is a good fit now without having all of that in the way later.



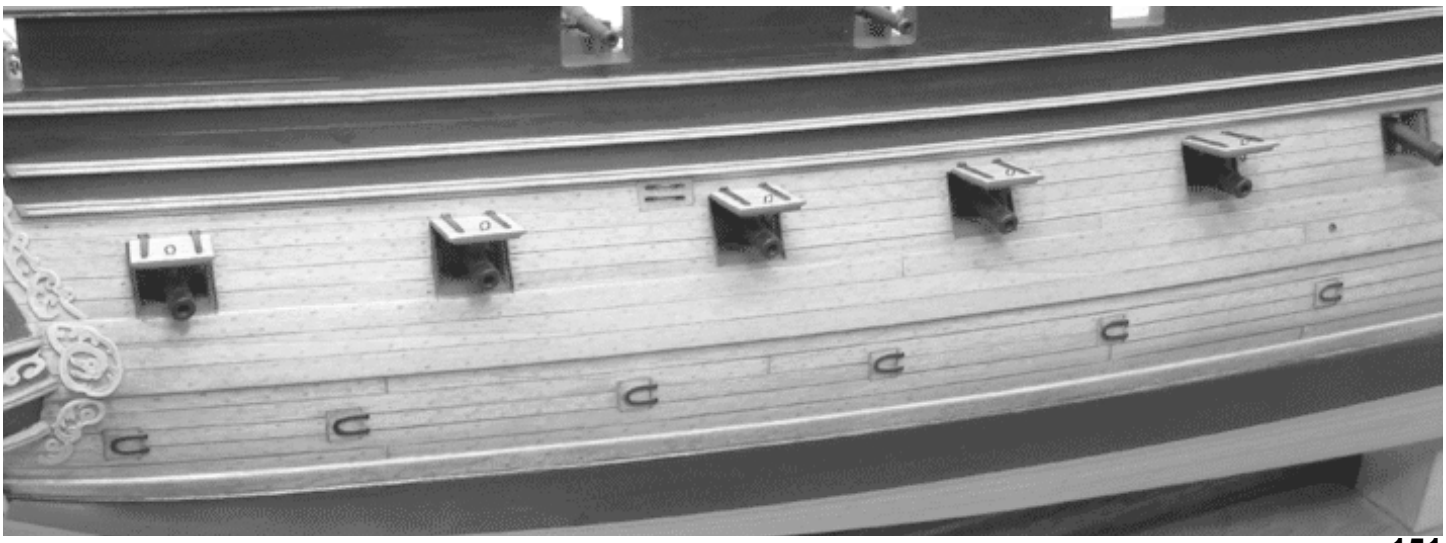

To begin, glue four 1/8" x 1/16" strips together edge-to-edge. Simulate the caulking between each strip with a pencil to hi-light the seams. Refer to the photo provided that shows each step for the construction of the lids.

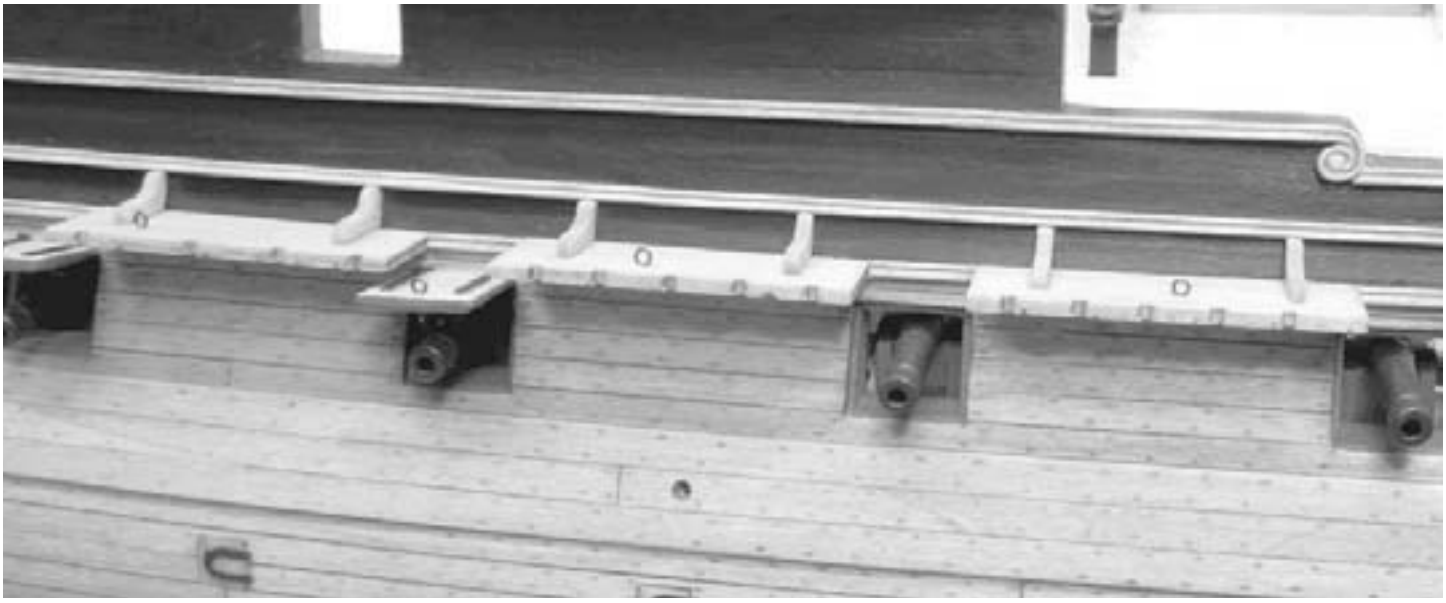
*Step 1* - Hold the strip of four planks against one of the open ports that will get a lid. Angle it so the run of the port lid strip matches the run of the hull planking. Then mark the angles for the sides of the lid on the strip so you can cut it to match the shape of that opening. Each lid has a unique shape. You can't simply cut a bunch of squares the same size and shape.

*Step 2* - Create a rabbet around all four edges of the port lid. There are many ways to do this. On the prototype, a fine-toothed hacksaw blade was used to make straight cuts half the thickness of the lid. The blade was held against a steel ruler which was used as a guide so the blade wouldn't wander. The rabbets were cleaned up afterwards with a needle file.

*Step 3* - Paint the inside of the lid red to match the bulwarks. Insert an eyebolt into a pre-drilled hole on the inboard lower part of the lid.

*Step 4* - Glue the photo etched port lid hinges on the outboard side. Don't snip off the extension (sprue) on the top of each hinge. This is what you will insert into holes drilled above each port opening. You can see that in the photo provided for this step. Finally add another eyebolt on the outboard side of the lid.





With the gun port lids completed, you can hold them in position within their respective port openings. Then mark the locations of the pins of the hinges above the opening. Drill them out and insert the port lids. But don't glue them into position permanently yet. You might find it helpful to have the flexibility to remove them when you are working on the channels and chainplates.

**Installing the Channels…**

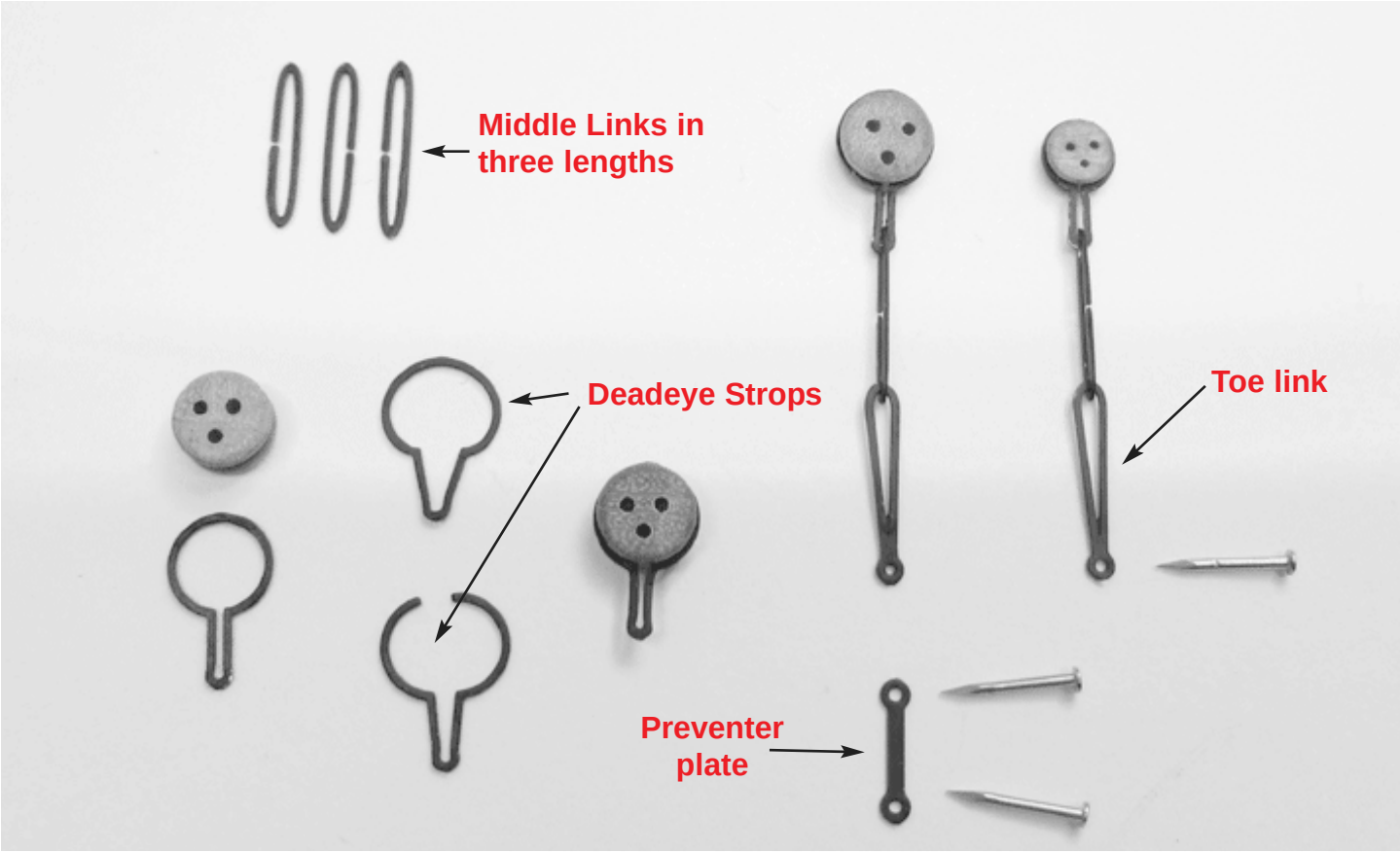
The channels have been laser cut for you and are 1/16" thick. Hold them against the hull where they would be positioned. Make any adjustments to the inside edges until they fit flush against the hull. The hull molding will need to be removed where the channels will be placed. You should do this before testing how well they fit. There are several eyebolts located on each channel. They can be added prior to gluing them into position. Be careful to line up the channels evenly port-to-starboard, as it will be quite noticeable if they aren't. You can also create a double beaded edge on the fore and aft edges of each channel. This will be a nice detail to add before you glue them onto the model. The outboard edges have many notches in them for the deadeyes and chainplates. Once the deadeyes are added, a double beaded molding strip will be placed along the outboard edge to secure them. This will be done after the chainplates are permanently positioned in each notch. Having the double beaded edges on all three edges of the channel will be a nice detail. You can use the photo etched scaper to make the molded profile on the fore and aft edges.

You will notice on the plans and in the photo provided that standards (or inverted knees) are evenly spaced along the channels for support. These have been laser cut for you as well. Sand them clean of laser char and glue them into position. They should fit between the channel and the molding above it. Tweak their shape so they sit flush against the hull. These standards along with the channels were stained to match the hull planking.

**Making the Chainplate Assemblies with Deadeyes…**

The chainplates for the Confederacy have been supplied as photo etched brass. You may find it easier to paint the chainplates while they are still on the photo etched sheet. They can be snipped free afterwards with a good pair of flush cutters. Then all you need to do is touch up the areas where you snipped them free of the sheet.

There are two sizes of deadeye strops provided as called for on the plans. Insert the respective sized deadeyes into their strops. There are two ways you can do this. The first being to simply open up the strop with some hobby pliers until the deadeye fits into it. You can see this in the photo provided. The opened strop looks like an




ice cream cone shape. The second method would be to snip the top of the strop to open it up. Then insert the deadeye and bend the strop closed around it. A small drop of super glue on the joint will secure the strop tightly around the deadeye. Make sure you orient the deadeye with the holes in their correct positions before applying any glue. You can touch up any paint that got damaged in the process.

The deadeyes in their strops can now be added to the middle links. There is a tiny opening on each middle link that will allow you to insert the bottom of the strop into it. If you examine the plans, you might notice how the angles of the chainplates increase as they work their way aft on the channels. Yet the bottoms of the chainplates are kept along the same line as they are secured to the channel wales. This is accomplished by making the completed chainplate assemblies slightly longer as they work their way aft along the channel. To make this possible, the middle links have been supplied in three lengths. You can see in that same photo how the middle links are only slightly longer for each size. When you are setting up the chainplates for the larger deadeyes, you will need to create them in all three lengths. Keep them separated by size so you can easily identify them when it comes time to place them on the model.

The toe links (or bottom links) are all the same size. You can add them to each assembly at this time.

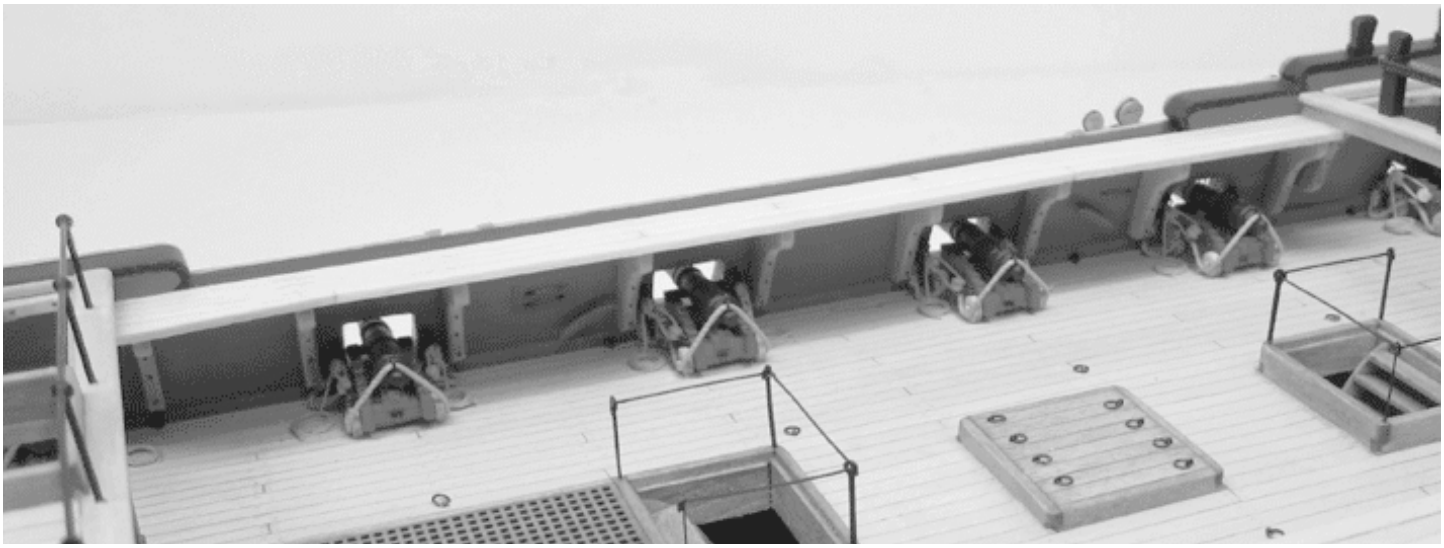
You are now ready to mark the locations where you will need to drill the holes along the hull. The chainplates are secured to the hull along the channel wales. Small brass pins secure the toe link and preventer plate to the wales. This can be a finicky process. What follows is the method used to secure them along the wales on the prototype.

You should have all of the deadeye assemblies made for the two sizes of deadeyes. This includes the length variations needed for both. Place them temporarily into each notch on the channels. Make sure you examine the plans carefully so the correct sized deadeyes are in the right order. The notches should be small enough that the bottom of the deadeye strops should sit

firmly in them without falling out. The toe links should be hanging freely below the channels at this point. Use the sharp point of an awl and insert it into the hole of the toe link. You should be able to approximate the angle of each chainplate as shown on the plans. When you are happy with the angle for each one, press the awl into the hull planking to mark the location for drilling that hole. On the prototype this was done one at a time. The location for the hole was marked and drilled. Then that chainplate was taken off the channel so the preventer plate along with a nail could be added.

A brass nail was inserted into the hole on the bottom of the toe link. Then one of the preventer plates (piece with two holes) was slid onto that brass nail as well. This will position the toe link on the outside of the preventer plate. This is not historically correct but it is one solution that makes installing them easier.

Finally, place the chainplate assembly back in its notch on the channel. Push the nail into the pre-drilled hole you made for it. This should secure the assembly in position. But the bottom hole on the preventer plate still needs to be drilled and nailed. You can make a small divot with the awl to mark the location of the bottom hole. Then slide the preventer plate over so you can pre-drill that hole. Don't try to drill the hole through the preventer plate. It won't end well. Pivot it aside first and then drill the hole. When you are done, pivot it back over the drilled hole and insert the



bottom nail. Repeat this process for all of the chainplate assemblies on each channel. Once completed, create some doubled beaded molding using the photo etched scraper. Use 1/16" x 1/16" strips for the molding. The strips should be glued to the outboard edge of the channels to fully secure the chainplates. Then use a needle file to blend the double beaded molding on the corners where it meets the edge profile you created on the sides of the channels. See the photo provided showing the main and mizzen channels completed on the port side. To finish up the channels, add the eyebolts to the hull between each preventer plate. You can see where they are located on the plans. There are also a few other eyebolts scattered around each side of the hull and they can be added at this time as well.

**Closing in the Waist and Gangways…**

Remove the remaining hanging knees which have been laser cut for you. Sand them to remove the laser burn. Then add three simulated bolts on the lower leg of the knee with 28 gauge wire. Use the same technique you used when creating the bolts on the other hanging knees. Examine the photo provided that shows the hanging knees glued along the bulwarks. Note how the top of the knees is set against the bulwarks. The tops are placed flush with the bottom of the cap rail. Once the gangway planks are glued on top of the knees, the top of the gangway planks should be flush with the top of the cap rail.

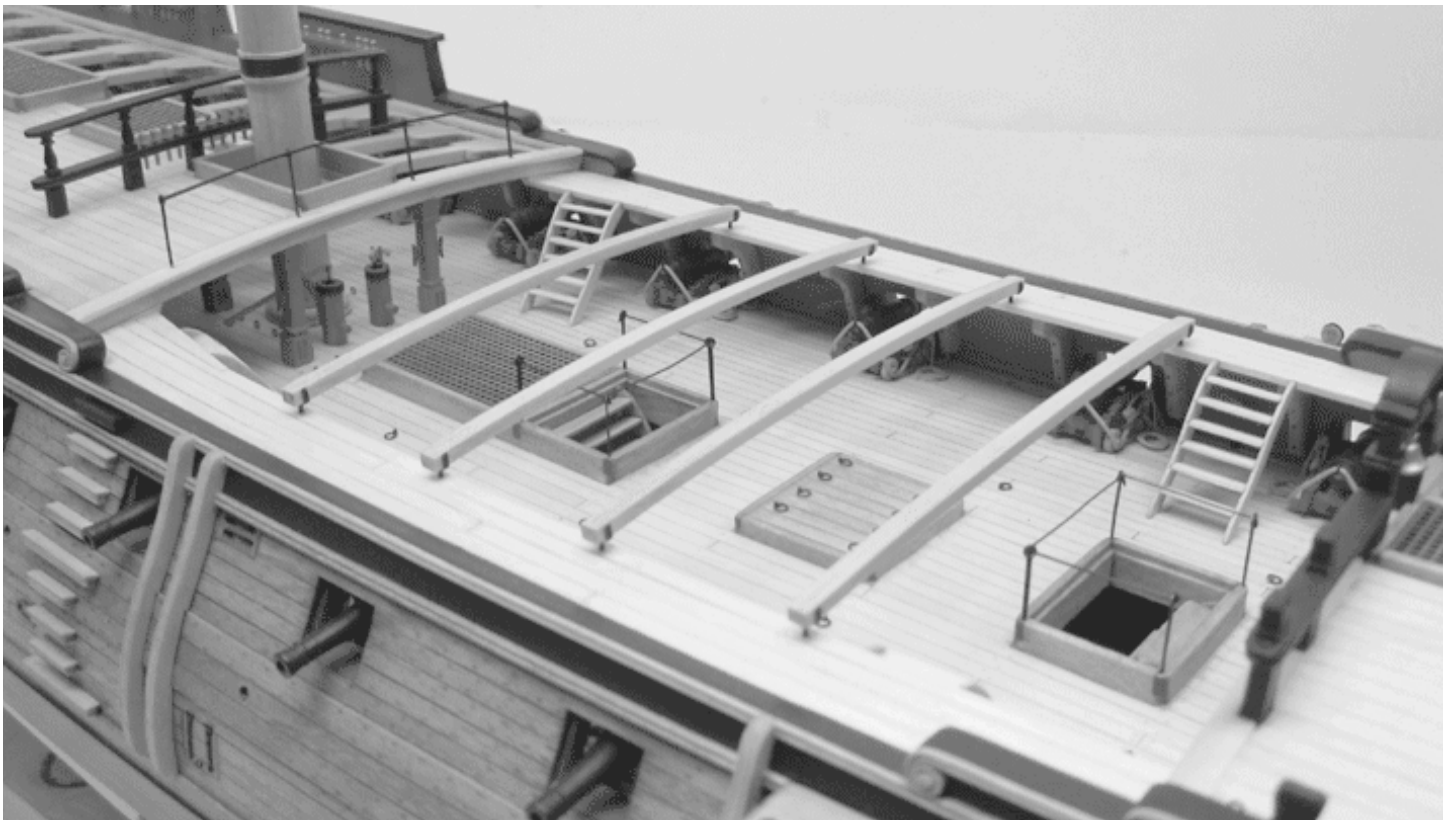
Plank the gangway as shown on the plans. The plans show the gangway planked with 5/32" x 1/16" planks. You could, however, use 1/8" x 1/16" strips as well. Just make sure you don't exceed the width of the gangways as shown on the plans. Keep it within 1/32" as shown. The gangways were very narrow during this time period. Treenail the planking once you are finished. The treenails should line up with the hanging knees. You can also simulate the caulking between each gangway plank by running a pencil down each edge before gluing them into position.

The ends of the gangway should create a step up onto the quarter deck and forecastle. If, for some reason, the gangway planking sits too low and creates a gap between the deck beam and the gangway, you can add a short length of wood under the deck beam to close it up. You should do this before you plank the gangways so you can butt the edges of the planks against the deck beams.

Create the ladders that sit against the gangways on each side of the waist. These can be made like the others earlier in the project. The stanchions and railings for the hatches in the waist can also be completed if you haven't done so already. Use the photo etched stanchions and 28 gauge black wire for the railings.

**Adding the Skid Beams…**

There are four skid beams that cross between



the gangways. These beams are secured in iron crutches that are glued into holes along the gangways. Use the 1/8" x 1/8" laser cut deck beams for your skid beams, as they have the correct camber cut into them. Cut them to length so they just span across the waist from gangway to gangway. The iron crutches are simulated using heavy paper or card stock painted black. Cut some strips that are 1/32" wide. Simply glue them to the bottom ends of each skid beam so they look like "U" shaped iron brackets. Then drill a hole through the underside of the paper brackets to accept some 22 gauge black wire. Insert a small length of wire into the hole to complete the skid beam crutches. Use a length of wire long enough that the skid beams will be elevated 3/32" off of the gangways after they are installed. Drill a corresponding hole along the edge of the gangways and insert the crutches into them. Use the plans to determine how far apart the skid beams should be. Also be very careful in making sure they are all straight and lined up consistently. If one of the skid beams is angled in comparison to the others, it will be very noticeable. The skid beams were stained to match the hull planking and other deck beams. See the photo provided that shows the skid beams completed.

**Adding the Waist Rails…**

A photo is provided that shows the waist rail completed. The rail runs along the cap rail of the waist. Photo etched stanchions are supplied for the rail. These are different than the other stanchions you have been using. There is a bracket on the top of each stanchion for the wooden rail. Paint the stanchions black. When you remove them from the photo etched sheet, leave the sprue attached to the bottom of each stanchion. These pins will be inserted into pre-drilled holes along the cap rail. There are stanchions of various heights as depicted on the plans. You can even use a photo copy of the plan to help mark the locations for each stanchion along the waist. Glue them into position, being careful to make sure that the tops are all level in relation to one another.

Then cut some 1/32" x 1/16" strips to length and glue them into the brackets on top of each stanchion. You can stain this strip of wood before you glue it into position so the stain doesn't get blotchy from the gluing process. You will need two lengths of wood on each side of the hull. Be sure to leave the opening in the rail where the boarding ladders are located.

**Building and Stepping the Stump Masts…**
If you haven't done so already, the stump masts can be made and glued into the mast coats on the gun deck. The main and fore masts are made using a 7/16" diameter dowel. When you cut them to length, be sure to add an extra ¼" to compensate for the depth of the holes for each mast. You can use the plans as a guide for cutting them. Since only a short length is needed, there is only a very slight taper to the masts. They taper slightly smaller as they get higher. It's very insignificant and you probably don't even have to do so. Sand them smooth and stain them.

The main and fore masts will have one set of wooldings on each of them. You can see them on the inboard plan sheet. Mark their locations on each mast. Heavy paper was painted to look like wood. Acrylic paints were used to match the color of the stained masts. Cut the paper or card into thin strips about 3/64" wide. Glue them around the mast to simulate the wooden hoops on the top and bottom of the wooldings. Then use some .028 black rigging line to create the wooldings. Wrap them around the mast between each mast hoop. You can bury the end of the line under the previous coil and glue it securely. Paint and add the cleats around the base of both masts and then glue them into position on the model.

The mizzen stump mast does not have a woolding to model. Just cut the dowel to length and add the cleats shown on the plans. Glue it into position when you are finished. Be sure to establish the proper rake for each mast when you install it. The fore mast is virtually straight up and down with no aft rake. The main mast is raked aft but very slightly. Then the mizzen mast should be raked slightly more. These angles are shown on the inboard plansheet.

**Making and Adding the Anchors...**

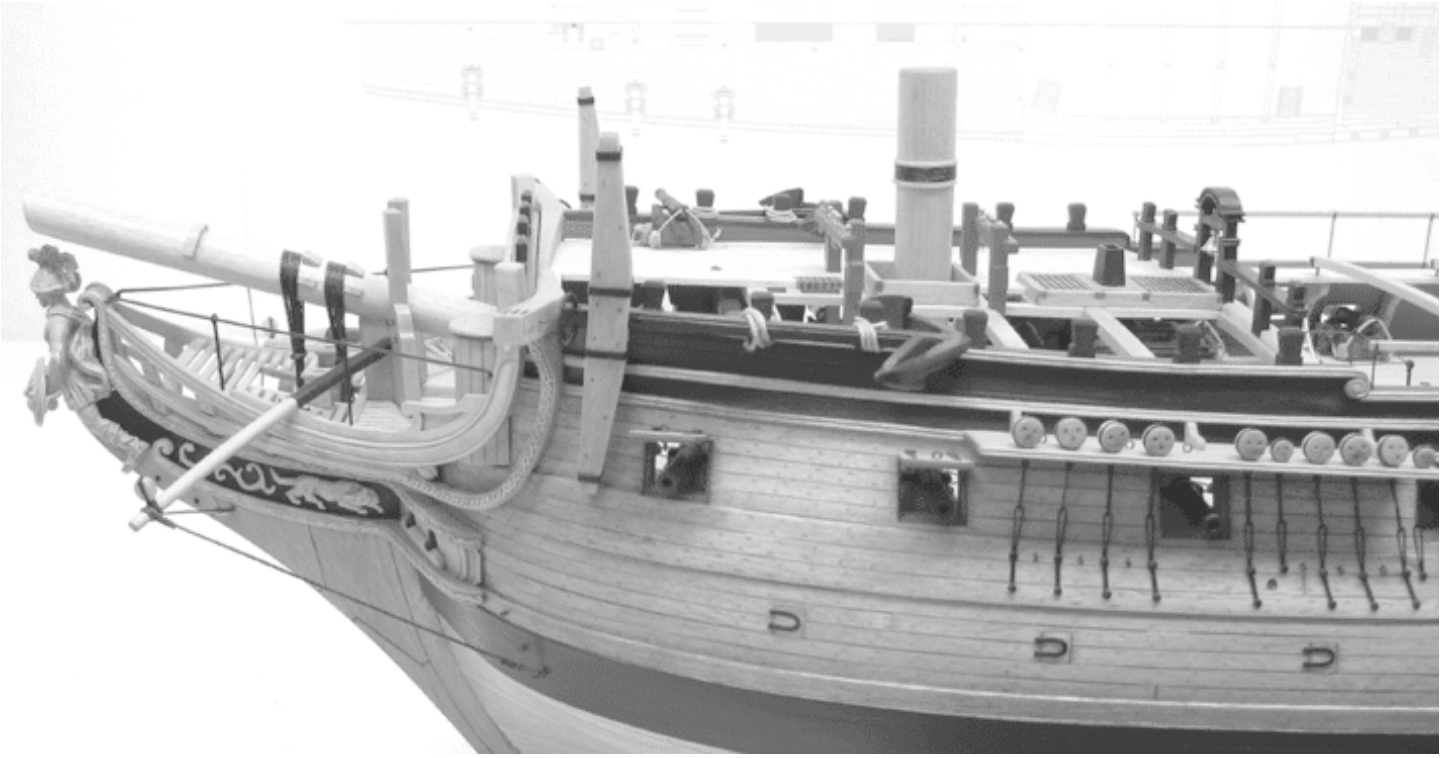
Two cast britannia metal anchors are supplied with kit. The anchor stocks are laser cut for you. There are two halves that must be glued together. Examine the plans for details. Note how the stock tapers on three sides. The top of the anchor stock is not tapered. It is easier to complete the tapering of the anchor stock after the halves are glued together. Notch out the center of each half so when they are joined the anchor can be slid through the hole it creates. See the photo provided. Wrap some 1/16” wide black pinstripe tape or card around the stock to simulate the iron bands. The bands are painted black. Several bolts can

also be simulated on both sides of the stock between each iron band. See the plans for their locations. The bolts can be made with 28 gauge black wire as you have done earlier in the project.

Then create the iron ring using 22 gauge black wire. Place the ring through the hole on the end of the anchor. Depending on your level of experience, the ring could be wrapped (served) with sewing thread to add another optional detail. See the photo above that shows the ring being served with black thread.

Because this is an unrigged Navy Board style model, the anchors aren't rigged to the cathead. On the prototype, they were simply lashed to the forecastle rail as if stowed. You could opt to fully rig them if that is what you prefer.

Use .028 guage tan rigging line to lash the anchores to the timberheads. Two lashings on each ancor are appropriate, since these are very large anchors. A photo is provided that shows the anchors lashed to the timberheads.



## Chapter Nineteen

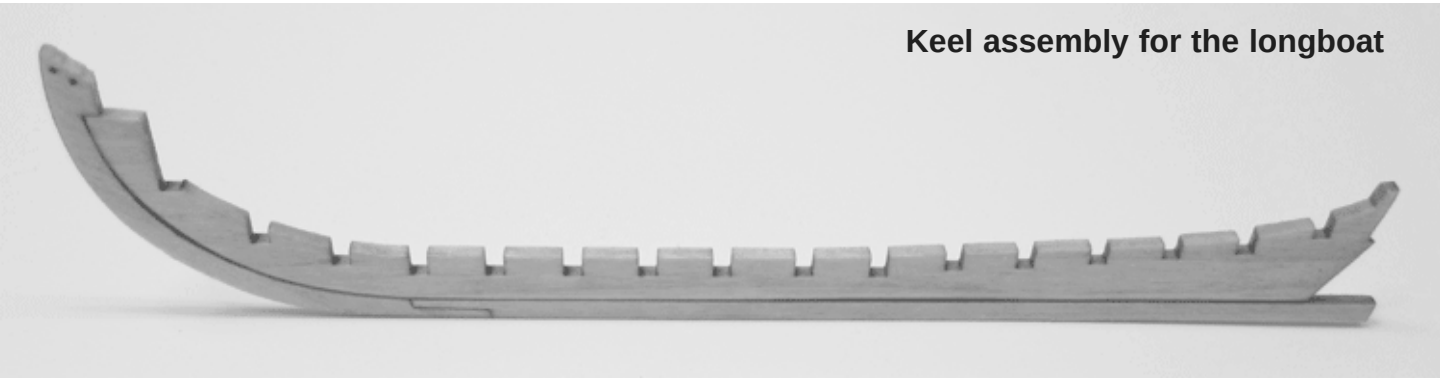
# Building the Two Ship's Boats

The Confederacy probably carried a minimum of four ship's boats. On our model, we will be building only two. The model will show a 22 foot longboat and a 26 foot pinnace secured to the skid beams across the waist. Each boat will be planked on bulkheads, much like the hull of the Confederacy. But after the initial planking is completed, the center of each bulkhead will be removed leaving a fully framed shell to detail.

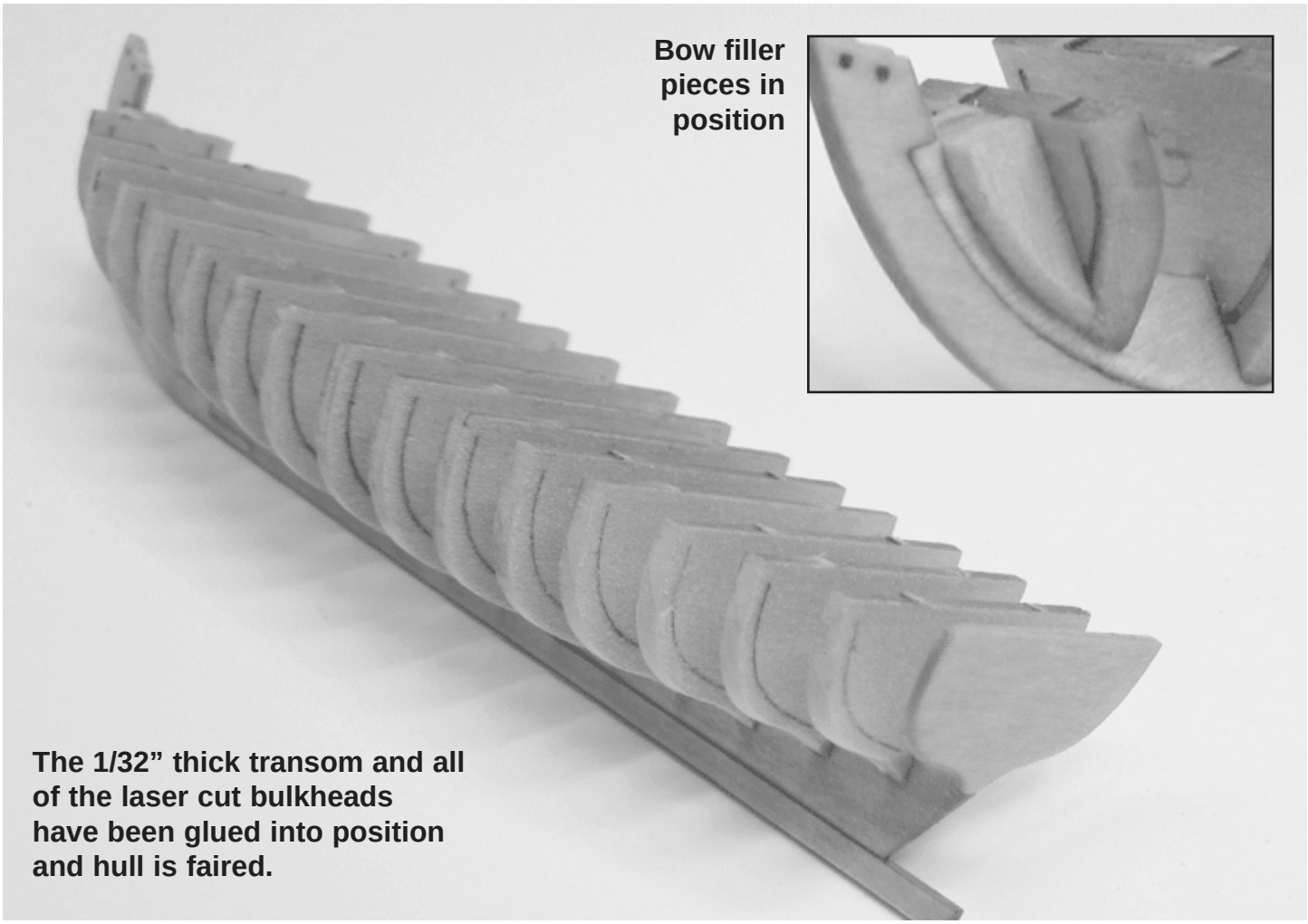
**Building the 22' Longboat…**

Remove the notched false keel from the laser cut sheet (1/16" thick). You will notice that it has a laser etched reference for the bearding line, much like the false keel for Confederacy. These smaller parts are very delicate, so handle them with care. You must bevel the false keel from the bearding line to the outside edges. Remove enough of the material so the keel gradually reduces in thickness to slightly less than 1/32". This needs to be done on both sides with the finished width being slightly less than 1/32". You can continue the beveling towards the bow and up the stem. This will create only a slight rabbet which will help make planking easier. Even though the edge of the false keel is so thin, the edge will still be a sufficient width to glue the actual keel and stem to.

Examine the photo provided that shows the stem and the keel glued to the false keel. Glue the stem into position first. Make sure you center it so the rabbet formed is equal on both sides. Then add the keel with its scarph joint. Just leave the end of the keel long enoughat the stern so it hangs over the edge as shown in the photo. Note: You may consider staining these pieces before you glue them together so the basswood doesn't get blotchy after gluing. The keel assembly was stained to match the outboard planking above the wales.



**Keel assembly for the longboat**



**Bow filler pieces in position**

**The 1/32” thick transom and all of the laser cut bulkheads have been glued into position and hull is faired.**

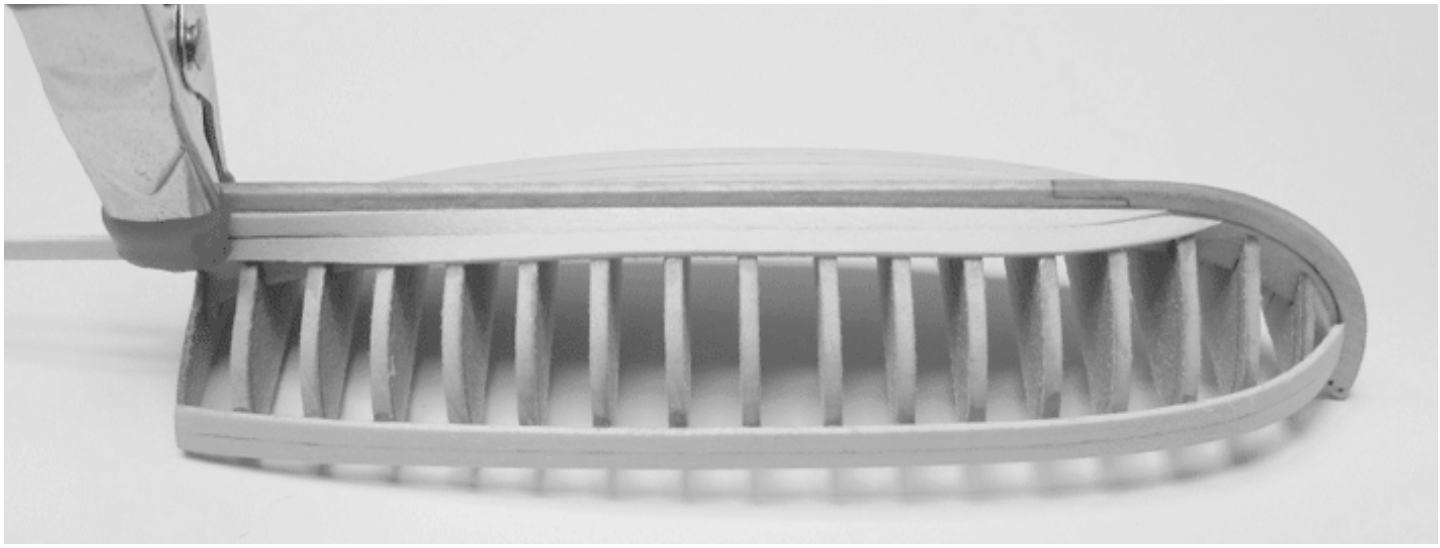
**Gluing in the Bulkheads…**

There are sixteen laser cut bulkheads for this longboat. They are 1/16” thick. They should be glued into their respective notches along the false keel. THIS IS VERY IMPORTANT: Make sure you leave the center of each bulkhead intact when you glue it into position. The center of each bulkhead is held in place with three small tabs, one on the bottom and one on each side of the top of each bulkhead. The centers won't be removed until after the planking is completed.

As you are adding each bulkhead, make sure you view it from the bow and stern. Look down the keel to make sure they are all centered and lined up correctly. As the glue dries you should have time to make sure that a bulkhead doesn’t stick out on one side. You can draw a reference line down the center of each bulkhead if it will help you keep all of them lined up with the keel properly. This is important as the hull will not be faired smoothly if they are not lined up properly. You should view the bulkheads from above to make sure they are glued in at a right angle to the keel and spaced evenly apart.

Once all sixteen of the bulkheads are glued into position, you can fair the hull. Use very fine grit sandpaper. Wet/dry 320 grit would be perfect for this. Anything coarser will grab the bulkheads along the sides as you sand them and possibly split them. Very gently sand the edges of each bulkhead to fair the hull. Take your time with this, especially at the bow.

After the hull is faired, you can add the laser cut transom (1/32” thick). This piece was added after the hull was faired because it is so delicate. It is only 1/32” thick and won’t really need to faired. If you do find the need to do so, please use a very light touch. Carefully glue it to the back edge of the keel. There is a small notch to help you line it up correctly. Just sit the bottom of the transom on top of the notch. Make sure it is straight and at a right angle to the keel before the glue dries.

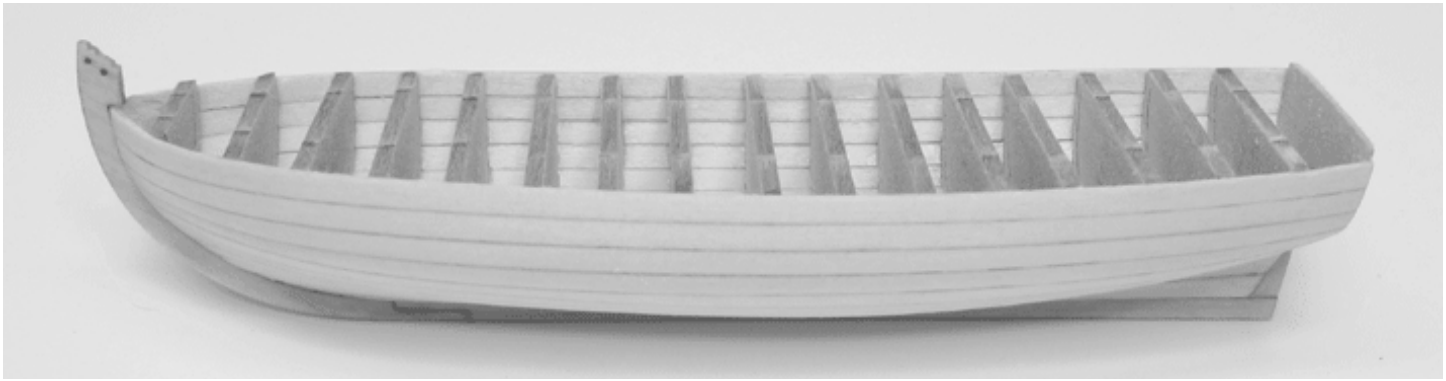


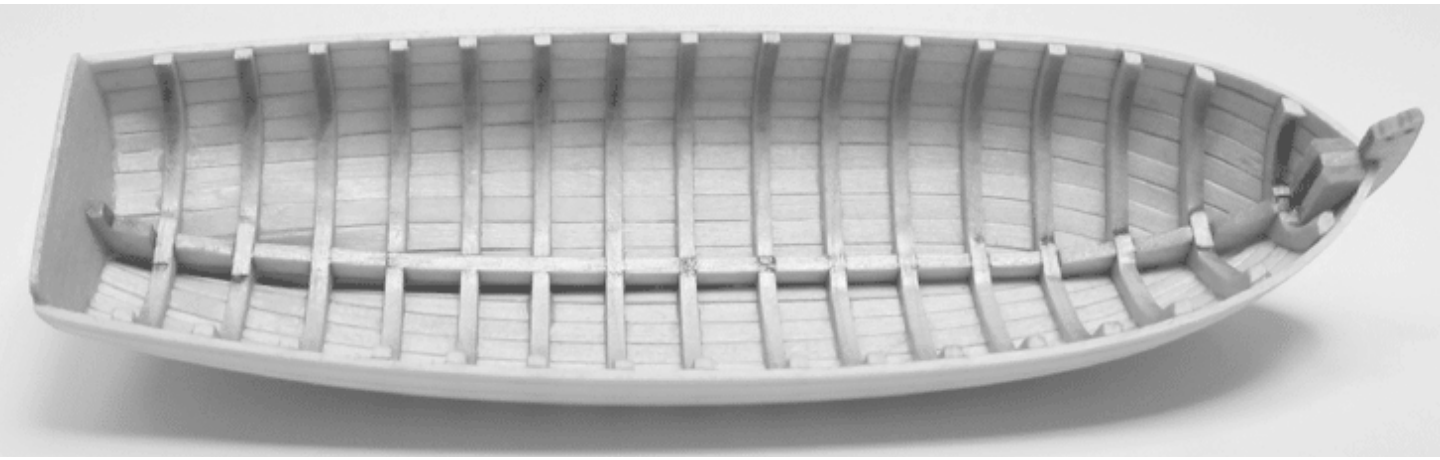
At the bow, there are two more filler pieces that will help make planking easier. It's designed much like the larger hull of Confederacy. These pie-shapes should be glued to the sides of the false keel at the bow. A photo is provided that shows these two pieces glued into position along with the transom. Fair the two bow fillers just as you did for the larger ones on the hull of the Confederacy. The longboat is now ready for planking.

**Planking the Longboat…**

The longboat will be planked with 1/32" x 3/32" strips of basswood. They should be pre-bent to make planking the bow easier. Two planks along the sheer should be added initially on the port and starboard sides. This will strengthen the entire assembly. You will be amazed at just how strong the structure will be after the first plank on each side is completed. NOTE: You can adjust the run of the first plank along the sheer if you prefer a more curved appearance. If you line up the top of the first plank with the top of each bulkhead, it will create a relatively straight sheer on the profile. If you lower the first plank in the middle of the boat by 3/32" it will create a more curved look. This is not needed however, but because some model builders prefer a more curved sheer on a longboat, I thought I would mention it.

The planks were added in one length rather than cutting each strake in two pieces. This is a simplified approach. The edges were darkened with pencil to simulate the tarred seams. The two strips placed along the keel were clamped because of the extreme twist at the stern. A photo is provided that shows this being done on the prototype. Let the strips run beyond the stern post so you can carefully trim them back afterwards. The hull planking was not stained. The planking was simply sealed with wipe-on poly to match the color of the planking on the Confederacy below the wales. This created a nice contrast between the stained keel and stem. An additional photo is provided that shows the long boat planking completed. The hull was sanded smooth and the thickness of the planking reduced for scale. You don't have to thin down





the planks that much, but 1/32” is just a bit thick in this scale.

Add the laser cut stern post and trim the keel flush with it. Carefully file all of the hull planks flat so the stern post will sit flush against them.

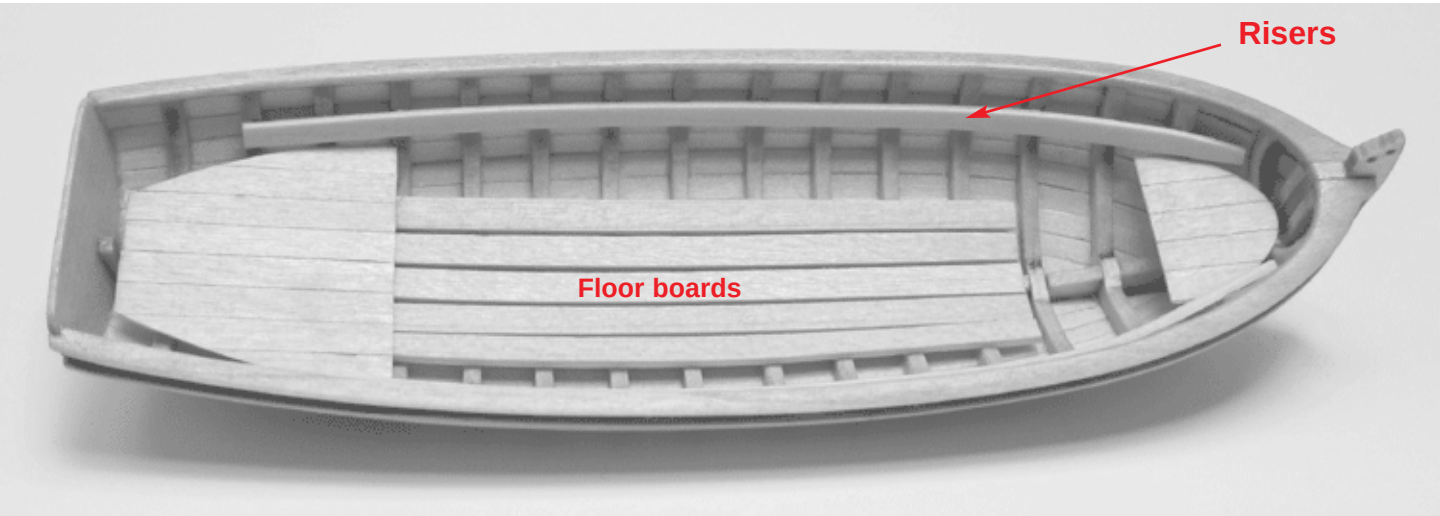
**Removing the Bulkhead Centers…**

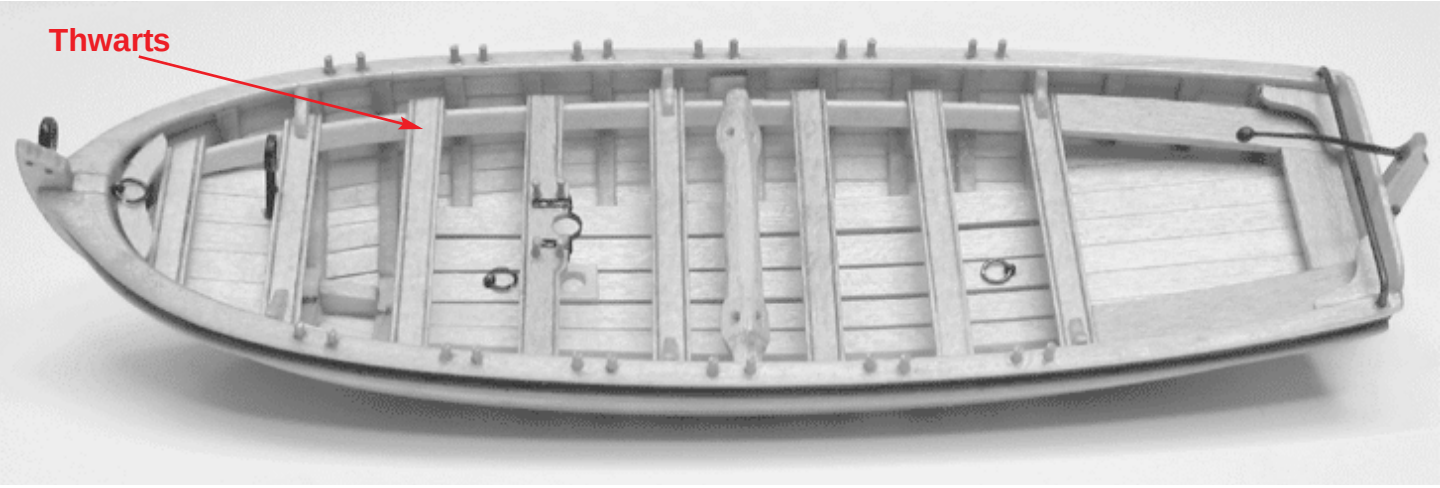
A photo is provided that shows the longboat after the center tabs have been carefully removed. This can be a very anxious procedure but it needn’t be. Basically, you will be separating the center of each bulkhead from the two tabs at the top of each frame. Resist the urge to grab your hobby saw to cut through them quickly. It is far better to use the edge of a flat needle file. File the tabs gently on each side of the hull and remove the center of the bulkheads one at a time. You can also hold the top of the bulkhead in the center while you file down the tabs. This will give it extra support. The wood grain is horizontal and the center will want to flex fore and aft as you file away the tabs. Try and hold it vertically and keep it immobile while filing. After you file the tabs away, simply bend the center forward and then aft to snap away the tab on the keel. This will free the center completely. Repeat the process to remove all of the centers for each bulkhead.

Then sand the frames and keel to reduce their thickness and fair them inboard. The photo shows the interior after the prototype was sanded and faired.

**Finishing the Outboard Details of the Longboat…**

Sand the tops of the frames and the sheer to get a smooth run bow to stern. The cap rail will be added next. To make the cap rail, hold a 1/32” thick sheet of basswood on the top of the longboat. You will be creating the cap rail for the longboat on one side only. Press the sheet firmly down against the top of the frames. Take a pencil and trace the outboard outline of the hull. This will give you the general shape of the cap






rail. Draw another line 1/8” inside the traced outline to create the cap rail template. Cut out the cap rail with a sharp blade, but cut outside of your lines to make it even wider. Leave plenty of extra meat on the cap rail because it will be easier to sand it to the proper width after it is glued on the model.

Repeat the process to make the cap rail for the other side of the boat. You can notch the aft side of the cap rail to fit around the transom. Then glue it on top of the boat's frames and sheer plank. It will be very wide and out of scale at this point. Carefully sand the outboard edge until it creates an overhang that is 1/64” wide. The sand the inboard edge until the entire cap rail is 3/32” wide. It will flare a bit at the bow and be slightly wider there. Examine the photo that shows the cap rail sanded with the correct shape. You may also note a small filler piece that was inserted between the two halves at the bow (just aft of the stem). There will be a small space there which needs to be filled. You could shape each half of the cap rail so this filler isn’t needed, but either way is good. The cap rail was stained to match the keel and stem.

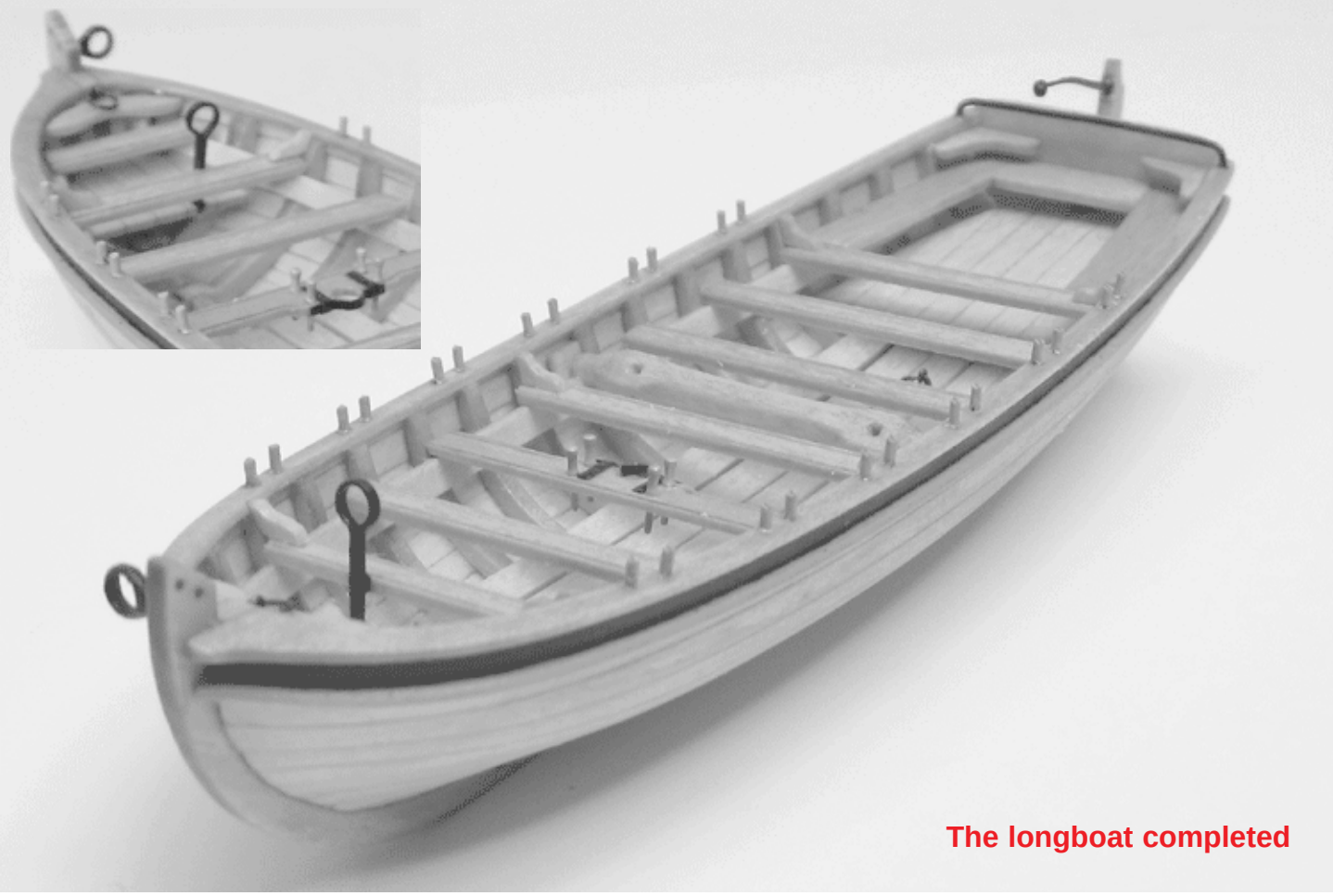
A thin strip was 1/32” x 1/32” basswood was glued to the outboard planking for the molding below the cap rail. It was positioned 3/32” below the cap rail. The space between the cap rail and this molding strip was then painted black.

**Starting the Inboard Details...**

The floorboards were glued into place first. Use 1/8” x 1/32” strips for these. They are visible in the photos provided. Leave a consistent air space between each floor board. Cut them to length using the plans as a guide. The two platforms (bow and stern) were made next. Basswood strips (1/8” x 1/32”) were glued together edgewise. A pencil was used to darken the edges before gluing. A paper template was cut using the plan as a guide. Once you determine that the paper template fits in position, you can use it to trace the shape of each platform on the wood you glued together. Glue them into place as shown in that same photo. You may notch each platform edge to fit around the frames as in real practice, but for our model you can simplify the process. You can simply glue the platforms in position without notching them and they will sit flush against the inboard edges of each frame.

The risers (or risings) were added next. These are support strips for the thwarts (or seats) of the longboat. The risers are made using a 3/32” x 1/32” strip. Cut it to length as shown on the plans and in the photos. The important part of installing these strips would be to make sure they are a consistent distance below the cap rail. Measure and mark this distance on all the frames before you glue them into position. This will ensure that risers are the same height on the port and starboard sides. The top edge of the riser should be placed between 3/32” and 1/8” below the top of the cap rail.

The thwarts (or seats) were made from 1/8” x 1/32” strips. There are eight thwarts on this longboat. One of them is slightly wider because it has a circular notch filed into it for the mast. This



The longboat completed

thwart was made using a 5/32" wide strip. All eight thwarts were cut to length and test fit in position. They weren't glued into position permanently so they could be spaced consistently according to the plans. Their positions along the risers were marked with a pencil. You might notice in the photos throughout this chapter that the thwarts have a molded edge. This is an easy optional detail to add. You can use a sharp awl to create these grooves down the edges of the thwarts. Take a metal straight edge and hold it firmly down on the basswood strip. Then "lightly" scribe the groove down the strip. It isn't a very deep groove at all. Just a few light passes on each side of the strip will create the molded edge. You can do this to a long strip of basswood before you cut the thwarts to length. This will help make the grooves consistent for all of them. NOTE: There is more space left between the thwarts where the windlass shall be placed.

The wider thwart that is notched to receive the mast was completed off the model. All of the ironwork and belaying pins were added to it before it was glued on to the longboat. Use the plans as a guide to file the circular notch and shape the aft profile of the thwart. Thin paper/card strips (1/32" wide) were painted black for the iron work. The iron band that forms the bracket for the mast was glued onto the edge of the thwart first. After gluing one side onto the edge, the strip was pushed to that side so it naturally bent in a circular fashion. Then the other side was glued against the edge of the thwart to "lock" into the natural curvature of the strip. Two support straps of the same width are then glued to the top of the thwart and wrapped over the bracket. They are taken under the bottom of the thwart and glued there as well.

Alongside each of these support straps, you will see two belaying pins. Brass belaying pins (very tiny) were supplied for these. Glue them into predrilled holes as shown on the plans and photos. Paint the belying pins to resemble wood. This thwart can be glued into position when you are finished. The seats for the cockpit were cut and shaped from the 1/32" thick basswood sheet. They were glued into position when finished.

Various knees are shown on the plans. Six are positioned on top of some thwarts and against the sides of the boat. There are more knees at the stern just above the cockpit seats and one additional at the bow. These were all cut from a 1/32" thick sheet to fit and glued into position. A tiny square was cut from the sheet and a hole drilled through it for the mast step. This was carefully positioned below the opening in the wider thwart for the mast. Glue it on top of the center floorboard. You can make this from a 1/8" x 1/32" strip as well.

The windlass is made using a 1/8" x 1/8" strip of basswood. Cut it to length. Then mark the locations for the two squared sections of the windlass on all sides of the strip. The area between these squared sections and on the outside ends is eight sided. These sections of the windlass can be filed to create the eight sided profile. Just file down the four corner of the strip carefully to create an eight sided profile. While filing, be conscious of how you define the two squared sections of the windlass. Drill small holes in the center each of the squared sections. Keep them lined up on all four sides of the windlass. Then glue the windlass on top of the riser between the two thwarts. You can take a small square of scrap wood 1/32" thick and notch it out to place over the ends of the windlass. These small squares should be glued against the inboard sides of the hull to simulate the caps that lock the windlass in position. The windlass won't actually turn, but these small pieces should simulate that it could.

**Adding the Ironwork to the Longboat…**

There are three eyebolts with rings on the longboat. Two were glued into the floorboards and were used to lift the boat when being deployed. One additional ring was glued at the bow and was used to tether the longboat if needed. Add these rings after painting them black. You can make them the same way as you made the split ring assemblies on deck for the long guns.

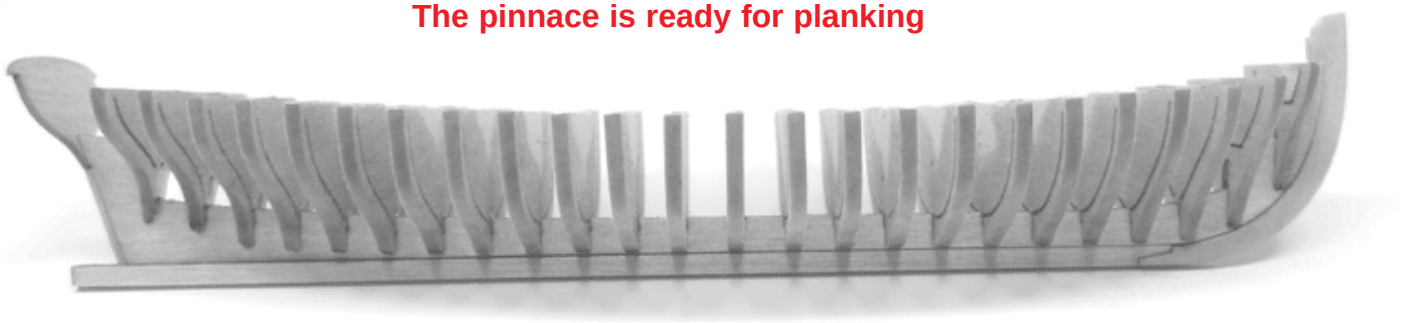
At the stern, you will see a traveler bar that spans across the boat (just forward of the transom). This is made using 22 gauge black wire. Just bend the ends and insert them into pre-drilled holes in the top of the cap rail.

There are two bowsprit irons. They are used to secure the bowsprit when it was being used. These are made using the 1/32" wide brass strips supplied with the kit. Just crimp an appropriate length around a suitable wooden dowel (1/8" diameter). Take the two "tails" and glue them together. These two tails will form the base (post) after being glued together. Snip off the excess to make the circular ring the correct height off the deck. Drill a hole into the platform at the bow so you can glue the first bowsprit iron into position. It should sit against the forward edge of thwart as shown in the photos and plans. Note how the location is slightly offset to the starboard side.

A second bowsprit iron is used on the starboard side of the stem. This one can be made the same way. You just need to cut the base much shorter. It should be painted black and inserted into a pre-drilled hole on that side of the stem. Be careful not to drill all of the way through the stem. Just make a shallow hole deep enough to glue this piece into and it won't sag or fall out. Carefully determine the placement of this hole so that after the ring ispositioned, it lines up with the one inboard. It must be aligned so that in real practice abowsprit could be inserted into both rings. Normally, the bowsprit was angled slightlyupward, so the rings should be positioned as such to make this possible. Although offset to starboard, the bowsprit also angled slightly to the port side, so the tip of the bowsprit ended up directly in front of the stem.

The oarlocks are simple to make. These are made using 22 gauge black wire. Just drill the holes on the top of the cap rail. Carefully position them in pairs so they are even on both sides of the boat. Cut small lengths of wire and insert them into the holes. It's easier to snip them all at the same height after you glue them into the holes. You can paint them to look like wood (as on the prototype) or leave them black.

The pinnace is ready for planking



**Adding the Rudder…**

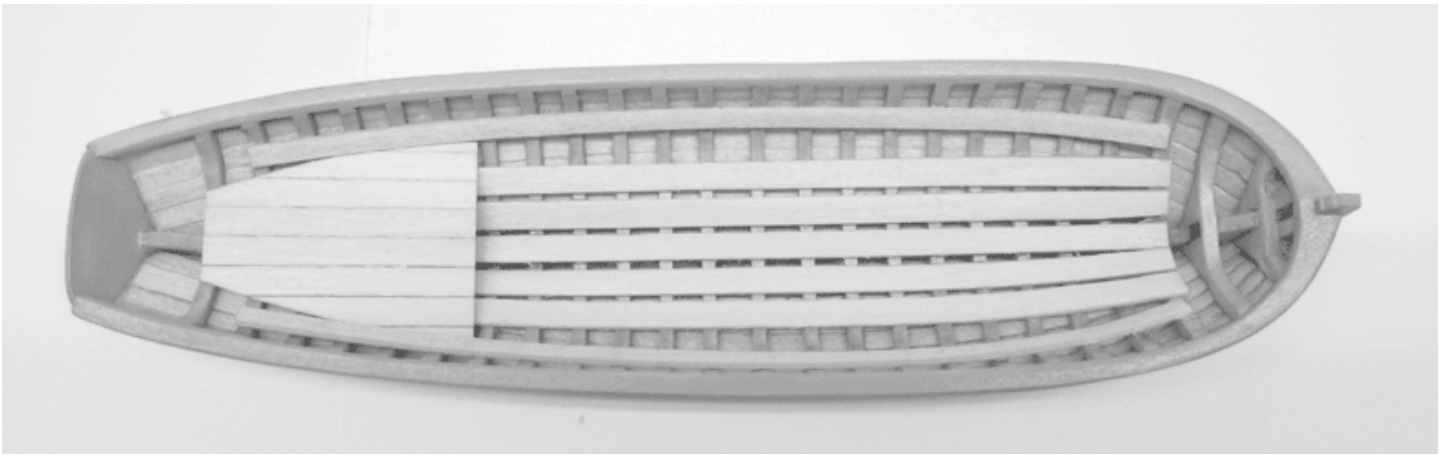
The rudder is laser cut for you. Just sand off the laser "char" and create the pintles and gudgeons from heavy card stock. The card stock should be cut into strips 1/32" wide and painted black. Add them to the rudder and use a tiny length of 28 black wire for the pintle pins. Hold the rudder against the stern post so you can mark the locations for the gudgeons. Glue the black card stock gudgeons to the transom and hull appropriately using the plans as a guide. You can bend the card strips to pre-shape the pintles and gudgeons somewhat before you glue them into position.

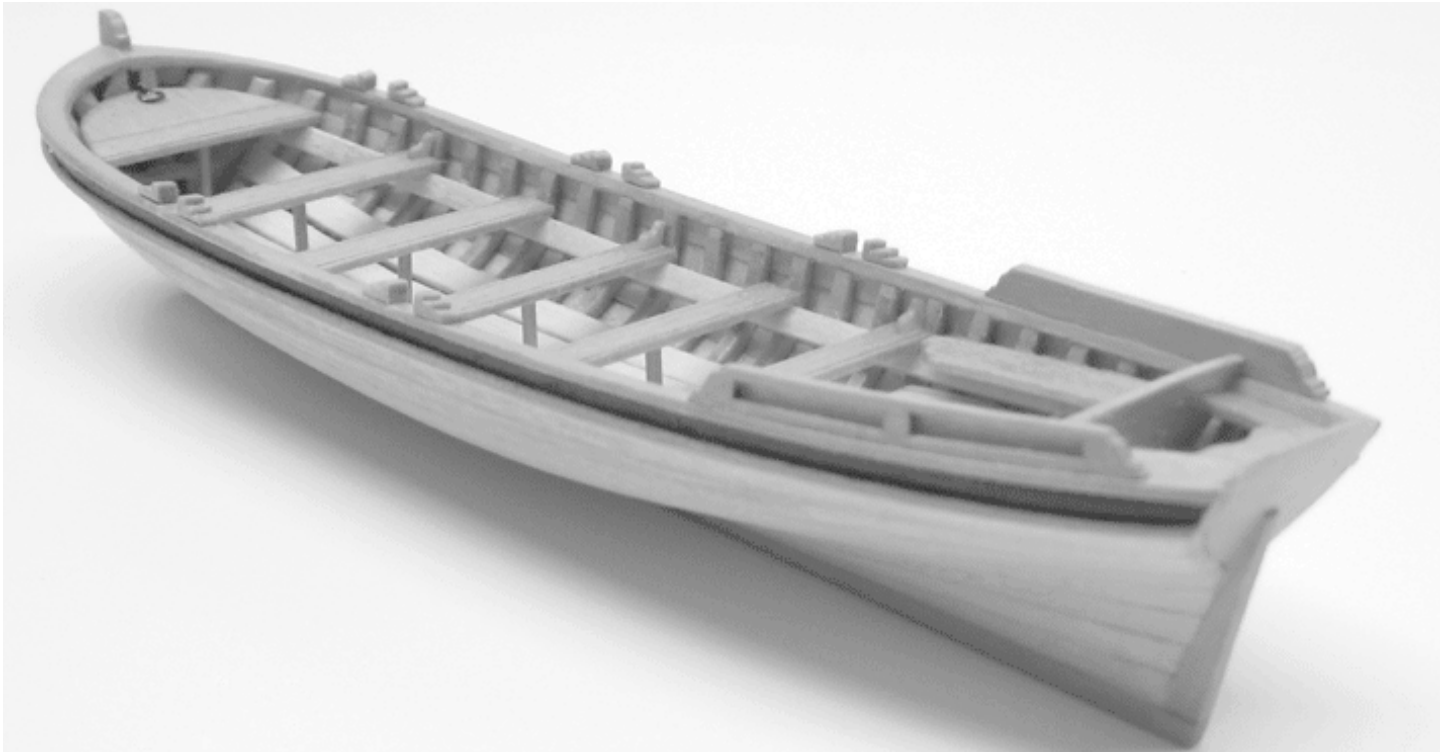
The tiller was made using 28 gauge black wire. Just bend it to shape. A drop of CA was placed on the end of the tiller to form the small ball. If you have a CA accelerator, you can spray it onto the droplet to instantly cure it. This helps lock in the perfectly round shape of the ball. Glue the tiller into the rudder after drilling a small hole for it. Then paint the tiller black. That will finish up the longboat. Set it aside while you start building the pinnace. When both are completed, they can be mounted on the model. Several photos of the completed longboat are provided for you.

**Building the 26 foot Pinnace…**

The pinnace is built just like the longboat. There is no reason to repeat the instructions for assembling the keel and bulkhead frames. Several photos have been provided that show the initial construction at various stages. Build them as you did with the longboat. There are, however, a few additional details and differences to note.

There are panels located on top of the cap rail on both sides of the cockpit. These have been laser cut for you in two layers. Glue the two lay-





ers together and sand them slightly thinner on both sides. Then glue them into place as shown in the photos.

Under each thwart, you will notice that support stanchions were added. These were made by cutting 1/32" x 1/32" strips to length and gluing them under the center of each thwart. This adds a nice detail to the finished pinnace.

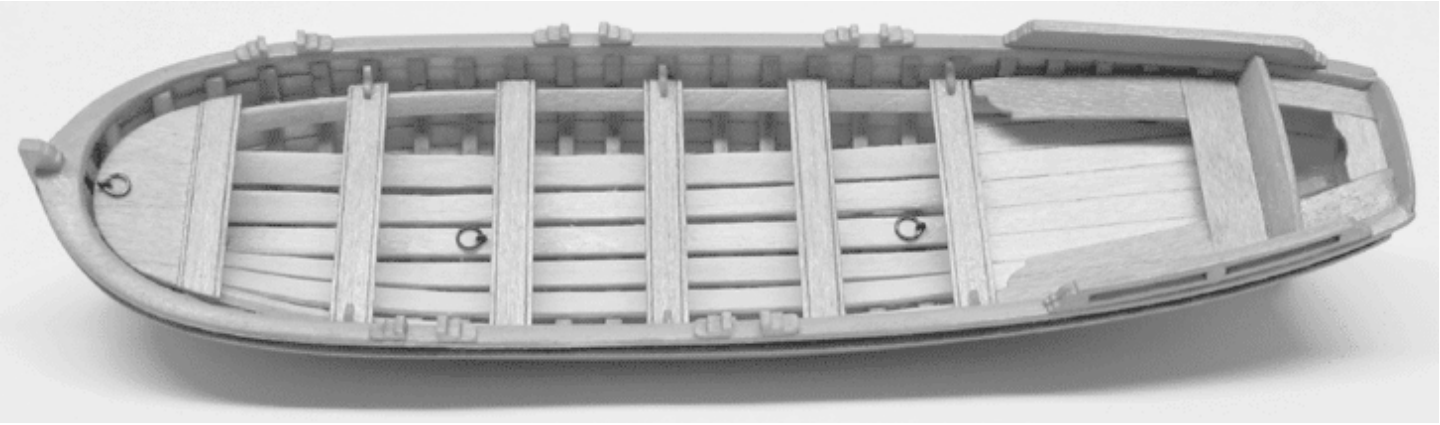
The oar locks on top of the cap rail are shaped out of 1/16" x 1/16" strips. They were cut to length and filed to match the "stepped" profile shown on the plans.

Other than those small differences along with a slightly different cockpit layout, this boat is built the same way as the longboat.

**Mounting the Ship's Boats on the Skid Beams…**

Both boats have laser cut crutches supplied for mounting them. They are 1/16" thick. These crutches will be glued to the tops of the center skid beams in the waist. An easy way to position them correctly would be to glue them to the bottom of the boats first. Place the ship's boats on the skid beams where they would be lined up "fore and aft" properly. You can examine the photos provided to get an idea of where they should be placed. Then mark the keel of each boat where the center of those two crutches should be located. Glue the crutches to the boats. This will ensure that the boats line up properly with the skid beams when you glue them on top of them. Place them both on the skid beams together so you can align them properly port-to-starboard with and even amount of space on both sides. The boats should be placed about 1/8" apart. Then mark the locations for the crutches on each skid beam. Don't glue them into position just yet.

Each boat will be tied down using .028 tan rigging line. The rigging will be doubled up and seized to eyebolts on the top of the skid beams. Now that you know where the crutches and boats will be positioned, you can glue these eyebolts into position ahead of time. It would be a good idea to actually seize the line to the inboard eyebolts before you glue them into the skid beams as well. Otherwise, it would be very difficult to reach between the boats to seize the eyebolts afterwards. On the prototype, the rigging line was placed through the inboard eyebolts and doubled up so the resulting lashing was 7" long. Then I seized the doubled lashing close to the eyebolt with two seizings. This was done to make four lashings. These four eyebolts were then glued



into pre-drilled holes on the two center skid beams. They were positioned in the space between both boats on the skid beams. Because the longboat is wider than the pinnace, it doesn't necessarily mean they should be placed down the exact center of the skid beams. They will be offset somewhat.

The boats can now be glued onto the skid beams permanently. Then grab each doubled lashing and bring it over the boats so you can seize it to the eyebolts on the outboard sides of each boat. Run the lashing through each outboard eyebolt on the skid beams and seize them to complete the process.

**With boat ship's boats now lashed to the skid beams, your model of Confederacy has been completed. CONGRATULATIONS!! A laser cut display cradle has been provided so you can proudly display your model of the Confederacy. We hope you enjoyed building the Confederacy.**

**The pinnace completed**