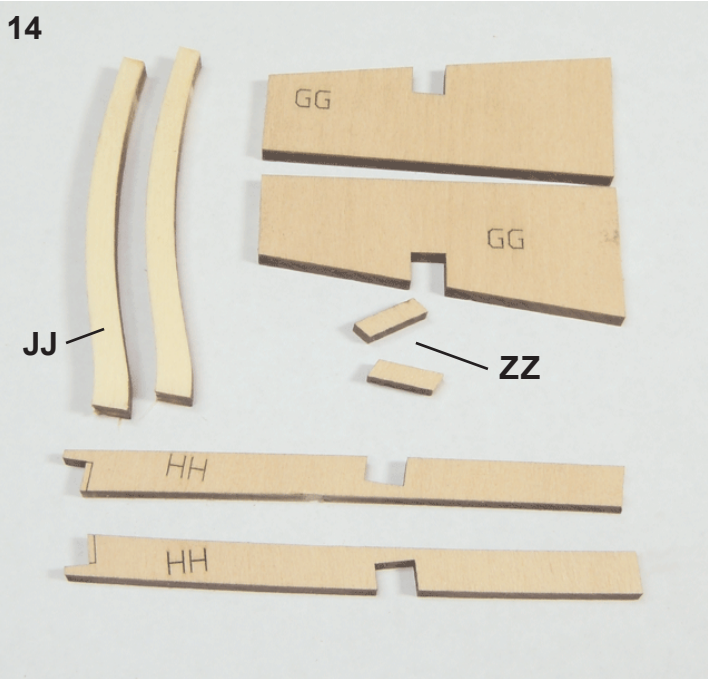
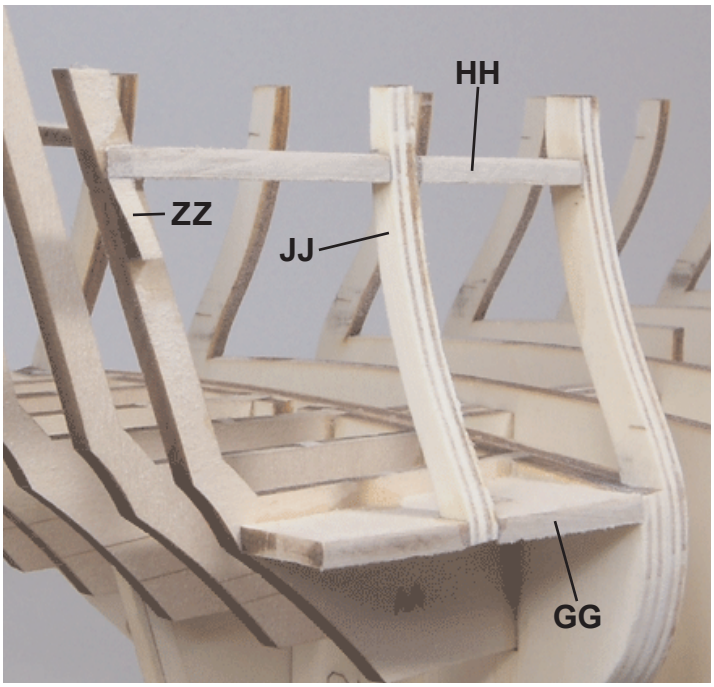




Chapter Three

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, they 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

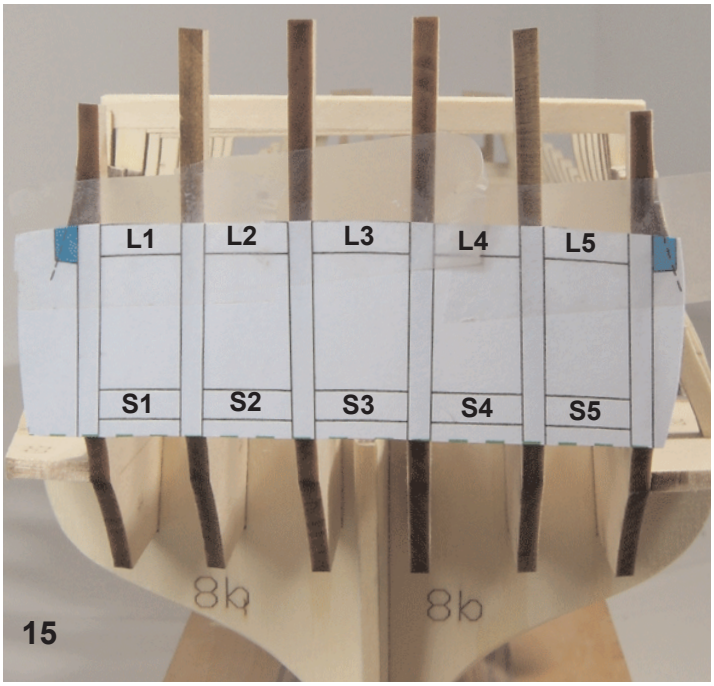
edge of GG. Examine the photo provided that shows this step of the stern framing completed. When you are finished, the outside of the hull should be faired again. Sand these pieces to match the shape of the hull just like you did while fairing the other bulkheads. Test how well these pieces are faired 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.

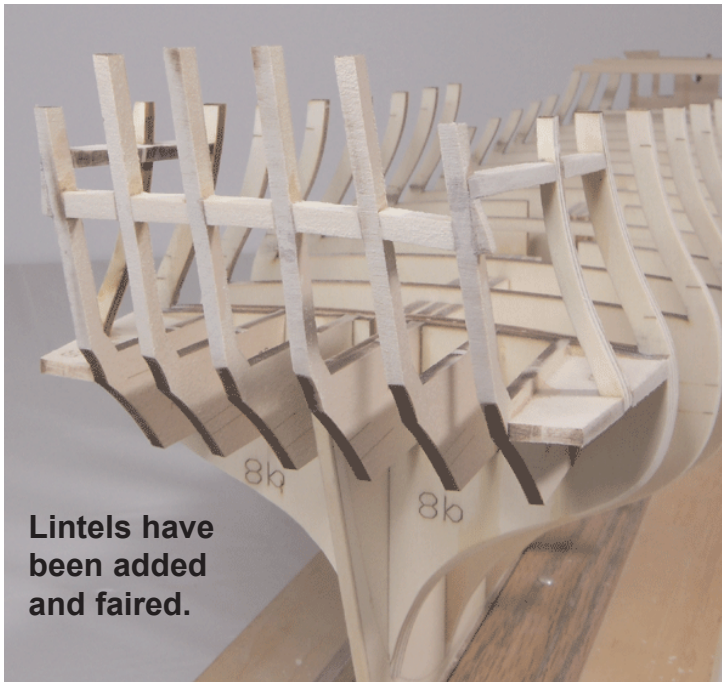
Sills and Lintels for the Stern Windows…

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.

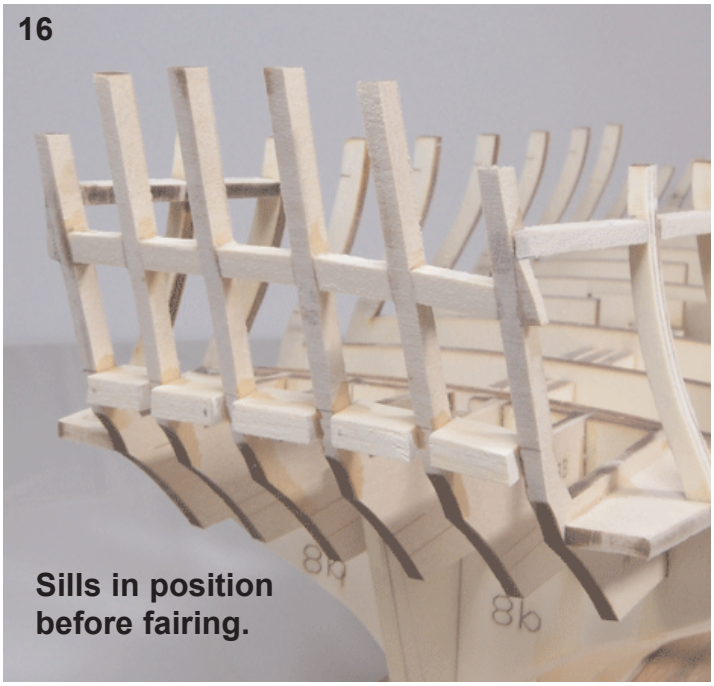
Cut out the stern template using a sharp blade. The stern template has a dashed line running across it. The template should be cut along this dashed line. See the photo attached which shows the template taped to the stern frames. The template is also cut along the top edge of the lintels for the window 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

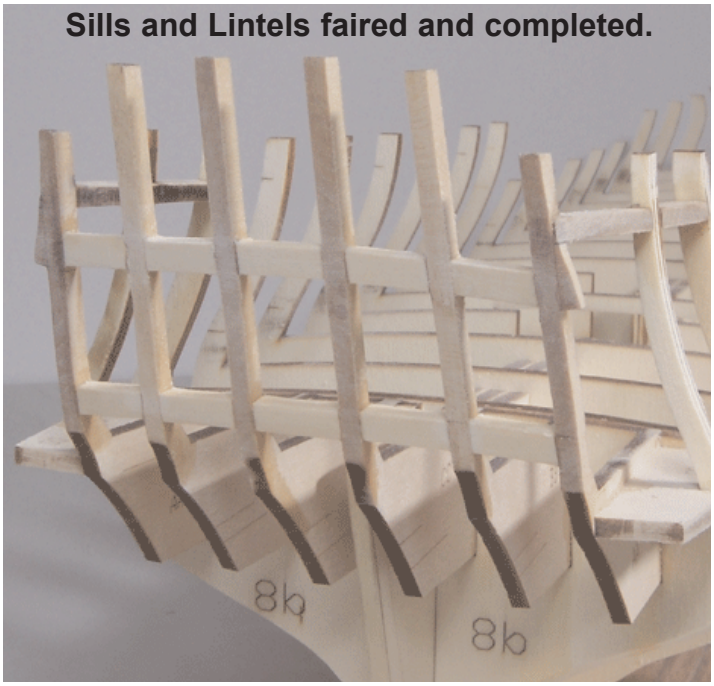




Lintels have been added and faired.



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.

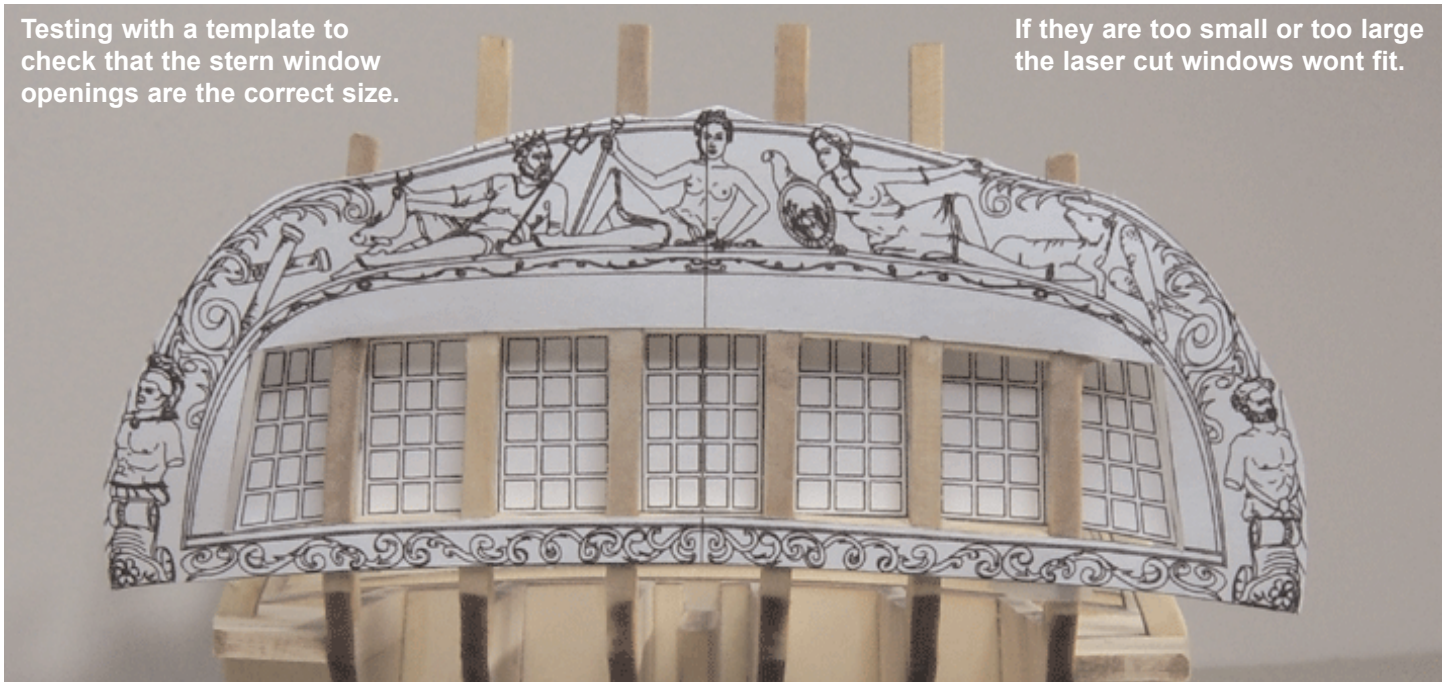
VERY IMPORTANT NOTE: Before you glue them on permanently, check each lintel against the template to make sure they are the correct length. You don’t want to force the stern frames apart if the lintels are too long. And you don’t want to push two stern frames together if the lintels are too short. This 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.

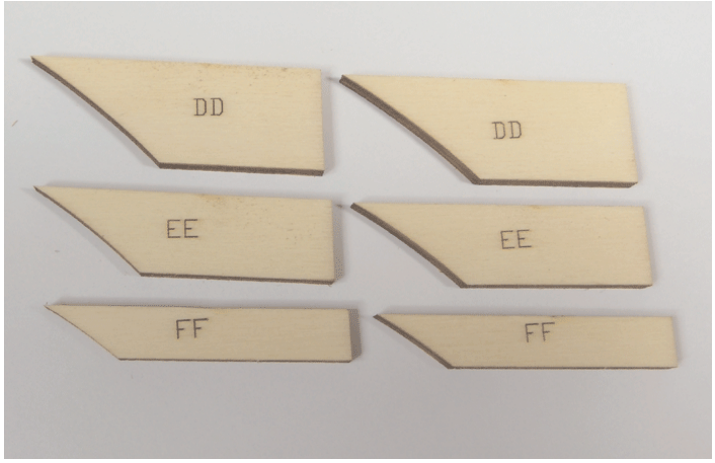
Stern Quarter Fillers…

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

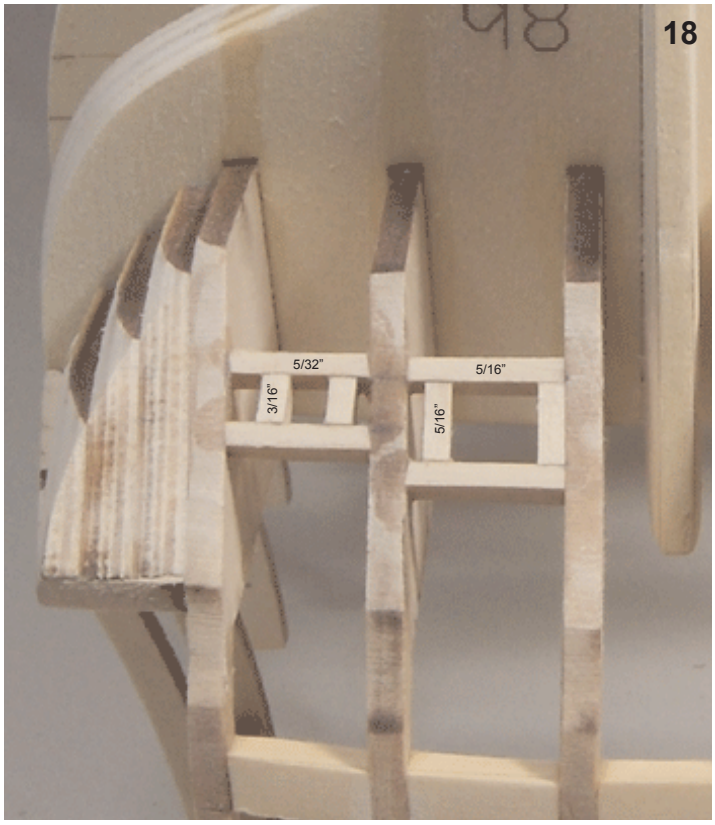


Testing with a template to check that the stern window openings are the correct size.

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"

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 than 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 decks surface and even between each bulkhead extension. If you need to widen the slots because one of your bulkheads were 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.