



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 $1/8" \times 1/16"$ 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 $3/16" \times 1/16"$ 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.

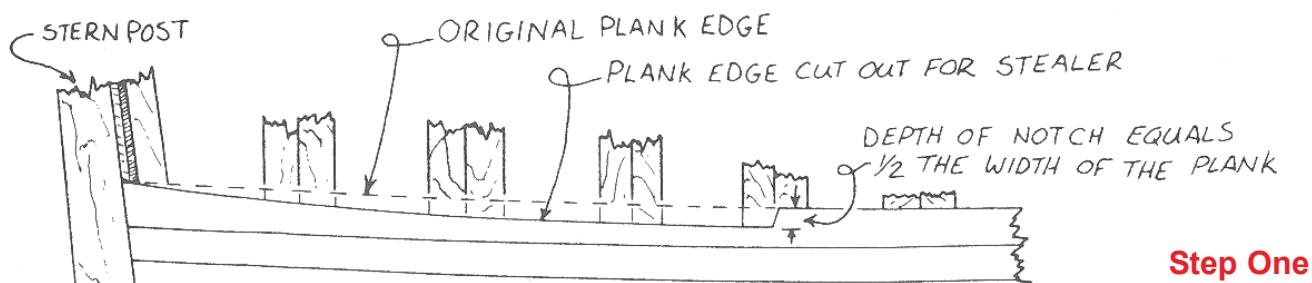
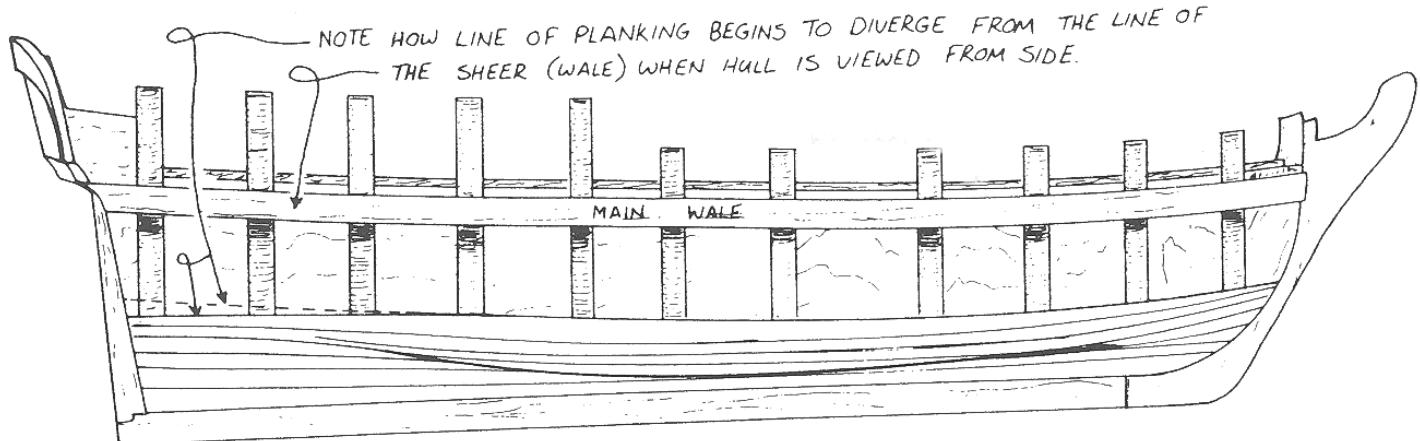
Step 3 – The area to be planked at the stern is larger than the space to be planked at mid-ship. This is the opposite dilemma that you faced in step two. You can use the same technique to determine how much the 32 planking strips should widen at the stern to cover that space. But you would discover that 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 steelers at the stern to cover the larger area of the hull. Steelers increase the number of planks that will fill up the space at the stern. You will need to use two or three steelers in order to plank the Confederacy at the stern. Steelers will also be discussed in more detail later. Even though steelers 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 the majority 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.

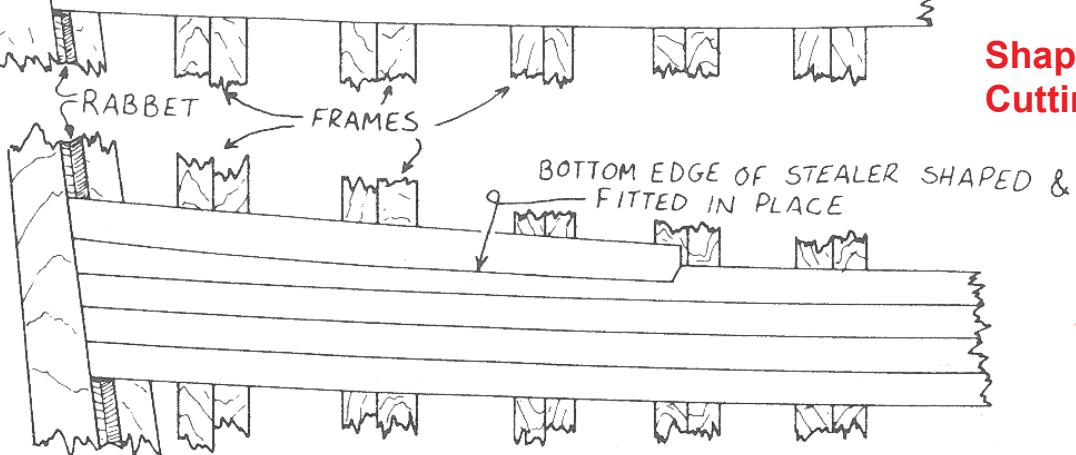
Instead of planking the hull from the wales to the keel in one stretch, it may be easier to manage if you divided the remaining space into three belts. Concentrate on completing one belt at a time. This was the process used to plank the Confederacy prototype. The first belt will consist of 10 or 11 planks 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 unplanned 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 steelers 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.

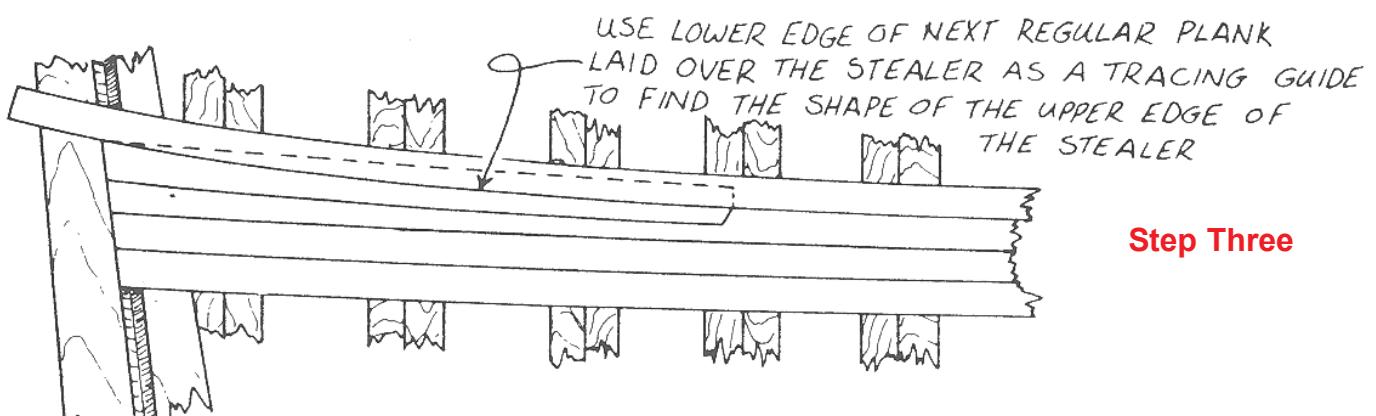
GENERAL VISUAL INDICATION OF WHEN STEALERS MAY BE NEEDED:



Shaping and Cutting Steelers



Step Two



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.

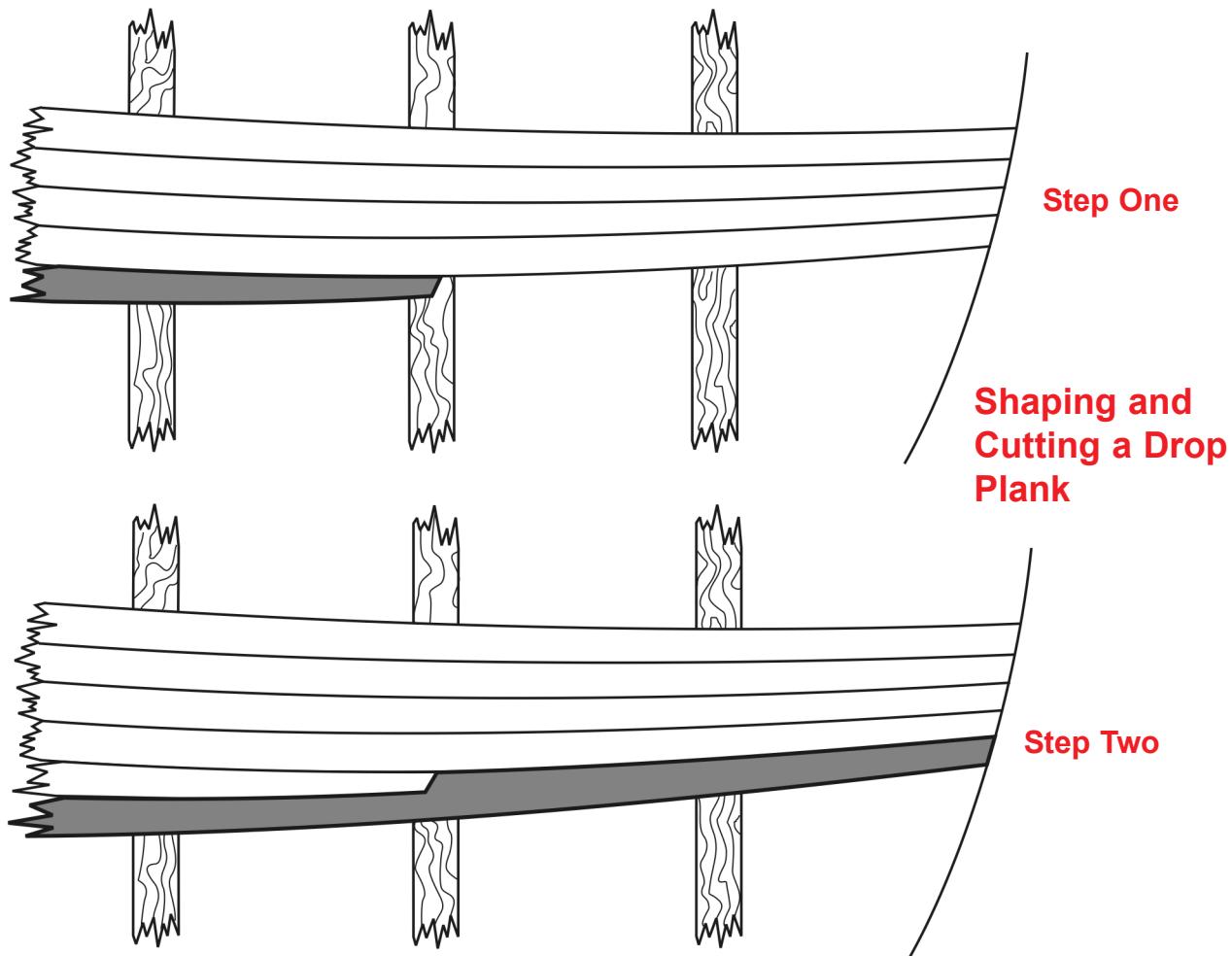
Creating a steeler at the stern is not that difficult. Steelers will increase the number of strakes at the stern. Follow the steps below to create a simplified steeler. You must visualize where a steeler might be needed at the stern. In all likelihood, 2 or 3 steelers will be needed. You should evenly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

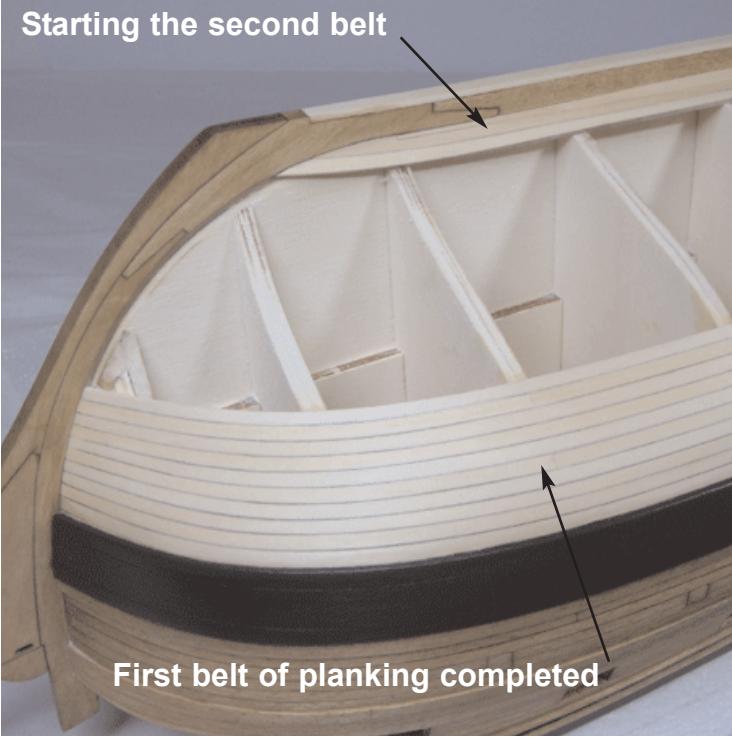
Step one – Dry fit a length of 1/8" wide planking that will complete the strake at the stern. Do not glue it into position yet. Cut it flush with the edge of the bulkhead former as it runs off the stern. Remove the plank and notch it as shown in the drawing provided. Glue it into position.

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 steeler 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 steeler.

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





Step One – Glue a tapered plank in 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.

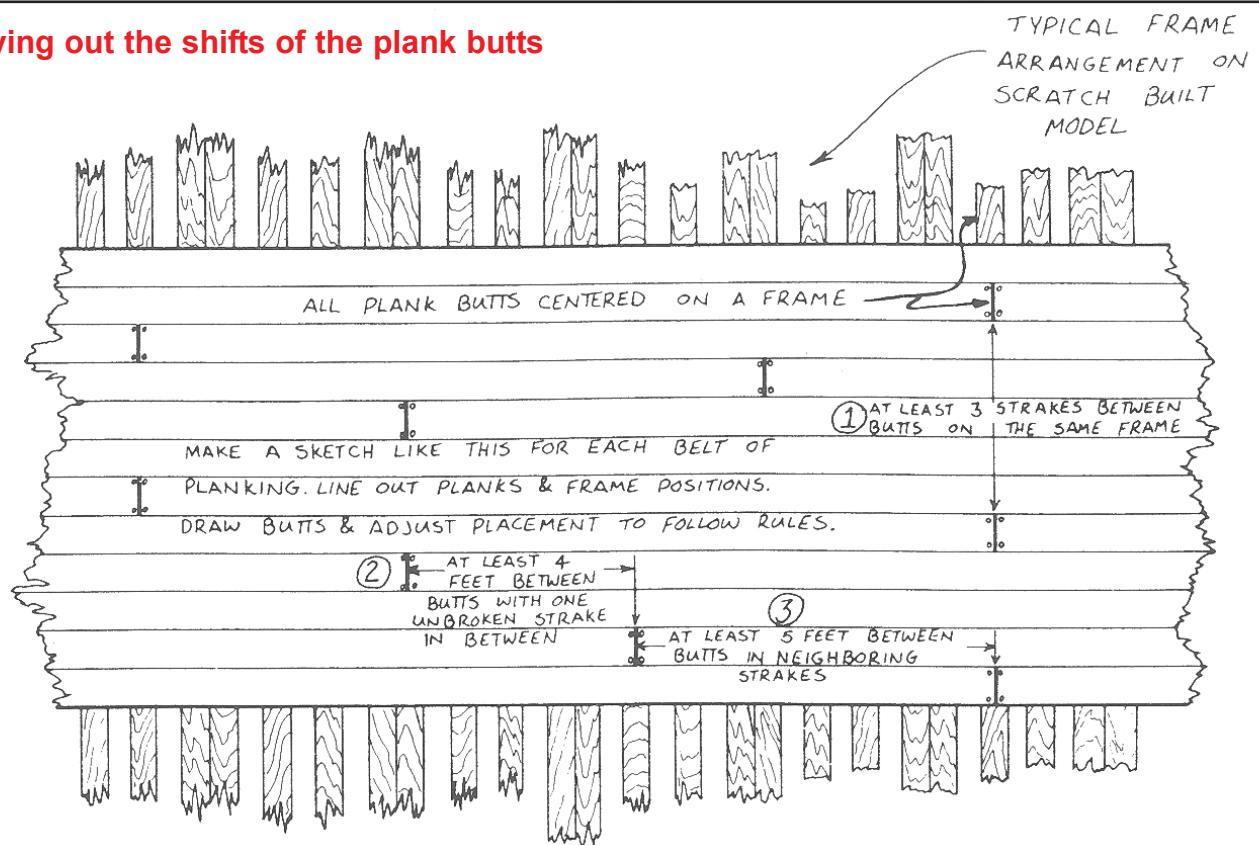
Step two – Place another tapered plank in the rabbet along the stem. Test fit this strip at the bow so it sits on top of the plank you glued into position in step one. Create some reference lines on this plank as a guide so you can cut a notch into the plank as shown in the drawing provided. Glue it 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.

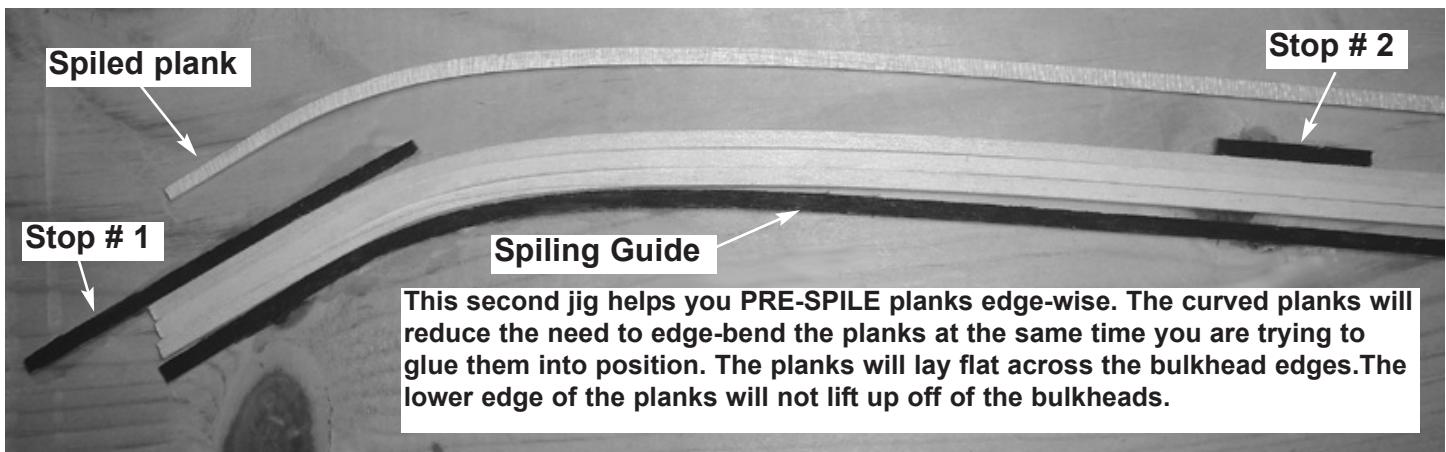
Planking the First Belt –

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

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.

Laying out the shifts of the plank butts





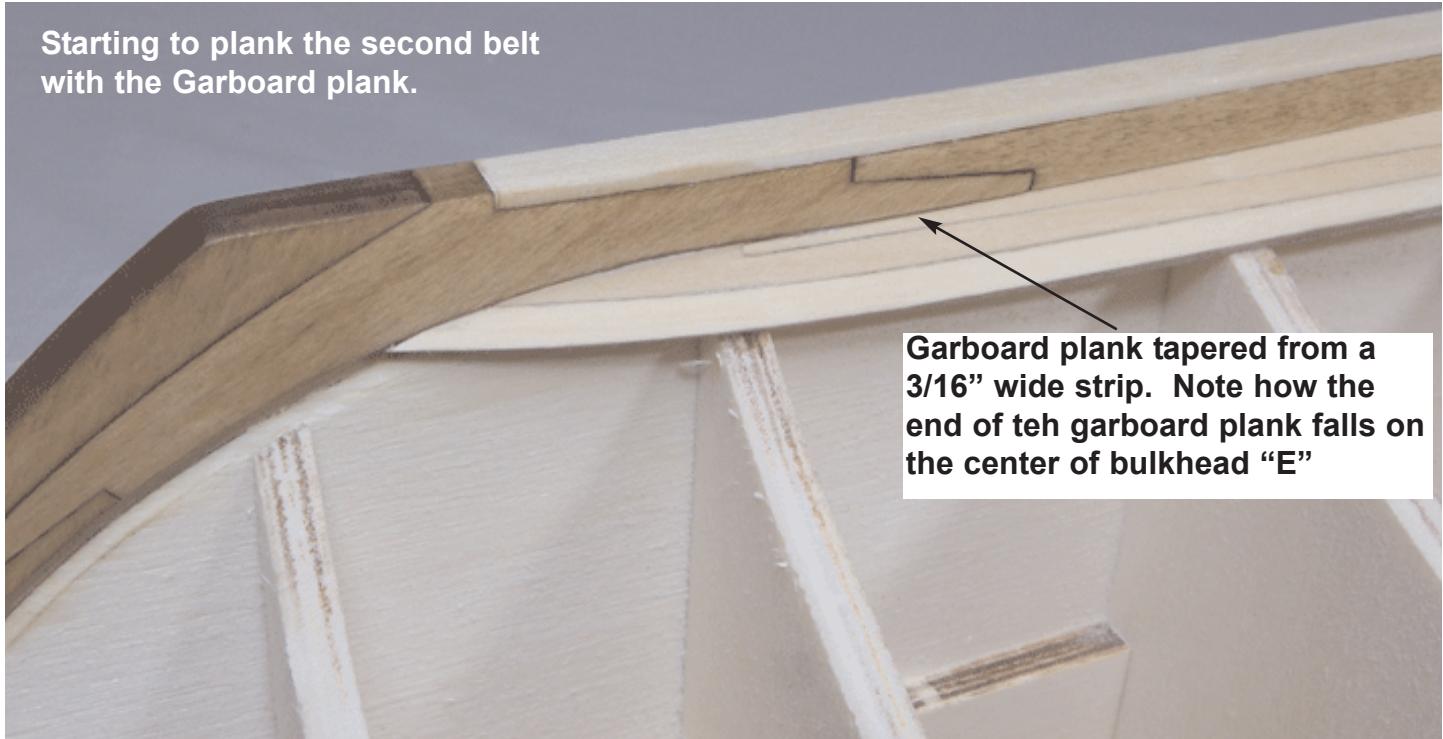
strakes below the wales there will be a few things which you are probably starting to notice. As you progress further down the hull you will no doubt notice how the planks at the bow are no longer sitting flat against the edges of the bulkheads. Even though you took the time to pre-bend these planks 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

Starting to plank the second belt with the Garboard plank.



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 $1/4"$ 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 ($1/8" \times 1/16"$ strips). You may want to add a steeler at the stern somewhere in the middle of this belt. The steeler 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 steelers 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.

