



Typical admiral's barge of the time period. Circa 1700-1750. Courtesy of the NMM

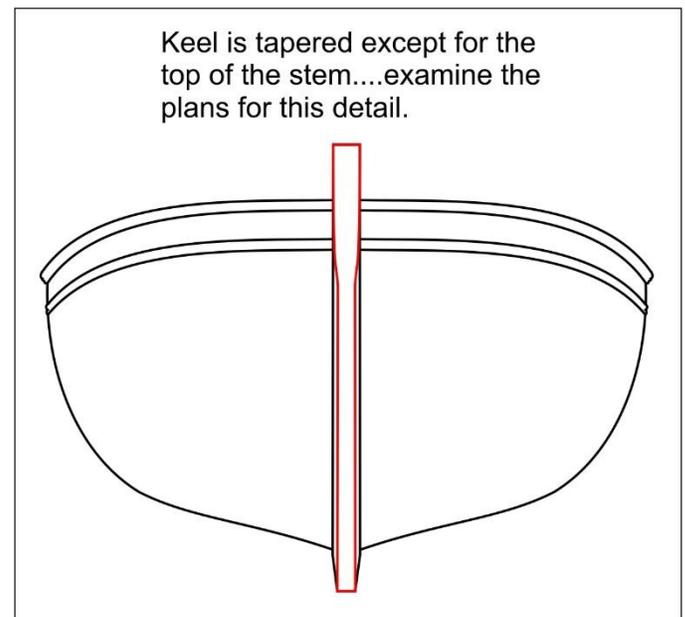
STARTING YOUR MODEL

The first task to build will be the keel assembly. You will find one 5/32" sheet of Cherry wood with laser cut parts for the keel. Before removing them from the sheet, sand both sides of the board with some medium sandpaper to remove the laser char. Cherry wood has a tendency to burn more than other woods but it is easily removed. This is one of the reason why Cherry is so popular with laser engravers. The letters engraved with the laser will show very dark.

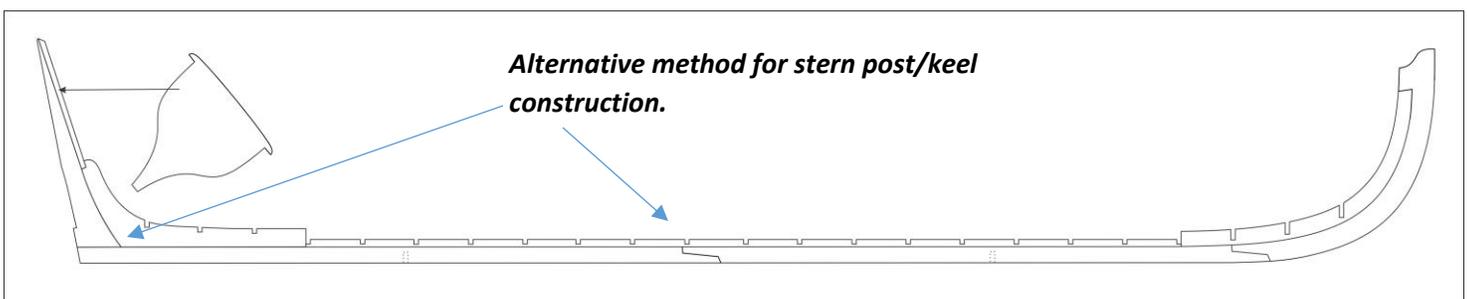
Carefully remove the four pieces of the stem. Cut the small tabs that hold them into the sheet with a sharp #11 blade first. Don't try to just push the parts from the sheet with your fingers without cutting those tabs first. Then proceed to remove the laser char from the edges of the four pieces. Use a sanding stick or medium grit emery board. These do the trick quite well. But DO NOT SAND the laser char from the scarf joints. The lengths of these four pieces is precision cut by the laser. If you sand these there may be some problems later on. So don't sand the joints between any of these elements.

After the four 5/32" thick keel pieces are free from laser char, you must taper them. The keel is tapered. This includes the sternpost and the stem. The only exception would be the very top of the stem at the

bow. See the illustration below. An emery board or sanding stick is good for this task as well. The thickness of the keel will taper a good deal. You can take the measurements from the plans. But notice how the keel will reduce from 5/32" thick to about 3/32" thick at the bottom of the illustration below shown in red.



Glue these four keel pieces together on a flat surface. You may darken the joint seams of the scarf joints and butt joint with a dark pencil before gluing them together as well. The four pieces should fit tightly together.

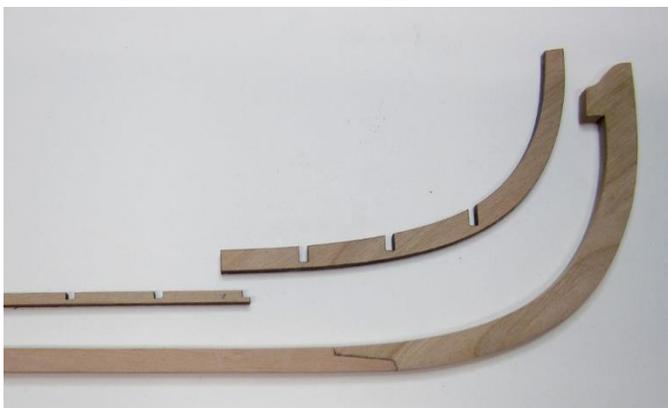


NOTE: There is an alternative for constructing the stern post and keel. In many contemporary model examples, the stern post is positioned on top of the keel. Although there are many instances where it is shown as the kit is designed, you may opt to use the alternative or stick with the kit design. This will require that you scratch build the section of keel and the stern post to show the alternative method. You will see the photos of the contemporary model that show it the same way as this kit is designed.

In actuality, this would have been a more complex lap joint that has been simplified for our kit. It would have appeared to look as our kit shows it on one side of the keel and as the alternative shows it on the other side. See the plans for more details on these alternatives. This is also true for the scarf joint at the center of the keel. It can be turned the other way as indicated on the plans. It's your choice.

Next, you will find a 3/32" thick laser cut sheet with three notched keel sections. Sand both sides of the sheet as you did earlier to remove the laser char first. Once you cut them free from the sheet, **DO NOT SAND ANY OF THE LASER CHAR FROM THE EDGES AT THIS TIME.** This is important because you want a nice tight fit when you add them to the keel assembly. You may want to just file down the little connector tab that might be sticking up after cutting it from the sheet.

The long thin section will be glued on top of the keel last. Set it aside for now. Test fit the two other pieces in position. Make any minor adjustments to get a tight fit against the stem and stern post. Once again....don't sand too much and leave the char along the edges. It is much easier to sand this off after they are glued into position. If they fit well, glue them on top of the keel but center them. Center these two pieces so you have a 1/32" lip on both sides. This creates the rabbet along the edge of the keel. It's a distinctive feature shown on



contemporary models of barges like the one shown on the previous page. The image on the lower left of this page shows the bow piece just prior to being glued into position.

Now you are ready to glue that last long piece into place. It is very delicate so be careful not to break it. An extra one is provided just in case. **BUT**, before you do...make sure that you have the correct end at the bow. There was a "B" laser etched into the sheet you removed it from that indicates the end that goes at the bow. The notches are not evenly spaced. This was by design. Actually it follows the design of the original draft used to produce and design this model. When you know which end goes where, test it first. This piece was made just a bit long on purpose. So if you need to, sand the aft end so it will fit tightly in place. Glue it in permanently once tweaked.

Now would be a good time to sand the laser char off of the top edge of these three pieces. It will clean up nicely. But leave the insides of the notches alone. We will address this later.



The final task to complete this keel assembly is to glue the transom into position. It is 1/16" thick and located on one of the sheets with all of the frame pieces. It is marked with a laser etched "T" on the sheet. Sand the bottom edges so when you position it in the slot at the stern, its width matches the thickness of the 3/32" keel section. But there is no need to sand off all of the laser char from the edges at this time. You only need to do about 3/16" of the lower edge because it will be difficult to sand later. The remaining edges need to be sanded later when you fair the frames. But that will be

done after all of the frames are positioned. You may however sand the laser char from the top edge of the transom before you glue it into place.

you must still be careful to ensure that the transom is set perpendicular to the keel. This is very important so you might want to avoid using CA glue as it sets up too



There are laser etched lines to help you position the pieces against the stern post correctly. The photo on the prior page shows the transom in position with a spare transom beside it. The etched lines will help prevent you from gluing it in position crooked. BUT,

quickly. Use yellow glue with more "open" time so you can tweak it until it's at the proper angle in relation to the keel.

Apply a coat of Wipe-on-poly or sanding sealer to the entire assembly.





The barge frames

There are two types of frames for this model. There are one piece frames and two piece frames requiring assembly.

This follows the practice of the ship modelers who built the contemporary models this kit is based on. These contemporary models usually show the last two and sometimes three frames at the bow and stern made in one piece. But the other frames between them are made of both floors and futtocks.

To make planking and assembling the frames easier, they will be inserted into a build board. BUT THEY WILL NOT BE GLUED INTO THE BUILD BOARD SLOTS. The frames will only be temporarily inserted into the slots of the build board. This will make the entire assembly of frames and keel parts very rigid while planking later in the project. Ultimately the assembly will look like the photo shown above. Once the hull is planked outboard, the bulkhead centers will be carefully removed so you can work inboard. This requires you to remove the planked hull from the build board. So I cannot stress enough how important it is NOT TO GLUE THE FRAMES INTO THE BUILD BOARD SLOTS. You will also note in that photo that the build board is raised up using $\frac{1}{4}$ " cherry blocks. This will help the stern and other areas from getting too close to your workbench surface. But more about these later.

To begin, take the two build board pieces and examine them. You will notice the slots are all marked with the

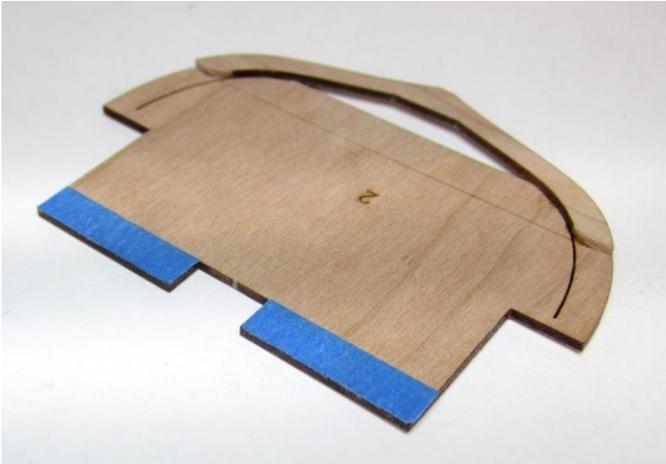
corresponding frame letters and numbers. You will not be gluing the two build board halves together. They must remain separate as removing it later will be much more difficult.

Let's start with the one piece frames. Before removing them from the laser cut sheet, sand both sides to remove any laser char. Then carefully cut the small tabs that hold the frame into the sheet. BUT don't remove the frame centers. These are supposed to remain intact until after the hull is planked.

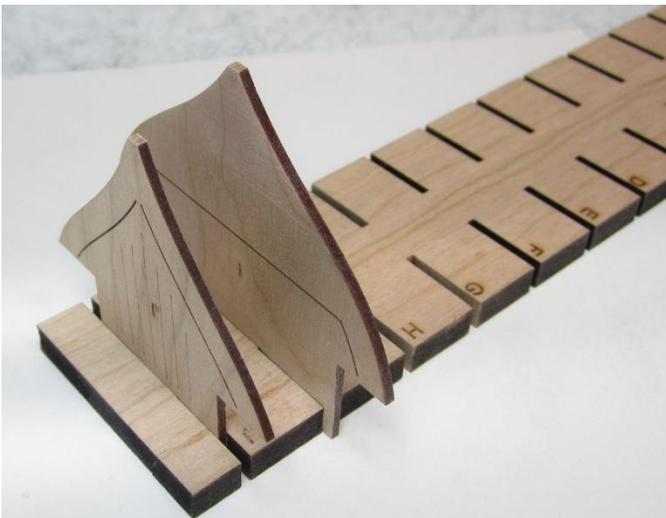
Remove frames I, J, 10 and 9. These are the one piece frames. Don't bother sanding the laser char from the sides of the frames at this time. The laser char on the frame edges is actually very useful when it comes time to fair the hull before planking begins.

Just lightly sand the tabs that held the frames into the sheet. Try inserting them into their corresponding slots in the build board pieces. But remember, don't glue them in. These frames should fit as a "press fit". This means they should be so loose that they fall out on their own. They should also not be so tight that you have to force them into each slot. Remember that you will have to remove the planked hull later and it will be very difficult if the frames are too tight. If they are too loose the entire assembly will be weaker and fairing the hull and planking it will be much more difficult. So pay close attention to how these frames fit into the slots. The slots have been made intentionally snug to begin with. You will more than likely have to file them slightly

wider so you get a nice easy fit....NOT to TIGHT and NOT to LOOSE.



Should any of the slots get too wide and your frame is too loose, apply a layer of blue painters tape across the bottom. This makes it just a hair thicker and it will probably fit beautifully afterwards. See the two piece frame above with some blue tape being used.

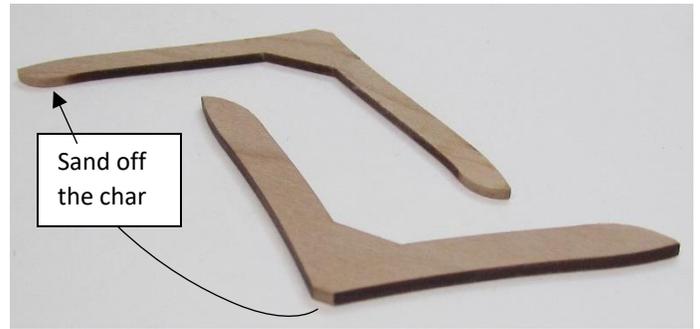


But back to the single piece frames I, J, 10 and 9. Hopefully they fit well in your build board slots as shown above. You will notice that frames J and 10 have a bunch of vertical lines etched onto them. When inserting these into the build boards, the vertical lines should face out. These are visual reference lines that will help you position the keel assembly on top later. It will help you position it so the stern post and stem is vertical and not slanted one way or the other.

The two piece frames...

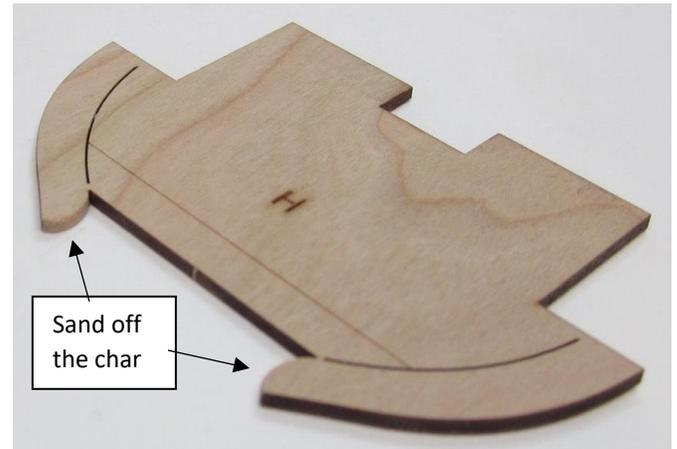
Each two piece frame is numbered or lettered and has a corresponding mate. It would be wise to work on just

one frame at a time so the floors don't get mixed up. Only remove the floor (shown below) that mates to the one frame you are working on.



The floors...this portion of the frame is shown above. Note how the bottom of the "V" shape has been lightly sanded to remove the char. Hopefully you can also see that the char was removed from the tips of the "V" shape also. Don't worry about the inboard and outboard edges. You can do that later when the hull is faired. But it is important to remove the char from these areas of the floors ahead of time. Don't sand too much off. If you use a fine sanding stick, you should be able to just lightly remove the charred surface.

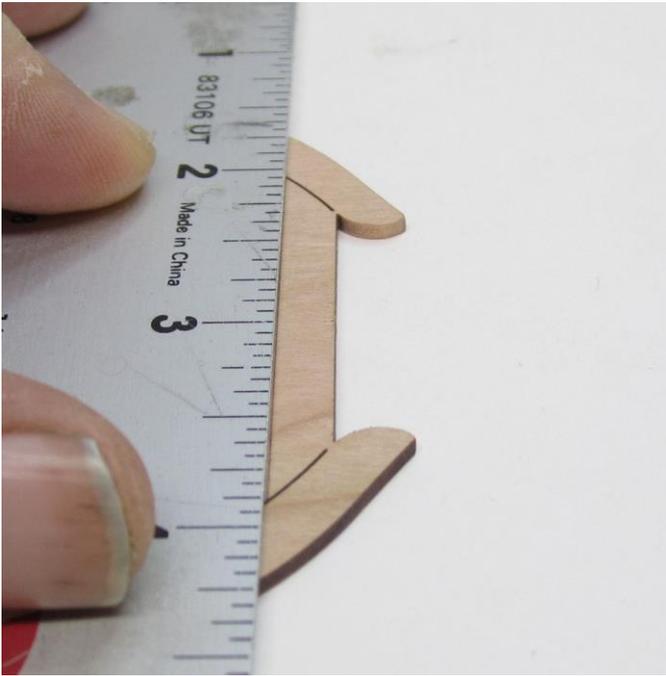
The futtocks...are what the other section of each frame is called. They are positioned on each side of the larger frame centers. (Below)



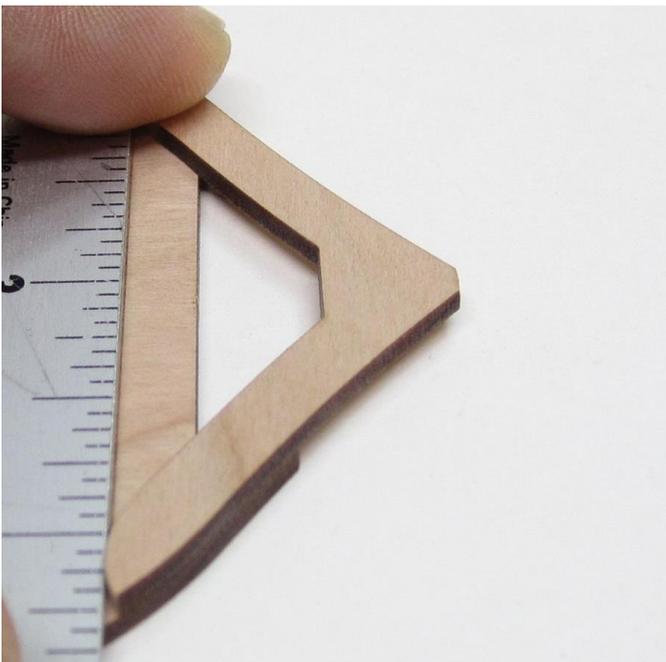
The futtocks are held in place by the tiniest little tabs. Be very careful with these because you don't want to separate the futtocks from the frame center. Carefully remove the laser char from the tips of each futtock only. Once again, don't worry about the rest of the frame edges.

Assembling the floors and futtocks...

To assemble the two parts of each frame, place the futtocks on a flat surface. Then position a straight edge (preferably metal) against the reference line that spans across the frame center. Below....

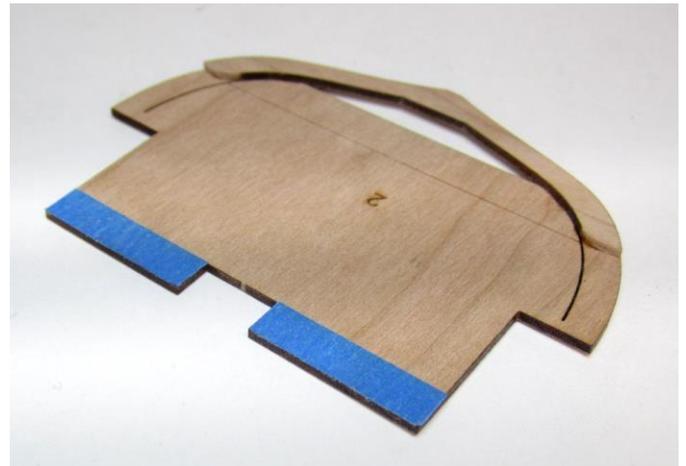


Then take the floor and slide it up against the metal straight edge. You will see that it fits nicely but be careful to position it properly from side to side. Do a test fit first before applying any glue. Only apply the glue to the futtocks. Be careful to not get any glue in the cut line between the futtocks and the frame center. This will make it more difficult to remove later on.



You only need a little bit of glue. I recommend that you use tight-bond or some other yellow glue. Don't use CA Glue. It sets too quickly and you want to have time to slide the floor one way or the other so it is positioned correctly. The finished assembly is shown below.

Test it in the corresponding slot of the build board. BUT also test the bottom to see how it fits in the keel. The notches in the keel were also made a bit small so they would be a snug fit. But if the frame doesn't fit into the keel notches, file it a bit until you get a nice fit. Perform this exercise for each and every frame to check their fit into the build board slots and keel notches as you finish them.



Important NOTE: As you begin to fill up the slots in each half of the build boards, pay close attention to how you are inserting the frames in the slots. Make sure they are facing the correct way. There are two frames marked "0". This is where the orientation of the frames change. The aft side faces in one direction while the fore side faces another. Examine the plans carefully for this detail. If any of the frames are turned the wrong way you won't be able to line up the keel assembly properly in the next step.

The photo on the next page shows all of the frames positioned in the build board slots. Note how the two halves remain separate.

Placing the keel in position...

It is now time to place the keel on top of the build board frames. You will do this in two stages. But before you begin, it is also a great time to add the blocks under the build board to raise it up. Don't glue the blocks to the bottom of the build board with the frames in position. This will be the last time you will get to adjust the slots and file them, so make sure the frames fit nicely.



Remove all of the frames and then glue the laser cut squares of cherry to the bottom of each half of the base board. Three on each side will work fine. But don't cover the center line where the two halves come together. Place a block about $\frac{3}{4}$ " to 1" away from the dividing line between the two halves. You can see the build board raised up with the blocks in the photo below.

The same photo shows the keel assembly being tested on top of the frames. If you can easily place the keel onto each frame as shown you are ready to glue it on top permanently. But take a few practice runs at making sure the keel is straight and not tilted one way or the other. Look at the keel dead astern. Look down the keel at this angle to see how well it runs towards

the bow. Use the vertical reference lines on the last frame to help you ensure that the stern post is positioned vertically as well. Take your time doing this so you get a sense of what you will need to do while the glue is setting up. You won't have a lot of time to play with the keel while the glue sets up. So practice tweaking it now. You may have to shift some frames left or right in each slot or shift the keel also.

You probably already noticed that there is a little wiggle room in the slots of the build board so the frames can be shifted left or right. This was done on purpose to allow for adjustments. It is best to push them all to one side first. Then during this test run...make any necessary adjustments. Once you know what you will need to do, remove the keel and add some yellow glue to the tops of each frame (actually the bottoms) and



glue the keel in position permanently to this first half of the frames. Just like it is in that photo on the previous page.

Slide the other half under....

After the glue dries on the aft section of frames and the keel seems secure, slide the forward half in position. Guide the frames into their respective keel slots. This is yet another test run before you add the glue and do it for real.

Once again, use the vertical reference line in that first frame to help you keep the stem vertical and straight. You know the drill by now.

When you are confident that everything will fit well enough, add glue to the tips of those frames....yellow glue....NOT CA.....you want more open time to allow you to make adjustments.

You can see how sturdy the hull assembly is at this point. But you will notice that the two halves of the build board show a bit of movement. You don't want to glue the two halves together. This will make it so much more difficult to remove the build board after you plank the outside of the hull. There is a very effective way to fix the two halves in position without any glue.

Flip the assembly over and place a strip of VERY tough reinforced packaging tape over the seam between the two halves of the build board. This is why it was important to place the square pieces away from the seam earlier. If you have the packaging tape that has the reinforcing string in it that would be the best way to go. It doesn't stretch and is really, really strong.

The photo below shows the seam taped up nicely. It will be easy to remove when the time comes.



Fairing the hull frames...Careful, use a light touch!!!

The important words for this procedure are “**careful and light touch**”. I can't stress this enough. I have witnessed first-hand how rough and heavy handed some model builders are. You are not carving a bear with a chain saw here folks.

Using a medium grit sandpaper, start fairing the hull frames. Notice in the photo below how there is no longer any laser char on the frame edges. You can use the darker laser char as a guide. You will know when the hull is faired properly based on the fact that no laser char remains on any of the frame edges. Remember that the futtocks are held to the frame centers by the tiniest little tab of wood. If you apply too much force or hit the frame with the end of your sanding block or sandpaper, you may snap the futtocks from the frame centers. So go slow and be very deliberate with your



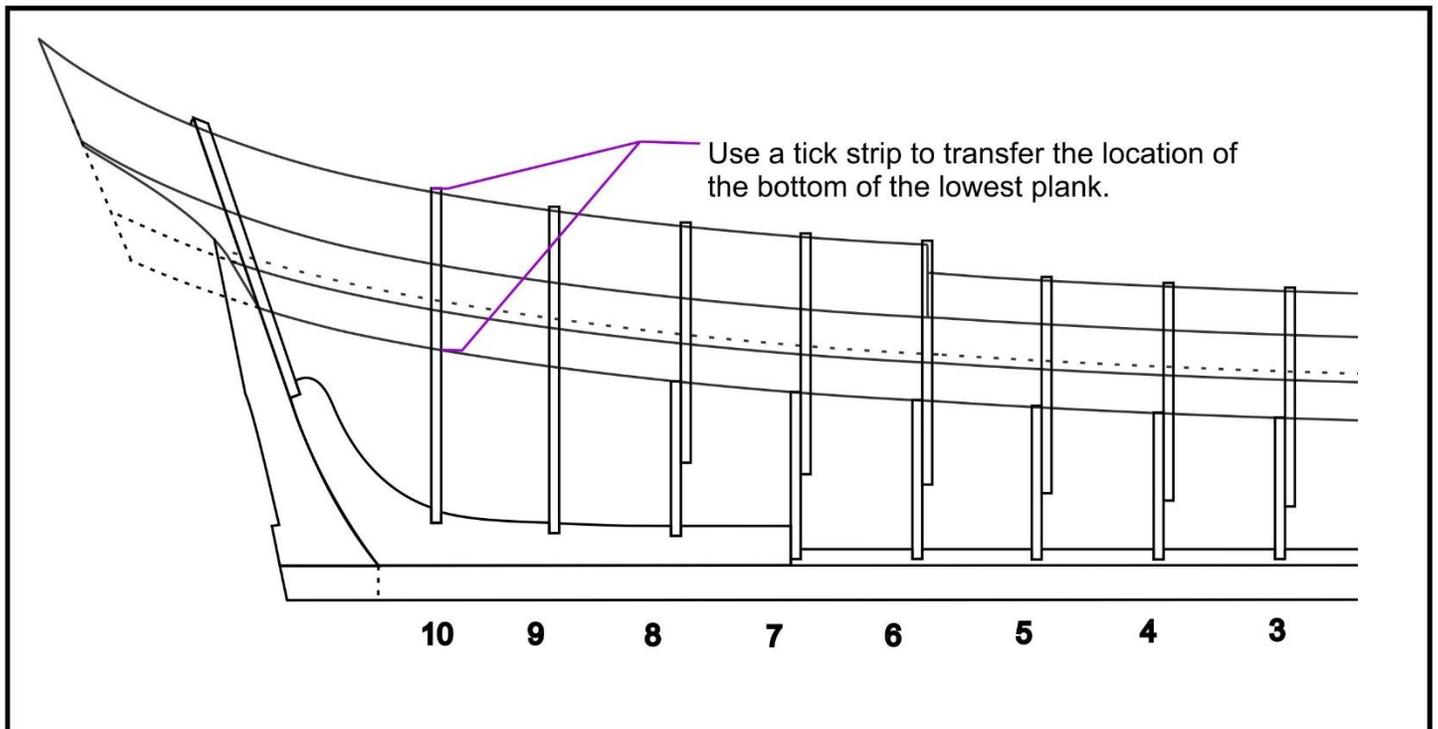


sanding as you move the sanding block back and forth. I personally prefer to use a sheet of sand paper for this and curl it up. I make sure that the fore and aft edges of the sandpaper are curled up so that it will not catch on any of the frames while moving it side to side.

Careful!!!!!!Use a LIGHT TOUCH!!!! applied a coat of wipe-on poly when it was all done. I applied it to all the frame surfaces and edges. Another view of the faired hull is shown above.

Preparations for planking...

On the bottom of the plans there is a planking expansion for the hull. There will only be three strakes of planking on each side. The bottom two will be lapstrake or clinker planking. Don't worry about that fact yet. Right now you need to locate the bottom of that lower strake and transfer the measurement to our model. You should do this for every frame, including the stem and transom. The best way to do this would be to use a series of tick strips.





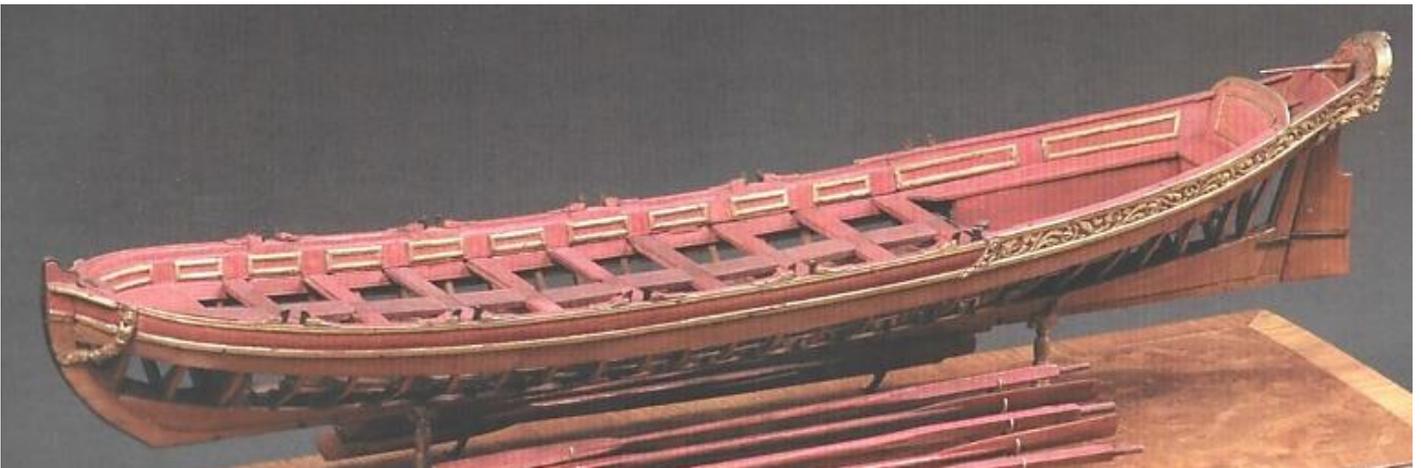
Another contemporary model of a royal barge from the same time period. Note the painted panels inboard.

I cut about three dozen tick strips about $\frac{3}{32}$ " wide and four inches long from some regular printer paper. Hold the tick strip against the plan with one end on the top of a frame. Place the end so it's even with the top of the frame. Then mark the location for the bottom of the lower plank along the edge of the tick strip.

Then hold the tick strip against that actual frame of your model and transfer the location for the bottom of that lower plank.

It's that easy. You should do this for every frame...don't try and save time by doing every other frame!!! While you are at it, it wouldn't be a terrible thing to also transfer the locations for every strake onto each frame edge, including the over-lap for the two clinker strakes. But at the absolute minimum, you will need to have the bottom of the lower strake marked on each frame.

Another contemporary model of a Queen Anne style barge. This one resembles our project very closely.





Planking your model outboard...

Before you dive right in and start planking let us review a few things before you start.

Many Royal Barges were clinker planked as our example replicates. But just as many were not. It's an interesting feature and can be a challenge for any model builder who has never tried it before.

Fortunately our project is designed to look like the many contemporary ship models which are only partially planked. So in our case there will only be three strakes (or rows) of planking on each side of the hull. Of those three, only the bottom two need to be planked in the clinker style. This will be the perfect opportunity to "dip your toe" into trying this method of planking for the first time.

When clinker planking any hull the usual method of doing so is to plank from the keel up towards the sheer. In our case, this means starting with the lower strake of planking.

As with all scale planking for ship models, there are a few terms and observations that merit some mentioning. I will try and give each and every plank that you will need to place on the hull a full description based on these terms and observations.

Spiled Curve – The spiled curve is a reference to the edge-wise bend in your plank. Especially at the bow but also at the stern. All of the outboard planking in this kit has been pre-spiled for you so you really don't have to worry about it. See the photo above.

Lateral bend – This is the bend that will be needed in the other direction to fit your plank against the frames at the bow and stern. It's the curve that conforms to the shape of the hull.

Twist - At times, a plank will need to be twisted as well as bent laterally to conform correctly to the complex curves at the bow and stern.

Clinker Bevel – Refers to the bevel required on clinker style planks. They will/can be made to the outboard and inboard faces of each strake.

Rabbit bevel – The bevel needed to sit the forward end of the planks at the bow into the stem rabbet.

Plank Length – Each plank is shown on the plans and the butt joints between each plank are shown. In some cases the laser cut plank is supplied a bit longer and you will need to test fit it on the model, mark its correct length, and cut it to length before you glue it into position. This is usually done after you pre shape the plank to fit until no force –bending is needed to position it.

Examine the plan and you will see a planking expansion with all 7 planks displayed for you. They are all numbered and the corresponding number for each plank is provided that is also referenced on the laser cut sheets. There are two laser cut sheets. One each for the port and starboard sides.

You can plank with the hull upside down or right side up. This is up to you. Find the method you find more comfortable. When I planked the hull, the first two bands of planking (the clinker strakes) were added while

the hull was upside down. The last strake (the sheer strake) was glued into position with the hull right-side-up.

Let's begin with Plank #1 on either the port or the starboard side.

It doesn't matter if you start with the port or the starboard side but I recommend you place both on the model before you proceed to the next plank number. It will help promote symmetry and consistency on both the port and starboard sides.

Before you remove the planking from the sheets, sand the back side of the sheet to remove the laser char from the plank surfaces. Be careful as these planks are only 1/32" thick. On the actual barge the planking would have been 5/8" to 3/4" thick. It was very thin planking. If you scale that down you will realize that we should actually be using material thinner than 1/32". But after sanding and preparations it will look just fine and the extra thickness is needed for strength and structural integrity while progressing. It is a very comfortable thickness to work with.

Remove plank #1 from the sheet and lightly sand the laser char from the cut edges. A fine grit emery board works well. The edge is only 1/32" so be careful not to break or snap the plank. You will be doing this with every plank you remove from the sheet. Use a light touch because you don't want to alter the overall width of each plank too much.

Clinker Bevel – You have probably already noticed the laser etched line that runs the entire length of plank #1. This is the outboard side. You need to bevel the plank gradually from this line towards the edge. You should bevel the plank to a little more than half its original 1/32" thickness. The edge should be just less than 1/64" thick when you are finished.

Once completed it is best to test the plank against the hull to get a good idea of how you will need to manipulate the plank further. In the photo (above right) the plank is held in position with its lower edge lined up with the tick marks you made on each frame. The beveled edge is the top edge and the next strake will sit on top of the bevel.

Lateral Bend/twist - Don't bend the plank in any way just yet. What you are looking to discover is the degree of lateral bend you need and how much twist might be

required to fit the plank against stem rabbet and against the frames at the bow. Just rest the plank against the frames as shown below as a test.



What you should see immediately is that the plank doesn't need much lateral bending at all. This isn't a very bluff or rounded hull. Just a slight lateral bend needs to be created.

More important, is the twist needed. It should be clear that the end of the plank is not aligned with the direction of the rabbet. The top edge of the plank sticks out too far. You can see it in that same photo. The plank will not only need a slight lateral bend but also a slight twist to correct the orientation of the plank end.

Pre-bending with heat – Now that you have a better idea of what shape your plank needs to be bent and twisted into, you can easily pre-form it.



The photo above shows how I form the planks. I use a hair dryer on its hottest setting. Clamp the plank



securely at about the center to a table's edge or a wood board. Then grab the end of the plank with another clamp. Remember to twist the plank in the right direction!!! It's easy to forget which way you need to twist it. Then apply the heat while both bending the plank laterally and twisting. There will be some spring-back but not much. So over-emphasize the bend and twist. It's OK to get really close with the hair dryer. I usually get as close as 1". Move the heat back and forth where the wood is being shaped. Keep the heat applied for about 1 minute or even more. Then remove the heat but continue holding the plank in its newly formed shape. Wait another 30 seconds to 1 minute for the plank to cool down. Then release it from the clamps and test it in position.

The photo above shows a plank not yet bent along with one that has been bent and twisted. It's a gradual bend and twist. You don't need to overdo it. Also shown is the emery board I used to create the **rabbit bevel** now that I will be able to more accurately see its orientation against the stem.

Test it against the hull again. It should lay flat against all frame edges and require little to no forcing to conform to the shape of the hull. The bottom edge should also line up with the tick marks you made on each frame...more-or-less.

There are so many factors that you shouldn't obsess with this detail. As long as the run of the plank is very close to the tick marks you made you should be fine. You may see one or two that are a little off but that could be the accuracy in your tick-marking or the fact that your frames aren't sitting in the slots of the build board perfectly. If they aren't pushed down into each slot all the way the tick mark on that frame will be slightly off in comparison to the others. A frame could



also be tilted a little one way or the other for the same reason. If this is the case, it's not a huge problem. Try and correct it but don't force the plank to sit on every tick mark perfectly. Don't force anything that may break at this point. It's more important to keep a smooth run in the plank without forcing it to be wavy just to line up with your tick marks. It's not the plank that is incorrect, it's the tick mark....so just keep going...it will be fine. In the end it won't matter all that much at all. Really.

Rabbit bevel – Bevel the forward end of the plank so it fits snug and neat against the stem rabbet. Adjust the angle of the edge if needed. The end of the plank should need to be filed to something resembling a point. Meaning you should angle both the inboard and outside edges at the appropriate angles so the inboard edge sits flat against the stemson while the outboard edge is angled to fit nicely against the rabbet edge. The smaller photo (above right) shows the first plank glued in position and with a tight fit against the rabbet. **BUT DON'T GLUE IT INTO POSITION JUST YET.** You still have

one last task to perform before you do so. And it is very important.

Plank Length – Plank #1 has intentionally been made a bit longer than needed. Hold the plank in position. Make sure it is tight against the rabbet at the bow. Then slowly work your way back towards the stern while keeping it secure. Mark and cut the plank to length. Mark it in the center of the first frame "0". You can see where this plank ends on the planking expansion of the plans. Make a nice straight plank end so the Plank #2 will fit snugly against it.

Once the plank is cut to its proper length you can glue it in position. I used CA glue to secure the planks to the frames. I glued the front edge against the stem along with the first two frames first. This made it easier to progress aft, gluing the plank to a few frames at a time until it was completed.

Repeat this process on the other side...But remember to check that the plank is at the same height on both sides before you glue it in permanently. Be sure to examine the model "head-on" while holding the plank on the other side to test it first. This is very important.

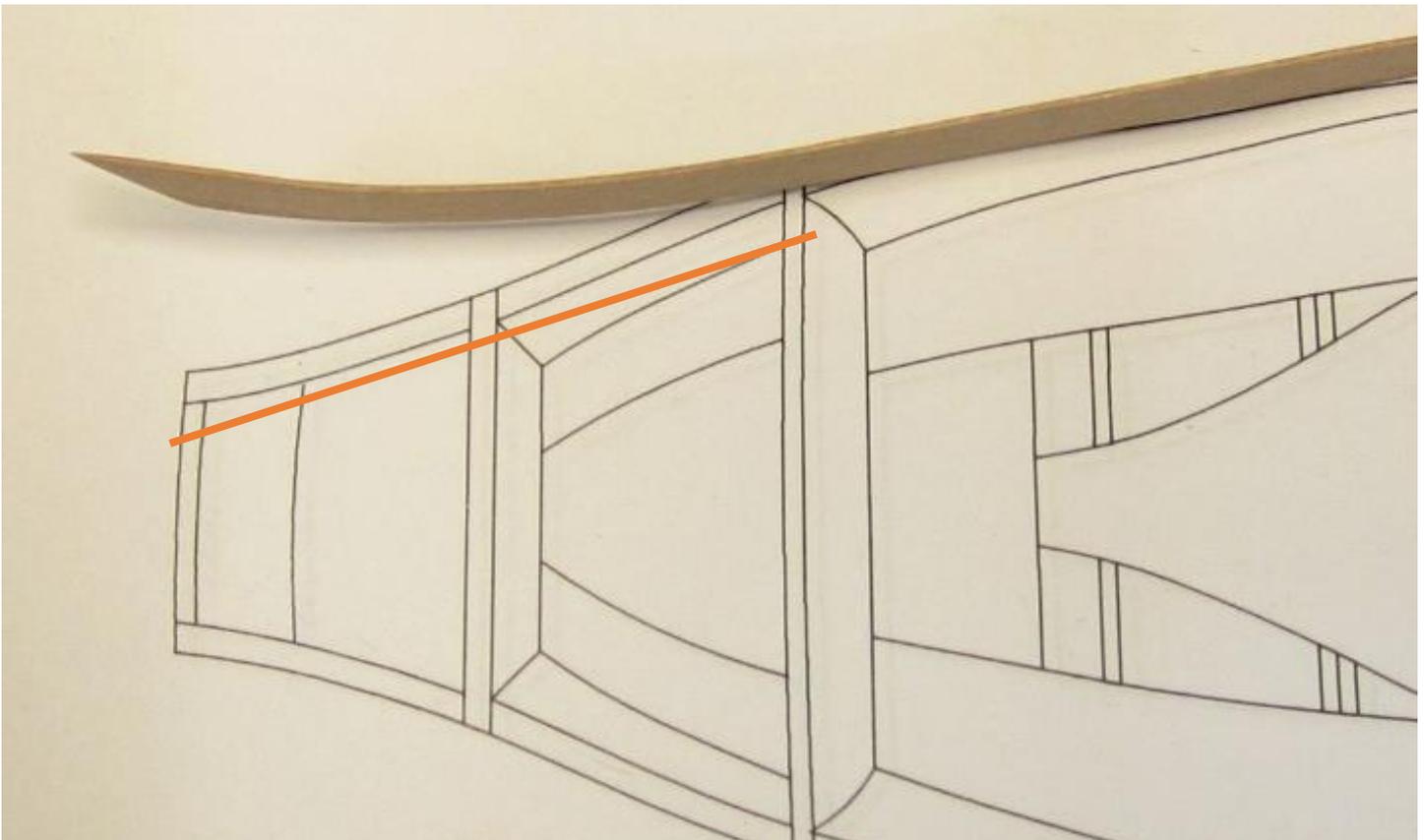
Plank #2 – Don't worry, I won't bore you with as lengthy an explanation for each and every plank. For the most

part, each plank will require the same attention applied to it as described above. I will just be hi-lighting a few differences and reinforcing other notable important procedures. Just note that all of the planking at the stern is longer than needed but shouldn't be trimmed. Let it run off the transom its full length. You will be trimming it back when it comes time to add the flying transom much later. This will leave the planks that run off the stern vulnerable to breakage because the stick out far. So be very, very careful moving forward after they are glued into position.

Clinker Bevel – Sand off the laser char and create the clinker bevel along the entire length of this plank just as you did with plank #1.

Lateral Bend/twist – There is no real twist needed for this plank at the stern. But you do need to bend it. It's just that the bend you need to make probably seems counter intuitive based on the hull. But it really isn't. Let me explain.

Examine the photo below. Note how the plan shows the edge of the barge curving inward towards the *flying* transom. It doesn't progress straight off of frame "10" and the "transom". If it did, it would follow the red line shown on that photo which is less elegant and incorrect.





Instead there is a gradual and graceful concave curve to the plank.

To create this, you must first bend the last few inches of the plank just a little bit. But you must do so in the opposite direction. So the plank flares out from the side of the hull as shown. This is OK...because once you glue the plank to frame ten and the transom, the remaining length of the plank that runs off the stern will still have the graceful curve to it. I hope that makes sense.

The photo above shows plank #2 glued into position. Note how it runs off the hull at the stern quite a bit.

Plank Length – I have already mentioned how this plank shouldn't be shortened. Use it as is. However, do feel free to fine tune the forward end of the plank so it fits snug against the end of plank #1. You want to create a nice tight butt seam. I also darkened the edge of plank #2 so it accentuates the butt seam once the plank is glued into position.

Go ahead and glue it into position being careful to align the bottom edge of the plank with your tick marks on each frame. This lower strake is no finished and it establishes the run of your planking across the hull. Repeat on the other side....

But of course pay close attention to the height of the planks as they run off the stern. You want the planks even in height so you can easily position the flying transom later without it being twisted or slanted. In order for the flying transom to be level both sides must be at the same angle exiting off the transom as well as at the same height.

Plank #3 – Plank #3 starts the next strake at the bow. This is a clinker plank. It will be positioned on top of the bevel you created in planks #1 and #2. BUT, at the bow the plank gradually becomes flush with plank #1 rather than stand proud of it creating a proper "clinker" plank.

Clinker Bevel – Sand off the laser char along the edge just like with the others. You probably noticed just a short laser-etched line on the forward end of this plank. This is actually the inboard side or "face" of the plank. Since the plank at the bow will gradually become flush on the surface with the plank next to it, you need to only create a short bevel on the inboard side. Bevel it to a little more than 2/3rds its thickness where it will enter the rabbet against the stem. Maybe even more. But immediately make the bevel less and less as you work your way aft for about 1". There will be plenty of time for adjustments before you glue it into position.

Lateral Bend/twist – Test fit to determine the amount of lateral bed and the direction of the twist. Just like you did with plank one. Pre-form with heat just like before. Test again....reform with heat if needed to tweak it....test again.....you get the picture.

Clean the rabbet and prepare PLANK #1 along the rabbet for the best possible fit –

You should be able to slide the end of plank #3 into the rabbet between plank #1 and the rabbet. It will sit on top of the bevel you created along the edge of plank #1.

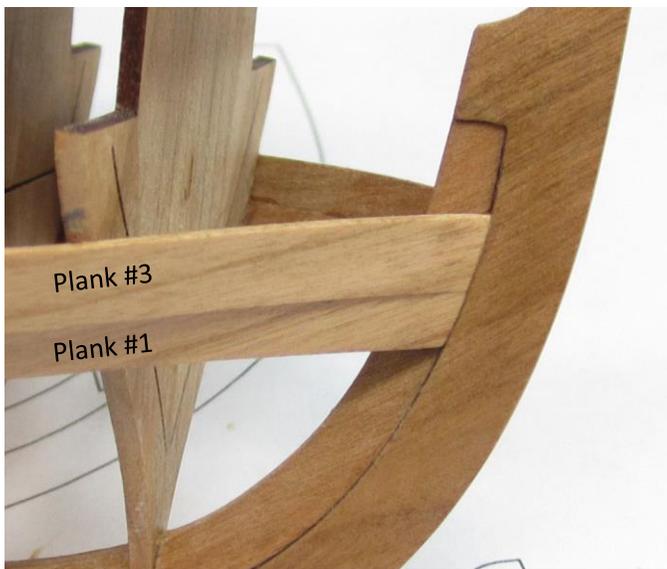


It will need to be cleaned out and *neatened up* in order to do so. The picture below shows the rabbet and bevel on plank #1 cleaned out with the point of a #11 blade so the forward end of plank #3 can sit properly in position. The photo on the previous pages shows the rabbet all cleaned up.

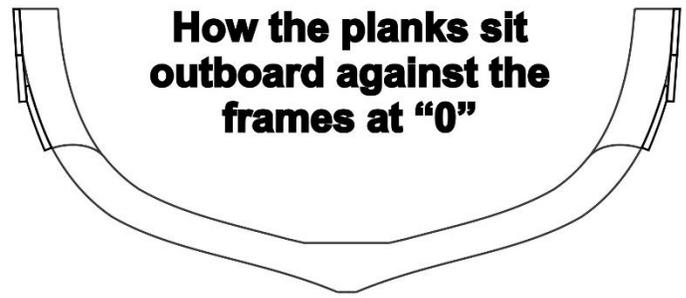
Plank #3 Length – Test it like you did for plank #1. This plank has also been created longer than needed. Cut the aft end so it falls on the center of frame 2. You can see this clearly on the plans.

Once done, glue it into position. The plank should sit on top of the bevel along the strake below it and overlap it. Remember that the bevel at the forward end of plank #3 is the inboard side. If you can still see some of the laser etched reference line depicting the bevel in that lower strake, use it as a guide to position the lower edge of Plank #3 against it. See the drawing above right.

The photo below shows a close-up detail of plank #3 glued into position. See how it is flush with the plank below it as it enters the rabbet but then immediately begins to stand proud on top of the plank #1 creating the clinker effect along its entire length. You can sand the outboard surface (the lower clinker edge only) of Plank #3 a bit to clean it up and make the transition into the stem more gradual and neat as it becomes flush rather than clinker.



The drawing on the top of the next column shows how all three strakes of planking will eventually sit against the frames outboard. This is true except at the bow and stern where the planking become flush as shown in the photo above.



Plank #4 – Plank #4 is handled exactly like plank #2 as far as the bending and twisting is concerned. In fact, you might want to test it before you even create the bend because it may not be necessary at all. The planks are so thin and you will now have the support of plank #2 that it will be overlapping. It will run off the stern and you shouldn't make any adjustments to the length after making sure the forward end cleanly butts against plank #3.

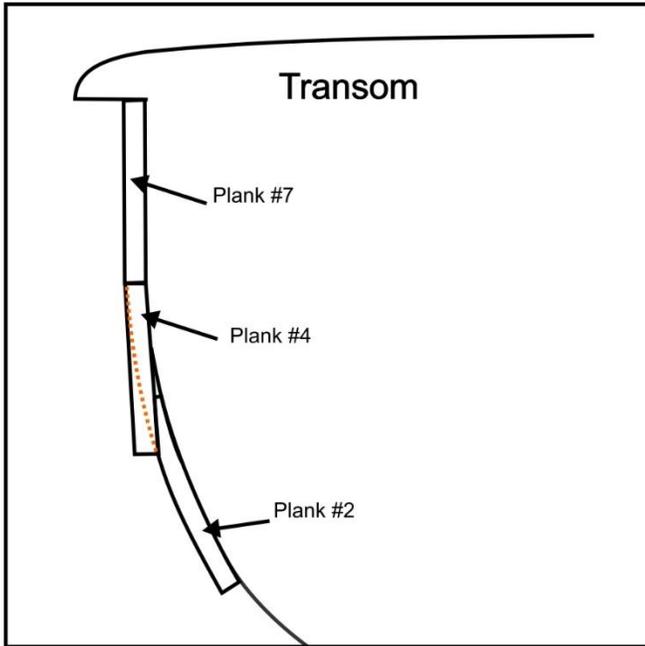
Clinker Bevel – NO bevel required on the inboard side of this plank...

If we were fully planking this model from the keel upwards, we would absolutely need to bevel the last inch or so on the inboard side of each plank at the stern. Just like at the bow, the stern planking gradually becomes flush as it enters the rabbet along the stern post.

BUT, we are very fortunate that in this one instance, the shape of the transom is such that no bevel is needed. We will use a model building "cheat" instead to create the same affect. If you test the plank in position you will see that without the bevel, the planks sits on top of the overlap of the lower strake quite nicely. In fact, if you did decide to bevel the inboard side like you did with plank #3 it would not fit nicely at all. Instead, we will glue the plank in position overlapping the strake below it to create the clinkered edge all the way across it. This includes the last few inches as it runs off the stern transom.

Then use some sandpaper to sand the bottom edge of plank #4 down so it gradually becomes flush and mimics the look we achieved at the bow. The drawing below illustrates this for clarity. You can see that there is no bevel on the inside lower edge of Plank #4. Simply sand the outboard side down to the red dashed line so it no longer appears clinker style. This should be done

gradually starting just forward of the transom and all the way to the end of the planks running off the stern.



This is of course NOT the actual way they would have done this but on our model it is much easier to do.

Planks 5, 6 and 7 – The last three planks represent the sheer strake. These are handled just like you would on any other model except for the fact that they are pre-spiled for you. They are not clinker planked but set flush against the strake below it “carvel” style. Just sand off the laser char from the edges and test fit them. Here are some details on each plank.

Plank 5 - Lateral Bend/twist – Just as you did with the other two planks at the bow, test it first to observe how much bend and twist you will need. Then pre-form it with heat.

Plank 5 - Rabbet bevel – Bevel needs to be created so its fits neat and snug like the others.

Plank 5 length – Is initially too long and should be measured and trimmed so the butt joint falls on frame “B”.

Plank 6 – A short plank trimmed to length so the aft butt joint falls on frame “6”.

Plank 7 - Wider than planks 5 and 6 just. The length is fine. Just make a tight fit against the butt to plank #6



and let it run off the stern its full length. You might want to apply some glue to the edges of the plank where it runs off the stern for strength. Photo of planking all completed at the bow.

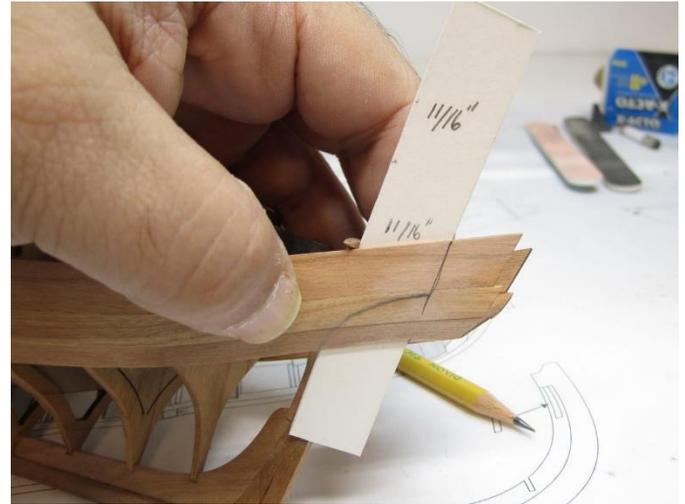


Don't forget the small filler piece of planking... If you examine the plans, particularly the planking expansion, you will see the small piece of planking I am referring to. This is a small length of laser cut planking that extends the wider part of the shear strake (plank#7"). It starts at frame "6" but does not extend all of the way to frame "5". It needs to be glued along its edges and positioned. You can see it as the white plank in the photo below. You can also wait until after you remove



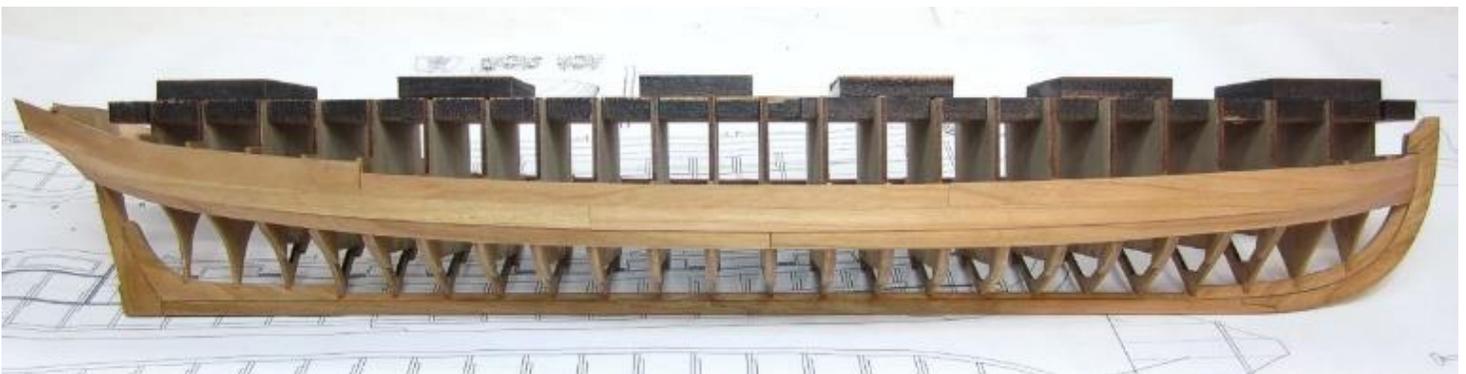
the frame centers to add this small piece of planking. Just remember to add it before you start gluing the cap rail in position. This is what I ended up doing.

Measure and trim the stern planks – I realize that the planking that runs off the stern is vulnerable to being snapped off and damaged at this point. So now is a good time to measure and trim the planks to their final shape and add the flying transom.



The flying transom will be set at the same angle as the transom. This is very opportune for us because it makes measuring the length of the planks easier. Cut a thin strip of cardstock that is 11/16" wide. You could make it just a little wider to give yourself some wiggle room. Some people prefer the look of more space between the transom and flying transom and many contemporary models show this area a bit longer.

Hold the strip against the transom and against the inboard side of the planks running off the stern. Then follow the outside edge of the card strip to mark the same angle that will become the final length. This is shown in the photo above. Trim and carefully sand the planks to this line. You can approximate the curve of the lower planks at this time also. But wait to trim those until you can test fit the flying transom. You want



to make sure the bottom of the flying transom is at the same level as the curve you establish.



Above is another look at the stern planks after trimming.

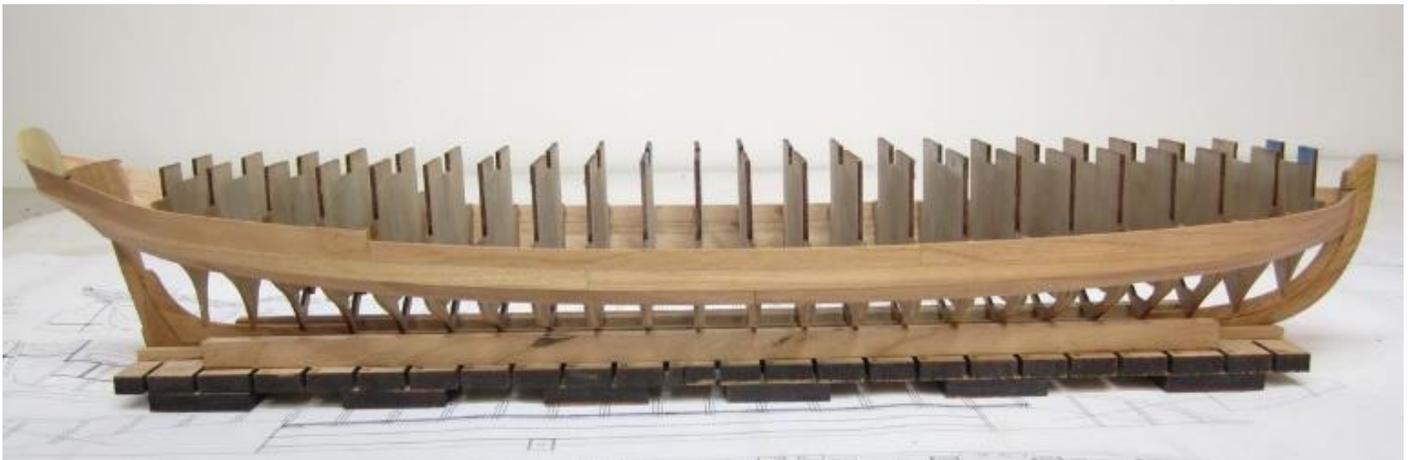


Once you are satisfied, take the flying transom which has been laser cut for you and glue it into position. Lightly sand off the laser char before doing so. You can see that the photo (below left) was taken a bit later in the project. I must not have taken a photo immediately after adding the flying transom. This image shows the cap rail being added on the far side which won't be done until a little bit later. But you get the idea. Adding the flying transom now will secure everything and make it more rigid back there. Now it's time for the fun part. It is time to remove the frame centers.

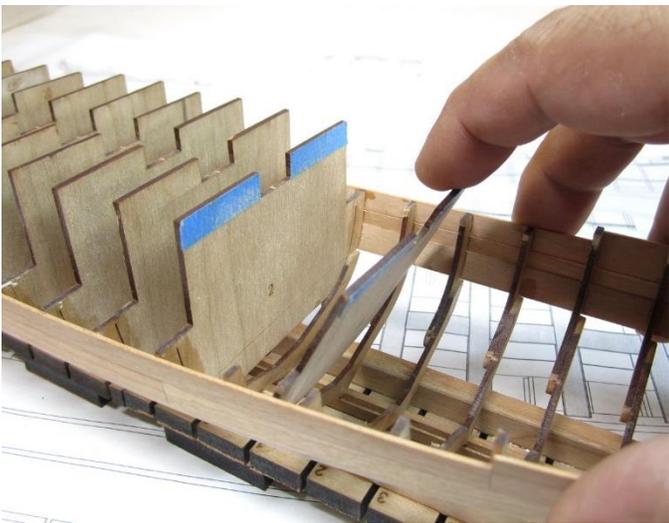
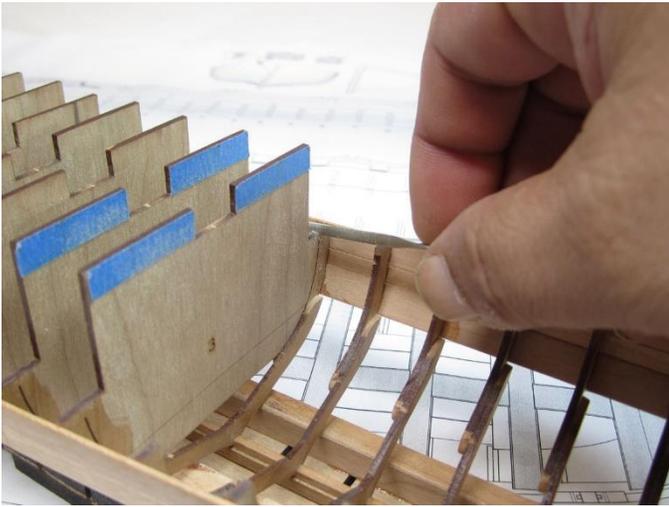
Removing the frame centers... It is understandable that you might want to remove the frame centers quickly to see how the model looks without them. But the next few procedures must be done with extreme care. The first order of business will be to remove the model from its base. Flip it upside down and remove the tape you used to reinforce the joint between the two halves of the baseboard.

Then carefully begin wiggling one side "port to starboard" until the base comes free. Repeat on the other side....dont rush this and proceed slowly with care. The photo on the bottom of the page shows the model after I removed the baseboard. Don't throw it away. You can actually glue the two halves together now and still use it as a build board. This time with the model right-side-up. Several laser cut cherry strips are provided that can be glued down the center of the baseboard so the keel fits snug between them. One on each side of the keel. This is also shown in the same photo. You may have to secure the bow and stern post a bit more but this should do a good job of securing the model as you work on it more.

To remove the frame centers, file the small tabs that hold the frame centers in place. I am only referring to the tabs on the top of each frame port and starboard.



Do this slowly with a light touch and also use your other hand to hold the center steady as you file through the tabs. You can't see that in photo below because my other hand would have blocked the camera view of the tab being filed.



Then bend the frame center slowly and gently until the lower tabs break. REMEMBER, always bend in the direction towards the floors. This will minimize any tear-out to the floors and futtocks. See photos.

The bottom photo shows the hull with all of the frame centers removed. It usually looks a bit messy at this stage but once you fair the inside edges of each frame it will look nice and clean.

This is the most delicate stage of the build! The hull is pretty sturdy but until the footwales/floorboards and platforms are in...it's best to be careful. Fairing inboard requires a slow, gentle and yet deliberate sanding to reduce the thickness of the frames significantly.

We will be gluing the cap rail in position next before even trying to sand the frames inboard. This will give the entire structure more strength. To prepare the hull for this, sand the shear/tops of each frame down so they are flush with the top of the planking. From experience, you might think you have sanded or filed them down flush with the planking but you would be surprised at how poorly you actually did. I say this only because it is best to check your work before gluing the cap rail into position.

The cap rail is laser cut in several (3) sections for each side of the hull. Remove the bow sections first and test them in position. Hold them on top of the model while examining the underside of the cap rail carefully. Try and spot any light showing through between the underside of the cap rail and the hull planking. If you see light, then you have a gap between the two and haven't sanded your frames down flush with planking yet. This is important for many reasons, but mostly



because you want to make sure the cap rail is glued down to the top edge of the planking as well as the top of each frame. It will give the entire hull much more strength that way.

A few things of note:

-Once the cap rail is in position you will be sanding the outboard edge flush with the planking. Keep this in mind as you position it.

-The inboard edge will be sanded down as you fair the framing on the interior. You will be trying to keep the thickness of the cap rail a nice and consistent $5/64$ " wide.



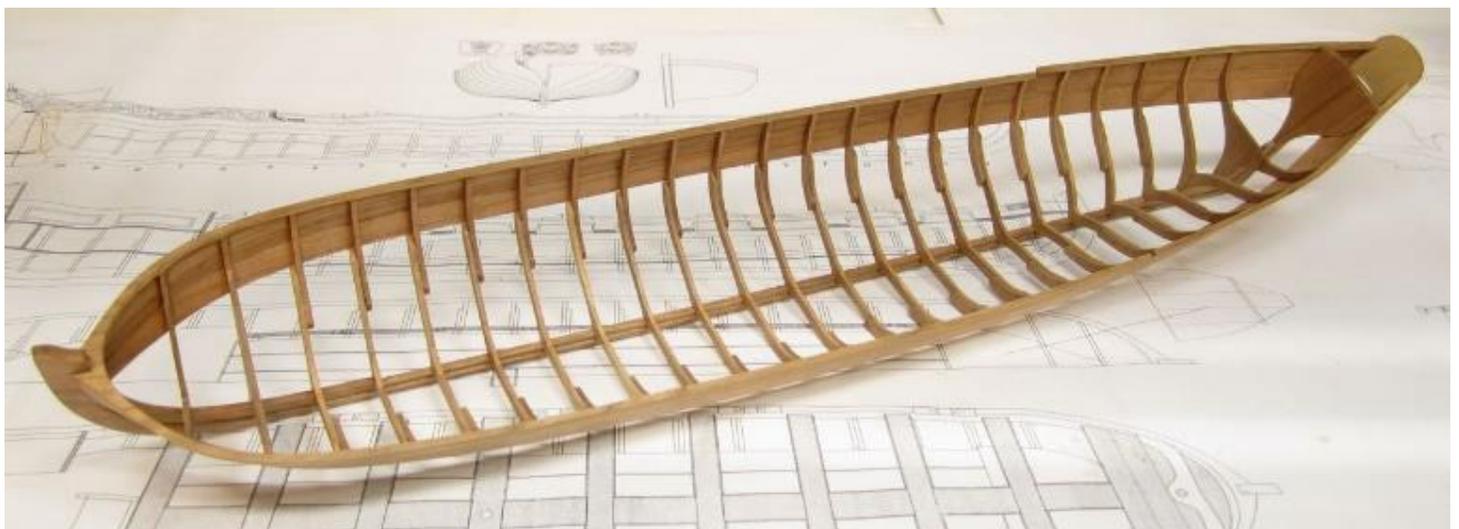
- The photo below left shows the cap rail at the stern. Note how you must notch the transom to position the cap rail properly. Then sand the top of the transom down flush with the top of the cap rail. You can see the port side completed. The starboard side is notched out but the cap rail hasn't been positioned yet.

- Bevel the aft end of the cap rail so it fits nicely against the flying transom. It is beveled in two directions.

- The photo at the top of this page shows the cap rail completed on the port side. But it has not been sanded outboard yet.

-Each section is left a bit wider at the bow to compensate for differences in the many kit builds as each builder will fair the hull at the bow differently. Some sections are also left longer and need to be trimmed to fit well. The important thing here is to sand the outboard edge flush to the planking while leaving enough width inboard to achieve a $5/64$ " width consistently along the entire cap rail after you finish sanding and fairing inboard.

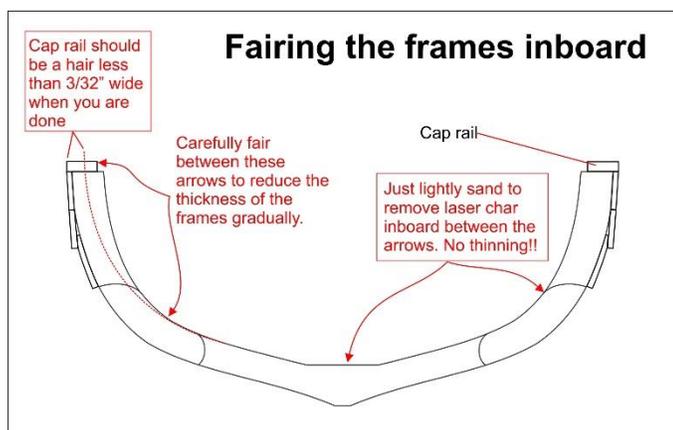
The photo below shows the inboard frames faired and you can see the width of the cap rail. If your cap rail is too wide it will have a negative impact on the overall look of your model. You want it to be narrow and graceful. Note how the frames inboard were not thinned down as much lower down and you can graduate each frame evenly. Only the very top $3/16$ " of





each frame really need to be thinned down enough to achieve a cap rail that is 5/64" wide.

The diagram below shows how to fair the framing inboard. But you should also keep in mind that the frames should be consistent so all of the floorboards and inboard planking have no dips. Take your time with this and if you can go even thinner you will be in an even better situation when it comes time to fit out the interior.



The photo on the top of the page shows the graceful shear after the cap was installed. It gives you a good overall impression of what the model should look like at this stage of its construction.

Floorboards and platforms...

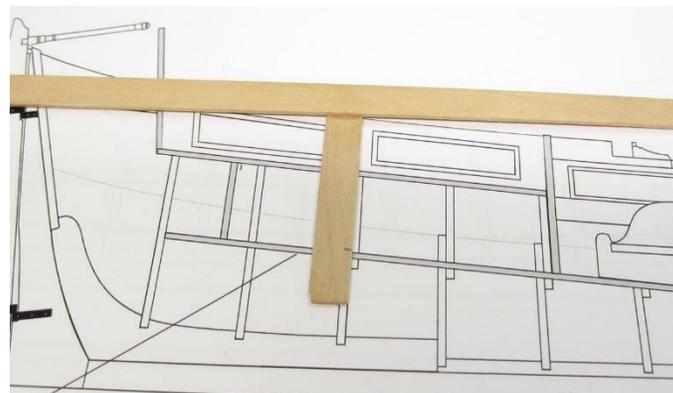
The hull is still very fragile at this point but as soon as you get the floorboards and platforms in position it will get quite strong. All of the pieces for them are laser cut for you and are 3/64" thick. But more about those later.

Right now I would like to discuss something that will be very important as you start adding more interior details like the platforms. I realize that it would be difficult for anyone to determine the proper depth inside the hull each of these elements should be placed. But the depth

or distance from the top of the cap rail is very important. If any number of these elements are placed too high or too low then it will have a cumulative effect on the future elements you will be adding. The errors will start to add up and since most if not all of the pieces are laser cut for you they won't fit properly.

So to help you find and transfer the correct depths for the interior elements, you can build a simple tool to help you transfer the measurements from the plans to your model.

This tool is just a simple "T" square of sorts. You will need a scrap length of wood strip. Two pieces actually. I found that using a left-over planking strip from a previous project worked out perfectly. I used one length of 3/16" x 1/16" strip wood that was eight inches long for the top piece. Then I cut another length of the same strip about 2 1/2" long.



This was glued at a right angle and centered on the longer cross piece to form a "T". See above where the tool is being used to measure the depth of the aft platform. The floorboards in the center of the barge will be added first but for purposes of this discussion and how to use the tool, let's talk about the aft platform.

The top of the "T" just next to the vertical strip is placed on top of the plan. You can see in the photo that the

bottom of the cross timber is touching the top of the cap rail on the plan. Then you can place a tick mark at the depth for the platform. Mark the top of the platform on the tool. You should do this at every frame for many of the elements you will be adding to the model.



Then as shown above, rest the Depth gauge on top of the cap rail of your model along the frame you took your measurement from. Slide the tool left and right until the tick mark touches the top of the frame. Transfer this tick mark to your frame. This represents the proper depth for your aft platform at this frame. Repeat at each frame port and starboard and you will know just where your platform should be.

You don't have to go through this exercise for the floorboards. It won't affect the outcome much.

The Floorboards...

The floorboards are laser cut for you. You can sand the laser residue from the top and the bottom of the sheet before you pop them free. Start with the center board. I didn't bother cleaning the char of the edges of each board because it will highlight them all once they are completed.

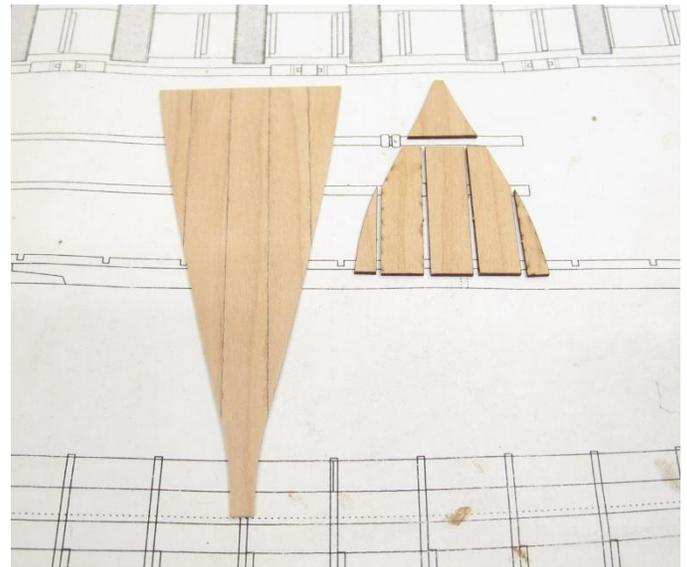
The center board was glued down the center of the barge. Right on top of the keel. Then it was just a matter of gluing each of the additional boards on both sides. You may have to bend and twist the other boards to pre-shape them so they fit nicely. I used the hair dryer just like it was used for the exterior planking.

Note in the photo below how the floorboards butt against each other. There are no spaces between these floorboards.

I sanded the floorboards smooth and applied some wipe on poly as the finish. This is the same finish I am going to apply to all the wood surfaces.

The Aft Platform...

You can find the pieces for the aft platform on the same laser cut sheet. The aft platform is shown on the left side of the photo below. I darkened the seams between each plank with a pencil before I glued them together edge-to-edge. Sand it smooth and apply a finish to both sides. The forward platform is shown on the right and has not been assembled yet.



You can glue the aft platform into position but remember to use the depth gauge to find the proper depth for it inside your hull first. After you mark the sides of your frames and place the platform in position, it should fall at the same height as your tick marks.

If it doesn't, you should make any needed adjustments to either your frames or the platform. My guess would be that if it doesn't sit low enough you probably didn't fair your frames thin enough. You should make some adjustments until the platform sits at the correct depth inside the hull. The aft edge of the platform should sit against bulkhead 10 as shown in that photo on the previous page.

The forward platform is actually a bit of an illusion. It doesn't pass through bulkhead "I". You should assemble the five pieces of the platform like you did for the aft platform but don't glue the triangular "point" of the platform to the assembly. This small piece will be glued to the forward side of bulkhead "I" so it appears as though it actually passes through. This is actually how it was done on many contemporary models and I think it made life easier having that bulkhead solid.

The larger part of the platform should butt against the other side of bulkhead "I". You should glue this into position first. It will make adding the small pointed section on the other side easier as you will be able to view it from many angles to see if you pulled off the illusion. It should look like a continuous piece from the other side.

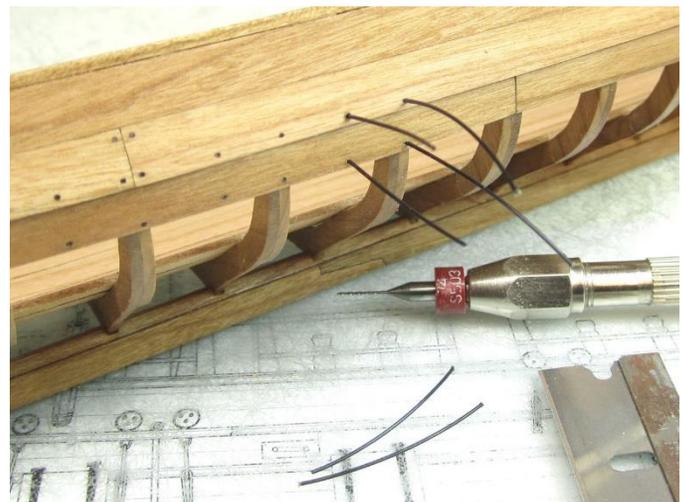
Nailing your planks...

Many of you are familiar with the process of treenailing your planks. Treenails were wooden fasteners that held the planks in place. On our barge however, there were no treenails. Actual nails were used instead. The photo on the top right shows the Queen Mary Barge which sits in the National Maritime Museum in Greenwich. This view of the bow shows the nails quite well. You can see the same pattern on your plans. But you will notice that there are many nails along the lower edge of the clinker planking. They are close together and very numerous. You might opt to not show them on your model but I decided to create a variation on the actual practice.

Using the 20lb black line supplied in the kit you can simulate this look if you choose to. I decided to show far fewer nails than was actually used but it does simulate the look nicely. Pre-drill holes along the



bottom edge of the planks. Use a #74 drill bit which is the perfect size for the 20 lb black line. You only need to nail the bottom two planks because the top plank will be painted red and the nails will look sloppy and distracting. Cut several small lengths of line about 2" long to start with.



Then dip the end of one of these short lengths into some CA and insert it into the pre-drilled hole. The photo above shows this well. Note how I only have a nail at each frame along with one more in between



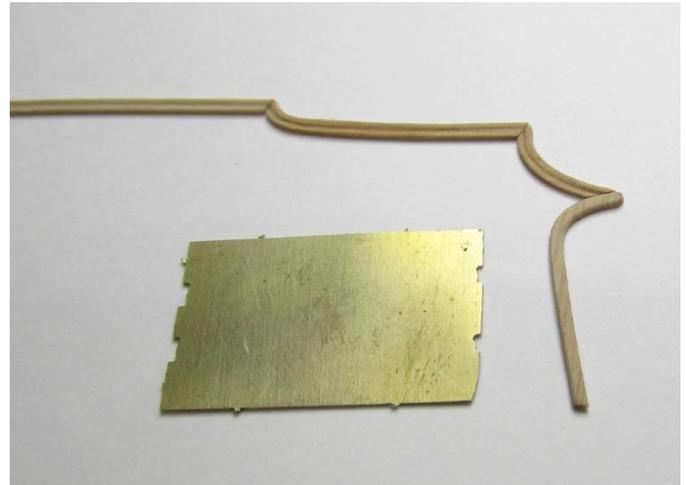
them. You can add more if you want to but I think this does the trick. If you decide to use more you might consider a smaller 15lb black monofilament instead. Then use a straight razor to carefully slice off the line flush with the planking. The plastic line cuts quite easily. Make sure you use a sharp new blade. A more accurate depiction of the number of nails used is shown on the plans. But examine the photo above which shows the hull completed with just enough to emulate the same look.

That same photo also shows the decorative molding in position with the plank between them painted red. This will be our next task.

Decorative Molding and Ears....



The photo above shows the "ears" and molding in position at the bow. These elements are provided in boxwood which will give a nice contrast to the cherry and red painted areas of the model. Note the decorative edge on the molding and the edge of the "ear". This decorative fancy edge was created using a scraper. I am sure many of you have seen this technique used before. You will need to create a scraper using a small piece of brass or even a discarded straight razor blade.



The photo above shows a scraper I made from a piece of brass for another project. You can use mini files and other tools you feel comfortable with to create the fancy profile into the scraper.

The kit comes with many 1/32" x 3/64" boxwood strips to be used for the molding. Use your scraper to create the fancy profile for your molding. Then use the same scraper to create the same profile along the edge of the "ear". Place the "ears" in position first. Note how they are flush with the top of the cap rail. Once complete, the molding can be glued into position so it looks like its running along the hull smoothly. Try to avoid any dips or unsightly waviness. Sections of the molding will eventually be removed to accommodate the carvings later but for now, you can just run them continuously along the hull.

A couple of important things to keep in mind as you add the molding...

- It's a small detail but it is important. Insert the small filler piece on the inboard side of the hull where the share transitions to a new level. This will create a forward edge of the cap rail and firm up the whole area. See the photo on the next page. It might be easier to

add this small piece now before gluing the molding along the outside edge of the cap rail.



- Please keep in mind the distance between the two pieces of molding. Keep them consistent and even. The area between the two molding strips is much larger at the stern so it will accommodate the carvings that will eventually be placed there. For this reason, I added the top molding first and made sure it was flush with the top of the cap rail. You will be gluing it on in sections so use care when joining two sections of molding so the seam between them is not visible.

- Before adding the lower molding strip, take the three carving blanks and hold them in position along the stern to see how wide they are. Mark the bottom of the carvings with a pencil so you know how wide to make this area. You want those carvings to be a tight fit between the molding strips with little excess room above and below them.

Now that you know how wide this area will need to be, you can run lower molding across the hull from stern to bow. A small length of the lower molding also extend onto the stem as shown in the photos provided. You can also take the measurements from the plans but it is best to use the actual carving blanks as a spacer.

- Some of my fellow model builders think I am a glutton for punishment. I will leave this up to you however. As you can see, I added the molding and ear pieces before painting. This meant that I had to be extra careful while painting so I wouldn't get red paint all over them. You might opt to paint ahead of time but I will leave that up to you.



- Note in the photo above how the paint extends onto the stem between the ear and molding. You will also notice in some other photos throughout this manual that the top of the cap rail is painted red as well. But this also includes the top of the molding. So spend some time sanding the seam between the molding and the cap rail smooth. Fill any gaps with wood filler so you get a smooth transition that won't be seen under the paint.

- At this point in the project you are about half way to completion. This will complete part one of the manual. But I do want to mention that you can spend some time painting other areas of the hull red like the top of the cap rail and stem above the molding. Spend some time sanding between coats to get a good base coat completed before we start working on the interior details in the part two. The photo below shows the next steps we will start in part two of the manual but have a look at the areas I started painting red now because they will be more accessible. These include the transom and flying transom, and the outside of the flying transom.

