



Medway Longboat 1742

The photo above shows one of the two contemporary models of the Medway Longboat. The other not pictured is fully rigged without sails. Your kit can be built just like the example above with exposed frames or you can fully plank it. A masting and rigging package is also available should you want to rig your model and even include sails.

Let us dive right in with the construction of your model.

Assembling the keel and stem...

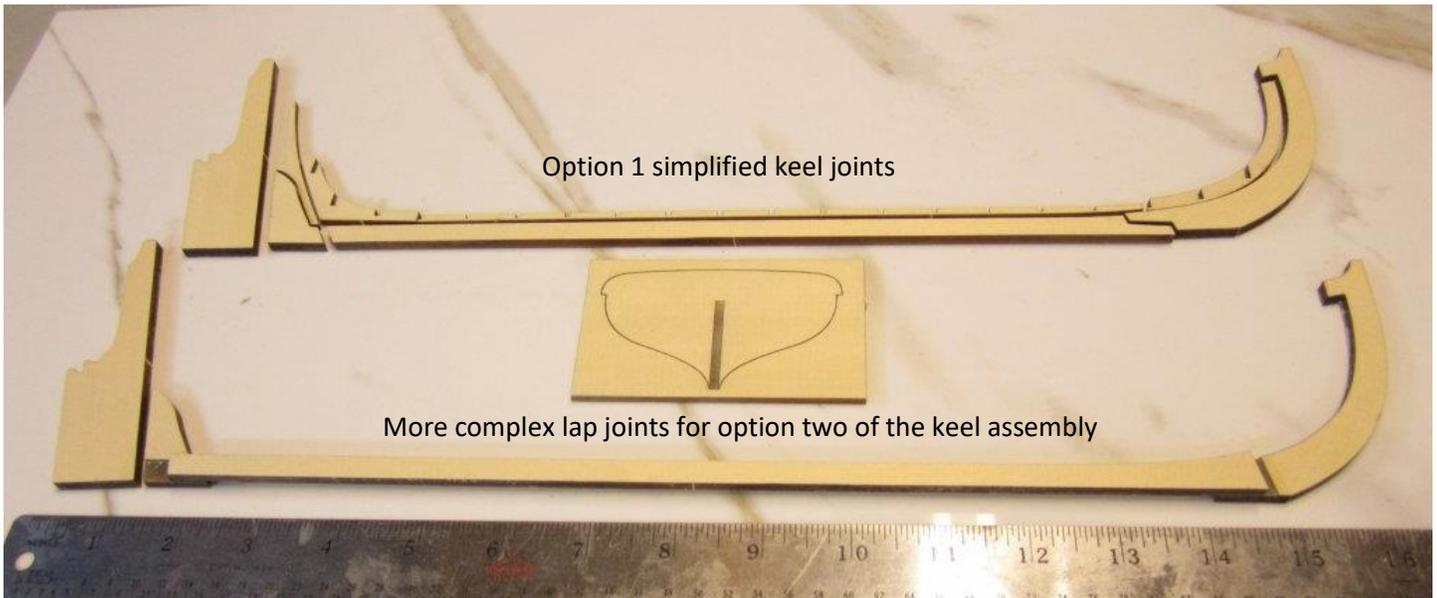
This kit comes with laser cut parts to make two versions of the keel assembly. The first version is a simplified keel, designed with scarf joints and butt joints which are all laser cut for you. The second option contains parts which will require some chisel work, filing and shaping. The joints in this version are more complex but very accurate in their historical depiction for a keel assembly. You can build the version that is more comfortable for you to complete but since you have enough laser cut parts for both, why not start with the more complex keel assembly knowing that you have the simpler option available *just in case!!!* Details instructions are provided for both.

Option 2 – More complex keel assembly...

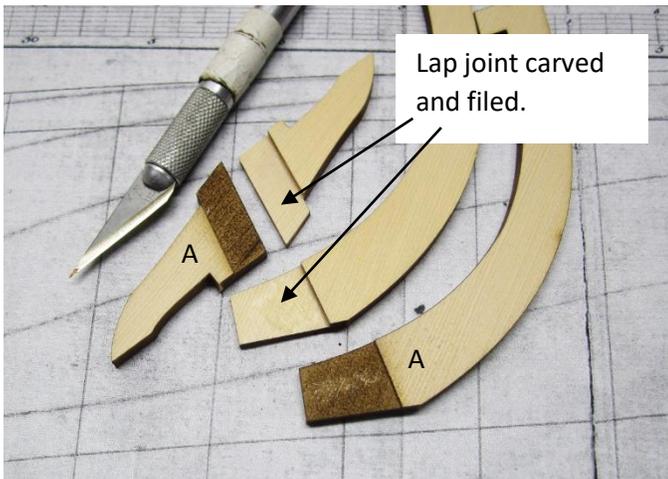
You will find the laser cut parts for the keel on the 5/32" sheets provided. Before you remove any of the parts from the sheets, sand both sides with 220 grit sandpaper to remove any laser char on both sides first. Then remove the parts from the sheets by cutting through the small tabs that hold them in place with a sharp #11 blade.



The photo on the top of the next page shows the parts laid out for both versions of the keel.



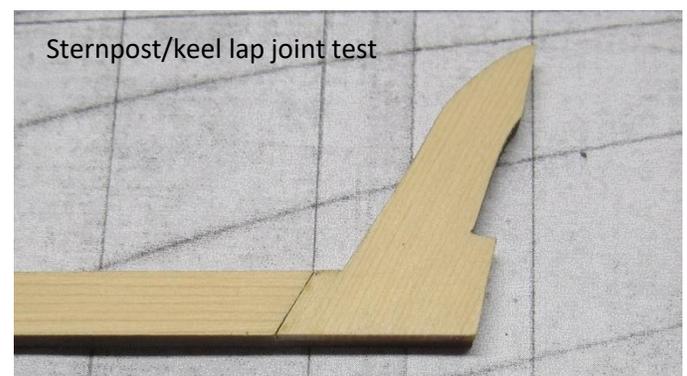
You can see that the three parts for the more complex keel assembly (5/32" thick parts) shown on the bottom of that photo are joined using lap joints. I have not removed any laser char from the edges of these pieces yet. It is better to leave that intact until after "carving" and completing the lap joints. In the photo below you can see two of each part.



One pair (A) shows the lap joint as prepared by the laser cutter. The laser cannot etch deep enough to complete the lap joint. But you have the area laid out with precision so you only need to make it deeper. You need to remove the material until it is half the thickness on each side of the lap joint. There are multiple ways you can do this depending on your skill level and what tools you have. You could use a Sherline mill for example if you are one of those folks who prefer to use machines. OR, as is my preference, I opted for the cheap yet effective.... sharp #11 blade. I slowly sliced off little shavings until it was close to the correct

depth. Then I used a sanding stick and files to clean it up.

Periodically, I stopped shaving and slicing to check how the lap joints fit together on the longer keel section. The longer keel section also needs the other half of each joint carved for a proper fit. The two photos below show the two lap joints test fit together.



One thing I would caution you on is to try very hard not to rush it. Don't get "close enough" and then think you can sand the outsides flush after you glue them together. This would be very bad. You would see the weird twisted shape that would develop and the other 3/32" slotted keel parts wouldn't fit onto it properly

and that error of impatience would snowball as your project moves forward. Keep in mind that these are extreme close-ups.....you can really see the wood grain. But once the finish is applied....that will disappear. When you are satisfied with how these parts fit together they can be glued using TiteBond. After the glue dries on these three 5/32" parts, you can sand the laser char from the edges and clean up the assembly.

You can now add the four (3/32") notched sections of the keel.

But before I describe how to do that, let's go over the simplified option for assembling the three 5/32" keel pieces.

At the bow, the lap joint is replaced with a simple scarf joint. This is laser cut for you and should fit together pretty tightly even without any tweaking. Test how it the pieces fit together and only if needed, tweak one side of the joint for an even tighter fit. But don't sand or file away too much because it could affect the overall length of the keel assembly.

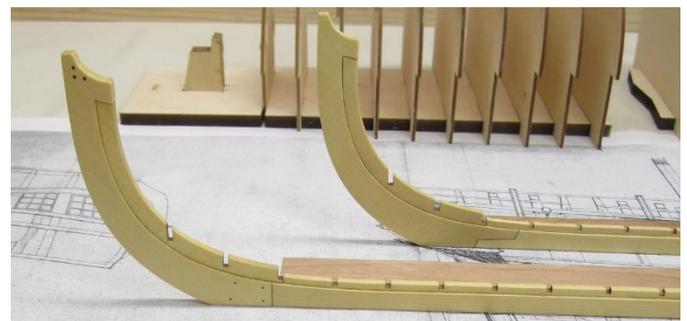
At the stern, the lap joint is replaced with a simple butt joint. These two pieces are simply glued together using Titebond after you happy with the nice tight joint you achieved. You might not think this joint will be strong enough, but it will absolutely be strong after the glue dries. There is no need to pin or dowel this joint together. Once these three pieces are glued up, sand off any laser char from the edges.

You can also darken the seams of these joints if you would like to. You can run a pencil over the edges of the joint before gluing them together. You can do this on both versions of the keel if you want to accentuate the joints. I used pencil on the prototype parts and you can see how this looks in the photos provided.

Adding the four 3/32" notched keel pieces...

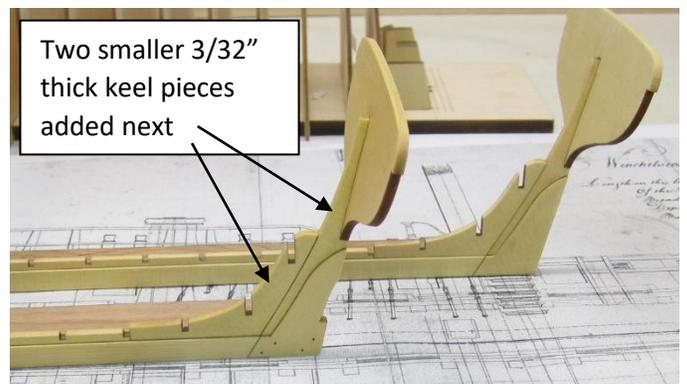
There are four 3/32" thick keel pieces that will be added next. Sand off any laser char from both sides of the parts before you remove them from laser cut sheet.

...IMPORTANT!!! Do not try and remove the laser char from the edges of these four parts until AFTER they are glued onto the keel assembly. They are very delicate and it is safer and easier to do after they are glued into position. These thinner pieces were centered along the keel leaving 1/32" on each side to form a rabbet or "lip" for the external planking. I found it easier to add the curved section at the bow first. You can see both versions of the keel below with the 3/32" thick keel sections in position.



At the stern, I added the two smaller sections next. I am intentionally leaving the really long and thin section until last. I recommend you do the same.

Note in this photo that the transoms are also installed. Not wanting to get ahead....please don't add the



The three 5/32" keel parts on the simplified version all glued up. The four 3/32" notched parts are shown and are ready to be glued into place next.





transom yet. We will do that very soon but we still have a few things left to do on the keel assembly first.

As mentioned earlier, you will leave an equal $1/32''$ rabbet on both sides of these two pieces. This is very crucial at the stern. In fact, before you glue them into position permanently, test them. Make sure that you actually have a $1/32''$ rabbet on both sides. If for whatever reason, your rabbet is less than $1/32''$, it would be a good idea to sand these two parts a bit thinner where it would leave that rabbet. You really want to make sure that that the rabbet is deep enough at the stern to accept the planking. The planking will be $1/32''$ thick which is really NOT that thick. To avoid needing to sand that planking down even thinner because your rabbet was too shallow, you will be so happy that you had the forethought to make the rabbet deep enough in advance. It will save you a lot of grief.

Lastly, you can add the long, thin notched section on top of the keel. Once again, leave a $1/32''$ rabbet on each side.

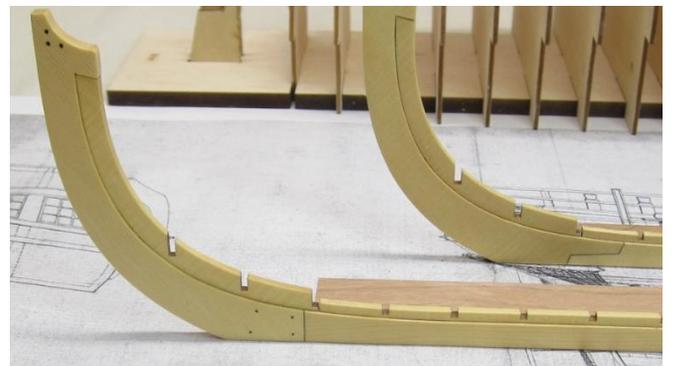
Now that they are all glued in position, you can carefully sand the laser char from the top edge of these pieces. Don't try to remove the char from inside the notches because they are laser cut with precision to accept your frames. Once you are done, apply a coat of wipe on poly.

The photo on the top of this page shows both versions of the keel completed although you shouldn't have added the transom yet. It will be much easier to add the bolts to the lap joints on your keel before you add the transom. You can check the plans for the locations and pattern for these bolts.

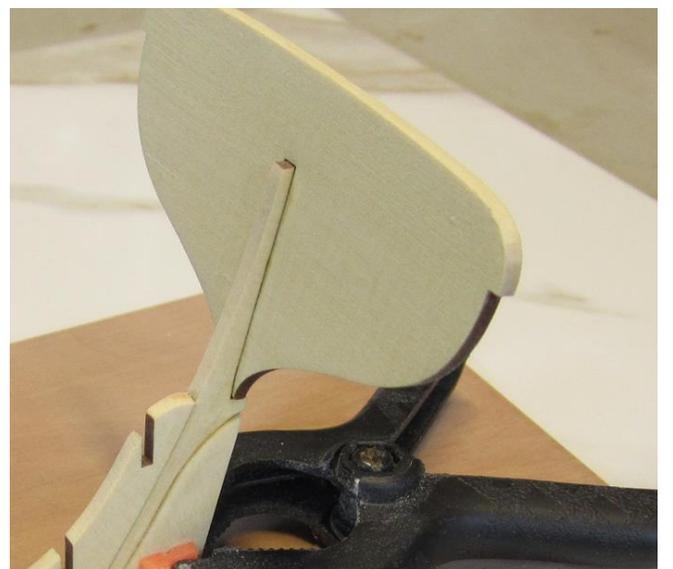
The bolts were made using 25lb. black monofilament supplied with the kit. This is the largest size of black fishing line provided. Drill small holes for these simulated bolts. You don't have to drill all the way

through. They are just simulated. Drill shallow holes and insert lengths of the fishing line into them. I usually cut small lengths about 1" long for these. Then I dip the end in Titebond. Insert it into the holes and allow to dry. Then use a straight razor blade to slice them off flush with the keel. You can sand them smooth as well and reapply some wipe on poly.

There are no bolts at the bow on the simpler version of the keel with a scarf joint. See the image below.



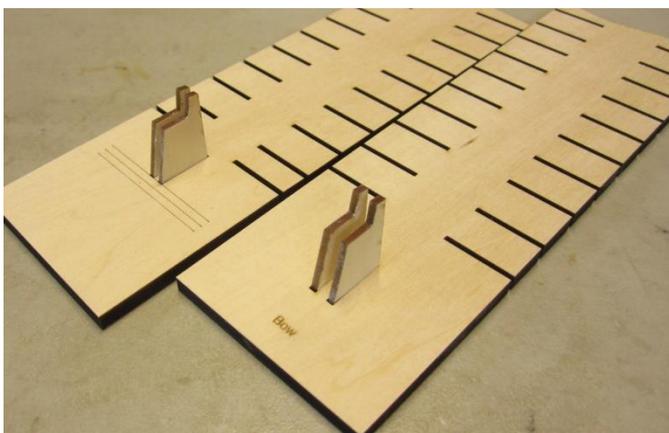
Adding the transom...



The laser cut transom can now be glued into position. Sand off the laser char along the top edge. There is no need to do this to the sides of the transom since you will need to fair the hull later after the frames are in place. There is a laser etched slot on one side. This slot should help you orient the transom when you glue it against the stern post with Titebond. But you will still need to ensure that the transom is perpendicular to the keel at a right angle. You don't want to have a crooked transom because you will end up seeing this after the hull is planked. One side will end up longer than the other!!! This completes the keel assembly. Set it aside so we can start assembling the frames.

Have your build board ready...

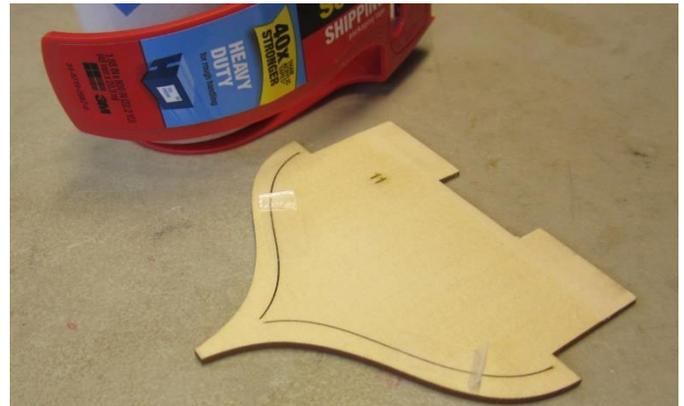
You will see the two-piece build board (1/4" Basswood) There are some slots for bracing blocks on both halves. Two for the transom and two for the bow/stem to stabilize them while planking (3/32" basswood). These pieces can be seen below. But do NOT glue them into the slots. These will need to be removed at some point in the build. It will be easier to remove the boat after planking without these in position. They are a press fit. If they are too snug....sand them a bit thinner because remember you will be removing them after a few planking strakes are completed. So make sure they are loose enough for that.



Assembling the frames...

There are two types of frames on contemporary models of longboats and barges like ours. There are one piece frames and two piece frames. The two piece frames have floors and top timbers. We will be doing the one piece frames first and there are 5 of them. One tip can be seen in the photo provided. You can see thin strips

of packaging tape along the inner cut line. I used heavy and very sticky packaging tape. You can fold over the end to make a tab and place the tape so it spans across the seam. This will give it added (temporary) strength while fairing and planking. The tape is put on both sides of each frame. The tabs will make it easier to remove the tape before breaking the inside of each frame free when it comes time to do so when you complete planking.



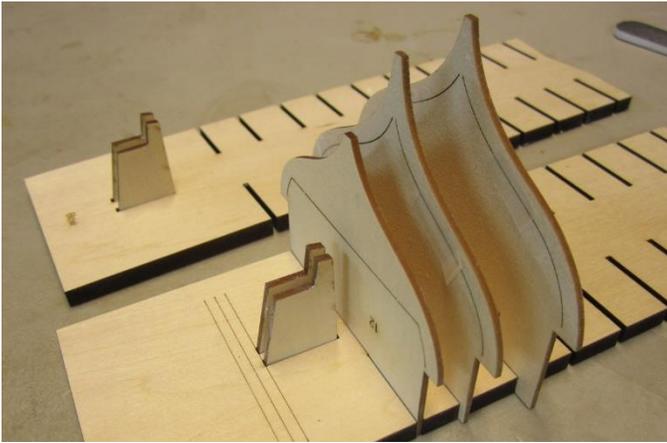
In addition to the tape, you can add a small length of cedar strip across the top of each frame at its most vulnerable point. You can see them below. Use small lengths of 1/16" x 1/32" strips. This will be hidden once planking is finished inboard and outboard. It really does help stabilize the frames while you plank and fair the hull. I only added them on the one piece frames but you can add them to one side of all the frames if you like.



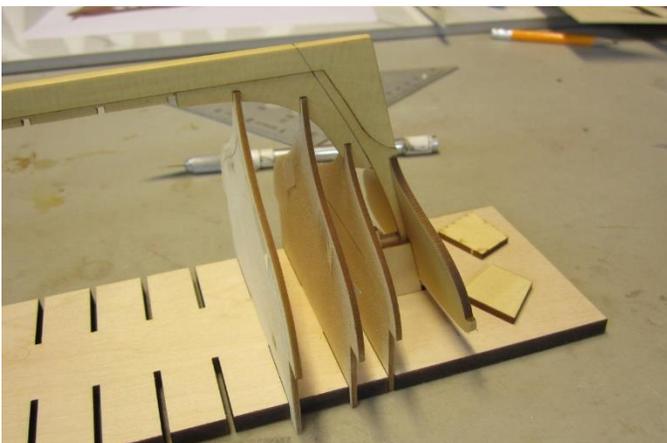
Then once this is finished you must test the frames in their slots on the build board. They will be very snug by design initially. You don't want these loose and falling out of the build board. But you don't want them too tight either. You want to be able to easily remove them

at any time. The best way to achieve the correct fit is to sand the two tabs that fit into each slot just a little at a time until they are the perfect thickness. You will know when they are good because they will be firmly seated and still be somewhat easy to remove. Be careful not to break the small tabs that hold the frame centers in the frames. There is no need to clean any laser char.

In addition, test the fit of the bottom of the frame so it fits its respective notch on the keel. Not too tight and not too loose. The three single piece frames at the stern are shown below being test fit and the two at the bow should be tested as well. Don't glue these into the build board. That would be a huge mistake!!!!

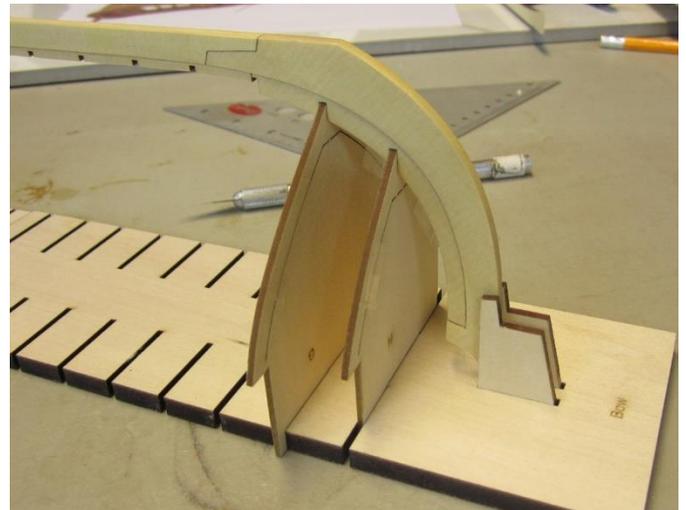


With this completed, let's test the keel assembly on the build board atop the frames. Carefully place the keel assembly into the stern half of the build board first. This is a bit tricky if you haven't done it before but once you do it a couple of times you figure out the little nuances. Slip the stern post between the two braces first as you carefully guide the keel onto each frame. Don't push too hard in each notch of the keel. Hopefully you have tested and filed those so they slide into each notch easily but don't fall out because they are too loose. NOTE the two small additional braces waiting to be installed next.

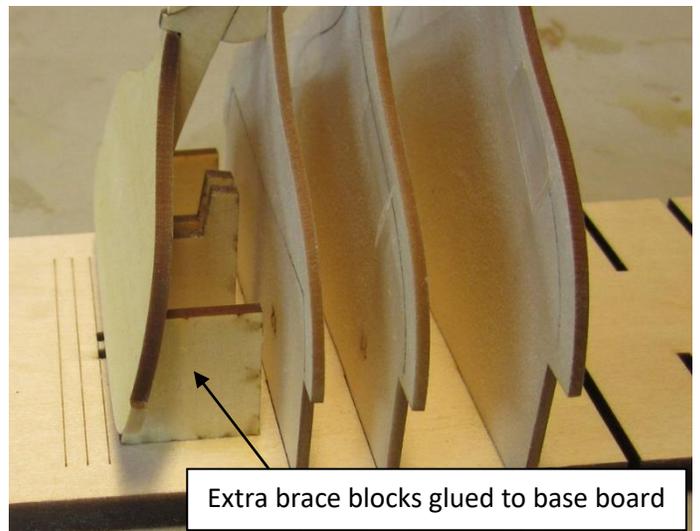


The two transom blocks in the slots can be moved forward or aft so you can get a good fit against the transom. Remember that they are not glued in. The slots for them are longer than needed so they can be adjusted to best advantage. But once in a good position, you can add the two smaller brace blocks.

These can and should be glued onto the build board. Use a little glue and push them into position against the transom. But DONT glue them to the transom. Just glue them to the build board. These will stabilize the transom even more while planking. Also use the laser etched lines on the build board to help make sure the transom is straight and not askew. This might be easier however after you slide the front half of the build board into position for a test fit first. So before adding those extra bracing blocks, test fit the front half of the baseboard by sliding that into position (below).



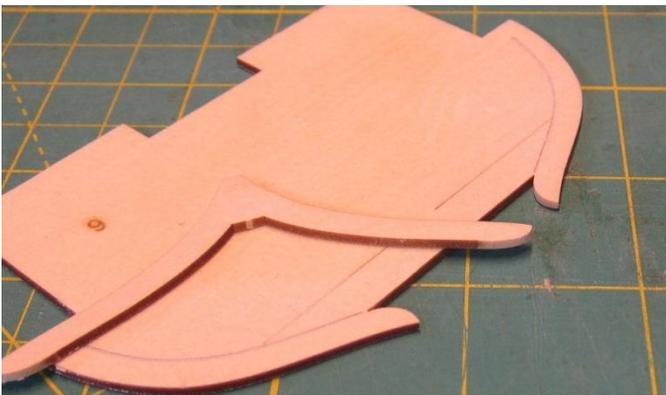
You will be removing and testing the keel many times before its time to glue the keel in position for good.





Above you can see what the keel assembly looks like after being tested on top of the five single part frames. Note how the two halves of the build board are not glued together. You should never glue the two halves together. Keep them separate for the time being. You can remove the keel assembly while you are building the two part frames next.

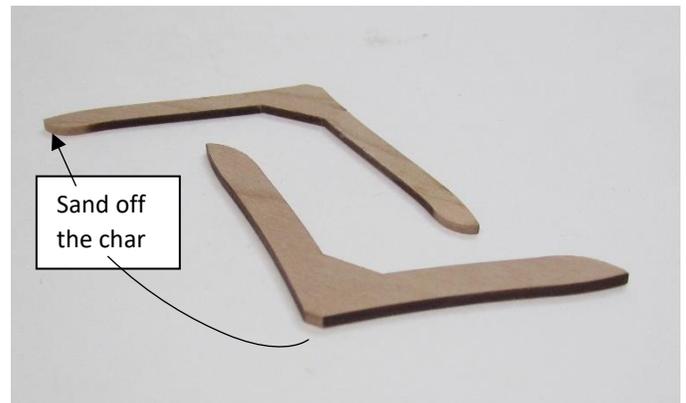
Building the two piece frames...



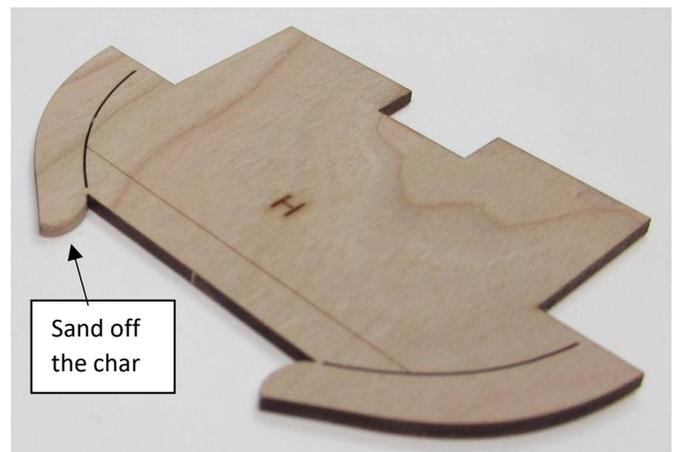
The remaining frames are made by gluing the two pieces together. I recommend that you only work on one frame at a time. The top timbers are also numbered but once you remove the floors (bottom piece) from the laser cut sheet, there is no identifying number or letter. So only remove the two pieces for one frame at a time to avoid mixing up the floors.

The floors...this portion of the frame is shown above (right). 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 Top timbers...are what the other section of each frame is called. They are positioned on each side of the larger frame centers. (Below)

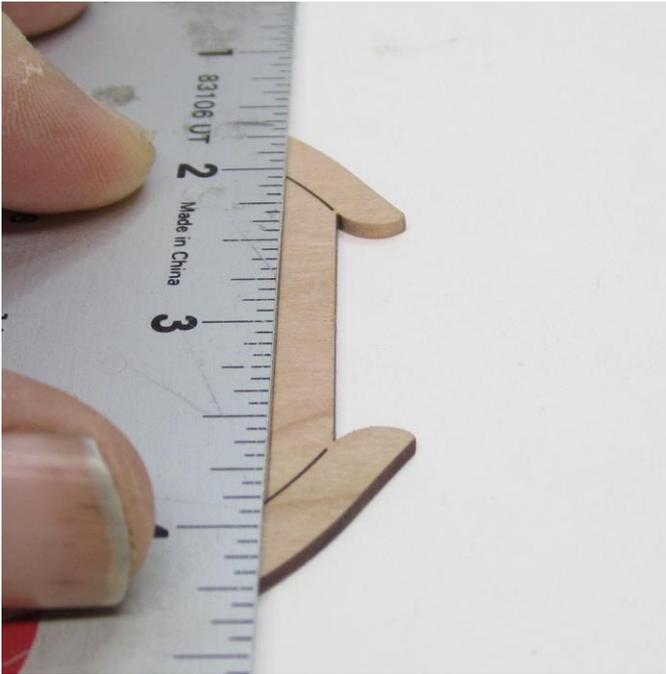


The top timbers are held in place by the tiniest little tabs. Be very careful with these because you don’t want to separate the top timbers from the frame centers. Carefully remove the laser char from the tips

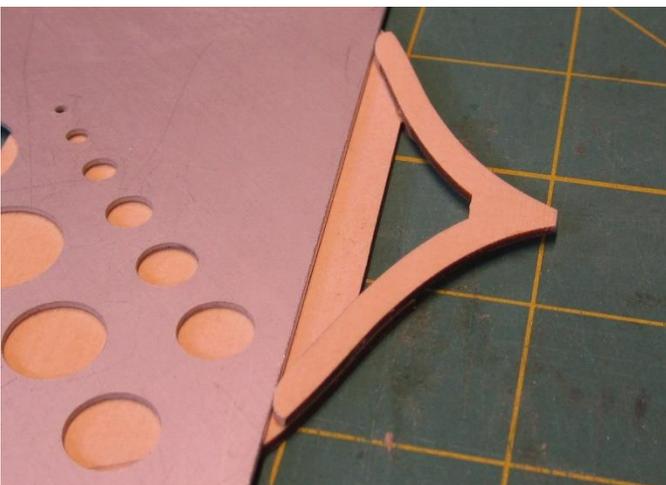
of each top timber only. Once again, don't worry about the rest of the frame edges.

Assembling the floors and top timbers...

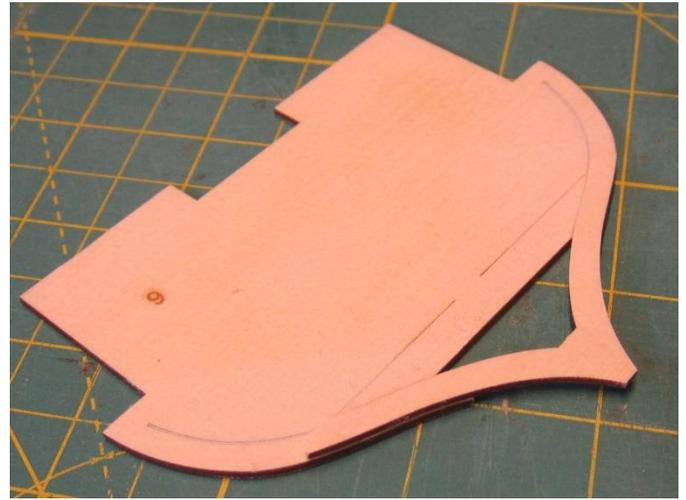
To assemble the two parts of each frame, place the top timbers on a flat surface. Then position a straight edge (preferably metal) against the reference line that spans across the frame center. Below....



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 bottom portion of each top timber. Be careful to not get any glue in the cut line between the top timber 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 titebond 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.

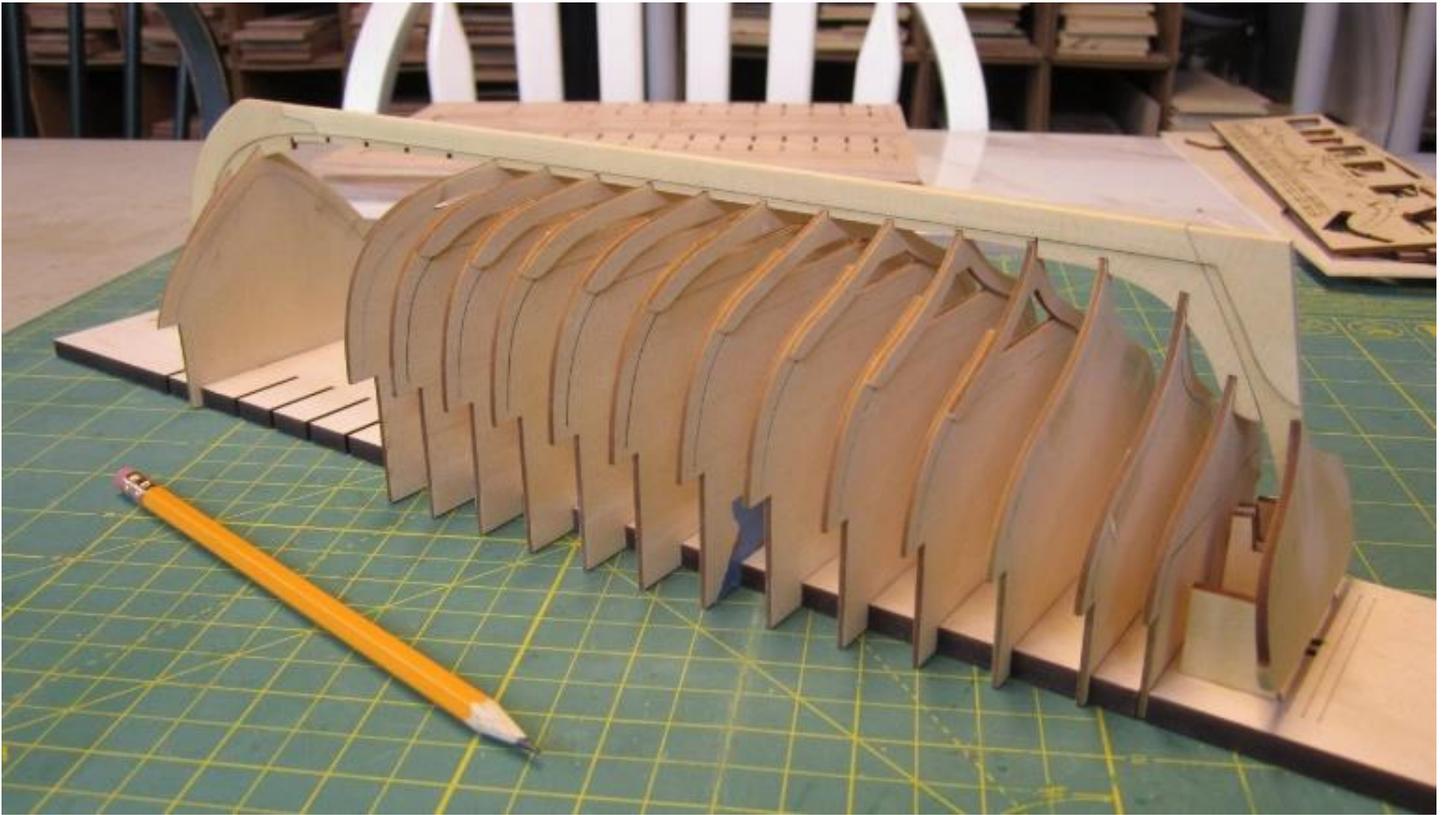


Test it in the corresponding slot of the build board. BUT also test the bottom to see how it fits in the keel. The notches in the keel were also made a bit small so they would be a snug fit. But if the frame doesn't fit into the keel notches, file it a bit until you get a nice fit. Perform this exercise 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. The aft side (numbered frames) faces in one direction while the fore side (lettered frames) 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.

Also, as you make more and more frames, you should spend some time testing how the keel assembly will fit on top of them. I am testing the keel for a proper fit quite often but also to get accustomed to the process. When it comes time to permanently glue the keel onto the frames you want to be familiar with all of the areas that may get hung up a bit or are a bit snug. This will help you get through the next step more smoothly.

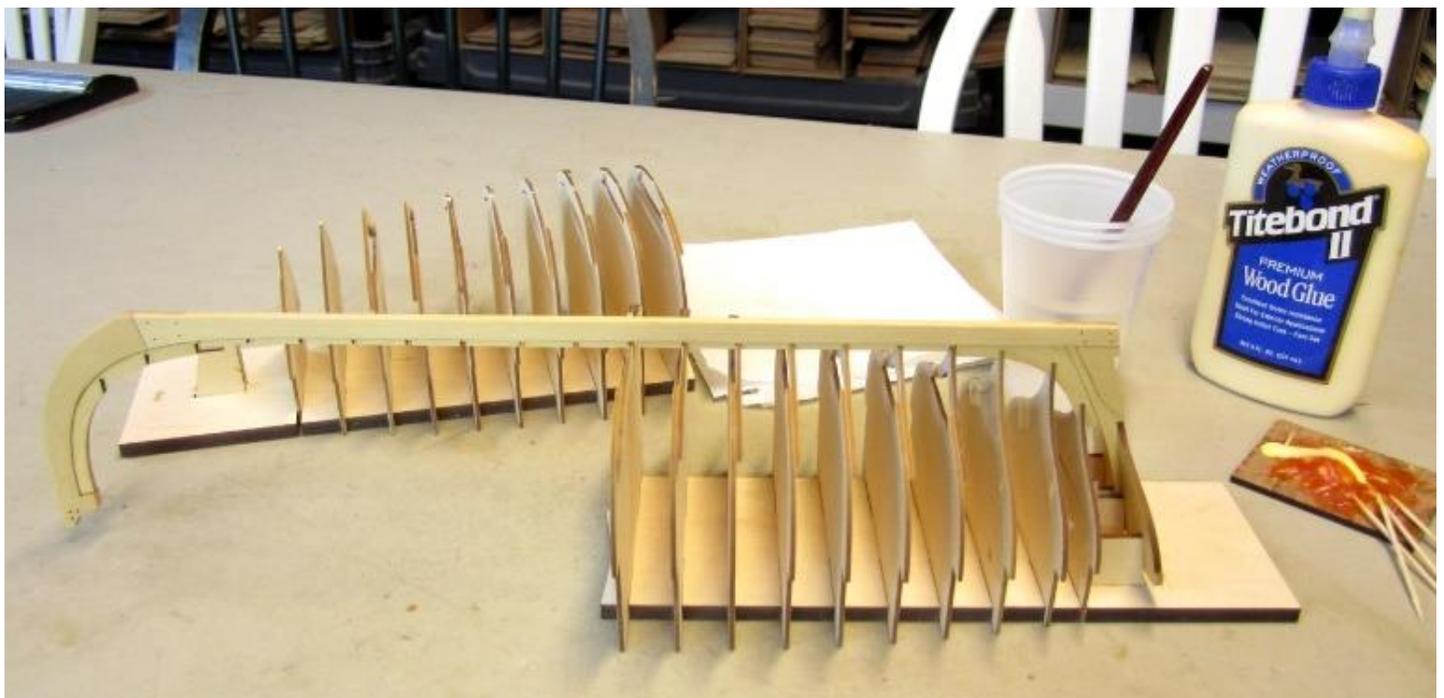
The photo on the top of the next page shows one such test.

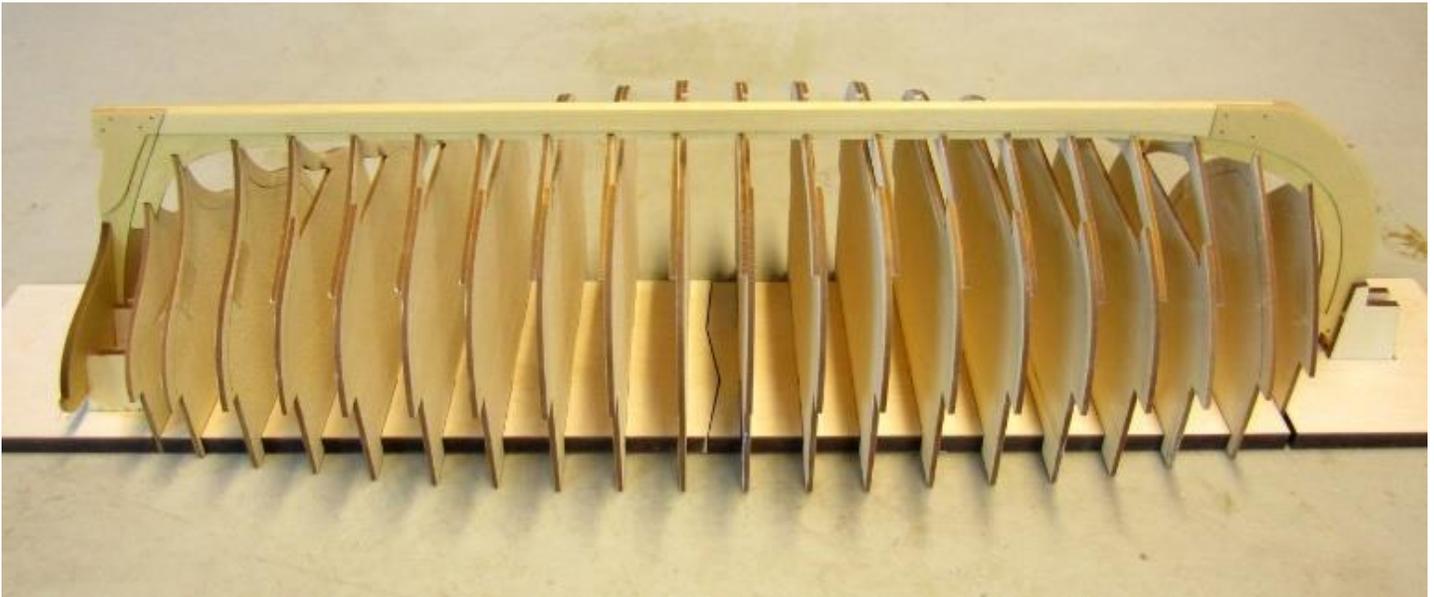


Gluing the keel atop the frames...

You want to have a cup of water and a paint brush handy before you begin. This is used to clean the excess glue from the joints after the keel is placed on top of the frames. Before you begin, make sure that all of the frames are facing the correct direction. The lettered frames face

one way and the numbered frames face the other way. I also recommend that you do a few dry test runs before using the glue. We are basically starting with the stern half of the frames first. Practice placing the keel into position. You will quickly discover that all of the frames are not lined up perfectly with their intended notches in the keel. You will need to work them in one





direction or the other until the keel slips into all ten notches.

Doing a few dry test runs will let you know which frames you will need to tend to once the glue is added. Don't rush it. You will have plenty of time to do this and tweak each frame if need be. I found it easier to place a generous dab of glue on the end of the frames rather than in each slot of the keel. Once seated properly clean off the excess glue and leave it to dry.

Once that dries, it will be time to slide the forward ten frames under the keel and repeat the same process. Absolutely do a dry run with this.

Once that glue dries, flip the model over and tape the two halves of the build board together along the joint. **DONT** glue it. Use a generous length of tape and several pieces. I like to use the reinforced tape with the string in it for added strength.

Now it's time to fair the hull. It's somewhat fragile as many of you may have guessed. But it is pretty sturdy if you force yourself to be careful and proceed slowly. Use either 320 or 220 grit sand paper to fair the hull. I wouldn't use a coarser grit because it will grab the frames and possibly split them etc. But use a light touch and *proceed slowly and carefully* just like you would with any other fairing.



Here is the model after it was completely faired. You can use the laser char on the edge of each frame as a guide as you continue fairing as

well.....onto planking in the next part of the project.

