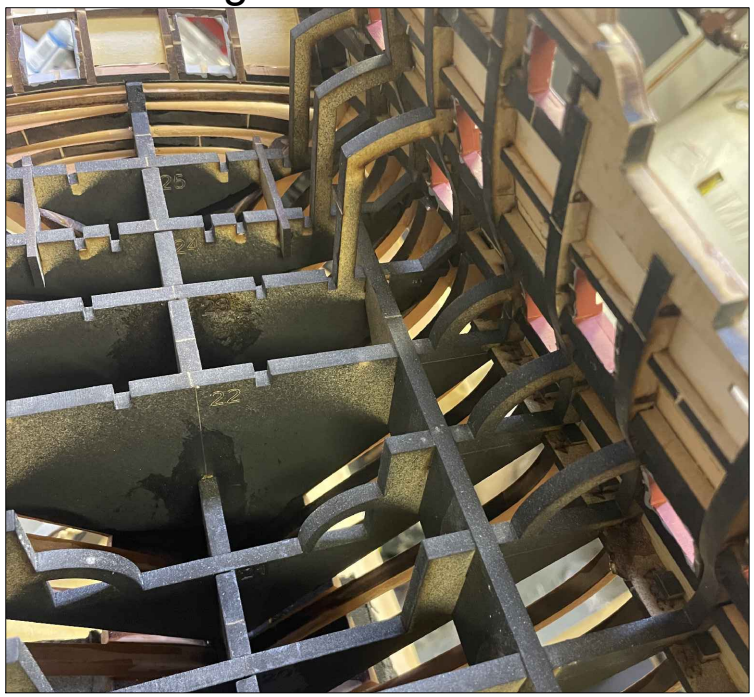
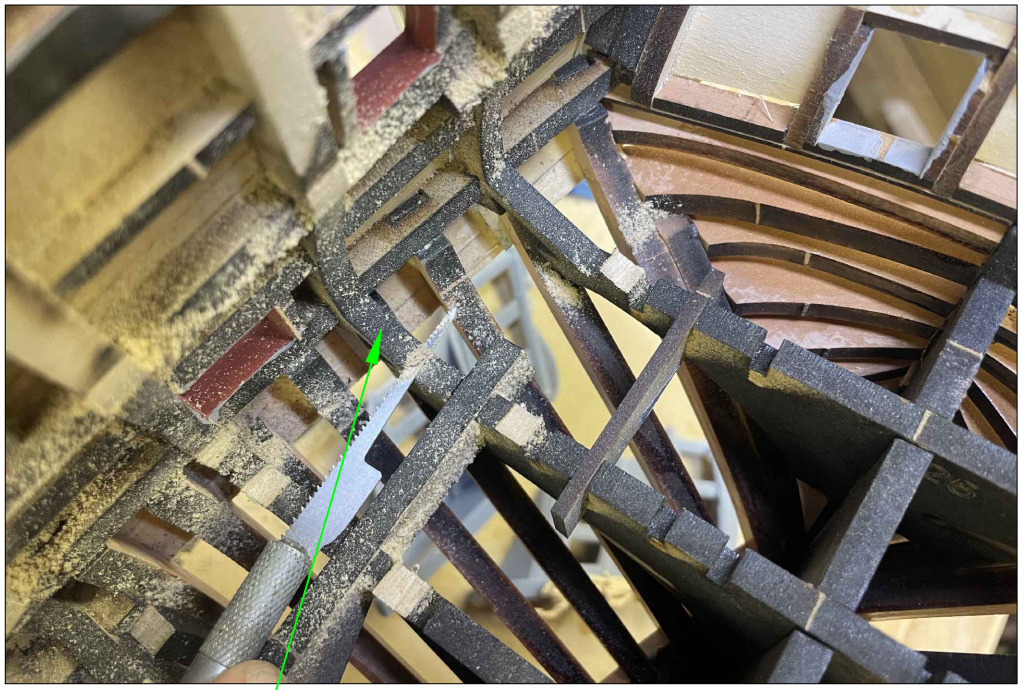
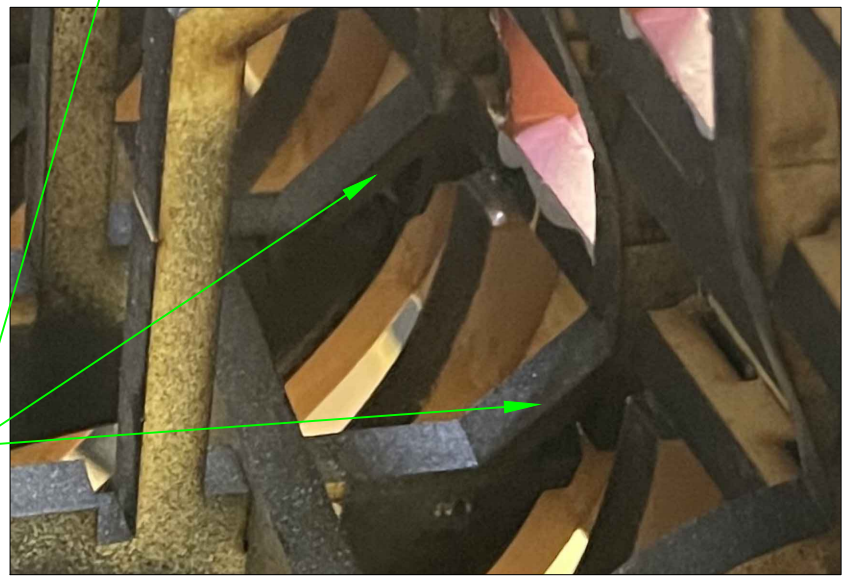
In Chapter 3 we are going to focus on the quarter galleries, the stern, moldings and some carvings (The carving sets are sold separately) . Lots of work to be done on the outside but we need to start on the inside and do some fairing work in preparation for chapter 4 but mostly to get this messy part out of the way so our freshly installed quarter galleries dont get filled with dust. We have already completed a small section up front so lets go ahead and dive into another dusty mess and finish fairing!



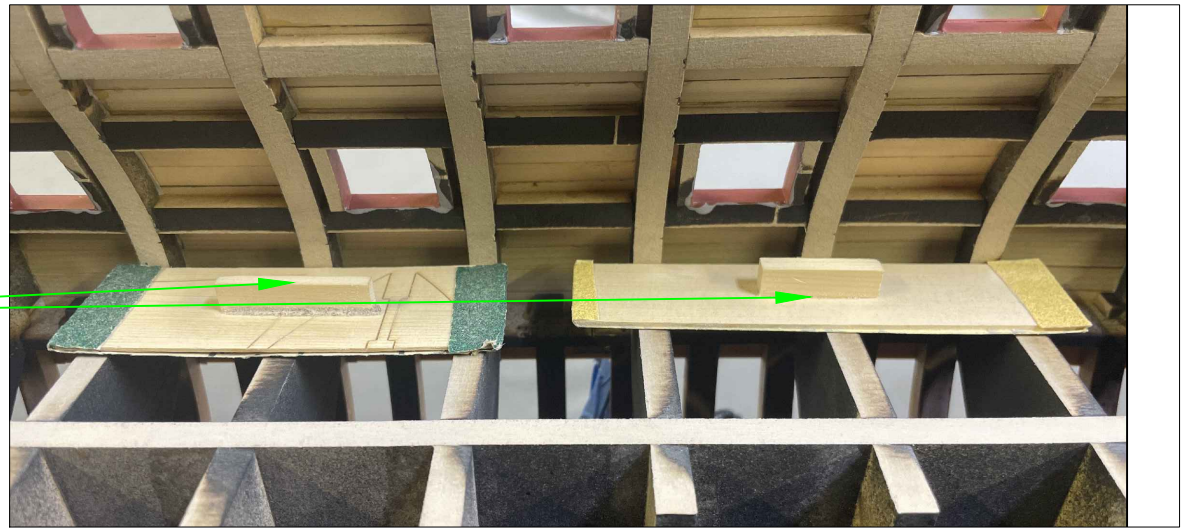


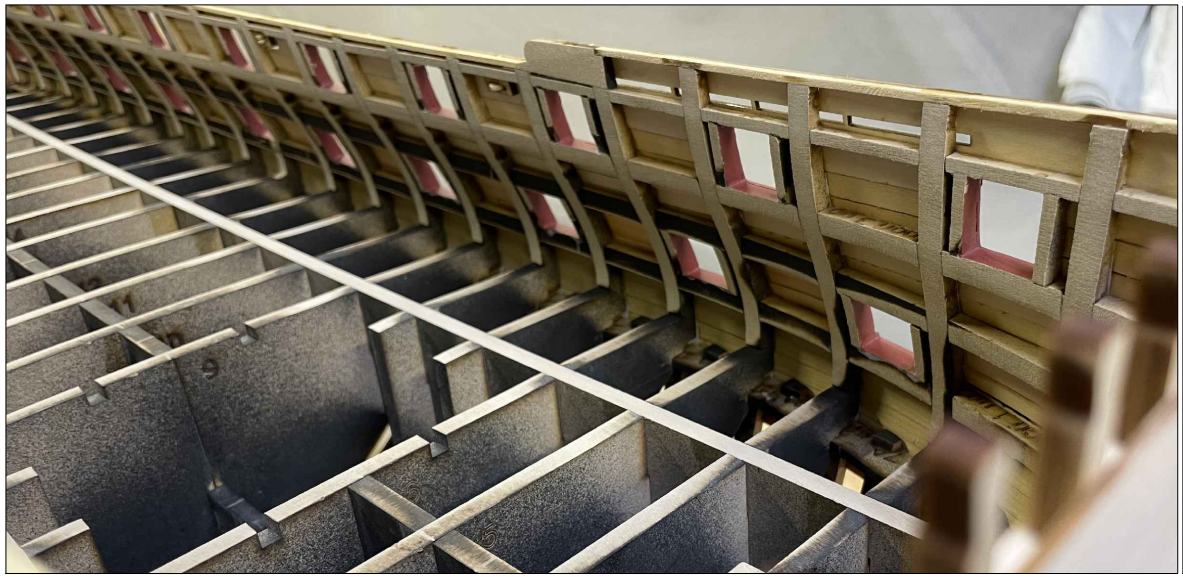
Like the bow, the stern is full of structural support hoops and diagonals that can now be removed, proceed with removing them the same way we did up front. On the right you can see the massacre going on, try and cut as close to the bulkheads and extensions as you can to spare additional sanding work. Also note the photo lower right that is zoomed in on the diagonal supports that also need to be removed, go ahead and cut them out as well and sand flush to the gundeck level on the bulkhead and the same with the extensions.

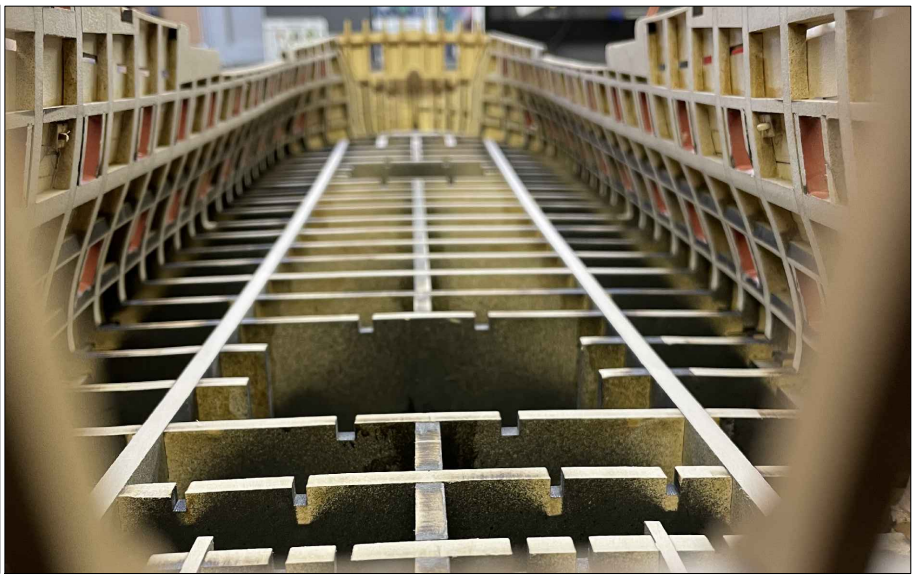


With all the hoops and diagonals cut out of the way we can begin sanding the extensions and fairing the inner hull. I tend to use alot of flexible board sanders along with foam blocks, the dremel oscillator is also valuable for the initial sanding.

The small semi flexible board sanders work very well when you finish with the dremel, i make sure they can span over at least 3 extensions to prevent them falling into the holes, keep the leading edges tapered up slightly. These will help prevent digging holes on your extensions between the longitudinal's.



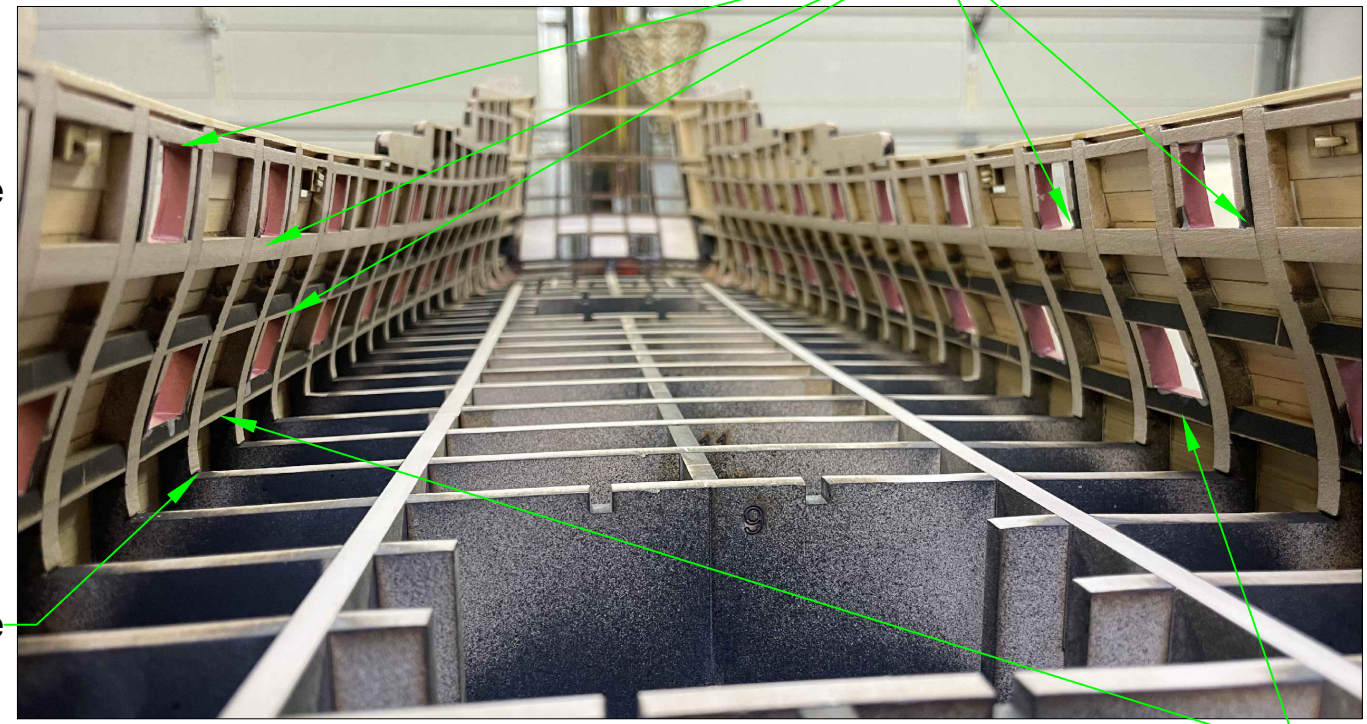




As you come close to finishing fairing your model should look like this. Follow the fairing caps down, the extensions will get thicker towards the bottom. I designed the model with the longitudinal's as a fairing guide, once the char of each upper and lower gun port edge is removed then you are close to arriving at your required thickness. This should expose the whole gunport char free. Note on my model the lower longitudinal was too narrow and therefore i will be using some filler, all other production kits have this part revised.

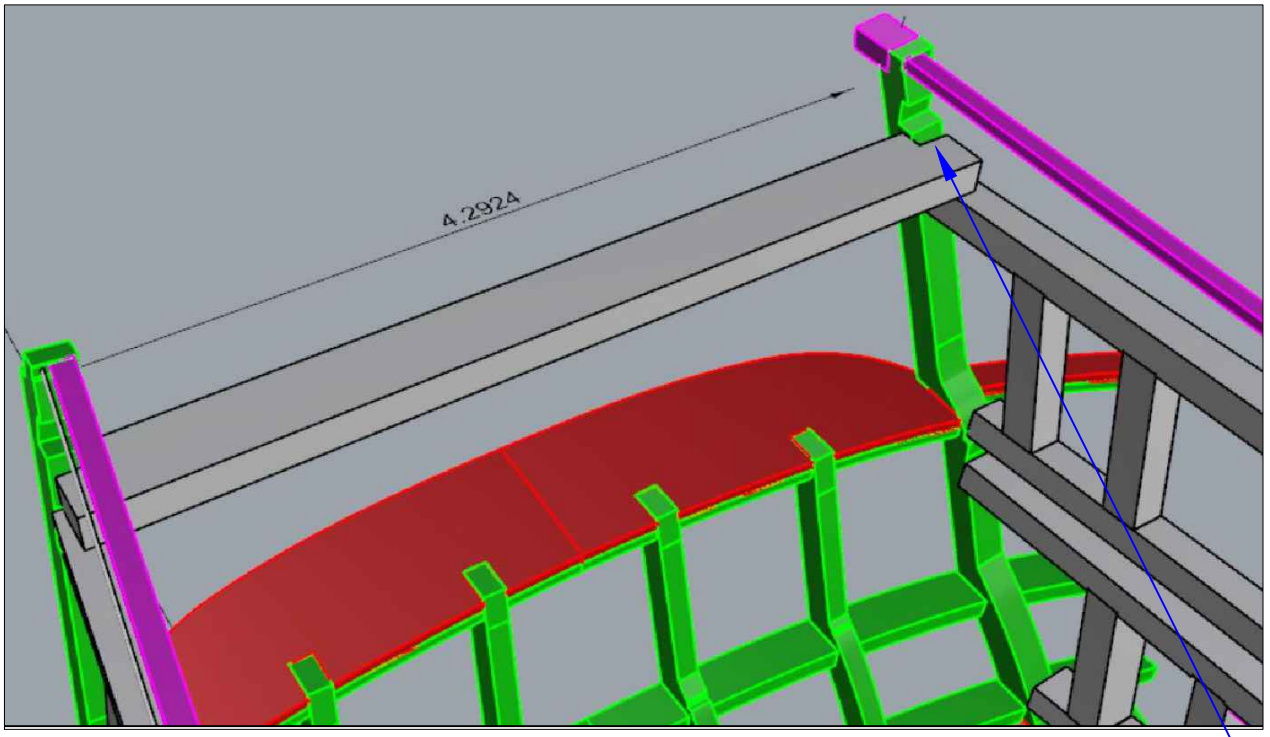
Do not sand too thin at the bottom of the extensions, it will eliminate the small notches that hold the sub deck down!

Expose the upper and lower edges of the gunports as a guide on how far to sand down. Depending on how you installed, a few sills may require some filler when we add spirketting.



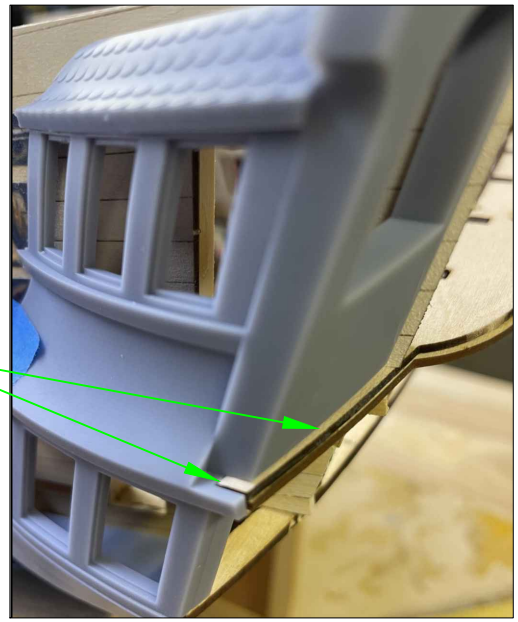
Lower gunport longitudinal is too narrow on the prototype and revised on production kits!

With our fairing of the inner hull complete we can now start with installing the Printed Quarter galleries, but FIRST we need to ensure we have the proper frame spacing for the cove beam to fit, I learned this the hard way and installed my QG's first which made this area harder to manipulate when it came time to install the cove. So im providing a small $\frac{3}{16}$" laser cut beam that will hold this all in place while you fit your QG's, When it comes time to add the cove beam and the stern panel it will be much a smoother process.

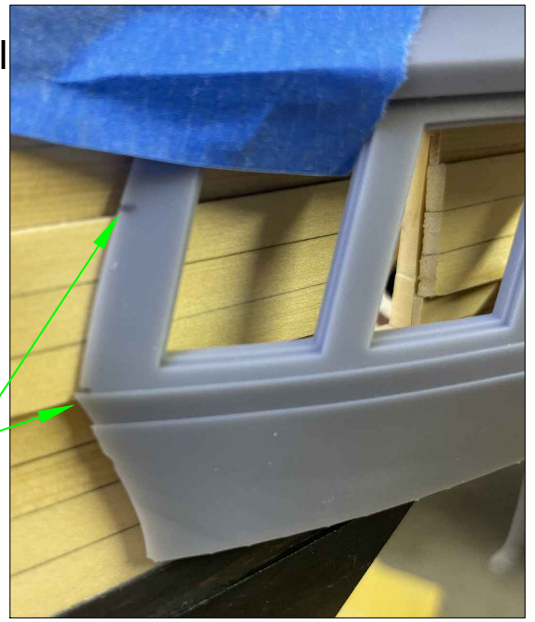


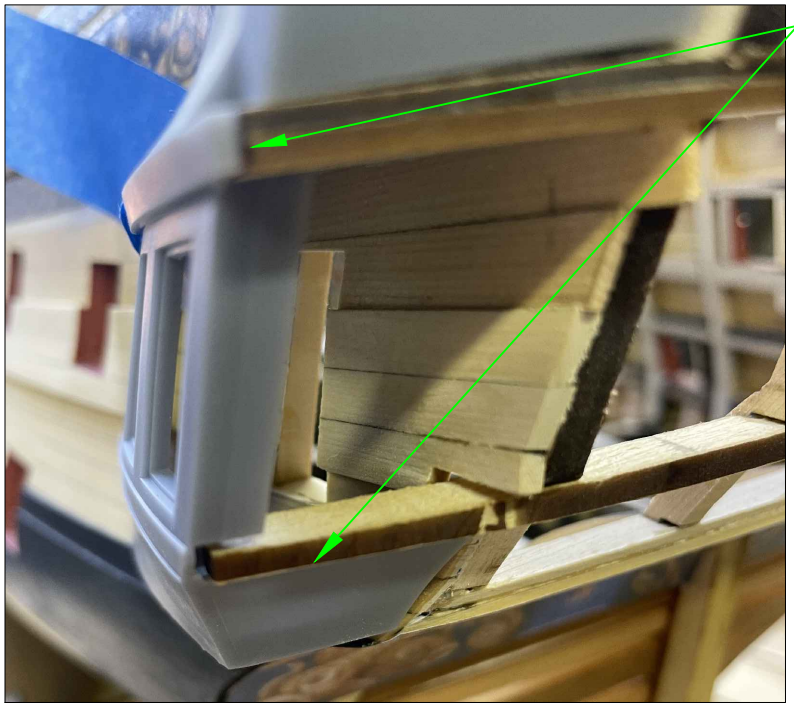
The $\frac{3}{16}$" beam should sit right on top of the upper QG door framing and back right up to the stern frames. attach with PVA or something that will release when its time to remove this part, or alternatively you can cut it free.

Go ahead and dry fit the QG in place, notice how it fits right on the balcony beam with about $\frac{1}{32}$" of the beam hanging out the back, this is what you want. Also notice how the beam meets the edge of the QG.

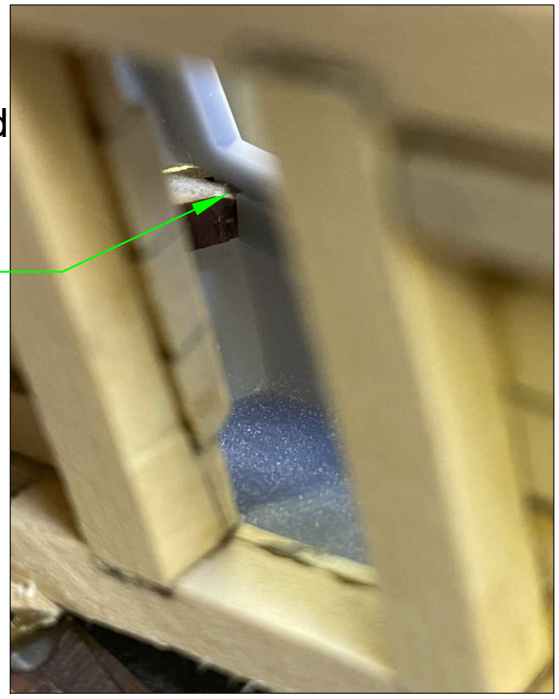


We need to mark where to file the QG to fit the channel wale, I taped mine in place and penciled it in. The lower edge where molding attaches should be right at the bottom of the channel wale. (mine slipped up a bit in this photo after i marked it)

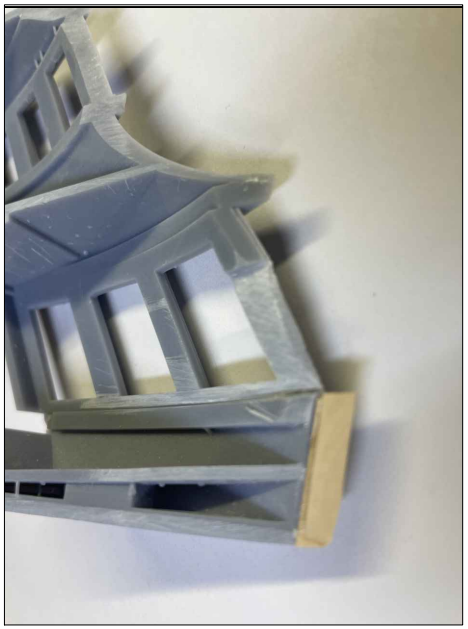




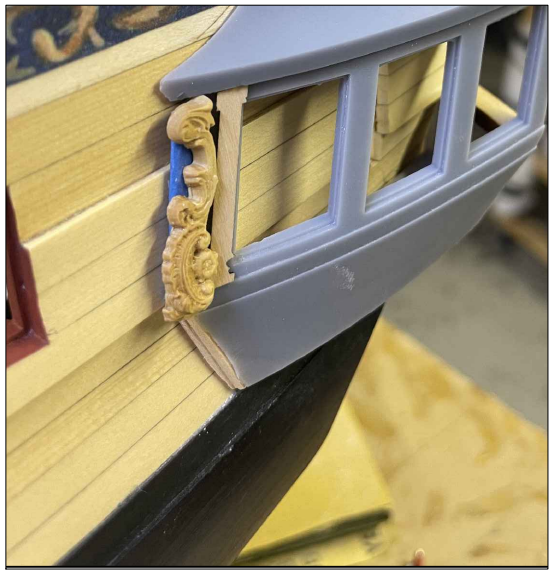
The QG should sit on both beams as you see to the left but also pay attention to the notch on the lower beam, it should allow the QG to fit up against it as you can see to the right, looking at it from the inside lower QG.



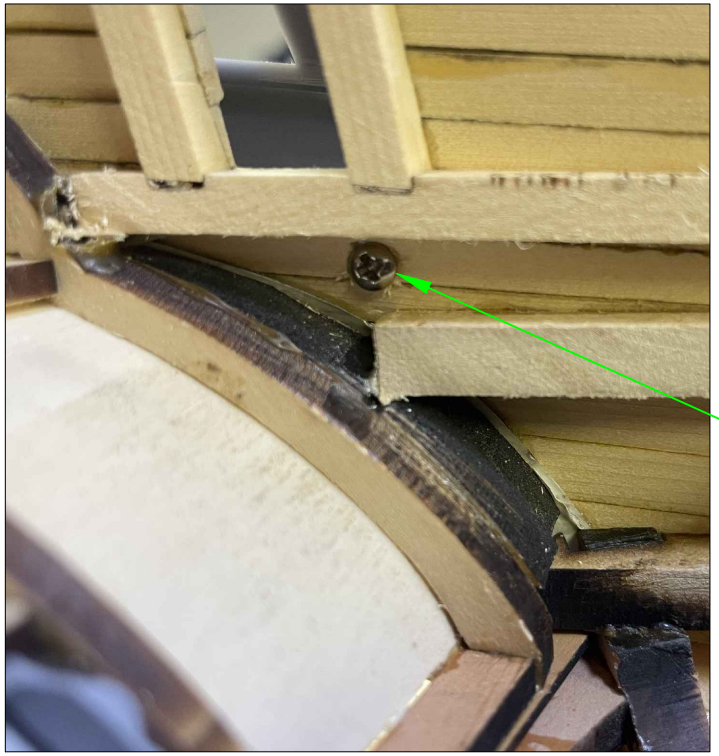
Once you are happy with the fit over the wales they can be mounted, i had a little bit of a gap at the lower part of the QG so i added a few strips of scrap wood and then sanded them down to create a tight fit against the hull. You should aim for a nice fit but since we will be adding the frieze over this area, it will cover any minor sins left behind.

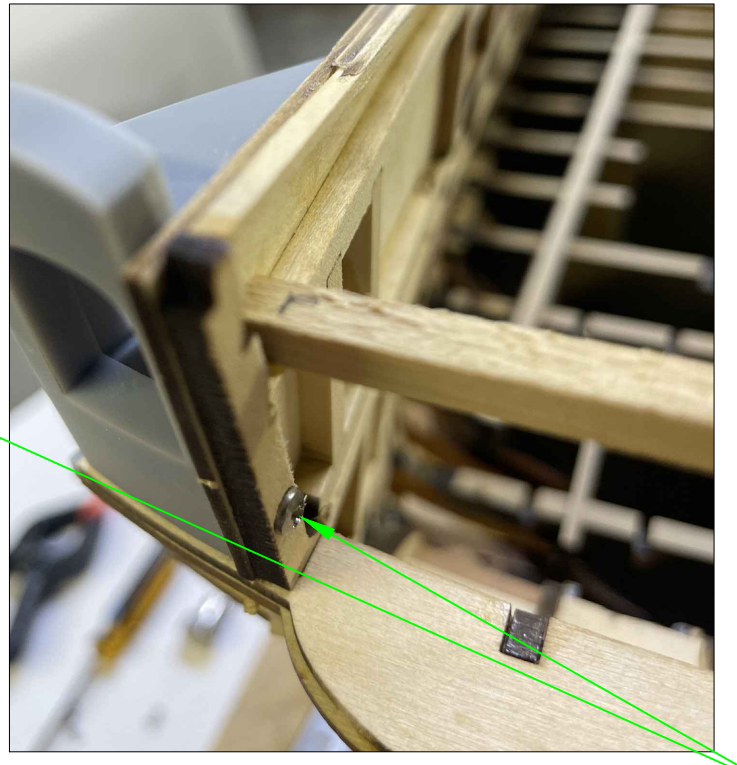


Everyones QG's will require slightly different amounts of sanding depending on planking thickness after final sanding. You can see the port QG to the right before final attachment, the gaps are pretty close.



Lets go ahead and temporarily mount the quarter gallery so we can see how it will permanently fit and make any necessary adjustments. I decided that screwing them to the hull would be good solution, i still utilized glue on the edges but did not want to rely on it. I designed some solid blocks where you can fit very small screws, i was actually able to find some at the local hardware store but they were button heads, i will end up replacing the upper one with a countersunk head later on.

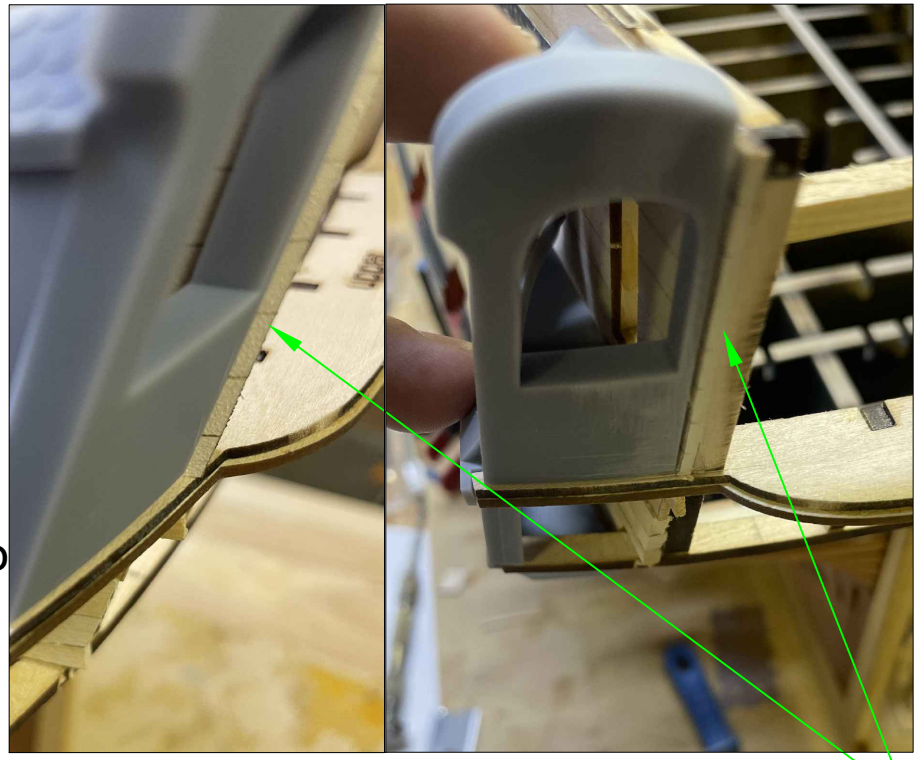




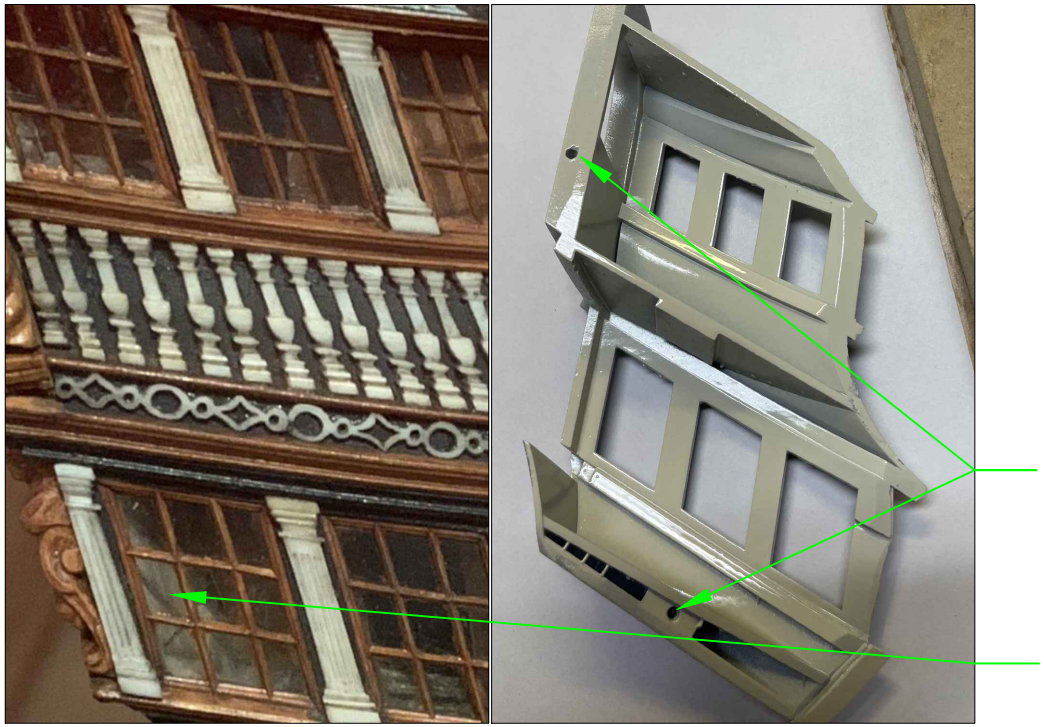
Above you can see the printed in block that i attached the lower screw into as well as the thick surface on the upper side.

Once satisfied with the fit, I placed the QG up to the hull and marked where the lower QG floor meets the hull, with a quick measurement this will establish where to drill through the planking. Using a small pilot bit drill through, reposition the QG and drill from the hull to the QG to mark the QG side now. Once that is complete you can then set the QG in place and snug up the lower portion. Now you can drill and screw the upper QG. I clamped mine down to assure that it was located where I wanted it. Then the hole was drilled and the screw installed.

With your QG's in place you may notice that you have some material protruding aft, this is ok, just block sand it of before you install the upper transom/balcony panel. After everything is fit with screws (don't glue yet!) lets go ahead and take the Quarter galleries back off and prep the insides before final install. I decided to paint mine an ivory white as seen on Bristol, once dried i went over them with some assorted weathering powders and dulled the finish a little bit. This also makes it easy to hide the color of the print resin. All future kits will be utilizing an "oak colored" resin so a wood appearance could be achieved.

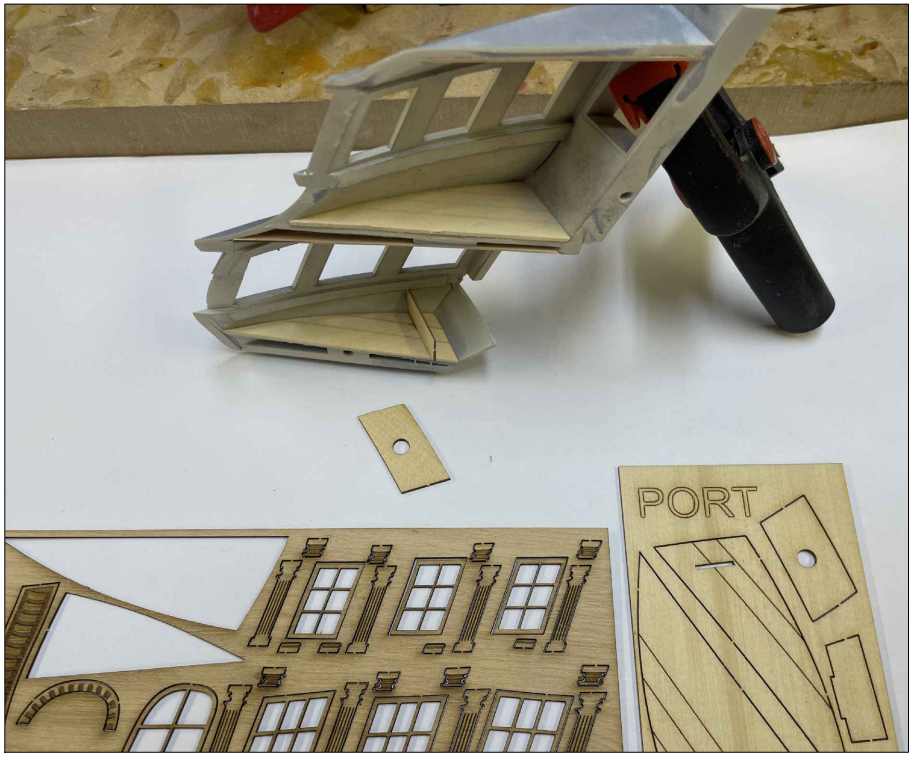


Above you can see the excessive frieze panel material and above right you can see where i carefully block sanded it off. The sanding should follow the curvature of the back of the quarter gallery.

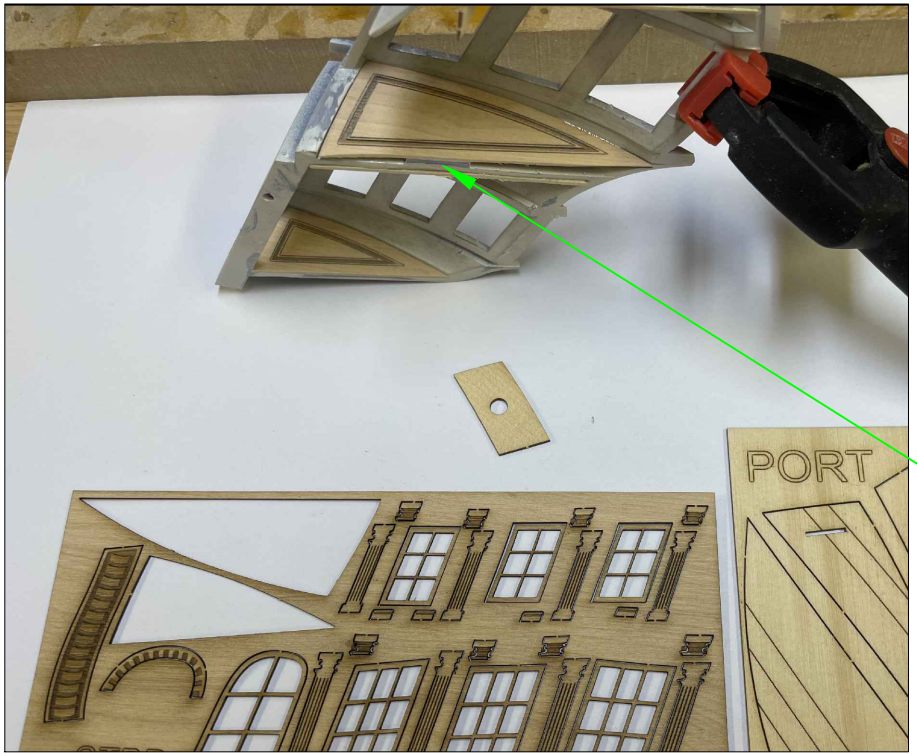


Here you can also see where holes were drilled for the mounting screws.

If you look carefully inside of the Bristol model you can see the inside of the QG is an off white color.

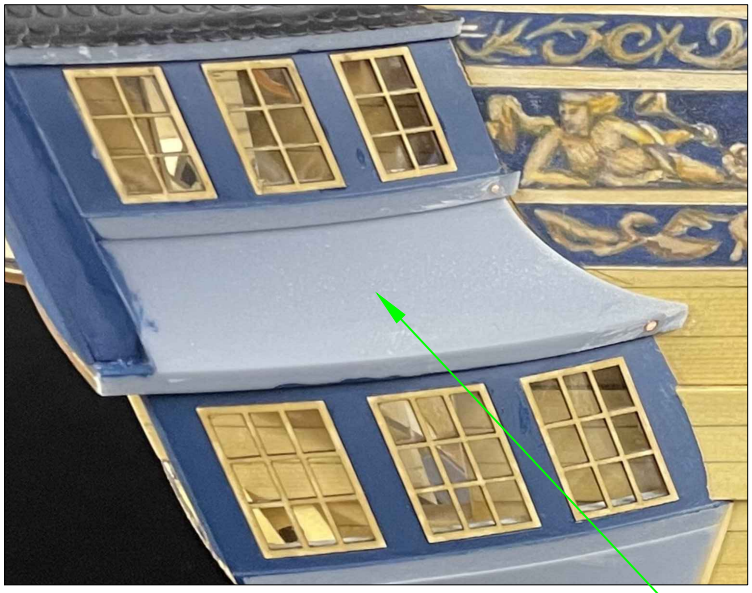


We can now begin outfitting the interiors, you can start on the floors or the ceilings, it really doesn't matter. Here you can see the floors going in and the toilet below, they will all require some trimming and test fitting to the model, since we are not building the galleries on the hull its a little bit trickier to get the panels to match up well, but don't stress too much, its hard to see in there once completed. Next is the overhead panels, these are all in an effort to conceal as much of the 3D print as possible, these are etched boxwood and look pretty nice once WOP is added, again they will be hard to see once the QG is attached.



The upper overhead panel mounts directly to the printed surface, i used CA to avoid warping. The lower overhead panel is a little bit different however, it sits on a raised block and fits up against the edges of the side and back of the QG, again i secured these with CA as well and then treated everything with WOP.

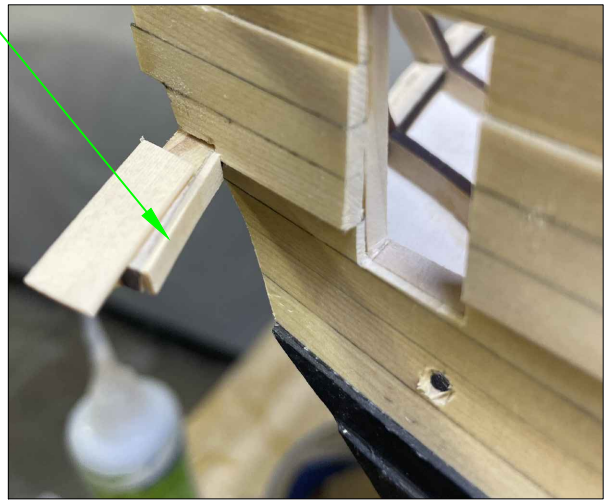
Lets install the windows but before we get started lets add some color to the quarter galley, as you can see to the right i painted all the areas around the windows before their install, you don't want to get paint on the boxwood window frames. Once the paint is dry go ahead and install the windows, they will come in order on the laser cut sheet of boxwood and require little if any sanding. I Used a few dots of CA in the corners and the middle after dry fitting them. In the picture it shows the QG on the model but the windows go in from the inside so go ahead and glue them in place as well, i carefully glued them in place with PVA and PVA dots in the corners, CA will create a haze when it dries.



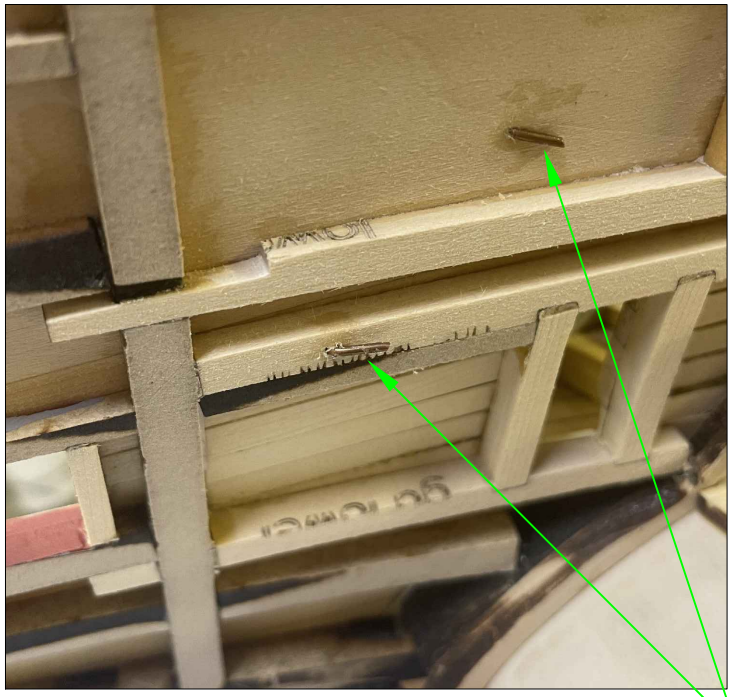
Paint the lower roof blue as well, I did mine after attaching. No need to paint the molding surfaces.

Don't forget the stern window, it goes together the same way. Now that the interiors of the QG,s are complete we need to paint the red on the upper hull, the lines are etched into the panel so just tape it off and use whatever red you chose for the model, I did my stbd one out of order, its much easier to paint before install. The final step before attaching the QG is to add some finish to the lower transverse beam that the toilet rests against. It will be hard to see but i did it just incase.

I used some scrap $\frac{1}{32}$ cedar and attached a piece to the fwd side of the beam first and then the top, sanded them smooth and added wop. You will need to sand it flush with the back of the beam so the QG rests against it properly.

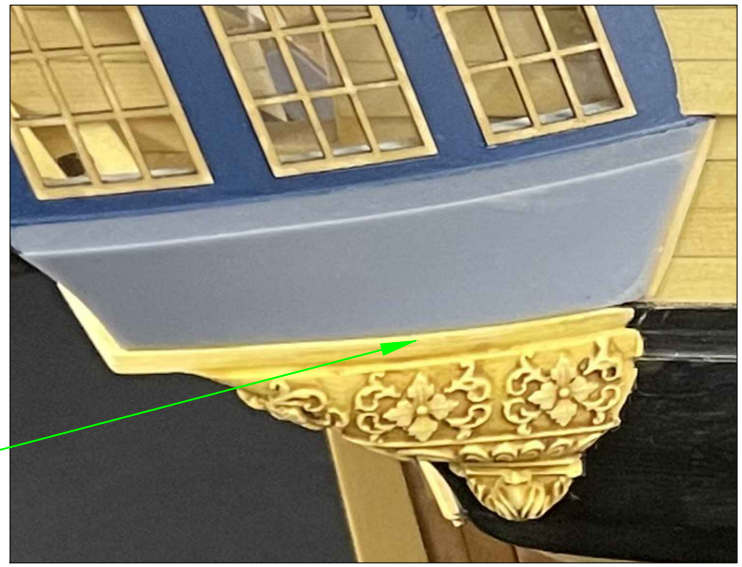


With the quarter gallery now ready to attach, I used some PVA around the edges and then screwed it on, once attached I also carefully drilled the ends of the molding surfaces and used soft copper wire to pin them down. I placed the copper all the way through so about $\frac{1}{2}$" or so was protruding out the other side, i then carefully added CA to the outside so the wire would seize to the QG, then carefully press the QG against the hull and fold the pin over on the inside. This will permanently hold the QG in place tight to the hull. Be careful not to crack the resin print, you should have very small gaps if any before you do this.

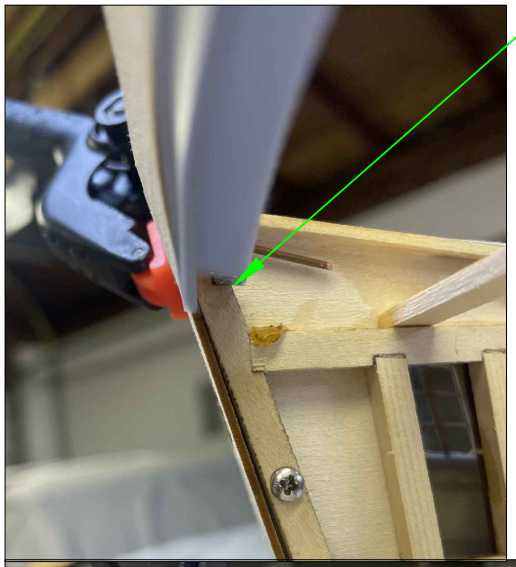


Above you can see the copper wire pins folded over to secure the QG. I also added CA from the backside once the pins were folded over. Note the pin folded on the beam, we will need to clip and file this flush as the interior paneling will go over it. Once the pin is glued in place it will never back out.

With the QG now attached and if you purchased the carvings already then you can now add the drop, I had to carefully carve away about .080" or material to fit it tight under the QG and against the side and top of the wale. Take your time and do several test fits. There is an edge for the molding to sit on and it should rest flush with the lower edge of the QG as seen to the right. The end of the drop will stick out, this is ok just make sure it follows the curve of the lower counter.

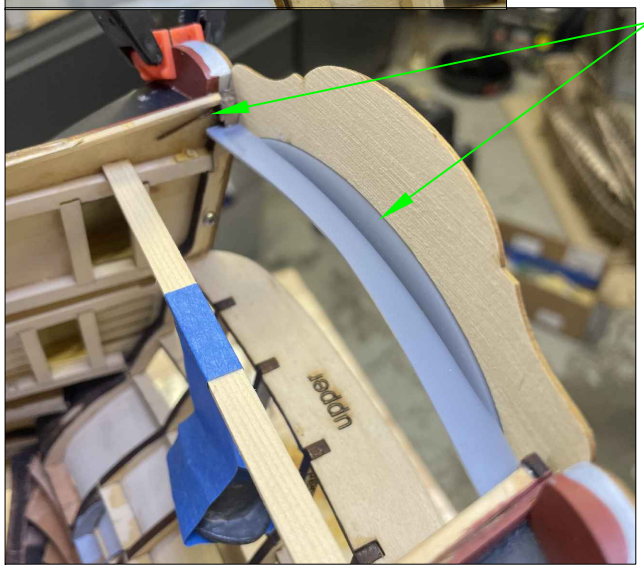


With our QG's attached let move onto the stern and then stern paneling. To the right you can see the prototype parts along with the upper beam camber jig, which i will cover later. For now lets mock up the stern panel and the 3D printed cove/beam. Below you can see these parts in position, note the notch in the stern frames that the cove beam sits in, also pay attention to the stern panel and how it fits over the windows which protrude out slightly.

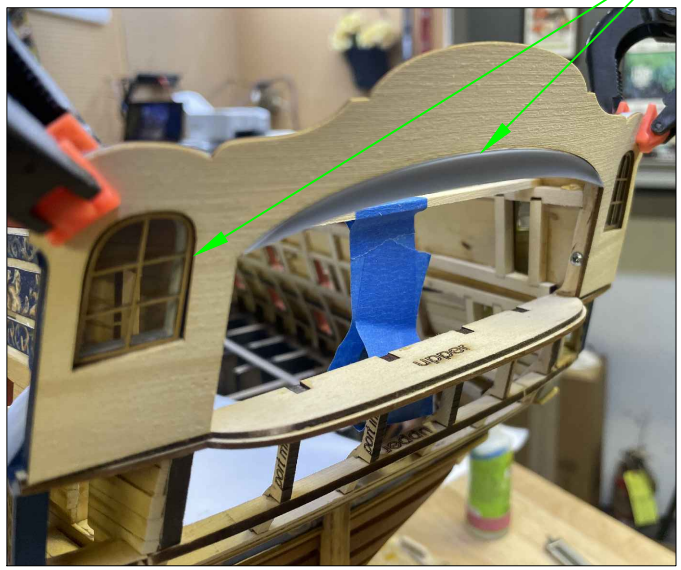


Cove beam secured, there is a notch for the beam to sit on in the stern frames. Note the gap, this is fine, the beam has camber so it should only make good contact on the outer edges.

Below we can see the cove in relation to the outside of the stern panel but also note how the window openings are sitting perfectly over the QG window frames, there should be very little material overlapping the QG.

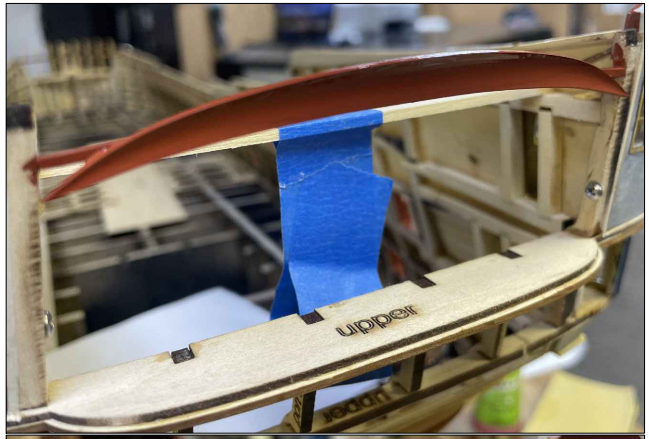


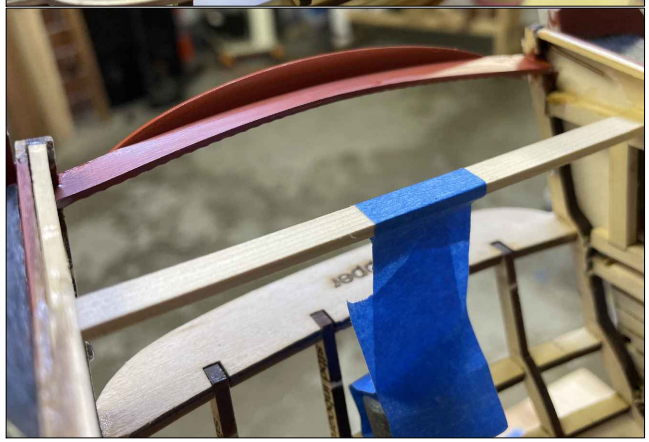
To left you can see the cove in relation to the stern panel, the beam is glued in and the panel clamped.This is after the i was sure they mated up fine. Also note i added an additional copper pin to the top of the QG.

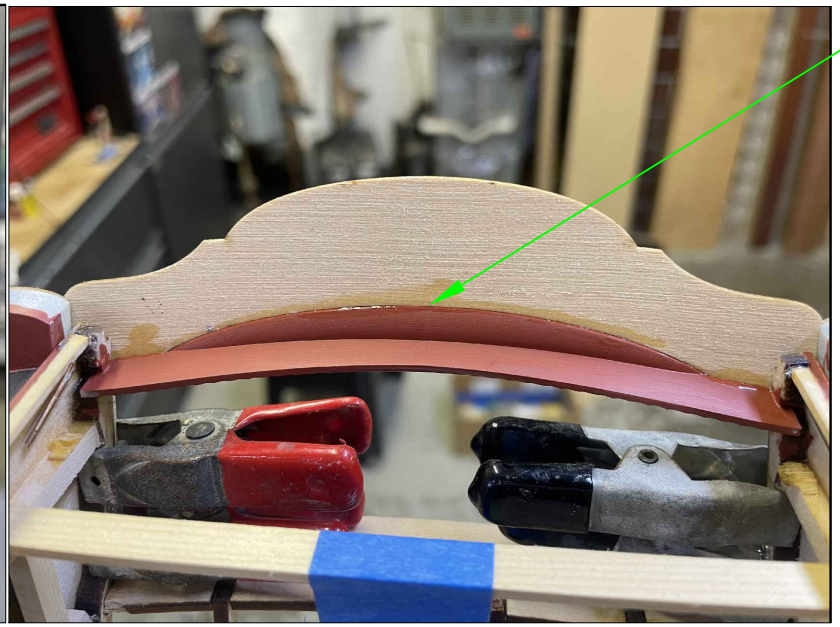


With the dry fit complete and everything looking good I painted the cove beam in red before I glued the stern panel on. When gluing the stern panel on proceed with care and go slow. I used PVA wherever i could so it would allow me time to get everything in place. I worked from the center outward, below you can see where i utilized thick scrap to clamp with, this helped spread the clamping load as well as protect the soft AYC panel.

With the clamps in place and the panel covering the windows without issue i was then able to attach the outer edges using CA, they will try and pull away and there really isn't much clamping options so I decided the finger clamps and CA were the way to go, I did one side at a time making sure everything was secure before moving on. Note that CA bonds to the print resin like white on rice and you will destroy things trying to remove it once cured, so be careful!

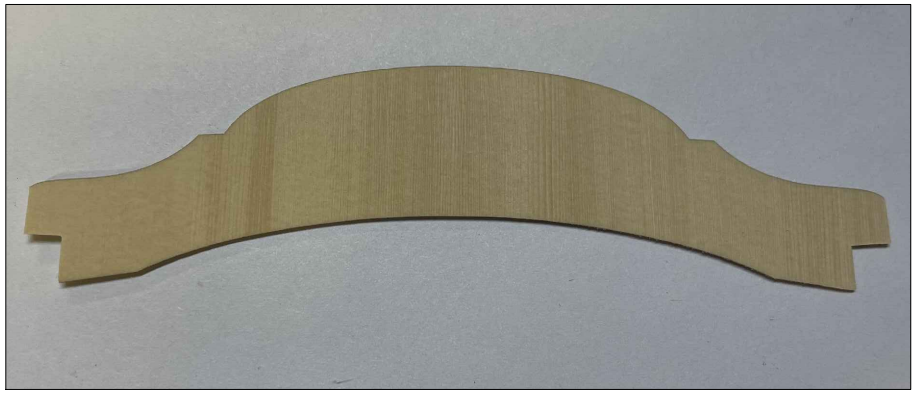






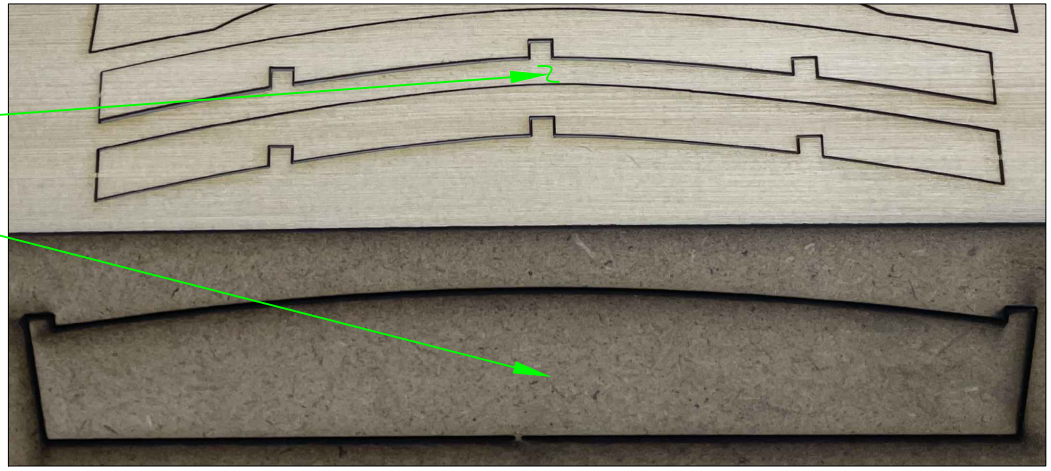
I may have gone overboard with the CA between the panel and the cove but we will be covering this with another panel in the next step, but be sure to secure the two of them.

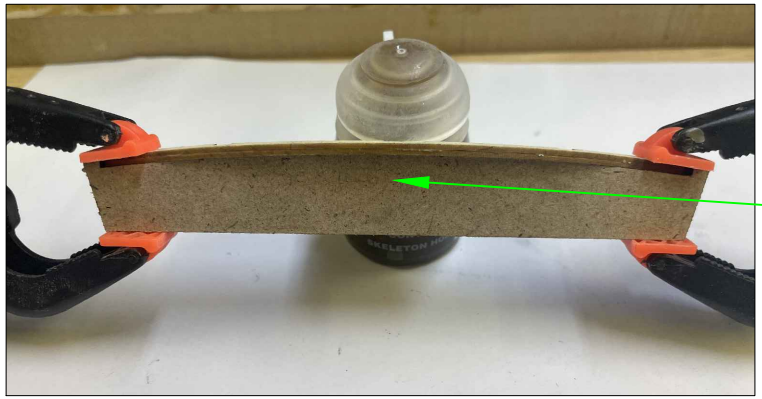
Be sure to paint color around the window openings before attaching



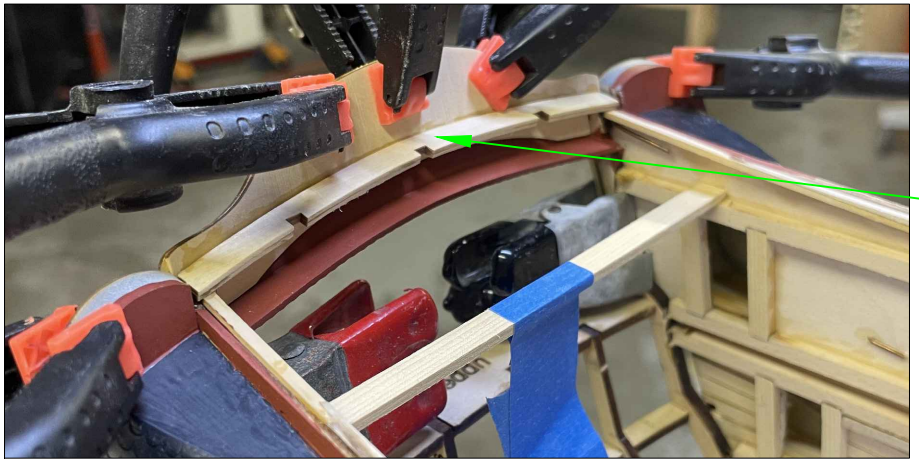
Lets get the inner stern panel in place along with the upper laminated beam. The inner panel is also $\frac{1}{32}$" AYC and just laminates to the outer panel, it shouldn't require much adjustment to fit so center it up and clamp and glue as necessary.

The upper beam is comprised of two laser cut $\frac{1}{32}$" pieces along with the jig to glue them together for proper camber.





Center the two pieces over the jig and glue and clamp them as shown, let them fully dry before you release the part otherwise they may try and return to their original shape...flat.



The inner panel glued and clamped in place with the beam, I beveled the back side of the beam so it fit up tight against the stern panel, once all glued up the assembly becomes much more stable. Once complete everything can be painted red.

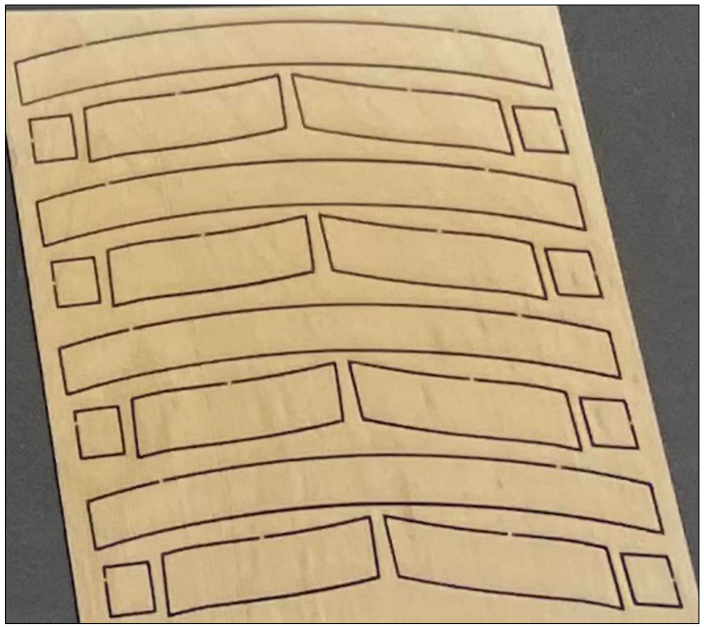
With the stern panel in place lets start outfitting it with details, as you can see to the right I have already started with the drop and upper QG boxwood decorative pattern. The piece is laser etched and very thin boxwood. I first block sanded the top with 320 to clean it up and remove the char from the edges and slightly round them off. This is a tricky part to install and its very fragile. You will have to carefully roll it into place using CA to glue it down but very slowly otherwise it will crack. I started on the outside with the piece centered I also trimmed it slightly to fit around the stern panel. Each piece is side specific and has a top and bottom.

Port top/inboard

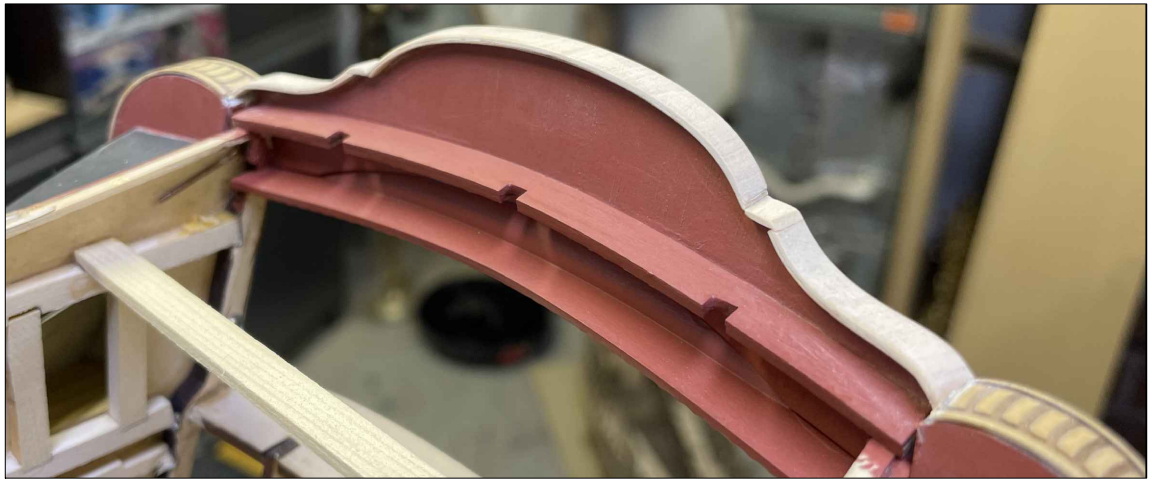
Port bottom/outboard.

The upper QG decoration was carefully rolled into place, i started on the lower end and carefully rolled it dry to check for fit, from there i trimmed as necessary. Once ready to glue I slowly attached it centered at the bottom of the QG and very slowly rolled it down to prevent it from breaking.

Lets move on to the taffrail, this is a tricky one to do and I tried several methods with this being the most successful. I laminated two sets of $\frac{1}{64}$" boxwood pieces together by gluing one down at a time, they are very thin and therefore flexible but they will still snap so you must carefully roll them down. You may gain some slight flexibility if the pieces are wet or a marginal resistance to cracking.



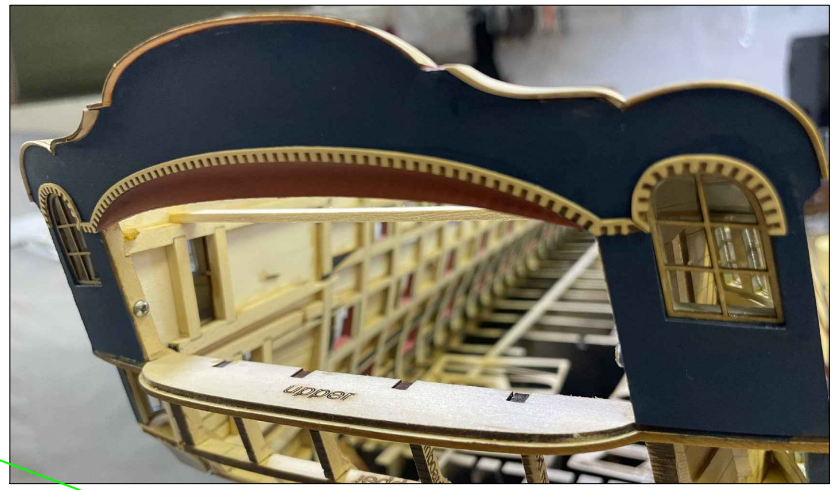
The taffrail pieces are laser cut boxwood, you will only need two sets.



I started with the lowest two pieces and worked my way up to the top center pieces. The parts are laser cut wide so you have some wiggle room so once complete you will have to carefully sand them to shape, you can see to the left that i kept them wider outboard and gently tapered inboard to about $\frac{1}{32}$" - $\frac{3}{64}$" on the inside and consistent overhang on the outside between $\frac{1}{32}$" - $\frac{3}{64}$". Carefuly sand any leftover char and gently round the edges with 3 or 400 grit sandpaper.

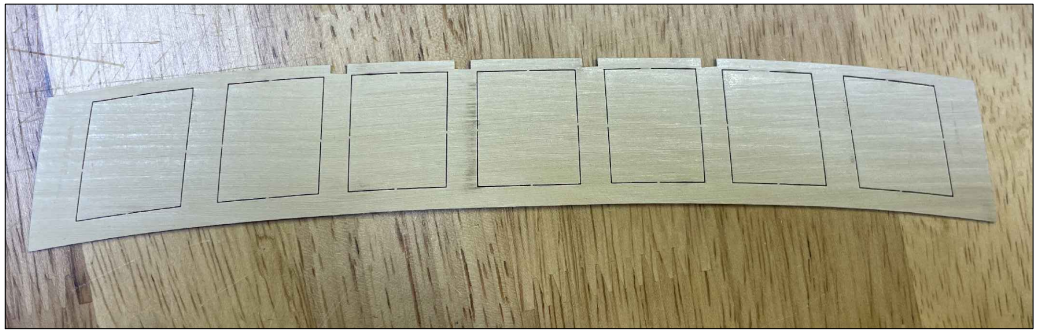
With the taffrail now in place I moved on to some more decorative elements starting with the trim above the cove and around the windows as seen to the left. This is laser etched boxwood so youll need to clean the char off, it should go on with little if any adjustments made.
Next we can start attaching some carvings, this is pretty straightforward, I just followed the painting as a reference. On Poseidon and Amphitrite you will need to trim some of the taffrail to fit them. The two sea boys will require some minor sanding and trimming of the window molding. The columns on the outboard side supporting the baroque scrolls will also require some trimming of the window trim.

Some trimming will be required on the window moldings, also note Poseidon is mounted slightly high on my model and needs to come down, there is a relief cut in the backside.



Pay attention to the blue tape. We will need to run a small boxwood molding strip from the upper edge of the outboard sculptures molding across the entire beam including the balcony, the elevation needs to be accounted for when adding the sea boys and the columns.

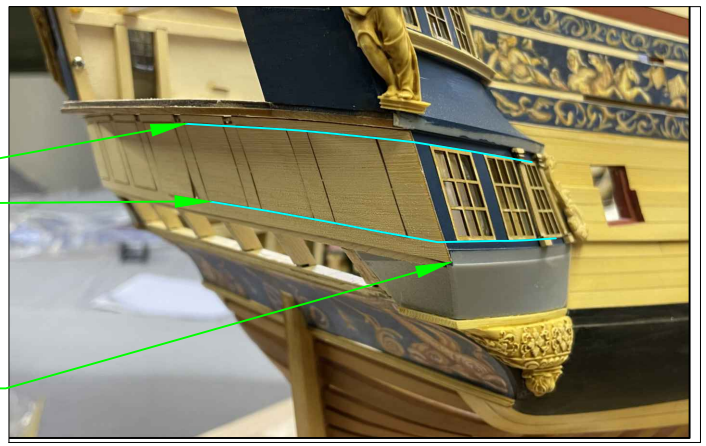
Lets move on to the stern windows, there are two panels that are $\frac{1}{32}$", the first one we will be working with is the inner one. I has the window blanks in it as they help keep it stabile when gluing, they also have 4 notches at the top that locate it to the stern frames. I gave the inside face a couple coats of the same of white i used on the QG's and let it dry. Once dry go ahead and dry fit it to the upper counter, if you haven't already, go ahead and fair up the upper counter so this panel will lay down on the stern frames, the notches should get it centered but there will be some slight wiggle room if you need it, look from the inside and make sure the windows are equally spaced between the frames.



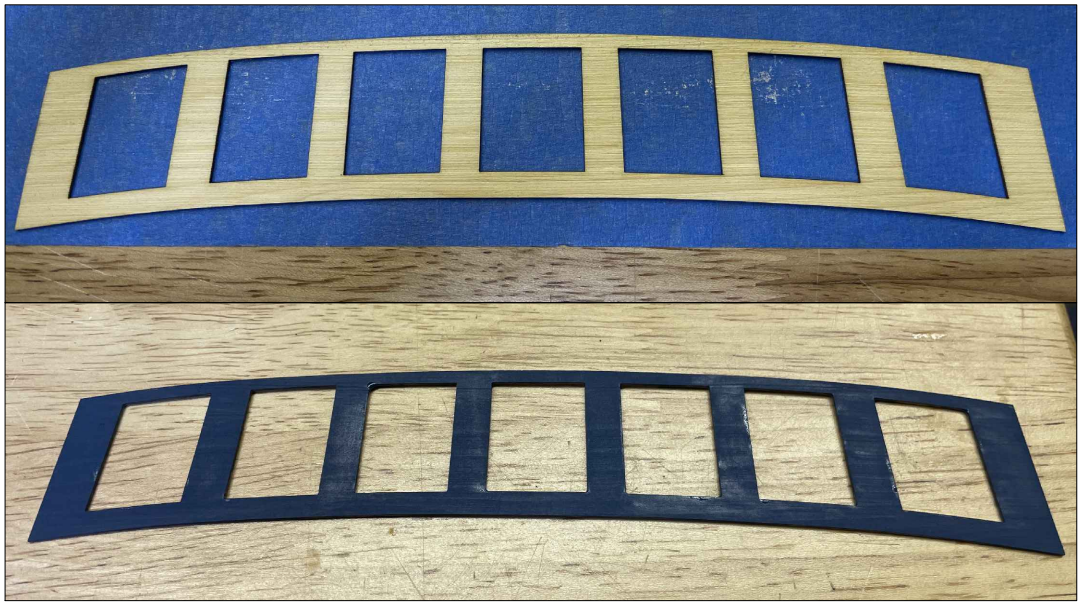
I carefully checked several times that the windows were centered between the frames while holding it in place, carefully i started gluing it with CA from the inside center outward while repeatedly checking. The photo here is deceiving because of the slight camera angle.

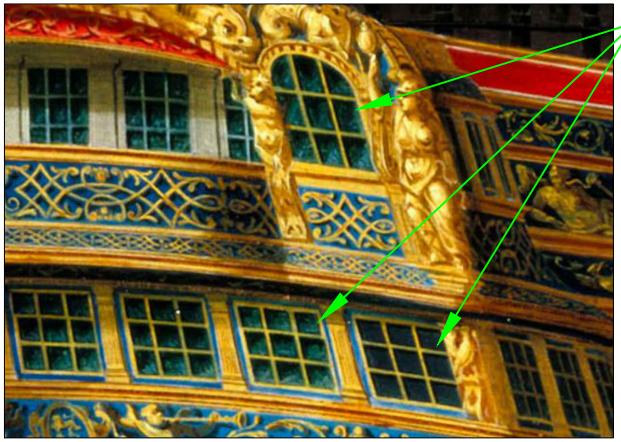
The first stern window panel in place you'll notice the window alignment with the QG windows, but if you look close you may see the openings are slightly larger on the stern, this is fine, the outer panel will have slightly smaller openings to retain the windows from the inside.
Once the panel is in you can remove the blanks but SAVE the two outboard ones!

The stern window panel should extend past the side of the QG by about $\frac{1}{32}$"

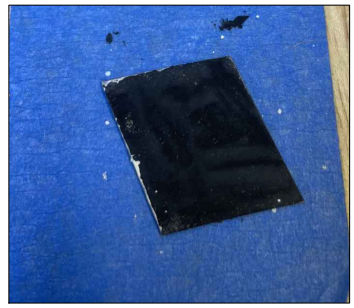


The outer stern window panel can now be prepped for install, so go ahead and paint it the blue you are using and set it aside. Before we attach it lets paint the blanks for the lower QG windows. I elected to leave the upper windows clear and black out the lower ones, lookng at the painting this is the arrangement the model appears to have had, also it would have been impossible to have a clear window as the structure and wales just made it too thick to accommodate.





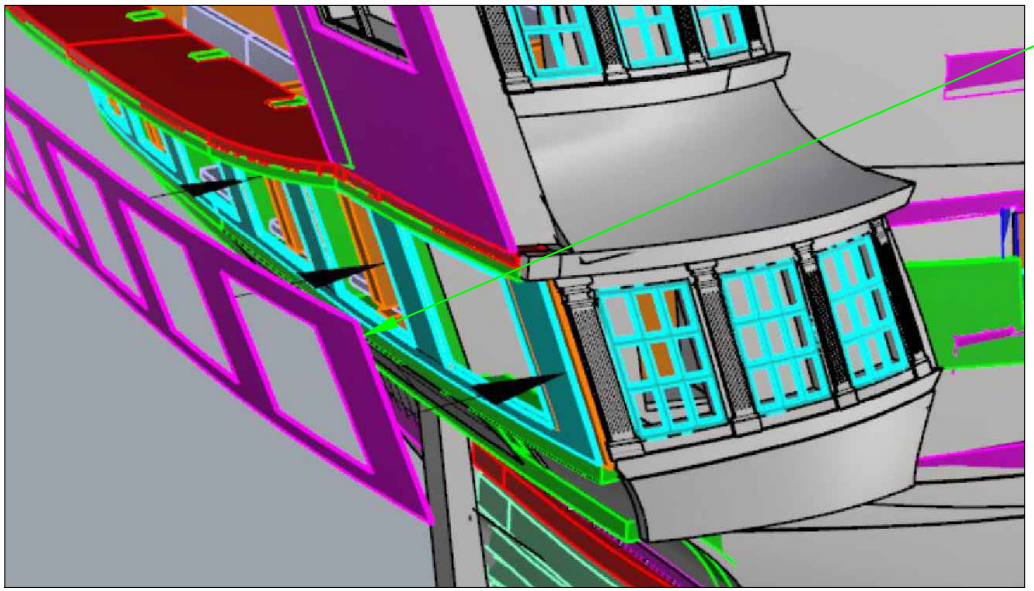
If you study the painting, all of the typical clear windows have some blue in them to mimic a glass reflection even the upper QG windows, the lower QG's are very clearly blacked out.



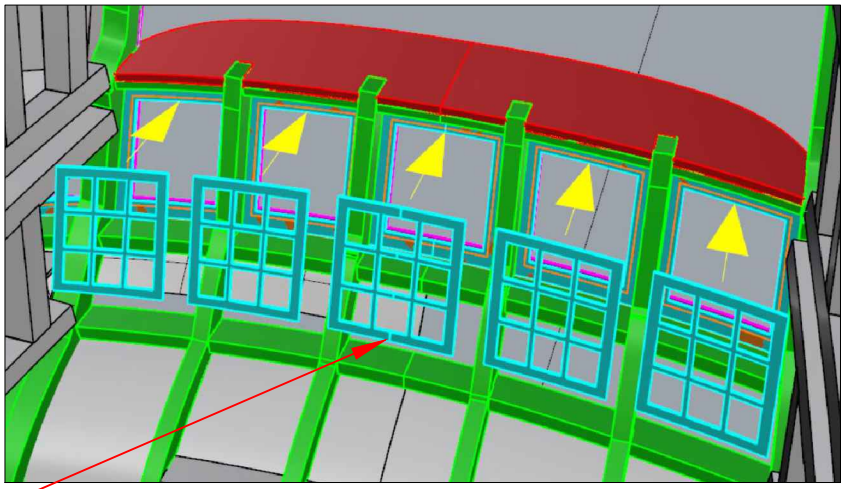
I used the same white as I used on the inside of the QG for the inner facing part of the panel and a flat black on the outside

The blanks must be installed before the outer window panel, like the windows they are meant to fit in from the backside. The window frame fits neatly into the outer panel as you will see in the next step.

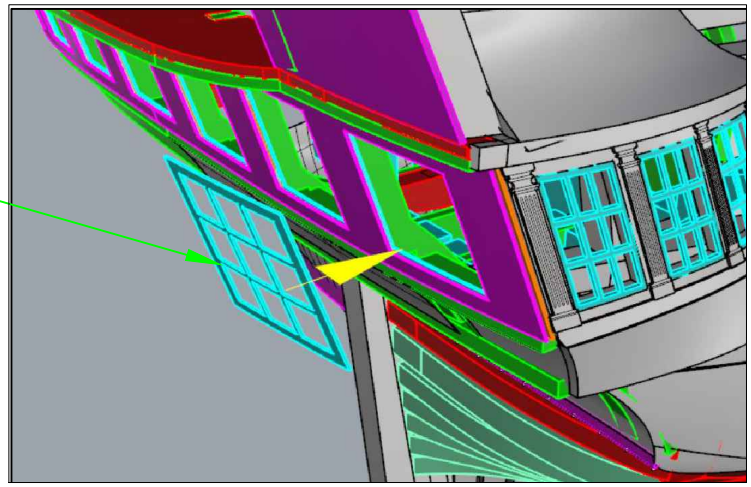
The outer stern window panel installs just like the inner one except it doesn't have notches for alignment, it just needs to be centered over the inner one. The openings are just slightly smaller to form a mount for the window frames. I installed it the same way as the inner one, slowly attaching it with CA from the middle outward.

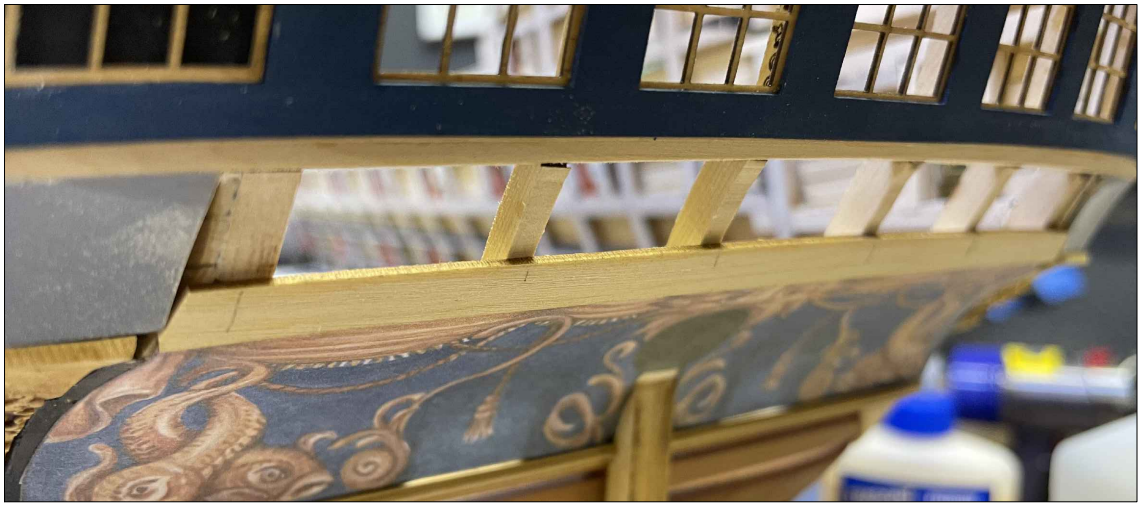


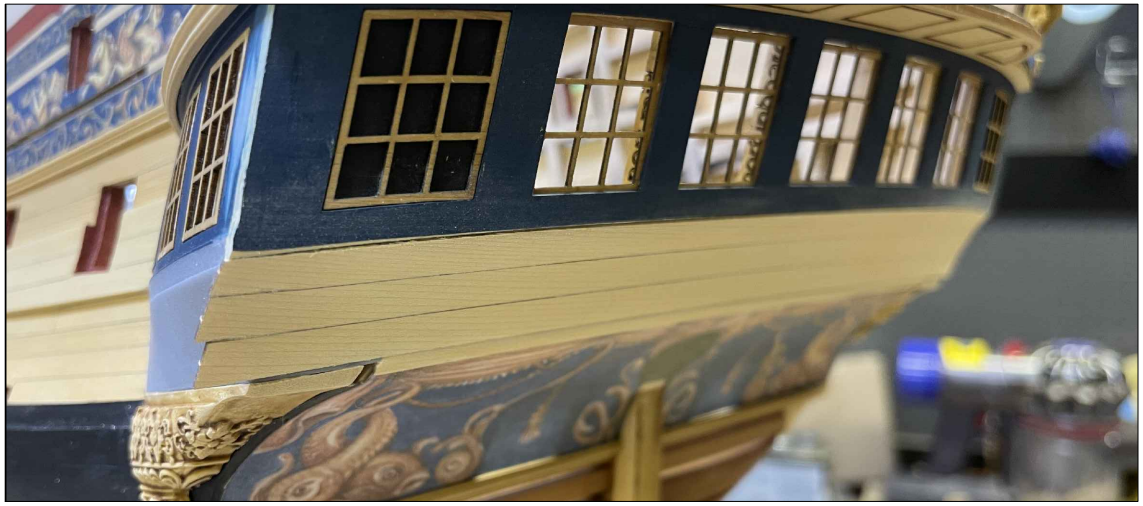
The outer panel going in place, it will also overhang the side of the QG just like the inner one.



The 5 inner windows will install from the inside while the two outer frames will fit over the blanks, with the outer frames be sure to install the clear glass first.







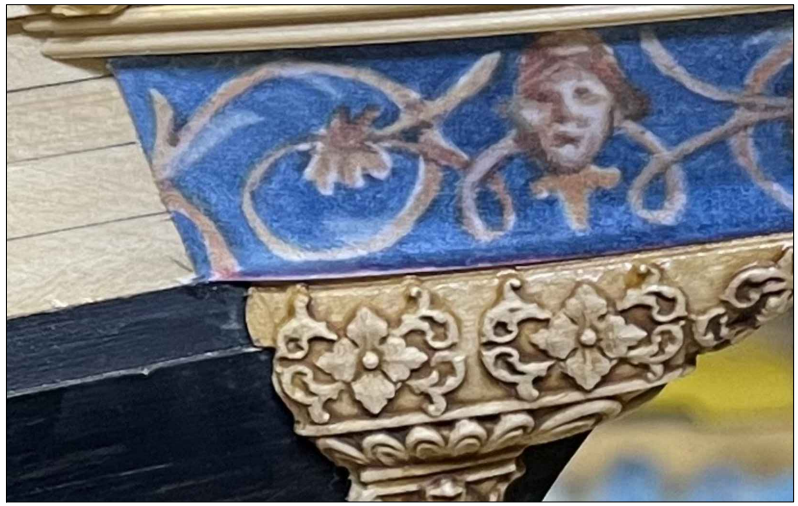
Lets move onto the upper counter, the gap between the to QG's needs to be filled with $\frac{3}{64}$" planks. I laser cut these so they will go on quick. The ends will have to be trimmed narrower and you progress upwards. Don't stress too much over the finish as we will be adding another layer of $\frac{1}{32}$" planks next.
Once completed i gave the first layer a quick sanding with my tube sanding block just so the next layer would lay down nicely.

The next layer of planks is also laser cut but they span the beam of the model, these will cover the end of the printed QG and make a smooth transition to the window panel.

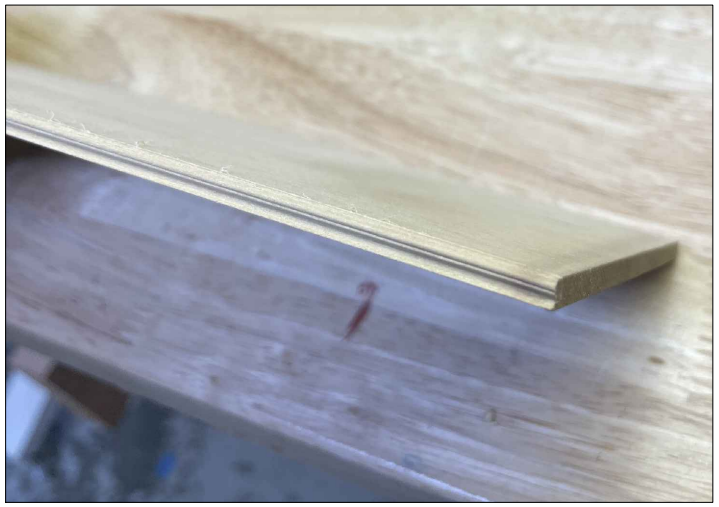
Below left you can see the completed planking layer, I spent a little more time fairing these planks to properly develop the shape of the counter, again a tube sander was used. when complete I trimmed and blocked sanded the plank ends flush with the sides of the QG's.

Lets go ahead and add the friezes around the lower quarter galleries and upper counter, you should be able to do this in one piece. I test fit several times and i decided to leave them a little long where they meet the planking. I brushed PVA on the back of the frieze work and slowly attached it from the middle outboard.

Once i had them down I was able to trim the excess off after a little drying time and establish a straight line using a new razor blade.Be careful not to cut them too soon as the razor may drag through the paper and make a mess.



We now need to move onto the moldings and the columns, i typically add my frieze work first and then the moldings over it for a nice crisp line, this is not mandatory and if you're reading ahead then feel free to swap the two if you prefer otherwise.

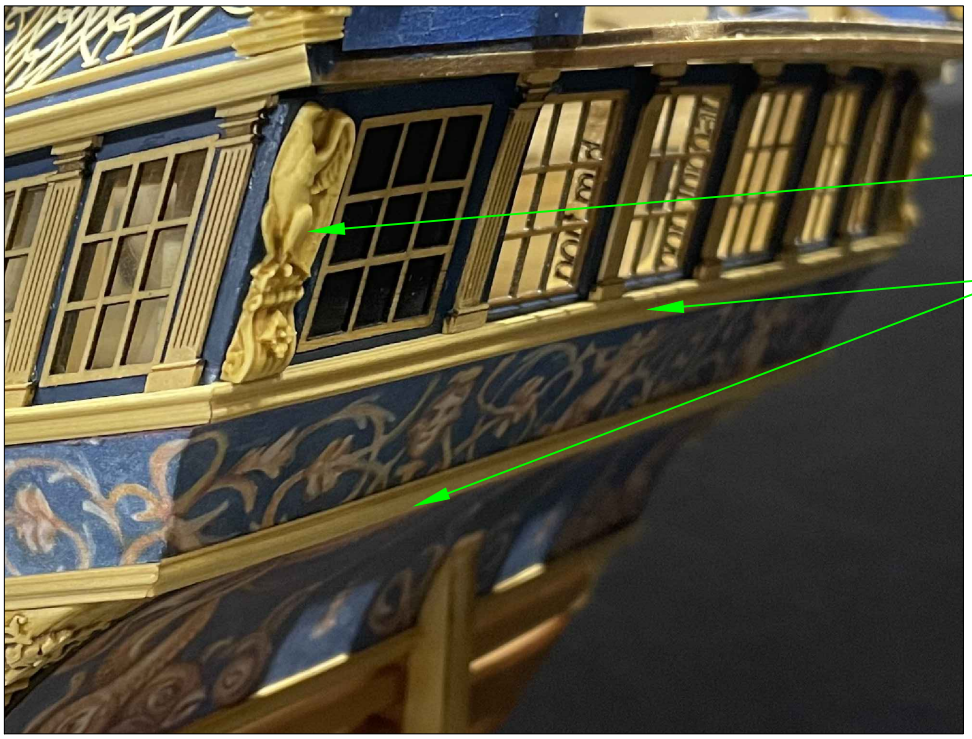


Lets begin with the moldings as they have to go on first in order to add the columns, the chapter 3 kit comes with a stainless molding scrapper and boxwood billets, I derived these shapes as from the painting and some very clear images of the Bristol contemporary model as best I could, the scraper in the kit is actually the second batch I had made as i wasn't quite satisfied with the first profiles. I found it much easier to scrape the molding with the billet locked in a vise and then use your Byrnes saw to cut the strip off.

Note, I have included a diagram in this document that give the locations of each molding profile on the model and where they are located on the model.

To the right we see the almost completed QG, There are four different molding profiles on the quarter galleries. Also notice the position of the carving relative to the molding. You can also see how the columns are placed and how they require the molding to be in place first. As mentioned earlier there are molding surfaces, they are pretty obvious and will save some trouble with having to make any edge bends in the moldings to conform to the QG angles. I cut all my moldings on my byrnes saw at just under $\frac{1}{8}$" thick about .100" but you can play with different widths, don't go too wide otherwise they will stick out too far past the front of the QG and onto the hull.

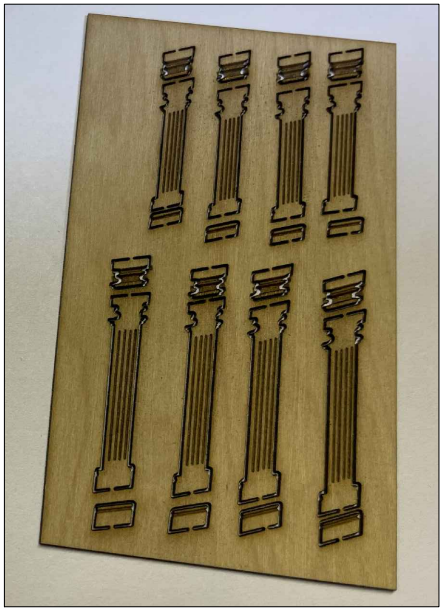
Note the additional carvings added after the columns.



For the moldings on the upper counter you will need to cut them at an angle in order to fit correctly and not point down. I scraped the moldings as i usually do and then established an angle. I stacked a few pieces of scrap on my Byrnes table to lift the billet and create and angle cut. Notice how they are almost horizontal off the back of the model.

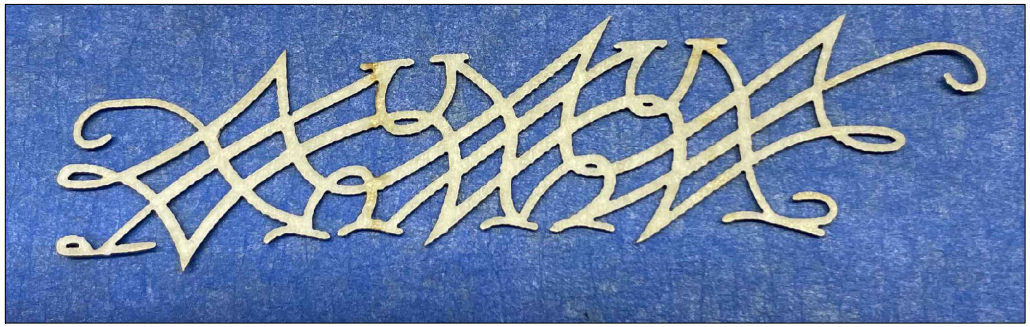
Also note: we cannot complete the molding along the balcony until we finish the balcony railing so this will have to wait.

With the quarter gallery moldings in place we can now attach the columns, these are pretty straightforward. The columns are laser cut to length with etched in details. They are in order on the sheet, forward to stern, to the left we have the port side columns with the left side being forward.
Very carefully remove as much char as possible on the main column, you can then place the column on the quarter gallery, from there carefully remove the top of the column and carefully sand the face to clean it up, you can use some PVA to attach it to the top of the column, do the same with the foot of the column.



I carefully sanded char off the sides of the column as well as the sides of the foot and the top of the foot, it will be almost impossible to sand the char from the sides of the shaped parts of the columns without causing damage. The remining char actually gives a nice contrast.

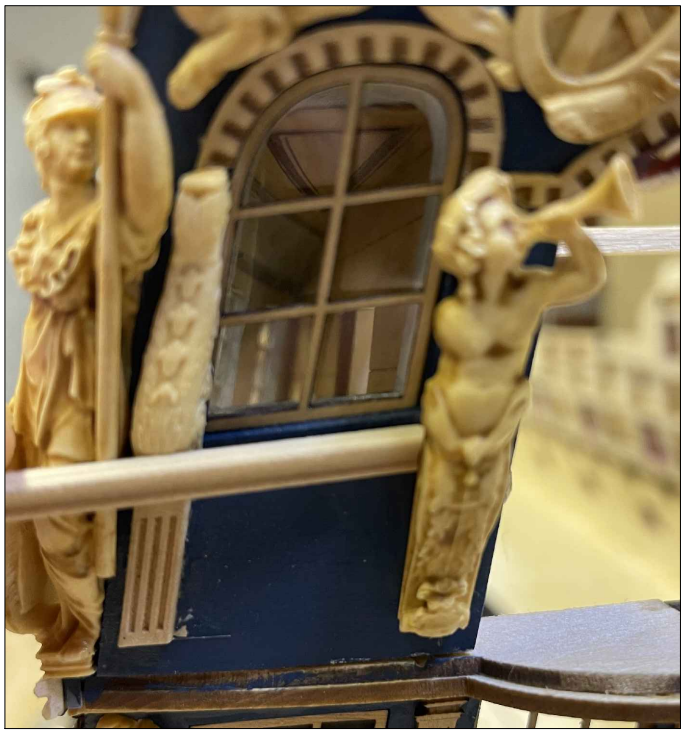
Moving on to the laser cut frieze work on the lower QG roof, carefully trim the piece away from the laserboard, It should fit up against the underside of the molding. To attach it i carefully applied small dots of PVA and pushed it down into place. The piece is fragile so take your time with it, it just needs to be centered. I had to hold it down for a few minutes to get it to hold, there were a few pieces that did not hold so i used small dots of CA to hold it.



To the right we have the portside friezes attached to the roof, the quarter gallery is almost complete except for a small strip below the frieze. We see this strip in the painting and on the Bristol model, included in the kit there is a $\frac{1}{32}$" x $\frac{1}{32}$" boxwood strip, i gently rounded the corners of this piece before i glued it down. notice how the strip looks progressively tighter to the molding towards the stern, this is correct. Below shows how the molding should look from the side, it should appear parallel with the molding below it.

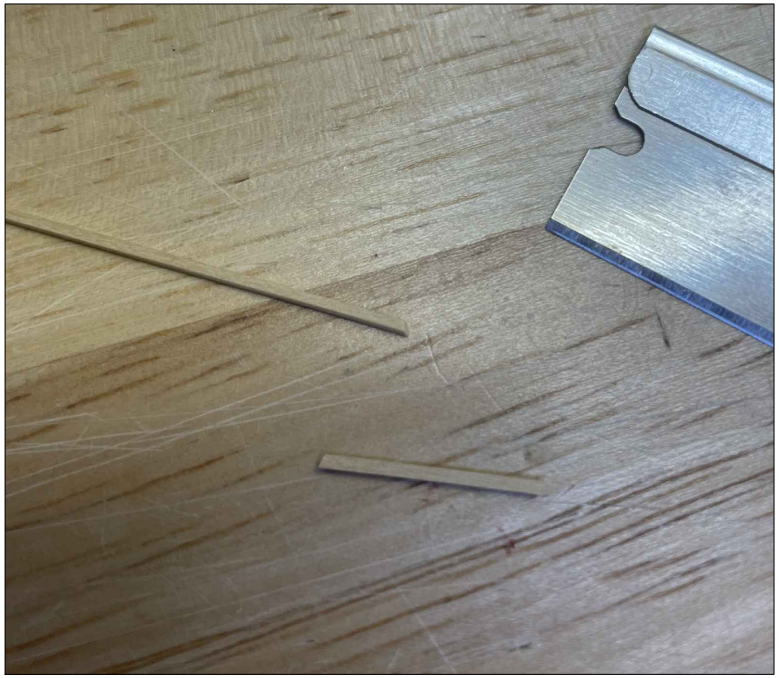
Viewing from the side the moldings should appear to run parallel.

Lets also attach the transom Frieze pattern, this will continue across the whole balcony but for now we will be just adding the piece under the window. This is exactly the same as the others, carefully remove from the laserboard and attach with some PVA that way you have time to move them around if needed. In also noticed that it slightly softens them so they are a little more compliant.

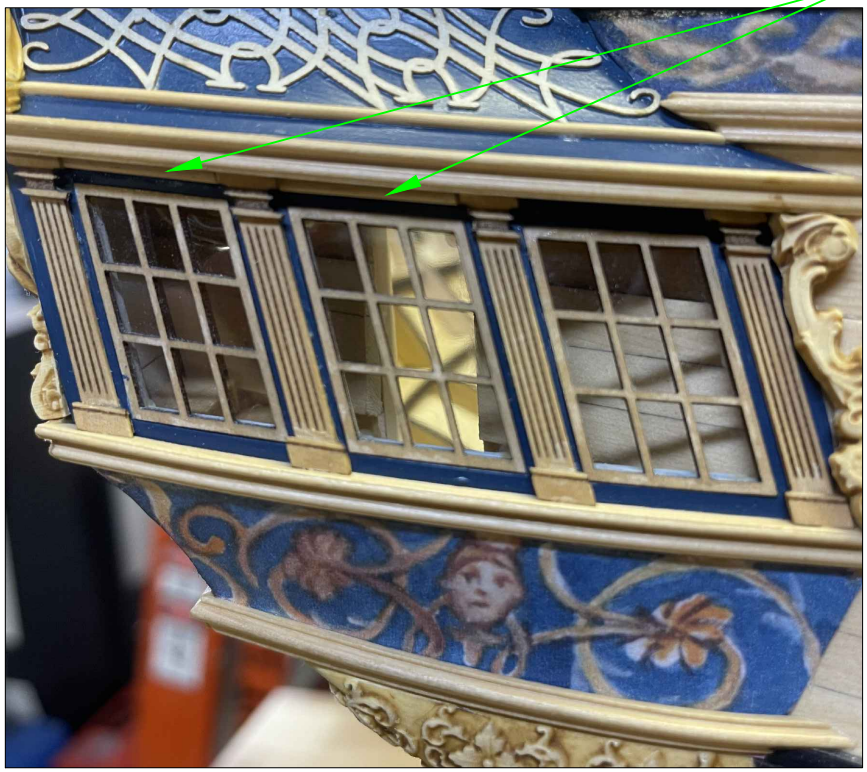


i first added the scraped molding that goes below the window, it requires a very slight curve to fit the transom panel. The molding is identified on the key.
Next I applied some PVA and carefully pushed the pattern into place, It fits within this little imaginary box as there will be a small molding placed below it that will intersect the one on the side of the QG, we will add these when the balcony's go on way later in the build.

Between the tops of the columns on the lower QG's there are small strips of molding that bridge them together, these can be cut from the provided small boxwood strip included. I carefully placed them between the tops using a few dots of CA, these are also required on the stern columns.

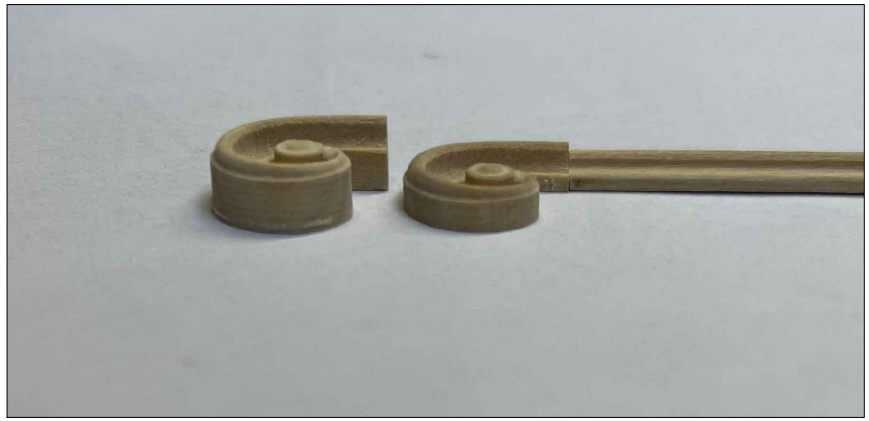


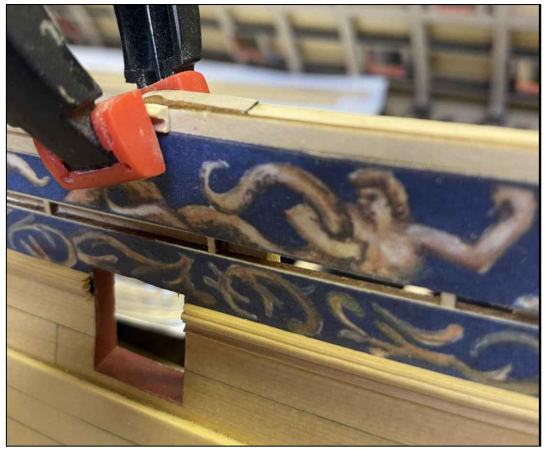
The molding strips in place on the quarter galleries with one still remaining, carefully sand them to fit between tops of the columns.

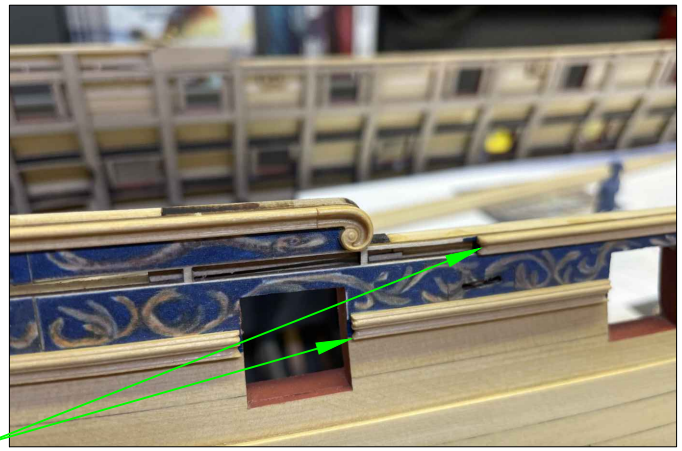


The molding strips running the beam of the model between the columns, these will finish off the joint between the window panel and the lower balcony nicely.

Lets move onto the fancy moldings on the side of the hull, again refer to the molding scrapper key. Starting with the scrolls, i had these CNC machined using the same boxwood stock that is in your chapter 3 kit so the wood tones should match perfectly. The scrolls come a little on the thick side side so youll have to sand them down to the thickness of the molding you made. Once I had them matching up well I placed the scrolls in place on the model try and use PVA so you can position them correctly. Also make sure the mating surface to the scraped molding is square. With the scrolls in place you can now bridge the two with a piece of molding, I slowly sanded the correct radius in first so it fit against the aft scroll with a tight joint, then with the molding slightly longer i I slowly sanded the forward edge with a block sander until it made a tight fit between the two scrolls, using CA i carefully attached the piece.

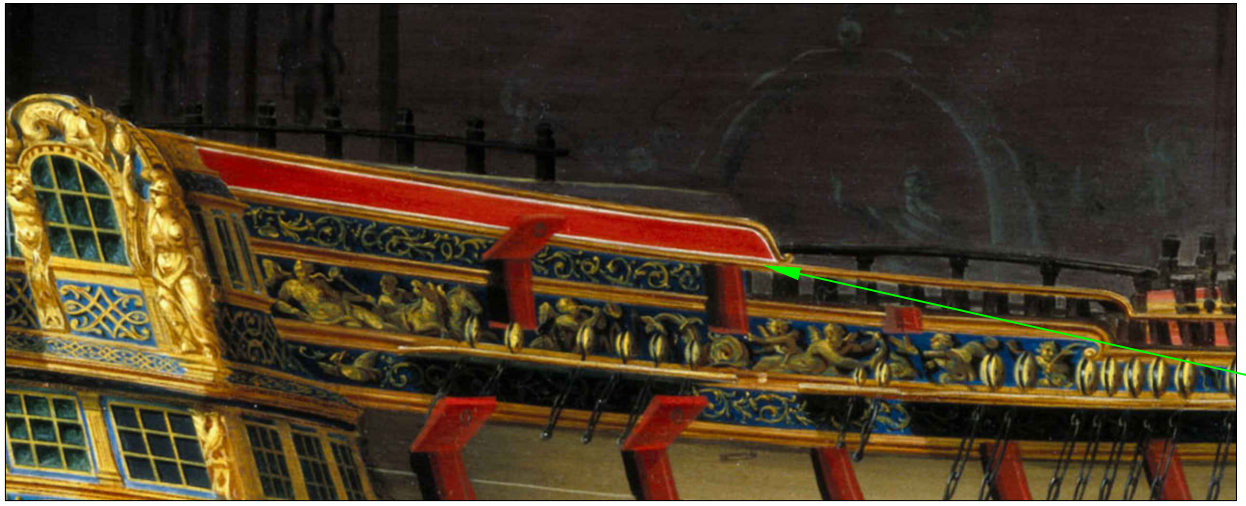




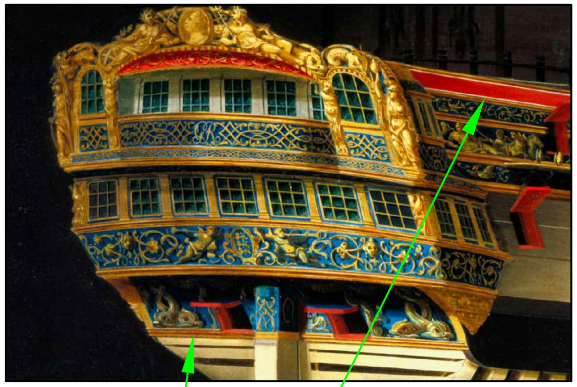


Since we know the location of the channels there is no need to run moldings so i stopped right in front of the slots for the channels. On all molding terminations I carefully filed the ends to give them a nice finish.

The starboard side with molding completed, notice the upper molding near the roof the of the QG is missing, we will be addressing this later in the build when the railings go in place as the molding strip will continue onto the railing as well. Below you can see this in the painting.



The upper moldings as shown on the painting, we will finish this when the cap rails go on and the uprights the hold the railing.



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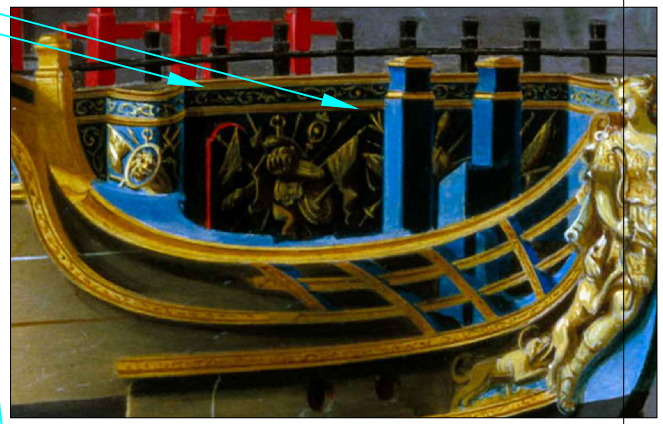

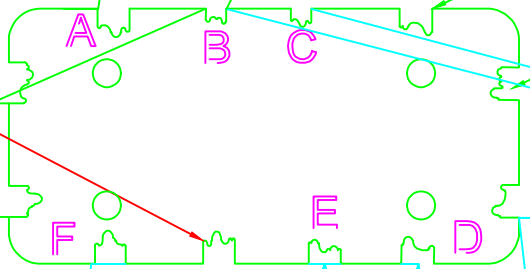


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