

*The Royal Yacht
Duchess of Kingston 1778*
Building Manual



PART NUMBER - VM-06



VANGUARD MODELS
BY CHRIS WATTON

THE ROYAL YACHT
BUILT FOR
THE DUCHESS OF KINGSTON
1778

HISTORY

The royal yacht built for The Duchess of Kingston was built by the shipbuilders JM Hillhouse of Bristol in the late 1770's. This type of vessel seemed to retain many older, more classical features, compared to those built for the Royal Navy, making the yacht look more a product of the late 17th/early 18th Century. The dimensions on the original plans are as follows:

Keel length - 68 Feet
Range of deck length - 81 Feet
Moulded Breadth - 24 Feet
Depth of hold under beams - 10 Feet
Burthen in tons - 206

ELIZABETH CHUDLEIGH (DUCHESS OF KINGSTON)
1721-1788

Elizabeth Chudleigh was born on 8 March 1721. Her father was lieutenant governor of the Royal Hospital, Chelsea; he died while she was a small child.

Chudleigh did not lack admirers, among them James Hamilton, 6th Duke of Hamilton, and Augustus Hervey, later 3rd Earl of Bristol, but, at that time, a younger grandson of the first Earl. On 4 August 1744, she was privately married to Hervey at Lainston House, a private country house with its parish church (St Peter's, now a ruin), near Winchester. The wedding was held at night to preserve the secrecy. Both husband and wife lacked the financial support they needed, and their union was kept secret to enable Chudleigh to retain her post at court, while Hervey, a naval officer, rejoined his ship, returning to England toward the close of 1746.

The marriage was unhappy, and for years, the pair did not live together. Married in secret, their marriage did not seem to need to be dissolved.

Chudleigh "cut a prominent figure" in British society, and in 1765 in Berlin, she was mistress to Frederick the Great. Then, she became the mistress of Evelyn Pierrepont, 2nd Duke of Kingston-upon-Hull, and married him in 1769. However, before Hervey could succeed his brother as Earl of Bristol, Chudleigh established proof of their marriage by forging an entry in the parish register at Lainston, unbeknownst to him.

Hervey wanted to end their marriage by divorce, but Chudleigh wanted to avoid any public acknowledgment of their marriage. She initiated a suit of jactitation against him, requiring him to cease claiming marriage to her unless proved. After Hervey proved incapable of proving the relationship and Chudleigh swore she was unmarried, the consistory court in February 1769

pronounced her a spinster, free to marry. Within a month, she married Kingston and became Elizabeth Pierrepont, Duchess of Kingston-upon-Hull. He built for her a grand townhouse called Chudleigh House (later called Kingston House) on Knightsbridge in the City of Westminster, London. He died four years later, leaving her all his property on condition she remain a widow. She travelled abroad. Visiting Rome, she was received with the honor due a duchess by Pope Clement XIV.

In 1775, her first husband's brother died, and Hervey became Earl of Bristol. Chudleigh's marriage to Hervey was legitimate, despite her denials, and she was therefore, legally, Countess of Bristol.

The Duchess / Countess was forced to return to England after her late husband's nephew, Evelyn Medows (died 1826), brought a charge of bigamy against her in hopes of establishing a legal rationale for challenging Kingston's will. She attempted unsuccessfully to have the charge set aside in December 1775 by reason of the previous judgment in her favour. She was tried as a peer in Westminster Hall in 1776, and found guilty by 116 peers without dissent. Absconding with her fortune, she hurriedly left England to avoid further proceedings on the part of the Medows family.

She lived for a time in Calais, and became mistress to Stefano Zannowich. 1777, after her acceptance by Russian royalty, the two had a boat built then made a spectacular entrance sailing into Kronstadt, the port of Saint Petersburg. In the Governorate of Estonia, she bought 3 properties: Toila, Orro, and Fockenhoff, consolidating them into an estate she named "Chudleigh". She planned to create a 'model Brit estate', imported spaniels and pointers and a collection of plants. She lived there in a clifftop house with a view of the Baltic Sea.

In 1777, Hervey gained legal recognition that his marriage to Chudleigh was legitimate, but he did not pursue divorce proceedings, probably because of his involvement with the suit of jactitation. Chudleigh continued to parade as Duchess of Kingston, residing in her Paris estate in Montmartre, Rome, and elsewhere, and died at her estate at St. Assise near Paris on 26 August 1788, still, legally, Countess of Bristol.

The Duchess / Countess was said to be coarse and licentious, and was ridiculed as the character Kitty Crocodile by the comedian Samuel Foote in a play *A Trip to Calais*, which, however, he was not allowed to produce. She is rumored to be the idea behind the character of William Makepeace Thackeray's character *Beatrice Esmond*, Baroness Bernstein in *The History of Henry Esmond* and *The Virginians*.

References

Heppenstal, Rayner, *Tales from the Newgate Calendar: True stories of crime and punishment*, Futura 1983

Jesse, John Heneage, *Memoirs of the Court of England 1688-1760*, vol. iv. (1901)

Gervat, Claire, *Elizabeth: The Scandalous Life of an Eighteenth-Century Duchess* (London: Century, 2003, ISBN 978-0-7126-1451-1)

THE KIT

The Duchess of Kingston kit has been researched to depict her as per the original plans, drawn up by Hillhouse of Bristol.

The model kit is designed to be as accurate as possible for a commercial kit in both scale and detail. Although the kit of Duchess of Kingston is as easy to build as we can make it, very basic woodworking skills (and patience) are still required. Estimated build time is between 60 to 80 hours, so a work space will have to be put aside for the job. Do not remove parts from the laser cut sheets until actually required for fitting, as they can be easily damaged or lost. Do not glue any wood parts when they are still wet from the bending process, as the wood expands greatly when holding water, and will shrink back to normal size when dry. We recommend all planks and laser cut parts that require bending be 'pre-bent' before gluing.

PLEASE NOTE - This is very important.

All major wood parts to be bent are to be soaked and clamped in place until thoroughly dry. Certain woods expand a lot when wet or even damp, so if you glue wood parts that still contain moisture, they will shrink once the moisture has dissipated.

Take plenty of time to study this manual until you are confident enough to tackle each stage of construction. Patience is the key word when building any scale model. Treat each stage as a separate project and the overall effect of the completed subject will be much enhanced.

Care should be taken when cutting parts from the laser and brass etched sheets. The sheet from which you are going to cut the parts should be laid on a hard, flat surface. Use a heavy duty craft knife (a Stanley Knife is perfect and is and always has been my staple for all manner of cutting) with a good strong blade to cut through the tabs holding the parts in place. Before removing the wooden parts from their sheets, they should be numbered by reference to the cut file identification drawings. It is easier to paint most of the photo-etched parts before removing them from their sheets. They can be touched up again once in place on the model.

When painting parts in wood, use multiple coats with fine sanding in-between each coat to help minimise the grain visibility. Never settle on just a single coat, but take your time with every single sub assembly. I have included a building cradle on the 3mm MDF laser sheet that is for use when building the model, marking the waterline etc. Do not make up the clear acetate cradle until the model is complete.



RECOMMENDED TOOL LIST

(All items listed were used by the modeller to build the Duchess of Kingston prototype model)

- 1: Craft knife (or standard Stanley Knife, which is robust enough for most jobs)
- 2: A selection of needle files
- 3: Razor saw
- 4: Small wood plane
- 5: Pin vice or small electric drill (the latter is the more recommended item)
- 6: Selection of drill bits from 0.5mm to 2mm
- 7: Selection of abrasive paper and sanding block
- 8: Selection of good quality paint brushes
- 9: Pliers/wire cutters (Good quality side cutters are excellent for trimming rigging ends)
- 10: Good quality set of tweezers (For small parts and rigging)
- 11: Steel ruler (300mm - for providing a straight edge for tapering the planking)
- 12: Clothes pegs or small clamps
- 13: Good quality pencil or drawing pen
- 14: Masking tape (Tamiya masking tape is perfect for masking areas around the main wale)
- 15: Waterline marking out tool
- 16: A Pin Pusher (Or you can just use a pair of pliers to push pins into the planking and bulkhead edges)
- 17: Cutting mat

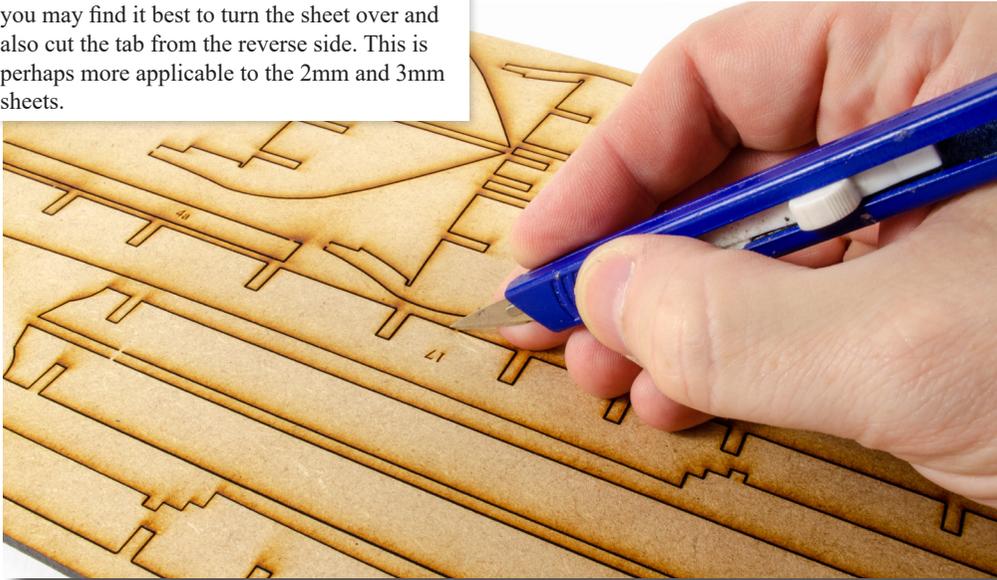
Although not strictly required, access to a lathe would be very beneficial for turning the upper masts and yards, although the yards are easily tapered using a small wood plane and abrasive paper to smooth the surface.

PAINTS, STAINS AND ADHESIVES

- 1: White PVA wood glue
- 2: Cyanoacrylate (superglue) thick and medium viscosity
- 3: Natural colour wood filler (Water based wood filler is recommended as this can be diluted and made thinner)
- 4: Matt polyurethane varnish (Not satin or gloss)
- 5: Black paint (Humbrol 85 or Vallejo matt black)
- 6: Gold paint
- 7: Red paint (Humbrol matt 60)
- 8: White Paint (For hull below waterline)
- 9: Blue paint
- 10: Metal burnishing/blackening liquid (AK Interactive AK 174 - brass Photo etch Burnishing) or similar
- 11: Clear Epoxy Resin or similar to glue the clear acetate stand together

HULL CONSTRUCTION

1. To remove the parts from any sheet, cut through the small tabs with a sharp knife such as a scalpel, X-Acto or Stanley Knife. In particular, you may find it best to turn the sheet over and also cut the tab from the reverse side. This is perhaps more applicable to the 2mm and 3mm sheets.



2. Clean up the tab marks on each part, using either a sanding stick (shown), sandpaper, or a craft knife. These need to be eliminated as some parts may need to sit against a surface with a tab.



3. Before hull construction begins, we will build the temporary cradle. This is very useful for sitting the model in whilst you progress. This cradle can be discarded when your model is complete. Cut out parts 26, 27, and 28 (x2) from the 3mm MDF sheet.

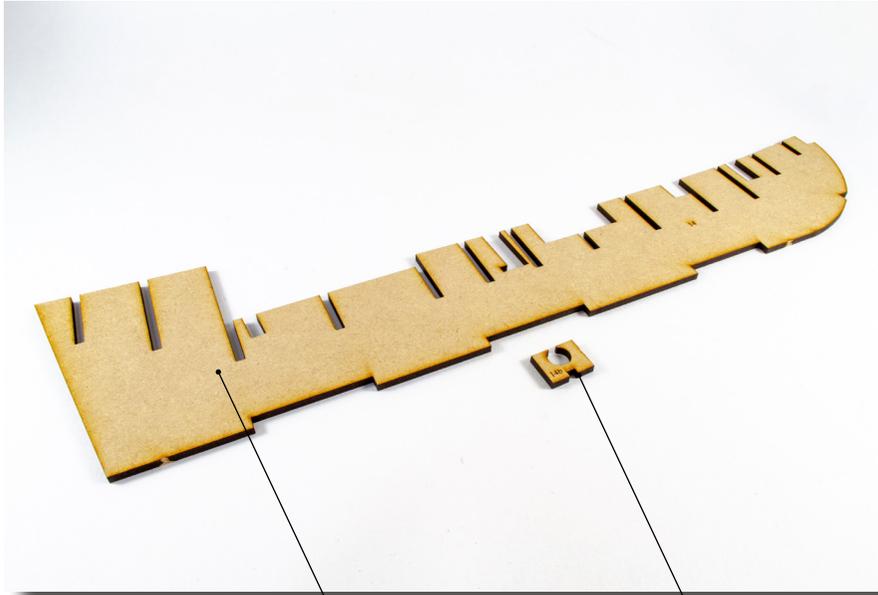


4. Add glue to one of the slots shown and carefully push the parts together, fully. Do this with each slot on the other parts until the cradle is built as shown.



5. The completed cradle.





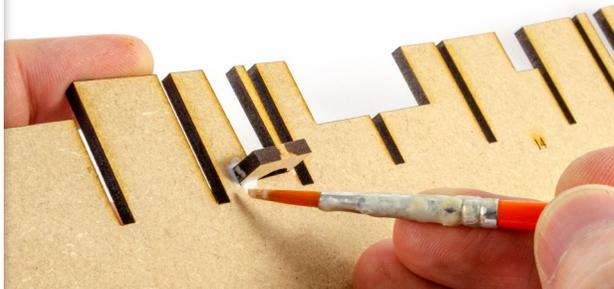
6. Remove the False Keel (14) and Main Mast Support Pattern (14b) from the 3mm MDF sheet.



7. Carefully slot 14b into position as shown here, being careful not to snap the delicate keel details.

8. When at the bottom of the cut out, push 14b into the slot in the false keel until it locks into position. This must be pushed fully into place so the mast can sit comfortably within.

9. Brush a little wood glue around the joint, but not within the mast recess. Note: You will notice that a lot of early MDF construction is glued after the parts are fitted. This is because some modern glues set quickly, and when dealing with multiple slots, it seems a safer way. However, feel free to add glue before fitting parts, if that is what you are more comfortable with.



10. Take the first three bulkheads (1, 2, and 3) from the 3mm MDF sheet.

11. Using a pen or pencil, draw a rough bevel line on them as shown here. Remember, it's always better not removing enough at this point, than removing too much.



12. Use sandpaper or a rotary tool to bevel the parts to the lines you have drawn.

SAFETY FIRST: Always use a face mask when sanding MDF, or indeed any timber. Such dusts can cause respiratory problems and long-term health conditions.



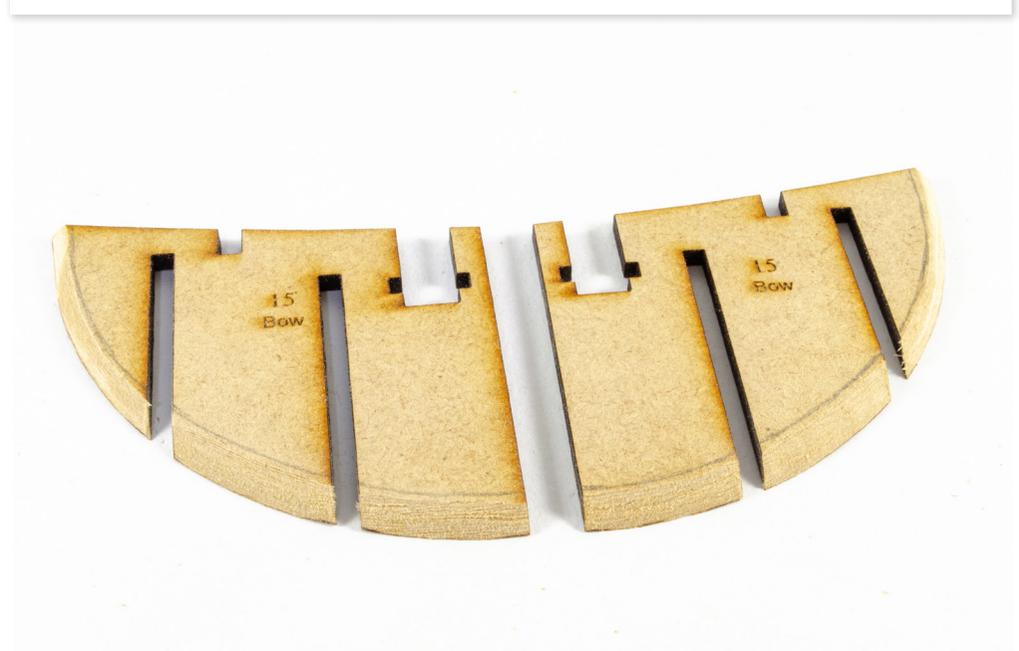
13. The first three bevelled bulkheads should look like this.



14. Now take the last three 3mm MDF bulkheads, (11, 13, and 13) from their sheet and repeat the process of marking a bevelling line and sanding away to it as shown here



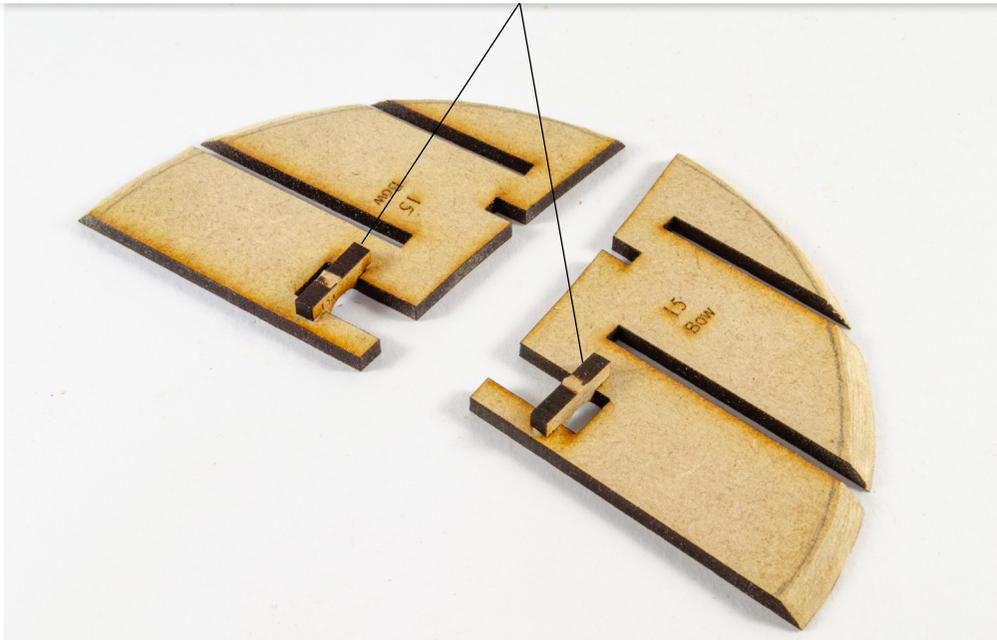
15. Remove the two Bow Planking Patterns (15) from their 3mm MDF sheet, and also bevel them as shown here.



16. Lastly, for the moment, take the two Inner Longitudinal Patterns (16) from the 3mm MDF sheet and bevel the curved front as shown here.



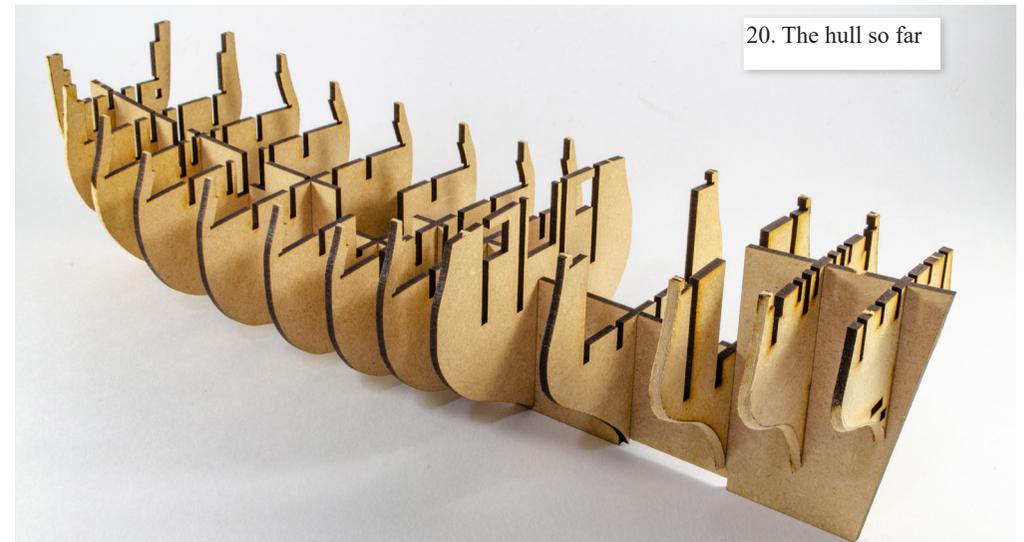
17. Take the two Foremast Support Patterns (15a), and glue them to the Bow Planking Patters (15) as shown here. Remember that they need to be glued to the faces that are bevelled.



18. Slot bulkheads 1, 2, 3, 4, 5, 6 and 7 into position on the False Keel, remembering that the first three bulkheads will have their bevelled edges facing forwards. Make sure the bulkheads are pushed fully into position.



19. Now slot bulkheads, 8, 9, 10, 11, 12, and 13 into position. Again, ensure that the last three bulkheads have their bevelled faces pointing rearwards. Make sure the bulkheads are pushed fully into position.



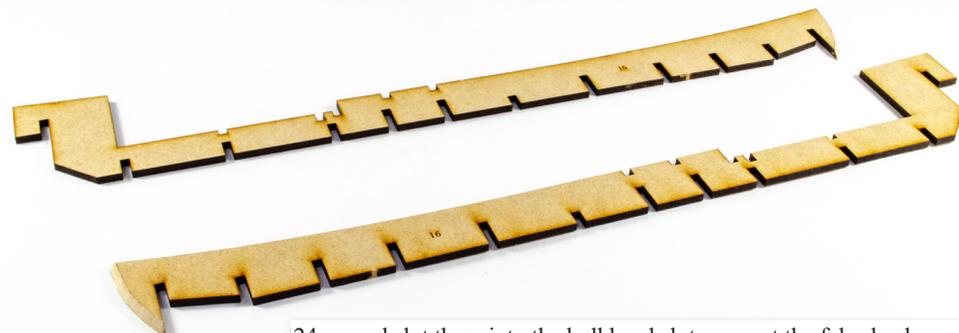
21. Slot the Bow Planking Patterns into position as shown. You can perhaps add a little glue to the rear of these before you slot them in. Make sure they are pushed fully into place so the top of these parts is level with the top of the false keel.



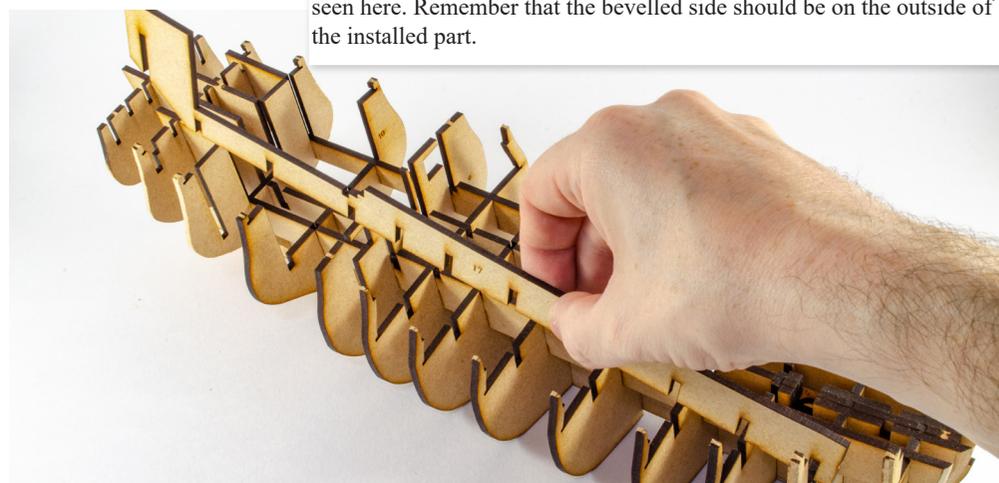
22. This is how parts 15 should look when fitted.



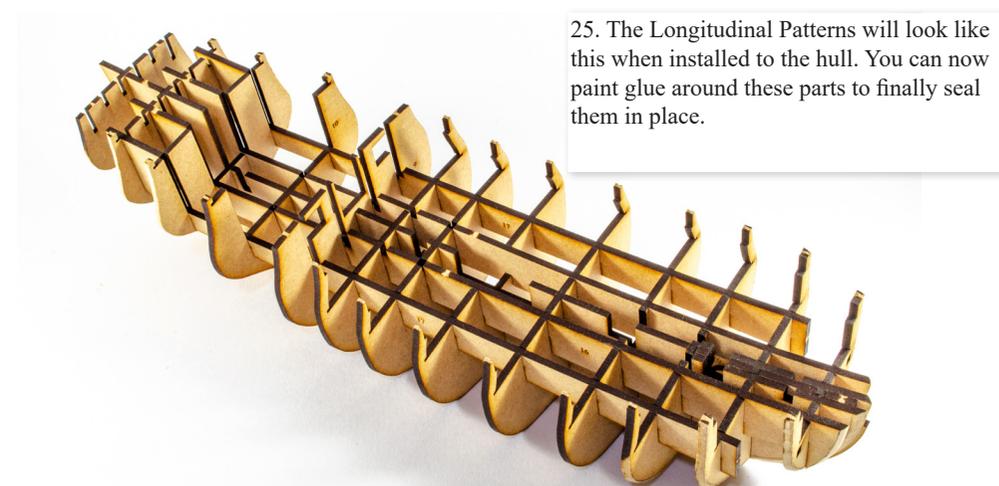
23. Take the two Longitudinal Patterns (16)...



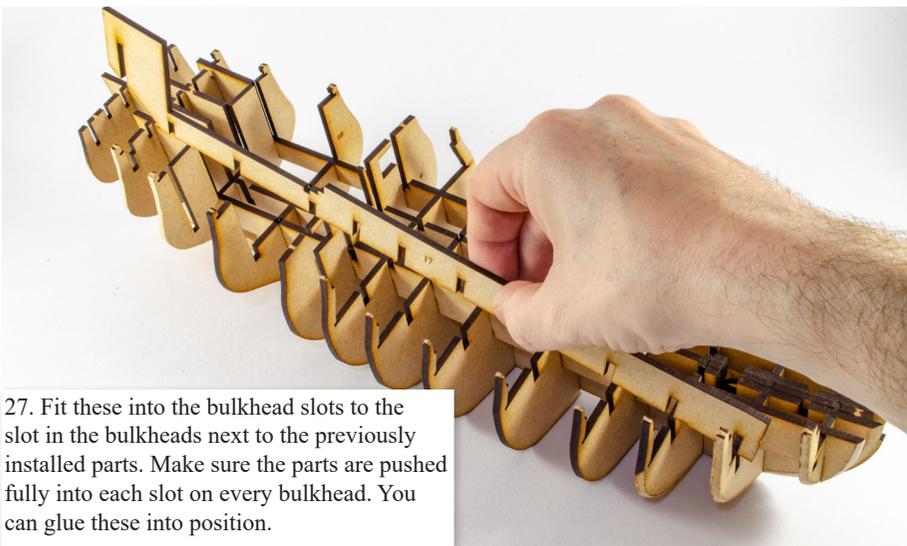
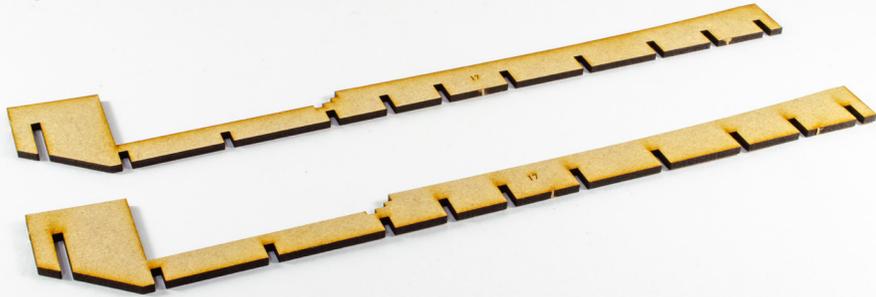
24. ...and slot them into the bulkhead slots nearest the false keel, as seen here. Remember that the bevelled side should be on the outside of the installed part.



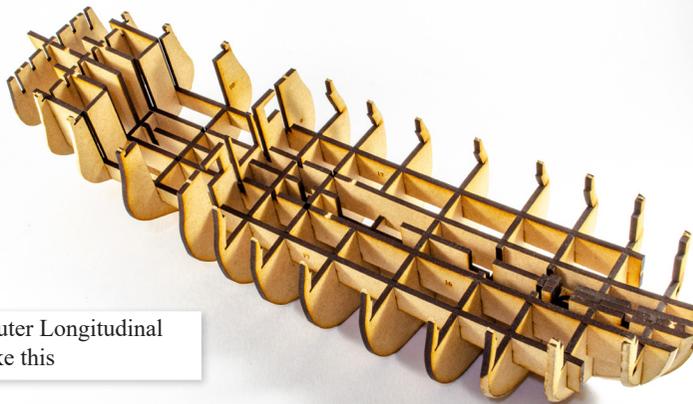
25. The Longitudinal Patterns will look like this when installed to the hull. You can now paint glue around these parts to finally seal them in place.



26. Remove the two Outer Longitudinal Patterns (17) from the 3mm MDF sheet.

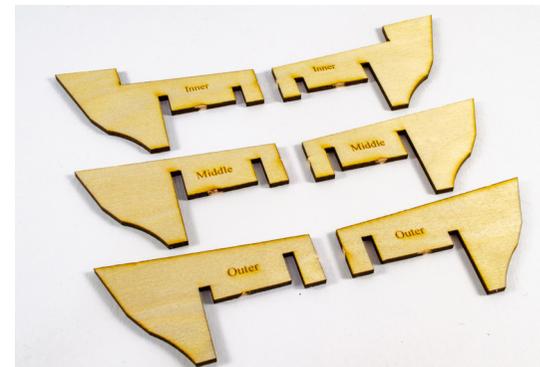


27. Fit these into the bulkhead slots to the slot in the bulkheads next to the previously installed parts. Make sure the parts are pushed fully into each slot on every bulkhead. You can glue these into position.



28. When installed, the Outer Longitudinal Patterns (17), will look like this

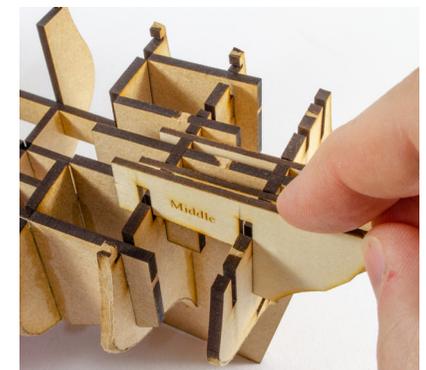
29. If you haven't already glued the various parts together, you can now brush white glue or yellow glue (aliphatic resin) into the joint areas. This will penetrate the MDF and set solid. Leave the hull to thoroughly dry.



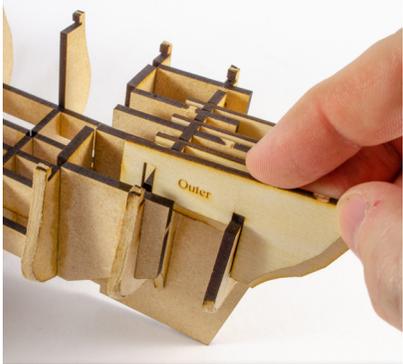
30. Remove the Stern Pattern parts (30, 31, 32, two of each) from the 2mm Ply sheet. Note that these are engraved with 'Inner', 'Middle' and 'Outer'.



31. Fit the two 'Inner' Stern Patterns into the stern slots nearest to and either side of the false keel, as seen here.



32. Now take the 'Middle' Stern Patterns and fit them into the slots next to inner stern patterns that you have just fitted.



33. Finally, fit the 'Outer' Stern Patterns into the last slots, next to the parts you have just fitted. You can paint glue around all these parts to secure them.

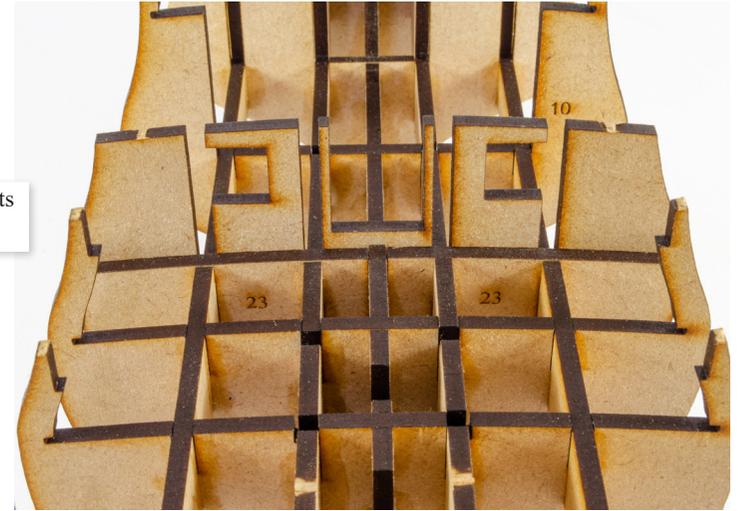


34. When fitted, this is how the Stern Pattern parts will look.



35. Note how those parts are also flush with the top of the false keel. This is important for the deck to fit, and for the stern timbers and decoration to fit.

37. When in place, parts #23 will look like this.



36. Remove the two Rear Deck Main Supports (23) from the 3mm MDF sheet and fit them into the slots just before the cabin bulkhead #9. Push these as far as they will go, so that the top of them is flush with the top of the surrounding framework. Glue into place.



38. Now take the two Mid Cabin Front Deck Supports (24) from the 3mm MDF sheet.

39. Fit these as you did with the previous parts, but to the slots at the back of Bulkhead #9 (inside the cabin area). Push them fully into position and glue.



40. When in place, they (Parts 24) will look like this.



41. Remove the laser-engraved Main Cabin Deck (29) from the 2mm Ply sheet and glue into place within the cabin area.



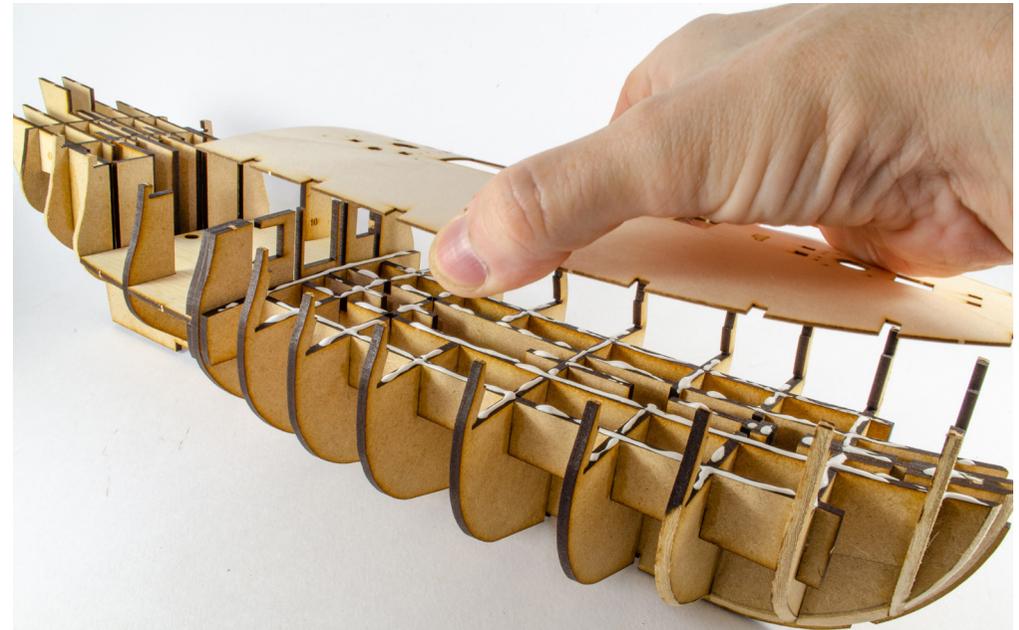
42. As the deck is slightly curved down at the edges, use clamps to firmly hold it while the glue sets.



43. Our work inside the cabin continues as we remove the two Thickening Patterns (25) from the 3mm MDF sheet, and...

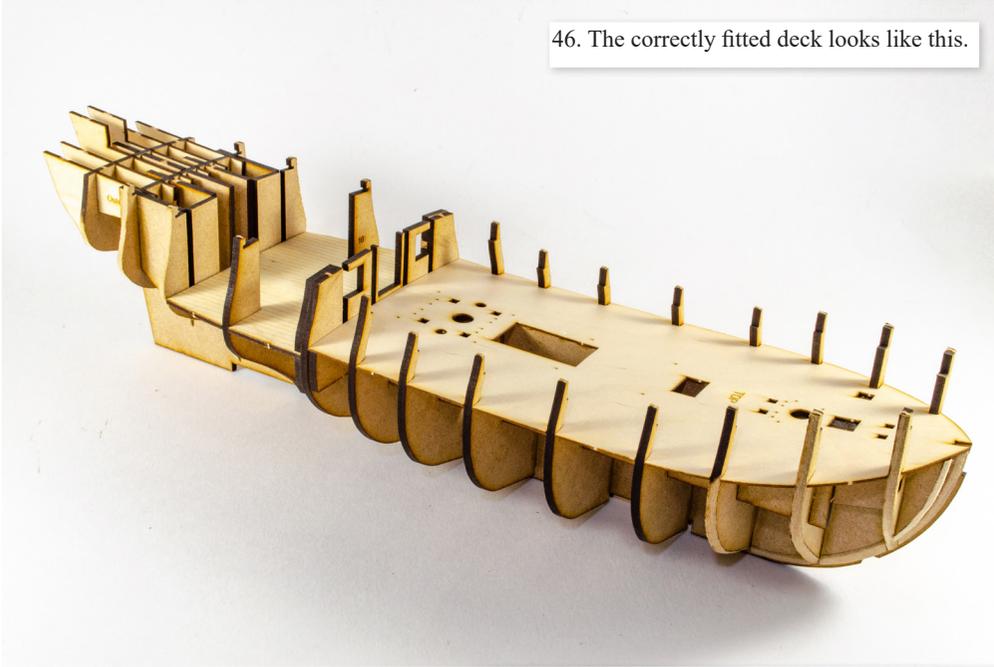


44....glue them into the slots in the main cabin deck, up against bulkhead #9.



45. We can now install the Fore Deck (42). Cut this part from the 0.8mm ply sheet and remove the cut-out sections. Note that the word 'TOP' is engraved on it. Of course, this must face upwards. Run glue along the tops of the deck and bulkheads, and then squeeze the ply deck and insert into position. The edges of the deck will fit/click into the slots at the base of the bulwark ears, locking it into place. You should find that the deck lies flat across all the frames etc. You shouldn't need to, but if necessary, use brass pins to hold it down along the centre. If it doesn't lie flat, it generally means that the deck isn't properly sat in all bulkhead tabs.

46. The correctly fitted deck looks like this.



50. We can now fit the Aft Deck in position. Add glue to the top of the various frames and bulkheads, and then flex the plywood deck enough to allow you to fit it into the slots in the bulkhead ears. The deck should fit perfectly in position, sitting flat atop all frames. For extra insurance, you can use brass pins to hold the deck down where it isn't fastened to the bulkhead ears, such as either side of the cabin bulkhead.

48.(Below) Slot the stern patterns into place as shown, against the false keel (so the top of the parts are flush with the top of the Stern Patterns). Using a pen or pencil, mark onto them the points where the edges of the bulkheads cross them.



47. Remove the Stern Patterns (21, 22, two of each) from the 3mm MDF sheet



49 (Left). Using sandpaper or a rotary tool, bevel the parts (21 & 22) as shown and then glue them into place on the model.

51. The installed deck will look like this.

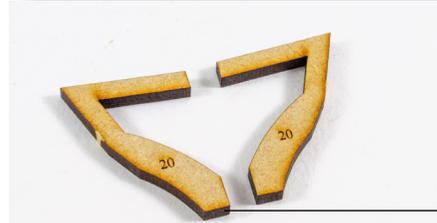
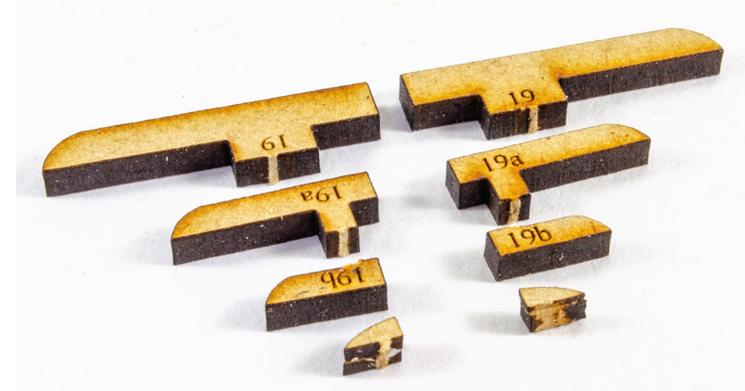


52 (Right). From the 3mm MDF sheets, remove the Bulkhead Temporary Cross Beam parts (1a, 2a, 3a, 4a, 5a, 6a, 7a, and 8a)...



53 (Left). ...and glue them into position on their corresponding bulkheads, as shown here. This will add some strength to the model as you progress, but these will later be removed, along with the bulkhead ears.

58 Left). The last 3mm MDF parts are for the stern. Cut out and clean up the Stern Patterns for Bulkhead 13 (19, 19a, 19b, and 19c)...



54 (Above). Cut the two Stern Quarter Filling Patterns (20) from the 3mm MDF sheet...



55 (Right)...and glue into position as shown on the outer face of the outer stern patterns. The back edge of this will be more or less flush with the adjoining stern pattern.

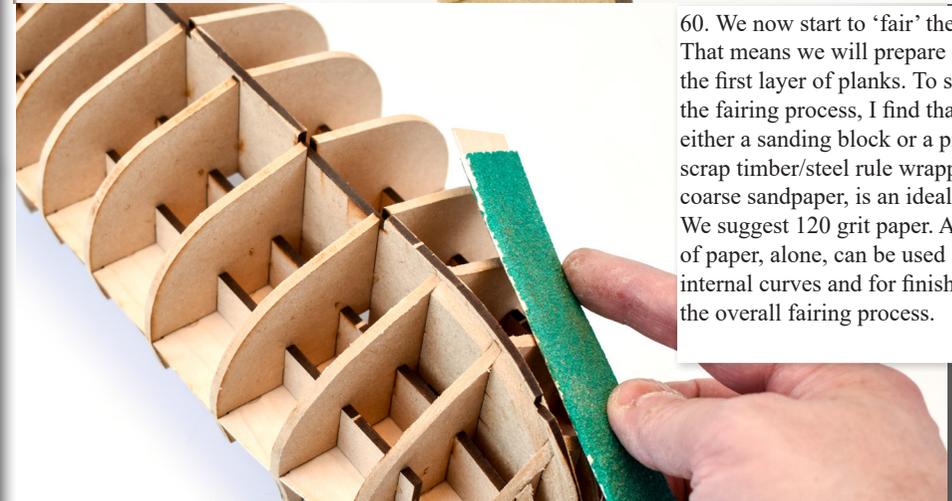


59...and glue them into place as shown, on Bulkhead #13.



56 (Left). Remove the two Outer Bow Pattern parts (18) from the 3mm MDF sheet...

57 Right)...and glue into place on Bulkhead #1, as shown here.



60. We now start to 'fair' the hull. That means we will prepare it for the first layer of planks. To start the fairing process, I find that either a sanding block or a piece of scrap timber/steel rule wrapped in coarse sandpaper, is an ideal tool. We suggest 120 grit paper. A piece of paper, alone, can be used for the internal curves and for finishing the overall fairing process.



61. It's important that you sand the bulkhead edges so that they match the curve of the deck.



62. When you have faired the hull, very little, or any of the laser char will remain. You can also check the 'flow' of the hull by lying a lime planking strip over the bulkheads to ensure you have maximum contact on each.

63. This photo gives you a good idea as to how the bow should look when the hull is faired. Note the forward area and how it should look.



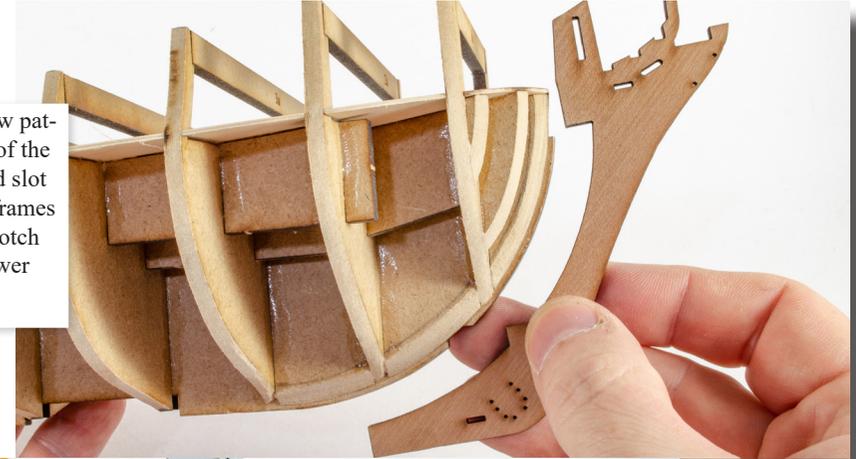
64. Likewise with the stern. When you've sanded the stern patterns to shape, they will look like this.



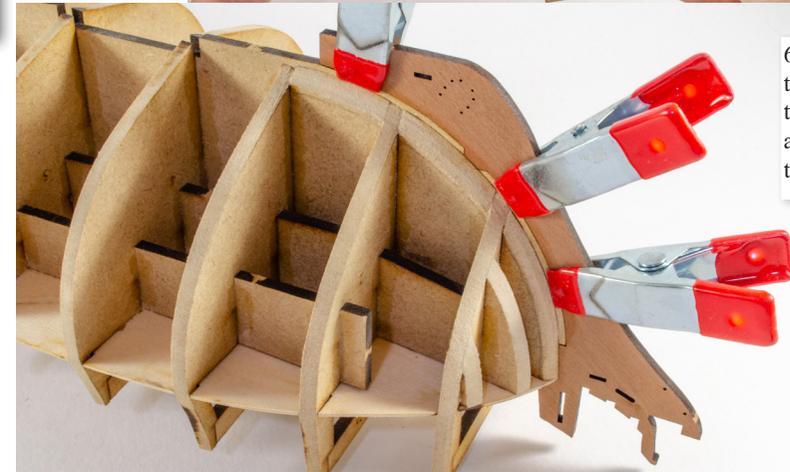
65. It's important that you also make sure that any protrusions such as the stern quarter filling patterns (20) are sanded flush with the upper deck, and all the bulkhead tabs above deck, are faired into the cabin bulkhead.



68. Glue the Bow pattern to the bow of the hull. This should slot in between the frames at the top, and notch into the keel, lower down.



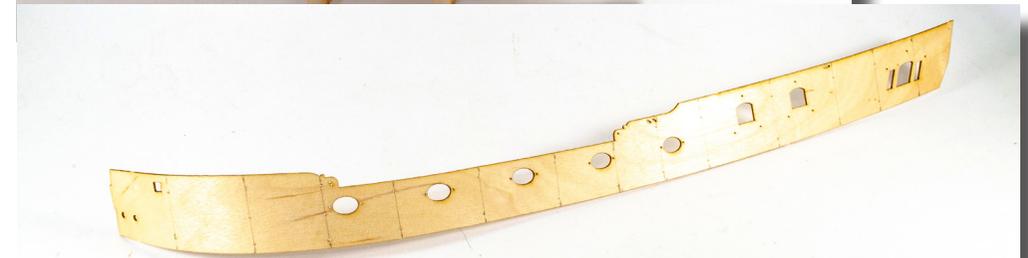
66. Another important area to sand is the upper stern area. Use a sanding block to finish the curved area between the Stern Pattern parts. You can use the shape of the rear of the upper deck to help with this.



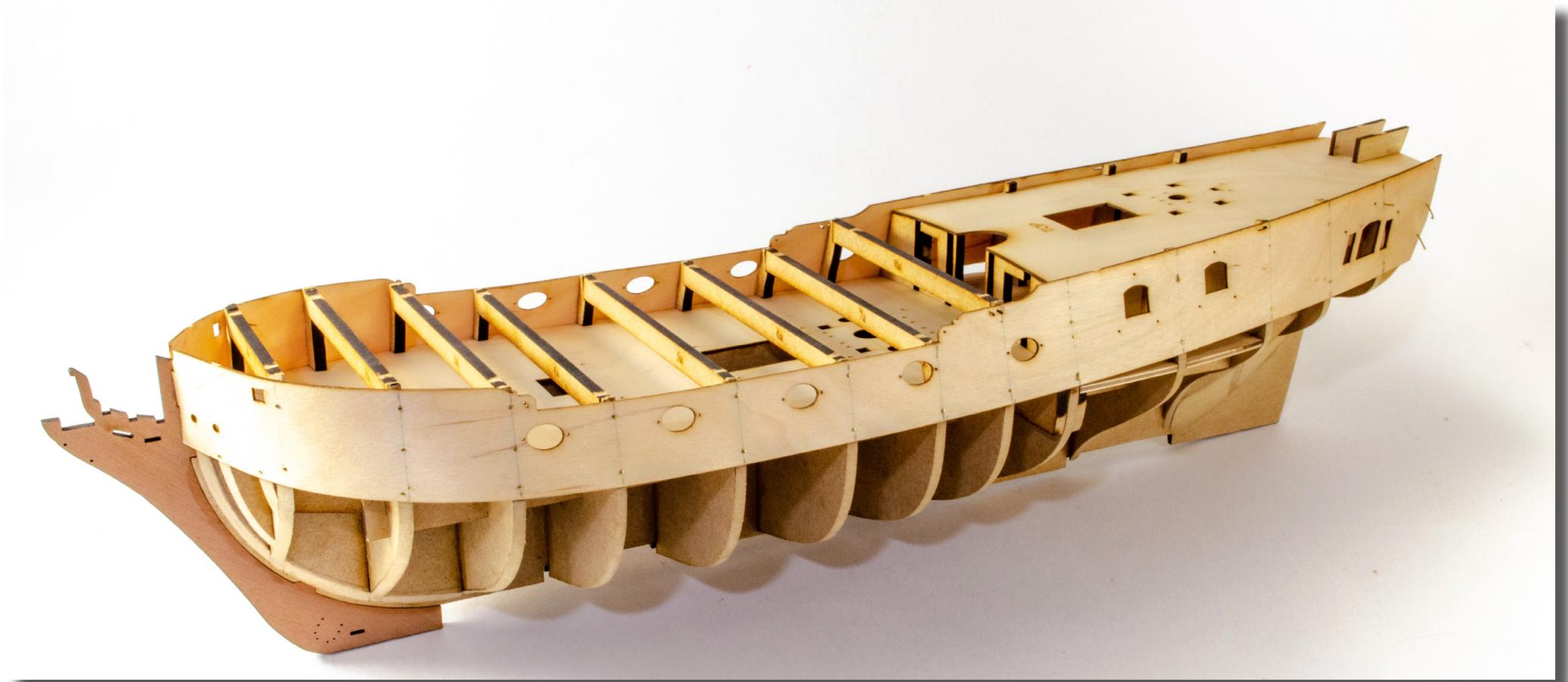
69. You can use clamps to ensure that everything is held properly and in alignment whilst the glue dries.



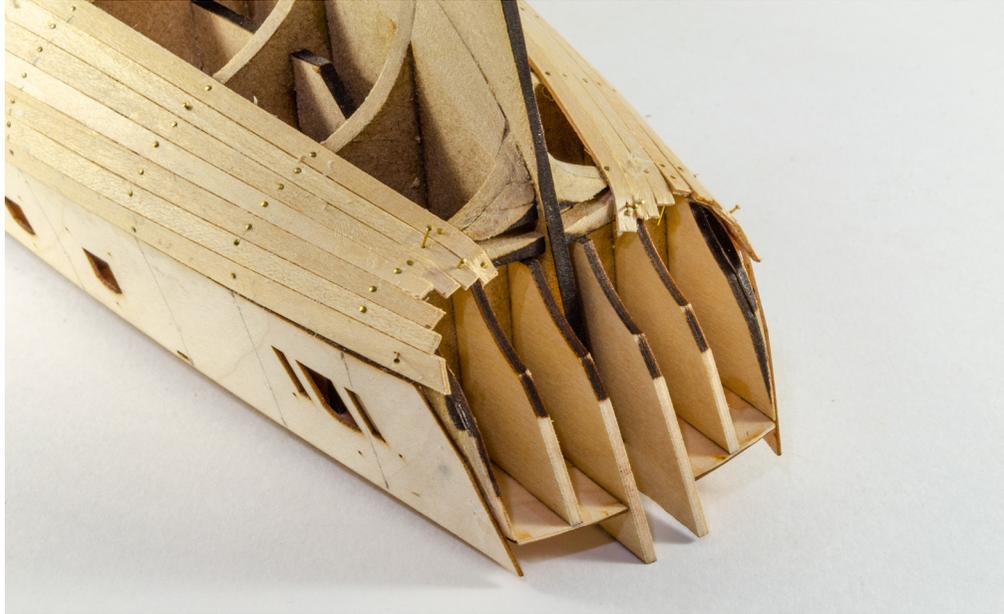
67. Remove the Bow Pattern (49) from the 3mm wood sheet.



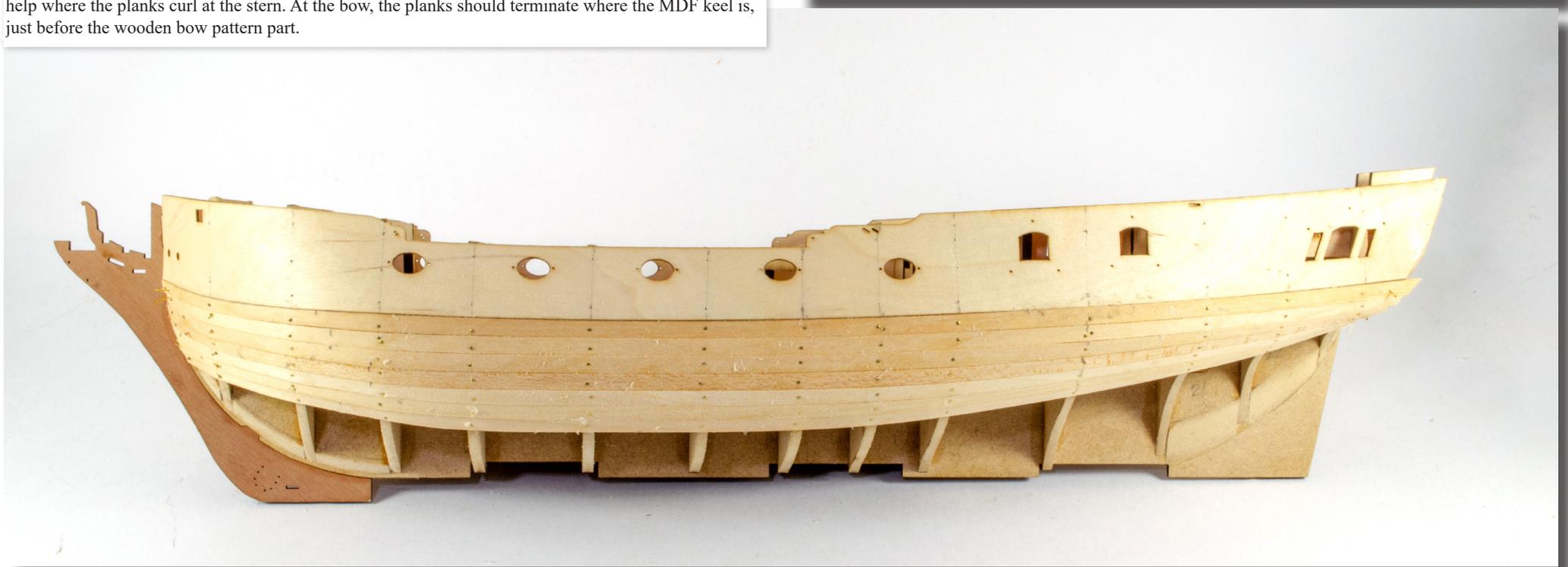
70. Remove the two Bulwark Patterns (45) from the 0.8mm ply sheet and soak them in hot water for 30 minutes. Remove from the water and wrap around a jar or tin at the bow side and leave to thoroughly dry overnight. Sit each bulwark onto the hull and use a pencil to mark the bulkhead positions on the bulwarks. You can now drill some 0.5mm holes through these lines (2 holes each) which will be used to pin the bulwarks to the hull. Slot the front of each bulwark in turn, into the Bow Pattern, and glue them to the hull, pinning as you go along. Note that the top of the bulwark should be more or less level with the top of each bulkhead.



71. Planking now begins, using the 1mm x 4mm lime strips. You will need to taper these from the outset. Lay the first plank underneath the ply bulwark and make a mark where it naturally crosses over the bulwark. Also mark the front of the plank. Make a mark about 1/3 down from the front of the plank and join with the mark you made where plank crossed the bulwark. Use a sharp knife and cut between them using a steel rule as a guide. The plank should now fit and lie snugly over all bulkheads. If it doesn't, taper a little more.



72. Here you can see how the stern planking should look. You can use something like a plank nipper to help where the planks curl at the stern. At the bow, the planks should terminate where the MDF keel is, just before the wooden bow pattern part.





73. Your planked hull should look something like this, as shown in these four photographs. All that matters at this stage is that you have a good surface onto which you will lay the next layer of planks.





74. Use a sheet of coarse sandpaper (120 grit) and sand smooth the first layer of lime planking, blending it into the ply bulwarks. Trim any excess planking from the stern.





75. Remove the Fore and Aft Keel parts (50, 51) from the 3mm wood sheet, and also the Stern Post (52). Glue the Fore and Aft keel parts into position as shown. They will only fit one way.



76. Cut the Left and Right Stern Post Outer Facings (137, 138) from the 1mm wood sheet, as well as the Stern Post End Pattern (141) and two Location Inserts (153).



77. Glue the Left Stern Post Outer Facing to the Stern. Post, using the two Location Inserts to aid alignment. You can also use some brass pins in the laser cut holes. Turn the assembly over and glue the Right Stern Post Outer Facing. Finally, glue the Stern Post End Pattern into position, making sure the arrow points to the top of the post.



78. Glue the completed stern post assembly to the hull, as shown.



79. Cut the Stern Counter Pattern – Lower (77) from the 1.5mm wood sheet. Soak this for 90 mins in hot water and then wrap around a jar/tin and bind tightly, then leave overnight. Glue the curved part into position as shown, and sand so it blends in with the sides of the hull.

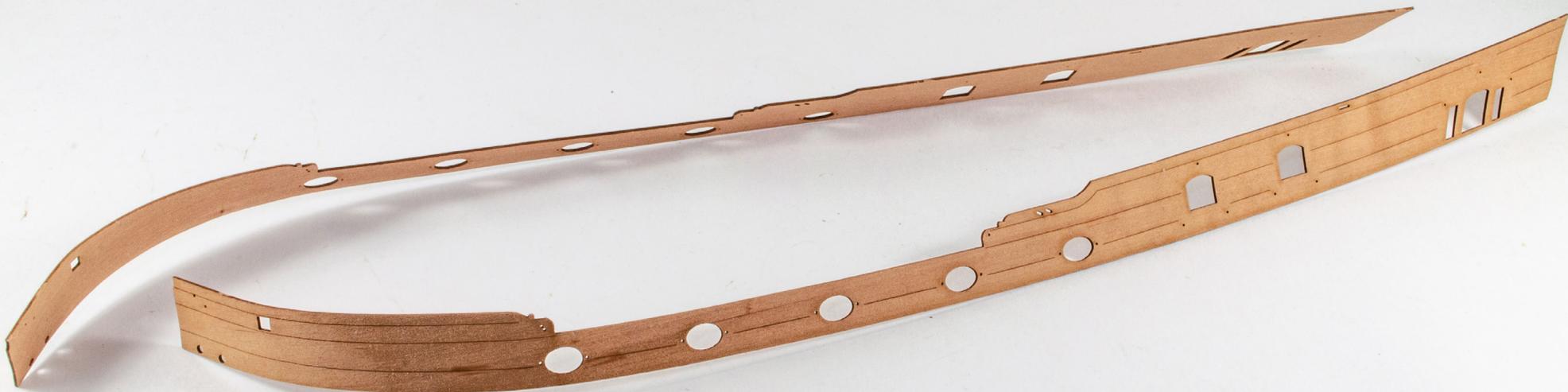


80. Remove the Stern Counter Pattern – Upper (78) from the 1.5mm wood sheet and bevel the inside lower edge so that it sits atop the Lower counter with no gaps. Glue into position and sand to shape as with the previous part.

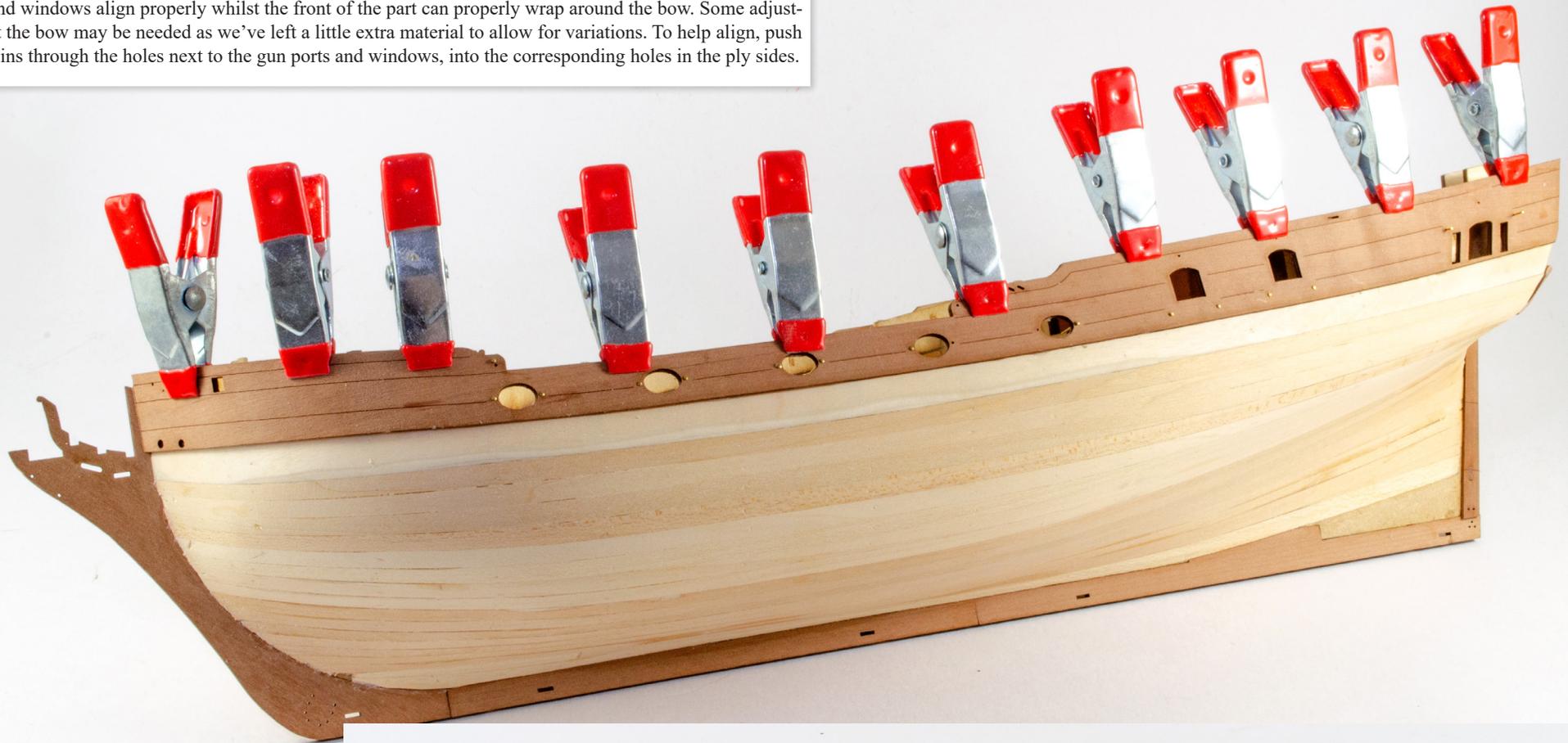




81. Remove the left and right Outer Side Patterns (119, 120) from the 1mm wood sheet. Soak the forward section of these (the area before the first oval gun port) in hot water for 30 minutes. Remove from the water and clamp in position on the hull until the parts are thoroughly dry. *We really do recommend you leave these overnight to avoid any expansion problems.*



82. Glue the dry outer side patterns to the hull. You will need to test fit these first to make sure that the gun ports and windows align properly whilst the front of the part can properly wrap around the bow. Some adjustment at the bow may be needed as we've left a little extra material to allow for variations. To help align, push brash pins through the holes next to the gun ports and windows, into the corresponding holes in the ply sides.

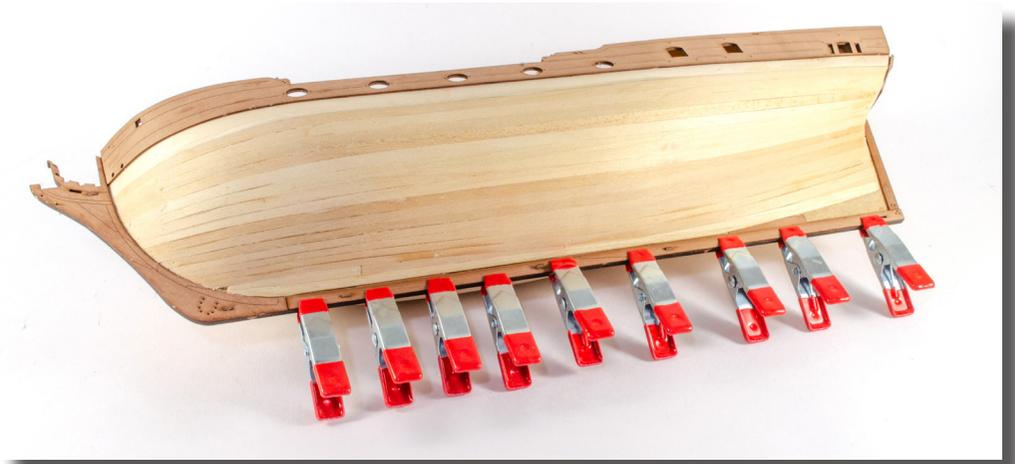


83. Cut the Bow Outer Facings (133, 134), Keel Outer Facings (135, 136), and six Location Inserts (153) from the 1mm wood sheet.





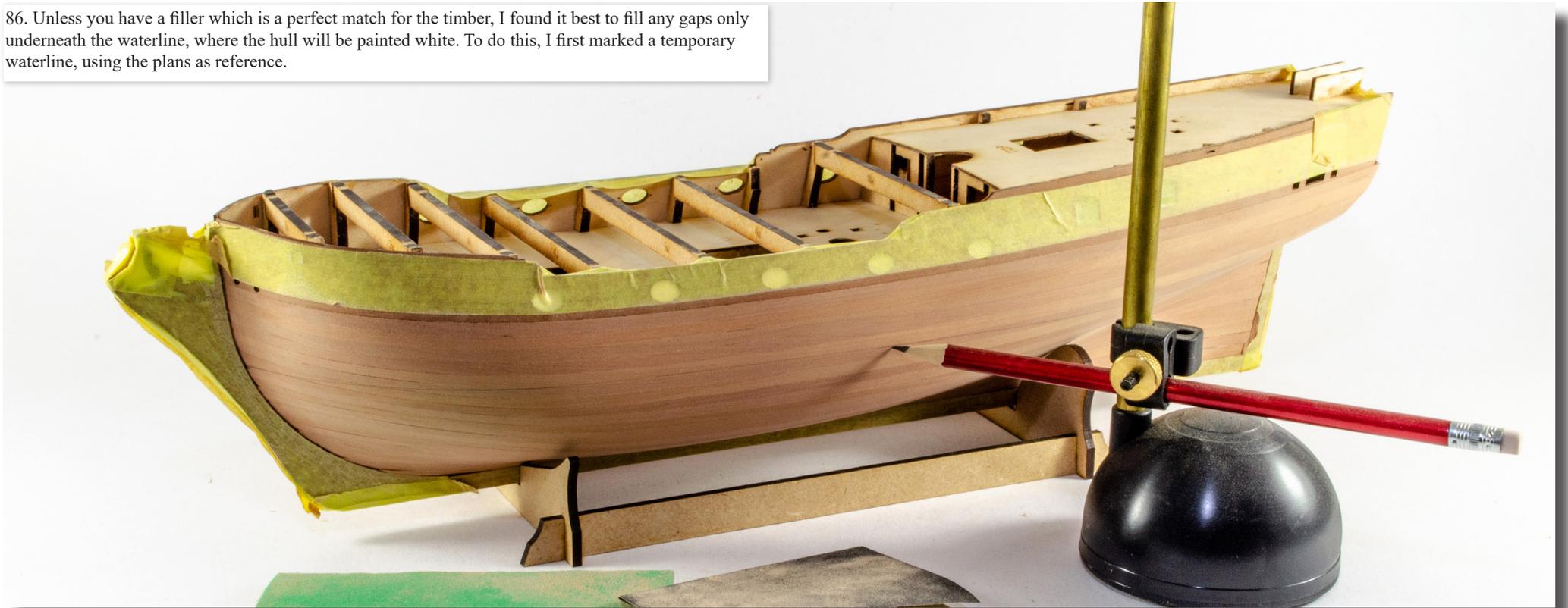
84. Glue two of the Location Inserts into the prow and then glue the Bow Outer Facing 'Left' (134) into position. The edges of this will line up with the external curve of the prow. Use clamps to hold things until they are fully dry. Now fit the Keel Outer Facing (136), in the same manner, clamping this also. When dry, repeat the process with the Bow Outer Facing and Keel Outer Facing for the opposite side.



85. Second layer planking can now begin, using the 1mm x 4mm x 500mm pear wood strips (F-33). Start this immediately underneath the pear bulwarks and plank down towards the keel. You will need to taper planks as you proceed, as with the first layer. On the prototype, I found I only needed to taper one plank at the stern. You will also need to edge bevel planks as you progress, so minimise gaps between them. Make sure than any stealers will be beneath the waterline. Please note that the stern planks will tuck under the lower stern counter. You can lay them over the lower edge of the stern counter if you wish, and later sand them into a curve which shapes into that part.



86. Unless you have a filler which is a perfect match for the timber, I found it best to fill any gaps only underneath the waterline, where the hull will be painted white. To do this, I first marked a temporary waterline, using the plans as reference.

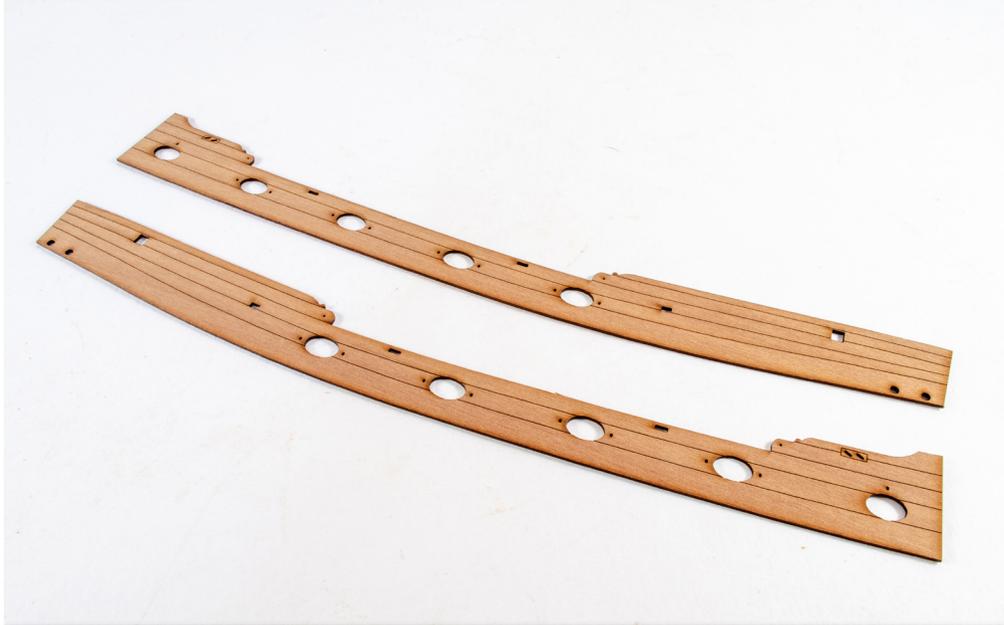


87. Acrylic filler was then used so fill any gaps between planks. This was then sanded smooth with various grades of abrasive paper, finishing with 320.



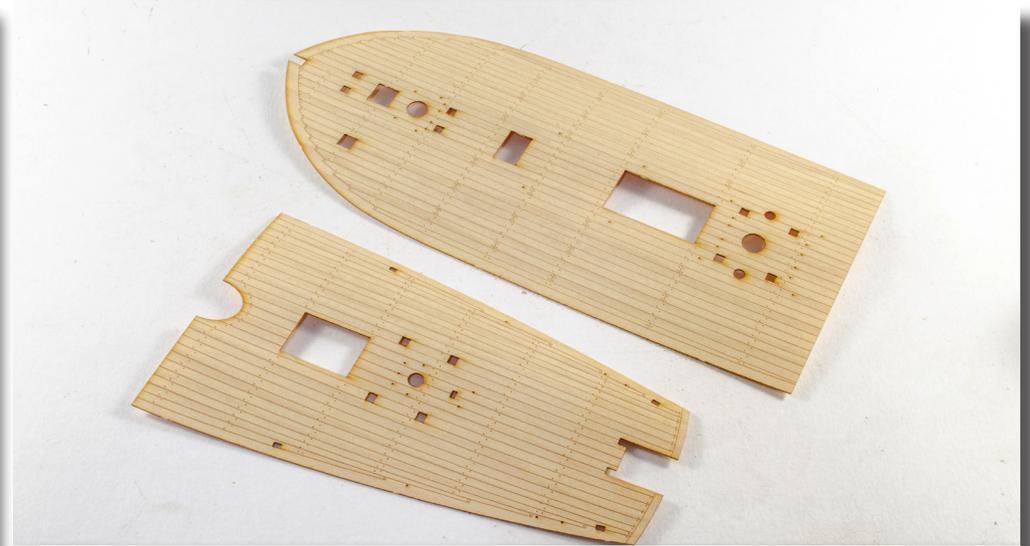
88. The temporary beams can now be twisted and broken off the hull, followed by the MDF bulkhead tabs above the decks. A knife and sandpaper were used to make these flush to the deck. Any glue remnants were also removed from the inner bulwarks.



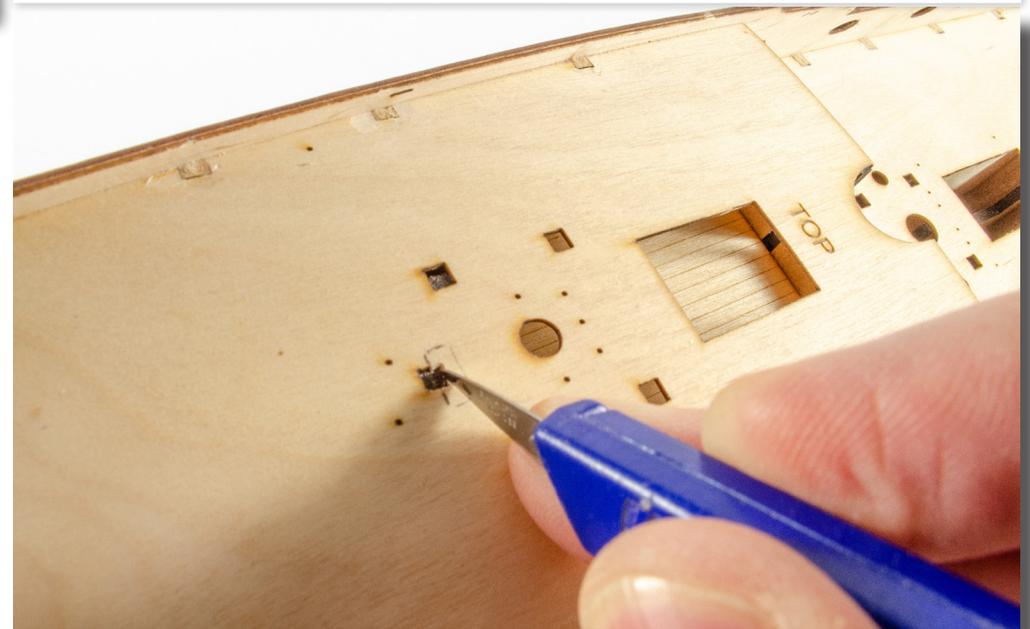


89. Both Inner Bulwark Patterns (193, 194) can be removed from the 1mm wood sheet. These need to be curved at the bow, and you will need to submerge each part, forward of the first gun port, in hot water for around 30 minutes. Take each part in turn and then mould it to the inside of the hull ply bulwarks, clamping it as you go along.

NOTE: It's very important that you now allow these to thoroughly dry due to the high expansion properties of pear wood. Once dry, remove the parts and set to one side.



90. Remove the Fore and Aft Deck Patterns (46, 48) from their sheet and also remove the small cut-outs as seen in this photo.



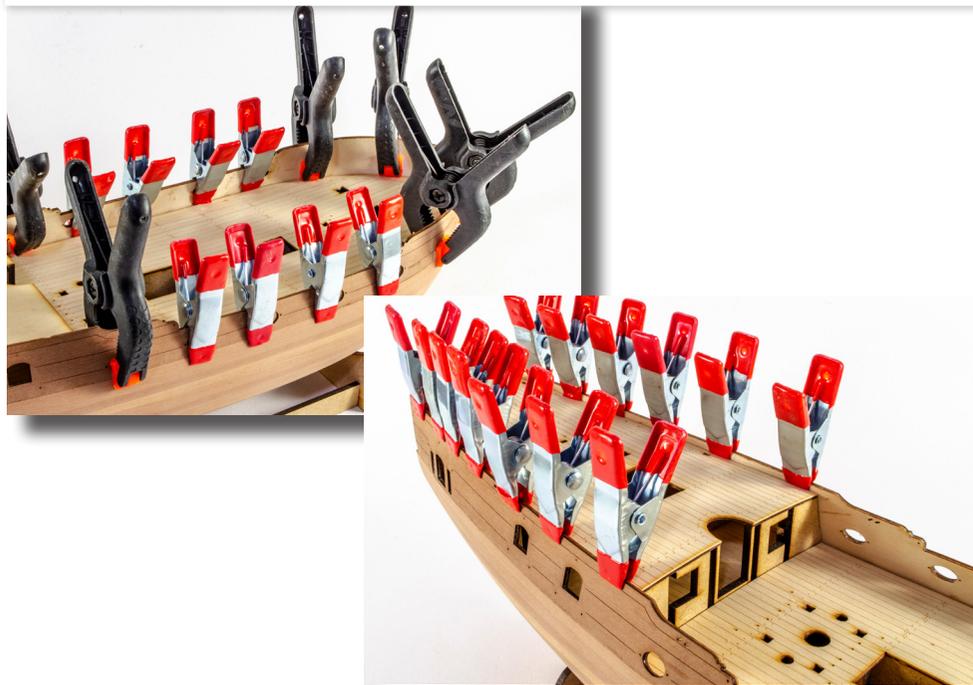
91. In some initial batches of this kit, a hole location in the Upper/Poop ply deck, will need to be opened up a little. Sit the Aft Deck Pattern in place and align the various holes. You will see the one here which needs slight adjusting. NOTE: You may need to carefully sand the edges of the Aft Deck Pattern to get a good fit on the model.



92. Both the Fore and Aft Deck Patterns can now be glued into place. Again, you may need to carefully sand the edges of the Fore Deck Pattern to make sure you get a snug fit. Note how this deck is flexed to allow you to fit it. The decks can be held down with clamps until dry.

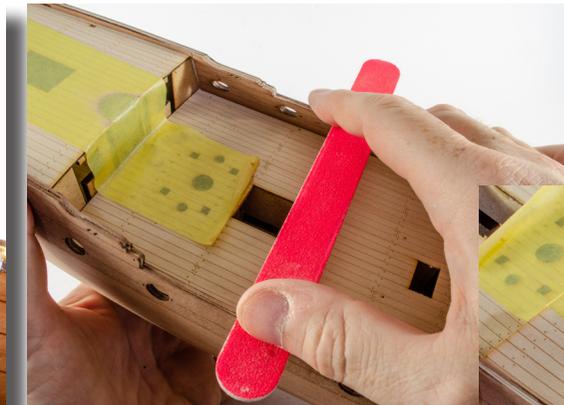


93. Carefully glue the Inner Bulwark Patterns into position and clamp as necessary. We have made these slightly long at the bow side to allow for any hull variations. Make sure that the gun port openings align with the plywood. Use the Oval Side Port Locator Plugs from the 6mm MDF (225) so assist you. These will be removed once the bulwarks are set.





94. Take the two Quarterdeck/Poop Inner Bulwark Patterns (195) and glue them in position, using the Locator Tabs to assist you, as with the keel parts. Also notice that these are left long at the front, to allow for variation between models. Cut them so they butt up to the inner bulwark patterns. Glue and clamp until dry.



95. Use a sanding stick or steel rule wrapped in sandpaper and run this over the tops of the bulwarks to make sure the edges are flat, horizontal and even. You shouldn't need to remove much material to do this. Note that I added some tape to the upper deck, so the sandpaper won't damage the laser engraving. Some small files will be useful to clean up the scroll work areas and within the oval gun ports.



96. Mask the outer bulwark as shown and paint the exposed areas in blue. You may wish to varnish the wood in this area first to prevent the paint soaking into the grain.



97. Once the blue is thoroughly dry, mask again and paint the upper bow and stern areas in bright red.

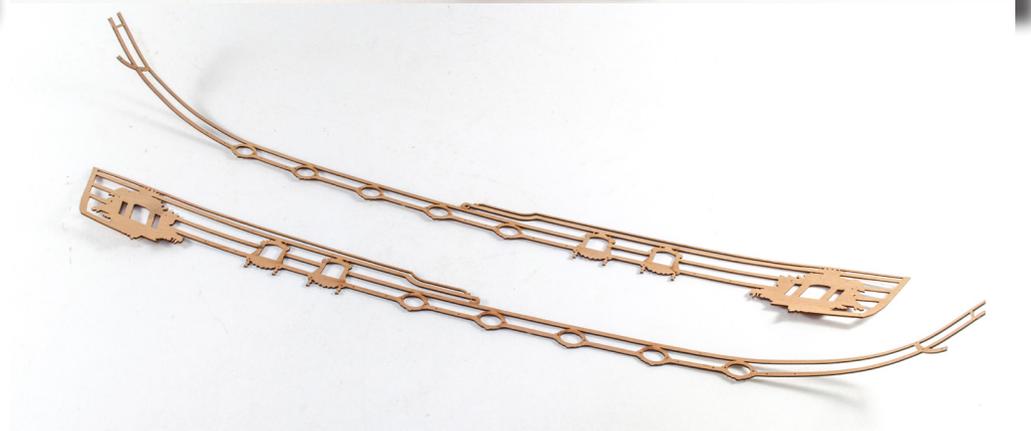
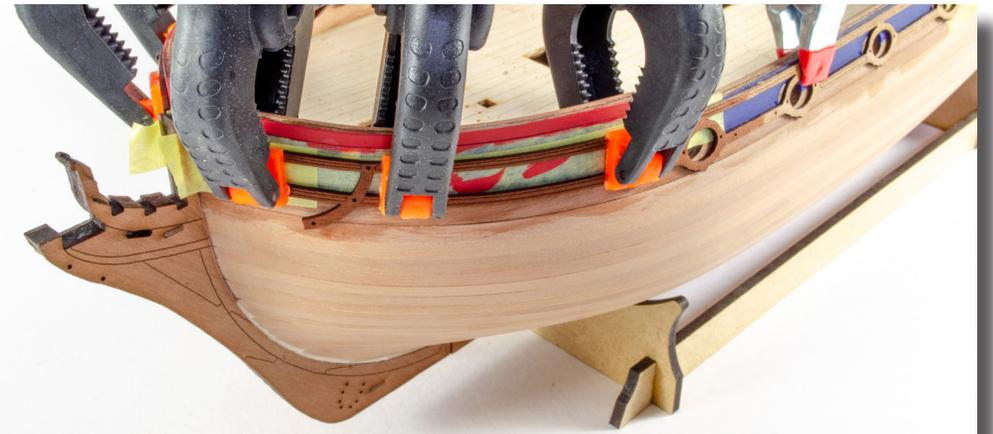




98. Cut the Upper Fore Rail Patterns (130, 132) from the 1mm wood sheet and soak them in hot water for 30 minutes. Form them around the bow as shown, and clamp as you go. Leave to dry overnight. Remove from the model. Also soak the stern end and use tape to hold the large window surround to the cull curvature.

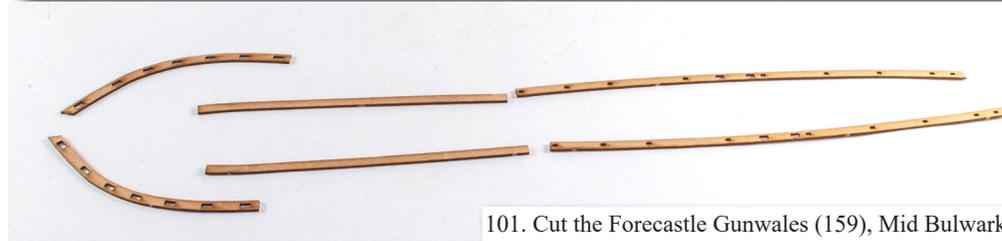


99. Remove the Main Upper Rail Patterns (129, 131) from the 1mm wood sheet. Soak the areas forward of the first gun port, in hot water for 30 minutes. Remove each from the water and clamp to the outside of the hull until thoroughly dry. We suggest waiting overnight. Remove the parts from the model.

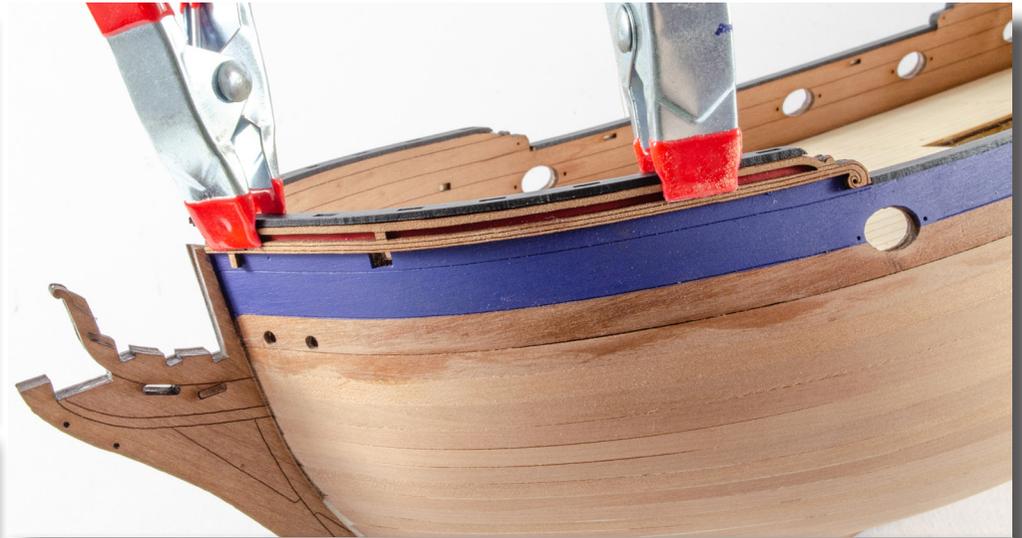
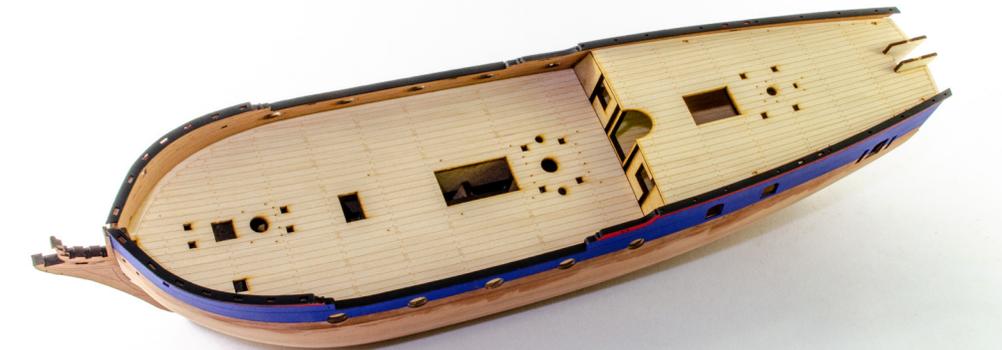




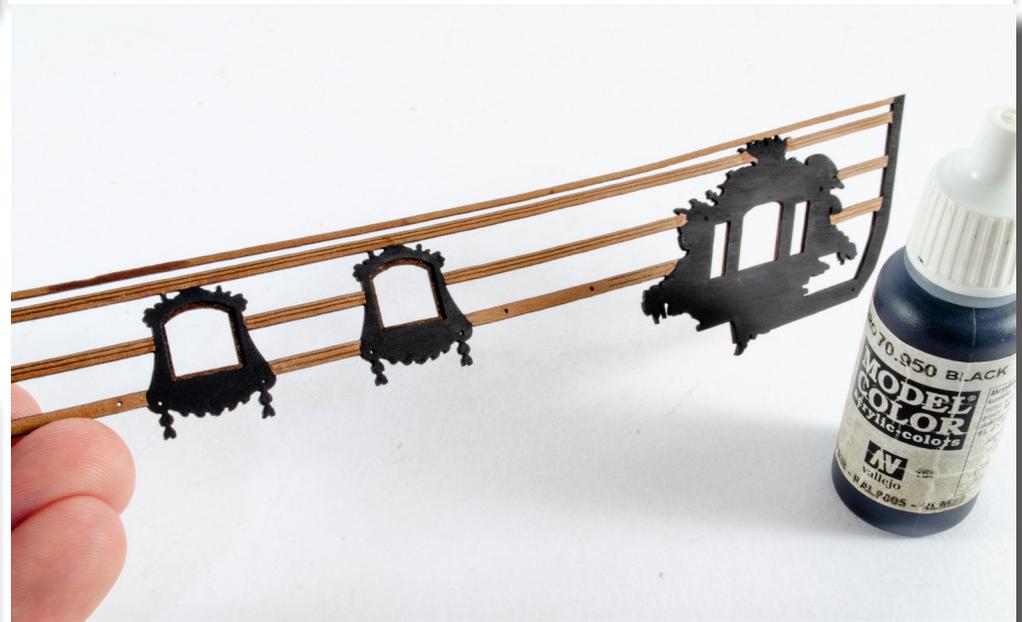
100. Mask the stern area and paint the stern counter areas in blue.



101. Cut the Forecastle Gunwales (159), Mid Bulwark Gunwales (160) and the Aft Gunwales (161) from the 1mm wood sheet. Paint these black and then fit into position as shown on the plan sheets.

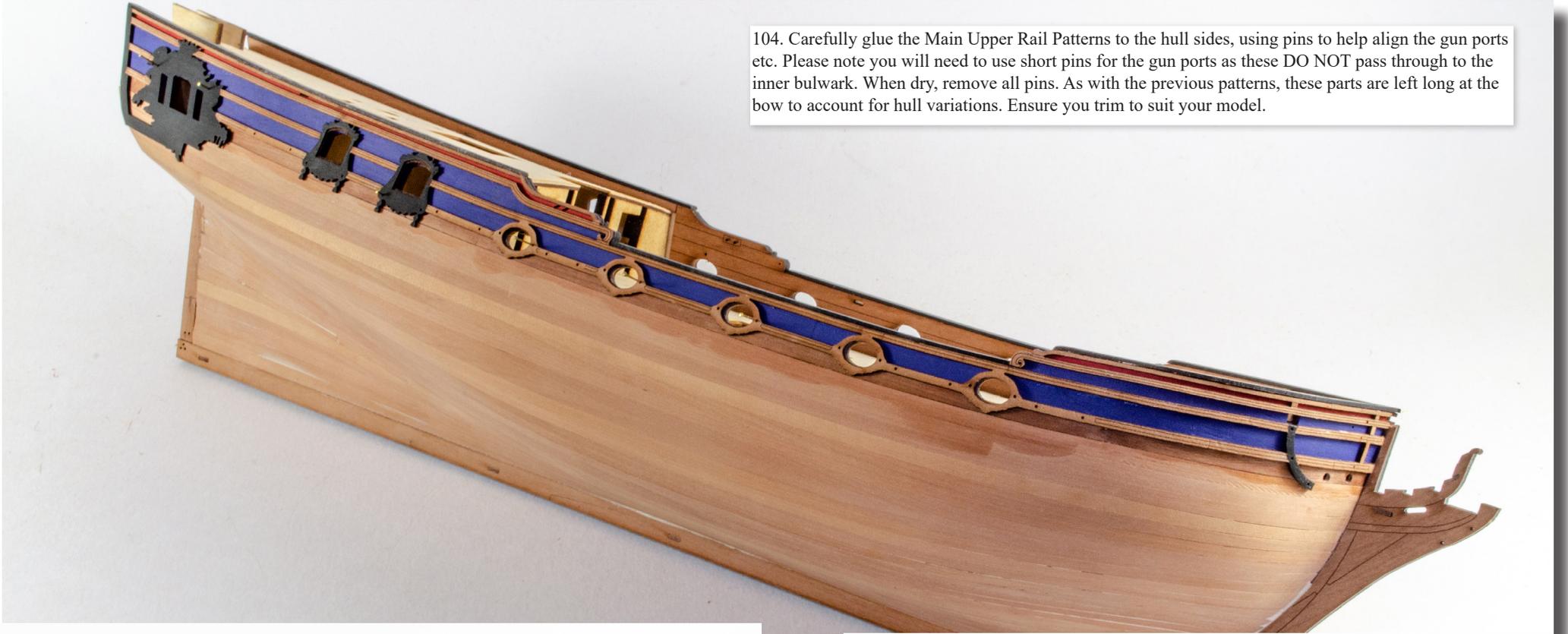


102. Now the gunwales are in position, the Upper Fore Rail Patterns can be glued into position. These fit directly up against the Forecastle Gunwales you just fitted. Please note that these patterns are left slightly long at the front, to cater to hull variations. You may need to trim and bevel slightly at the bow point.



103. Paint the window and rear rail areas of the Main Upper Rail Patterns, including the edges of the windows.

104. Carefully glue the Main Upper Rail Patterns to the hull sides, using pins to help align the gun ports etc. Please note you will need to use short pins for the gun ports as these DO NOT pass through to the inner bulwark. When dry, remove all pins. As with the previous patterns, these parts are left long at the bow to account for hull variations. Ensure you trim to suit your model.

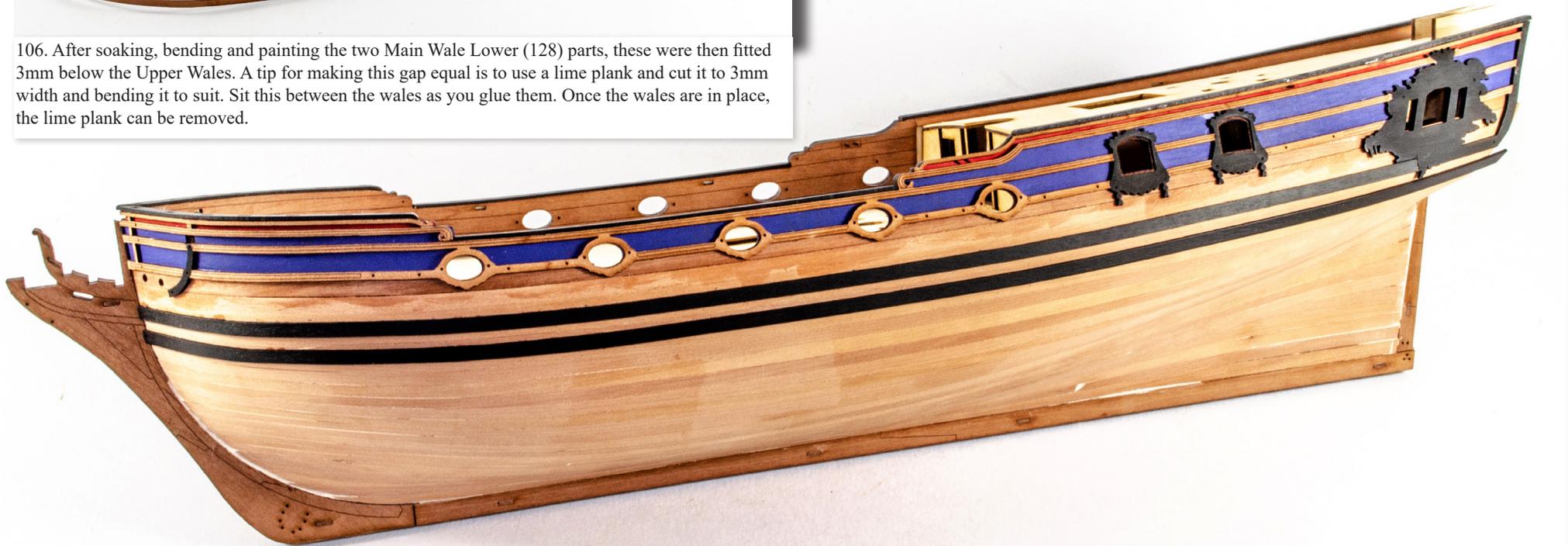




105. We can now fit the wales to the model, starting with the Main Wale Upper (127) on each side. These need to be first soaked in hot water and clamped in position on the hull and left overnight to dry. They can then be painted black. Small pencil marks were added to the hull, approx. 10.5mm down from each Bulwark Pattern, at various intervals along the length of the hull. This coincides with the meeting point on the rear of the Bulkhead Patterns. The Upper Wales are now glued into position. We used CA gel on the prototype as it gives the user time to adjust their work.

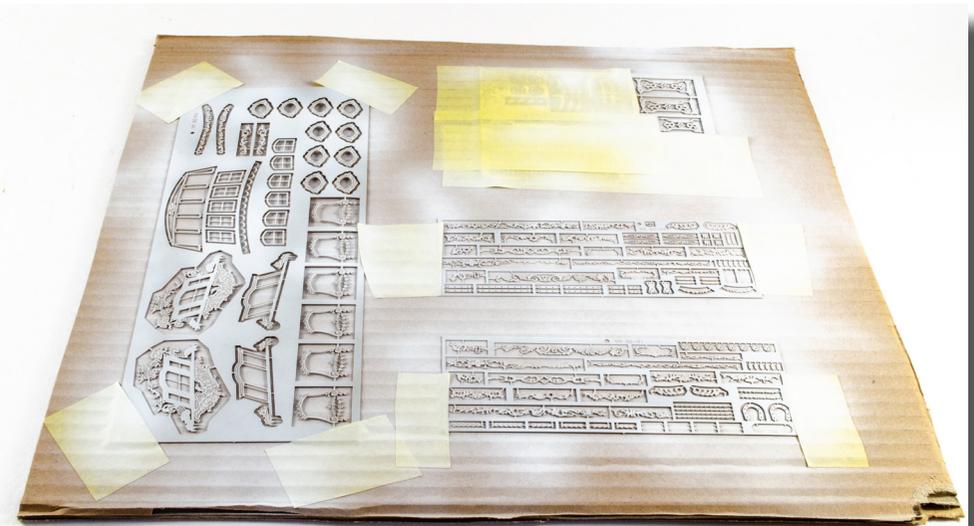


106. After soaking, bending and painting the two Main Wale Lower (128) parts, these were then fitted 3mm below the Upper Wales. A tip for making this gap equal is to use a lime plank and cut it to 3mm width and bending it to suit. Sit this between the wales as you glue them. Once the wales are in place, the lime plank can be removed.





107. A waterline tool is again used to accurately mark the waterline. Use your plan as reference.



109. PE parts that mainly required both gold and white paint were first primed in white and then the parts that were to remain in white were masked off. The PE sheets were then sprayed in gold, prior to sealing with acrylic varnish. At this point, I also sprayed the Wing Transoms (205, 206), the Lower Stern Counter Rail (207) and the Upper Stern Counter Rail (208) in gold paint and then in varnish.



108. The lower hull is now sprayed with white primer and built up in thin coats. If you see any gaps, they can be filled and then sanded back. For the prototype, we used acrylic thinner, but heavily diluted with water and then brushed on.



110. After scraping a little blue paint from the lower stern counter, the Wing Transom parts were fitted and trimmed to length.



111. Remove the Stern Fascia from the 1.5mm wood sheet. Note how the external face has engraved recesses for the windows. Paint the part in red, as shown, and then glue the part to the stern of the hull. You will need to trim the gunwales first, and test fit to make sure the fascia fits all the way around. Of course, this part will be curved when in position.



113. Paint the Stern Decoration as shown. Blue is applied first, followed by the gold. For the gold paint shown, a tip is thoroughly shake and then pour a little into a tub, followed by mixing with a few drops of isopropyl alcohol. This makes the paint very easy to apply without being grainy.



112. Remove the Stern Decoration (F-2) from its casting block using a knife and a razor saw. Clean up any excess resin from the web connection area. This part now needs to be bent to match the curve of the Stern Fascia. This is a very easy task. Dip the part in freshly boiled water for 10-15 seconds, and then remove and immediately lay the part in position. The part will be slightly floppy and mould to the curve of the stern. Leave to cool for a minute, then run under cold water and dry thoroughly.



114. Fit the white-primed Stern Window Frame photo-etch parts (PE-60, 61, 62, 63, 64) as shown, using CA (superglue). CA gel is good as it allows the user time to adjust the parts.



115. Glue the Stern Panelling Decoration (PE-65) in position.



116. Now glue the Stern Decoration as shown, followed by the Lower and Upper Stern Counter Rail parts.

117. The protruding Rails can now be trimmed to length and the Stern Upper Counter Decoration (PE-66) glued into position. You can choose to either trim the ends of the Stern Fascia to match the resin decoration, or paint the slight overhang in gold.



118. Remove the two Horseshoe Plates (PE-1) and two Fish Plates (PE-4) from the two 0.2mm photo-etch sheets. Paint these parts in a copper colour.



119. Apply a little superglue to the back of one of the Horseshoe Plates and push brass pins through the plate and through the keel so they protrude on the opposite side. Apply a little more superglue to the protruding pins and glue the other Horseshoe Plate in position over the pins. Cut the pins short. Repeat this with the Fish Plate at the stern.





120. Using black and blue paint, colour the prow as shown here.



122. Cut the Bow 'V' Frames (33, 34, 35) from the 2mm ply sheet, and file them to shape as shown here. The filing will angle the slots on one side, and also bevel the outer corners. Glue these into place on the prow, as shown. Paint these parts black apart from the surfaces where the rails will fit.



121. Remove the Lower Cheek Rails (200, 202) and the Upper Cheek Rails (201, 203) from the 1mm wood sheet. Glue these into position as shown here, with the engravings facing outwards.

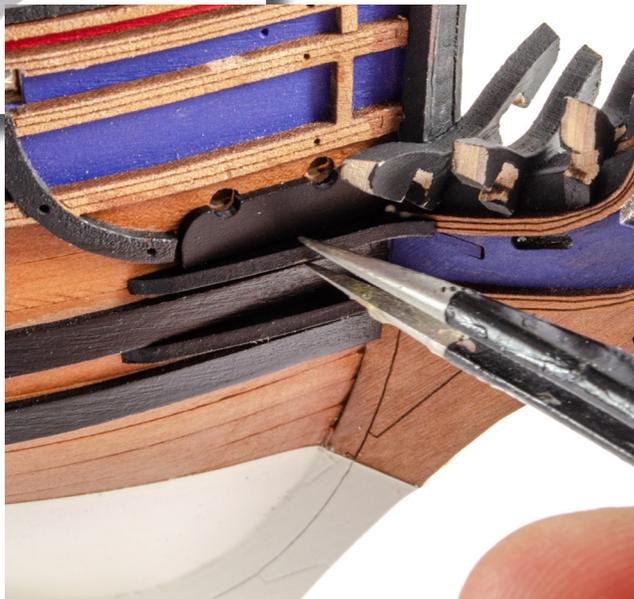




123. Cut the four Bow Brackets (95) from the 1.5mm wood sheet and paint them black.



124. Glue two of the bow brackets into position as shown here. Also remove the two Hawse Bolsters from the 1mm wood sheet, paint black, and fit as shown. You may need to trim the inboard edge of these, so the notches are aligned with the hull's hawse holes. Finally, glue the remaining two Bow Brackets into their upper positions, underneath the Hawse Bolsters.



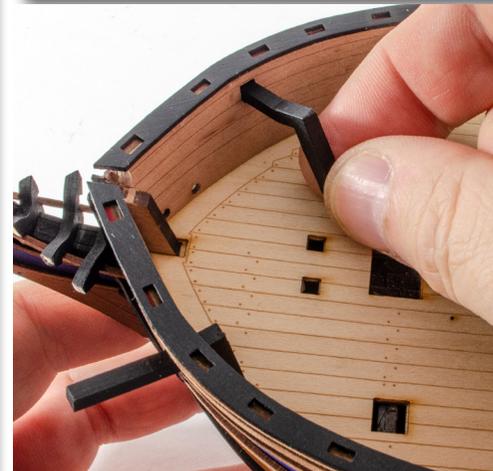
125. Cut the Bow Lower Rails (198, 199) from the 1mm wood sheet and glue into position as shown here. These are pre-shaped but if you find they need adjustment for your own build, soak them for 30 minutes in hot water and adjust to your model.



126. Remove the two Catheads (56) from the 3mm wood sheet.



127. Using a flat/square jeweller's file, open up the cathead holes so the cathead will pass through it. You will also need to slightly bevel the underside of the cathead, so it sits flat on the deck. Paint the catheads black and glue them into position as shown here and on plan.





128. Remove two Cathead Support Brackets (69) from the 2mm wood sheet and paint them black. Glue them into position as shown. These have been left slightly long so you can cut them to the specific size for your model. You may need to bevel one side for them to sit snugly.



129. Take the two Figurehead castings (F-1) and remove any casting blocks from them. Using CA, glue the parts together as shown. The figurehead can now be painted in blue and gold and then fitted to the prow.



Using the plans as reference, add the photo etched decoration to the box area and catheads



130. Again referring to your plans, fit all the photo-etch embellishments down the side of the hull. We advise you either use spots of CA gel for this maybe even acrylic varnish or Future/Klear for the flat pieces. The latter will allow you time to position before the liquid sets.





131. Remove the Side Window Frames (PE-67, PE-68) from the 0.4mm photo-etch sheet and glue them into the recesses on the side of the hull, as shown. Now cut the Side Window Borders (PE-69, PE-70) from the 0.4mm photo-etch sheet and place in position. Use brass pins to align these and leave the pins in place when finished.





132. Remove the Quarter Gallery Decorations (PE-72, PE-74) from the 0.4mm photo-etch sheet and carefully paint the area shown. We suggest red, to match the upper bulwark colour. Paint the window frames in white. Carefully bend the lower portion of the parts to match the hull curvature, and glue in place. Temporarily use pins to position the parts. Also remove the Quarter Galley Decoration – Top (PE-73, PE-75) from the PE sheet and glue/pin into position over the previous parts. Leave the pins in position.



133. Remove the ten Oval Port Surrounds (PE-71) from the 0.4mm photo-etch sheet and glue them to the external gun port. Use long nails to help align them, and then cut the pins short and glue into position. Also cut the Hull Side Scuppers (PE-55) from the 0.2mm photo-etch sheet and glue them into position as shown on the plan. You can use varnish to 'glue' them into position if you aren't confident to use CA.

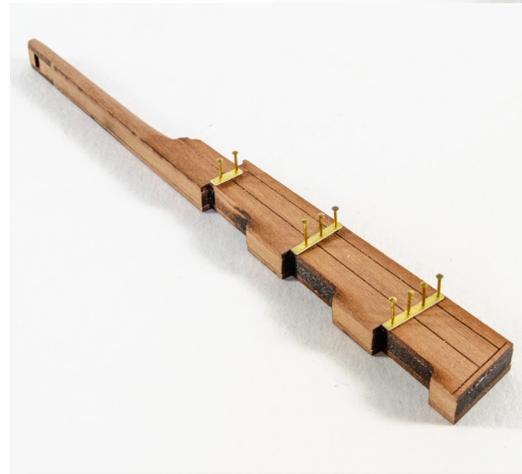


Oval decorative ports in place.



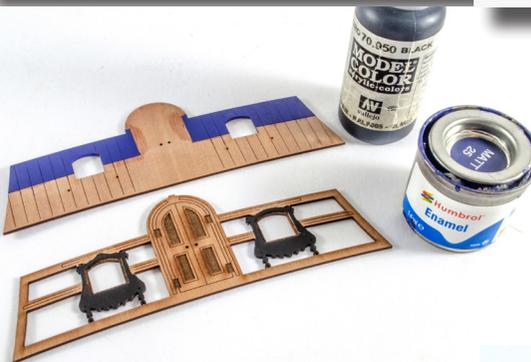
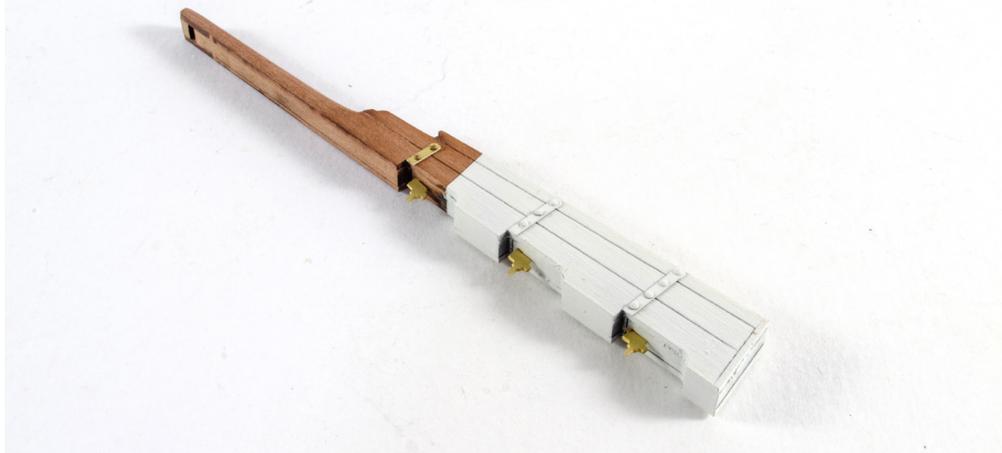
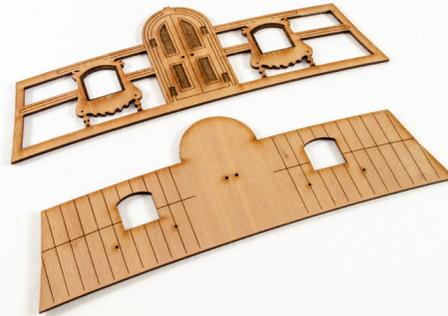
134. We can now build the rudder. Remove the Rudder (53) from the 3mm wood sheet, also the Rudder Outer Facings (139, 140) from the 1mm wood sheet.

135. Glue the outer facings to the rudder with the engravings facing outwards and use pins to help align. Clamp until dry. Add the Rudder Pintle Straps (PE-5, PE-6, PE-7) to the rudder using CA. Glue the pins in place and cut them short.

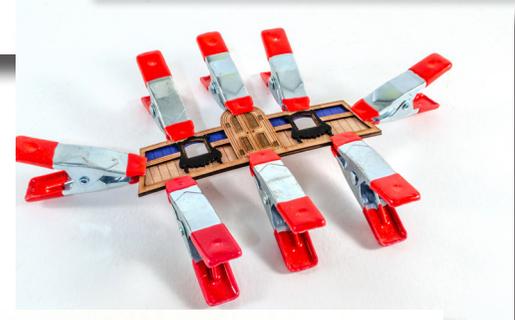




136. Drill 0.8mm holes on the inner rudder face and glue the three Rudder Pintles (PE-100) from the 0.6mm photo-etch sheet. Paint and fit the rudder as shown here and on the plans, and add the Rudder Post Brace Straps (PE-8, PE-9, PE-10) to the hull.

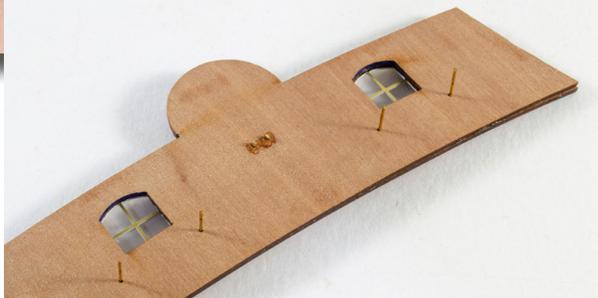


137. Cut the Mid Deck Bulkhead (189) and Mid Deck Bulkhead Facing (190) from the 1mm wood sheet. Over a thin layer of varnish, apply masking tape and then paint the upper portion of the Mid Deck Bulkhead in blue. Paint the window surroundings on 190 in black. Carefully glue both parts together and clamp until properly set. Remove the Bulkhead Window Framwres (PE-67, PE-68) from the 0.4mm photo-etch sheet and glue into position.





138. Take two Eyebolts (PE-89) and two Eyebolt Rings (PE-90) from the 0.4mm photo-etch sheet and assemble as shown. Glue these into position for the door handles. Also cut four Door Hinges (PE-15) and glue into position, as well as the Royal Emblem (PE-108) above the doors. Cut the two Bulkhead Window Borders (PE-69, PE-70) from the 0.4mm photo-etch sheet and fit them using pins to align them. Cut the pins short at back of bulkhead.



139. Glue the finished bulkhead into position, taking care not to damage the assembly.

140a. The hull should now look like this



140b. The hull should now look like this



142. Cut the two sets of Channels (108, 109, 110, 111, 112) from the 1.5mm wood sheet.



143. Cut lengths of the 0.5mm Brass Rod (F-39) and insert in the holes in the side of the pear pattern. If you wish, you can drill these holes a little deeper into the bulwarks but be careful not to break out of the other side. Glue the wire and cut so a few millimetres are sticking out.

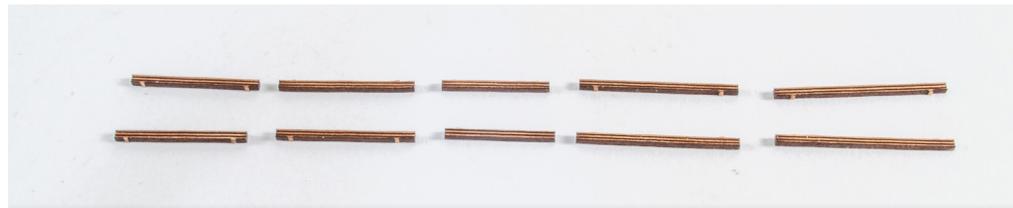


141. Cut the Side Steps – Upper/Lower (154, 155) from the 1mm wood sheet and assemble as shown. Glue into position as shown. These should be vertical to the bottom of keel. Use a straight edge to ensure they are in alignment.





144. Using the plans, place the correct channel at each position and mark a point to drill the edge of the channel.



146. Cut the two sets of Channel Edging Strips (209, 210, 211, 212) from the 1mm wood sheet, and fit to the edges of the channels you just installed. You will need to slightly curve the fore channel parts in hot water. Glue these to the corresponding channels.



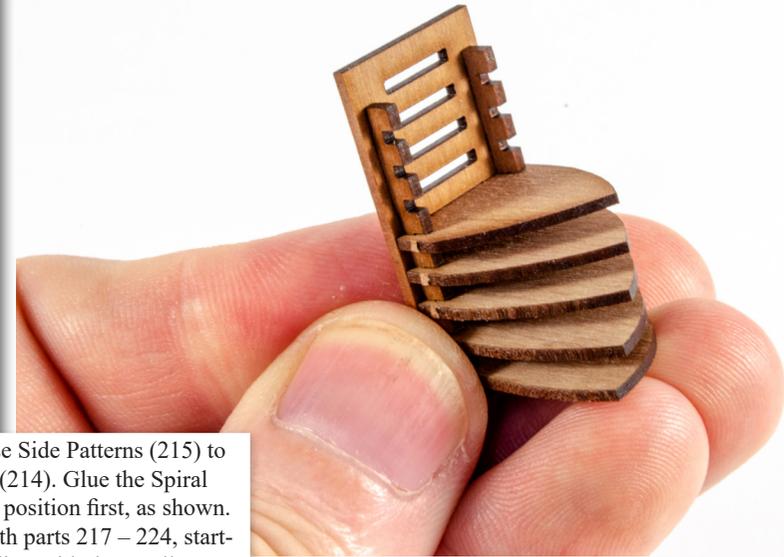
145. Glue the channels into position with wood glue.



147. Glue the Domed Canopy Base (47) from the 0.8mm veneer, into position as shown.



148. Now we need to build the spiral staircase. From the 1mm wood sheet, remove the Spiral Staircase parts (214 – 224).



149. Glue the two Spiral Staircase Side Patterns (215) to the Spiral Staircase Rear pattern (214). Glue the Spiral Staircase Step – Bottom (216) in position first, as shown. Now work your way upwards with parts 217 – 224, starting with the next largest, and ending with the smallest.



150. Insert the completed staircase through the opening in the aft deck, slotting the tab on the bottom of the staircase into the lower deck. Add a little glue to the rear of the assembly so it fastens to the aft deck.



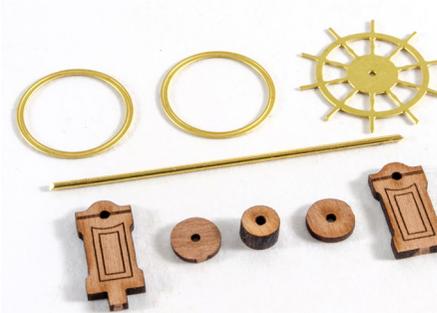
151. Cut the Mid Deck Bulkhead Door Canopy (F-4) from its casting block and paint in a metallic colour. We suggest copper instead of gold, as it contrasts the gold. Glue into position with CA.



152. Remove the Tiller Housing Front Frame (143) from the 1mm wood sheet and glue into position as shown. Now glue the side panels into position (144, 145). You may need to check the fit at the rear and adjust accordingly.

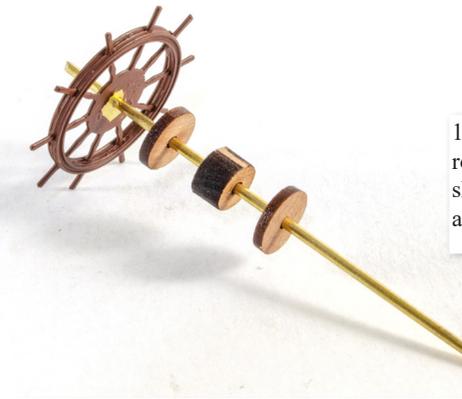


153. Using two short lengths of the 0.25mm black thread (F-25) attach two 2mm Single Blocks (F-13) to the Rudder Tiller Arm (100). You will need to shape the Tiller Arm first by rounding the edges. Glue the tiller arm into position as shown and use a length of scrap plank to temporarily lift the arm so it doesn't sag to the deck whilst drying.

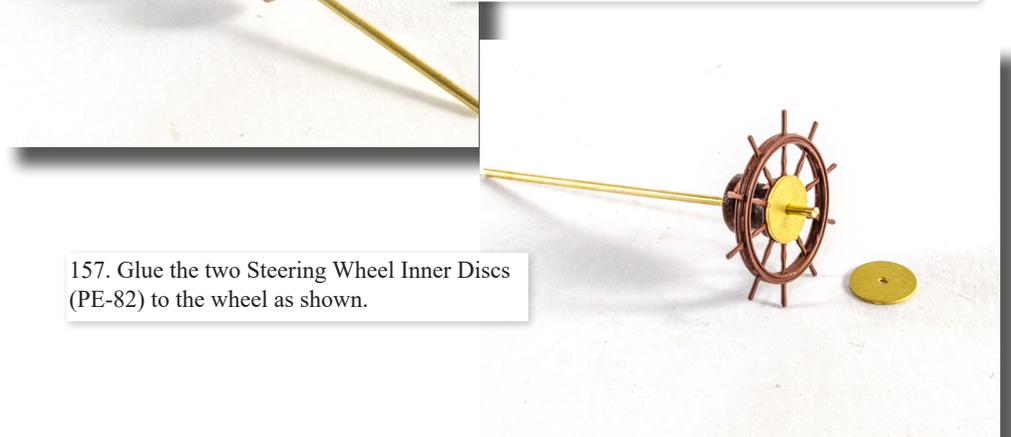


154. From the 1.5mm wood sheet, cut the Ship's Wheel Standard parts (101, 102), the two Drum End Pieces (142) from the 1mm wood sheet and Steering Wheel Drum (59) from the 3mm wood sheet. From the 0.4mm photo-etch sheet, remove the Steering Wheel Main Body (PE-81) and the two Outer Rims (PE-83). You will also need a length of 1mm brass wire (F-38).

155. Using CA gel, glue the two outer rims to the ship's steering wheel.



156. Paint the ships wheel in brown, and slot the brass rod through it, followed by the drum and end pieces as shown here. The wooden parts are glued to each other and to the wheel in turn.



157. Glue the two Steering Wheel Inner Discs (PE-82) to the wheel as shown.



158. Glue the for and aft Ship's Wheel Standards onto the wheel assembly. You can temporarily sit this on the deck to ensure the aft part is level with the deck. When dry, cut the brass rod flush with the side of the assembly.



161. Tie six 2mm Single Blocks (F-13) to Standard Eyebolts (PE-90) using 0.25mm black thread (F-25). Fit all blocks into position on the aft deck, as shown on the plan. It's a good idea to spray all the eyebolts in black paint prior to their use (as with other small fittings) and scrape away any paint before gluing in place. Slide the rigging thread on each side of wheel, through the rigging blocks adjacent to wheel. Now glue the wheel unit into position and then rig the blocks as shown here and on plan.



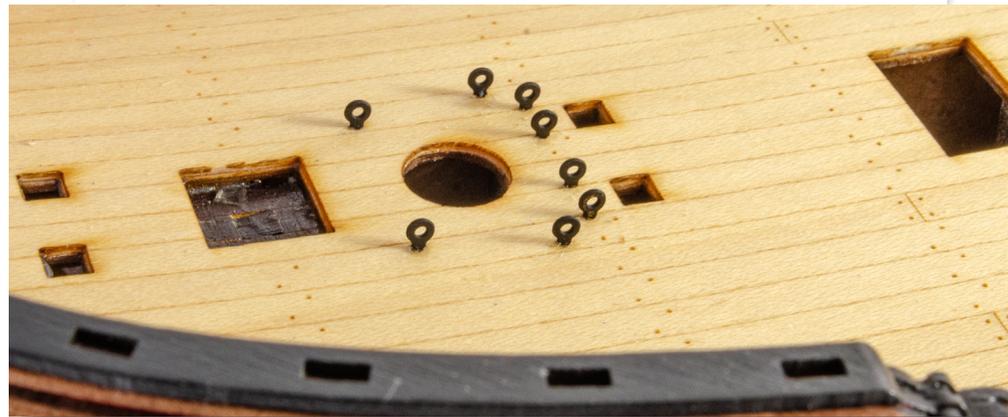
159. Cut around 60cm of 0.25mm natural thread and wrap this around the wheel drum and secure with a little dilute PVA. You should have an equal length of thread loose on either side.

160. Fit the four 1.5mm Cleats (105) to the aft deck (2 per side).





162. Fit Standard Eyebolts (PE-90) to the holes surrounding the mast holes on both decks.



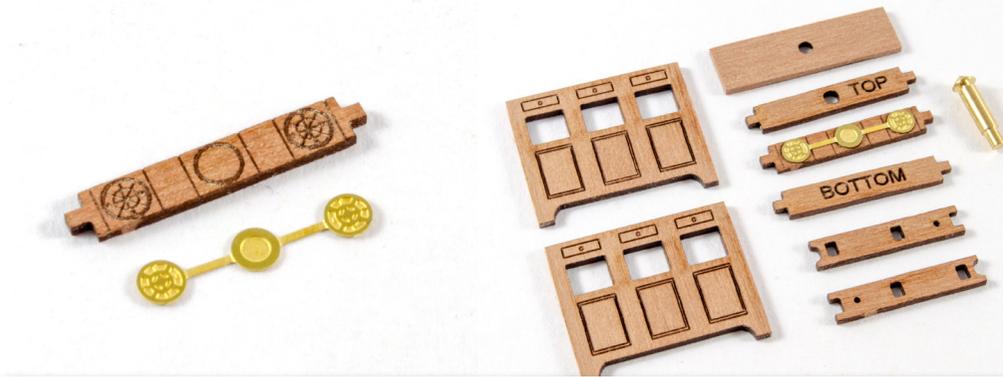
164. Remove the four Mizzen Mast Bitts from the 3mm wood sheet, and the two Mizzen Bitts Belaying Rails (152) from the 1mm wood sheet. Assemble as shown. Note: These look better if you use a small round file to shape the tops of the bitts to make them more 3D. Also remove any char from the visible areas. When complete, add the Belaying Pins (PE-102) as seen and varnish the assembly.



163. Remove the Quarterdeck Companion Rails (PE-97, PE-98, PE-99) from the 0.6mm photo etch sheet, and the Upper Deck Spiral Staircase Coaming (80) from the 1.5mm wood sheet. Using CA, glue the rails together as shown and paint them gold. Also glue the coaming onto the deck as shown. With the parts dry, you can then place the rail onto the coaming and glue into position. At this point, you can also add the Quarterdeck Gunwale Timberheads (99) and paint them black.



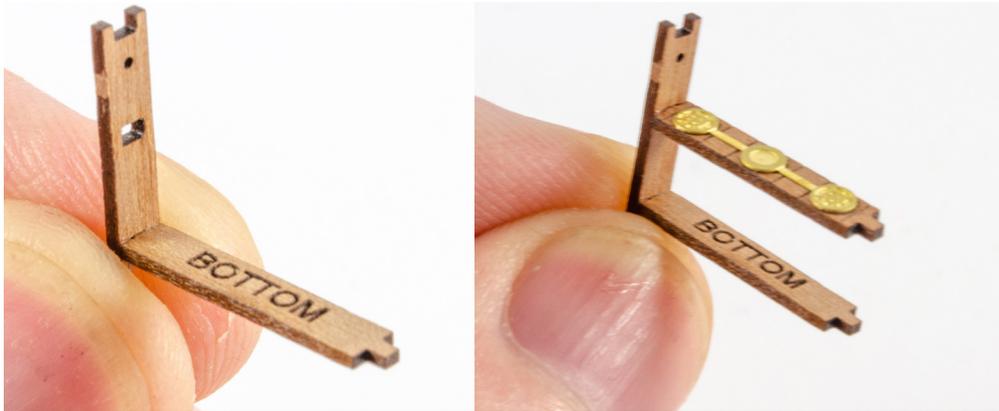
165. Once dry, fit the Bitts to the aft deck. Also fit the Mizzen Mast Base (98).



166. Remove the Binnacle Cross Piece – Centre (124) from the 1mm wood sheet and also the Binnacle Compass Detail (PE-2) from the 0.2mm photo-etch sheet. Assemble them as shown. Now remove the other Binnacle parts from the same 1mm sheet (121, 122, 123, 125, 126).



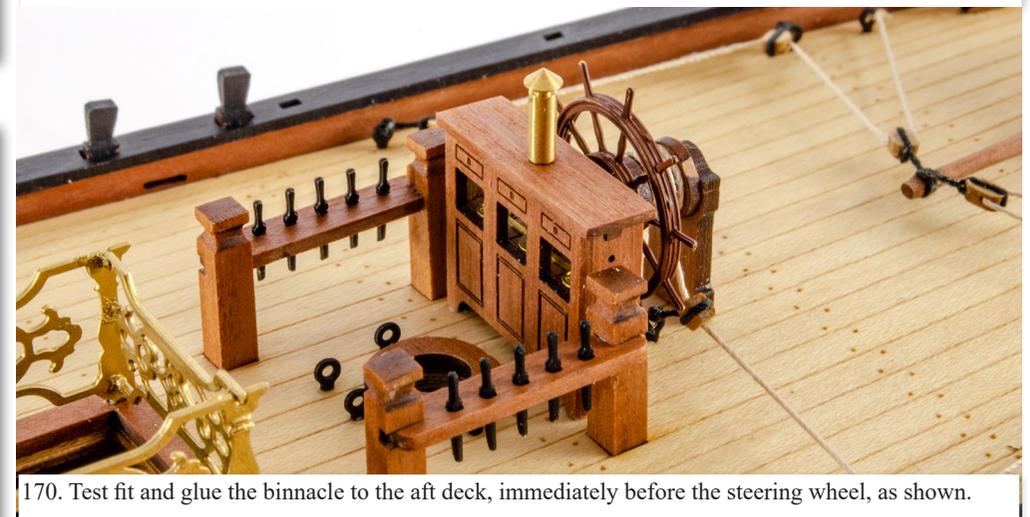
168. Glue one outer facing to the frame and clamp until set. Repeat with the other outer face.



167. Assemble the inner frames in the sequence shown.



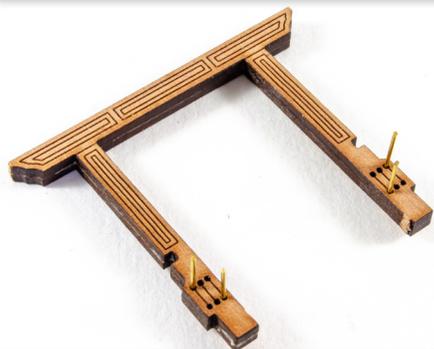
169. Glue the Binnacle Chimney (F-9) to the Binnacle Roof (126). Fit the roof to the binnacle. Varnish to complete.



170. Test fit and glue the binnacle to the aft deck, immediately before the steering wheel, as shown.



171. Cut the Gallews and Main Mast Bits (103, 104) from the 4.5mm wood sheet. Glue these back to back as shown, using brass pins to help with alignment. When dry, remove the pins and laser char from the edges.



172. Remove the Main Mast Gallews Belaying Rail (150) from the 1mm wood sheet and glue into position as shown. You can also fit photo-etch belaying pins as with the previous bits and varnish the assembly.



173. Cut the Main Mast Bits Aft Belaying Rail (150) from the 1mm wood sheet, and also the two Main Mast Bits - Aft (57) from the 3mm wood sheet. Remove the char and assemble as shown. You can now fit belaying pins and varnish the assembly.



174. Fit Eyebolts (PE-90) to the holes on either side of each oval gun port. Now glue the two Bitt-assemblies into position as shown here. Also fit the Fore and Main Mast bases (97) from the 1.5mm wood sheet. At this point, assemble the eyelets from parts PE-89 and PE-90 and glue into position as shown here and on the plan.

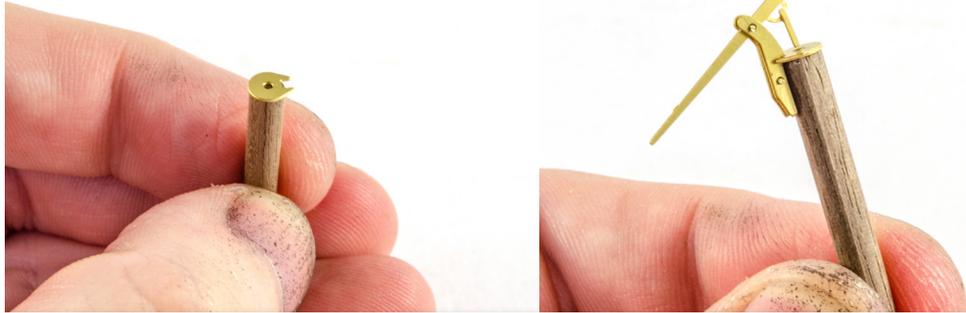


175. Our yacht was fitted with two bilge pumps. Cut two lengths of 4mm dowel, approx. 30mm long. Also remove the pump parts from the 0.4mm photo-etch sheet. These are PE-85, PE-86 and PE-87.



176. Using pins to align, glue a Hand Pump Side Bracket (PE-86) to the Hand Pump Main Body (PE-85). Turn the part over and glue another PE-86 to the opposite side of the pump main body. Glue the pins in position and cut them short as shown.

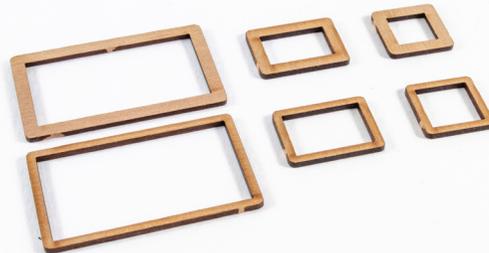




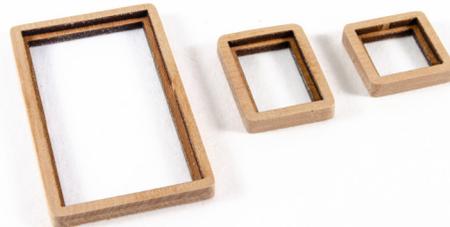
177. Glue the Hand Pump Top Cap onto one end of the dowel. Make sure the PE hole aligns with centre of dowel. Glue the pump assembly into position and then paint black. You can use some metal pigment to give an appearance of iron.



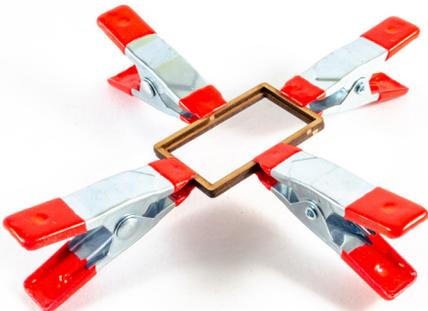
178. Fit the pumps to the main deck, observing the angle they are set at.



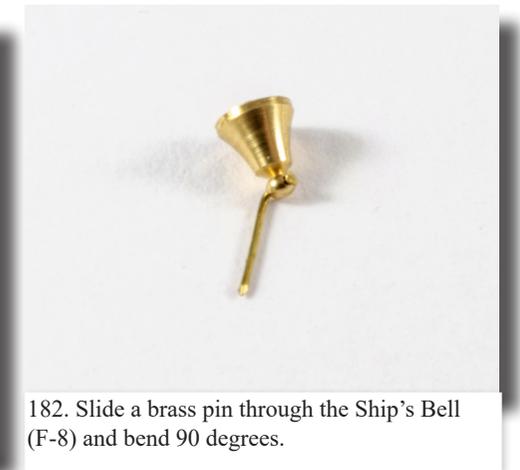
179. Remove coaming parts 81, 82, 84, 86, 87, and 88 from the 1.5mm wood sheet. These are obviously pairs, and after removing the outside edge char, they should be glued together as shown and clamped until set. You can now varnish these.



180. Glue the hatch coamings to the main deck as seen here, including the Main and Fore Hatch Gratings (83 and 89, respectively). You can also fit the Hawse Hatch Grating (86) but DON'T glue in place yet.



181. Remove the Ship's Bell Standard (60) and Ship's Bell Head Stock (61) from the 3mm wood sheet. Also remove the Belfry Fascia (204) parts from the 1mm wood sheet.



182. Slide a brass pin through the Ship's Bell (F-8) and bend 90 degrees.



183. Using a 0.5mm drill, make a hole in the bottom of the Head Stock.



184. Cut the brass pin shorter and glue the bell into the head stock. Now glue the head stock into the bell standard.



187. Cut the Bowsprit Bitts (54) and Bowsprit Bitts Cross Timber (55) from the 3mm wood sheet and assemble as shown. Also varnish.



185. Fit the Belfry Fascia parts (204) as seen here.



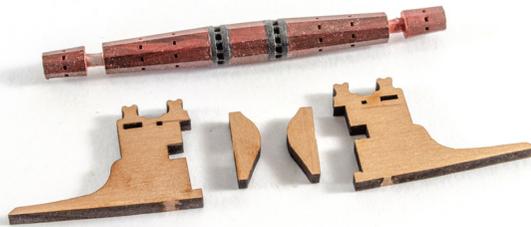
186. Remove two Small Cleats (PE-101) and the two Windlass Pawls (PE-80) from the 0.4mm photo-etch sheet. Paint the cleats and glue into position, but don't glue the pawls just yet.



188. Fit the Bell Standard and Bowsprit Bitts as seen in this photo. To be assured the Bell Standard is at the correct height in relation to the winch, you can simply dry fit this for the moment.



189. Remove the Octagonal Winch Drum (F-3) from its casting block and paint the part to represent wood. The central bands should be painted black.



190. Remove the Windlass Bitts (62) and Windlass Bitts Front Pattern (63) from the 3mm wood sheet.



191. Sit the winch drum in the cut-out in the Windlass bitts and glue the Front Pattern into place. Don't glue the actual winch drum. Fit the bitts to both sides of winch drum.



192. Remove two Small Cleats (PE-101) and glue into position as seen here.



193. Remove the two Windlass Bitts Belaying Rails (149) from the 1mm wood sheet and push into position as seen here, but don't glue. On the prototype, we found these best when flush with the outside edge of the bitts.



194. Sit the winch in position with the belaying rails slotted into the Bell Standard. At this point, you can glue the standard into position and leave to set before finally gluing the winch bitts to the deck. Once everything is aligned and set, you can finally add the pawls so that they sit on the winch ratchet.

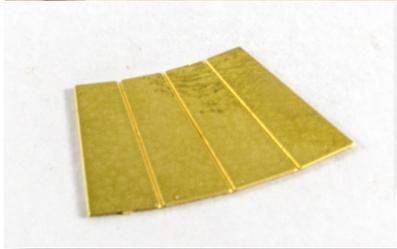


195. Remove the four Staghorn Cleat Beams (166) and four Staghorn Cleats (167) from the 1mm wood sheet and assemble as shown.

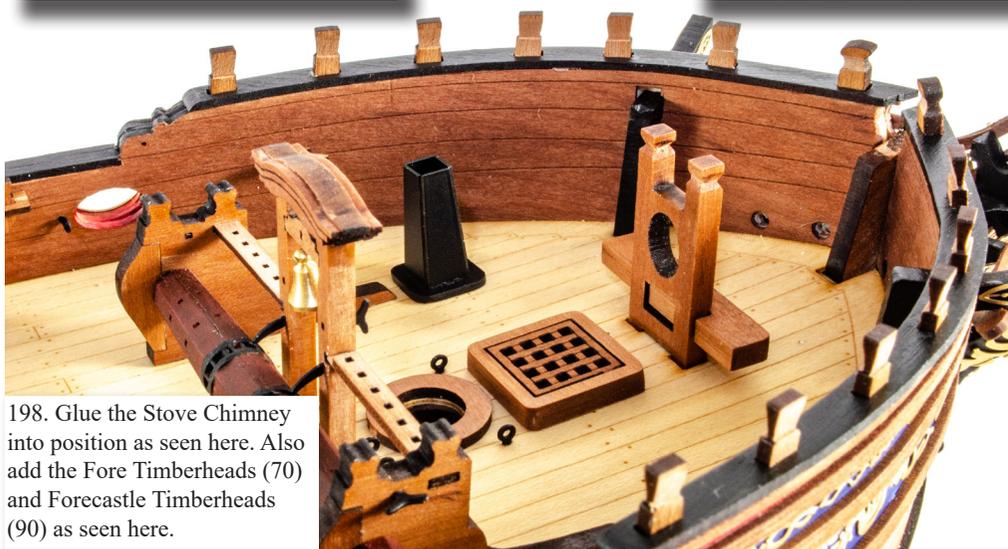
196. Fit the staghorn cleats into position as seen here.



197. Cut the Stove Chimney (PE-84) from the 0.4mm photo-etch sheet and bend into position. Glue this to the Chimney Coaming (148), and paint black.



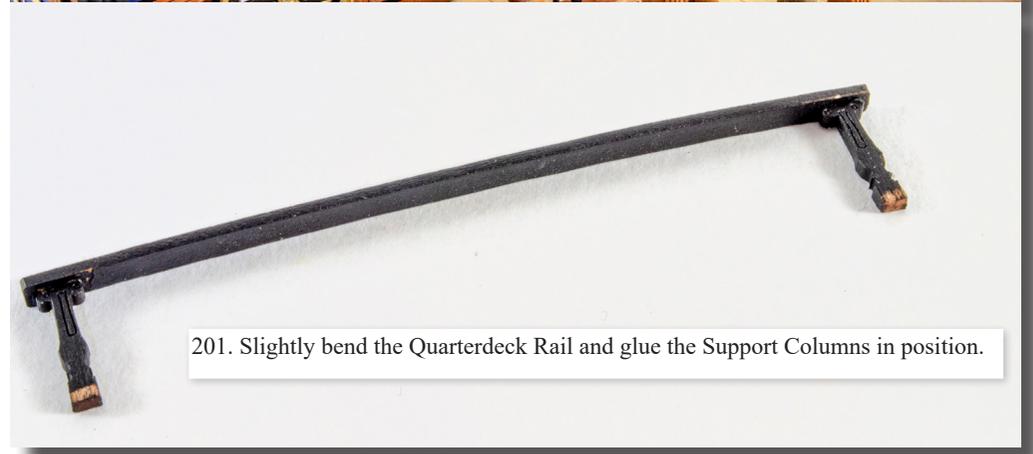
198. Glue the Stove Chimney into position as seen here. Also add the Fore Timberheads (70) and Forecastle Timberheads (90) as seen here.



199. Cut Quarterdeck Gunwale and Quarterdeck Rail (191, 192) from the 1mm wood sheet, and one set of Aft Deck Rail Support Columns (96L, 96R) from the 1.5mm wood sheet. Paint all parts black.



200. Glue the Quarterdeck Gunwale parts in position as shown. You will need to bevel the outboard ends of these where they touch the bulwarks.



201. Slightly bend the Quarterdeck Rail and glue the Support Columns in position.



202. We now need to make two sets of steps. These are specific for the left and right side of the mid cabin bulwark, and care needs to be taken not to mix them up. Per set of steps, cut eight Ladder Steps (164) from the 1mm wood sheet as well as one Outer Ladder Side (163), one Inner ladder Side (162) and one of the Ladder Side Panels (162a/b). These latter parts are for the Inner Right and Inner Left steps.



203. Take one Inner and one Outer Ladder Side and glue the steps between them. NOTE: the top of the steps has a shallow bevel which sits against the midships cabin bulwark. The flatter end obviously fits against the deck. When built, you will notice that the bottoms on these steps have one side longer than the other, to cater to the deck camber. The shorter, inboard side on each will now be fitted with the engraved side panels (162a, 162b).

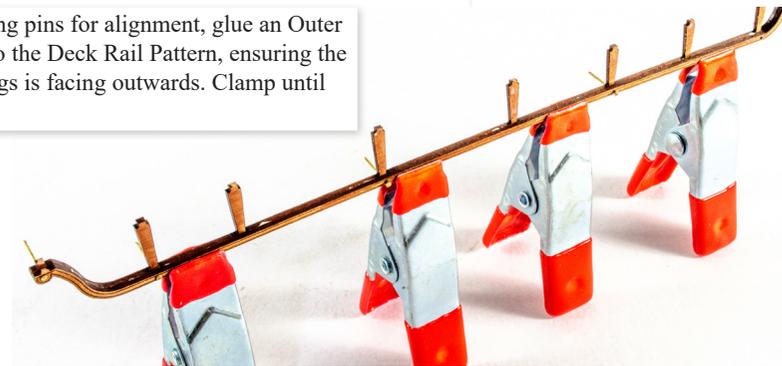


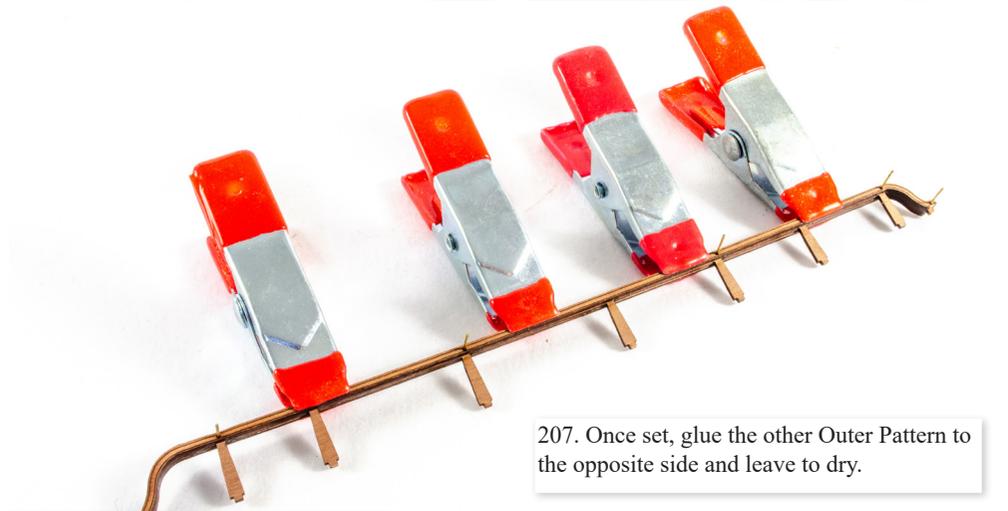
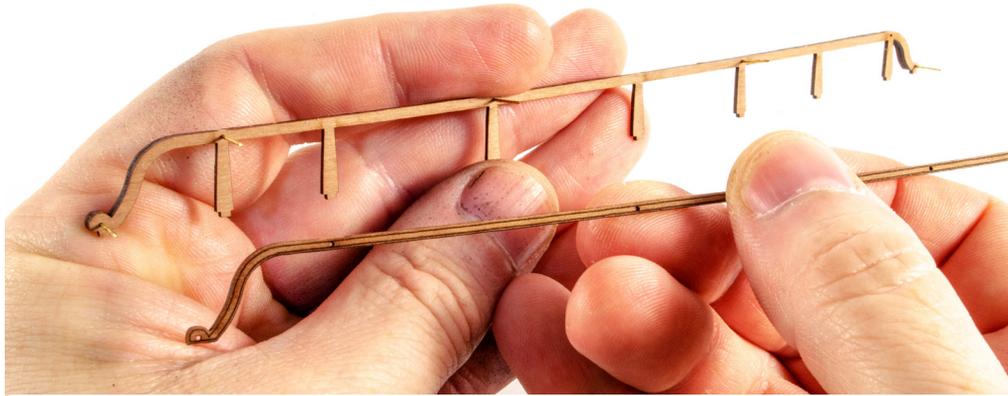
204. Fit the steps in position as seen here, and also the Quarterdeck Rail, making sure the engravings on the support columns face towards the bow.



205. Each of the Aft Deck Rails is built from three separate parts. Cut the two Aft Deck Rail Patterns (156) from the 1mm wood sheet, and the four engraved Aft Deck Rail Outer Patterns Inner – Outer (157, 158) from the 1mm wood sheet.

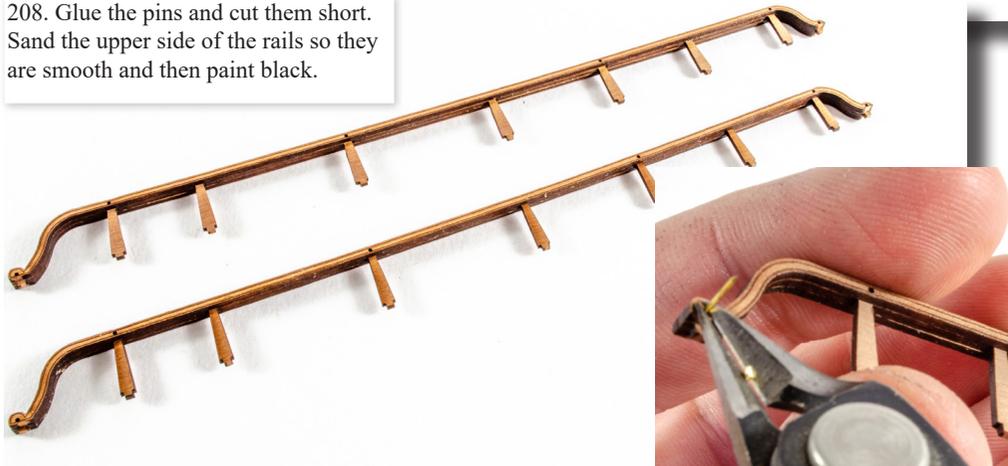
206. Using pins for alignment, glue an Outer Pattern to the Deck Rail Pattern, ensuring the engravings is facing outwards. Clamp until set.





207. Once set, glue the other Outer Pattern to the opposite side and leave to dry.

208. Glue the pins and cut them short. Sand the upper side of the rails so they are smooth and then paint black.



209. Fit the rails to the aft deck gunwales as seen here, making sure that they are also vertical along their length.



210. We now need to build six cannon units. Each of the carriages consists of Carriage Side (113L, 113R), two Front Wheels (117) two Rear Wheels (118), one Front Axle (114), one Rear Axle (115), and a Carriage Bed (116). All parts are on the 1.5mm wood sheet.



211. Using very fine sandpaper, slightly round the wheel axles.



212. Assemble the gun carriages as seen here and now remove three Eyelets (PE-90) and one Cross Bolt (PE-77) per gun cart.



213. Paint and glue the PE parts as shown, and now add the wheels and carriage bed. The latter part butts up against the cross bolt.



214. Remove the 4-Pounder Cannon Barrels from their casting blocks and glue into position on the carriages, with the emblem facing upwards. Now glue the Carriage Square Caps over the Cannon Barrel trunnions and paint them black.



215. Glue the cannon into position on the main deck. Also add the Black Cannon Balls (F-6) to each of the four Shot Garlands (165). We suggest you sit the garlands on some clear film and then add the cannon balls, followed by painting the assembly with varnish which will hold the balls in position. You can then peel the film away and glue the finished items to the deck as shown.



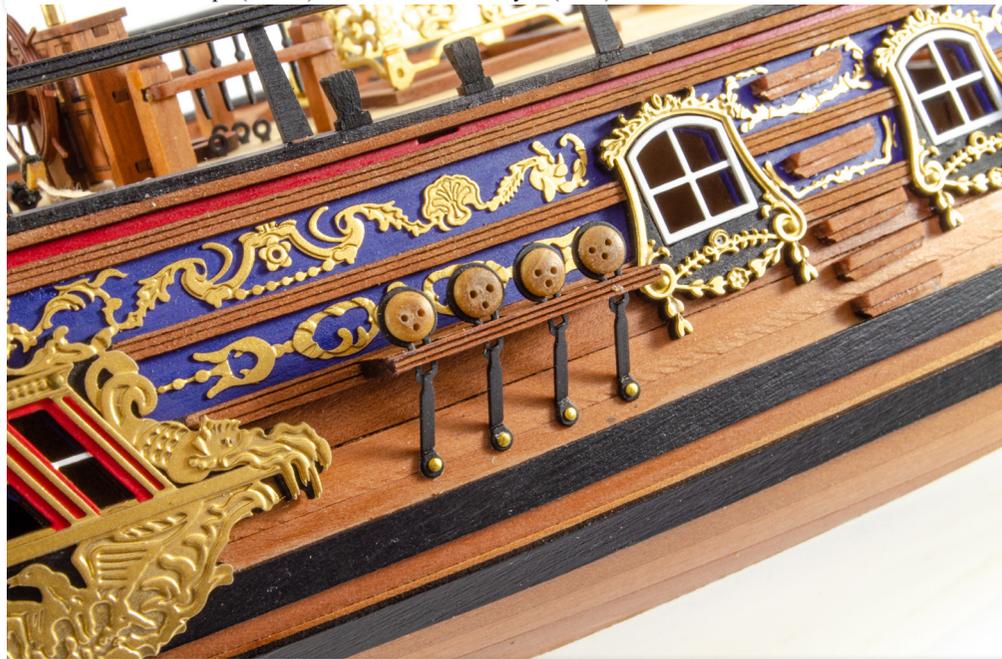
216. At this stage, your hull should look like this.







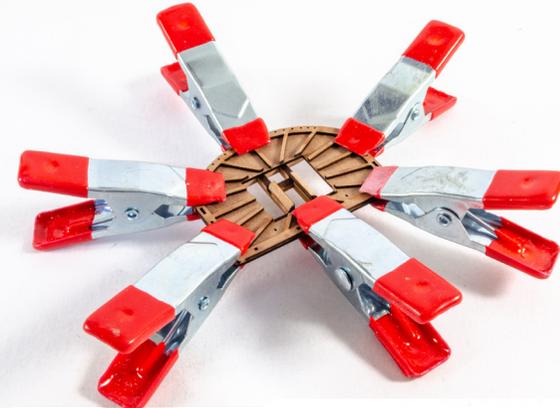
217. We now need to insert the deadeyes into the chainplates. The chainplates are best being painted before assembly, and then you can simply touch them up afterwards to hide any chips. Remove the 5mm Deadeye Stropps (PE-91) from the 0.4mm photo-etch sheet and using a small pair of pliers, pull the eyelet open slightly as shown here. Now take a 5mm Deadeye (F-11) and insert it into the open eyelet. Using your pliers, carefully squeeze the eyelet back into shape, locking the deadeye in place. Also do this for the 3mm Stropps (PE-92) and the 3mm Deadeyes (F-12)



218. Slot the completed strop/chainplate assemblies through the holes in channels, making sure you put the 3mm and 5mm parts into the correct positions. Bend the strop so the lower end sits against the hull. Using the plan, check the orientation/angle to fasten these to the hull and mark each with a pencil. Drill a small hole to accept a brass pin and then pin/glue these into position. You can now paint the pin head in black.

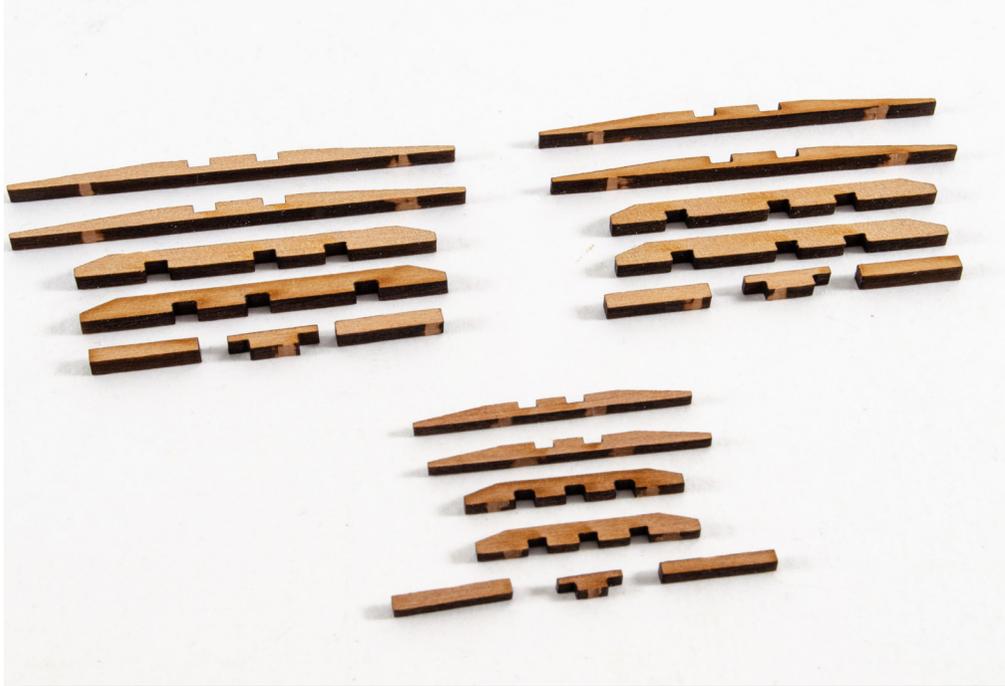


219. From the 1mm wood sheet, remove the Fore, Main, and Mizzen Top Gunwale and Ribs (179, 181, 183) and the Fore, Main, and Mizzen Top Platforms (178, 180, 182).

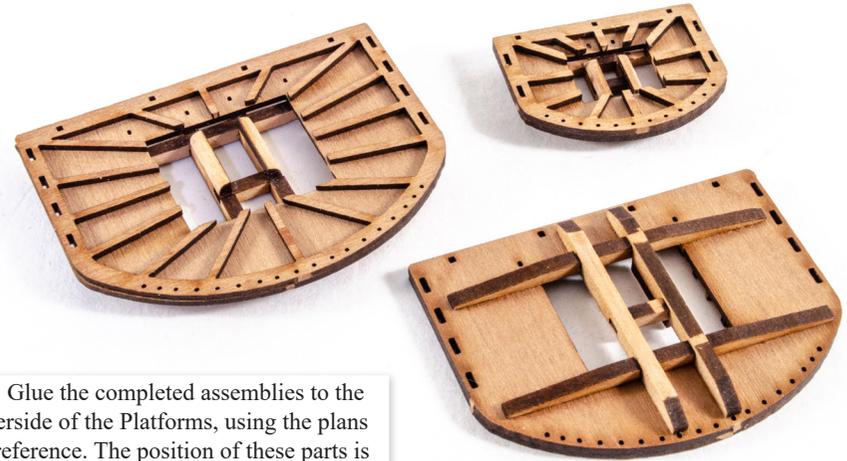


220. Glue the corresponding Fore, Main, and Mizzen parts together as shown, making sure all the holes and slots align. It's a good idea to clamp the parts until set in case they start to curve with the applied glue.





221. From the 2mm wood sheet, remove the Trestletree, Crosstree, Bolsters and Spacers (71, 72, 73, 74, 75, 76) for the Fore and Main Masts. From the 1.5mm wood sheet, remove the same parts for the Mizzen Mast (91, 92, 93, 94).



224. Glue the completed assemblies to the underside of the Platforms, using the plans for reference. The position of these parts is important.

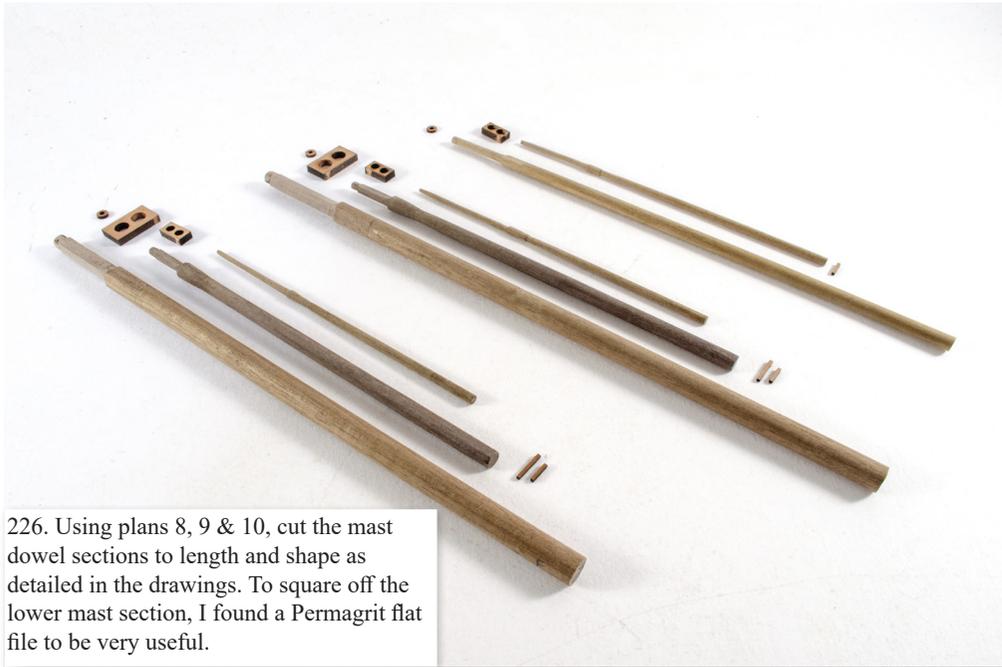


222. Sand the Bolsters as seen here, curving two faces.

223. Assemble the crosstrees and trestletrees as seen here and on the plans and glue the bolsters into position. Leave to set.



225. Take the Fore Topmast Trestletrees (175) and the Main Topmast Trestletrees (176) from the 1mm wood sheet. Also cut the Fore Topmast Crosstrees (105) and the Main Topmast Crosstrees from the 0.6mm photo-etch sheet. Glue the corresponding parts together as seen here and on plan sheets 8 & 9. Drill a 0.6mm hole through the timber, from the holes in the PE.



226. Using plans 8, 9 & 10, cut the mast dowel sections to length and shape as detailed in the drawings. To square off the lower mast section, I found a Permagrit flat file to be very useful.

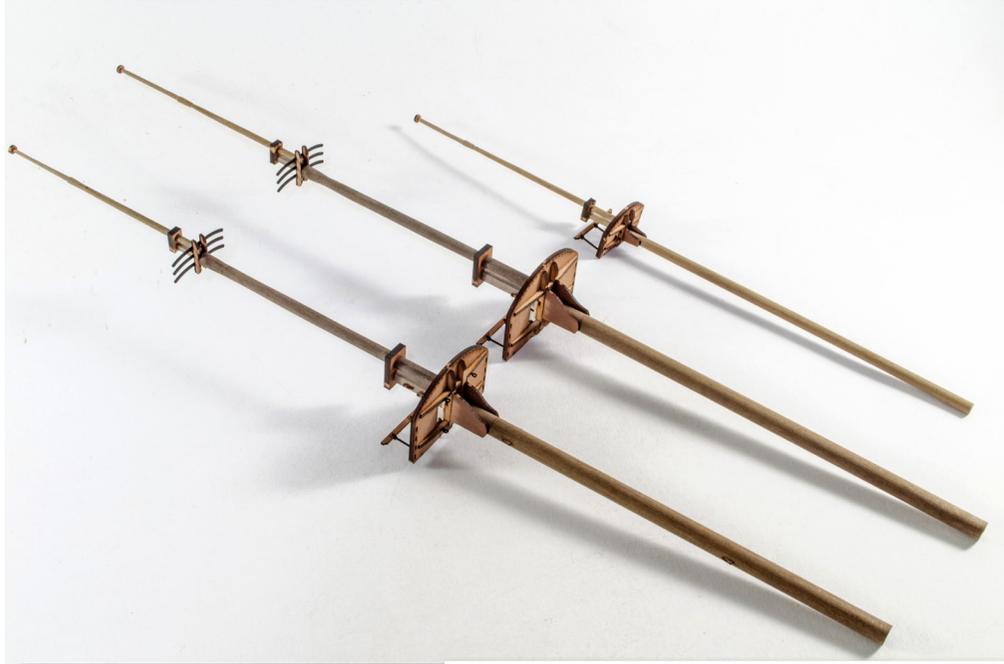


228. Assemble the masts as shown on the plans. These photos will add extra clarity for this stage. Ensure that everything is perfectly straight and in total alignment. Add the various cleats to the masts as shown.



227. The upper mast sections are fitted with a Fid. These are parts 184 and 185 on the 1mm wood sheet. These need to be fitted AFTER the respective Caps have been slid into place. The Fid will stop the mast section from dropping through the Crosstrees and Trestletrees assemblies.





229. The general mast assembly is complete, and your finished assemblies will look like this. Mask the masts so you can spray the areas black as shown. When finished, add the thread bindings to the lower sections of the fore and main masts using 0.5mm black thread. Paint varnish over these to seize them to the wood, then spray or paint varnish over the rest of the masts to protect the wood and paint. Fit rigging blocks as shown in plans 8, 9, and 10.



230. Build the bowsprit as shown on plan sheet 10. Fit it out with eyelets and paint black as shown. Finally, fit the rigging blocks and varnish the completed assembly.



231. We can now finally fit the Hawse Hatch Grating (86). Firstly, turn the part upside down and lie the 2mm Anchor Hawse Thread (F-30) as seen here, so it's equally as long on either side.



232. Carefully glue the grating in place and wrap around the winch as shown on plan sheet 7. Push the cord through the inner hawse holes so it lies neatly underneath the Bowsprit Bitts Cross Timber. You can also now fit the Ship's Bell Strap (PE-76) as shown and then paint black. Hang a small length of 0.25mm natural thread from it.



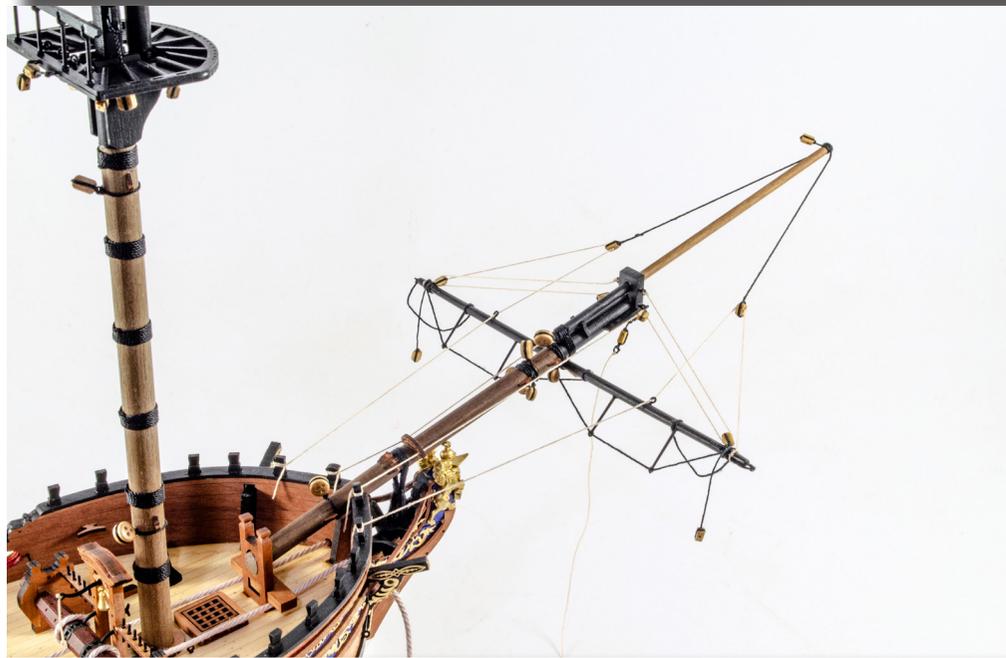
233. First fit the masts. The main mast was glued in place first and checked to ensure it was vertical and the angle correct, although you should already find this a very good and accurate fit. Following this, the foremast and mizzen mast were then finally fitted, while checking vertical alignment against the main mast. Now glue the bowsprit into position.



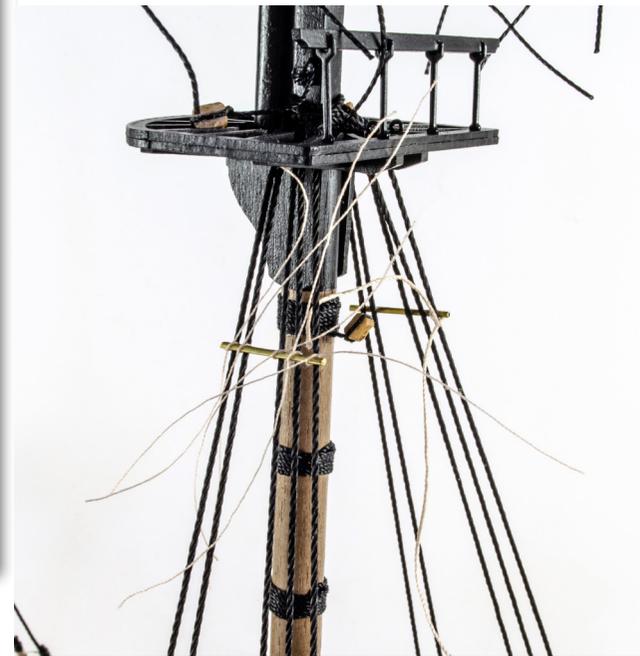
234. The yards on the Duchess are very simple to construct with simple tapering from a specific point you can see on the plans. Fit out the yards with the various cleats, and the Footrope Stirrups (PE-107) from the 0.6mm photo-etch sheet. Paint the yards completely black and then fit them out with rigging blocks as seen here. Also make the bowsprit boom as seen on plan sheet #10.



236. The next phase of rigging is to add the shrouds. Use plan sheet #11 for reference with this. The shrouds wrap around the mast sections in sequence and then terminate at the deadeyes. Try to get the deadeyes as level as possible to each other. Tie these to the lower deadeyes as shown on plan sheet #11



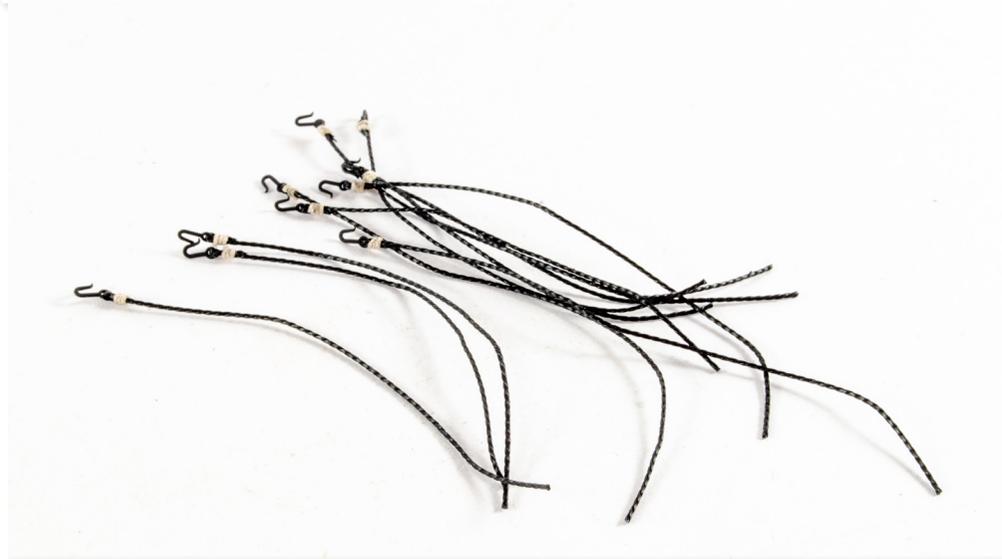
235. Rigging the bowsprit is very easy on this model. First fit the gammoning and then the spritsail boom. Use the rigging illustration on plan sheet #13 to complete this stage.



237. Once the shrouds are added, you need to fit the Futtock Staves using the 1mm brass rod. Cut these so they are a little longer than the width of the shrouds at the point of fitting. Tie them to the shrouds using 0.25 thread. I have used natural thread for this, simply to illustrate, but you can use black thread.



238. With the futtock staves are fitted, you need to add the catharpins as shown here and on the plan sheet #11. These stop the shrouds from deforming/pulling apart, when you add the futtock shrouds. Use 0.5mm black thread for this.



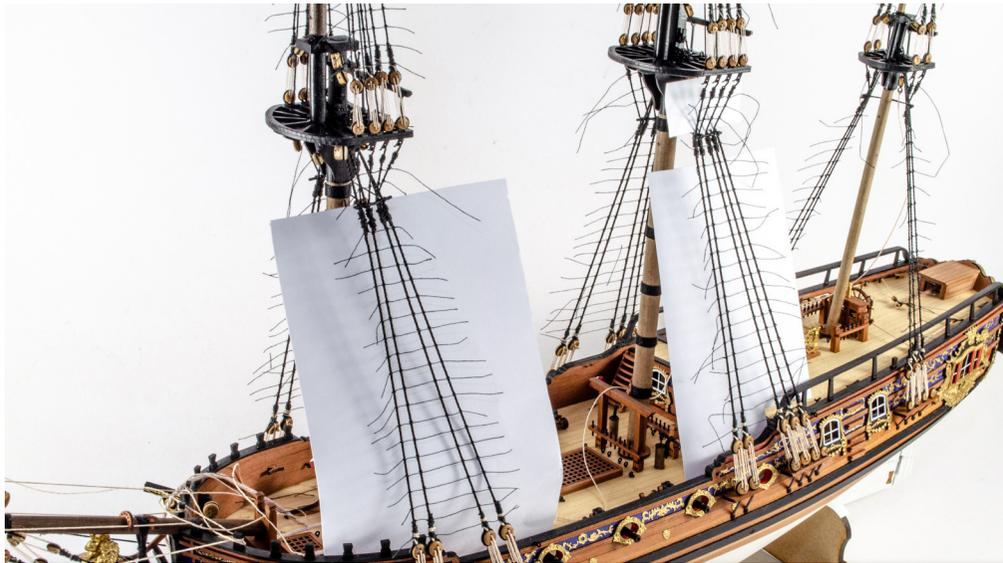
239. The futtock shrouds are made up from short lengths of 0.75mm black thread, seized to the Futtock Shroud Hooks (PE-94) with 0.25mm black thread. I have used natural thread to illustrate.



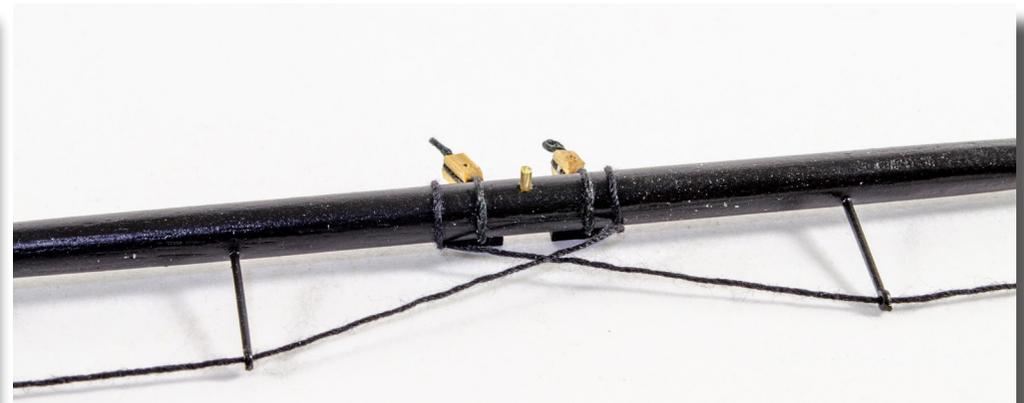
240. After adding the 3mm deadeyes to their 3mm Futtock Stropps (PE-93), slide these into position on the lower mast tops. Now take each futtock shroud line and hook into the stropps, fastening as shown here and on plan sheet #11. Seize with 0.25mm black thread. Again, I have used natural colour thread to illustrate only.



241. Now add the upper shrouds using 0.75mm black thread as shown on plan sheet #11. Add the deadeye lanyards using 0.1mm natural thread and make sure they are reasonably and evenly taught. Be careful not to overtighten them or you'll twist the upper mast.



242. Ratlines are therapeutic, honestly. Using 0.1mm black thread, add the ratlines as seen here and on the plans. Make sure these are level to the waterline and evenly spaced. On the prototype, these were spaced 5mm to 6mm apart, for your guidance. Use a simple knot on the first shroud, and then clove hitch knots for the others. I used a clove hitch for last shroud too as it allowed be the freedom to properly tension the shrouds and make sure they were still straight. Use dilute PVA to seal the knots and when dry, trim the excess thread. TIP: Put a piece of paper behind the shrouds as you add the ratlines. This will make things much easier to see when making sure things are even and level. If you haven't already added them, fit the bowsprit stays using 0.74mm black thread and 0.1mm natural thread for the deadeye lanyards.

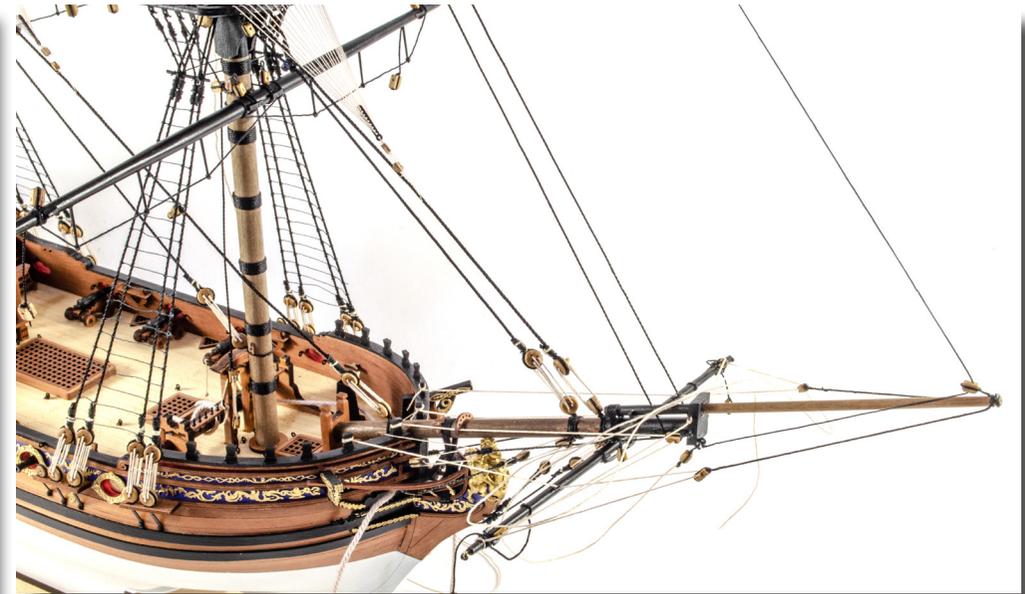


243. Glue and fit the yards to the masts. An idea here is to drill the yards and add a small length of brass wire or a pin so you can fasten these to the masts. Also drill the mast in the correct place so the yard sits easily. Lash the yards to the masts by the methods shown on the plans, such as parrels etc.





244. Add the mizzen stay and the fore/main mast's main and preventer stays etc. Also add the crowsfeet rigging to the lower mast tops, using the mizzen and fore/main Euphroe blocks (PE-79, PE-78), and 2mm single rigging blocks. This is shown on plan sheet #12. Use 0.1mm natural thread for the crowsfeet rigging.



246.(Below) The yard jeers/tyes can now be rigged as per plan sheet #12 (shown). Now Rig the yard lifts as per plan sheet #13. Ensure you use the correct thread as the lower yards on the fore/main masts use 0.25mm natural thread whilst all others use 0.1mm natural thread. The mast backstays now are added. The reason these are left until last is to allow you more access to the various belaying points for the previous rigging steps. The yard braces can now be rigged as per plan sheet #13. These are all in 0.25mm natural thread. That concludes the rigging.



245. Now add the topmast and topgallant stays.

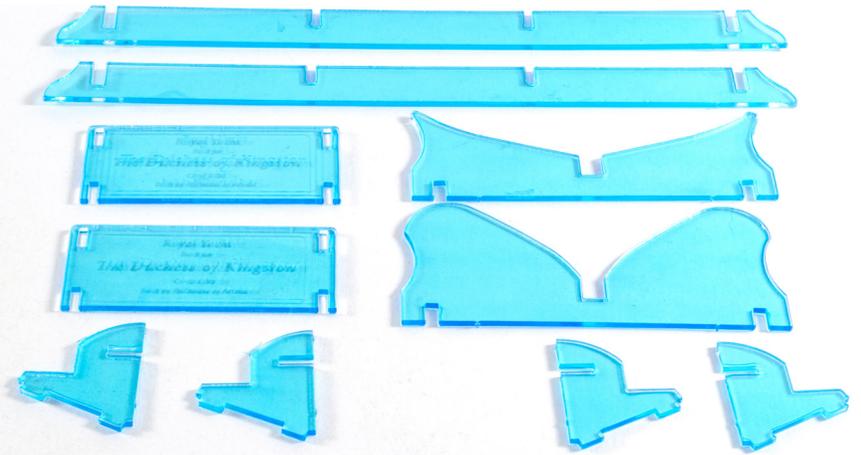




247. (Left) Cut the Anchor Patterns (36) from the 2mm MDF sheet, and also the Anchor Flukes (44) from the 0.8mm ply sheet and assemble as shown. Paint these assemblies in black.



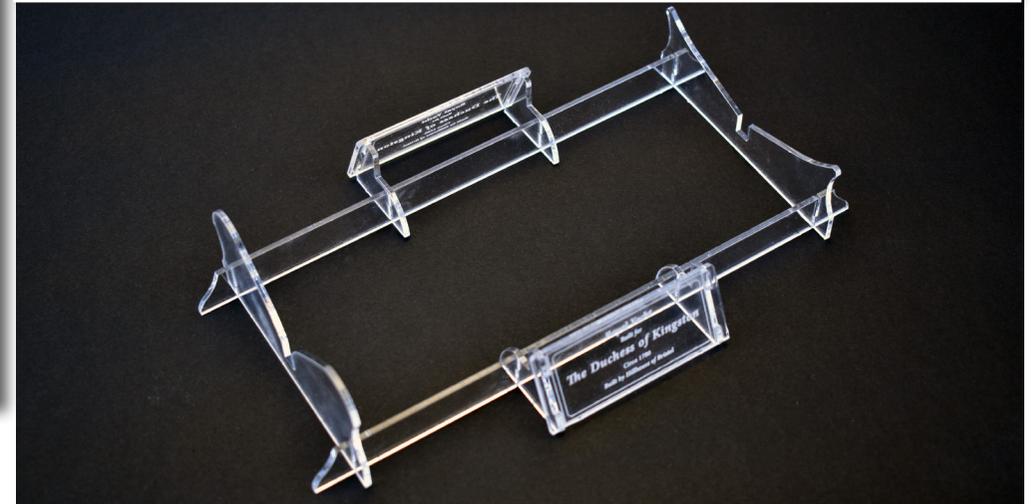
248. (Right) Remove the Anchor Stock parts (68) from the 2mm wood sheet and glue together as shown. Use black cartridge paper (F-40) to add the ironwork straps to them. Fit the stocks over the anchors. Add the Anchor Rings (PE-103) and also paint black.



250. Remove all parts from the 2mm acetate sheet and peel the protective film from them. These can now be assembled as shown. You may use a little white glue if you feel it necessary. An idea is to apply gold paint to the engraved letters and wipe the excess from the surface. You can of course finish this as you wish. Sit the Duchess of Kingston on the new cradle and dispose of the original MDF cradle. Congratulations, you have now completed your model. We hope you enjoyed the experience!



249. Fit the anchors to the anchor cables and use 0.5mm natural thread to seize them. Lash the anchors in place as seen here, using 0.25mm natural thread. Use the channels and timberheads to tie the anchors to.



The Royal Yacht Duchess of Kingston 1778

PARTS LIST

Pt. No	Description	Material	Qty
3mm MDF			
1	Bulkhead	3mm MDF	1
1a	Bulkhead 1 temporary cross beam	3mm MDF	1
2	Bulkhead	3mm MDF	1
2a	Bulkhead 2 temporary cross beam	3mm MDF	1
3	Bulkhead	3mm MDF	1
3a	Bulkhead 3 temporary cross beam	3mm MDF	1
4	Bulkhead	3mm MDF	1
4a	Bulkhead 4 temporary cross beam	3mm MDF	1
5	Bulkhead	3mm MDF	1
5a	Bulkhead 5 temporary cross beam	3mm MDF	1
6	Bulkhead	3mm MDF	1
6a	Bulkhead 6 temporary cross beam	3mm MDF	1
7	Bulkhead	3mm MDF	1
7a	Bulkhead 7 temporary cross beam	3mm MDF	1
8	Bulkhead	3mm MDF	1
8a	Bulkhead 8 temporary cross beam	3mm MDF	1
9	Bulkhead	3mm MDF	1
10	Bulkhead	3mm MDF	1
11	Bulkhead	3mm MDF	1
12	Bulkhead	3mm MDF	1
12a	Deck Beam	3mm MDF	1
13	Bulkhead	3mm MDF	1
14	False Keel	3mm MDF	1
14b	Main Mast support pattern	3mm MDF	1
15	Bow planking pattern	3mm MDF	2
15a	Foremast support pattern	3mm MDF	2
16	Inner longitudinal pattern	3mm MDF	2
17	Outer longitudinal pattern	3mm MDF	2
18	Bow Pattern (Outer)	3mm MDF	2
19	Stern pattern for Bulkhead 13	3mm MDF	2
19a	Stern pattern for Bulkhead 13	3mm MDF	2
19b	Stern pattern for Bulkhead 13	3mm MDF	2
19c	Stern pattern for Bulkhead 13	3mm MDF	2
20	Stern quarter filling pattern	3mm MDF	2
21	Stern patterns (Between bulkheads 11&12)	3mm MDF	2
22	Stern patterns (Between bulkheads 12&13)	3mm MDF	2
23	Main deck rear support	3mm MDF	1
24	Mid-cabin front deck support)	3mm MDF	1
25	Thickening pattern for Bulkhead 9	3mm MDF	2
26	Sacrificial building cradle (Fore)	3mm MDF	1
27	Sacrificial building cradle (Fore)	3mm MDF	1
28	Sacrificial building cradle spacer	3mm MDF	2
2mm Birch Plywood			
29	Main cabin deck	2mm Plywood	1
30	Stern pattern (Inner)	2mm Plywood	2
31	Stern pattern (Middle)	2mm Plywood	2
32	Stern pattern (Outer)	2mm Plywood	2
33	Bow 'V' Frame (1 Required)	2mm Plywood	2
34	Bow 'V' Frame (1 Required)	2mm Plywood	2
35	Bow 'V' Frame (1 Required)	2mm Plywood	2
2mm MDF			
36	Anchor Pattern	2mm MDF	2
2mm Clear Acetate			
37	Display cradle (Fore)	3mm Clear Acetate	1
38	Display cradle (Aft)	3mm Clear Acetate	1
39	Display cradle spacer	3mm Clear Acetate	2
40	Display cradle nameplate support	3mm Clear Acetate	4
41	Display cradle nameplate	3mm Clear Acetate	2
0.8mm Plywood			
42	Fore Deck	0.8mm Plywood	1
43	Aft Deck	0.8mm Plywood	1
44	Anchor Fluke	0.8mm Plywood	4
45	Bulwark Pattern	0.8mm Plywood	2

0.8mm Veneer

46	Fore Deck Pattern	0.8mm Veneer	1
47	Domed canopy Base	0.8mm Veneer	1
48	Aft Deck Pattern	0.8mm Veneer	1

3mm Wood

49	Bow Pattern	3mm Wood	1
50	keel (Aft)	3mm Wood	1
51	keel (Fore)	3mm Wood	1
52	Stern Post	3mm Wood	1
53	Rudder	3mm Wood	1
54	Bowsprit Bitts	3mm Wood	1
55	Bowsprit Bitts Cross Timber	3mm Wood	1
56	Cathead	3mm Wood	2
57	Main Mast Bitts (Aft)	3mm Wood	2
58	Mizzen Mast Bitts	3mm Wood	4
59	Steering Wheel Drum	3mm Wood	1
60	Windlass Pawl and Ships Bell Standard	3mm Wood	1
61	Ships Bell Head Stock	3mm Wood	1
62	Windlass Bitt	3mm Wood	2
63	Windlass Bitt front Pattern	3mm Wood	2
64	Fore and Main Mast Cap	3mm Wood	2
65	Bowsprit Cap	3mm Wood	1
66	Mizzen Mast Cap	3mm Wood	1
67	Fore and Main Topmast Cap	3mm Wood	2

2mm Wood

68	Anchor Stock	2mm Wood	4
69	Cathead Support Bracket	2mm Wood	2
70	Fore Timberhead	2mm Wood	2
71	Fore trestletree	2mm Wood	2
72	Main Trestletree	2mm Wood	2
73	Fore Crosstree	2mm Wood	2
74	Main Crosstree	2mm Wood	4
75	Lower top bolsters (Requires sanding)	2mm Wood	4
76	Fore and Main Trestletree spacer	2mm Wood	2

1.5mm Wood

77	Stern Counter Pattern (Lower)	1.5mm Wood	1
78	Stern Counter Pattern (Upper)	1.5mm Wood	1
79	Stern Fascia	1.5mm Wood	1
80	Upper Deck Spiral Staircase Combing	1.5mm Wood	1
81	Main Hatch Coaming (Lower)	1.5mm Wood	1
82	Main Hatch Coaming (Upper)	1.5mm Wood	1
83	Main Hatch Grating	1.5mm Wood	1
84	Hawse Hatch Combing (Lower)	1.5mm Wood	1
85	Hawse Hatch Combing (Upper)	1.5mm Wood	1
86	Hawse Hatch Grating	1.5mm Wood	1
87	Fore Hatch Coaming (Lower)	1.5mm Wood	11
88	Fore Hatch Coaming (Upper)	1.5mm Wood	1
89	Fore Hatch Grating	1.5mm Wood	1
90	Forecastle Timberhead	1.5mm Wood	12
91	Mizzen Trestletree	1.5mm Wood	2
92	Mizzen Crosstree	1.5mm Wood	2
93	Mizzen Top Bolsters (To be shaped)	1.5mm Wood	2
94	Mizzen Trestletree Spacer	1.5mm Wood	1
95	Bow Bracket	1.5mm Wood	4
96R	Aft Deck Rail Support Column (Right)	1.5mm Wood	2
96L	Aft Deck Rail Support Column (Left)	1.5mm Wood	2
97	Fore and Main Mast Base	1.5mm Wood	2
98	Mizzen Mast Base	1.5mm Wood	1
99	Quarterdeck Gunwale Timberhead	1.5mm Wood	4
100	Rudder Toller Arm	1.5mm Wood	1
101	Ships Wheel Standard (Fore)	1.5mm Wood	1
102	Ships Wheel Standard (Aft)	1.5mm Wood	1
103	Gallows and Main Mast Bitts (Front)	1.5mm Wood	1
104	Gallows and Main Mast Bitts (Rear)	1.5mm Wood	1
105	Cleat	1.5mm Wood	12
106	Yard Cleat	1.5mm Wood	16
107	Mizzen Lateen Yard Cleat (1 required)	1.5mm Wood	2
108	Fore Channel (Front)	1.5mm Wood	2
109	Fore Channel (Rear)	1.5mm Wood	2
110	Main Channel (Front)	1.5mm Wood	2
111	Main Channel (Rear)	1.5mm Wood	2
112	Mizzen Channel	1.5mm Wood	2
113R	4-pounder carriage side (Right)	1.5mm Wood	6

113L	4-Pounder carriage side (Left)	1.5mm Wood	6
114	4-Pounder carriage front axle	1.5mm Wood	6
115	4-Pounder carriage rear axle	1.5mm Wood	6
116	4-Pounder carriage Bed	1.5mm Wood	6
117	4-Pounder carriage front wheel	1.5mm Wood	12
118	4-Pounder carriage rear wheel	1.5mm Wood	12

1mm Wood

119	Outer side Pattern (Right)	1mm Wood	1
120	Outer side Pattern (Left)	1mm Wood	1
121	Binnacle front and rear	1mm Wood	2
122	Binnacle Sides	1mm Wood	2
123	Binnacle Cross piece (Bottom)	1mm Wood	1
124	Binnacle Cross piece (Centre)	1mm Wood	1
125	Binnacle Cross piece (Top)	1mm Wood	1
126	Binnacle Roof	1mm Wood	1
127	Main Wale (Upper)	1mm Wood	2
128	Main Wale (Lower)	1mm Wood	2
129	Main Upper Rail Pattern (Right)	1mm Wood	1
130	Upper Fore Rail Pattern (Right)	1mm Wood	1
131	Main Upper Rail Pattern (Left)	1mm Wood	1
132	Upper Fore Rail Pattern (Left)	1mm Wood	1
133	Bow Outer Facing (Right)	1mm Wood	1
134	Bow Outer Facing (Left)	1mm Wood	1
135	Keel Outer Facing (Right)	1mm Wood	1
136	Keel Outer Facing (Left)	1mm Wood	1
137	Stern Post Outer Facing (Right)	1mm Wood	1
138	Stern Post Outer Facing (Left)	1mm Wood	1
139	Rudder Outer Facing (Right)	1mm Wood	1
140	Rudder Outer Facing (Left)	1mm Wood	1
141	Stern Post End Pattern	1mm Wood	1
142	Ships Wheel Drum End Pieces	1mm Wood	2
143	Tiller Housing Front Frame	1mm Wood	1
144	Tiller Housing Side Panel (Right)	1mm Wood	1
145	Tiller Housing Side Panel (Left)	1mm Wood	1
146	Tiller Housing Canopy	1mm Wood	1
147	Hawse Bolster	1mm Wood	2
148	Chimney/Flue Combing	1mm Wood	1

149	Windlass Bitts Belaying Rail	1mm Wood	2
150	Main Mast Gallows/Bitts Belaying Rail	1mm Wood	1
151	Main Mast Bitts (Aft) Belaying Rail	1mm Wood	1
152	Mizzen Bitts belaying Rail	1mm Wood	2
153	Location Inserts for Bow, Keel & Sternpost	1mm Wood	16
154	Side Step (Lower)	1mm Wood	12
155	Side Step (Upper)	1mm Wood	12
156	Aft Deck Rail Pattern	1mm Wood	2
156a	Aft Deck Rail Pattern Spare support	1mm Wood	2
156b	Aft Deck Rail Pattern Spare support	1mm Wood	2
156c	Aft Deck Rail Pattern Spare support	1mm Wood	2
156d	Aft Deck Rail Pattern Spare support	1mm Wood	2
156e	Aft Deck Rail Pattern Spare support	1mm Wood	2
156f	Aft Deck Rail Pattern Spare support	1mm Wood	2
156g	Aft Deck Rail Pattern Spare support	1mm Wood	2
157	Aft Deck Outer Rail Pattern (Right)	1mm Wood	2
158	Aft Deck Outer Rail Pattern (Left)	1mm Wood	2
159	Forecastle Gunwale	1mm Wood	2
160	Mid-Bulwark Gunwale	1mm Wood	2
161	Aft Gunwale	1mm Wood	2
162	Ladder Side (Inner)	1mm Wood	2
162a	Ladder Side Panelling (Inner Right)	1mm Wood	1
162b	Ladder Side Panelling (Inner Left)	1mm Wood	1
163	Ladder Side (Outer – nearest side bulwark)	1mm Wood	2
164	Ladder Step (16 Required)	1mm Wood	18
165	Triangular Cannon Shot Garland (4 required)	1mm Wood	6
166	Staghorn Cleat Beam	1mm Wood	4
167	Staghorn Cleat	1mm Wood	4
168	Mast and Yard Cleat	1mm Wood	80
169	Bowsprit Bee	1mm Wood	2
170	Bowsprit fairlead	1mm Wood	1
171	Jibboom Saddle	1mm Wood	1
172	Fore Mast Bibb	1mm Wood	2
173	Main Mast Bibb	1mm Wood	2
174	Mizzen Mast Bibb	1mm Wood	2
175	Fore Topmast Trestletree	1mm Wood	2
176	Main Topmast Trestletree	1mm Wood	2
177	Fore, Main and Mizzen Topgallant Truck	1mm Wood	3
178	Fore Top Platform	1mm Wood	1
179	Fore Top Gunwale and Ribs	1mm Wood	1

180	Main Top Platform	1mm Wood	1
181	Main Top Gunwale and Ribs	1mm Wood	1
182	Mizzen Top Platform	1mm Wood	1
183	Mizzen Top Gunwale and Ribs	1mm Wood	1
184	Fore & Main Topmast Fid	1mm Wood	4
185	Fore & Main Topgallant Mast Fid (Mizzen Fid)	1mm Wood	4
186	Fore Top Rail	1mm Wood	1
187	Main Top Rail	1mm Wood	1
188	Mizzen Top Rail	1mm Wood	1
189	Mid-deck Bulkhead	1mm Wood	1
190	Mid-Deck Bulkhead Panelling	1mm Wood	1
191	Quarterdeck Gunwale	1mm Wood	2
192	Quarterdeck Rail	1mm Wood	1
193	Inner Bulwark Pattern (Right)	1mm Wood	1
194	Inner Bulwark Pattern (Left)	1mm Wood	1
195	Quarterdeck/Poop Inner Bulwark Pattern	1mm Wood	2
196	Bow Main Rail (Right – 1 Required)	1mm Wood	2
197	Bow Main Rail (Left – 1 Required)	1mm Wood	2
198	Bow Lower Rail (Right – 1 Required)	1mm Wood	2
199	Bow Lower Rail (Left – 1 Required)	1mm Wood	2
200	Lower Cheek Rail (Right)	1mm Wood	1
201	Upper Cheek Rail (Right)	1mm Wood	1
202	Lower Cheek Rail (Left)	1mm Wood	1
203	Upper Cheek Rail (Left)	1mm Wood	1
204	Belfry Fascia	1mm Wood	2
205	Wing Transom (Right)	1mm Wood	1
206	Wing Transom (Left)	1mm Wood	1
207	Lower Stern Counter Rail	1mm Wood	1
208	Upper Stern Counter Rail	1mm Wood	1
209	Fore Channel (Front) Edging Strip	1mm Wood	2
210	Fore Channel (Aft) Edging Strip	1mm Wood	2
211	Main Channel (Front) Edging Strip	1mm Wood	2
212	Main Channel (Aft) Edging Strip	1mm Wood	2
213	Mizzen Channel Edging Strip	1mm Wood	2
214	Spiral Staircase Rear Pattern	1mm Wood	1
215	Spiral Staircase Side Pattern	1mm Wood	1
216	Spiral Staircase Step (Bottom)	1mm Wood	1
217	Spiral Staircase Step	1mm Wood	1

218	Spiral Staircase Step	1mm Wood	1
219	Spiral Staircase Step	1mm Wood	1
220	Spiral Staircase Step	1mm Wood	1
221	Spiral Staircase Step	1mm Wood	1
222	Spiral Staircase Step	1mm Wood	1
223	Spiral Staircase Step	1mm Wood	1
224	Spiral Staircase Step (Top)	1mm Wood	1

6mm MDF

225	Oval Side Port Locator Plug	6mm MDF	1
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0.2mm Photo Etched Brass

PE-1	Horseshoe Plate	0.2mm Photo Etch	2
PE-2	Binnacle compass detail	0.2mm Photo Etch	1
PE-3	4-pounder carriage cap square (12 required)	0.2mm Photo Etch	18
PE-4	Fish Plate	0.2mm Photo Etch	2
PE-5	Rudder Pintle Strap	0.2mm Photo Etch	2
PE-6	Rudder Pintle Strap	0.2mm Photo Etch	2
PE-7	Rudder Pintle Strap	0.2mm Photo Etch	2
PE-8	Rudder Post Brace Strap	0.2mm Photo Etch	2
PE-9	Rudder Post Brace Strap	0.2mm Photo Etch	2
PE-10	Rudder Post Brace Strap	0.2mm Photo Etch	2
PE-11	Cathead Knee Decoration (Right)	0.2mm Photo Etch	2
PE-12	Cathead Knee Decoration (Left)	0.2mm Photo Etch	2
PE-13	Cathead Side Decoration	0.2mm Photo Etch	4
PE-14	Cathead End Decoration (2 Required)	0.2mm Photo Etch	4
PE-15	Mid-Deck Bulkhead Door Hinge (4 Needed)	0.2mm Photo Etch	12
PE-16	Bow Decoration (Near Bolster) Right	0.2mm Photo Etch	1
PE-17	Bow Decoration (Near Bolster) Left	0.2mm Photo Etch	1
PE-18	Cathead Knee Edge Decoration	0.2mm Photo Etch	2
PE-19	Bow 'V' Frame Edge Decoration	0.2mm Photo Etch	2
PE-20	Bow 'V' Frame Edge Decoration	0.2mm Photo Etch	2
PE-21	Bow 'V' Frame Edge Decoration	0.2mm Photo Etch	2
PE-22	Bow Cheek Edge Decoration	0.2mm Photo Etch	4
PE-23	Lower Side Decoration (Right - Bow)	0.2mm Photo Etch	1
PE-24	Lower Side Decoration (Right)	0.2mm Photo Etch	1
PE-25	Lower Side Decoration (Right)	0.2mm Photo Etch	1

PE-26	Lower Side Decoration (Right)	0.2mm Photo Etch	1
PE-27	Lower Side Decoration (Right)	0.2mm Photo Etch	1
PE-28	Lower Side Decoration (Right)	0.2mm Photo Etch	1
PE-29	Lower Side Decoration (Right)	0.2mm Photo Etch	1
PE-30	Lower Side Decoration (Right)	0.2mm Photo Etch	1
PE-31	Lower Side Decoration (Right)	0.2mm Photo Etch	1
PE-32	Lower Side Decoration (Right - Rear)	0.2mm Photo Etch	1
PE-33	Upper Side Decoration (Right - Bow)	0.2mm Photo Etch	1
PE-34	Upper Side Decoration (Right)	0.2mm Photo Etch	1
PE-35	Upper Side Decoration (Right)	0.2mm Photo Etch	1
PE-36	Upper Side Decoration (Right)	0.2mm Photo Etch	1
PE-37	Upper Side Decoration (Right)	0.2mm Photo Etch	1
PE-38	Upper Side Decoration (Right - Rear)	0.2mm Photo Etch	1
PE-39	Lower Side Decoration (Left - Bow)	0.2mm Photo Etch	1
PE-40	Lower Side Decoration (Left)	0.2mm Photo Etch	1
PE-41	Lower Side Decoration (Left)	0.2mm Photo Etch	1
PE-42	Lower Side Decoration (Left)	0.2mm Photo Etch	1
PE-43	Lower Side Decoration (Left)	0.2mm Photo Etch	1
PE-44	Lower Side Decoration (Left)	0.2mm Photo Etch	1
PE-45	Lower Side Decoration (Left)	0.2mm Photo Etch	1
PE-46	Lower Side Decoration (Left)	0.2mm Photo Etch	1
PE-47	Lower Side Decoration (Left)	0.2mm Photo Etch	1
PE-48	Lower Side Decoration (Left - Rear)	0.2mm Photo Etch	1
PE-49	Upper Side Decoration (Left - Bow)	0.2mm Photo Etch	1
PE-50	Upper Side Decoration (Left)	0.2mm Photo Etch	1
PE-51	Upper Side Decoration (Left)	0.2mm Photo Etch	1
PE-52	Upper Side Decoration (Left)	0.2mm Photo Etch	1
PE-53	Upper Side Decoration (Left)	0.2mm Photo Etch	1
PE-54	Upper Side Decoration (Left - Rear)	0.2mm Photo Etch	1
PE-55	Hull Side Scupper	0.2mm Photo Etch	8
PE-108	Mid-Deck Bulkhead Decoration	0.2mm Photo Etch	1

0.4mm Photo Etched Brass

PE-56	Rear Vertical Decoration (Right)	0.4mm Photo Etch	1
PE-57	Rear Vertical Decoration (Left)	0.4mm Photo Etch	1
PE-58	Bow Trail board Decoration (Right)	0.4mm Photo Etch	1
PE-59	Bow Trail board Decoration (Left)	0.4mm Photo Etch	1
PE-60	Stern Window frame (Right)	0.4mm Photo Etch	1
PE-61	Stern Window frame	0.4mm Photo Etch	1

PE-62	Stern Window frame	0.4mm Photo Etch	1
PE-63	Stern Window frame	0.4mm Photo Etch	1
PE-64	Stern Window frame (Left)	0.4mm Photo Etch	1
PE-65	Stern Panelling Decoration	0.4mm Photo Etch	1
PE-66	Stern Upper Counter Decoration	0.4mm Photo Etch	1
PE-67	Side and Bulkhead Window frame	0.4mm Photo Etch	3
PE-68	Side and Bulkhead Window frame	0.4mm Photo Etch	3
PE-69	Side and Bulkhead Window Border	0.4mm Photo Etch	3
PE-70	Side and Bulkhead Window Border	0.4mm Photo Etch	3
PE-71	Oval Port Surround	0.4mm Photo Etch	10
PE-72	Quarter gallery Decoration (Right)	0.4mm Photo Etch	1
PE-73	Quarter gallery Decoration (Right - Top)	0.4mm Photo Etch	1
PE-74	Quarter gallery Decoration (Left)	0.4mm Photo Etch	1
PE-75	Quarter gallery Decoration (Left - Top)	0.4mm Photo Etch	1
PE-76	Ships Bell Strap/Crank	0.4mm Photo-Etch	1
PE-77	4-Pounder Carriage Cross Bolt (6 Needed)	0.4mm Photo-Etch	16
PE-78	Fore and Main Euphroe Block	0.4mm Photo-Etch	2
PE-79	Mizzen Euphroe Block	0.4mm Photo-Etch	2
PE-80	Windlass Pawl	0.4mm Photo-Etch	2
PE-81	Steering Wheel Main Body	0.4mm Photo-Etch	1
PE-82	Steering Wheel Inner Disc	0.4mm Photo-Etch	2
PE-83	Steering Wheel Outer Rim	0.4mm Photo-Etch	2
PE-84	Chimney for Stove	0.4mm Photo-Etch	1
PE-85	Hand Pump Main Body	0.4mm Photo-Etch	2
PE-86	Hand Pump Side Bracket	0.4mm Photo-Etch	4
PE-87	Hand Pump Top Cap	0.4mm Photo-Etch	2
PE-88	Eyebolt for Ring (PE-89)	0.4mm Photo-Etch	37
PE-89	Ring for Eyebolt (PE-88)	0.4mm Photo-Etch	38
PE-90	Standard Eyebolt	0.4mm Photo-Etch	
	134		
PE-91	5mm Deadeye Strop	0.4mm Photo-Etch	20
PE-92	3mm Deadeye Strop	0.4mm Photo-Etch	16
PE-93	3mm Futtock Strop	0.4mm Photo-Etch	23
PE-94	Futtock Shroud Hook	0.4mm Photo-Etch	24
PE-95	Parrel Rib	0.4mm Photo-Etch	28
PE-96	Standard Rigging Hook	0.4mm Photo-Etch	20

0.6mm Photo Etched Brass

PE-97	Quarterdeck Companion Rail (Right)	0.6mm Photo Etch	1
PE-98	Quarterdeck Companion Rail (Left)	0.6mm Photo Etch	1
PE-99	Quarterdeck Companion Rail (Rear)	0.6mm Photo Etch	1
PE-100	Rudder Pintle (3 Required)	0.6mm Photo Etch	4
PE-101	Small Cleat	0.6mm Photo Etch	19
PE-102	Belaying Pin (True Scale)	0.6mm Photo Etch	54
PE-103	Anchor ring (2 Required)	0.6mm Photo Etch	4
PE-104	Lower Top Rail Stanchion	0.6mm Photo Etch	11
PE-105	Fore Topmast Crosstrees	0.6mm Photo Etch	1
PE-106	Main Topmast Crosstrees	0.6mm Photo Etch	1
PE-107	Footrope Stirrup	0.6mm Photo Etch	31

Fittings

F-1	Figurehead (2 parts)	Casting	1
F-2	Stern Decoration	Casting	1
F-3	Octagonal Winch Drum	Casting	1
F-4	Mid-Deck Bulkhead Door Canopy	Casting	1
F-5	4-pounder Cannon barrel	Casting	6
F-6	1.5mm Diameter Black Cannon Ball	Acrylic	50
F-7	Small pin	Brass	300
F-8	Ships Bell	Brass	1
F-9	Binnacle Chimney	Brass	1
F-10	3.5mm Diameter Sheave	4280/35	14
F-11	5mm Deadeye	4050/05	50
F-12	3mm Deadeye	4050/03	80
F-13	2mm Single block	4070/02	20
F-14	3mm Single block	4070/03	100
F-15	5mm Single block	4070/05	30
F-16	4mm Double block	4080/04	20
F-17	Parrel bead	Plastic	70
F-18	Large mouse bead (Lower mast stays)	Plastic	6
F-19	Small mouse bead (Upper mast stays)	Plastic	6

Materials

F-20	0.1mm Diameter natural thread		40m
F-21	0.25mm Diameter natural thread		40m
F-22	0.5mm Diameter natural thread		20m
F-23	0.75mm Diameter natural thread		10m
F-24	0.01mm Diameter black thread (Ratlines)		30m
F-25	0.25mm Diameter black thread		20m
F-26	0.5mm Diameter black thread		20m
F-27	0.75mm Diameter black thread		5m
F-28	1mm Diameter black thread		5m
F-29	1.3mm Diameter black thread		2m
F-30	2mm Diameter natural thread (Anchor hawse)		0.5m
F-31	8mm Dowel x 500mm long	Wood	1
F-32	6mm Dowel x 500mm long	Wood	2
F-33	5mm Dowel x 500mm long	Wood	2
F-34	4mm Dowel x 500mm long	Wood	4
F-35	3mm Dowel x 500mm long	Wood	2
F-36	1 x 5 x 500mm long Limewood	Wood	34
F-37	1 x 4 x 500mm long Second planking	Wood	52
F-38	1mm Diameter brass rod x 160mm long (Approx.)	Metal	1
F-39	0.5mm Diameter brass rod x 160mm long (Approx.)	Metal	1
F-40	Black Cartridge paper (For anchor)	Paper	1

Laser and PE Sheet Quantities

3mm MDF Laser Cut	3
2mm MDF Laser cut (Anchors)	1
2mm Birch Plywood	1
2mm Clear Acetate	1
1mm Pear Wood	6
1.5mm Pear Wood	1
2mm Pear Wood	1
3mm Pear Wood	1
4mm Pear Wood	1
0.8mm Plywood	2
1mm Wood laser etched deck Fore and Aft deck)	1
0.2mm Photo Etched Brass Sheet	2
0.4mm Photo Etched Brass Sheet	2
0.6mm Photo Etched Brass Sheet	1



VANGUARD MODELS

BY CHRIS WATTON

©Vanguard Models is a subsidiary of Burncroft Limited

Registered Office:

70B, High Street

Cinderford

Gloucestershire

GL14 2SZ

UK

Tel (0044) [0]1594 824610

Registered company number – 04317996

Website - www.vanguardmodels.co.uk

Email - sales@vanguardmodels.com

Duchess of Kingston was designed and developed in the UK by Chris Watton
Finished prototype model made and photographed (including construction manual text) by James Hatch

21/10/2020