

# The British Armed Naval Cutter

*Alert - 1:64 Scale*

1777

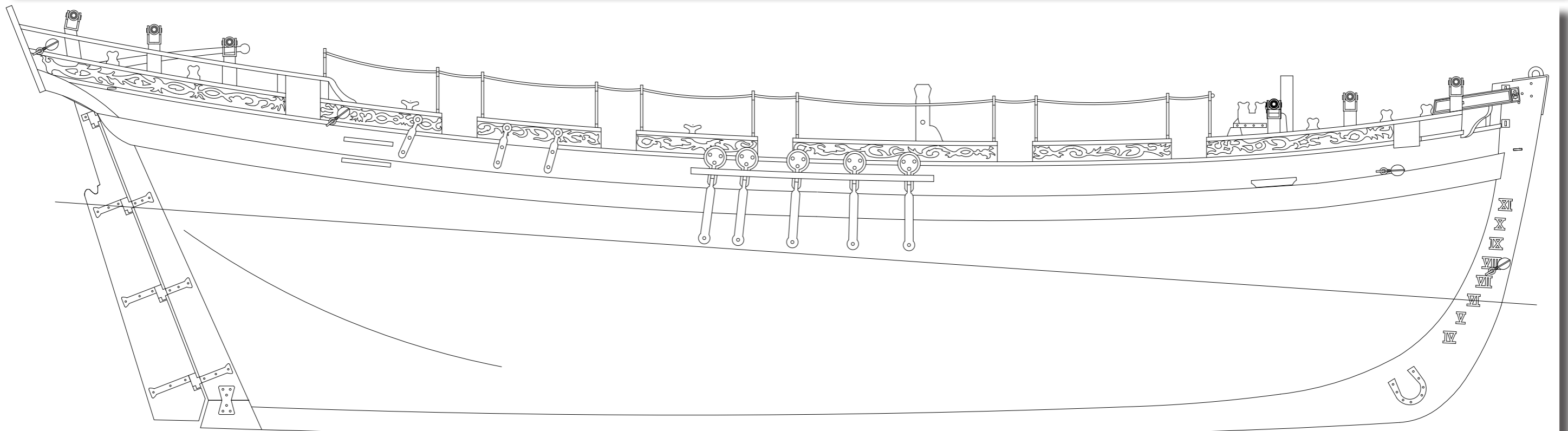
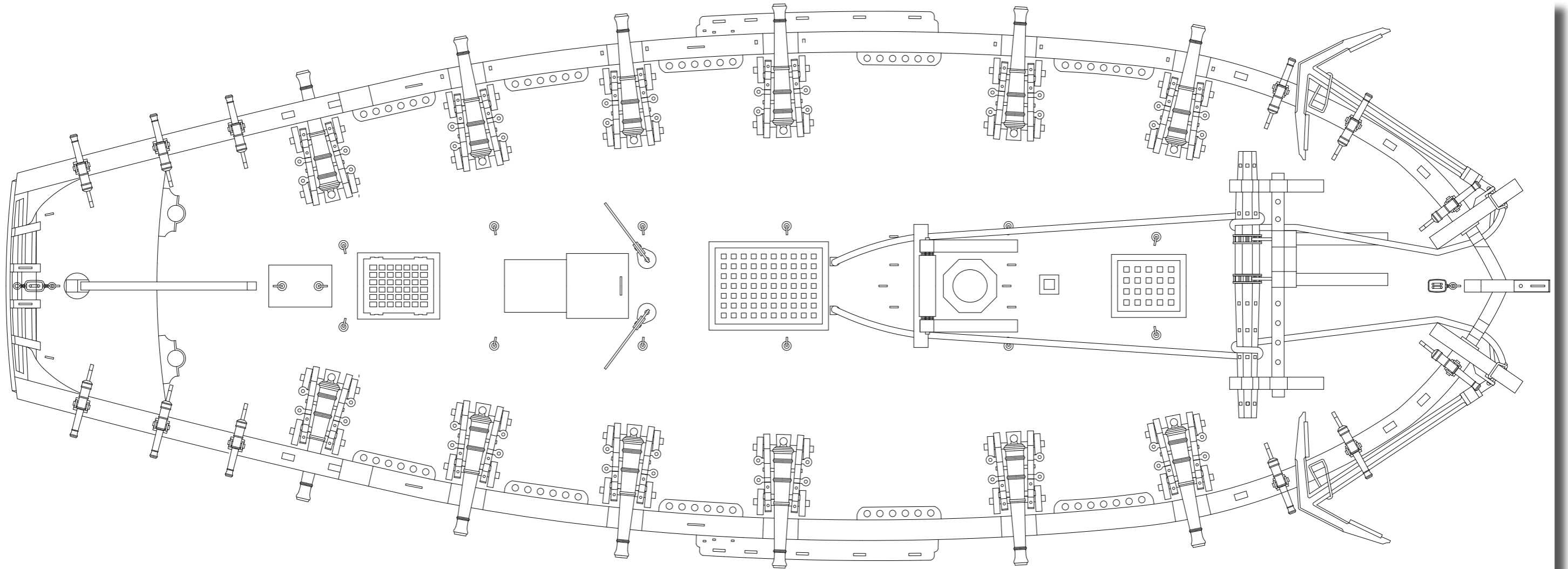
Building Manual



VANGUARD MODELS  
BY CHRIS WATTON

Designed, developed and produced in the UK





The Alert, built in Dover by Henry Ladd and launched on 24th June 1777, was the largest class of cutter in the Royal Navy. Alert originally carried ten four-pounder carriage guns and six to twelve half-pounder swivel guns. She was one of fifteen cutters built for the Royal navy between 1777 and 1778. Smaller cutters were often purchased or built by private yards and then purchased by the Navy, but Alert was purpose built from the keel up.

In February 1778, Alert docked at Plymouth for an overhaul, to which some alterations were made to her hull and the ten four pounder carriage guns were replaced with twelve six pounder guns, raising her broadside weight by 30%. The guns were changed because six-pounder shot was more commonly available and, of course, they were more effective.

Because of the increase in ordnance, the crew of the Alert was increased from sixty to eighty men, and recommissioned under a new commander, Lieutenant William George Fairfax. In May 1778, Fairfax was promoted to Commander and Alert was re-classed as a sloop to comply with Admiralty requirements. (Although always remained cutter rigged)

On 17th June 1778, the Alert, in company with the frigate Arethusa, spotted and intercepted the French frigate Belle Poule and the armed lugger Coureur, with the latter overhauled by the Alert and surrendered, returning to Spithead after the action with her prize. On 8th July of the same year, whilst on an independent deployment, searching for the enemy fleet, Alert was taken by surprise and captured by the French frigate Junon. Alert is reported as lost without trace on 15th December 1779.

Alert's sister, Rattlesnake lasted a little longer, being wrecked on the island of Trinidad on 11th October 1781.

The model kit of the Alert is depicted after her refit with twelve six-pounder guns and a full compliment of twelve half-pounder swivel guns, giving an ordnance total of twenty four guns. Although not stated in the records when researching, it is possible that the upper bulwarks were fully planked, rather than having the open drift. The decoration that adorns the upper sides and stern is optional, as it is unlikely that the original vessel, when in service, would have had such decoration. This is inspired by the two paintings of the vessel by Joseph Marshall, which formed part of the George III collection of ship model paintings. It is possible the decoration would have been painted on during launch day, or if a prominent (royal) figure visited to review the fleet.

The model kit is designed to be as accurate as possible, for a commercial kit in both scale and detail. To this end, all hull and deck fittings are bespoke with no 'off the shelf' fittings used. This included the six-pounder and half-pounder cannon barrels, hand pumps, anchors, winches etc. All designed specifically for this one kit. Although the kit of Alert is as easy to build as we can make it, very basic woodworking skills (and patience) are still required. Estimated build time is between 30 to 50 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.

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.

The metal cannon balls should be blackened before gluing in place. You can either paint them or blacken them using a solution for brass burnishing, which is listed below.

### Recommended tool list

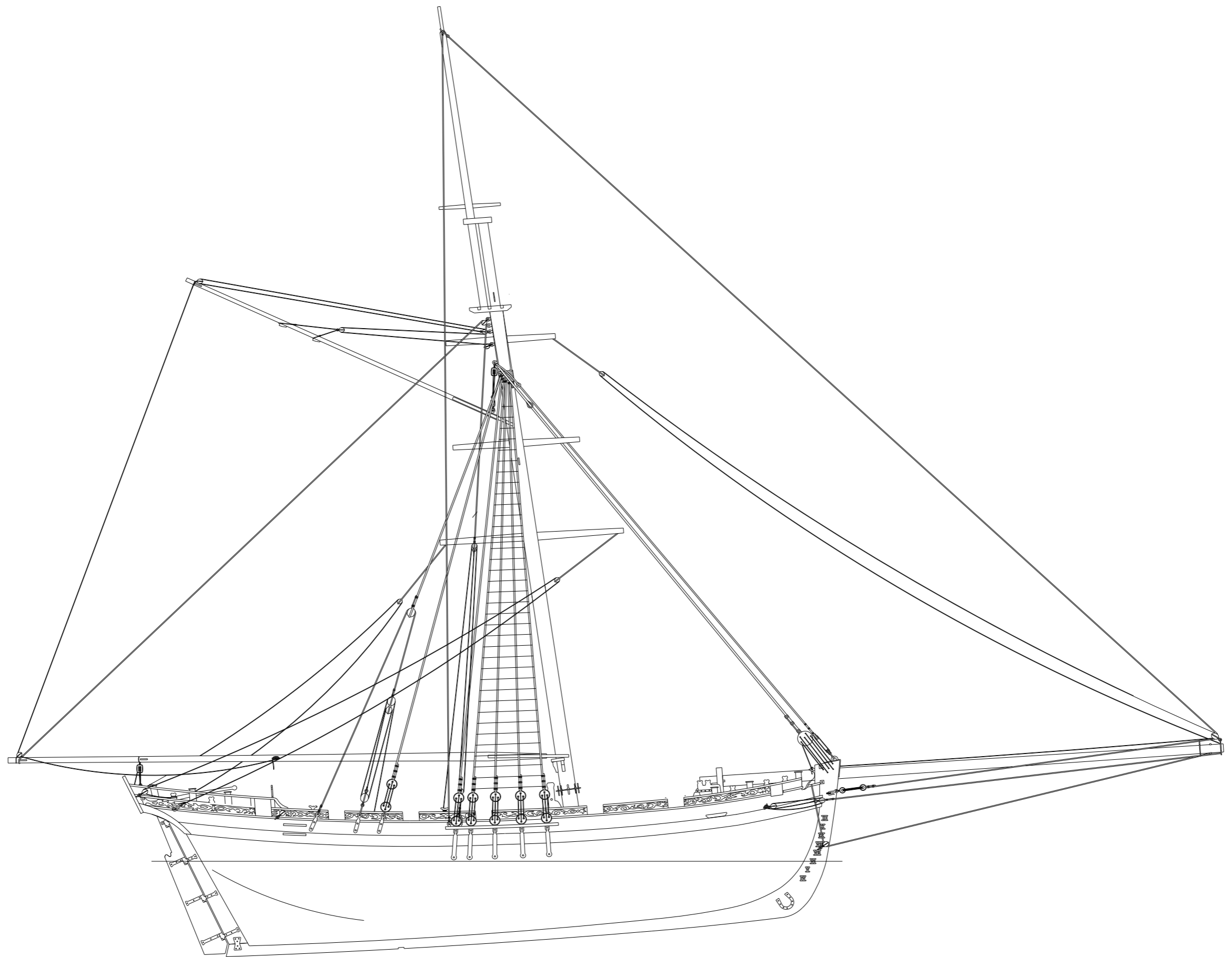
(All items listed were used by the designer to build the Alert prototype model)

- 1: Craft knife (or standard Stanley Knife)
- 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 1mm
- 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: Dividers or compass (To help measure down from the hull the wales)
- 12: Steel ruler (300mm - for providing a straight edge for tapering the planking)
- 13: Clothes pegs or small clamps
- 14: Tee-Square (For help with marking out the side steps)
- 15: Good quality pencil or drawing pen
- 16: Masking tape
- 17: Waterline marking out tool
- 18: A Pin Pusher (Or you can just use a pair of pliers to push pins into the planking and bulkhead edges)
- 19: Cutting mat

### Paints, stains and adhesives

- 1: White PVA wood glue
- 2: Cyanoacrylate (superglue) thick and medium viscosity
- 3: Natural colour wood filler
- 4: Indian ink (Black for ratlines)
- 5: Matt polyurethane varnish (Not satin or gloss)
- 6: Black paint (Humbrol 85) 3 tins or Vallejo matt black
- 7: Matt white paint (A spray can obtained from your local DIY store is fine)
- 8: Blue paint (Humbrol 25) 1 tin
- 9: Yellow paint (Ochre) (Humbrol 24) 1 tin
- 10: Red paint (Humbrol matt 60 for inside of bulwarks, cannon carriages and various deck fittings)
- 11: Copper Paint (Humbrol MET 12)
- 12: Metal burnishing/blackening liquid (AK Interactive AK 174 - brass Photo etch Burnishing) or similar
- 13: Clear Epoxy Resin or similar to glue the acetate stand together

**Please Note:** Some parts shown in the construction stage photographs may differ slightly to what is in the kit. This is because the prototype model was built with parts which were then amended, so do not worry if what you have in the kit is different to what is shown in the photographs - you have the correct parts.



## PARTS LIST

Pt. No	Description	Material	QTY
<b>3mm MDF</b>			
1	False Keel	3mm MDF	1
2	Bulkhead	3mm MDF	1
3	Bulkhead	3mm MDF	1
4	Bulkhead	3mm MDF	1
5	Bulkhead	3mm MDF	1
6	Bulkhead	3mm MDF	1
7	Bulkhead	3mm MDF	1
8	Bulkhead	3mm MDF	1
9	Bulkhead	3mm MDF	1
10	Bulkhead	3mm MDF	1
11	Bow pattern (Inner)	3mm MDF	2
12	Bow and bulkhead securing pattern (Outer)	3mm MDF	2
13	Bow pattern (between first and second bulkhead)	3mm MDF	2
14	Stern securing pattern	3mm MDF	2
15	Stern planking pattern	3mm MDF	2
108	Ships' stove flue	3mm MDF	1
<b>2mm Wood</b>			
16	Lower deck pattern	2mm Wood	1
17	Stern frame (Inner)	2mm Wood	2
18	Stern frame (Middle)	2mm Wood	2
19	Stern frame (Outer)	2mm Wood	2
20	Stern filling pattern	2mm Wood	2
<b>3mm Wood</b>			
21	Stempost and front keel	3mm Wood	1
22	Rear keel	3mm Wood	1
23	Sternpost	3mm Wood	1
24	Rudder pattern	3mm Wood	1
25	Cathead	3mm Wood	2
26	Hawse hole post	3mm Wood	2
27	Step block for mizzen mast	3mm Wood	2
28	Carrick bitt pattern	3mm Wood	2
29	Carrick bitt cheek	3mm Wood	2
30	Pawl bitt head and bowsprit step post	3mm Wood	1
31	Pawl bitt post	3mm Wood	1
32	Mast bitt pin and standard	3mm Wood	2
33	Mast bitt pin cross piece	3mm Wood	1
34	Stern swivel gun post	3mm Wood	4
35	Stern swivel gun post (After-most)	3mm Wood	2
36	Fore swivel gun post	3mm Wood	6
37	Pawl bitt standard	3mm Wood	2
38	Anchor stock pattern	3mm Wood	2
39	Mast cap	3mm Wood	1
<b>3mm Clear Acetate</b>			
40	Hull cradle (Front)	3mm Clear Acetate	1
41	Hull cradle (Rear)	3mm Clear Acetate	1
42	Hull cradle spacers	3mm Clear Acetate	2
43	Hull cradle lower centre spacer	3mm Clear Acetate	1
<b>1mm Wood</b>			
44	Main deck pattern	1mm Wood	1
45	Rudder head housing platform	1mm Wood	1
46	Capping/Drift rail	1mm Wood	2
47	Stern 'Rough Tree' rail	1mm Wood	2
48	Stern counter pattern	1mm Wood	1
49	Stern transom pattern	1mm Wood	1
50	Lower counter rail	1mm Wood	2

51	Stern transom rail (Lower)	1mm Wood	1
52	Stern transom rail (Middle)	1mm Wood	1
53	Stern transom rail (Upper)	1mm Wood	1
54	Inner Stern transom vertical rail (Outer)	1mm Wood	2
55	Inner Stern transom vertical rail (Inner)	1mm Wood	2
56	Rudder head housing platform panel	1mm Wood	2
57	Windlass belaying pin rack (Long)	1mm Wood	1
58	Windlass belaying pin rack (Short)	1mm Wood	1
59	Ships' stove flue combing	1mm Wood	1
60	Tiller arm (To be glued together)	1mm Wood	2
61	Hull side step	1mm Wood	4
62	Front capping spacer pattern	1mm Wood	2
63	Bread hatch combing	1mm Wood	1
64	Bread hatch lid	1mm Wood	1
65	Mast cheek	1mm Wood	2
66	Topgallant mast truck	1mm Wood	1
67	Five hole deadeye pattern (Outer)	1mm Wood	2
68	Five hole deadeye pattern (Inner)	1mm Wood	1

### 1.5mm Wood

69	Cannon shot rack	1.5mm Wood	8
70	Cannon shot rack (Front)	1.5mm Wood	2
71	Timber head	1.5mm Wood	12
72	Stern transom knee	1.5mm Wood	2
73	Rearmost gun port opening vertical post	1.5mm Wood	4
74	Stern 'Rough Tree' rail end pattern	1.5mm Wood	6
75	Stern transom main sail boom cradle	1.5mm Wood	2
76	Stern side counter timber	1.5mm Wood	2
77	Anchor chock	1.5mm Wood	2
78	Cathead support bracket	1.5mm Wood	2
79	Channel pattern	1.5mm Wood	2
80	Mast base	1.5mm Wood	1
81	Trestle tree	1.5mm Wood	2
82	Cross tree	1.5mm Wood	3
83	Stool for boom	1.5mm Wood	1
84	Stool bracket/support	1.5mm Wood	4
85	Main boom jaws	1.5mm Wood	1
86	Gaff boom jaws	1.5mm Wood	1
87	Fore companionway combing (Inner)	1.5mm Wood	2
88	Fore companionway combing (Inner)	1.5mm Wood	2
89	Fore companionway combing (Outer)	1.5mm Wood	2
90	Fore companionway combing (Outer)	1.5mm Wood	2
91	Main hatch combing (Inner)	1.5mm Wood	2
92	Main hatch combing (Inner)	1.5mm Wood	2
93	Main hatch combing (Outer)	1.5mm Wood	2
94	Main hatch combing (Outer)	1.5mm Wood	2
95	Rear hatch/Skylight combing (End)	1.5mm Wood	2
96	Rear hatch/Skylight combing (Side)	1.5mm Wood	2
97	After companionway front pattern	1.5mm Wood	1
98	After companionway rear pattern	1.5mm Wood	1
99	After companionway side pattern	1.5mm Wood	2
100	After companionway rear roof pattern	1.5mm Wood	1
101	After companionway top hatch pattern	1.5mm Wood	1
102	6 Pounder gun carriage cheek	1.5mm Wood	24
103	6 Pounder gun carriage front axle	1.5mm Wood	12
104	6 Pounder gun carriage rear axle	1.5mm Wood	12
105	6 Pounder gun carriage front wheel	1.5mm Wood	24
106	6 Pounder gun carriage rear wheel	1.5mm Wood	24
107	6 Pounder gun carriage bed	1.5mm Wood	12

**0.4mm Photo Etched Brass**

PE-1	Deck and gun port eyebolt (with ring)	0.4mm Brass	80
PE-2	Deck and gun port eyebolt ring	0.4mm Brass	80
PE-3	General eyebolt (0.9mm hole)	0.4mm Brass	100
PE-4	5mm Deadeye strop and chain plate	0.4mm Brass	12
PE-5	Bowsprit Outer ring (Three hole)	0.4mm Brass	1
PE-6	Bowsprit Inner ring (One hole)	0.4mm Brass	1
PE-7	Main sail ring	0.4mm Brass	8
PE-8	Stempost eyebolt strap	0.4mm Brass	1
PE-9	Stempost 'U' shaped eyebolt	0.4mm Brass	1
PE-10	Shroud cleat	0.4mm Brass	12
PE-11	6 Pounder carriage transverse bolt	0.4mm Brass	14
PE-12	Iron hoop to secure bowsprit	0.4mm Brass	1
PE-13	Square bolt for iron hoop	0.4mm Brass	4
PE-14	Iron plate for backstay rigging	0.4mm Brass	8
PE-15	Rear companionway skylight	0.4mm Brass	1
PE-16	Name plate	0.4mm Brass	2
PE-17	Rigging hook	0.4mm Brass	24
PE-18	Hand pump upper main body	0.4mm Brass	2
PE-19	Hand pump upper side bracket	0.4mm Brass	4
PE-20	Hand pump top cap	0.4mm Brass	2
PE-21	Belaying pin	0.4mm Brass	23
PE-22	Cleat	0.4mm Brass	14
PE-23	Swivel gun mounting	0.4mm Brass	16
PE-24	Mast belaying pin ring	0.4mm Brass	1
PE-25	Handle for part 101	0.4mm Brass	1

**0.6mm Photo Etched Brass**

PE-26	Main hatch grating	0.6mm Brass	1
PE-27	Fore Companionway grating	0.6mm Brass	1
PE-28	Fore main windlass pawl	0.6mm Brass	2
PE-29	Cathead iron cleat	0.6mm Brass	2
PE-30	Inner yard and mast large cleat	0.6mm Brass	8
PE-31	Inner yard small cleat	0.6mm Brass	6
PE-32	Yard outer cleat	0.6mm Brass	46
PE-33	Windlass crank handle	0.6mm Brass	2
PE-34	Rudder gudgeon and pintle	0.6mm Brass	5
PE-35	Anchor ring	0.6mm Brass	2
PE-36	Stanchion	0.6mm Brass	24
PE-37	Small stanchion	0.6mm Brass	4

**0.2mm Photo Etched Brass**

PE-38	Copper horseshoe plate	0.2mm Brass	2
PE-39	Copper Fish plate	0.2mm Brass	2
PE-40	Rudder gudgeon and pintle brace	0.2mm Brass	1
PE-41	Rudder gudgeon and pintle brace	0.2mm Brass	1
PE-42	Rudder gudgeon and pintle brace	0.2mm Brass	1
PE-43	Rudder gudgeon and pintle brace	0.2mm Brass	1
PE-44	Rudder gudgeon and pintle brace	0.2mm Brass	2
PE-45	Rudder gudgeon and pintle brace	0.2mm Brass	2
PE-46	Rudder gudgeon and pintle brace	0.2mm Brass	2
PE-47	Draught markings (copper)	0.2mm Brass	2
PE-48	Carrick bitt iron strap	0.2mm Brass	4
PE-49	Iron bracket for mizzen mast step block	0.2mm Brass	2
PE-50	Cap square for 6 Pounder carriage	0.2mm Brass	26
PE-51	Cathead panel decoration	0.2mm Brass	4
PE-52	Cathead end decoration	0.2mm Brass	2
PE-53	Stern transom decoration (centre)	0.2mm Brass	1
PE-54	Stern transom decoration (left)	0.2mm Brass	1
PE-55	Stern transom decoration (right)	0.2mm Brass	1
PE-56	Stern counter decoration (left)	0.2mm Brass	1
PE-57	Stern counter decoration (right)	0.2mm Brass	1
PE-58	Side frieze decoration	0.2mm Brass	2
PE-59	Side frieze decoration	0.2mm Brass	2
PE-60	Side frieze decoration	0.2mm Brass	2
PE-61	Side frieze decoration	0.2mm Brass	2
PE-62	Side frieze decoration	0.2mm Brass	2
PE-63	Side frieze decoration	0.2mm Brass	2

PE-64	Side frieze decoration	0.2mm Brass	2
PE-65	Side frieze decoration	0.2mm Brass	2

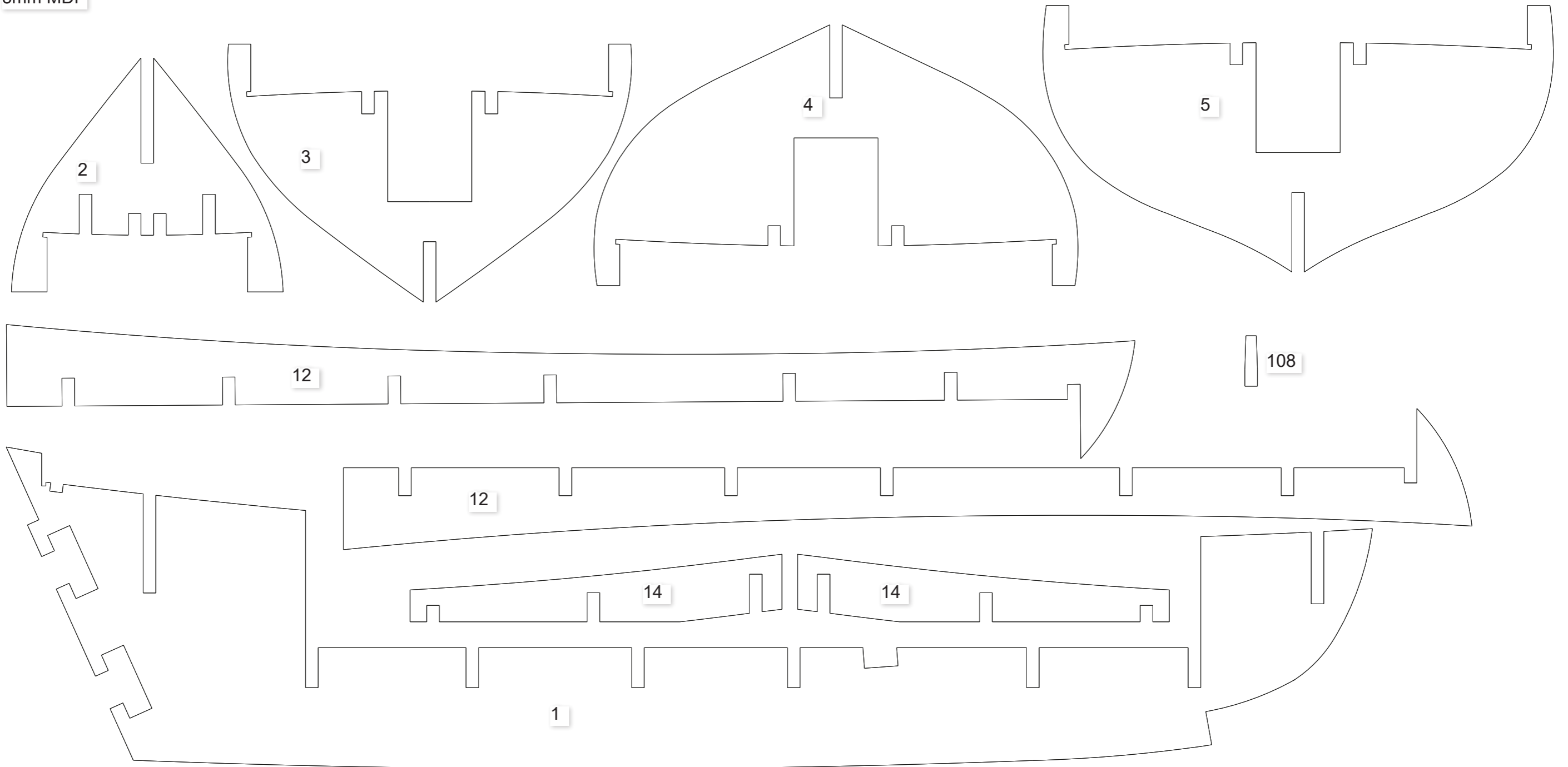
**Fittings**

F-1	Main windlass spindle/drum	Casting	1
F-2	Jeer and topsail bitts windlass	Casting	1
F-3	Sheet anchor shank	Casting	2
F-4	6 Pounder cannon barrel	Casting	12
F-5	Half-Pounder swivel gun barrel	Casting	12
F-6	2mm Diameter cannon ball	Steel	62
F-7	Small pin	4136/10	300
F-8	3.5mm Diameter Sheave	4280/35	8
F-9	5mm Deadeye	4050/05	26
F-10	3mm Single block	4070/03	50
F-11	5mm Single block	4070/05	12
F-12	4mm Double block	4080/04	10
F-13	5mm Triple block	4083/05	2
F-14	Parrel bead	Plastic	50

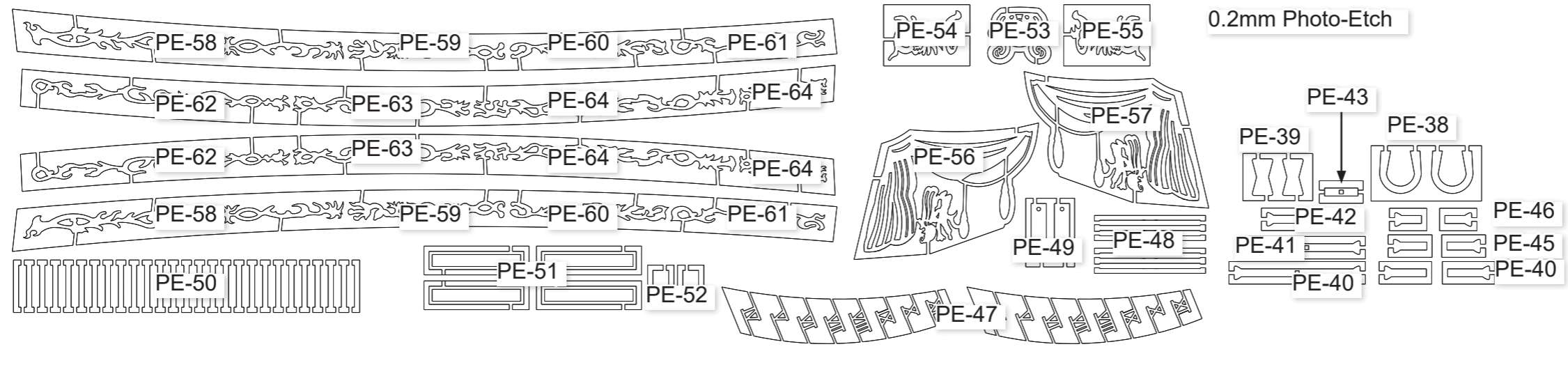
**Materials**

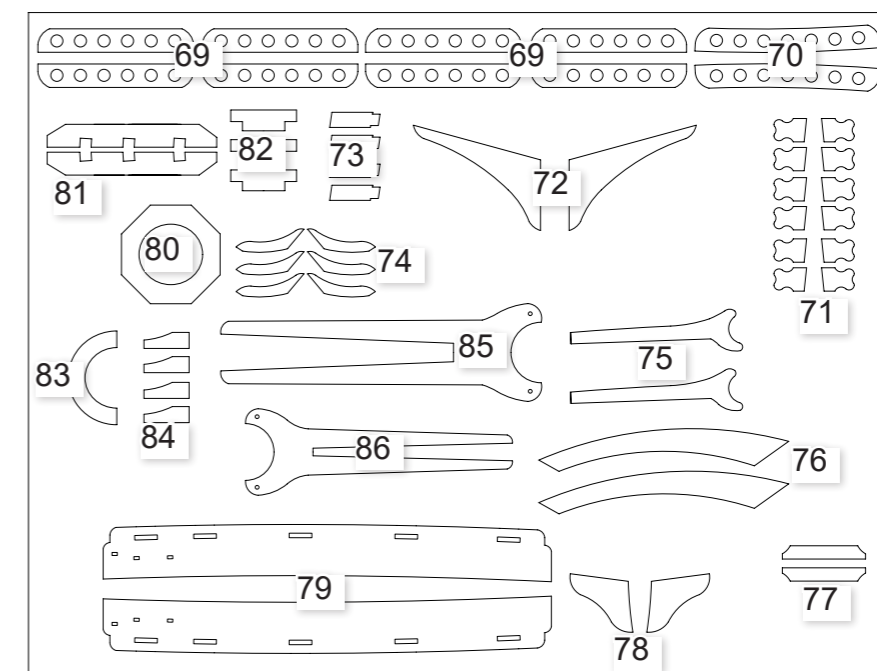
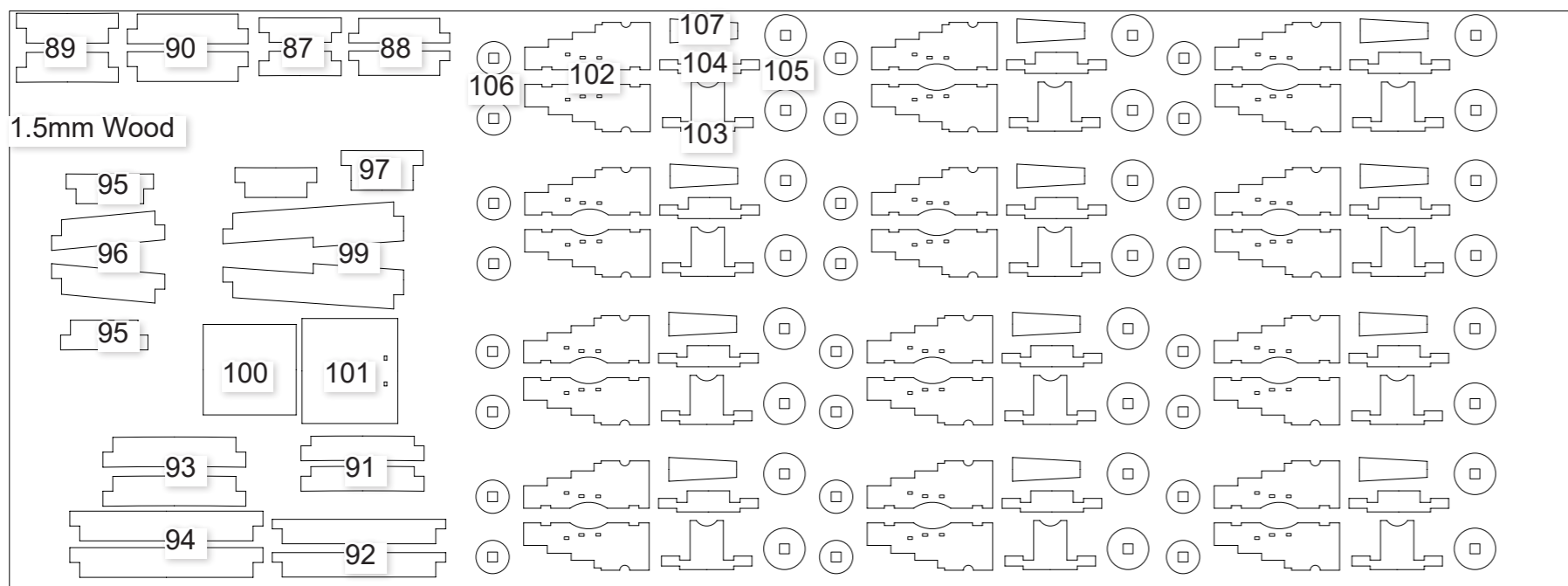
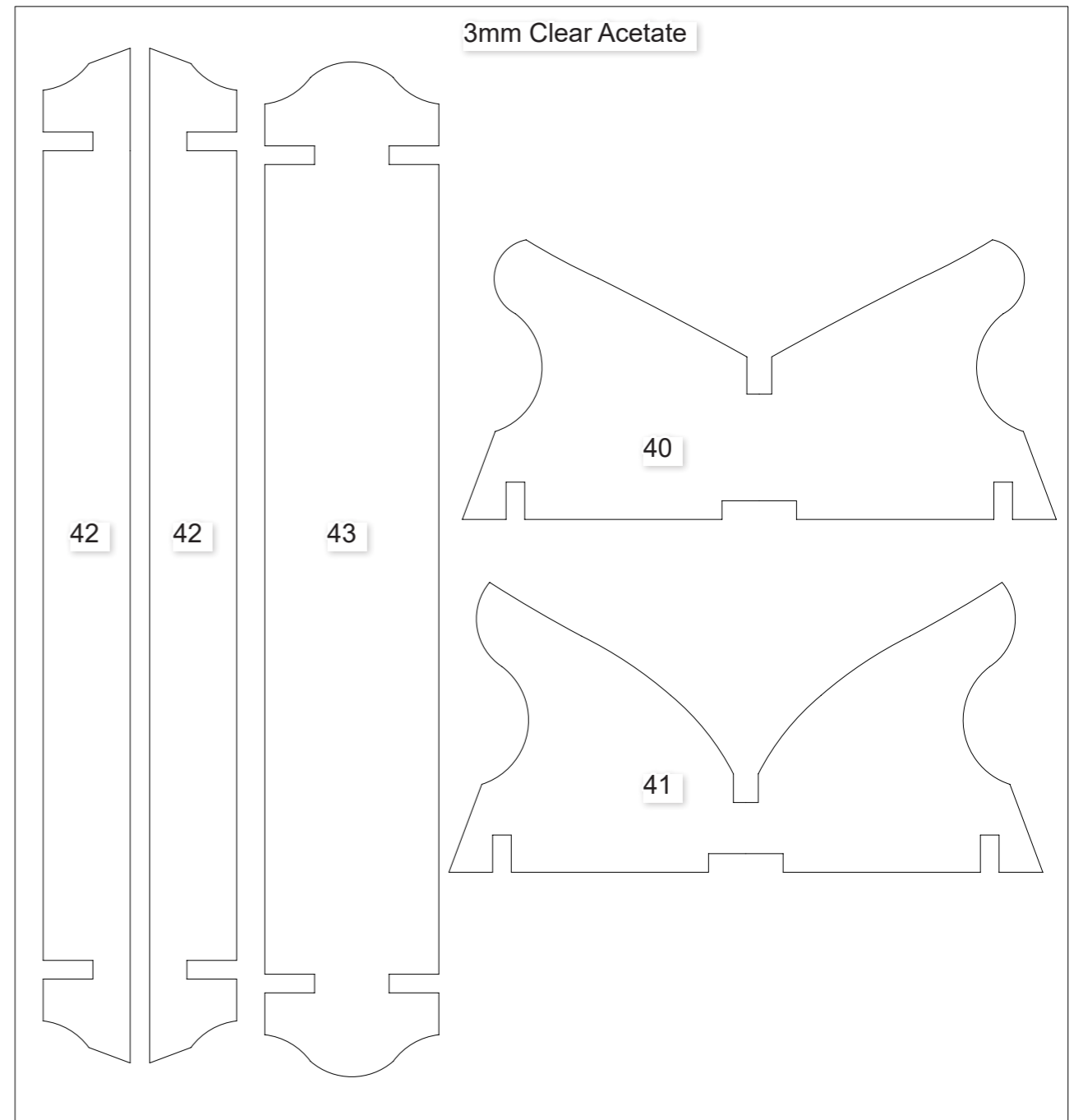
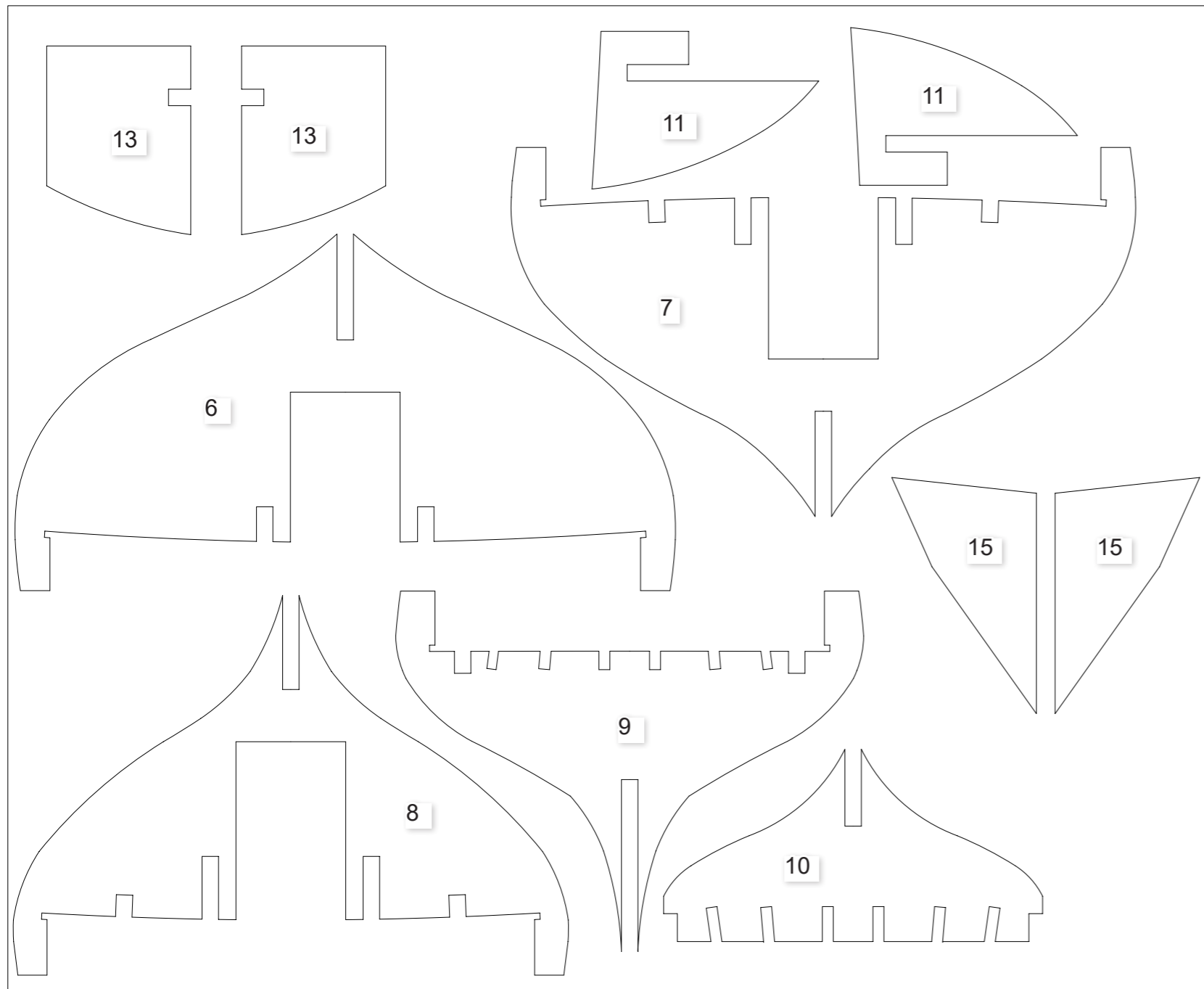
F-15	0.1mm Diameter natural thread	DD 50//8243	40m
F-16	0.25mm Diameter natural thread	DD 36//8243	40m
F-17	0.5mm Diameter natural thread	DD 25//8243	20m
F-18	0.5mm Diameter black thread	DD 25//black	10m
F-19	0.75mm Diameter black thread	DD 18//black	10m
F-20	1mm Diameter black thread	DD 12//black	5m
F-21	1.6mm Diameter natural thread	DD 36//8243	1m
F-22	8mm Dowel x 500mm long	Wood	2
F-23	5mm Dowel x 500mm long	Wood	1
F-24	4mm Dowel x 500mm long	Wood	2
F-25	3mm Dowel x 500mm long	Wood	2
F-26	1.5 x 5 x 500mm long Limewood	Wood	40
F-27	1.5 x 4 x 500mm long Limewood	Wood	4
F-28	1 x 4 x 500mm long Pear Wood	Wood	50
F-29	1 x 3 x 500mm long Pear Wood	Wood	6
F-30	1 x 1 x 500mm long Pear Wood	Wood	4
F-31	1 x 4 x 300mm long Boxwood	Wood	30
F-32	Sail material – 600x600mm	Cloth	1
F-33	Black Cartridge paper (For anchor stock straps)	Paper	1

3mm MDF



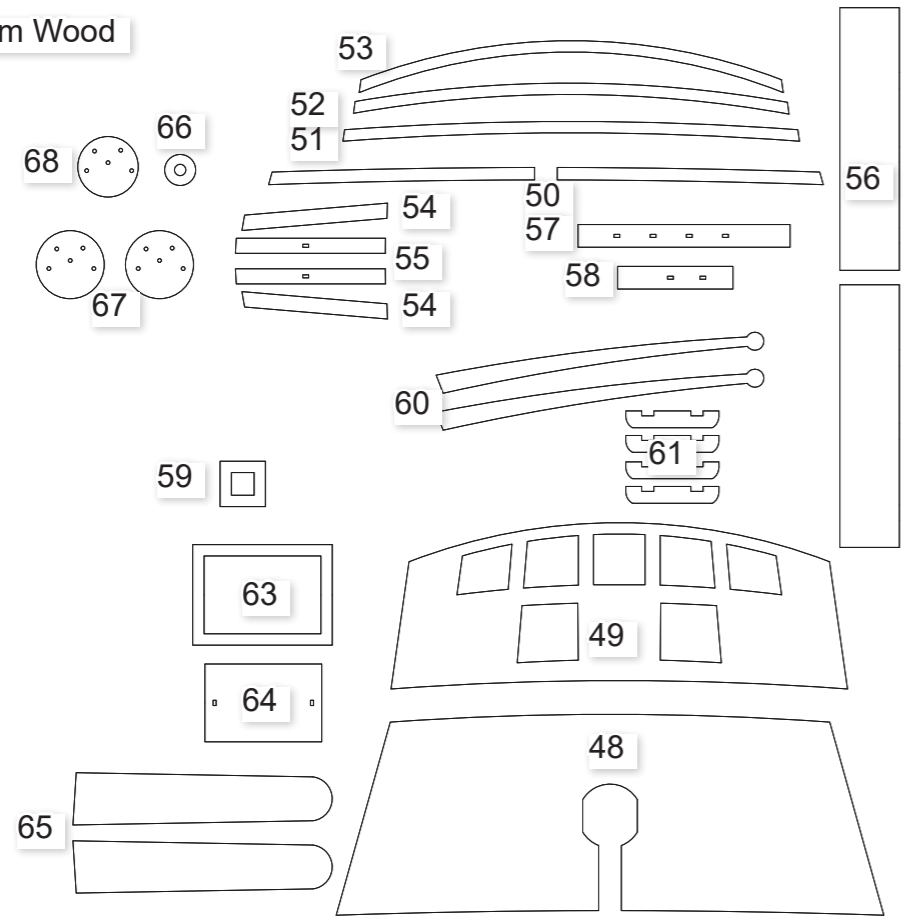
0.2mm Photo-Etch



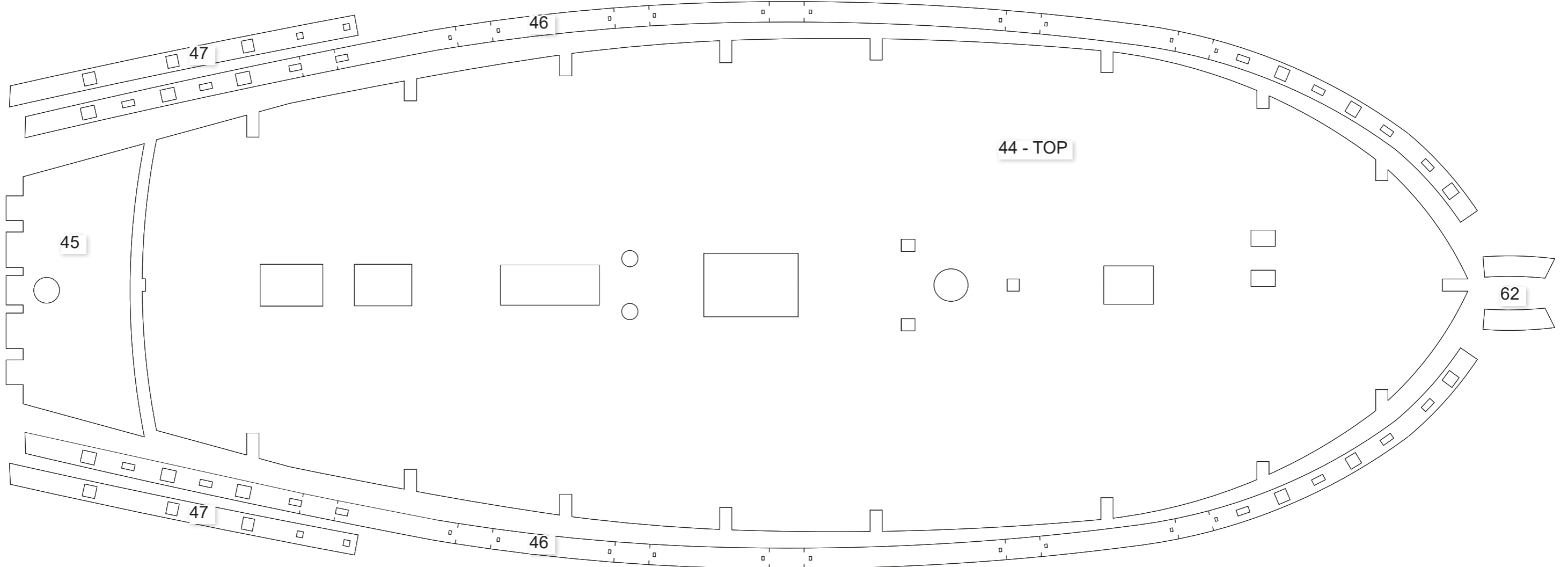
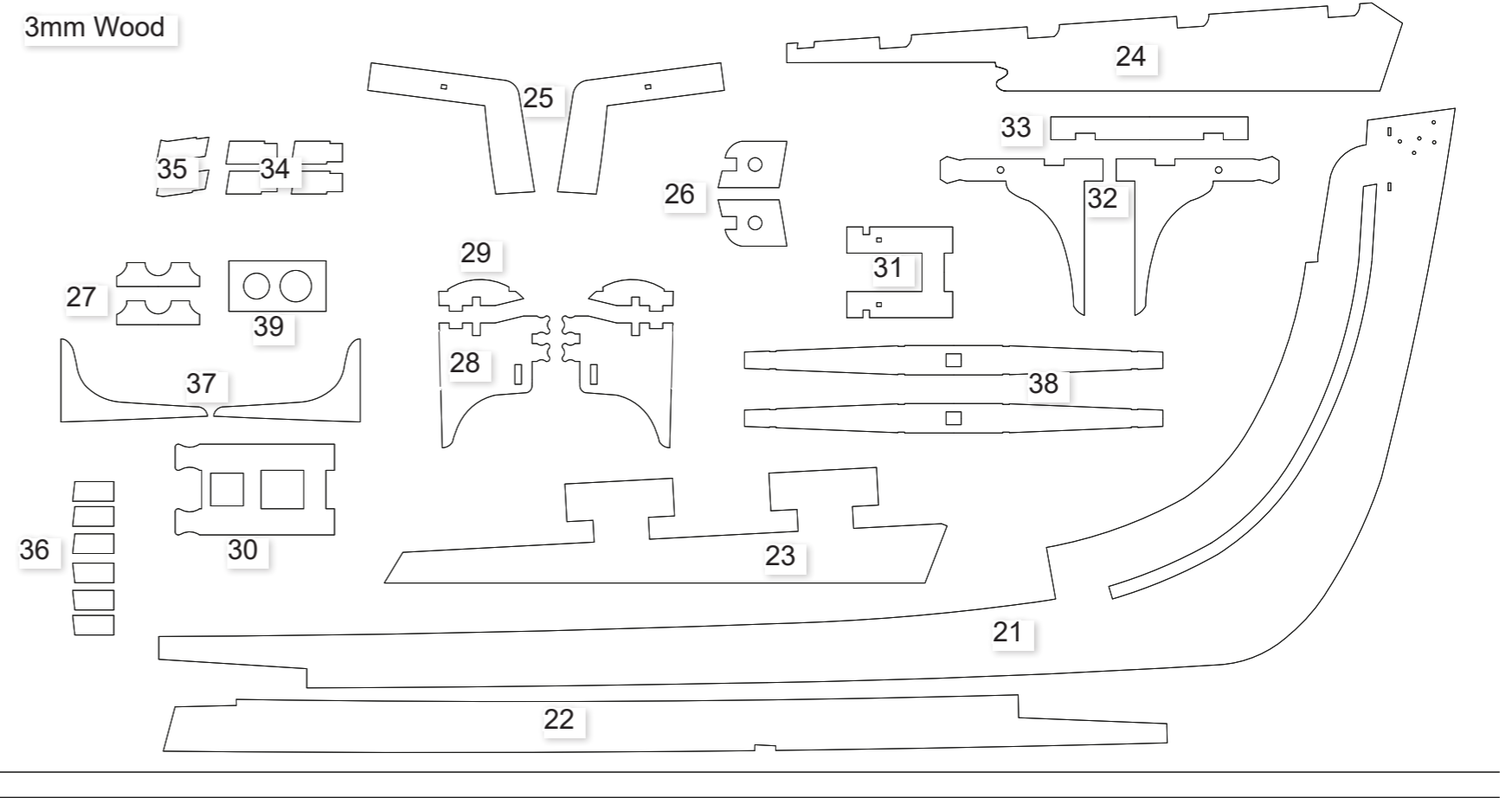




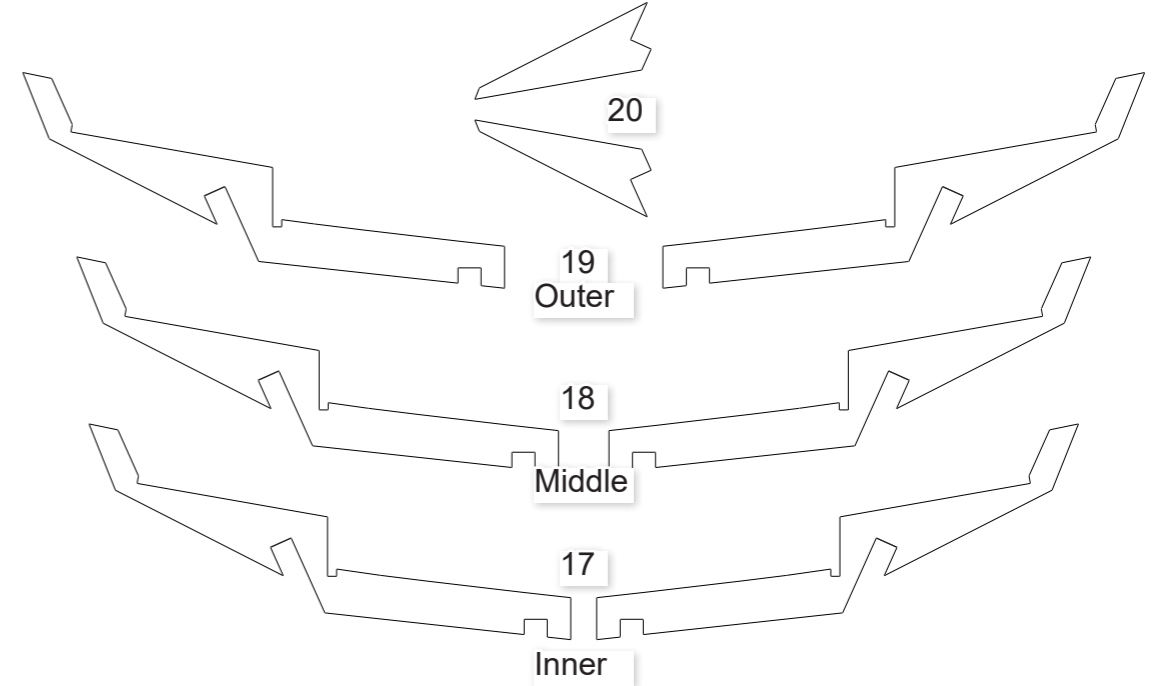
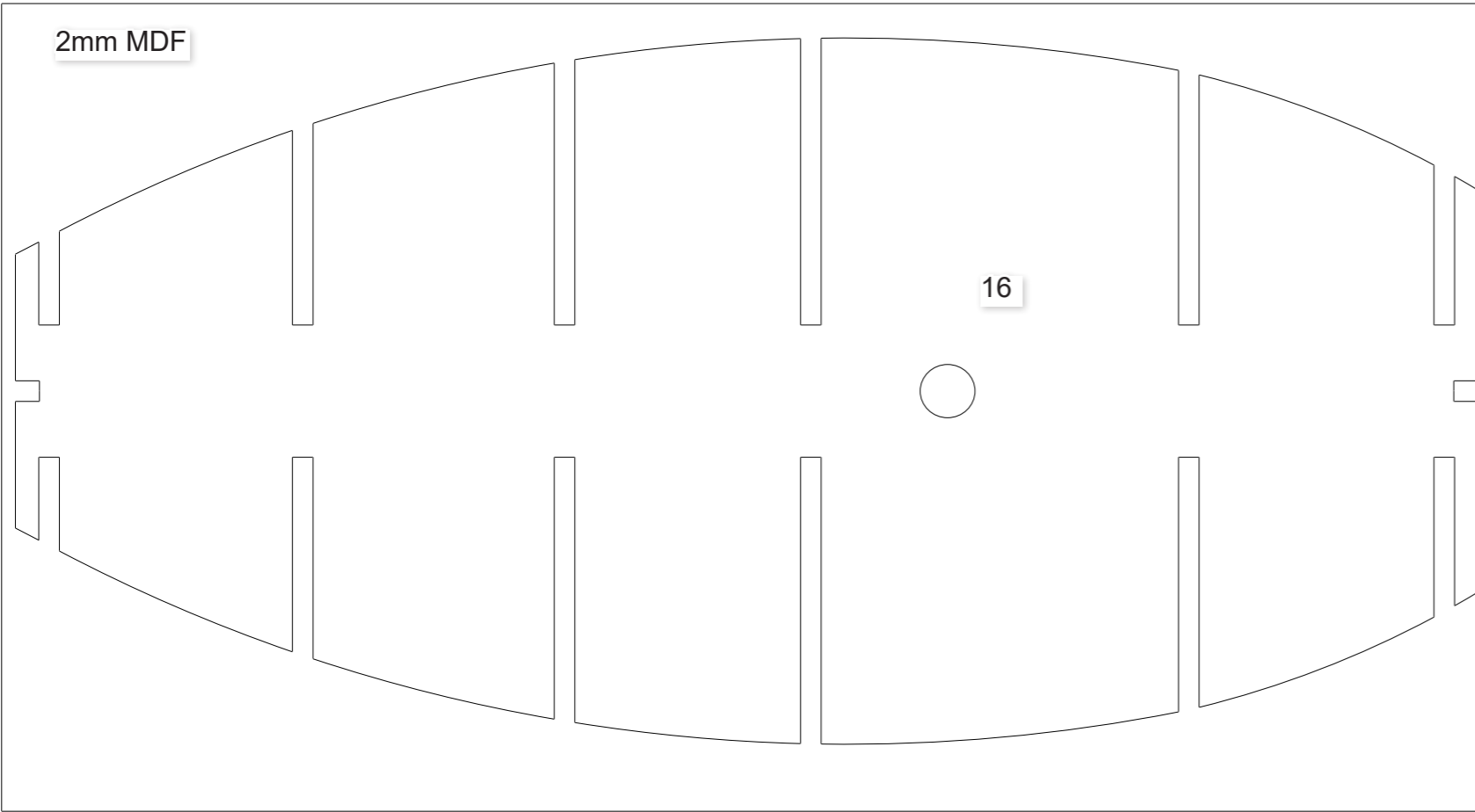
1mm Wood



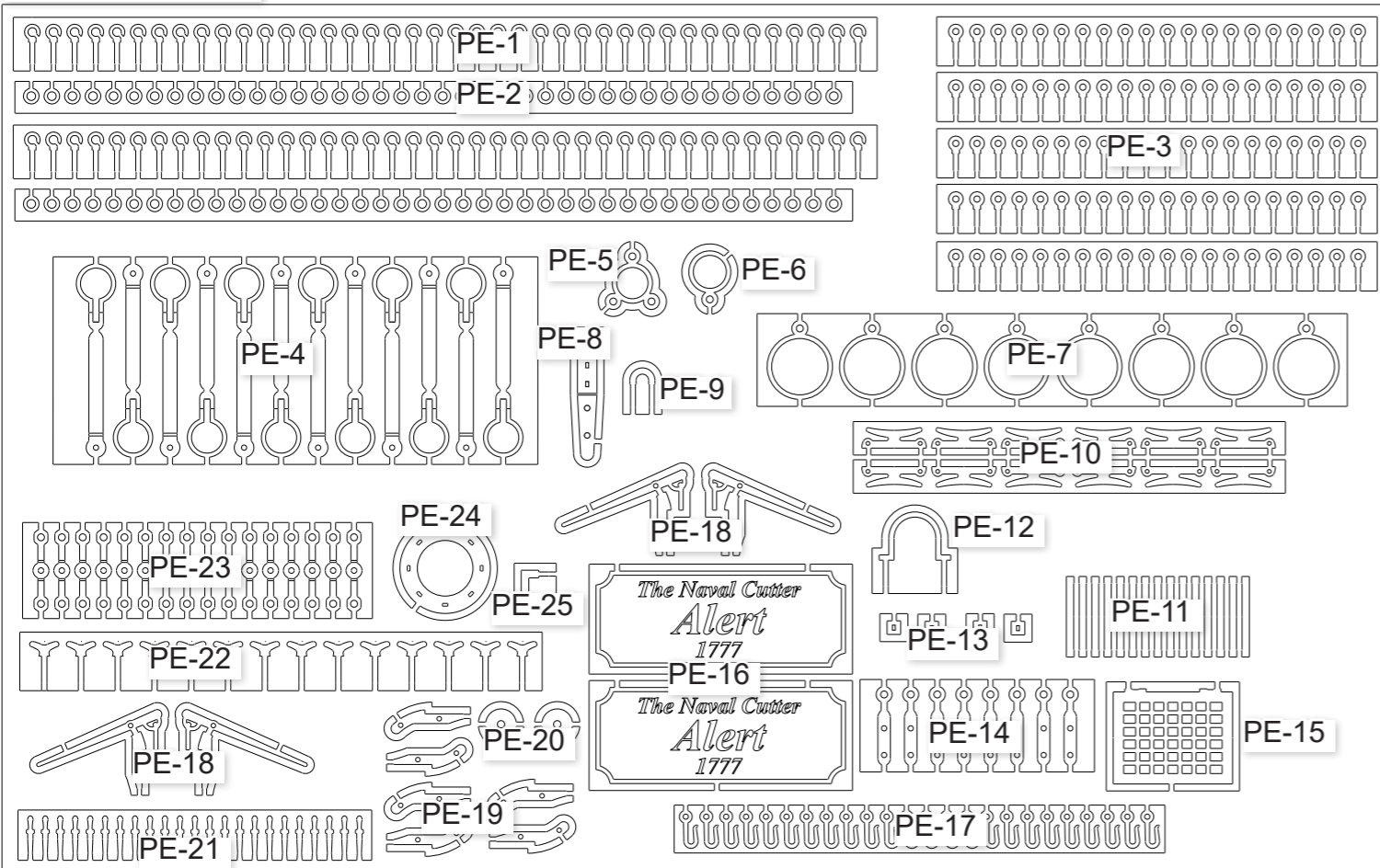
3mm Wood



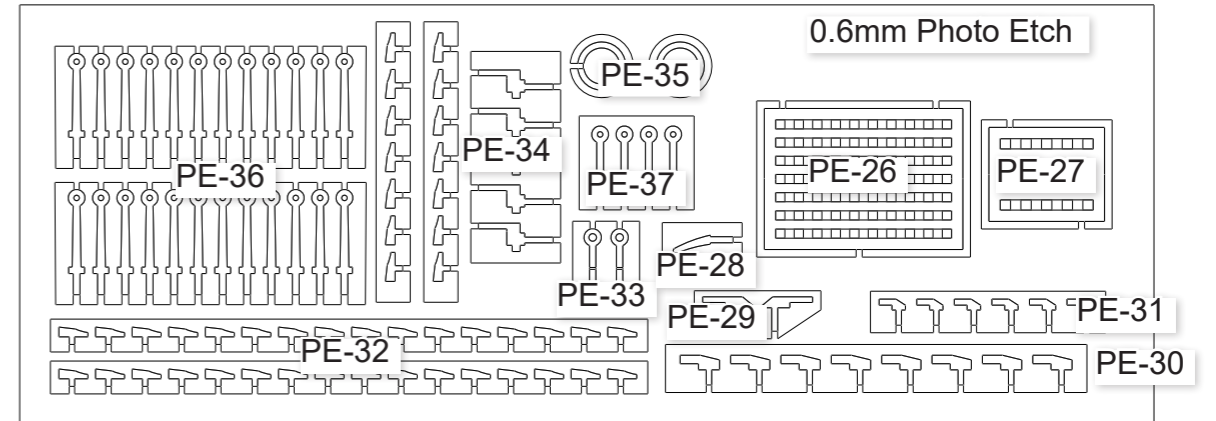
2mm MDF



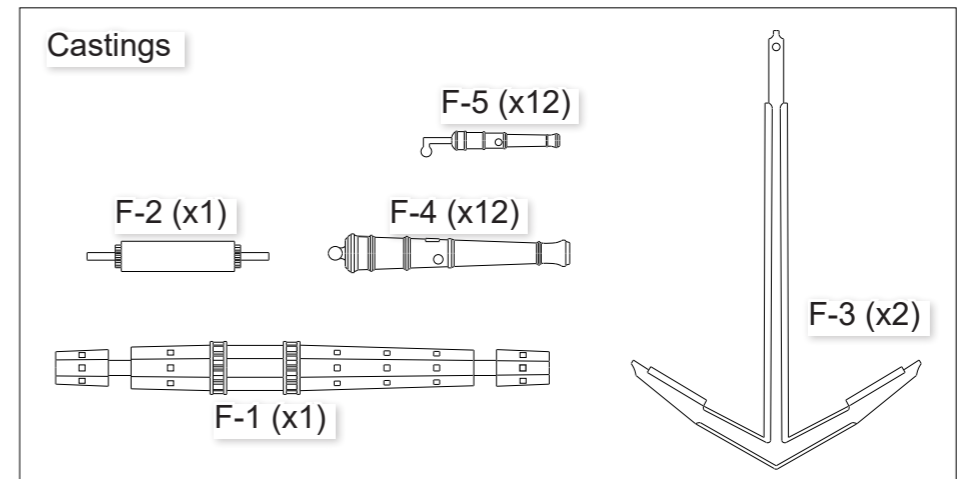
0.4mm Photo Etch



0.6mm Photo Etch



Castings



# HM Cutter Alert Second Edition Kit

Left - New layout for the second edition Alert 1 and 1.5mm laser cut wood sheets.

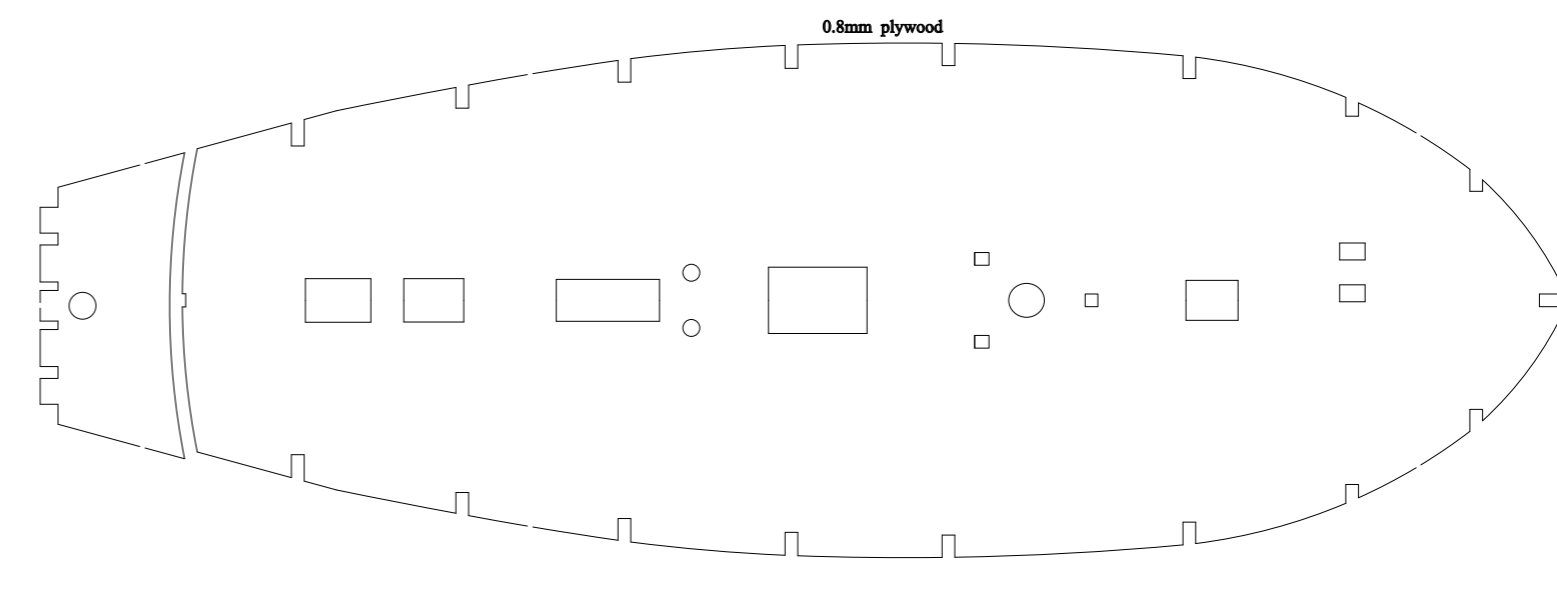
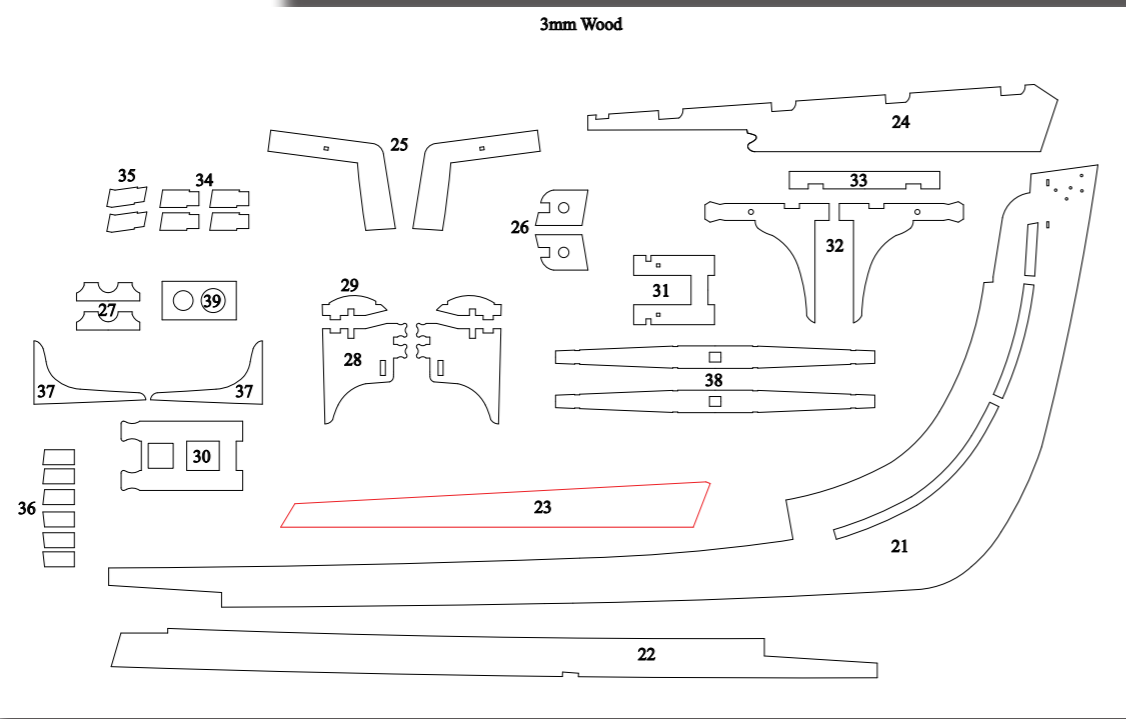
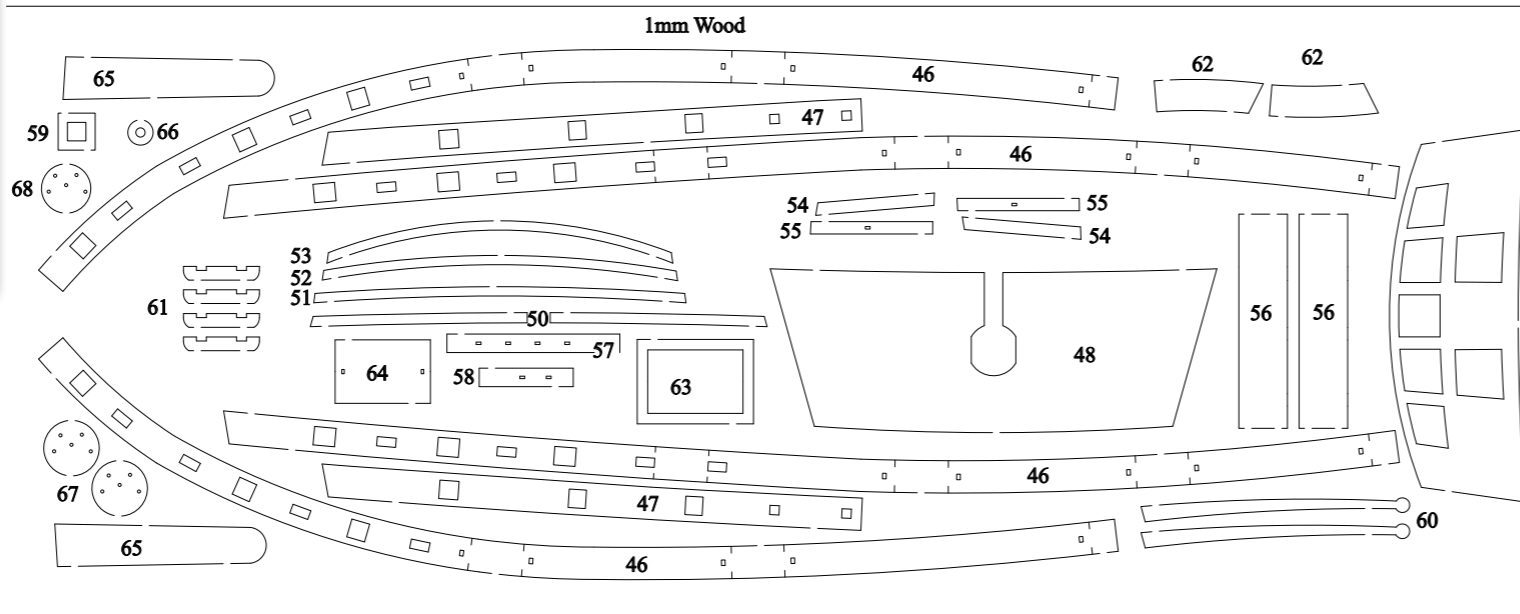
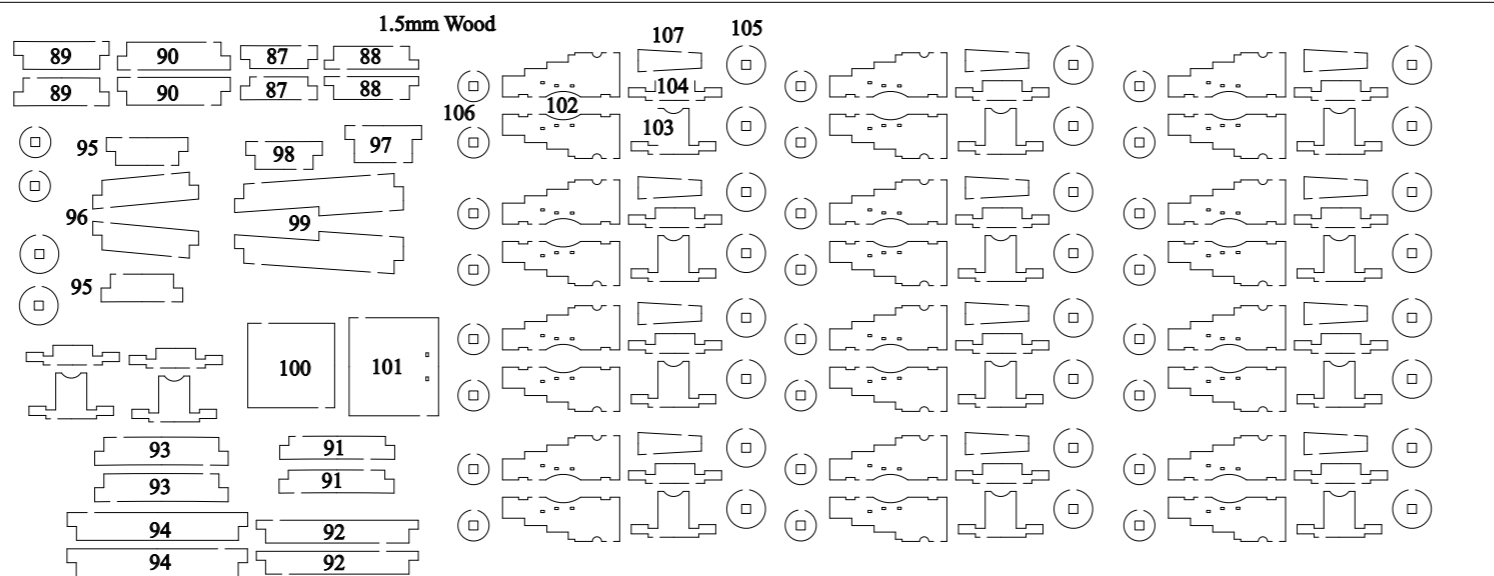
Use these sheets in conjunction with the main building manual. The main differences between the main manual and the second edition kit parts are:

1 - Parts 46 are now split into two lengths per side to minimise the chance of breaking.

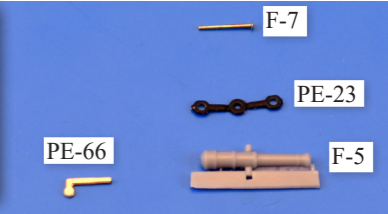
2 - The false keel (1) and rudder post (23) no longer have a location key so that the rudder post can now be added after the first planking is finished, and not before.

3 - The main decks are now in 0.8mm plywood.

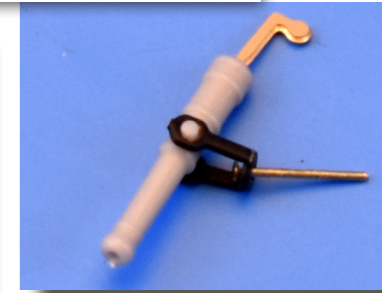
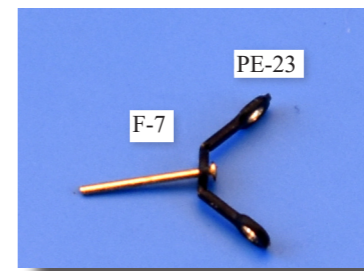
4 - The cannons (both 6-pounder and half-pounder, F-4 and F-5) are now cast in resin to increase the quality of parts. The half pounder now has a separate photo etched sheet containing the extended handles (PE-66)



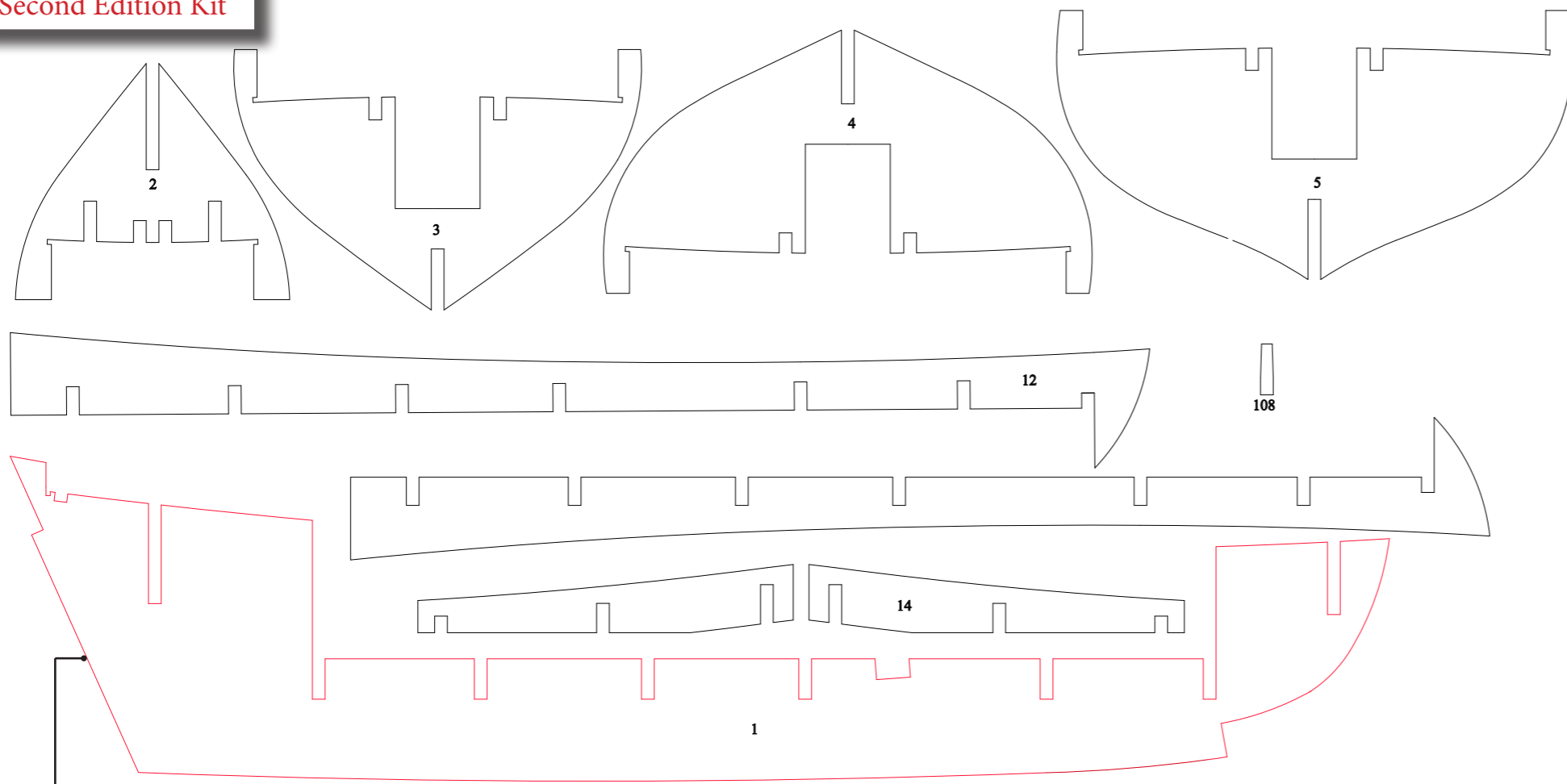
Cast resin guns. The half-pounder swivel gun now has a separate handle, which is found on the separate photo etched small sheet (Part PE-66). Drill and fix the handle in place as shown in the photographs.



Remove the gun from its casting base and clean up. Drill a 0.8mm hole at the rear to take PE-66. Insert and glue PE-66 in place.

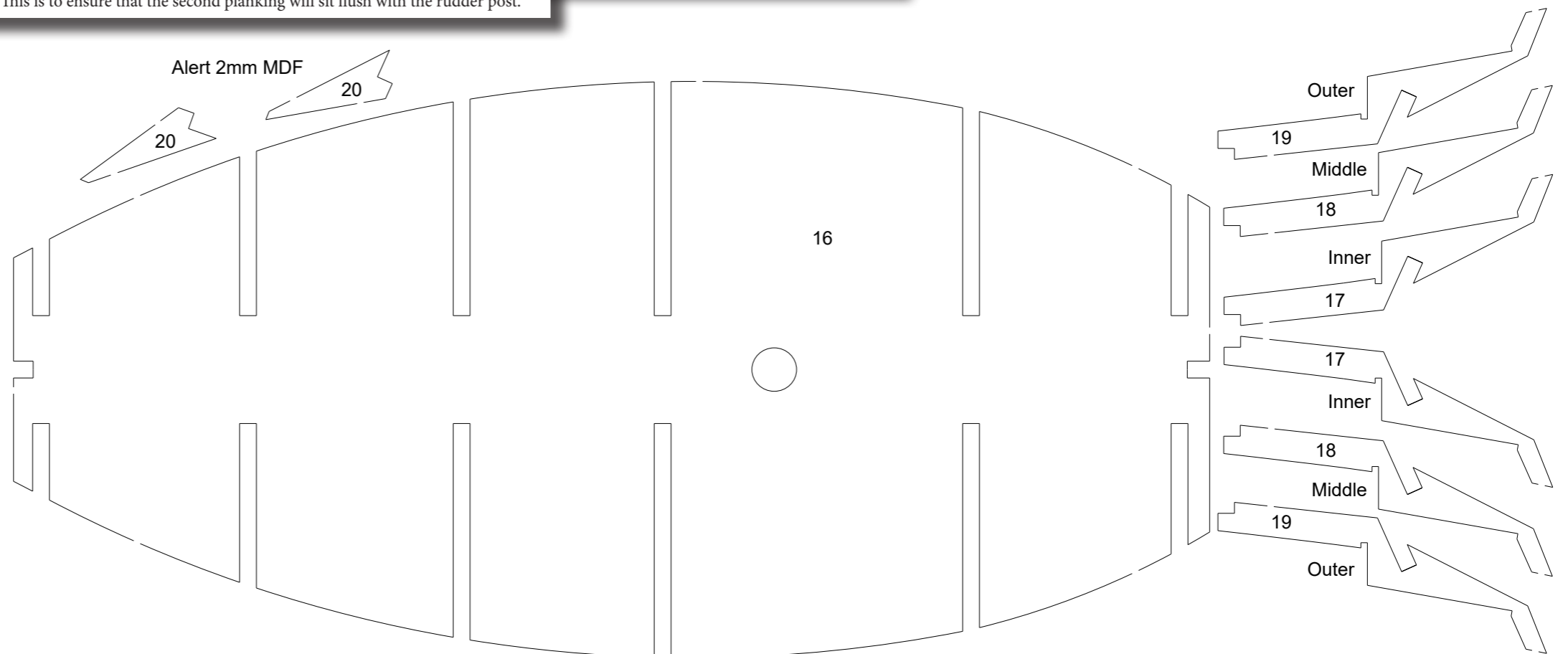


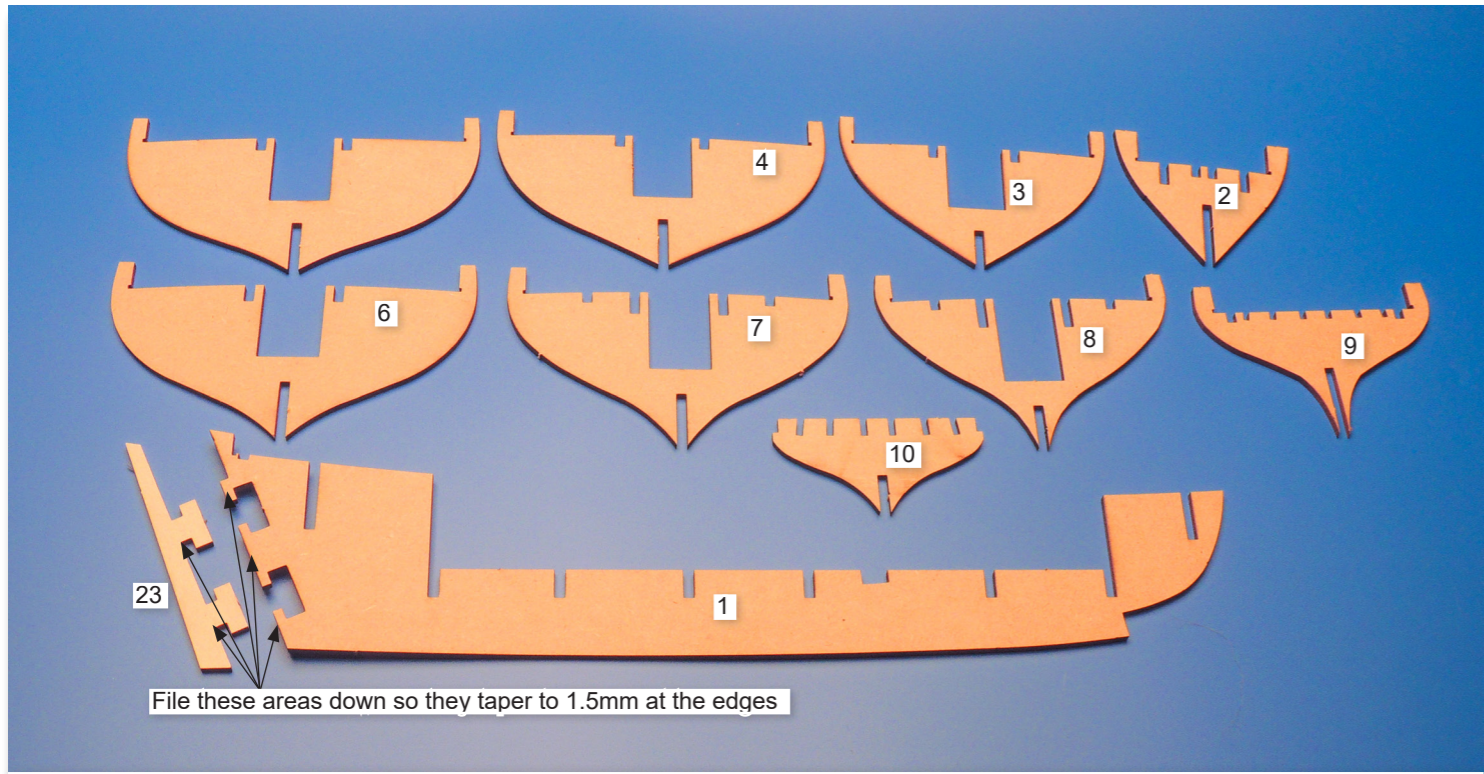
3mm MDF



Above - The false keel (1) now has a straight line for the rudder post (23).  
Add the rudder post (23) only after you have completed the first planking, and not before. Once the first planking is complete, file the edges of the area on part 1 to which the rudder post will be fixed to a thickness of approximately 1mm. This is to ensure that the second planking will sit flush with the rudder post.

Alert 2mm MDF

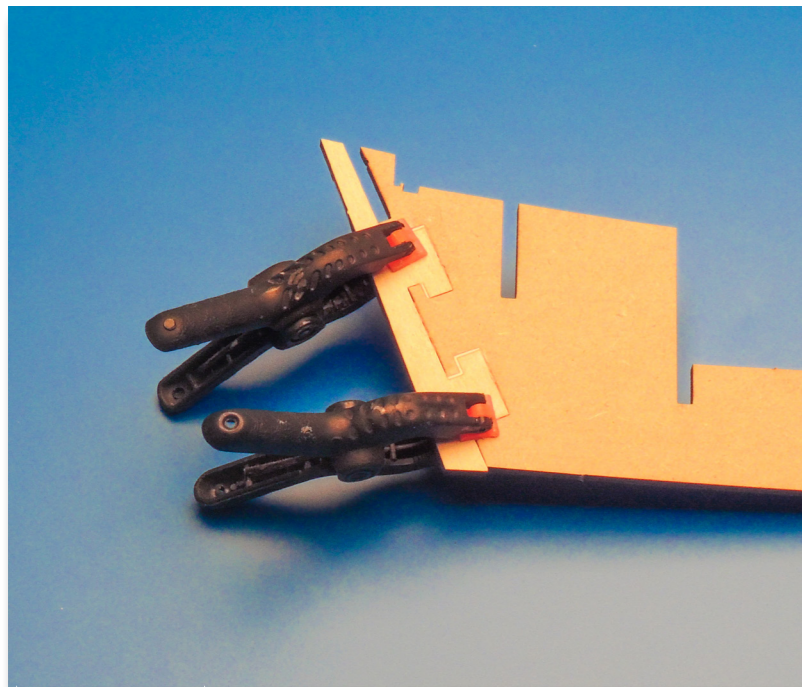




File these areas down so they taper to 1.5mm at the edges

Before removing the component parts from their host sheets, make sure all parts have been numbered. To start the main hull assembly, identify and cut out the main keel (1) from the host 3mm MDF sheet. Next, cut from their host sheets the main bulkheads (2-10).

It is recommended that the stern area of the false keel (1) to which the rudder post (23) will be glued to is sanded to roughly half of its original width. This is because once the second planking is complete, the width of the stern should be very similar to the 3mm width of the rudder post, hence less sanding will be required to attain a flush finish between the keel edge and rudder post.



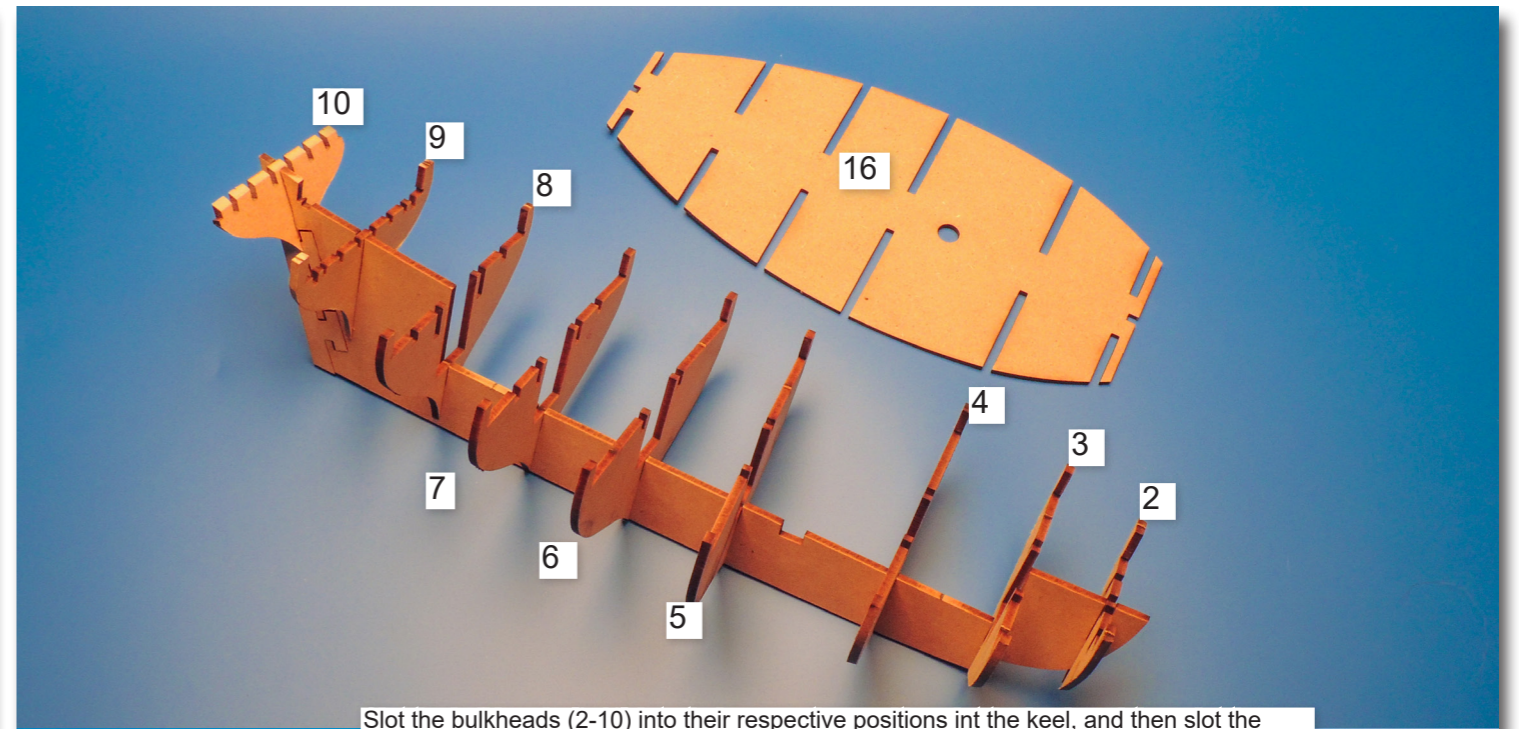
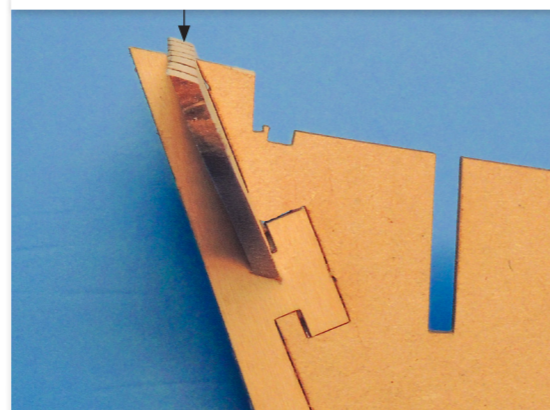
Above - Using PVA wood glue, fix part 23 into part 1 and clamp the two parts together until the glue has cured.

This applies only to Version One of the kit. In Version Two, leave the stern post off until first planking is complete.

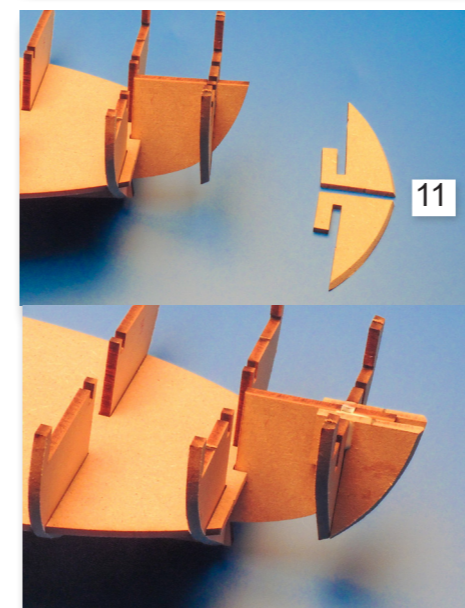
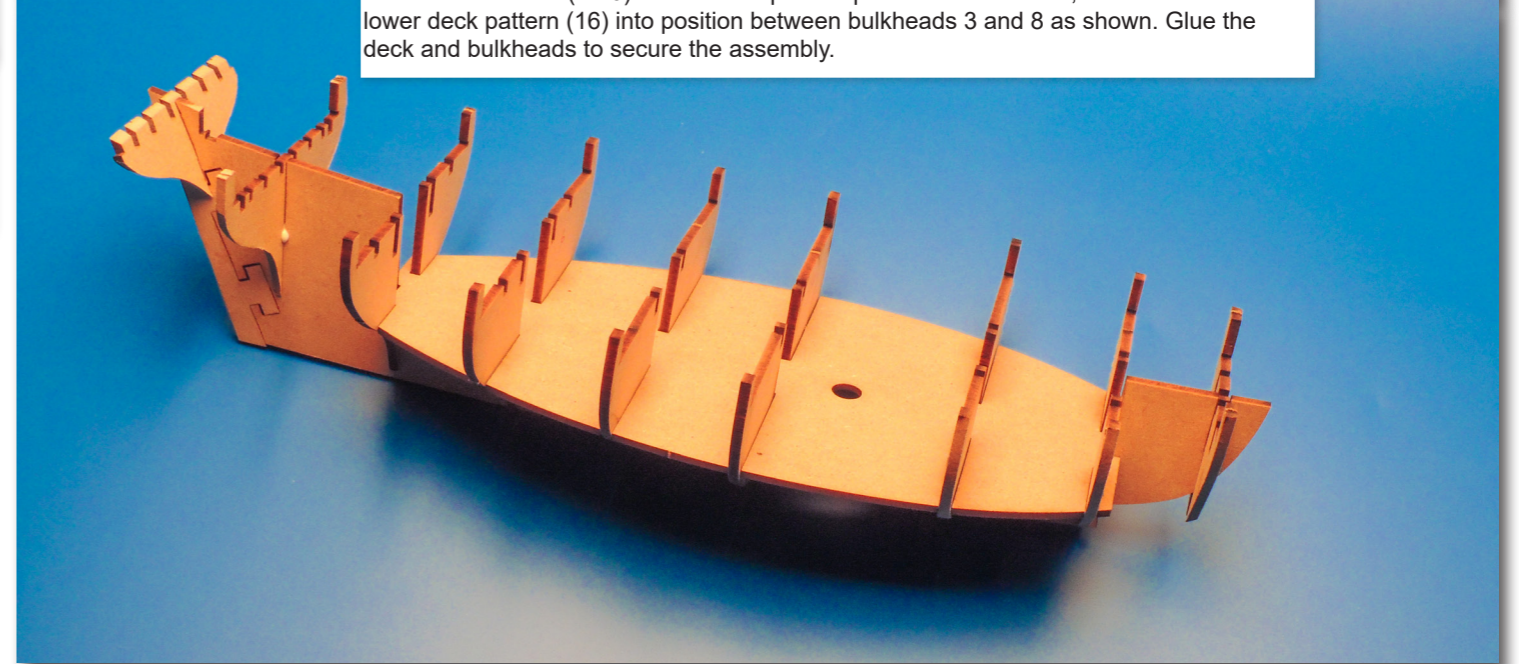
Slot and dry fit (no glue) bulkhead 10 into position in the aftermost slot in the keel as shown.



Sand or file the top edge of bulkhead 10 so that it follows the same angle as the top edge of the keel.

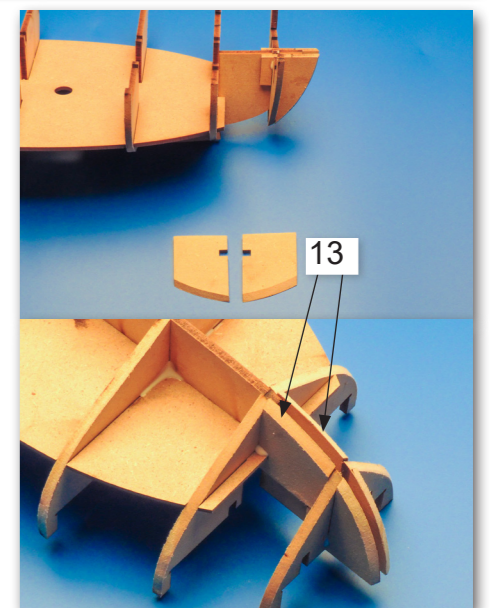


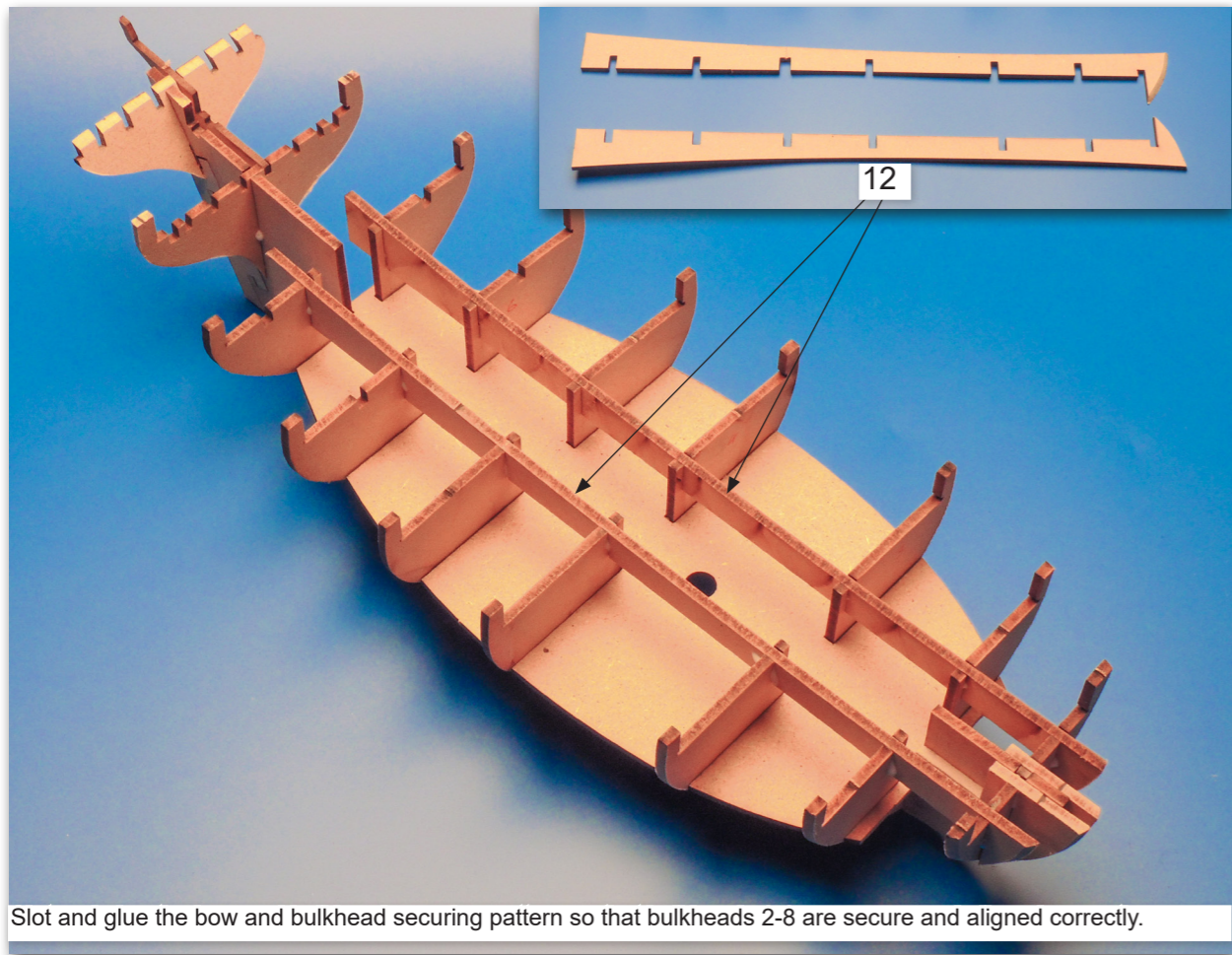
Slot the bulkheads (2-10) into their respective positions into the keel, and then slot the lower deck pattern (16) into position between bulkheads 3 and 8 as shown. Glue the deck and bulkheads to secure the assembly.



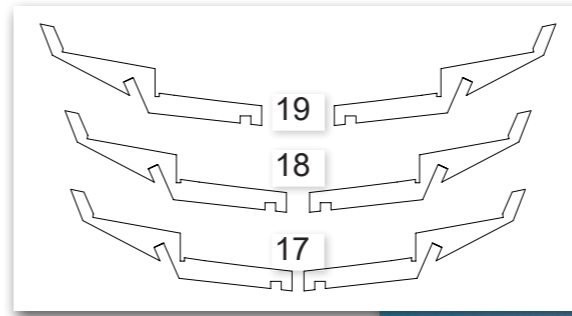
Left - Slot and glue the bow (inner) bow patterns (11) into place each side of the front keel as shown.

Right - Glue parts 13 into place in-between bulkheads 2 and 3. The edges that have contact with the planking can be sanded before fitting, and then sanded/filed again once in place so that the edges are flush with the bevelled bulkhead edges.

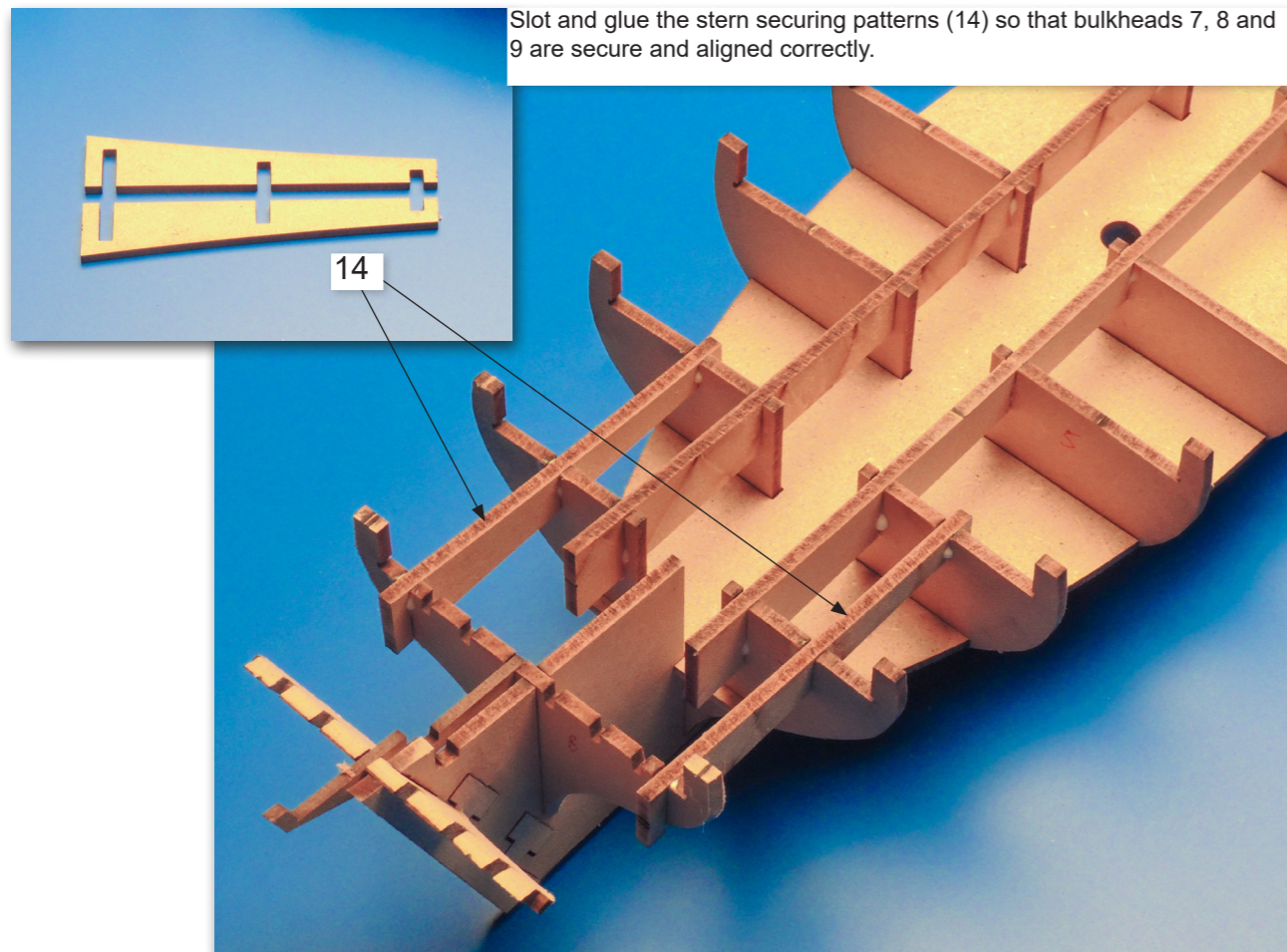
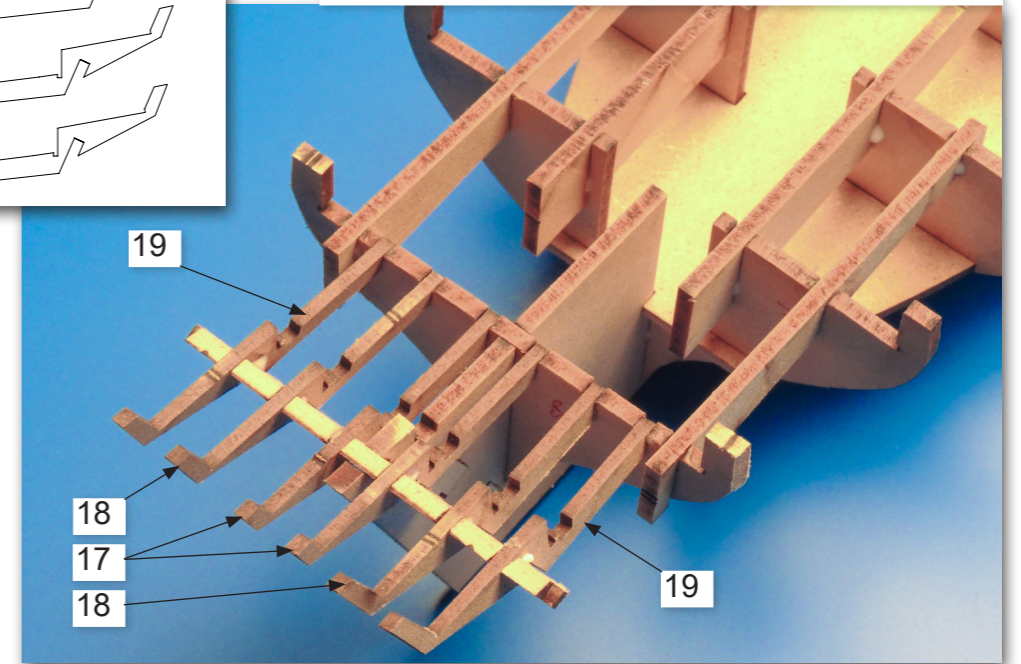




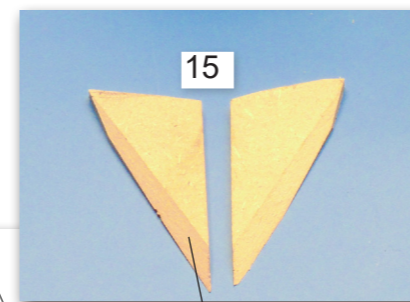
Slot and glue the bow and bulkhead securing pattern so that bulkheads 2-8 are secure and aligned correctly.



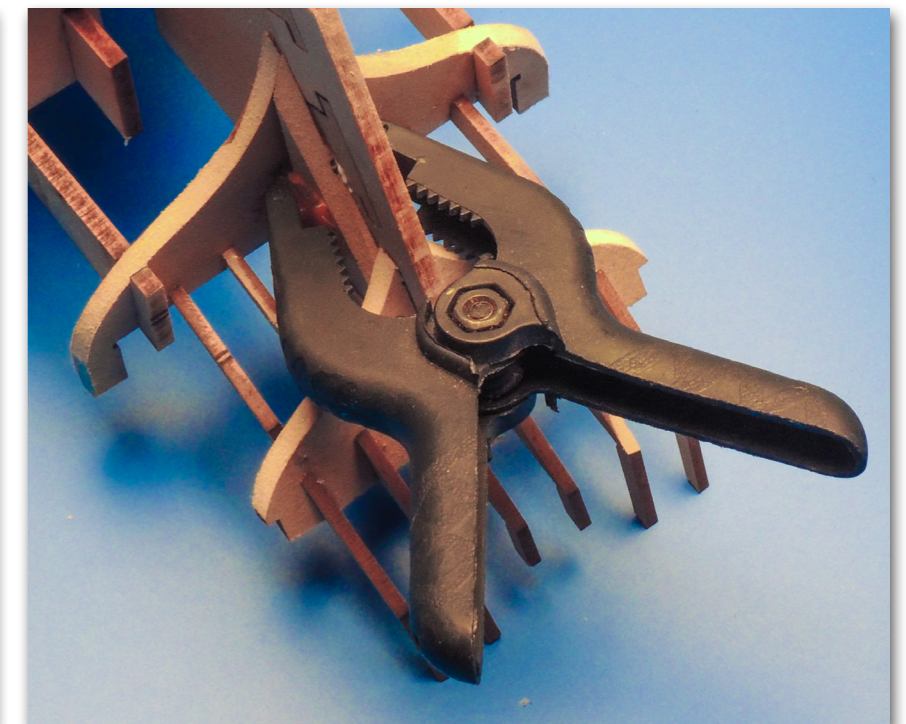
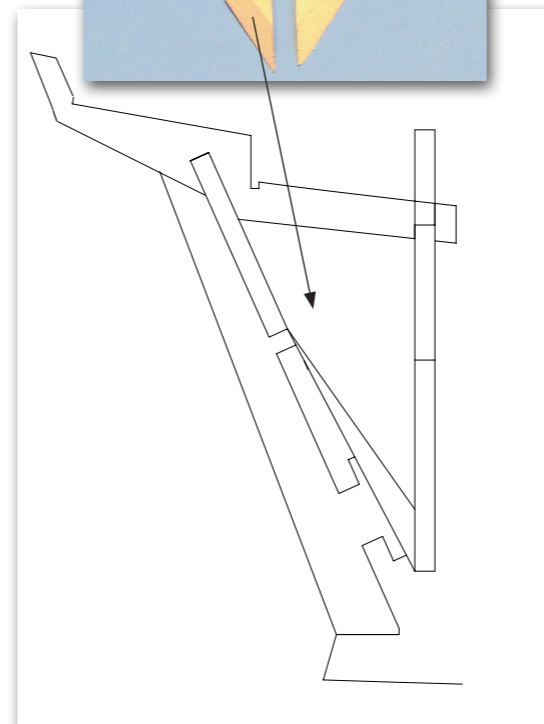
Slot and glue the stern frames into position as shown, taking care to note that part numbers 17 are the inner-most patterns, 18 the middle patterns and parts 19 are the outer patterns.

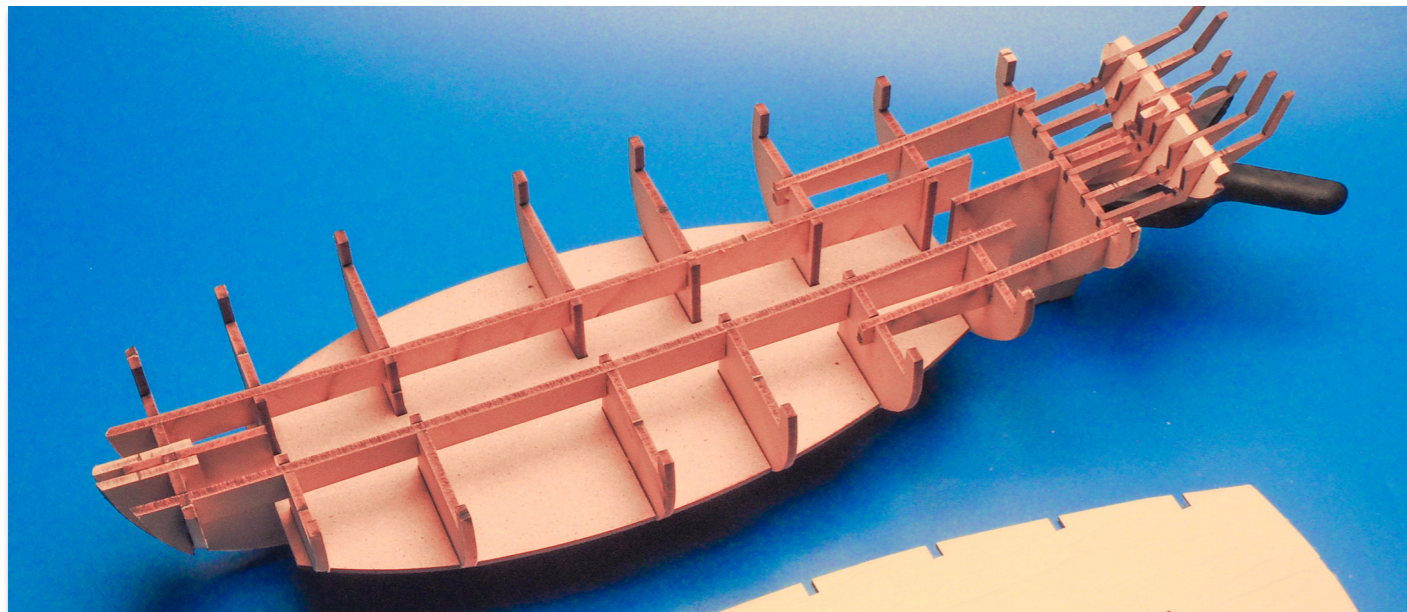


Slot and glue the stern securing patterns (14) so that bulkheads 7, 8 and 9 are secure and aligned correctly.

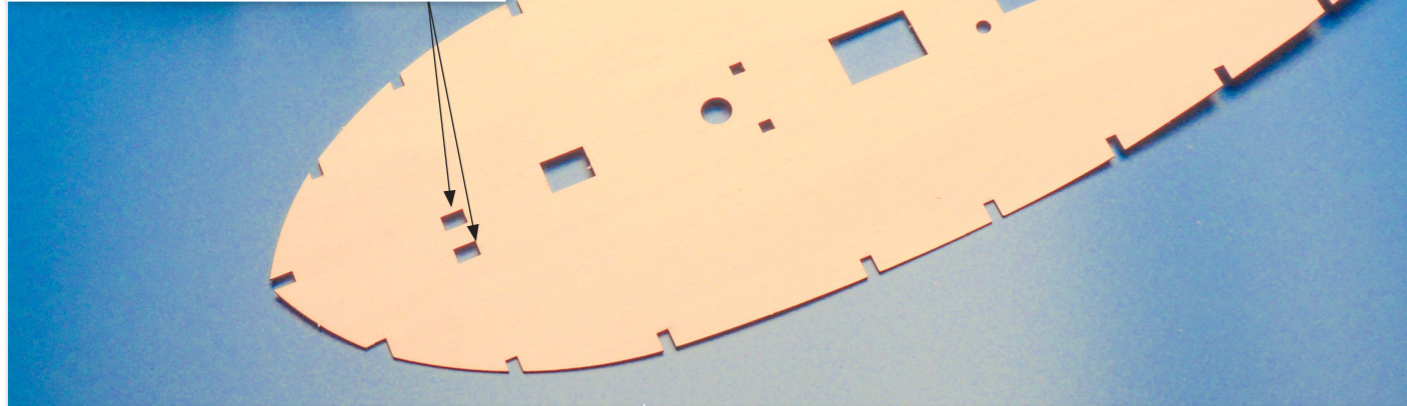


Glue the stern planking patterns (15) in place as shown, and clamp them until the glue has cured. The edges can be bevelled before fixing in place.

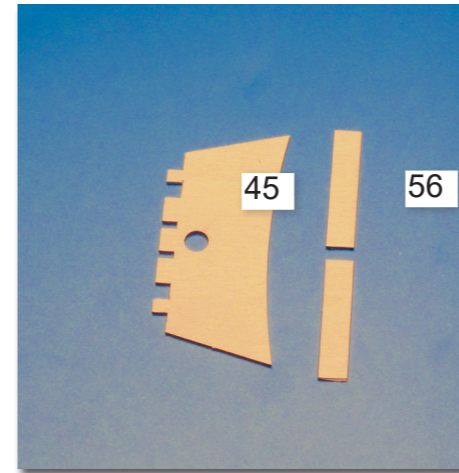
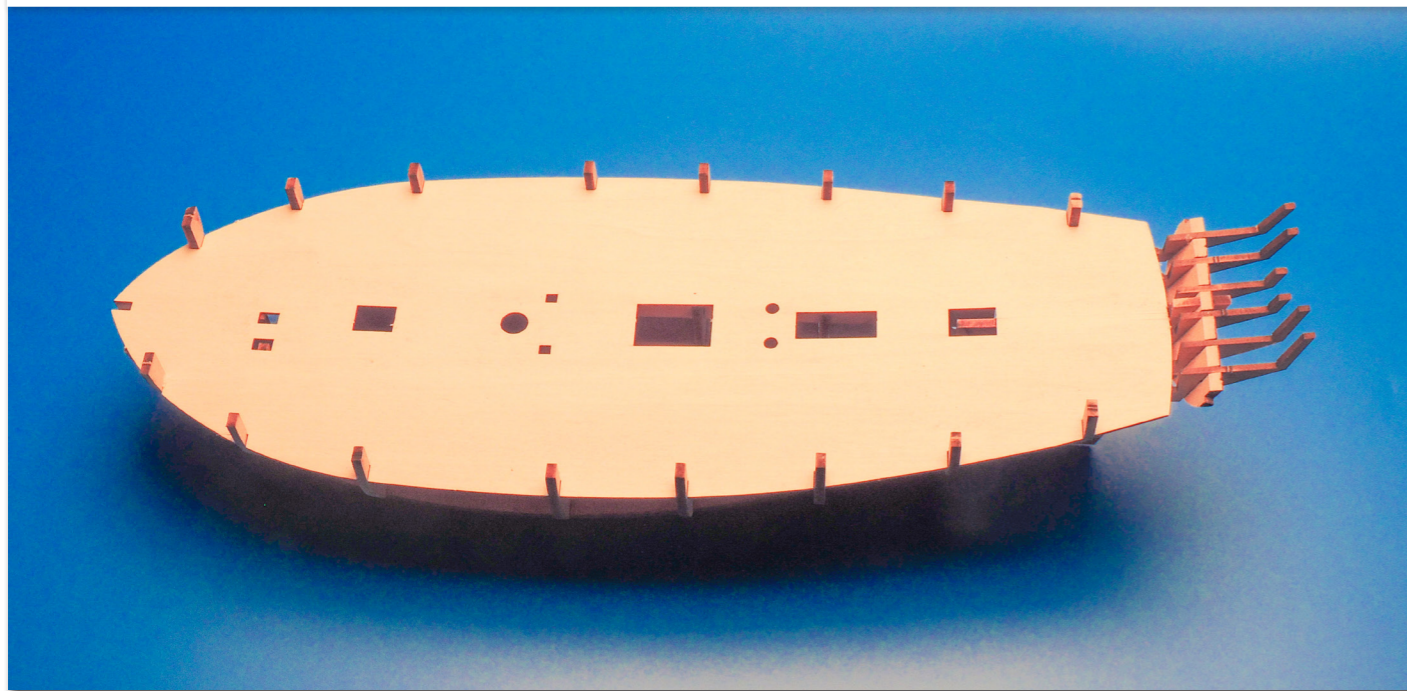




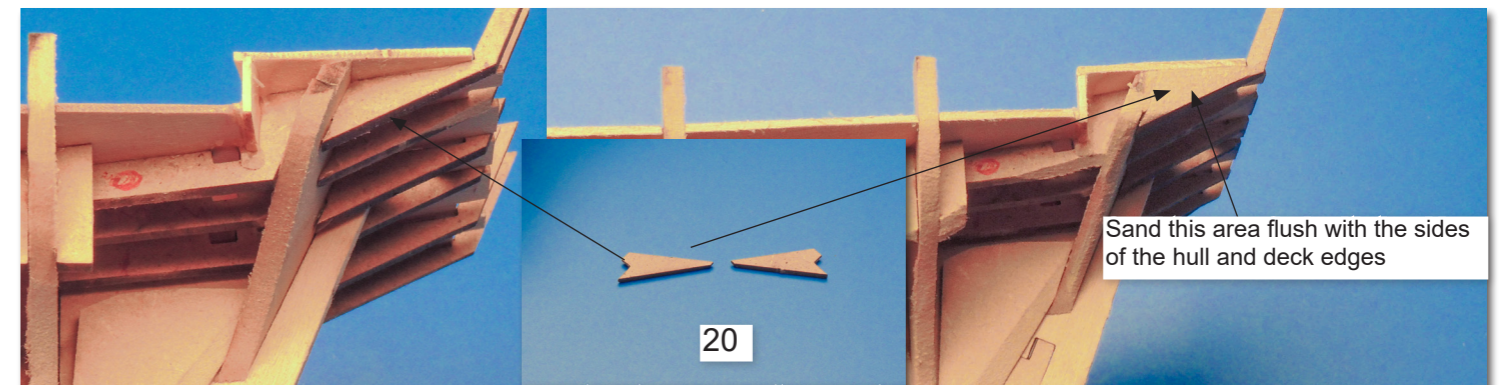
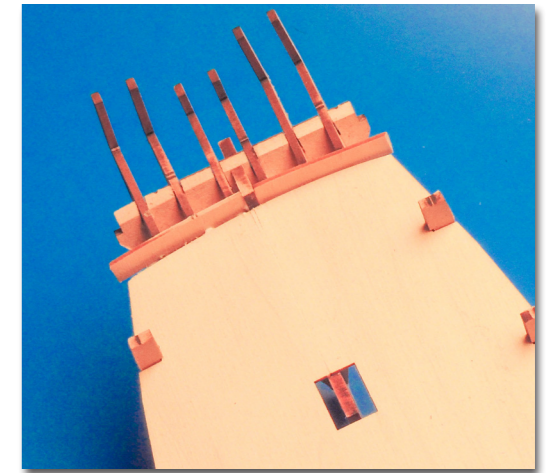
Please note the correct orientation of the deck, the inner slots should be to the left of centre.



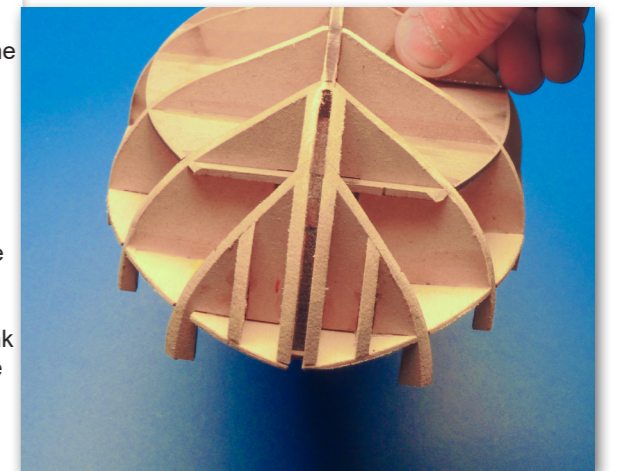
The main deck (44) can now be slotted and glued in place. Apply wood glue to the upper contact surfaces of the bulkheads and longitudinal patterns and carefully slot the deck in place so that the deck slots located into the notched as the edges of each bulkhead. If the centre of the deck pattern bows up slightly, you can either use pins to secure it in place until the glue has cured or use a weight placed near the centre to keep the deck flush against the top surface of the bulkheads and longitudinal patterns.

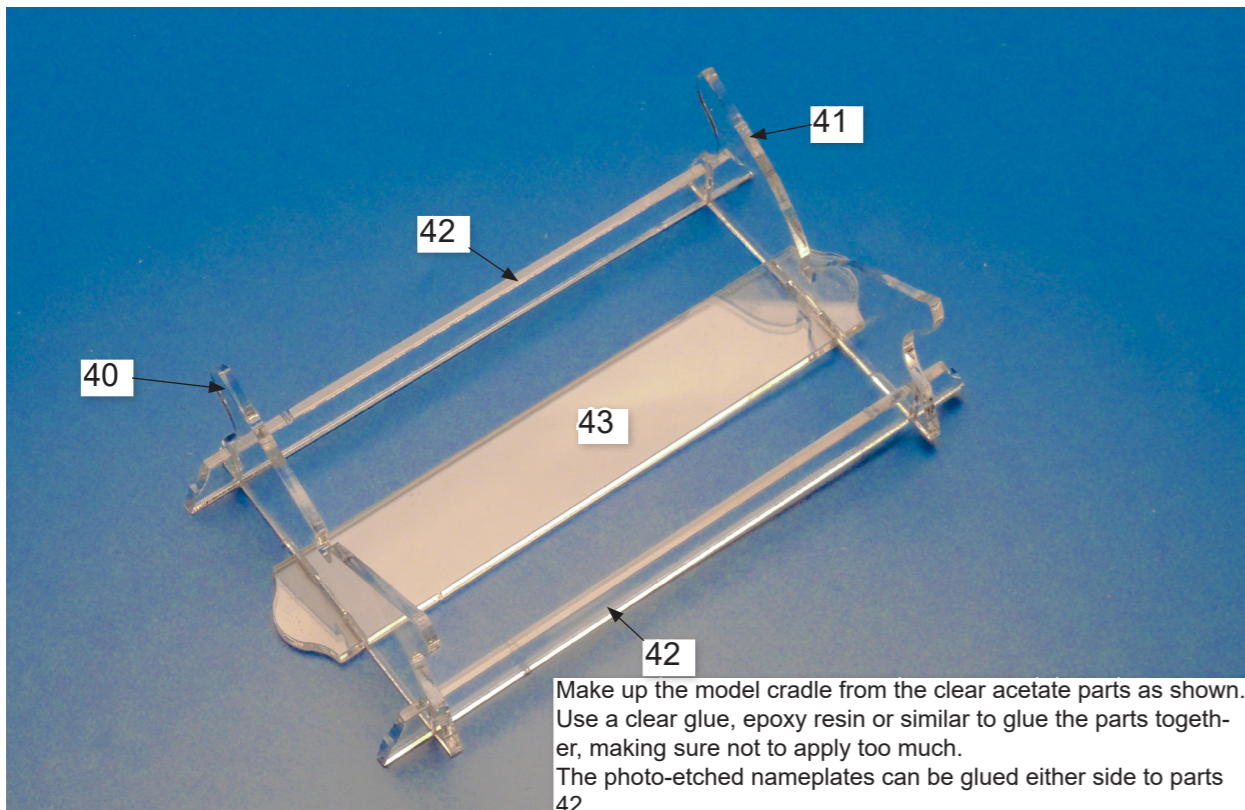


Slot and glue the two rudder platform bulkheads (56) to the positions shown. Sand or file any excess from the top edges, ready for part 45 to fit onto. Next, slot and glue the rudder platform in place as shown, using clamps to keep the deck in place whilst the glue cures. Once the rudder platform is securely fixed, sand or file the edges of parts 56 so they are flush with the edges of both the main deck and rudder platform.



Glue the stern filling pattern (20) to either sides of the outer stern patterns as shown. Once fixed, sand or file the edge so that it follows the same shape as the rear bulkhead and top edge of the rudder platform. This extra pattern just adds a little more gluing surface to which the first planking will be fixed to. Finally, before adding the 3mm wood keel patterns, sand all of the bulkhead and deck edges so they all follow the run or curve of the planking strips. You can lay a plank across the bulkheads to check the edges have maximum contact.

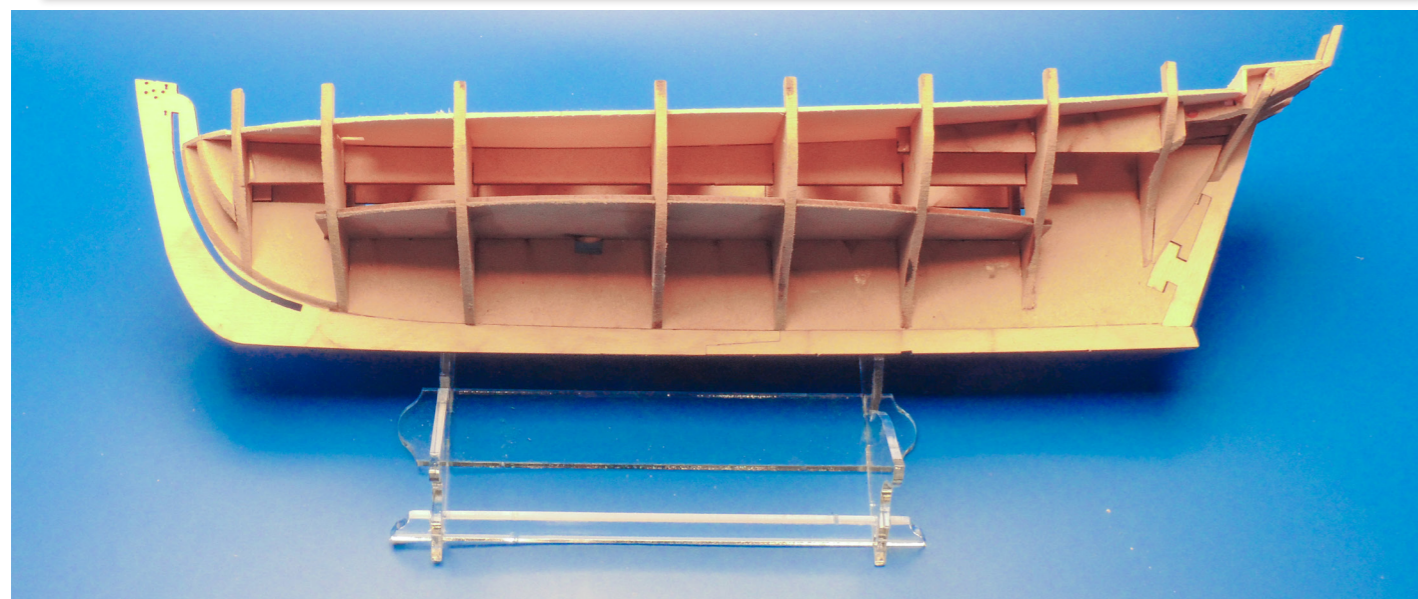




Make up the model cradle from the clear acetate parts as shown. Use a clear glue, epoxy resin or similar to glue the parts together, making sure not to apply too much. The photo-etched nameplates can be glued either side to parts 42.



Remove the front stem and keel (21) and the rear keel pattern (22) from their host wood sheet. Dry-fit the parts and when happy with the fit, glue them in place, starting with part 21. You could apply a drop of cyano glue at regular intervals, in-between the PVA wood glue to help keep the parts in place whilst the PVA wood glue cures. The small slot on the bottom edge of part 22 is to help locate the keel to the cradle. (The cradle may require some bevelling of the top edges for the hull to sit perfectly).



### First Planking

The first planking should now be ready to be laid using 1.5x5mm lime wood strip. The first or 'master plank' is to be laid 4mm down from the top edge of the bulkheads and the front of the plank should fit into the slot in the bow pattern. Because the upper most planking strip (1.5x4mm) stops short of the bow, it is better to add this once the first planking is complete, as the front will be quite vulnerable. For fixing the planks to the MDF bulkheads, use the small pins temporarily until the PVA wood glue has cured. Because the pins are to be removed, do not push the pins all the way down, as they will be more difficult to remove later.

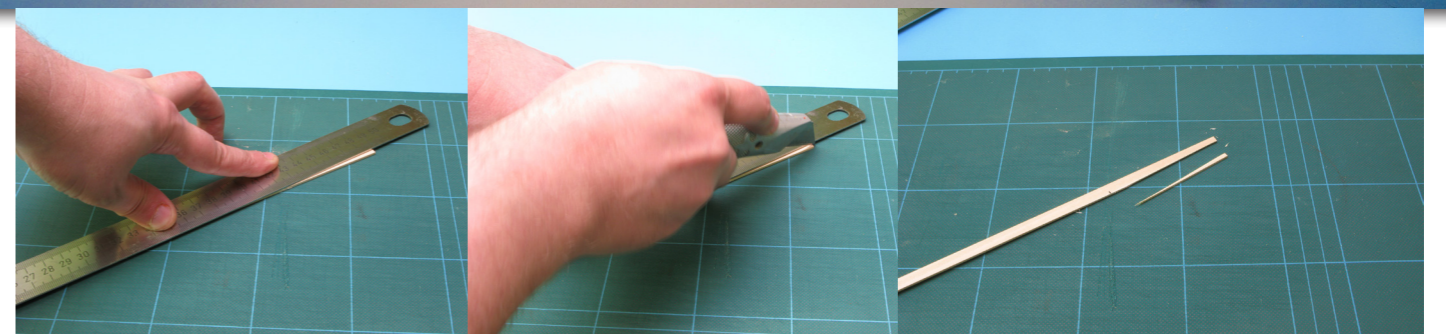
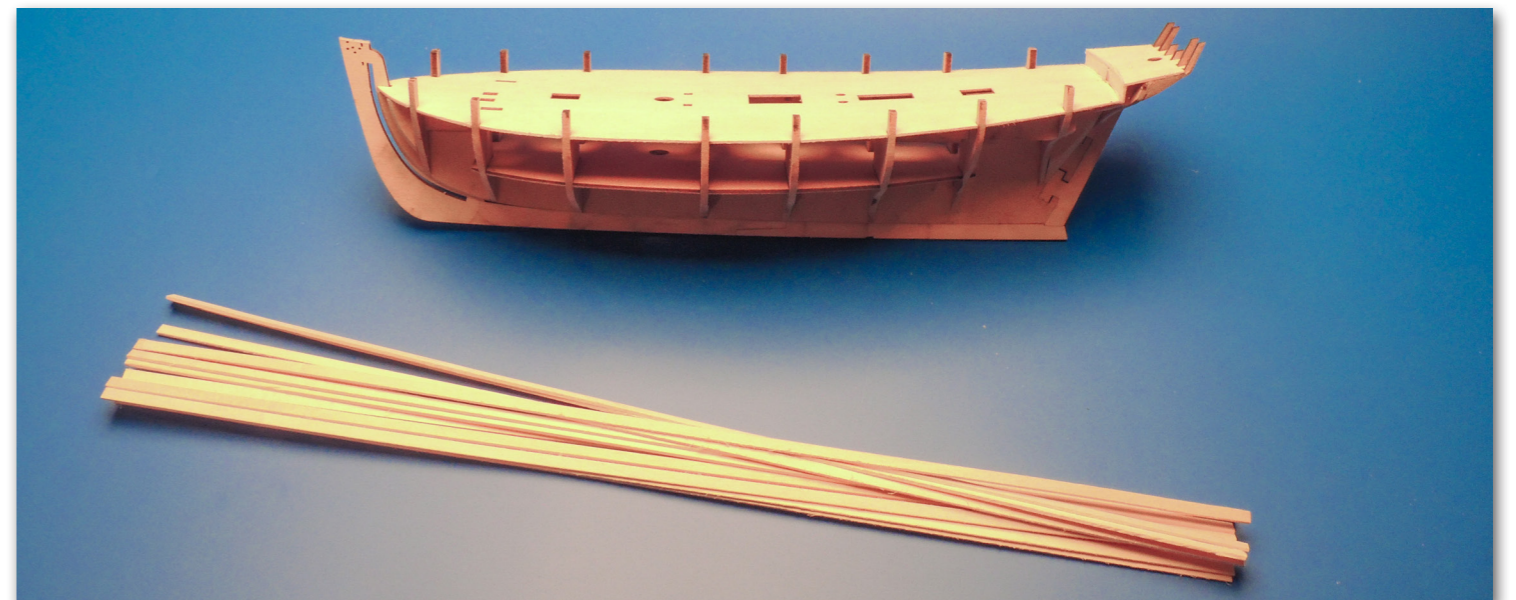
The planks will need to be tapered to follow the natural run of the planks. To determine the amount of taper needed for each plank to lie naturally, lay a plank at the forth bulkhead and then lay it around the bow. Mark the excess area of plank that overlaps the one directly above it and taper the plank. Repeat this technique for the stern also. Although some planks may not require tapering at the stern, it is advisable to let the planks run as natural as possible which helps avoid any possible 'springing' of the planks when sanding.

Before cutting the taper into the planks, soak them in warm water for about half an hour, as this minimises the chance of the blade of the knife following the grain of the wood rather than the edge of the steel rule. Lay the first wet plank to be tapered on a clean, flat surface; (a cutting mat is well suited for this and is highly recommended.) Press firmly with your fingers onto a steel rule to the marked taper line on the plank and score down the line with a heavy duty craft knife several times until the excess is cut off. Pin and glue the tapered planks into position on the hull. Glue two or three strips each side alternately. This method should prevent any possible twisting/warping of the frames and keel as the glue cures.

Use this planking technique right down to the keel. When planking is almost complete, triangular shaped gaps at the stern may be apparent. This was also the case in full size practise, although not so simplified. The use of triangular shaped planks is needed for the gap in-between the top and bottom edges of the planks, usually near the stern. The correct name for these triangular shaped planks is called stealers. Cut these to shape using the excess lime wood from the ends of the planking and glue them into the gaps. Trim off the excess stern planks to shape and leave the hull for the glue to fully cure for at least 24 hours.

When the first planking has been completed, pin and glue the stern counter fascia (Part 48) in place onto the back edges of the stern counter frames.

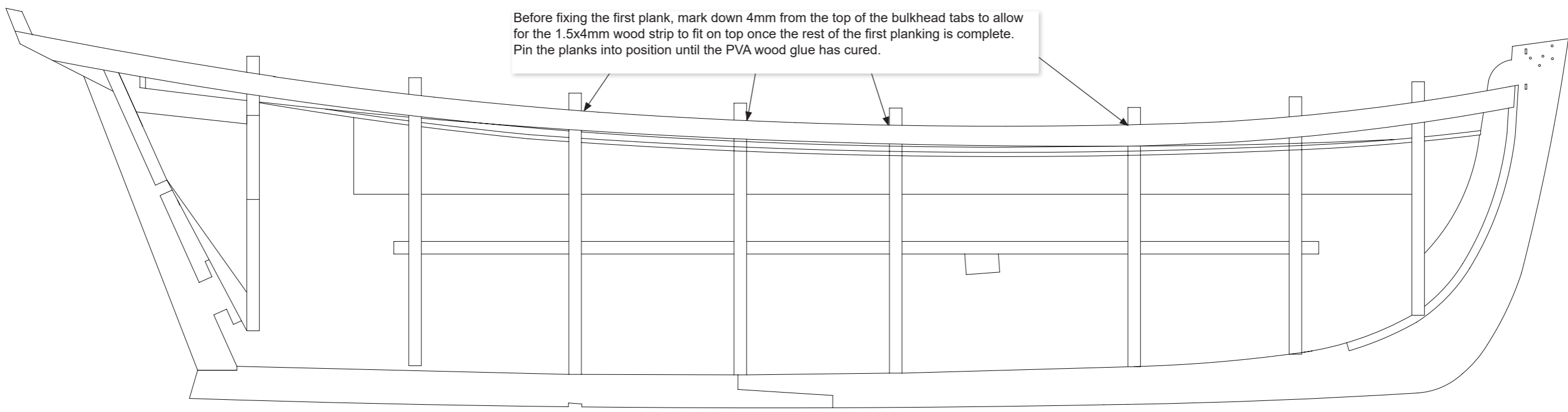
Sand the whole hull that has been planked with a coarse grade abrasive paper, followed by medium grade. This will entail about an hours work by hand, less if you are using an electric 'Mouse-type' sander (which is highly recommended). If possible, sand the hull in a well-ventilated area, ideally in an open space as the dust particles could present both a fire and health hazard. The use of a dust mask and light duty gloves is also recommended to reduce any risk of blisters from sanding.



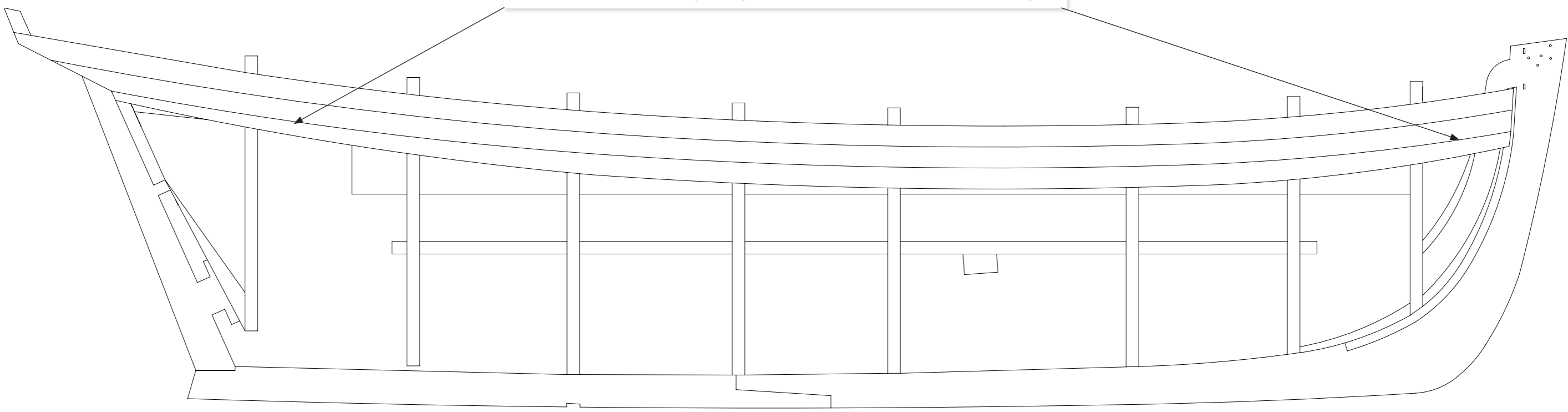
Tapering the planks



Before fixing the first plank, mark down 4mm from the top of the bulkhead tabs to allow for the 1.5x4mm wood strip to fit on top once the rest of the first planking is complete. Pin the planks into position until the PVA wood glue has cured.

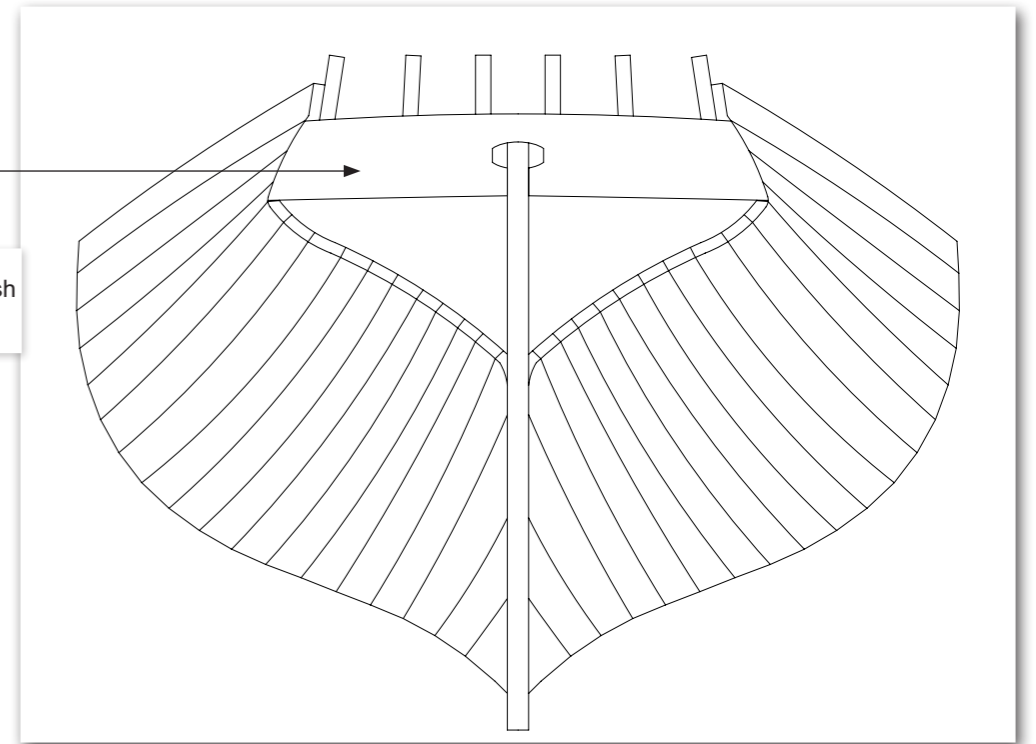


Taper the planks fore and aft as you progress down as described in the main first planking text



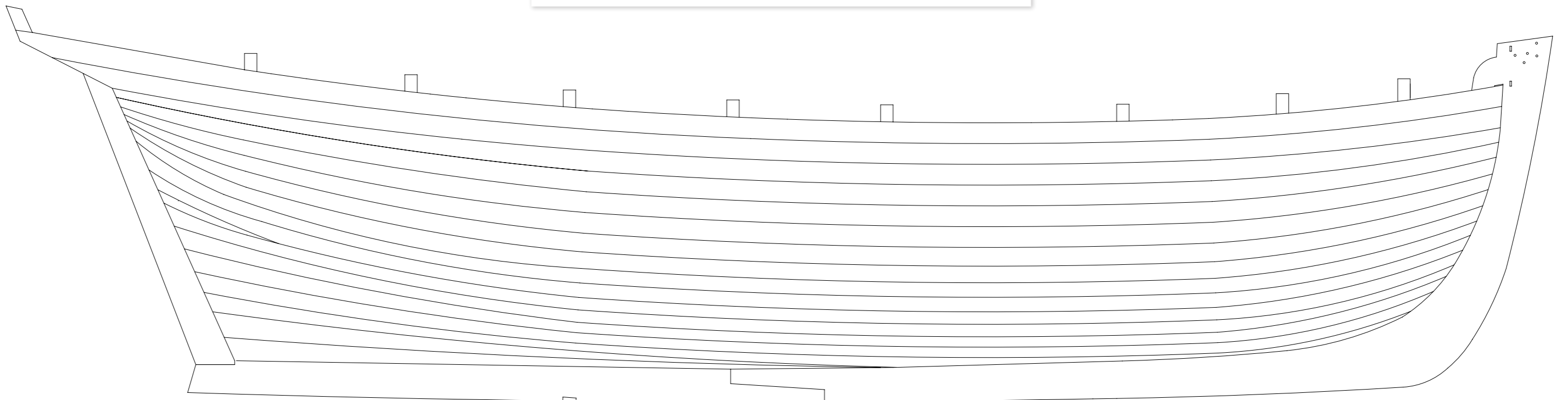


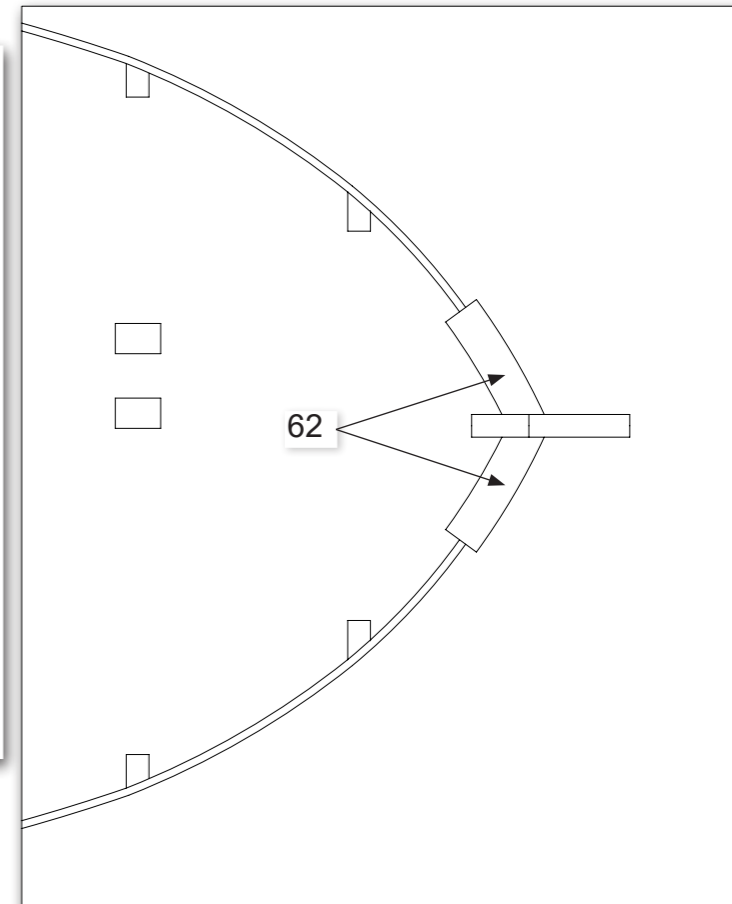
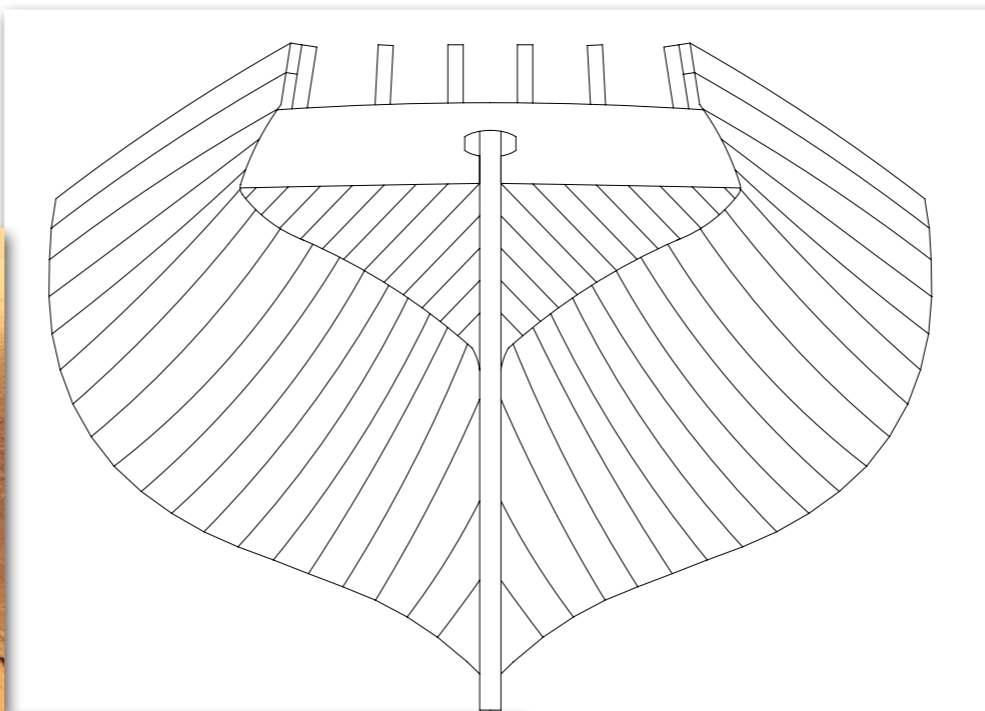
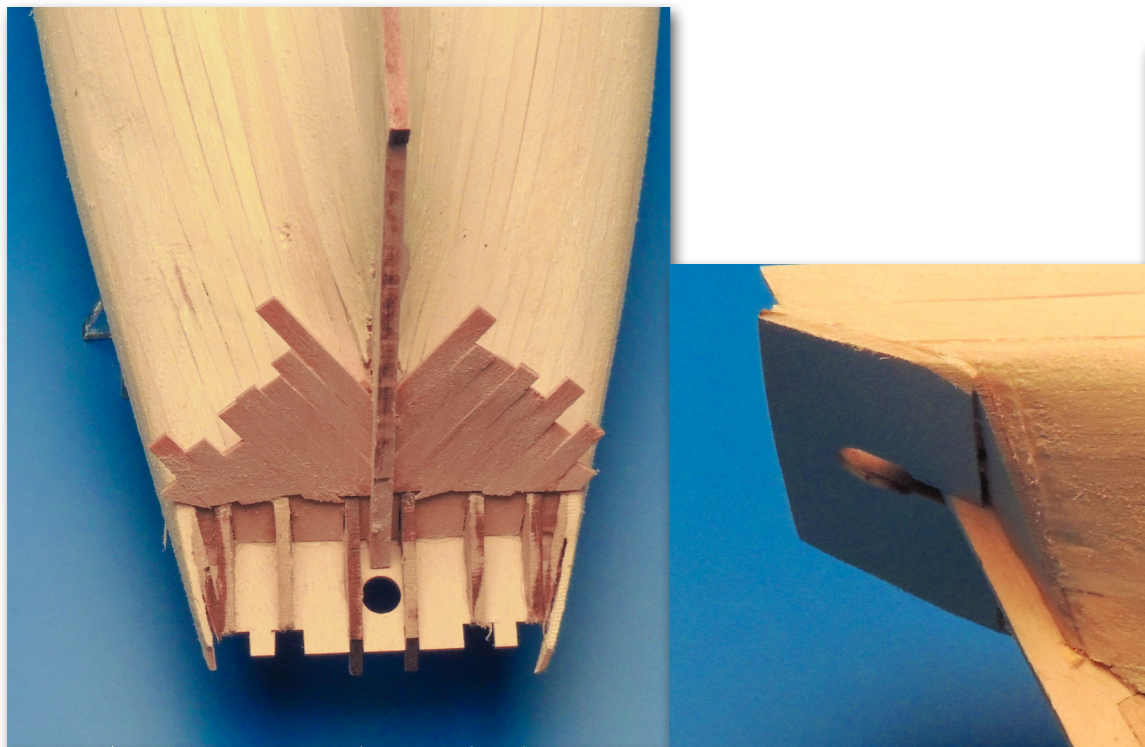
Taper the planks fore and aft as you progress down as described in the main first planking text.



48  
Dry-fit the stern counter pattern (48) and trim the edges if required so they are flush with the first planking.

When planking is complete, sand the hull smooth using medium grit abrasive paper.

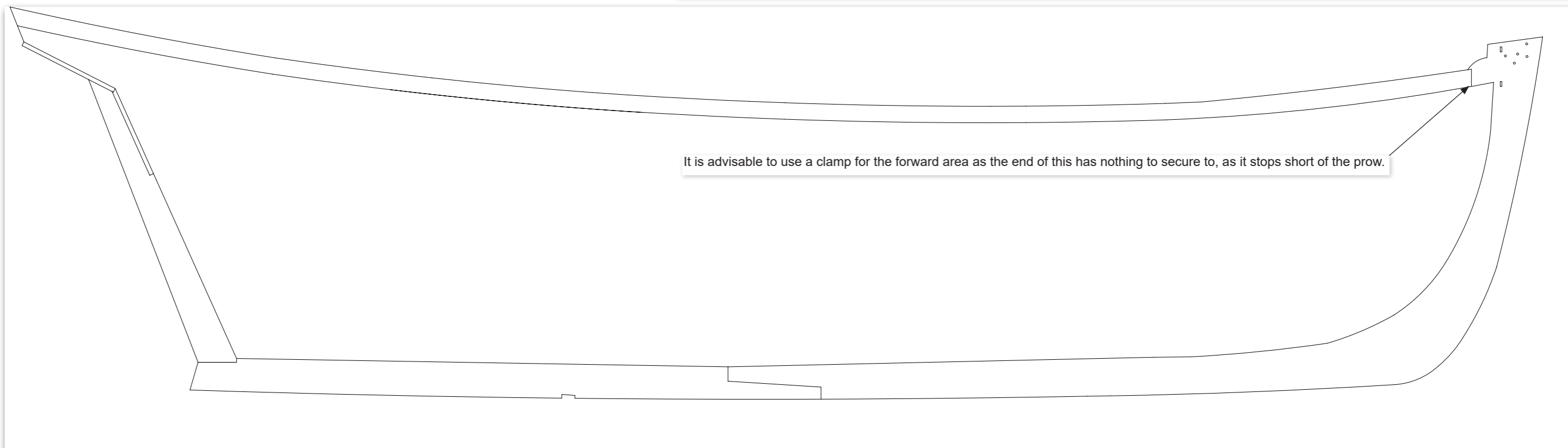




Using 1x4mm second planking strip, plank the stern bulkhead to the diagonal pattern shown in the full size drawing above. Once complete, trim off the excess at the edges so the planking is flush with the first planking. Finally, pin and glue the stern counter pattern (48) in place.

Before adding the upper most 1.5x4mm lime wood planking strip, temporarily apply parts 62 to the positions shown in the drawing above using pins. These are to be removed once the 1.5x4mm lime wood plank is in place. Parts 62 are spacers, to ensure both sides of the planking terminate at the correct position.

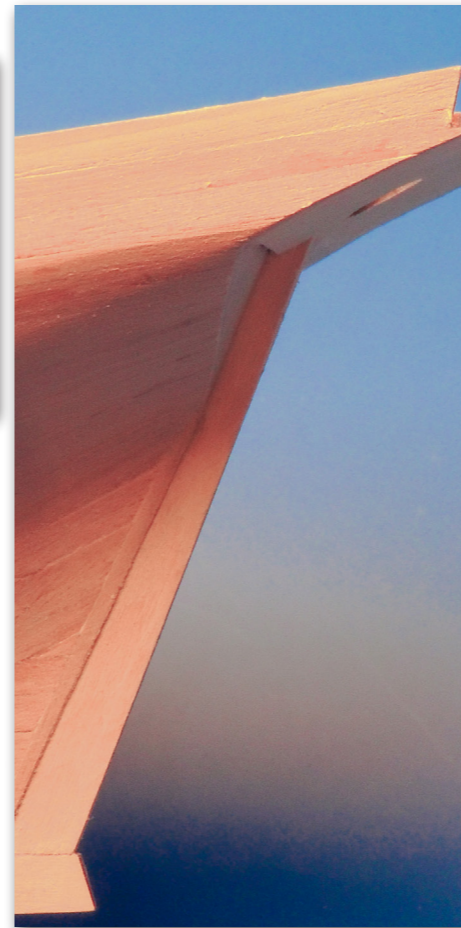
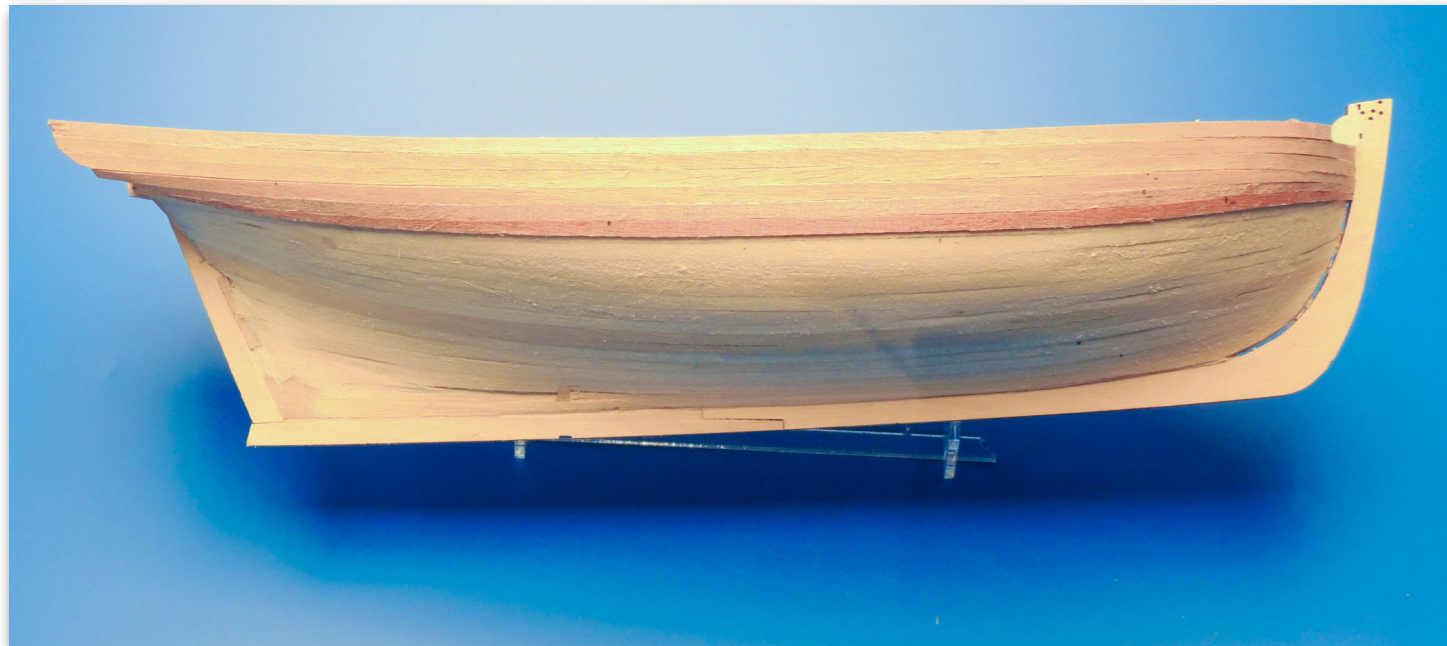
Once parts 62 are in place, add the last plank using PVA wood glue and pins or clamps to secure the strip until the glue has cured. This 4mm wide plank is the same depth as the half-gun port openings.



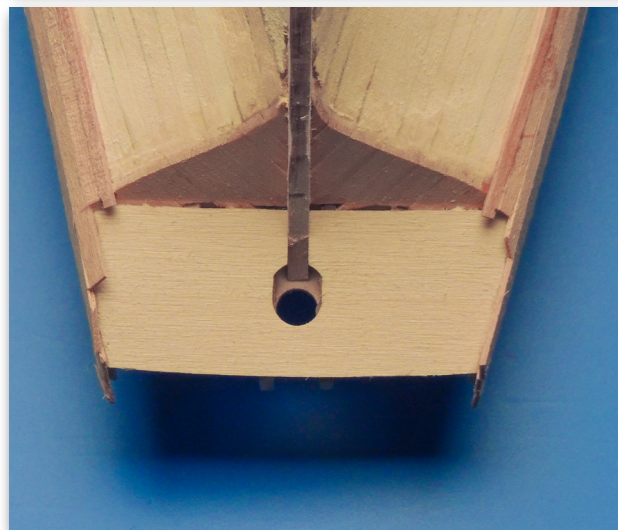
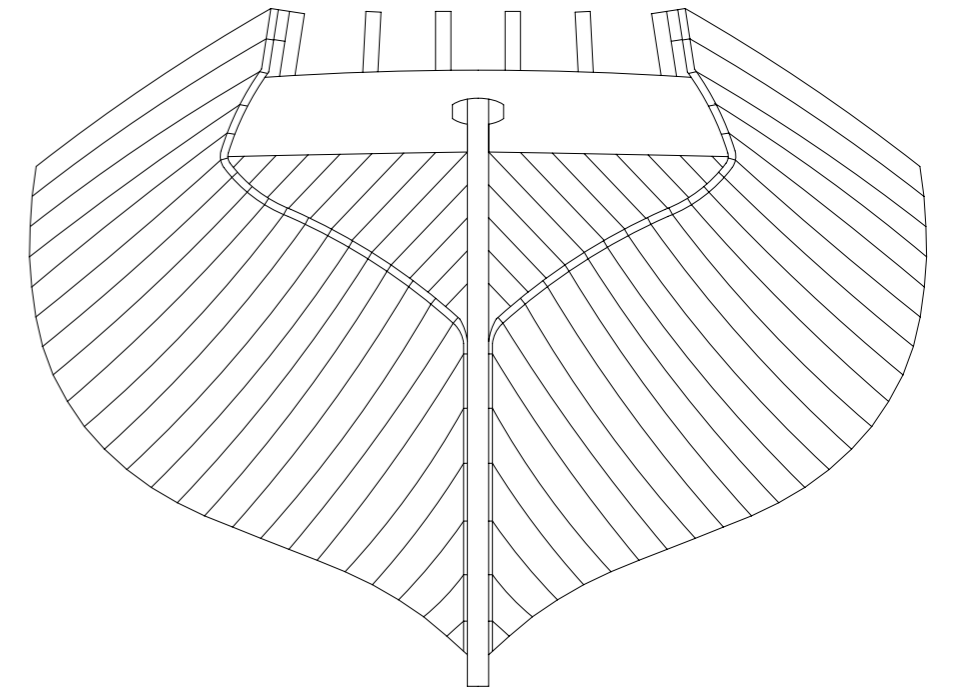
## Second Planking

The second planking is applied using 1x4mm wood strip. Start the planking from the top edge of the bulwarks and work down towards and up to the keel. Use the same planking techniques as the first planking, with the exception that the whole under surface of the plank is to be glued to the first planking, as well as edge to edge.

The best glue to use for the second planking is medium to thick cyano gel. This is to avoid any pin holes, which would have to be filled in prior to painting. Cyano will stick the planks as well, if not better than wood glue. Greater care however, is needed to attain a very neat finish to minimise the need for filling. More care is needed to attain as neat a job as possible, to help reduce the need for filling and sanding once planking is complete.



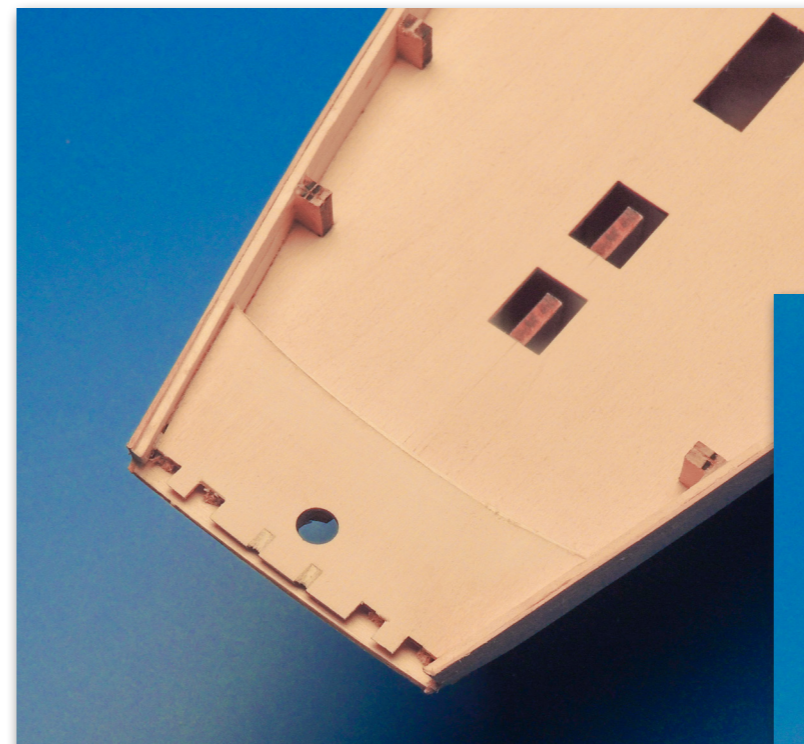
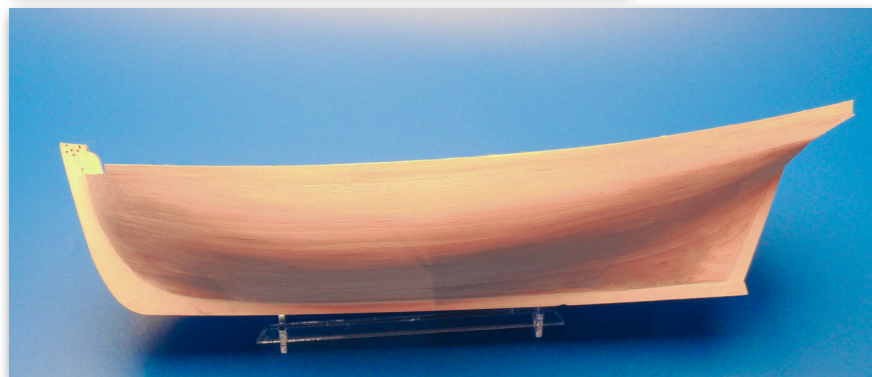
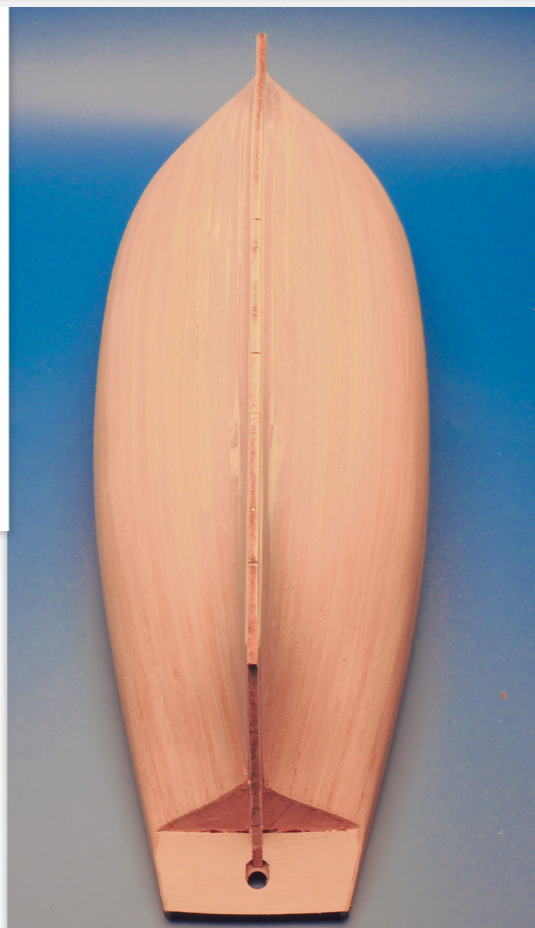
Above - The second planking trimmed at the stern



Above - Second planking progression. As with the first planking, the second planking needs to be tapered fore and aft.

Left - The planks can be left over long at the stern and trimmed back once planking is complete.

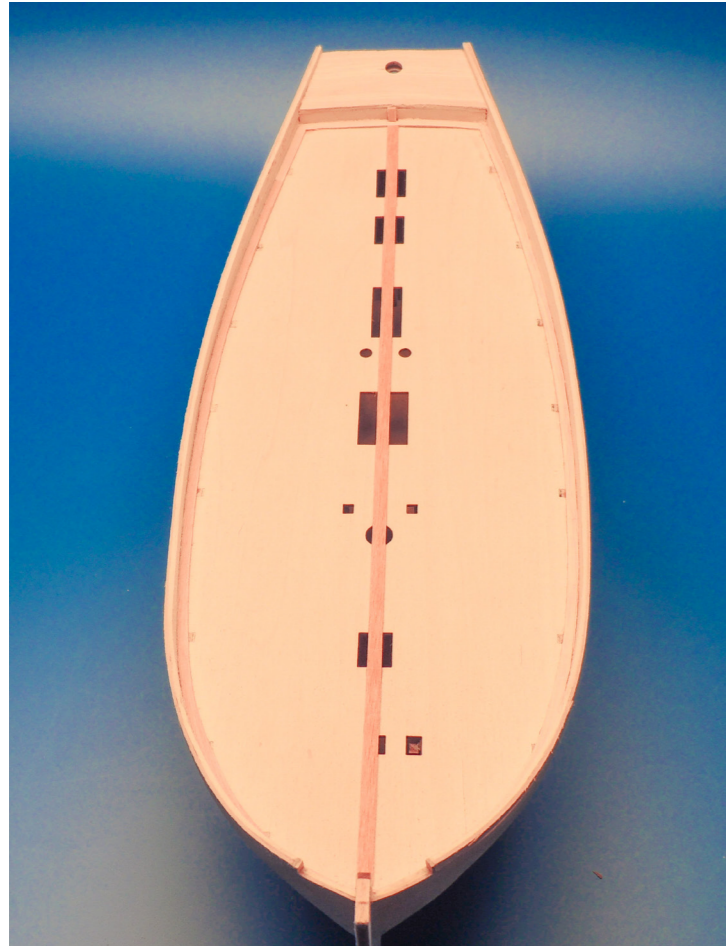
Below and right - Second planking complete and sanded smooth using first medium followed by fine course abrasive paper.



Once the second planking is fully complete, remove the bulkhead tabs above deck level. Also remove the stern tabs as shown above, but ensure that the planking is at the same angle as the frames before removing the frames, as the stern transom pattern is to be glued to this area.

Remove the tabs with a pair of pliers by twisting and pulling the tabs off or a pair of side cutters. Sand or file any remaining material that protrudes above deck level.

Once all tabs have been removed and the deck sides sanded, plank the inner bulwarks using the 1x4mm second planking strips from deck level to the height of the bulwarks.



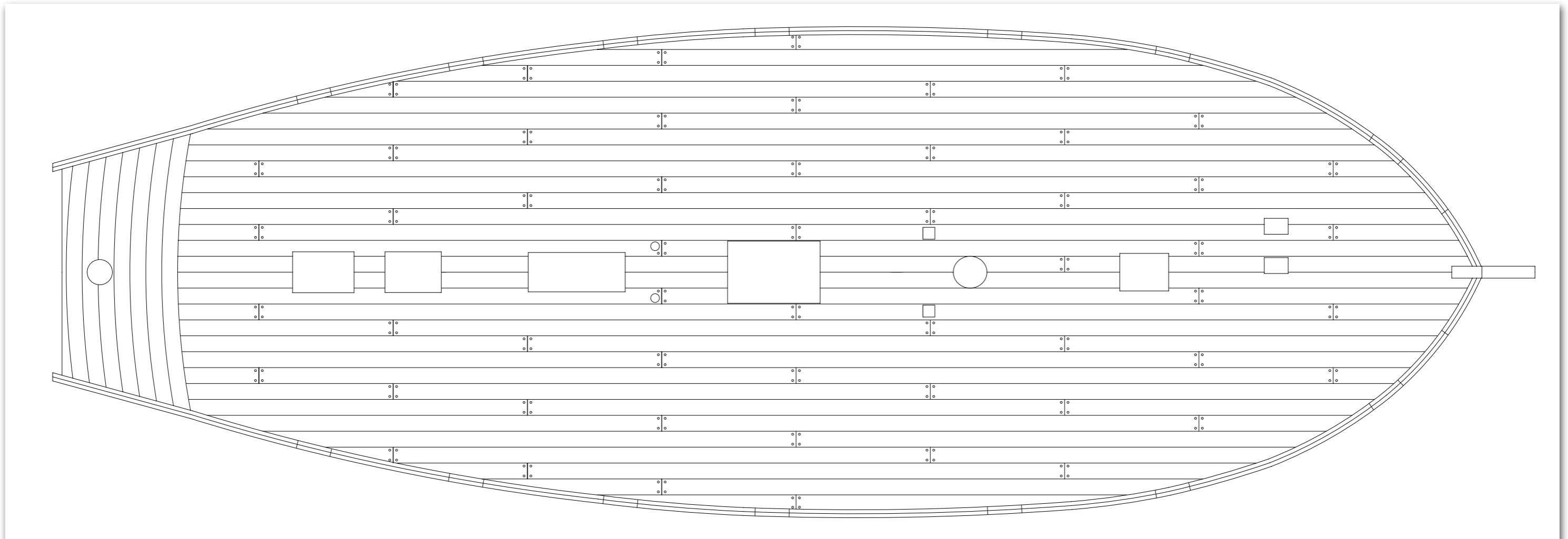
Left - The inner bulwarks planked and the first deck plank laid down the centre line of the deck. It is better to keep this first plank as one strip to ensure correct alignment of the rest of the planking.

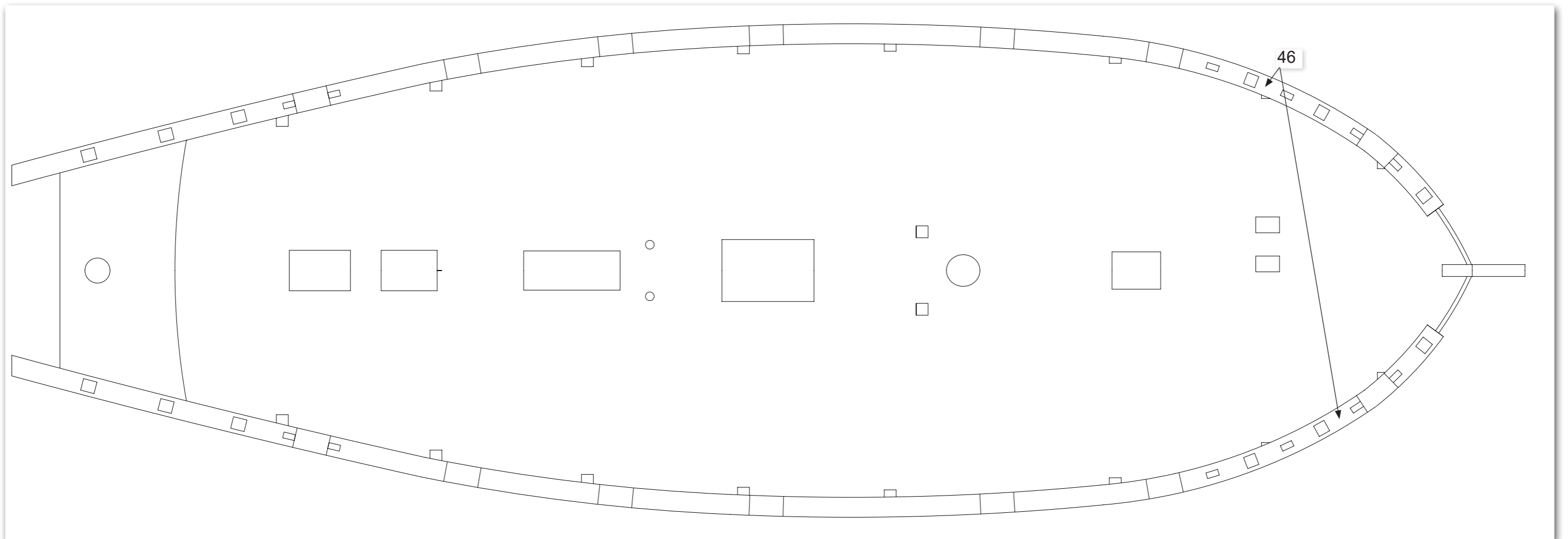
The deck planking is 1x4mm boxwood strip, and it can be laid as one complete strip down the length of the deck or, as shown in the drawing below, cut into the length shown and laid in steps. The prototype model used Tanganika wood for the deck planking, which is much easier to manipulate the required bends, whereas the boxwood is much closer grained, so not as easy to manipulate with just wetting the planks.

Use cyano thick viscosity adhesive to apply the planks to the false deck. The pictures left and right show a margin plank running around the edges of the bulwarks, but if you find the strips too difficult to bend, the scale drawing below can be used. The planks can be bent, but it will require water and heat to manipulate the wood into the correct shapes.

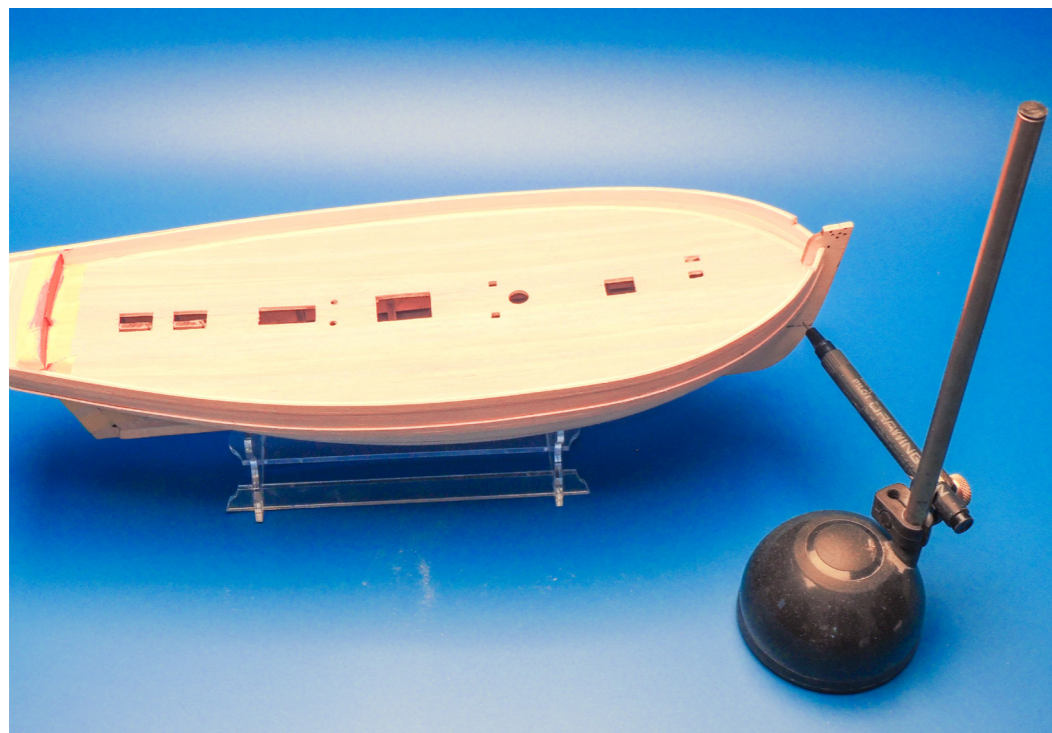
When the deck planking is complete, sand the surface with fine grit abrasive paper and apply a couple of light coats of mat clear varnish to help protect the surface.

The inner bulwarks can be painted at this time using red paint. It is recommended that you mask off the edges of the decks to avoid any paint spillage on the decks. Tamiya masking tape was used for the prototype model.

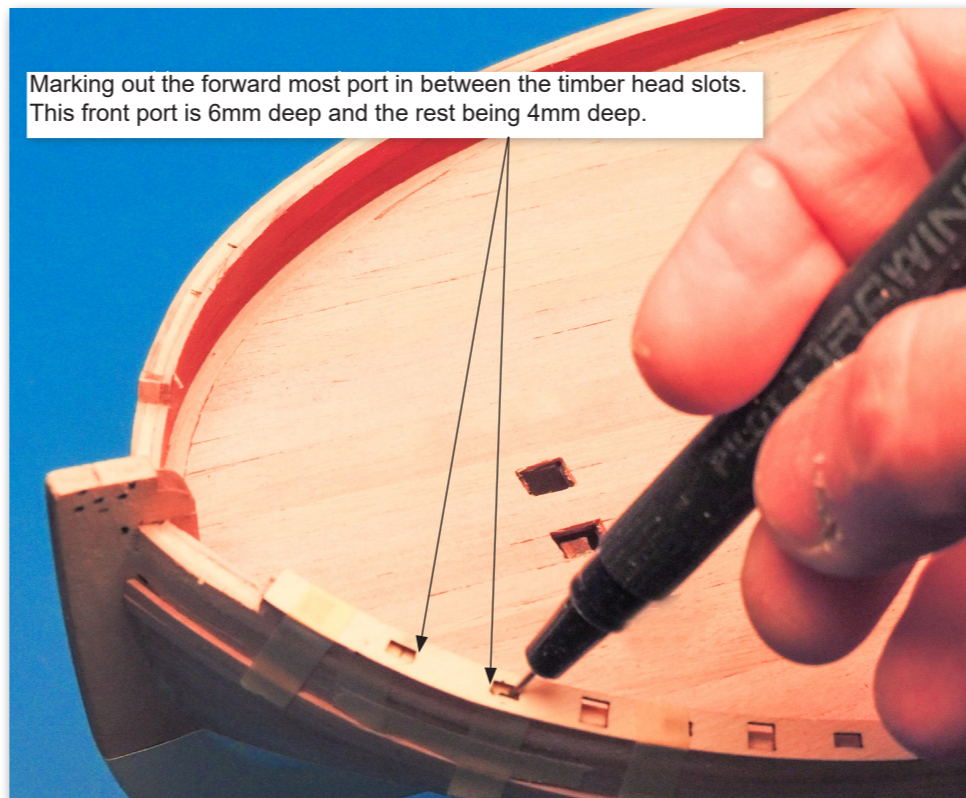




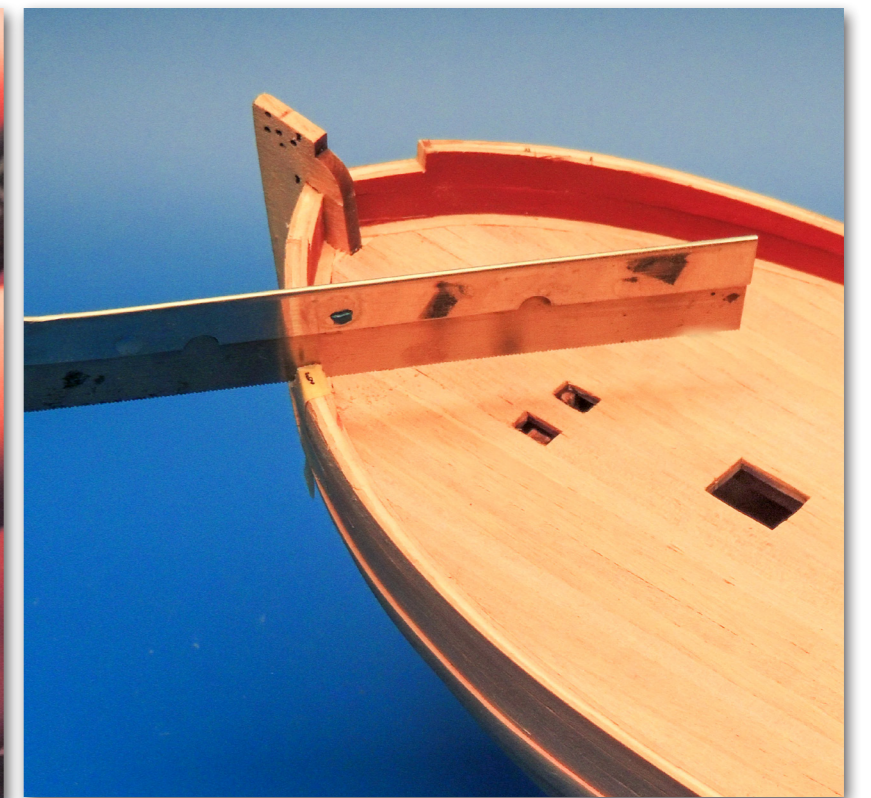
Above - Remove the capping rail patterns (46) from their host 1mm wood sheet and temporarily fit using either pins or tape. Mark out the gun port opening positions using the half cut lines found on both edges of parts 46. The forward most port is located in between the timber head slots. Mark out the position as shown in the photo below. When all gun port openings have been marked out, carefully cut them out using a razor saw or similar as shown in the picture below right. The forward most port is to be 6mm deep with the rest being 4mm deep



Above - The waterline level can be marked out at this time using an appropriate waterline marker. (The above picture shows the Amati waterline marker). Make sure the hull is seated correctly in its cradle and the cradle itself is on a hard flat surface and carefully mark out the waterline level.



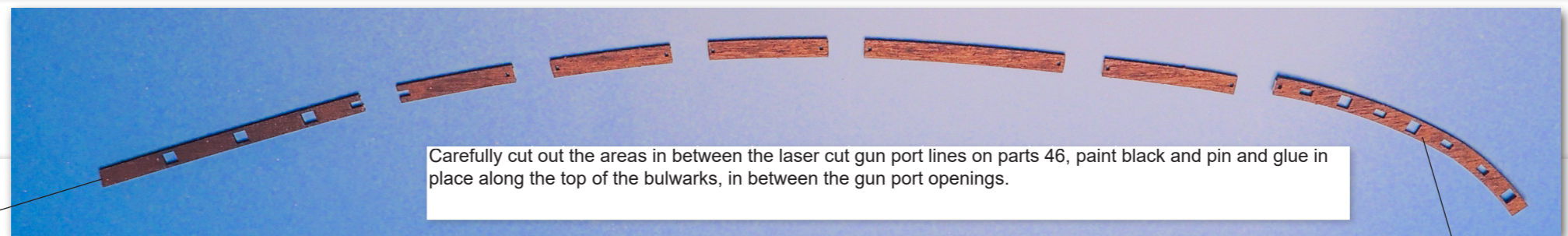
Marking out the forward most port in between the timber head slots. This front port is 6mm deep and the rest being 4mm deep.



Correct positions and depths of the gun port openings

4mm deep

6mm deep



Carefully cut out the areas in between the laser cut gun port lines on parts 46, paint black and pin and glue in place along the top of the bulwarks, in between the gun port openings.

Paint the area in between the gun port openings blue

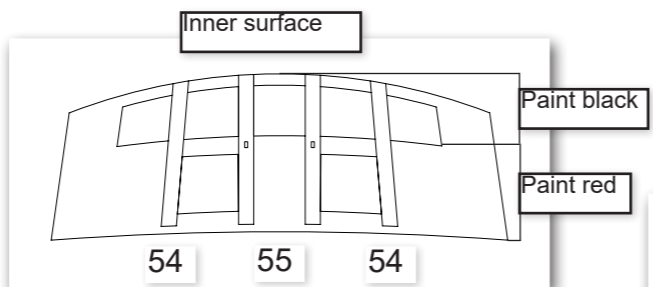
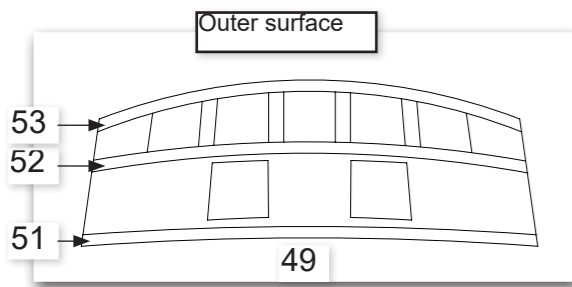
1x1mm wood strip - Paint black

1x3mm wood strip

Paint main wale black

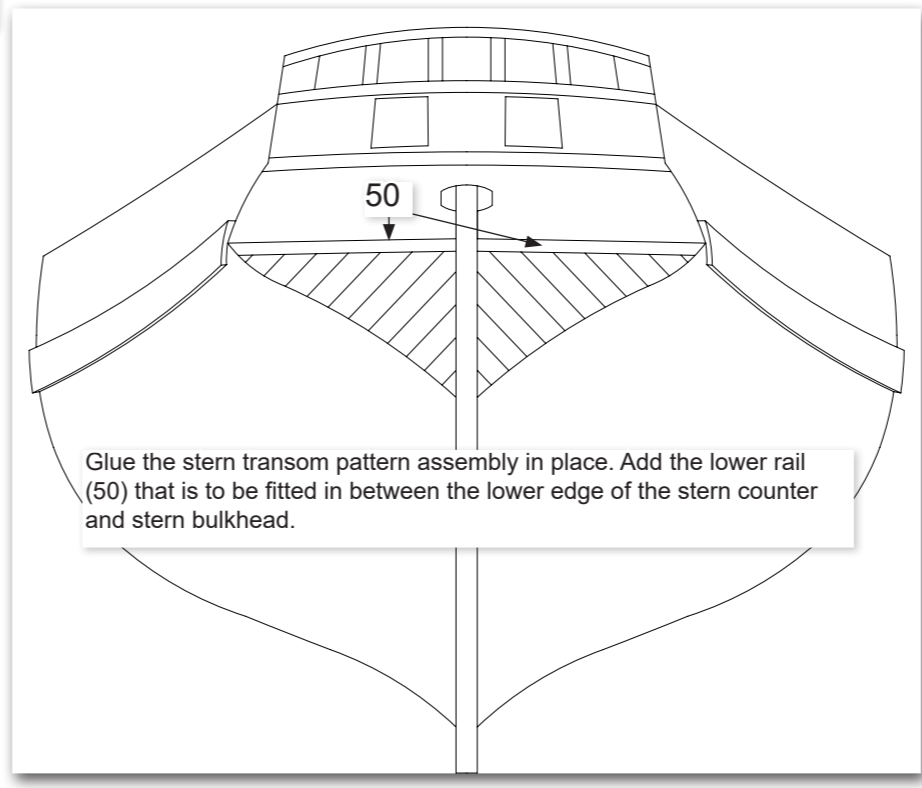
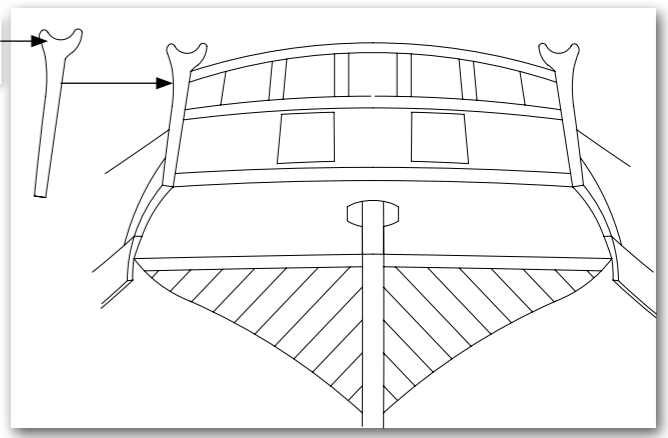
Waterline level

Paint area below waterline white

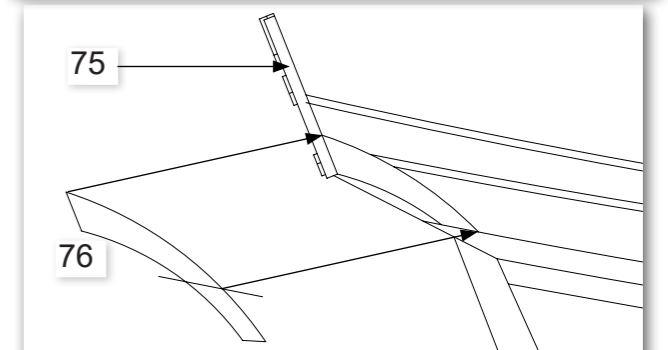


Paint the stern transom pattern (49) blue on the outer surface and on the inner surface paint red at the lower half and black at the top half.  
 Paint yellow ochre and apply parts 51, 52 and 53 to the positions shown on the outer surface. Add the inner supports (54 and 55) to the positions shown. Note that parts 55 have a slot to take a cleat.

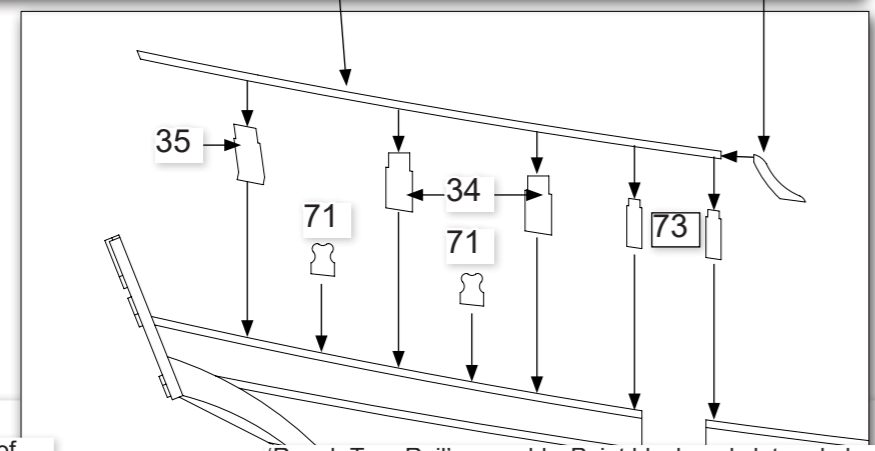
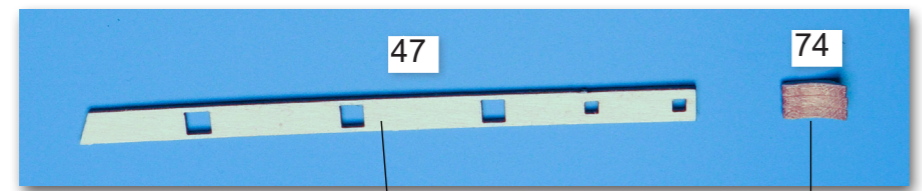
Glue parts 75 (Main sail boom cradle) to each side of the stern transom pattern as shown.



Glue the stern transom pattern assembly in place. Add the lower rail (50) that is to be fitted in between the lower edge of the stern counter and stern bulkhead.



To fix the stern side counter timber (76), first dry fit and mark out how much of the bottom requires cutting off so that it fits along the top edge of the main wale as shown. Use glue only when you are happy that it fits correctly.

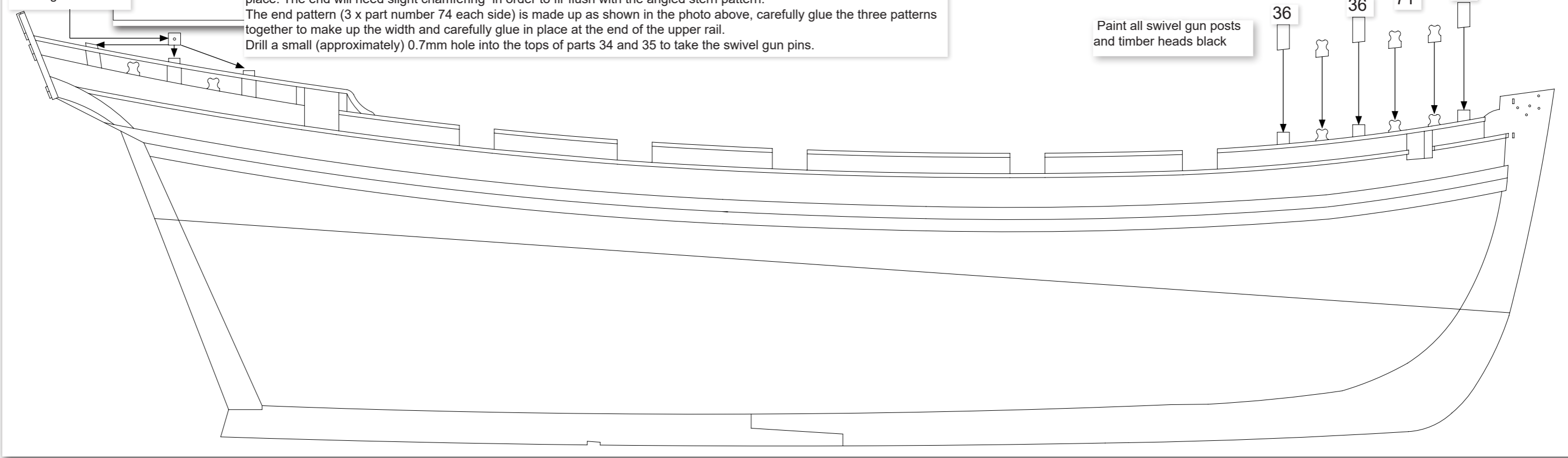


Overhead view of parts 34 and 35 showing 0.7mm hole

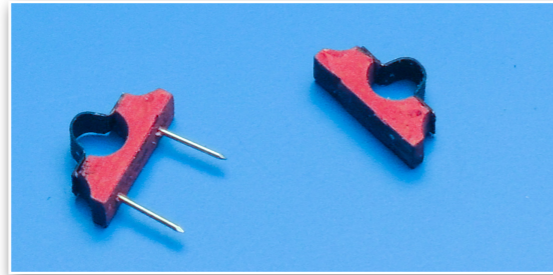
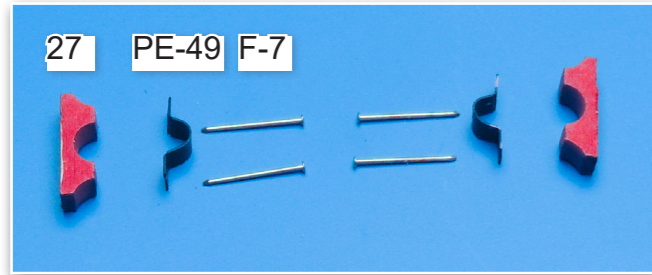
'Rough Tree Rail' assembly. Paint black and slot and glue the two timber heads (71) into their respective slots in part 46. Next, slot and glue parts 34, 35 and 73 into position. The upper 'Rough Tree rail' can now be painted black and slotted into place. The end will need slight chamfering in order to fit flush with the angled stern pattern. The end pattern (3 x part number 74 each side) is made up as shown in the photo above, carefully glue the three patterns together to make up the width and carefully glue in place at the end of the upper rail. Drill a small (approximately) 0.7mm hole into the tops of parts 34 and 35 to take the swivel gun pins.

Drill a small (approximately) 0.7mm hole into the tops of parts 36 to take the swivel gun pins.

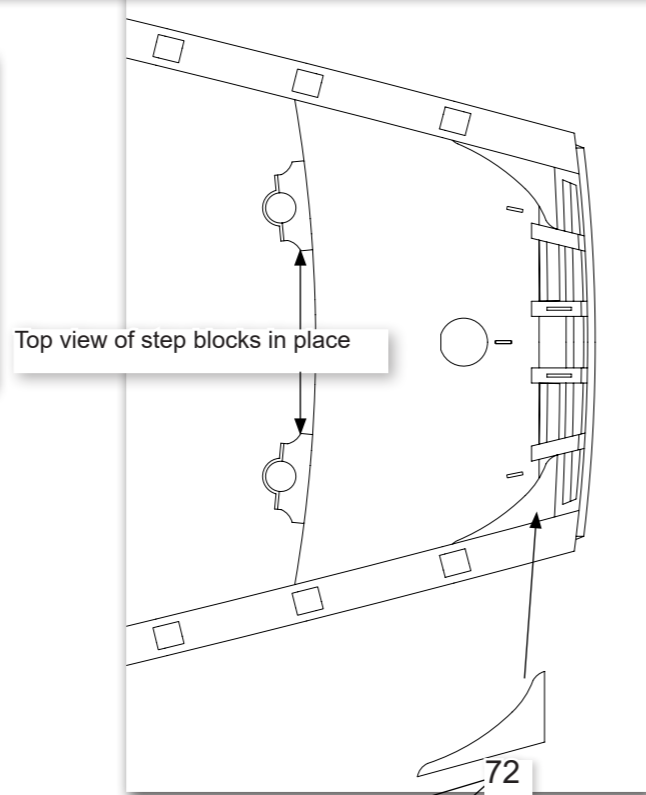
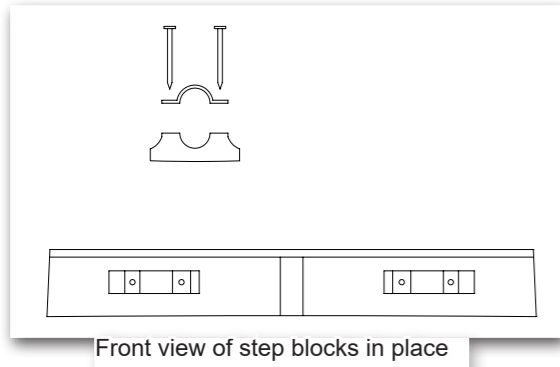
Paint all swivel gun posts and timber heads black



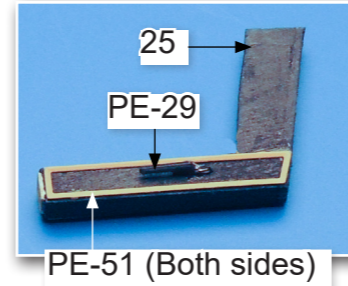




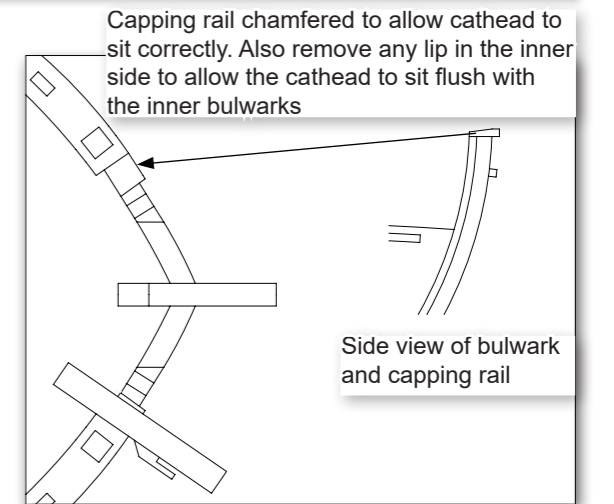
Make up the pair of step blocks for the mizzen mast as shown. The bracket (PE-49) can be pre-shaped by bending the centre area around a short length of 4mm dowel. Using the pins, drill and pin the two parts together and then pin and glue the assemblies into position on the rudder platform bulkhead face as shown in the drawings below.



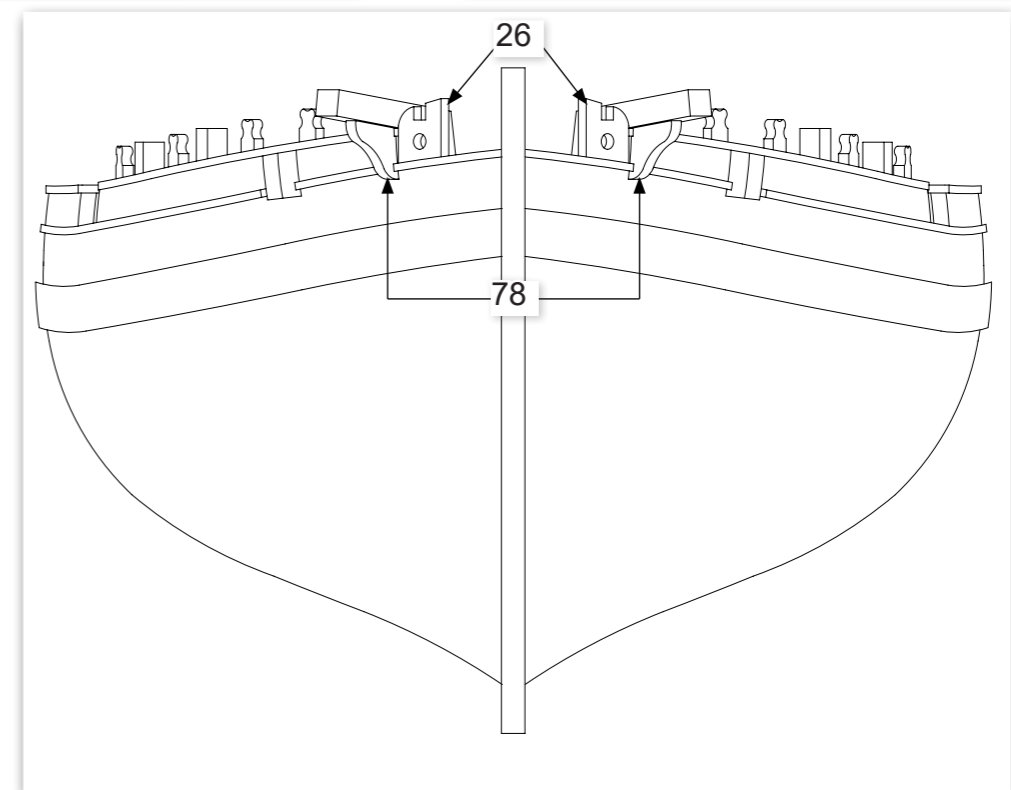
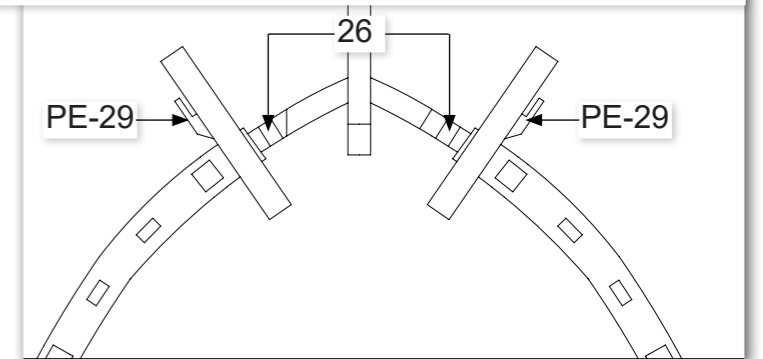
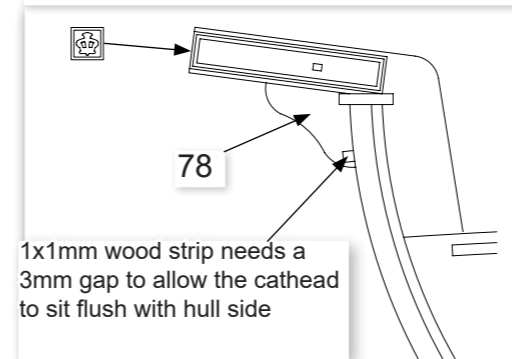
Paint red and glue the stern transom knee's (72) in position as shown. Slight shaping may be required to get them to fit perfectly flush.



Cathead assembly and fixing. Remove the two cathead patterns (25) from the 3mm wood sheet and dry fit the position. The capping rail will require chamfering to the same angle as the cathead. The lower part of the catheads may also require slight adjustment to allow them to sit correctly on the deck. They have been left slightly longer than they need to be to take into account any slight deviations. Paint the cat heads black, and paint the photo etched decoration (PE-51 and 52) yellow ochre. Glue parts PE-51 to each side of the catheads and PE-52 to the ends.



Below - The catheads in place. Once in place, add the cathead knee (78, paint yellow ochre). The 1x1mm rail 4mm down from the top will need to be cut to allow the knees to sit flush with the hull side. Finally, add parts 26 (hawse hole posts, paint black) to the positions shown so that the curved end is flush with the end of the capping rail.

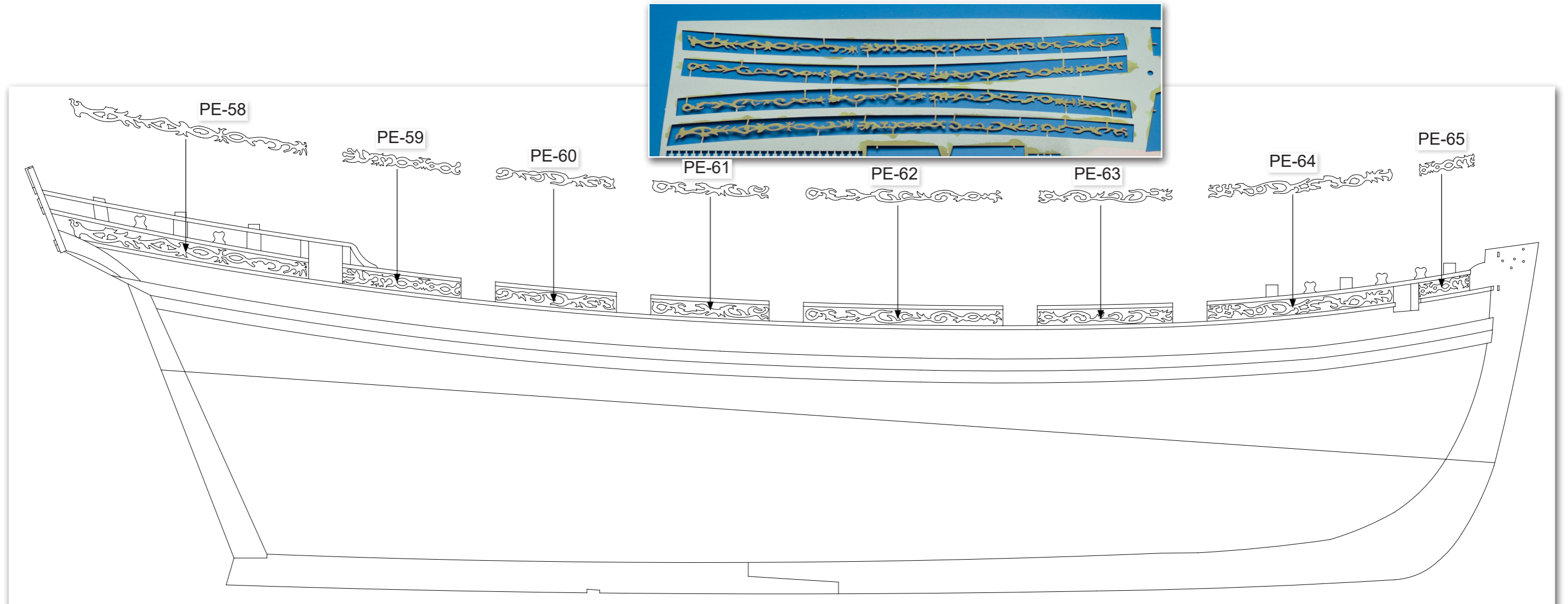
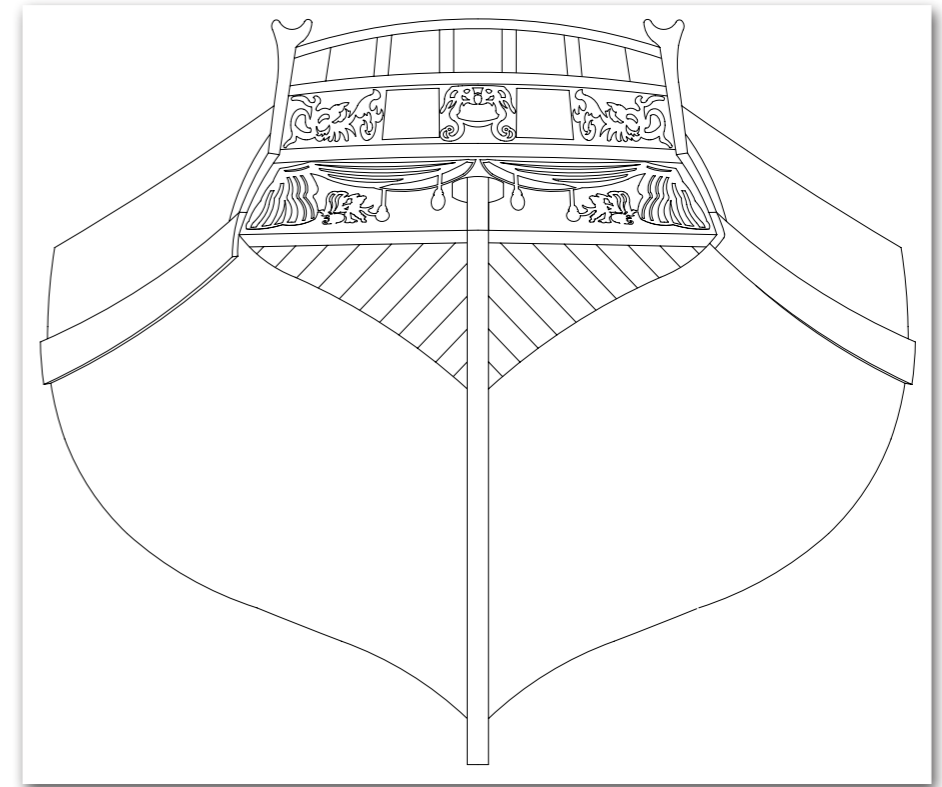
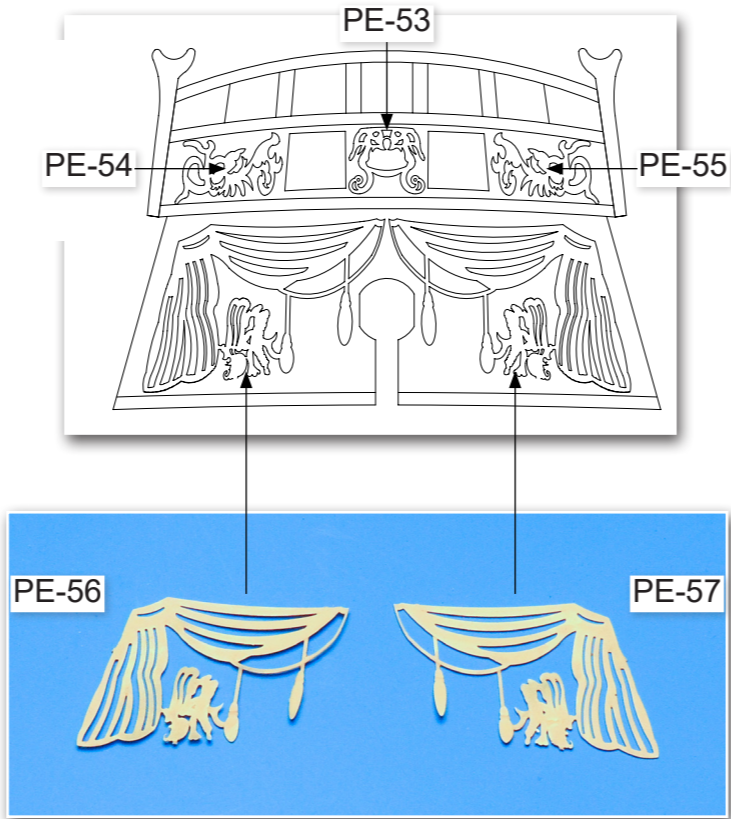


Application of frieze work/decoration

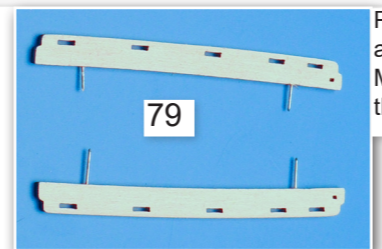
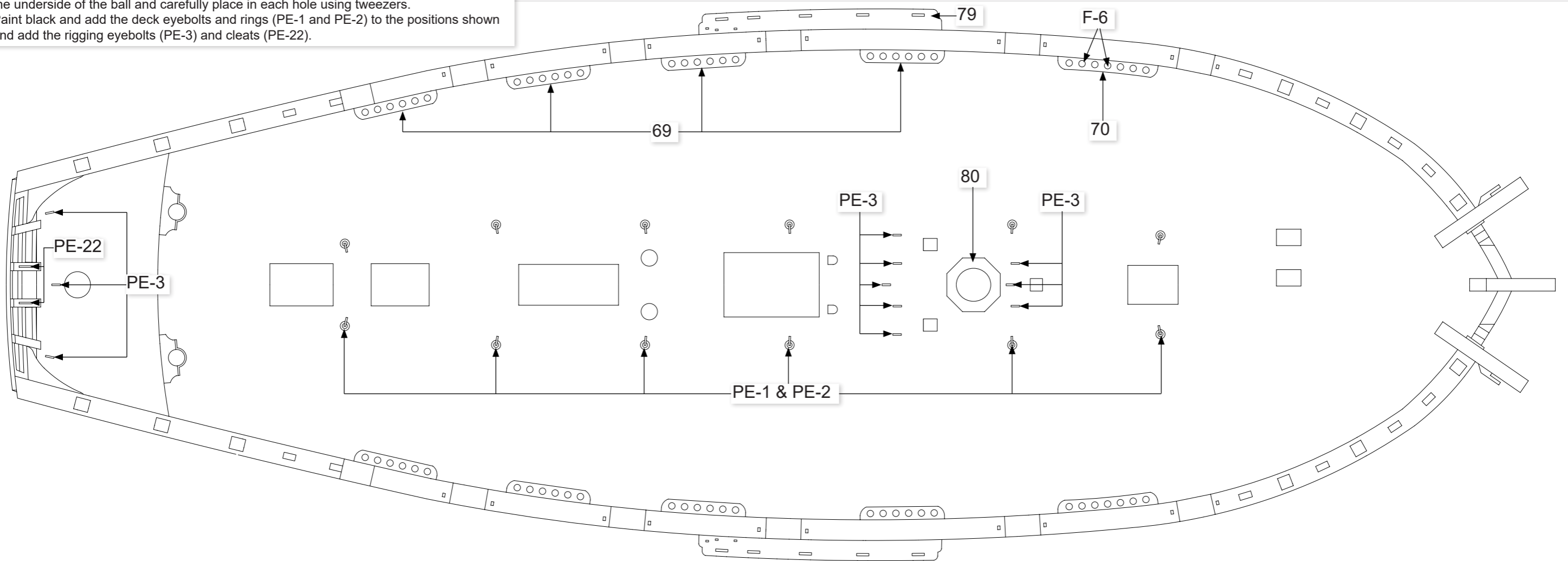
It is advisable to paint the delicate decorative parts that are to be fixed to the stern and upper hull sides before removing the parts from their host sheets. Use a yellow ochre colour to paint the parts. The use of an airbrush would be better, as small globules of paint can get to the underside of the parts when brush painting and, if not removed, will impede the fixing of the parts flush with the hull sides.

Using thick viscosity cyano glue, apply sparingly to the underside of each decorative part and carefully apply to each position as shown in the drawings.

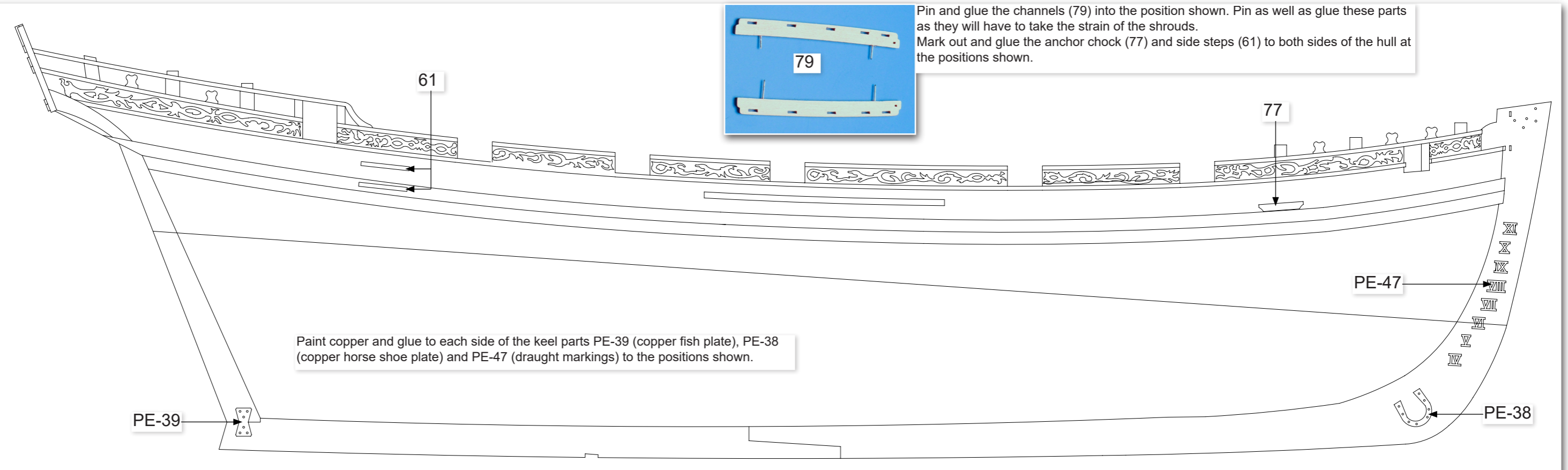
Part number PE-65 may require further trimming of one end to ensure it fits correctly between the cathead knee and forward most port opening. Use tweezers to apply each part, and touch up any areas of the parts before fixing in place.



Paint red and glue the shot racks (69 & 70) to the positions shown. They should be 3mm above deck level. Paint black and add the cannon balls by applying a small drop of glue to the underside of the ball and carefully place in each hole using tweezers. Paint black and add the deck eyebolts and rings (PE-1 and PE-2) to the positions shown and add the rigging eyebolts (PE-3) and cleats (PE-22).

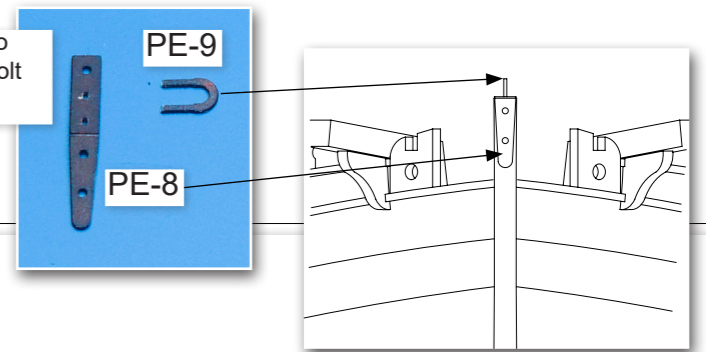


Pin and glue the channels (79) into the position shown. Pin as well as glue these parts as they will have to take the strain of the shrouds. Mark out and glue the anchor chock (77) and side steps (61) to both sides of the hull at the positions shown.

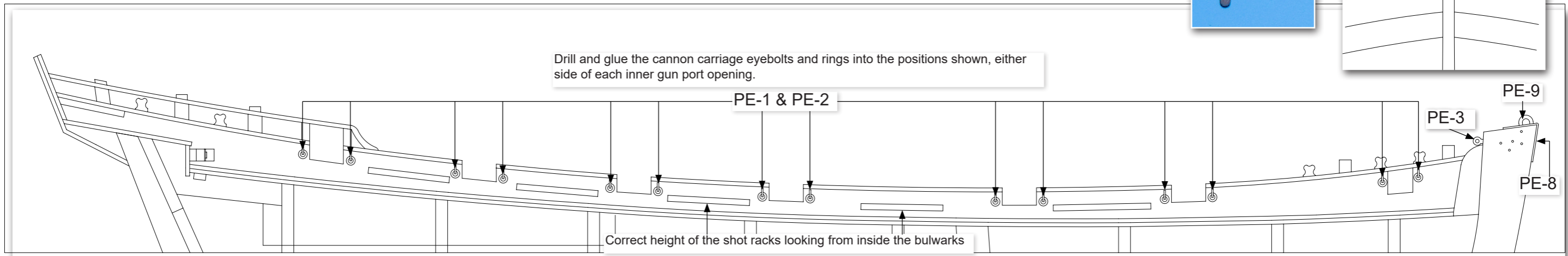


Paint copper and glue to each side of the keel parts PE-39 (copper fish plate), PE-38 (copper horse shoe plate) and PE-47 (draught markings) to the positions shown.

Paint the stem post eyebolt strap (PE-8) and eyebolt (PE-9) black. Bend part PE-8 along the fold line and dry fit into position. Drill four 0.7mm holes and glue and insert two pins into the front part of PE-8 and glue and insert the eyebolt (PE-9) into the top of PE-8 and through the top of the prow.



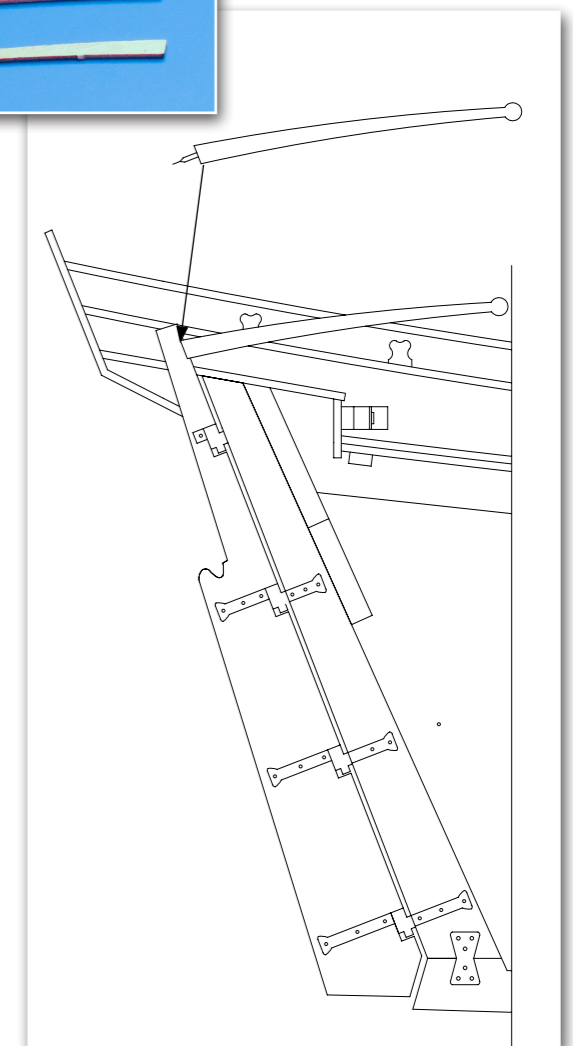
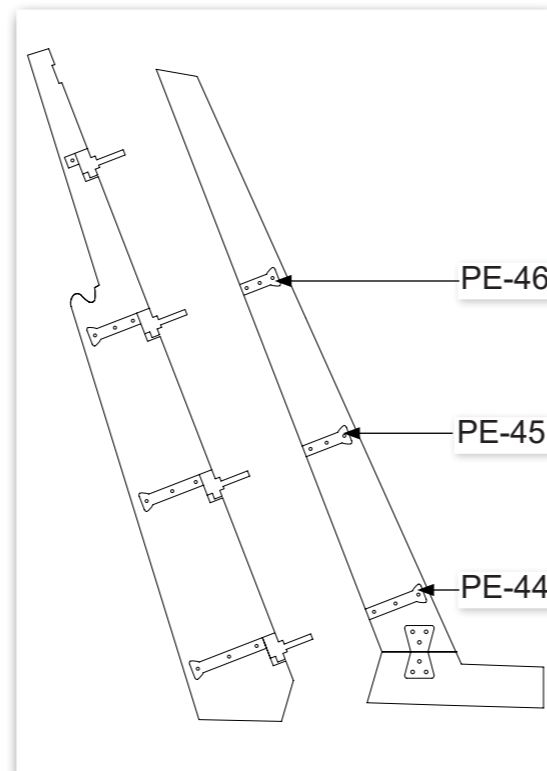
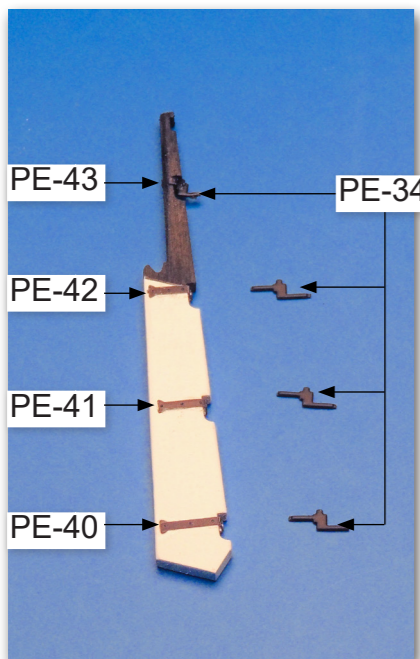
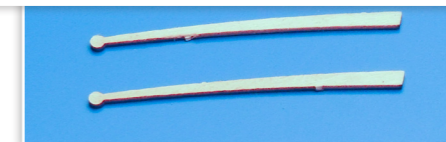
Drill and glue the cannon carriage eyebolts and rings into the positions shown, either side of each inner gun port opening.



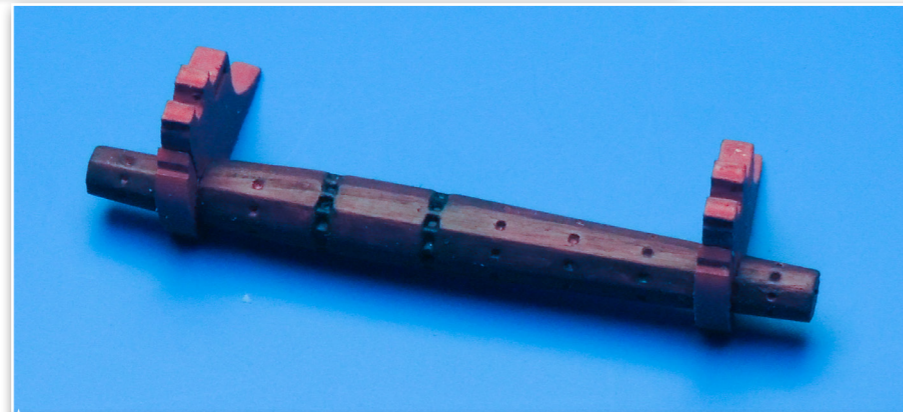
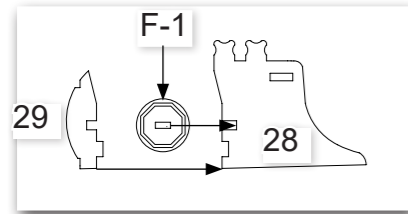
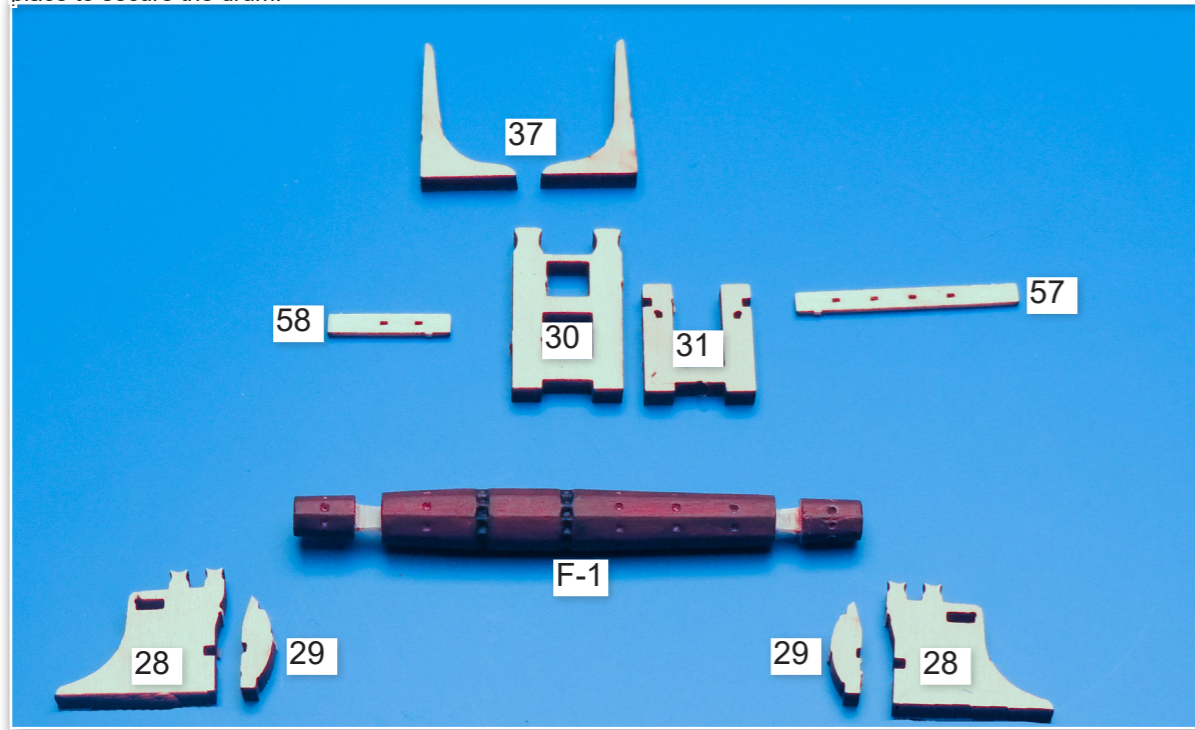
Rudder assembly - Paint the rudder (24) white below the waterline and black above. Paint the rudder gudgeon and pintles (PE-34) black, along with the rudder gudgeon and pintle braces (PE-40-43). Glue the braces into position as shown and then drill a 0.8mm hole into the inside edge of the rudder, through the hole in the gudgeon and pintle braces. Glue and insert parts PE-34 into the holes.

When the rudder is complete, offer the assembly up to the stem post and mark out the holes to be drilled that take the outer stems of parts PE-34. Paint black and glue parts PE-44, 45 and 46 in place to both sides of the stem post. Glue and insert the rudder assembly to the stem post to complete the assembly.

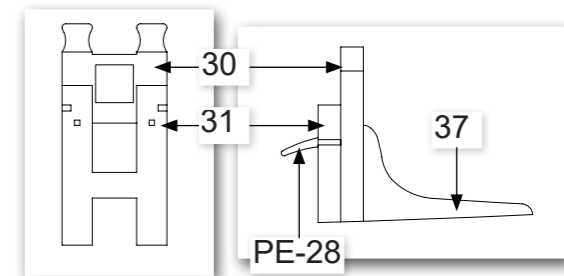
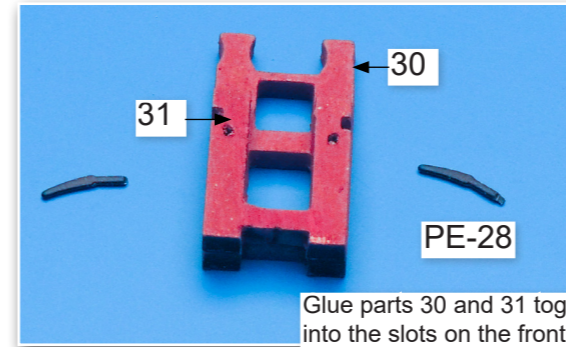
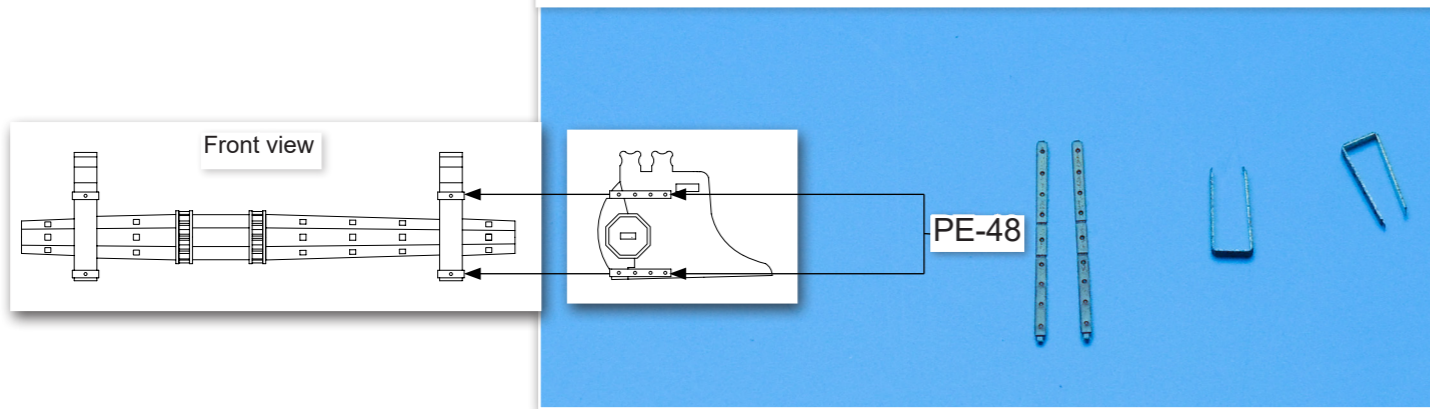
Glue the two halves of the tiller arm (60) together and drill a 0.8mm hole into the end that fits to the rudder. Insert and glue a pin with the end cut off, and drill a 0.8mm hole into the rudder slot and insert and glue the tiller into place as shown.



Main winch and bitt assembly. Remove all parts relating to the main winch assembly as shown below. Paint the main winch drum casting (F-1) a dark wood colour and the teeth black. Paint the carrick bitt pattern (28) and cheek (29) red. When dry, slot the winch into the slots in parts 28 and then slot and glue parts 29 in place to secure the drum.



Add the carrick bitt iron straps (PE-48). Paint them black, bend at the fold lines and glue in place as shown in the drawing below

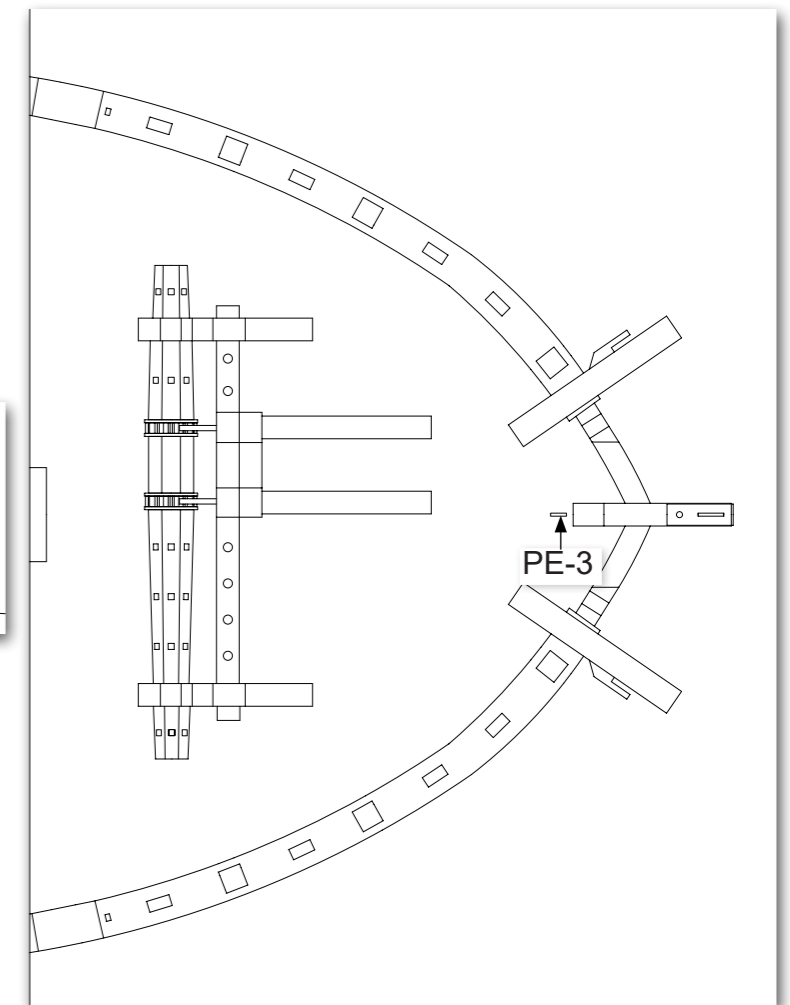
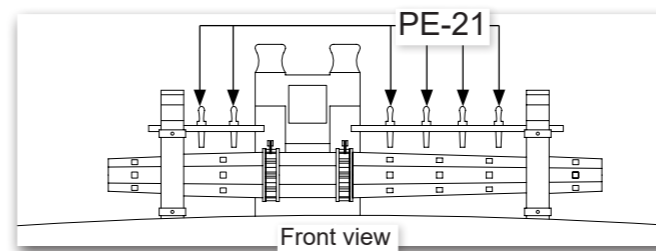
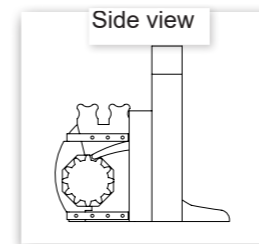
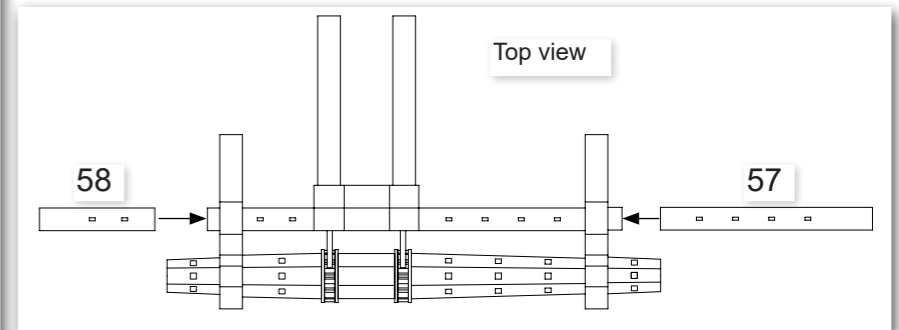
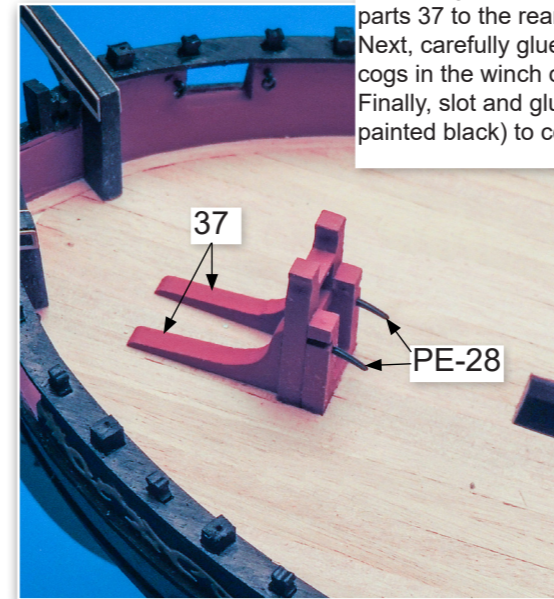


Glue parts 30 and 31 together and paint red. Paint black and glue and insert parts PE-28, the pawls, into the slots on the front of part 31.

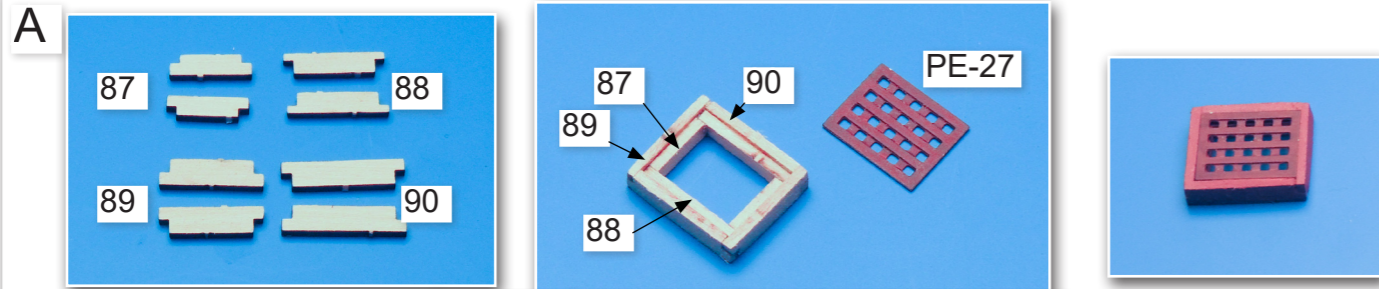
Slot and glue the assembly into the slots located off-centre in the front deck and then paint red and add parts 37 to the rear of part 30.

Next, carefully glue the winch drum assembly in place so that the ends of the pawls (PE-28) touch the cogs in the winch drum.

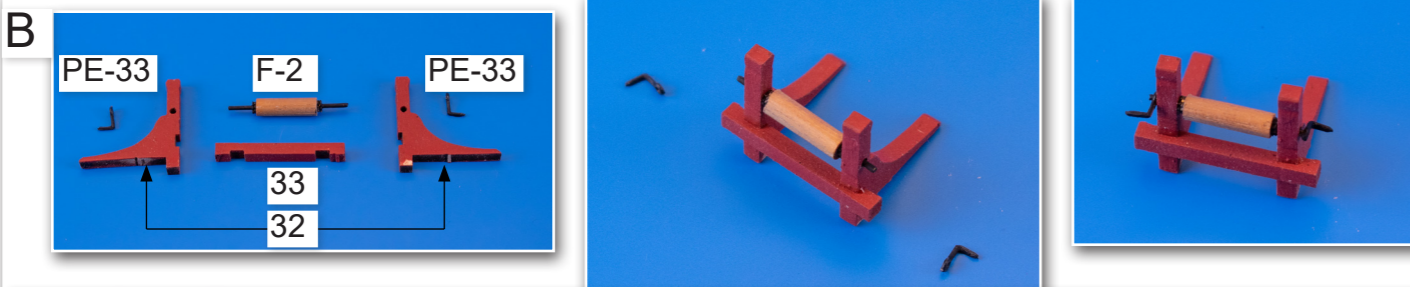
Finally, slot and glue the belaying pin racks (57 & 58) in place, followed by the belaying pins (PE-21, painted black) to complete the assembly.



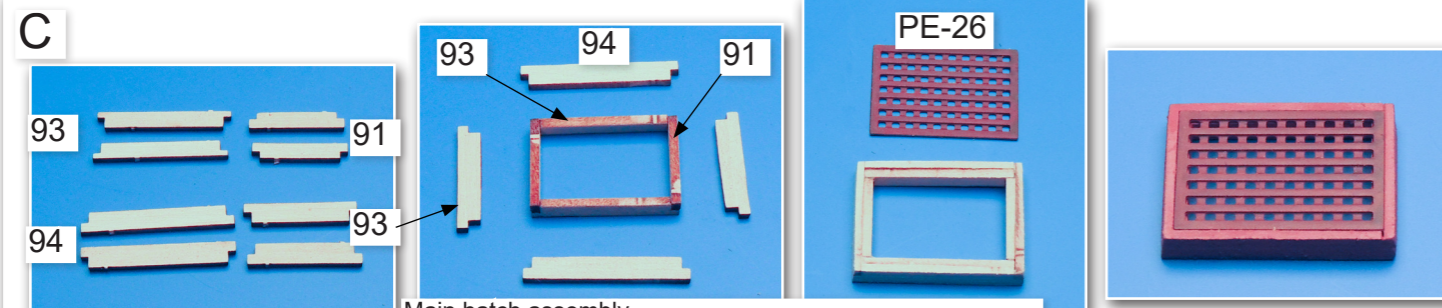
## Deck fittings



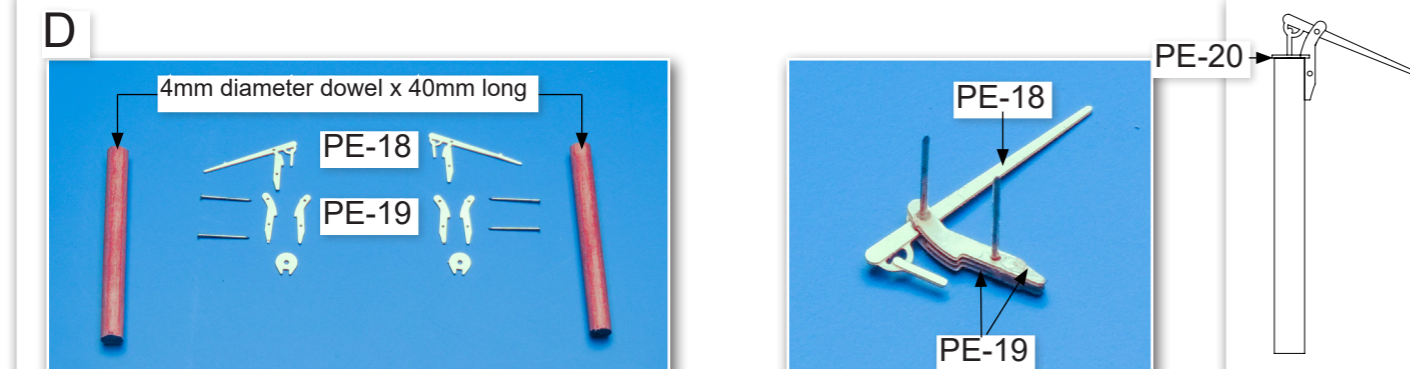
Fore companionway assembly.  
Paint combing red when complete and grating wood colour.



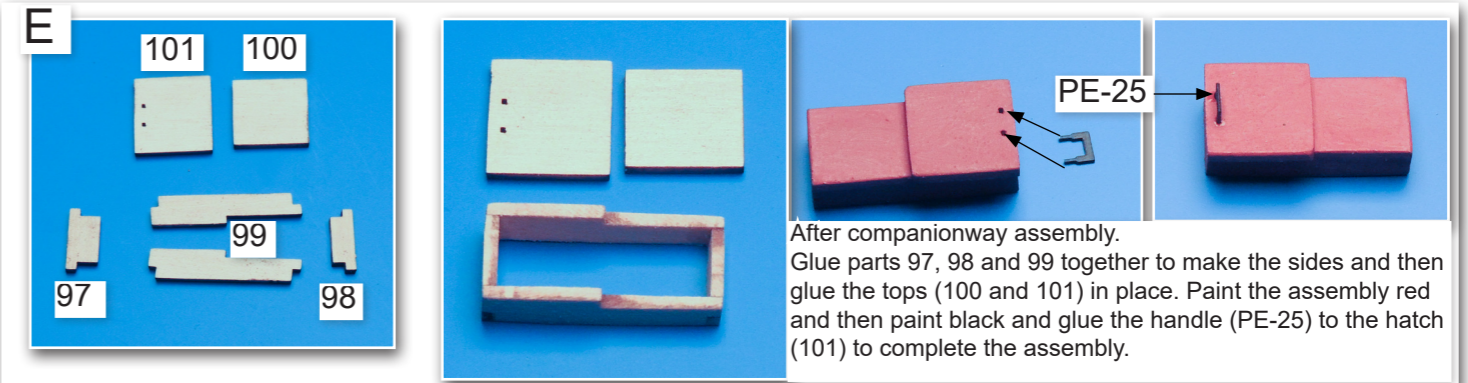
Jeer and topsail bitts assembly.  
Paint parts 32 and 33 red, PE-33 black and F-2 wood colour for the drum and black for the gears and shaft. Make up the assembly as shown. The handles (PE-33) are to be bent and glued to each end of the shaft on F-2.



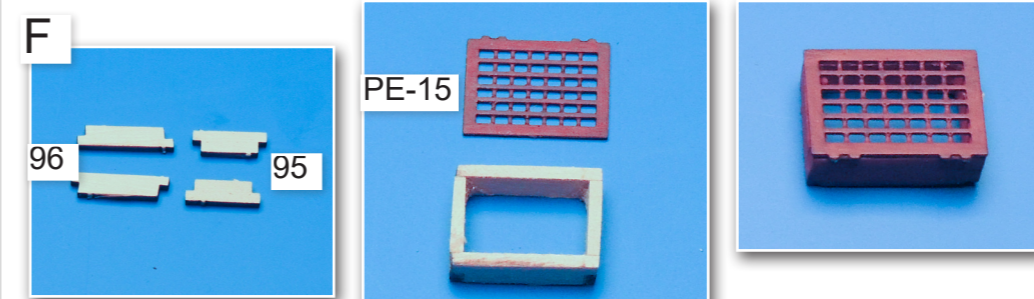
Main hatch assembly.  
Paint combing red when complete and grating wood colour.



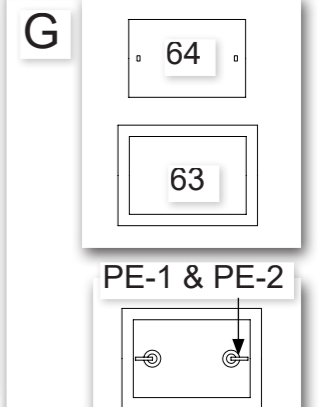
Deck pump assembly.  
Assemble the photo etched parts (PE-18 and PE-19) by first joining them together using the pins (F-7) and then glue to secure the three parts together. Trim the pins flush with the sides of PE-19. Glue part PE-20 to the top of the dowel and then glue the main pump handle assembly in place as shown. Paint all of the photo-etched parts black.



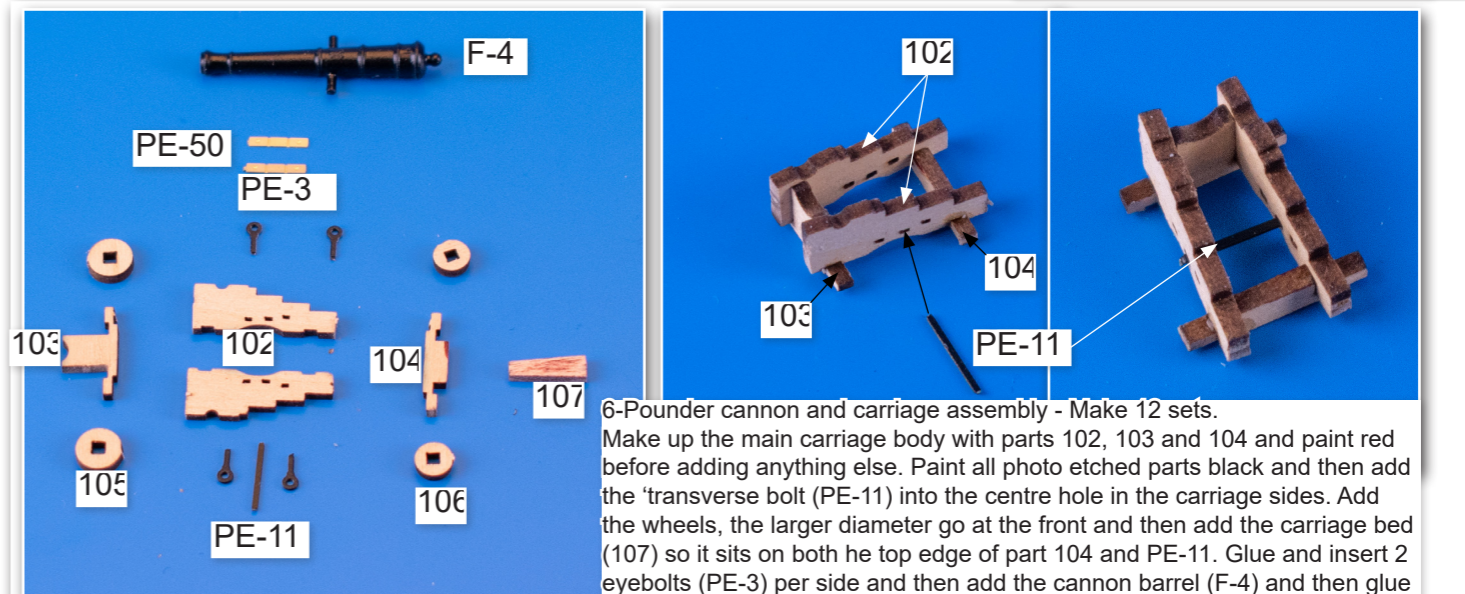
After companionway assembly.  
Glue parts 97, 98 and 99 together to make the sides and then glue the tops (100 and 101) in place. Paint the assembly red and then paint black and glue the handle (PE-25) to the hatch (101) to complete the assembly.



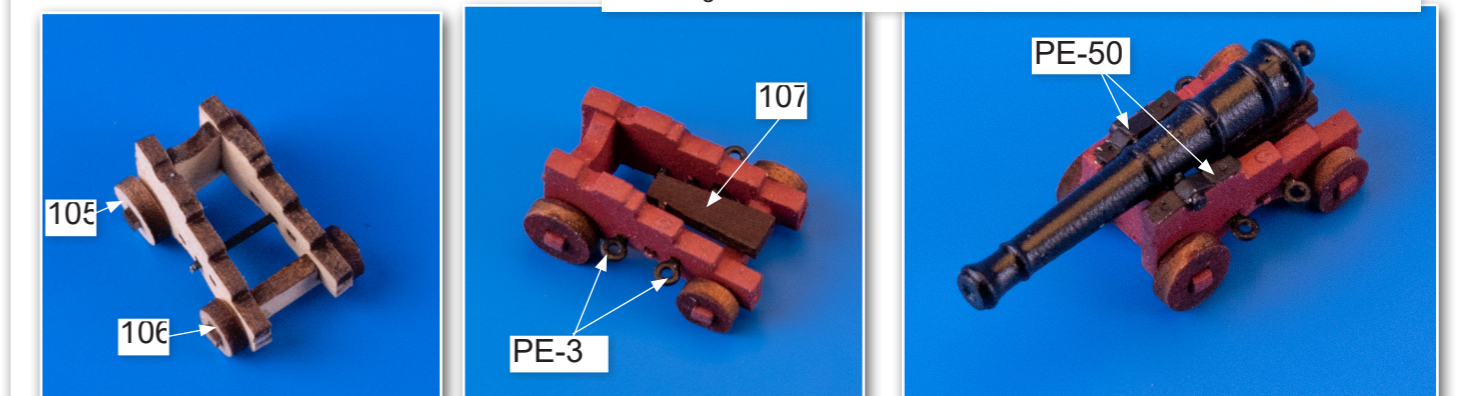
Rear hatch/Skylight assembly.  
Paint sides red when complete and skylight frame wood colour.

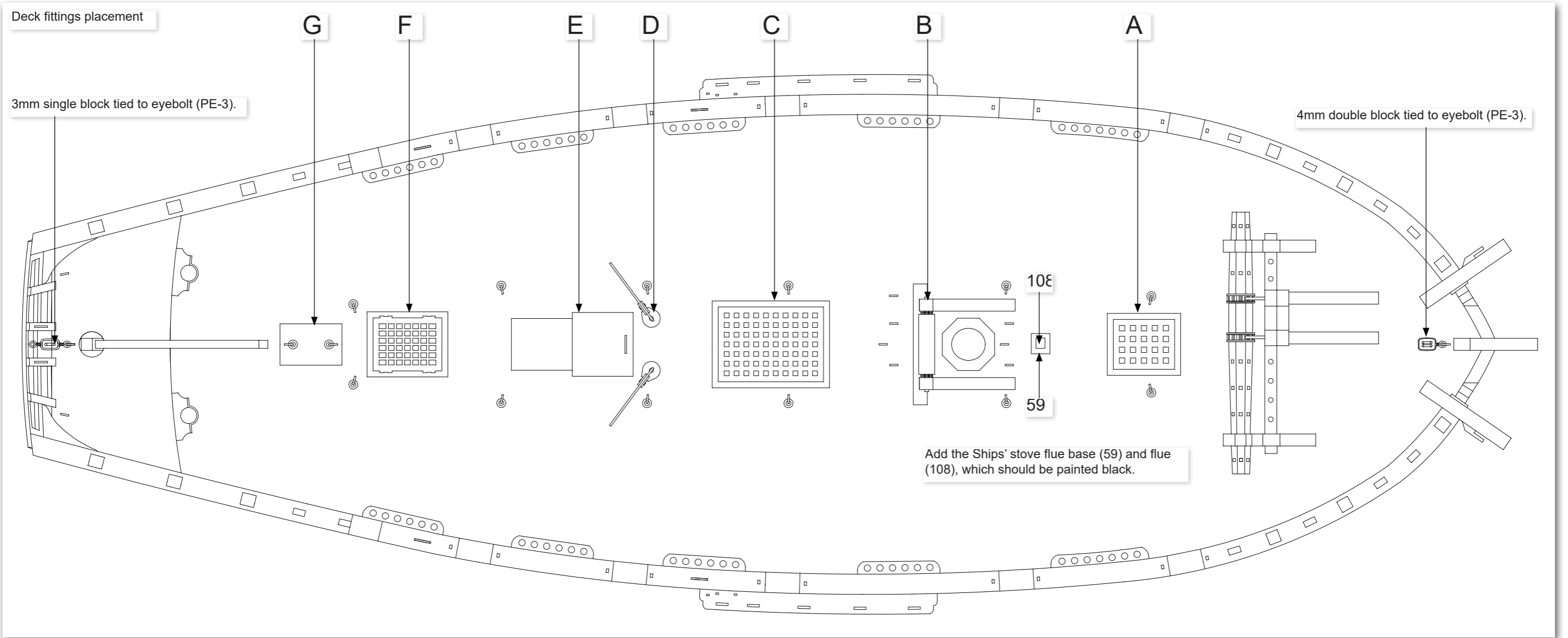


Bread hatch assembly  
Glue the hatch (64) inside the combing (63) and paint red. Add the eyebolts and rings to each end of the hatch.

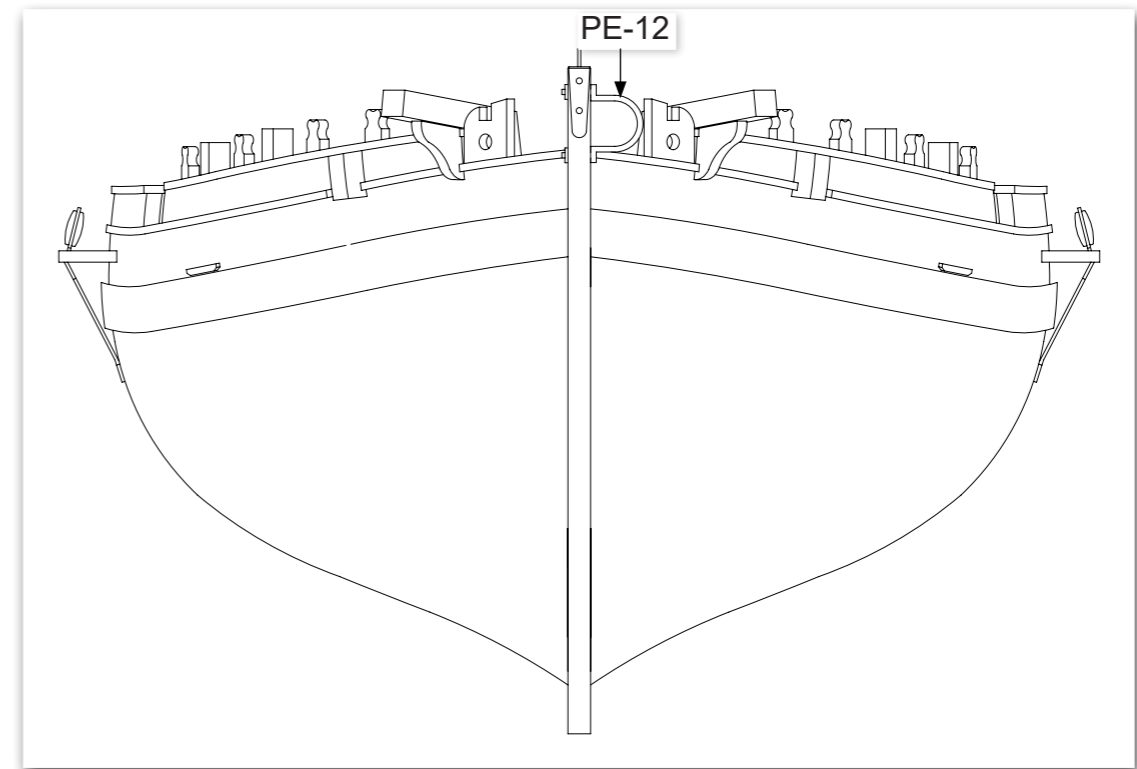
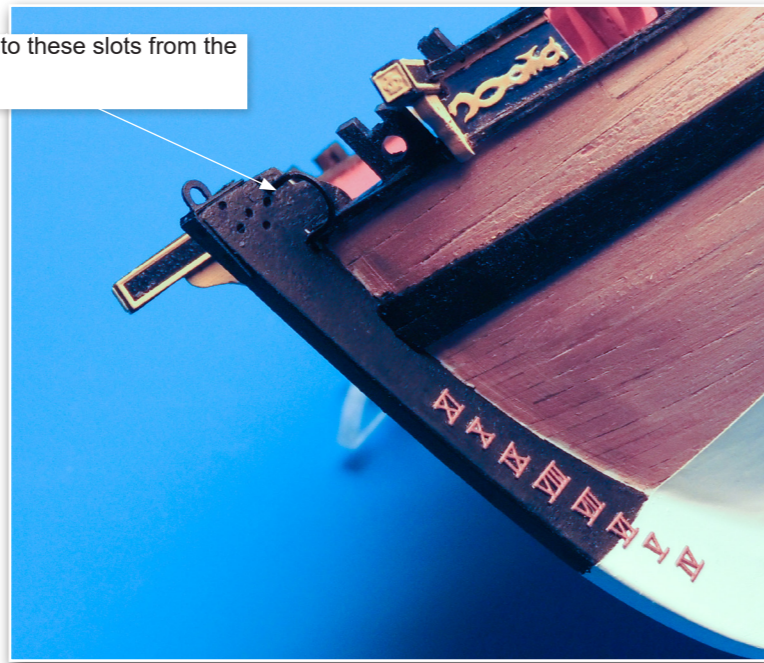
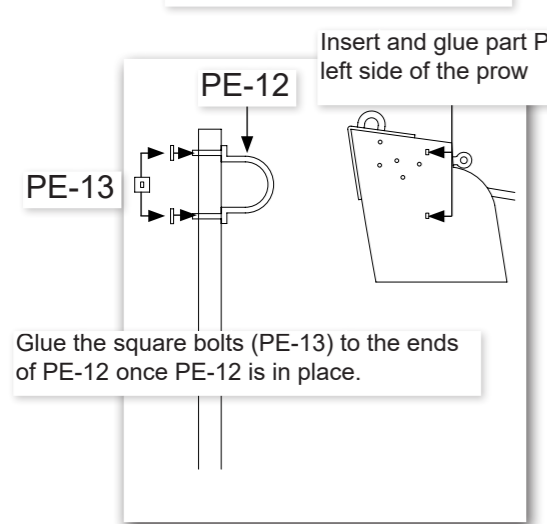


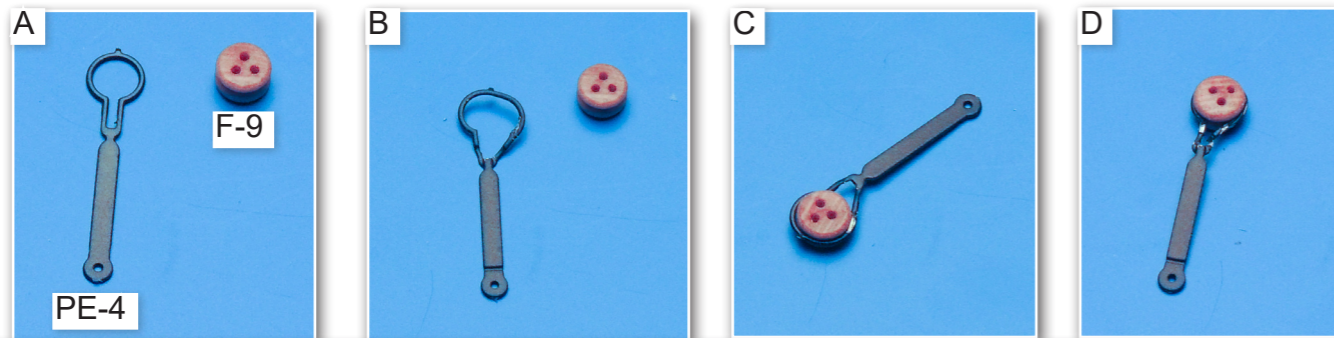
6-Pounder cannon and carriage assembly - Make 12 sets.  
Make up the main carriage body with parts 102, 103 and 104 and paint red before adding anything else. Paint all photo etched parts black and then add the 'transverse bolt (PE-11) into the centre hole in the carriage sides. Add the wheels, the larger diameter go at the front and then add the carriage bed (107) so it sits on both the top edge of part 104 and PE-11. Glue and insert 2 eyebolts (PE-3) per side and then add the cannon barrel (F-4) and then glue the cap square (PE-50) over the cannon trunnions and one the top surface of the carriage sides as shown.





**Bowsprit 'Iron Hoop' placement**

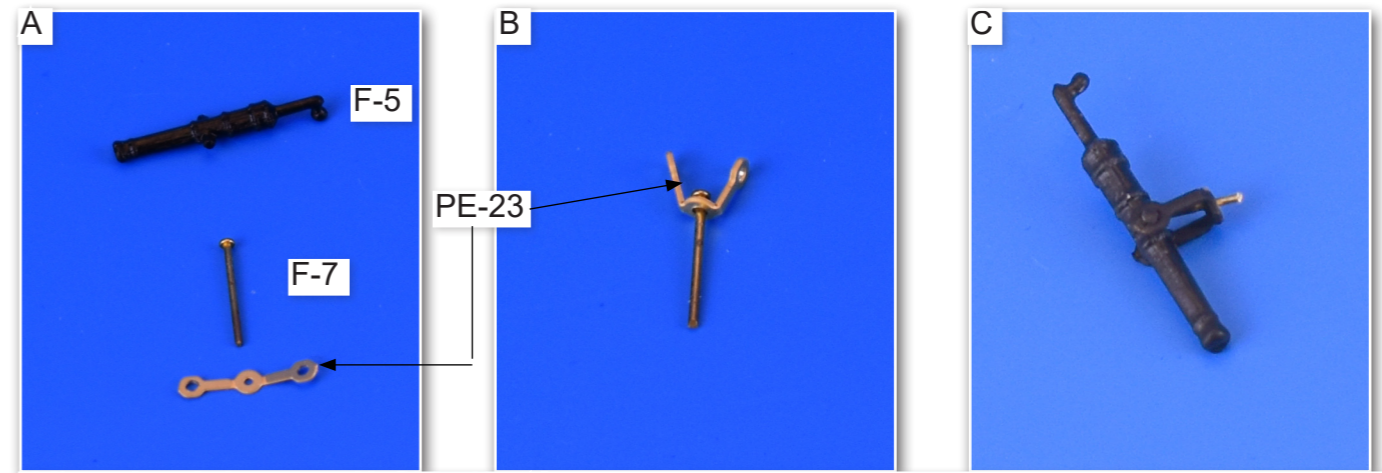




Deadeye and chain plate assembly. (Make 10 sets)  
 Paint the chain plates black and then open up the loop that will hold the 5mm deadeye (B). Push the deadeye into the loop (C) and then close the loop back up to secure the deadeye (D).  
 Once the 10 sets are done, fix them in place through the slots in the channels and pin the ends into the hull sides, as shown below.

The iron plates for backstay rigging (PE-14, paint black) can be fixed at this time. Using the full size hull profile drawings, mark out and pin parts PE-14 in place.

Add the stanchions (PE-36 and PE-37) by first drilling a 0.8mm hole through the stanchion positions already laser cut in the capping rail for PE-36, and drill a 0.8mm hole to the position shown in the full size drawings to take the shorter stanchion (PE-37). The stanchions should be painted black and then a length of 0.5mm diameter thread run through the holes and tied off at the ends to simulate the safety rope.

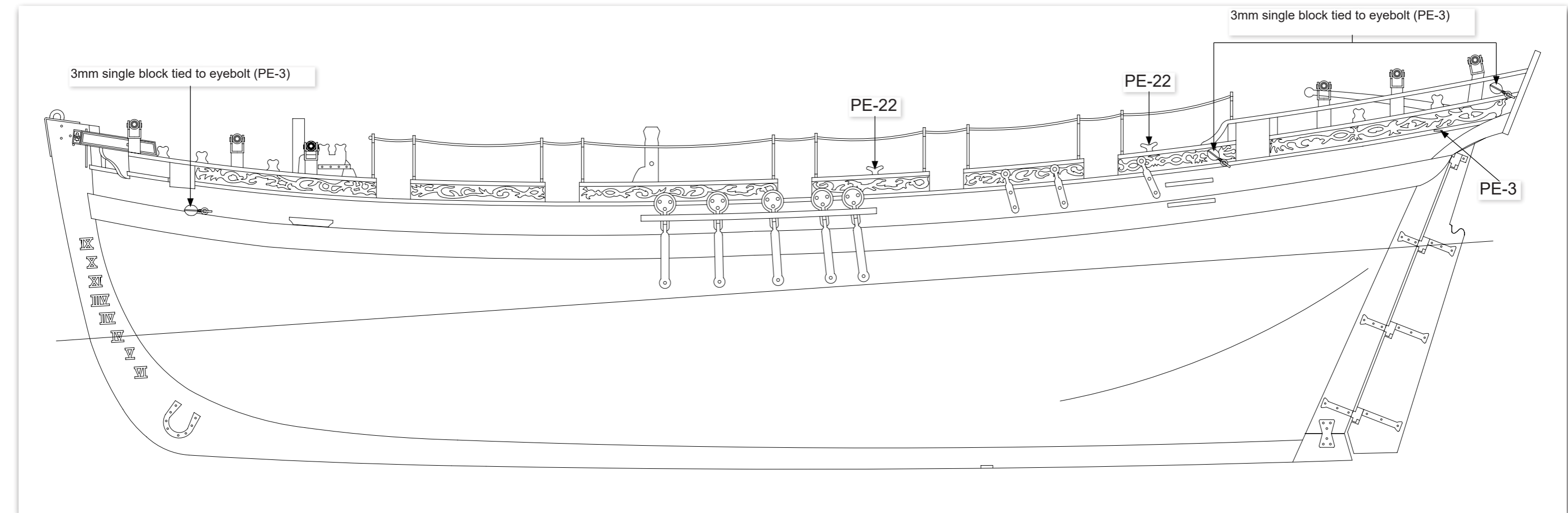
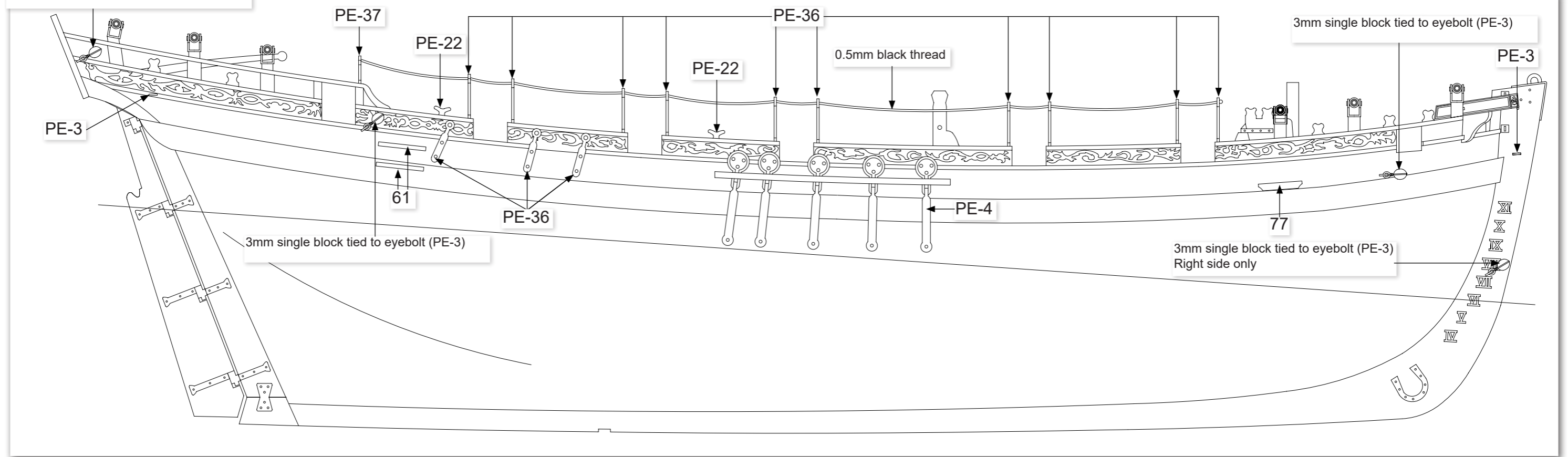


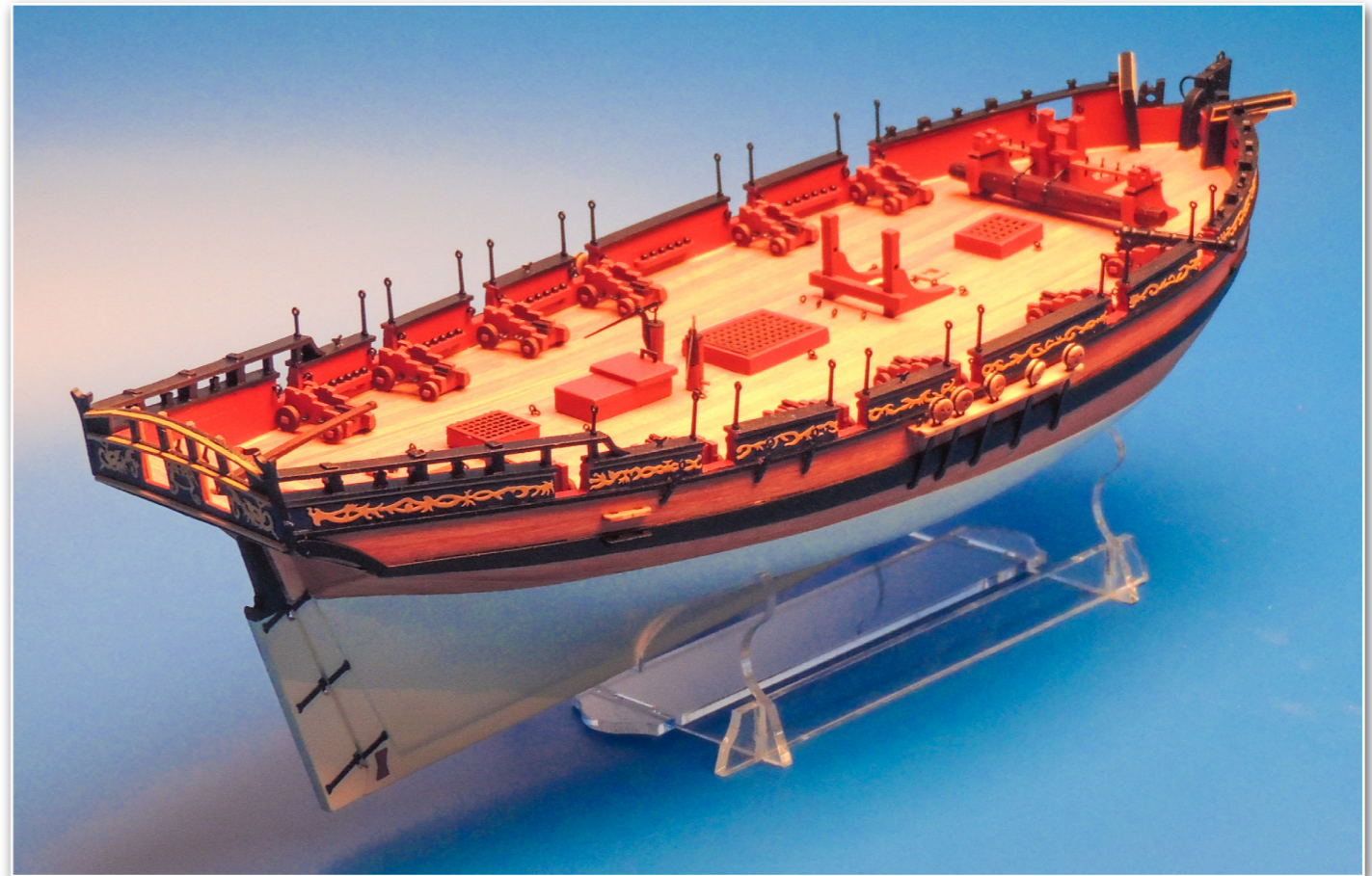
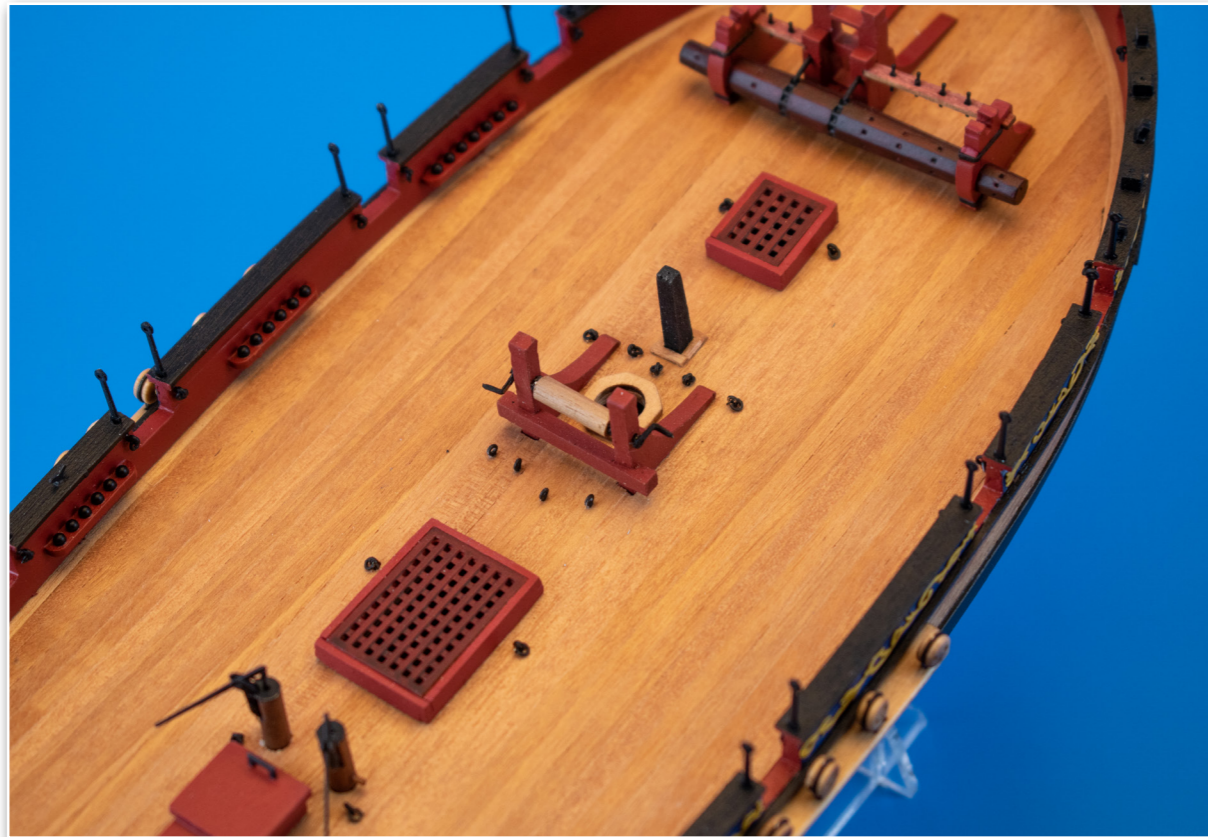
Half-pounder swivel gun assembly (Make 12 sets)  
 Push a pin through the centre hole in the photo-etched swivel gun mounting (PE-23) and then fold the sides of the mounting so that the holes slot into the trunnions of the half-pounder barrel (F-5). Paint the parts black and insert and glue the assembly into the hole on the swivel gun base.



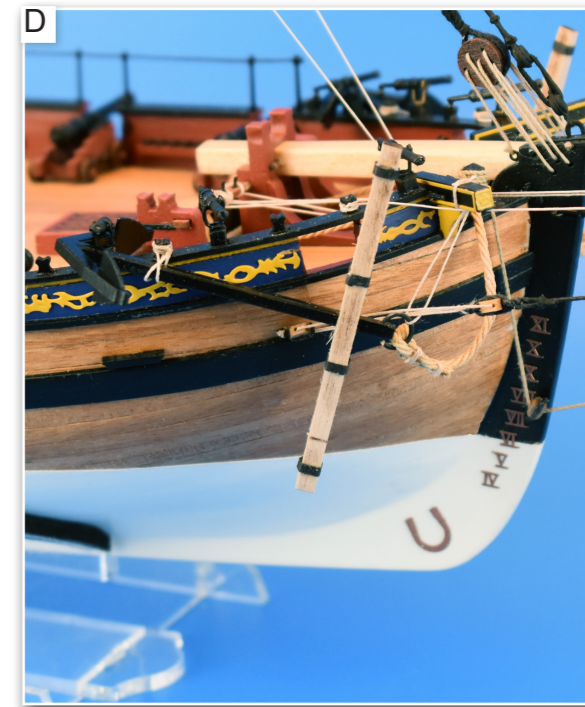
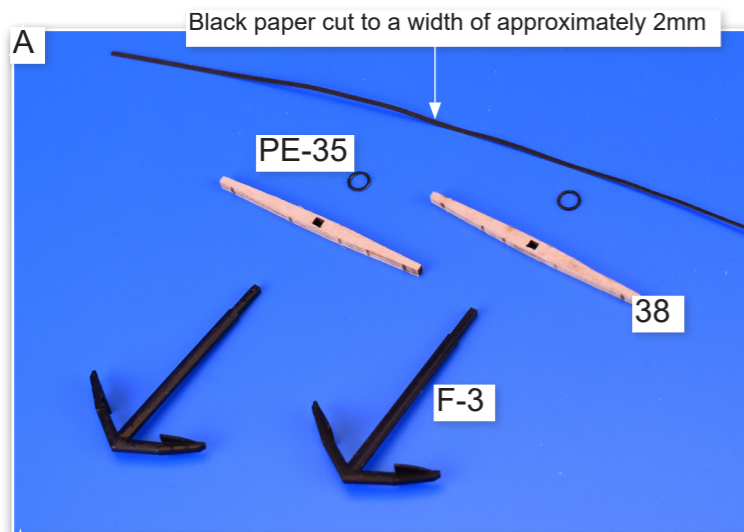


3mm single block tied to eyebolt (PE-3)





Pictures showing the hull construction almost complete. The nameplates (PE-16) can be glued to the centre of the stand spacers. Before this, paint them black and when dry, carefully sand the letter surface to remove the black paint and reveal the lettering.



**Anchor assembly**

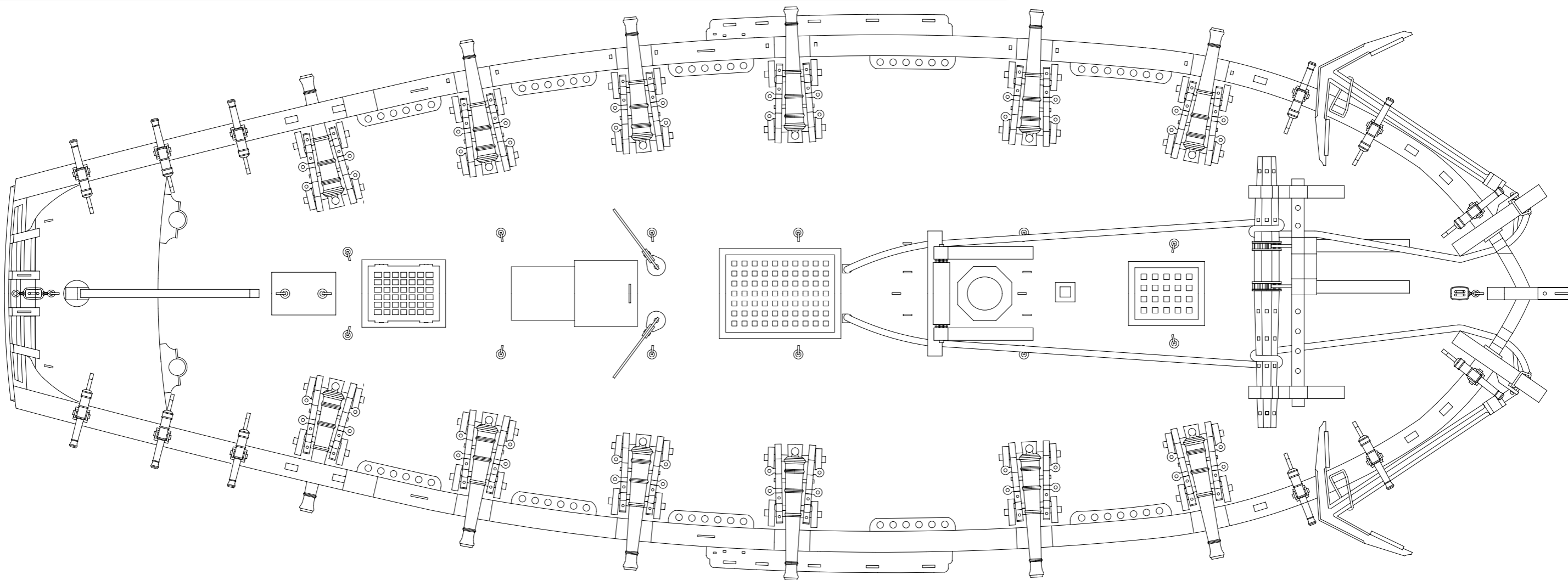
A - Paint the cast anchor shanks (F-3) and photo-etched rings (PE-35) black. Remove the anchor stocks (38) from their 3mm wood sheet. Cut a few lengths of the black paper to a width of approximately 2mm.

B - Using PVA wood glue, fix the black paper strips around the stocks at the notched positions to simulate the strapping

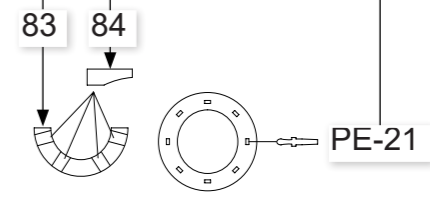
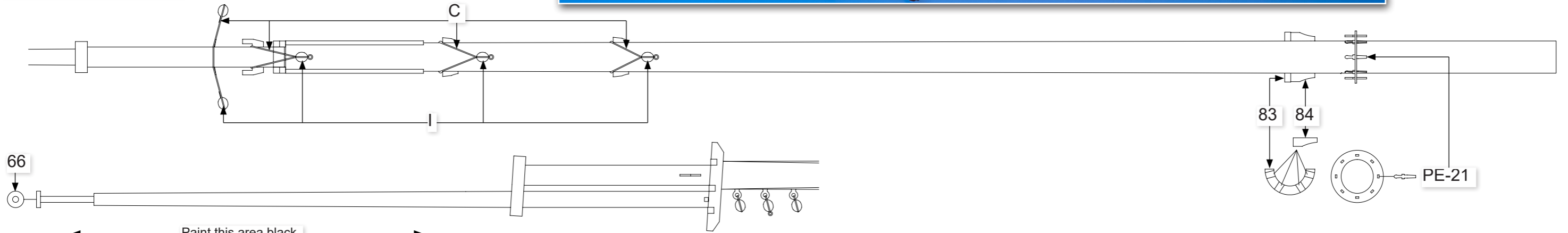
C - Slot and glue the stock to the cast anchor shank and then open up the ring (PE-35) and push it into the hole at the end of the shank and close back up to complete the assembly.

The anchor cable is 1.6mm diameter natural thread. To start, it can be pushed through the holes in the deck, just forward of the main hatch as shown below (or simply coiled aft of the main drum winch as shown in the photographs), and then to the main drum winch, where it should be wound around a couple of times and then the end pushed through the hole in the hawse pattern. The end is then tied to the anchor ring.

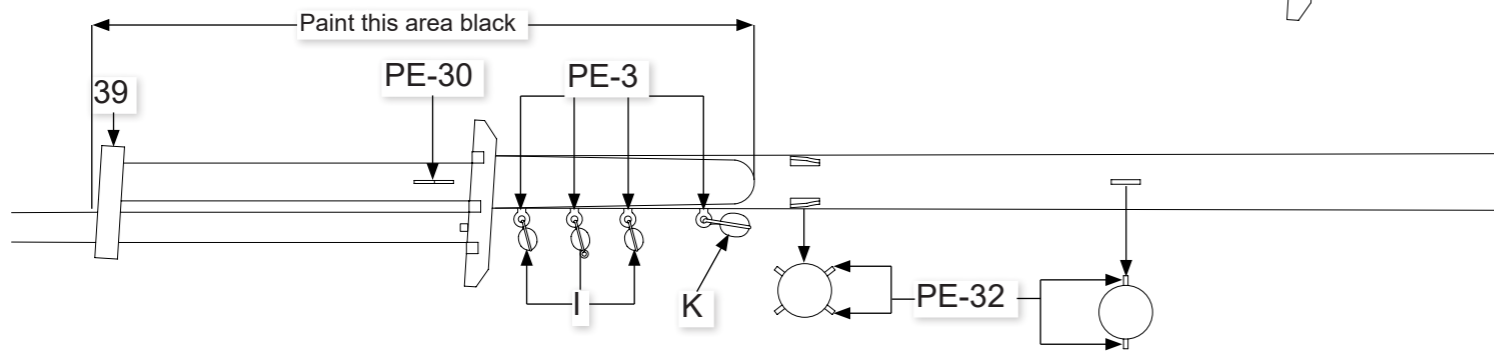
D - It is better to leave the lashing of the anchor to the sides until after the rigging is complete. The anchor is then simply lashed into place using 0.5mm natural thread.



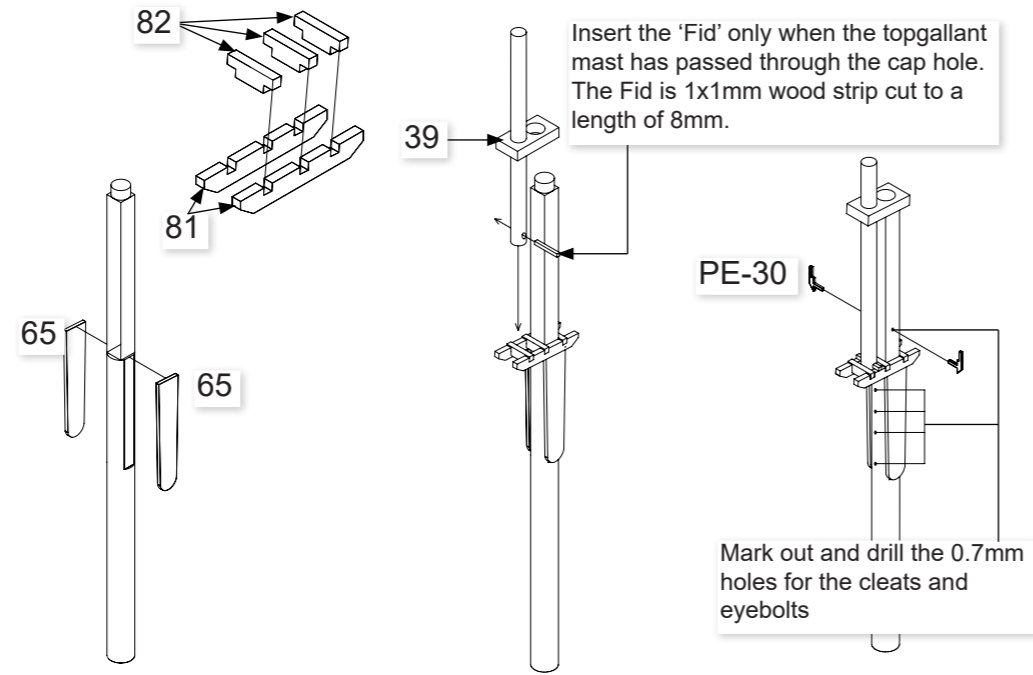
**Alert Mast Plan**  
Scale - 1:64



Paint black and then slot on the 8 sail rings before fixing parts 83 and PE-24 ONLY if you intend to add the sails. They do not need to be added if no sails are fitted.

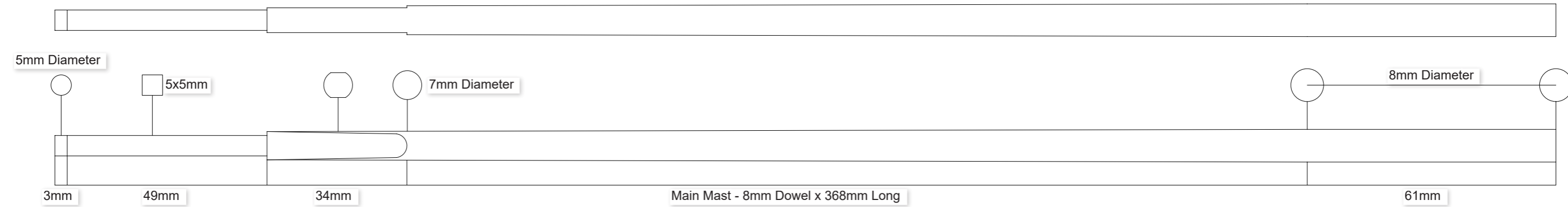
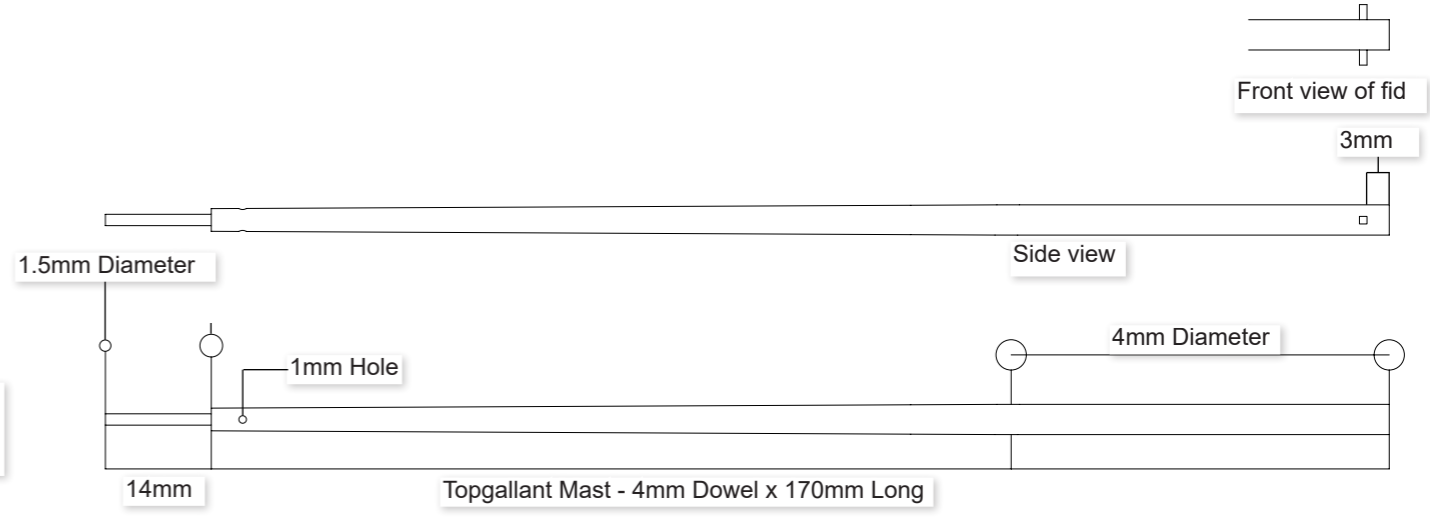


Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block



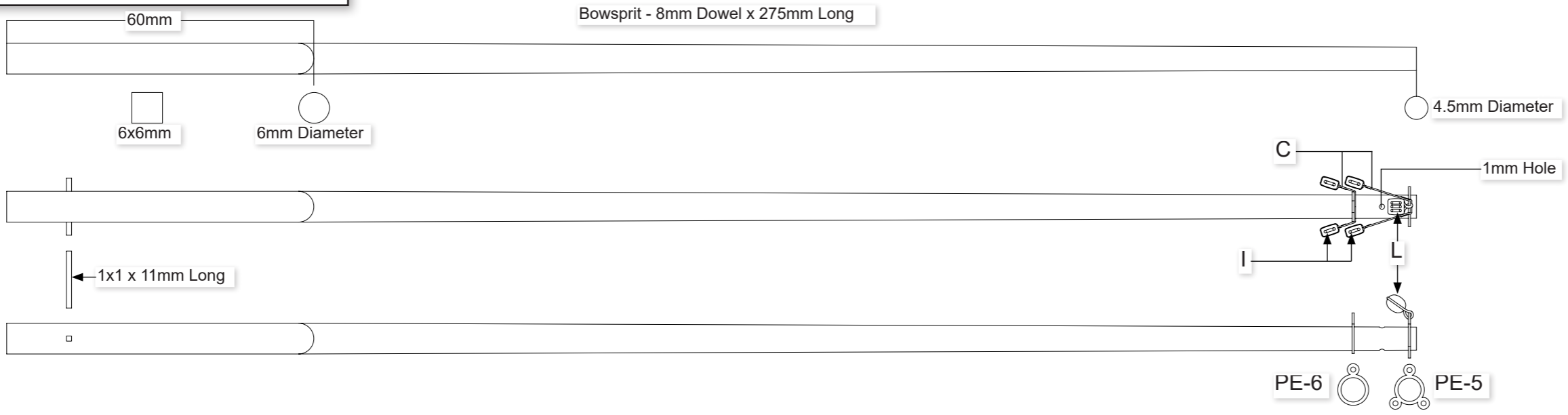
Insert the 'Fid' only when the topgallant mast has passed through the cap hole. The Fid is 1x1mm wood strip cut to a length of 8mm.

Mark out and drill the 0.7mm holes for the cleats and eyebolts

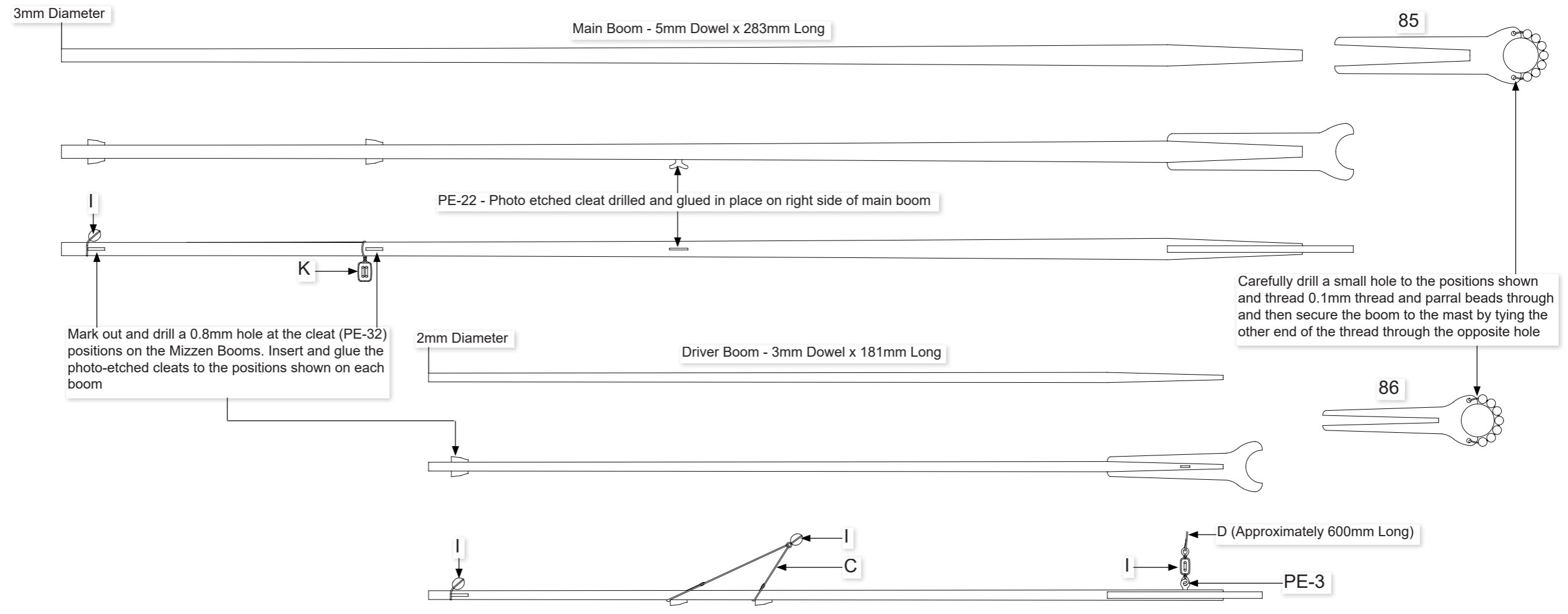


# Bowsprit, Gaff and Boom Plan

Scale - 1:64



Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block



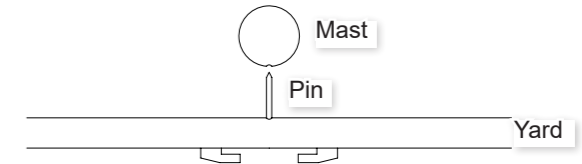
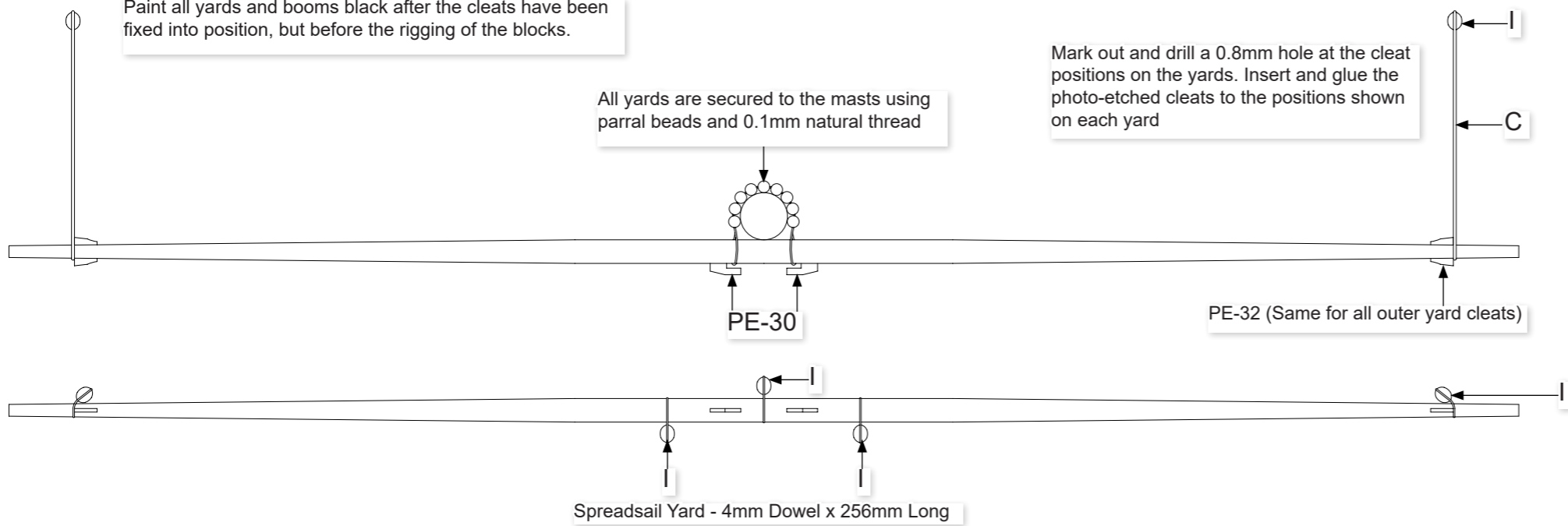
# Square Sail Yards Scale - 1:64

Paint all yards and booms black after the cleats have been fixed into position, but before the rigging of the blocks.

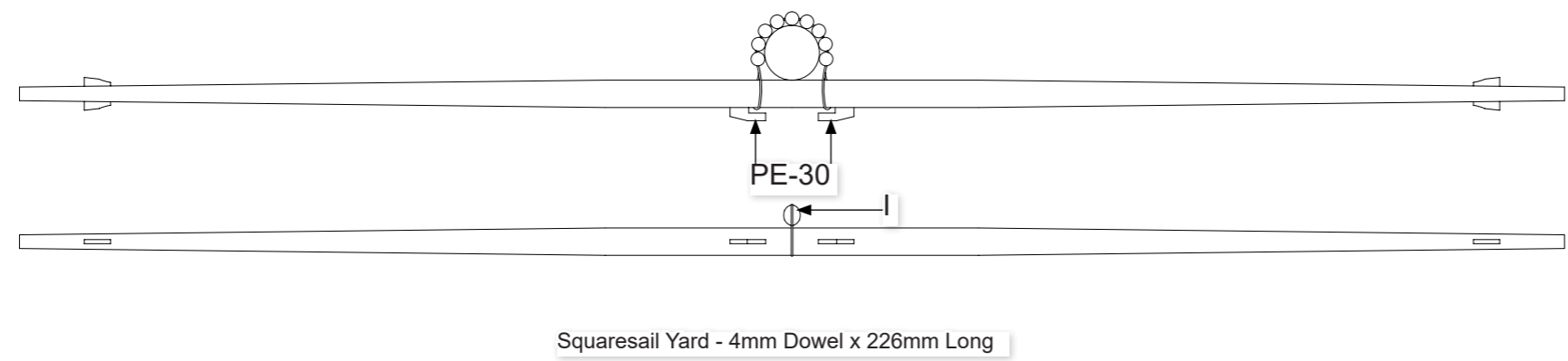
All yards are secured to the masts using parral beads and 0.1mm natural thread

Mark out and drill a 0.8mm hole at the cleat positions on the yards. Insert and glue the photo-etched cleats to the positions shown on each yard

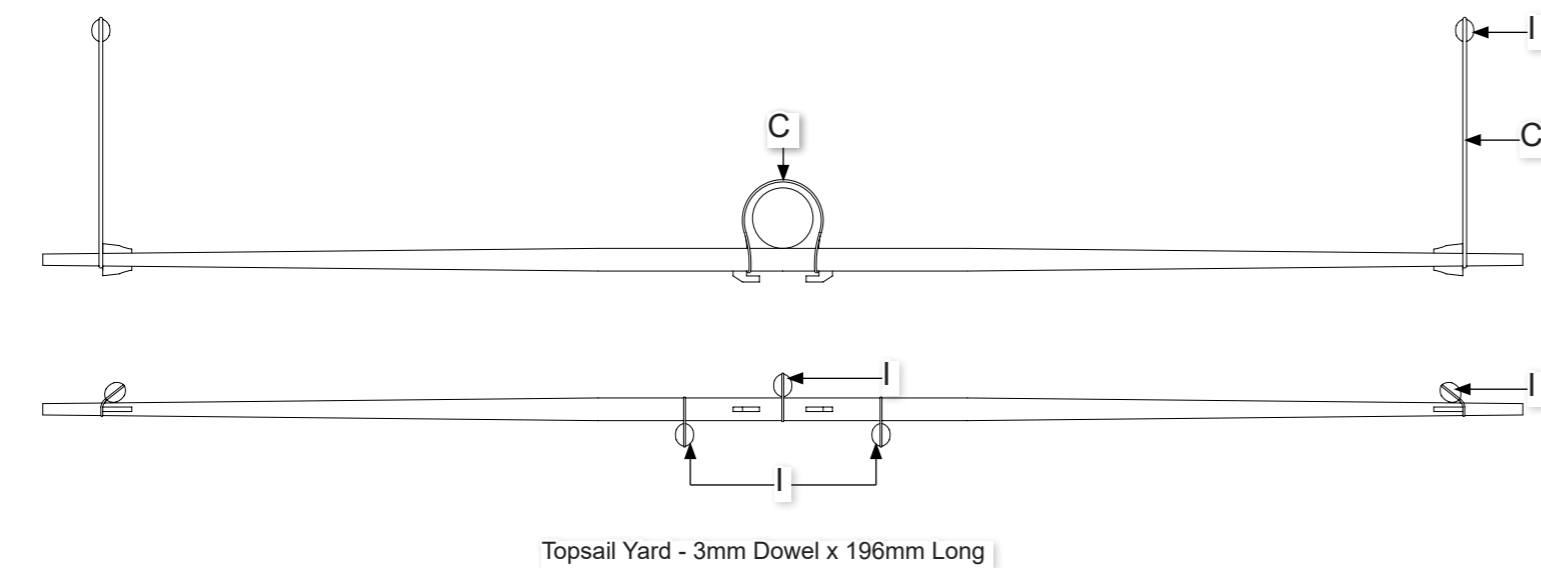
Whether you use sails or not, it is recommended that you pin as well as tie each yard to the masts. Mark out the centre of the yard and drill a small hole halfway through and insert a pin with the head removed (Or small diameter brass wire would suffice). Drill another hole in the mast, at the yard's resting position, and pin and glue the yard in place. This also makes the rigging of the yards a lot easier.



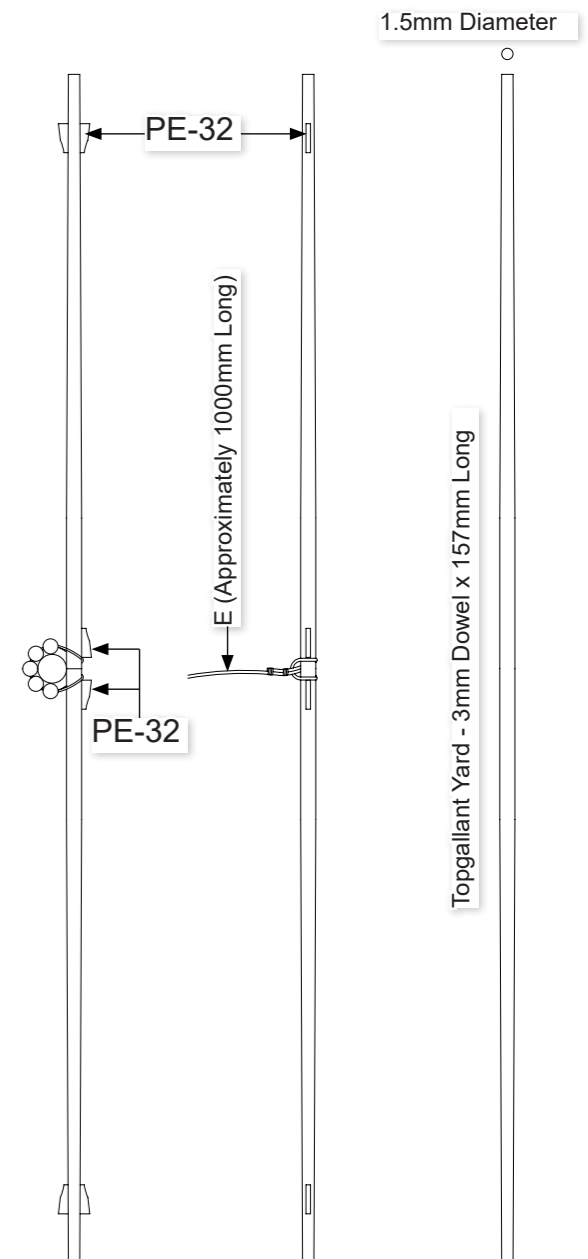
○ 2mm Diameter



○ 2mm Diameter



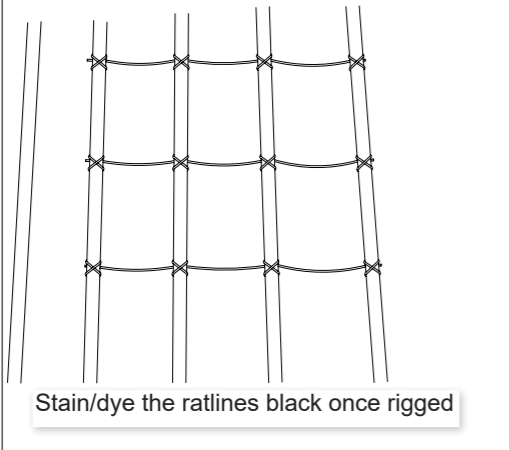
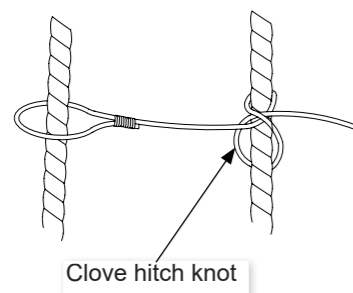
○ 1.5mm Diameter



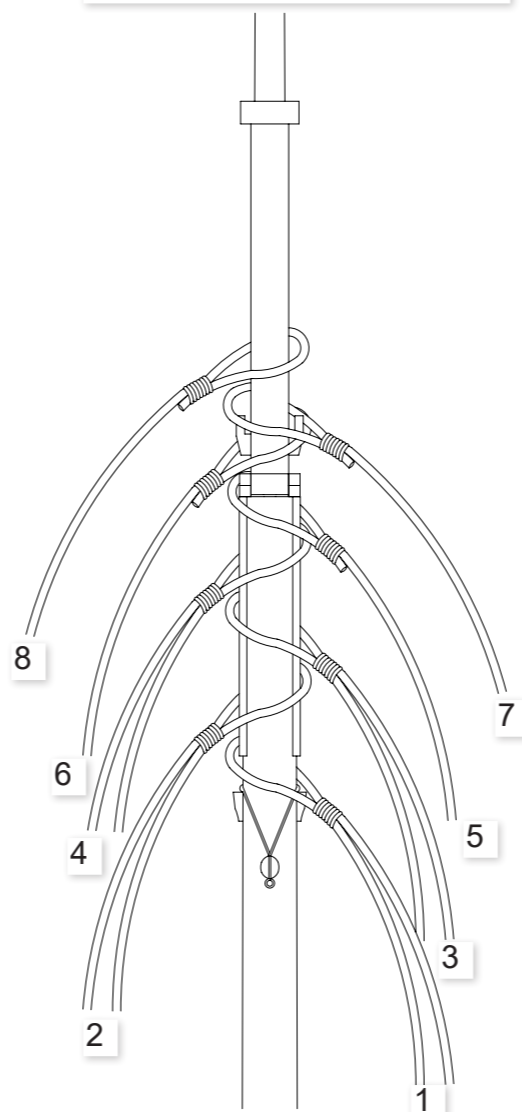
Rigging Thread and Blocks	
○	A - 1mm Black Thread
○	B - .75mm Black Thread
○	C - .5mm Black Thread
○	D - .1mm Natural Thread
○	E - .25mm Natural Thread
○	F - .5mm Natural Thread
⊙	G - 5mm Deadeye
⊙	H - 3.5mm Thimble
⊙	I - Single 3mm Block
⊙	J - Single 5mm Block
⊙	K - Double 4mm Block
⊙	L - Triple 5mm Block

**Rigging Plan 1**  
**Shrouds and Ratlines**  
**Scale - 1:128**

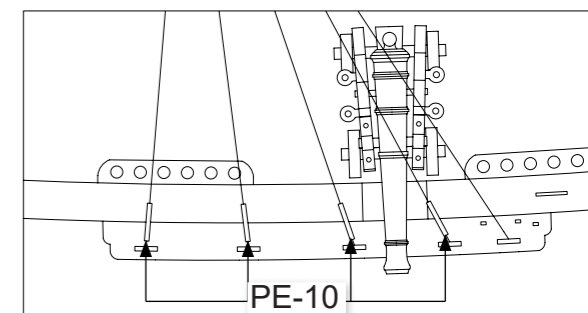
**Tying Ratlines**  
 All ratlines are tied the same way and all are 0.1mm natural thread



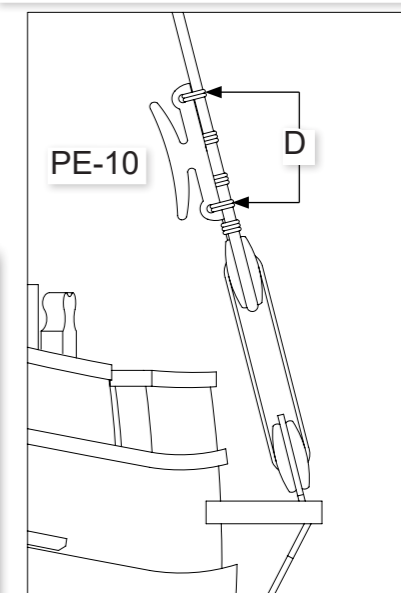
Order of fixing shrouds and back stays



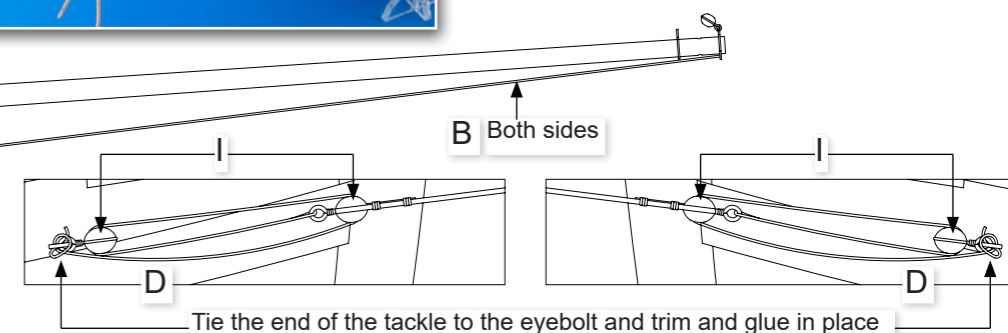
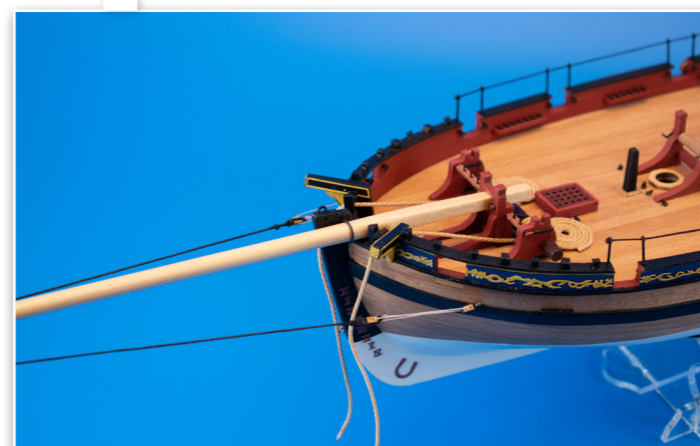
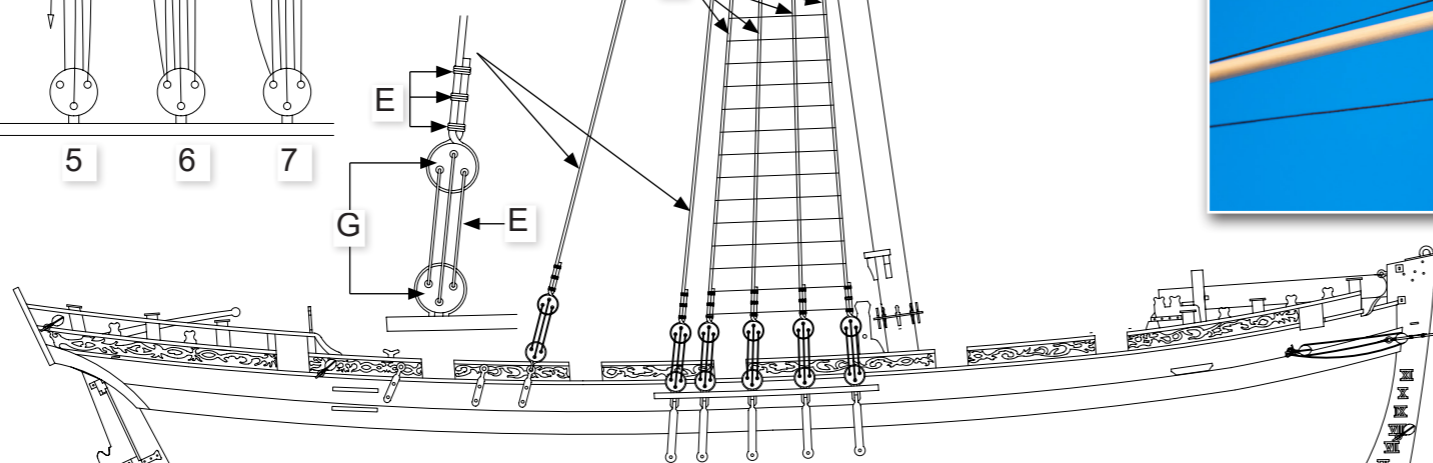
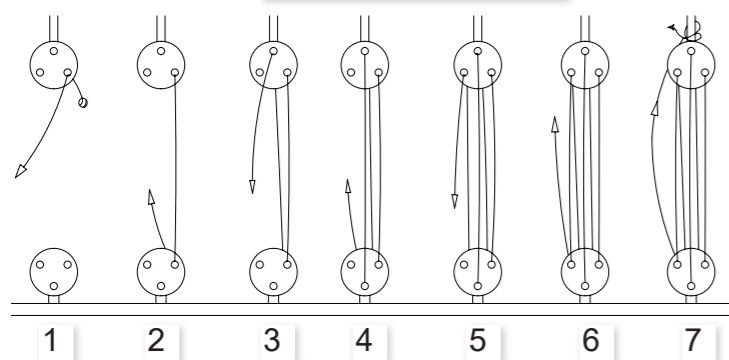
Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block



Paint black and then remove from the host sheet the shroud cleats (PE-10). Tie the cleats to each shroud at the position shown. Use 0.1mm diameter thread to tie the cleats to the shrouds.

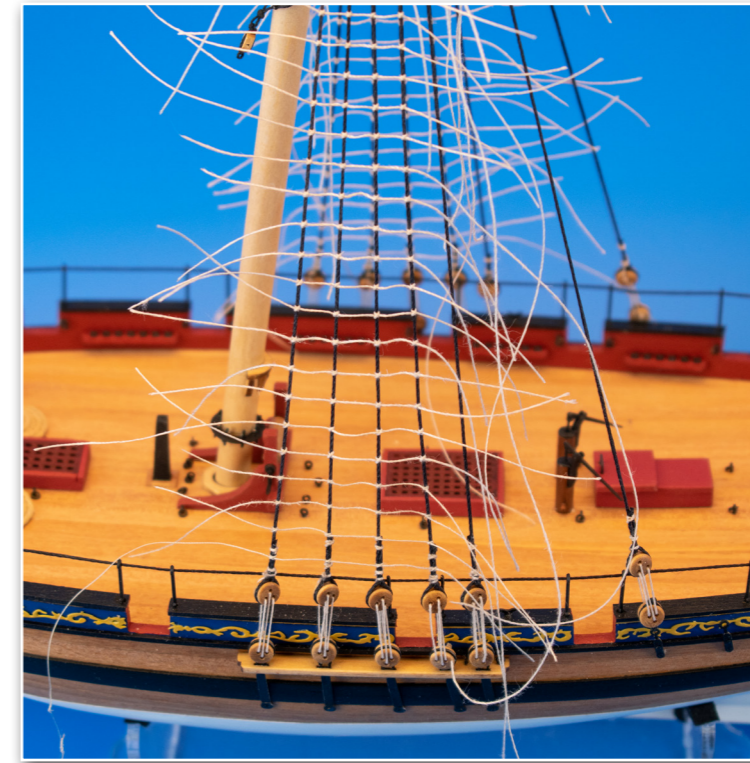


Deadeye lanyard sequence





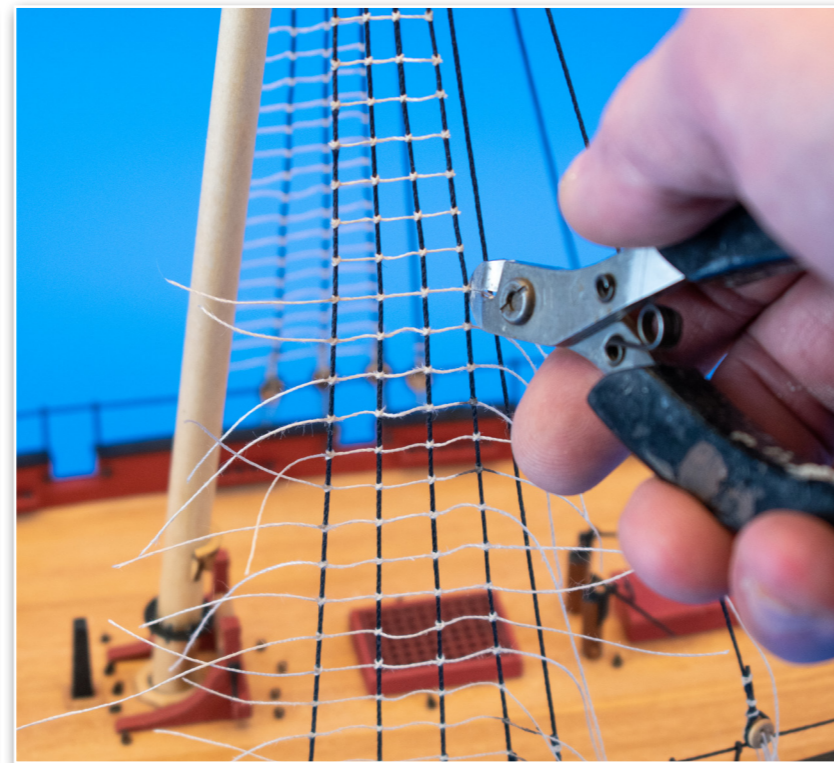
Detail showing the shrouds and back stay rigging secured



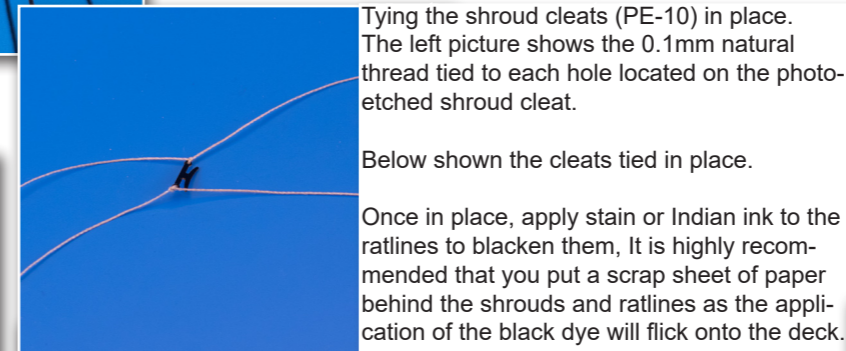
Ratlines tied into place. before applying watered down PVA wood glue to the end knots, to secure them permanently in place, pull the excess ends of the ratlines to ensure the shrouds are not pulled in from the clove hitch knots of the ratlines.



Apply watered down PVA wood glue to the ends of each ratline using a small brush.



Once the PVA wood glue has cured, trim off the excess ratline thread using scissors or a pair of side cutters, as shown above.



Tying the shroud cleats (PE-10) in place. The left picture shows the 0.1mm natural thread tied to each hole located on the photo-etched shroud cleat.

Below shown the cleats tied in place.

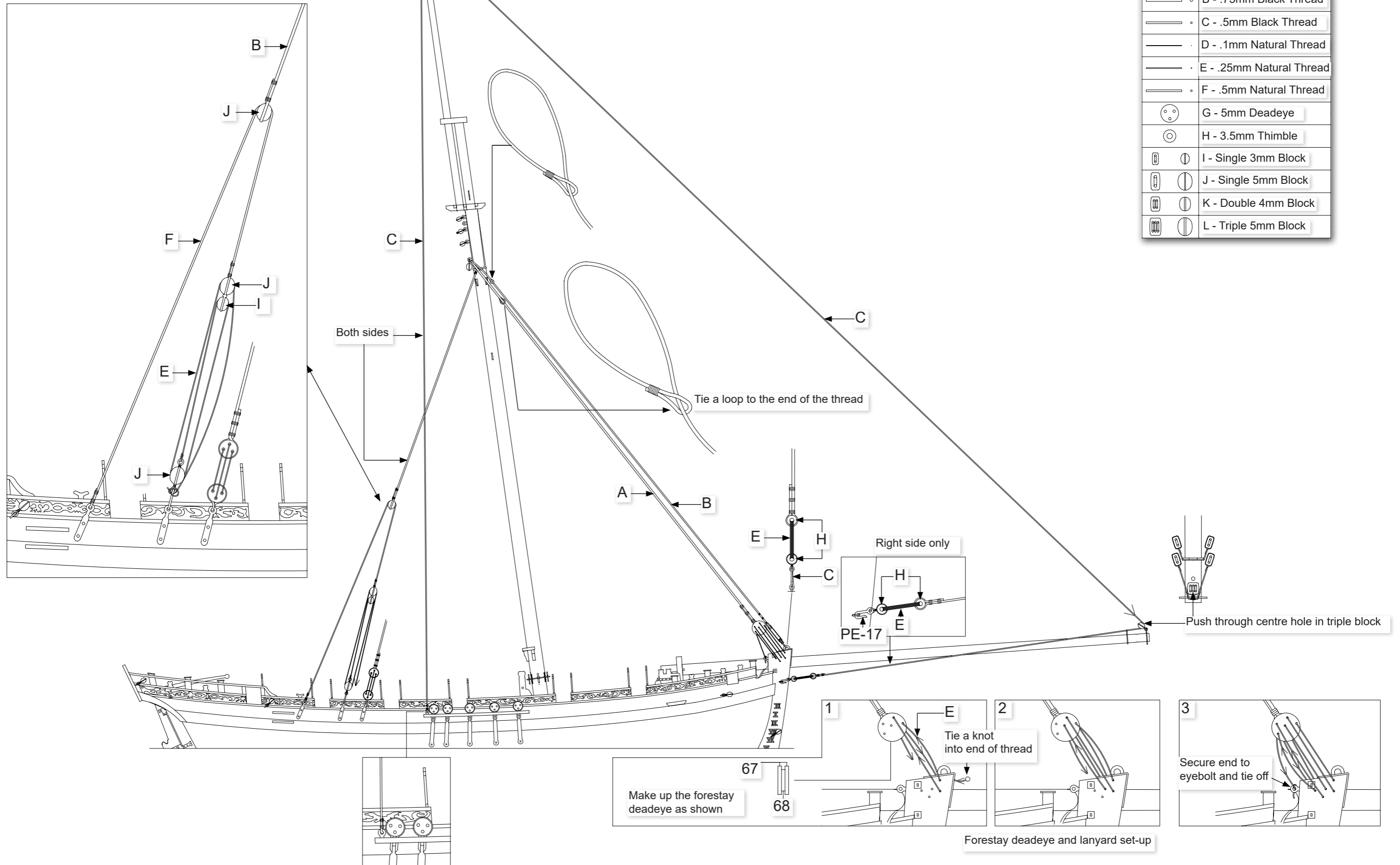
Once in place, apply stain or Indian ink to the ratlines to blacken them, It is highly recommended that you put a scrap sheet of paper behind the shrouds and ratlines as the application of the black dye will flick onto the deck.



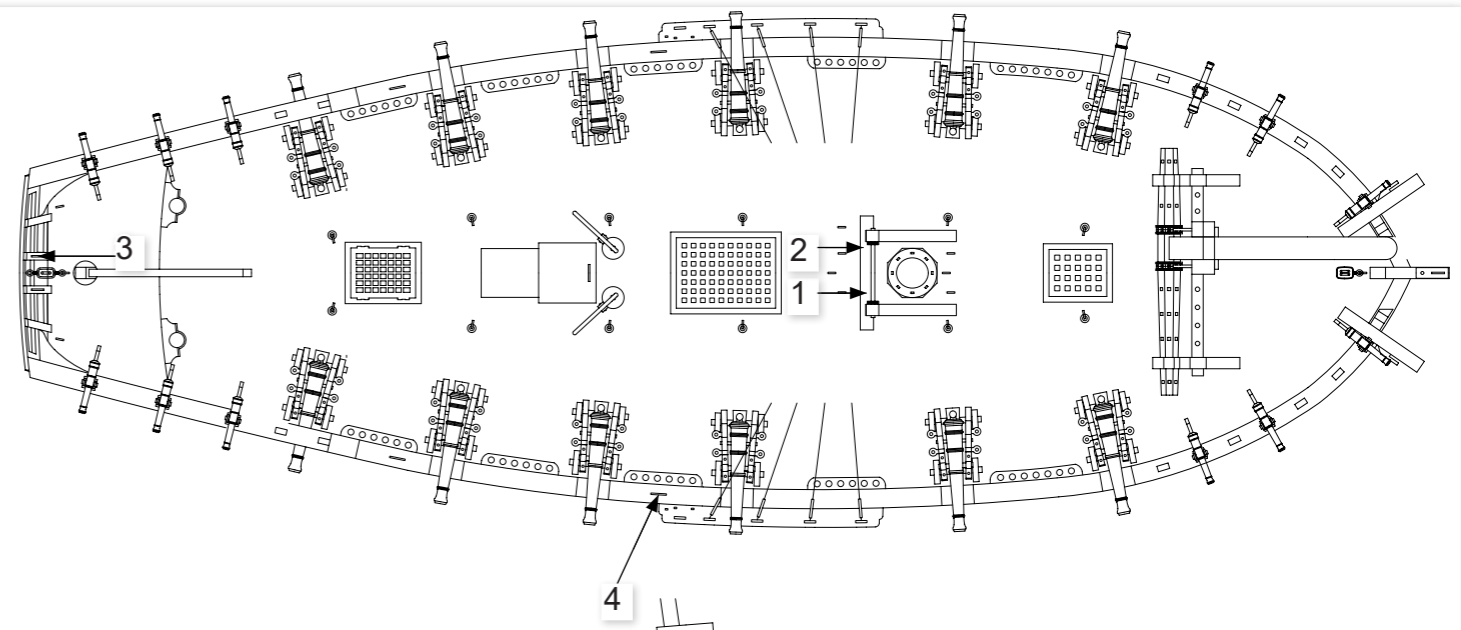
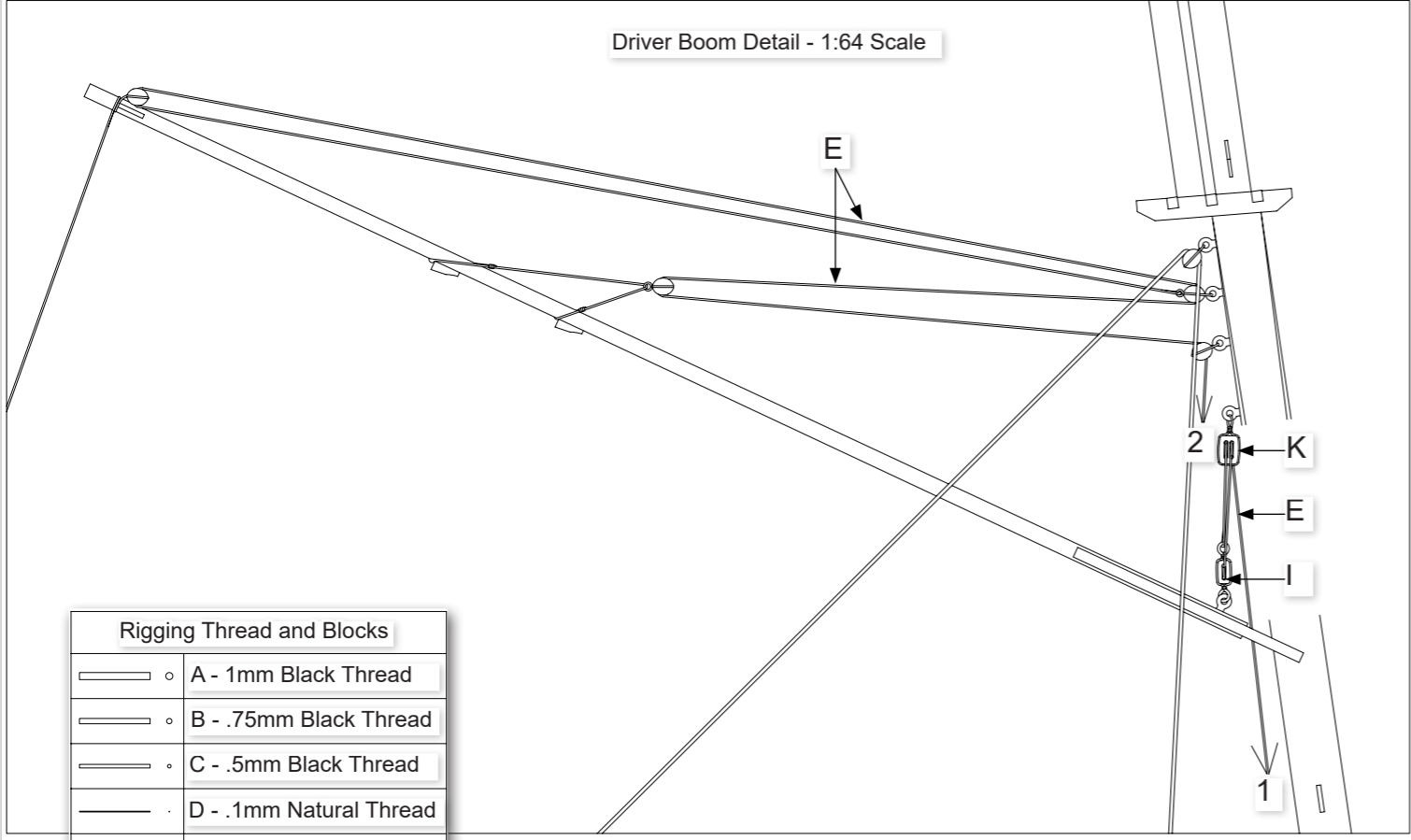


**Rigging Plan 2**  
**Stays**  
**Scale - 1:128**

Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block



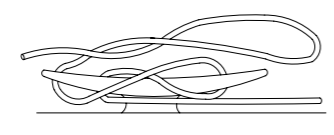
Driver Boom Detail - 1:64 Scale



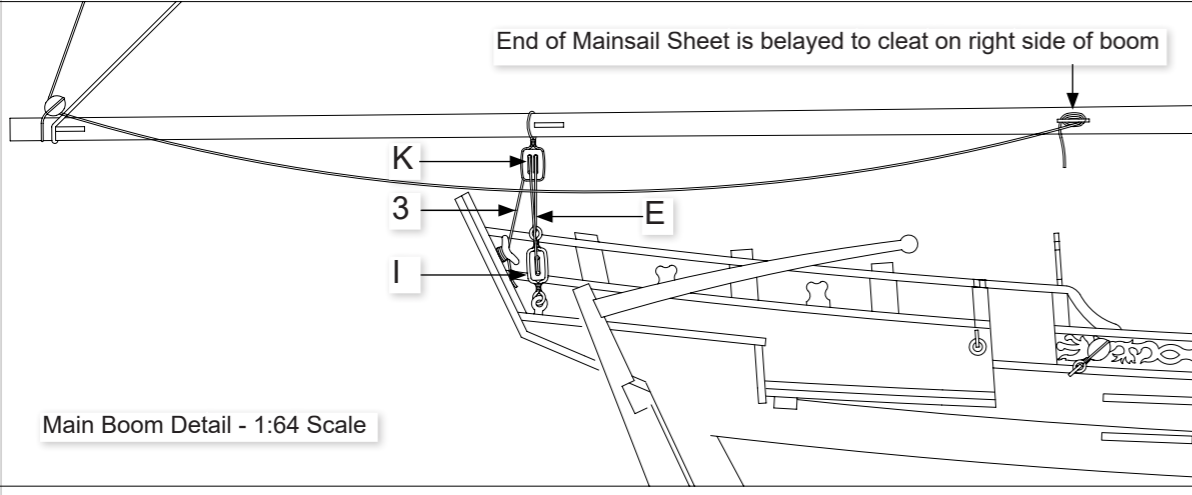
Rigging Thread and Blocks

	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block

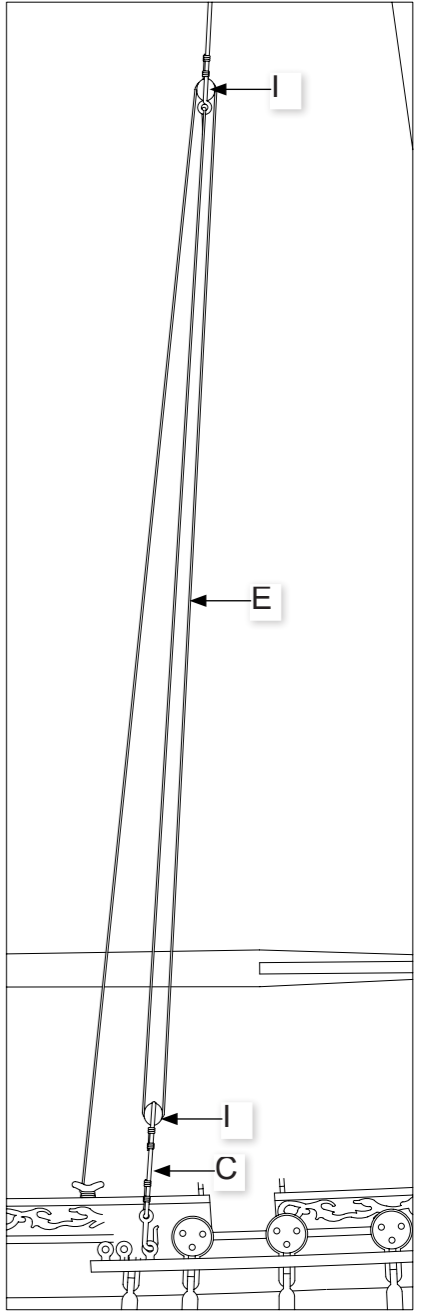
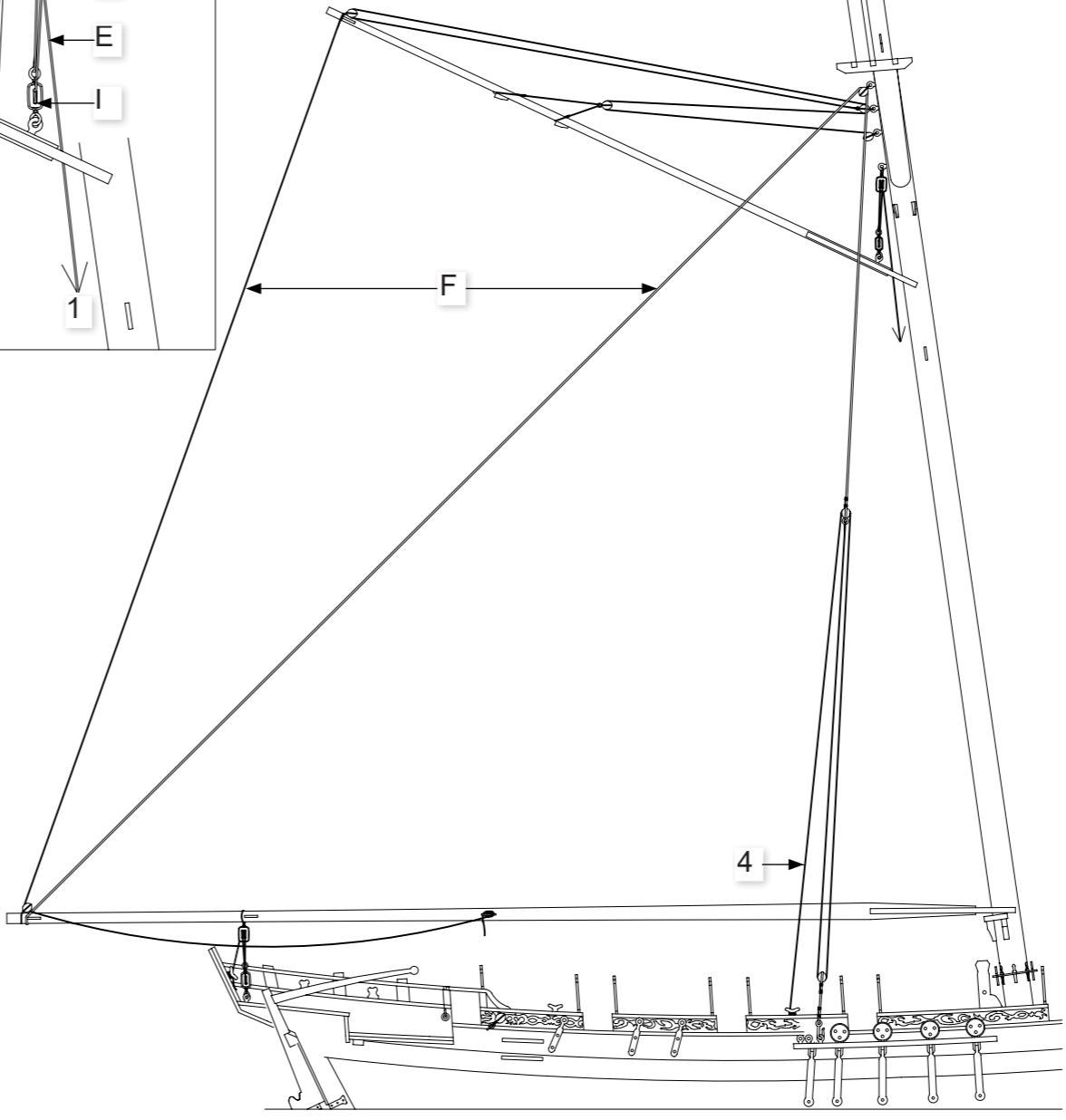
Belaying to cleats



End of Mainsail Sheet is belayed to cleat on right side of boom

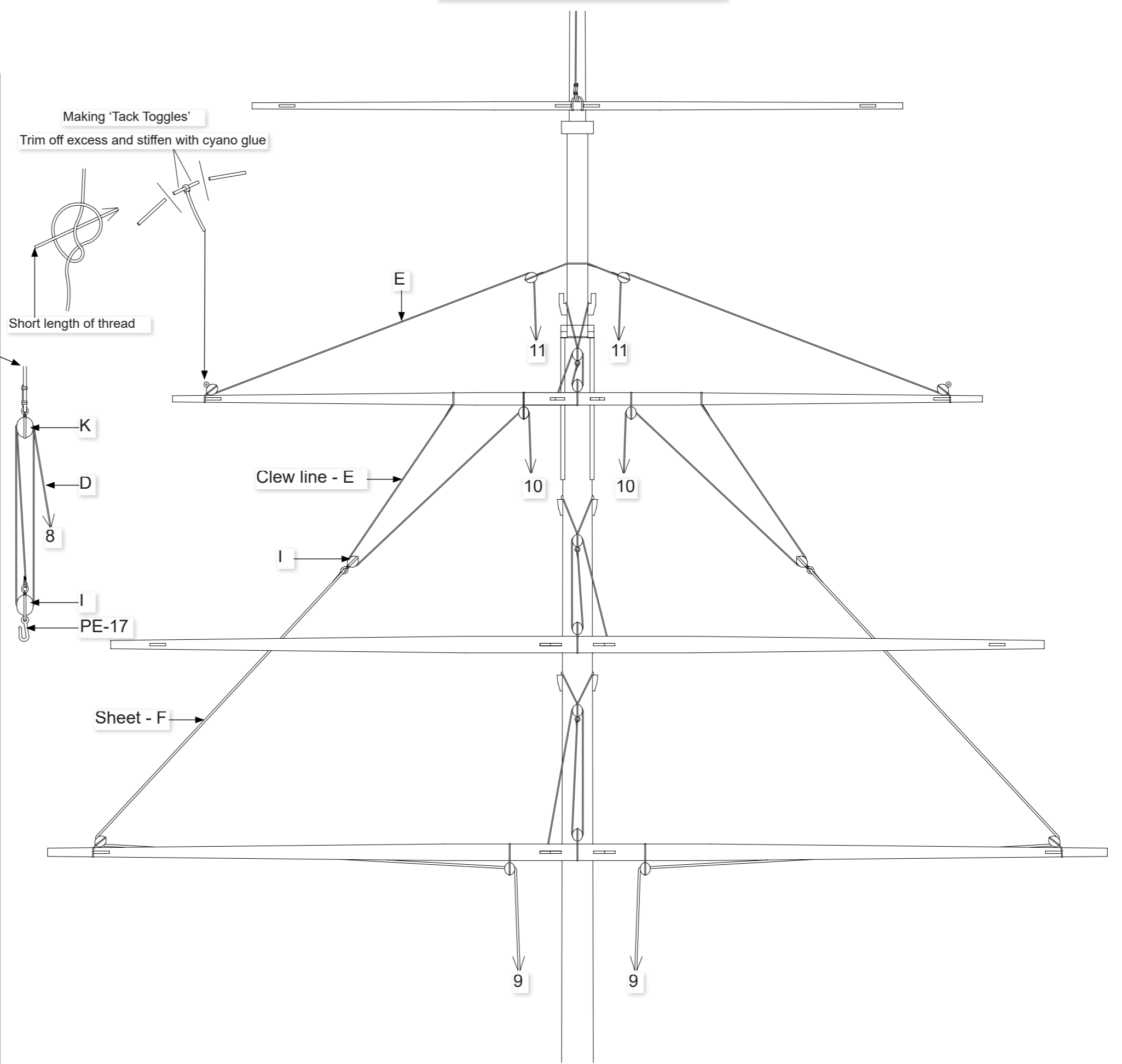
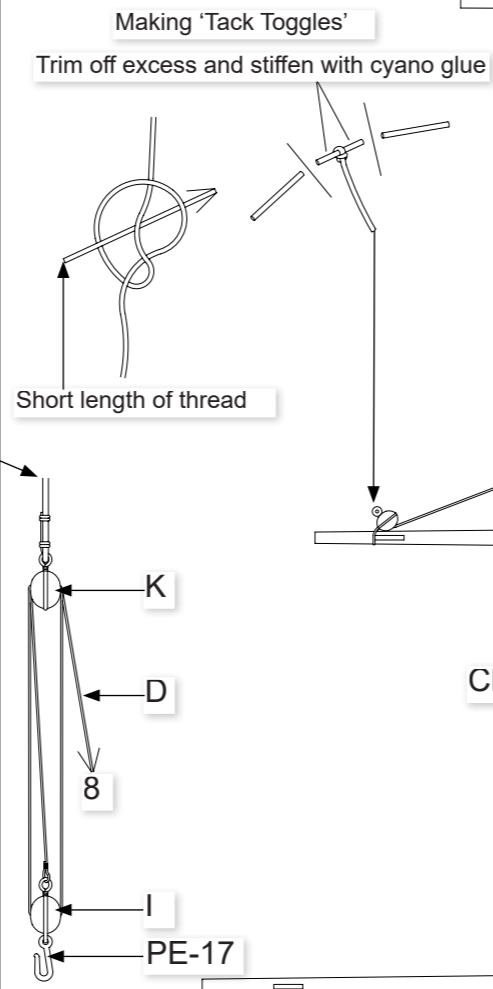
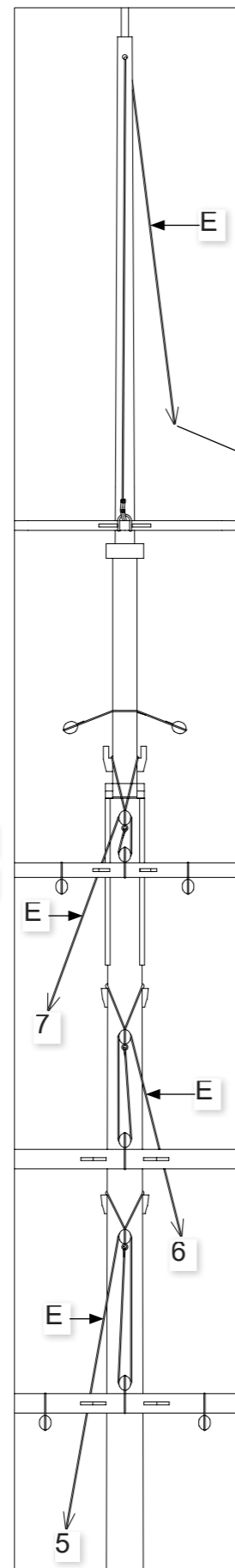
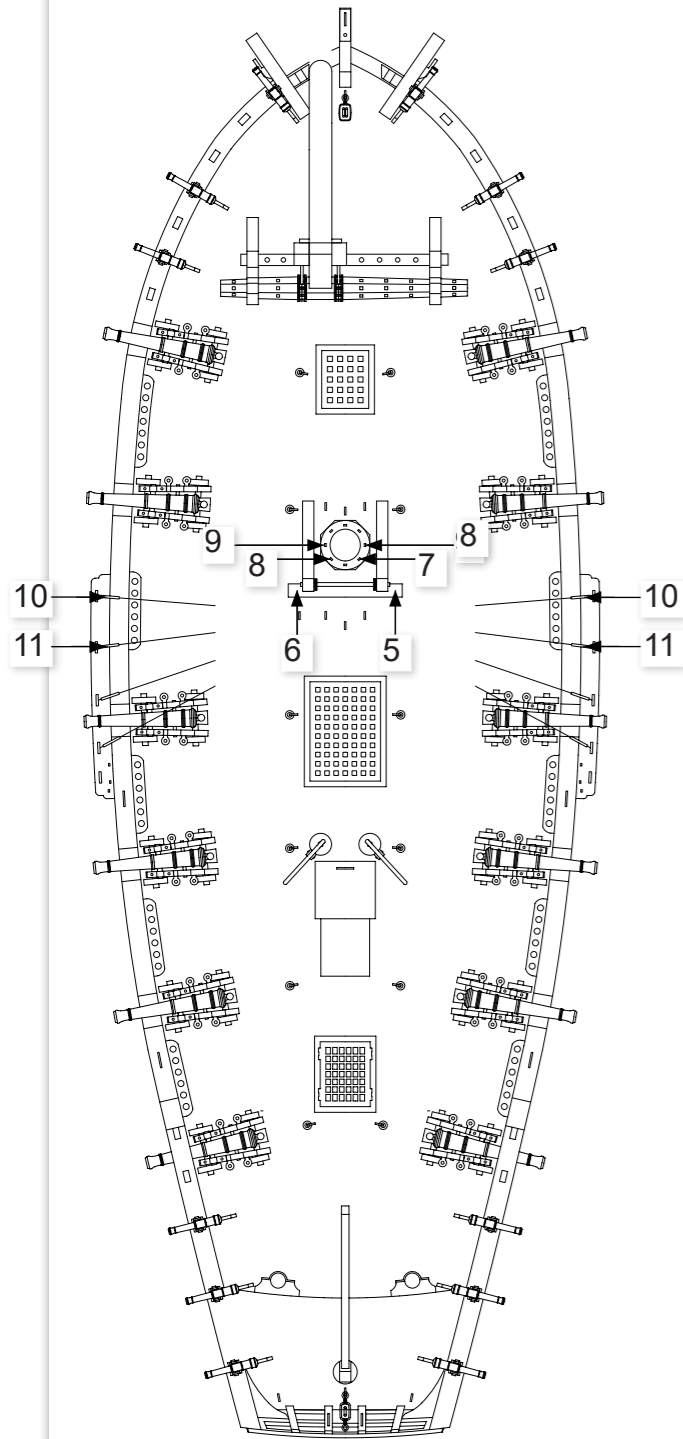


Main Boom Detail - 1:64 Scale















**Rigging Plan 4**  
*yard Ties, Clew lines*  
*and Sheets*

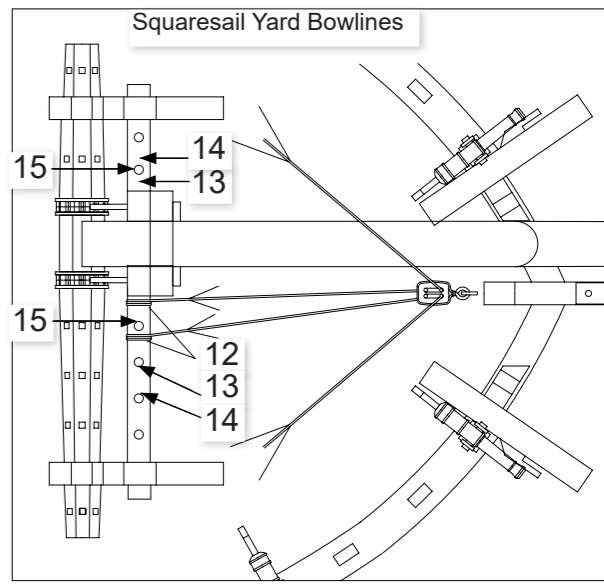
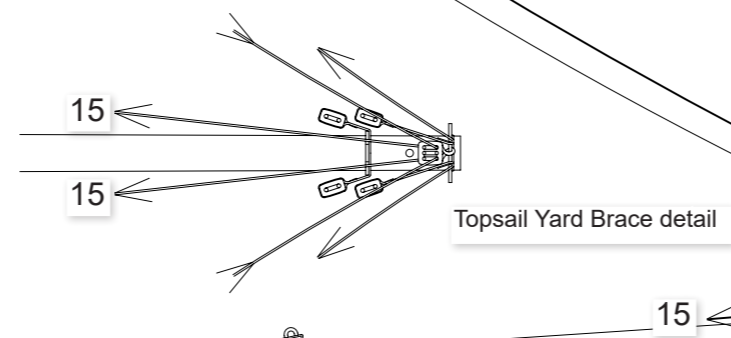
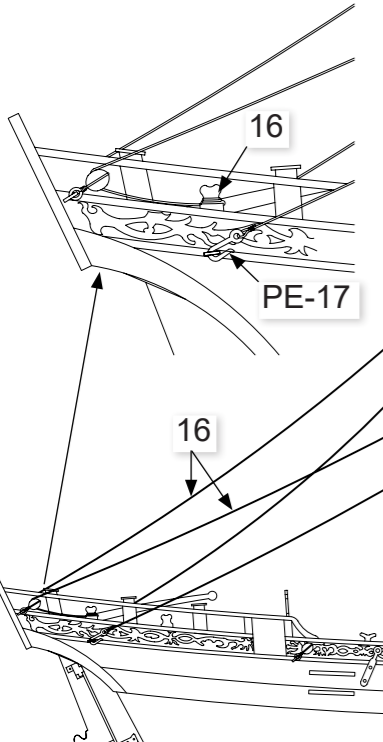
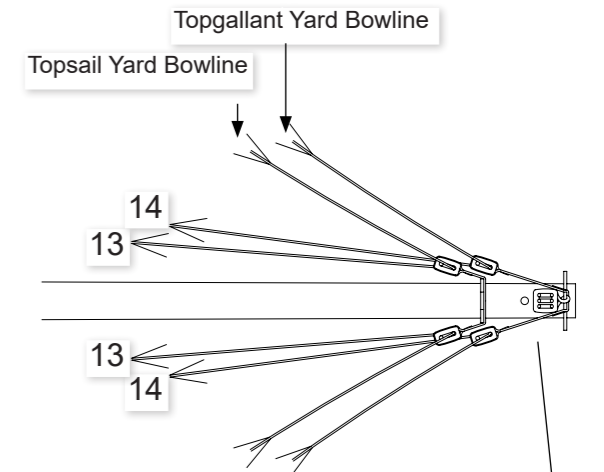
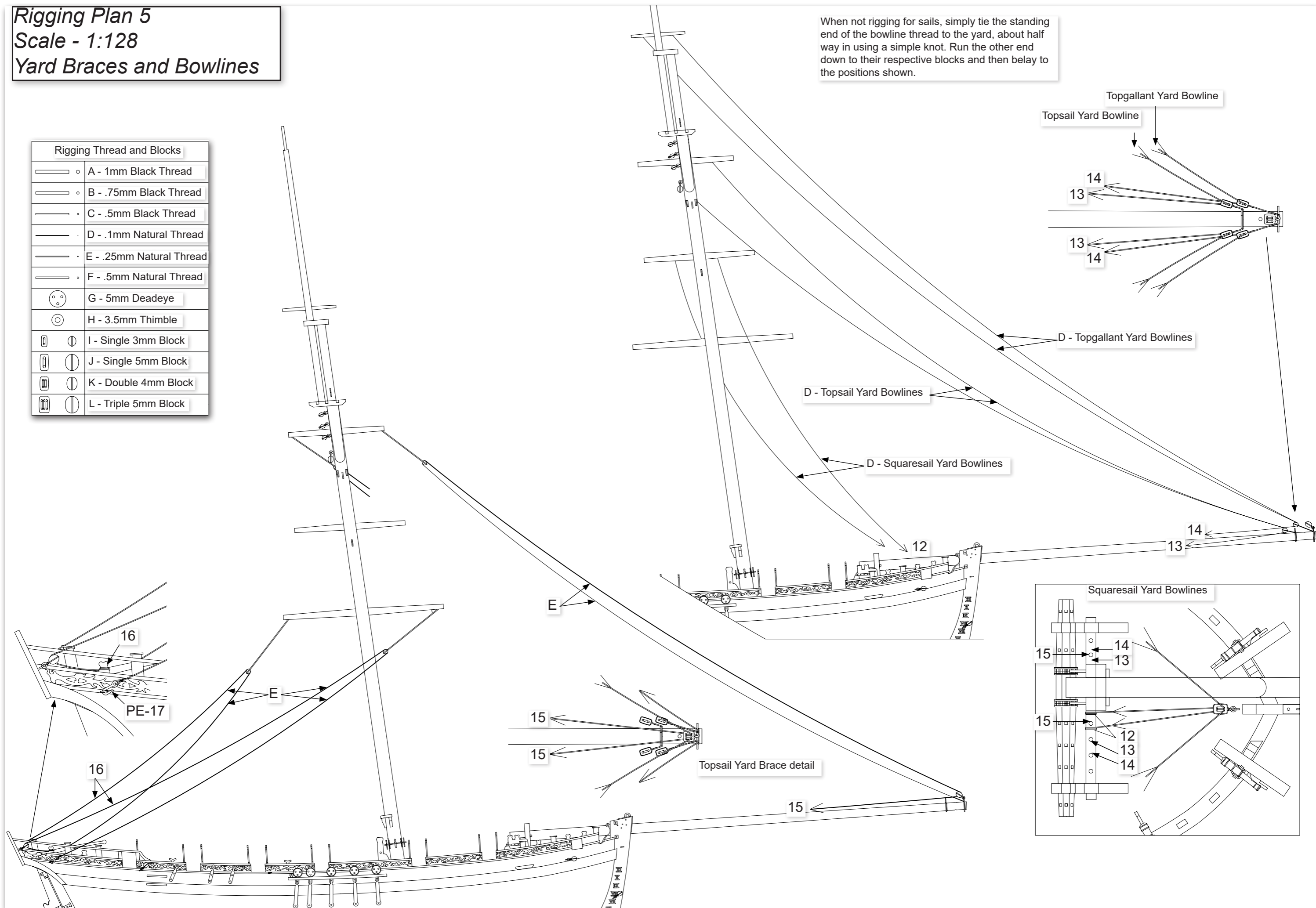
Front view of Yard sheets and clues - 1:64 Scale



**Rigging Plan 5**  
**Scale - 1:128**  
**Yard Braces and Bowlines**

Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block

When not rigging for sails, simply tie the standing end of the bowline thread to the yard, about half way in using a simple knot. Run the other end down to their respective blocks and then belay to the positions shown.

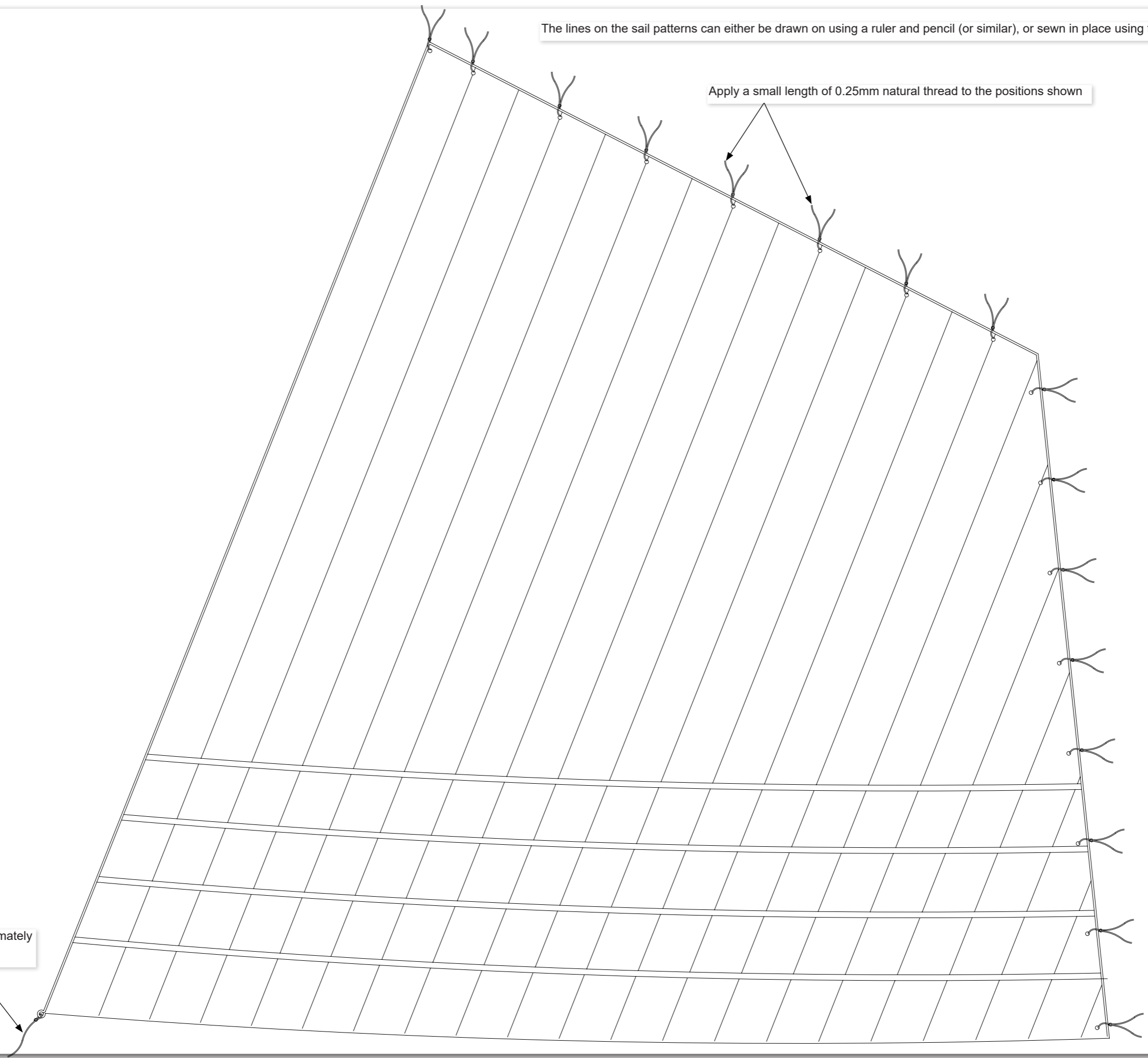


**Rigging Plan 6**  
**Scale - 1:64**  
**Mainsail Pattern**

The lines on the sail patterns can either be drawn on using a ruler and pencil (or similar), or sewn in place using thread.

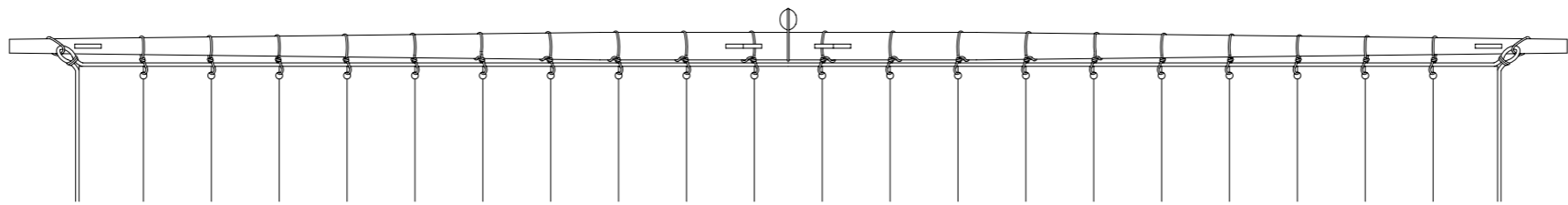
Apply a small length of 0.25mm natural thread to the positions shown

0.5mm natural thread approximately  
300mm long

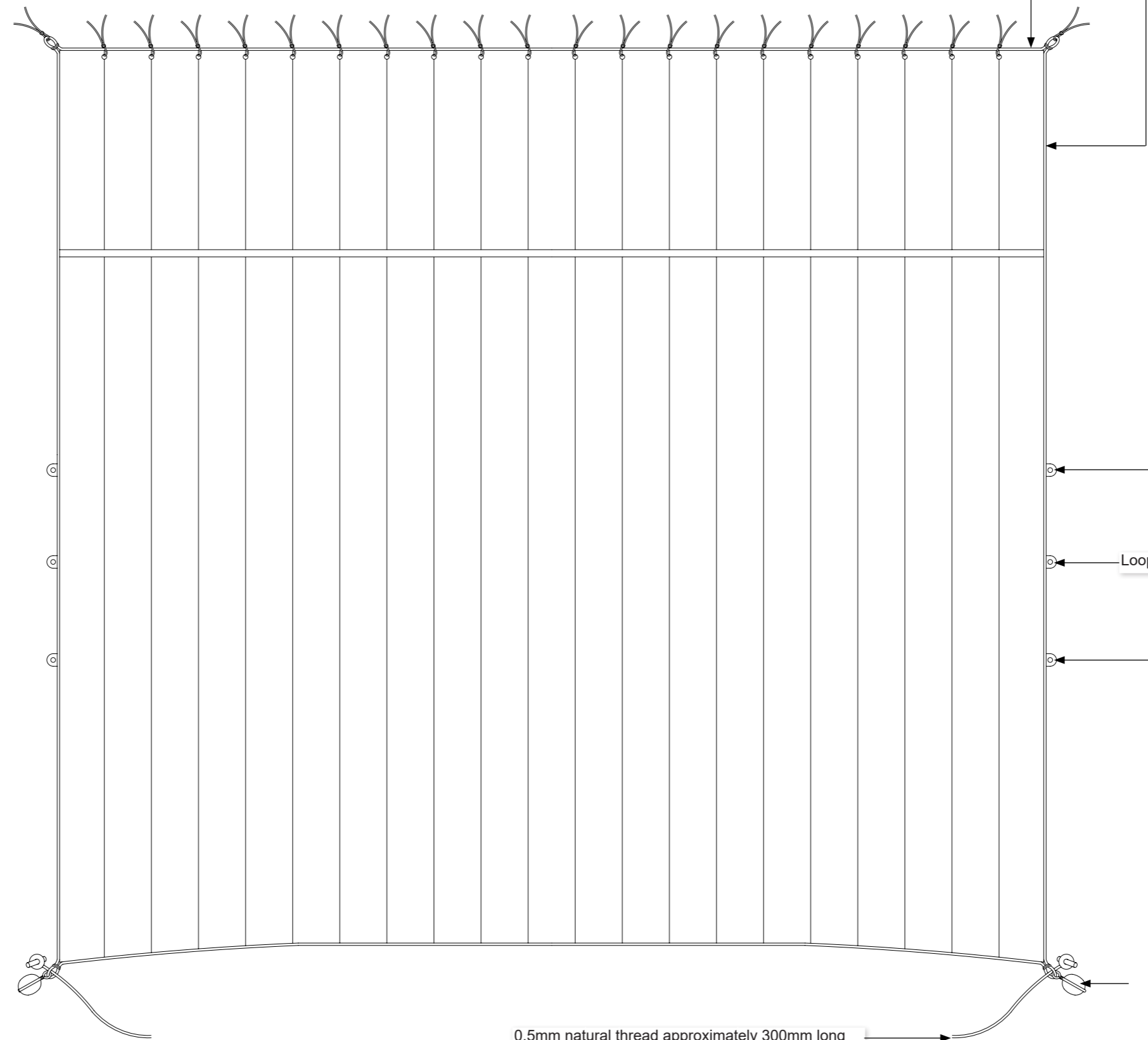


**Rigging Plan 7**  
**Scale - 1:64**  
**Square sail Pattern**

Lower yard with sail attached using 0,25mm natural thread tied around the yard at the positions shown

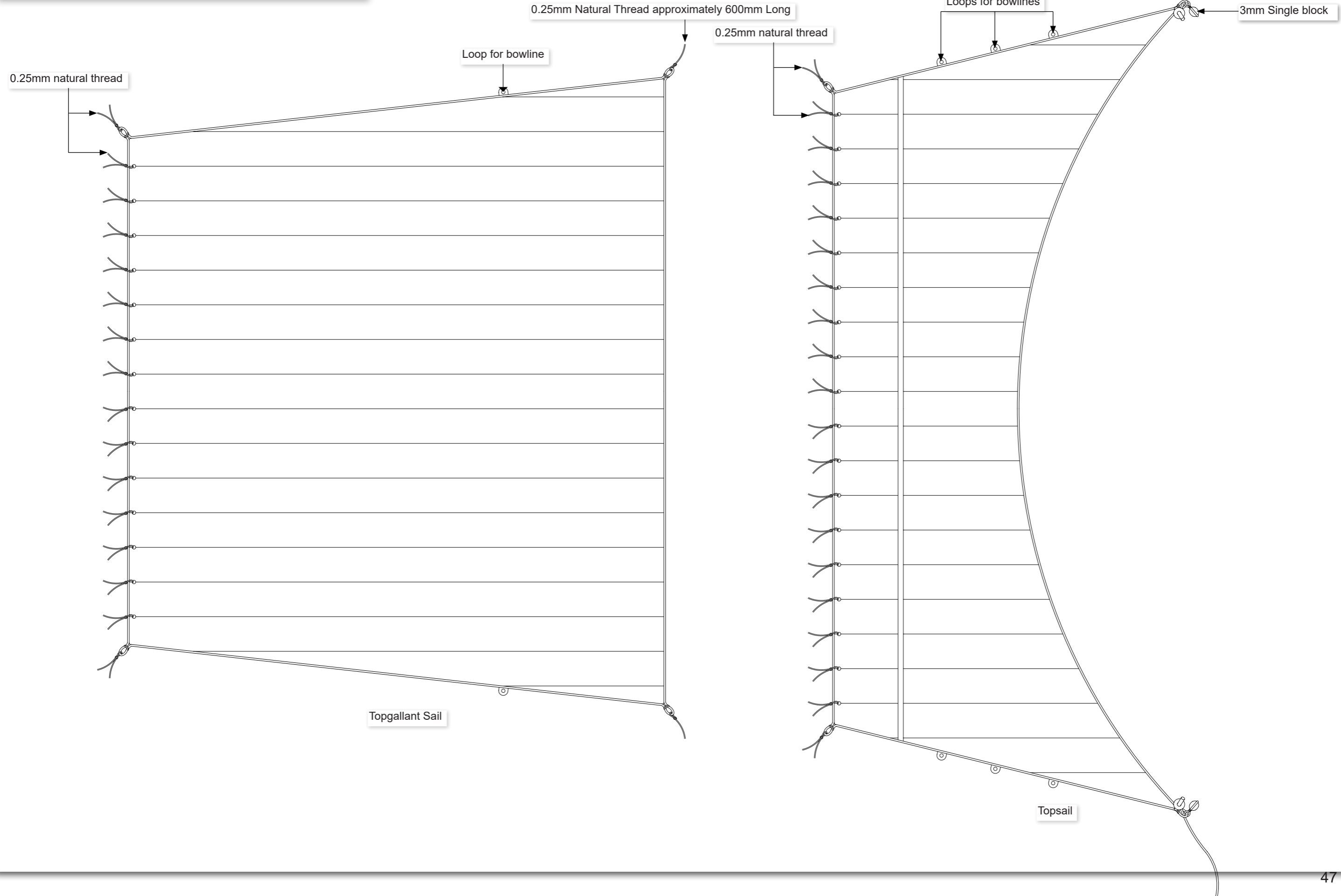


Thread along the edges of each sail a length of 0,5mm natural thread, and tie a loop into each corner.

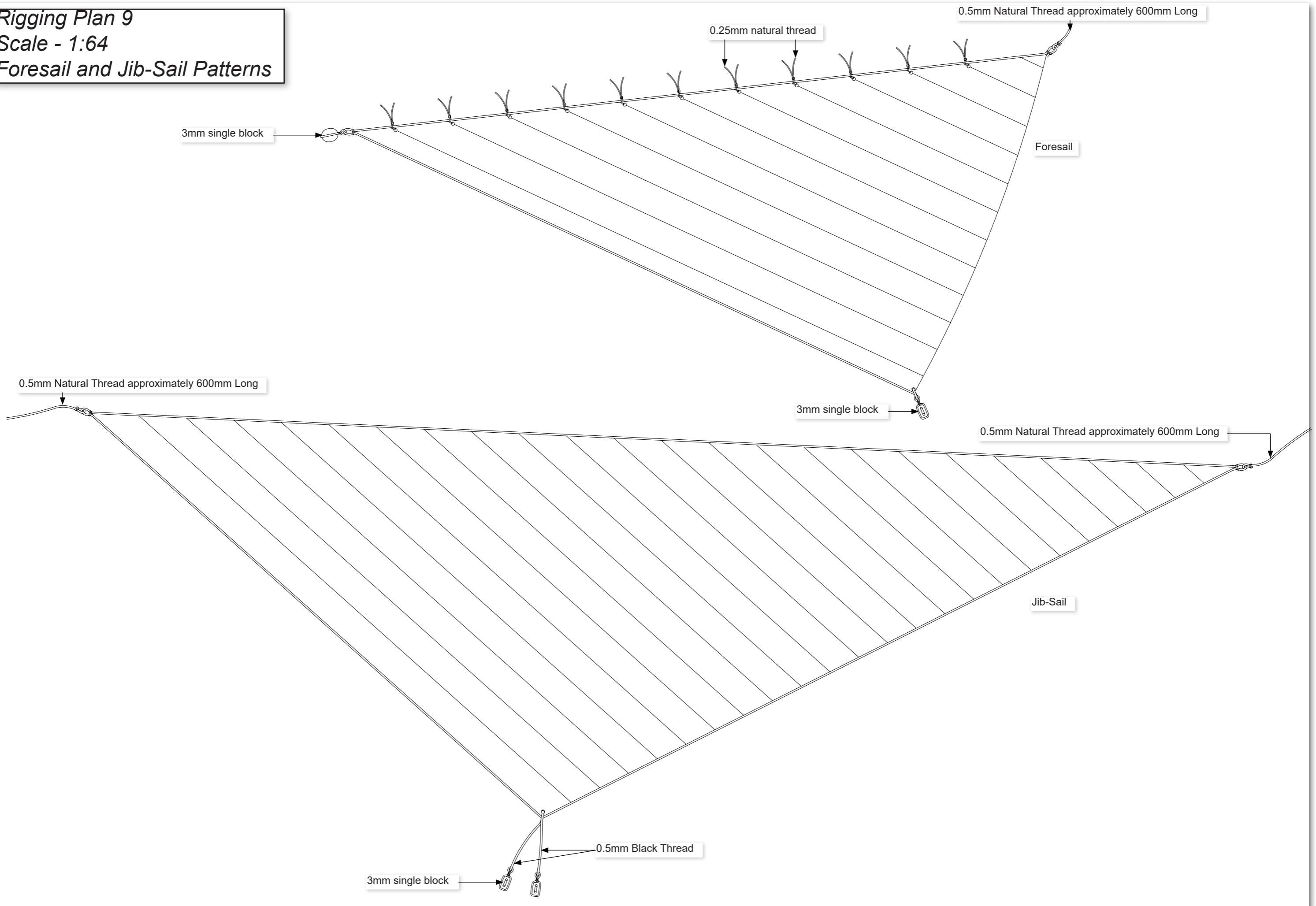


0.5mm natural thread approximately 300mm long

**Rigging Plan 8**  
**Scale - 1:64**  
**Topsail and Topgallant sail Patterns**



**Rigging Plan 9**  
**Scale - 1:64**  
**Foresail and Jib-Sail Patterns**

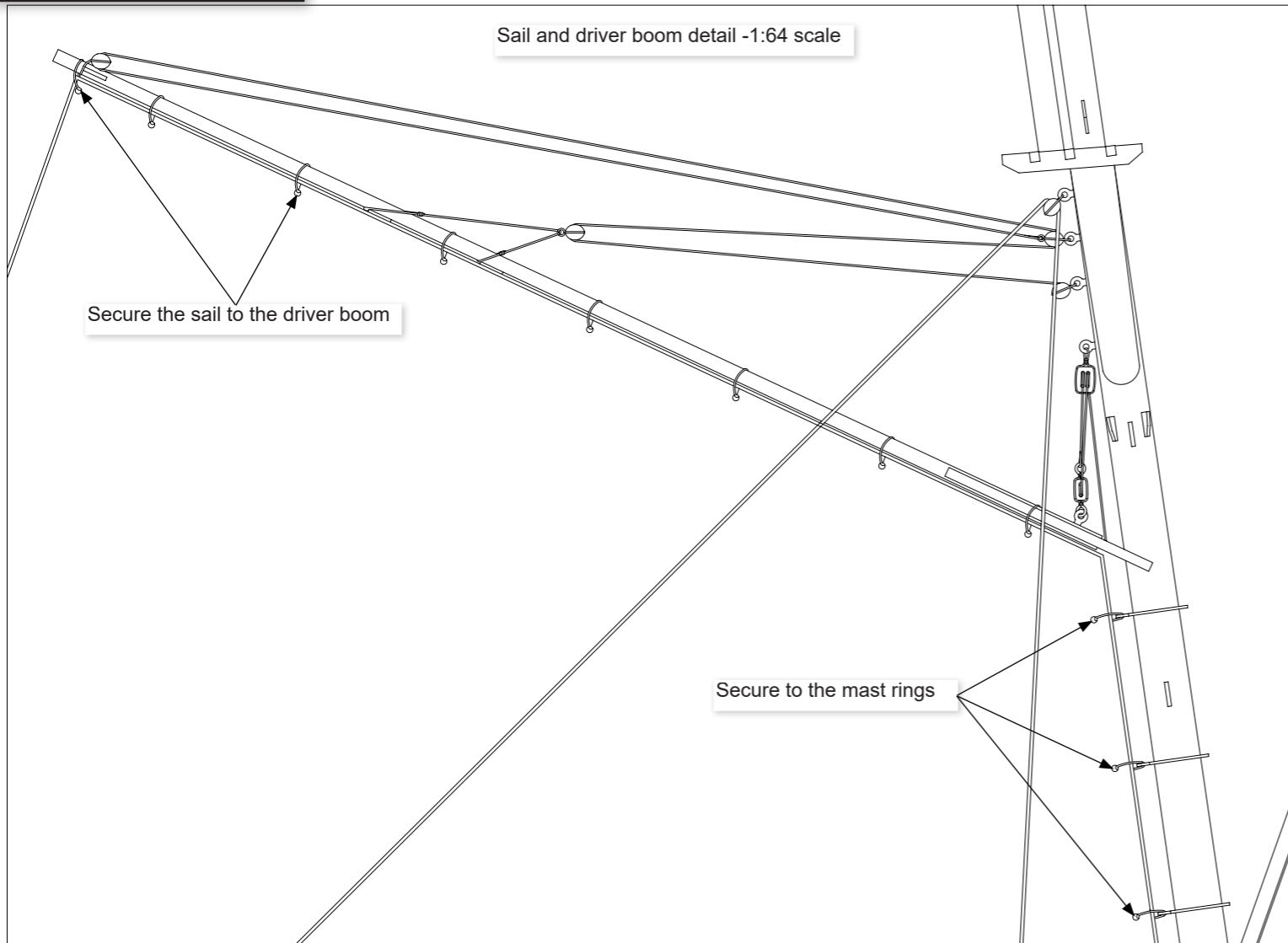




**Rigging Plan 10**  
**Scale - 1:128**  
**Mainsail**

The main boom and gaff boom rigging is identical to the drawings showing the booms without sail, except for the mainsail sheet set up

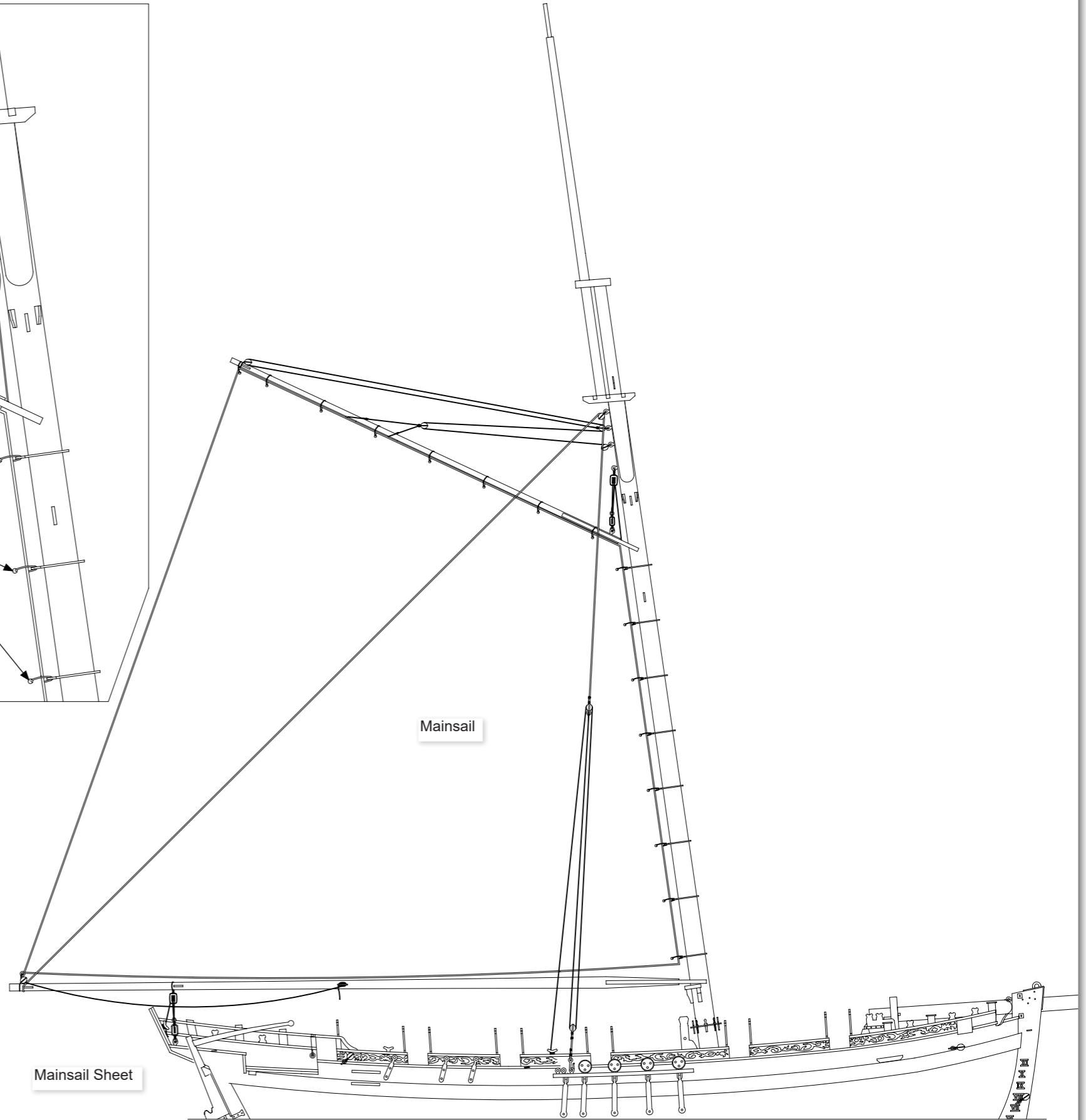
Sail and driver boom detail -1:64 scale



Secure the sail to the driver boom

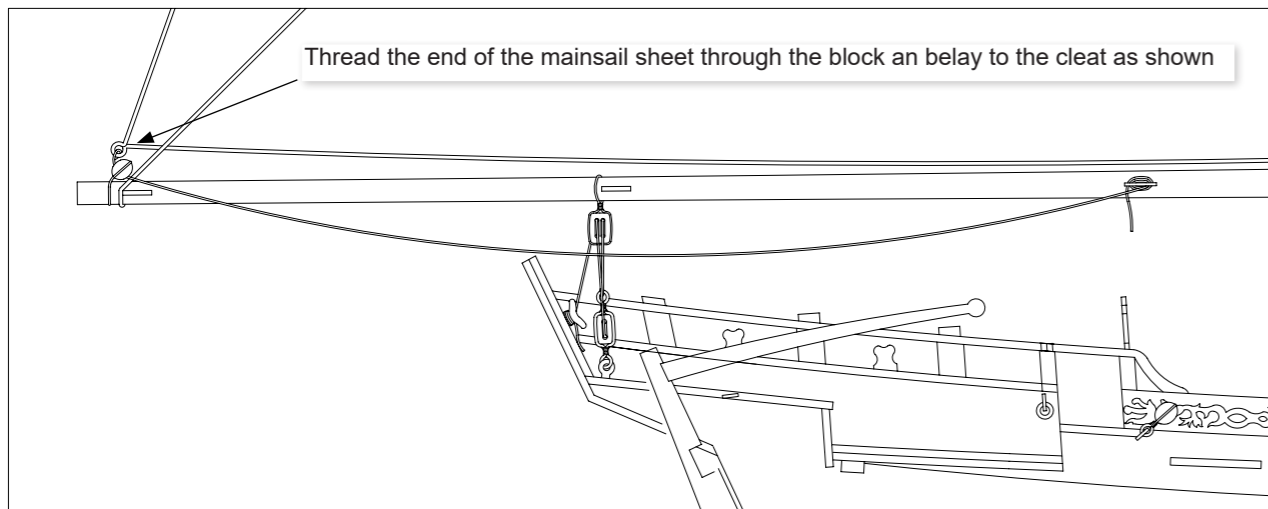
Secure to the mast rings

Mainsail



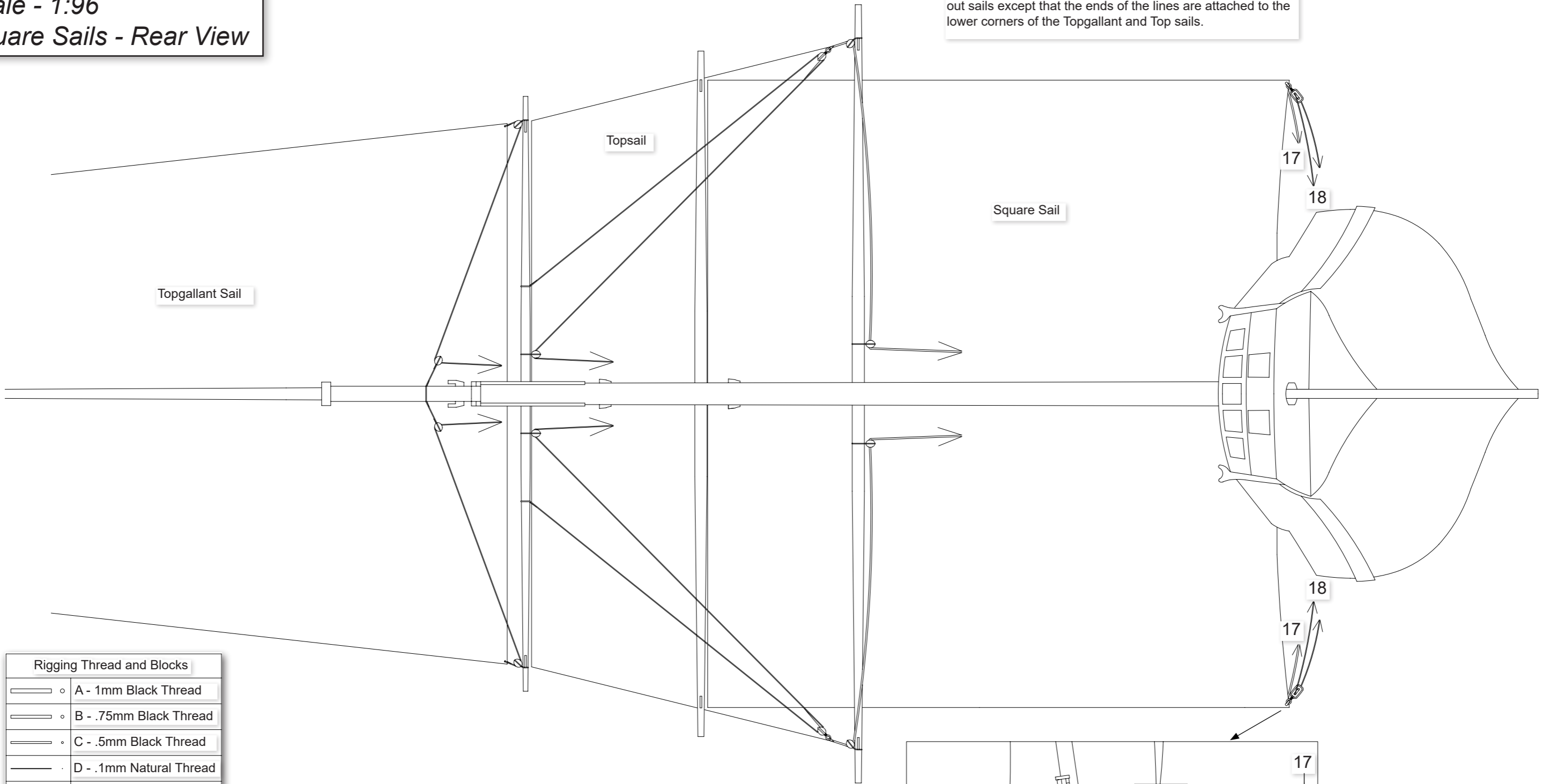
Mainsail Sheet

Thread the end of the mainsail sheet through the block and belay to the cleat as shown

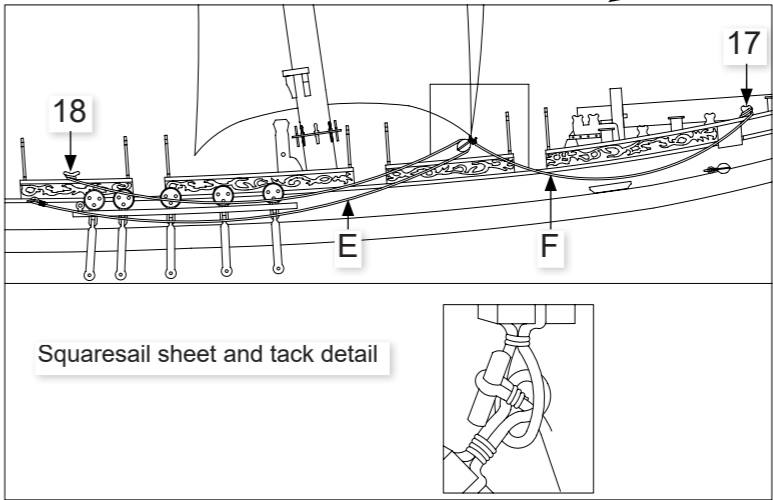


**Rigging Plan 11**  
**Scale - 1:96**  
**Square Sails - Rear View**

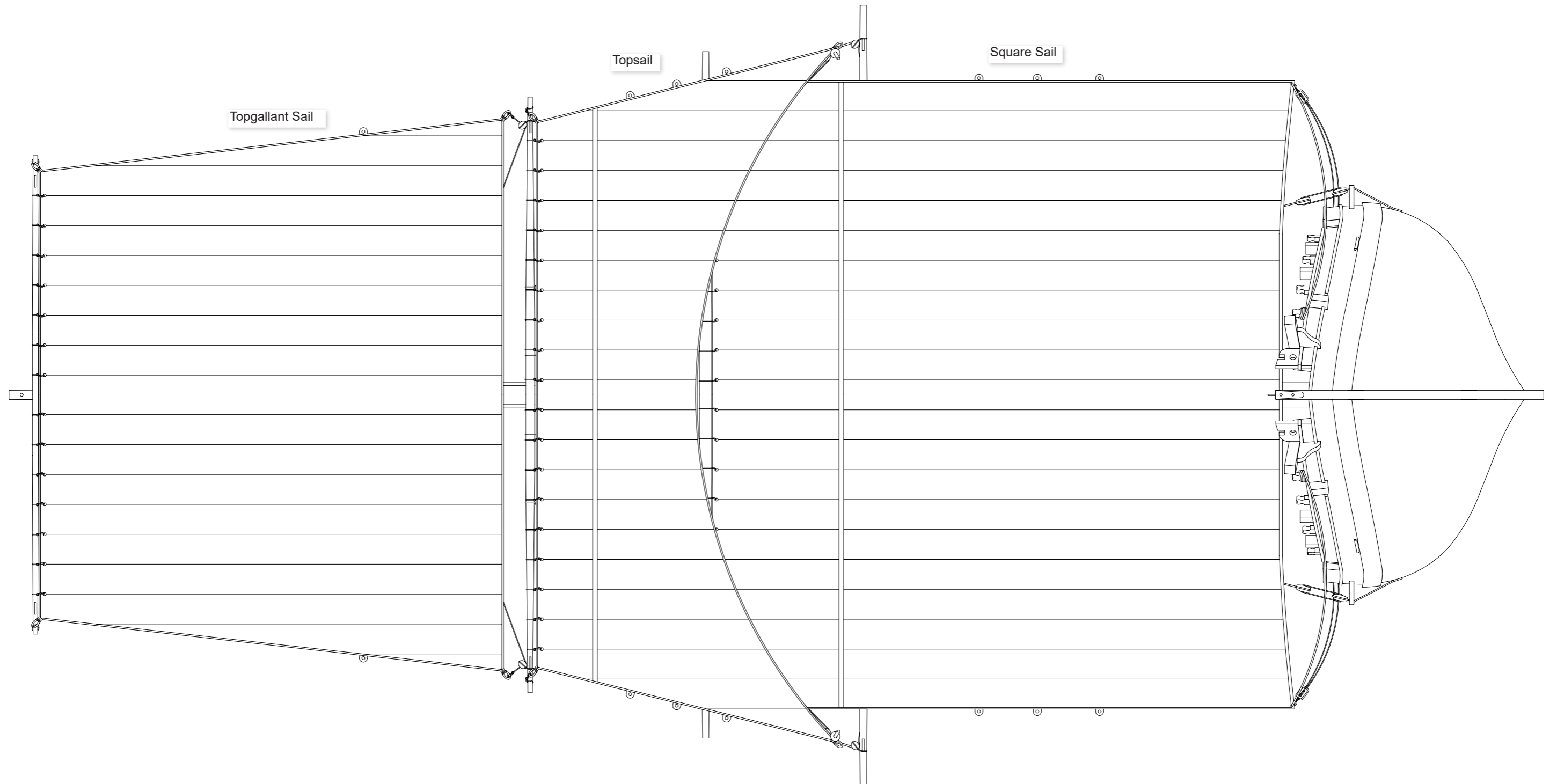
The sheet and tack rigging is the same as the drawings without sails except that the ends of the lines are attached to the lower corners of the Topgallant and Top sails.















Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block

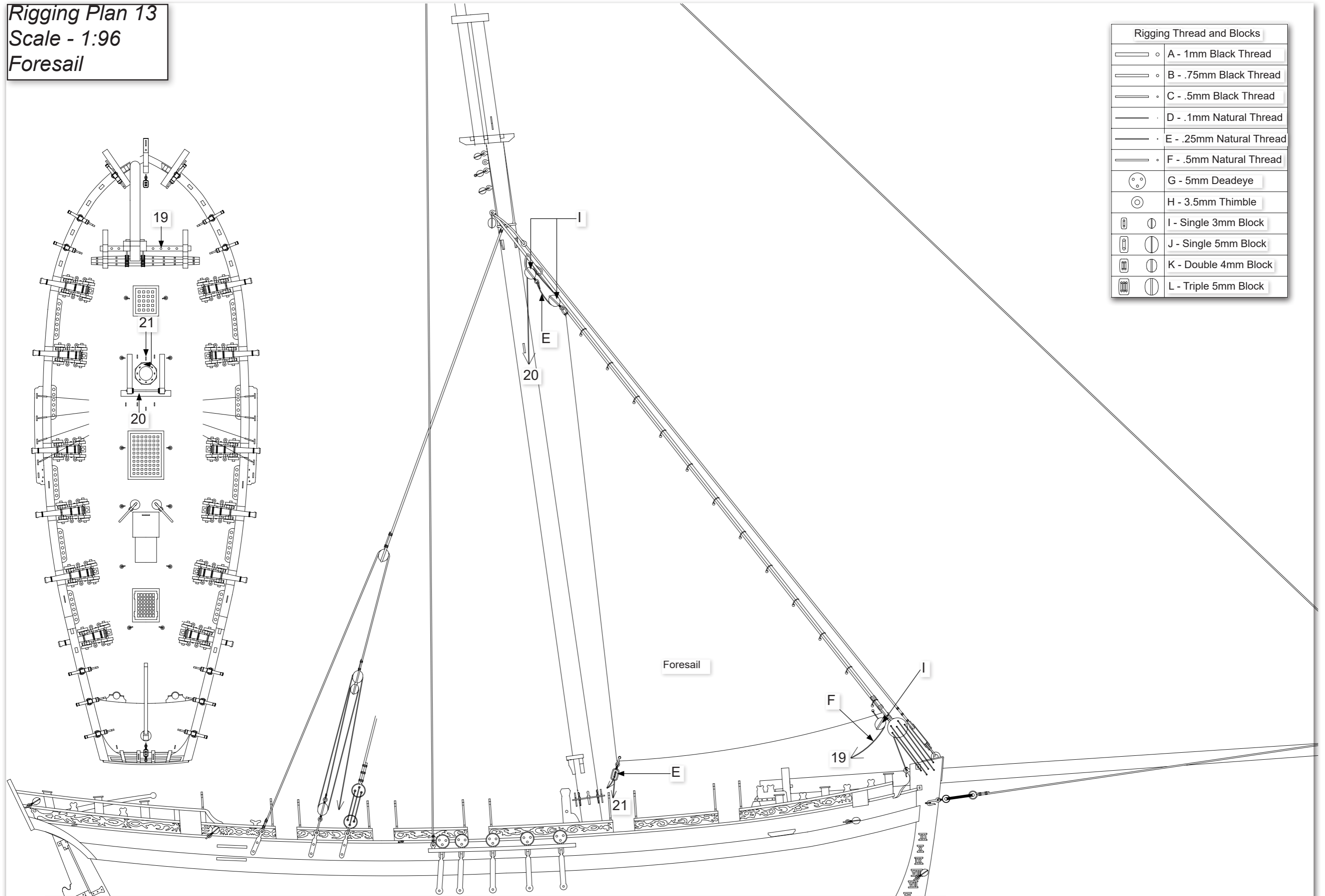


Rigging Plan 12  
Scale - 1:96  
Square Sails - Front View

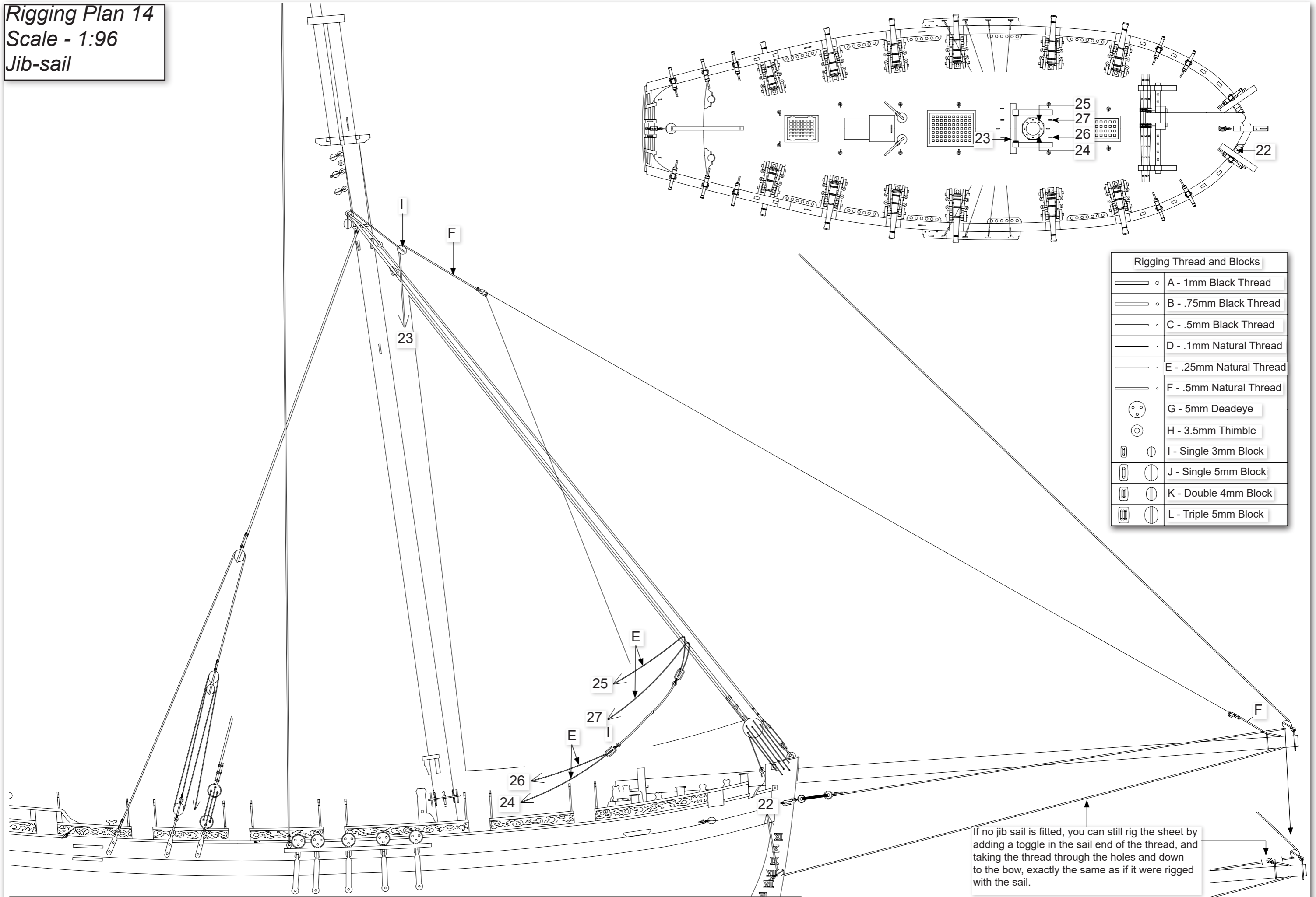


**Rigging Plan 13**  
**Scale - 1:96**  
**Foresail**

Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block



**Rigging Plan 14**  
**Scale - 1:96**  
**Jib-sail**

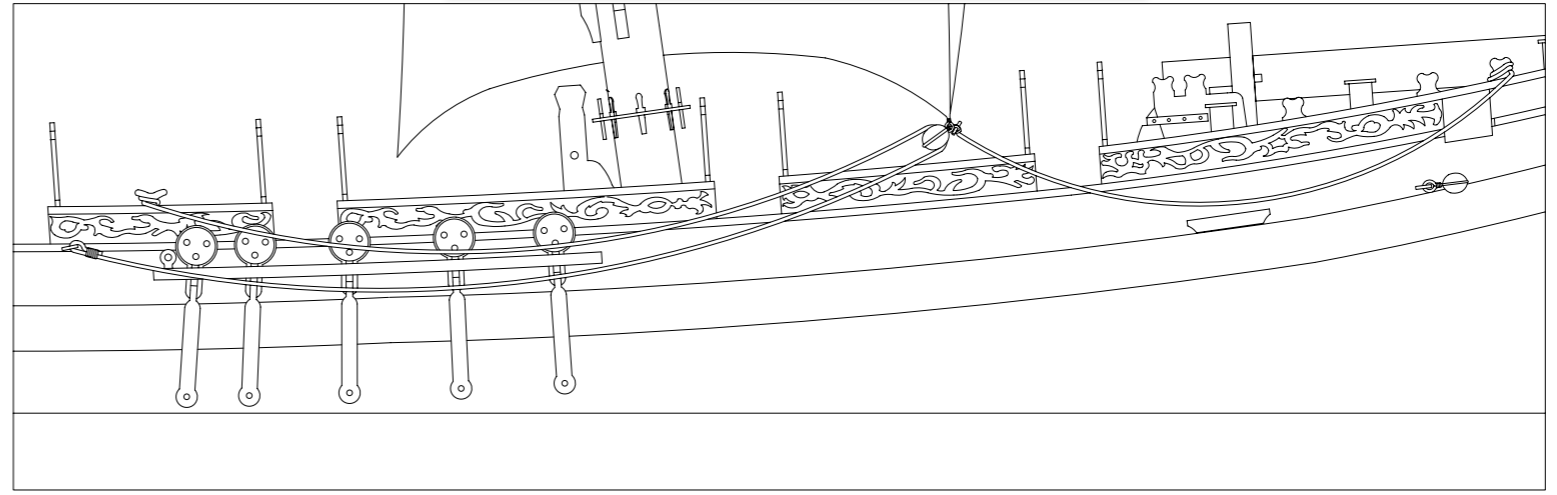


Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block

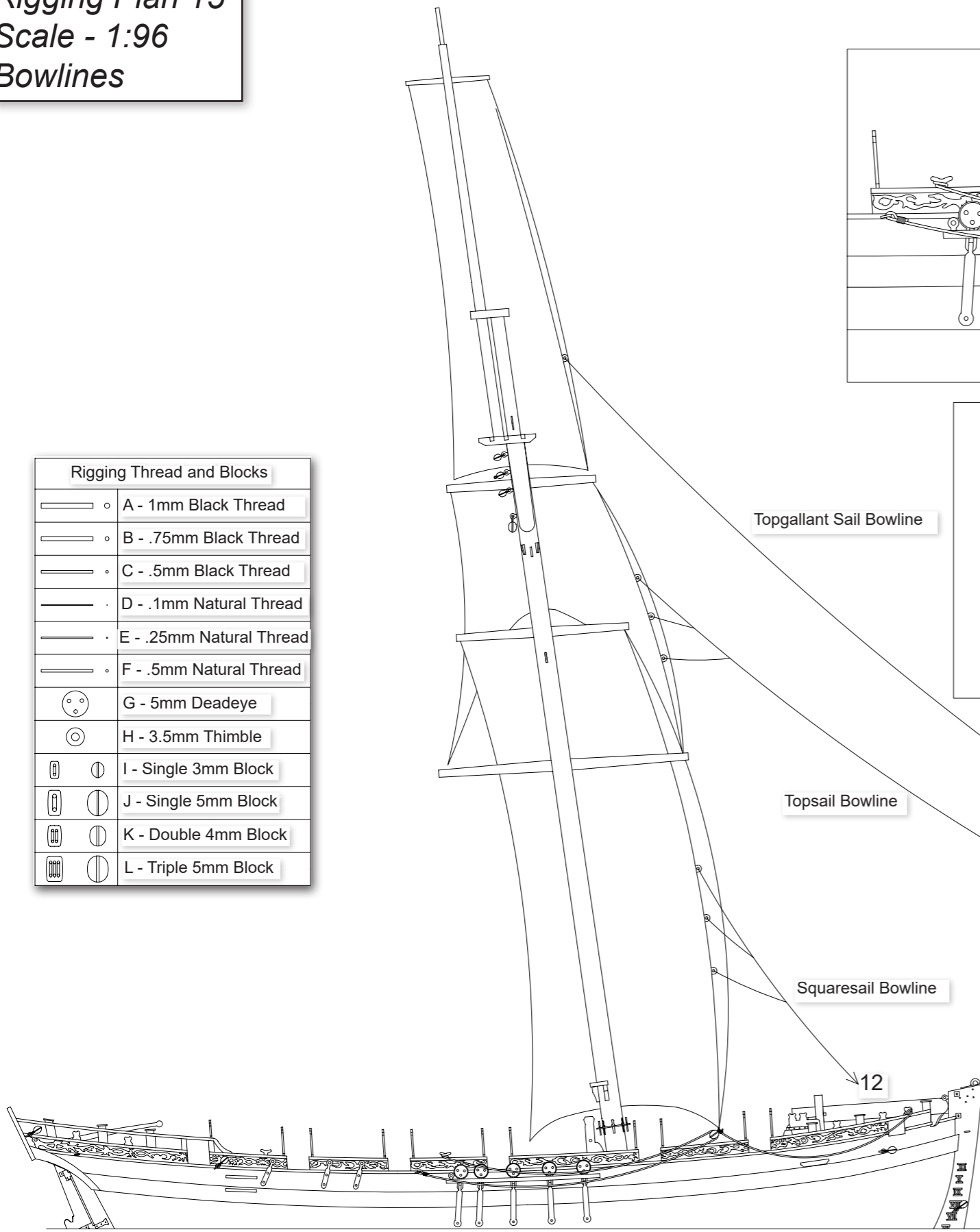
If no jib sail is fitted, you can still rig the sheet by adding a toggle in the sail end of the thread, and taking the thread through the holes and down to the bow, exactly the same as if it were rigged with the sail.

**Rigging Plan 15**  
**Scale - 1:96**  
**Bowlines**

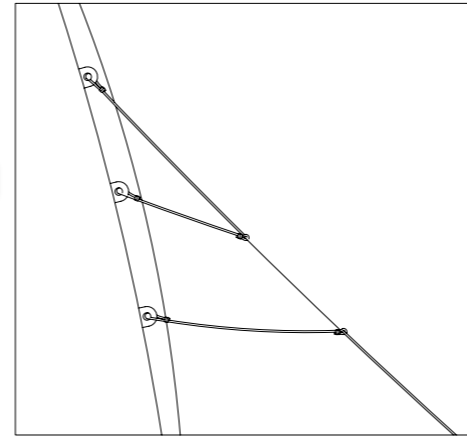
Larger (64th scale) drawing of Square Sail sheets and tack detail



Rigging Thread and Blocks	
	A - 1mm Black Thread
	B - .75mm Black Thread
	C - .5mm Black Thread
	D - .1mm Natural Thread
	E - .25mm Natural Thread
	F - .5mm Natural Thread
	G - 5mm Deadeye
	H - 3.5mm Thimble
	I - Single 3mm Block
	J - Single 5mm Block
	K - Double 4mm Block
	L - Triple 5mm Block

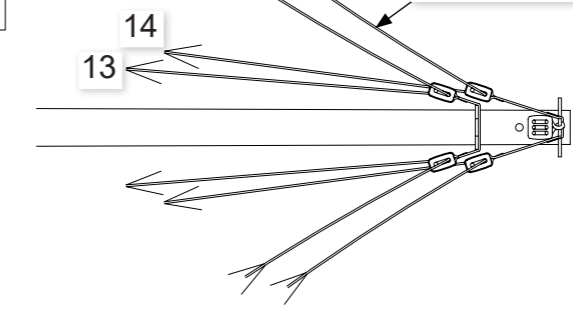


Topgallant Sail Bowline



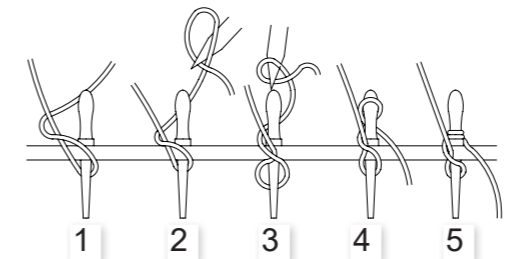
Topsail Bowline

Topgallant Sail Bowline



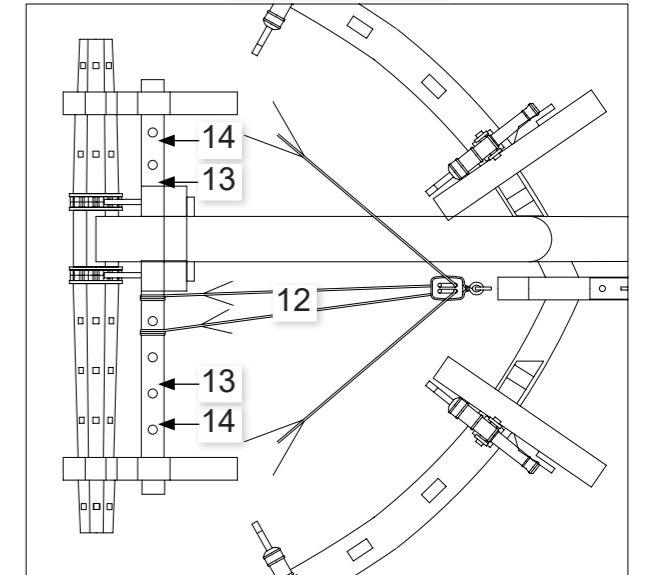
Topsail Bowline

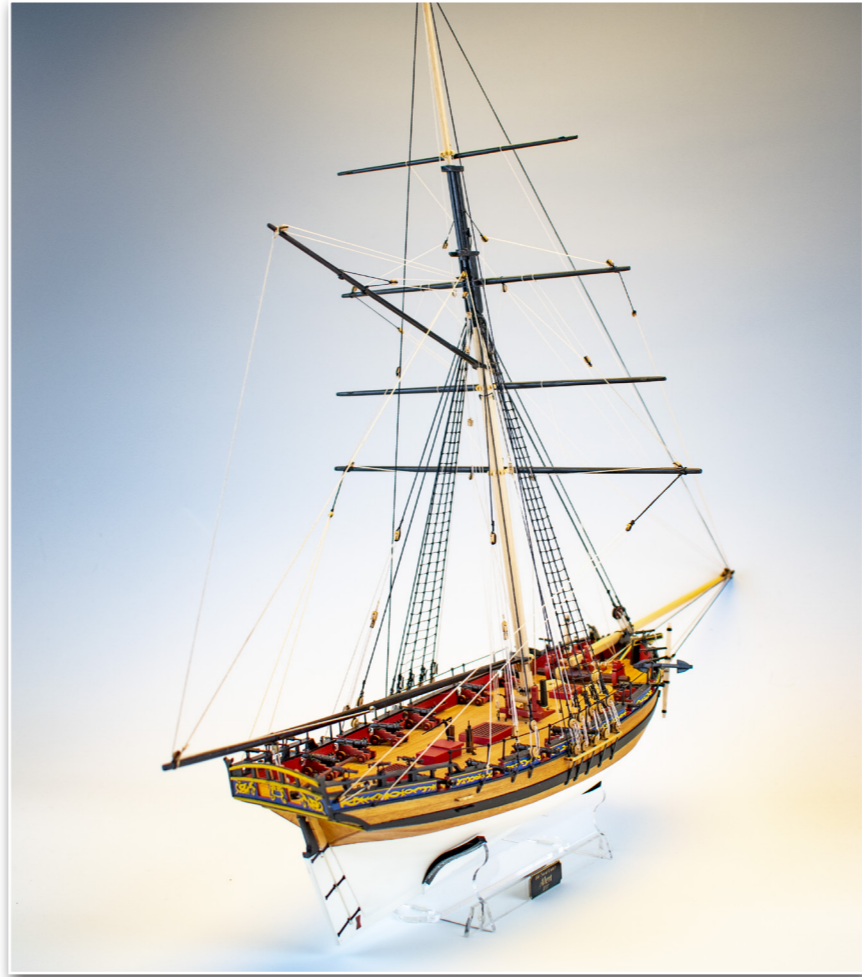
Squaresail Bowline



Method of belaying rigging to belaying pins

Squaresail Bowlines





# VANGUARD MODELS

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The Alert was designed and developed in the UK by Chris Watton