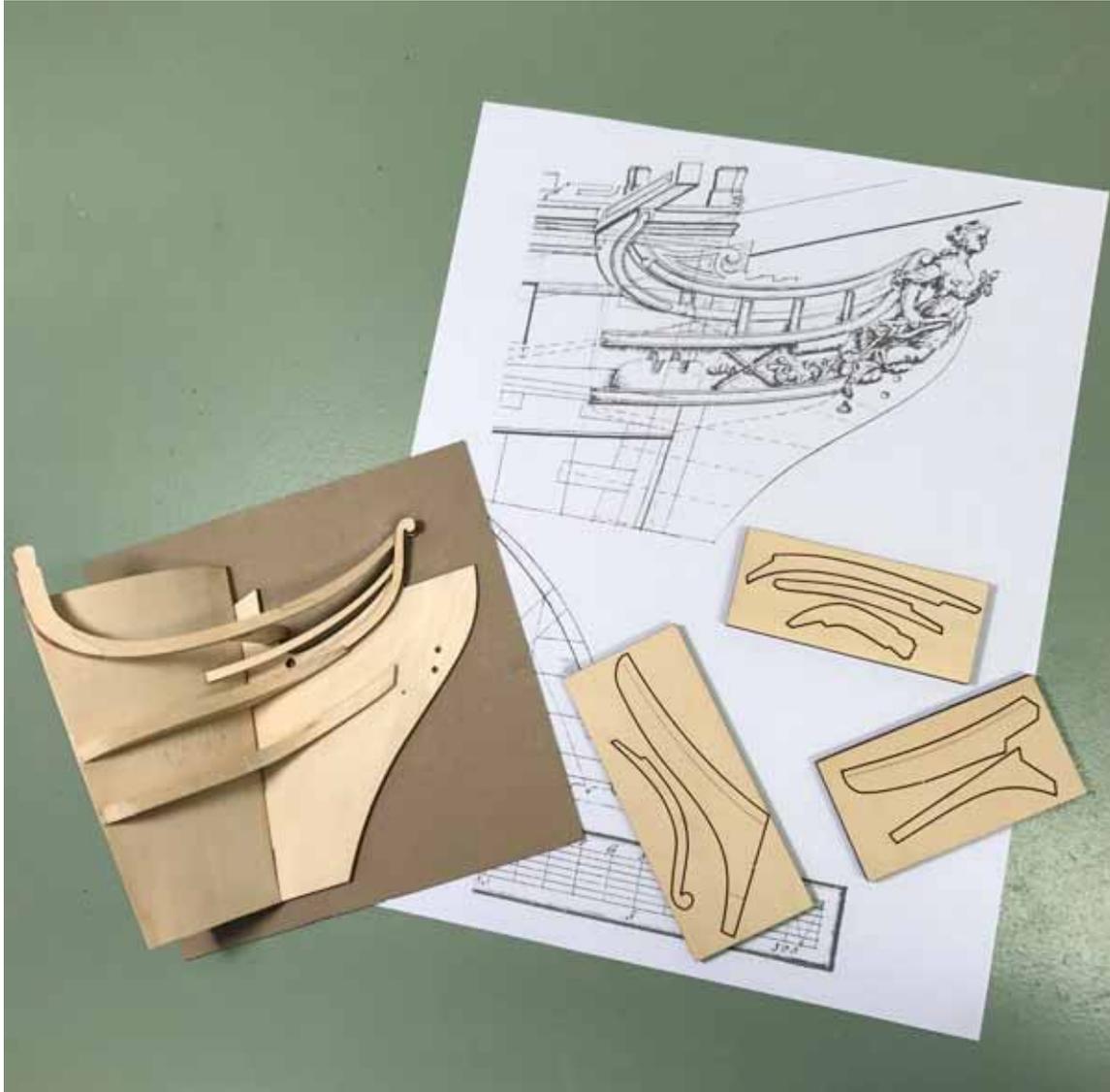


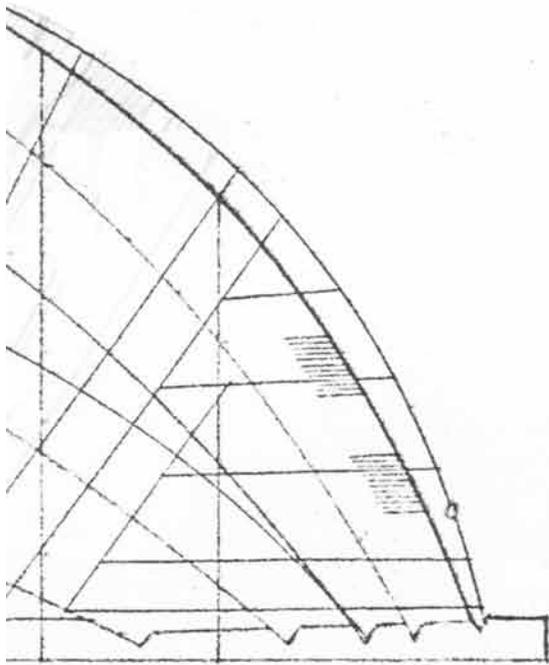
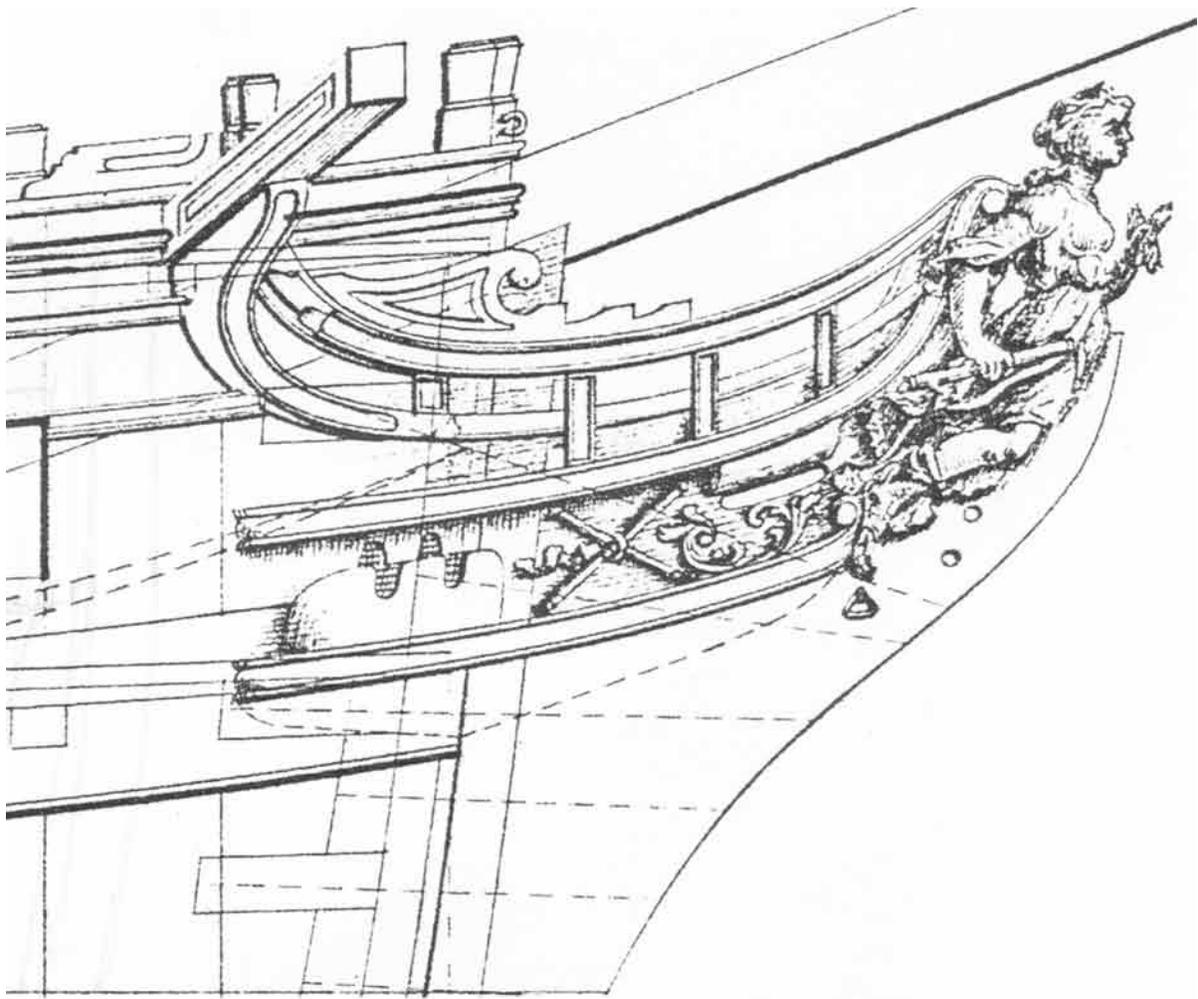
# ADMIRALTY MODELS WORKSHOP

OCTOBER 29-30, 2017



Pre-workshop instructional manual for assembling the model

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Welcome to Admiralty Models' workshop. Here you will learn to tackle the tricky points of headwork, including projection drawing and construction. In preparation for this workshop, we have supplied you with a laser-cut kit to assemble. Please take time now to read and follow the instructions so that you will have your model ready for the workshop.

***As the workshop takes place in a hotel, we cannot cut wood and make dust there. This is why we ask you to prepare your model ahead of time. There will NOT be time for you to play 'catch up' with the kit on Sunday!*** We will be using paper and card to add to the model. Also, you will see some differences between the photographs in this instructional manual and your kit, as the photos were taken using different production prototypes. So, with these points in mind, to work!



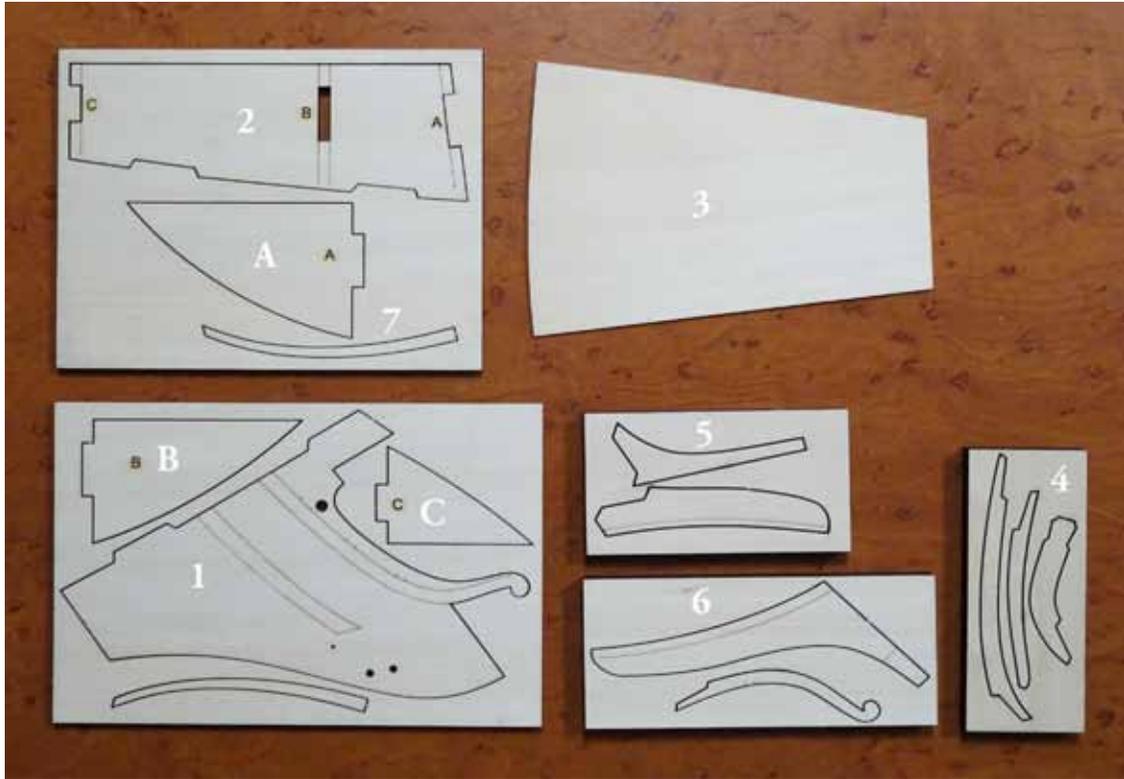
The model is of *Inspector*, a sixth rate experimental ship sloop of 1782. She was experimental in that, instead of the usual underwater aft body, two large hydrodynamic horizontal fins extended out from midships to the stern post just above keel level. I assume that this was an early attempt at stabilizing a ship's tendency to roll. It was apparently unsuccessful as the design was never repeated. This unusually detailed 'as launched' sheer and profile (part of which reproduced at left) is in the Royal Museums Greenwich (RMG) collection, ZAZ 4474. Other plans available for *Inspector* are as follows:

- CHN 0107 Section of the deadwood, profiles and half-breadths, inverted body plan
- ZAZ 4479 Plan showing the framing for stations 20, 19, 17, 15, 13, 11, 9, 7, 5, and 3
- ZAZ 4477 All deck plans and platforms, slightly overlapping
- ZAZ 4473 Design sheer and profile
- ZAZ 4476 Quarterdeck, forecastle and upper deck
- ZAZ 4475 Lower deck and fore & aft platforms
- ZAZ 4478 Aft frames. Note that these differ from ZAZ 4479 (above)

While all the original draughts are at 1:48, this waterline model is at a scale of 1:32 ( $\frac{3}{8}$ " = 1' 0"). I chose *Inspector* as our subject because her headwork is especially sleek and beautiful.

The kit consists of a number of laser-cut parts that will need char cleaned off and, in some cases, considerable shaping. However, basswood is easy to work with coarse files, edge tools and sandpaper. In building the prototype I used 60- and 100-grit sandpaper rubber-cemented onto flat and shaped blocks, a half-round file, small plane and a  $\frac{1}{2}$ " chisel. This study model is somewhat simplified.

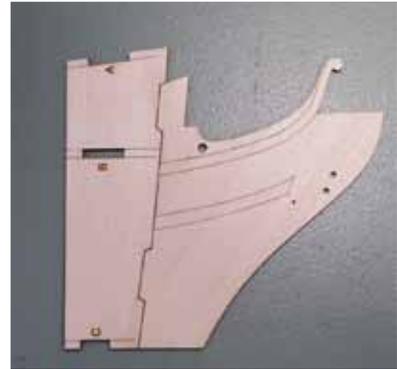
One option is a backboard (see cover page). I made mine of heavy illustration board. It is 5½" square, but the dimensions are not critical. Purely for aesthetic reasons I spray-glued a piece of colored paper on the face of this board.



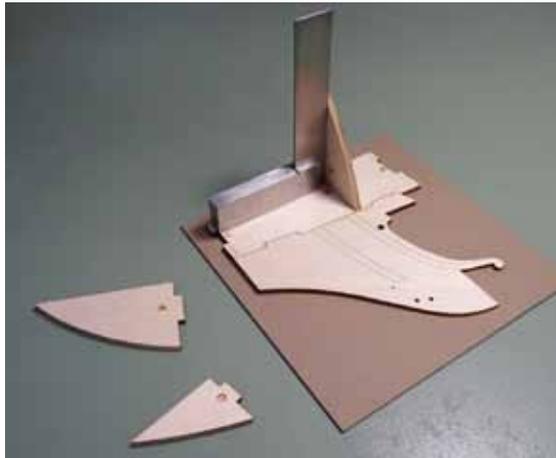
Press the knee of the head (1) and the interlocking piece (2) out from ¼" sheet and clean them up as appropriate. *Note that your production run wood sheets will vary from the prototype shown here.* The first shaping task is to taper the knee of the head from the stem to the tip of the knee. The finished piece should measure ¼" at the tip and the taper should be straight as seen from above.



This process is easiest when done using a sanding block. Lay the knee on a flat surface, face down (photo previous page). Begin by sanding from the tip using differential pressure on the block, gradually working back towards the stem. As you get close to the final thickness, sand across the piece rather than vertically.

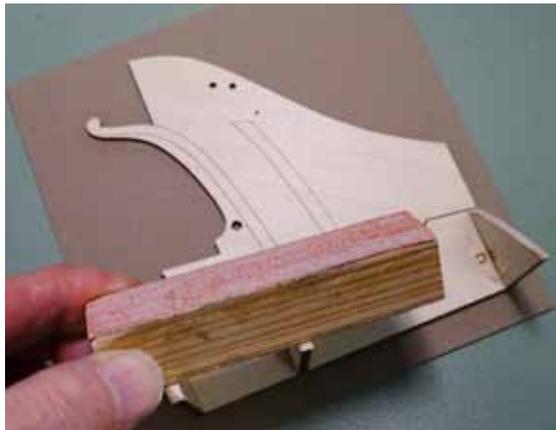


Glue the two parts together on a flat surface. I used regular Bond-Fast® white glue. If using a backboard, glue the pieces to this now.

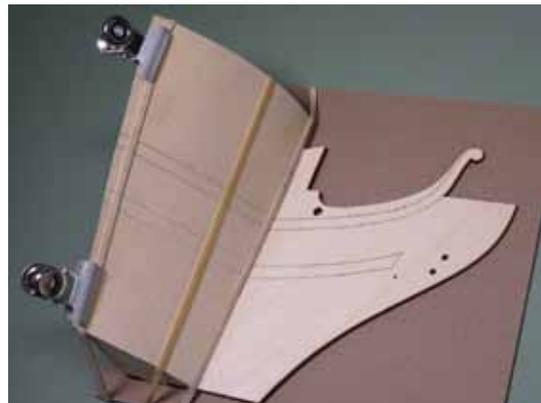


Now remove parts A, B and C from the  $\frac{1}{8}$ " sheet and clean these of char. Take part B and glue it in its slot. Note that this needs to be oriented upside-down relative to parts A and C. Make sure that it is at right angles to the central structure. Once it is set, add parts A and C, ensuring that they too are at right angles.

So that the 'skin' will attach properly to the framing, some sanding of the joining surfaces is needed. Again, a sanding stick will achieve this easily.



The piece of  $\frac{1}{32}$ " wood sheet (3) can now be glued by its tab and straight edge to the base. Let this dry, then dampen the outer surface of the sheet. It will bend towards A, B and C. Glue the parts together and improvise clamping. I used several rubber bands. The clips prevent the one band from slipping down.





While this is drying, remove the parts for the main rail from the  $\frac{1}{4}$ " sheet. Clean these of char. The three pieces should glue together without trouble at the scarph joints. I assembled mine on a flat plastic non-stick surface.



The main rail tapers from the aft end to the fore end. I used a small plane and a sanding stick to cut this regular taper. The fore end of the rail should measure  $\frac{1}{8}$ " thick, actual, when finished.



The next item to make is the lower cheek, found on a  $\frac{1}{4}$ " thick sheet (5). The cheek parts are different to those in one photograph, as they were modified after the first prototype was made. The joint between them is now a straight one.

First take the larger curved piece which fits the bow. Clean off the char. The surface that abuts the bow will need to be bevelled. This bevel is suggested by the thin laser-cut line. Clamp the part against the bow to check fit (left).

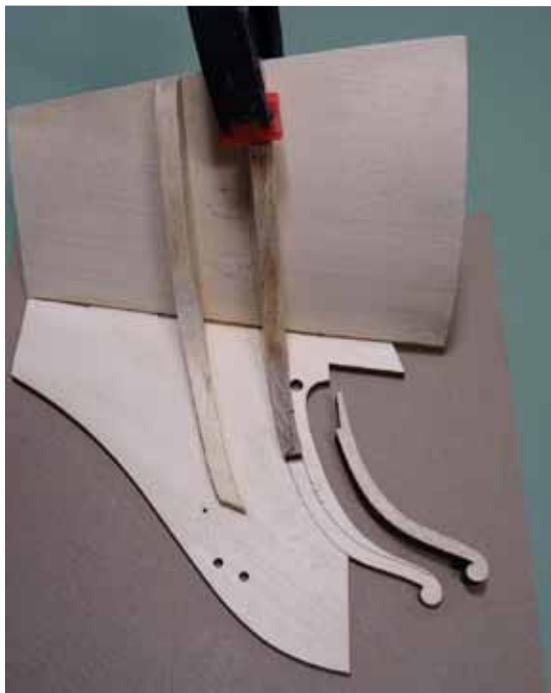


The joint with the fore piece now needs to be cut. I suggest an angle of about  $5^\circ$ . If you happen to have a disk sander, this will be easy. Otherwise use chisel and sanding stick. Next, clean char from the fore piece and cut the joint at right angles. Place the fore piece along the knee until it contacts the aft piece. You will need to adjust the joint angle until the guide marks on the knee are covered by the fore piece. (It may also be necessary to slightly bevel the inboard face against the knee.) Once the fore section covers the marks, the two pieces may be glued together.

Draw the curves of the fore piece onto tracing paper and transfer the mark-out to the inboard face of the piece (right). The fore piece can now be shaped to conform to the knee of the head. Make sure that the upper and lower surfaces are horizontal. A smooth compound curve should result. Glue the completed cheek to the bow and knee of the head.



The upper cheek (6) parts may be freed from the sheet and the aft part bevelled to fit the bow as for the lower cheek. In this case, the forward end should cover the marks on the knee of the head. First shape the upper surface as shown in the photograph (below), then the lower surface. When fitted to the bow, the completed aft part should look as seen in this photograph.

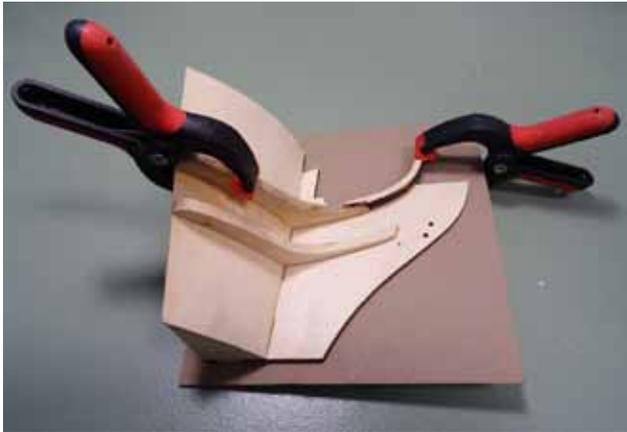


Clean the char from the fore part of the cheek and hair bracket piece. Make sure that the surfaces of the scarph\* are cleaned without losing their definition.

Transfer the shape of the scarph to the inner surface of the aft piece. Cut the surface 'a' (below left) using a razor saw. Trim away the waste wood of the sloping surface using a sharp chisel, then trim the end lip carefully until a good fit and alignment between the parts is reached when fitted to the model (photographs over-leaf). Glue the upper cheek and hair bracket together on a flat, non-stick surface (photograph below).

*\* If it's too challenging for you to cut a scarph joint, a simple butt joint here will be fine instead. Mess up? See the next page!*



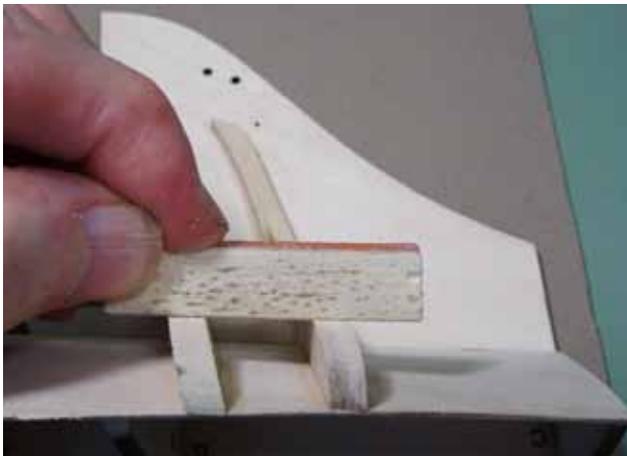


Should cutting and fitting this joint prove too difficult for you, simply cut the scarph away from both parts. Glue the cheek piece and hair bracket to the model. Then cut a piece of scrap to bridge the gap and shape it to blend.

Next, the hair bracket needs to be shaped. Cut away the bulk of the waste wood with a sharp chisel (left). Note that the bracket flares out at the upper end at the scroll. As this model is simplified, there is no need to detail the scroll or any other scratch-molded surface.



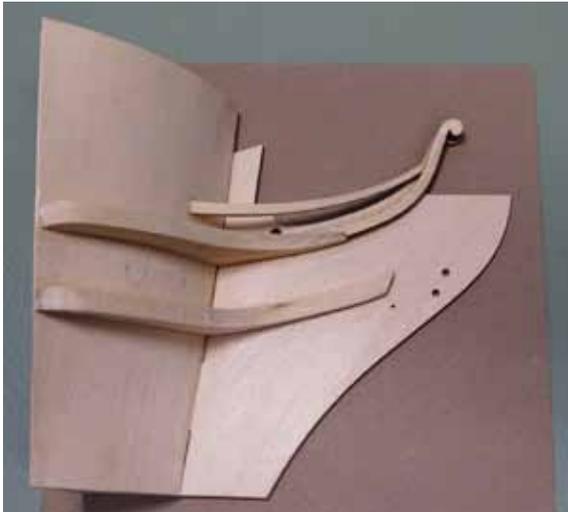
The fore faces of the cheeks now need to be shaped parallel to each other. I used sanding sticks to bevel the surfaces until they were parallel to each other and the round of the bow. A convex stick was useful to shape the throat areas of the cheeks.



This completes the main structures of the head. The next item is the lower rail (7). In the actual ship this rail is molded and tapers slightly in thickness along its length, but these refinements may be ignored for the purposes of the model.

The aft end fays against the ship's side. Again, in the real ship this rail continues aft and up around the bow to form the eking rail and cathead supporter. The position of the aft end of the lower rail is marked for you on the bow of the model.

Cut the aft end at approximately the angle required for it to meet the bow. Test fit it. As the piece is a little overlength, the fore end will sit high, but this is of no consequence. Refine the angle until a good fit is reached. Do not cut off more than necessary, though!



The fore end of the rail can now be trimmed until it sits at the right height in relation to the hair bracket. If unsure of where this is, refer to the sheer plan on page 2 and measure the distance below the scroll. Again, trim gradually and with caution. When happy with fit and position, glue in the lower rail (left).

The main rail needs to sit vertically as seen end-on. As the round of the bow slopes outward where they meet, this prevents it. Therefore the inner face of the head of this rail needs to be shaped to compensate.

Turn the rail face down on the bench and mark a horizontal line  $\frac{5}{8}$ " actual size (or 1' 8" at scale) below the top of the timberhead. A sloping diagonal cut is required below this so that the rail will sit vertically and close against the side of the ship. In the photo at the right I have marked the limit of this cut on the fore edge. If the rail sits crooked at an angle, the whole head will look wrong, so this is a very important item to take care of now. In all ships you will find that the main rail is oriented in the vertical plane. When the score has been cut correctly, the rail fits as seen in the photograph below.



Once satisfied that the rail is vertical when in position, its forward end can be carefully trimmed back until the top end is level with the top of the hair bracket's scroll. This end will be at a shallow angle and is also a compound angle cut, as seen below. You can now glue the main rail to your model, double-checking that it is still vertical when viewed end-on.





The photograph at the left shows the main rail being glued in. A small clip holds the fore end in place. The rail has been re-checked for verticality as viewed end-on from aft.

There is one last piece to add that is not shown on page 4. It is found on the 1/4" thick sheet and is shaped as shown, below left. This is the starboard half of the head beam. It sits against the head of the stem on the horizontal shelf and fays against the inner side of the mail rail. It needs to be thinned to the same thickness as the main rail at that point, then glued in.



Below left is an overhead shot showing the head beam in place. In actuality there would be knees connecting this to the main rail.



The model that you have assembled is only part of the complex of pieces that comprise the headwork. We will cover the rest at the workshop, as well as learn how to prepare patterns in card for the head timbers - always a tough job to carry out well.

This completes your pre-workshop preparation. *For the actual workshop, please bring the following:*

- A small cutting mat
- X-Acto or scalpel handles and #11 blades
- Band aids (just kidding to see if you are reading this!)
- Mechanical lead-holder
- 4H leads and sharpener
- A small metal straight-edge

We will supply card stock and instructional booklets. See you there!