Building a model of a Thames Barge

Stage 1 : Reading the instructions

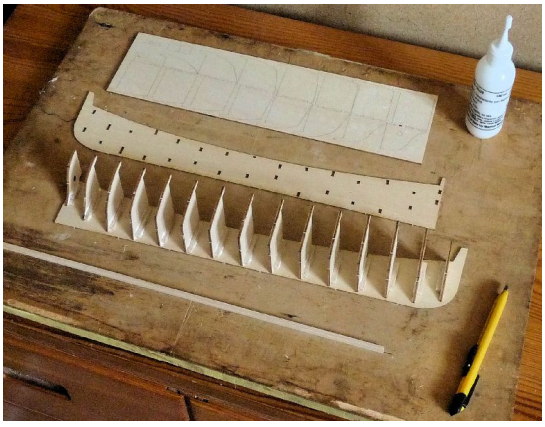
The model which I purchased is of the Will Everard, a steel-hulled barge built in the 1920's, one of a range of laser-cut kits from Billing's Boats.

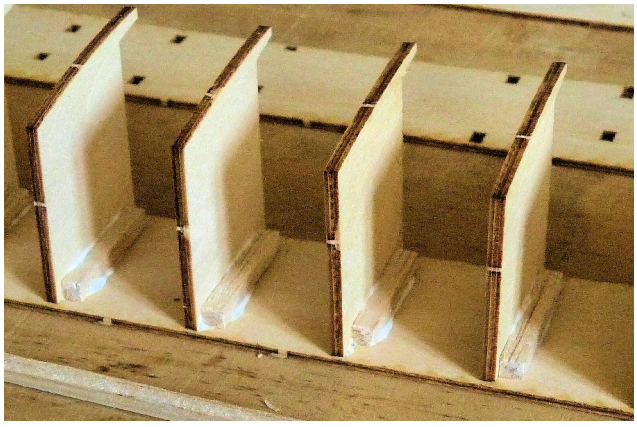
The kit comprised several sheets of laser-cut ply, a bundle of strip wood, a packet of spars, cloth for the sails, a plastic moulding with various items of deck furniture and a packet of tiny plastic and brass parts for the rigging, deck winches etc. In addition there was a sail plan and two detailed numbered plans of the deck and rigging.

The instruction book, written in eight languages, relies almost entirely on exploded diagrams to explain how the model fits together. Little if any advice is given to the novice as to the techniques of construction and I soon found myself making things up as I went along.

Stage 2: Building the hull

Construction starts simply enough with glueing the frames onto the keel. In order to ensure that the frames were at right angles to the keel, I found it convenient to glue a short strip of 5mm square balsa in the angle of the joints.

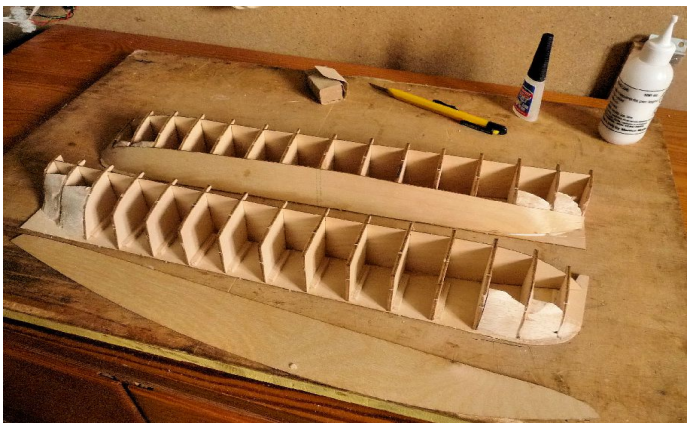




Next, the deck was glued in place. Because the deck is not flat, it has to be held in place while the wood glue sets. Here and elsewhere I adopted the following technique: wood glue was applied to all the frames and the keel with the exception of a few vital areas where the deck needed to be held down. These were glued using superglue (cyano). In effect, the superglue is used instead of modelling pins.

When trying to glue the sole-plate on to the bottom of the frames, it was clear that even superglue was not going to be able to hold the plywood against the tension induced by the sharp curves defined by the frames so I used some scrap balsa wood to infill the gap between the frames at each end of the hull and sculpted the wood to the required shape. Now the vastly increased area of contact enabled the superglue to do its job very effectively. holding the sole-plate in place until the wood glue sets solid.

Here is a useful tip. Before you start planking the hull, drill a 1.3 mm hole in the very top of ribs 3, 6, 7, 11 and 12 as numbered on plan 2. These are for the plastic cleats and they are impossible to drill once the hull is complete (as I found out later!).



Stage 3: Planking the hull

Before planking the sides of the hull I decided to add some ballast in case I ever wanted to try the boat in water. I happened to have about 600g of modelling clay handy which I cut up and distributed evenly in the centre compartments. Time will tell if it is sufficient as, once the hull is complete and sealed, I shall not be able to add any more. Assuming that the model will have a surface area of about 370cm^2, 600g of ballast will add an additional draft of 16mm. I estimate that the weight of the completed model (including ballast) will be about 900g giving a total draft of 24mm. I am told that a Thames Barge when fully laden had a draft of 1.5m. At a scale of 1:67 this translates to a draft 22 mm so perhaps we are not too far out.

The instructions tell you to glue the strakes with white glue and hold them in place with modelling pins. I used cyano (lots of it!). (Bear in mind that the instructions were written in 1980 – before superglue was invented!) I began at the top using 5mm wide strips, tapering them slightly at the bow. I used a 5mm strip,at the bottom and trimmed out the last gap to take a 3mm strip. The next photo shows the two halves of the hull after they have been lightly sanded.

The final task is to glue the two halves of the hull together.

Stage 4: Adding the decking and side boards

Adding the decking was easy if time consuming. Since only the bow and stern are decked, I added a plank at right angles to the others to finish off the decked area. I don't know if this is authentic but it just looked right to me.

Next to add was the railing strips (19 and 20). The two forward pieces which are made of 3mm plywood are not numbered on the picture on page 7 but it is obvious where they go. Next I added the side rails (22). This is made of 4mm × 2mm pine. There is only one piece of this so make sure you find it. In order to make sure that the front pieces could bend easily, I boiled them up in a pan, then glued them in place with wood glue, pinned with a few drops of cyano. For the stern railing I

found a piece of 5mm × 3mm pine which was just the job. The parts list includes a piece of 6mm × 3mm pine numbered 21 which I assume was the piece intended but, like Nos 19, it has not been identified on the picture on page 7.

Finally, the bow piece (27), stern post (23) and the two drop-keel supports (25) were added. I did not add the decorative strips (26 & 28) at this stage as I wanted to paint these a different colour.

Stage 5: The deck furniture, rudder and keels

Next I built all the wooden parts of the deck furniture – the hatch covers and wheelhouse etc. I did not add any of the plastic or metal parts as I intended to apply several coats of varnish to the finished hull. This is what the hull looked like just before painting and varnishing. (It is always a good idea where two different finishes meet, to paint them separately before gluing them together. You get a much better join that way.)

Stage 6: Painting and varnishing

I deliberately ignored the colour scheme suggested as it was not my intention to model any particular boat, just a typical working Thames barge. First I stained the whole of the deck area and hatch covers with teak woodstain. Then I painted the hull matt black and the fore and aft gunwales white. Then I painted two strips of wood, one green and the other white to go above and below the barge board plate. Instead of using the acetate to finish the hatch covers, I chose to use some scrap wood and paint them green. Since when did a load of coal need skylights in the roof?

Lastly I gave the whole hull a couple of coats of satin yacht varnish. This was the result:

Stage 7: Deck furniture

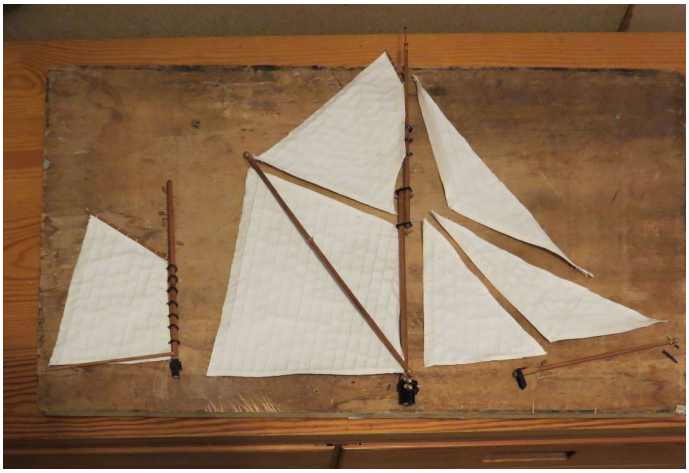
First I added all the cleats and the lower dead-eye fastenings to the gunwales, then the fixings for the rudder and dropkeels and finally, all the winch machinery. If you use superglue to glue the dead-eye pins into the gunwales, make sure that they are free to move; alternatively, let the glue set with the hull upside down so that the dead-eyes hang down. Several of mine stuck in a horizontal position and I had to replace them.

Stage 8: Masts and sails

The footings of the masts need to be planed down to size and the spars sanded to shape before being stained and varnished. Eyebolts are then glued in the appropriate places, some with single or double block pulleys attached.

In order to make sure that the sail cloth was cut correctly, I cut out the sail plans and pinned them onto the cloth. After hemming all the edges with a sewing machine I pencilled lines down the seams and ran the machine down each one giving the sails the appearance of being made of several strips of material.

Finally. the sails were attached to the masts and spars as shown in the rigging plan. Mast hoops are used for the mizzen mast but it is not clear how the topsail is attached to the top mast. The plan suggests that hoop masts are used but no hoops are provided and the photograph on the front of the instructions appears to show rope loops instead. I used three spare hoops. The mainsail does not appear to be attached to the main mast at all.



The sails were then dyed red using wood dye. I used a mixture of light teak and red mahogany to get the colour I wanted.

Stage 9 – The rigging

First the mizzen and main masts were glued to the hull and the shrouds added using the thicker of the two threads provided. In spite of getting eight goes at it, I never really solved the problem of threading the dead-eyes at the base of the main shrouds. The question is – where do the two free ends of the lanyard tie off? I have heard it said that on a real boat, the lanyard is held fast in one of the holes by means of a small wooden wedge. I tried to simulate this by supergluing the end of the thread into one of the holes but I found it difficult to do this without getting glue wicking down the thread, making it stiff and unsightly. I decided against trying to add ratlines as I knew I would make a mess of it.

The bowsprit was added next. I made sure that the boom was able to rotate freely on its mounting so that, having cut the chain to the right length and fastened in place, the assembly could be tensioned by tightening the forestay.

The flying sails were then attached to the stays in the following way. A darning needle was used to punch a hole in the sail; a small hook was made in the end of a piece of copper wire using a pair of long nosed pliers and the hook passed through the hole; then the wire was cut off leaving about a cm of wire sticking forward; this was the bent over nearly double. When all the hooks were finished in this way, the sail was clipped onto the stay, the loops were flattened down and the excess wire trimmed off.

It is not always clear from the rigging plan where all the halyards are tied off but it is not difficult to guess. I don't suppose every boat was rigged in exactly the same way anyway.

Next the bowsprit stays and the keelboards with their associated tackle were added. Since the white cotton threads looked too new, I then painted all the rigging with teak wood dye making the faults much less conspicuous.

Finally the anchor, the dinghy and the rudder were fitted and the model was complete.