

Instructions for building "Our Emmie"

THE HULL

This may be built from any soft wood with the exception of balsa.

BOW SECTION

Cut or build up a block of wood to measure 6 in. x 4 in. x 3 in. The grain of the wood should run parallel to the 4 ins. dimension. On one of the faces of the block, which measures 6 in. x 4 in., draw a line at $\frac{1}{2}$ in. in from one of the 6 in. edges. Then measure along this line $1\frac{1}{2}$ in. from each end.

Next, take a pair of compasses and open them out to $4\frac{3}{4}$ ins; place the point of the compasses on the $1\frac{1}{4}$ in. mark and draw in the radius (see diagram). Repeat this operation from the other $1\frac{1}{4}$ in mark. This gives you the curve of the hull at the deck line.

At the opposite end from the $\frac{1}{2}$ in. line make a similar mark $\frac{3}{8}$ in. down the 6 in. x 3 in, face. There is no need to continue this line across the block; a mark at each end is sufficient. Then draw a line diagonally from each of these marks down to the bottom corners on the 3 in. x 4 in. faces. The block is then ready for shaping.

First cut the block in half along the diagonal line. Shape the $4\frac{3}{4}$ in. curve. Start by making a series of saw cuts at about $\frac{1}{2}$ in. intervals down to the line of the curve, and then break out the unwanted pieces with a wood chisel. Complete the shaping with a rasp and finish off with a piece of glass paper.

STERN SECTION

The marking out procedure is exactly the same as for the last block with a slight alteration to the dimensions. Mark out the block to the sizes shown on the drawing and then shape as before.

CENTRE SECTION

This is built up from one piece of wood measuring 15 in. x 6 in. x $\frac{1}{2}$ in. and two pieces 15 in. x $2\frac{1}{2}$ in x $\frac{1}{2}$ in.

Clamp the three pieces together and square up the ends so that all the pieces are exactly the same length. Then assemble these parts by glueing the two narrow pieces edge wise to the face of the broad piece. Drive in a few panel pins at regular intervals to prevent the joint from moving whilst the glue sets. When the glue has dried the centre section is then ready for joining to the bow and stern pieces.

JOINING THE THREE SECTIONS

Offer the bow and stern pieces to their respective ends of the centre section and mark the positions by drawing a line on each end piece all round the inside of the hull. Then from a piece of $\frac{3}{8}$ in. square material cut two pieces 5 in. long and four pieces $2\frac{1}{8}$ in. long. Glue and screw these pieces, using $\frac{3}{4}$ in. x 4 in. brass wood-screws, to the inside edge of this line on each block.

This provides a rebate into which the centre section of the hull is finally fitted. A resin-bonded glue is all that is required to join these pieces, with an occasional panel pin to prevent the work from moving while the glue sets.

MAST BOX AND MOUNTING

The mast box is built up from three pieces of wood 2 in. x 7/8 in. x 3/16 in. It is assembled in the same way as the centre section of the hull: two pieces are placed edge wise on to the broad face of the remaining piece. This will provide a 1/2 in. gap between the two pieces. They are fixed as before with glue and panel pins.

The box is held in the hull to take the strain of the sails on the mast by two pieces of 5 in. x 3/4 in. x 1/4 in. wood. One piece is fitted into the top of the hull 7 1/4 ins. from the front or bow and the second piece 7/8 in. from the first. When correctly positioned, they are pinned and glued and the mast box is fitted centrally between them. The mast box should protrude above the top of the hull by 1 1/4 ins. Before the box is finally glued in position do not forget to drill the 3/32 in. hole shown on the drawing for the mast-pin.

DECK

The deck is shaped from a piece of resin-bonded ply of about 1/16 in. thick. You will require a piece 24 in. x 7 in. Mark out the position of the mast box, which will be a 7/8 in. square hole, and remove the unwanted material with a drill and file so that it fits neatly over the masts box.

When this has been done, hold the plywood firmly down on the hull and pencil round on the underside of the ply to the shape of the hull. Remove the plywood and cut away the unwanted part to within 1/8 in. from the line. Coat the top face of the hull with glue, and fix the plywood deck firmly down with a few panel pins at regular intervals. When the glue has dried, trim the edges of the plywood deck with a file, finishing with fine glass paper until they are flush with the sides of the hull.

CARGO HATCHES

There are two cargo hatches, one amidships and one in front of the mast. The only difference is that one is longer than the other. You will see the sizes on the drawing. The sides of the hatches, or coamings, are made from 1/4 in. x 1/8 in. strips of wood. The ends or head ledges of the hatches are made from 3/8 in. x 1/8 in. strip. Cut these to 3 1/2 in. in length for both hatches and curve the top edge so that the ends are 1/4 in. wide to match up with the coamings.

Build up the hatches by glueing each piece directly to the deck. The front edge of the smaller hatch should be 4 ins. from the tip of the bow and the main hatch 9 1/2 ins. When the glue has dried, fit a top to each hatch made from thin plywood or balsa wood sheet not thicker than 1/8 ins. The tops are glued in position, and it may be necessary to use ordinary domestic pins to make the top follow the curve of the head ledge and hold it in position while the glue dries. After the glue has set, the pins may be withdrawn.

ACCOMMODATION HATCH

This is made in the same way as the cargo hatches, the main difference being the size and that the top is flat and slopes forward.

WINDLASS, FOREHORSE, MAINHORSE

These three details are all made from a pre-shaped piece of wood fixed to each end of a piece of dowel. The sizes are all shown on 1/8 in and the drawing.

RAILS AND QUARTER BOARDS

These are shaped from 3/8 in. x 1/8 in and 1/4 in. x 1/8 in. strip, and glued to the deck.

RUDDER AND MIZZEN

The rudder blade is cut and shaped from 1/8 in, thick wood and includes the rudder post which takes the tiller. To strengthen this section, glue two pieces of 3/4 in. x 1/4 in. wood, 5 ins. long to each side. When the glue has set, cut away part of the post down to the top edge of the rudder blade, leaving a section measuring 5/8 in. x 3/8 in.

At this point drill a 1/4 in. hole for locating the mizzen mast, which is a piece of 1/4 in. dowel 6 in. long,

Using the same size drill, make another hole 1/4 in. deep at the top end of the rudder post to take the tiller. The tiller is shaped from a piece of 3/4 in. x 1/4 in. wood cut 5 1/2 in. long. The end which fits into the rudder post is filed to 1/4 in. diameter and made a tight fit into the drilled hole. Both the mizzen mast and the tiller are held in place by a spot of glue.

MAIN MAST

Use a piece of 1/2 in. square wood for the main meet and shape it to about 3/8 in. diameter for all but 1 1/4 in. of its 12 in. length. Drill a 3/32 in. hole 1/4 in. up from the bottom and the same distance from the sides. Round off one of the corners as shown in the drawing, so that the mast can be made to swivel down when it is fitted to the mast box.

SAILS

The sails are cut from any suitable cloth which is not too heavy or stiff. The sizes shown on the drawing should be taken as only approximate and should be checked against your model. Any difference should be allowed for in the cutting. The sails are secured to the mast and sprit by string loops or suitable curtain rings. The sprit, top mast and bowsprit are all pieces of 1/4 dowel, and the sprit and boom for the mizzen are 3/16 dowel.

LEE-BOARDS AD RIGGING BOARD

The lee-boards are plain pieces of wood 5 in. long and 3/16 in. thick. Cut to shape shown on the drawing.

The rigging boards are pieces of 3/8 in. x 1/8 in. strip 4 long, with four 3/32 in. to take the shrouds and lee-boards. The hole centres are shown on the drawing.

KEEL

The main part of the keel is in two layers, built up from ten pieces of wood 8 in. x 3 in. x 1/8 in. five pieces in each layer. Lay the five pieces side by side at an angle, as shown by the dotted lines on the

drawing. Coat the top surface with resin glue and lay the remaining five pieces on top, as shown by the solid lines. When the glue has dried, cut the laminated keel to the shape and size shown.

Next you will need four pieces of 1 in. x $\frac{3}{8}$ in. and four pieces of $\frac{3}{8}$ in. square, all 14 in. long. Lay a piece of the 1 in. x $\frac{3}{8}$ in. on either side of the top of the keel, and glue the $\frac{3}{8}$ in. edge to the keel. Then take a piece of the $\frac{3}{8}$ in. square and glue this in the angle between the 1 in. x $\frac{3}{8}$ in. piece and the keel, on either side so as to strengthen the work.

FITTING THE KEEL

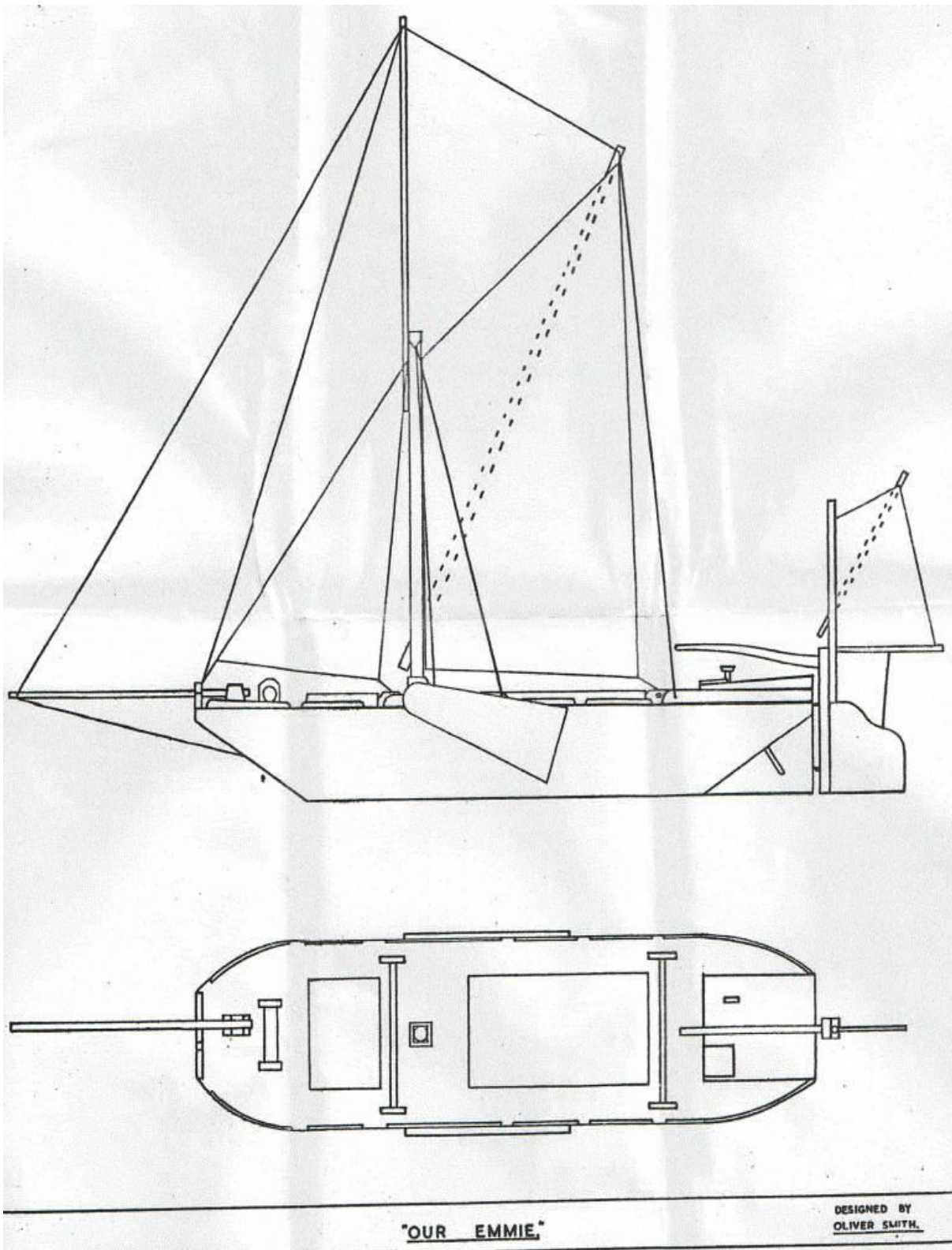
Place the finished keel on the hull, and after making sure it is exactly central with the sides, draw two lines to denote its position. Remove the keel and on the lines fit the remaining $\frac{3}{8}$ in. square and 1 in. x $\frac{3}{8}$ in. pieces, so as to form a channel for the keel to slide into, as in the sectional drawing. Use brass screws for fixing to the hull.

The keel can then be removed to make it easier to carry the model to the pond.

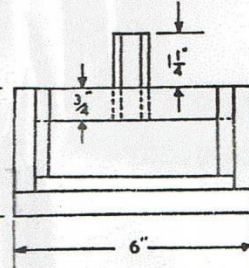
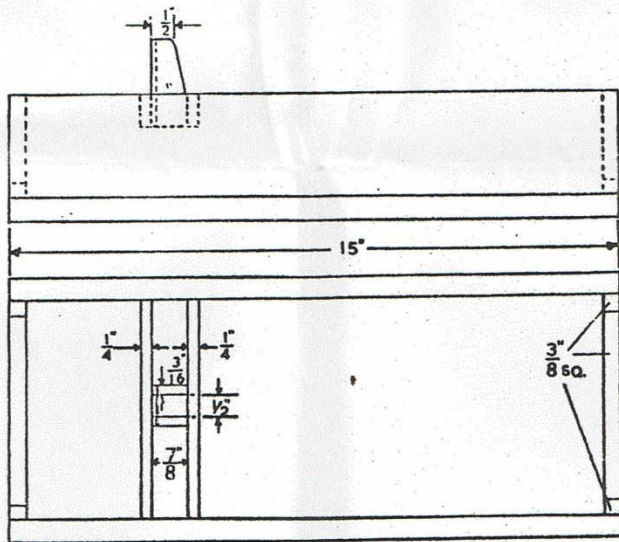
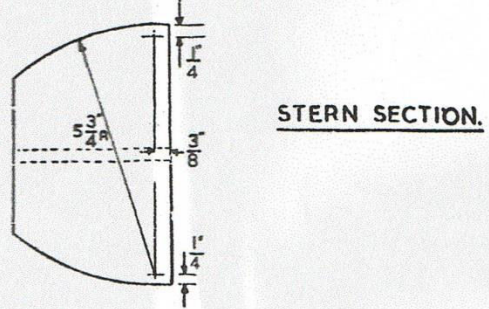
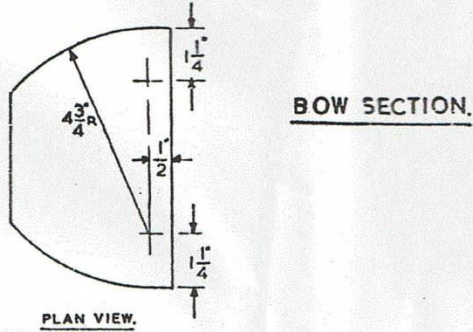
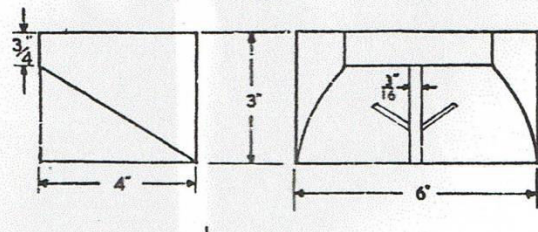
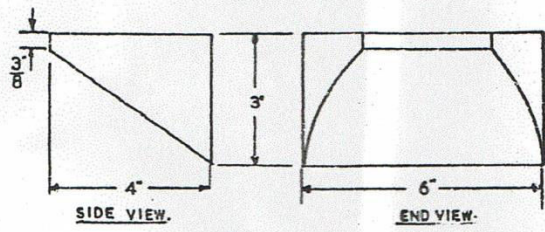
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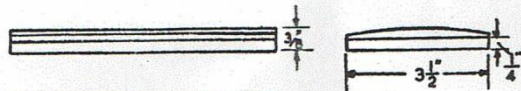
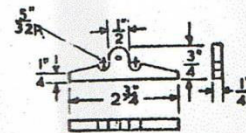
DRAWING 1



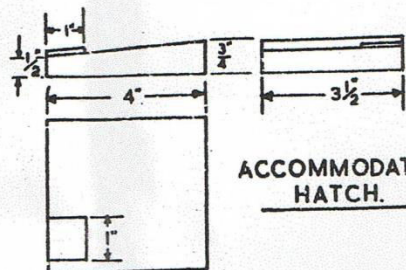
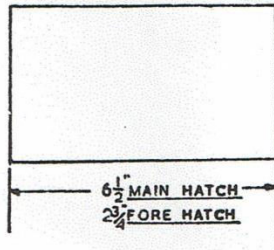
DRAWING 2



CENTRE SECTION.

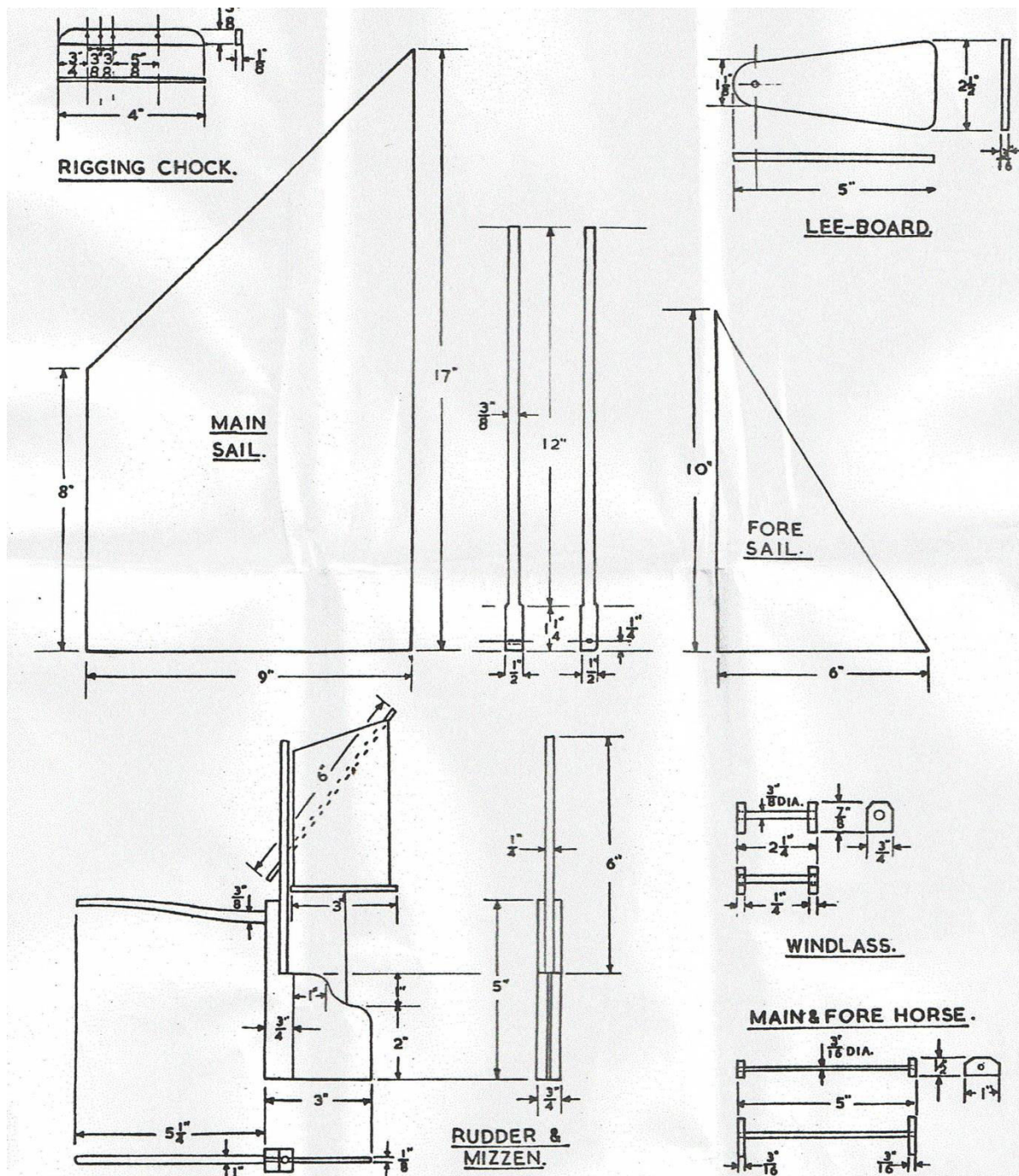


CARGO HATCH.



ACCOMMODATION HATCH.

DRAWING 3



DRAWING 4

