

### Figure 1

- B1 Bunk front - starboard
- B3 Bunk bulkhead - starboard
- B4 Bunk bulkhead - forward port
- B7 Bunk end - port
- B8 Cockpit locker bulkhead
- B10 Bunk top - forward
- C2 Cockpit support - port
- E Chain locker bulkhead
- M1 Motor pad - inner
- M2 Motor pad - face
- M3 Motor pad - top

### Figure 2

- B2 Bunk front - port
- B5 Middle bunk bulkhead - starboard
- B6 Middle bunk bulkhead - port
- B9 Main bulkhead
- C1 Cockpit support - starboard
- D Cabin door
- F4 Floor
- F5 Floor
- T Table top
- T2 Former - when cut becomes table base

### Figure 3

- F1 Cabin sole (floor)
- F2 Floor
- F3 Floor
- S1 Shelf front - starboard
- S2 Shelf front - port
- S3 Shelf - starboard
- S4 Shelf - port
- S5 Shelf - forward
- S6 Shelf knee - forward
- S7 Shelf knee - forward
- S8 Shelf knee - rear
- S9 Shelf knee - rear

### STANDARD TOOLS AND EQUIPMENT

1. Saw
2. Padsaw handle to take H. S. hacksaw blade
3. Frame hacksaw
4. Drill
5. Brace and bits
6. Slot Screwdriver
7. Rasp (a millencut is best)
8. Hammer
9. Adjustable spanner
10. Flat file
11. Round file
12. Stanley or similar knife
13. Sandpaper
14. Metric steel rule or tape
15. Clamps
16. Pop rivet gun. (can be hired from your local Express Boating Centre at a nominal charge)
17. Marine glue
18. Varnish or paint
19. Sealing mastic
20. Brass panel pins

UNLESS OTHERWISE STATED, ALL MEASUREMENTS ARE IN MILLIMETRES

### DETAILED INSTRUCTIONS

All glass fibre components are rough trimmed by our works but may need sanding for final fitting.

1. Cut and prepare all timber components  
Your Ryplas woodpack 'X' contains three 8'0" x 4'0" sheets of marine ply, 9mm thick. Also a number of hardwood lengths (15mm x 15mm and 15mm x 40mm)

The three marine ply sheets have been marked for cutting to make all the components required for the interior of the boat. Cut the sheets as marked and prepare for assembly.

NB. Cutting the plywood will be made easier by pre-scribing with a Stanley knife.

2. Construct all bulkheads  
Glue and screw all hardwood cleats to the bulkheads as shown in the drawings.

3. Construct shelves  
It is easiest to assemble the shelves outside the boat before scribing to fit in the hull.

4. Varnish all areas which will not be covered by bonding  
To give the best finish in the interior, it is preferable to varnish the wooden components outside the boat but you must first mask all areas where glass fibre bonding is to take place, as it will not adhere satisfactorily over varnish.

5. Construct and fit bunk assemblies into hull

The cockpit supports (C1/C2) must be fitted into the hull first, then the bunk fronts (B1/B2). Use the two formers (T2) to hold the bunk fronts in position. Now fit the main bulkhead (B9) and fix to the bunk fronts. To check that the bulkhead is horizontal, take a measurement from the corners of the cockpit entrance to the corresponding corner of the front bulkhead. These measurements should be the same for the port and starboard sides. As an extra check, take a straight edge and lay across the bunk assemblies. Now take the forward bunk top (B10) and temporarily place in position in the boat. This will enable you to locate the chain locker bulkhead (E). The cockpit supports and bunk fronts should be screwed together ready for glass fibre bonding.

#### 6. Bond bunk assemblies into position

Having assembled and faired all wooden components you may now bond these into the boat. It is best to cover all the varnished area with newspaper to prevent resin spoiling the finished surfaces. The areas of the inside of the hull where bonding will take place should be thoroughly cleaned with Ryplas cleaning solvent.

Using the Ryplas materials supplied it is suggested that you cut the chopped strand mat into a number of 50mm and 75mm wide strips before commencing work. You may also wish to colour the resin using the white colour paste supplied in the kit. In the initial stages until expertise is acquired it is suggested that only small areas of bonding be tackled and these should be in the easiest of positions. First coat the laminating resin onto the plywood about 50mm upwards and 50mm onto the hull. Cut a 150mm length of the 50mm and a 150mm length of the 75mm wide chopped strand mat and pre-wet with the catalysed resin onto a scrap piece of cardboard. As a general guide add 5cc of liquid catalyst to each 500g. of Ryplas polyester resin and mix thoroughly with a stick. Peel the mat from the cardboard and offer up to the previously coated areas. You will then be able to "dab out" with a brush into the angle. Two layers are required.

Once proficiency has been achieved you can then tackle the more inaccessible areas. Always remember to cleanse your brush thoroughly in cleaning solvent between working sessions. It is advisable to ventilate the confined area of the quarter berth when laminating. It is suggested that rubber gloves be worn when handling polyester resins as it may cause skin irritation. When using cleaning solvent and liquid catalyst the warning labels on the bottles must be heeded.

#### 7. Fit and bond shelves into hull

Follow general procedure to bond all plywood components into hull.

#### 8. Fit cabin hatch and handrails

The cabin hatch is rough trimmed and the edges will need sanding to a fine finish. The hatch slides on the four nylon runners provided. These should be fitted to the GRP hatch by pop rivets. The hatch is held in place by the hand rails which are made from the hardwood as shown in Fig.3. Assemble door rebates in accordance with Fig.4.

#### 9. Fit cockpit and chain locker hatches

Having sanded all rough edges on these hatches pop rivet the hinges to the hatch and then to the deck.

#### 10. Fit windows

The window openings must be cut out with a jig saw and cleaned up with sand paper. The perspex should be cut to size as marked on the paper backing sheets. To fit the windows, drill 3/16" holes at 75mm centres 12mm from the edge of the perspex, (see Fig.5). It is important to remember that when drilling perspex slow drilling speeds and light pressure should be used. Now place the self adhesive sealing strip around the window opening and place perspex into position. Drill through the sealing material and deck starting in the centre of the window and working to both left and right fitting round head 3/16" machine screws as you go. Fit the nuts and washers taking care not to overtighten them. To remove the surplus screw thread on the inside of the boat use a close fitting piece of tube and bend from side to side to snap the screw off neatly.

#### 11. Attach fittings

The various fittings may now be attached using the fastenings included in the packs. Many of the fittings have their positions marked on the deck by means of pips. It is essential to use a good quality sealant underneath all fittings to cut out the possibility of leaks into the interior of the boat. (see Fig.6,7)

#### 12. Assemble mast, boom and rigging

The mast and boom may now be assembled in accordance with Fig.12,13. Many of the fittings are attached with pop rivets and if you do not have a suitable rivet gun one may be hired from your Express Boating Centre.

#### 13. Casting polyester resin in keels

Each keel has 132kg. of metal punchings (6 tins), one can of coloured Ryplas keel casting resin, and 120cc of catalyst hardener. First pour the can of resin into the keel space, then add the 120cc of catalyst and stir thoroughly. You may now add the 6 tins of metal punchings. Again, this mix must be stirred thoroughly and allowed to set.

When you cast the ballast in the keels is entirely up to you. It is easiest to do this as the first operation but as you will need to move the boat during the building operation it may be best to leave the casting of the keels until later.

#### 14. Making the rudder and tiller

Cut the rudder from the marked hardwood supplied. The tiller can be planed to shape as shown in Fig.9. The rudder blade should be chamfered at its edges to the shape shown in Fig.10.