

You will need help for the next job. With the U-tube at working pressure and sitting on a flat floor, present the transom to it with the back edge of T1 lined up with the lines on the tubes. Pull the tubes together, and when the transom is "sitting comfortably", at the height at which it seems to fit best and at the right angle according to the lines for positioning the back edge of T1, mark down both sides and across the top of T1 on both tubes.

Tip the tube on its side and put the transom in position again in order to be able to mark right round the bottom edge of T1, and then remove the transom and buff up this area, being careful not to lose your marks. Do this on both sides.

You may notice that the marks which you used to position the front section do not appear to be symmetrical with the position you have now marked for the transom, as you might expect. This is normal, and due to the twist which the front section has developed.

If you try to twist the tubes back so that the original marks are symmetrical you will find that you impart a twist to the whole boat, but by marking the position of the transom with the tube allowed to take up its natural twist when held square by virtue of sitting on a flat floor, the transom will hold it square once it is fitted.

It follows that when you come to actually glue the transom and its T1 pieces onto the tubes, the whole tube must be inflated and again sitting on a flat floor.

Start by "tacking" the transom onto one side with two comparatively small blobs of glue in order to hold the transom square in the boat, and glue on the whole of the area of T1 the other side. Then separate the glue off the other side (it must obviously not have had a chance to cure) and glue that side on fully as well.

Gluing on the Reinforcing Pieces

First of all lay T5 in position each side and mark round to show where to buff and apply glue. Make a mark on both the tube and T5 at the top, to help you position it correctly when gluing on.

The problem with gluing on pieces T2 and T3 is the tendency to stick accidentally to both sides so that you cannot push it home into the corner.



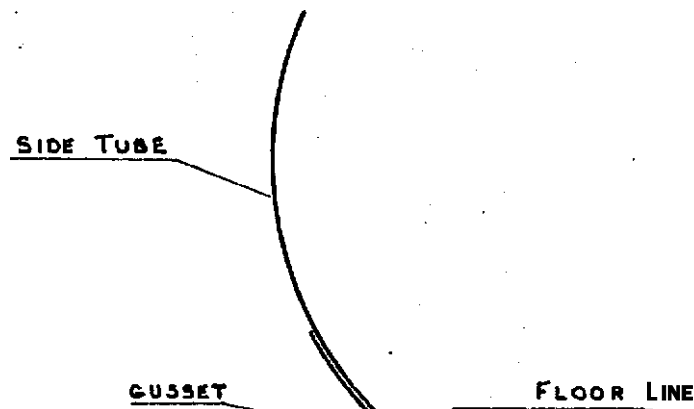
To overcome this problem, apply glue to the whole of each piece and onto the area where it is to be stuck (offer each one up before gluing if you are not sure), and when it is ready to go together, very lightly dab sellotape onto one half of the reinforcing piece: you can then stick the first half down with the other half folded out of the way, and only take the sellotape off when you are ready to glue it down.

Do pieces T2 and T3 in this way, and then glue T4 on the top corner with the sides folded down onto each side of the transom. Try it dry first of all, and mark where it is to go. Note that a small area of T3 will need to be buffed before applying glue.

Finally, glue on T5 to finish it off. Start at your positioning mark, and stretch it down each side as much as you can, or you will get wrinkles.

RUBBER FLOOR

The rubber floor is glued directly onto the U-tube and there is a gusset to prevent any peeling on the inside.



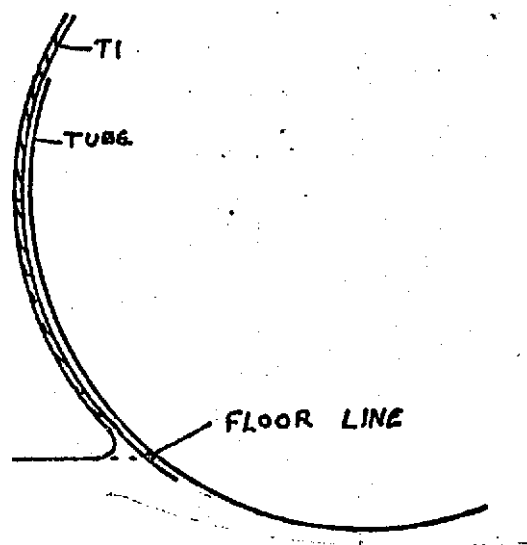
Preparing the U-tube

The first job is to draw in the "floor line", and then the lines for the outside edges of floor and gusset, to show you the area to buff and apply glue.

The floor line round the front is exactly 1" outside the outer edge of the longitudinal seam. Mark it at various points, and then use a straight edge to draw the line: do not try and do it with the compass.

The floor line on the side tubes runs from the point on the side tube which is level with the bottom edge of the transom, in a straight line to join up with the line on panel 4. Use a straight edge or a taut piece of string to draw the line.

TRANSOM

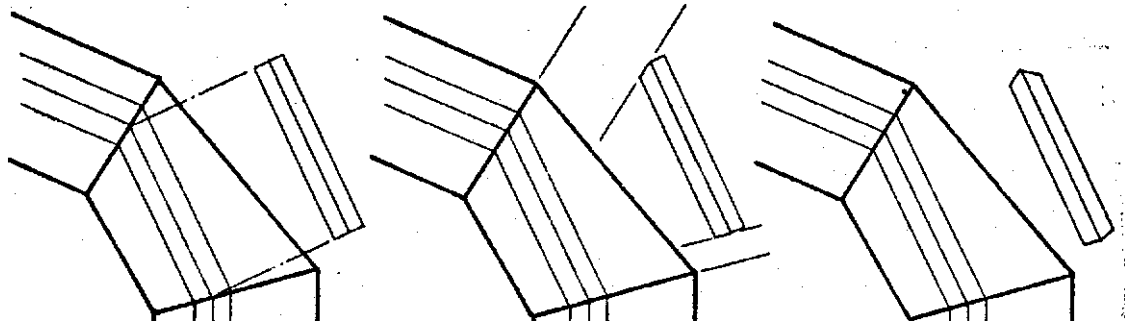


The outer edge of the floor is 1" outside the floor line all round, so this line can be drawn in easily once you have completed the floor line.

The gusset is 6" wide on the side tube and panel 4 (to act as a protective rubbing strip for the floorboard side members), and 3" wide round the rest of the front section. Since half the gusset is glued to the floor and half to the tube, this means that you need to draw a line 3" inside the floor line on the side tubes and panel 4, and 1 1/4" inside round the rest of the front section. Buff up the strip between the outer two lines, making sure that all three lines remain visible, and remarking them if necessary, up to a line 1" behind the back edge of the transom.

The Gussets

First of all, clean up the neoprene side of the gusset, and draw a line down the centre. Cut the strip up into lengths corresponding to each straight length of the floor line, and mark the front of each strip. Lay each piece in position on the inverted U-tube, neoprene side down, and cut the corner off the end of each one to the same angle as the tube seam, so they can all be glued down to the U-tube without any corners overlapping. Then trim up the remaining square corners so that each piece is symmetrical round its own centre line.



Then glue all the gussets on - dark side against the tube.

Be careful when applying glue not to cover more than half the gusset, or over the floor line on the tube, or you will have problems later when you come to fold it in half: if you do not trust the accuracy of your brushing, use sellotape or masking tape. When all gusset pieces are on, each one must be folded back flat on itself and temporarily glued down, so you have a fairly flat band on which to glue down the floor.

To do this, go along each gusset putting a blob of glue every 12" or so, close to the edge on the side which has been glued onto the boat: the blobs should be small in area, but the glue should be quite thick. Then quickly go round again while the glue is still wet and fold the gusset in half down onto the wet blobs of glue. Make sure "the glue has spread itself onto the other side, and allow the gusset to spring back open again. When the blobs of glue are touch dry, you can fold the gusset over again and it will stick down.

You will find it will be fairly easy to separate again with the scraper after you have got the floor on, because the glue will not have had time to cure, and in any case the surface is unbuffed, and so the glue will not adhere well. The blobs of glue will not be visible when the floorboards are in and the boat inflated.

Gluing on the Floor

The next step is to glue on the floor itself, which is fitted with the neoprene side on the inside of the boat.

On the Double Six and Seven, first glue the two halves together: mark your own centre line and start the seam at this point, so any stretch should be symmetrical.

On all models the centre bottom rubbing strip should then be glued on, with the front shaped as shown in the diagram below. »

Make sure you get it straight, and on the centre line of the floor, and line up the back edge with the back edge of the floor. When you scrape it down, be careful to start in the centre and work outwards, or you will find you get air bubbles underneath it which you cannot remove.

Then clean up the areas which you are going to glue, including a strip about 5" wide across the back, and roll it up from the back, to make it more manageable. Unroll just the part you are working on as you go.

Start by gluing the floor on panels 1 and 2 one side, then do panels 1 and 2 on the other side, and carry on doing one panel one side and then one panel the other side until you reach the transom (of course, you can do less than a panel at a time if you like, but keep doing one side and then the other in the same way).

Glue the floor onto the bottom edge of the transom, but not onto the back in the same operation, and glue it onto the U-tube behind the transom, between the projection of the floor line and the line for the outer edge.

Scrape the floor down onto the gusset and U-tube as you go (the U-tube should still be at working pressure) using the scraper across the tube, not along it, or you will put wrinkles in the same way as you would in a seam. When you are gluing the floor to the transom, be generous with glue in the corner between the U-tube and transom, and scrape the floor well down into it, or you may suffer from small water leaks at this point.

When you have glued all the floor on, turn the boat the right way up, and separate the glue spots off all the gussets. Scrape the gussets down to the floor if at all necessary.

Then, make a slit in the floor at each side behind the transom, and glue it down to the back side of the transom. Glue another gusset inside the boat, with one side onto the floor and the other side onto the transom. When gluing in this gusset, fold it in half and either temporarily glue it as before, or paper clip the two edges together. If you do not do this, you will have difficulty getting it right down into the corner.

Then, with the front of the boat elevated as high as possible deposit a good amount of glue in the corners where the transom meets the floor and tubes, leave this to dry, and then bond the corner gussets into these two corners (the corner gussets are the discs with a slit in). The best way to do this is to curl the corner gussets up to form a cone and then to push them into the corner and let them open out until firmly stuck to the floor, transom and tube.

Finally, turn the boat upside down again and glue another of the slit discs each side onto the back corner of tube and transom. Arrange the disc so that one edge of the slit lies along the back edge of the transom, with the other on the back face of the transom, and by stretching it apart at the slit it should be possible to completely cover the end of the slit in the floor, to make the whole corner neat, and watertight.

Bottom Rubbing Strips

The rubbing strips on the tubes should then be glued on, with the ends shaped, as shown in the diagram. >

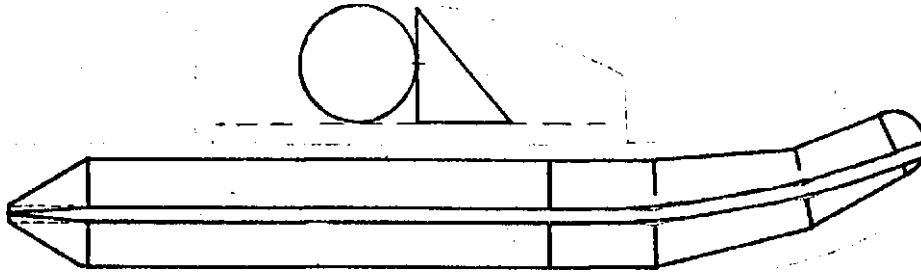
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Side Rubbing Strips

To find the line along which to glue the side rubbing strip, make yourself a big set square, and put it up against the side of the boat. Mark the point of contact and use this as the centre line for the rubbing strip.

On the front section use the same principle all the way round, but remember that the rubbing strip does not like to go round corners, and make a fair curve on the angles between the panels.

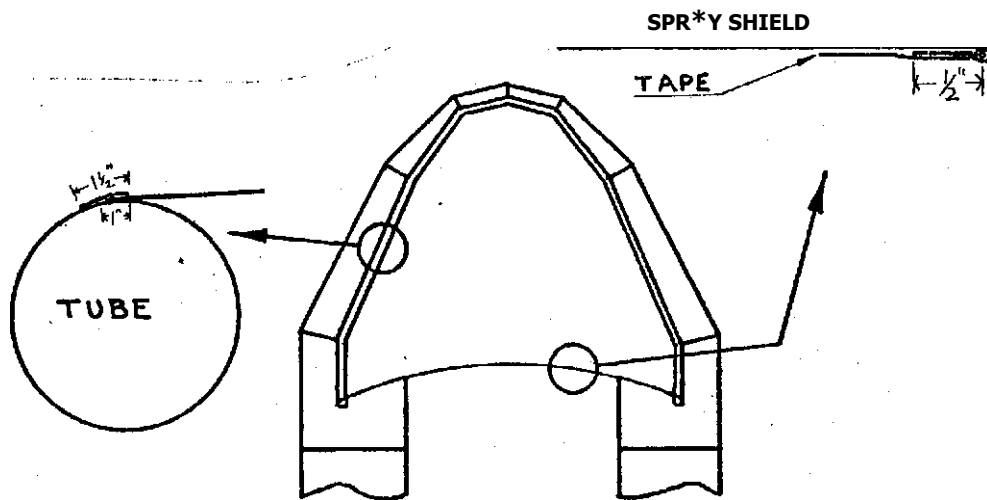
On the cones, to make the boat look rather smarter, you should taper the rubbing strip down to nothing at the end.



The fabric backing of the rubbing strip does not need to be buffed, but you should apply plenty of glue when sticking it on.

Spray Shield

The spray shield is glued directly on the U-tube without a gusset, and finished with tape. The back edge is folded back on itself around the thin plastic tube, and reinforced with tape.



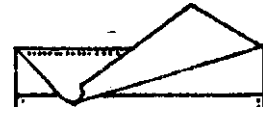
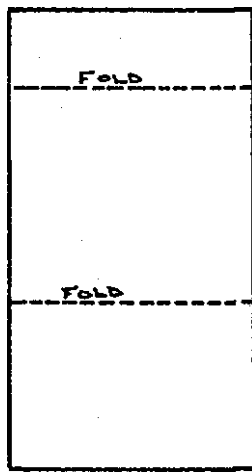
To find the position for the spray shield you must have at least the front floorboard in position (it does not need to be varnished or reinforced), and the U-tube at working pressure. Then, with the aid of another pair of hands, hold the spray shield in position, stretched tight across the boat, and with the corners lining up with the seams. Check that it is symmetrical, and draw round it.

Before gluing it onto the boat, glue the thin plastic tube into the rear edge, and tape it. The rough side of the fabric is the underneath, and so should be on the inside of the fold. Use the same glue, but buff to roughen the surface.

Then glue the spray shield onto the boat with a band 1" wide all round, and glue a tape on top of the edge. At the back corners continue the tape 1/4" behind the spray shield, and the side rope fastenings should subsequently hide the end.

Stowage Pocket

The diagram shows the construction of the stowage pocket. The sides and top both can be glued, but stitching on a household sewing machine is rather neater.



The pocket is attached to the boat by gluing the whole of the back to the U-tube under the spray shield.

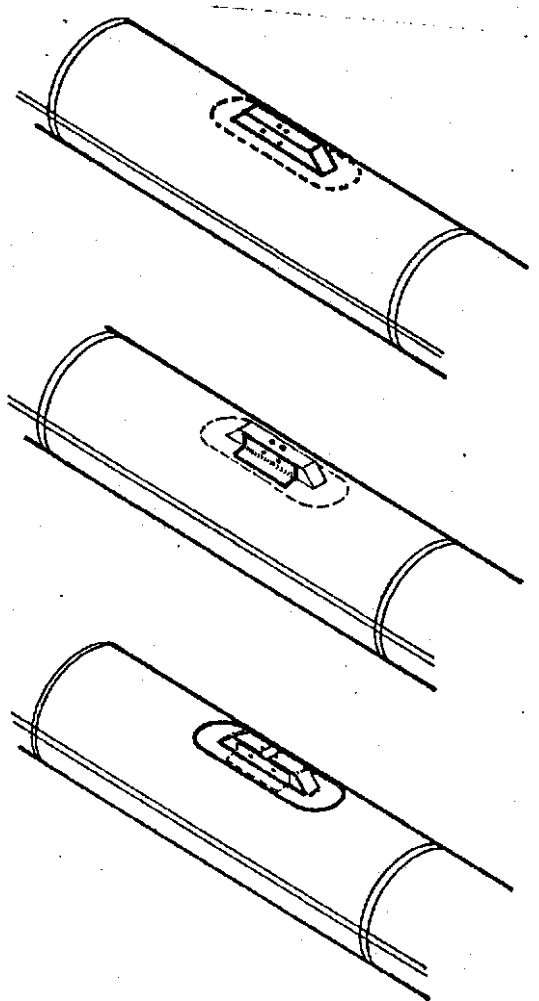
Rowlocks (where fitted)

It is important that you drill the screw holes (1/8") in the wooden blocks before gluing them onto the U-tube, or you will find that it is very easy to drill through the U-tube as well. Sandpaper the blocks all over.

Decide where you want the rowlocks (think about the position of the seat at the same time) and glue the blocks directly onto the tube.

Then place the doughnut in position and draw round it to show where to buff and apply glue. Glue the side reinforcing pieces on as shown, and then the doughnut.

Finally, screw on the actual rowlock fittings.



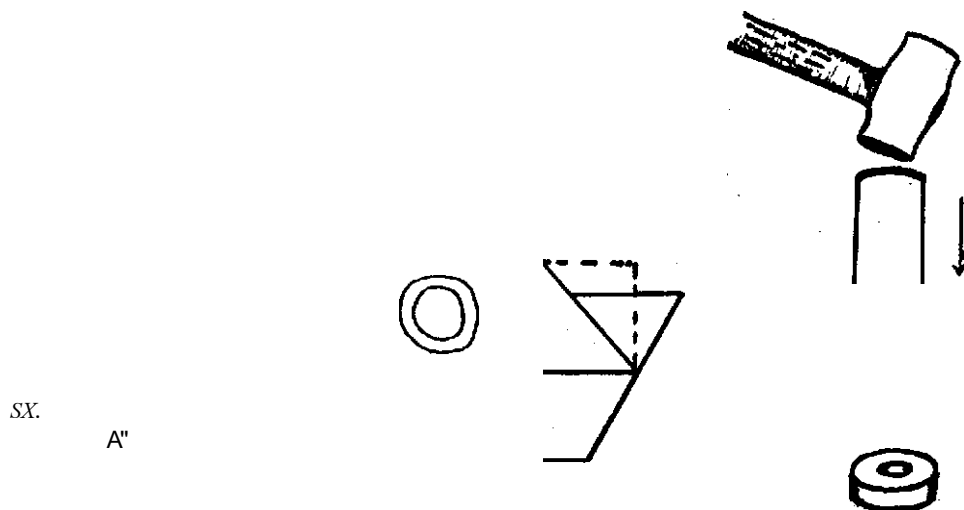
Rope and seat fastenings, and handles

All these parts are made in exactly the same way, with a reinforcing strip glued into a fold in the fabric, to which the eyelets are fitted, and the sides are then splayed out and glued to the tube. The front handle doubles as the painter fitting, and has two reinforcing strips enclosed.

Buff the centre strip(s) well, and glue the fold up in two separate operations, first gluing on one side, and then doing the fold. Always start by touching each hole down onto its mate, and any slight distortion or creasing caused by the holes being out of line can then be smoothed out with the scraper. (There is no cheap and easy cutting device which is effective on this type of material, or you could cut the holes afterwards).

To neaten the appearance, cut off the corners of the fold at an angle each end.

Remember to fit the eyelets before gluing the fittings onto the boat. Push the tubular part of the eyelet up through the hole, and place the back on the die on a hard surface. Put a ring in place on top, and open the eyelet out with the punch, hammering it down until the eyelet is firmly locked onto the material.



Position

The rope fastening runs along the top of the tube from the back of the spray shield to approximately the level of the transom. It should cover the seam on the side tube but not necessarily centrally, since the seam may be slightly twisted.

The side handles should be fitted adjacent to and above the side rubbing strip. The back handles should be up against the tape for the circular seam at the join of the cone, and the front handles on panel 4, up against the seam with panel 3. (The Double Five does not have front side handles).

The front handle and painter fitting should be fitted centrally below the rubbing strip, as low down as is consistent with comfortable carrying.

The seat fittings should be fitted about half way up the tubes, but the actual position is a matter for personal choice. Use a ruler to check that you put both on at the same height, and the same distance back in the boat.

Ropes -

The rope has to be cut up into the correct lengths, all ends heat sealed, and then spliced onto the boat.

Start by cutting off two 3'2" lengths to tie in the seat.

Then cut off the length for the painter. Allow 36" for the splice and handle at the bow, and about 15" at the other end to splice in a loop, which you will find can be very useful. Then measure it against the boat so that it is not long enough to foul the propeller if it should be dropped in the water and trail back underneath.

Then cut the remainder in half for the side ropes and handles. You will probably have to shorten them later, but it is difficult to measure the required length exactly before splicing it onto the boat.

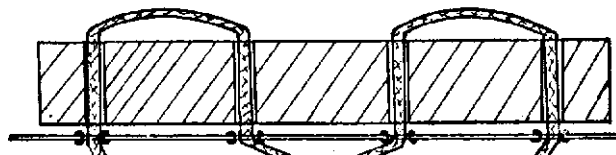
Sealing the Ends

All the ends, including those to be spliced, must be heat sealed. Hold the end in a hot gas flame until all the strands at the end have melted into a yellow sticky mass, and then dip your fingers into cold water and lightly pat the mass into a neat shape before it sets solid. Try to end up with a lump on the end which is no bigger in diameter than the rope itself, and if you do not succeed first time, heat it up and try again.

The secret of not burning your fingers lies in keeping them wet, and in patting rather than squeezing the molten lump into shape.

Tying the Seat

The diagram shows how to thread the rope through the seat and fastening. Pull the ends as tight as you can, and tie them with a series of reef knots (right over left, left over right, right over left, left over right, etc.) until you run out of rope.

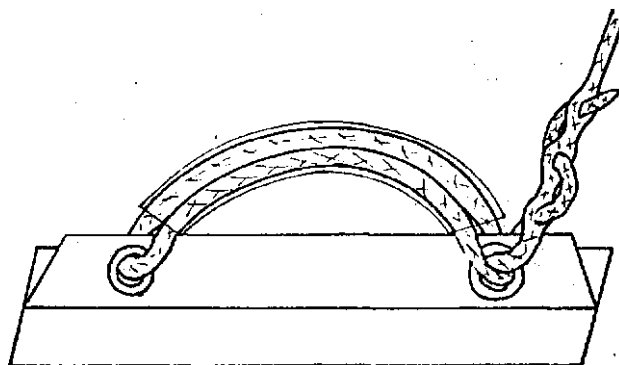
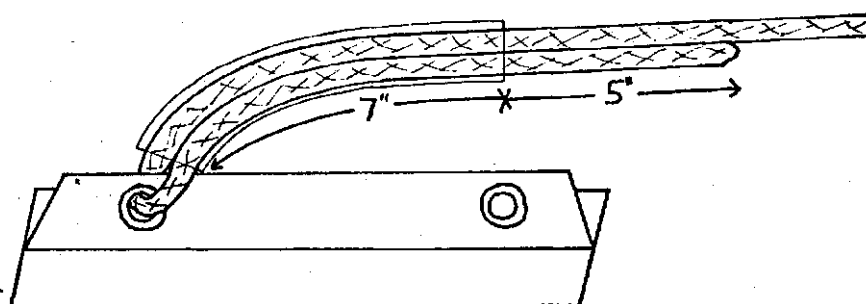
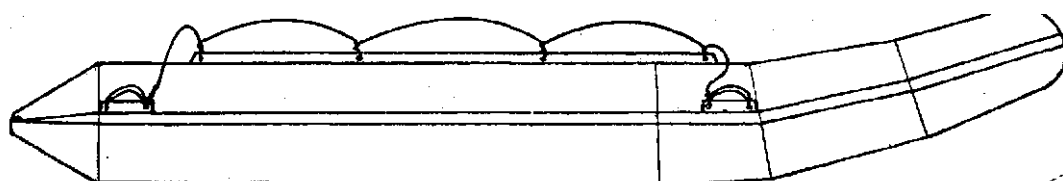


Side ropes and handles

The diagrams describe better than words both how the rope is threaded and the handles constructed. Use a biro to separate the strands in order to pass the end through.

Where the rope passes through the eyelets on the top rope fastening, pass the rope through itself and back again to prevent it sliding through.

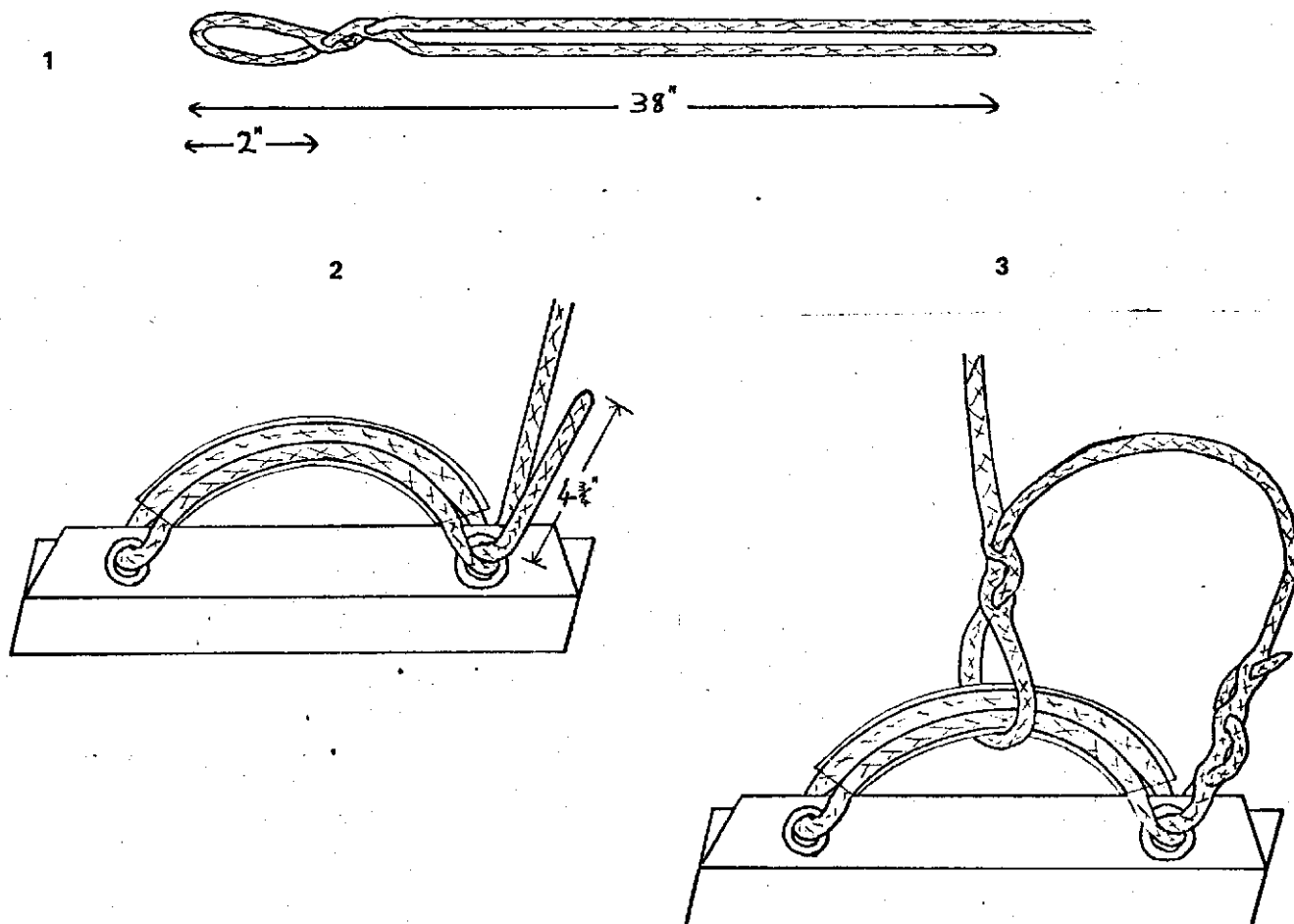
On the Double Five there is no front handle, so just loop the rope through the front eyelet, and secure it by passing it through itself three times as on the handles.



Front handle and painter

The diagram tells better than words how the rope is threaded. Start by making the loop which fits round the handle, 38" from the end. Study diagram 1, and see that you do not put one end through and back again, but first one end through and then the other end. In this way, you will make a loop that does not slip smaller.

Then arrange it as shown in diagram 2 (end through one eyelet, through the loop, through the clear plastic tube, through the other eyelet, back through the tube and other eyelet). Finally, finish it off as shown in diagram 3.



Badges

On boats made in the factory, we put the "Domino" badges just above the side rubbing strip on panel 2, and the model badges above the back handles. We hope you will want to do the same!

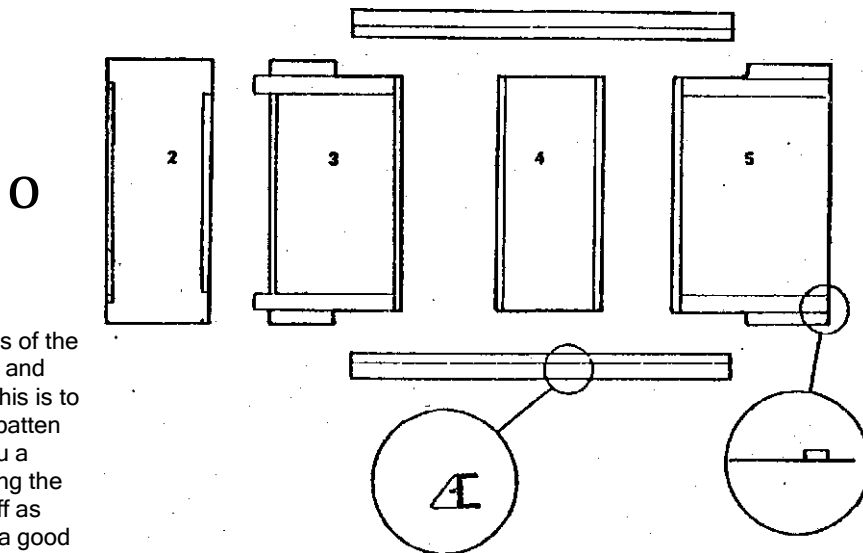
FLOORBOARD INSTRUCTIONS FOR DOUBLE SIX

The floorboard assembly consists of three rectangular boards which are held as a rigid platform by the side members, and **two** boards in front which can hinge in relation to each other and to the platform. The weight of the transom and motor is supported on the floorboard assembly by means of a batten and two blocks which rest on the rear floorboard and back ends of the **two** longitudinal battens, and the transom stays serve both to lock the floorboards and transom together, and to prevent any hinging movement between the two.

All the boards are reinforced by cross battens glued and nailed to the top surface of the boards, and the longitudinal rigidity and strength of the platform is extended beyond the ends of the side members by the longitudinal battens.

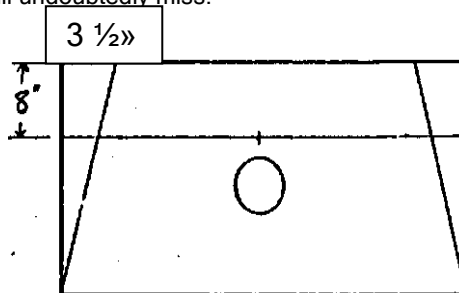
The side members are of composite aluminium and wood construction, the aluminium giving the strength and the wood acting as little more than a packing piece and bearing surface to prevent undue chafe on the tubes.

The diagram shows how it all fits together, and we suggest that you start by laying out all the boards and battens to show what goes where. The points to note are that board 4 is the narrow one, the slightly longer pair of longitudinal battens fit **on** number 3, with one 31 1/4" batten between them on the front edge. Board 2 has a 31 1/4" batten on the back edge with a 34" batten with angled end on the front edge. Board 1 has a 34" batten on its back edge, and a 24" batten 8" from the front edge. You should have one 24" batten with angled ends over, to be cut up and screwed to the transom.



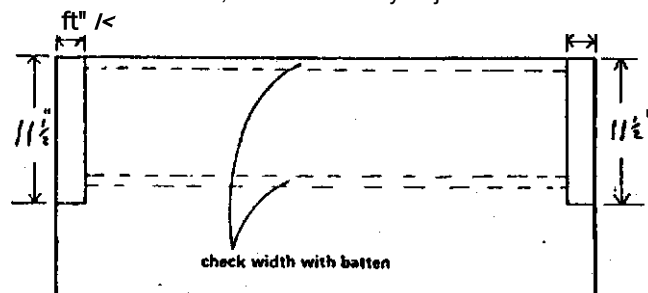
Front Board

First draw a line on both sides of the board 8" from the front edge, and mark the centre. On the top this is to line up the back edge of the batten and on the bottom to give you a reference line when positioning the nails. Then cut the corners off as shown in the diagram. Draw a good clear line to follow when sawing - do not just "aim for the corner", because you will undoubtedly miss!



Shaping boards 3 and 6

These boards both have a cut-out to accept the side member, as shown in the diagram. Mark it carefully to the measurements shown, and then check the width of the narrower part with one of the long battens, which should fit exactly after you have cut the board. Your lines should be out by no more than the width of a saw cut, but if necessary adjust them to make the batten fit.



Battens

The battens are glued in place and each one is held during gluing by gripfast nails driven through from the lower side of the ' board (the joint ultimately relies on the glue rather than the nails for its strength).

Glue on all the cross battens first, and then the longitudinal ones.

The cross battens are obviously glued on with their longer sides vertical so the rounded corners are on top, and the side of each one should be flush with the edge of the board.

The short battens on the front boards should be central, and to achieve this you should mark both the centre of the batten and the centre of the edge of the board in such a way that you can line up the marks with the batten in place and the board upside down, as it will be when you come to drive the nails in.

Follow the instructions on the side of the pack for the mixing and use of the glue (Aerolite 306), and apply resin to the batten and hardener to the ply. You should apply enough resin so that a little excess oozes out when you nail the batten on; this can be cleaned off with a wet rag before it has had a chance to harden.

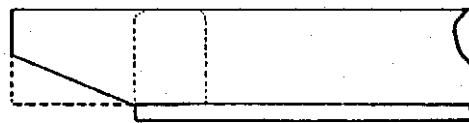
Take care that the batten does not slip as you hammer the nails in: start with two about 3" from each end, and hammer them very gently through the ply until the points are just protruding, then you can relocate the batten if necessary and the points will stop it slipping again as you hammer the nails right home.

On the shorter battens add one more nail in the centre, and on the long ones add three more, first one in the centre and then two equally spaced either side.

Take care that you get the nails on the centre line of the narrow battens or they will split, and hammer all of them well in so that the heads are flush with or slightly sunk into the ply.

Shaping battens on board 3

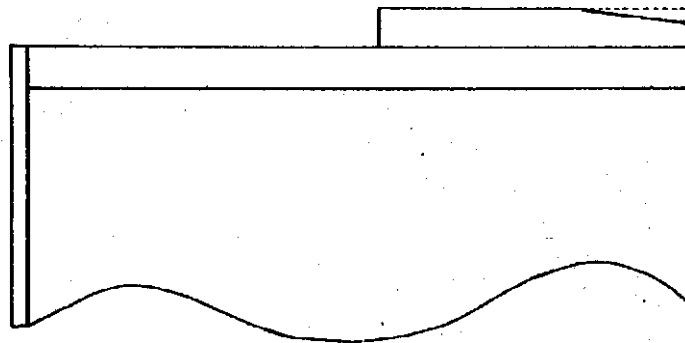
When the glue has hardened, shave off the bottom side of the projecting battens so that it angles up at about 20°. This is to allow the board in front to hinge upwards freely.



Side view of front end of

Shaping rear board

The back corners of the rear board need to be trimmed off to accommodate the transom reinforcing pieces. Mark a line ' before you start, and then either saw or shave off the wood.



Side Members

The wood and aluminium parts of the side members are simply screwed together with the aluminium screws, but the face of the wood which is in contact with the aluminium ought to be varnished first.

Since the rest of the wooden section cannot be varnished until some final shaping has been done, the best approach is to assemble the two parts, do the shaping, then unscrew them again to varnish the wood. Do not try to shape the wood without the aluminium in place.

Start by drilling holes in the aluminium to fit the screws, and countersink them on the inside of the channel so that the heads of the screws can lie flush with the surface. Position the holes roughly on the centre line of the back of the channel, with one about 3" from each end and the other two equally spaced between.

Then place the wood and aluminium together with the ends level at one end, and mark the position of each hole onto the wood by poking a pencil through the holes. Separate them, and drill the wood $1/8"$ to the full depth of the screw, and $7/32"$ for the shank. If you do not bother to drill it, the wood will probably split.

Then screw the two parts together with just the two end screws at this stage; and with a hacksaw trim off whichever part is projecting at the end which you have not made level (the wood and aluminium may be the same length, but you will be very lucky if they are).

With a coarse file you can now round off all sharp corners and edges of both wood and aluminium, and use sandpaper to smooth it all off. Then separate the two parts and varnish the wood, and complete the job by screwing them back together again.

Final Shaping

Go over the rest of the boards rounding all corners to a radius of approximately 1" (2" on front corners of front board), and rounding all exposed plywood edges to prevent chafing on the rubber. Take particular care with the front edges and corners of the front board.

Transom Support Pieces

Having assembled the floor boards, you should have over one short batten with angled ends. Cut off 214" from each end, and screw the three pieces onto the transom as shown in the diagram, with the short pieces 1 1/2" above the bottom edge and as close in to the tube as possible, and the long one 3/8" above the bottom edge and central.



Transom Drain

You will need a brace and bit to drill a hole in the transom: position it to one side of the centre batten and as low down as possible, and screw the fitting on the outside. "

The transom drain will be found to act as a self bailer if the plug is taken out when the boat is on the plane.

Varnishing

All the woodwork in the boat should be given at least three coats of varnish. Before you start, rub down all over with the coarse sandpaper, and round off the corners of the seat with a Surform or plane to a radius of at least half an inch.

Apply reasonably generous coats of varnish, though not such as to make it run. Let each coat dry completely, and rub down lightly with the fine sandpaper between coats.

Assembly of Floorboards in Boat

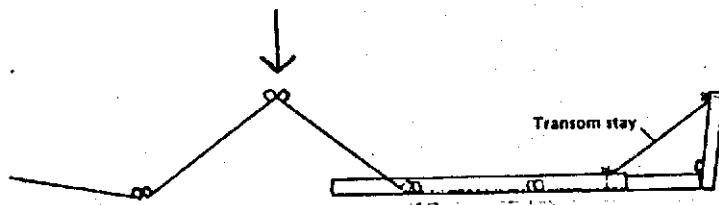
Lay out the boat on a flat surface and inflate about half way, i.e. so that the tubes are off the ground, but nowhere near round.

Then place the deflated keel in position, put the front board in place and arrange the keel so that the valve lies under the hole.

Put the next front board in, then the rear board, and put the side members in place on the rear board and slide board ' 4 into place between them.

To get the last board in, separate the side members and push the back edge of board 3 into position between them, holding the front end of the board up at an angle so that the channels cannot yet slot into place on the board.

Then lift up the back edge of board 2 to meet the front edge of board 3, and by pressing down you should be able to stretch the boat enough to get them down flat. Slot the side members onto board 3, and pump the boat up to working pressure.



If you are simply unable to get the boards in by this method, you will have to trim the front board to let it go further forward, but do not do this unless it is absolutely necessary, or gaps will open up between the boards when the boat is going through a choppy sea.

Transom **Stays**

The transom stays fit each side and are secured by a bolt at each end through the longitudinal batten of the rear board and through the transom (see diagram on previous page). They should be positioned so that at the closest point the stay is about 3/8" from the tube, and the top ends should be just below the top edge of the transom.

Start by rounding the ends with a file, then drill a 5/16" hole about 1/8" from each end, and then bend about 1" up at an angle each end so that it lies flush with transom and batten respectively when held in place.

Then check that the tube is at working pressure and that the rear board is fully back against the transom, and hold them in position to mark where to drill holes in the transom and batten. Remove the rear board before actually drilling the holes, or you will undoubtedly drill through the rubber floor as well.

Always remember when assembling to fit the coachbolts to the rear board before fitting the board in the boat, and the coachbolts of the transom can be pushed through from the back when the stays are in position.