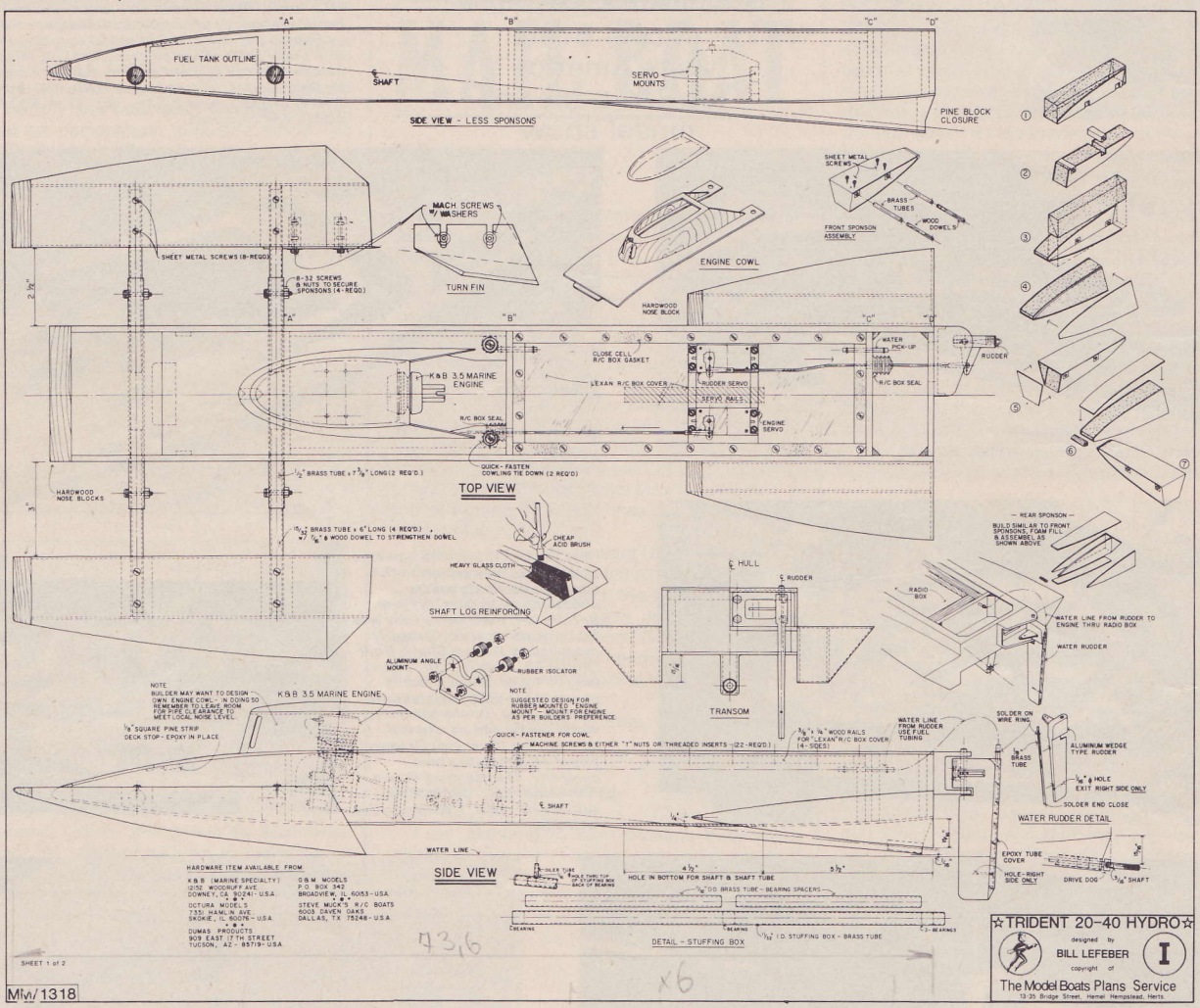
TRIDENT 20-40 HYDRO

A three-point radio-controlled hydroplane design by top American competitor — Bill Lefeber

THIS style hull (outrigger) has set many records in the US. She is a good oval boat and the *Trident* could accommodate a .40 engine also. As a .20 boat, this hull would be very stable; its footprint is a little larger than the *Crapshooter* by Marten Davis, and also a little longer. This is mainly for two reasons — first, stability; second, you also can run a .40 engine just by changing the engine mounts. So, if you're interested in running fast, here's your chance — build your own outrigger.

Enough talk about the performance — we're interested in getting a hydro in the water so let's get started on the construction. First of all, if you can build a box you



Full size plans for Trident, hull length 29in., are available from Model Boats Plans Service, PO Box 35, Bridge Street, Hemel Hemstead, Herts HP1 1EE. Sheet 2 details former and skin shapes. Quote plan MM1318 when ordering, price code I, £4 plus 40p postage and packing.

can build this boat. Take your full size templates and cut them to approximate size leaving about ⅛in. clear of outline of the individual parts. Then glue the paper templates to the proper sized wood and cut out on a jig-saw or band saw. Cut just outside the parts outline, then you will have room left to sand to proper size. After cutting and sanding is completed, dry assemble parts to see if they fit properly and also to get a feel for how the boat goes together.

Now for the actual construction, I think we'll go just with a check-off method style of construction — you have a full size drawing of the hull so really all you need is just some helpful hints on construction so you can hold your mistakes to a minimum. I would like to make a suggestion at this point of construction — that you take time and build yourself a building jig, see photo 1. This will save you many hours in your construction and you can pass it along to a friend if they want to build a hydro also.

(1) Take parts A, B, C, D and the two main hull stringers and fit them into the jig for gluing — prior to gluing place a piece of waxed paper on jig where gluing is to take place — this will keep any excess glue from gluing parts on jig together. At this point put in place the two brass tubes for alignment.

(2) After these six parts are glued in place install the 1/16in. bottom piece (4⅜in. × 28¼in. long) and glue in place — using a jig clamp and miscellaneous wedges at each

end to bring the bottom into place at each end of hull. (Leave brass tubes in throughout gluing of centre section).

(3) After bottom is in place, glue in place the two engine compartment doublers to the sides of the two main stringers between bulkheads A and B. After doublers are in place sand top to match surface of the two main stringers.

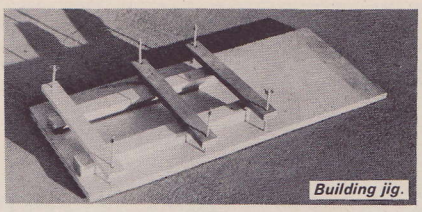
(4) Next comes the top 1/16in. plywood cover plate — glue this in a similar manner as you did the bottom — using jig clamp and wedges.

(5) Then glue hardwood nose block in place; trim and sand to shape.

(6) Next item is the two front sponsons — align all four main sponson stringers — nail (with small nails) together; sand to shape and drill holes through all four parts at one time. This will give you a correct tube hole alignment for future part installation. Using assembly views 1 through 6 of sponsons I am sure you can complete the two main front sponsons. I would suggest you make two sets of front sponsons for possible replacement if damaged during a race.

(7) Next — build the two rear sponsons in a similar manner.

(8) Mount your sponson (front) brass tubes using the centre section of hull for alignment and as a gluing jig. Then on right sponson put on your turning fin as shown on main drawing — using two machine screws (socket head) and four nuts (two per screw). Wax screw so that the glue will not



Building jig.

bond to threads. Drill a 3/8in. round hole approximately 1in. deep to receive screw, nuts and glue. Using the turn fin as a jig, place and glue screws in holes — tape turn fin to side of sponson — you may want to wax back side of turn fin so it won't glue to sponson side — allow glue to dry and remove screws. The nuts will remain in holes for future mounting of turn fin after painting of sponsons.

(9) Now comes a critical part of construction — mounting your engine and drive shaft alignment. Make your choice of engine mount, cut four 1/2in. × 1/2in. holes in bottom of hull for stuffing box as shown on drawings. Put engine — shaft and stuffing box with bearings in place in the hull ready for gluing. Put masking tape over hole in bottom; wedge stuffing box to proper height at transom and for engine as shown on drawing. Tack glue stuffing box — allow this to dry, then check shaft for alignment into female U-joint at engine. This alignment should be so that shaft-ball joint drops into female part of U-joint freely with no friction.

When this fit is completed remove tape and glue into place the wood shaft piece that houses the stuffing box. On the inside of hull in the radio compartment fill with glue and use heavy glass cloth over this hole; then glass reinforce the shaft timber as shown on drawings. Use epoxy glue for all construction. Sand to shape.

(10) Next, glue in place the two rear sponsons — locate as shown on drawings.

(11) Now we're getting down to the finishing of construction and refinement of hull, readying it for painting.

Remember variations of construction will effect the performance of this hull. With a 3.5 engine this hull should run in the high 40mph and low 50mph; and in the 60mph with a .40cc or 7.5cc engine.

You should build a cowling — builder can design his own or obtain a glassfibre one.

Use the drawings for mounting radio equipment that will fit your equipment but locate as close as you can to the drawings.

I wish you the best of luck and a lot of fun running your hydro.

Editorial note

Whilst most of the hardware shown can be fabricated from scratch or by modifying components already available on the market, we are advised that the American suppliers listed on the drawing are prepared to mail order to the UK. An international reply coupon should be enclosed when requesting information.