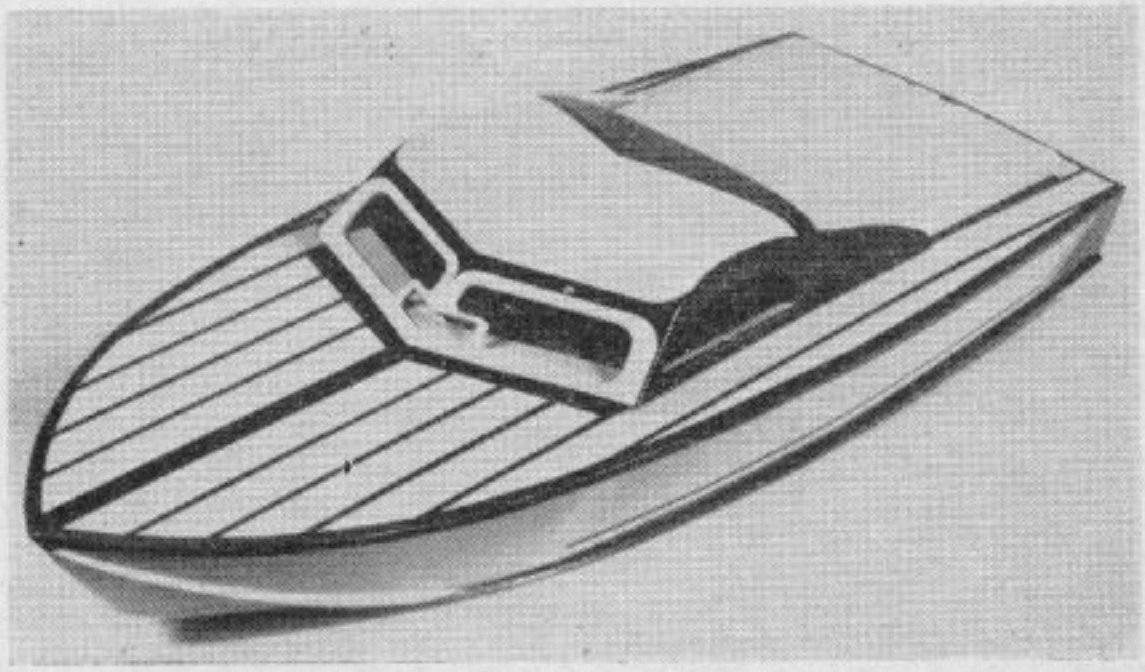
Your Christmas
Free Plan

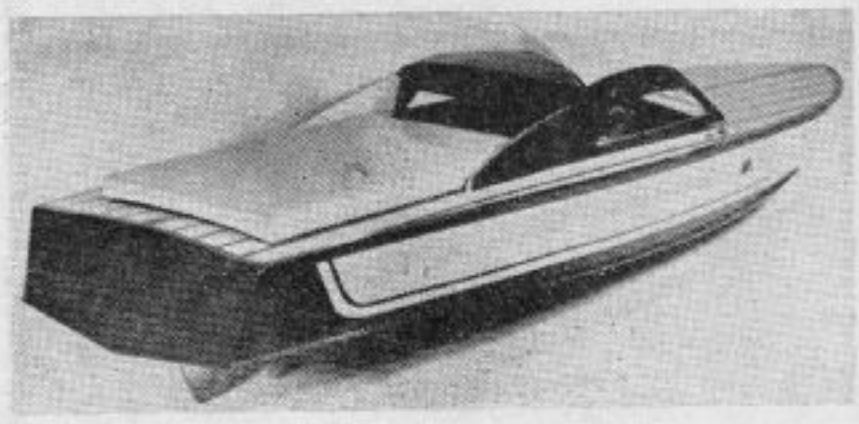
REMORA

Vic Smeed's latest speed-steering design



THE chief criticism of our earlier *Pirana* design by the average modeller has always been the nature of its turns; unless it is built very light and trimmed with great care there is, as was stated in the original article on the boat, a tendency to skid when rudder is applied. The reasons for this, and the argument for deliberately designing for this type of turn, need not be repeated — in any event, most people soon acquire the knack of handling such a boat and the competition record of the design in the last four years speaks for itself.

When thinking about a choice for this year's free Christmas plan, it seemed that something with similar speed to the average *Pirana* but with more conventional turn characteristics would be likely to prove most popular. In other words, a fast steering boat which would not necessarily lend itself to sheer speed work, but which might well prove capable of winning a speed event if the water was a little rough, and give a good account of itself in a steering competition in any weather. In some events where time enters into it, very small boats lose the advantage of nimbleness round the buoys by lack of speed between the hazards, or in a timed circuit after completing the course, so a compromise in size is the first requirement. About 30 in., with 3½ c.c. power, seems right to us if the boat is fairly light, since this is a reasonable size for all but very rough conditions, and 3½ c.c. will produce a fair number of knots with a good light hull of this length. A low length/beam ratio is essential, plus a beamy transom, and, of course, spray strips are a must. There is a lot more subtlety in present-day hull design than used to be the case, but we believe that this model incorporates everything learned from observation and experiment over the last two or three years and it should "suit" the majority of modellers. Have you noticed that a boat which is excellent in one person's hands can be a dud in another's?



Our prototype, fitted with an O.S. 19, came entirely up to expectations. It was one ounce over the target of 5 lb., faster than we had reckoned, and after minor initial adjustment to balance the turns, highly satisfactory in all respects. No doubt we shall hear in due course what happens when a larger engine is fitted, but in the meantime we can confidently recommend it for up to 3½ c.c.

The remora, by the way, is a Mediterranean fish believed centuries ago to have the power of determining the course of ships — not altogether inappropriate for a steering boat!

Construction

Building is fairly conventional, starting by cutting the keel, fitting shaft and doublers, then cutting and fitting bulkheads. The extended breasthook and apron pieces make the bow simple to line up (check that B2 is square to the keel) and the attachment of the inwales and chines is very easy, since there are no sharp curves. Chamfer all round and fit the bottom skins. At this point make the motor mount from two ¾ in. hardwood cheeks shaped to the bottom with a platform of ¼ in. ply or 14 s.w.g. dural or similar. Take care in lining up the motor and prop-shaft — this is the step which requires more care than any other, with any boat.

It is desirable to carry out a dummy radio hook-up at this stage, especially with regard to the throttle servo, in order to check on holes, etc., needed for wiring. We have tucked a Servo-Auto-Matic in close to the engine (see photo) mounted on a bent aluminium bracket screwed to the motor mount plate, and it would have been easier to fit the bracket before adding the deck.

Once the inside layout is roughed, skin the sides, using brown paper templates to get the exact shape. When trimmed, add the forefoot blocks, carve and sand to shape when dry. Now paint or varnish the interior thoroughly, two coats, fit coamings and deck bearers, etc., and add the deck. The space between B1 and B2 may be required for a motor servo, with an additional deck hatch (or a cut-away section of B2 and a shelf projecting forwards) but in our model the space was filled with a cut up expanded poly-

styrene ceiling tile. This is a valuable flotation aid, and we had just had a couple of sinkings with experimental models! It also accounts for the one ounce over target weight!

The remaining jobs before painting are the spray strips (those shown are adequate if the corners are left sharp) and the stern gear water-scoop, rudder tube, and skeg. In the prototype these last were all made as one unit, which has advantages but need not be used if conventional practice is preferred. The unit consists of a length of thin brass sheet ¾ in. wide scribed down the centre and bent to fit over the keel and seat on the bottom skins. The fore end is slit and a piece of brass silver-soldered in (only a tiny blowlamp is needed). This piece forms the skeg and the lower edge can be cut and filed to fit against the stern tube. Six 8 B.A. clearance holes are drilled, plus holes for the rudder tube and water scoop. The plate is slid in place and silver-soldered to the stern tube, protecting the bottom skins from the blowlamp flame with scrap metal. Check alignment before drilling through for the mounting bolts and tubes. Push the rudder tube through and solder to the plate. The water-scoop is a piece of 14 gauge brass tube (quite adequate, but use 12 gauge if you'd rather) bent to a curve in the blowlamp flame (or any other flame — even a candle will do) then cut at an angle and filed up. Solder this in place, too. One advantage of this unit is that it is easy to move scoop or rudder position, if you're so inclined.

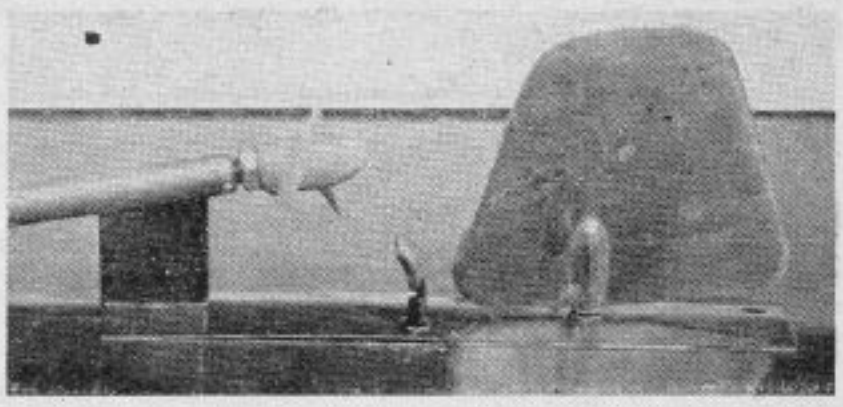
Now sand the hull thoroughly, veneer the transom if desired, and paint in the usual way. The prototype colours were beige and maroon, but the colours introduced in our cover picture offer a gay alternative — if anything, they make it look nicer than the prototype's actual colours.

Superstructure

The superstructure is straightforward, the after hatch consisting only of two shaped ends, strip sides, and a ¼ in. sheet top. This could be a ply top, or laminated balsa, etc., but make sure that it does not warp the hatch out of shape.

As with the hatch, the cabin should be assembled over the coamings to ensure a reasonable fit. Although the tumbled sides and heavily cambered roof make it a little trickier to assemble, the finished appearance is well worth it. Lynx-eyed readers will undoubtedly notice a fancy little bit on the front screens which is not on the plan; this merely provides an air intake, and the intention is to try the effect of a little duct built back from this to direct the air to the engine air intake. Had we used a rear intake engine as at one time considered, we would have run a Paxolin tube down from above B1 straight to the intake.

Once the cabin and hatch tops are sanded they



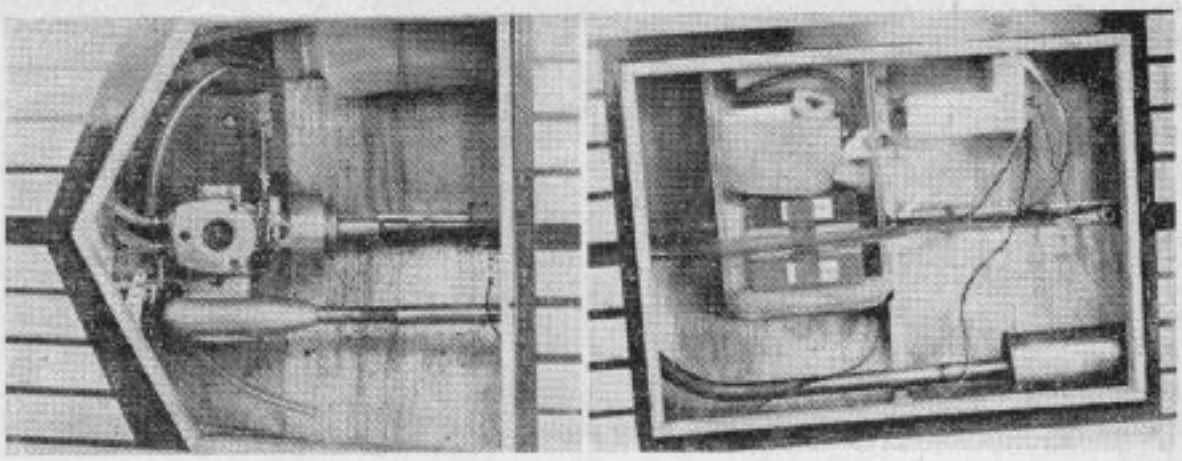
should be tissue-covered (as should the balsa fore-foot of the hull) before painting. As ever, a good finish is the result of care and patience more than skill — stir and strain the paint, use a good clean brush, and sand away most of the first three or four coats, cleaning away all the resulting dust.

Internals

Graupner-Grundig four-channel radio gear is used in the prototype. At first we fitted a Bellamatic servo for the rudder, but later substituted a modified Duomatic with a rubber band on the tiller to assist speedy centring, in our opinion essential for a steering model. Tankage is provided by a plastic clunk tank, and the O.S. silencer was modified to accept a trace of thread into which screws a brass exhaust pipe. This pipe is joined to a thin-wall brass tube of the same o/d by a tight-fitting sleeve also of brass tube, and the thin tube is cranked and led to a Taplin silencer into which it plugs. The result is a clean and quiet installation.

Storage of the radio is a personal matter; we like a sandwich box or other waterproof box to hold everything except the servos. It is not possible to give complete guidance on trimming, but if your model is, like ours, in the region of 5 lb. complete, the radio should be positioned so that the boat balances on or close to bulkhead B3. Trim should then be about right, though a subsequent movement of the R/C equipment may effect a slight improvement, depending on the power provided by the engine.

A big rudder is fitted because this gives area to be clipped away to balance the turns for equal diameters, and also because a large balanced rudder will blank off the waterstream from the prop, slowing the boat as well as giving the stern an instantaneous kick round. For negotiating buoys a boat which slows a little when a turn is started can be an advantage, provided the bow does not pitch down too heavily; once again, if you don't fancy this type of control, it is easy to slim the rudder by taking a strip off both fore and after edges.



Top picture shows the stern gear unit, while those on the right show the interior. The 'free' piece of Neoprene tube is the fuel feed, inadvertently left disconnected after emptying the tank. Throttle servo can just be seen. Receiver, etc., is in plastic sandwich box, L-shaped object is waterproofed Duomatic. Additional centring band can also be seen.