Rapier

The transom mounted actuators for the foils and rudder. As the rudder moves sideways, the angle of attack of the foils is adjusted via the pushrods and bellcranks.

Another view of the main feature of the model, showing the rudder blade, water pickup and fixing points of the rear foils.

Fit water cooling pipes, exhaust pipe, fuel tank, RC equipment, and push rods (with rubber bellows).

**Finishing**

The inside was finished with two thin coats of glass-fibre resin for fuel proofing, while the outside was first painted with aluminium primer, followed by Humbrol plastic enamel. Finally the whole model was given 2 to 3 coats of two-part clear fuel proofer.

To seal the radio lid I ran silicon rubber bath sealant around the hatch opening and, after greasing the underside of the lid, lightly squeezed the lid into position until the sealant had set. Be careful with this — the sealant nearly stuck my lid in place permanently!

**Foil Alignment**

You will probably find that you need a few trial and error runs to sort out the optimum foil incidences. Once set however, there should be no need to re-set except if the foil system is completely dismantled.

Variation of the angle of attack of front lower foil can be made by adjusting the foil clamps, or inserting packing pieces. For the upper foil, allow a little play in the holes on the strut-bracket assembly so that the whole clamp/foil assembly can be set.

Initially, set the upper front foil to +5deg. and the lower foil to 2deg. relative to the deck line.

To set the angle of attack of the rear foils, adjust their bottom surfaces to follow an imaginary line which would pass half way between the front upper and lower foils. The incidence is varied by adjusting the length of the rudder/foil linkage with the turn-buckles. Note that if the foils are not equally set the model will heal to one side when the rudder is at neutral.

The aim in setting the foil incidence is to ensure that the bow comes out first, but that neither the bow or the stern foils rise so high as to skip about on the surface, which can happen if the incidences are too high. Even at 3.17kg my Rapier flies on only 12sq ins. of foil area.