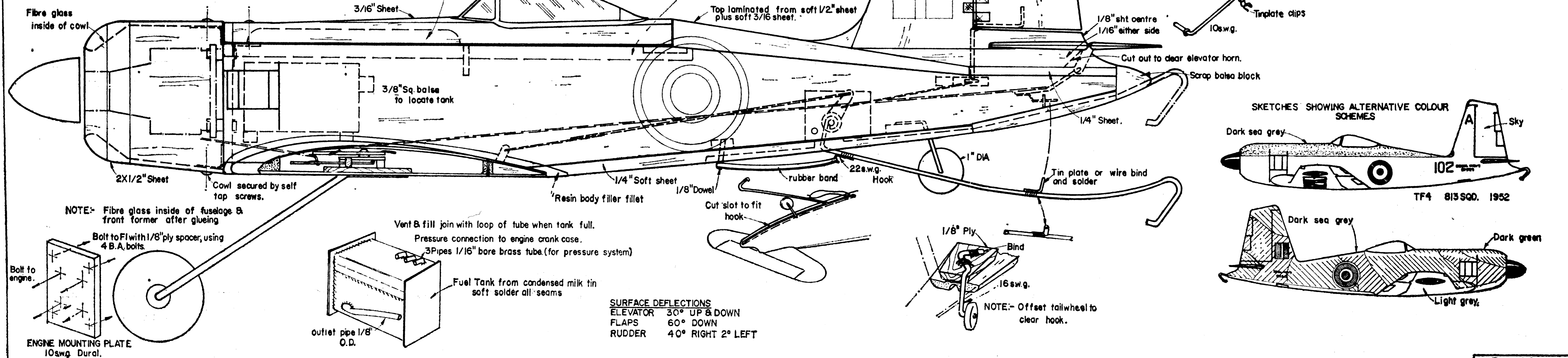
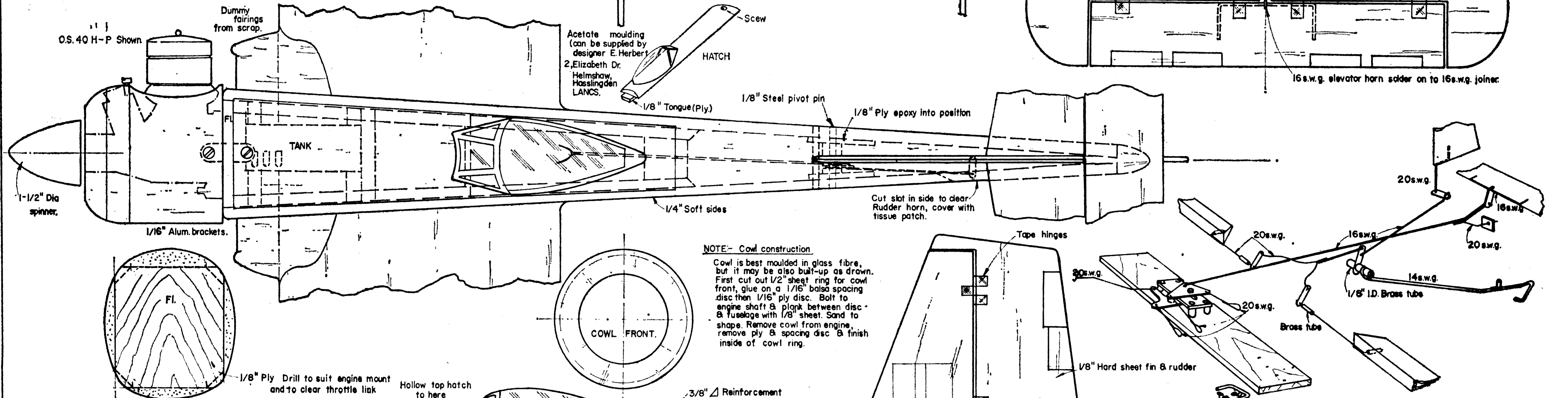
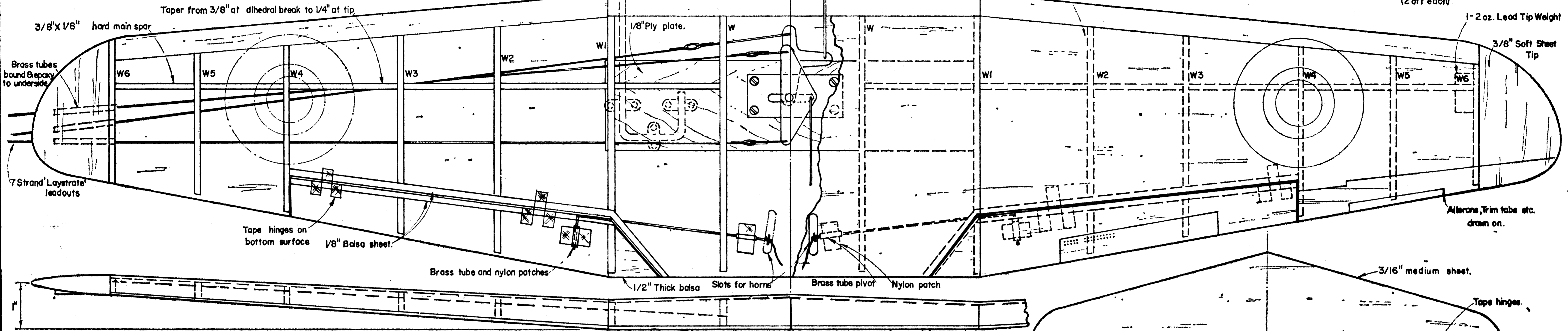
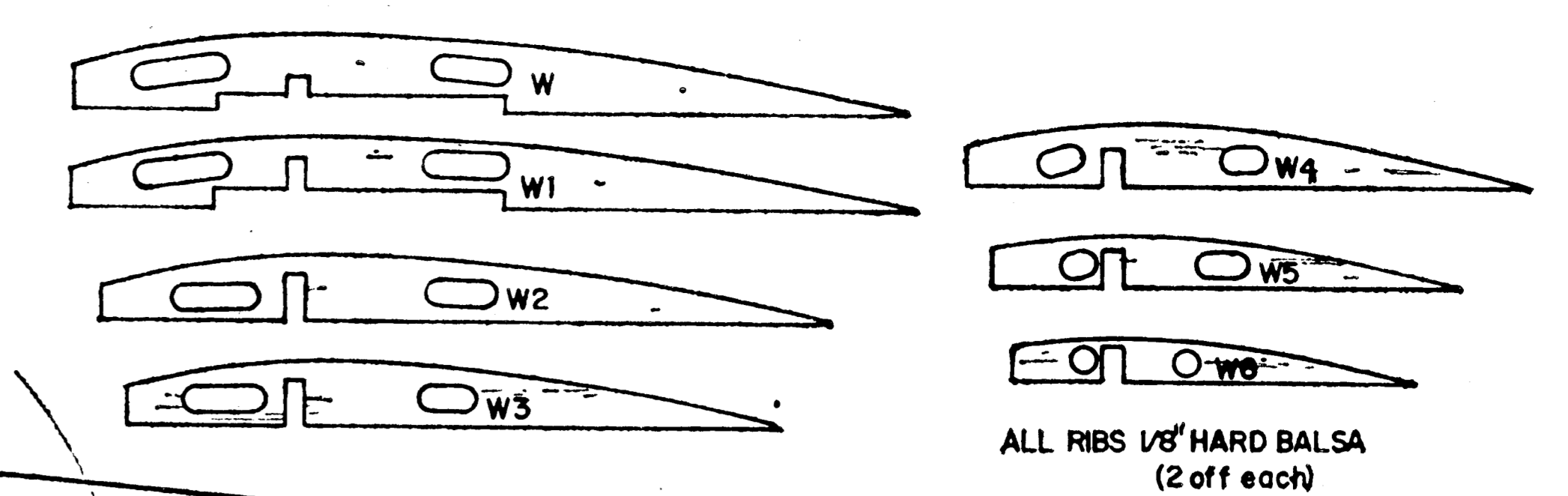
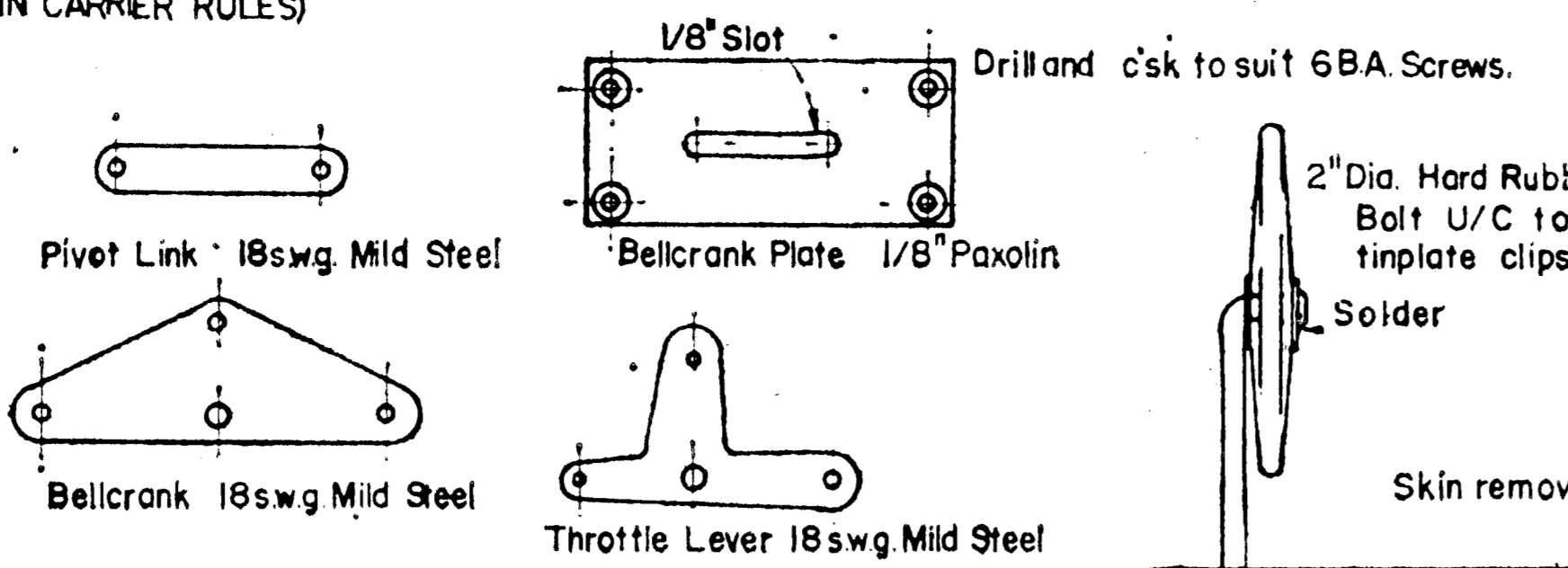


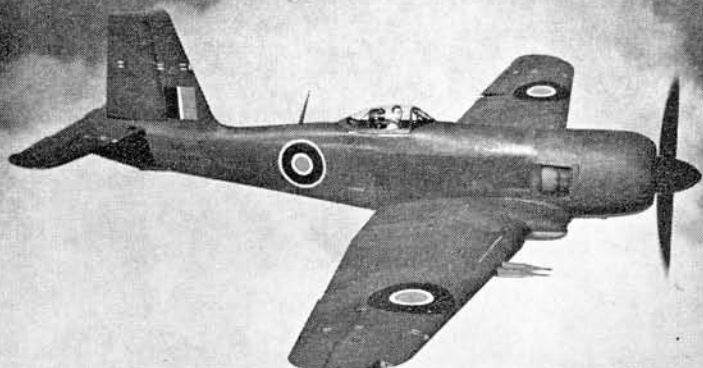
BLACKBURN FIREBRAND
 designed by
E.HERBERT
 copyright of
The Aeromodeller Plans Service
 13-35 Bridge Street, Hemel Hempstead, Herts.
75p
 NOTE:- ALL MATERIAL Balsa UNLESS STATED OTHERWISE



SURFACE DEFLECTIONS

ELEVATOR	30° UP & DOWN
FLAPS	60° DOWN
RUDDER	40° RIGHT 2° LEFT

'BLACKBURN



FIREBRAND'

ERIC HERBERT

concludes his feature
on Carrier Deck

Landing models with
plans of his 34 in.

span design for

0.35-0.60 cu. in. motors

THE CONTROL LINE 'carrier' contest is an ideal event for the competitor, combining as it does the chance to show your skills in both building, flying and, of course, engine preparation. As was discussed in my article in the April issue, it is not too difficult a class to fly and it does offer much scope to the inventive. The main problem has always been the lack of a suitable carrier, but now that the ever-active **Three Kings** club have made the *HMS Fly-catcher* mobile, this should no longer be a problem for contest organisers. However, even without a 'proper' deck to land on, one can always rig up a temporary affair by pegging out arrestor wires at the side of a runway. The event is certainly a 'crowd puller', ranking with R/C scale as a major attraction.

The *Firebrand* model is suitable for either the American Class 1 or Class 2 and with an increase in wing area to 300 square inches plus the adoption of a $\frac{1}{2}$ -inch wide sheet fuselage and a .35 cu. in. motor, could be used in the 'Profile' class. In this country there is, as yet, just one class with no restriction on engine size (other than the F.A.I. limit of 10 cc.) and in fact the model, as drawn, should have a good, flying performance with any engine from a 'hot' 2.5 cc. to a 10 cc. R/C glow. For competition flying the obvious choice is either a 'rat race' .40 or an R/C 60, which develop around the same maximum power. A profile version was also built and it was found that an Enya 29 provided more than adequate power.

Construction is by no means difficult, but neither is it in the 'beginner' category – especially with regards to the control system which must operate smoothly without binding. As with all contest models, keep a careful eye on the weight – when flying at low speed an excess of ounces can be quite a handicap! However, also bear in mind the stresses involved in an arrested landing – make sure that the arrestor hook and undercarriage assembly are carefully and strongly assembled. Epoxy resin is most useful in these areas.

Firstly, cut the bottom wing sheeting to shape and mark the rib position on the top surface. Now make up the 'heart' of the system – the control plate assembly. If you prefer, you can, of course, substitute a Roberts 3-line control unit instead of the 'do it yourself' item illustrated. With the control system installed on the ply undercarriage mount, glue the whole unit in position. Add the

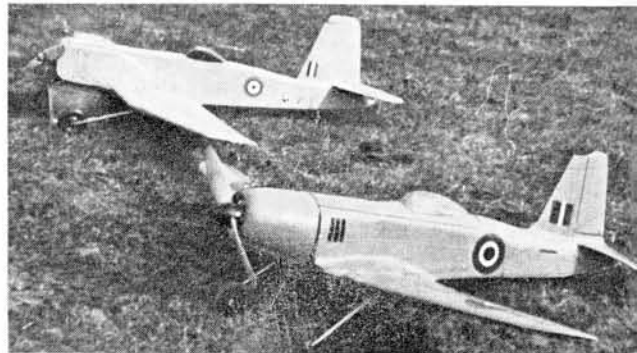
In the foreground is Eric's original 'Firebrand', which unfortunately met its end recently when a take-off from grass was attempted – be warned! Behind is a profile version of the same design, built for an Enya 29.

leading edge and ribs while the bottom sheeting is pinned flat to the building board. Notch the leading edge and score along the sheeting at the dihedral breaks, then lift and block up each tip one inch as shown. Run cement into each break. When dry, unpin then carve and sand the leading edge to section. Make up the leadouts, leaving them overlength and add the throttle, flap and elevator pushrods.

The flap areas should now be cut from the bottom sheeting and hinged with nylon tape. Next, add the flap L.E. followed by the flap torque arms, which are retained/pivoted with tubing and nylon patches. Epoxy the tip weight in place, glue the wing trailing edge in place at the flap areas, then sheet the entire upper surface. Cut the tip sheeting to size, glue in place then carve and sand to section. Install the leadout guides as shown.

Now for the fuselage. Cut out the ply front former and make up the dural engine mount – this is bolted to the rear crankcase cover and is then, in turn, bolted with a $\frac{1}{8}$ -inch ply spacer to the former. An alternative would be to utilise a commercial engine mount. If using a rear-induction motor, the position (and size) of this former would need modifying. With the engine position determined, remove the engine and glue the front former to the $\frac{1}{4}$ -inch soft sides. Cut out the tailplane and drawing the fuselage ends together, glue in position. Glue the fin in place. Make up the hook assembly, complete with rudder and flap coupling wires and epoxy to the fuselage. Fit the rudder, cutting a hole in the fuselage sides as required to clear the horn.

Join the wings to the fuselage, again using an epoxy adhesive, then complete the linkages and test for easy



action. The bottom sheeting may now be added, as can the top decking - note that the area from the nose to behind the cockpit is a removable hatch, giving access to the fuel tank, etc. The cowling is best made in glass fibre, for durability, but may be built up as described on the plan, if desired.

The dummy fairings are made from scrap, soft, 1/4-inch sheet, while the wing/fuselage joint should be reinforced with glass-fibre cloth - as should the front former. Apply glass-fibre resin around the inside of the cowl and around the fuel tank bay. Fair in all joints with car-body filler.

Cut out slots in the wing lower surface to take the undercarriage wire and clips, then sand the whole model smooth. Brush on two coats of sanding sealer, sanding lightly between each. Next, apply a coat of grey primer which will help to show up parts that need more attention from the sand-paper block. When satisfied, dope on lightweight tissue all over. Add two coats of dope and a further coat of grey primer. Sand smooth with wet or

dry paper and continue with grey primer and wet or dry until an even, smooth surface results. Preferably, spray on the finishing coats, then add the transfers, cockpit cover and fuel proofer.

Run the engine/tank combination on the bench until familiar with its operation and ensure that all flying controls move freely in all throttle positions. With a .40 cu. in. motor a 9 x 8 inch propeller can be used for test flying, or an 11 x 8 inch for a 60 cu.in. unit.

Do not allow carrier models to take off from grass, as the hook tends to catch and turn the model in. However, it can be hand-launched quite safely if you do not have a tarmac practice site. For contest flying I prefer to use a wooden propeller, which is intended to break on hitting the deck, thus stopping the engine. If this does not happen (unknown!) the engine can pick up again as the lines go slack and the model will fly off the deck, losing all those hard-won points.

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