FAIREY BARRACUDA

A 32" span near-scale model for free flight or single channel radio control, using .75 c.c. engines.

by Phil McAlroy

THE FAIREY BARRACUDA, although never a popular aircraft, had one main asset. A former F.A.A. Oberver in Barras relates that on reconnaissance patrols over towards Norway, it could turn inside the Ju 88s sent to intercept – the allies' scheme, therefore, was to get down to sea level and keep turning!

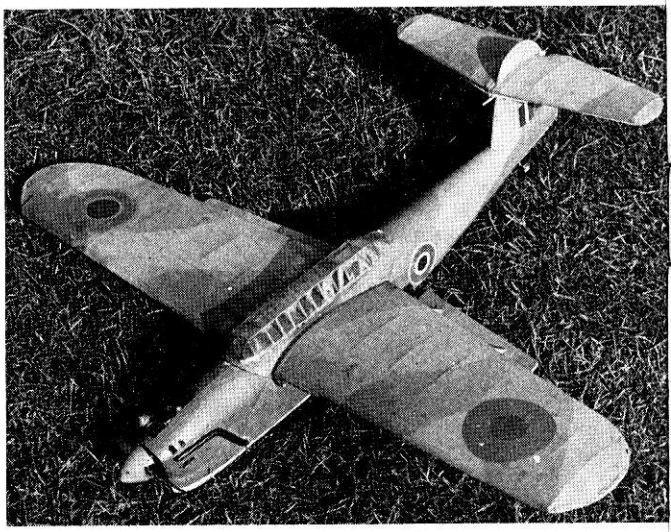
This model, with the exception of the tailplane, is near scale and designed for flying over rough ground. When looking at a scale model the designer finds that life is made much easier by applying 'Mac's fifty-foot rule' – just picture how the model looks at an altitude of 50 ft. and build accordingly. It won't win the Nats., but you will have more fun flying.

The model was originally flown free-flight, in which form it flew extremely well with its Mills .75 c.c. powerplant. Later, single channel radio control equipment was added (an R.C.S. Guidance System with Conquest escapement) and was found to give excellent results, although not recommended as a first R/C power model. However, anyone experienced in handling a single channel model should have no trouble. A version built for free-flight can easily be adapted to R/C at a later stage if required, with very little 'surgery' involved.

Fuselage sides are cut from medium soft 3/32 in. sheet with former positions marked on the inside. Cut out both under-wing windows and fix sheet acetate to the inside. The fuselage floor from F1 to F5 is of soft $\frac{1}{4}$ in. sheet, with a further piece of similar sheet extending to F6. Begin by pinning down the main floor tray, then adding bulkheads F4 and F5, dropping the fuselage sides on to the tray at the same time. (Note the slightly different construction required if using R/C). Ensure that both sides meet squarely at the tail but do not fix yet. When set, add formers F2 and 3. Bring in tail to F11, then add the remaining formers – remember the cutouts for escapement controls if required. Offer up the second piece of the fuselage tray between F5 and F6. Add soft $\frac{1}{4}$ in. x $\frac{1}{8}$ in. upper and lower spine pieces followed by WF1 and 2. The rear decking may now be applied – this is soft 1/16 in. sheet well soaked and pinned. Rear bottom decking can be persuaded round the formers providing that it is well soaked on the outside, but if in doubt, you could use 1/16 in. planking.

A contour sheet of 1/16 in. ply gives the nose its true shape and locates the $\frac{1}{4}$ in. beech engine bearers. The original used a sidewinder-mounted engine but for 'fifty-foot rule' purposes it could just as well be upright. Downthrust is built into the contour sheet but it will need offset to give some right thrust. With the long nose it might not seem essential but the prototype without offset produced some remarkably stable left-hand vertical banks! Slot the contour sheet egg-box style into F3 after fitting and drilling the bearers. Slot former F1 on to the front of the contour sheet. Leave the cowl open on the right-hand side between F1 and F2, adding soft block between F2 and F3 on that side. Fill with soft block between formers F1, 2 and 3 on the left-hand side. Do not forget to apply a few coats of fuel-proofer inside this compartment before the blocks go on. Chin blisters consist of $\frac{1}{4}$ in. sheet stuck on the sides and bottom, then shapes. Fit engine and tank, then remove until after painting.

Build the fin from medium $\frac{1}{4}$ in. x $\frac{1}{8}$ in. framing covered with 1/16 in. sheet to the rear vertical spar. Make the rudder from $\frac{1}{4}$ in. sheet with a hinged trim tab. Refer to the detail drawing for R/C use. Add soft fairing blocks either side of the fin and add similar block tail cones below the rudder. The tailwheel is bound and glued to soft block let into the space remaining between F10 and the rudder lower outline. The tailplane platform is from 1/16 in. ply,



then 1/16 in. retainer dowels can be added to the fin. The typical *Barracuda* stabiliser bracing struts should be left until after the fin is painted. Tailplane construction is quite straightforward, but after covering, add a layer of cartridge paper between the two ribs T2 to take care of wear and tear. It is advisable to cover the underside with nylon where a radio control model is planned.

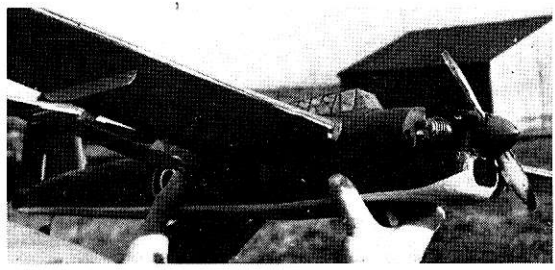
Wing construction should present no problems if built one panel at a time, and its structure is economical as well as simple. Use very hard $\frac{1}{8}$ in. square for wing spars. Lay down the leading edge, bottom spar and lower trailing edge sheet, and build up from there. The dihedral brace is form 1/16 in. ply and serves mainly to give the correct angle when adding the opposite wing panel. Add wing sheeting, but leave the flaps for the moment.

Fix the wing temporarily to fuselage, pin and cement formers WF1 and WF2 in place at leading and trailing edges, and build up wing decking with soft block and finally a strip of medium 3/32 in. carving to shape while wing is still in place. Templates for the canopy are shown on the plan but try these first on writing paper to make sure of a good fit. Give the canopy 'floor' a coat of dark green before the clear acetate is glued in position.

The prominent flaps turned out to be rather vulnerable on the prototype until modified. Flap brackets are from 20 s.w.g. dural sewn and epoxied to both the hard $\frac{1}{8}$ in. flaps and the 1/32 in. ply strip, which is afterwards glued to the lower trailing edge. Flaps are a little shorter than scale to allow the wing to swivel slightly on rough landings.

With all the 'woodwork' now completed, the finishing process may now be begun.

Cover both fuselage and tail with lightweight tissue, but use a heavyweight grade for the wings. A



couple of coats of dope – you're not entering the Nats, surely? – then for the fun of adding camouflage. The pattern shown is probably correct and is taken from a study of several wartime photographs. Colours used are Dark Grey and Dark Slate Grey (Humbrol Matt No. 27 and No. 31) and Sky below (Matt No. 20). No markings were applied below the wings – and please remember when applying the top surface roundels (plus flash) that the red was 'Indian Red' – more a ruddy brown – not the bright scarlet of nowadays, while the blue was quite dark.

Spinner is blue. Canopy framing consists of Sellotape stuck to a tin or glass painted Dark Slate Grey, then cut into 3/32 in. strips which are then stuck to the canopy. Undercarriage? Easy – there isn't one – this is for rough fields, remember?

With the last coat of dope dry, we are now fit for the flying field. Test gliders are quite feasible – even for the R/C versions, which should not weigh more than 16 oz. If more than 1/16 in. packing is needed under the tailplane trailing edge, then the C.G. is too far forward. Aim for a fast straight glide, not a swooping trim. When satisfied with the glide, try short runs at near-maximum revs, then increase in small stages. Happy 'fifty-foot ruling'!