THE IDEAL SUBJECT FOR THE NEWCOMER TO FREE-FLIGHT SCALE AND AN ALL-TIME FAVOURITE WITH OLD TIMERS

TWO prototypes of this model have been built and successfully flown. The design has " built-in " crashproofness, with its plug-in wings and tailplane and pivoting undercarriage. These features, combined with its simple construction, make it a good subject for any modeller attempting his first scale free flighter.

Fuselage

Build the $\frac{3}{16}$ in. sq. frame and $\frac{1}{8}$ in. sheet sides directly over the plan. When building the second fuselage side over the first, some temporary $\frac{1}{8}$ in. packing is inserted between the $\frac{1}{8}$ in. sheet sides, thus producing a left- and right-hand basic fuselage side. These are next assembled to the wing box and cemented, carefully checking for squareness.

When dry, the $\frac{3}{16}$ in. sq. cross pieces and Formers 1 to 4 are added. Ensure that the 16 s.w.g. brass tube is securely sewn with carpet thread to Former 4, before fitting this former in place. Durofix or Araldite should be used for gluing the engine bearers to Formers 1 and 2 and when this assembly is dry, Former 1A is slid over the bearers and glued to Former 1. This gives the correct profile for the cowling blocks, which are added next.

Now add the $\frac{1}{16}$ in. sheet to the top and bottom of the forward fuselage. Fix the 5/32 in. dia. rudder post in place and note that this is half-lapped and securely bound to the 5/32 in. dowel rear fuselage cross member. Finally, add the tail skid detail and sheet in the rear fuselage bays, before cementing the $\frac{1}{16}$ in. ply tailplane tongue in position.

Tailplane and Rudder

These are of quite simple construction, but the tailplane halves must be a tight fit on the tongue and be accurately set at 90 deg. to the fuselage, when viewed " head on " with the wings fitted. The integral tube in the rudder should also be a snug push-fit over the rudder post, so that the rudder may be turned to any angle for trim, yet be resistant to accidental movement.

Wings

Build on the plan in the usual way, remembering to pack up the lower mainspars (front and rear) to allow for the undercambered section. To ensure accuracy and equality of the dihedral angle on each wing half, the tongues should be assembled " dry " (uncemented) into the wing root ribs. The tongues are then mounted on $\frac{1}{4}$ in. thick packing and suitably held down with weights. The wing tips are now propped-up to $1\frac{1}{2}$ in. and the wing tongues cemented to the root ribs *in situ*. When thoroughly dry, the $\frac{1}{16}$ in. top and bottom sheeting between ribs 1 and 2, is added, followed by the 1 mm. ply facing rib (f).

Finishing

The entire airframe is covered with heavyweight Modelspan and given one coat of clear dope, final colour trim on the original models consisted of " Humbrol " enamel with two coats of fuel proofer around the engine bay and bearers.

Cowling

This may be beaten from thin gauge aluminium over a hardwood former; however, an alternative balsa cowling is shown on plan. This is equally successful, with no loss of scale effect and may be painted light grey or silver and fuel proofed.

Trimming and Flying

Due to the long tail and short nose moments it may be necessary to add some weight to the engine bulkhead (cored solder wrapped round bearers or solder cast to a convenient block), in order to achieve the correct C.G. position. The original model finished up at 21 oz. complete.

Test glide over long grass in calm weather. The prototype needed no adjustment (other than a little nose weight) to obtain a fairly flat glide. However, this can only be finally checked after a powered flight, as hand launching can be deceptive.

Start power flights on fairly low revs, adding down and side thrust to the engine if required. To cure any tight turning tendencies, a *small* amount of rudder may also be used. Any stalling tendencies on power (providing the glide is fairly flat) can be corrected by increasing the power turn.

Of the two prototypes built, one was flown in left-hand circles and the other in right-hand circles, behaving quite happily in either direction. On one occasion on launching the model, I unfortunately knocked off the port tailplane half and, much to my surprise, the model completed a good power flight and glide, with only " half a tailplane " ! This was as much a surprise to me as it was to the several witnesses; however, it could well have been a pure fluke and is a practice not recommended for general flying !

Both originals were powered with an E.D. " Bee," with 8 × 4 nylon props.