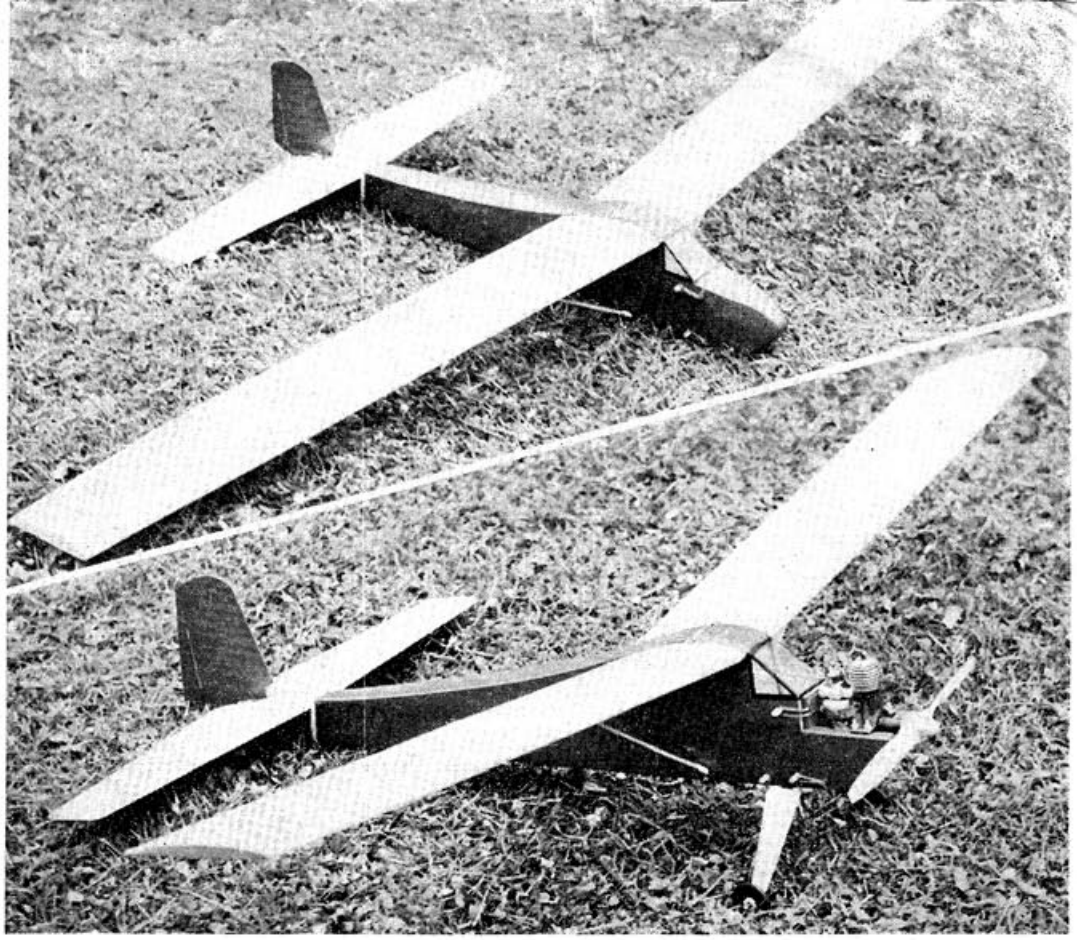
FULL SIZE PLAN

A dual-purpose model for .75 to 1 c.c.

by G. ELSEGOOD



UPBURYS "CONVERTIBLE"

THE model started life as a follow up design to the *Upburys* featured in the June, 1964, MODEL AIRCRAFT. It was designed as a semi-scale model of the Slingsby *Prefect* sailplane because the lads in the club wanted something that looked like a real 'plane. At the same time, however, some members of the club were acquiring small glow and diesel engines and wanted a suitable F/F model for them. The idea occurred to me that with a little modification the semi-scale glider could become a power model as well as a glider, so the *Convertible* was born. The strut fittings have, so far, proved well able to stand violent contact with trees, fences and mother earth and the complete model will pack into a box only 25 × 5 × 5 in.

Construction

Fuselage. The entire fuselage except for former *A* is cut from 3/32 in. med. hard sheet. Make sure that the tow hook is bound to the strip of $\frac{1}{4}$ in. square balsa and cement securely to the bottom 3/32 in. sheet before assembly. Before fitting former *A* use it as a jig for drilling holes ($\frac{3}{16}$ in. dia.) in former *B* and in the glider noseblock, this will ensure that the locating dowels fit accurately. Cement on the $\frac{1}{16}$ in. ply root ribs and strut plate.

Nose Assemblies. Make up the power nose (using $\frac{1}{4}$ in. sq. or $\frac{1}{4} \times \frac{5}{16}$ in. hardwood bearers. (These are shown spaced for a Mills 75; if using a different engine, the spacing may have to be adjusted) and glue and screw on the $\frac{1}{8}$ in. ply side pieces and former *B*.

The glider nose on the original model was made from a piece of hardwood, but balsa may be used; drill a $\frac{3}{8}$ in. hole for trimming ballast and fit the wire hooks to retain the nose.

Wings. The construction methods for each set of wings is identical. The glider wings are each 24 in. long, the TE tapering for the last 6 in., and the power wings are parallel and are each 18 in. long. Cover the LE of the wings with soft $\frac{1}{16}$ in. sheet. Bind the strut fixing wire loops to $\frac{1}{8}$ in. sheet with thread and cement between the spars, then fit the pieces of 3/32 in. sheet flush with the bottom of the ribs.

Tailplane and Rudder. Cut the tailplane from $\frac{1}{8}$ in. sheet, note the direction of the grain at the centre and the tips. The rudder is made from 3/32 in. sheet, again note the direction of the grain. Cut out the trim tab and hinge with strips of aluminium.

Undercarriage. Cut out the u/c from 18 or 20 S.W.G. aluminium, bend up the 16 S.W.G. wire, fit, bind with fuse wire and solder in position. The wheels are made from $\frac{3}{16}$ in. ply bushed with 16 S.W.G. brass tube. The wheels are retained with cup washers soldered on. Shape the struts from $\frac{3}{8} \times \frac{1}{8}$ in. hardwood, bind and glue the 20 S.W.G. wire fittings.

Covering. Cover the wings with heavyweight tissue and the remainder of the model with lightweight tissue. Give at least three coats of thinned dope. Coloured dope was confined to the fuselage and fin rudder on the original model.

Flying

Assemble the power version and test glide. Fly with full power but a short engine run. The plane should fly equally well left or right and will climb nearly vertically with a Mills 75, so do not fill the tank! Trim the glider version by adjusting the nose weight until a flat glide is achieved.

STRIP
- 4 off 3/16 x 3/16 x 36 in. med.
- 8 off 1/8 x 1/8 x 36 in. hard.
- 3 off 1/8 x 1/2 x 36 in. T.E. med.
- 1 off 3/8 x 1/8 x 14 in. spruce.
- 1 off 1/4 x 5/16 x 6 in. beech (bearers)
- 1 off 3/16 dia. birch dowel

SHEET
- 2 off 1/16 x 3 x 36 in. med.
- 2 off 1/16 x 3 x 36 in. soft
- 6 off 3/32 x 2 x 36 in. med.
- 1 off 3/32 x 3 x 36 in. med.
- 1 off 1/8 x 2 x 36 in. soft.

BLOCK
- 1 off 2 1/2 x 1 1/2 x 3 1/4 in. hardwood.
- 1 piece 1/8 in. ply, 3 x 8 in.
- 1 piece 18 g. dural 1 1/2 x 9 1/2 in.
- 1 length 16 g. wire.
- 1 length 20 g. wire.

Small piece of celluloid, 16 g. brass tube, woodscrews, scrap ply, etc. All woods are balsa unless otherwise stated