



AN INCH TO THE FOOT SCALE
MODEL OF AN ULTRA-LIGHT
SINGLE SEATER FOR SMALL
MOTORS OF .5 TO .87 cc.

By John Lamble

SEEING an article on the Dart "Kitten" in the October, 1950 AEROMODELLER, John Lamble was beset with a violent attack of "scaleitis", impelling him to build something other than his usual functional machines.

Scaled at 1 inch to 1 foot, for his old 1947 Amco .87 c.c., the Kitten makes up into a sweet little machine of 32 inch span with a very lively performance. Any of the new 0.5 c.c. engines should be satisfactory, also the Mills .75; but don't try anything bigger than .87 c.c.

Incidentally the model was made entirely out of the contents of a scrap box and it is suggested that you do the same. As a guide, medium balsa was used throughout.

In any case, here's the list of materials:—

- One sheet $1/32" \times 3" \times 6"$
- One sheet $1/16" \times 3" \times 18"$
- One sheet $1/8" \times 3" \times 24"$
- Two pieces $1/16" \times 1/16" \times 36"$
- One piece $1/16" \times 1/8" \times 36"$
- Five pieces $1/8" \times 1/8" \times 36"$
- 16 and 20 s.w.g. wire, $1/8"$ Dowel,
- Celluloid, Tissue, Bearers and one $3/8" \times 3" \times 4"$ soft block.

Prototype was built for less than 3s. 6d. and was completed in less than a week of evenings. Without doubt, this is the simplest scale model yet.

CONSTRUCTION

Wings and Tailplane. These are quite conventional. The only point to remember is to make sure the undercarriage legs are *firmly* bound into place on the lower mainspar.

Fuselage. Assemble the two basic side frames, *over the plan*, omitting $1/8$ in. sheet wing seating and formers, F1, F2 and F7, for the moment. These two sides are placed upside down on the plan view and are joined together with $1/8$ in. \times $1/16$ spacers and trued up by the formers F1, F2 and F7, which are now inserted. Add the other spacers as indicated on the plan and also the $1/8" \times 1/8"$



at F3 and the trailing edge station, plus the $\frac{1}{8}$ in. sheet wing seating, double cementing the joints here. Add the diagonal bracing between F1 and F2, making sure that the fuselage is true at this stage. This bracing will ensure that the sharp bends of the longerons at this point do not distort the rest of the fuselage. Remove from the plan and add the upper formers F4 to 10. Fit the engine bearers, double cementing all their joints. Sheet the nose with $\frac{1}{32}$ in. sheet, trimming off the cockpit shape carefully afterwards. Add the $\frac{1}{16}$ in. square stringers aft of the cockpit. Sheet in the cockpit with $\frac{1}{32}$, noting that this is fixed to the underside of the longerons. Cut out the windshield, using the template, and cement in position. Add $\frac{1}{8}$ dowels for wing fixing and pins for tail fixing. Fit your motor and then carve and fit the cowling blocks forward of F.1. Hinge the rudder to the main fin with linen hinges. Sew the pendulum actuator arm to the rudder. Make up the pendulum weight on the end of 4 ins. of 20 gauge wire and from the rear, push through the loop on the actuator arm. Bend a loop on the front end of the pendulum arm and clip over the head of a pin pushed through the $\frac{1}{8}$ in. \times $\frac{1}{16}$ in. spacer at the bottom of F7. Cover the whole model in heavyweight Modelspan and give two

coats of clear dope. The original had a red fuselage with silver markings and silver flying surfaces with red lettering.

Flying. Test glide first and ensure that there is no tendency to stall. Little can be learnt from further test glides so embark on low power tests and watch what happens. Adjust the tailplane incidence to increase or decrease the rate of climb and bend the actuator arm to alter the amount of turn. Try for a gentle left turn as gyroscopic effect makes right turn hazardous. Once the model is roughly trimmed, try various tailplane incidence and rudder settings and you will find that on full power the Kitten is capable of all sorts of entertaining semi-aerobatics.

John Lamble's favourite, with $\frac{1}{32}$ positive and rather too much left turn, is a straight, fast steepening climb to about 20 ft. slow left turn developing into a power dive. But with the auto rudder gradually getting the upper-hand the Kitten pulls out at about 3 feet up to assume a steady climbing circle.

Sounds dangerous? Well why worry, such a small model can do itself little harm if put together with plenty of cement in the first place, and believe us, there's never a dull moment.

