

THIS design started back in 1944, when the disclosure of such types as the Miles "Libellula" and the Curtiss "Ascender" inspired me to attempt a semi-scale prototype for a canard lightplane. Two different designs were built before the "Bee" version, which has been lost in a creek for some months, placed second at our Nationals, and is still going strong, attracting great interest and causing much amusement at every appearance.

CONSTRUCTION is quite simple, but weight distribution needs to be watched, trying to keep the rear end as light as possible. Fuselage construction follows the usual practice, and must be extra strong, as a nose down landing with so much weight aft sets up severe stresses. Double cement all those joints!

Before inserting the nosewheel assembly in the fuselage, bolt it to the piece of ply, then cut the bolts off short and rivet them over. Bind the top of the legs very firmly with strong thread, and cement heavily.

For the wing, prepare leading and trailing edges first, the latter being planed and sanded to a triangular section, and notched in 1/16 inch rib positions. Pin these edges down flat, and cement the ribs in place. The tapered ribs for wing and elevator are best made by sandwiching between two templates.

When dry, prop up the tips to the correct dihedral and washout, and add top main spar. The double angle at the joints necessitates special splicing pieces, carved from 1/8 inch hard balsa. Next, turn the wing over and add the lower spar. Cement the tip fins on very securely; it will be noted that they are splayed out 1/4 inch, a trick which I borrowed from tailless practice to improve directional stability. The motor bearers are attached to the wing, as it was found that the cylinder head was very prone to damage the centre of the wing when the motor was mounted in the fuselage. The front hold-down hooks are designed to permit the wing to move off forwards in a crash, and for this reason the motor bolt heads must be recessed into the bearers. Elevator is made in a similar manner to the wing.

The correct positioning of the C.G. is vital, and for this purpose, nose ballast almost equal to the engine weight is needed. This has to be determined before the fuselage is covered. Wings and elevator should be completely covered, doped and painted, and the engine and propeller installed, before attaching them to the fuselage with rubber bands for a trial balance. Determine the amount of sheet lead needed to bring the C.G. to the



ASCENDER

**A 40-INCH CANARD
FOR .75 - 1.49 c.c.**

**BY AUSTRALIAN EXPERT
JIM FULLARTON**

**Draughtsman . . . aged 33,
married, one child . . . Australian
Wakefield Team member,
1934, 35, 38, 39, 49 . . . 1950
Victoria free-flight champ . . .
P.R.O. Victoria M.A.A. . . .
Model Editor, "Aircraft" . . .
Also keen Glider pilot.**

point shown, and bolt it to the ply floor in the nose. The fuselage may then be covered and finished off.

Trim should be first investigated by glide testing down a hill, varying the elevator incidence until the flattest possible glide is obtained without stalling. Rudder adjustment is very sensitive, and these should be left alone at first. If it is necessary to move them, use only the tab on one side, setting it outward 1/16 inch at a time.

This model is definitely not intended as a contest type, but has a gradual, realistic climb, and may be flown on fairly long motor runs without fear of losing it. Added advantages are that propeller breakage is reduced to zero, and there is no risk of the motor being damaged or filled with dirt. To the modeller who is a trifle browned-off on the regular run of skyrocketing free flighters, I can recommend this model as a refreshing diversion.

Without dihedral on the elevator, or leading plane, Ascender is an unusual, and most successful tail-first design. In the upper photo, the designer demonstrates the mode of hand launching. Left, the E.D. Bee powered prototype is a natural prop-saver. Engine is mounted on the wing, and completely crash protected.

