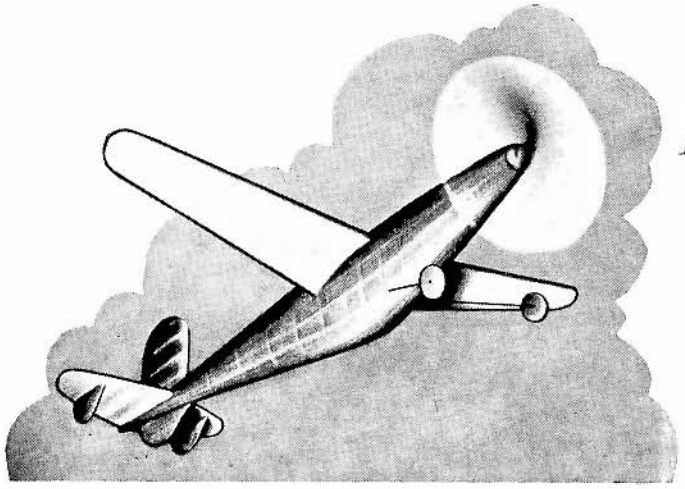

BRYTON ROC

Holder of British Outdoor Rubber and Wakefield Class Records

By F. H. Boxall

THIS model will not appeal to the flyer who builds his models by the score. There is a fair amount of work in its construction, and careful building will pay dividends on the flying field. After the results of the Fairlop Trials, and of the Wakefield proper, it might well be argued, "why go to all the bother of a fully streamlined job when simple slabsiders are winning?" Quite so, and it is not for me to say whether the simple slabsider, or the pure "streamliner" is the best for everyday flying. Many of the experts have written plenty on this subject, and I will leave this touchy subject to them.

The design of this model was based largely on extensive flying with my 1941 design over a period of years. I have used single-blade folders on this old machine, but have decided in favour of large free-wheelers from now on; my aims were (like all Wakefield designers) to get a good power weight ratio, a design that would be stable in all weathers, and freedom from structural failures. The deep fuselage is descendent from my '41 machine, and is used for the same purpose—to counteract the torque of a 19 in. propeller, and to dampen the roll in the glide which results from a large free-wheeler. The high aspect ratio is used to improve the glide on the necessarily high wing loading, and to obtain span, the main correcting force against torque.

Building

For anyone who has built any form of streamlined model this should present no trouble. The fuselage is, of course, the longest task. I used a $\frac{1}{2}$ in. square obeche jig through the centre of my card templates, but any similar size rigid spar will do.

Pin temporary balsa sheets, cut to the width of the former spacings, to the jig to act as bracings, until the four longerons are set; these bracing sheets can then be removed and the wing fairings added; finally all the stringers. The $\frac{1}{8}$ in. × $\frac{1}{16}$ in. inserts between formers to form the T-section longerons must be added before the stringers, of course. The wing fairings are only small and need only be of very soft balsa as they are faced-up with 1 mm. ply ribs. The rectangle for the wing brace must be cut very carefully, so that the wing-brace is a snug fit. The reason for this cutaway is to be able to slide the wing-brace into place (on its side—then twist upright when central) and *not* to be able to slide the wing to and fro. The wing position, fore and aft, is fixed, and small bamboo pegs are used to locate the T.E. Care must be taken to see that the angles of incidence on wings are the same. Also ensure that no part of the fairing or fixing protrudes inside to harm the rubber motor; even the arch of the wing brace must be well sanded and left smooth so that a bunched motor will not chafe. The undercart is of the "The Club Super" type and is used because of its extreme lightness, whilst still being rigid enough for safe take-offs. Once again ensure that nothing in the fixing can harm the motor, should it lay low in the fuselage.

The propeller is perhaps the most important component. Carve from really hard balsa, and thin down the blades to the section shown. Bare weight of the propeller should be 0.7 oz., so carve down to this weight. The propeller shown is intended for perfect weather, but is a little coarse for really rough days. You should carve a similar propeller of 24 in. pitch for such flying. The motor is normally 14-strands of $\frac{1}{4}$ in. × 1 24 in., 45 in. long and is un-skeined; the mechanical type of tensioner being used always.

Flying

Like all high performance machines, best trim is obtained when the model almost stalls. In fact, the model *should* stall in a straight glide; the circle developed by the free-wheeling propeller just takes it off the stall. $2\frac{1}{2}$ deg. of right thrust is normally used, and on full turns, the model may do a shallow take off and safe right-hand climbing turns in large circles. The glide may tend to be a right-hand spiral (due to the right-thrusted free-wheeler), but small amounts of left rudder will correct this until a large right-hand circle is obtained in the glide. This left rudder is also helpful under power, preventing any tendency to spin in to the right under full power. In my opinion, downthrust need *never* be used on any model, however well powered, and the longitudinal set-up of this machine ensures that it is not required under any conditions.