

THE CRANWELL C.L.A.3 LIGHT MONOPLANE

Bristol "Cherub" Engine

As the only new machine entered for the Royal Aero Club race meeting at Lympne, very considerable interest attaches to the little monoplane produced by the Cranwell Light Aeroplane Club for the August races. This club occupies a somewhat unique position in that it is composed of Royal Air Force officers, and, up to the present, has the distinction of having twice entered amateur-built machines for open competitions. It may be of interest to mention that the President of the Club is Squadron-Leader W. Thomas, M.C., while Flight-Lieutenant E. P. Mackay is Treasurer, and also acts in the capacity of reserve pilot. The Club's designer is Flight-Lieutenant N. Comper, who will also pilot the new

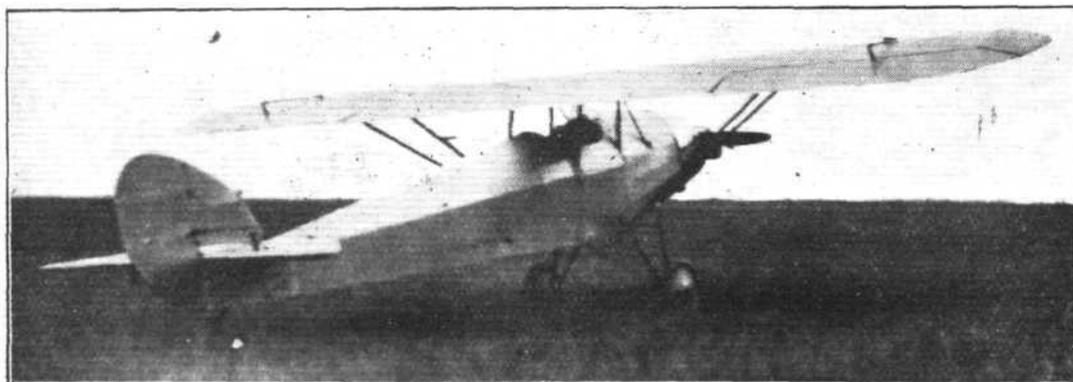
wood construction. Although an attempt has been made to give the machine as clean lines as possible, the cantilever principle has not been adopted for the wing construction; it probably being considered by the designer that any slight extra resistance caused by wing bracing struts would be more than made up for by the lighter structure which could be achieved when bracing was employed. The rear portion of the fuselage has flat sides and bottom, but there is a deep deck faring on top. In front, however, very great care has been taken to obtain as smooth a contour as possible, this being formed by light formers and stringers passing on the outside of the main fuselage structure, which in itself is of

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 ○ Cranwell C.L.A.3:
 ○ Three - quarter
 ○ front view. Note
 ○ the careful
 ○ streamlining of
 ○ the nose.
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machine in the Lympne races. It may be mentioned that Flight-Lieutenant G. T. H. Pack is in charge of wood construction, while engine installation, cowling, etc., is in the able hands of Flying-Officer F. H. Cashmore. It may be recollected that in last year's Lympne competition the Cranwell Light Aeroplane Club was represented by a biplane, the C.L.A.2, with Bristol "Cherub" engine, which won the reliability prize of £300, with a total mileage of 762½, and a total number of hours flying of 17 hours 53 mins. 18 secs. The biplane was a somewhat slow machine, what with the side-by-side arrangement of pilot and passenger, and this great number of hours had to be put in in order to cover the mileage in the reliability trials. The Cranwell Club thoroughly well

considerably smaller cross-sectional area. Streamline form is maintained right up to the nose, a large beaten cowl surrounding the Bristol "Cherub" engine, of which only the cylinder heads project. The monoplane parasol wing is of constant chord but has the tips rounded off. The section used is known as Eiffel No. 371. This section has given very good results in model tests, but the full size performance of it is, we believe, somewhat of an untried quantity. This section is a fairly deep one, with flat bottom camber, but having a slight rise to the leading edge. The conventional undercarriage and normal tail planes complete the aerodynamic design, which altogether may be characterised as very clean, but by no means freakish.



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 ○ The Cranwell
 ○ C.L.A.3: Three-
 ○ quarter rear
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deserved this encouragement, and everyone will be glad to learn that last year's success has induced the Club to have another try this year. The C.L.A.3 is, however, a very different kind of machine, and is expected to be one of the fastest for its power in the race. All will wish the Cranwell Club every success again this year, as theirs is a spirit much too rare in this country, where amateur designing and construction has never attained the popularity with which it is regarded abroad, particularly in Germany.

The Cranwell C.L.A.3, designed by Flight-Lieutenant Comper, A.F.R.Ae.S., is shown in the accompanying general arrangement drawings. It is a parasol monoplane of normal

Constructional features

Generally speaking the Cranwell C.L.A.3, is of fairly normal construction, and naturally forms have been chosen which lend themselves to amateur construction, the whole of the work of building the machine having been carried out by members of the Club, who, it must be admitted, have made a very creditable job of it. The rear portion of the fuselage is built up as a Warren girder comprising four longerons braced by diagonal struts so as to provide perfect triangulation. This form of construction extends from the stern post to the cockpit, but from here to the engine plate wire bracing has been employed. The struts in the triangulated portion of