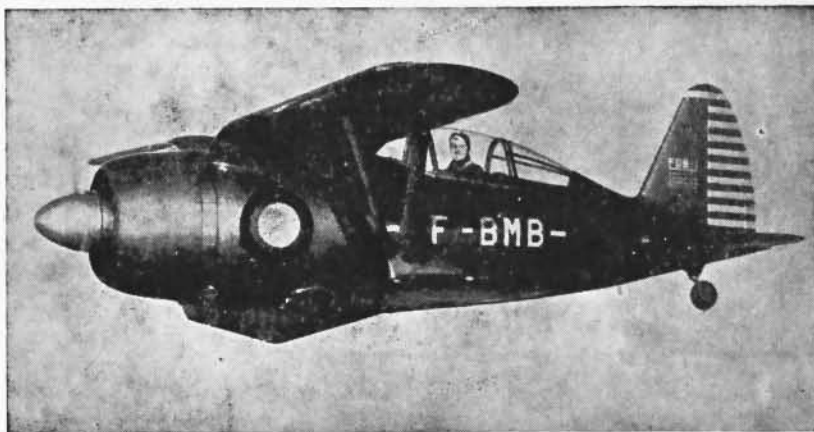


# A FLYING SCALE MODEL OF THE CANADIAN CAR & FOUNDRY CO. GREGOR F.D.B.-1

BY J · A · F · HALLS



Above: The full-size machine. Photo: International News.

THE last of the biplanes, the Gregor, was the first all-Canadian fighter and was a very creditable effort. It was powered with a Pratt and Whitney Wasp junior, which gave it a speed of almost 300 m.p.h. The Wasp junior develops about 750 h.p. at rated altitude, and if we compare this with biplanes of similar horse-power we see that the C.C.F. engineers have produced a very worthy first effort.

The span of 28 ft. gave a moderate wing loading, and the landing speed was by no means excessive (flaps were, of course, fitted). The armament was two 0.5 cal. machine guns considered sufficient in 1938, when the Gregor first appeared. No detailed performance figures were given out, so the description must necessarily be short. The C.C.F. is now (as far as is known) building Hurricanes.

### The Fuselage.

Cut formers from  $\frac{1}{16}$  in. sheet balsa, keels from  $\frac{1}{16}$  in. sheet substitute. Pin keels to plan, add left formers, leave to set, and check that they are at right angles to keel. Add  $\frac{1}{16}$  in. square stringers; while setting make cowl; 1, 2 and 3 are  $\frac{1}{8}$  in. soft sheet rings (1 and 2 are rings, 3 is a disc with a square hole about its centre), size determined by block on dummy crankcase. Cement 1, 2 and 3 together; now build up crankcase from two  $\frac{1}{8}$  in. sheet discs and a block, which must be a tight fit in the square hole in 3. Add cowling spacers and 4, cover with  $\frac{1}{16}$  in. sheet. Remove half fuselage from plan and complete other half. Add soft balsa blocks at tail end as shown. MS is a master stringer and should be hardwood, as it takes the soft wire hoops, which are the cabin formers.

### Tail-Unit.

Insert cowling plugs into paper tubes cemented to keel—put in rod and tubes before covering cowling and fuselage with  $\frac{1}{16}$  in. sheet. Build direct on plan as shown.

### Wings.

As for tail-unit. N.B.—Extend L.E. of lower wing  $\frac{3}{8}$  in. inwards. The top wing is gulled from D. The spar T.E. and L.E. are cracked and cemented to that when viewed frontally; the bottom of C is  $\frac{3}{8}$  in. below the bottom of D.

### Assembly.

Sandpaper all parts, cement tail-unit to fuselage,

tailplane no incidence, check angles constantly until set. Cement on cowling. Add lower wing, fix the extended portion of the L.E. to the keel and 6; there should be  $\frac{1}{4}$  in. dihedral at each wing tip. At this stage all parts are covered with red tissue, tautened with a water spray and then clear doped. Add upper wing and struts, the latter are doped red: dihedral same as for lower wing. Insert upper wing 2 to 3° incidence, lower wing none. Complete the cabin and add the tailwheel. The  $\frac{1}{4}$  in. sheet "oil cooler" is now added and doped red. For strut and undercart detail examine photos. Spinner is silver and either made from  $\frac{1}{8}$  in. sheet rings or turned from hardwood on a lathe; propeller blades are black. There are alternate red and yellow stripes on the rudder; on the fuselage are the letters C-F-BMB in yellow. The wheels are flush surfaced, made from two discs of  $\frac{1}{8}$  in. sheet: incorporate internal hubs. (The cabin may be made sliding and the undercart retractable, as on the original.) The propeller blades are a tight sliding fit in the spinner so as to be v.p. The winding hook extends in front of the spinner, the rear of which is slightly hollowed to take three cup washers. As this is a small model make sure that the propeller is well balanced before attempting flying. Propeller shaft 18 s.w.g. piano wire.

### Flying.

Fly R.T.P. or in calm weather. If obtainable use 4-6-8 strands of  $\frac{3}{8}$  in. flat rubber to suit conditions. In free flight the model has made  $\frac{1}{4}$  minute flights consistently and should be capable of more R.T.P.

Below: The model.

