

## BUILD FROM AVAILABLE AT

Aspect Ratio : 8.15.

Span : 30 in.

Area : 108.2 sq. in.

Wing Loading : 4.35  
ozs./sq. ft.

Loaded Weight : 3.25  
ozs.

### A 30 FLYING SCALE MODEL

By J. L. ROBERTS

Heading photo by courtesy of "Flight."

#### General.

This machine was in use extensively before the outbreak of war by flying clubs and private owners. It is a light 'plane, of spruce and ply construction, ply covered, with a 90 h.p. Cirrus engine. The large area of the main planes, and their disposition, and the ample tail surfaces all make for a successful flying scale model of the machine.

#### MODEL DETAILS

##### Weights :

Fuselage, centre-section, under-carriage .. .. .	1.25	ozs.
Nose block, gearbox prop. .. .. .	.75	oz.
Two rubber motors .. .. .	.5	oz.
Tail plane, fin .. .. .	.125	oz.
L.H. main plane .. .. .	.25	oz.
R.H. main plane .. .. .	.25	oz.
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A/C. in flying trim (theoretical) .. .. .	3.125	ozs.
A/C. in flying trim (actual) .. .. .	3.25	ozs.

**Power :** Two motors, each 4 strands  $\frac{1}{4}$  in. by  $\frac{1}{30}$  in. rubber.

**Gearbox :** Two gears  $\frac{1}{2}$  in. diam. meshing, driving  $1\frac{1}{2}$  in. gear on prop. shaft. Mounted on brass plates, front and rear, ballthrust races. Ratio of step-up = 17-17-13 = 1.31-1 on prop.

#### Fuselage.

First build two flat sides right on top of the plan, identical to each other, by laying down the longerons

and the wing base former and, starting at the nose cutting and cementing in the diagonal bracing pieces. Do *not* fit the patch plates around the wing base formers, or the rear motor anchorage plates, yet. Erect the fuselage by assembling the two sides with the *straight across* crossmembers, and C.B.B.1, C.B.B.2 and C.B.B.3 at the bottom, and frames 5, 6, 7, 8, 9, 10 at the top. True up and cement firmly. Next draw the tail-ends together and cement to the sternpost, holding with pins whilst the cement dries hard. Cut and insert all the diagonal cross-bracings from the rear cockpit to the sternpost, true up, and cement firmly. Cut the cross pieces for the nose, cement, and hold in by rubber bands until dry. Now cut and insert all the remaining diagonal braces, true up the whole fuselage finally, and put aside to set. Now fit remaining decking frames, all stringers, patch plates *inside* fuselage at wing base formers, rear motor anchorages, tail skid, dowel tube for the tail unit, dashboards; sheet in the nose with  $\frac{1}{16}$  in. sheet up to frame 4, and add the cowling formers, finally cementing on top and side cowlings of  $\frac{1}{64}$  in. sheet.

#### Centre-section.

Block up the fuselage with the top longerons level fore and aft and across. Slide in the twin spars through the holes in the W.B.F., packing them apart  $\frac{1}{2}$  in. and  $\frac{1}{16}$  in. respectively. Check for alignment and cross level, and before cementing firmly in place finally, cement on spar stiffeners; then cement spars to W.B.F. Now slot on the centre-section ribs on each side, check for 3 degree incidence and cement in place. Adding the L.E., T.E., undercarriage supports and plywood facing ribs completes the assembly. Cover centre-section in  $\frac{1}{64}$  in. sheet.

# FULL SIZE PLANS 2/6 POST FREE



## Undercarriage.

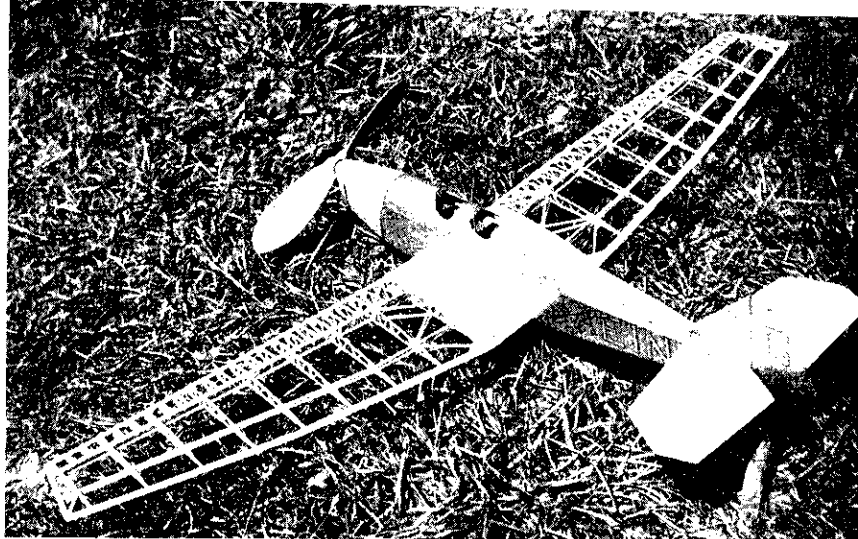
Bend the various wires to the shapes shown in the drawing. Bind them together with fuse wire, and sweat together for a clean joint. Now push the tops of the legs into their various supports on the airframe, sew tightly with thread, and cover amply in cement to ensure a firm fixing. This method will be found simple and strong, and should give no trouble in service.

## Tail Unit.

Cut out all ribs from 1/32 in. sheet. Pin down in post and L.E. and cement in F1, F2 and F3. Cement together pieces to form T.E., pin down and insert R1, R2 and R3. Take up from drawing, true up and cement firmly. Add the two dowels, being sure to get a good fixing; cement on the hooks. Sandpaper L.E. and T.E. to complete. For the tail plane, pin down the two spars, and cement on all the ribs. Add L.E. and T.E. after taking up from the drawing, sandpapering to correct shape when dry. Insert and cement firmly the sheet balsa in the centre-section.

## Main Planes.

On the original, these weighed  $\frac{1}{4}$  oz. each, with three coats dope. Cut out all the ribs, and using directions on the drawing make the riblets. Then lighten them all by cutting out their centres as shown. They are now braced with strips 1/16 in. by 1/32 in., on one side only, *inboard*. The top and bottom of all ribs and riblets are now rounded slightly with 00 sandpaper. To erect a wing, slide the *ribs only* on to the front bottom spar, pin on to drawing, true up and cement. Now slide in bottom rear spar, true up again, and cement. The wing can



now be taken up, the top spars being slid in and cemented firmly in place, taking care to keep the ribs upright. Add L.E., T.E. and tips. Fit in riblets, line up, and cement in place. The addition of gussets, 1/16 in. by 1/16 in. bracing, ply facing rib, and spruce spar reinforcement completes the assembly. Sandpaper L.E., T.E. and tips, and fill in between the rear spars with hard balsa. Repeat for other wing.

## Gearbox.

The detailed drawing and notes make everything clear. On no account use any oil on the gears or bearings, as this soaks into the noseblock. Pack the gearbox with thick grease before screwing on the back.

## Covering.

Cover the entire model with superfine jap tissue, and waterspray. When completely dry, give one coat of shrinking dope, and two coats of coloured dope. The original model had yellow fuselage and tail fin, with silver wings and tail plane.

## Power.

Two loops of 3/16 in. flat rubber on each hook will make the model fly quite steadily for 25-30 seconds, but if you want a really snappy climb at the expense of a long flight, use  $\frac{1}{2}$  in. rubber. The glide is amazingly flat, as the max. L/D for Gött. 436 is 2.9 degrees, and incidence of model is 3 degrees.

As with most flying scale types the performance is not high, but by careful construction and saving of weight wherever possible the duration figures given above should easily be exceeded in good weather conditions.

*Reduced scale plans are given on page 742.*

