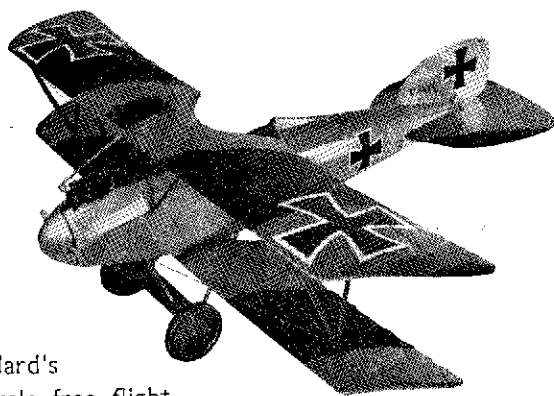




The scale  
model you  
have been  
waiting  
for!



Douglas McHard's  
superb  $\frac{1}{4}$ th scale free flight  
model of the fabulous 1917 fighter—for 1.5cc engines

## Albatros D.V.

THE FULL-SIZE ALBATROS DV was a developed version of the famous D.III as flown by Von Richthofen and detailed by George Cox in his "Famous Biplanes" series last month. It made its first appearance on the Western front during 1917 and the most noticeable new feature was the beautifully streamlined fuselage which replaced the somewhat flat-sided shape employed by the earlier D.III. Although no subject for the raw beginner to tackle, the elegant lines of this authentic flying model will fully repay the experienced builder for the extra effort involved.

For this is truly a scale connoisseur's project. It is the most detailed single-engine scale-model plan in AEROMODELLER Plans Service and the sight of the prototype in the air on flight tests, takes one right back to that famous era of two-gun biplanes fighting it out over the Somme.

One major reason why this model did not appear, as promised in our December issue, was because the flight tests called for further work on the design details. In our endeavour to see that the A.P.S. drawing provides full data for a foolproof model, we spent extra time on this beauty. An initial flying problem was that of side-slipping, which although most realistic in the extreme and probably a scale characteristic adopted from its full-size counterpart, was not the sort of flight path desirable in an otherwise stable model. Happily, this and other minor points have been overcome in the final design and with incidences, engine angles and the balance point specified, the Albatros is a certain flier and one in which all keen modellers will revel.

The  $\frac{1}{4}$ th square balsa used in constructing the fuselage side frames should be carefully selected for its uniformity and firm texture, for upon the accuracy of this basic construction depends the entire alignment of the model! Build the two frames one on top of the other and when completed, allow them to dry out thoroughly before attempting to separate or remove them from the plan. In the meantime, cut out the bulkheads, paying particular attention to the plan notes on the material to employ.

The  $\frac{1}{4}$ th ply bulkheads should be cut with a fretsaw. If  $\frac{1}{4}$ th ply is not obtainable, a satisfactory substitute would be  $\frac{1}{4}$ th inch hard balsa with 1 mm. ply front and back. Where large areas are to be laminated (for example,

the wheels and exhaust pipes), the drying time can be drastically reduced by employing one of the contact adhesives, such as "Evo-Stick" or Goodyear "Pliobond" in place of cement. A further advantage of this type of adhesive is the complete absence of warping.

The two halves of the 1/16th sheet formers should be joined together and reinforced by two pieces of  $\frac{1}{4}$ th x  $\frac{1}{4}$ th balsa as indicated on the plan. Formers Nos. 3, 5, 6, 8 and 9 are now assembled on the engine bearers and the lower flying wire anchorage hook cemented to former 9. Check the plan view for the correct sidethrust angle.

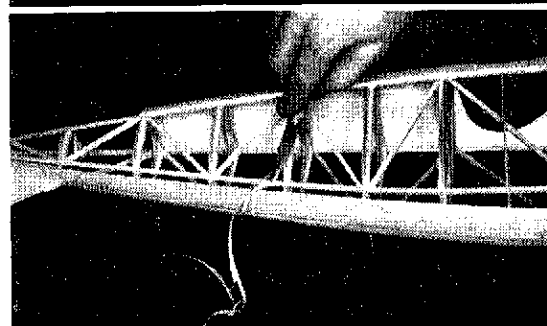
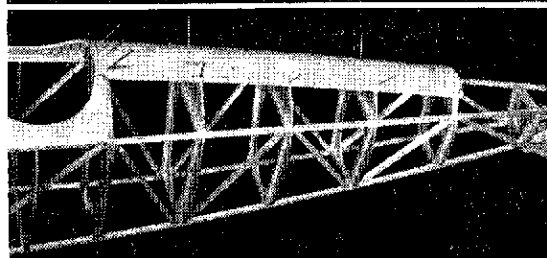
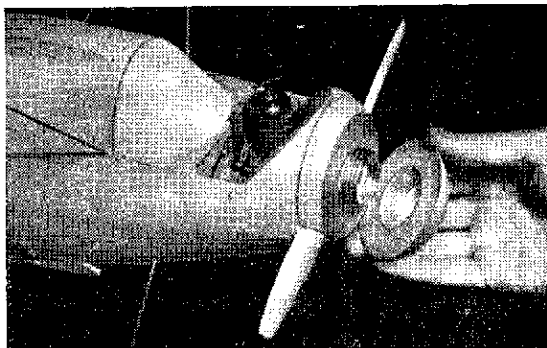
Bend the undercarriage main legs from 12 s.w.g. piano wire and bind them to the motor bearers. This binding is best done with copper wire and then soldered, however, tough thread will do provided you bind tightly, use sufficient and cement liberally. Now bolt the u/c straps to former.

The assembly which has now been completed forms a kind of jig on which to line up the fuselage side frames. These should now be cemented in place and the remainder of the bulkheads added. The tail block is fixed in position together with the tail skid support.

The 1 mm. ply panels are inserted between formers 5 and 6 and the wing cabane struts firmly bound and cemented in position. Make certain at this point that the incidence is correct! See photo 4 overleaf.

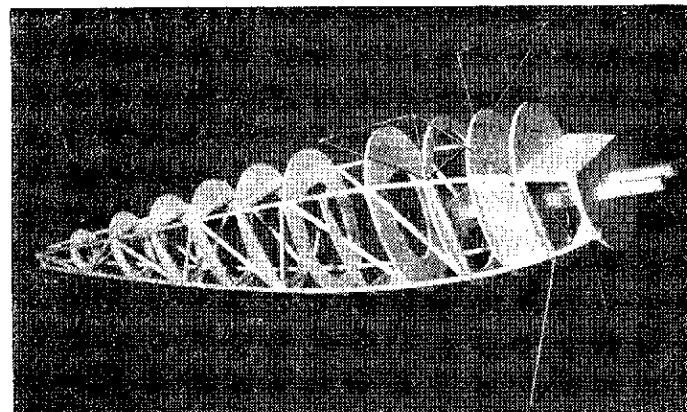
The lower wing locating pieces F7 and F8 are now fixed in place and the 1/16 in. sheet under-surface is cemented between them onto which is mounted former 9A. The top of the fuselage may now be sheathed with 3/32 in. balsa. Choose a medium soft grade which can be easily curved without cracking. The top decking can be sheathed in three panels aft of the cockpit and three in front, as shown in the photograph. Start by moistening the outer surface of the centre panel. The effect of this is to expand this surface and thus produce a curve. If the resultant curvature is insufficient, a more pronounced effect may be obtained by applying a coat of powerful dope to the inner surface, but don't overdo it!

When the centre panel has been pre-curved sufficiently, pin and cement it in position and when dry, chamfer the edges as shown in order to present a larger surface against which to cement the remaining panels. The protruding corner of the top longerons must now



**Photos top to bottom show:—**

1. Engine protected against dust by adhesive tape around exhausts and intakes, fitted temporarily in position to check thrustline and spinner alignment. Spinner reveals the screw cap retaining method. 2. First piece of 3/32 in. sheet pinned to top of basic fuselage frame, note chamfered rear edge of cockpit sheeting. 3. Top sheeting completed and showing method of triangulating lower longerons flush with surface of formers. 4. Basic frame prior to fitting nose block assembly and sheeting. Cabane struts are securely bound in position.



be trimmed off flush with the bulkhead surface (see photo). This provides a flat surface and simplifies attachment of the lower edge of the top sheeting. The pendulum bearings and torque rod should be fixed in position before adding any further sheeting.

The nose block assembly may now be added, making sure that the downthrust and sidethrust are correctly incorporated at this point, for it is impossible to make adjustment later.

Add lower sheeting (five strips) and side sheets (two panels each side) using the same bending method as described for the top decking. Build up the removable cowling on the fuselage, *lightly* cementing the pieces in position to enable them to be cut away upon completion.

Assemble the dummy engine and make up exhaust pipes. The downward curve of the pipe when viewed from the front must be introduced during the laminating process. This is perhaps a little tedious, but may again be speeded up and simplified by pre-bending the pieces and using a contact adhesive. The rear edge of the pipe comes firmly against the leading edge of the diagonal cabane strut and thus keeps the back of the cowling in place. The cowl may be lifted and slid back under the top wing or completely removed for making adjustments by releasing the spring catch on its front former. The air intakes, etc., are designed for use of the Frog 1-49. The induction tube intake will be unnecessary if a front rotary valve motor is employed.

The tailplane is constructed in two halves and holes are carefully cut in the fuselage sheeting to take the spars which are firmly cemented to the fuselage structure upon insertion.

Wing construction is quite straightforward, use the grades of balsa specified on the plan, and pack up the wing spars with scraps of sheet balsa to lift them into the undercamber, 3/8 in. washout is incorporated in the upper wing T/E at the tip.

Wing strut fixings should be accurately formed. They must not be a sloppy fit, yet must release easily in a rough landing. When the lower wing is knocked back the lower end of the strut comes off the front of the lower wing strut fixing and under the influence of the tension on the shirring elastic rigging is pulled up clear of the lower wing and thus the risk of the strut puncturing the covering is minimised.

All-up weight should be around 2 lb. The prototype came to exactly that figure and no particular pains were taken to keep the weight down. Double-weight Modelspan was used throughout and dope liberally applied. The flight is very slow and stately, but don't take undue advantage of the fact.

Do not allow the C.G. to drift back beyond the point marked on the plan. Make adjustments to the trim by means of the adjustable elevator a little at a time. This is important, as the control surface is very large and is sensitive to adjustment. It will probably be necessary to use a *little* "UP" elevator to achieve a good glide. Trim for large left circles by offsetting the rudder *slightly*. Start on very low power and build up gradually, correcting trim as you go.

The colour scheme and registration used on the model is authentic and was obtained with the kind co-operation of the Imperial War Museum. Mauve and dark green bands across the upper wing, and tail surface, straw-colour fuselage (varnished ply) metal cowl and spinner, white rudder and light blue undersurfaces.