FULL SIZE PLANS!

Stan Cole's

Me 109

A free flight model for ·5-·75 c.c. engines

AFTER Stan Cole's *Spitfire* plans were published in 1962, they became so popular that a model of the *Spit's* old adversary—the Messerschmitt *Me* 109—was an obvious follow-up design. After testing two prototypes extensively, under a variety of conditions, we can safely say that this design is another winner. It is *not* a super-scale job. Some design deviations have been necessary, as with the *Spitfire*, in order to produce a tough practical flying model. However, the original fighter's characteristic appearance is fully retained. A nice paint job will really dress up your *Me* 109, large numbers of which we expect to see during the coming season.

Building notes

Wing: Commence by pinning down over the plan, the L.E. and T.E. (medium balsa), the latter being suitably notched for ribs. Pin down the lower halves of ribs W1 and W2 and the $\frac{1}{8}$ in. sq. rear spar. (*IMPORTANT: A draughting error on the plan came to light only after the printing blocks were made. Rib W2 should have a slot in it for the wing box—exactly the same as W1. The upper surface of W2 should also be cut $\frac{1}{16}$ in. lower than shown behind the main spar to allow for the depth of the $\frac{1}{16}$ in. sheeting.*) Next assemble the wing box using hard balsa and ensuring that the sheet grain runs as per plan sketch. Cement the box to W1 and W2, check for squareness over plan and also slip a scrap piece of $\frac{1}{4}$ × 1$\frac{1}{2}$ in. sheet into the box to prevent distortion while the assembly is drying.

Cement wing ribs W3 to W7 to T.E. and press the main spar into the rib slots and add top half of ribs W1 and W2 over wing box, followed by $\frac{1}{8}$ in. sheet gussets in corners and soft block wing tips. Slightly chamfer rear of wing box prior to adding $\frac{1}{16}$ in. sheet covering. When this assembly is quite dry, the L.E. may be carved and sanded to shape.

Finally, add the geodetic ribs, using 1/32 in. or SOFT $\frac{1}{16}$ in. sheet. These are best formed by cutting the sheet to the required length with a notch for the rear spar. Cement in place and when dry sand top to conform to section of main ribs. All geodetic ribs are "full depth," i.e. level with bottom of wing to depth of main spar and L.E. sheeting.

A hinged trim tab is built into the starboard (right) wing as indicated on the plan. It should be cemented securely after achieving the correct flight trim, in order to prevent accidental misplacement.

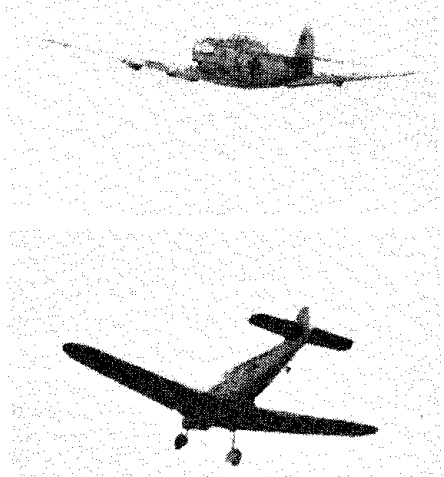
Fuselage: Commence by building the $\frac{1}{2}$ in. × $\frac{1}{8}$ in. crutch over the plan view. Then cement formers 4 and 5 in position (checking for squareness) followed by the wing tongues assembled to the completed wing halves, as shown on the plan sketch. Araldite should be used for engine bearer attachment to formers 1, 2 and 3.

The fuselage is sheeted with four full length panels—two above the crutch and two below. Obtain the correct shape by first cutting paper templates. The lower rear fuselage is planked with $\frac{1}{4}$ × $\frac{1}{16}$ in. strips. The $\frac{1}{16}$ in. gap between the rear of the fuselage and the rudder will prevent the latter from being sheared off in the event of a "nose in" landing. Using the grades of wood specified, no trouble should be met in keeping to the recommended maximum weight of 13 oz.

Trimming and flying

Glide testing will give very little indication of the model's trim and powered flights are recommended from the outset. Use fairly high revs. with a good follow through hand launch. With the forward c.g. position, a $\frac{1}{16}$ in. packing will probably be needed at the rear of the tailplane (negative incidence) for a steady climb, which *must* be to the left. Three degrees right side thrust and slight "up" on the starboard (outside) wing trim tab should be used, but downthrust is neither necessary nor recommended.

On launching, the model may well fly dead straight, touching down 12 yd. or so from the launch position. This is not an uncommon thing with a favourably proportioned (power weight ratio) low wing model and is due either to the launch itself or insufficient power. It can usually be completely remedied by tuning the motor to maximum revs. and adding the $\frac{1}{16}$ in. T/P packing. The two prototypes were flown both with and without undercarriage using a 0.5 c.c. Quickstart Dart with 6 × 3 in. nylon prop.



MATERIALS LIST

Balsa
4—1/16 x 3 x 36 in.
1—3/32 x 3 x 36 in.
1—1/8 x 3 x 36 in.
2—1/8 x 1/2 x 36 in.
1—3/4 x 3/16 in. (T.E. section).
1—1/8 x 1/8 x 36 in.
1—2 x 2 x 5 in.
1—1/2 x 3/16 x 8 in. (hard balsa).
1—1/4 x 5/16 x 9 in. hardwood (bearers).
1—1/16 x 2 x 8 in. plywood.
1—1 mm. x 6 x 6 in. plywood.
12 in. of 16 g. piano wire; 2 in. dia. spinner; 1 pair 1 1/2 in. dia. sorbo wheels.