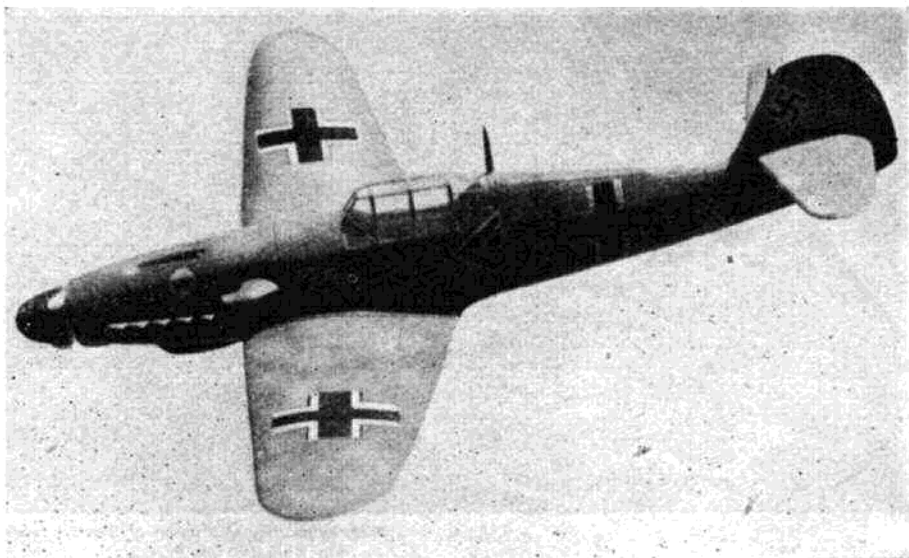


# A 1" TO THE FOOT FLYING SCALE MESSERSCHMITT Me 109 F

By A. S. ROSENFELD

*In response to popular request we present this fine flying scale model of Willy Messerschmitt's fighter creation. Superb attention to detail makes this a model fit to grace any collection. Readers are referred to the article by the author in last month's issue on the use of stencils for duplicating the insignias.*



**A**FTER building many scale models, both of the flying and solid types, the writer has every confidence in saying that this particular model was by far the most interesting on which to work. The shape of fuselage, particularly in the region of the nose, lends itself admirably to planking and sheeting in soft balsa—methods without equal for obtaining sleek appearance.

The refinements incorporated in the 109 F result in a model far more attractive in both appearance and performance than the old 109 E.

Now for construction details.

## Fuselage.

The half former outlines are shown on the plan. On the original they were cut from plywood although laminated balsa could be used provided the sections are increased.

Reinforce former 6 to form wing fixing stub.

Roll strong paper tube round  $\frac{1}{4}$  in. dowel and fix to former 4 in position shown.

Cut two of former 12 to allow of subsequent parting.

No. 14 is cut from hard  $\frac{1}{4}$  in. sheet balsa.

Mount all formers on cardboard and cut square holes exactly on the C.L. shown on side elevation, which is also marked on former outlines.

Mark the position of the formers on a length of square hardwood— $\frac{1}{2}$  in. square is convenient for this size of model.

Former 14 will pin directly to the carefully squared end of the rod.

Cement the cardboard lightly to the rod after locating the formers on the marks.

Fix stringers to formers along C.L.s in elevation and plan. These main stringers, four in number, are of  $\frac{1}{4}$  in. by  $\frac{1}{16}$  in. hardwood. Fill in the spaces between the main stringers with  $\frac{1}{16}$  in. square balsa stringers spaced approximately  $\frac{1}{8}$  in. apart where the curves are gentle at the sides, and  $\frac{1}{4}$  in. or less where the curves are sharp at top and bottom. Stringers should be cut where the wing fillets will later be. The formers are not marked for stringers. The writer prefers to fix them front and rear and sight them for alignment in their turn.

When the cement has set fill in the space at the nose, and rearward to where shown, with very soft  $\frac{1}{16}$  in. balsa sheet.

Cut the sheet away to form slots for the gun snouts, curve a piece of  $\frac{1}{32}$  in. balsa sheet to fit notch on former 3 and cement in place. Round out the rear of the trough so formed with plastic wood and insert a short length of 16 gauge aluminium tube while the plastic wood is still soft.

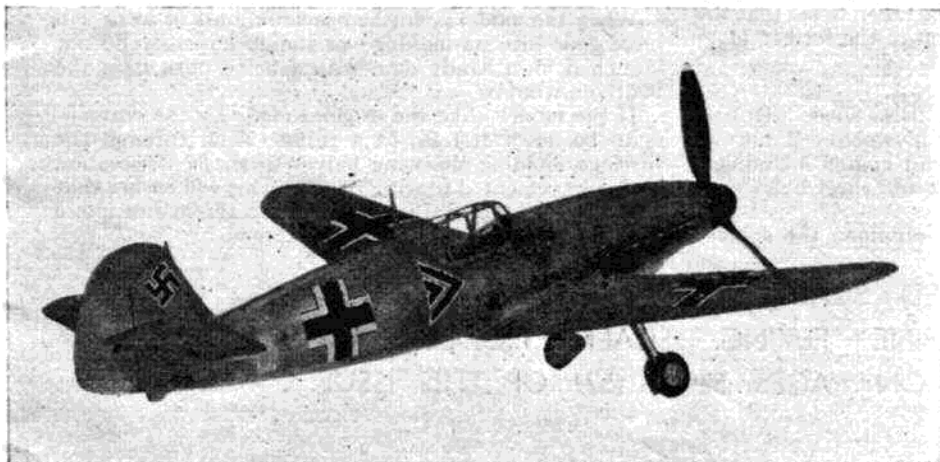
Cement the fin as shown and fair in to the dotted line on plan. Fit the tailplane adjusting mechanism made from scraps of sheet balsa.

Fix W1 to centre-section spars and fix U/C paper tubes.

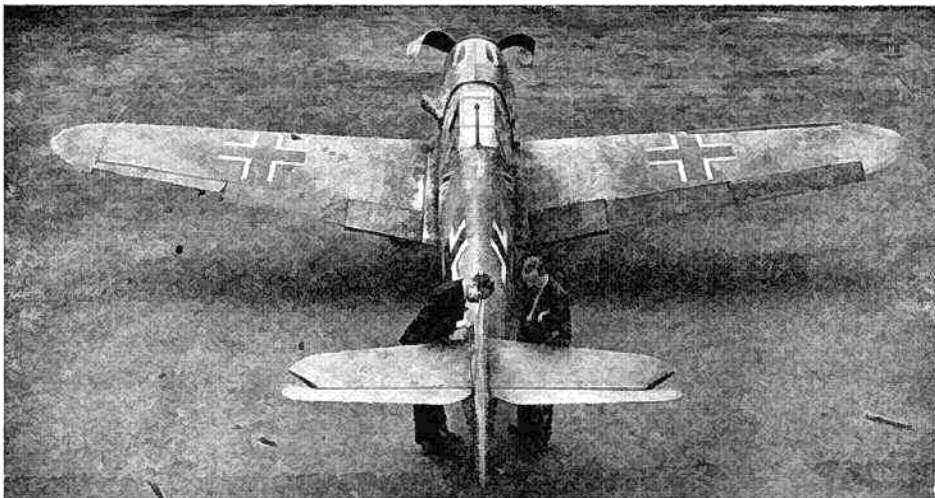
Sheet in the whole centre-section above and below and fillet to the line shown; all with  $\frac{1}{32}$  in. soft balsa sheet. The sheet may best be curved by immersing in hot water and fixing with seccotine. Cellulose cement will not work on wet wood.

Build the cockpit cover of  $\frac{1}{16}$  in. square hardwood.

Where sheeting or planking ends, carefully scallop the edges, as sketch, to avoid hard lines in the covering.



*These two first-class photographs illustrate the perfect finish and camouflaging of the model. It is capable of long, fast flights and may also be flown R.T.P. with marked success. Reduced scale, fully detailed working drawings are given on pages 520-1 of this issue.*



[Photo by courtesy of Ministry of Aircraft Production.]

An actual photograph of the full size machine shot down in this country. It received minor damage and the machine has now been repaired and is flying again with R.A.F. roundel markings.

Sand carefully with successively finer grades of paper. Withdraw the stick and cardboard holders.

Gently cut the stringers between the two formers 12.

Face both formers 12 with 1/32 in. plywood to outside of stringers and drill holes for fixing locating pegs of 1/16 in. round bamboo.

Cement the plywood motor blocks in the tail.

Face former 1 with 1/32 in. plywood to outside of sheeting.

Fit paper tube for detachable radio mast and sand the whole fuselage once more.

Cover cockpit with celluloid, after painting all wood which will be visible later, with grey dope.

Make air intake of plastic balsa as explained in my previous article and fit in position on balsa sheeting.

Make and fix exhaust stubs and intakes.

### Wings.

On straightforward "Wakefield" lines. The ribs are best made by the sheet-cum-block method between two templates cut to 1 and 14.

The hardwood locating peg on the LE is fixed by splicing to the balsa spar after same has been roughed out to section and the whole sanded together.

The rear boxes should be built up on strips of wood the exact size of the centre-section stubs.

### Tailplane.

Similar to wings except for paper tubes to take 3/32 in. dowel through fin.

### Rudder.

Similar to above. Care should be taken to see that the bottom exactly coincides in section to the former 14.

### Airscrew.

Blades are cut from laminated balsa sheet. Hub is built up from balsa blocks and plywood. A normal freewheel is fitted to avoid "dead engine" landings. The spinner is built up from block and sheet balsa on a short rod similar to the fuselage.

If a soft enough balsa can be obtained the spinner

can be built as part of the fuselage. Medium or hard balsa definitely will not take the curves.

The whole should now be covered, first making sure that everything is smooth, with superfine bamboo tissue. Water spray and shrink dope in the usual manner and camouflage. True German mottled camouflage can only be simulated by spraying. The colours used were: green-grey undercoat over top surfaces. Then light blue-grey lightly mottled on. Then duck-egg blue over the whole undersurface gradually fading away on the sides of the fuselage.

The various insignia should now be sprayed through stencils as explained in my article in a previous issue of THE AERO-MODELLER.

Strips of paper (previously doped grey) are cut 3/32 in. wide to form the outer cockpit cover frame. They are cemented outside the celluloid.

The springs for the tailplane adjustment and undercart should be made by winding 20 s.w.g. wire round rod of the correct diameter.

After reading the instructions it is a good plan to obtain as many photos of the prototype as possible—they have appeared from time to time in THE AERO-MODELLER and aircraft journals.

The original is powered with one ounce of 3/16 in. rubber, prewound and fitted with run-true bobbins.

The model should balance, when complete, at former 5, or approximately 1/4 the chord from the L.E. Adjustments may be made by adding plasticine in the correct position. Slight adjustments, and they must only be slight, can also be made to the tailplane by varying the thickness of the balsa packing between the rear tailplane dowel and the fixing box top.

When the model is finished several hours of work will have gone into its making—or should have—so do not launch it on a windy day, with a hefty push from the bedroom window.

If the model—like the original made by the writer—is to be flown R.T.P., fit a rubber band through the fuselage, holding the wing halves to the centre-section by hooks cemented to wing ribs 1. This will ensure that the fuselage and starboard wing remain in one piece with the port wing and tethering thread.

REDUCED SCALE WORKING DRAWINGS OF  
THIS FINE FLYING SCALE MODEL ARE  
GIVEN ON PAGES 520 & 521 OF THIS ISSUE.