Me 109 G
BUILDING INSTRUCTIONS

Despite its size and the fact that this model is true scale, it is quite easy to build due to carefully worked-out methods and procedures. We advise you to follow these procedures – variations could result in certain stages becoming difficult later. Construction is orderly and rapid but will slow down greatly if snags are encountered. Avoid these by doing it like it says! Notes are fairly basic as it is felt this model is not for beginners to model building.

PARTS IDENTIFICATION

We can't print the diecut sheets so must let you mark these off. Refer to the plans where every piece is drawn full size. Identification is thus very simple.

FUSELAGE

You'll need a table or board (true and flat, please) about 6 ft. long to build the fuselage. Separating the fuselage planview if you wish from the main plan, pin or tape the planview down over the building table.

1. Cut the 5/8" sq motor mount strip equally in two. Glue ply parts F-18 to the mounts, 1/8" away from the rear end to fit F-4 later, making a LH and RH pair.
2. Glue F-20 to mounts (refer to cross-sectional view of F-3 on plans). Mark placement of Formers 1 thru 4 on this assembly. Glue – in order – F-4, F-19, F-2, F-4A, and F-3.
3. Pin or lightly tack-glue this assembly over the planview CENTERING it very CAREFULLY!
4. Glue the LH & RH halves of formers F-5 thru F-14 together. Glue the supporting jig-tabs (J-5 etc.) to formers. Do this over the drawings to ensure accuracy. Mark the center at bottom of each J-piece.
5. Glue 2 halves to make complete F-24 & mark locations of F-7 and F-8 on this piece. Glue F-6 thru F-9 to F-24. Check with triangle to ensure squareness.
6. Pin this assembly over the planview again centered carefully. Mark positions of F-2 thru F-6 on 1/4 sq top keel & glue in place. Add F-5 to assembly. Note that keel sticks out some from F-6 – trim flush per side view. Glue servo rails to F-5 & F-8.
7. By now you're seeing how this body is going together over the planview. Pin the rest of the formers down to the plan. Mark locations of formers on top & bottom keels and glue in place. At every stage keep checking accuracy. Make the pushrods **NOW** and install these as you go.
8. The crutch is laminated since it is bent upward at the rear end. Lay in one 1/4 sq piece each side first; then glue the second 1/4 sq on top of the first. Stagger the length-wise joints. Now add F-17 and the 3/8" top piece. Screw the tailwheel bracket to F-16. Break off the top of F-17 and put aside till later.
9. Glue in parts F-22, F-23 and rear servo rails. Lay motor pushrod in place ready to be hooked up later. Bevel the outside edge of F-24 and 3/8" top to follow former contours.
10. Time to begin sheeting. Refer to plans. Cut & join parts to make "Fuselage Upper Skins". Make two and sand them smooth. We want to prevent our nice accurate fuselage from getting any curlies at this late stage so we add the sheet skins to both sides at once. Glue skins to both sides at once. Glue one skin to the crutch (half-way up) from F-2 to F-7. Then do the same on the other side. Proceed rearwards with both skins, glueing them to the crutch only at this time. Trim the bottom edge of the skins so they follow the center of the crutch all along.
11. Still proceeding with both sides equally, dampen the outside of the skins and glue to the formers, F-24, & top block. Start at the front & work rearwards. If water will not allow the wood to bend sufficiently (altho' this is rare & only happens if wood is very hard) use ammonia.
12. Trim side skins level at F-24, top, & between F-2 & F-6. Glue gun through blocks in place, also F-21. When dry, carve & sand entire upper body to shape. Aim for a good flowing streamlined form.
13. Time to make the vertical fin. Replace upper part of F-17. Glue fin ribs & L.E. Add 1" x 1" block. Carve this to conform to rib tapers until sheeting will lay correctly in place (no hole for stab at this time). Make skins from extra wood on Diecut sheet #1. Outline of skin on plans is approximate and may vary a little from one model to another, so do not be concerned if you have to alter it to fit your model. Glue fin skins in place. Keep checking that fin is true vertical to bench. Glue tip block. When dry, shape & sand. Fair fin to body with microballoons and sand out.
14. Lift the fuselage off of the plan. Remove jig-tabs. The bottom can now be skinned one section (each side as before) at a time. Finally add & shape the tail block. Shape wing attach blocks to fit & glue in strongly. Install motor & finish front end with F-1 & cowl blocks. Epoxy glass oil cooler to fus; build removable cowl. Shape entire fuselage to your satisfaction.

WING

This is an extremely simple wing to make, and will be very true using our famous 15 cent jig (one strip of balsa strategically placed!) No washout is used.

1. Over the front view join bottom mainspars at correct dihedral angle using ply W-12 as a tie. Glue two W-1 ribs making a 1/4" thick single rib. Add L.E. dowel, W-1A caps, & W-16.
2. Carefully sighting from front, glue W-1 rib to bottom spar assembly BISECTING THE DIHEDRAL ANGLE IN THE SPARS. Check also that rib & spars make a true right-angle in plan view.
3. Pin strip jig in position over plan view of left wing. Pin down spar assembly with root rib carefully centered. Glue rest of left wing ribs to spar & pin to jig. Add L.G. mounting rails & W-15 as you go.
4. Notch L.E. for dowel & glue to ribs. Add rear upper spar. Glue top mainspar in place.
5. When set remove pins, re-pin jig over right wing plan. Rock wing over & pin down right spar. Build right wing basic framework as left wing – not forgetting to glue in W-14 & L.G. rails as you go.
6. With basic wing built, lift from plans and add bottom rear spars. Glue in filler blocks, webs & W-17's. Add bellcranks & servo for ailerons; check drive. Should be smooth & easy with no lost motion at bellcranks.
7. Install entire R.L.G. system but do not attach wheels yet. Operate system & check for leaks.
8. When all wing hardware is functioning properly, sheet the bottom of the wings. You can do this holding the wing in the air – it is not necessary to jig the wing during this stage. Sheet right over the R.L.G. units – do not make cutouts in skin for L.G. doors yet.
9. The jig is again used to hold the wings straight while the upper surfaces are sheeted. After preparing the skins, pin down jig and one wing over it. After sheeting this wing, flop over to the other side and skin that wing. Glue on wingtip blocks and shape when dry. Attach T.E. strips. Shape & sand L.E. & T.E.'s.
10. The ailerons are simple structures best made "in place" on the wing. Glue L.E.'s top & bottom. Make ribs from scrap 1/16" sheet, sand to triangular section when dry. Make bevel on L.E. to allow 20° of movement.
11. Make the wheel doors next. See the Finishing booklet for detailed description of this process.
12. Attach wheels. Make cutouts in upper wing skin to **just** clear the wheels and glue vac-formed fairings in place. **Note:** Getting the landing-gear organized correctly is a process requiring care and some patience. Take the time to get it right!

FITTING WING TO FUSELAGE

Here again, reference to the enclosed Finishing booklet on how to make fillets should be studied before proceeding.

1. Trim the side skins of the fuselage to **rough** shape to accept the

wing. A good fit is not required; a 1/16" - 1/8" gap is OK at this time.
2. With the wing pinned in position (center carefully) drill thru the wing & fuselage blocks with a #26 drill, one side only. Remove wing, tap hole in fuselage blocks with 8-32 tapping screw supplied. Drill out hole thru wing with a #18 drill and attach wing with this one screw while repeating the process for the other screw.
3. Proceed to make fillets per the booklet.

STABILIZER

1. Mark positions of ribs on stab spar. Thread ribs onto spar but do not glue joints.
2. Cut T.E. to length. Mark rib locations. Glue ribs to T.E. Cut L.E. pieces & glue to ribs. Hold over plan to see the assembly is correct.
3. Making sure the tail is unwarped, glue rib/spar joints. Proceed to skin the stab with 1/16" sheet, checking for warps as you go.
4. Sand to airfoil section and glue tip blocks in place. Build up elevators in similar fashion to the ailerons. Cut pieces of tip blocks away from the stab and glue to elevators (tip balances).
5. Build the rudder in similar fashion to the elevators. Cut part of tip fin block & glue to rudder.

FITTING THE STAB TO THE FUSELAGE

This is a delicate and patient task, possibly the most important of all to the success of the model's flight performance. Do it with care!

1. Mark the height of the stab chord line on the fin. Cut off the upper part of the fin along this line. Put the small piece aside for awhile.
2. Set the model on a large **level** surface with its wing attached & standing on its L.G.
3. Now, measuring the table-to-wing L.E. center, and then the table-to-wing T.E. point, prop up the rear of the fuselage with blocks etc. until the two measurements are the same. Shim the fuselage supports until this is EXACTLY so. Note: It doesn't matter what these dimensions are – it only matters that they are the same as each other. We want the wing to be **exactly** level with the surface of the table.
4. Trim away the block rib in the fin until the stab rests in the recess for half of its depth.
5. Pin or tape the elevators level with the stab and take L.E. and T.E. meaurements down to the table. We are again aiming at the same dimension front & rear. Trim the recess in the fin until the stab sits correctly in its place and level with the table (and, of course, with the wing. This is the **real** object of the care).
6. When you have achieved this, the rest is easy. Trim away enough of the fin block rib to enable the link on the elevator pushrod to be connected to the elevator horn. When this is done, glue the stab to the fin. We suggest you use a fairly slow-drying glue (such as Titebond) for this, as you need to ensure the alignment of the stab is also correct in the front view and plan view. A fast-setting glue would not allow time for adjustments. **Check one last time** that you have a zero-zero incidence relationship between the wing and the stabilizer. Leave to set. Phew!
7. Trim the block in the upper part of the fin till it will fit the upper half of the stab airfoil and glue in place. Atach rudder and hook up to tailwheel steering arm.
8. The model is now ready for final sanding prior to the covering & finishing process. The canopy, vac formed details etc. are glued on later during finishing, so we'll let the other booklet take over from here.

DETAILING

The extent to which the builder details this model will be a matter for individual judgement. Those willing to spend extra time can have a potential Nats winner. Conceivably, still more effort (a fully detailed cockpit, etc.) will produce an A.M.A. Precision Scale model of the highest caliber, since no inaccuracies are present in the design outlines.

Use the 3-view supplied and further info. sources noted on the plans to incorporate scale details.

The best single book on the Me 109 is "The Fighting 109" (Doubleday - Garden City, New York)