

BUILDING TIPS for the “Messerschmitt Bf 109” Kit # FF28

By Rick Foch

Like many vintage rubber powered scale designs, the Easy Built Messerschmitt Bf 109 features a minimal, structure and can be built to the plans for a neat and simple SAM scale model. Upon opening the box, I was impressed by the great wood quality and the selection of colors for the tissue covering. My kit had good portions of light blue, light gray, forest green and a small patch of yellow tissue. These are great colors for a Messerschmitt. After studying the plans, it was apparent that the models proportions are semi-scale for an early model Bf 109. This is quite understandable since it was designed when most details of Germany's hottest fighter were classified and only limited propaganda photos were released to the public. Nevertheless, all the Messerschmitt's key features are there and I decided to build the outline per the plans, concentrating on scale detailing, and its colors scheme and markings. This resulted in a model that is unmistakably a Bf 109 having even better proportions for flying than an exact-scale one!

I made a few structural additions to increase the durability of the model, by strengthening the landing gear and the wing-to fuselage joint. I also made a purely preference change to the square-edged canopy of the Bf 109 E4 which I felt would be easier for me to cover than the prettier kit's design which was the rounded type used on the Bf 109 prototype through the E3 model.

Tail Surfaces

Instead of building separate adjustable elevators and two stabilizer halves, I built the horizontal tail as a one piece unit with a 1/16" X 1/4" center rib to accommodate a 1/16" wide slot from the leading edge halfway back to the spar. Correspondingly, the vertical fin also has a 1/16" X 1/4" rib, centered at the stabilizer location with a 1/16" wide slot from its trailing edge forward, halfway to the leading edge. This allows the completed stabilizer to be slipped into the completed fin with both units interlocking into alignment during final assembly. The rudder is a separate unit built per the plans that is added to the tail assembly, after the fin and stab are joined. I added a few extra 1/16" square rib strips in the stab and rudder, too, although they probably aren't really needed.

Wing Panels

Having cut the ribs slightly oversize then sanding them right up to the printed outlines, I was amazed how well each rib fit into its place which is not always the case with printed parts and a tapered wing panel. I added a 1/16" X 1/8" strip up against the inside bottom of the root rib to stiffen it from being bowed by the covering. You could get by without this stiffener if you glue the wing to the fuselage before shrinking the covering, but because this wing features a light structure and a fairly thin airfoil, I wanted to be able to pin the wing panels down while shrinking and doping, before attaching them. I drew the plan view of the two scale wing radiators on the wing panel drawing, so I knew where to place a small strip of 1/16" square between the first two inboard ribs, flush with the wing lower surface in order to have a little structure to support the front edge of each radiator. I also added two small gussets of 1/16" sheet to add a little more gluing area between the wingtip and the leading and trailing edges.

Fuselage

I built the two side frames exactly per the plan, then inlaid 1/16" balsa sheet into the first bay to add a little more strength in an area that gets a lot of handling. I also inlaid a rib-shaped piece of 1/16" sheet into each side frame to form a base to glue each wing panel to the fuselage. Like the wing ribs, the fuselage formers also fit very well and it was easy to complete the fuselage per the plans. After inspecting the finished fuselage I began having second thoughts about cutting, bending and gluing the clear plastic panels in place to make the neat smooth-style canopy. I've seen it done many times, but I've not yet been able to make a really good small canopy this way. So I removed the kit parts and constructed a flat frame style canopy used by the later 109 versions.

For anyone interested in reproducing the square-frame style canopy, here is what I did: I drew a top view of the top of the canopy frame in its location of the top view of the fuselage and I extended the outside edges of the canopy frame all the way to the tailpost.. I then constructed this long, slender canopy-top/ rear fuselage-top frame from 1/16" square strip with cross braces at each location directly above each fuselage cross brace. Next, I cut new trapezoid-shaped rear formers whose lower width was the same as the width of the fuselage (like the original formers), whose upper width was the same as the width of the newly constructed canopy-top/fuselage-top frame, and whose height was measured from the side view. Then I glued these new formers to the fuselage. (note: I should have subtracted 1/16" of an inch from each former to allow for the thickness of the canopy-top/ fuselage-top frame but I forgot to. So, my fuselage top is actually 1/16" taller than the side view, but the vertical tail is also taller than scale on this semi-scale model, anyway, and I am happy the way things turned out). After gluing the canopy-top/ fuselage-top frame to the new top formers, 1/16" square strips were individually cut, fitted and glued into place, until the entire, light and very strong canopy frame was complete. The resulting rear fuselage top and canopy are now easier to cover than the original design and there are now only two tip stringers from the canopy to the tail instead of three which saves a little weight behind the balance point.

Landing Gear

Using the strut and axle angles shown on the plans for the wooden landing gear plus the length shown on the fuselage side view, I drew a landing gear pattern for bending a 1/32" music wire landing gear that extended 3/8" into the fuselage. I cut two rectangular formers from 1/16" sheet and sandwiched the upper part of the music wire gear between them, then glued the entire unit into the fuselage, in the usual manner.

Scale Details

I removed the stringers from the top and bottom of the fuselage nose and lightly glued soft balsa block between the first two formers. After carving and sanding to match the fuselage nose contours, I removed them and hollowed them to about 1/8" wall thickness to save a little weight. While I had the top nose block in my hands, I used a small rat-tail file to shape the nose gun troughs. After sealing the grain in the troughs

with nitrate dope, I glued both nose blocks back into place.

I sanded a piece of 3/16" square soft balsa strip round to make a lightweight dowel for the scale landing gear oleo struts. Next, I cut a 1/32" wide groove 1/32" deep down the length of the strut so it would fit over the music wire. After trimming them to length and gluing them to the wire, I wrapped them with a few small strips of typing paper saturated in white glue to make the telescoping portions of the oleos. The landing gear doors were cut from light 1/16" sheet balsa (1/32" would be fine...I didn't have any). They are set aside and only attached after they're tissue covered and the oleo struts have been painted.

The kit's plastic 1" diameter plastic wheels looked a little small, so I made new 1 1/4" diameter wheels from three cross-grain laminated pieces of 3.32" soft balsa with an aluminum tube bushing. The hubcaps (as well as the instrument panel) were printed on bond paper from a computer drawing I made with Microsoft Visio drawing software.

The exhaust stacks and intake scoop were carved from really soft balsa, and the prop spinner from the medium weight block that was included for it in the kit.. They were sealed with several coats of nitrate dope and painted to match the surrounding color tissue. Details were either cut from black construction paper or drawn with a fine point, permanent marker. Then they were given one smooth coat of Tamiya Acrylic plastic paint that I mixed from Lemon yellow with a few drops of orange to match the cub yellow tissue. For the canopy frame, I mixed black and white to match the dark gray tissue ahead of the canopy and I also painted the landing gear oleo struts gray as well.

I framed up the wing radiators on the drawings that I added to the wing plans earlier, using 1/16" X 3/16" balsa strip. They were covered and doped separately from wings and glued into position during the model's final assembly.

Finish

The covering is the covering that came with the kit plus a little extra light gray, a small amount of dark gray, cub yellow and black Easy Built tissue. I needed to add the extra light gray because I decided to use the forest green only for the fuselage markings. I gave the entire model one thin coat of nitrate dope, and then sanded the raised grain with 400 grit paper. I applied the tissue with thinned white glue. To avoid warping the delicate wing and stabilizer structure, they received a very light misting of water from an inexpensive airbrush and were clamped to a flat non-porous surface to dry. I applied one smooth coat of well thinned nitrate dope to each covered component and the wing and tail surfaces were again clamped to the flat surface to cure for a few days. The care in shrinking and doping was worthwhile. Despite their lightweight structures, the tail is flat and the wings naturally twisted, with each having about 3/32" washout, which is ideal.

My original plan was to apply a splinter camouflage pattern of dark gray over the light gray, but after trying this out on the horizontal tail, I didn't like the blotchy look that resulted. Fortunately I didn't start with the wings, since I had to recover the tail. The German crosses and swastika were cut from black tissue and white typing paper. The

white paper was attached to the black tissue using one thin coat of UHU clear liquid paper glue sparingly applied with a small brush.

Finally, although its many scale details might seem a trifle tedious, they aren't very hard to do and they really make the model special. I hope these tips will help you enjoy building your version of the Messerschmitt Bf 109.. It's sure one of my favorites!