

Introduction:

The Pica ME-109F is a laser cut, balsa and light ply, sport 1/12 scale electric airplane. The kit builds quickly due to the "laser lock" system and results in an easy and fun airplane to fly.

Kit Contents:

The kit consists of several balsa and light ply sheets of laser cut parts, rolled plans, various bags of hardware, bundled sticks, vacuum formed canopy, and an instruction booklet. All the parts were neatly packed and arrived without damage. The builder need only supply his choice of radio gear and covering to complete the kit. One nice touch is a complete listing of parts in the instruction manual as well as individual lists in each package of parts.

Construction Notes:

Fuselage/ Tail Surfaces/ Motor Mounts

Construction starts with several sub-assemblies; the elevator, vertical stab, motor mount, wing mounting blocks, and formers were assembled with a combination of thin and medium CyA (the instructions suggest Pica's GLUIT). Motor mounts for both speed 400 and 480 style motors were provided. I chose to use the 480 mount and drilled a set of holes for a speed 400 on the same mount so that I could try a variety of power systems.

The order of construction is interesting as you are now instructed to cover the horizontal and vertical stabs, as well as the elevator and rudder (and in slightly different order), but there would be no problems following the instructions as written. The fuselage went together easily with all the parts fitting nicely. The servo mount has various knockouts to accommodate servos of different sizes. The JR241 servos that I used were smaller than the smallest knockouts so I added two small light ply rails. The servo connection to the rudder was typical and the elevator connection was made internally. With the basic fuselage assemblies complete I tackled the wing.

Wing

The wing is assembled similar to an egg crate. First the two spars, which are very dense (26 oz/cu ft!) balsa, are joined in the center with a light ply joiner. Then the ribs are slipped into notches cut alternately from the top and the bottom of the spar. The leading edge core is then slipped into a slot from the leading edge back to the spar. The instructions then instruct you to pin the wing half over the plans on a washout jig that is just two pieces of balsa. I couldn't determine how having the wing supported on two parallel pieces of balsa would create washout. There was no mention of how much washout was required in the manual or on the plans. I left the wing flat for the initial flights (see flying notes).

Once everything was properly aligned, I wicked thin CyA into all the joints. Add the leading and trailing edges, gussets, and the servo tray and the basic wing is complete. A typical torque rod setup is used for the ailerons and is explained well

in the manual. I chose to use two servos for the ailerons to simplify the setup. Even though the laser cutting is good and the parts fit well, care must be exercised to ensure the wing will end up straight. One of the leading edge core pieces supplied was warped. I went ahead and used it but was very careful to keep everything straight. Even when completed the wing was fairly flexible. Another concern was the lack of sheeting on the bottom of the center section since it would be landing on the bottom of the wing.

Canopy

The next step is to cut out and trim to fit the canopy/top module. When cutting out plastic parts I use a Sharpie marker to indicate the cut line. Alcohol will easily remove the ink after the parts are trimmed. Since I have had poor results in the past using various glues to hold canopies on I tried a new technique. I lightly sanded the portion of the canopy that would overlap the fuselage and painted a thin coat of Balsa Lock on both the fuselage and the canopy and ironed it on. It worked great and I didn't have to wait overnight for the glue to set.

Covering/ Finishing

I used Doculam for covering and also for hinging the control surfaces. I lightly sanded the canopy (just the overlap) and again used Balsa Lock to ensure the covering would stay attached to the top module. I trimmed and attached the cowl with small screws. I then cut out the exhaust stacks, oil cooler, and turbo charger, and glued them on with RC56. At this point I finished the installation of the radio gear. The receiver ended up in the canopy; no pilot for this little warbird. I glued in a Velcro strap to hold the battery in place and the ME-109F was ready for paint. At this point it weighed 24.8 ounces and had taken about 26 hours to build. A pleasant Saturday was spent airbrushing on the camouflage scheme and applying the decals. The paint only added 0.2 ounces and brought the final time to just over 30 hours.

Flying

I had a friend launch the plane for the maiden flight, since there's something about low wing fighters and first flights that just don't go together. The launch went fine but it required some down trim and a few clicks of aileron trim to achieve straight and level flight. It tracked well and had an aggressive climb rate, although there was a fair amount of tail wagging. The ailerons and rudder were very effective; the elevator was a bit sensitive. I throttled back and settled into some low and close figure eight's for the camera. When the roll of film was gone I set up for a landing. It slowed down well and set down gently on the grass. A couple more pictures on the ground (I wonder where Murphy was - I had forgotten the insurance pictures!) and it was time for flight number two. I moved the CG forward a tad and dialed the elevator rates down. The launch was much cleaner and it climbed away nicely. At full bore it will do nice large loops from level and very axial rolls. Throttled back, it is very docile and fun to fly in close. I landed with a little over six minutes on the clock and probably a minute or more left on tap. It was a little prone to dropping the left wing when slowed down but was easily corrected with the ailerons. I've since added 1/8" of washout, but results will have to wait for the next flights. The tail wag was still evident; perhaps the vertical stab is a little small?

Recommendation:

This is a nice sport scale warbird that comes as a very complete kit. It builds quickly and looks good in the air. I have thoroughly enjoyed flying it. The instructions do assume a fair amount of knowledge concerning the selection and installation of the power system. Pica only provides a small table of "motor-battery combinations", but does little to describe how to select one.

Other than the warped leading edge core I didn't have any problems with the kit. I would like to see either a better description of the washout needed or clarification of how to build it in using the supplied "jigs". I would suggest at least sheeting the center section on the bottom of the wing and perhaps even glassing it unless you only fly on nice grass fields.

Ward Shelley

Addendum:

I spoke with the designer after he had a chance to read my review. He is planning on making some minor changes in the kit to make it easier to build as well as more accurate; most were focused on the trailing edge of the wing and motor mounts. Re: washout, the last four ribs are cut with a progressive amount of washout totaling two degrees. Pica will also review the instructions to see if they can be clarified. I suggested that comments be added to the electric info table to indicate what type of performance the modeler could expect.

Pictures were removed when pulling a copy of the review from the web.