Martin Baker MB5

Martin Baker is most famous for the invention of the ejection seat. Before that they made the first jettisonable canopy in British service. But Martin had always had a desire to design and build a fighter aircraft and the MB5 was the culmination of that dream. Martin Baker was a valuable manufacturer of parts and equipment for the British Air Ministry, so his plans to build a fighter were seen as a distraction from his main function. Add to this the fact that Martin Baker was not an established and "accepted" aircraft manufacturer, and it you have the reason why Martin Baker fighter development was not pursued by the Air Ministry more seriously. Had the MB5 gone into production it quite probably would have been hailed as the finest piston engine fighter ever made!

Martin's designs were filled with simple, elegant innovations. Innovations so brilliant and basic that most have become standard production features on every aircraft built since. The MB5 housed the powerful Rolls Royce Griffin engine, with contra-rotating three blade props. My plans to not attempt to include this feature because of the serious complications of weight and performance degradation. With a simple 8-4 prop on a strong .15 the plane is agile and fast, with a very fast roll rate (with ailerons set at 3/8"). When constructing the aircraft be sure to finish the nose so that the spinner back-plate is a full 1/8" separation from the "cowl ring". Once the prop is tightened down, about 1/16" is absorbed.

The sequence of construction I suggest is to start with the wings, so that when the fuse is being build the wings can be fitted nicely to the wing cut-out.

The fuselage is built upside down by adding the formers to the balsa crutch. After this the crutch is trimmed up to the formers so that 3/32" fuse sides may fit smoothly against them. You may sheet the bottom scoop area, but wait to add the 3/32" under tail sheeting, if you are going to make your elevator linkages internal. Remove the fuse from the plans and add the top formers and sheet with 1/16" balsa.

Make the stab/elevators and join the elevator halves with 3/32" (=.09") music wire. I make my control horn using a 3/32" wheel collar and one inch 4-40 screw (in place of the set-screw). Place the wheel collar on the wire before bending the ends as indicated on the plans. Flatten a place on the wire for the screw to hold the collar tight and when satisfied solder the whole assembly (wire to collar to screw). Cut off the head of the screw leaving about 5/8" and attach a 4-40 aileron connector. To this you will attach your clevis and push rod. At final assembly you will fish the pushrod through the installed tube and secure the tail plane in place. You can mount your push rod externally, through the fuse side, if you prefer.

With the fuse framed up (less the nose/cowl blocks) fit the engine mount, tank, and engine. Attach the nose/cowl blocks. Trim the end of the nose off so that with cowl ring attached there is a 1/8" clearance between the end and the 2" spinner back-plate. You may achieve a closer fit, but be sure the prop is TIGHT on the spinner. Sand to shape. The chin inlet was easily added to the round-sanded chin with three layers of 3/32" balsa. Trim and sand to shape as per the plans.

The exhaust stacks are the next feature, set in a "trough" on the MB5 for streamlining. A 5/16" Brass tube was sharpened and used to carefully cut into the outline marked on the fuse, according to the plans. Don't cut all the way through the nose/cowl block, but do cut into the fuse side. You'll have to trim into the firewall with a hobby knife or something, to get the full length of the cut. Short narrow blocks of 3/16" balsa will need to be glued inside the fuse (where cut) and then recut to deepen the trough. Don't

cut through the fuse side blocks, or you'll have to redo it. Sand the trough smooth and add the stacks. You could use Airkill's plastic stack or do as I did using 1/8" dowels cut 5/8" and glued together. I aligned six of the sections against a ruler over wax paper. The pieces were angled severely with about 1/8" overlapping onto the next. Medium C.A. was lightly applied at the base (away from the ruler) and set with Kicker. My assemblies were secure enough to sand carefully and progressively over new 150 grit paper, to achieve a flattened bottom. Paint silver or black (or brown) and glue into the trough AFTER covering (remember to remove a narrow strip of covering in the trough for secure attachment of the stacks to wood).

Monokote flat gray and olive drab are suitable colors, with Cub yellow undersides. The yellow underside is continuous from nose to tail, with about 1/4" extending beyond the sides of the chin inlet at the nose to about 1/8" showing along the bottom sides to the tip of the rudder. The bottoms of the wings are fully yellow covered. These colors are not exact but they're about as close as you'll get without painting. That's the basics, the rest is up to you and your taste. She flies nice in my hands and in yours she will undoubtedly fly even better!