



The author with his beautiful WWI type Senior Falcon, dubbed the Falconmeister.

PART I: CREATIVE R/C

THE FALCONMEISTER

Tired of seeing row after row of "look-alikes?" This first in a series of articles on creative modification concerns M. T. Hunsicker's renovation of the popular C.G. Senior Falcon.

Resplendent in red and white finish, the Falconmeister even sports home-made decals.



THE current trend of "buy-today-fly-tomorrow" seems to be robbing the modeler of one of the most rewarding aspects of our hobby: creative thinking, planning, building, and the thrill of seeing the culmination of these in full and graceful flight. It is hoped that this plane will inspire more modelers to add a little of their creative abilities to that next beautiful bird they plan to build.

The modification of the Sr. Falcon to the "Falconmeister" is easy and simple, despite the fact that these minor changes completely alter the appearance of this fine plane which so many RC'ers have used for learning to fly. The "Falconmeister" handles well on the ground, is less apt to turn up on its nose in high wind. It takes off with a shorter run and lands at a lower speed, probably because the modification caused a shift of the C.G. about $\frac{3}{4}$ " aft. With an O.S. Max 60 RV up front, I find it will get off on half throttle on rough ground. The original Falcon under the same conditions required full throttle. Another advantage brought about by this modification is a reduction in prop breakage. I have broken only one prop after approximately 60 flights.

In building the "Falconmeister," I retained as much as possible of the original general arrangements, moments, areas, etc. Let's begin with the fuselage. First remove the landing gear, it just doesn't fit a WW I type. Cut a piece of $\frac{1}{8}$ " plywood $\frac{3}{4}$ " wide and another $1\frac{1}{2}$ " wide, both as long as the width of the fuselage where the landing gear is to attach. On the $\frac{3}{4}$ " plywood cement a piece of $\frac{3}{16}$ " x $\frac{3}{8}$ " full length on the aft edge. On the second piece cement two pieces of $\frac{3}{16}$ " x $\frac{3}{8}$ " maple on the fore and aft edges. (See where the landing gear attaches on the drawing.) These pieces should be cemented to the bottom of the fuselage for locating the landing gear. Directly above the landing gear bearers, drill $\frac{5}{16}$ " holes in the fuselage, invert and cement two pieces of dowel used for attaching the landing gear. These should extend about $\frac{3}{4}$ " outside each wall of the fuselage.

Remove the rudder and elevator, get out the old razor saw and let's start cutting them up. Locate rib S5 of the stabilizer as shown on the drawing. Cut through the leading edge, center spar, and trailing edge on the outboard side of the rib. Save the tip of the stabilizer to glue to rib S5 as a new stabilizer tip. Now cut S5 at the front edge of the center spar and the leading edge at the indicated angle, at the forward end of S4. A new leading edge is made from $\frac{1}{4}$ " x $\frac{1}{2}$ " balsa, and cement end in place from the outboard end of the center spar to the angle cut on the leading edge, then to the top edge of the side of the fuselage. The location of the new leading edge at the fuselage should be approximately 11" from the aft end of the fuselage. Balsa should be added to ribs S3 and S2 top and bottom, from the maximum thickness to the leading edge. Sand these rib additions to a smooth contour. Now continue the $\frac{1}{16}$ " sheeting forward on S2 and fuselage to the leading edge.

The old elevator should be cut to the proper length for the new stabilizer and additional wood added to it to give it the approximate size and shape as indicated in the drawing.

(Continued on Page 68)



THE FALCONMEISTER

(Continued from Page 28)

Measure 5" up on the aft edge of the fin, from the top of the stabilizer. Use a straightedge to draw a line from this point to the foremost edge of the stabilizer. Remove the portion above this line and fill in as indicated on the drawing. Now give the rudder the same type of treatment as the elevator.

The turtle deck is constructed by cutting former #3 from $\frac{1}{8}$ " or $\frac{3}{16}$ " sheet balsa, and cementing it to the top of the fuselage at the aft edge of the wing cutout. The shape of this former can be your own but the height should be $2\frac{1}{2}$ " as shown on the plans, and should set at the approximate angle indicated. Be sure to allow $\frac{3}{32}$ " around the contour for the sheet covering which will be added later. Three stringers $\frac{1}{8}$ " x $\frac{1}{4}$ ", are cemented to the back of this former, one at the top center, and one on each side equally spaced, the other ends are cemented to the top of the fuselage about $\frac{1}{2}$ " forward of the leading edge of the stabilizer. The aft ends of these stringers should be tapered at the gluing surface so that the aft end of the turtle deck will be flat and bend into the stabilizer. Now you can take scrap pieces of $\frac{1}{8}$ " x $\frac{1}{4}$ " balsa, cut them to size, and cement them between the stringers as shown in detail "B" to form a flase former. Cover the turtle deck with $\frac{3}{32}$ " sheet balsa.

The nose of the plane should have the appearance of a radiator, so build up the sides with $\frac{1}{8}$ " sheet balsa about 2" above the old "top of the fuselage line," and about $\frac{3}{4}$ " fore and aft. Top this off with a cross piece, rounded or roof shaped, and fill in with louvers or honeycomb material to allow for free passage of air for cooling. The radiator shell and former #3 are the control contours for determining the shape of formers #1, 1A, 1B, 2, and 3A.

Cut 2 pieces of $\frac{1}{8}$ " or $\frac{3}{32}$ " sheet balsa as long as the width of the formers #1 and 1A. Cement these in place as shown in the drawing. The height of #1 is determined by placing a ruler or other straightedge, from the top center of former #3 to the top center of radiator shell. By moving the straightedge around the edges of former #3 and the radiator shell, and cutting formers #1 and 1A so that there is $\frac{3}{32}$ " clearance from the straightedge at all points around the edge of #1 and 1A, you will come up with the proper shape and size of these formers. Cover this area with $\frac{3}{32}$ " sheet balsa.

Cut the ailerons at the sixth rib out from the center of the wing, and remove. Glue additional balsa on the larger portion and shape as indicated on the drawing. Attach the aileron and cement enough balsa to

the trailing edge of the wing, between the inboard end of the aileron and the first rib, to form the stationary scallops. In the corners formed by the outboard side of the eighth rib, and the aft edge of the main and rear spar, and cement a length of $\frac{5}{32}$ " aluminum tubing. The ends of the tube should be flush with the top and bottom surfaces of the wing. Cement a $\frac{1}{8}$ " half round and quarter round gusset around the ends of the aluminum tube, and sand flush. The sheeted leading and trailing edges are not a part of the "Falconmeister" modification, but was added to my original Falcon for extra strength, because I thought it advisable when using a .60 mill. Move the aileron bellcrank outboard to a location between the 11th and 12th rib. I used "Ny-Rod" nylon tube within a tube pushrod, to connect the servo to the bellcrank in its new location.

Cut two formers #3A and #1B from $\frac{1}{8}$ " sheet to match formers #3 and #1A, place the wing in its normal position on the fuselage, and cement formers #1B and #3A to the leading edge and trailing edge of the wing so as to mate with formers #1A and #3. The fuselage width must be maintained all the way across the wing, so cement two pieces of $\frac{1}{8}$ " x $\frac{1}{4}$ ", laying flat against the wing between the two formers. These will control the width of the fuselage across the top of the wing. When the $\frac{3}{32}$ " sheeting is applied to this area, the lower edges will be cemented to these $\frac{1}{8}$ " x $\frac{1}{4}$ " pieces. Cut a stringer from $\frac{1}{8}$ " x $\frac{1}{4}$ " and cement to connect formers #1B and #3A at the top center. Make former #2 from $\frac{1}{8}$ " sheet balsa, cut to the proper length and height, notch it in the top center to fit the $\frac{1}{8}$ " x $\frac{1}{4}$ " stringer, and cement in place as shown. Shape the former by straight edging between formers #1B and #3A. Attach two more stringers midway on each side, and make a flase former, the same as shown in detail "B", between formers #1B and #2. Be sure to start at the $\frac{1}{8}$ " x $\frac{1}{4}$ " pieces cemented flat to the surface of the wing. Now this over-wing section can be sheeted with $\frac{3}{32}$ " sheet balsa. Make a tank hatch cover from a block or built up method, with a cut out for your engine. Cut out the cockpit opening and you are ready to silk and dope.

The landing gear is made from two pieces of $\frac{1}{8}$ " music wire and one piece of $\frac{5}{32}$ " as shown in the front view. When tread should be about 14" and the distance from the axle to the bottom of the fuselage, $4\frac{1}{2}$ ". The back brace is bent from $\frac{1}{8}$ " wire. Bind the latter to the front piece with wire, and solder. Acid core solder, is best for making landing gears, but be sure to apply a mixture of $\frac{1}{2}$ tablespoon of baking soda and one tablespoon of water, to these joints when complete to prevent residual acid from causing severe rusting. Another piece of $\frac{1}{8}$ " wire should be bent in a curve so that the ends can be attached to the main piece directly above the first solder joints. The top of the curve should be approximately 1" from the bottom of the fuselage. This piece was found to be necessary to prevent excessive spreading of the landing gear on hard landings. Install $3\frac{1}{2}$ " to $3\frac{3}{4}$ " wheels and rubber band the gear to the fuselage. Attach your favorite type of steerable tail wheel and we are ready for the finishing touches.

The original model had all movable surface painted white, as well as four square panels near the wing tips, a portion of the fin, and a wide band on the fuselage aft of the cockpit. The remainder of the plane was red. I cut three different size patterns of German crosses from cardboard and traced them onto the white panels, then masked the outline and painted them black. (See the accompanying photos.)

Split some neoprene tubing and attach to the edges of the cockpit opening with contact cement. Cut a wind screen from celluloid and cement in front of the cockpit. This should be flat, or only slightly curved. The machine guns are made from rounded balsa or dowels, and were painted black.

The flying wire brace assembly is made from four pieces of spruce, $\frac{1}{8}$ " x $\frac{1}{4}$ " x $5\frac{1}{2}$ ", sanded to a streamline section and cemented to the wing so that the top will be directly over the front spar. The top of these braces are cemented to a piece of spruce $\frac{1}{4}$ " x $\frac{1}{4}$ " x $\frac{1}{2}$ " (the $\frac{1}{2}$ " dimension laying fore and aft). A hole should be drilled down through this block and a 2-56 blind nut inserted from below. For the flying wire assembly, cut a piece of $\frac{1}{32}$ " plywood $\frac{7}{8}$ " x $\frac{1}{2}$ " and trim it to the approximate shape as shown in detail "AA," and drill a hole in the center for a 2-56 bolt. Cut two pieces of silver X-acto plastic lacing about 7' long, attach the centers of these to the plywood web with glue and thread, and fasten the web to the top of the flying wire brace assembly with a 2-56 bolt. Push the lacing through the appropriate aluminum tubes in the wing, and pull them under the fuselage as shown in the side view. Cut them to length, the ends extending $\frac{3}{4}$ " under the fuselage. Fold the ends back $\frac{1}{2}$ ", and cement and bind with thread, leaving a small eye so that an "S" shaped hook can be attached. The hooks are made from $\frac{1}{32}$ " piano wire. When flying, all four hooks are bound together under the fuselage with a rubber band. Oddly, these flying wires have never given any vibration problems in flight.

The entire plane should be sprayed with at least one coat of clear dope. I used a 2" scale Williams pilot in the cockpit, and a little piece of white silk tied around his neck for a scarf looks real sharp on a low pass.

Good luck with your brand new "Falconmeister," and I hope you have as much fun with yours as I am still having with mine — but look out for "Snoopy," he may drop out of the sun and be on your tail before you know it.