



Shark's teeth and mouth markings add considerably to scale details of our P-40 profiler. Rest

of scale details will help as an eye catcher while performing all that good control-line flying.

Designed for young or old, our P-40 is docile for the very beginner, perform well for expert.

P-40-Combat Special

Three-in-one control-liner—good scale; fine stunt and outstanding combat flier—can't ask for much more than that and a profile model besides.

by PAUL DEL GATTO

► The "Curtiss P-40" has always held a warm spot in the hearts of modelers, particularly the U-control fans. Of all the P-40's perhaps the Allison 1,200-hp engine P-40N has had the most lasting appeal. Built by the thousands, (14,000 P-40's were manufactured) this 343-mph fighter saw widespread service in many theatres of war. Armed with six .50-caliber Browning machine guns, it also had provision for a total of three 500-pound bombs.

Spanning 43 inches, our profile is ideal for stunt and combat flying when powered by engines of .19 to .35

displacement, and has all the zip and realism of the full-scale fighter.

Fuselage: The "Profile" is cut from $\frac{1}{2}$ " x 4" hard sheet balsa 24" long, with the portion below the "split" line at the wing position being a separate piece. After tracing the outlines onto the wood, cut out with a coping or jig saw leaving a little material for final smoothing and sanding. Butt join the top and bottom pieces of the profile. Be careful that the cut-out for the wing is accurately made; check it with a wing rib pattern. Leave extra material for final trimming with your balsa knife. Be sure the engine cutout will properly receive the hardwood mounts.

Note how the two $\frac{1}{8}$ " thick plywood doublers lend strength to the nose, locking the motor mounts in place and helping to mount the wing accurately. Be sure the doubler on the engine side of the fuselage is cut out to take the engine when it mounts (Continued on Page 40)

This design was so well thought of it is kitted by Scientific Models for those of you who don't like to build from plans — build it though, it's good.



P-40 — Combat Special

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on the inserts; the ply overlaps the inserts. It may be necessary to make a small cut out in the other doubler to clear the crankcase of your engine. Cut to length the 7/16 x 1/2" hardwood insets and cement them in position.

For easy engine installation 4/40 blind mounting nuts and bolts are suggested. Mark the bolt holes and bore with a 1/8" drill.

To attach the doublers smear the glue area with cement and allow to dry; then put on more glue and press the doublers in place. Hold them in position until the glue dries by means of C-clamps or spring-clothes pins.

Tail Surfaces: The stabilizer and elevators are cut from 3/16 in. sheet balsa, as is the fin-rudder. Smooth with a large sandpaper block using fine paper, then sand the leading edge portions round and the trailing edge portions to a slight taper running from the hinged line aft, with the actual rear edges rounded.

Attach the elevator control horn and then connect the elevators to the stabilizer with six sets of cloth tape hinges as indicated. Note on the top view that the rudder is offset 3/8" toward the outside of the circle to help maintain line tension. The fin-rudder should be cracked along the hinge line, then recement the crack to hold the proper amount of rudder offset, or cut the rudder from the fin and recement at the proper angle.

Do not install the tail surfaces until the wing is in place.

Wing: Construction is quite simple and very strong, using two sturdy edges, two over-and-under spars and a novel plywood landing gear mount which, extending across the center section, serving as a joiner and wing-construction jig at the same time. Follow this procedure carefully.

Notch the leading edge and trailing edge pieces for the ribs, and then cement the trailing edge joiner in place. Then cement the leading and trailing edge pieces in position. Pin the wood exactly over the edge outlines on the plan while the cement dries, so that the parts will fit properly later.

Note that ribs R-1, R-2, and R-3 are slotted to fit over the plywood joiner that holds the gear, as are the short ribs R-3A and R-2A. Actual assembly is begun by cementing ribs R-1 and R-10 on each side to the leading edge, then the trailing edge to the same four ribs. Insert and glue the remaining ribs then locate and cement the 3/16 x 3/8" spars.

Before the wing sheeting can be done, the 3/32" music wire landing gear struts are bent to shape and attached to the plywood joiner-gear mount by means of heavy thread laced through small holes drilled in the plywood (see top view). Slide neoprene tubing over the struts.

Sheet the bottom of the centersection with 1/16" thick balsa, then build up the 1/8" ply bellcrank mount and spacers. The hole for the bolt is drilled from the bottom up, taking care not to penetrate the top spar with the drill. The bolt head is on the outside of the wing and the retain-

ing nut for the bellcrank is inside the wing.

Cut the wing tips to shape from 1/8" thick sheet balsa, cement in place, then fair with 1/16" sheet balsa triangular-shaped gunsets. Cement the aluminum tubing leadout guides at the tips.

Both pushrods and leadouts must be attached to the bellcrank, and the bellcrank mounted before the top sheeting can be applied at the center section. Lay the 1/16" diam. music wire pushrod over the side view drawing when marking the necessary bends. Finally, glue the top center-section sheeting in place. Cut the exit hole for the pushrod and be sure that it can move freely back and forth.

Wing Covering: Sand the wing frame free of bumps, fuzz, and glue bumps. Coat all surfaces with clear dope where the paper attaches and let dry. Sand lightly again. Cut out two pieces of heavy Silkspan, one for the top surface and the other for the bottom, with the grain running spanwise. Dope the paper to one wing tip, then stretch and dope to the other tip. Dope to the leading and trailing edges, working out any wrinkles. Repeat for the other side of the wing. Waterspray the finished covering; it will pull taut when it dries out. Give the wing three coats of clear dope.

Main Assembly: Slide the wing through the opening in the fuselage, lining it up carefully. Work cement into the crevices of the wing-fuselage joint by sliding the wing slightly back and forth. Pin the wing in place temporarily and fillet the joint with more cement.

Trim fit the stabilizer. Its position can

be changed slightly in either a fore or aft direction in order to accommodate the pushrod attachment to the elevator horn, insuring neutral elevator when the lead-outs are held even at their ends. When the stab has been located glue it in position and follow up with the fin and rudder. Note how the cutout hole in the rudder fits over the elevator at its narrowest portion, leaving the elevators free for up and down travel.

Final details and finishing: Sand the entire structure to a smooth finish and round off the fuselage edges at the proper points, as for example, around the top, bottom, and front of the nose.

Bend the 1/16" music wire tail-wheel axle and cement to the fuselage as seen on the side view. The bottom of the fuselage at the rudder hinge line is drilled and grooved as necessary to receive the wire. Use a soldered washer to retain the wheel.

Give the fuselage and tail wood surfaces three coats of balsa wood filler, sanding with fine paper after the first two coats until bare spots begin to show through. The color scheme is olive drab on top, sky blue beneath.

Thin your colored dope slightly (one part thinner to nine parts dope) and brush on three coats of the blue, sanding lightly with wet-and-dry paper after the first two coats. Repeat for the olive drab areas, but allow the darker color to make a soft (no masking tape) wavering edge (as on plans) over the lighter color. When sanding over-paper-covered areas you will have to be careful not to cut through the material. If you think this risky, just sand the painted wood surfaces.

The tiger mouth has blue outlines with white teeth against a red back-ground. Put on the white first, then the red and finally the blue trim. Use a good quality small brush. Paint the landing gear struts black.

Insignias are hobby shop decals.

Mount the engine and the wedge tank. Small screws hold the latter in place on the side of the fuselage that faces the outside of the flying circle. Slide the 2½" wheels over the axles and remain by means of soldered washers. Make the radio antenna mast and affix it firmly to the fuselage top, then string heavy nylon black thread as an antenna. Finally, add and paint the tail wheel door covers.

Flying: Use at least 50-foot long lines. Before flying, lay out the lines and handle and operate the controls from the center of the circle while a helper holds the model. On your signal the helper should release the model in the downwind direction. Keep the ship level for a few laps while you gently feet it out. Progress to very shallow wing overs, increasing their severity as you get used to the control feel. Climb and maneuver going into the downwind quadrant at first then, when you have everything just right, cut loose as you would any stunt or combat ship.

You will find your P-40 "Warhawk" fast and responsive.