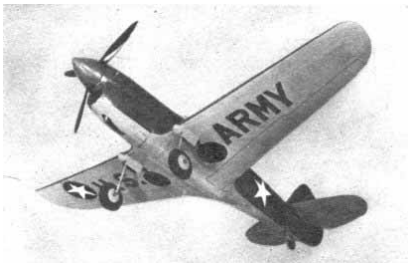
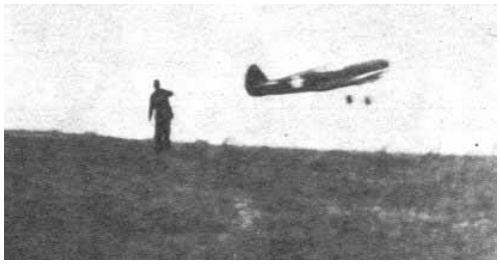
THE WARHAWK

By Claude McCullough

PUT THIS P-40F THROUGH ITS PACES AND YOU'LL FIND THAT CONTROL-LINE FLYING OFFERS MORE POSSIBILITIES THAN JUST RACING.

This picture should convince you of the scale authenticity of this Warhawk. Note landing-gear details.





She's off on a 40 m. p. h. test hop! Controlling's a cinch, just keep the lines taut and rudder well offset.

YOU can have your screaming hot wires and engines-on-a-broomstick. Me, I'll take scale jobs. Of course, I'm the type of guy (as if there were any other) who goes buzzing around the room with a scale model rat-tat-tatting imaginary Zeros to the amusement of any nonmodelers present who exchange knowing glances and tap their heads significantly. But there is a certain thrill obtainable from an authentically realistic buzz-buggy that the most surrealistically streamlined brain wave fails to arouse -- and they have lots of other advantages, too. You'll realize this especially the next time you watch a half foot of horsepower make like a bomb.

This control-line edition of the P-40F is just fast enough to make it interesting without involving the clinical type of interest required in assembling the scattered bits of wood and metal found in a landing crater. The construction would be husky even in balsa, and in bass it's practically gravity proof. The beginner will find this stable control liner easy on props and nerves. Any Class A or B engine may be used successfully, but anything larger than a .29 is a little too speedy for comfort. If you want superspeed, you don't want this job. But -if you want dependable performance and control with a plane that can double in brass as a slick display job and still be in one piece after landing, here she is.

The fuselage is carved from two basswood

blocks, 2 x 2-1/2 x 22", and 2-1/2 x 2-1/2 x 22". Trace the top and side views on the block. You will note that the cowl is just a little deeper than two and one half inches below the thrust line. Cement a piece of sheet bass to the bottom of the block to allow for this. With a band saw, cut to top outline. Replace the cut offside pieces with pins or small brads and saw to top outline. Draw a center line as a guide on the top and bottom of the fuselage; during carving operations, do not carve this away.

Clamp in a padded vise and begin carving to general shape with a draw knife or spoke shave. Carve with care from the cockpit forward and backward. When it is roughed to shape, begin to check with templates, using a sharp knife to bring the block to accurate cross section, leaving it a little oversize to allow for sanding. Smooth with the fine side of a wood rasp until the fuselage is free of bumps, and then sand with sandpaper wrapped around a small block.

Split the fuelage blocks apart at the thrust-line joint. With a common cupped chisel and mallet, begin removing wood with smart smacks of the mallet at first and careful taps when the shell begins to thin. Work according to the dotted lines on the plan. This is really very easy, since basswood is a perfect carving wood.Note that the back-view part of the cabin is cupped in; be sure to allow for this when carving.

Cut off the removable forward part of the fuselage. If you like, the entire top shell may be made removable, but it will serve little purpose since the control system is contained in the top. The front hatch is held on with a tube-wire stop at the back and small hooks with a rubber band at the front. A cooling vent made from light bristol board is attached to the right side of the cowl and the cooling flaps are cut from tin, salvaged from a tobacco can and hinged on a wire hoop. When you fly it, open the flaps for ample cooling.

The control mechanism is fully explained on the plan. The control plate is fastened to a 1/8" flat piece of bass. Place several washers between the control plate and base. A small slot is cut in the back part of the right-hand side of the fuselage to permit passage of the control rod.

To regulate the amount of elevator movement, use small wood screws or brads stuck in the control-plate base to limit the movement. Set the controls to operate as shown on the plan. The cabin is celluloid formed over a foundation of light wire that has been bent to shape. The cabin should be made sliding or removable to permit easy access to the control plate.

The tail section is of conventional construction. The hinges are of 1/32" sheet metal and .035 wire fastened securely to the elevators, which are cut from 3/16" sheet bass. The fillets for the tail are carved as a part of the fuselage and the tail surfaces cemented to them. A slot is made in the rudder to pass the elevator control wire.

Cut out the wing ribs from 1/16" sheet and cement them to the spars, which are cut from 1/8" bass sheet, to fit the notches in the ribs. Add leading and trailing edges. The wings are made in two pieces, with the spars extending to the center line. Cut slots in the fuselage at the indicated position and slide the spars through, cementing them together at the center. The 1/8" plywood dihedral spar is made in one piece, slid in through the slot and cemented securely to the main wing spar.

The landing gear is bent from 3/32" steel wire (see plan detail) and, lashed firmly to the plywood spar with liberal applications of cement. The ends of the landing-gear pieces run along the inside of the fuselage shell. A cover of 3/16" aluminum or rubber tubing, brings the landing gear to scale diameter. Plank the leading edge of the wing after the landing gear has been installed with 1/28" sheet bass. A pair of 2" sponge wheels are used, held on with a brass washer soldered to the end of the landing gear.

"Fill in" the space left between Rib 1 and the fuselage with 3/32" sheet pieces on both top and bottom until the space is entirely planked over. Form the fillets over this foundation with plastic wood. Allow it to dry until it can be handled easily and carefully work to shape while still soft. Allow to dry thoroughly and sand with sandpaper wrapped around a 1/2" dowel. Fill in any small holes or cracks with cement. This makes a super-strong wing-fuselage connection and landing gear stress point, which is certainly required above all else in control models.

Install the engine in the motor mounts with 1" wood screws. The ignition unit is fastened in the bottom of the fuselage shell. An Austin battery box is convenient for medium or pencells. Shift the ignition for balancing.

Cover the plane with Silkspan or G. M. paper. Give two coats of clear dope and follow with regulation U.S. army war paint or any other finishing scheme desired. All upper surfaces are painted olive green and underneath a light blue-gray. With paint, or use paper letters, put U. S. ARMY on the bottom of the wing. Wheel wells are black and control markings are added with India ink and ruling pen. Army stars are added to both sides of the fuselage and the upper

left wing and lower right.

The control lines are made of thirty-pound-test enameled fishline, which should be kept on a reel to prevent tangling. These are attached to a spade-grip handle made from pine. Balance the plane about mid-way between the control lines.

You will notice that the entire rudder is hinged to avoid a common mistake. Every serious crack-up I have ever seen in control-line flying was due to the fact that the plane was not turning enough against the circle. The right-hand turn tendency must be strong to keep the lines taut and the plane in perfect control. It's hardly possible to turn the rudder too much; even if it is overdone it's far from being the messy result of slackened control lines. The plane will try to veer off to the right but, unable to go because of the restraining control lines (a backward step or two will control the tendency further) it will simply pancake in meaning at most a broken prop. Turn the rudder at least three fourths of an inch for the first flight, which should be made in absolutely calm weather. Keep the motor throttled down until you get the feel of the model.

Scanned From March 1943
Air Trails