

**This nifty Control Line British RAF version of the P-51B Mustang was designed and built by a third-generation modeler who looks to be just as taken with the hobby as his well-known father and grandfather before him. ■ Michael and David Haught**

Those bold invasion stripes and British RAF insignia were what first attracted Michael to the P-51 as a modeling subject. Simple enough for a beginner to build, the Mustang is still a reasonably accurate replica. Note the long, wide landing gear for good leverage off grass strips.

## Michael's Mustang

MODEL BUILDING is somewhat contagious, partially genetic—and frequently addictive. How else could it spread so fast? I caught it early, at about age six. My oldest son, Michael, was hooked a bit earlier, and each of my other children seems to be affected in varying degrees from time to time. So far, Michael shows every sign of being incurable.

My son's first original design was a P-51B Mustang. Here's how he came to build it:

"My name is Michael. I saw the P-51B Mustang in one of my dad's books. It was painted with the invasion stripes used at the end of World War II, and I liked the way they looked. The P-51 Mustang was one of the fastest fighters of the war, which is another reason I chose it. With four 50-caliber machine guns and rockets too, the P-51 was a real mean machine.

"I had to pick a model to build for my entry in the county 4-H fair, so I took my .049 Black Widow engine and we made this model. My Mustang won a blue and a purple rib-

bon at the fair, so I'm pretty proud of it! I hope you will want to build one, too."

**Construction.** Building any model is best begun by making a kit of parts. Carefully study the plans and photographs. Be sure to use the right size and thickness of wood for each part. We used a fast-setting CyA (cyanoacrylate glue) for most gluing tasks in this project.

We make paper patterns for the parts we want to kit by reproducing the appropriate sections of the plans on the copier at the library. Lightly coat the paper with spray mount glue or glue stick, place it on the wood, and cut along the outline.

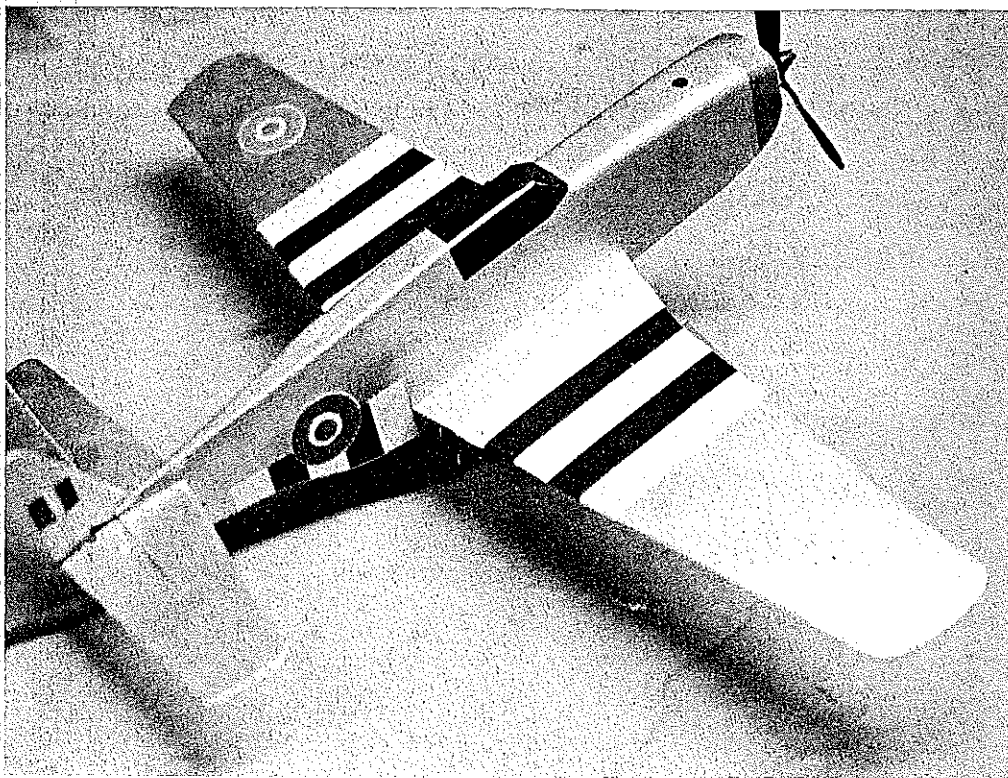
Once cut out, the parts are ready for sanding and assembly. Label each piece and check it for fit and accuracy. Make sure the wing slips snugly into the slots in the fuselage side. Check that the stabilizer is a snug fit as well.

**Fuselage.** Mark both fuselage sides with the locations of the formers and firewall. Mark the engine centerline on the fuse sides and then on the firewall. Locate and drill the engine mounting holes in the firewall. It's much easier to drill them now than to wait until later.

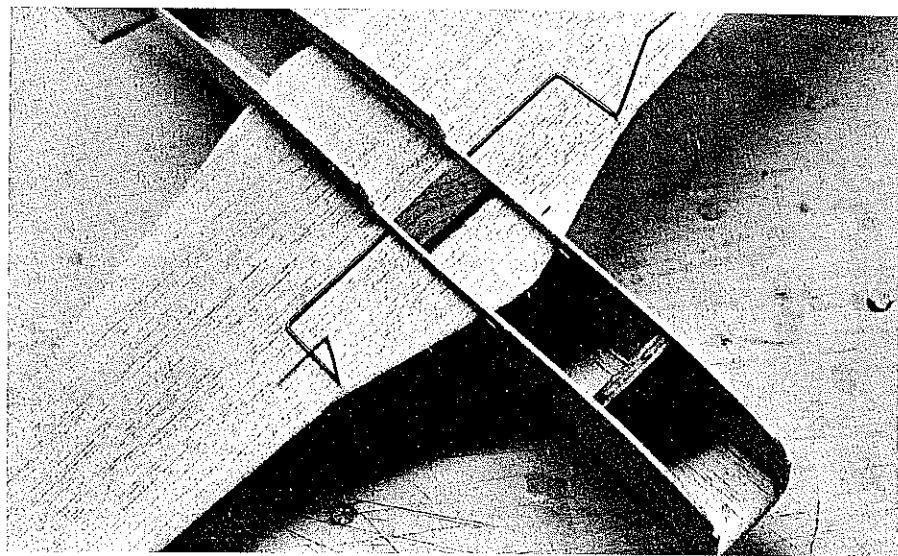
Tack glue formers 1 through 5 to one of the fuselage sides, using a small drafting triangle to make sure they're perpendicular. Don't glue formers 3 through 5 where they curve near the top; this will be done after both sides are glued together later.

Tack glue the other side to the formers, checking that they're aligned with the location marks you made earlier. Carefully draw the sides together at the rear and secure them with a clothespin. Position the assembly over the plan fuselage top view to check that the center of the fuselage is congruent with the centerline. Adjust the clothespins until the alignment is perfect, then glue the

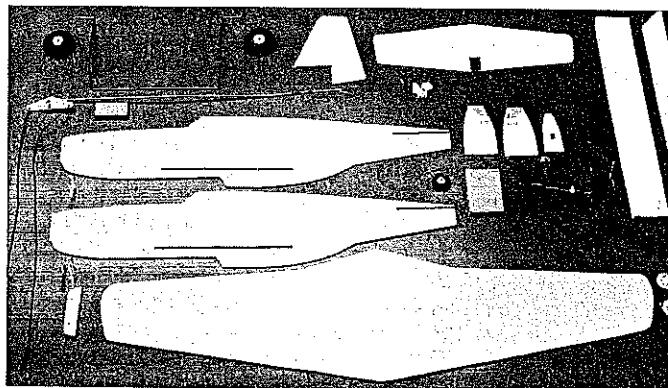
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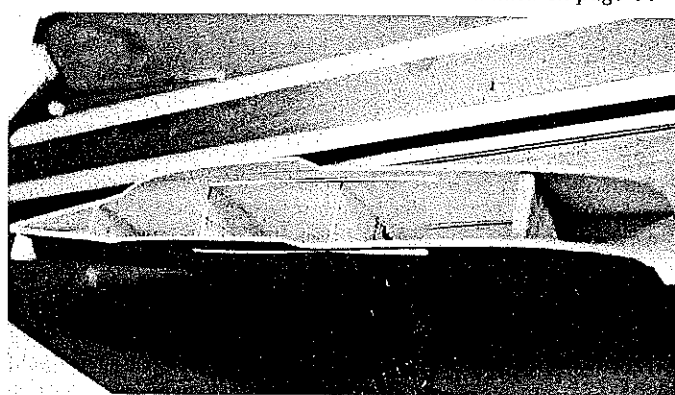
Stick-on trim tape, in this case black and white electrical tape, is easy to work with and makes eye-catching invasion stripes. Black tape was also used for the cockpit windows.



The one-piece landing gear has been slipped through the bottom of the wing slot in the fuselage, then glued to the wing. The 1/32 plywood gear plates have yet to be added. Note that the ply bellcrank mount attaches to the wing and the fuselage sides for added strength.



Left: The Mustang kit set out and ready for labeling and fitting. Making a kit of parts speeds up building, adds to the fun. Right: The fuselage framed up and lying on its back. Note the wing slot and the curved formers that lend the fuse its realistic appearance.



sides together.

Beginning at the firewall, securely glue each former to the fuselage sides in turn. Since F3 through F7 are curved, you'll need to pull the sides together at the top to conform them. This isn't as tricky as it sounds. If you glue one former at a time and let the CyA set as you go, you'll end up with a nicely shaped fuselage.

Cut the top block and front portion of the cockpit to fit from 1/4-in. sheeting. Hollow the block a little to clear both the firewall and the engine. Test mount the engine, and trim the top block to fit.

Drill the needle valve access and fuel tank holes. File a groove on top of the valve to hold a screwdriver for easier needle valve adjustments.

Cut and attach the 1/6 fuselage top sheeting. When the glue is dry, sand the sheeting to contour smoothly with the sides. Be sure not to sand through the wood at the corners.

**Stabilizer, elevator, rudder, bellcrank and landing gear.** Round off the edges of the stabilizer, elevator and rudder. Cut out the two 1/32 plywood doublers. Glue them in place on the center section of the elevator. Allow to dry, and fit the hinges. Check for adequate elevator travel—about 3/8 in. up and down. Any of the small, thin nylon hinges or Sig Manufacturing's Easy Hinges work well.

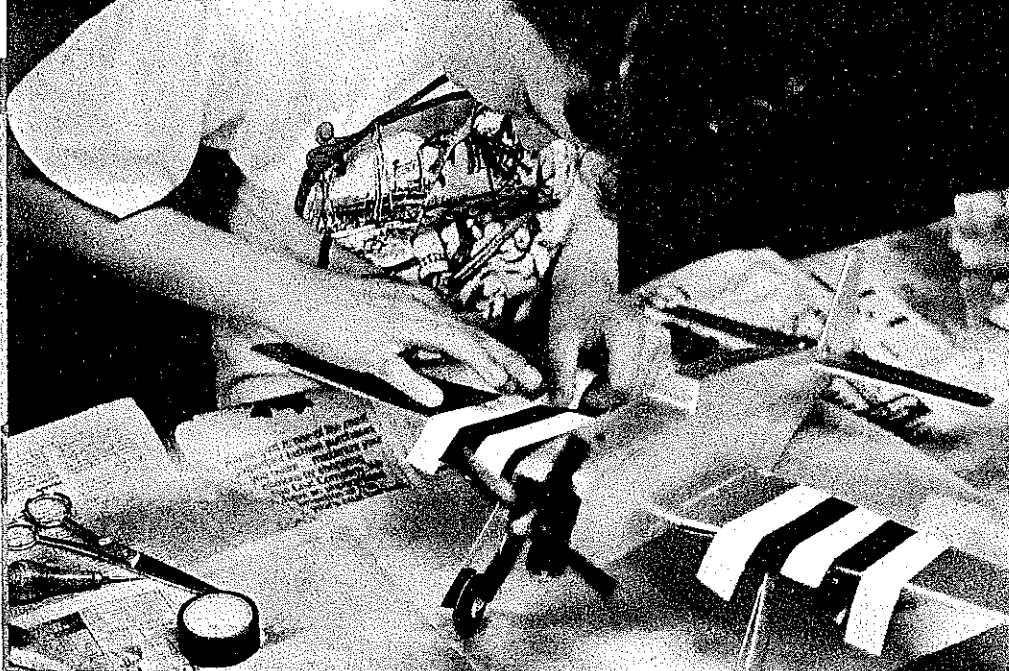
Slip fit the stabilizer assembly to the fuselage. You'll have to trim the fuselage so that the elevator clears it on its downward travel. View the stabilizer alignment from the front, making sure it's perpendicular to the fuselage sides.

Trial fit the wing. Check that it's parallel with the stabilizer when viewed from the front and rear. Bringing the wing and stab into alignment now is important to the appearance of the finished model. Make whatever adjustments are necessary, then set the parts aside.

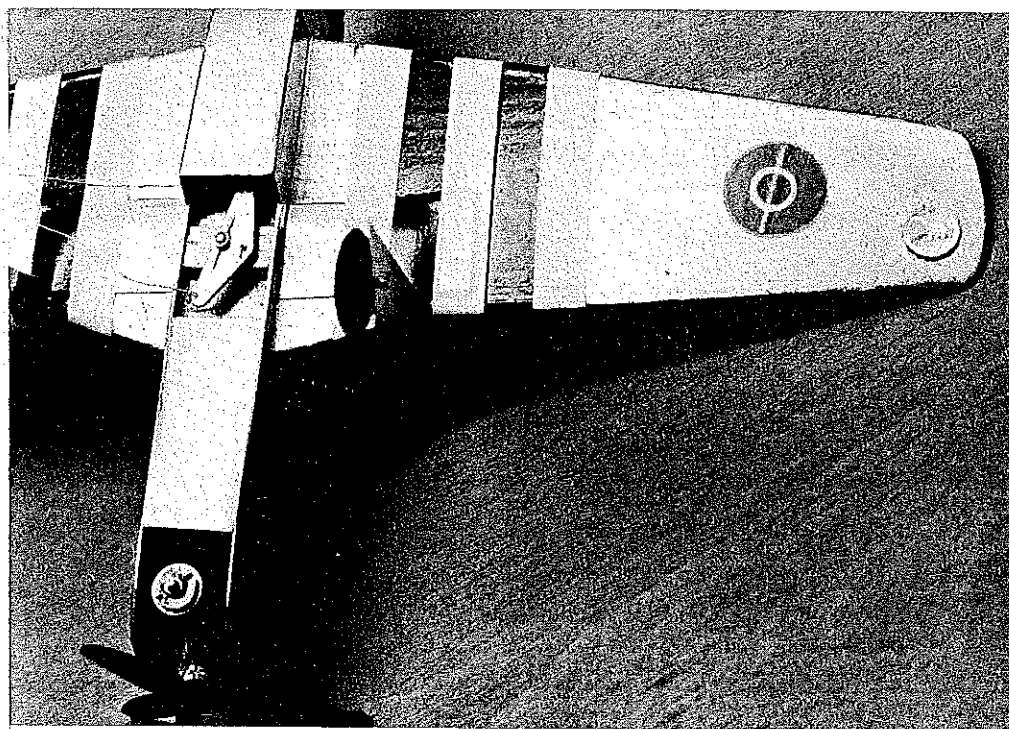
Drill the bellcrank, and attach it to its plywood mount. The bellcrank should fit snugly between the fuselage sides just under the wing position. Slide the wing in place, pinning it securely. Fit and pin the bellcrank mount.

Starting at its attachment to the bellcrank, begin bending the pushrod wire to shape. Note that the wire travels straight to approx-

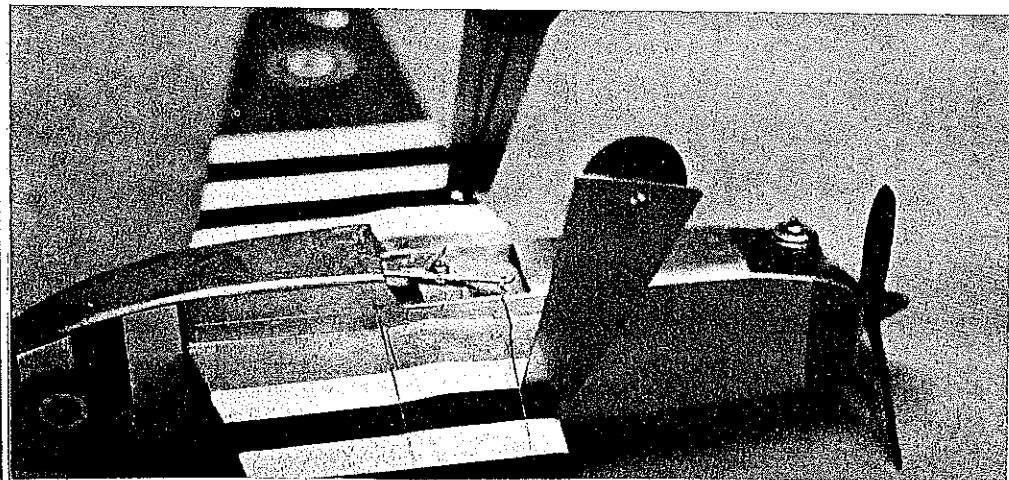
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Michael puts on the invasion stripes. Painted with these prominent stripes, Allied fighters could be identified by friendly ground troops from a good distance.



Above: Access to the engine and bellcrank system is easy. Note the landing gear plates and penny wing tip weight. Below: With the bellcrank open for adjusting and servicing, it's simple to replace the lead-outs and even the pushrod. The rear lead-out exit hole is just visible. Make sure the lead doesn't snag on the hole as it travels in and out.



imately where the wing trailing edge begins, then gently bends upward towards the elevator horn. Trim the wire about two inches overlength.

Mount the elevator horn to the elevator. Slip the stabilizer back in its slot, holding it in place with pins and tape while you finish bending the pushrod to hook up the elevator. Check that the stabilizer moves freely through the full range of elevator travel before gluing it in place. Don't forget to add the tail wheel strut and the balsa blocking (a small wedge cut from trailing edge stock fits nicely) to secure the stabilizer. Glue everything thoroughly with CyA.

Carefully glue the top of the wing to the fuselage, but leave the bottom free. Bend the landing gear from  $\frac{1}{16}$  music wire, slip it through the bottom of the wing slot in the fuselage, and clip it in place with clothespins. Glue the gear to the wing using a tiny bit of CyA at a time. Thoroughly coat one side of each  $\frac{1}{32}$  ply landing gear plate with white glue, then clamp it securely over the wires and up against the fuselage. Glue the bottom of the wing to the fuselage.

While the landing gear is drying, glue in the bellcrank mount, lead-out guide and wing tip weight. Hook up the pushrod, and install the bellcrank. Make the lead-outs from either the Dacron control line that comes with  $\frac{1}{2}$ A control handles or thin music wire. Drill holes for the lead-outs in the fuselage sides. Move the controls from full up to full down to check for free travel.

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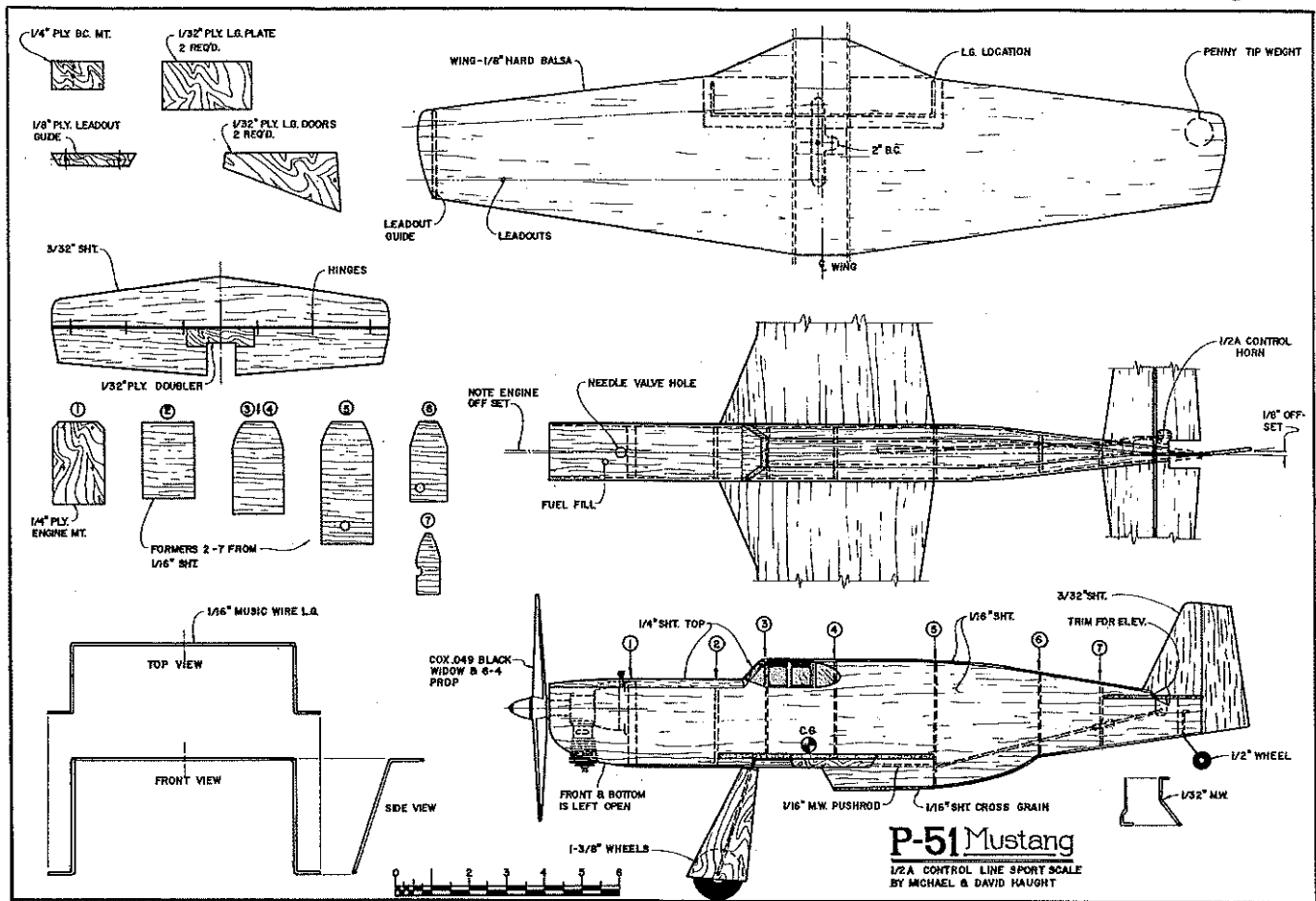
*Painted with World War II invasion stripes, Michael's P-51 Mustang became a Blue Ribbon winner at the County Fair.*

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Cut out the rudder. Offset it  $\frac{1}{8}$  in. as shown on the plan top view, then fit it to the fuselage and stabilizer. Notch the fin to allow the elevator joiner full range of motion. Checking that it's both perpendicular and congruent with the fuselage centerline when viewed from above, glue the rudder in place.

Sheet the fuselage bottom with  $\frac{1}{16}$  balsa, leaving the area just around the bellcrank open for easy access to the control system. Mount the wheels and the landing gear doors. To hold the bottom of the door in place, drill it with a small hole and insert the end of the landing gear wire after the wheels have been attached. Wind a few turns of copper wire onto the gear wire tip before soldering it in the hole.

Secure the top of the door by gluing it to



the top of the landing gear wire with a drop of silicone caulking. The silicone stays rubbery enough to withstand the shock of landings. Consider leaving the gear doors off if you plan to do much flying over grass.

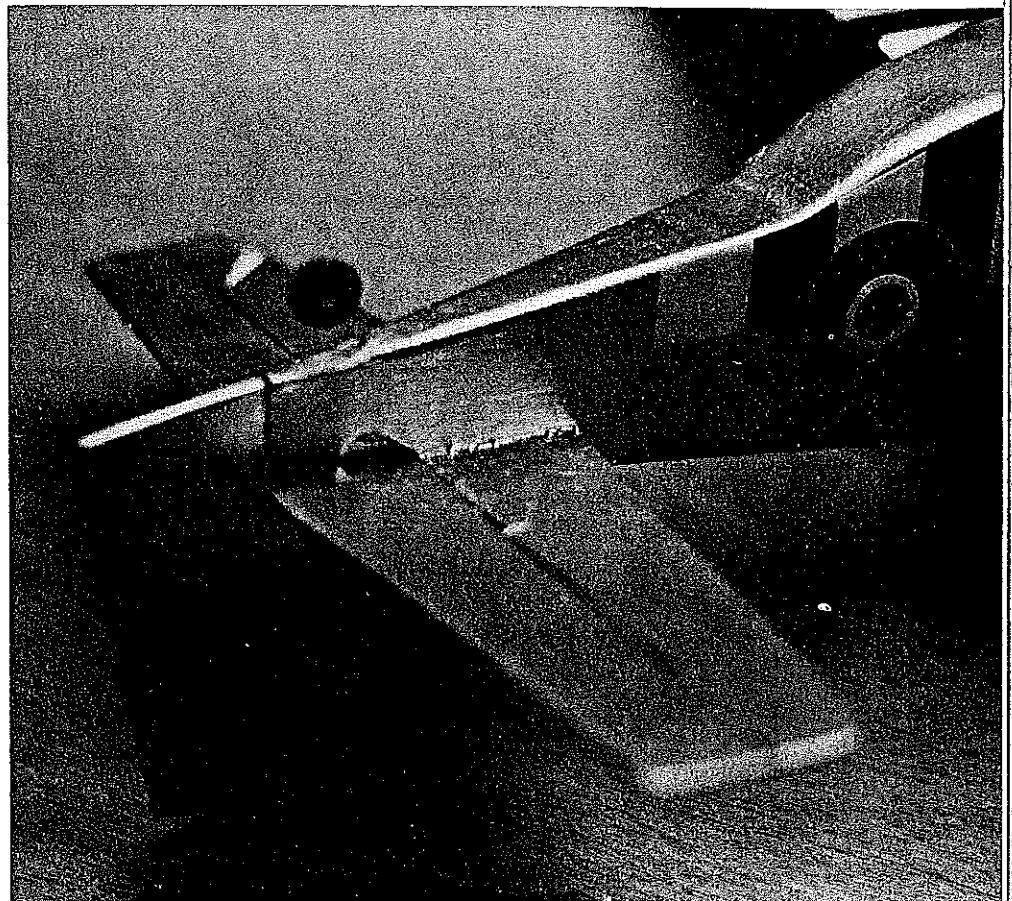
**Finishing.** Final sand the model in its entirety. Apply five coats of Sig Lite-Coat dope, sanding carefully between coats. Follow with three coats of Sig silver dope for an attractive finish.

We bought special decals for our British RAF insignia. Made from black and white electrical tape as pictured, the invasion stripes really spruce up the color scheme. The black tape is so easy to work with that we used it for the cockpit windows as well. A red nose stripe finished off the trim.

**Preparing to fly.** To keep the model at the end of the control lines, give the engine—a mighty Cox Black Widow, in our case—a little right thrust. Do this simply by putting a washer under both left engine mounting screws. Install a three-bladed propeller.

Check the balance point. If the center-of-gravity matches that shown on the plans, the model should be either level or slightly nose-down. Add lead as necessary.

Get ready for your first sally across the channel. Tune up the engine, and adjust the needle valve for a steady run. Even in a light breeze, this model flies well on 25-ft. Dacron lines. Try some loops and wing-overs. They're easy first maneuvers, and the Mustang does them with aplomb. Is there a Messerschmitt anywhere about?



The pie-shaped hole above and below the elevator joiner provides clearance for the one-piece elevator as it travels through the fuselage. Make sure there's room for free movement.