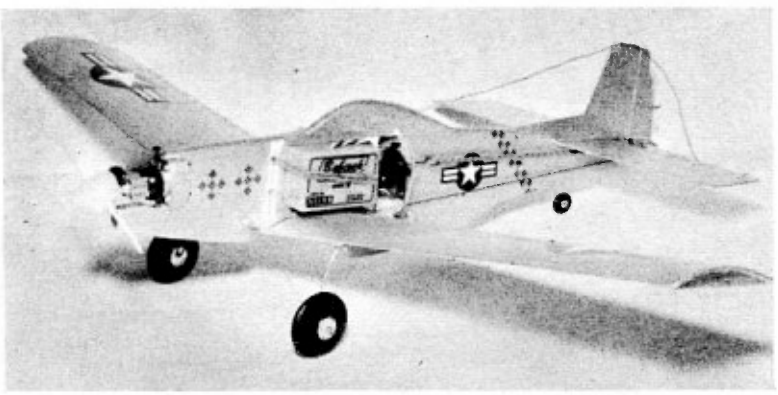
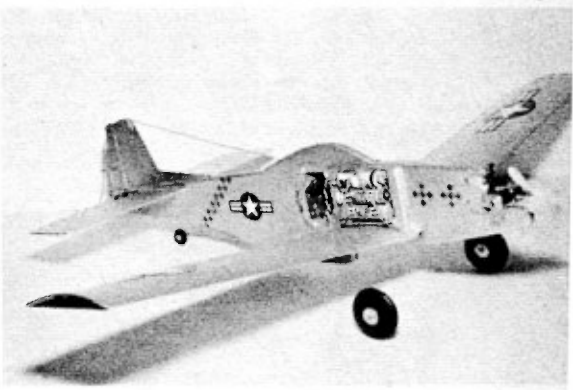
R C PROFILE

P-51 "MUSTANG"

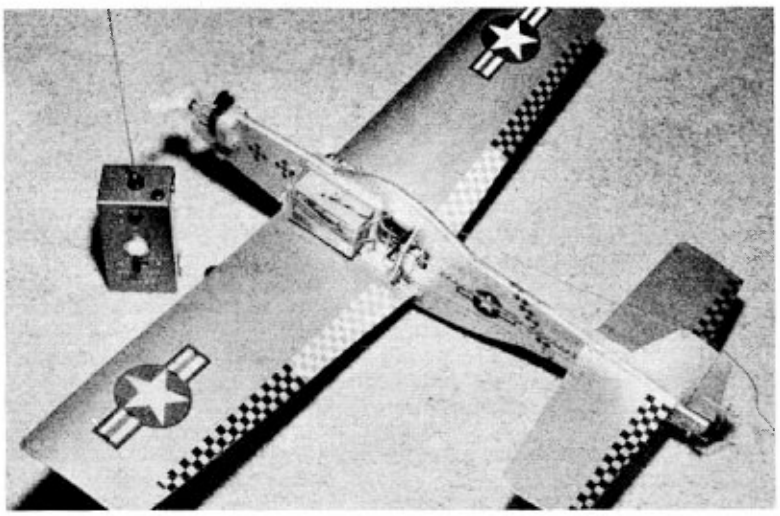
By Ted Strader

Don O'Brian holds peewee P-51 and looks real pleased. The author probably threatened him!





What could be easier than engine, gear and receiver mounts on this fine aircraft? Right: Batteries and sidewinder engine are on starboard side. Below: Escapement is centered in fuselage, right there for tinkering, but away from the exhaust.



For almost as long as we've been interested in R/C we've been obsessed with the idea of strapping some gear to the side of a sheet of balsa and flying it. Until the fairly recent advent of commercial receivers of small size and minimum battery requirements it has remained more a thought than a reality. When we finally decided to do something about it, it was decided to at least attempt to make the ship look like a real one. Having had such good luck the 4' P-51 which we did for FM back in February '58 we decided to use that outline for our first profile R/C.

So much for the prologue, suppose we get down to business and stamp out a copy of this little 9 oz. terror before the late movie comes on!

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Construction can be greatly speeded up by cutting out all the parts needed before the first pin is pushed.

FUSELAGE: Cut two identical side patterns from 1/16" sheet balsa. If 6" stock is used they can be cut in one piece. We used 3" sheet and laid it out so the seams came where it would be backed by the 3/16" inner core. This made two seams and they were along the base of the canopy outline and the radiator outline. Using one of the 1/16" sheet sides as a planform, cement the 3/16" sheet core and the rear 3/16" sq. pieces in place. When this is dry, cement the other 1/16" sheet side in place and proceed to another bit of construction.

Once the basic fuselage is dry it can be sanded and made ready for the rest of the parts. Before the tail pieces are installed, position the 1/16" plywood escapement support to be certain it fits properly. Position the escapement and again check to be sure all is jake. The escapement support can now be cemented in place.

Cut the wing support from 1/16" sheet, 1½" x 5⅛" and cement in place. The engine firewall and scrap balsa supports along with the stabilizer can be cemented in place. Bend the tail gear and press it into the fuselage where noted on the plans, reinforcing with a small piece of gauze.

Join the fin and rudder with cloth hinges and when dry position, along with the dorsal fin to the fuselage. The dowels which hold the wing and the one for the escapement rubber are added after the fuselage has been clear doped and before the final finish has been added.

The 3/16" sheet frames for the receiver, batteries, escapement and torque rod are not added until the model has been test glided.

WING: Make two identical wing patterns from medium grade balsa sheet and mark the positions of the ribs. Cut two sets of ribs of 3/16" sheet from the patterns and cement in place starting at the trailing edge. When this much of each wing section is dry, the assemblies can be completely cemented and held down on a flat surface to dry.

We have found that applying a little warm water with a paper napkin to the outer surface as it is pinned in place relaxes the balsa and makes forming of the contour easier. Don't overdo the water bit as it can cause the sheeting to buckle.

When both wing panels are completely dry remove and draw a bead of cement along both sides of each rib. Be certain that rib 2 is especially well reinforced with cement as this is the

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rib that supports each landing gear. Sand the center-sections of each wing panel to effect a good smooth joint, block up each tip 2½" and cement, reinforcing with gauze for strength.

When this phase has been completed and is dry the landing gears are cemented in place and reinforced with gauze.

At this point we finished our model, before installing any radio gear, frames or torque rod. This was done so we could find the balance point to determine exactly where the equipment would actually be located.

FINISH: Our model was given three coats of clear fuel proof dope with a generous application of fine sandpaper between each. This was topped off with two coats of fuel proof aluminum dope, wing hold-down dowels and decals as desired.

R/C INSTALLATION: With our hero all decked out in its war paint and the Cox .020 PEE WEE bolted up front at a 2 degree right thrust angle, we proceeded to test glide into high grass. With any luck you should find that your model balances out as is, and will venture forth in a long flat steady glide. (Anyone for free flight?)

When you get the glide you want, mark the balance spot on the model for future reference. You may find the balance spot we have indicated on the plans is a bit too far forward. This was done for a reason. When testing low wing aircraft it is wise to start off with a model that is almost obviously nose heavy. Low wings will stall violently if tail heavy but can usually handle nose heaviness with little struggle until our final balance point is arrived at.

As our model will weigh only about 5 oz. without equipment you have little to worry about during the initial tests if the grass is high!

When installing the radio gear we'd suggest the following procedure. Bolt the escapement in place, then bend the torque rod and work it through the hole in the escapement support. Next slip a small eyelet on the shaft, then the rear torque rod support followed by another eyelet. Press the rear support into the fuselage and cement. Line the torque rod up for a smooth fit and solder the eyelets to the rod on either side of the rear support to keep it in place.

Next strap the receiver to one side and the batteries to the other side of the fuselage in the approximate area of the balance point. Shift this equipment back and forth until the model balances were it did during the test

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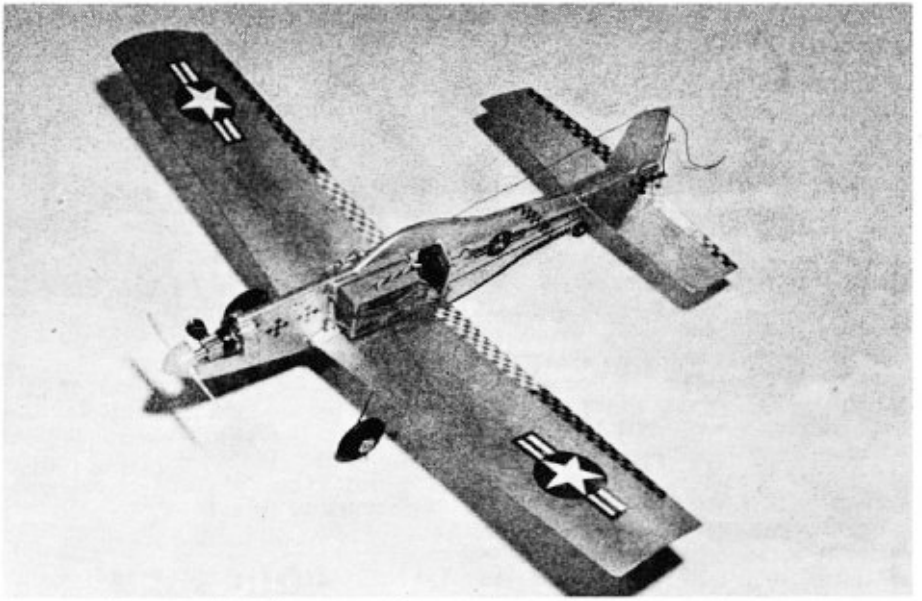

Profile model of P-51 Mustang weighs only about 5 oz. without its R/C equipment.

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glides. Now the receiver and battery frames can be finished and cemented in the proper place.

The receiver frame is outlined to hold the Babcock Mark III Magic Carpet Receiver, however some of the other popular small receivers such as the Citizen-Ship, GG Electronics, Min-X and others can be used with equal success by just adapting the frame to their outline.

Four short lengths of 1/16" dowel cemented at 45 degree angles in the outer edges of the receiver frame, allow rubber bands to be used to hold the receiver in place. The dowels on the battery frame were installed straight into the frame and we cemented small eyelets, as per plans, to keep the rubber bands from working loose. The dowels were installed thusly to give some base support for the batteries as well as hold the rubber bands. This arrangement has proved to work very well.

The Babcock Mark III receiver uses a 9v battery and we simply disconnect one of the snap connectors as a switch. If a 3v receiver is used, a dress snap, soldered into one line would do the trick. If a 3v receiver is used and only a single two pencell battery compliment is used, the battery frame, of course, will have to be fashioned accordingly. Final wiring, securing the wheels in place and assembling the various parts is all that remains. I guess were ready now for a calm day.

The original weighed in at 9 oz ready to fly and is surprisingly rugged. Check for warps and if all appears to be in readiness, return to the testing spot for a final test glide. If the ship still glides flat and straight, you're ready for the fuel can. We hope you have as much fun with your P-51 as we have had with ours. Good Luck!! ●