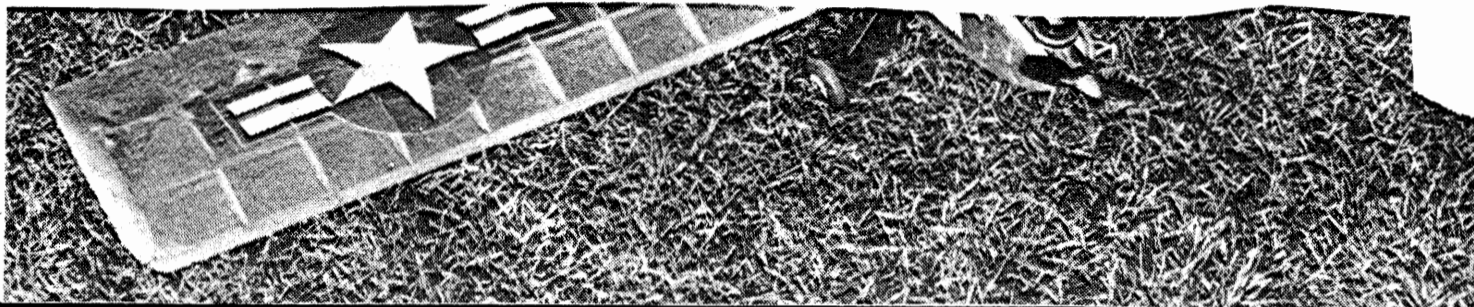


by KEN WILLARD

Sport R/C airplanes for 1/2A engines have always been reasonably popular, but their popularity was somewhat hampered by the availability of lightweight radio gear. No longer. Kraft, Cannon, Ace and Litco, to mention a few, have all come out with super-mini servos and receivers, with 100 ma battery packs, so you can now have four channels of control for a total airborne weight under five ounces, even around three ounces for two controls. So now you don't have to have the hottest Tee Dee .049 powering your 1/2A sport job in order to do aerobatics.

With that in mind, I decided to design a low wing sport job for the Cox QZ .049—one that could do stunts, but which could be slowed down in the glide and flown in highly restricted areas like my front yard. That meant I had to use a high lift wing, and keep the weight down.

So I sketched out a fairly conventional fuselage, the typical box construction, but with a slight difference. By using triangular stock, a rounded effect was achieved by trimming the corners. Yet, where the wing cradle was, it could be strong and square. Even though straight lines are used, the impression is one of



MINIMOU

smooth curves, and that's what I was looking for.

When the profile was completed, I fiddled with various shapes for the fin and rudder. As I did this, with the highly undercambered wing section showing, I idly sketched in a simulated scoop—something you could hold for hand launching. Hm-m-m. Now, if you just add a little dorsal fin in front of the vertical fin, how about that? Doesn't that look like a stretched version of the famous Mustang fuselage? But the wing isn't tapered and for good reasons. Easy to build, no problem with tip stall, and easy to repair. Can't call it a standoff scale Mustang then. But it does use mini servos, and it is a bit of a Mickey Mouse design. Hey! Why not dub it the Minimousetang? Mini servos, Mustang profile, and a Mickey Mouse type—like Minnie was. And so, the Minimousetang was created.

Now just a minute. Don't laugh yet. It's got a lot of flights on it, and one of them was a test to see how it would stand up in certain types of sport contests. Like, for instance, a looping event. Ever been in one? Well, if one comes along, build a Minimousetang and enter. It'll do at least forty—yes, forty—loops in two minutes, using standard fuel. Put in some Magnum 25% nitro, and it will loop continuously and gain altitude while doing so! Spins? Add weight to the tail until you get to the rearward location of the C.G. shown on the plans. It'll spin so fast you'll lose count. But watch it! Don't get the C.G. any further back, or it will go into a flat spin, and you won't get it out until it hits the ground. Even so, it's so light the damage is small and easily repaired. With the QZ engine, noise is no problem. In fact, the only complaint I've had when flying it in my front yard has been "Why didn't you let

us know you were going to fly it? We didn't hear it until it was too late!" And then I had to fly it again for them.

Because it is so light, and the structure is so simple, the Minimousetang can be put together very quickly. In fact, if you're impatient, like I am, you can Zap it, or Hot-stuff it together in just a few hours (although I do recommend fast drying epoxy, Hobby Pox formula 4 or Devcon 5 minute, for the front end which might take a beating on rough landings).

For any modeler who has built a sport R/C, or even a sport free flight model, it is almost an insult for me to say "glue this to that, then that to this," which is what most construction articles do. So, I'm not going to do it. My instructions to you are going to be confined to only those areas which may be just a bit tricky—and there are very few of them. Let's go.

FUSELAGE

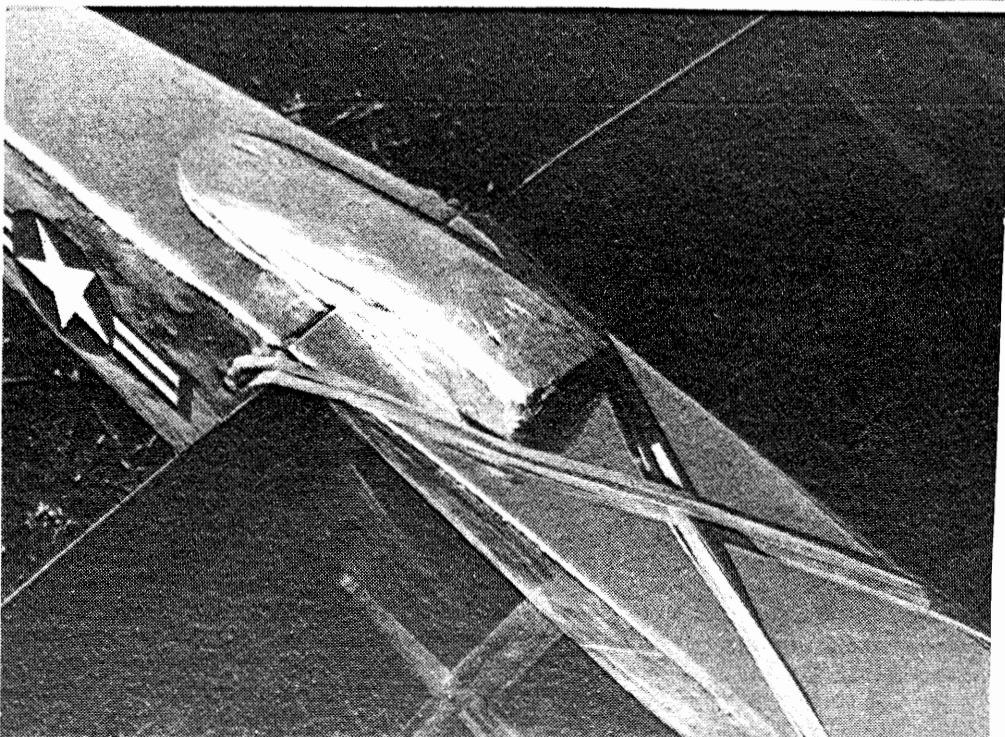
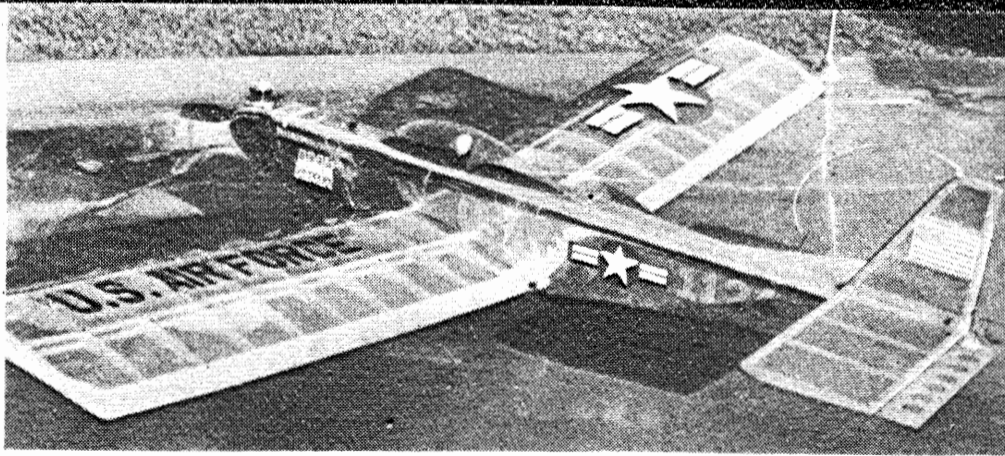
Cut out the sides, and Zap the triangular stock, 1/8-inch stringers, doublers, and uprights in place.

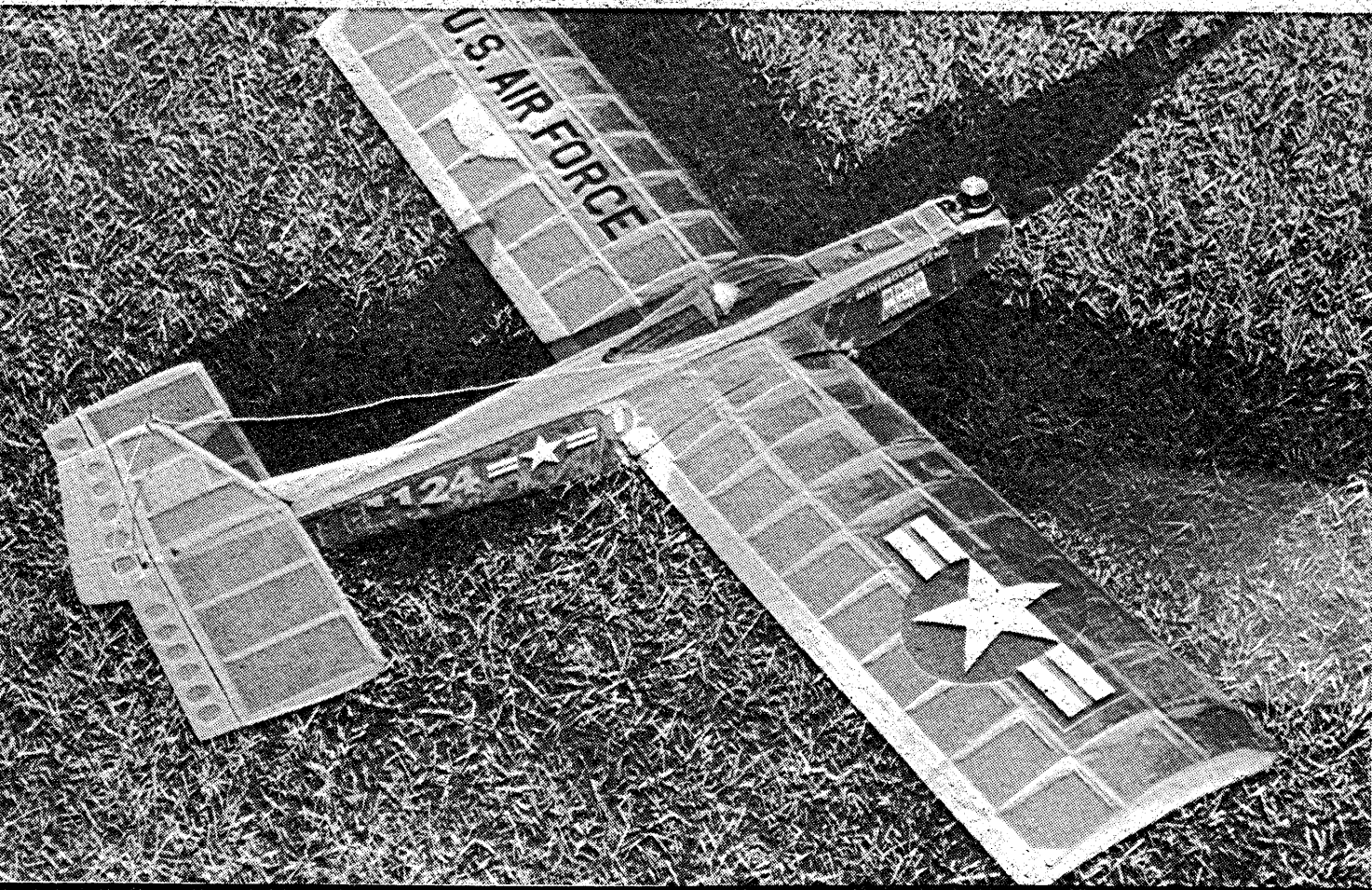
Attach the sides together, using the leading edge and trailing edge bulkheads.

Pinch the tail together, and Zap the 1/4-inch tailposts together.

Pinch the nose together, and epoxy the firewall in place. Note the slight right thrust and downthrust shown on the plans. Duplicate it. It will help you fly under power and then go to power-off glide without having to hold some trim on

TOP: A cute little model that will give lots of pleasurable quiet flying hours. BOTTOM: The under wing scoop adds to the Mustang effect and it is functional. Something to hold on to for a hand launch.





to mount whatever unit you happen to have handy. And, since you need the weight up front, a 225 ma pack can be used in lieu of the 100 ma pack if you don't want to worry about battery life for a session of flying.

The hatch up front is for convenience in mounting the engine and removing it in case repairs or cleaning is required.

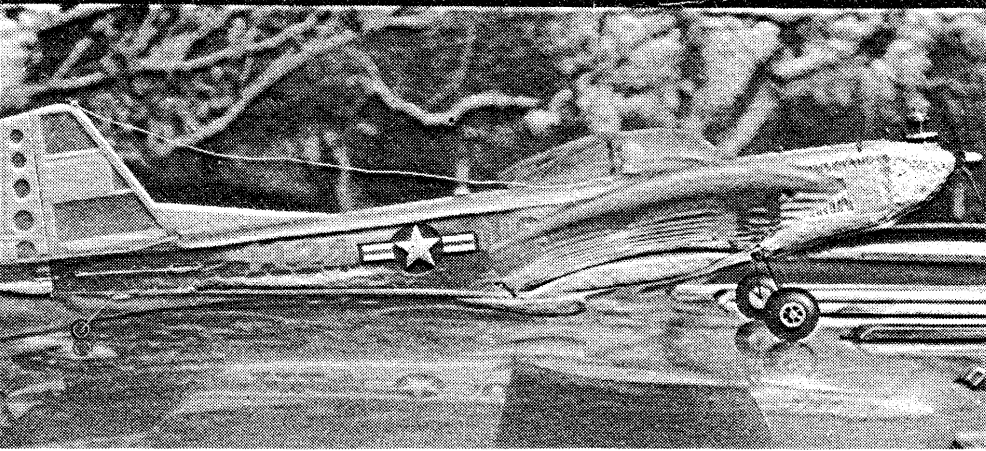
As the plans show, the landing gear is a "strap-on" unit, held on by a rubber band around the leading edge dowel. I've used this system on many lightweight planes, and it works fine. If you do happen to have trouble with it sliding back, just Zap a piece of 1/16 x 1/8 plywood across the fuselage behind it.

WING

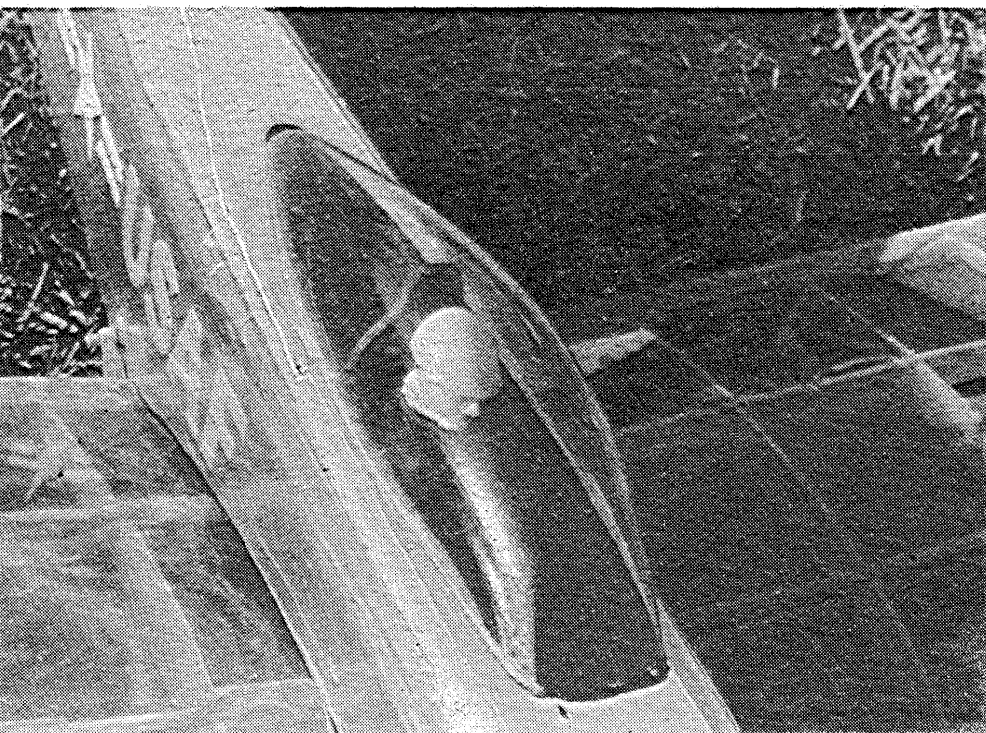
The only tricky part of the wing is attaching the trailing edge so that it continues the contour of the airfoil. The forward edge of the trailing edge stock has to be blocked up on the flat work surface, about 1/8 inch as the plans indicate. Use a

LEFT AND OPPOSITE PAGE: From the top platform, the Minimousetang does not look a lot like a Mustang but it is functional.

MUSETANG



A cozy engine installation. Note the convenient switch location.



the transmitter.

Sheet the top and the bottom, carve away the corners on the top, add the balsa doublers up in front of the firewall, and you've got a fuselage. Wait until you've made the wing before you cut out the balsa block filler and "scoop" which fits below the wing. Add the 1/8-inch dowels to hold the wing, and the landing gear can be inserted after you've MonoKoted the fuselage and Zapped in place.

The plans show mounting rails tailored to fit the Cannon super-mini block but, as you can see, there is plenty of room for you

strip of 1/8 to 1/4 inch to block it up, and put a piece of waxed paper over it so you don't glue the block strip to the ribs as well as the trailing edge stock.

Also note that the 1/8-inch square spars are set so they are flush with the airfoil surface. This makes it easy to glue the dihedral braces in place, and eliminates the need for sanding except just to smooth the wood surface.

TAIL SURFACES

At first glance, these surfaces may look flimsy and, in a way, they are. But they are more than strong enough to withstand any flight loads, and the idea behind this plane is to keep it light for maneuverability. In fact, you'll notice that I even put light-

TOP: The side view of the Mousetang is just a suggestion of a Mustang. BOTTOM: Every airplane should have a pilot.

ing holes in the prototype's elevators—but really more for the "see-through" look than to make them lighter. You'll also note on the prototype that I originally had a smaller rudder and added a strip to widen it. Again, this was to improve the response rate.

The hinges on the prototype are made from overlapping MonoKote strips, but if you prefer the flexible nylon type, or hinged nylon, then use them.

COVERING

To get the "Mustang" finish on the fuselage, I used Chrome MonoKote. Then, because I like the transparent look, I used transparent orange MonoKote on the wings and tail surfaces. To cover the underside of the wing, lay the MonoKote in the cradle formed by the undercamber of the undersurface when you have the wing upside down. Iron the MonoKote lengthwise along the spars from center section to the tip, then individually to the bottom of each rib, and finally to the leading and trailing edges. For the top surface, just iron the MonoKote to the leading edge and trailing edge, then to the center ribs and the tips, and then shrink it tight, uniformly, over the top. Be sure to watch the shrinking process to see that it doesn't put any warp in the wing. Even if it does, it can easily be removed by reheating the wing and holding it true until the covering cools.

FLYING

Your model should come out with an overall weight of around 18 ounces, depending on the wood used and the radio you install. Even if it goes as high as 20 ounces, it will have plenty of power with a standard .049 with the muffler. But if you use the super-lightweight radio, you'll probably be closer to one pound in weight, and at that weight the Minimousetang can be really wild in loops and tight turns. It will handle the wind well, and penetrate easily with a little down pressure on the elevator, but will slow down quickly for a gentle landing as soon as you let the nose come up. It won't fly inverted—well, you might get it to stay upside down for a very short time, but the engine will run out of fuel. You can do rolls with it, loops are a blast, and if you move the C.G. back, it spins like a dervish (what's a dervish?).

A fighter it ain't, nor a pattern ship or a racer. But for fun it is, and I hope you enjoy yours as much as I do mine.

Let me know. **RCS**