

# ME-109

## 1/4 Midget Pylon Racer

Quarter Midget Racing is growing in leaps and bounds and its excitement has grabbed many a modeler in Indiana, myself included.

I think the racing fever hit me at our Wednesday luncheons every week. Every week as many of our club members as can beg, walk or sneak off from work to meet at Ed Reike's house and go to lunch. We average 10 to 20 modelers all talking about contests, engines, girls, models, airfoils, girls, plans, kits and girls. While not much gets accomplished, once in a while a glimmer of something interesting shines through the gravy stains.

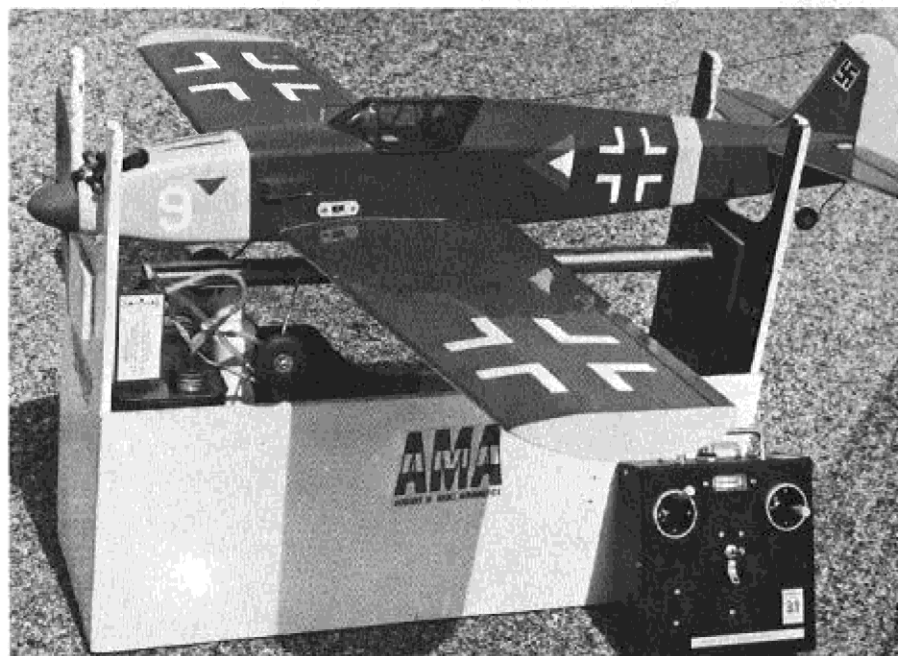
On one of these occasions, Bob Finley and Hal Vandiver were discussing the possibilities of getting a team together to compete in 1/4 Midget racing. Bob has become somewhat of an authority on this class and their powerplants, so it was decided he would make the engines go. Hal is by far the better flyer of us all and so he fell heir to the job of test pilot. I got stuck with the designing and building end of things. Bob Godfrey was drafted as the fourth man on the team, Mr. MonoKote of Indianapolis. Our size 10 shoe held adroitly over his Ryan STA quickly made him see the need and volunteer to the cause. The foursome tip-toeing through the tulips toward the flying field might look a bit like a pair of Laurel and Hardys, but what did you expect, Raquel Welch maybe?

The day finally came for the maiden voyage of our little ME-109 inspired concoction. We won't call it "eyeball scale," it's surely less than that, but all action in the air. Bob Finley and Hal Vandiver departed the work scene at noon and we proceeded

Jack turns to R/C with a quick ship to sizzle around the pylons. A Super Tigre .15 provides the thrust in an easy airframe while a Blue Max system turns it on. Achtung! You WILL enjoy it!

by Jack Sheeks

Photos by the Author



Jack lagged behind on take-offs as field box skidded slowly, led to invention of the wheel. Above: An "ME-109" on your tail would make anyone fly faster. It helps your friends beat you.



to the flying field. Since my cohorts were still in their suits I was left with the oily task of starting up the engine.

Harold put the ship through its paces as if it were a pattern ship. Loops, rolls, inverted flight, immelmans and a few other unrecognizable things. After about 10 minutes of this I decided to try it even though it was set up on standard sticks. I fly split sticks, but no matter, at the time of the launch we found something amiss. A battery had gone dead and we retired to change the cell. We also took the opportunity to switch to a newer ST .15 engine for the races coming.

At the Muncie contest we found out you should never have a truly free-wheeling

tailwheel. It ran in circles and I almost had to beat it with a club. With that remedied, it held its own nicely in the air, catching others and passing them. Perhaps it was because we were flying in the wrong direction, for we lost. The second heat came along and by that time I had cut the tailwheel off and turned it into a wire skid. It now tracked true and it was off and running far ahead of the pack. We were stretching the lead on every turn when on the 8th lap the engine quit. The tank had slipped back and pulled the fuel line off. We were not embarrassed however, we fulfilled a function. The world needs losers too! Give the design a try. It's easy to build and quick as grease, a good ship to try your hand in

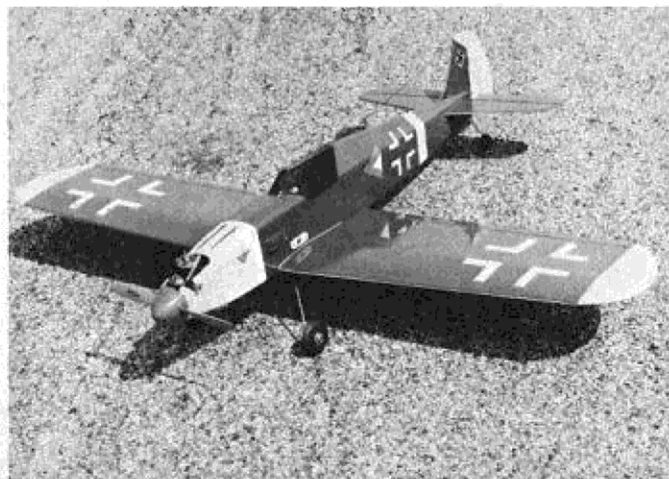
the races and it can fly some of those pattern maneuvers to boot.

### The Construction

The place to begin is with a selection of straight and light wood. Cut the bottom wing planking from  $\frac{1}{16}$ "x6" balsa, measured to fit from the  $\frac{1}{4}$ " sq. spars to the trailing edge, from the wing center to the tip. Pin this to the plans. Next, glue the  $\frac{1}{4}$ " sq. spars onto the planking. The ribs are now cut out and the easiest method of doing this is to sandwich nine pieces of  $\frac{1}{8}$ " balsa between the tip and root rib templates and then carve and sand them to airfoil. Final trim each rib and attach them onto the lower planking. The top  $\frac{1}{4}$ "

Photo above: Dad's normal landing angle Scotty? Ship is quick in flight. Angular lines and a standard platform put it in the air in short order.

Simple trim details give the illusion of realism without much structural effort. It's something short of eyeball scale, but built for the action.





Bob and Jack forsake a lunch to test fly it. Basic ship is light and corners well, competitive. Below: Getting down to grass roots. At the Muncie meet Jack's 109 is already an inch ahead. After 8 laps the engine lapsed.  $\frac{1}{4}$  Midget Pylon racers growing very popular on contest scene.



sq. spars are now installed. Follow this with the upper rear planking and install the leading edge. The opposite wing panel is assembled in like manner. Dihedral braces are of  $\frac{1}{16}$ " plywood. Install them and glue the two wing halves together and brace the leading edge at the center with scrap  $\frac{1}{4}$ " balsa. The final wing planking is now applied, using  $\frac{1}{16}$ "x3" stock or whatever is convenient.

Cut the servo area clear from the upper section of the center of the wing. Using Celastic or fibreglass cloth, the center-section of the wing can now be straightened from the inside. Wing tips are next shaped and installed. Using a straight edge, mark and cut-out the trailing edge to fit the ailerons.  $\frac{1}{4}$ "x $\frac{3}{4}$ " trailing edge stock will serve beautifully for the actual surfaces. Install a vertical piece of  $\frac{1}{4}$ " leading edge stock into this area creating a new trailing edge to hinge the ailerons to. If you decide to use only one aileron, use just the right side. It helps hold the model's nose up in a turn to the left. Install your torque rods and  $\frac{3}{16}$ " dowel hold-downs. Hinge the ailerons and your wing is ready to cover.

Cut out your stab, elevators and rudder fin from  $\frac{3}{16}$ " medium balsa, then final sand and hinge the rudder and elevators in position. Don't forget to bend of piece of  $\frac{3}{32}$ " dia. wire and install in the elevators as shown. They would look funny flopping in the breeze without it.

Start the fuselage by cutting both sides from  $\frac{3}{32}$ " balsa and double them up with  $\frac{1}{32}$ " plywood. Saw the firewall out of  $\frac{1}{4}$ " plywood.  $\frac{1}{8}$ " ply will suffice if  $\frac{1}{4}$ " is not handy. Chop the rest of the formers from balsa as shown, doubling former #2 at the bottom with  $\frac{1}{32}$ " plywood. Install the firewall and brace it in with scrap balsa.

Glue a piece of balsa to the rear of the fuselage sides and join them together. After this has dried, position the formers and install the stabilizer and elevator. Build up the turtle deck with  $\frac{3}{32}$ " balsa sides and a  $\frac{1}{4}$ " balsa top. The tailwheel assembly (or skid) follows at this point.

Shape and glue the  $\frac{1}{4}$ " balsa bottom blocks and the  $\frac{1}{2}$ " nose top and lower blocks. Fill in the nose areas with scrap  $\frac{1}{2}$ " stock and carve down to meet the spinner shape you are planning to use. This is accomplished by first installing the Kraft Hayes motor mount and the engine. Make all necessary cut-outs at this time for the exhaust and the needle valve. Install the nyrod set-up for your motor control and drill and insert the hardwood wing hold-downs into the fuselage. Drill the hole for the wing dowel in former #2 and make a final fit of the wing.

It may sound silly, but I install the landing gear hardwood mounts at this time in the wing and epoxy them securely. Bend the gear from  $\frac{1}{8}$ " dia. wire and align them so it will track straight.

At this point, glue the rudder into place and install whatever cockpit detail you desire. The canopy is made in two pieces from heavy celluloid.

The original was MonoKoted in olive drab, grey on the undersides and yellow trim with black and white crosses of the MonoKote material.

Install your equipment and stand back. It's a fast little thing and it will keep you charged up and ready to go for the coming season.