

Plane on the cover

Demon Delta



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BACK in 1963, Dale Nutter and Austin Leftwich were flying some very different R/C ships. The "new" three-cornered diapers were capable of great speed and maneuverability. A modeling buddy, Jack Kimbrough, and I assumed that if it worked for R/C, it would be much easier on lines.

A true Delta was constructed (like the ones being flown in R/C Pylon), and we

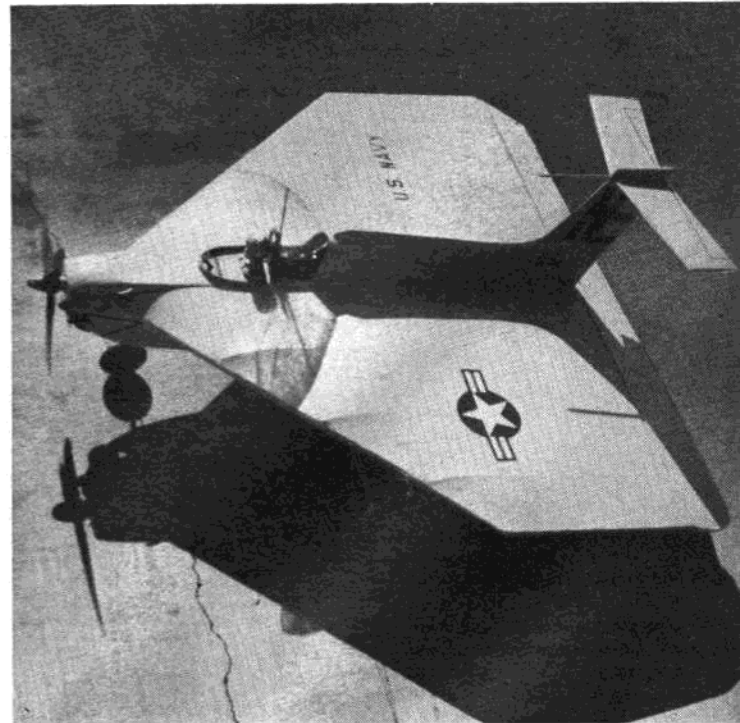
found it to be fast, but not so maneuverable. This plane was relegated to sport flying and parking on the flight line to attract questions from curious spectators. Several years later, Wes Moore of Irving, Texas and I worked on a Delta, attempting to hit on a competition stunt formula. We wanted something different in appearance, yet competitive. It was a complete flop.

The present aircraft has served a two-fold purpose. First, it has proved to me that a delta-winged aircraft, with its high ratio of wing area to frontal area, is fast. Second, while comparing the handling in the same

Demonstration machine really draws a crowd. Fast flyer with 45-size engine uses throttle and brakes.

circle with Ed Thomas and his Coyote stunter, we not only found the Delta as fast with twice the wing area, but discovered it could "stop the show," and draw a crowd.

This aircraft serves no useful purpose if you are a "dyed in the wool" trophy hound. If, however, you are trying to get some city parks department to build a flying site to arouse public interest in modeling, this plane is for you or your club's demonstration team. Resembling a modern fighter, it will attract on-lookers and possible future modelers. If you take care with details,



Top: Ed Thomas, president of Key City Prop Twisters, Abilene, Texas, tries to explain to a contestant that it is against the litter laws to drop bananas in flight. Above: Having enjoyed his banana, intrepid modeler prepares for a flight at local airshow. He checks his equipment carefully, "Let's see, the middle one is for fast flying, top one makes it go up, and bottom one stops it." Having followed the Tenderfoot series in *American Aircraft Modeler*, he is quite sure he can make it fly.

Delta is easy to fly but rather fast at around 75 mph; it lands at 30. Makes wide loops, eights, and flies well inverted.

you will be surprised how many modelers will ask you, "Hey, what's that a scale model of?"

In the air this ship is great! You can use throttle, wheel brakes, a smoke bomb, or tow a streamer for an aggressor pilot. All this and it is still easy to fly and fast (about 75 mph), but with more than 800 sq. in. of wing, it's groovy. Low speed is only about 30 mph. It will go slower, but not in this West Texas wind. Demo Delta will do wide loops and fly inverted, but alas, a stunter she is not.

The construction is simple, but does require a lot of wood. Therefore, a club project may be in order.

Cut the fuselage sides from straight-

grained $\frac{1}{8}$ " sheet balsa 4" wide, and position $\frac{1}{2} \times \frac{3}{8}$ " engine bearers on the centerline. Cut the doublers, then use Titebond to put the whole thing together. While that is drying, cut the $\frac{1}{8}$ " plywood firewall and F-3. Cut the rest of the formers. Drill the plywood pieces for landing gear mounting, then rubber-band the fuselage together. No glue yet.

Slip $\frac{1}{4}$ "-sq. spars through the cutouts in the fuselage. See that it is straight. Now glue. When dry, block in the nose, but do not sheet. Use a sheet aluminum tailskid and some fiberglass resin in the fuel tank area and in the engine room. While on the fuselage, let's discuss fuel tanks. You can use Veco T-21 D or E, but I used what I

now consider to be one of the best pre-made, homemade tanks around, a Ronsonol lighter fluid can. It is $4\frac{1}{2}$ oz. and strong. Pop off the plastic cap and solder a patch over the opening. Install vents and pick up tube. Use epoxy and J-bolts to install the landing gear.

Wing ribs are cut from $\frac{1}{8}$ " sheet balsa and positioned between the spars at proper intervals. You can use rubber bands at the spar tips to secure them for gluing. Pin the $\frac{1}{4}$ "-sq. trailing edge in place. Make sure the wings are not warped. Double check, glue it well, and go to bed.

Attach the leading edge with pins. Shape it to a triangular section and reglue all wing joints. The wing tips are $\frac{1}{4}$ " soft balsa. All that is left to do is sheet the leading and trailing edges, center section, and the $\frac{1}{16} \times \frac{1}{4}$ " cap strips.

The bellcrank mount is $\frac{1}{8}$ " plywood and mounts between the fuselage sides with plenty of epoxy, because this thing has some kind of flight pull. Install a Robert's Unit or a home-built unit for three-line flying, and do not forget that a standard two-line system will work for just plain fun flying. Install pushrods and leadouts but do not run them out the tip. Leadouts exit through brass tubing guides epoxied in the leading edge at positions shown on the plans. Sheet the top nose and hinge the $\frac{1}{4}$ " sheet elevator on with your favorite method. Attach control horn.

The tail is British Gloster Javelin inspired and needs to be doweled together to stay put. It is all $\frac{1}{4}$ " sheet and simple, but be sure to make it strong. Speaking of Gloster Javelins, British war paint and markings will be beautiful!

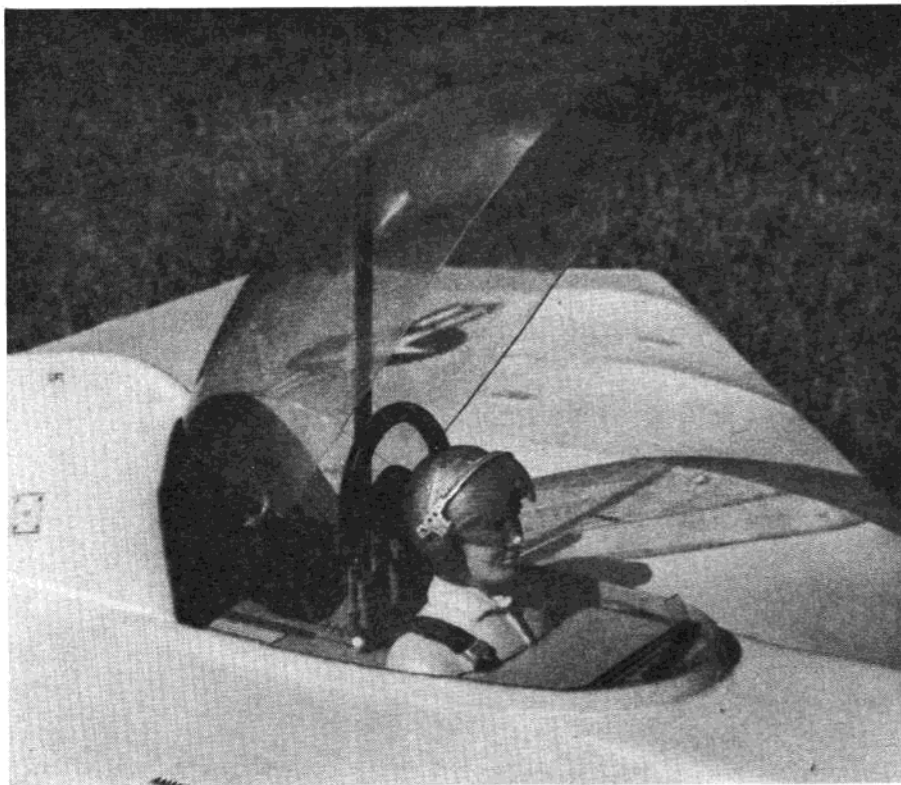
If you are going to use brakes, now is the time to do it. Use stranded cable. Solder it to the pushrod and run it out an eyelet in the $\frac{1}{8}$ " sheet bottom planking that you can now install. I used simple homemade drag brakes, but they are clumsy in tall grass. I have had to pick the grass sprigs from mine, so it may be wise to use a set of R/C type brakes. Adjust your cable so that anything less than slight down-elevator begins to apply brakes. Mount your nose wheel strut securely.

Cover the wings with silk, Silkspan, MonoKote, etc. Put a coat of clear on the whole ship. The canopy is 12" hobby shop stock, and I strongly recommend that you put some details under that big glass area. Scale-like pilot and dummy radio gear, ejection seat, etc. will add lots of appeal to this type model. I made my canopy to open, but this just collects dirt and I do not suggest it.

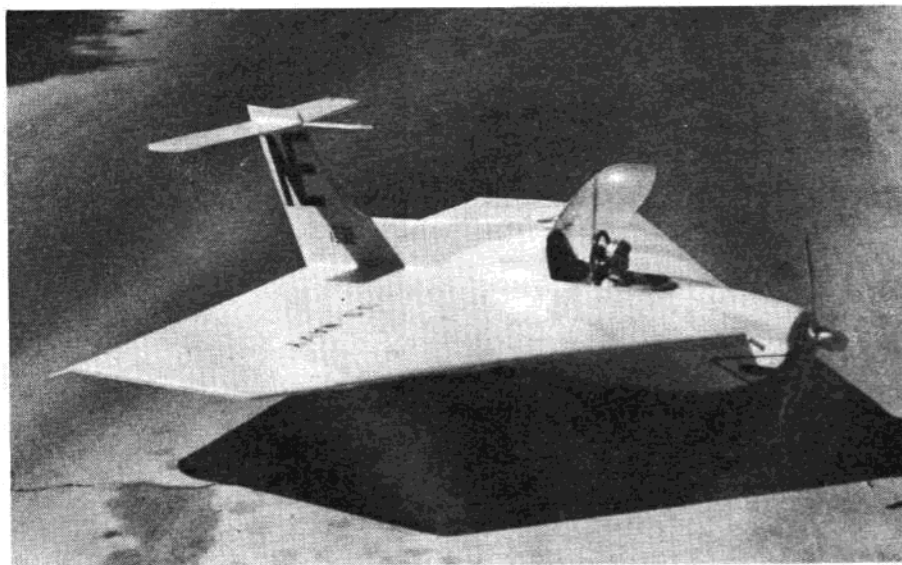
The early Deltas were finished in many ways. One was USAF silver and markings, and one was WW II night fighter black with stars, etc. The one built for (Ha!) stunt was a beautiful sunburst pattern in blood red on charcoal gray with white stripes. A true beauty.

Flying is a snap. Under full power let it stay on the ground about one third of a lap, then ease her off. Now you are flying a real-looking airplane that is not scale, but fun to fly. A plane of this size is a little faster than you thought it would be with only a 35 up front. A Delta will fly at very large angle of attack when power is reduced; therefore, when you pull back on the power, pull back on the handle just a little and let her settle on the main gear. Neutralize the controls, and she will rock forward onto the nose gear. Ease down and the model will roll to a smooth stop.

If there was ever an aircraft that has the potential to demonstrate control-line modeling at a contest or Sunday flying sessions any more convincingly than this, I have not run across it in 20 years. Any questions or comments about this aircraft will be answered by me if addressed through the magazine.



Attention to canopy details enhances the scale appearance. Under hinged canopy we find pilot, ejection seat, radio. Pilot bails out when chimp flies!



If sport flying is your bag, a delta has a lot going for it—fast, modern, and it attracts attention. Deltas are not fully acrobatic stunters.