

Ever since the first competitive stuntship rolled out of my shop, I've been concerned about wood weights. In the stunt world "heavy" is not a compliment, it's a downright insult! There is, however, another side to that coin. Having an airplane too light can also give you a problem. Earlier $\frac{1}{2}$ A designs that I had tried proved to be too light and too fast. My first $\frac{1}{2}$ A Mirage weighed only 7½ ounces with a profile fuselage and MonoKoted wings. Applying what had worked in the full-size stunters, I increased the span, chord and airfoil thickness. This also added a few more ounces to the overall weight, helping to improve the flying characteristics by giving it better penetration in the wind.

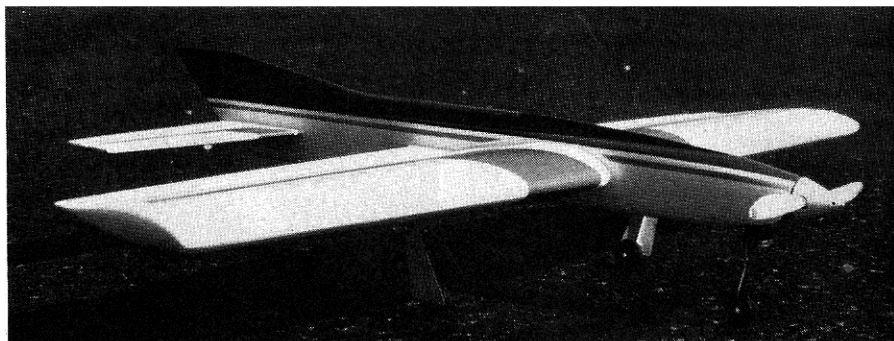
The design presented here spans 32 inches—one of the largest $\frac{1}{2}$ A designs to date. For its size, a finished weight of 10 to 12 ounces is competitive. Four ounces of that total will be the engine, tank, wheels, spinner, etc. The other 6-8 ounces is your basic airframe. I had no trouble at all keeping the unfinished airframe under six ounces and the finish under two.

Special care was taken in laying out the nose section to allow minimum problems to develop concerning tank hold-downs, as well as to provide easy access to all the other components. The tank is removable, as is the nosegear. This affords the builder yet another option in being able to change the landing gear height for either prop changes or ground clearance.

Construction of the wing begins with the templates necessary to cut out the foam cores. I usually make mine out of plywood but if you're a little concerned about burning them, cut them out of thin aluminum sheet. Also make only half of an airfoil section and flip the template around for the other side thereby assuring a symmetrical wing. The cores can now be cut using the standard foam cutting apparatus. After cutting, sand lightly to remove any ridges or high spots. Always sand in the direction of the eventual air flow. Sanding perpendicular to the airflow will produce flat spots in the core. Glue the trailing edges on with Titebond and, after drying, carve it to continue the curve of the airfoil. Depending on how wide you can get $\frac{1}{32}$ " sheet balsa, you may have to join pieces to cover the wing. If that's the case, get yourself a good metal ruler or T-square and trim the edges of the wood to be joined with a sharp hobby knife. Mate them up and run masking tape down the seam. Turn the sheet over, bend back the seam to expose the edges of the sheet to be joined and run a thin bead of Ambroid glue down them. Close the seam, wiping off the excess glue and put more masking tape at right angles to the seam on the opposite side of the sheet from the long piece of tape. When that dries, remove the tape and sand lightly. Next, place the core on the sheet parallel to the leading edge. Leave about an inch around the perimeter and precut four sheets in this manner. Spray contact cement on both the panel and the sheeting, spraying one 90° to the other to assure a uniform coverage. Wait until it's tacky and, starting at the leading edge, roll the core across the sheet. Trim off the excess and repeat the procedure for the other side. After completion, place the sheeted core back in the core cradles and weight them down with the weights evenly distributed and let dry overnight. All that remains to do is to sand the leading edges to accept the leading edge cap and add the con-

$\frac{1}{2}$ A Mirage

This much requested $\frac{1}{2}$ A version of a popular FLYING MODELS Stunt C/L design published one year ago flies as well as it's larger brother. Lightness is the key to a great $\frac{1}{2}$ A performer/**Lou Wolgast**

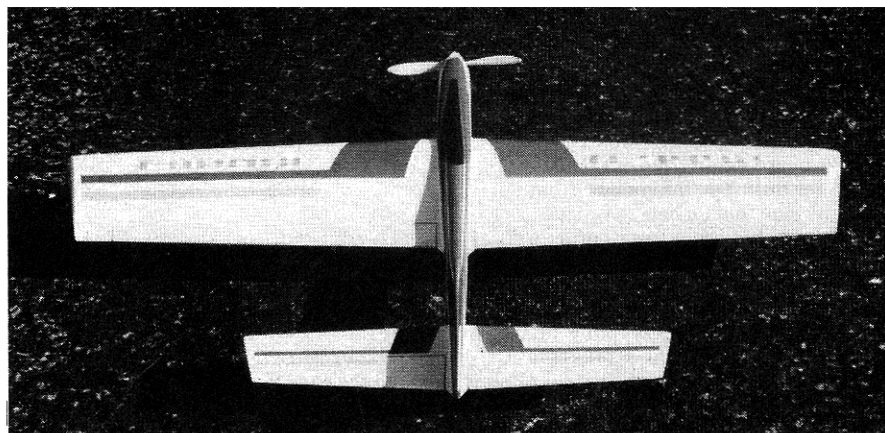
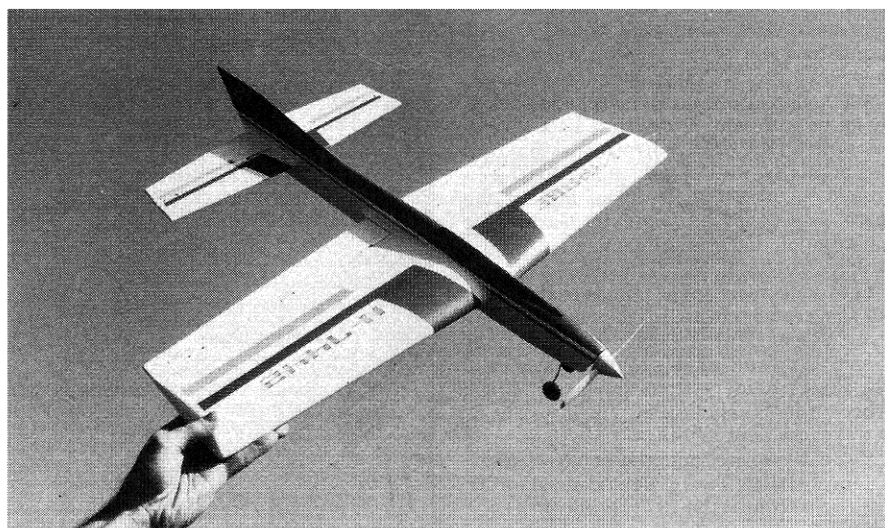


PHOTOGRAPHY: BOB HUNT

trols, flaps and wingtips. The cores are joined using either Titebond or epoxy glues with glass cloth over the joint. The landing gear mounts and tip weight box can now be cut into the wing and at this stage the complete assembly should weigh about three ounces.

The other components, stab, elevators and the fuselage can now be completed and made ready for final assembly. I choose to slide

both fuselage sides onto the wing from each side, invert the airframe on a level building board and install the formers over a plan layout of the fuselage. Next, the top and bottom blocks (in the case $\frac{1}{8}$ " balsa sheet) are added, as well as the noseblock between the $\frac{3}{32}$ balsa sides. After carving, sanding and hollowing the top block, glue it in place on top of the $\frac{1}{8}$ sheet. The nose gear mount ($\frac{1}{16}$ "

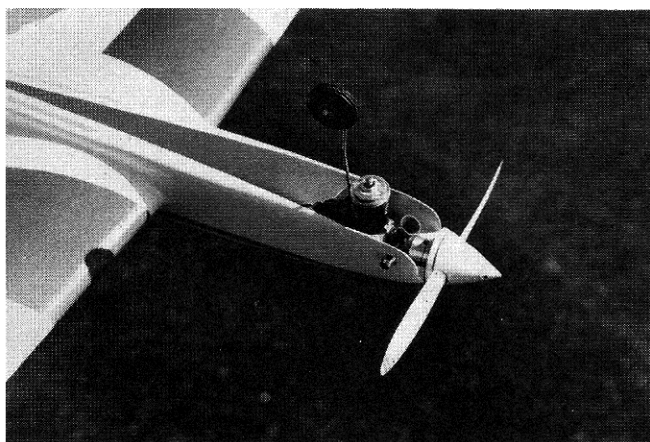
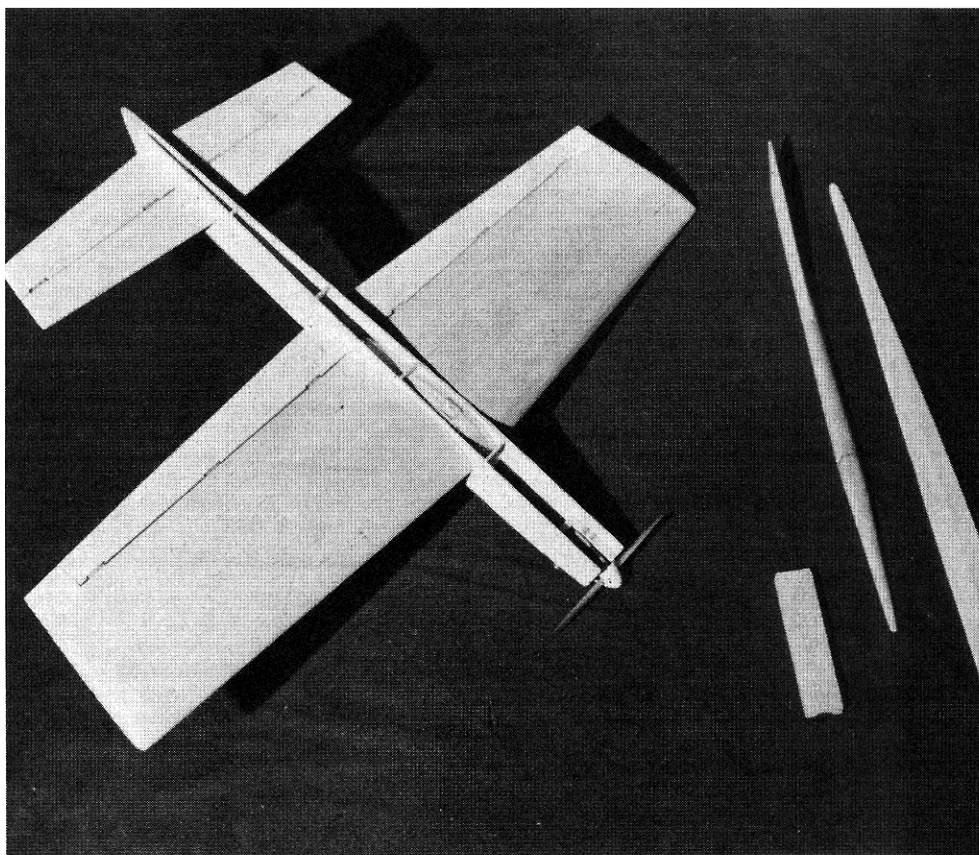


tubing) can now be positioned in F-1 and epoxied in place.

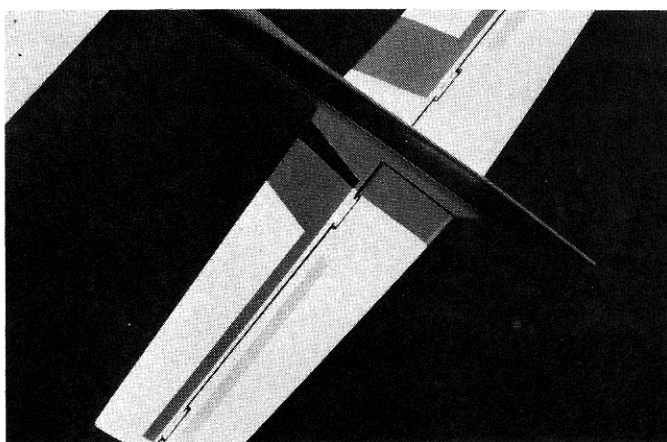
The finish that I use is started with two coats of HobbyPoxy Clear brushed on sparingly. Fillets are next and using Epoxolite and a 1/8-inch wood dowel you should be able to apply them without adding too much weight. The fillercoat is the usual 1/2 paint (clear) to 1/2 talc mix with enough thinner to either brush or spray it on. After it is dry I recommend dry sanding with non-clogging type sandpaper starting with a medium grit sand and winding up with very fine. Now comes the moment of truth. Dust on a light coat of silver. This color is very unforgiving and any imperfections are readily apparent. Make the proper corrections and proceed to your final colors. The trim colors are applied with the help of A-21 contact paper found in the local hardware store. It has low adhesion allowing repeated moves for positioning and still maintains a clean line edge, eliminating the need to apply clear to the edge to prevent seepage, as you would with regular masking tape. The lettering is done with an ink pen and with a little practice, expert results can be achieved. All that remains is the clear and the rubbing out.

The model presented here was flown on .008 x 35'6" lines, carried 1/2 ounce of tip-weight and was powered by a medalion .049 turning a 6x3 prop.

If for any reason you can't get a foam core for the wing, I'd be glad to cut you one as I am cutting cores on a limited basis. Simply write to me: Lou Wolgast, 40 Castlewood Trail, Sparta, NJ 07871.



A Medalion .049 is shown nestled in the nose. Behind the motor is a removable fuel tank. The removable landing gear makes it easy to trim for ground running (below). Note the tin stock fairings.



Here's a shot of the tail feathers showing the hinge detailing. The construction is of the same type as found in large stunters (top). Paint details and numbering make the difference in any size ship (below).

