

# MISS AMERICA

## for A Texaco

### ★ Norm Rosenstock

To modelers born in the first quarter of this century, the name Texaco brings back visions of seven-to-ten-foot wingspan free flight models flown with a fuel-allotment method of engine-run control.

The event got its name from its sponsor: the Texas Oil Company. Sponsorship was started in 1935, and continued until most modeling stopped for the duration of WW II.

Creation of the Society of Antique Modelers (SAM) in 1966 gave the now-mature modelers the chance to fly the type of models that they enjoyed so much before going into service. They wanted the laid-back type of flying that they enjoyed in the past.

Texaco was one of the earliest events flown under this new banner. The restriction to models designed and flown before 1939 left modelers with very large airplanes to build and fly.

The later creation of 1/2A Texaco allowed modelers to scale down these humongous airplanes to sizes suitable for Cox .049 engines.

At the last SAM Champs, 1/2A Texaco the most popular event, with 60 entries, The second most popular event was Class C Ignition with 47 entries, followed by the original Texaco event with 45.

The 1/2A Texaco rules state that the only allowable engine is the Cox Black Widow, with its 8cc fuel tank. This is a reed valve engine, and they can sometimes be very finicky. The result can be a lot of frustration, and that's not what we are "into" now. More pleasure and less frustration is the way to go.

While discussing the problem with my friend and fellow modeler Dave Platt, I asked: "The concept of 1/2A Texaco is a good one, but why is it only one class? Why not expand this event to include other displacements? How about a Class A Texaco event?" We got so excited about the concept that we sat down and seriously started hammering out the parameters.

We looked in the SAM rule book and found that Class A is defined as displacement

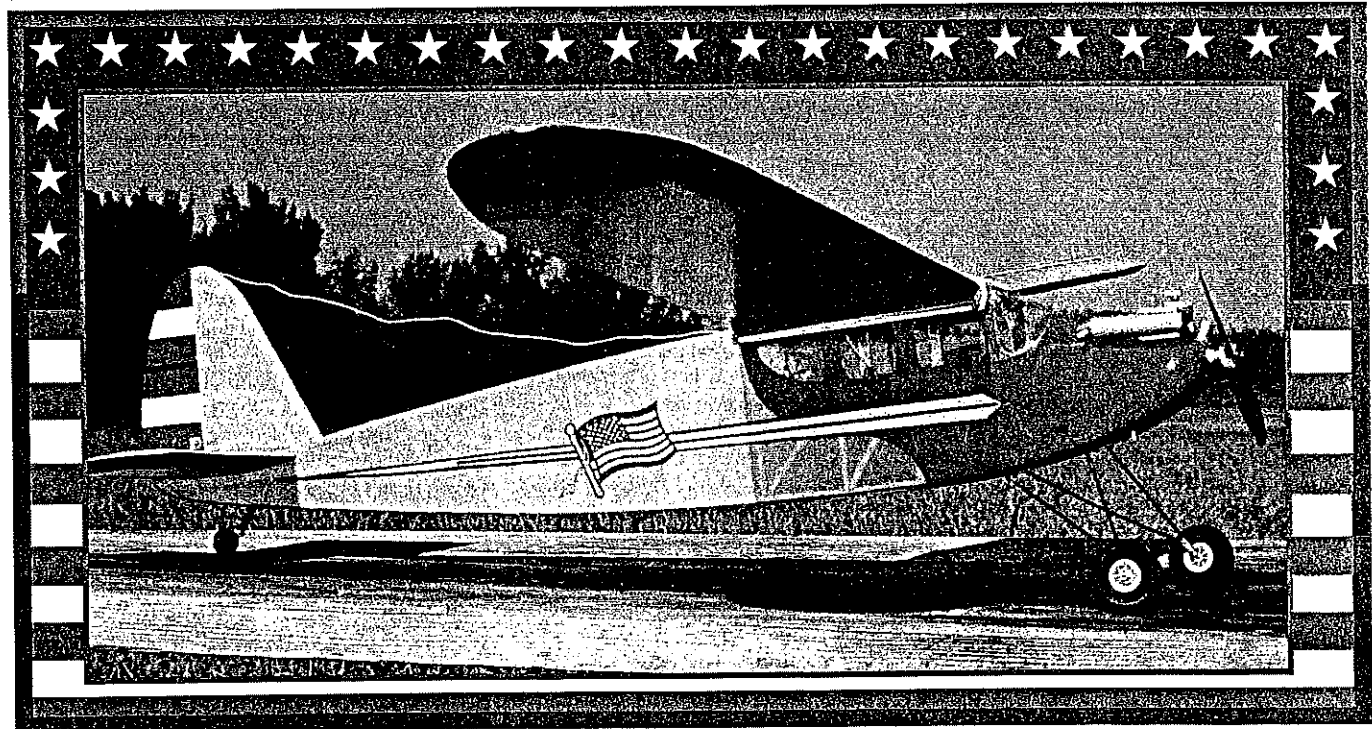
from .000 to .200 cubic inches. For the new event to stand on its own merits, we thought it should be flown separately from 1/2A, so we changed the displacement range to .055-.200.

Since the Cox 1/2A is restricted to its 8cc tank, we allow a 1/2 ounce (14cc) capacity tank for this larger engine. The Perfect #5 tank was our first choice, due to its availability. Now Carolina-Taffinder has come out with 13.5cc tanks designed for our rules.

All other rules remain the same. The choice of engine is up to you, but remember that you only have 14cc of fuel, regardless of engine.

What size airplane? It will depend on the engine you pick. Any plane using an engine over 1/2A must have a 10 oz./sq. ft. wing loading. A 450-square-inch model will have to weigh 31.25 ounces, for example. "You pays yer money and makes yer choice." Models are restricted to those designed, kitted, or published before December 31, 1942.

My first Miss America was the 310-square-



can be moved the length of the cabin to give excellent control of the CG location.

I have installed an Airtronics 4 Channel Micro FM receiver and three Airtronics #94501 servos. This is very reliable equipment, and is the lightest available. Using a 150 mAh battery pack with this equipment, my total installation weight is only 4.6 ounces.

Sand the entire fuselage frame, slightly rounding the longerons in the process. The fuselage is now ready for covering.

**Tail feathers:** Cut 10 stabilizer ribs and trace the stabilizer tips. Assemble both stab tips before starting on the stab. After the stab is assembled, install the elevator leading edge subspar before cutting the elevator from the assembly. Fabricate the 1/2 music wire coupler and fit and glue it to the elevator halves. Maintain alignment of the elevator assembly to fit back into the stabilizer. Cut the hinge slots, then drop the elevator assembly back into the stab. The coupler does not have any covering over it.

Glue in the 1/16 sheeting. Add the control horn platform and all other details shown on drawing. Sand the leading edge to shape, and sand all parts of the stab in preparation for covering.

The fin and rudder are built flat, and are not very complicated. Assemble the curved parts first, then fill in the spars and cross-pieces. After cutting the slots for the hinges, sand to shape and put aside until you are ready to cover. The hinges can be glued in place after the parts are covered.

**Wing:** The wing is the most important part of any competition model.

(The hardest thing for me to learn was how to build a light, *strong* wing. It's easy to build a heavy wing—all you gotta do is use humongous spars, use 1/8 sheet on the leading edge, have spar doublers out the kazoo, and voilà! a three-pound wing.)

If built properly, the contest version of this wing should weigh five ounces fully covered. It's not that hard to do; just follow the plans and don't add extra reinforcements.

Cut all the ribs and two wingtips. Assemble the wingtips first. Sand them lightly to even up all irregularities. Lay the front and rear spars and the trailing edge on the plastic-covered wing plan. Install all W2 ribs, but do not install the W1 ribs yet.

Fit the assembled wingtip in place, gluing

it to the leading and trailing edges. Now install the top spars, followed by the ribs W3 through W6.

Cut the spars to length at the tip and draw the spars together, converging on the wingtip. Before removing the wing panel from the drawing, mark the lower spars, leading edge and trailing edge at the center section end of the wing panel. When you have both the right and left wing panels built, assemble the center section with the three W1 ribs and the spars as indicated on the plan.

Assembly of the wing is simple, but out of the ordinary. First, clear off your bench. You will need an area that is flat and level about 60 x 10.

Place the center section in the middle and weigh or pin it down so that it will not move. Cut the spars, leading and trailing edges of one panel to the marks you made earlier indicating the panel end.

Cut some 1/4 x 3 sheet about 10 inches long, and pin it inboard of the tip at a location that will give you 3 1/2 inches of dihedral. Place a square alongside the spar ends until the square touches the end of the lower spar.

Since the wing panel is in its dihedral position, the upper spars will be too long, so mark the upper spars and cut them. If you have done it right, all the spars and leading and trailing edges will touch the center section at the same time. If not, sand until all points touch at the same time.

Use thick CyA to glue all six points. Let stand for about 15 minutes before doing the other side the same way.

Cut 16 one-inch pieces of the carbon fiber for use as spar joiners. Cut into W1 for a depth of 1/4 inch alongside the spar. Make the same cut on the other side. Do not cut into the spars themselves; cut the glue and balsa in contact with the spars.

Prepare a couple of stationery paper clamps, apply some thick CyA (Zap-a-Gap) to one side of the CF

spar joiner, and insert CyA side against the spar. Quickly repeat the procedure for the other side of the spar.

Install the paper clamps to squeeze the CF against the spar, helping make a good bond. If a little of the CF sticks up above the rib, don't worry, it sands off easily. Repeat this operation seven more times on all the spar joints in the center section.

Add the triangular gussets as shown on the plan, and sand the wing carefully in preparation for covering.

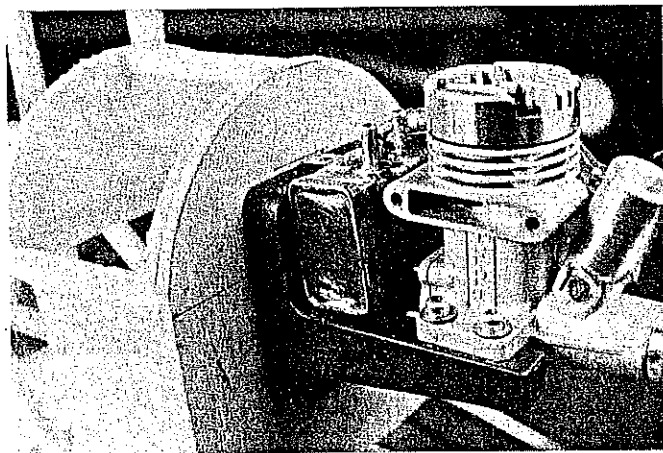
**Covering:** I have been using Coverite's Micafilm on all of my contest models for a number of years now. It is a little bit more work than the covering films that are so popular, but is lighter and stronger than any other covering that I have tried.

Part of the strength of the wing comes from the covering. I have tried the popular films, and had the wing twist very easily and break, due to the fact that the covering was very "rubbery" and offered no support to the structure. Another suitable covering would be silk and dope.

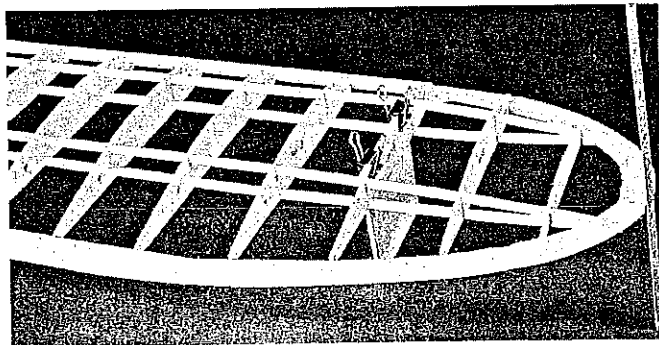
At this point you can cover the wing, stabilizer, and rudder. Do not assemble the rudder to the stab at this time.

When the wing is covered, the washout must be set up. Lay one wing panel on a flat table, and put some weights on the leading edge near the tip and at the center section.

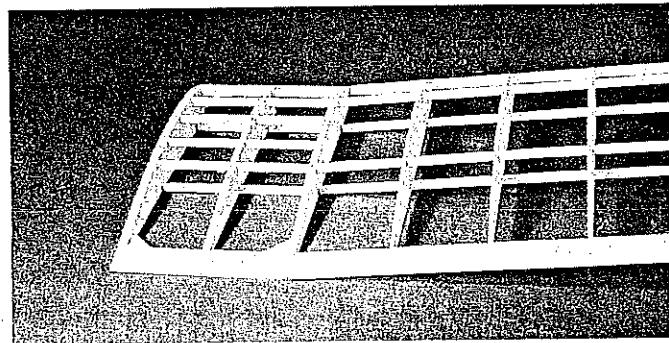
Put a wood shim about 1/2 inch thick under the trailing edge where it meets the wingtip (by



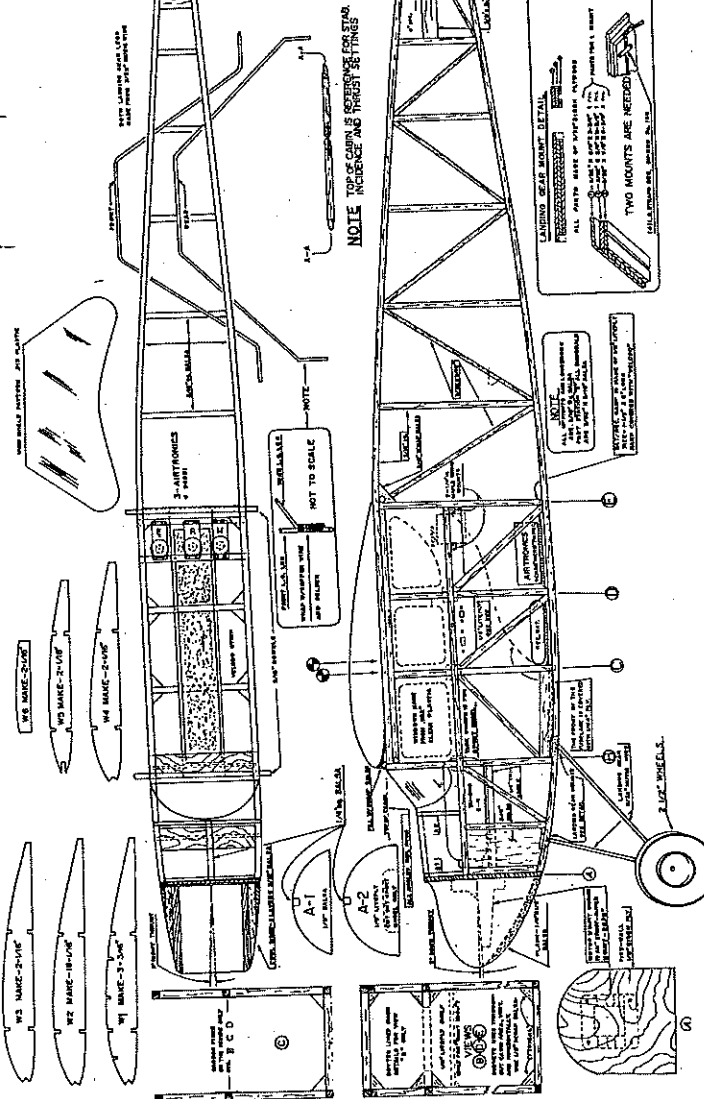
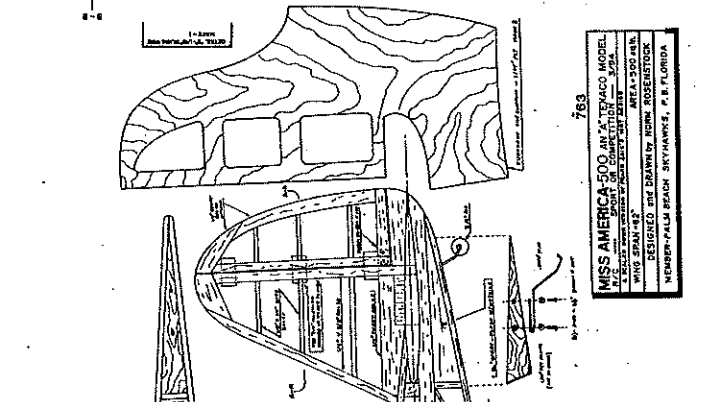
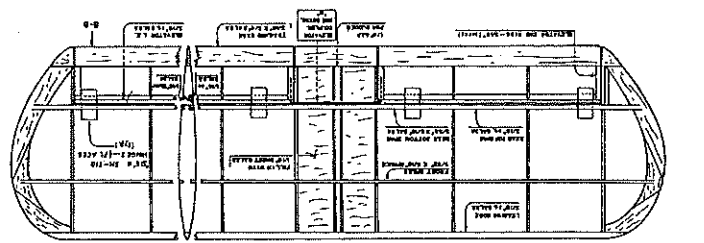
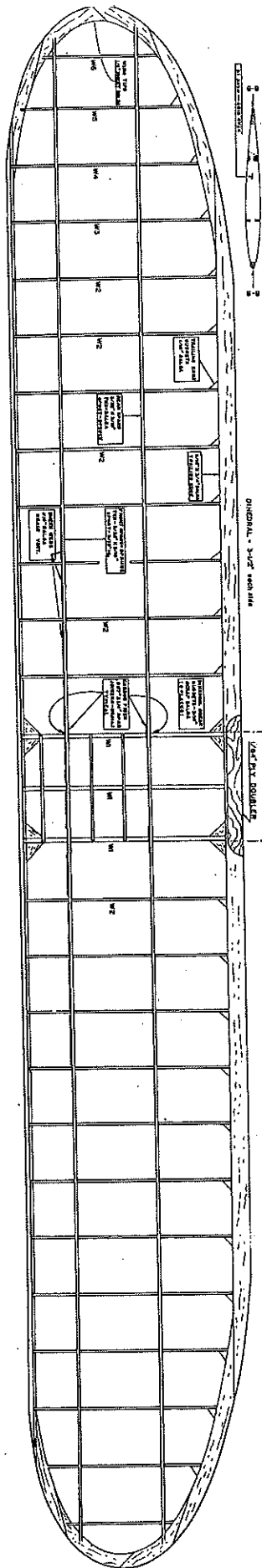
Engine and tank installation. Author's model used an O.S. FP .10 with a Davis Diesel conversion head.



Establish dihedral by clamping a piece of sheet balsa to the second or third rib and adjusting for proper angle.



Sand main panel spar ends until they touch center section spars. Ribs are then slotted and reinforced with carbon.



763  
**MISS AMERICA 500 AIRPLANE MODEL**  
 A 1/4 SCALE PLAN OF THE MISS AMERICA 500 AIRPLANE  
 WING SPAN 48'  
 DESIGNED BY DRAWING ROOM, ROSENTHAL  
 MEMBER-PALM BEACH, SEYDANKE, P. O. FLORIDA

**LANDING GEAR MOUNT DETAIL**  
 ALL PARTS MADE OF ALUMINUM  
 TWO HOLES ARE NEEDED

**NOTE**  
 ALL PARTS MADE OF ALUMINUM  
 TWO HOLES ARE NEEDED

NOTE: TOP OF CAPIN IS SQUARE OFF IN CASE OF INCIDENCE AND WEIGHT OF PARTS

NOT TO SCALE