

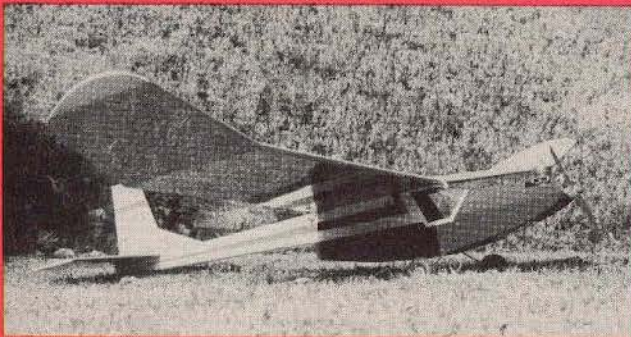


Karin Refsdal and Miss Priss.

MISS PRISS

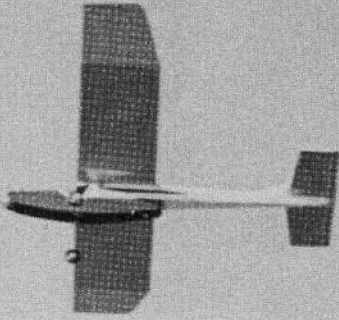
Miss Priss is a classy lass; she can soar, she can bomb, and she can win the limbo.

What else can you ask for?



ABOVE: Miss Priss is a lean machine with a pleasing shape. ABOVE, RIGHT: Polyhedral is a major factor to Miss Priss' stability. RIGHT: This arrangement should appeal to the senior citizens, work on the model in a standing position.

By Paul Denson



MISS PRISS

Designed By: Paul F. Denson

TYPE AIRCRAFT

Motor Soarer

WINGSPAN

60 Inches

WING CHORD

Root — 9 $\frac{3}{4}$ " , Tip — 8 $\frac{1}{2}$ " (Avg.)

TOTAL WING AREA

545 Sq. In.

WING LOCATION

High Wing

AIRFOIL

Clark Y 12%

WING PLANFORM

Center — Constant Chord

Tips — Tapered T.E.

DIHEDRAL EACH TIP

4 Inches

O.A. FUSELAGE LENGTH

42 Inches

RADIO COMPARTMENT AREA

(L)8" x (W)2" x (H)4"

STABILIZER SPAN

17 $\frac{1}{2}$ Inches

STABILIZER CHORD (incl. elev.)

5 $\frac{1}{2}$ " (Avg.)

STABILIZER AREA

93 $\frac{1}{2}$ Square Inches

STAB AIRFOIL SECTION

Flat

STABILIZER LOCATION

Top of Fuselage

VERTICAL FIN HEIGHT

6 $\frac{1}{2}$ Inches

VERTICAL FIN WIDTH (incl. rudder)

4 Inches

REC. ENGINE SIZE

.15-.20 Cu. In.

FUEL TANK SIZE

2-4 Oz.

LANDING GEAR

Conventional

REC. NO. OF CHANNELS

3-4

CONTROL FUNCTIONS

Rud., Elev., Eng., Bomb Drop

BASIC MATERIALS USED IN CONSTRUCTION

Fuselage Balsa & Ply
 Wing Balsa & Ply
 Empennage Balsa
 Wt. Ready To Fly 38 Oz.
 Wing Loading 10 Oz/Sq. Ft.

Miss Priss was designed for a number of reasons, first and paramount was simplicity; anyone can build it. Secondly, hands-off flying; it makes a fine beginner's plane. Third, everytime I picked up a pencil the sketches always looked the same, just like Miss Priss.

For stability, it had to have a high wing with polyhedral and to have a low Center of Gravity, it became a cabin job. In order to make take-offs easier, the long tail moment was necessary. There are some of us who do not have tall waving grass, short stubby grass, or even green concrete. We fly from a brown concrete called adobe and wheels are a necessity. If you want to fly it occasionally without wheels, they are easily removed, however, we would advise a landing skid to keep the grass stain off the bottom of your fuselage. Much of the time, even though we fly with wheels, we do not bother with a standard take-off, just stand back and heave it into the air.

Miss Priss may be considered to be a motor soarer, the 5' wing makes up in chord for what it lacks in span. The wing area is almost identical to many 2-Meter gliders. She held up well, wheels and all, with a Windfree and a Drifter II, both of which had auxilliary engines. In fact, we were surprised how well she really did as a thermal machine.

The bomb carrying capability came about as a necessity, our club **always** has a bomb drop event **in** every fun fly. The club members are so good, the C.D. recently inspected one plane for a Norden Bomb Sight, the pilot was so accurate. We have discovered that with the slightest breeze, low throttle and full up elevator, Miss Priss will almost hover. Can't you see the technique, just hover over the target and, when ready, flip in full down and the bomb scores a perfect hit. Please watch the plane, not the bomb so you won't be the first to score a perfect hit with both the bomb and the plane.

After loading the bomb, please check elevator movement with full up to make sure the controls are free. We loaded the bomb, checked movement up and down and, of course, the bomb dropped out on the flight box. So nothing to do but reload; this time we were smart and did not check movement. Sure enough, the bomb was in crooked and the controls were locked in, full down. The flight following a hand launch was the shortest on record. Fortunately, only the prop and the ego suffered any damage. (P.S. the wing does pop off with a quick stop.)

Miss Priss is a beginner's plane, both building and flying, but if you have never built a R/C model we would strongly recommend you purchase the RCM Flight Training Course, Vol. 1, from your hobby dealer or directly from RCM. This publication will prove invaluable to you both for building and flying. It will become a basic text for your R/C library. Read it from cover to cover --- then you will know

where to go back and check when you get in trouble.

The wing is simple and straightforward; it is built flat then joined with polyhedral later. Always cover your plans with a clear plastic wrap or waxpaper. Lay down the two center section leading and trailing edges, bevel them slightly where they meet on the centerline, pin in place, bevel and add all bottom spars. Then put in the bottom sheeting and glue in place. Wing ribs 1A are added on top of the bottom sheeting. Install all Number 1 ribs between leading and trailing edges. The T.E. is notched with three thicknesses of hacksaw blades. When you have finished the center wing sections, build the tip sections. Slant the ribs to match the polyhedral lines and glue in place where the sections join. Add the top spars and allow these sections to dry thoroughly, then add the center section top sheeting.

To assemble left and right wing halves, prop each tip up 4" from the workbench; be sure and glue the small dihedral braces to the bottom spars. A clearance notch must be cut in each of the two adjoining Number 1 ribs for this brace. The two halves are butt joined using epoxy. After sanding, the center sheeting top and bottom will be covered with 3" fiberglass tape.

The fuselage sides are cut from 3/32" medium sheet balsa. A doubler is also cut from 1/32" ply. This doubler goes back just beyond where the pod and boom join, giving this area extra strength. Affix the doubler to the balsa sheeting with epoxy or contact cement.

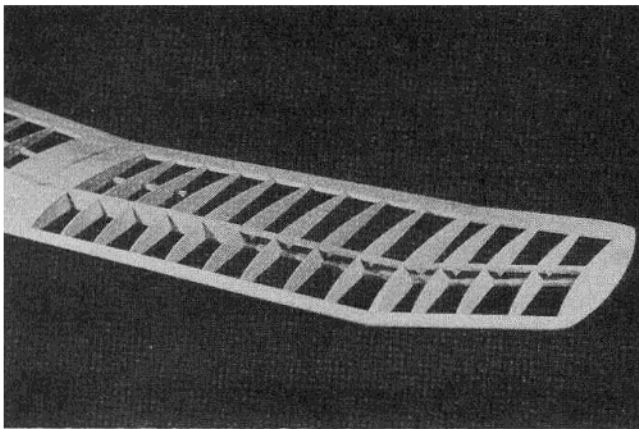
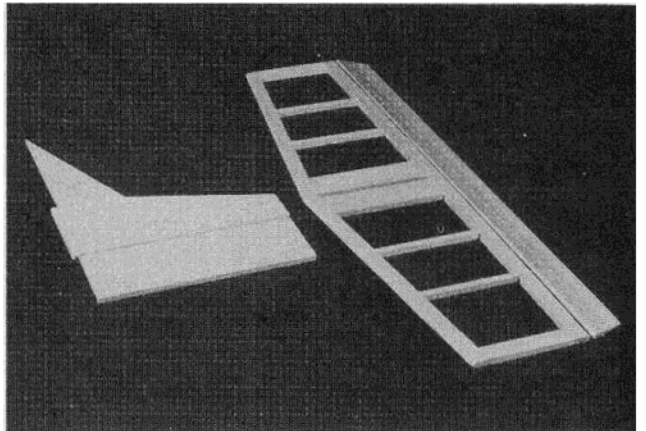
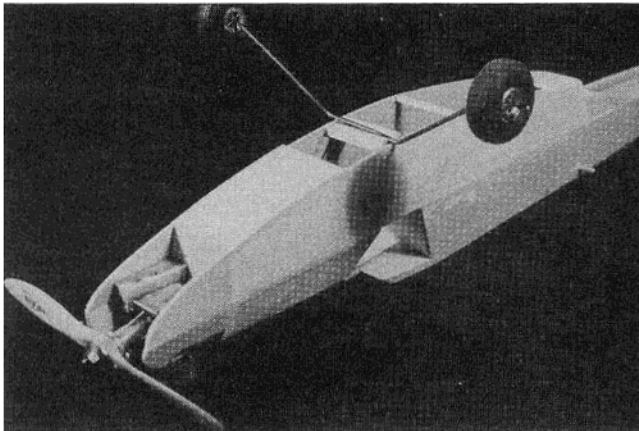
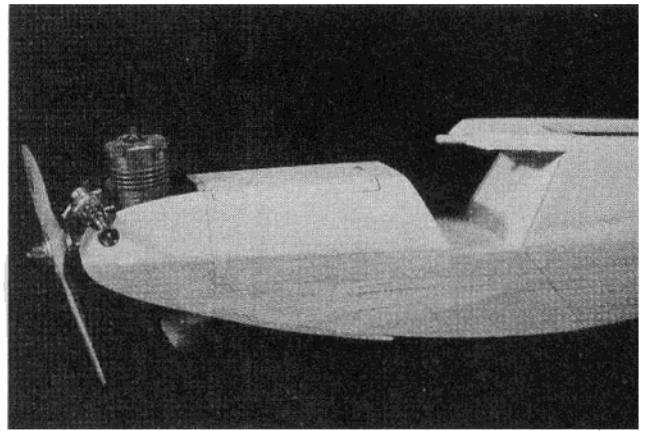
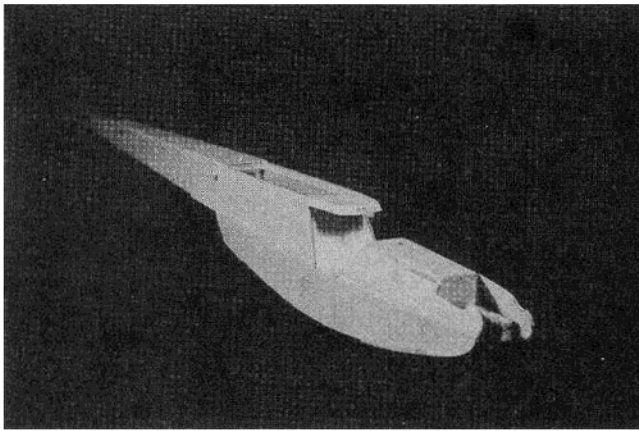
Place the right fuselage side on the plans and mark the former locations on the ply side. There are marks outside the fuselage plan view for this purpose. Transfer these locations to the ply side of the left fuselage half. Then add all 1/8" x 1/4" stringers and doublers.

To fit the shape of the formers, the sides must be folded, please do not let the coffin shape of Former Number 1 influence your thinking as to your success in fuselage building. Make the cuts from the balsa side. Cut through the balsa layer and score the ply — do not cut all the way through the ply — try to fold it; the ply should crack then fold. If you have to exert too much force, score again then fold.

Put glue on Formers Number 1 and Number 4 and assemble the center of the fuselage into a box. Hold things together with masking tape or rubberbands till dry. Add the other formers.

The choice of beam or manufactured engine mount should be made at this time and the firewall should be notched or drilled as required. Do not forget holes for fuel lines and the throttle linkage — trying to do it later may prove embarrassing. Add the firewall, backing it up with 3/8" triangular stock. The built-in down thrust is sufficient.

Cover the bottom of the boom from the back side of Former Number 4 to the tail with 3/32" balsa cross-grain. Then the back pod-block is added. The cockpit roof is



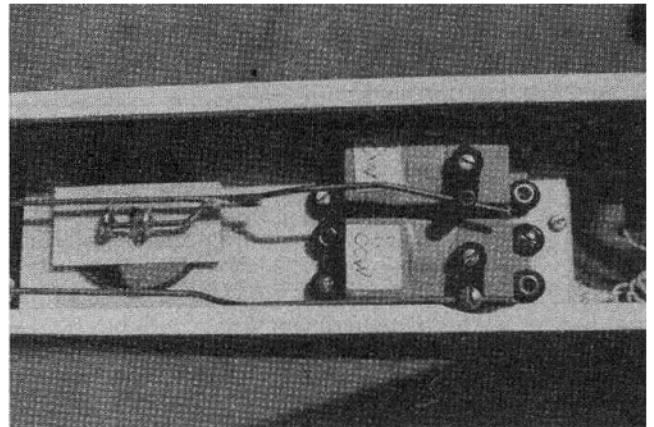
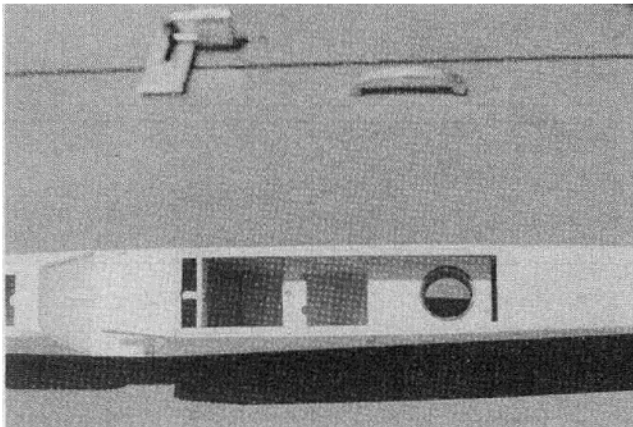
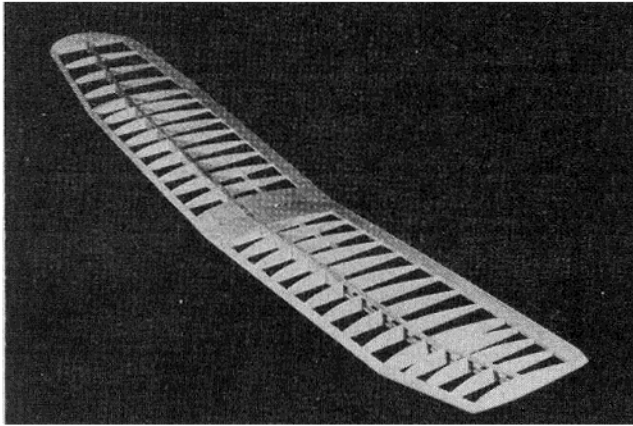
TOP ROW, LEFT: *Simplicity of construction is in evidence here.*
TOP ROW, RIGHT: *Easy access is provided for engine and fuel tank.*
2ND ROW, LEFT: *Bottom side details are clearly shown.*
2ND ROW, RIGHT: *Tail surfaces are light and simple.*
BOTTOM, LEFT: *Note spar webbing in inboard panels.*

easiest built on the fuselage. Cement the 1/8" ply top piece to the top face of Former Number 2. Drill a 3/16" hole through Former Number 2 just under ply roof. Push a 3 3/8" piece of 3/16" hardwood dowel through this hole, slide Former Number 3 on the inner end of the dowel, epoxy the dowel and Former Number 3 in place. Add pieces of 3/16" scrap balsa under the roof to hide the dowel and then sand this sandwich to the shape shown on the plans.

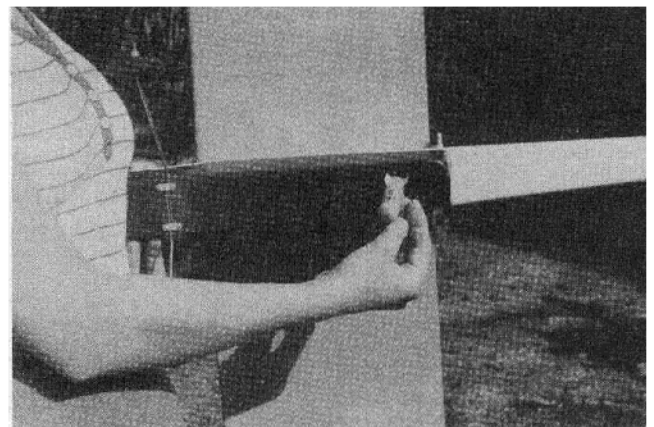
Cement the 3/16" x 1/4" stringers on the inside of the fuselage to hold the ply servo tray. In the proper location, cut a hole in the servo tray. The diameter of this hole depends on the size bomb bay tube you have

at hand. We used the tube on which MonoKote comes rolled, a T.P. roll, paper towel roll, etc., would work fine. Cut the same size hole in the center of a 3" wide piece of 1/8" sheet balsa. This sheet will be glued to the bottom rear of the pod to anchor the bomb bay in a vertical position. Decide your servo locations and cut holes for them. When this is all completed, the bomb bay may be epoxied in place. When assembling, be sure the top of the tube is flush with the top surface of the servo tray. The tube may stick out slightly at the bottom and be sanded flush later. Finger paint the inside of the bomb bay with 5-Minute epoxy to keep out moisture.

When you folded the sides of the fuselage, the balsa parted into a "V" shape; this groove may be filled with a long triangular strip then sanded to match the fuselage contour. Fit your engine and remove material from the fuselage sides to allow installation of the muffler and insertion of the needle valve. Make the hatch cover for the fuel tank compartment and spot glue in place. The wheelwire anchors must be made from some harder wood such as pine or spruce. Look at the plans and cut them to shape and fit; insert and glue in place. The remainder of the bottom is now covered with rather hard 1/8" sheet balsa. Sand the whole fuselage



TOP ROW, LEFT: The wings can be quickly built with instant glues.
TOP ROW, RIGHT: Ready for covering.
2ND ROW, LEFT: Servo mount and bomb drop tube are shown.
2ND ROW, RIGHT: Elevator servo also operates the simple bomb release.
BOTTOM, RIGHT: Bomb is installed from the bottom.



rounding all corners.

Build the empennage with stock as shown on the plans. The fin has a tab which anchors it in a notch in the stabilizer; be sure you allow for this tab when you cut the fin from 3/16" balsa. The rudder may be cut and sanded from the same sheet. The elevator is 1/4" aileron stock.

It is recommended (if you intend to use a steerable tailwheel) that you consider exiting the elevator pushrod under the stab in the conventional manner rather than as shown on the plans. There is a possibility that in the narrow confines at the tail, the elevator pushrod could get hung up on the tailwheel wire and cause a crash. The

prototype had a tail skid.

If you use the very small servos, there is room enough in the fuel tank compartment for the throttle servo, otherwise it must go in the radio compartment and the pushrod must pass through the cockpit.

Any of the heat shrink coverings are recommended as there will be very little stress on this plane. Do construct as lightly as possible. It took two sets of landing gear wires before we were satisfied and even then we had to do a little twisting to get them to the position we wanted. One length of 1/8" piano wire was sufficient.

The first flight of Missy was from our backyard --- we have a valley about 300'

deep and the west wind blows up our side making a perfect slope soaring location. Wonder if that had anything to do with our decision to purchase? The plane was hand launched under power out over the valley and it went straight up. The throttle was pulled back to an idle to keep it down within reasonable range. When the fuel ran out, we brought the plane back overhead and slope soared on the uplift for 10 to 15 minutes more. We haven't been able to coax the bulldozer operators, putting in house pads across the valley, to come over here and carve us out a landing strip. We figure they will be over here soon enough, and it won't have anything to do with model airplanes. □