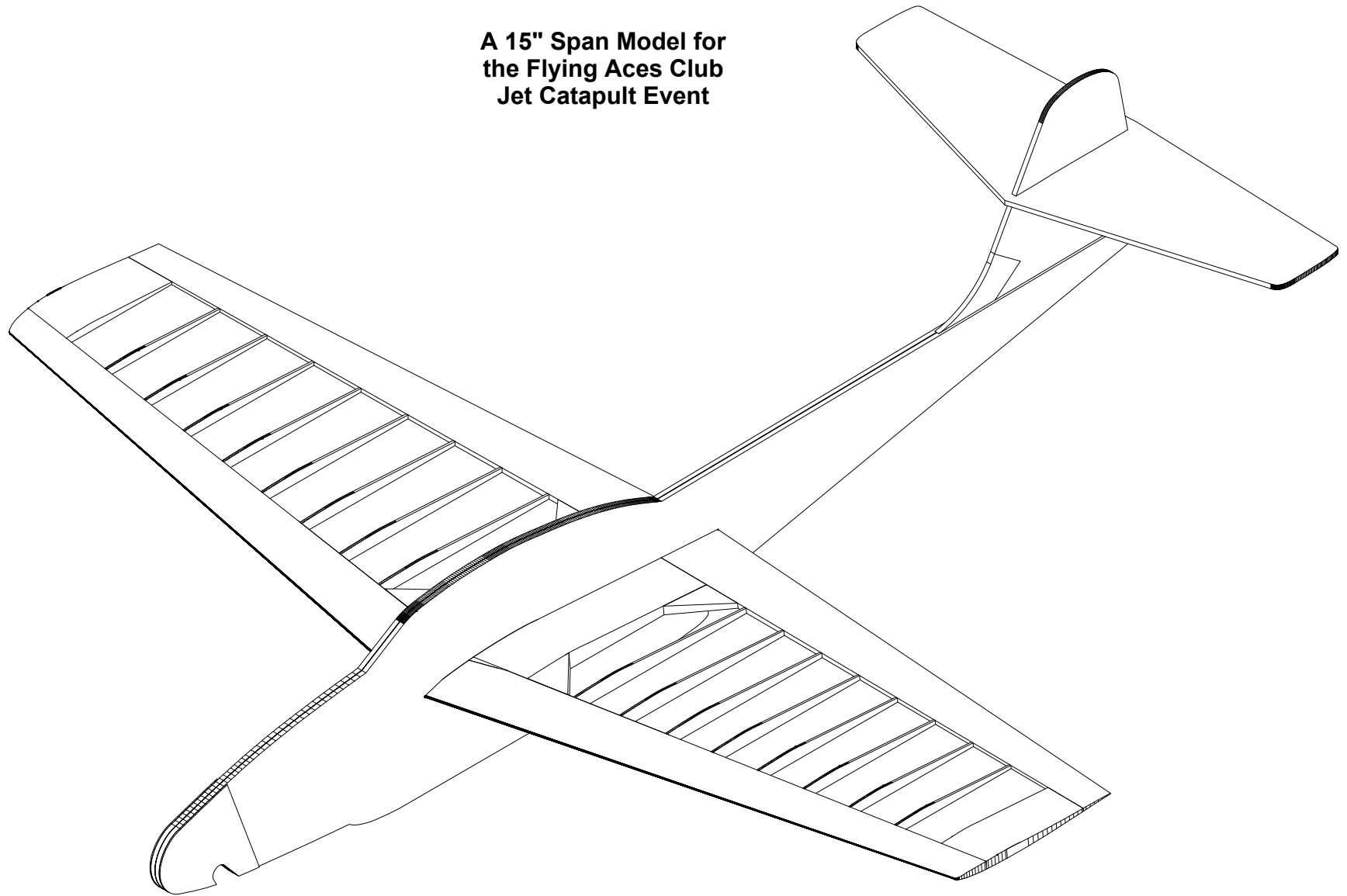


Northrop XF-89 FAC Jet Cat

A 15" Span Model for
the Flying Aces Club
Jet Catapult Event



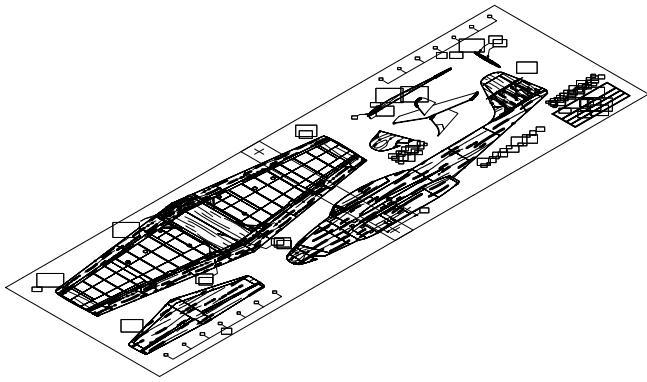
A Catapult Launched
Model

ASSEMBLY GUIDE

April 2019

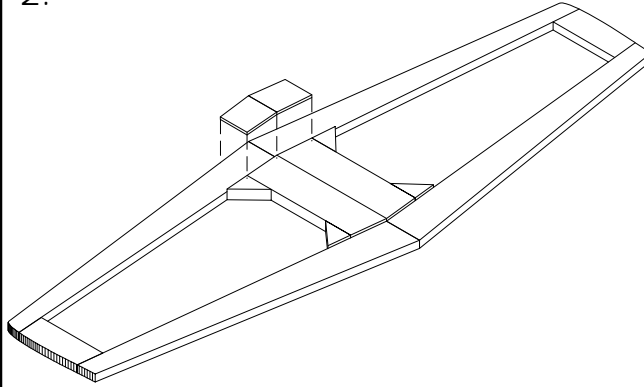
BY PAUL BRADLEY

1.



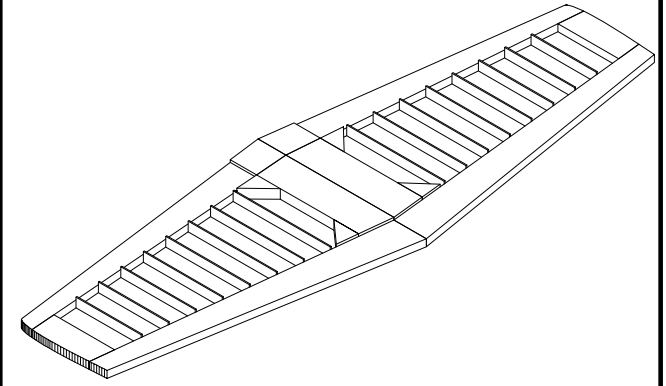
Tape the two plan pages together to form the building plan. Use the "+" marks for alignment of the pages.

2.



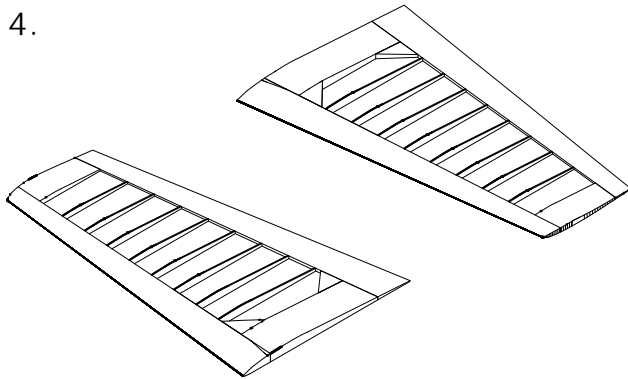
Cut the wing outline parts from 3/16" and 1/4" balsa. Glue the outline parts together using the plan. DO NOT glue the center section joint. Add the 1/16" balsa leading edge root laminations.

3.



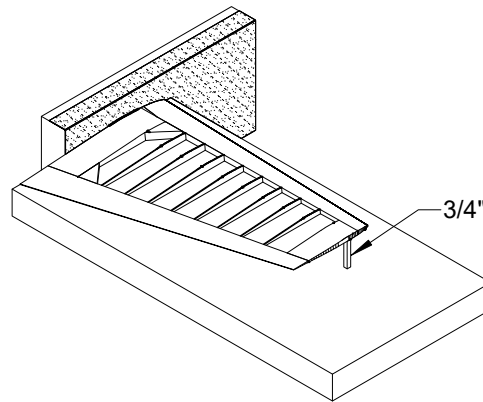
Cut some firm 1/32" balsa into several 1/4" wide strips. Using the 1/4" wide strips, cut and glue individual lengths at each rib location.

4.



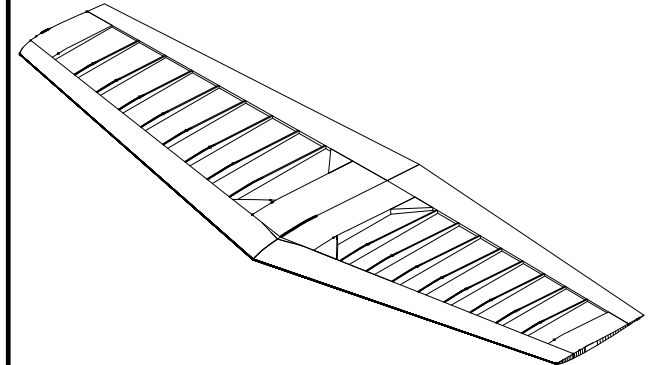
When all of the glue is dry, remove the two wing panels from the plan. Sand the wing panels to the airfoil shown in the wing root cross section shown on the plan. Taper the wing thickness toward the tips.

5.



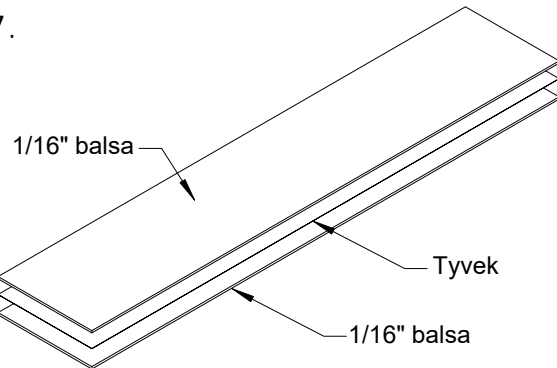
Block each wing panel up 3/4" at the tip with the root flush with the building surface. Sand the root of each panel so the wing panels can be joined in the middle with 3/4" dihedral under each wing tip.

6.



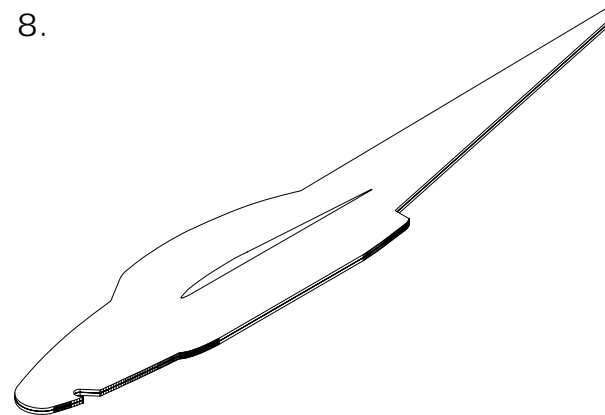
Glue the wing panels together.

7.



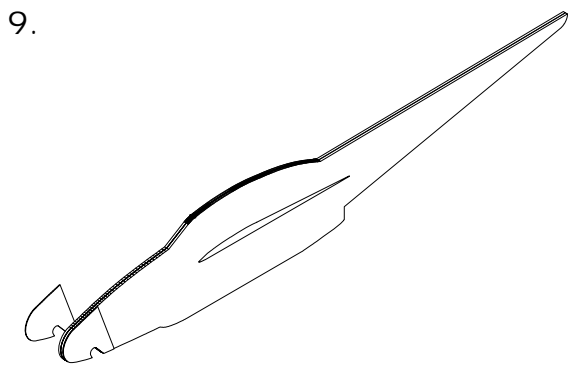
Cut two pieces of 1/16" balsa to slightly larger than the length and width of the fuselage. Also cut a piece of Tyvek to the same size. A good source of Tyvek is a U.S. Priority Mail envelope. Glue the laminations together with a glue like Titebond or a cellulose based glue like Sigmant.

8.



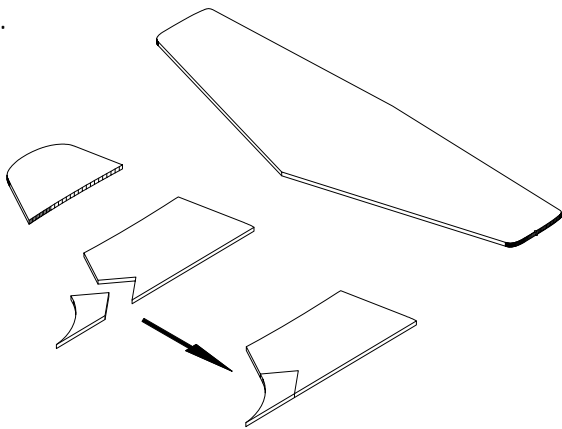
Once the glue dries in the fuselage lamination lay up, cut out the fuselage.

9.



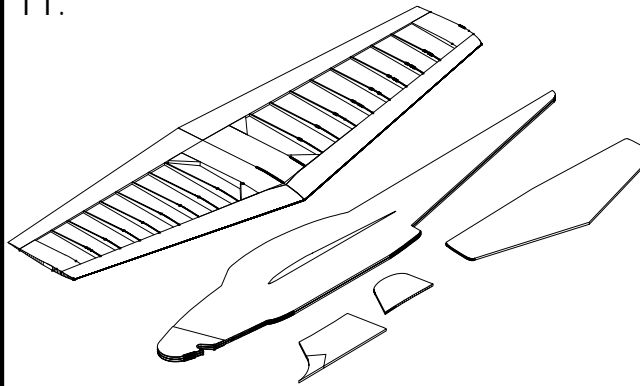
Sand the fuselage to form a cross section similar to the one shown on the plan (not shown in these illustrations). Glue the 1/64" plywood nose doublers to each side of the fuselage. Sand the doubler edges when the glue is dry.

10.



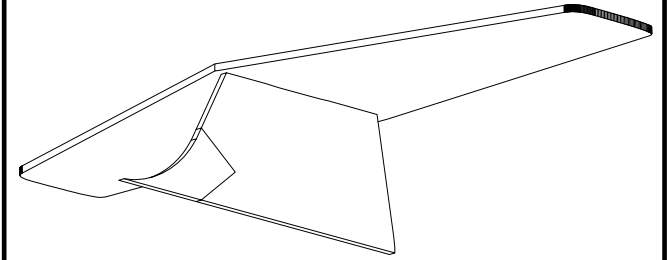
Cut out the tail surfaces from 1/16" blasa. Sand both surfaces to a symmetrical cross section (not shown in these illustrations).

11.



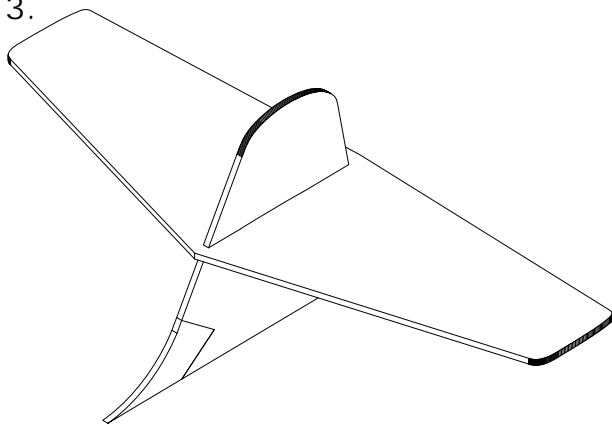
Cover the wing, fuselage, stab and fin halves (not shown in these illustrations).

12.



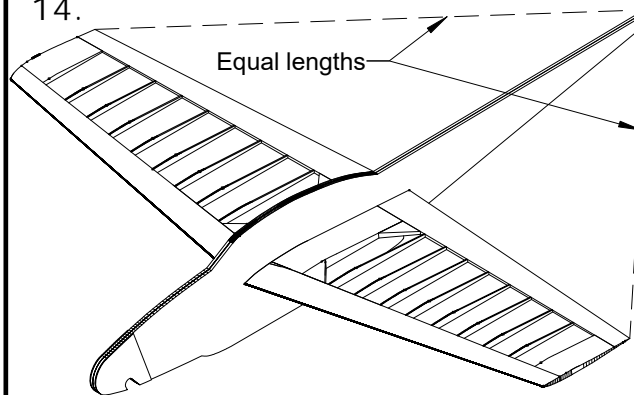
Glue the stab to the fin base. Note that the LE and TE overhang the fin base. Make sure the fin base is square to the stab.

13.



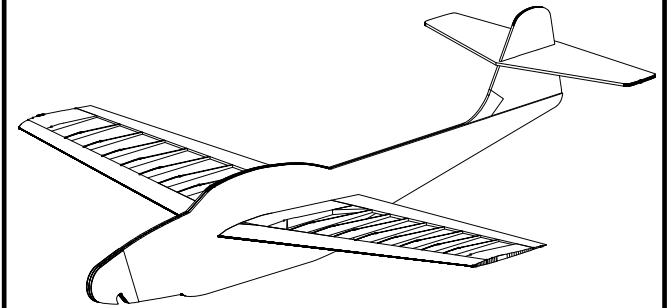
Glue the fin top to the stab. Make sure it is square to the stab.

14.



Slide the wing into the fuselage slot and glue it in place. Make sure the wing is square to the fuselage, and that the distance from the tips to the rear of the fuselage is equal on each side.

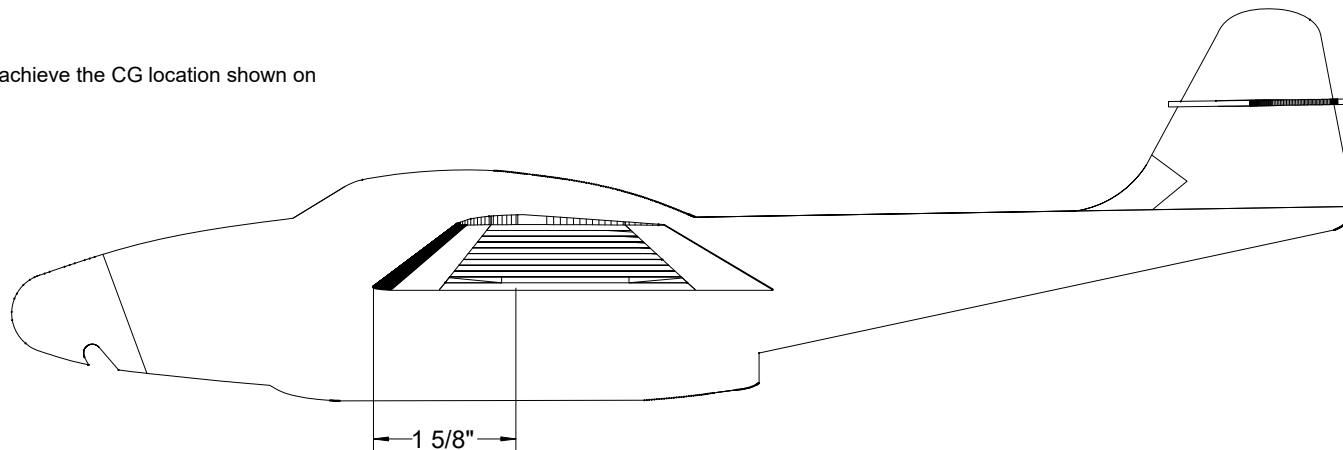
15.

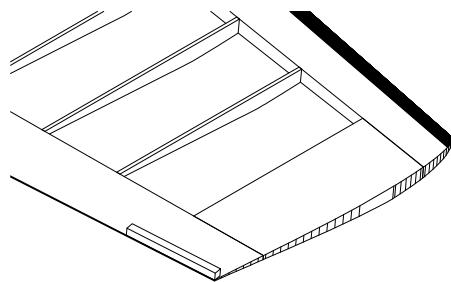
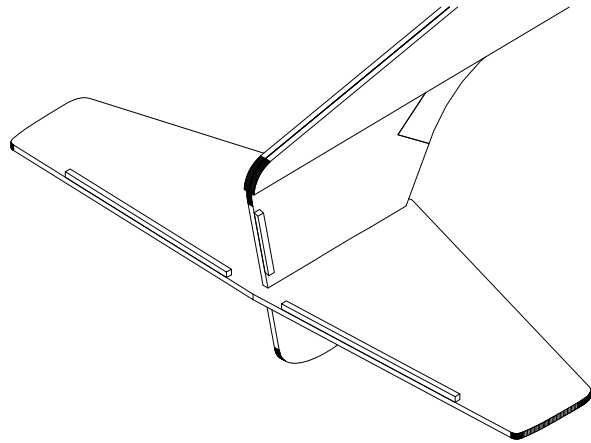


Glue the fin/stab assembly to the fuselage. Make sure the stab is square to the fuselage.

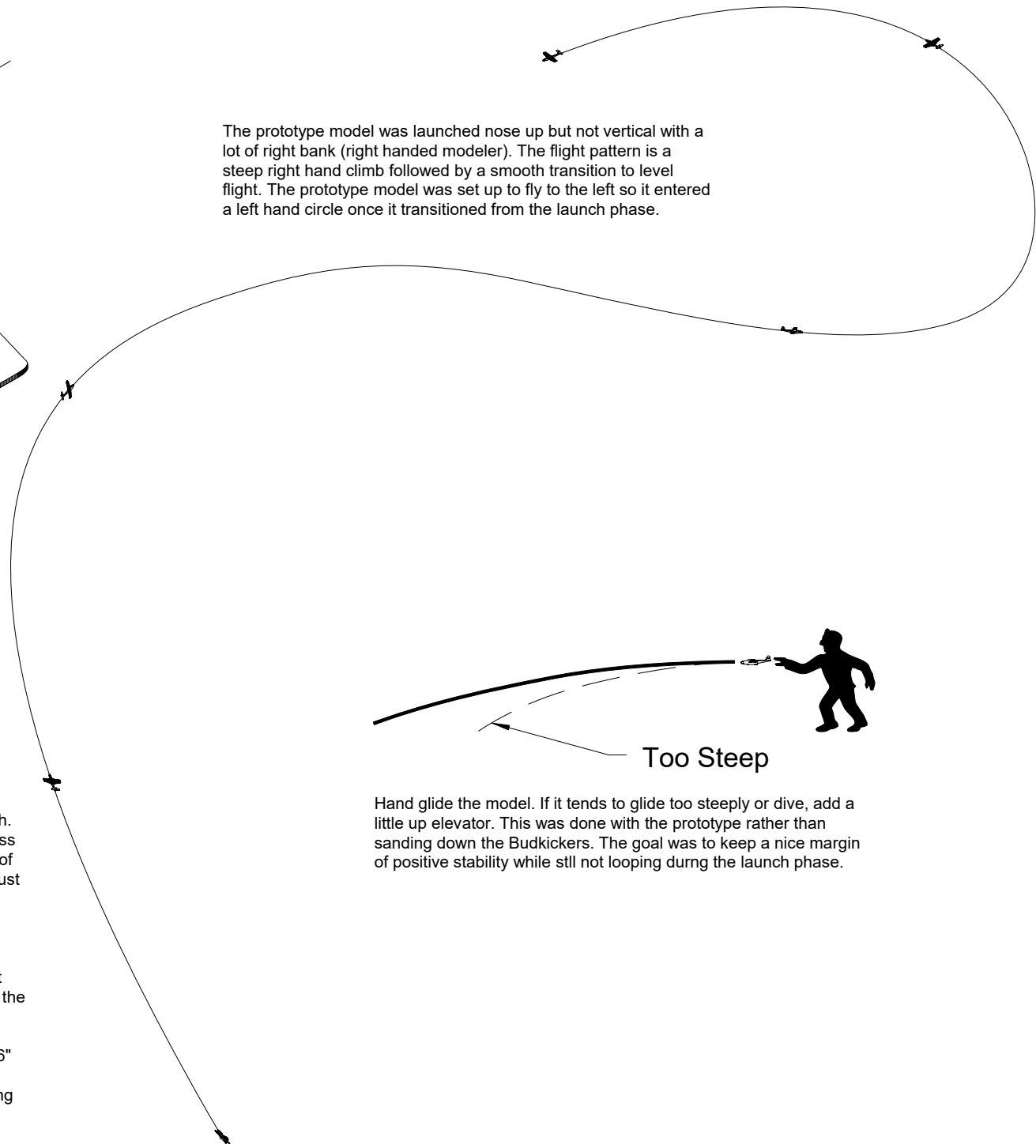
16.

Add ballast to the nose to achieve the CG location shown on the plan.





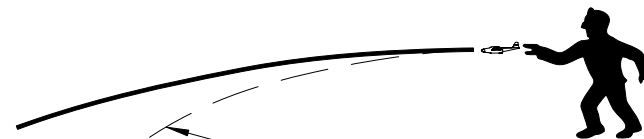
The prototype model was launched nose up but not vertical with a lot of right bank (right handed modeler). The flight pattern is a steep right hand climb followed by a smooth transition to level flight. The prototype model was set up to fly to the left so it entered a left hand circle once it transitioned from the launch phase.



The prototype model was set up with "Budkickers" on the stab. These are Gurney flaps to help control looping during the launch. This set up allows for a more positive incidence set up that is less prone to diving in if the launch is not perfect. Simply glue strips of 1/16" square balsa to the bottom of each stab trailing edge. Adjust the glide by bending the stab trailing edge very slightly up if necessary.

The prototype model was also set up for a left hand glide circle. This was done by adding a 1/16" square strip of balsa to the left side of the fin. A 3/4" long strip of 1/16" balsa was also glued to the bottom left wing tip to help keep the wing level during the glide.

Adjustments to the glide circle can be made by sanding the 1/16" balsa strip Gurney flaps. For right hand glide circle place the Gurney flaps on the right side of the rudder and bottom right wing tip.



Too Steep

Hand glide the model. If it tends to glide too steeply or dive, add a little up elevator. This was done with the prototype rather than sanding down the Budkickers. The goal was to keep a nice margin of positive stability while still not looping during the launch phase.