

Wing is mounted at a 2 degree offset from square to the fuselage. A template for setting the offset is provided on sheet 2 of this plan package.

Bill of Materials:

Wing - Hefty 9.75 inch cut-resistant square red foam plate

Wing Stiffener - 6" x 3/4" x 1/16" Woodsie Jumbo Craft Stick by Loew Cornell - cut in half along the length

Fuselage - 1/4" square balsa stick 12 inches long

Fin and Stabilizer - 1.5 mm thick foam cut from a foam plate

Nose Weight - .035" brass 1/4" x 2 1/8" K&S Engineering is a good source

Launch Peg - 1/8" dowel about 15/16" long

Rear Launch Grip - 3 1/2 inch Forster Craft Pick

Score On The Top Side

Craft Stick Cut In Half Serves As The Wing Stiffner

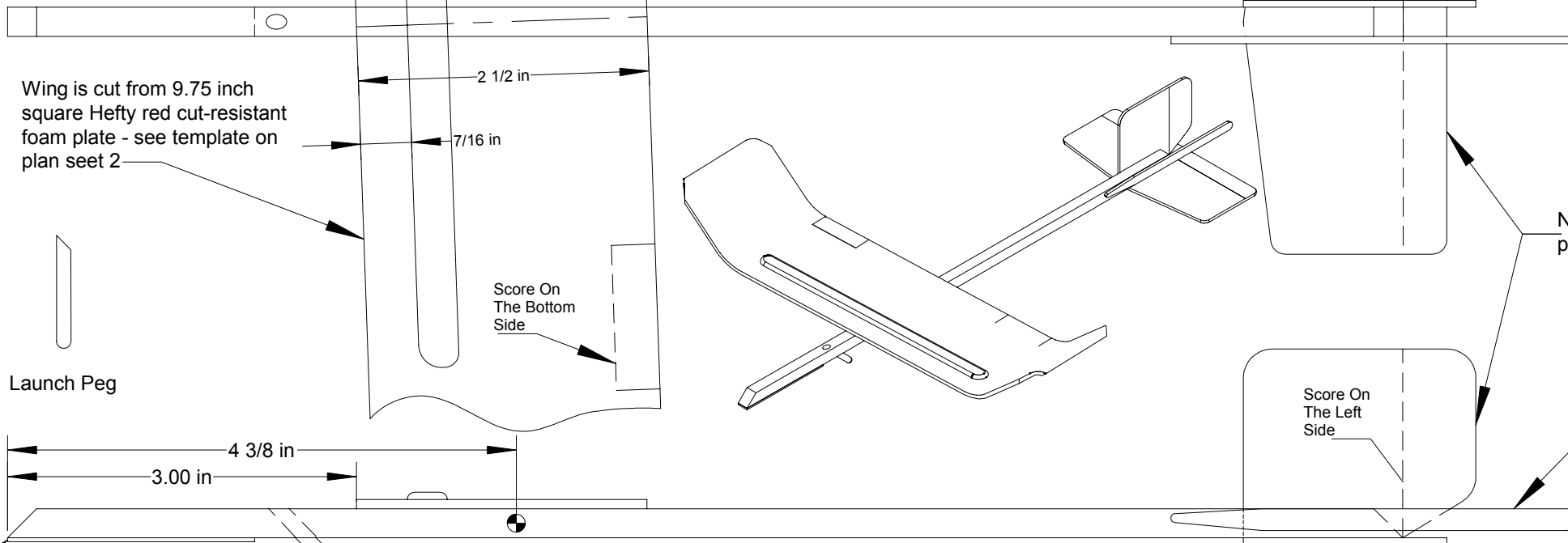
Score On The Top Side

Tail surfaces are cut from the center of a foam plate that is 1.5 mm thick - see plan sheet 2 for the templates

Score On The Left Side

Note: See Sheet 2 for the part templates

Launch Grip



Wing is cut from 9.75 inch square Hefty red cut-resistant foam plate - see template on plan sheet 2

2 1/2 in

7/16 in

Score On The Bottom Side

Launch Peg

4 3/8 in

3.00 in

2 1/2 in

Fuselage is made from a 1/4 inch square balsa stick 12 inches long

Brass Nose Weight

1/8" Dowel Launch Peg

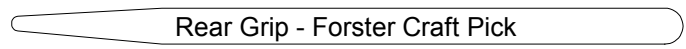
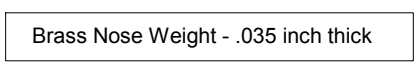
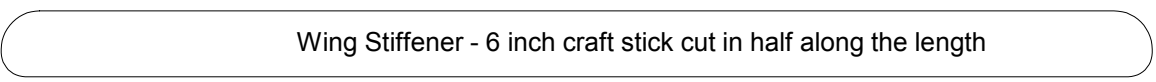
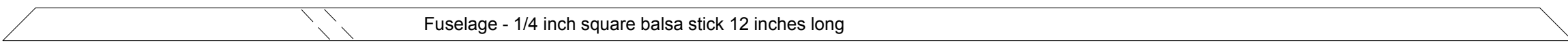
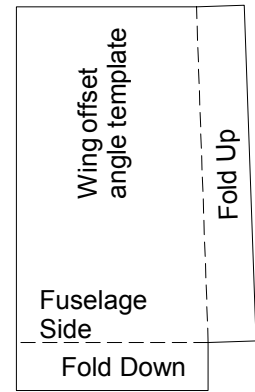
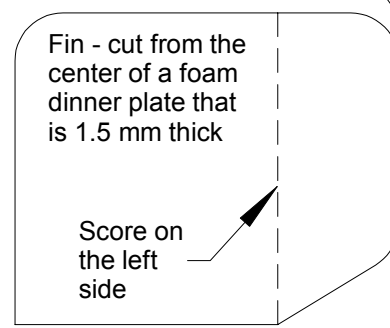
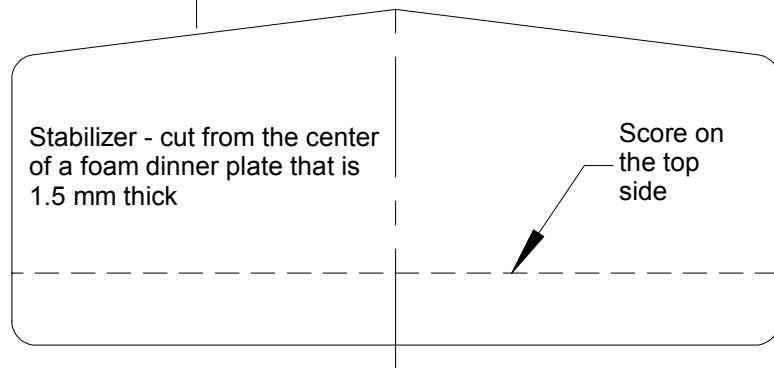
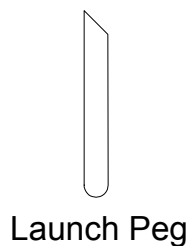
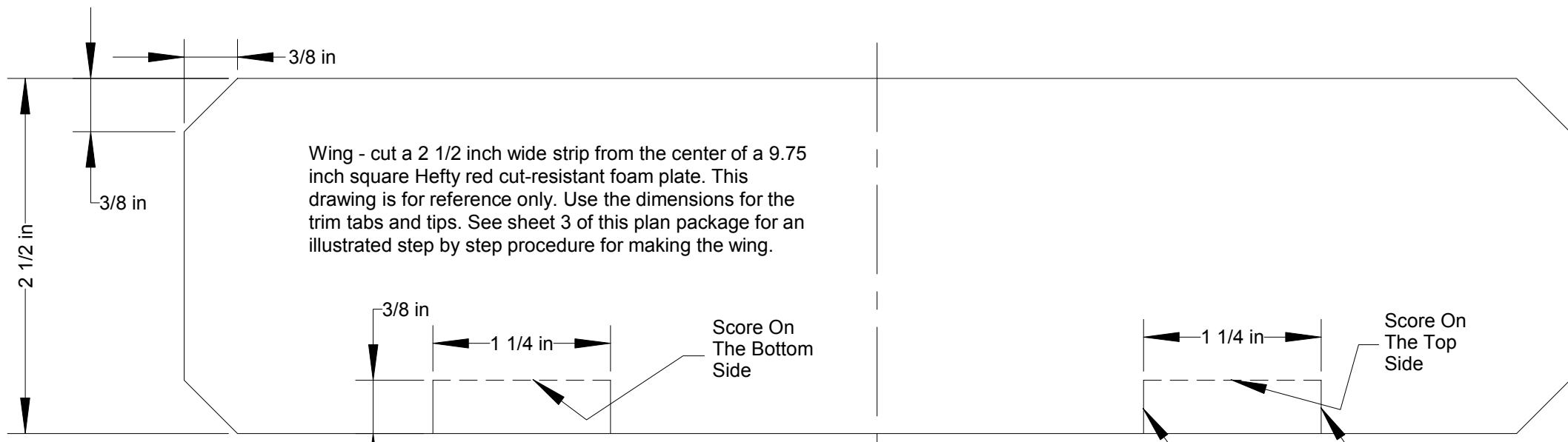
This is a general arrangement drawing. It has been drawn at a reduced scale. Full size part templates can be found on sheet 2 of this drawing package.

A comprehensive video for building this model can be found at http://youtu.be/H19G_upFf7Q

Flying Star
Outdoor Catapult Glider

Designed by Walter Legan
October 2012

Drawn by Paul Bradley	Feb 2014	Sheet 1 of 4
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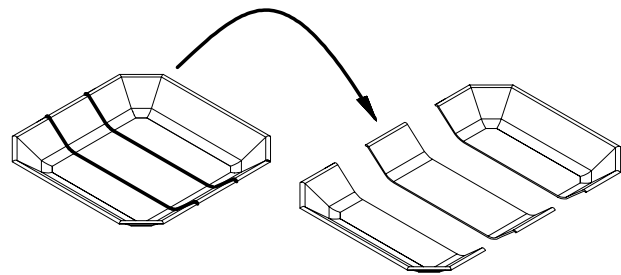


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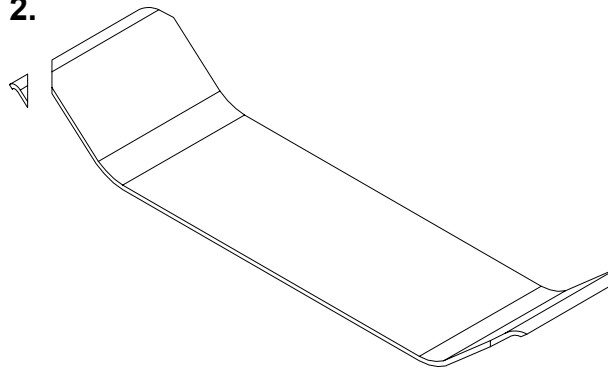
Drawn by Paul Bradley	Feb 2014	Sheet 2 of 4
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1.



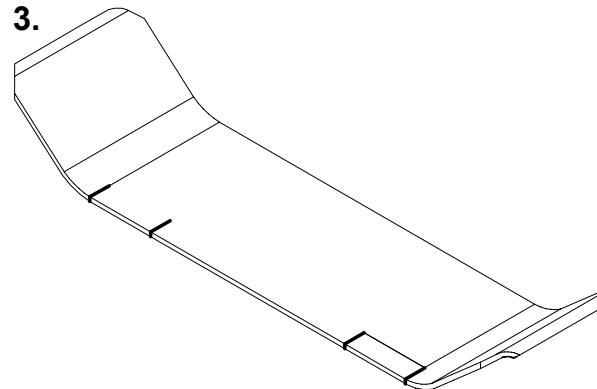
Begin construction by cutting the wing from the foam plate. Draw a 2 1/2 inch wide strip that is centered in the plate. Cut the plate along each edge of the strip.

2.



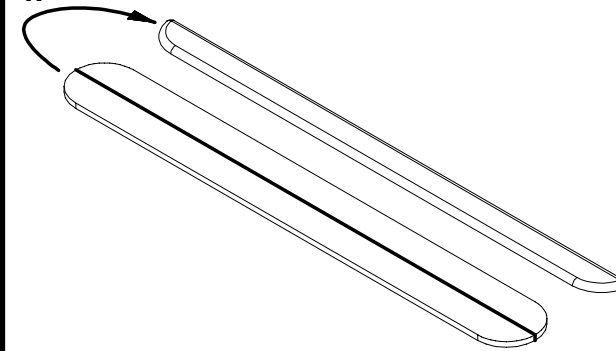
Measure 3/8 of an inch from the corner of each wing tip. Cut the diagonal between each of the 3/8 inch marks to shape the wing tips.

3.



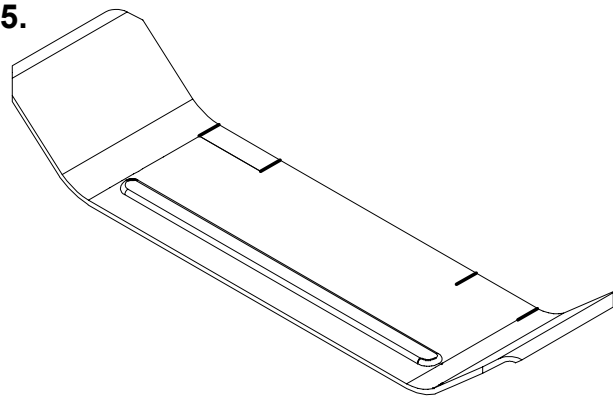
Using the wing reference drawing on sheet 2 of this plan set, draw the trim tabs on the wing. Cut the edges and then score the tabs as noted on the reference drawing.

4.



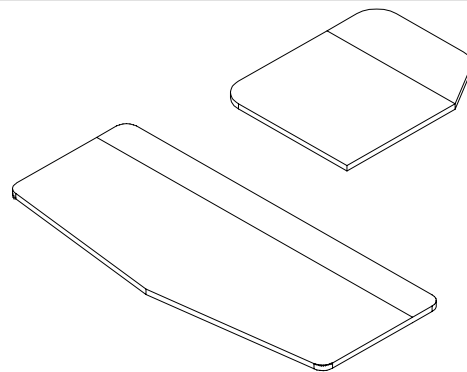
Cut a 6 inch by 3/4 inch craft stick in half along its length. Using sand paper round the edges on one side as shown above.

5.



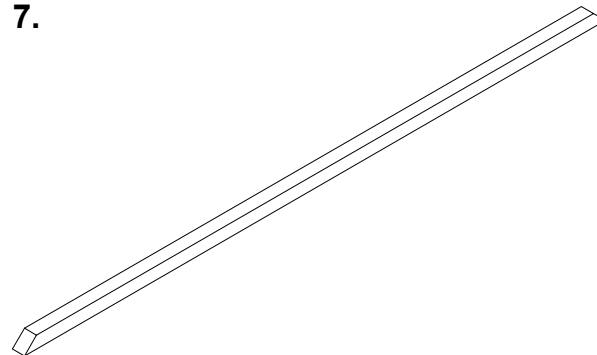
Glue the craft stick to the top of the wing. It is centered on the wing span and set back from the forward edge (leading edge) by 7/16 of an inch.

6.



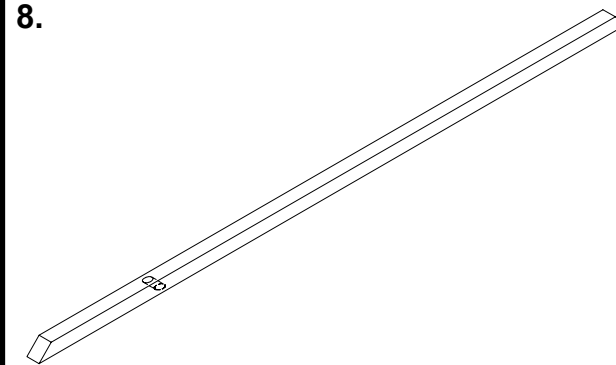
Cut the stabilizer and fin from the center of a foam plate. Make sure the thickness of the material is at least 1.5 mm. Score the left side of the fin and top side of the stabilizer as shown. Use plan sheet 2 of the plan package for the location of the score lines.

7.



Cut a 12 inch length of 1/4 inch square balsa. Measure 1/4 inch back from each end and cut a bevel on each end to match the drawing on sheet 2 of the plan package.

8.



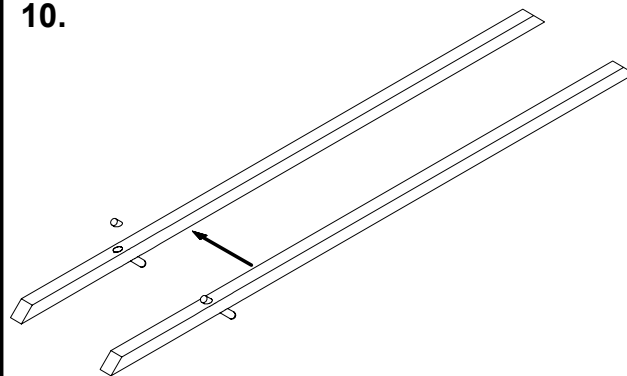
Make a mark on the bottom of the fuselage 2 1/2 inches back from the nose. Using a 1/8 inch diameter drill, make a hole in the fuselage at about a 45 degree angle as shown on the reference drawing on plan sheet 2 of this plan package.

9.



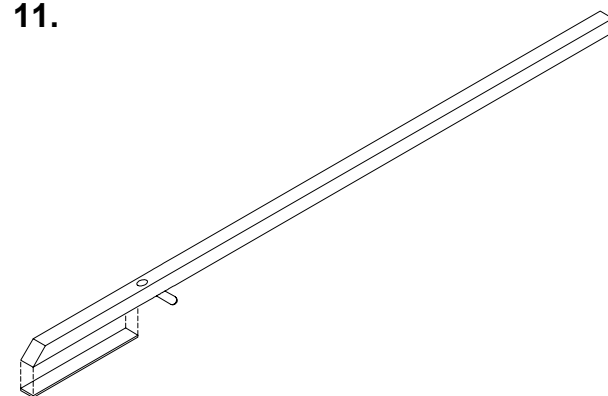
Make up the peg that will hold the catapult rubber when the model is launched. Cut a 1 inch length of 1/8 inch diameter dowel. Round one end.

10.



Glue the launch peg in the hole in the fuselage. Let it extend just beyond the top of the fuselage. When the glue is dry cut off the excess length on top. Sand the top smooth using some sand paper.

11.



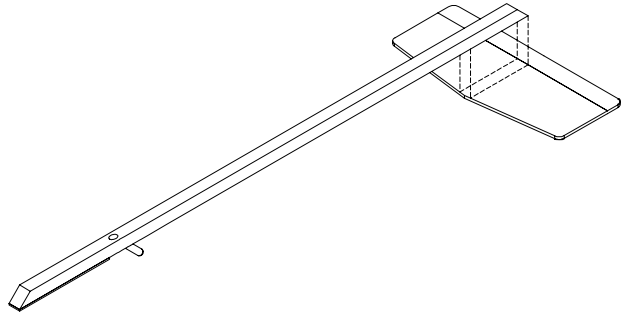
Glue the nose weight to the bottom of the fuselage nose. It should be lined up with the forward edge of the fuselage nose.

Flying Star

Outdoor Catapult Glider

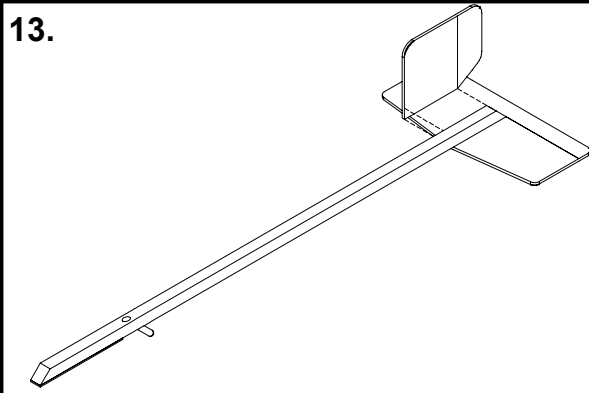
Designed by Walter Legan
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12.



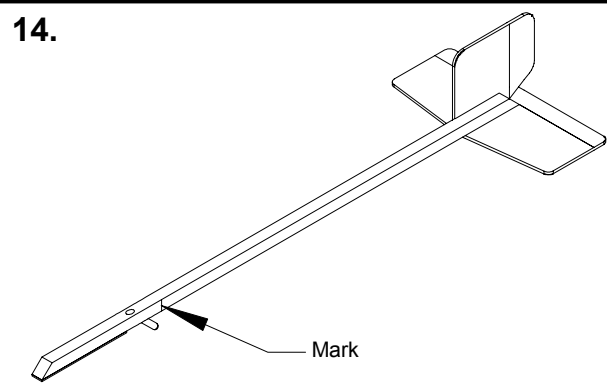
Glue the the stabilizer to the bottom of the fuselage at the rear. The stabilizer should be centered on the fuselage and the score line on top. The score line will be lined up with the end of the fuselage.

13.



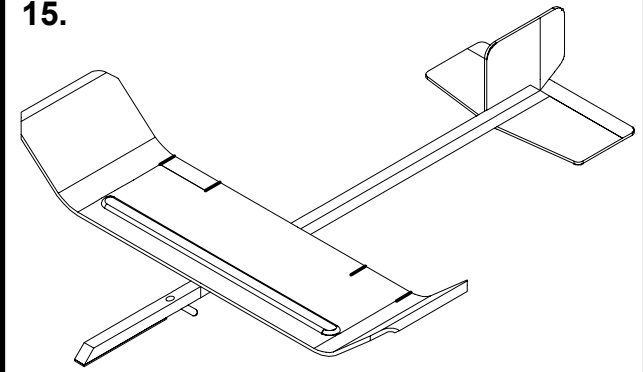
When the stabilizer glue is dry, glue the fin to the right side of the fuselage (as viewed from the top) at the rear. The score line will be to the left and lined up with the end of the fuselage.

14.



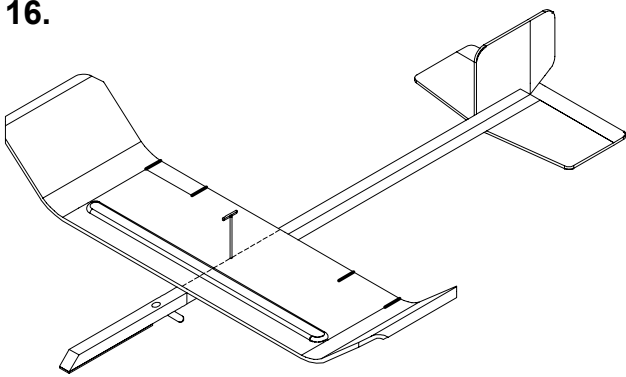
Make a mark on the side of the fuselage that is 3 inches back from the bottom forward edge. The will locate the forward edge (leading edge) of the wing.

15.



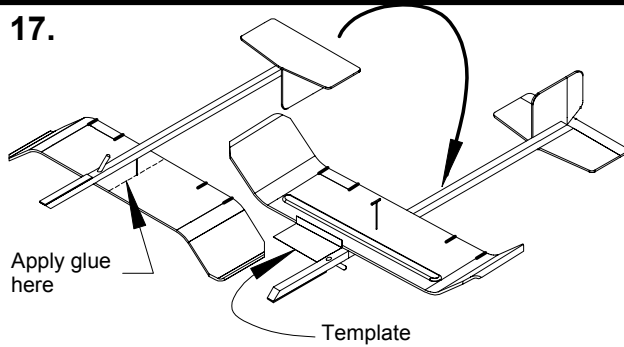
Place the wing on the top of the fuselage with the leading edge lined up with the mark made in the previous step. The wing should be centered on the fuselage.

16.



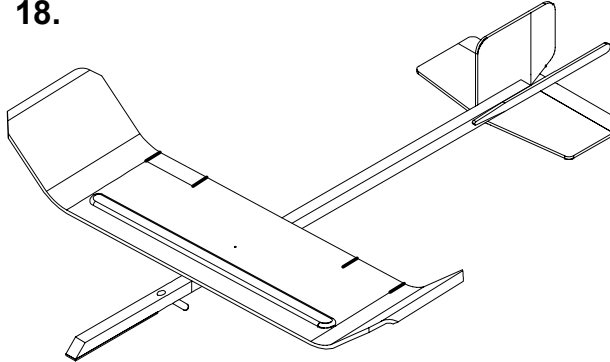
Push a straight pin through the wing at its center into the balsa fuselage. Push the pin into the fuselage only about 1/8 of an inch.

17.



Slide the wing up on the straight pin and apply glue to the bottom along the center line. Slide the wing back down on the pin so it is in contact with the fuselage. Using the template from plan sheet 2, rotate the wing so it has a 2 degree offset. The right wing tip is rotated forward.

18.



When the wing joint glue has dried, glue the rear launch grab stick to the left side of the fuselage. This completes the assembly of your Flying Star catapult glider. Enjoy flying it!

A complete video on building and flying the Flying Star catapult glider is available at http://youtu.be/H19G_upFf7Q.

The table of times below will help in your viewing of the video:

0:00 - 2:42 Introduction 2:42

2:43 - 6:13 Launch Technique and Flight Path 3:52

6:14 - 10:13 Key Design Features 1 & 2 3:59

10:14 - 14:47 Key Design Features 3 - 11 4:33

14:48 - 24:57 Construction: Wing 10:09

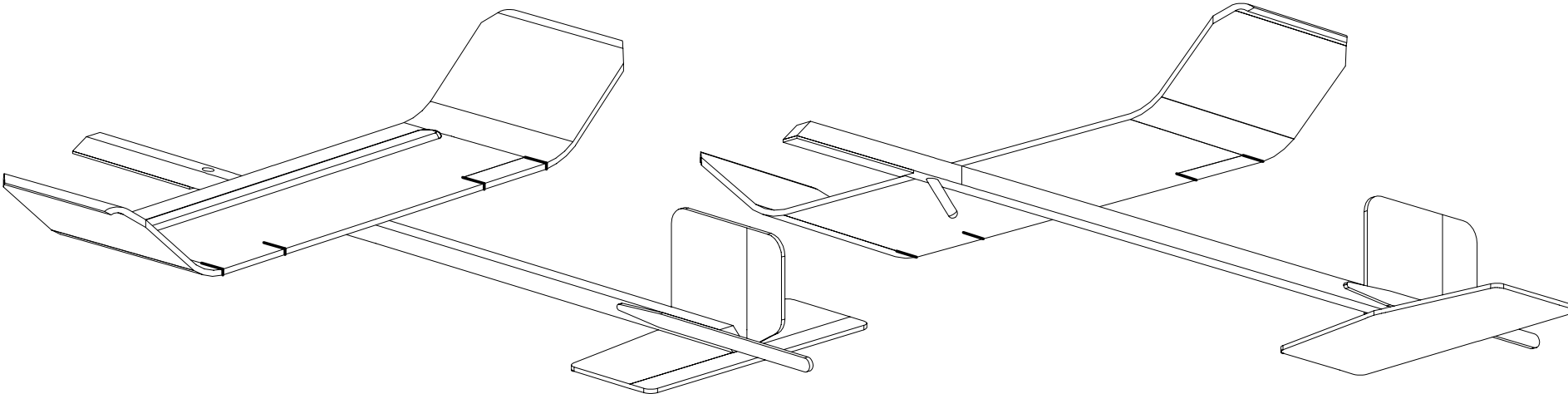
24:58 - 34:07 Construction: Wing & Tail 9:09

34:08 - 46:24 Construction: Fuselage 12:16

46:25 - 56:09 Final Assembly 9:34

56:10 - 59:04 Launcher Construction 2:54

59:05 - 62:54 Flight Trimming 5:49



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