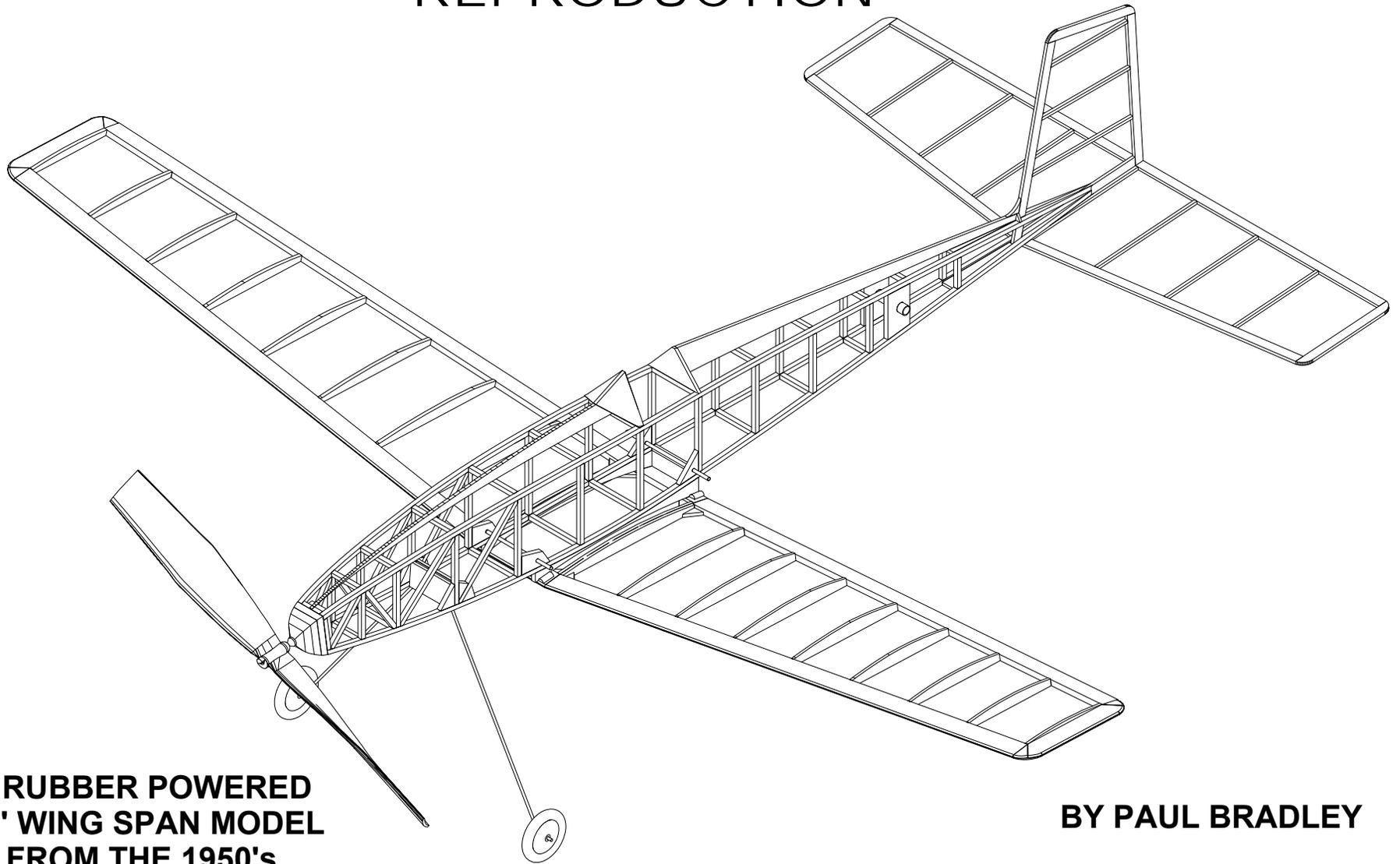


JETCO FALCON REPRODUCTION



**A RUBBER POWERED
25" WING SPAN MODEL
FROM THE 1950's**

BY PAUL BRADLEY

**ASSEMBLY GUIDE AND PLAN
SEPTEMBER 2015**

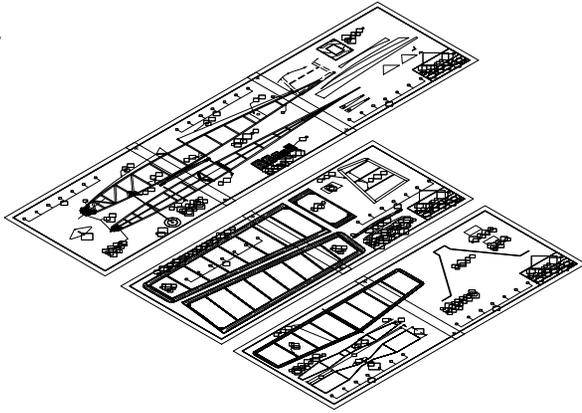
NOTES

The reproduction drawings for the JETCO Falcon have a few minor revisions to the original kit plan. The revisions are listed here:

1. The original plan calls for the wing to be held in place with a large rubber band that wraps around the fuselage. This method was used in the early days of model airplanes. It makes it hard to attach the wing to the same location each time the model is disassembled and reassembled. As a result wing dowels have been incorporated.
2. The kit plan shows no real support for the fin when it is installed in the fuselage. Two simple balsa pieces have been added to improve the fin to fuselage joint.
3. Gussets have been added to the landing gear mount to improve the load bearing strength of the landing gear mount.
4. Wing ribs were added to the dihedral joints. This was done to allow the three wing sections to be covered before they are joined. This makes covering the wing easier.

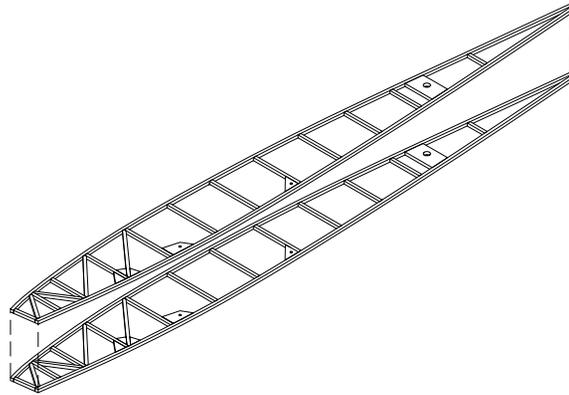
The original model and this reproduction package call for 3/8" x 1/8" tapered stock for the wing leading edge, trailing edge and tips. If not available from your supply source, a strip of 3/4" wide trailing edge stock split length wise will produce the needed tapered stock for the wing.

1.



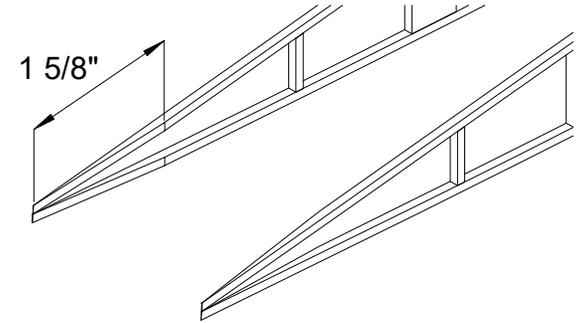
Tape the seven plan pages together to form three building plan pages. Use the "+" marks for alignment of the pages.

2.



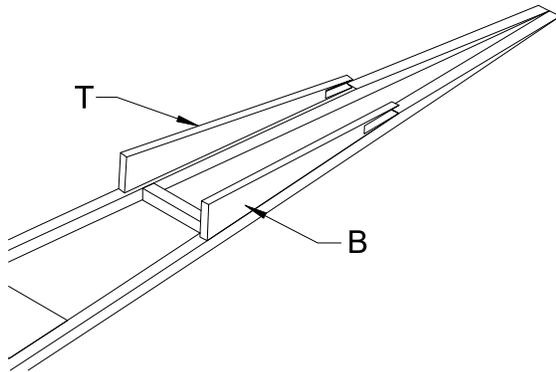
Build the two fuselage sides. Build the second side on top of the first using something like plastic kitchen wrap between the two sides. Glad Wrap works especially well for this.

3.



Trim each fuselage side at the rear as shown. Start the trim line 1 5/8" from rear most point of each side. Make sure you create a right and left side.

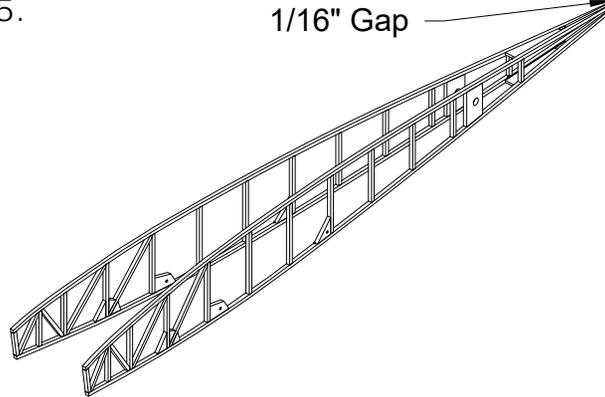
4.



Glue parts T and B as shown to the rear of one of the fuselage sides. The side used does not matter.

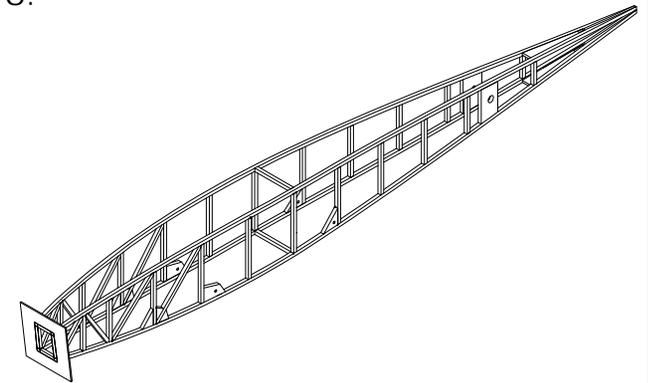
5.

1/16" Gap



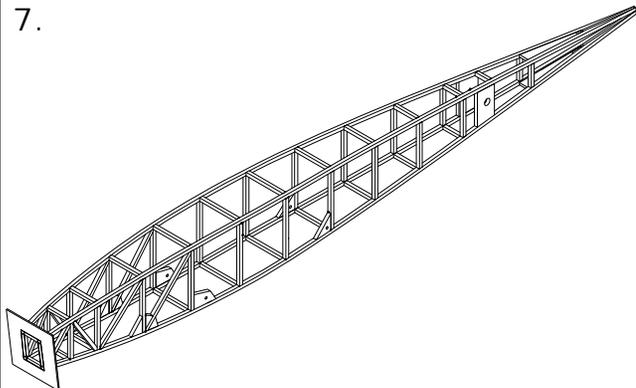
Glue the fuselage sides together at the rear. Make sure they are square relative to the building surface. There should be a 1/16" gap at the rear of the fuselage.

6.



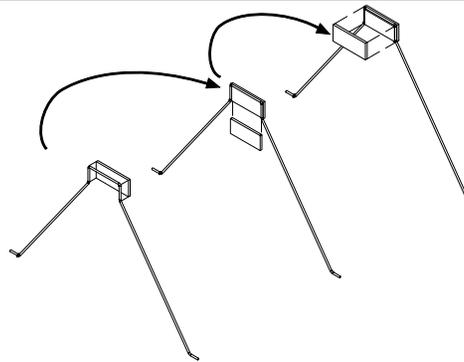
Place the 1/32" plywood temporary nose clamp over the nose of the fuselage. Now glue the center set of cross pieces to the fuselage. Make sure everything is square.

7.



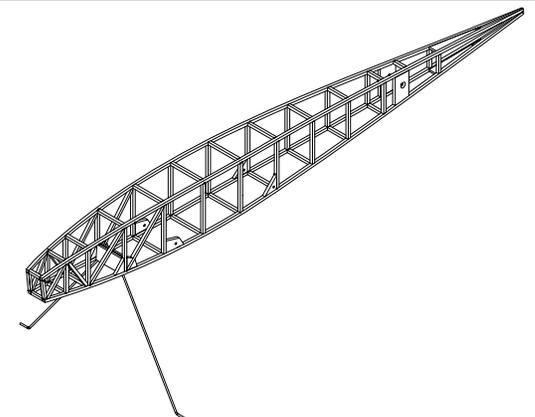
Glue the nose and remaining cross pieces to the fuselage. No not use a cross piece where the landing gear is installed. Remove the nose clamp when finished.

8.

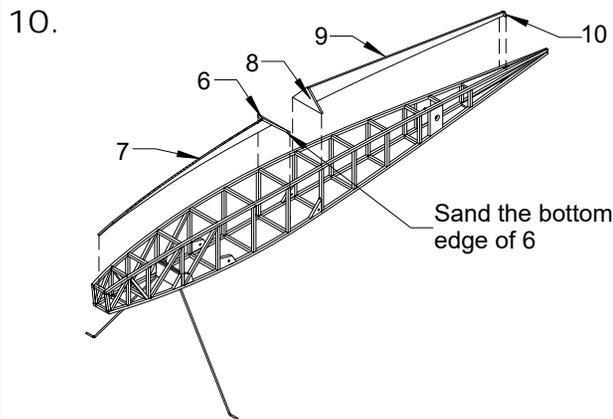


Bend the landing gear from .047" piano wire. Make up the landing gear mount pieces. Glue a face piece to one side of the landing gear. Glue the center piece and then sand it to the thickness of the landing gear. Glue the remaining face piece to the assembly.

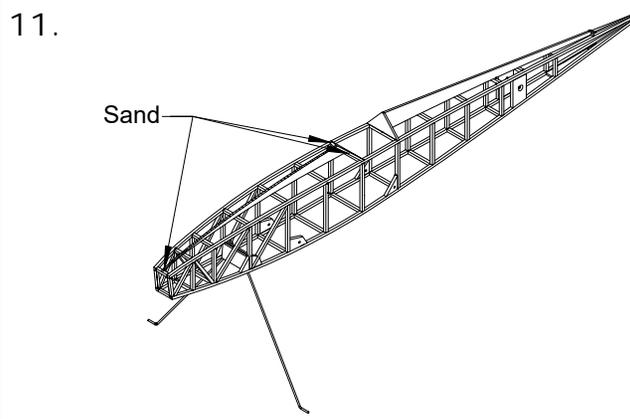
9.



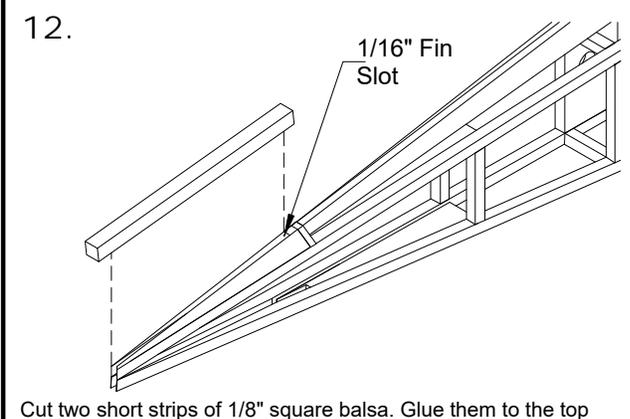
Glue the landing gear assembly to the fuselage. Use the plan as a guide for the forward tilt. The angle is not critical but should be close to the angle shown on the plan.



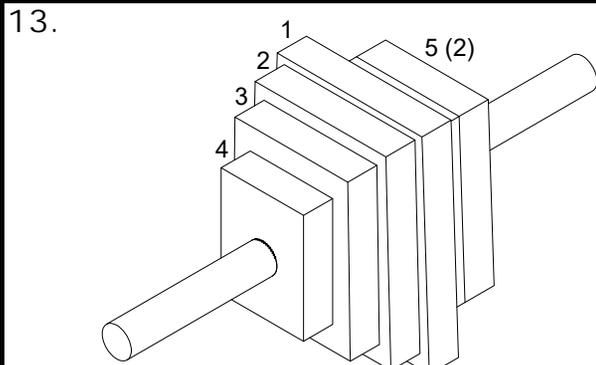
10. Glue part 6 to part 7 and parts 8 and 10 to part 9. Sand the bottom of 6 to match the bottom profile of 7. Glue the assemblies to the top of the fuselage as shown.



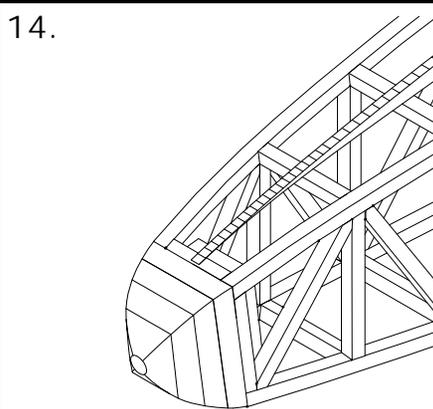
11. Sand the forward top edge of 7 so it has a sharp edge that blends into the nose cross piece. Also sand the edges of 6 so they blend with the top of 7 and the fuselage longerons.



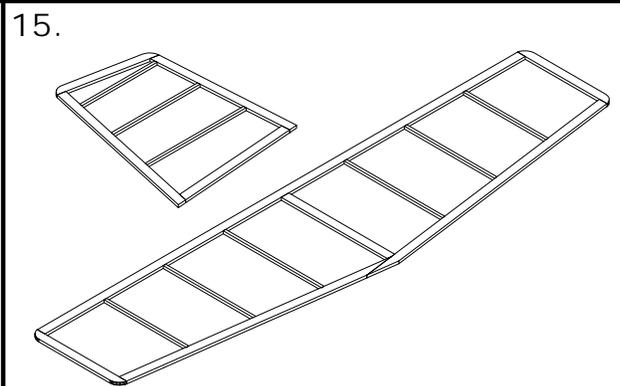
12. Cut two short strips of 1/8" square balsa. Glue them to the top longerons at the rear behind part 10. Be sure to retain the 1/16" wide fin slot. Sand the top faces to match the angle of part 9. Shape the pieces to blend the the longerons to the fin opening.



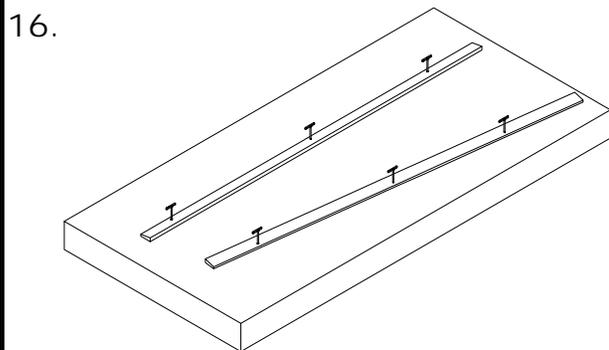
13. Cut the four nose block laminations from 1/8" balsa. Also cut the two nose block key pieces (part 5 on the plan). Note the grain direction for each nose block piece. Glue all the pieces together. A piece of 1/8" dowel can be used to align the individual laminations. Remove the dowel after gluing the laminations.



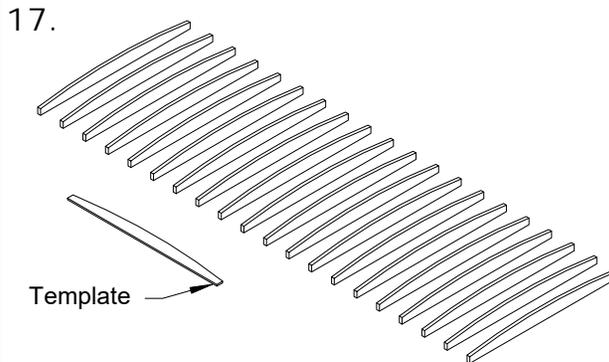
14. Rough shape the nose block using the plan as a guide. Place the nose block on the fuselage and final sand the nose block shape.



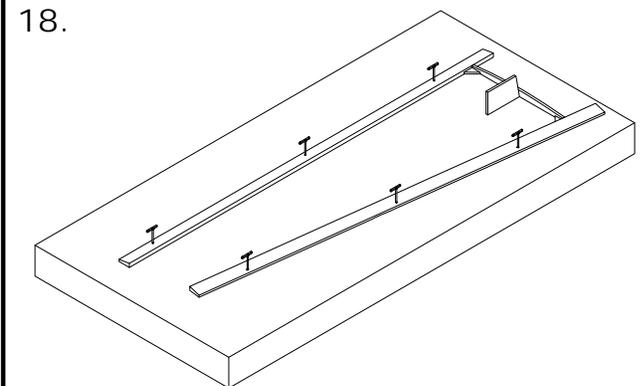
15. Build the tail surfaces.



16. Cut the 3/8" x 1/8" tapered stock for the leading edge, trailing edge, and tip. Cut each piece a bit long for trimming after assembly. Lay some plastic kitchen wrap over the plan. Glad Wrap works especially well. Pin the LE and TE pieces to the building surface.

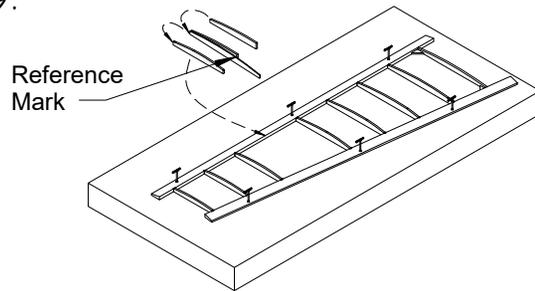


17. Make a rib cutting template from 1/16" plywood. Cut 20 ribs from 1/16" balsa. The ribs are symmetrical so it does not matter which end is used for the leading edge.



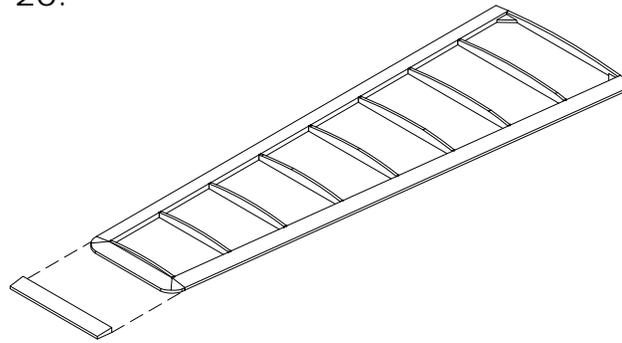
18. Glue the root rib in place using the dihedral template to slant the rib. Add the 1/16" balsa gussets. Note the grain direction shown on the plan.

19.



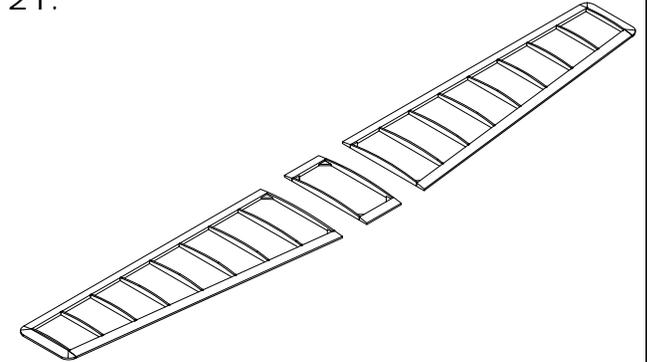
Cut each successive rib to length at the trailing edge matching the angle of the front face of the trailing edge. Once trimmed to length, mark the trailing edge thickness at the TE end of the rib. Use the rib template to cut the top of the rib. Place one end of the template at the top edge of the LE side and rotate the template until it hits the TE thickness mark. Once aligned, trim the rib and then glue it in place.

20.



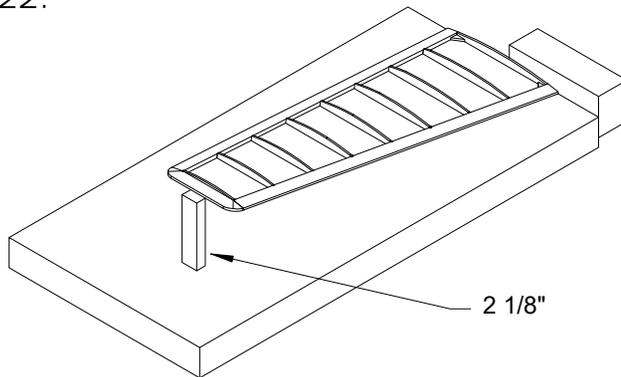
Remove the wing panel from the building surface. Trim the LE and TE to length using the end ribs as your guide. Glue the tip piece in place and then trim and round off the ends as shown.

21.



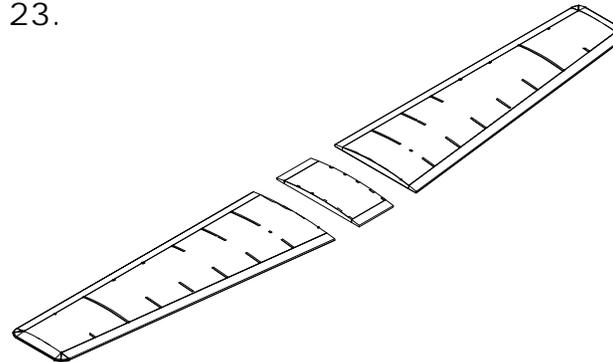
Build the second wing panel and center section. All of the gussets are made from 1/16" balsa. Note the grain direction shown on the plan.

22.



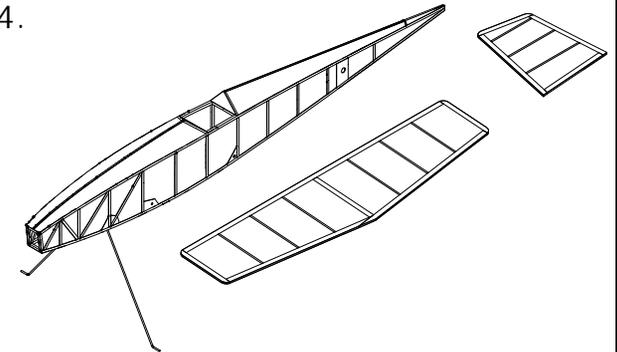
Block each wing panel up 2 1/8" at the tip and sand the root so it is smooth and straight.

23.



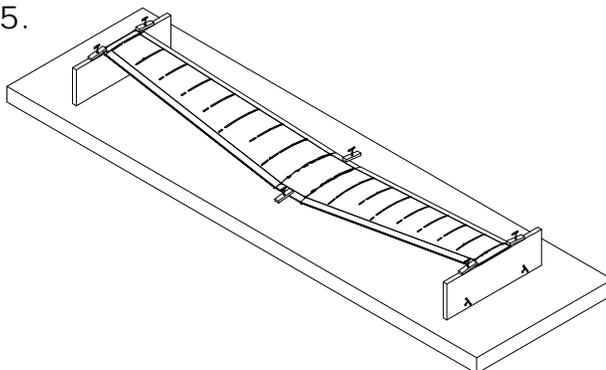
For ease of covering, it is suggested that the wing panels and center section be covered before the three wing components are glued together. Water shrink the wing tissue after the components are glued together.

24.



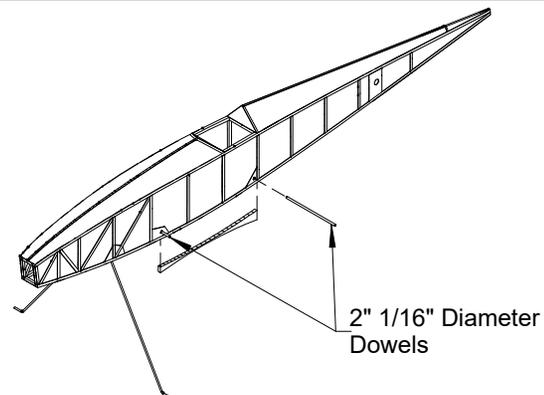
Cover the fuselage and tail surfaces. If you water shrink and dope the tail surfaces, be sure they are pinned to a flat surface while drying. Two coats of 50-50 clear dope should be enough on the tail surfaces. Leave them pinned to a flat surface for at least a week after doping before they are glued to the fuselage.

25.



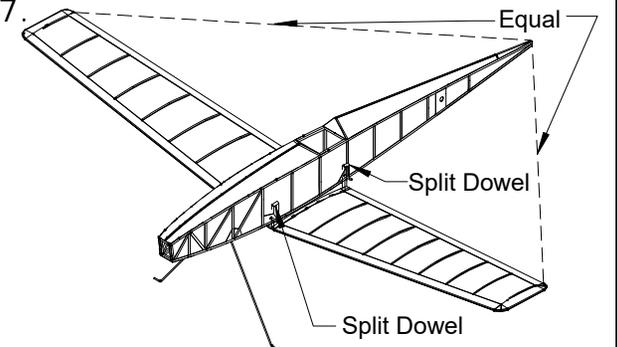
Like the tail surfaces, the wing should be pinned to a simple fixture when water shrinking and doping. Three coats of 50-50 clear dope should be enough. Leave the wing pinned to the simple fixture for at least a week after the final coat of dope.

26.



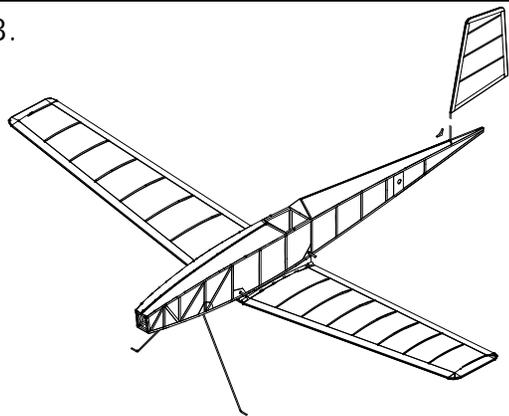
Cut two 1/16" wing mount dowels 2" long. Glue them in each set of wing dowel supports on the fuselage. Cut the two 3/32" balsa wing saddle pieces. Glue them to the fuselage using the plan as a location guide.

27.



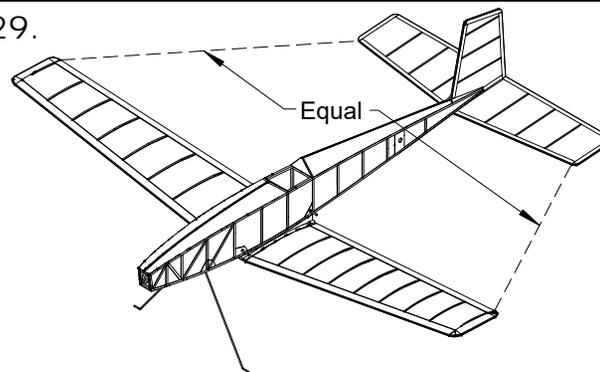
Rubber band the wing to the fuselage. Use two bands on each side in an "X" pattern. Make sure the distance from each wing tip TE to the rear of the fuselage is the same. Cut two lengths of 1/8" dowel 1/4" long. Split them along their length. Glue a dowel half to the top of the TE and LE on each side so they just touch the wing saddles.

28.



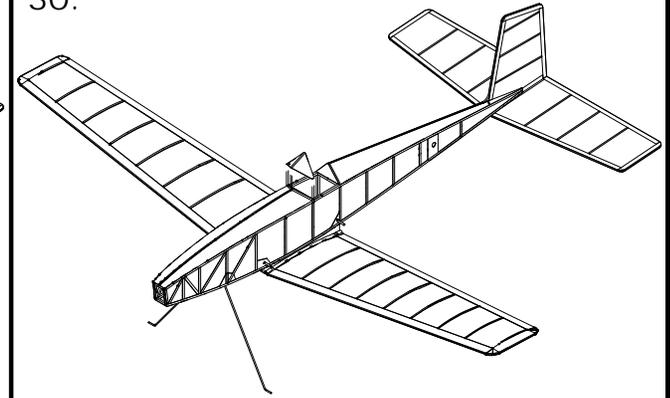
Glue the fin and fin fillet to the fuselage. It fits in the slots formed by parts T and B and the opening in the rear of the fuselage sides. The bottom is aligned with the bottom of the fuselage.

29.



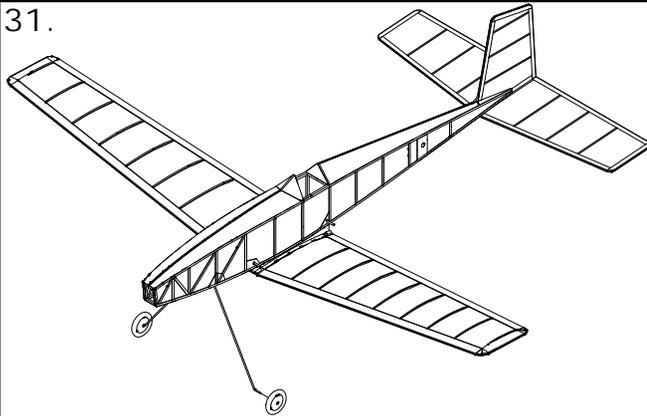
Glue the stab to the bottom of the fin and fuselage. Make sure the distance from each wing tip TE and the stab tips LE are equal. To help the model turn, stab tilt can be used. Glue the stab so one side is about 1/4" high on the side you want the model to turn toward.

30.



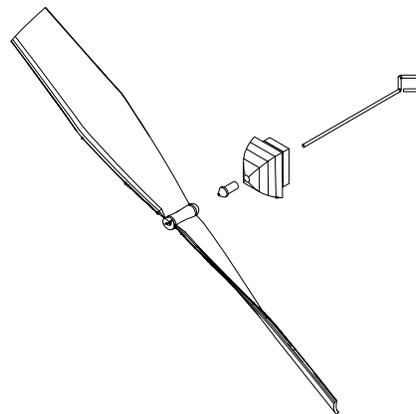
Cut the windshield from clear plastic. Bend the plastic along the two center reference lines. Glue the windshield to part 6.

31.



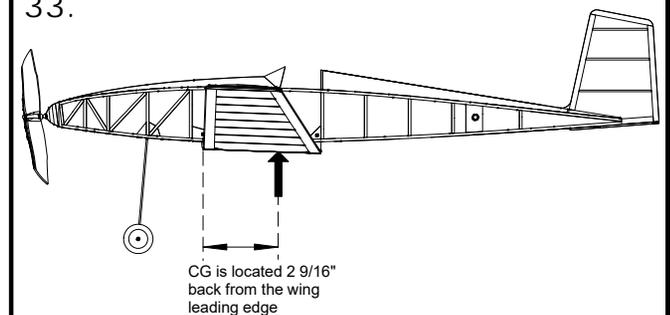
Install the 1" wheels. A good way to retain the wheels is to wrap the axles with thread. Apply some glue to the thread as you wrap. When dry cut off the excess axle length.

32.

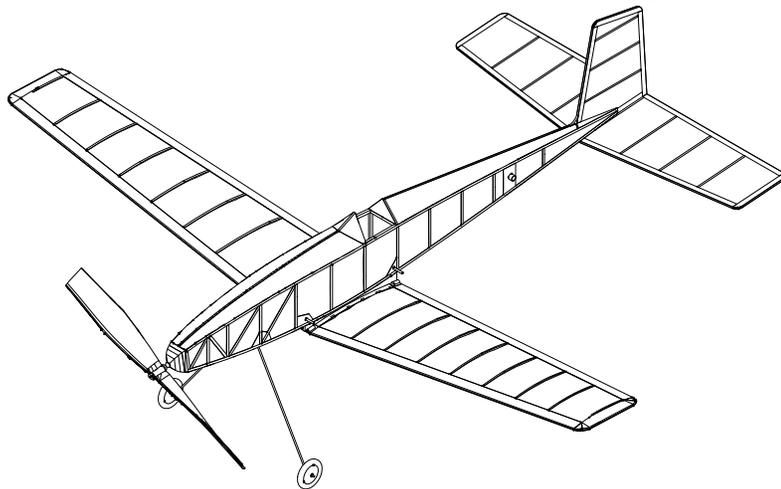


Install a Peck thrust bearing in the nose block. Use one for 3/64" prop shafts. Slide a prop shaft from the rear of the nose block into the thrust bearing and then install your prop.

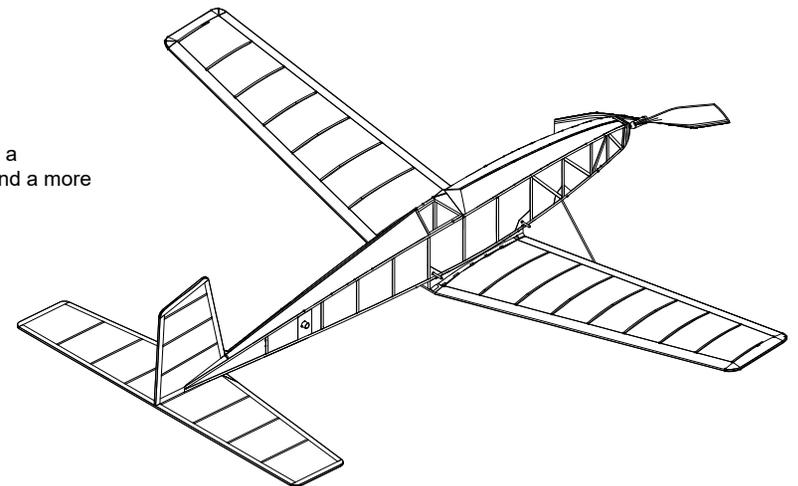
33.

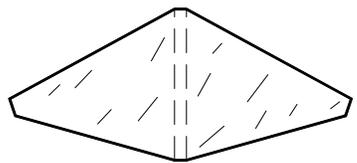
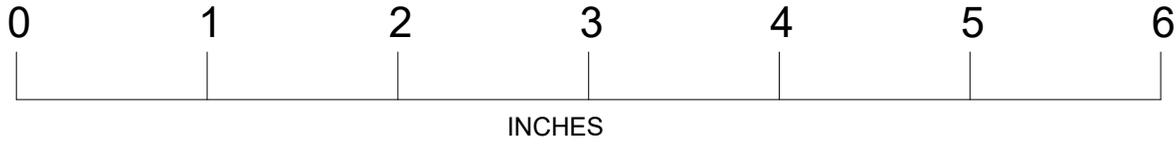


Make up a short loop of rubber and install it in the fuselage along with the nose block and prop. Check the CG location. Adjust if necessary with some ballast in the nose or tail. Replace the short motor with a flight motor and the model is now ready for its trim flights.



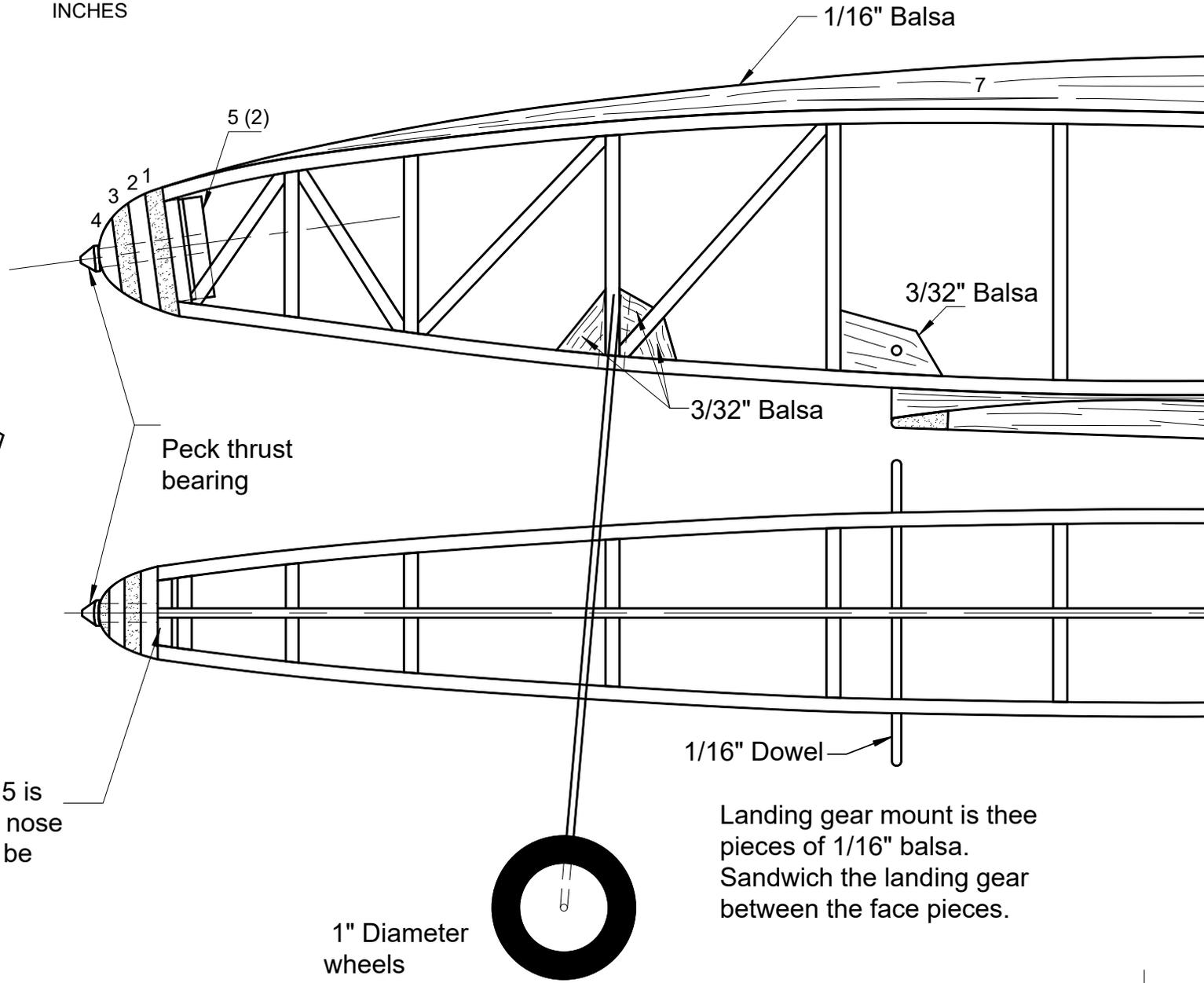
The CG location shown in step 33 is a suggested starting point. You may find a more forward CG provides a better overall performance envelope.

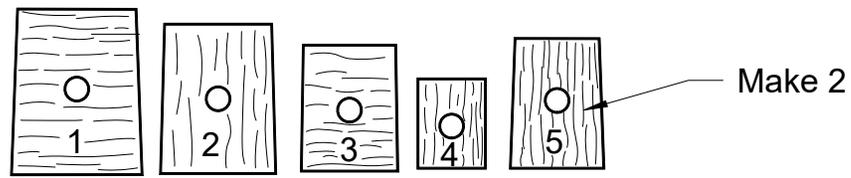
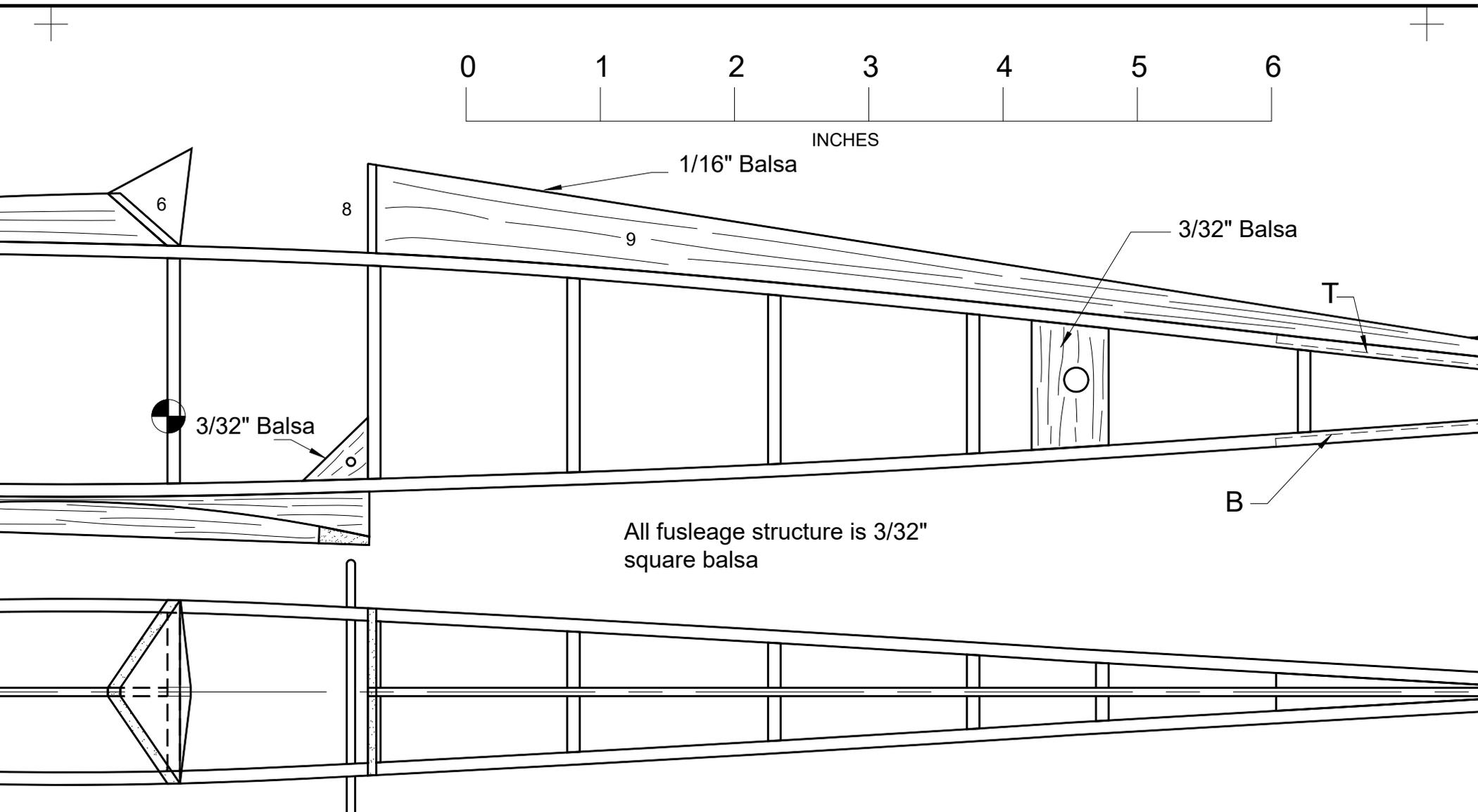




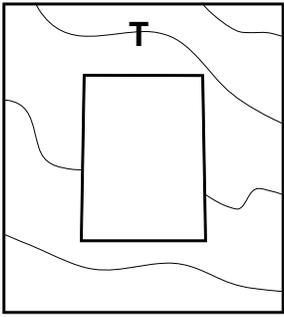
Windshield

Nose block layer 5 is not shown so the nose cross pieces can be clearly seen





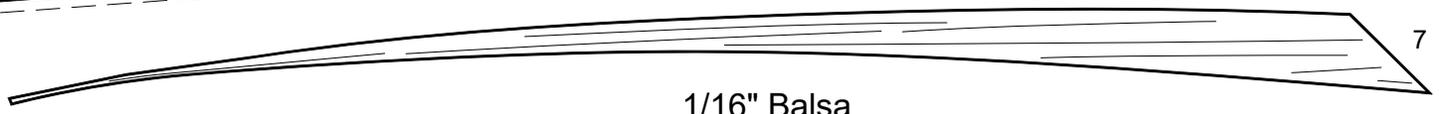
Nose block laminations. Each lamination should have the grain rotated 90 degrees. Make from 1/8" blasa.



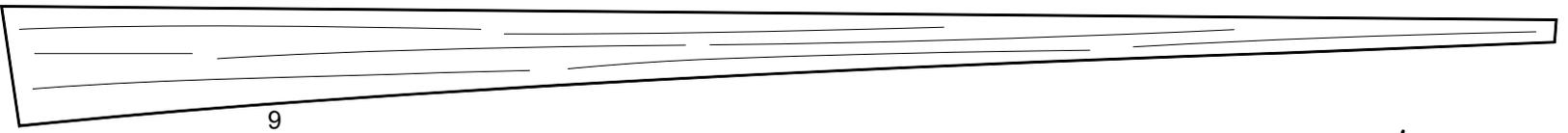
Temporary nose clamp -
make from 1/32"
plywood



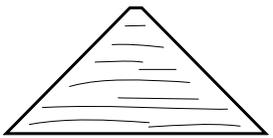
Wing Saddle - 3/32" Balsa
Make 2



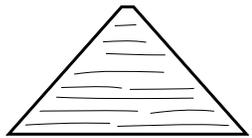
1/16" Balsa



9



6

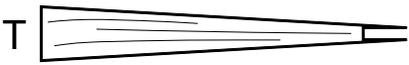


8

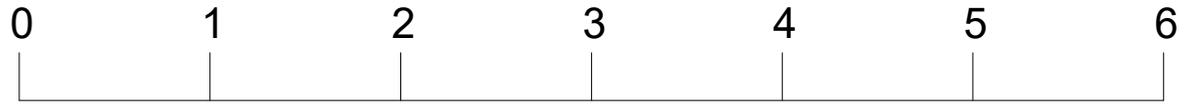
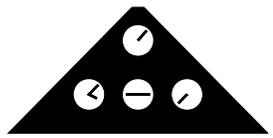


10

1/16" Balsa



1/16" Balsa



INCHES

Jetco Falcon

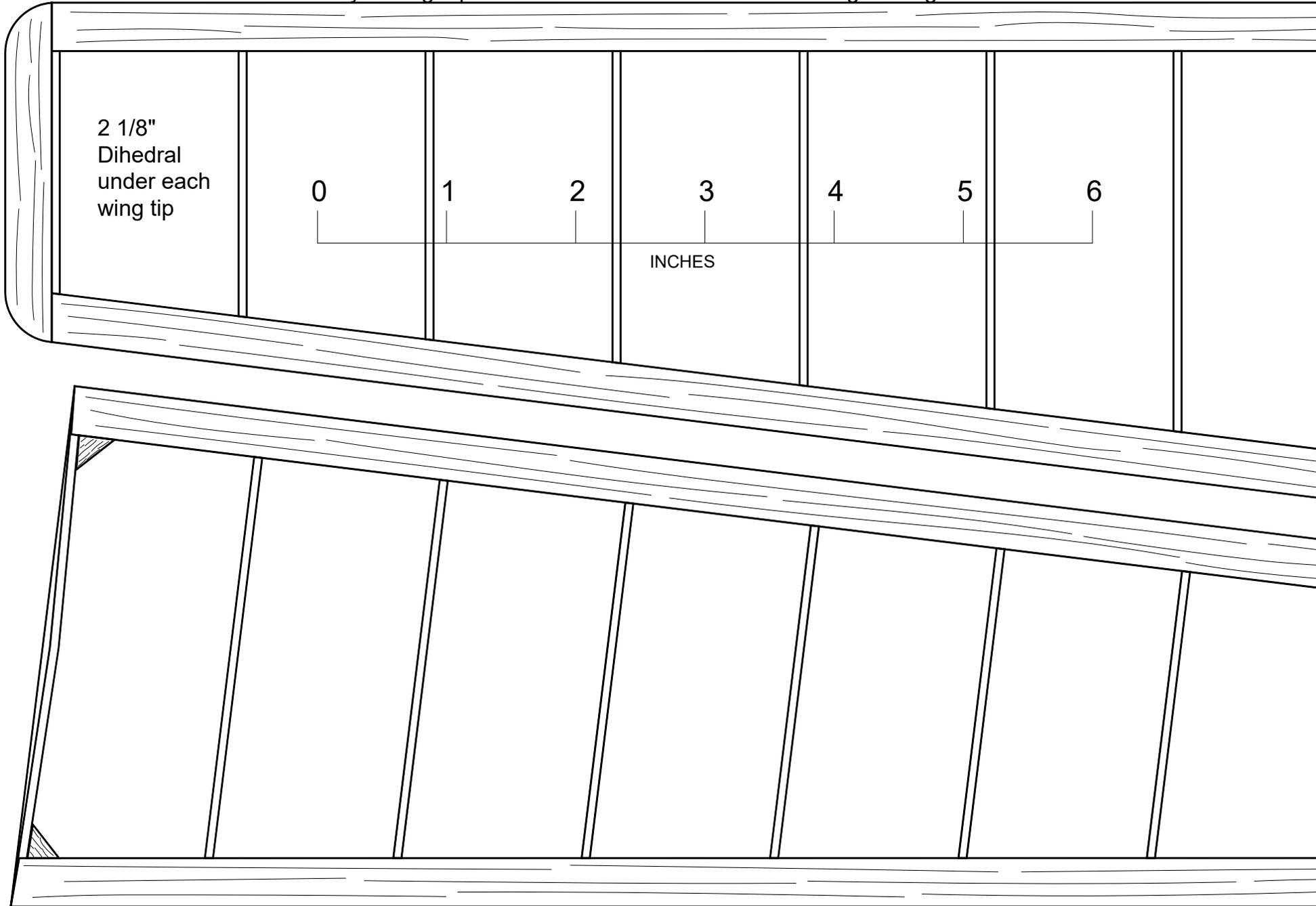
A reproduction of the kit introduced in
the early 1950's

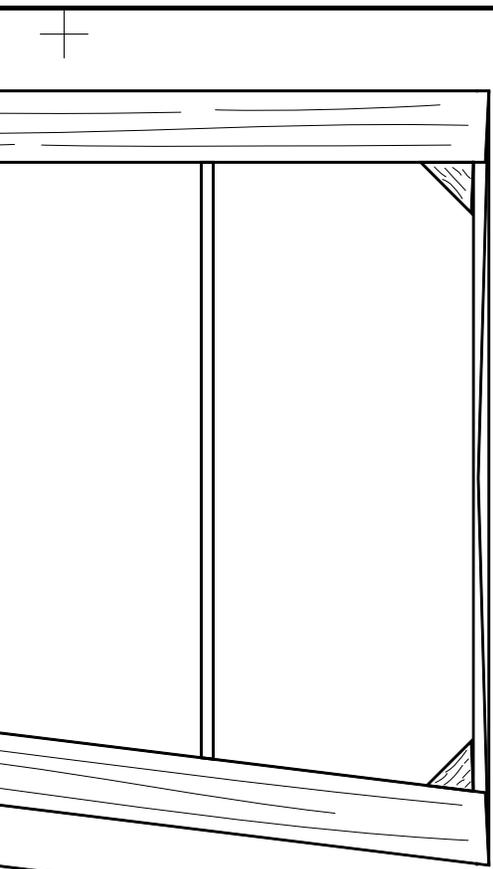
25" Wing Span

Drawn by Paul Bradley - Sept 2015

Sheet 1 of 3

Wing leading edge, trailing edge, and tips are made from 3/8" x 1/8" tapered stock. This can be made by cutting a piece of 3/4" wide TE stock in half along its length.

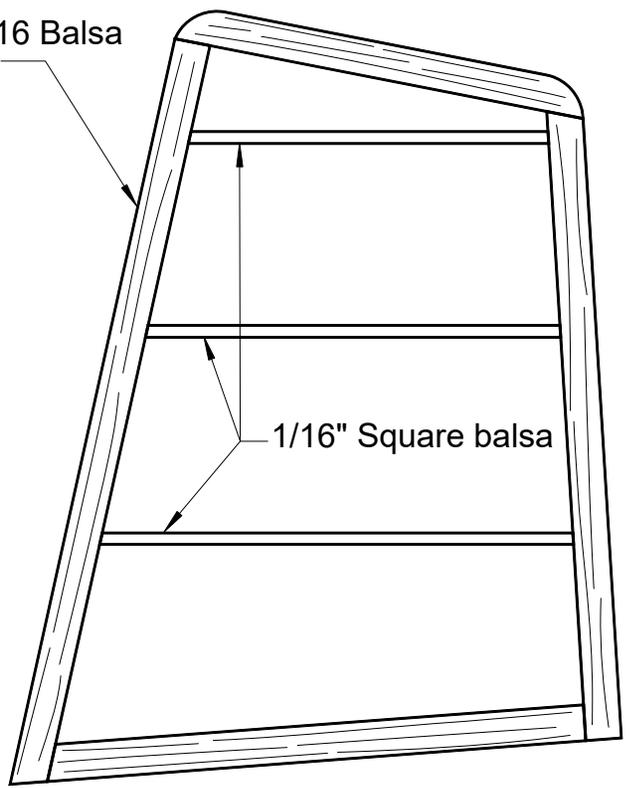




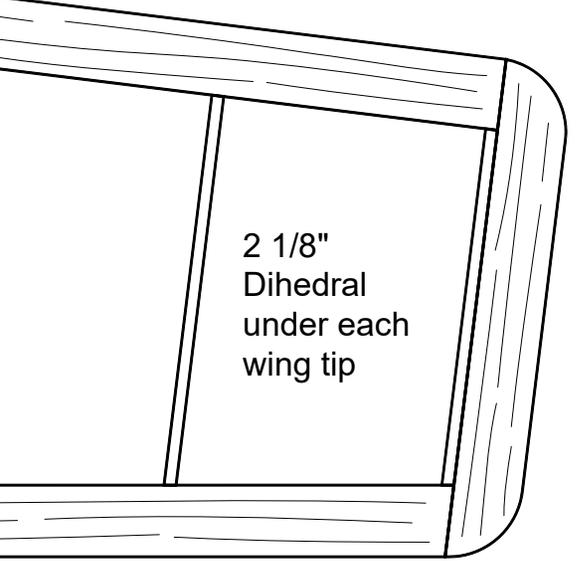
All gussets are 1/16" balsa

Root Rib Dihedral Template

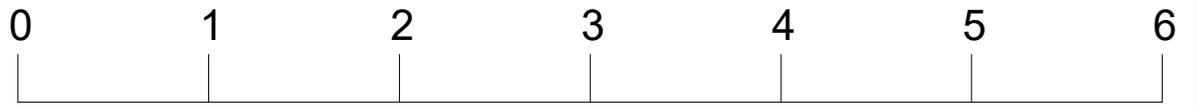
1/16" x 3/16 Balsa



1/16" Square balsa



2 1/8" Dihedral under each wing tip



INCHES

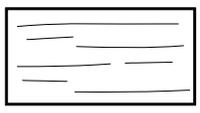
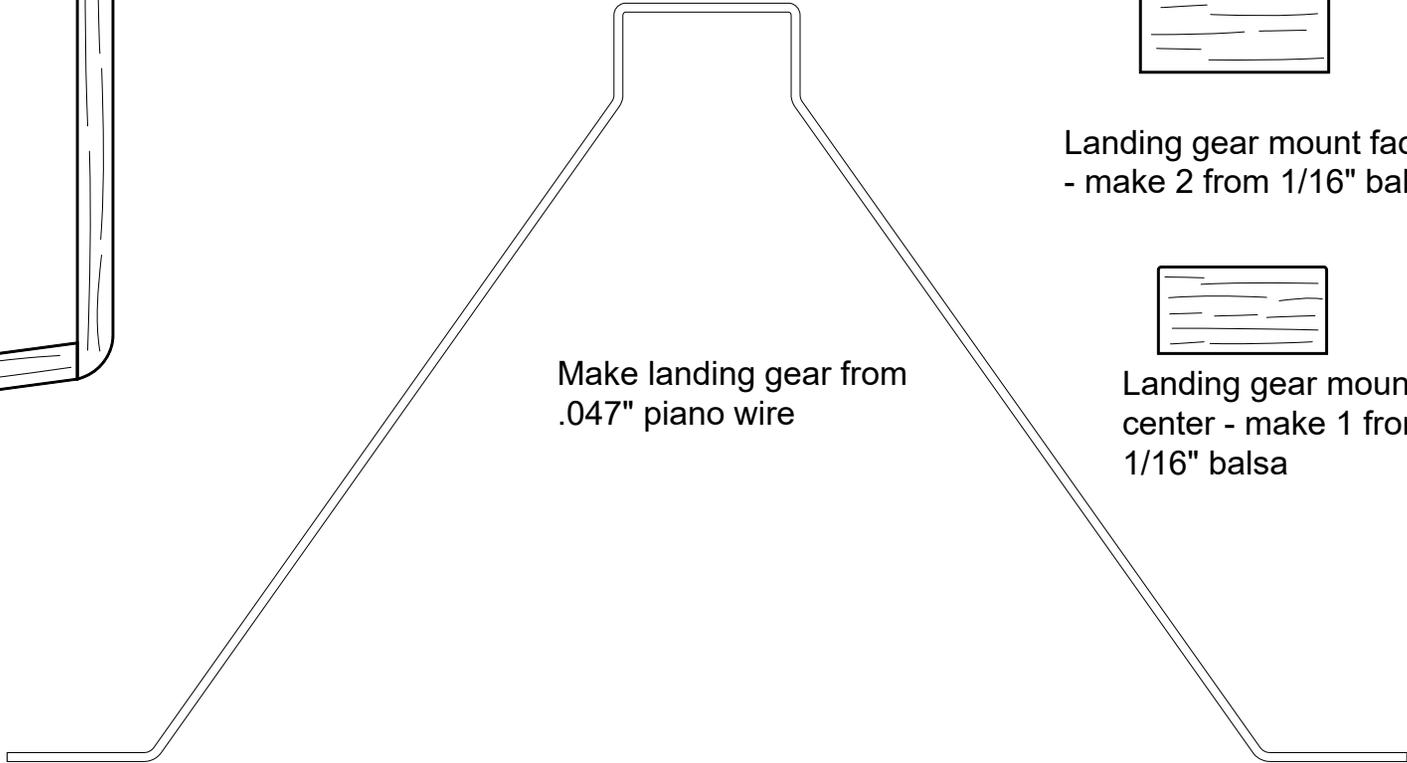
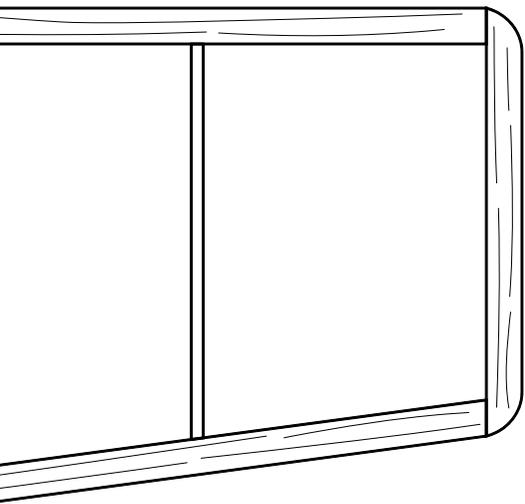


Typical wing cross section

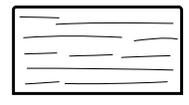


Wing rib template. Make 20 ribs from 1/16" balsa. Trim each rib to length and then use the template to trim the top edge by placing the template on the LE and then rotating so it matches the TE thickness. Make from 1/32" plywood.

<h1>Jetco Falcon</h1>	
A reproduction of the kit introduced in the early 1950's	
25" Wing Span	
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Sheet 2 of 3	

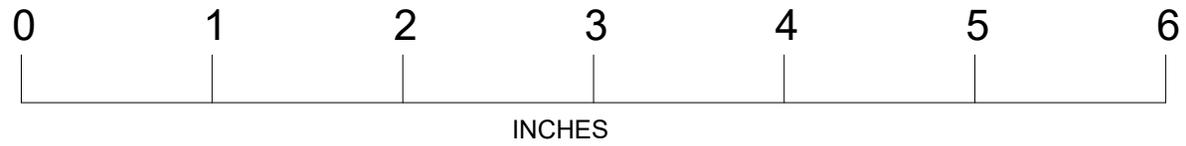


Landing gear mount face
- make 2 from 1/16" balsa



Landing gear mount
center - make 1 from
1/16" balsa

The original kit plan calls for a rubber motor made from a 9 1/2 foot length of 1/8" rubber that has been formed into four loops.



<h1>Jetco Falcon</h1> <p>A reproduction of the kit introduced in the early 1950's</p>
25" Wing Span
Drawn by Paul Bradley - Sept 2015
Sheet 3 of 3