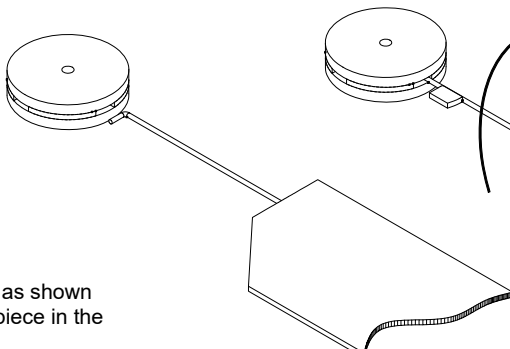
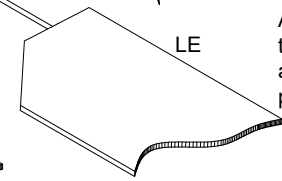


Assemble the rotor hub as shown with the 1/32" plywood piece in the middle.

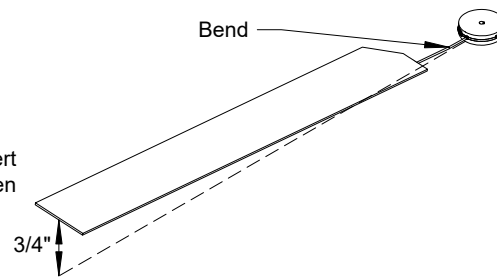


Insert the rotor arm in the slot of the hub.

Rotate this direction before gluing the arm in the hub to produce a negative 3 degree angle



After rotating the rotor arm, insert the plywood locking key and then apply some thin CA. Follow this procedure for each rotor blade.



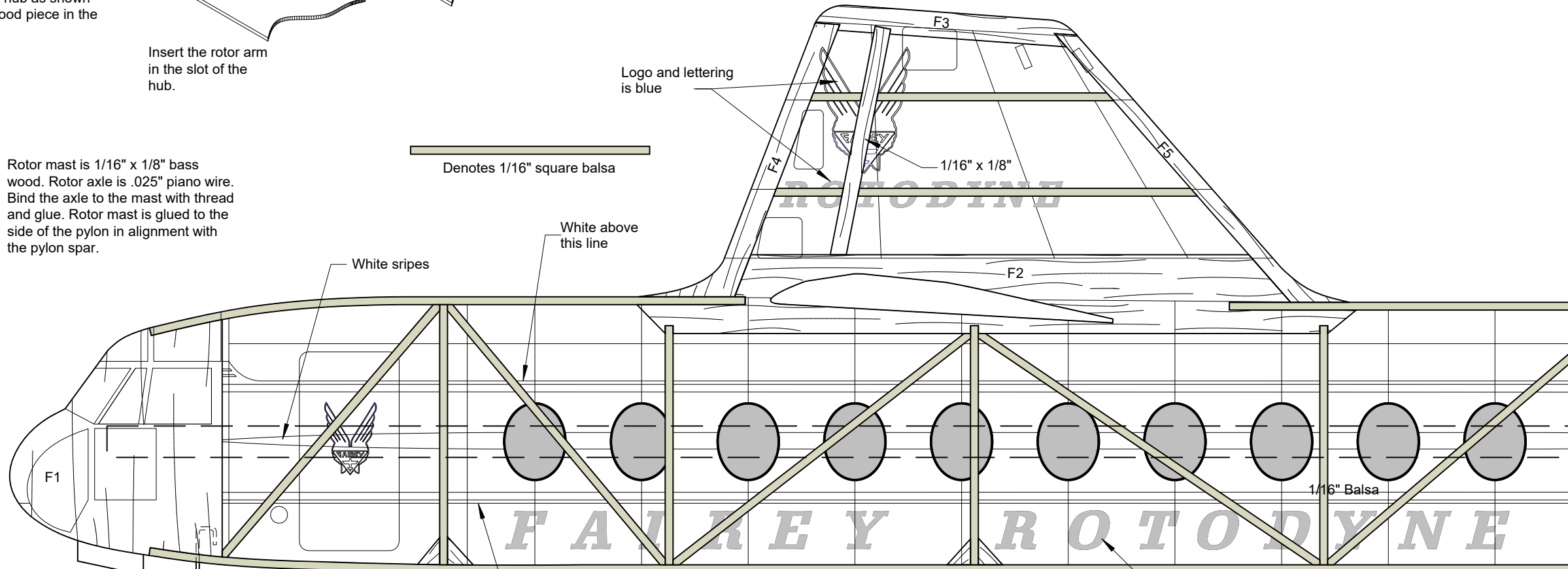
Before inserting the brass pivot tube, place the assembly on a flat surface. About 1/4" out from the hub bend each arm up so the tip of each blade is 3/4" above the work surface. The brass pivot tube is then glued in the center hole of the hub.



Rotor mast is 1/16" x 1/8" bass wood. Rotor axle is .025" piano wire. Bind the axle to the mast with thread and glue. Rotor mast is glued to the side of the pylon in alignment with the pylon spar.



Denotes 1/16" square balsa



Logo and lettering is blue

F3

F5

1/16" x 1/8"

F2

White stripes

White above this line

F1

1/16" Balsa

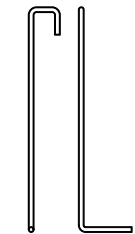
FAIRY ROTODYNE

Glue to the side of F1

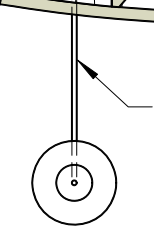
Light gray below this line

Structure is 1/16" square unless otherwise noted

Lettering is blue



.025" Piano wire



7/16" Diameter balsa wheel



INCHES

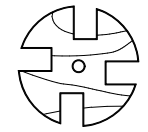
ROTOR HUB

.025" Piano wire

1/64" Plywood doubler

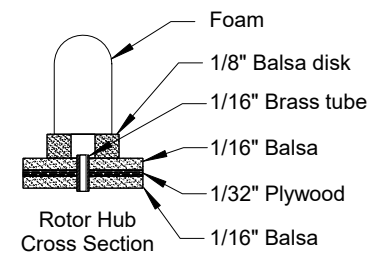


1/16" Balsa



Lock key  
make 4

1/32" Plywood



Rotor Hub  
Cross Section

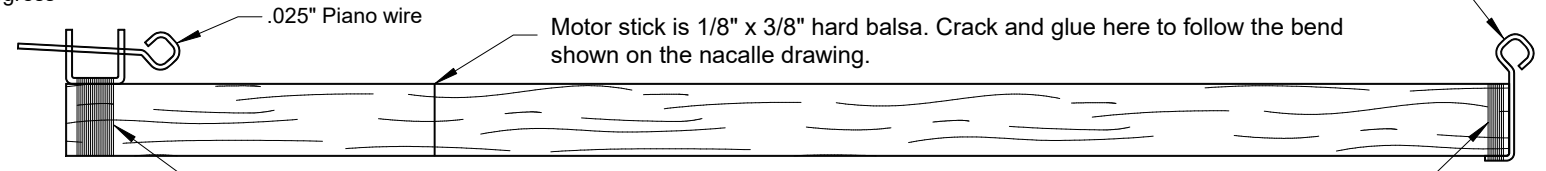
Leading Edge

Tip jets are made from foam

Make four rotor blades from 1/32" balsa

Bend each rotor arm up at this point after the blade assemblies are inserted in the hub. See the diagram.

3 Degrees right thrust and 4 degrees down thrust on both sides



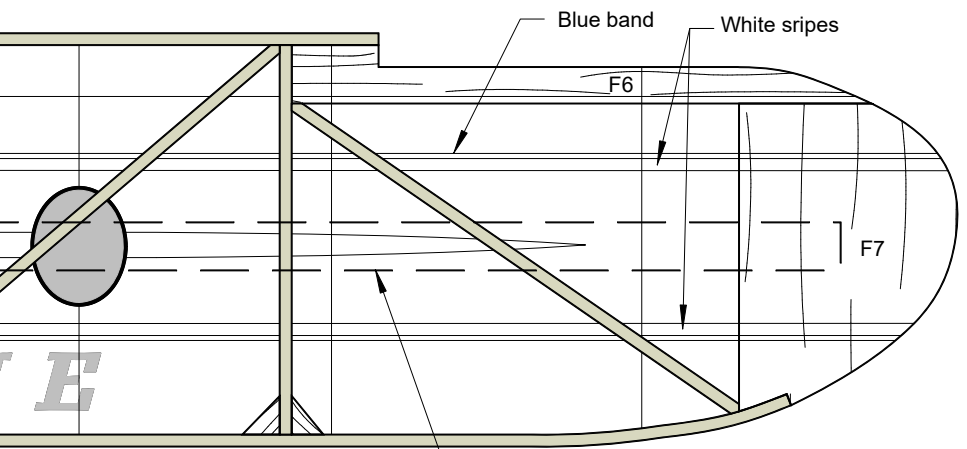
Motor stick is 1/8" x 3/8" hard balsa. Crack and glue here to follow the bend shown on the nacelle drawing.



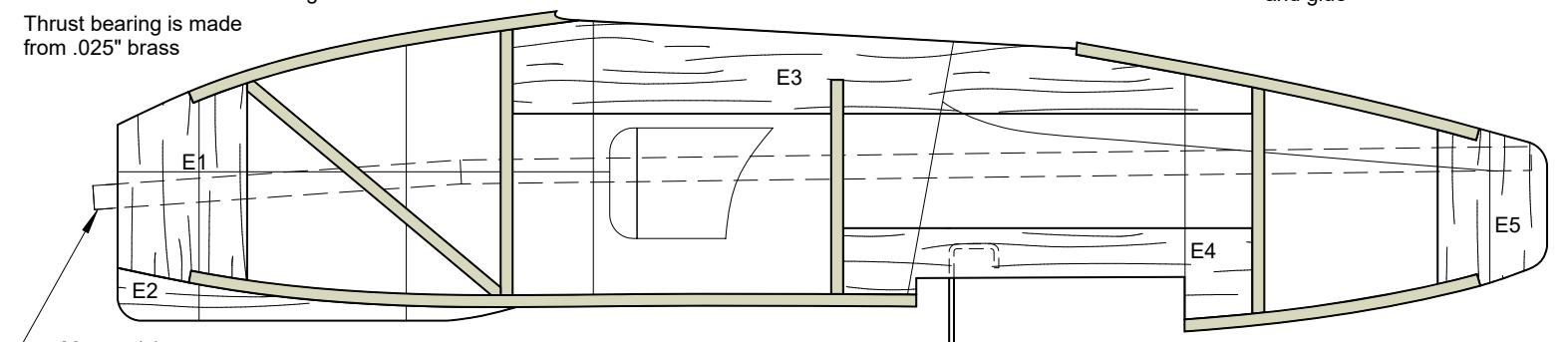
Thrust bearing is made from .025" brass

Bind with thread and glue

Bind with thread and glue



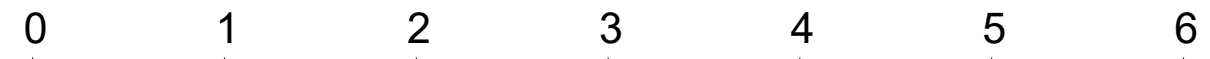
1/6" x 1/4" hard balsa strip to strengthen the fuselage glued on side opposite the tissue covering



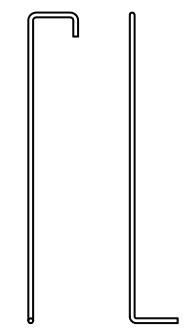
Make a left and right nacelle

Base color of the nacelles is light gray

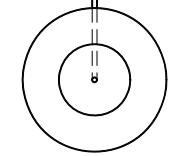
Glue to the side of E4



INCHES



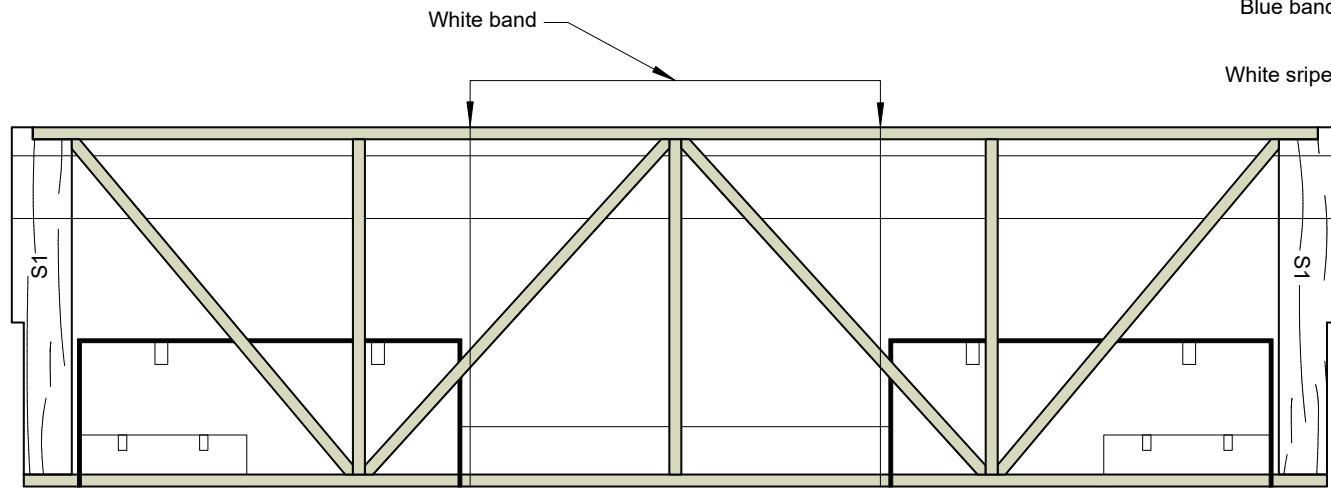
.025" Piano wire



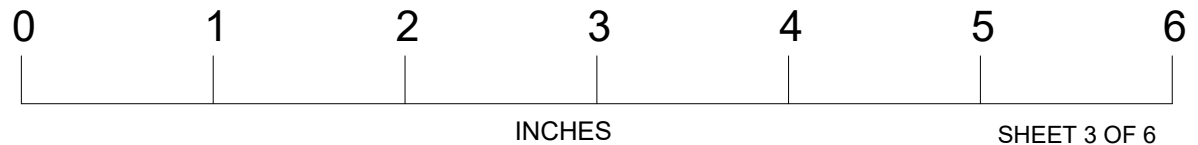
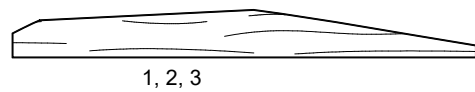
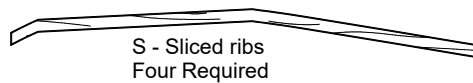
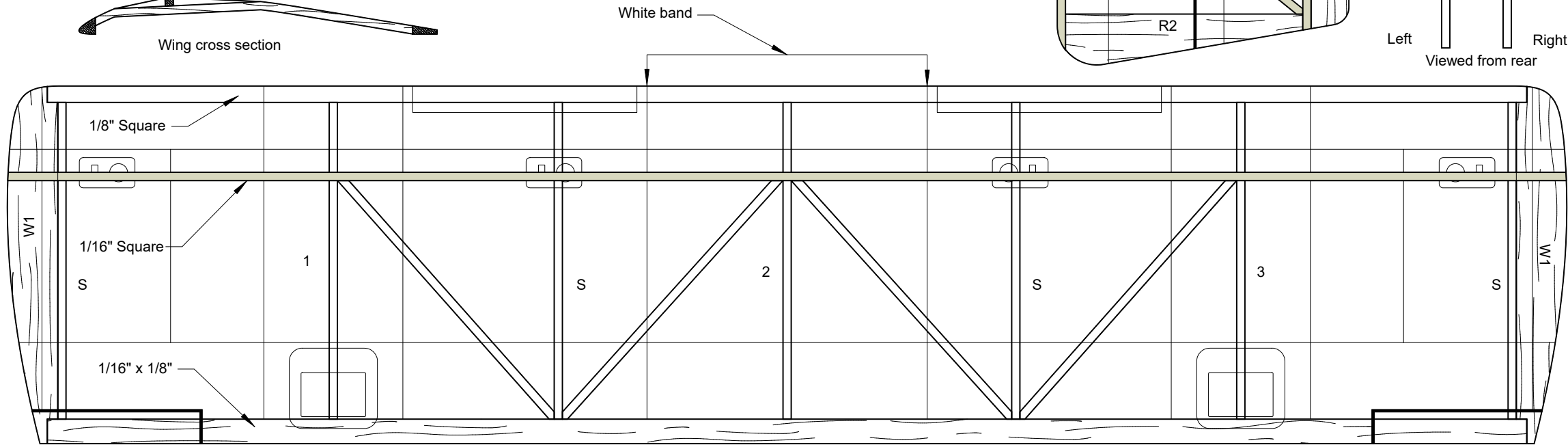
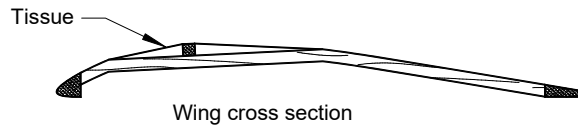
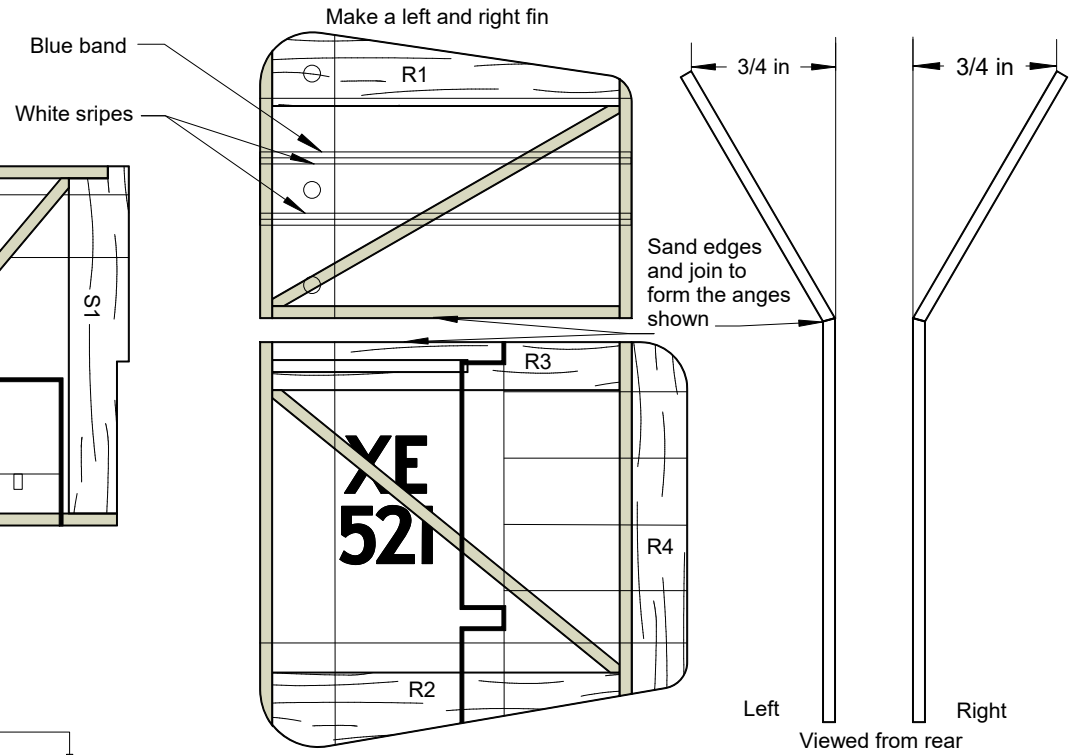
3/4" Diameter balsa wheel

SHEET 2 OF 6

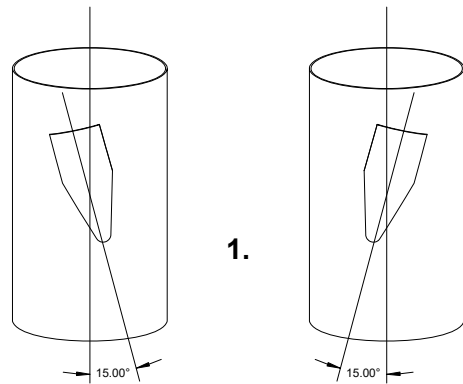
<b>FAIREY ROTODYNE</b>
NO-CAL RUBBER POWERED FREE FLIGHT
16" ROTOR DIAMETER
DESIGNED BY RAY KIERNA - 2005
CAD DRAWING BY PAUL BRADEY - 2018



Base color of these components is light gray.



# PROP SET UP INSTRUCTIONS



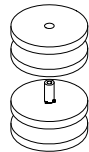
1.

Right Prop  
CCW Rotation

Left Prop  
CW Rotation

The prop blades are wet formed on a cylinder that is around 3" in diameter. The props are set up for counter rotation to help control torque reaction. Place wet blades on the cylinders as shown. Use masking tap to hold them in place. When dry the blades will have the correct camber and twist for the left and right side props.

3.



Using the aluminum tube as an alignment guide, glue the four 1/2" balsa disks together as shown. Orient the grain so it is 90 degrees to the adjacent disk.

4.



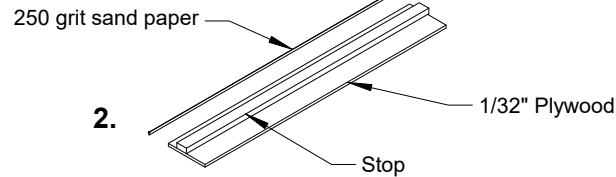
Using rubber cement, glue a paper slotting template around the hub.

6.



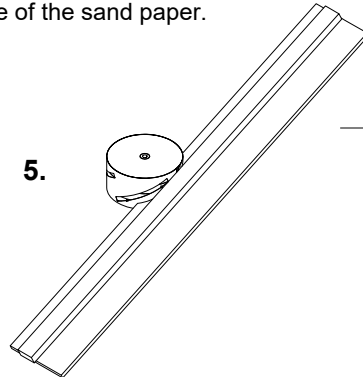
When finished with one hub, make the second hub. Be sure to change the orientation of the slot sanding template so there will be a right and left rotation hub.

2.



Make up a notch/slot sanding tool as shown above. Glue a piece of 250 grit sandpaper to one edge of a strip of 1/32" plywood. Trim the sandpaper so it is flush with the faces of the plywood strip. Make a depth stop from a piece of hard balsa or bass wood. Glue the depth stop to one side of the plywood strip 7/64" back from the outer edge of the sand paper.

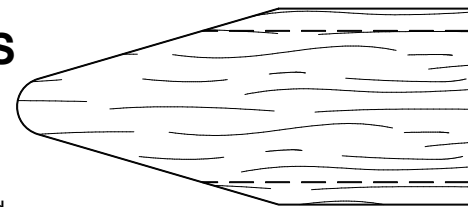
5.



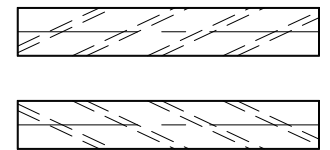
Using the notch/slot sanding tool, sand four slots in the hub 7/64" deep. Use the paper template as a guide for sanding the prop blade slots.

7.

Use the above right diagram when inserting and gluing the blades in the hub. Place either hub over the hub outline and pin it to your building board. Slide the appropriate blades into the slots using blade center lines on the diagram as an alignment guide.

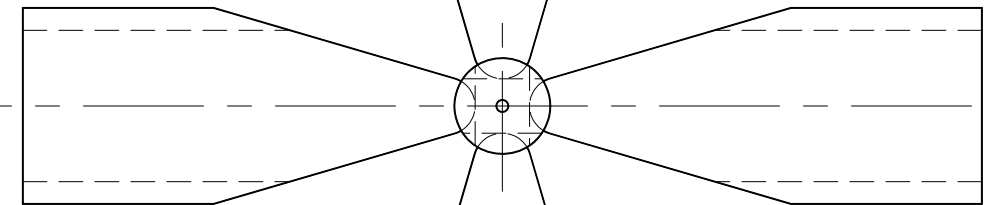


Cut eight prop blade blanks from 1/32" balsa.

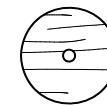
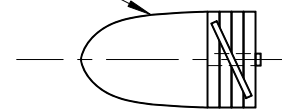


Hub slotting guides

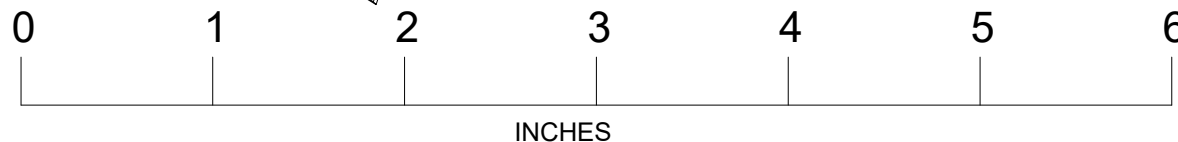
Alternate blade profile for props with slightly less blade area



Foam



Each prop hub is made from four disks of 1/16" balsa that are 1/2" in diameter. Orient the grain of each disk 90 degrees to the adjacent disk. Use 1/16" aluminum tubing in the center of the hub.



INCHES

**FAIREY ROTODYNE**

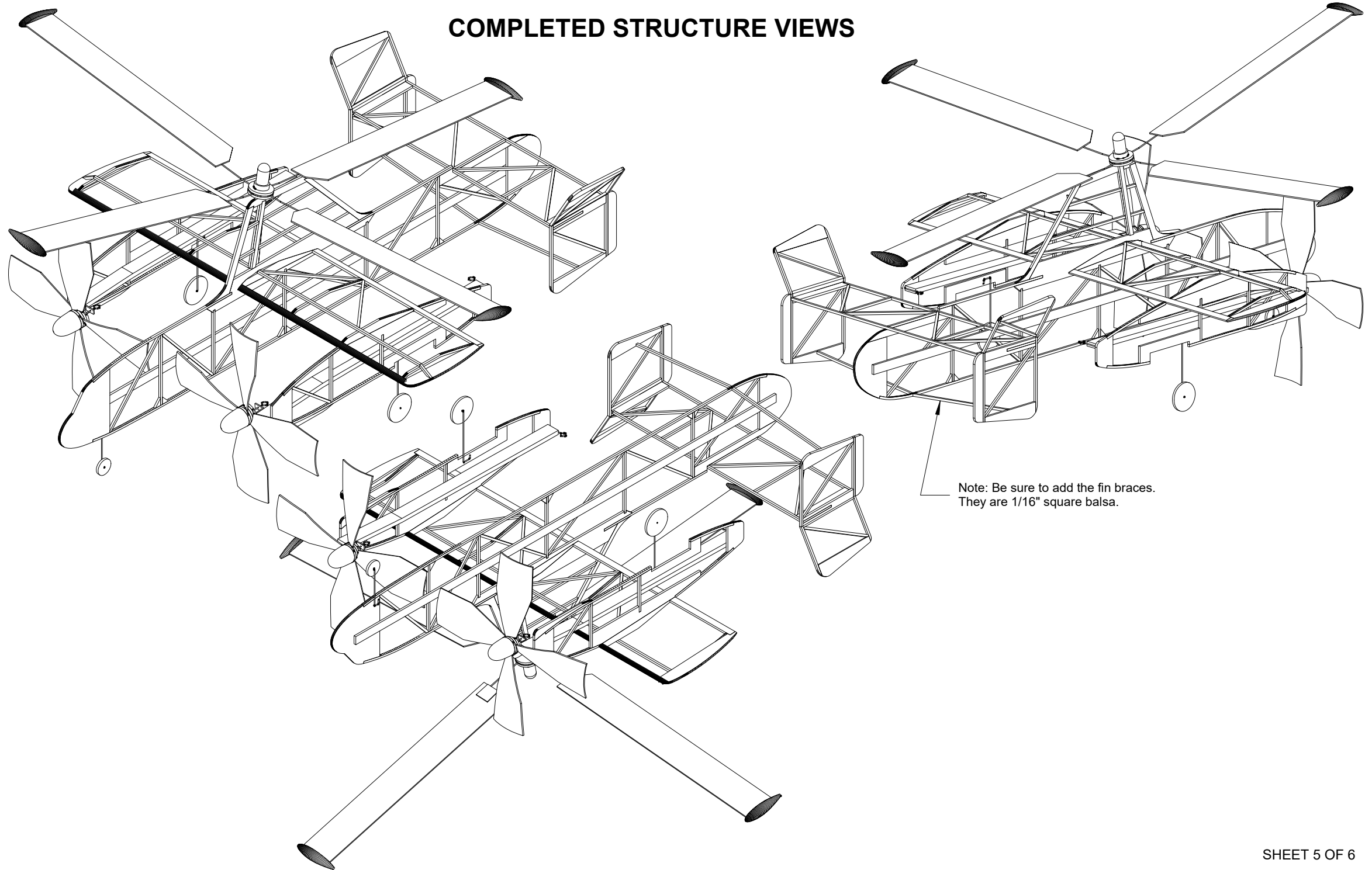
NO-CAL RUBBER POWERED FREE FLIGHT

16" ROTOR DIAMETER

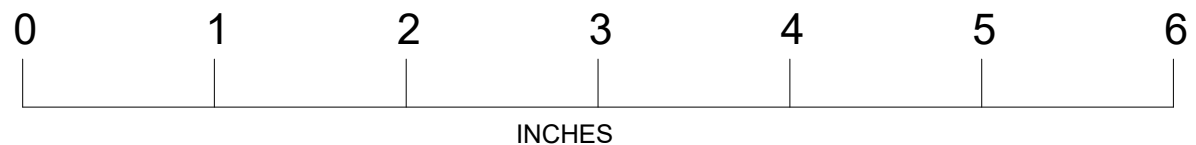
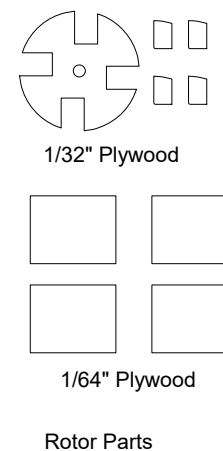
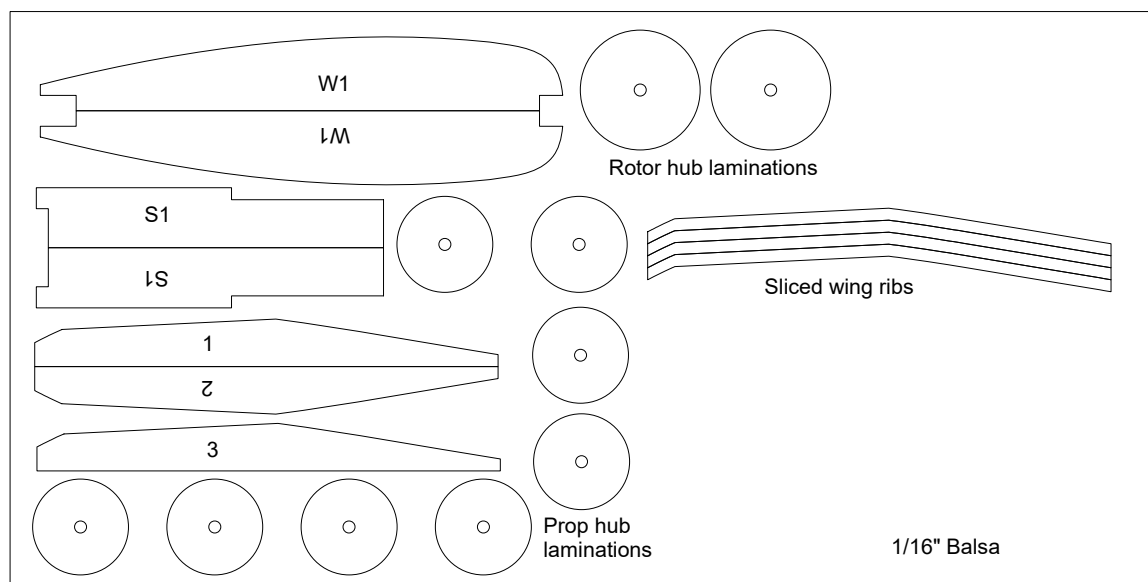
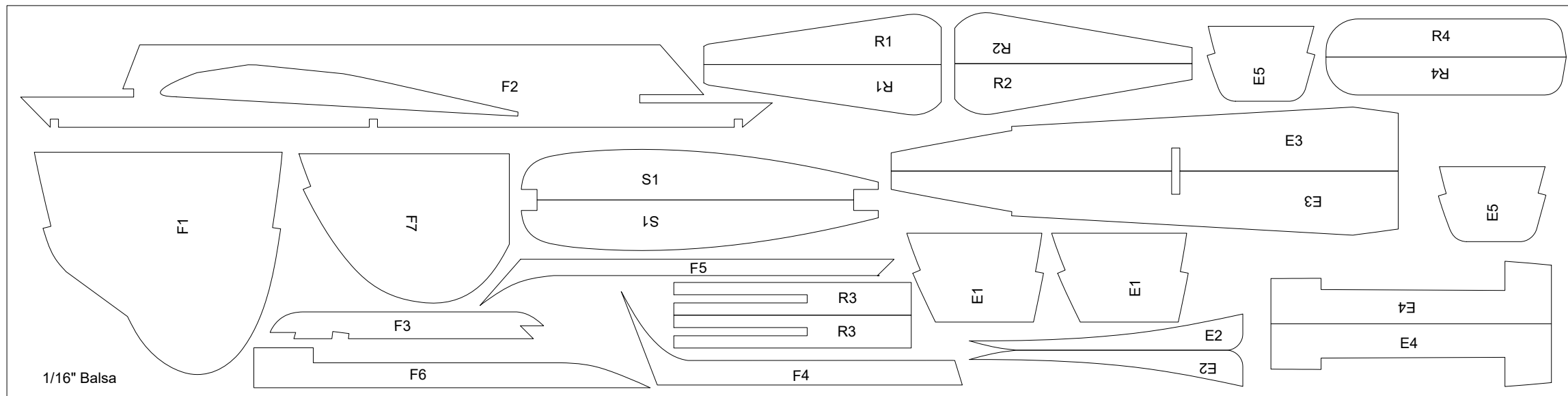
DESIGNED BY RAY KIERNA - 2005

CAD DRAWING BY PAUL BRADEY - 2018

# COMPLETED STRUCTURE VIEWS



Note: Be sure to add the fin braces.  
They are 1/16" square balsa.



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