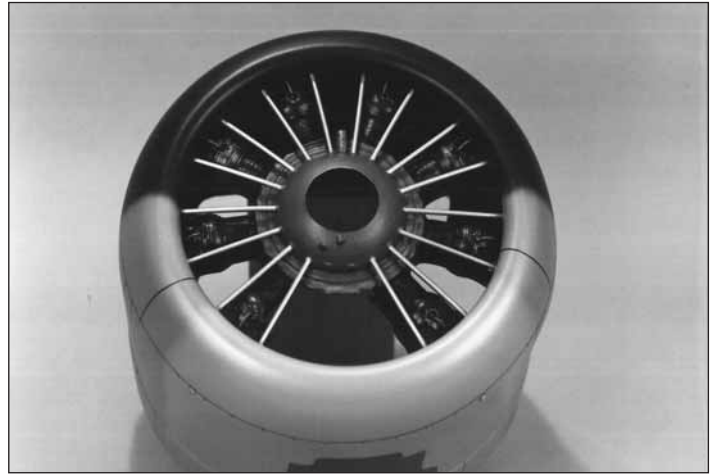




# 1/5 SCALE REPLICA RADIAL ENGINE

## ASSEMBLY AND FINISHING INSTRUCTIONS

The Top Flite® Replica Radial Engine (hereafter referred to as Radial) is patterned after the Pratt & Whitney radial engines that powered numerous aircraft from the Golden Age of aviation. Modeled to fit the Top Flite Giant F4U Corsair, this 1/5th scale Radial will fit any cowls with a frontal opening of 8" to 9-1/4". Not only does the Radial enhance scale appearance, but it also serves as an air-flow baffle for more efficient engine cooling.



### WARNING

Do not attempt to start your engine unless the Radial has been modified to permit cooling airflow to the engine!  
See text for more information.

### PARTS LIST

- |  |           |
|--|-----------|
| <input type="checkbox"/> (1) ABS Plastic Radial          | RADIAL05  |
| <input type="checkbox"/> (6) 8" Plastic Push Rod Tubes   | PLTB025   |
| <input type="checkbox"/> (1) 16" Wire for Ignition Leads | WIRES58   |
| <input type="checkbox"/> (1) Instruction Sheet           | RADIALP05 |

### TOOLS AND SUPPLIES REQUIRED

- |  |  |
|--|--|
| <input type="checkbox"/> 1/8" x 10" x 10" Lite Ply         | <input type="checkbox"/> 6-Minute Epoxy            |
| <input type="checkbox"/> Hobby Knife with # 11 Blade       | <input type="checkbox"/> Small Paint Brushes       |
| <input type="checkbox"/> 1/16" and 1/8" Drill Bits         | <input type="checkbox"/> Scroll or Coping Saw      |
| <input type="checkbox"/> Paint (see painting instructions) | <input type="checkbox"/> #100 & 240-grit Sandpaper |
| <input type="checkbox"/> Round File or 1/2" Drum Sander    |  |
| <input type="checkbox"/> Hand Drill or Dremel® MultiPro    |  |
| <input type="checkbox"/> Rubber Cement or Spray Adhesive   |  |
| <input type="checkbox"/> CA - Medium                       |  |

### ASSEMBLY

The following procedure covers the assembly and modifications required for a flying model. No modification is required for static display models.

- 1. Trace or photocopy the Baffle Template from your plans onto a 10" x 10" sheet of 1/8" lite-ply (not included). Cut around the circumference and the engine opening with a scroll or coping saw.
- 2. Trim the Radial to fit the lite-ply baffle with a hobby knife or scissors.



- 3. Cut away the prop shaft opening from the center of the Radial. Smooth the edges with a round file or drum sander.

- 4. Tape the Radial to the baffle, then test fit the assembly inside the cowl. If necessary, sand the baffle and Radial for a good fit.
- 5. (Flight Modification) Trim away one or more of the plastic cylinders to allow air flow across the "real" engine head.
- 6. Drill a 1/8" hole through each of the raised marks around the perimeter of the crankcase and also through the bottom of each rocker arm cover. Drill a 1/16" hole through the dimple near the top of each cylinder.
- 7. Use #240-grit sandpaper to lightly sand the full length of the 6 plastic tubes for better glue and paint adhesion. Cut 18 pieces 2-1/2" long to use for the push rod tubes.
- 8. Sand the 16" wire, then cut 1-3/4" long pieces to use for the ignition leads. Make a 90° bend 3/8" from one end.

**Note:** As you will probably be removing at least one cylinder when you use the Radial as an air baffle, you need not install push rods and an ignition lead in at least one cylinder. Complete all 9 cylinders if you will only be using the Radial for static display.

**Painting Hint:** Some modelers find that it's easier to paint this type of structure before final assembly. If this is your preference, skip down to the section on Painting then return to step 9 when you are ready to proceed.



❑ 9. Insert the push pod tubes into the rocker arm covers and the crankcase as shown in the photo. They should protrude inside the Radial about 3/32" at each end of each piece. Don't worry about gluing them yet.



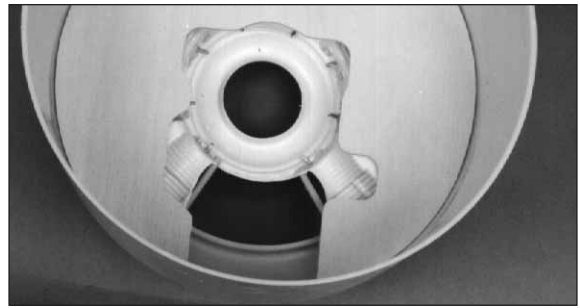
❑ 10. Insert the ignition leads into the cylinders. **NOTE:** Bend the ignition leads over the top of each cylinder so that they touch the backing. The ignition leads will be installed in the baffle later.



❑ 11. Turn the Radial over and apply a drop of CA to both ends of all pushrods and ignition leads.

❑ 12. Glue the Radial to the ply baffle with 6-minute epoxy. Be sure to align the "removed cylinder" with the opening in the baffle. **Hint:** Roughen the back surface of the Radial with coarse sandpaper for a better bond.

❑ 13. Drill a 1/16" hole through the Radial and ply backing at each ignition lead location. Insert the ignition leads into holes you drilled and apply a drop of thin CA to secure them in position.



❑ 14. Tape the Radial assembly inside the cowl. Make final adjustments to the fit between the cutouts and the engine. By working from the inside it's possible to remove material from the Radial without affecting the push rods tubes and ignition leads. Pay special attention to unrestricted throttle movement.

❑ 15. When satisfied with the fit, smooth all rough edges with fine sandpaper then paint the Radial.

❑ 16. After the Radial is painted and fuelproofed, glue the assembly in the cowl with a mixture of 30-minute epoxy and milled fiber glass or microballoons. Be sure to roughen the inside of the cowl with coarse sandpaper. Apply a solid bead of this mixture around the entire perimeter of the baffle for a secure bond.

#### PAINTING SUGGESTIONS

We painted our prototype Radial with Testors® Model Enamel paint then sprayed two very light top-coats of fuelproof Flat Clear over the finished job.

If you are building a scale replica of a particular aircraft, paint the Radial in similar colors to the full scale version. The colors we chose represent typical P&W colors with chrome plated push rod tubes.

#### PAINTING SEQUENCE AND COLORS USED



2. Crankcase - Gun Ship Gray
3. Cylinders - Euro Gray
4. Background - Flat Black
5. Push Rod Tubes - Silver
6. Ignition Leads - Red
7. Rocker Arm Covers - Black
8. Spark Plug Connectors - Gold or Copper
9. Cylinder Fins and weathering - Silver & black  
Random fine lines on the fins
10. Engine I.D. Plate - Black with Silver details
11. Flat Finish Fuelproof Clear Coat - 2 VERY light coats

Questions or comments?

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