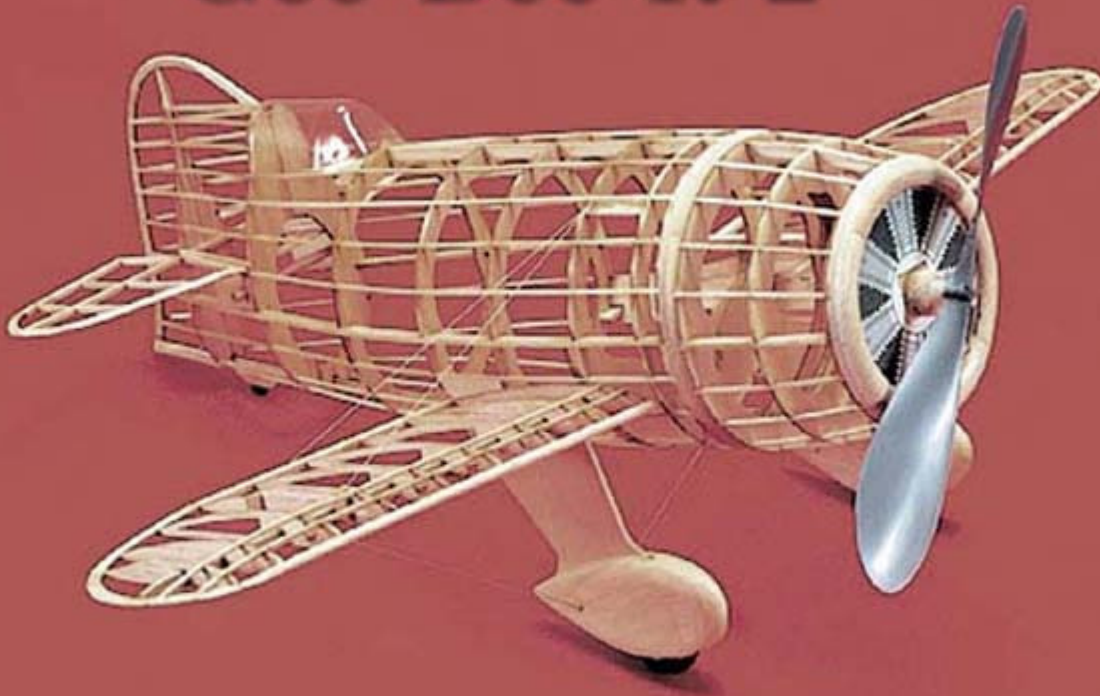




Award Winning Model Designs™

# Gee Bee R-2



Herr Engineering Corp. HRR107



## ASSEMBLY INSTRUCTIONS

Your kit contains the following parts. Please check your kit for any missing or damaged parts before starting construction.

COMPLETE KIT PARTS LIST			
1	Plan Sheet #1	1	Plan Sheet #2
2	White Tissue	1	Colored tissue
1	Plastic Canopy	1	100" Thread
2	3/32"sq.x18" Balsa Strip	2	1/8"sq.x18" Balsa Strip
4	3/32"x1/4"x18" Balsa Strip	1	3/16"x3" Birch Dowel
1	9" Plastic Propeller	1	Propeller Shaft
1	Nylon Propeller Bearing	2	Plastic Wheels
9	Laser Cut Sheets		
2		2	Decal Sheet
		2	Wire Axle's
		23	1/16"sq.x18" Balsa Strip
		2	3/32"x3/16"x18" Balsa Strip
		1	Instruction Manual
		2	Brass Washer
		1	3/16"x60" Rubber Strip

### Tools and Building Supplies

You will need the following items to assemble this model. You must read and follow all of the manufactures instructions provided with these items!

**-Glue**

CA, White Glue, Siment or Ambroid all work well.

**-Cutting Tools**

A hobby knife with a #11 blade is used for general cutting. A single edge razor blade is also a useful cutting tool.

**-Clear Dope, Thinner & paint brush**

**-320 and 400 grit sandpaper**

**-Straight Pins**

**-Wax Paper**

**-Needle nose pliers**

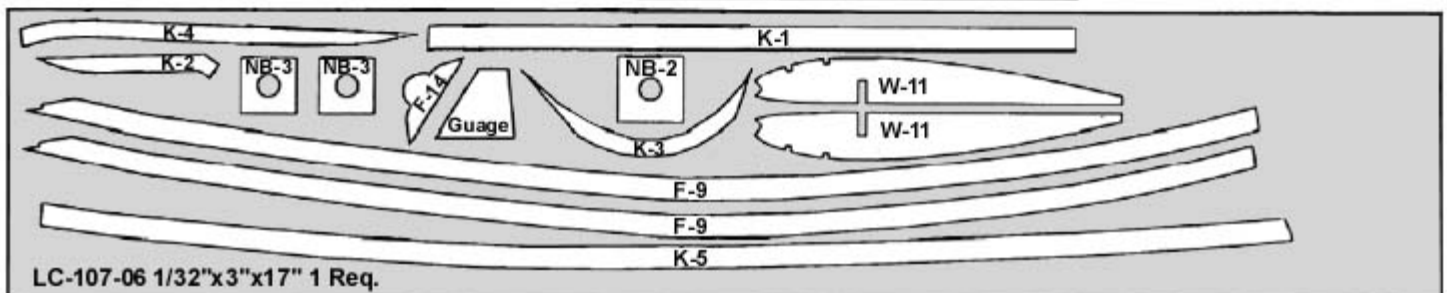
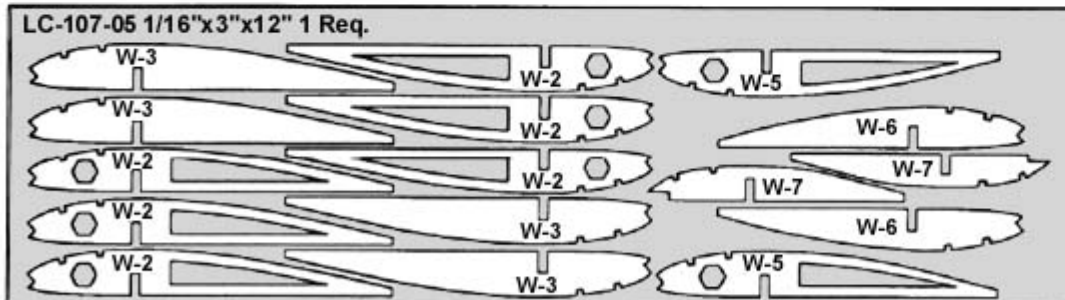
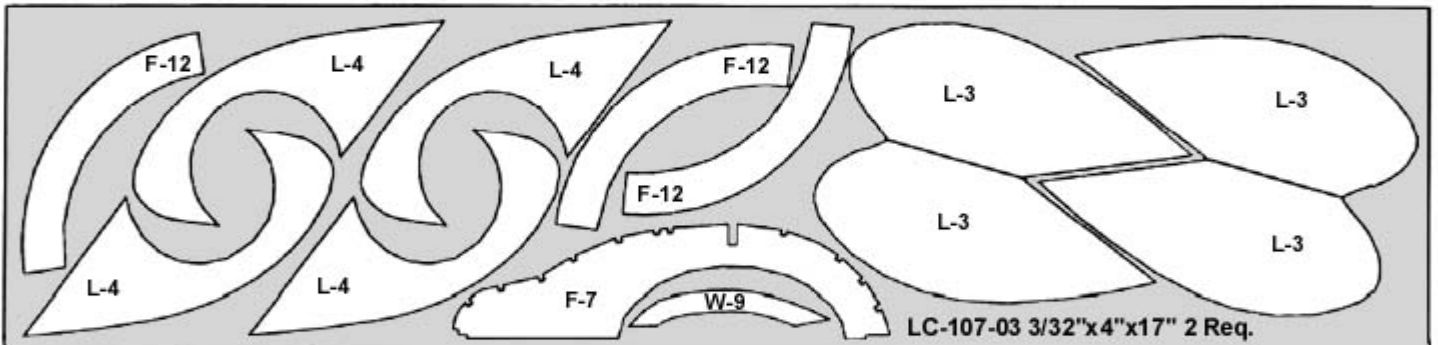
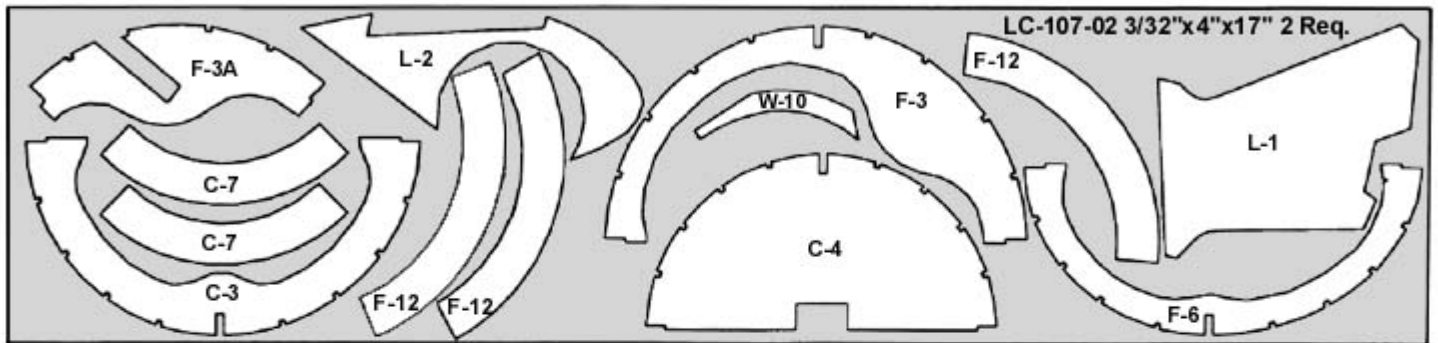
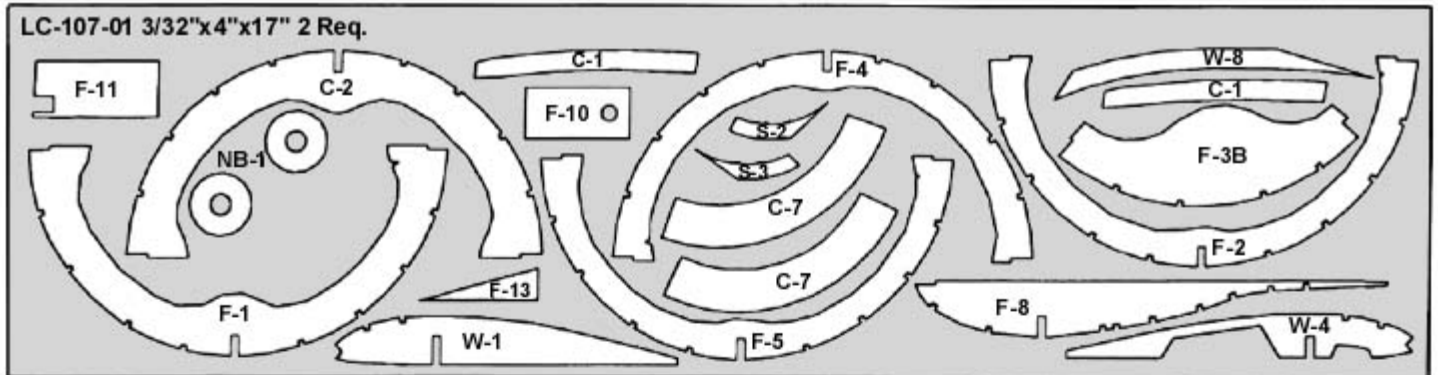
**-1/4" and 1/32" Drill Bits**

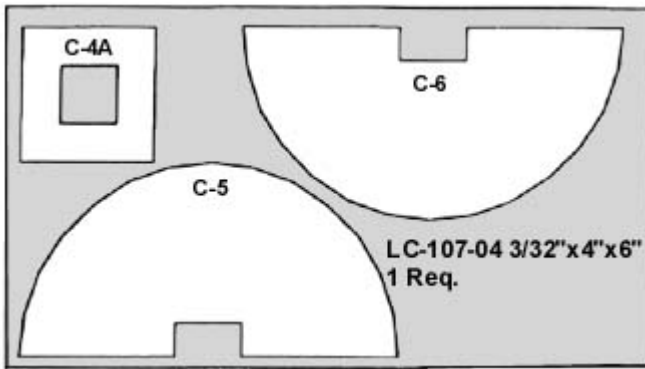
**-Building Board**

The first thing that you need to do is to identify and mark the part numbers on the laser cut parts using the drawings on the following pages as a guide.

It is possible that several of the laser cut parts may not be completely cut through. If this is the case you can free the part from the sheet quickly using an X-acto knife.

NOTE: The slight discoloration on the edges of the laser cut parts may be removed by lightly sanding the edges with 400 grit sandpaper.





### Beginners Note

These instructions were written assuming that the builder has previous building experience. If this is your first model then we recommend that you purchase a copy of the following book:

#### Rubber Powered Model Airplanes By: Don Ross

This excellent book covers basic building and flying procedures and provides valuable information about all aspects of building and flying rubber powered model airplanes.

### Building the Fuselage

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1. Pin the fuselage plan to the building board and cover it with wax paper.
2. Pin the fuselage keel pieces K-1 through K-6 into position on the plan.
3. Laminate parts F-3, F-3A, and F-3B together. Make sure stringer notches are aligned with each other. Be sure to make one left hand and one right hand.
4. Position F-1 on the front of K-1 and K-6. The top of formers F-1, F-2, F-4, F-5, and F-6 are determined by a "v" notch located on the inside of the formers. Use a small square to hold F-1 at a 90 degree angle to the building board. Glue F-1 into position.
5. Carefully glue formers F-2 through F-8 into position on the fuselage keel making sure that they are at 90 degrees to building board.
6. Position the master stringer F-9 onto the fuselage assembly and make sure that it is pressed in completely before glue is applied.
7. Glue the 1/16" sq. fuselage stringers into position. Note: Start at the rear of the fuselage and work toward the front.
8. Remove the fuselage from the plan. Add the formers to the opposite side of the keel and glue the master stringer into position. Now glue the remaining stringers into position.
9. Glue pieces F-10, F-11, and F-13 into position. Cut to fit, position, and glue 3/32" x 1/4" balsa for rigging as shown on fuselage plan.
10. Laminate parts F-12 to F-1. The basic fuselage structure is now finished. Now sand the fuselage smooth all over. Sand and round off the F-12's as shown on plan.

### Building the Cowling

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11. Pin C-1's to fuselage plan.
12. Glue C-2, C-3, and C-4 to top and bottom C-1's making sure that they are at 90 degrees to the building board.
13. Position and glue the main cowling stringer C-1 onto the assembly.

14. Glue the cowling stringers 1/16" sq. balsa into position.
15. Remove cowling from plan. Add the formers to the opposite side and repeat steps 13 and 14 for stringers.
16. Glue C-4A to C-4 making sure to align 6/8" square holes.
17. Glue C-6 left and C-6 to C-4.
18. Assemble and laminate front C-7's by pinning them to your wax paper covered building board. Remove and sand inside of C-7's so that the shape resembles the side view on the fuselage plan. Glue this ring to the front of the cowl. Now shape the outside of the C-7 ring and sand the cowl smooth.

## **Building the Tail Surfaces**

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19. Cover the stabilizer plan with wax paper. Build the stabilizer and elevators over the plan using laser cut parts S-2 and S-3. Use 3/32" x 1/4", 3/32" x 3/16", and 3/32" sq. for all remaining parts.
20. Remove the stabilizer and elevators from the plan and sand the edges round and smooth on the entire assembly.
21. Test fit the stabilizer to the fuselage. Now set the tail surfaces aside until needed for covering.

## **Building the Wings**

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22. Cover the wing plan with wax paper. Pin the 3/32" x 1/4" lower wing spar into position over the plan.
23. Pin the 3/32" x 1/4" trailing edge into position. Place rib W-1 into position and glue it to the lower spar and trailing edge while using the dihedral gauge to maintain the proper angle.
24. Place rib W-3 into position and glue it to the lower spar and trailing edge while using the dihedral gauge to maintain the proper angle. Now glue rib W-4 and another rib W-3 against the first rib (W-3).
25. Glue ribs W-2 into position. Use a small square to position these ribs 90 degrees to the building board.
26. Assemble the wing tip parts W-8, W-9, and W-10.
27. Glue four small doublers made from 3/32" x 1/4" balsa to rib W-11 as shown on the plan. Trim these doublers flush with the top and bottom surface of the rib. Drill a 1/32" dia. hole between the doublers to accept the rigging thread during the final assembly. Now glue rib W-11 into position.
28. Glue ribs W-5, W-6, and W-7 into position.
29. Glue leading edge 1/8" sq. balsa into position. Now glue the two leading edge spars 1/16" sq. into position.
30. Remove the wing panel from the plan and sand smooth all over. Now repeat the proceeding section to build the opposite wing panel.
31. Laminate the two landing gear assemblies using parts L-3 through L-4. Sand the wheel faring to a tear drop shape.
32. Insert L-1 into wheel faring and glue. Sand the leading and trailing edge of the leg round.

## **Cover the Model**

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33. Sand the entire model smooth with 400 grit sandpaper. Test fit the wings to the fuselage. Test the tail surface with the fuselage. Make any adjustments necessary to achieve the proper fit.
34. Coat the exposed surfaces with two coats of clear dope.
35. Attach the tissue to the model with clear dope mixed 50/50 with thinner.

36. Lightly mist the model with water to shrink the tissue.
37. Apply two coats of thinned dope to the entire model.
38. Carefully apply the decal's to the model. Cut the paper motor from the plan and glue to the front of the cowl.
39. Draw additional details on the model with a waterproof marker.

## **Final Assembly**

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40. Glue the canopy into position on the model.
41. Glue the wings into position on the model.
42. Cut the paper wing fillets from the plan and glue them into position, one on top of the wing and one on bottom of each side. Cover the fillets with tissue.
43. Install the wheels and axles into the landing legs. Remove the tissue from the slots in the bottom of the wing and glue the landing gear legs into position.
44. Glue the stabilizer into the slot the fuselage making sure that it is aligned properly.
45. Glue left and right elevators into position.
46. Paint and then glue F-14 tail wheel into position.
47. Attach the thread rigging to the model on the wing and the tail.
48. Carefully glue the cowling into position on the fuselage.
49. Assemble the propeller shaft and bearing with laminate pieces NB-1 (3/4" dia.), NB-2 (3/4" sq.) and NB-3 (5/8" sq.). Paint this assembly black. Tie the rubber motor. Install the prop and motor, using the 3/32" dowel to retain the motor at the aft end of the model.
50. Balance the model at the points shown on the plan. Add weight to the nose or tail as required to achieve the proper balance.
51. Your model is now complete. You **MUST READ AND FOLLOW** all of the safety rules. We hope that you have enjoyed assembling your model and hope that you enjoy many fine flights.

## **Your First Flights**

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1. Make sure that all flying surfaces are straight and warp free.
2. Wind the motor about 100 turns.
3. Point the nose of the model into any gentle breeze that may be blowing.
4. Release the propeller and after it starts turning gently toss the model aiming the nose at a point on the ground 100' in front of you. Adjust the model to circle while increasing the number of turns in the motor. Adjustments can be made by gently bending the tail surfaces and wing trailing edge.
5. A properly trimmed model will circle to the left while climbing under power, level out as the power runs down and transition into a right hand gliding circle.

## Safety Rules

1. Fly your model in a large open area that is free of obstructions, people or their property.
2. Do not fly your model in the vicinity of power lines, trees, streets or buildings.
3. Never try to retrieve any model stuck in power lines, in trees or on a roof or other high place. Never run onto the street to retrieve your model.
4. Position yourself at least 150' from spectators before launching model.
5. Never launch model directly at another person or other object.
6. Never stick your fingers into a spinning propeller. Do not try to stop a spinning propeller with your hand or fingers. Never stick any object into a spinning propeller.
7. Fly your model only on calm days. Do not fly when the wind is blowing.
8. Get proper permission before retrieving your model from private property.

## WARRANTY

Herr Engineering Corp. guarantees this kit to be free from defects in both materials and workmanship at the time of purchase. This warranty does not cover any component damaged buy use or modification. In no case shall Herr Engineering Corporation's liability exceed the original cost of the purchased kit. Further Herr Engineering Corp. reserves the right to change or modify this warranty without notice.

In that Herr Engineering Corporation has no control over the assembly or use, no liability shall be assumed or accepted for any damage resulting from the use by the user during construction of the kit or the use of the final user assembled product. By the act of building this kit and/or using the final user assembled product, the user accepts all liability.

If the buyer and/or user is not prepared to accept all of the liability associated with this product, he is advised to immediately return this kit in new and unused condition to the place of purchase for a full refund.

### LIMIT OF LIABILITY:

In use of our products, Sig Mfg. Co.'s only obligation shall be to replace such quantity of the product proven to be defective. User shall determine the suitability of the product for his or her intended use and shall assume all risk and liability in connection therewith.