



Award Winning Model Designs™

Pitts Special



Herr Engineering Corp. HRR507



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

Wood Bag #1:

1 LC-507-01	3/32"x4"x24" Laser Cut Balsa Sheet	1 LC-507-02	3/32"x4"x24" Laser Cut Balsa Sheet
1 LC-507-03	3/32"x4"x24" Laser Cut Balsa Sheet	1 LC-507-04	3/32"x4"x24" Laser Cut Balsa Sheet
1 LC-507-05	3/32"x4"x24" Laser Cut Balsa Sheet	1 LC-507-06	1/16"x4"x18" Laser Cut Birch Ply Sheet
1 LC-507-07	1/8"x4"x18" Laser Cut Balsa Sheet	1 LC-507-08	1/8"x4"x18" Laser Cut Balsa Sheet
1 LC-507-09	3mmx4"x18" Laser Cut Poplar Ply Sheet	1 LC-507-10	3mmx4"x18" Laser Cut Poplar Ply Sheet
1 LC-507-11	3/32"x4"x8" Laser Cut Balsa Sheet	8 Leading Edge Spars	1/8"x1/8"x18" Balsa
1 Fuselage Top Stringer	3/32"x1/4"x18" Balsa	2 Ailerons	1"x18" Herr Aileron
8 Wing Trailing Edge Sheet	1/16"x1"x18" Balsa	14 Wing Main Spars and Leading Edges	3/16"x3/16"x18" Balsa

Wood Bag #2:

5 Wing Center Section Sheet	1/16"x3"x12" Balsa	1 Forward Top Fuselage Sheet	3/32"x3"x12" Balsa
8 Fuselage Top Rear Stringers	3/32"x3/32"x12" Balsa	2 Aileron Torque Rod Trailing Edges	1"x3" Herr Torque Rod Tie (A)
1 Fuselage Former Cross braces	3/32"x3/16"x12" Balsa	1 Wing Tip Leading Edge Blocks	3/8"x1/2"x8" Balsa
1 Firewall Bracing	1/4"x1/4"x12" Balsa Triangle	2 Fuselage Tail Blocks	1"x1"x4 1/4" Balsa
2 12" Rod /Thread and Bent on One End			

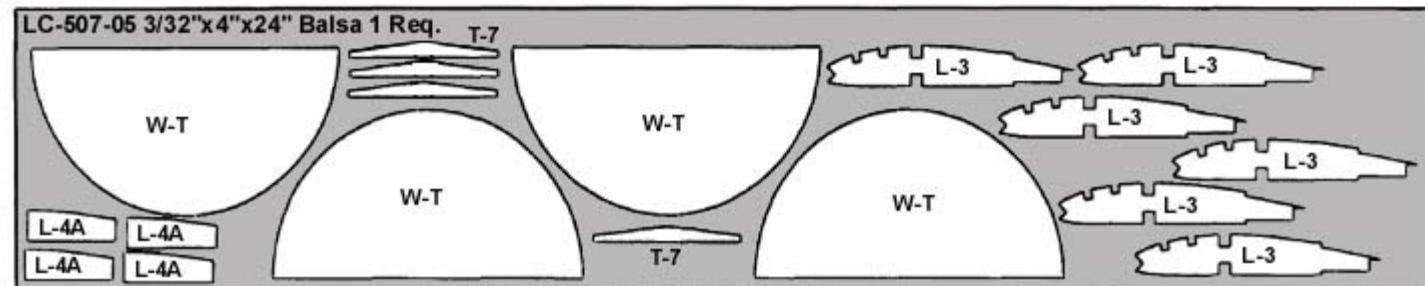
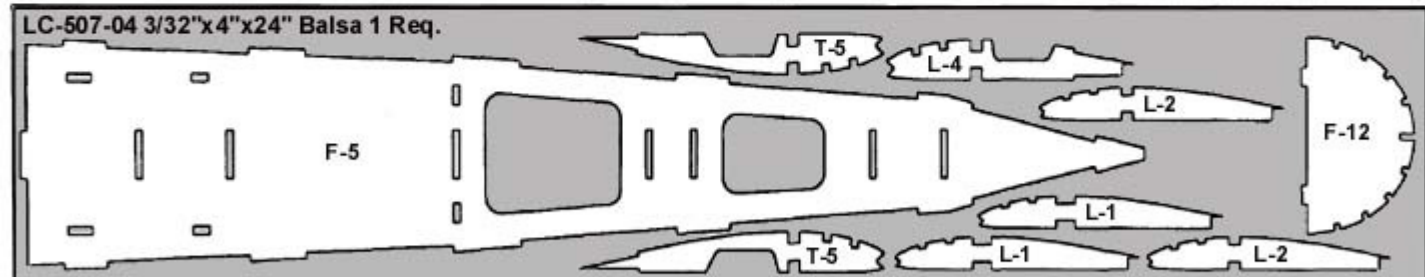
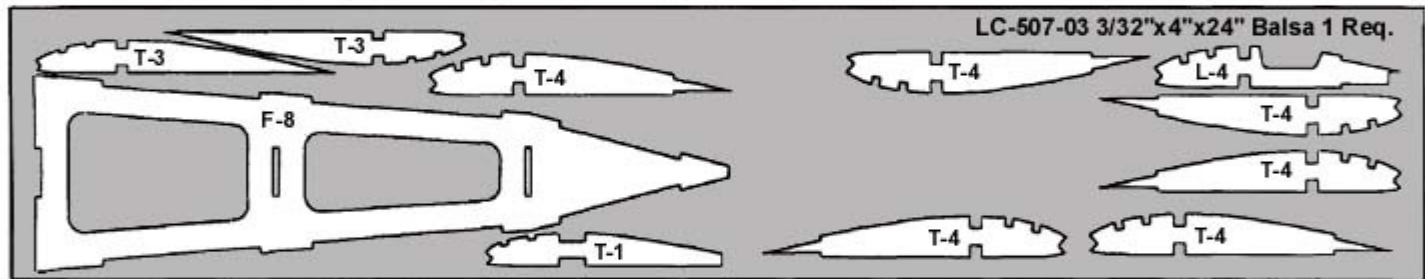
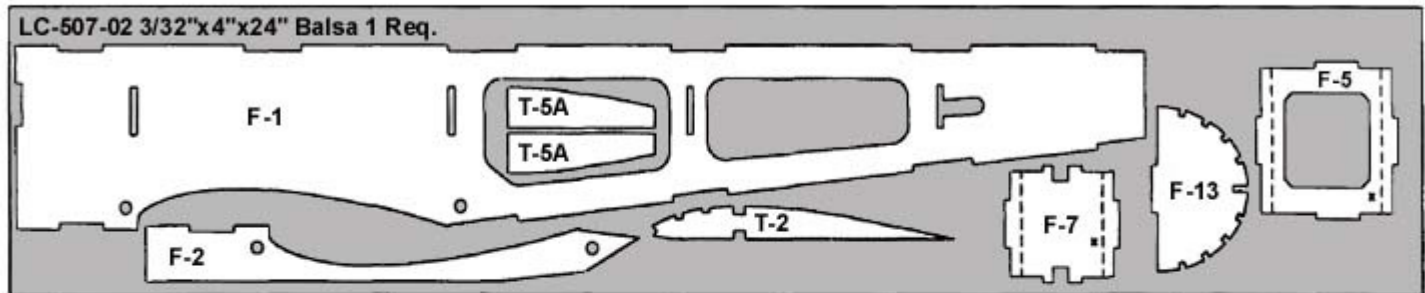
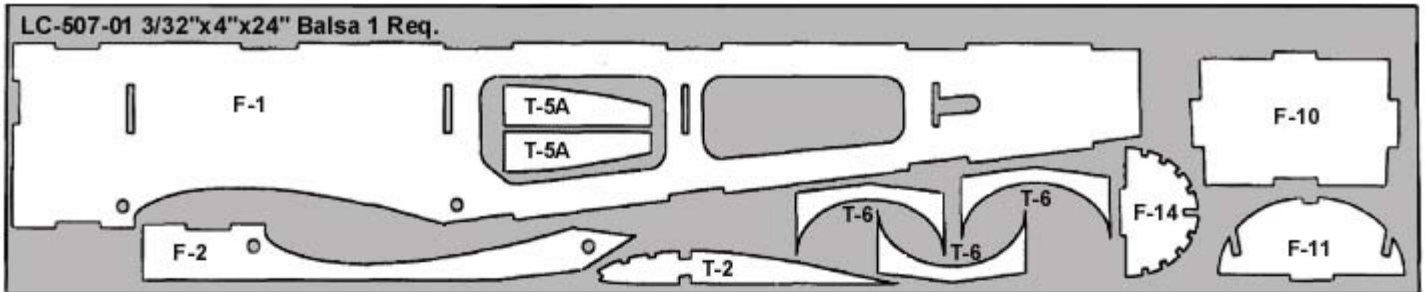
Misc Parts Loose in Box:

1 K-507 Plan A		1 K-507 Plan B	
1 K-507 Plan C		1 K-507 Instruction Manual	
1 K-507 Decal		2 K-507 Pre Bent Landing Gear Wire	3/32" x 7 1/4"
1 Windshield Plastic	.010" x 6" x 3 1/4"	1 K-507 Molded Plastic Cowling	
1 K-507 Molded Plastic Wheel Pants			

Hardware Bag:

1 Elevator Joiner	1/8"x3" Birch Dowel	2 Wing Hold Down Dowels	3/16"x4 5/8" Birch Dowel
3 Cowl Attach Screws	#2x1/2" Sheet Metal Screw	3 Cowl Attach Blocks	3/8"x3/8"x3/8" Hardwood Block
2 Control Horns	1/2 A Control Horn	2 Aileron Torque Rod Fittings	2-56 Molded Nylon Fitting
4 Control Horn Screws	2-56x3/8" Machine Screw	2 Torque Rod Bearing Tube	1/8" OD. x2 3/8" Nylon Tube
1 Tail Wheel Wire	1/16"x3" Music Wire		

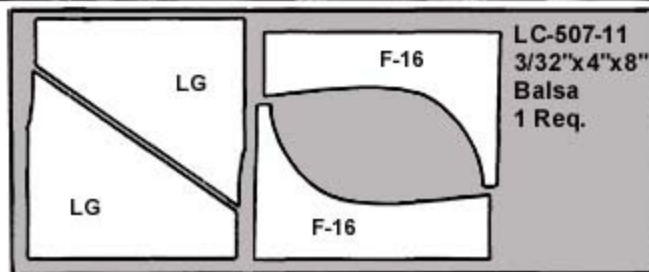
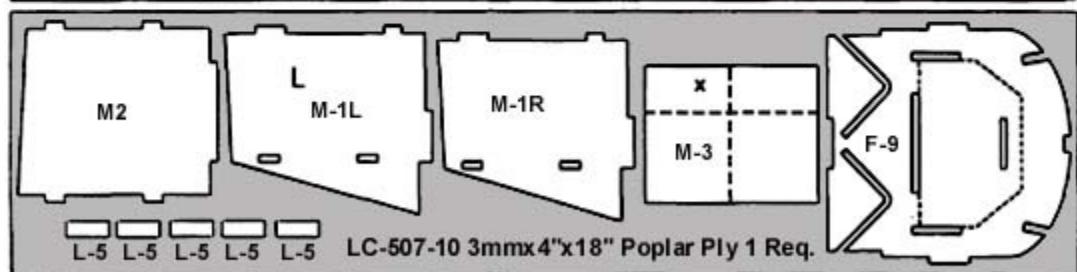
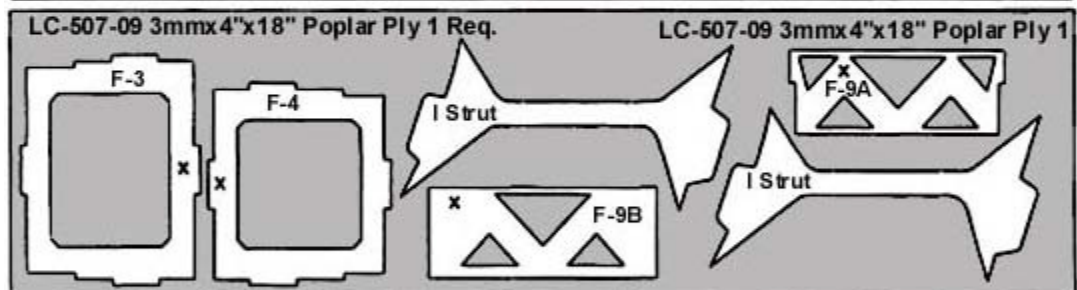
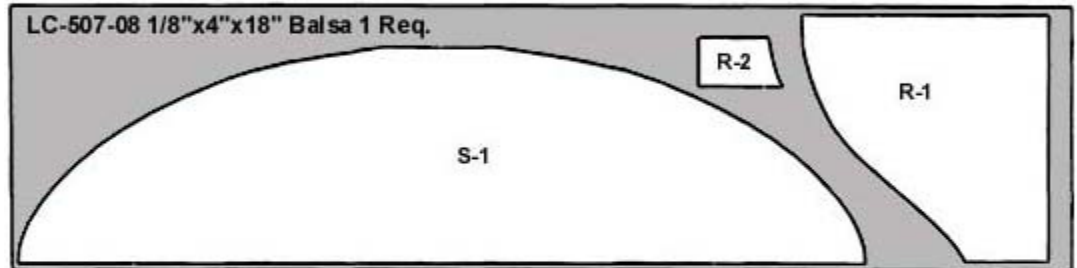
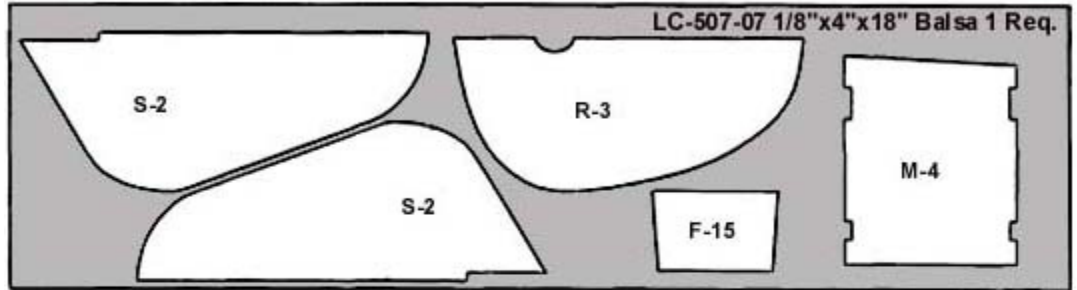
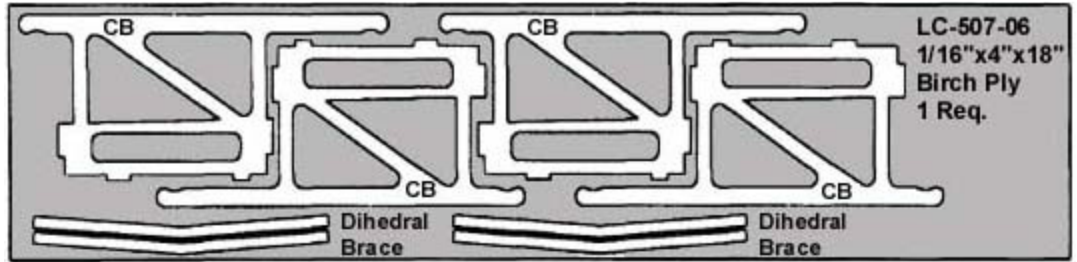
The first thing that you need to do is to identify and mark the part numbers on the laser cut parts using the drawings on the following pages as a guide. It is possible that several of the laser cut parts may not be completely cut through. If this is the case you can free the part from the sheet quickly 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.



**Additional Items Required
(Not Included in Kit)**

Note: These are parts that we have used and are familiar with. There are many other brands available and you may substitute other items that you are more comfortable with or have on hand.

1	Engine	.049 to .15 Engine with throttle
1	Motor Mount	To fit Your motor
1	Propeller	To fit Your motor
1	Throttle Pushrod Assembly	Du-Bro #165
1	Radio	4 Channel Radio with Mini Servos. Servos should have a minimum of 25 oz" of torque.
5	Hinges	Sig EasyHinges #SH-710 or Du-Bro KwikHinge #537
4	Motor Mount Screws	4-40x /4" Machine Screws and Blind Nuts Du-Bro #129
1	Fuel Tank	Sullivan 20z. #SS-2
1	1/2-A Fuel Line	Du-Bro #221
2	Flexible Pushrod	Du-Bro #500 Laser Rod
2	Aileron Pushrods	Push rod with Clevis, Du-Bro #229
2	Covering Material	2 Rolls Iron on covering material (Base Color)
1	Covering Material	1 Roll Iron on covering material (Trim Color)
1	Paint	To match the covering material for Cowl & Wheel Pants
4	3/32" Wheel Collars	Du-Bro #138
1	1/16" Wheel Collar	Du-Bro #137
2	Main Wheels	2" Du-Bro #2.00T
1	Tail Wheel	3/4" Sullivan #351 T1 Tail Wheel
2	Wheel Bushings	Make from K&S Brass Tube #127
12	Rubber Bands	#32 Rubber Bands Sig #SH-364



General Note: Cover the plans with wax paper before assembling your model to prevent the parts from sticking to the plan.

Building the Tail Surfaces

1. Join R-1 and R-2 together over the plan to make the fin. Temporarily hinge the rudder (R-3) to the fin (R-1). Do not glue the hinges at this time. Bend the tail wheel wire to shape and glue it into position into the bottom of the rudder.

2. Join the elevators (S-2) using the 1/8" dowel. Use the plan of the stabilizer as a guide. Trim the dowel if required to achieve the proper length.
3. Temporarily hinge the elevators (S-2) to the stabilizer (S-1). Do not glue the hinges at this time.
4. Sand the tail surfaces smooth and round all of the edges except the bottom edge of the fin.

Building the Fuselage

5. Glue the doublers F-2 to the inside of the two fuselage sides (F-1). Make sure that you make one left side and one right side.
6. Glue the 3/32" x 3/16" braces to the front face of formers F-7 and F-8.
7. Glue F-9A to the rear of F-9 as shown on the plan.
8. Tack glue formers F-3 & F-4 to the left fuselage side. These formers should be approximately 90 degrees to the fuselage side and should be held into position with just a small drop of glue near the top and bottom.
9. Position the right fuselage side onto the formers F-3 & F-4 and tack glue into position.
10. Place the fuselage top (F-5) into position. Because the formers are just tack glued into position you can move these parts around to allow F-5 to fit into position properly. With F-5 in position the front of the fuselage is now held in the proper alignment and the formers F-3 & F-4 can be completely glued to the fuselage sides. Also glue F-5 to the fuselage sides from F-4 forward to the front end.
11. Tack glue formers F-6 and F-7 to the fuselage top. The small "x" is on the top. The 3/32" x 3/16" braces should face the front.
12. Squeeze the fuselage sides together between F-4 & F-6 so they make contact with the top and the tabs in F-6 engage the slots in the sides. Glue the sides to the top from F-6 to F-4 and glue F-6 to the sides and top.
13. Squeeze the fuselage sides together between F-6 & F-7 so they make contact with the top and the tabs in F-7 engage the slots in the sides. Glue the sides to the top from F-7 to F-6 and glue F-7 to the sides and top.
14. Wet the fuselage sides at F-7 with water or Windex to soften them. Now pull the rear end of the fuselage sides together and hold with two clothespins. Lay the fuselage upside down on your building board and adjust the aft end so that it is vertical and 90 degrees to the fuselage top. Glue the aft end of the fuselage sides together and glue F-5 to the sides from F-7 to the rear.
NOTE: It is not a problem if the fuselage sides crack at F-7 while bending. When finished just put a small amount of glue onto the inside and outside of the cracked areas.
15. Place the fuselage bottom (F-8) into position and glue to the fuselage sides and the formers.
16. Place F-9 into position on the front of the fuselage so that F-9A is facing the rear. Place F-10 into position on the fuselage bottom and then glue F-9 & F-10 to the fuselage.
17. The basic fuselage box is now finished. Go over all joints with a second application of thin C/A. Now Sand the fuselage smooth all over.
18. Laminate the four 1/16" plywood cabane struts [CB] together to make two struts that are 1/8" thick. Sand the edges round on the strut portions of the cabanes. Also sand the edges round on the top portions of the cabanes. Do not sand any of the lower portion that fits inside the fuselage.
19. Place F-11 into position on top of the fuselage. Slide the cabane struts into position. Hold F-11 tightly against the back of the cabanes and glue the cabanes and F-11 to the fuselage.
20. Using the 3/32" balsa, sheet the top of the fuselage from F-9 to F-10. Use four strips as shown on the detail on the plan. Bevel the edges that contact the cabanes for tight fit. When the glue is dry, sand and trim the top of the lower section of the cabanes where they stick above the sheet as shown in the detail on the plan. Sand the sheet flush with the front of F-9 and the back of F-10.
21. Glue formers F-11, F-12 and F-13 into position on the top of the fuselage. Make sure that these formers are 90 degrees to the top of the fuselage.

22. Glue the 3/32" x 1/4" Stringer and the 3/32" sq. stringers into position between F-12 and F-14. When the glue is dry, trim and sand them flush with the front of F-12 and the rear of F-14.
23. Glue F-15 into position on the top of F-5 immediately behind F-14.
24. Place one of the F-16 cockpit sides into position so that they stand vertical between F-11 and F-12. The outside edge should be flush with the fuselage side. Trim the aft end to achieve the proper fit if required. Now glue the fuselage side to the fuselage top only with a small amount of glue.
25. Spray the outside of the cockpit side with water or Windex to soften the wood. After several minutes gently roll the rear end of the cockpit side in so that it is flush with the outside of F-12 and glue the rear of the cockpit side into position. Gently curve the front of the cockpit side around so it is flush with the sheeting on the top of the fuselage at F-11 and glue into position. Repeat this process to install the opposite cockpit side. Trim the center front to fit against the opposite side.
26. Lay the stabilizer into position on the rear of the fuselage. Hold the fin in position and place the two 1" x 4 1/4" blocks on each side. Align the blocks so that the front and rear of the fin are on the fuselage centerline and carefully glue the blocks to F-14 and F-15 only. Do not glue the fin or stabilizer into place at this time.
27. Slide the fin and stabilizer from the fuselage and then carve and sand the tail blocks to shape.

Building the Top Wing

28. Pin the top wing plan to your building board and cover with wax paper. The top wing is built-in one-piece and is flat with no dihedral.
29. Pin the lower 3/16" sq. main spars to the plan. The lower spars end flush with the outboard face of the last T-4 rib. Glue two of the T-7 spar joiners into position.
30. Pin the lower 1/16" x 1" trailing edge sheet to the plan. The inboard end should be angled so they fit tightly together at the center of the wing. The outboard ends stop flush with the outboard face of the last T-4 rib.
31. Trim the lower aft center section sheet to size and test fit the sheet into position. Now glue the sheet to the spars, spar joiners and trailing edge sheet.
32. Glue ribs T- 1, T- 2 and T- 3 into position. These ribs should be 90 degrees to the building board.
33. Glue the three T- 6 pieces into position on top of each other. The front edge is aligned with the front edge of the trailing edge sheet.
34. Glue the six T- 4 ribs into position.
35. Glue the T- SA Doublers onto each side of the two T- 5 ribs and then glue the ribs into position.
36. Place the wing tips (W- T) into position against the ends of the wing. Raise the outboard ends 1/4" and glue the wing tip into position.
37. Test fit the top 1/16" x 1" trailing edges. Trim the inboard ends to fit tightly against the T- 6 pieces. Now glue the top trailing edge sheet to T- 6, the lower trailing edge sheet, the ribs and the wing tips.
38. Bevel the outboard ends of the 3/16" sq. spars to fit flush with the wing tips as shown on the plan. Crack the spar at the last T- 4 rib and trim the inboard end to the center of T- 1 and glue into position. Glue the two top T-7 spar joiners into position.
39. Trim and glue the 1/8" sq. leading edge spars into position as you did the main spars.
40. Cut and glue the 3/16" sq. leading edges into position.
41. Cut two 2" long pieces from the 3/8" x 1/2" block and glue to the top front of each wing tip.
42. Remove the wing from the plan and sheet the bottom front center section with 1/16" sheet.
43. Pin the wing back on the building board and then cut, fit and glue the eight 1/16" shear webs into position on the front of the main spars as shown on the plan.

44. Now cut, fit and glue the top center section 1/16" sheet into position.
45. Cut the lower trailing edge sheet to match the cut out in T- 6. Sand the wing smooth all over and shape the wing tip blocks and the T- 6 parts. Sand the leading edge round to match the drawings on the plan.

Building the Bottom Wing

46. Cover the lower wing plan with wax paper. You're going to build the left side first. Then you will prop the left wing up to establish the proper dihedral angle and you will then build the right side onto the left.
47. Pin the lower left 3/16" sq. main spar and the 1/16" x 1" trailing edge sheet to the plan. These pieces extend from the wing centerline to the outboard face of the last L-3 rib at the tip.
48. Pin and glue the 3/16" sq. trailing edge into position on top of the 1/16" x 1" trailing edge sheet. This piece should be the same length as the sheet and positioned flush with the back edge.
49. Glue the two 1/16" plywood dihedral braces to the front and rear of the inboard end of the lower spar. The left side of the dihedral braces should be flat on the building board and a right side should angle up away from the building board.
50. Fit and glue the lower center 1/16" sheet into position between the main spar and trailing edge sheet. You'll need to cut a small notch in this sheet so that it fits around the dihedral brace.
51. Glue the L- 1, L- 2 and L- 3 ribs into position.
52. Glue the L- 4A doublers to each side of L- 4 and then glue L- 4 into position.
53. Place the wing tip (W- T) into position against the end of the wing. Raise the outboard ends 1/4" and glue the wing tip into position.
54. Test fit the top 1/16" x 1" trailing edge sheet. Trim the inboard end flush with rib L-1. The outboard end should extend past the wing tip. Now glue the top trailing edge sheet to the 3/16" trailing edge, the ribs and the wing tips.
55. Trim and glue the 1/8" sq. leading edge spars into position as you did the main spar.
56. Cut and glue the 3/16" sq. leading edge into position.
57. Cut a 2" long piece from the 3/8" x 1/2" block and glue to the top front of the wing tip.
58. Remove the left wing from the plan.
59. Pin the lower right the 3/16" main spar in the 1/16" x 1" trailing edge sheet to the right wing plan,
60. Test fit and glue the 3/16" sq. trailing edge to the top of the trailing edge sheet as you did for the left side.
61. Place a left wing into position against the lower right spar and trailing edge parts. Hold the dihedral braces flat against the building board and place a block under the left wing to hold it up with the proper dihedral. Glue the dihedral braces to the right spar and glue the trailing edges together.
62. Cut, fit and glue the lower rear 1/16" the sheet into position as you did for the left side.
63. Glue the L- 1, L- 2 and L- 3 ribs into position.
64. Glue the L- 4A doublers to each side of L- 4 and then glue L- 4 into position.
65. Place the wing tip (W- T) into position against the end of the wing. Raise the outboard ends 1/4" and glue the wing tip into position.
66. Test fit the top 1/16" x 1" trailing edge sheet. Trim the inboard end flush with rib L-1. The outboard end should extend past the wing tip. Now glue the top trailing edge sheet to the 3/16" trailing edge, the ribs and the wing tips.
67. Trim and glue the 1/8" sq. leading edge spars into position as you did the main spar.

68. Cut and glue the 3/16" sq. leading edge into position.
69. Trim, fit and glue the top the 3/16" sq. spars into position along with the two top 1/16" dihedral braces. The top of the dihedral braces should be flush with the top of the spars.
70. Cut a 2" long piece from the 3/8" x 1/2" block and glue to the top front of the wing tip.
71. Remove the wing from the plan and sheet the bottom front center section with 1/16" sheet.
72. Cut, fit and glue the eight 1/16" shear webs into position on the front of the main spars as shown on the plan.
73. Now cut, fit and glue the top center section 1/16" sheet into position.
74. Slide the nylon tubes onto the two aileron torque rods and then bend and trim the outboard ends as shown on the plan. A small drop of oil in the nylon tube will help prevent glue from sticking them to the torque rods later on.
75. Cut a small notch in the aileron torque rod blocks for the upright leg and test fit them to the wing. After achieving the proper fit you can glue the torque rod blocks to the wing. Glue them carefully so as not to glue the torque rods to the nylon tubes.
76. Mark the centerline on the front edge of the ailerons. Bevel the front of the ailerons to the shape shown on the plan. Drill and notch the inboard end of the ailerons to hold the torque rod. Temporarily hinge the ailerons to the wing and trim the outboard ends of the aileron to fit with a small gap at each end.
77. Glue the cutoff ends from the ailerons to the top rear of each wing tip behind the 1/16" top sheet.
78. Sand the wing smooth all over and shape the wing tip blocks. Sand the leading edge round to match the drawings on the plan.
79. Clamp the ailerons into alignment with the torque rod blocks with clothespins and then trim and sand the wing tips to shape. The back ends should match the bevel on the ailerons.
80. Remove the clothes pins and notch the torque rod block and the trailing edge of the wing to allow the torque rods to move fore and aft.
81. Mark the location of the aileron servo and cut away the top sheet and ribs W-1 to allow the servo to fit into the wing. Glue the servo mounts (L-5) to the wing sheeting.
82. Mount the aileron servo and connect the pushrods to the servo and the torque rods.

Building the Motor Mount Box

Note: The motor mount box is designed to accept the Norvel .061 motor. It needs to be cut shorter if using a larger motor.

83. Use the patterns on plan sheet No.3 to market cut the front of parts M-1L & R, M-2L, and M- 3 for the motor that you are planning to use.
84. Hold parts M-1L (left), M-1R (right) and M- 3 together and position on the front of the fuselage. Tack glue these parts together but do not glue to the fuselage.
85. Remove the motor mount box from the fuselage and securely glue the motor mount box parts together.
86. Glue part M- 3 to the front of the motor mount box. The small " x" mark on M-3 is on the top. The top edge of M-3 should be flush with the top edges of the M-1 sides.
87. Cut and glue pieces of the 1/4" triangle into the comers at the bottom and sides. Also glue a strip across the top of M- 3.
88. Attach the motor mount to the front of M-3 using screws and blind nuts. **Note:** You will need to drill a new hole in the motor mount for the screw in the top left position as the existing one in the mount has the screw to close to the top edge of M- 3.
89. Mount your motor to your motor mount. The engine should be mounted all of the away at the front of the mount so that the front of the motor mount is flush with the front of the mounting lugs on the motor. **Note:** If using a larger motor such as the O.S. .10 or .15 you'll need to trim the bottom edge from M-1R to allow for muffler clearance.

90. Assemble the fuel tank following the instructions that came with the tank.
91. Drill holes in M-3 for the throttle pushrod and the fuel and vent lines. The position of these holes will vary depending on the motor that you are using.
92. Test fit the motor mount box to the front of the model. If using a motor larger than the Norvel .074 you'll need to cut an opening in the front of F-9 to allow the rear of the fuel tank to stick into the fuselage. Drill a hole in F-9 for the throttle pushrod.
93. Glue the motor mount box to the front of the fuselage.
94. Mount the throttle servo to the fuselage side with servo tape.
95. Attach the motor mount and motor to the model.
96. Place the fuel tank into the motor mount box. Install the fuel and vent lines between the fuel tank and the motor. The tank should have thin pieces of foam rubber under it panel on the sides.
97. Install throttle pushrod. Use your radio to check for proper travel and function.
98. Glue M-4 to the top of the motor mount box.
99. Mount the elevator and rudder servos using servo tape.
100. Glue the stabilizer and standing into position on the back of the fuselage. Temporarily install the elevators and the rudder and cut the slot for the lower hinge on the rudder at this time.
101. Mount the control horns onto the rudder and elevator.
102. Assemble the rudder and elevator pushrods and install into the model.
103. Glue the three 3/8" cowl blocks to the front of the F-9.
104. Trim the plastic cowl parts on the marked lines. Join the two halves with small pieces of tape and when properly aligned, glue them together. Now fit and glue the front of the cowl into position.
105. Test fit the cowl on the model and attach with three #2 sheet metal screws. Make cut outs for access to the glow plug and needle valve.
106. Trim the wheel pant halves and glue them together. Test fit them to the landing gear legs and glue the two pieces of scrap 3mm ply on each side of the landing gear leg as shown on the plan.
107. Place the lower wing dowels into the fuselage and attach the lower wing.
108. Sand the tabs on the top and bottom of the "I" Struts so that they will fit snugly into the slots in the ribs L-4 and T-5. Sand the front and rear edges of the "I" Struts round.
109. Place the "I" Struts into position in the lower wing and attach the top wing to the cabanes using rubber bands. The "I" Struts should fit into the ribs T- 5.

Covering

110. Remove the engine, control surfaces, wing dowels and other items. Sand the entire model smooth with 320 grit sandpaper. Sand the back edges of parts LG round.
111. Cover the model with your choice of iron on covering materials.
112. Cut the trim pieces from covering material using the patterns on plan #3 and apply to the model.
113. Paint the cowl and wheel pants to match the model. The trim for the cowl and wheel pants can be painted on or cut from sticky trim sheet.

Final Assembly

114. Cut the wood and covering material from the ends of the landing gear slots. Epoxy the landing gear wires into the slots in F-9 and glue F-9B to the front.
115. Paint the motor mount box, F-9 and cockpit area with a fuel proof paint.
116. Attach parts LG to the model. The front edge is attached to the landing gear wire by wrapping it with a strip of iron on covering. The top edge is glue to the fuselage with a small bead of silicone rubber.
117. Install the elevators and then the rudder to the model and glue the hinges in place.
118. Install the pushrods and control horns and connect the pushrods to the servos.
119. Install the engine mount to the firewall and bolt the engine to the mount.
120. Install the throttle pushrod.
121. Trim the windshield to shape using the pattern on the plan as a guide. Test fit the windshield to the model and then glue into position. You'll need to cut the covering material away where the windshield contacts the fuselage so that the plastic may be glued directly to the wood.
122. Mount the pants and the wheels using to the 3/32" collars on each side. The inboard wheel collar hold the wheel pants against the strut. The outboard wheel collar holds the wheel to the axle. A small amount of the axle should stick through a hole on the outboard side of the wheel pants.
123. Reattach the cowl to the model using the sheet metal screws. Securely attach the propeller to the motor.
124. Glue the wing dowels into position in the fuselage. The top and bottom wings are held On the model with # 32 rubber bands. Use three Oneach side at the top and three on each side at the bottom.
125. Install the receiver and battery pack so that the model balances at the point shown on the plan. Wrap the battery and receiver with foam rubber. If necessary, add weight to the nose or tail until the model balances at the point shown on the plan with the fuel tank empty. Mount the switch in the left fuselage side. Run the receiver antenna through the rear fuselage and out a small hole in the fuselage side just behind F-7 and below the stabilizer.
126. Set the control throws to the measurements shown on the plan .
127. Verify that the model balances at the point shown on the plan before flying. Verify that the control throws are set and that the controls move in the proper direction.
128. Always pre-flight your model thoroughly before each flight. It is your responsibility to verify that your model is airworthy. Always follow established safety guidelines while starting and operating the engine, radio and while flying the model.

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.

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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.

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