



P-51 Mustang



Herr Engineering Corp. HRR506



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-565-01	3/32x4x24 Laser Cut Balsa Sheet	1 LC-506-02	3/32x4x24 Laser Cut Balsa Sheet
1 LC-506-03	3/32x4x24 Laser Cut Balsa Sheet	1 LC-506-04	3/32x4x24 Laser Cut Balsa Sheet
1 LC-506-05	3/32x4x24 Laser Cut Balsa Sheet	1 LC-506-06	3/32x4x18 Laser Cut Balsa Sheet
2 LC-506-07	1/16x4x24 Laser Cut Balsa Sheet	2 LC-506-08	1/16x4x24 Laser Cut Balsa Sheet
1 LC-506-09	1/8x4x18 Laser Cut Balsa Sheet	1 LC-506-10	1/8x4x18 Laser Cut Balsa Sheet
6 Leading Edge and Spars	1/4 sq.x24 Balsa Strip	2 Trailing Edge	3/16 sq.x24 Balsa Strip
4 Trailing Edge	1/16x1x24 Balsa Sheet	1 Fuselage Top Stringer	3/32x1/4x18 Balsa Strip
2 Ailerons	1x24 Tapered Ailerons	1 Wing Jig	1/8 sqx24 Balsa Strip
1 Top Fuselage Sheet	3/32x4x18 Balsa Sheet		

Wood Bag #2

2 Aileron Torque Rods	10 Threaded Rod (Bend One End)	4 Center Section & Belly Scoop Sheet	1/16x3x12 Balsa Sheet
1 Former F-9 Braces	3/32x1/4x6 Balsa Strip	2 Tail Blocks	1/2x3/4x3 1/4 Balsa Blocks
2 Main Landing Gear Blocks	3/8x1/2x3 1/4 Grooved Hardwood Block	2 Canopy Rails	1/2x3/4x6 1/4 Balsa Block
2 Wing Tips	1/2x1x6 Balsa Block	1 Rear Cockpit block	3/4x3/4x1 3/4 Balsa Block
1 Fuselage Lower Nose Blocks	1/2x3x6 Balsa Block	2 Main Landing Gear	
2 Aileron Torque Blocks	1/4x1x3 Tapered Balsa		

Misc. Parts Loose in Box

1 Plan Sheet #1		1 Plan Sheet #2	
1 Decal Sheet		1 Instruction Book	
1 Molded Plastic Canopy		1 LC-506-11	3mmx6x18 Laser Cut Poplar Ply Sheet

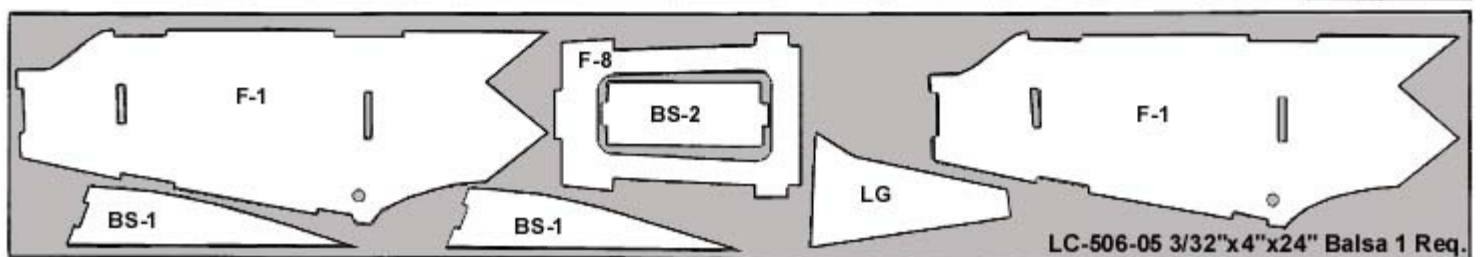
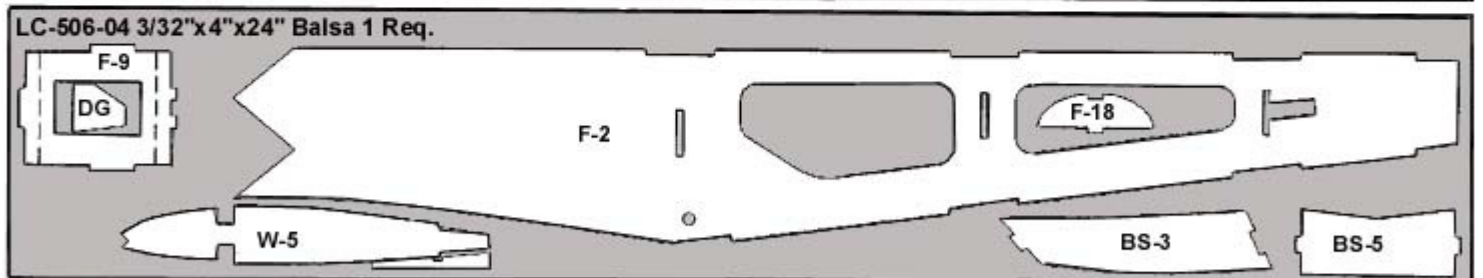
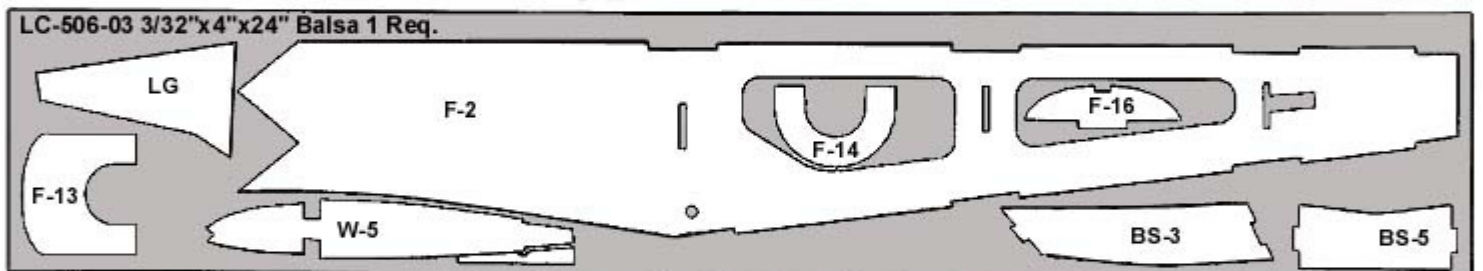
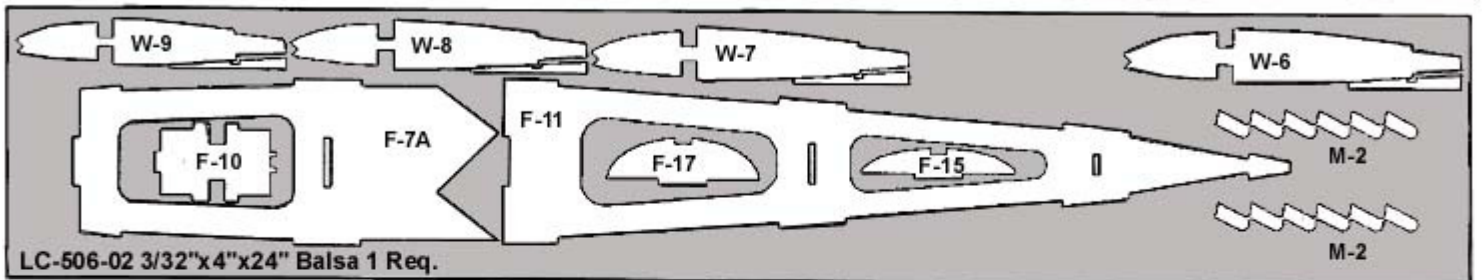
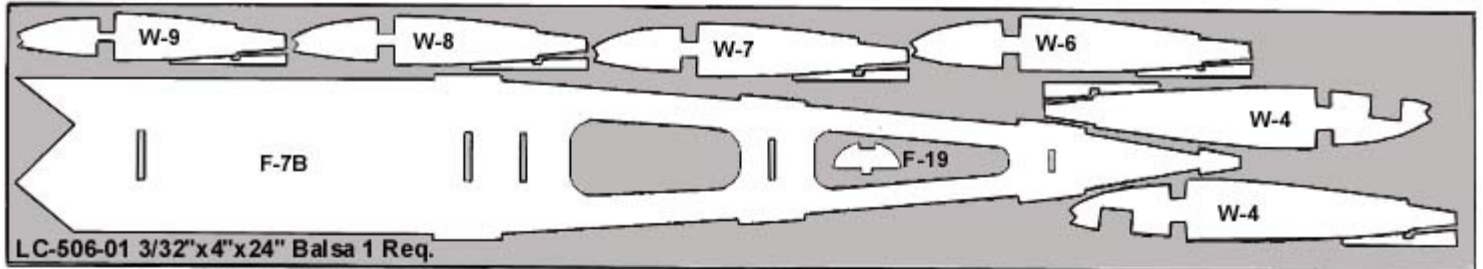
Hardware Bag

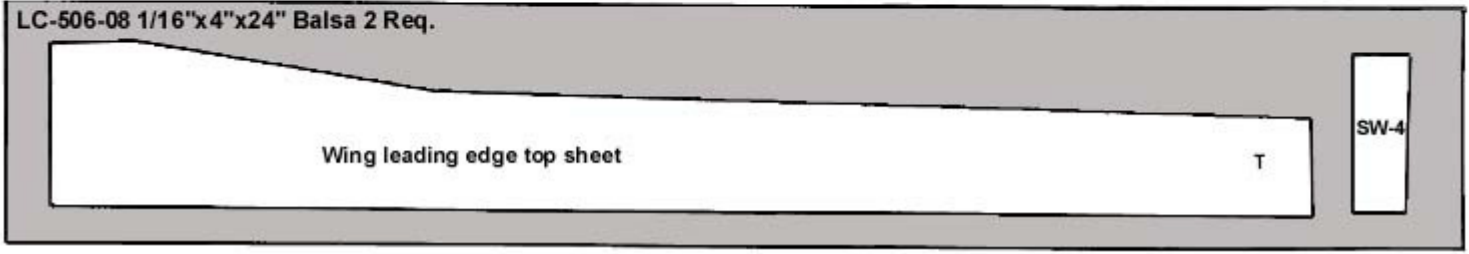
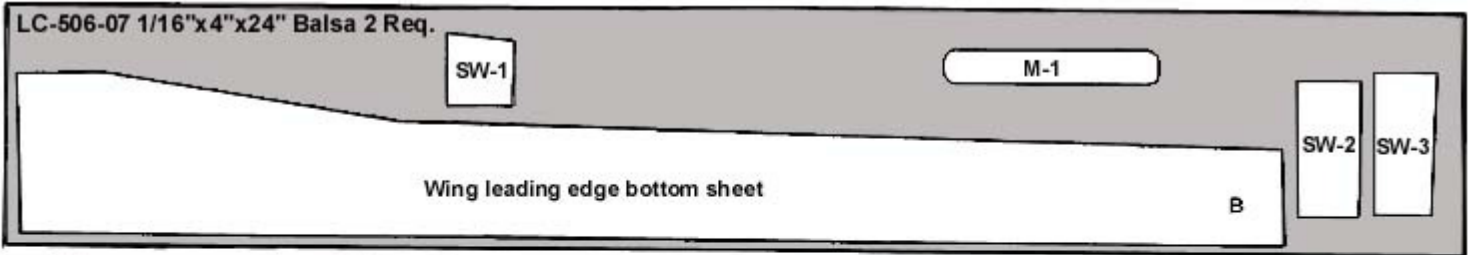
2	Control Horn	Small Nylon Control Horn	4	Horn Screw	2-56x3/8 Machine Screw
1	Elevator Joine	1/8x3 Birch Dowel	4	Main Landing Gear Screw	#4 X1/2 Sheet Metal Screw
2	Wing Dowels	3/16 dia. x3 3/4 Birch Dowel	1	Tail Wheel Wire	1/16 dia. x3 Music Wire
2	Torque Rod Bearing Tube	1/8 OD. x2 3/8 Nylon Tube	2	Aileron Torque Rod Fittings	Molded Nylon Fitting
1	Wing Center Section Tape	1 x20 Nylon Tape	1	LC-506-11	3mmx6x18 Laser Cut Poplar Ply Sheet

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.

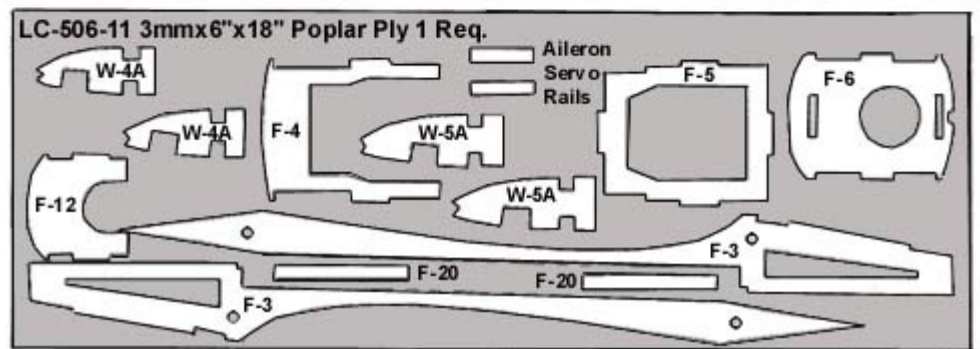
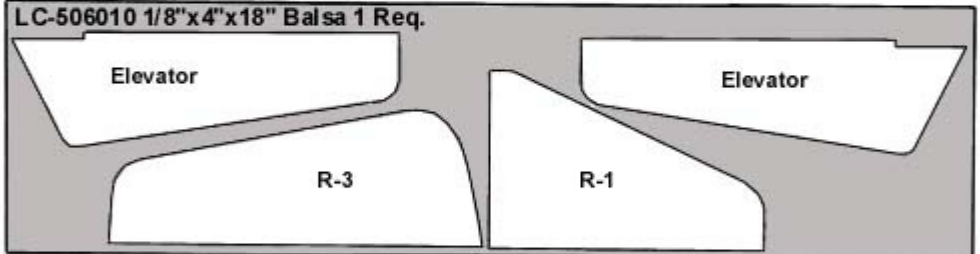
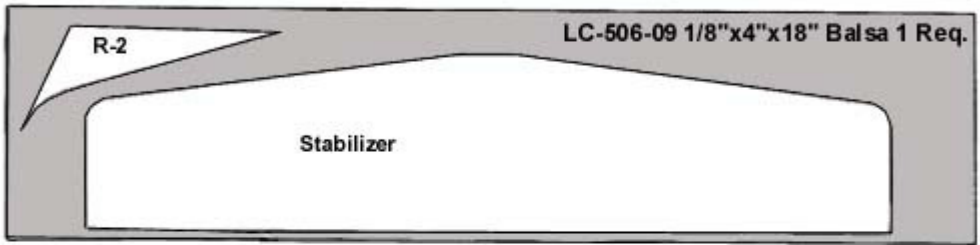
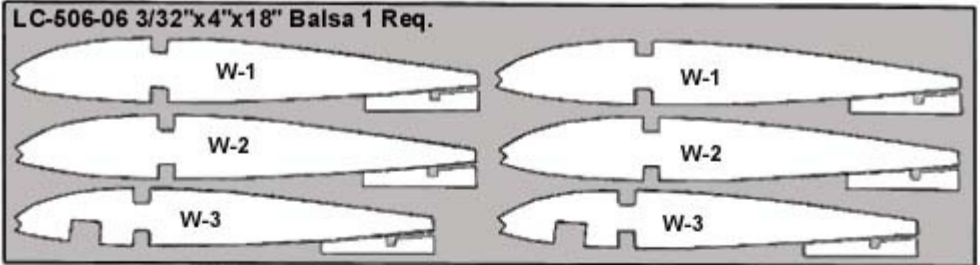




**Additional Items Required
(Not Included in Kit)**

1	Engine	049 to .061 Engine with throttle
1	Radio	4 Channel Radio. Servos should have a minimum of 25 oz of torque
5	Hinges	Sig Easy Hinges #SH-710 or Du-Bro Kwik Hinge #537
1	Motor Mount	Dave Brown # 0506
4	Motor Mount Screws	4-40 x 3/4 Machine Screws and Blind Nuts Du-Bro #129
1	Fuel Tank	Sullivan 2oz. #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, DuBro #229
2	Covering Material	2 Rolls Iron on covering material
1	Paint	To match the covering material for canopy and engine compartment
1	Propeller	Grish Tornado 6-3 Nylon Propeller #GRIQ1050
2	3/32 Wheel Collars	Du-Bro #138
1	1/16 Wheel Collar	Du-Bro #137
2	Main Wheels	2 1/4 Du-Bro #225T
1	Tail Wheel	3/4 Sullivan #351 T1 Tail Wheel
2	Wheel Bushings	Make from K&S Brass Tube #127
1	Throttle Pushrod Assembly	Du-Bro #165
8	Rubber Bands	#32 Rubber Bands Sig #SH-364
1	1 3/4 Spinner	DuBro #267

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.



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 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 to the stabilizer. 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. Assemble the fuselage side by gluing parts F-1 and F-2 together.
6. Glue the plywood doubler F-3 to the inside of each fuselage side. Be sure that you make a left and right side. The doubler goes on the inside of each side.
7. Cut two strips from the 6 piece of 3/32 x 1/4 and glue to the front face of former F-9. Glue the fuselage top pieces F-7A and F-7B together.
8. Lay the right fuselage side on the building board and glue former F-4 into position 90 degrees to the fuselage side.
9. Glue former F-5 into position 90 degrees to the fuselage side.
10. Place the left fuselage side into position on the the formers. Now glue the formers F-4 and F-5 to the left fuselage side.
11. Pull the front fuselage sides together and glue former F-6 into position.
12. Pull the aft end of the fuselage together and hold with two cloths pins.
13. Place formers F-9 and F-10 into position and glue to the fuselage sides.
14. Place the fuselage top (F-7) and glue to the fuselage starting at the front and working toward the rear. Glue the aft ends of the fuselage sides together making sure that they are 90 degrees to the top.
15. Glue part F-8 into position on the bottom front of the fuselage. Glue the lower rear fuselage (F-11) into position.
16. Glue former F-12, F-13 and F-14 to the front of the fuselage.
17. Cut the fuselage nose block into two pieces and glue into position on the forward bottom of the fuselage.
18. Mount the engine on the mount and position the mount on the front of F-12 so that the spinner is aligned properly with F-14. Mark the location of the mount on the front of F-12 and drill the holes in F-12 for the motor mount screws.
19. Glue the fuel tank supports (F-20) into position. You may have to trim them to the proper length before installation.
20. Assemble the fuel tank and fit it into place in the fuselage.
21. Mark the front of F-12 for the location of the throttle pushrod and fuel and vent lines. Remove the motor mount from the model and drill the holes in F-12.
22. Mount the motor and the mount on the front of the fuselage and install throttle servo and throttle pushrod. Now remove the engine from the model.

23. Glue formers F-15 and F-16 into position on the top of the fuselage. Be sure to angle F-16 forward as shown on the plan.
24. Glue a piece of the 3/32 x 1/4 into the notches in the formers from F-6 to F-16.
25. Cut the 3/32 x 4 x 18 top sheet into two pieces 9 long. Cut these pieces in half to make four 2 wide pieces. Use two of these sheets to sheet the top of the fuselage from former F-6 to F-16. Wet these pieces with water or an ammonia based window cleaner such as Windex and allow them to soak for several minutes to make them easier to bend around the curved formers. If you wind up with any cracks or splits near the lower edges of these sheets you can fill them in with small scraps of wood. Trim the ends of the sheet flush with the formers.
26. Glue formers F-17, F-18 and F-19 into position on the top rear fuselage.
27. Glue the 3/32 x 1/4 strip onto position on top of the formers and then sheet as you did the forward fuselage.
28. Glue the two tapered canopy rails into position between F-16 and F-17. The outside edges should be flush with the outside of the fuselage sides. Glue the rear cockpit block into position between the two canopy rails.
29. Glue the rear belly scoop parts BS-1 and BS-2 to the bottom of the fuselage. The front edge of BS-2 should be flush with the front face of F-5.
30. Sand the lower nose blocks to shape so that they are flush with the lower formers. Sand the canopy rails to match the curvature of former F-17. Sand the entire fuselage smooth all over.
31. Glue the stabilizer into position at the rear of the fuselage.
32. Place the fin into position and sand the tail blocks to shape. Now glue the fin and tail blocks to the model.
33. Install the elevators and rudder with their hinges but do not glue at this time. Cut the slot in the fuselage and rudder for the lower hinge and insert this hinge without gluing.
34. Bolt the engine and mount into position on the front of the model.
35. Test fit the spinner to the model.
36. Mount the elevator and rudder servos into the fuselage with a good quality servo tape.
37. Mount the control horns onto the rudder and elevator.
38. Assemble the rudder and elevator pushrods and install into the model.
39. Trim the canopy and test fit it to the model.
40. Glue the two parts M-2 to the two M-1 s to make a right and left scale exhaust.

Building the Left Wing

41. Pin the 1/8 sq. building jig to the plan so that it is centered on the main spar. It should extend several inches at each end.
42. Pin the lower 1/4 sq. main spar on top of the building jig. Trim the length of this spar so that there is about 1 extra at each end.
43. Glue the plywood doublers W-3A and W-4A to the front of ribs W-3 and W-4.
44. Place ribs W2 through W-9 into position. Pin the aft ends to the building board and glue the ribs to the lower spar. These ribs should all be 90 degrees to the building board.
45. Place the top spar into position. It should extend past each end of the wing about 1. Glue the top spar to ribs W-2 through W-9.

46. Place part SW-1 into position against W-2 and the main spars. The angled end should face where the W-1 rib will go and it should be positioned so that the top edge is flush with the top of the top spar. The angle should allow the top of rib W-1 to lean slightly toward the wing tip. When properly positioned, glue SW-1 to the spars and rib W-2.
NOTE: The top inboard corner of the SW parts is marked with a small X .
47. Place rib W-1 into position. Pin the aft end to the plan and glue the rib to the spars and to SW-1.
48. Slide the lower 1/16 x 1 trailing edge sheet into the slots in the aft ends of the ribs and glue into position.
49. Glue the 3/16 sq. trailing edge to all of the ribs and to the lower trailing edge sheet.
50. Glue the top 1/16 x 1 trailing edge sheet into position on the tops of the ribs and the 3/16 trailing edge.
51. Glue parts SW-2, SW-3 and SW-4 into position on the back of the spars. The tops of these parts should be flush with the top of the top spar.
52. Place the 1/4 sq. leading edge into position. Nick the leading edge with your knife and crack it to make the bends at ribs W-2 and W-4. Now glue the leading edge to the ribs.
53. Fit the top leading edge sheet (marked T) into position and glue it to the 1/4 sq. leading edge. Wet the top of this sheet slightly and press it down and glue it to the ribs and to the top spar.
54. Use the 1/16 x 3 sheet to sheet the center section of the wing from W-1 to slightly past W-3.
55. Remove the wing from the plan.
56. Drill the 3/32 hole in the inboard end of the landing gear block as shown on the plan and then glue this block into position in ribs W-3 and W-4.
57. Install the lower leading edge sheet as you did the top sheet. This sheet should also be glued to the landing gear block.
58. Use the 1/16 x 3 sheet to sheet the center section of the wing from W-1 to slightly past W-3.
59. Trim and sand the spars and sheet flush with ribs W-1 and W-9. Sand the wing smooth and sand the leading edge round.
60. Use the tip of your knife to locate the slot in the landing gear block through the lower leading edge sheet and cut the sheet away that covers the slot.

Building the Right Wing and Joining the Wings

61. Build the right wing as you did the left wing.
62. Test fit the right and left wing panels together. With one wing panel on your building board you should have approximately 4 1/2 to 4 3/4 dihedral as shown on the plan. Now glue the two wing panels together.
63. 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.
64. 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.
65. Use thin C/A glue to attach the 1 nylon tape to the joint between the wing panels. Glue one end at the top trailing edge with a small amount of glue. Now stretch the tape around the wing tightly and glue the tape completely into position. When the glue is dry you can trim away any excess and then lightly sand the tape smooth.
66. Glue the wing tip blocks into position on the ends of the wing.

67. 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 between them and the wing tips.
68. Clamp the ailerons into alignment with the torque rod blocks with clothes pins and then trim and sand the wing tips to shape. The back ends should match the bevel on the ailerons.
69. 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.
70. 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 rails to the wing sheeting.
71. Mount the aileron servo and connect the pushrods to the servo and the torque rods.
72. Place the wing hold down dowels into the fuselage and attach the wing to the fuselage with several rubber bands.
73. Build the forward belly scoop onto the bottom of the wing using parts BS-3, BS-4 and BS-5. Adjust the fit of these parts to allow the scoop to fit flush with the scoop that is attached to the fuselage. Be careful not to glue the forward belly scoop or the wing to the fuselage. When the glue is dry you can sand the belly scoop on the wing smooth and flush with the parts that are glued to the fuselage.

Covering

74. Remove the engine, control surfaces ,wing dowels and other items. Sand the entire model smooth with 320 grit sandpaper.
75. Cover the model with your choice of iron on covering materials.
76. Apply the decals and other markings as desired. An ultra fine Sharpie Marker can be used to draw panel lines and other details. Paint the canopy frames or use trim tape. Paint the engine compartment and wing dowels with a fuel proof paint.

Final Assembly

77. Install the elevators and then the rudder to the model and glue the hinges in place.
78. Install the pushrods and control horns and connect the pushrods to the servos.
79. Install the landing gear into the wings with the #4 screws as shown and then mount the wheels. Cover the parts LG and glue them to the landing gear struts with a small bead of silicone rubber.
80. Install the fuel tank and fuel and vent lines.
81. Install the engine mount to the firewall and bolt the engine to the mount.
82. Install the throttle pushrod.
83. Place the canopy on the model and mark the covering material under it. Remove and trim away the covering material so that the canopy can be glued directly to the wood surface. Paint the cockpit area with the color of your choice and glue the canopy to the model when the paint is dry.
84. Paint the scale exhaust parts and then glue them to the model. Cut the covering away from the area where they will be attached to allow a good glue joint.
85. Glue the wing dowels into position in the fuselage.

86. 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-10 and below the stabilizer.
87. Set the control throws to the measurements shown on the plan.
88. 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.
89. 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 by 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.

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