



AT-6 Texan

**Herr Engineering Corp. HRR501**

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 LC-501-01	3/32"x4"x24" Laser Cut Balsa Sheet	1 LC-501-02	3/32"x4"x24" Laser Cut Balsa Sheet
1 LC-501-03	3/32"x4"x24" Laser Cut Balsa Sheet	1 LC-501-04	3/32"x4"x24" Laser Cut Balsa Sheet
1 LC-501-06	3/32"x3"x12" Laser Cut Balsa Sheet	1 LC-501-07	3/32"x3"x3" Laser Cut Balsa Sheet
1 LC-501-08	1/32"x2.4"x4.5" Laser Cut Birch Ply	2 Wing Tip	3/4"x3/4"x4" Balsa Block
2 Landing Gear Block	3/8"x1/2"x25/16" Grooved Hardwood Block		

Wood (Loose in Box):

1 LC-501-05	3mmx6"x9" Laser Cut Poplar Ply	1 Leading Edge	1/4"sq. x36" Balsa Strip
2 Main Spar	3/16"sq. x36" Balsa Strip	2 Leading Edge Strips	3/32"sq. x36" Balsa Strip
1 Trailing Edge	5/16"x1"x 6" Tapered Balsa Trailing Edge	1 1/16" Balsa Sheet	1/16"x3"x 6" Balsa Sheet
1 3/32"x1/4" Strip	3/32"x1/4"x18" Balsa Strip		

Misc. Parts Loose in Box:

2 Main Landing Gear		2 1/16" Bent Aileron Torque Rod	
1 Pushrod	1/16"x18" Wire Pushrod "Z" Bend One End	1 Cowl	
1 Canopy		1 Plan Sheet #1	
1 Plan Sheet #2		1 Decal Sheet	
1 Instruction Book			

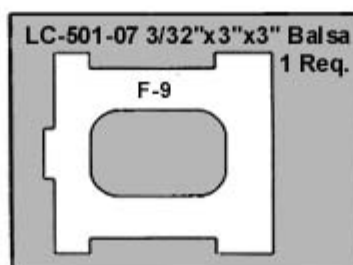
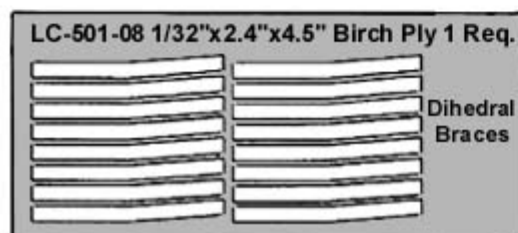
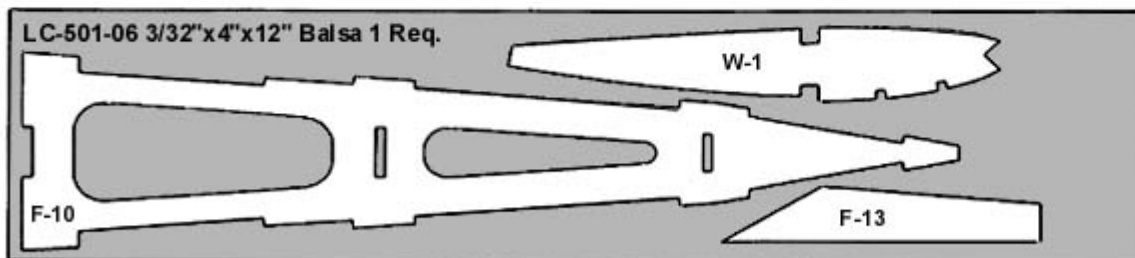
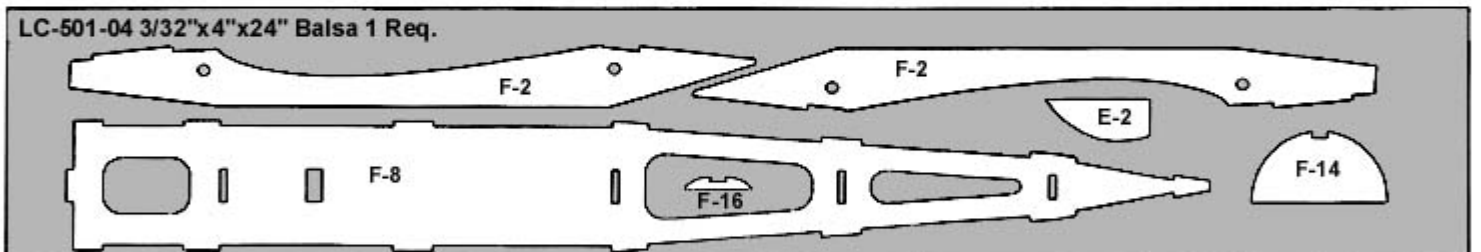
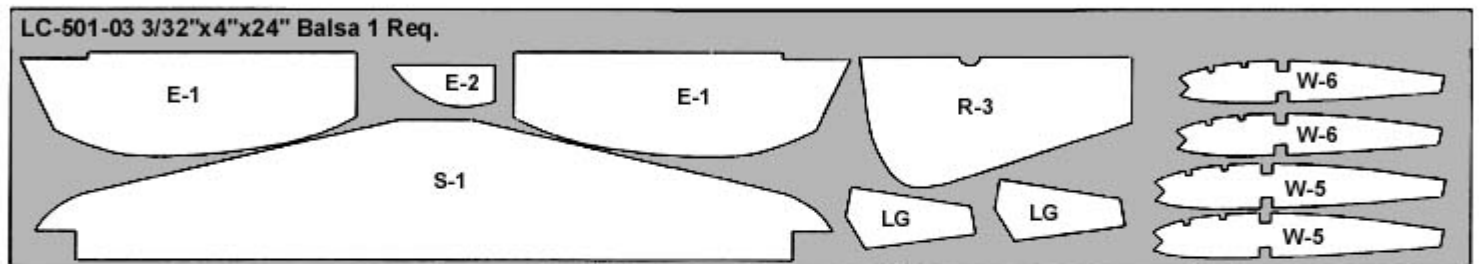
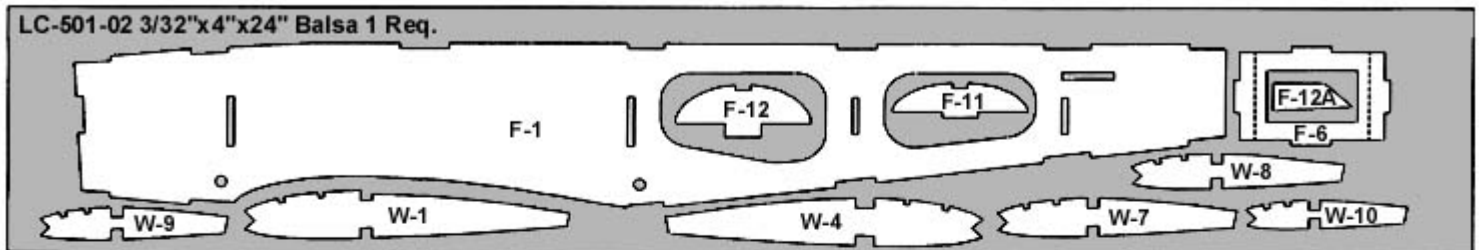
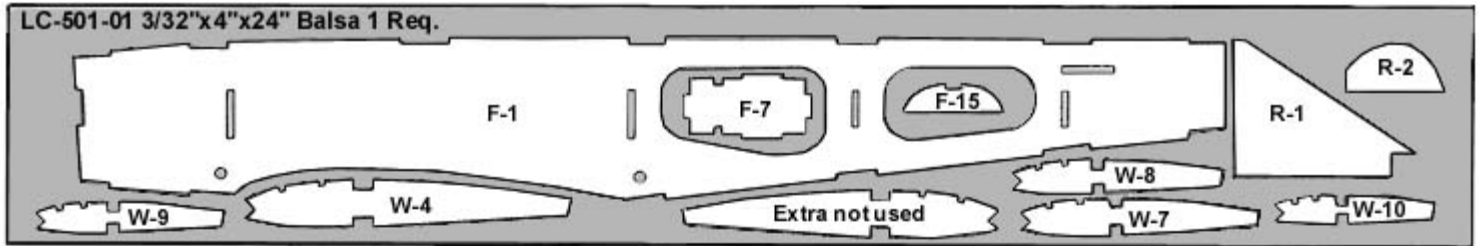
Hardware Bag:

1 Control Horn	Small Nylon Control Horn	2 Horn Screw	2-56x3/8" Machine Screw
2 Torque Rod Bearing	1/16" ID. x4" Nylon Tube	1 Tail Wheel Wire	1/16" x 3" Music Wire
2 Aileron Connectors	Molded Nylon Fitting	1 Elevator Joiner	1/8" x 3" Birch Dowel
2 Wing Dowels	3/16"x3 1/2" Birch Dowels	3 Cowl Attach Screws	#2 x1/2" Sheet Metal Screws
1 Rudder Filler Block	1/4"x3/4"x2" Balsa Block (makes 2 parts)	3 Cowl Attach Blocks	3/8"x3/8"x3/8" Hard Wood Block
4 Landing Gear Attach Screws	#4 x1/2" Sheet Metal Screws		

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.

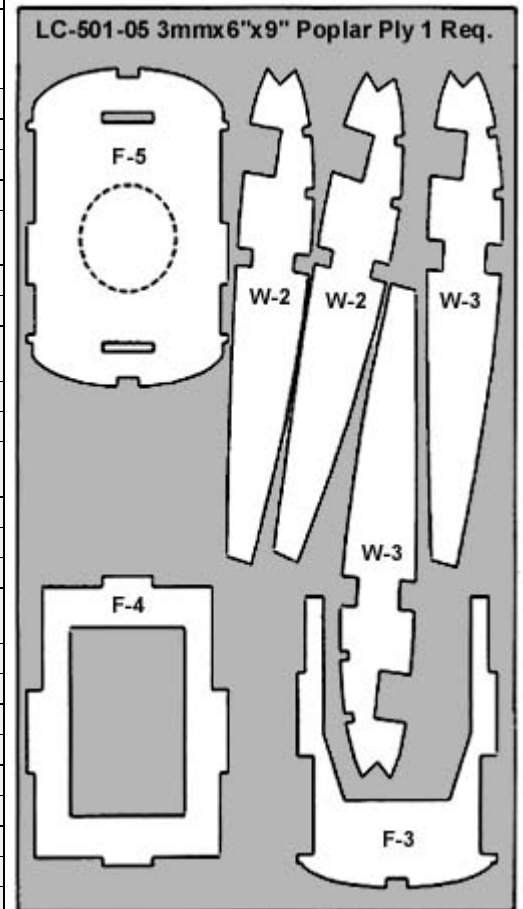
NOTE: The slight discoloration on the edges of the laser cut parts may be removed by lightly sanding the edges with 400 grit sandpaper.



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	Norvel Big Mig .049 or Norvel Big Mig .061
4	Hinges	Sig Easy Hinges #SH-710 or Du-Bro Kwik Hinge #537
2	Collars	3/32" Wheel Collars Sig #SH-585 or Du-Bro #138
1	Control Horn	Sig #SH-220 or Du-Bro #107 (if using rudder control)
2	Aileron Push Rods	Wire Make From Sig #SH-133 or Du-Bro #229 or make from 1/16" Music Wire
1	Collar	1/16" Wheel Collar Sig # SH-584 or Du-Bro #137
1	Motor	Mount Dave Brown #0506
4	Motor Mount Screws and Blind Nuts	4-40x3/4" Machine Screws and Blind Nuts Sig #SH-111 or Du-Bro #129
1	Servo Mount Tape	Sig #SH-119 or Du-Bro #634
1	Throttle Pushrod Assembly	Sig #SH-559 or Du-Bro #165 (if using throttle control)
2	Wheels	Dave Brown LectraLite Wheels #5617 (13/4") or #5620 (2")
1	Tail Wheel	3/4" Sullivan Wheel #350
1	Fuel Tank	Sullivan loz. #SS-1 or 20z. #SS-2
1	1/2-A Fuel Line	Sig #SH-288 or Du-Bro #221
3	Servo Connectors	Sig #SH-736 or Du-Bro #121 (5 Reqd. if using Rudder and Throttle)
1	Yellow Covering Material	1 Roll Top Flite Monokote, Cub Yellow #TOPQ0220
1	Black Covering Material	1 Roll Top Flite Monokote, Black #TOPQ0208
1	Yellow Paint	Top Flite LusterKote Cub Yellow #TOPR7220
1	Black Paint	Top Flite LusterKote Black #TOPR7208
1	Propeller	Grish Tornado 6-3 Nylon Propeller #GRIQ1050
6	Rubber Bands (wing attach)	Sig #SH-340
2	Wheel Bushings	Make from K & S Brass Tube #127
1	Nylon Reinforcing Tape	Goldberg #450
1	1 1/2" Spinner	Du-Bro #261



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. Make the elevators by gluing parts E-2 to parts E-1 over the plan.
2. Join the elevators using the 1/8" dowel using the plan and part S-1 as a guide. Trim the dowel as required to achieve the proper length.
3. Temporarily hinge the elevators to the stabilizer. Do not glue the hinges in place at this time. Sand the stabilizer smooth and sand the edges round. Glue R-2 to the top of R-3 over the plan.
4. If you are going to fly your model 2 or 3 channel (no rudder control) then glue the rudder assembly to R-1.
- 4a. If you are building the model 4 channel, temporarily hinge the rudder to the fin. Do not glue the hinges in place at this time.
5. Sand these parts smooth and sand all edges round except the bottom of part R-1.
6. Remove the hinges from the tail surfaces and set these parts aside until needed later in construction.

Building the Fuselage

7. Glue the doublers F-2 to the inside of the fuselage sides (F-1). Be sure to make one right and one left hand side.
8. Glue the 3/32" x 1/4" to the top and bottom of F-6 as shown on the plan.
9. Position formers F-3 and F-4 on one fuselage side and glue them into position making sure that they are 90 degrees to the fuselage side.

10. Place the opposite fuselage side onto the F-3 and F-4 formers and glue into position. The formers should be 90 degrees to the fuselage side.
11. Place the fuselage top (F-8) into position. Working from F-4 forward, glue F-8 into position.
12. Place former F-7 into position. Use 2 clothes pins to hold the two fuselage sides together at the aft end. Align the joint at the aft end of the fuselage 90 degrees to the fuselage top.
13. Glue the fuselage sides together at the aft end. Glue F-8 to the fuselage sides from F-7 to the rear of the fuselage. Glue F-7 to the fuselage sides and top.
14. Glue F-6 to the fuselage top. It should be aligned 90 degrees to the fuselage top.
15. Pull the fuselage sides in and glue to former F-6.
16. Gently squeeze the upper fuselage sides into contact with F-8 between F-6 and F-7 and glue sides to top.
17. Gently squeeze the fuselage sides into contact with F-8 between F-4 and F-6 and glue the sides to the top.
18. Place the aft fuselage bottom (F-10) into position and glue to formers F-4, F-6 and F-7.
19. Working from the back to the front, squeeze the fuselage sides into contact with F-10 and glue together.
20. Glue F-9 into position on the lower forward fuselage.
21. Drill the firewall (F-5) for the motor mount screws and install blind nuts on the back side. Secure the nuts with thin C/A glue making sure not to get any on the threads.
22. Glue F-5 into position on the front of the fuselage.
23. Glue F-16 to the fuselage top directly over F-7. Glue F-15 to the fuselage top directly over F-6.
24. Glue F-13 into position on the top of the fuselage, on the centerline, with the back end against F-15.
25. Sand a slight bevel on the bottom of F-14 and glue into position on the fuselage top and against F-13.
26. Glue F-11 into position on the fuselage top. Glue F-12A and F-12 into position.
27. Glue 3/32" x 1/4" strips between F-3 and F-5, between F-3 and F-12 and between F-14 and F-16. Trim away F-12A and F-13 if required to allow the strip to fit completely into the notches in the formers. When the glue is dry trim the ends of the strips flush with the formers.
28. Sheet the lower front fuselage with 1/16" sheet. Cut a piece of 1/16" x 3" sheet slightly longer than needed. Split along the grain to make two 1 1/2" wide pieces. Place one piece into position against the lower edge of the fuselage side and glue to the fuselage side only. When the glue is dry, wet the outside of the 1/16" sheet with Windex or other ammonia based glass cleaner and allow to soak in for several minutes. Wrap the 1/16" sheet around the formers and trim on the centerline of the 3/32" x 1/4" strip. Then glue into position.

Now add the opposite piece of 1/16" sheet as you did the first. If there is a small gap between the sheets where they meet on the 1/4" wide joiner strip it can be filled with a small scrap of 1/16" sheet. When the glue and the wood is dry, trim the ends flush with the formers.
Note: When you try to bend the wet 1/16" sheet around the formers it may try to crack near the fuselage side. If this starts to happen you can use a hot iron (Monokote iron) to steam the wet wood up and around the formers. Any small cracks that might appear can also be filled with a drop of glue and then sanded smooth.
29. Sheet the top front of the fuselage from F-5 to F-12 using the above method. Sheet the top rear fuselage between F-14 and F-16 using the above method.
30. Now that the basic fuselage structure is finished you should go back and apply a small amount of thin C/A glue to every joint in the fuselage structure. A bead of thick C/A should be applied to the inside joints between the firewall and the fuselage sides and the top and bottom.
31. When all glue is dry you can sand the entire fuselage smooth all over with 320 grit sand paper.

Building the Wing

Center Section:

32. Cut the lower 3/16" sq. main spar from one of the 36" pieces and pin it to the plan.
33. Cut a piece of trailing edge to length and pin it into position on the plan.
34. Position ribs W-1, W-2 and W-3 on the plan. Hold them 90 degrees to the building board and glue them to the lower spar and the trailing edge.
35. Cut a piece of 1/4" sq. balsa strip for the leading edge and glue into position on the ribs.
36. Cut the top 3/16" sq. main spar from the other 36" piece and glue into position.
37. Cut the two 3/32" sq. leading edge strips (one from each of the 36" pieces provided) to length and glue into position. Add the 1/16" sheet on top of ribs W-1 from the main spar to the trailing edge.

Outer Wing Panels:

38. Cut the 3/16" sq. main spar to length and pin it to the plan. Do not glue this piece to the wing center section at this time.
39. Cut the trailing edge to length and pin it to the plan. Do not glue this piece to the wing center section at this time.
40. Place ribs W-5, W-6, W-7, W-8, W-9 and W-10 into position on the plan. Hold these ribs 90 degrees to the building board and glue to the main spar and the trailing edge.
41. Cut the 1/4" sq. leading edge to length and glue it to the ribs. Do not glue this piece to the wing center section at this time.
42. Remove the pins from the left panel and remove it from the plan. Now re-position the left wing panel against the wing center section. Raise the wing tip from the plan by placing a 1 1/4" spacer under rib W-10.
43. Glue the lower spar, the trailing edge and the leading edge to the wing center section.
44. Place rib W-4 into position and glue it to the trailing edge, the main spar, the leading edge and to rib W-3.
45. Cut the top 3/16" sq. spar and the two 3/32" sq. leading edge strips to length and glue into position.
46. There are 4 thin plywood dihedral braces that are laminated together at each upper and lower joint between the the spars on the center section and the outer panels. They must be installed one at a time to allow them to bend to the angle formed by the spars. Working with one piece at a time, glue the 4 dihedral braces to the front of the top joint between the center section and the outer panel. Add the first piece with thick C/A or 5 minute epoxy and hold it securely into position on the front of the spars with several clothes pins until the glue is dry. Now add the second, third and fourth piece as you did the first.
47. Remove the wing from the plan and add the four dihedral braces to the joint between the two lower main spars.
48. Trim the spars, leading edges and trailing edges flush with rib W-10.
49. Drill a 3/32" hole in one of the main landing gear blocks as shown on the plan. Glue the main landing gear block into slots in ribs W-2 and W-3 with 5 minute epoxy. The 3/32" hole should be on the inboard end.
50. Pin the wing center section into position on the plan and build the right outer panel as you did the left.
51. Cut or sand the wing tip blocks to the shape shown on the plan as seen from the top.
52. Glue the wing tips to the wing and sand them to the airfoil shape of the wing ribs. Finally sand them to the rounded section shown on the plan.

53. Sand the leading edge of the wing round and sand the wing smooth all over.
54. Measure and draw a line on the top of the trailing edge, 1/4" back from the forward top corner. Use a straight edge to guide your knife while you cut the trailing edge from the wing. Each section should be flat on the building board as you cut it free from the wing and your knife should be held 90 degrees to the building board. The pieces from the outboard panels will make the ailerons and the piece from the center section will be grooved to accept the aileron torque rods.
55. Cut the 1/8" sq. groove into the front of the center section trailing edge that you removed from the wing in the previous step. Do not cut this groove in the ailerons.
56. Slide the nylon bearing tubes over the aileron torque rods and then bend the ends 90 degrees to match the plan. Be sure to make one right and one left hand. Cut the ends to the length shown on the plan.
57. Fit the torque rods into the notches in the center section trailing edge. Cut notches into the top forward edge of the trailing edge to allow clearance for the vertical ends. Carefully glue the bearing tubes into the trailing edge. Be careful not to allow any glue to get into the inside of the tube. The aileron torque rods must rotate freely.
58. Glue the center section trailing edge onto the center section of the wing.
59. Trim or sand the bevel onto the front of the ailerons. Trim the ends of the ailerons so there is a 1/32" gap at each end when held into position on the wing.
60. Cut the hinge slots into the wing and ailerons and drill the 1/16" hole in the aileron for the torque rod. Test fit the ailerons onto the wing. Cut a small groove into the front of the ailerons from the torque rod hole to the inboard end to allow the torque rod to fit flush into the aileron and allow the aileron to contact the trailing edge of the wing.
61. Test fit the landing gear wires into the landing gear blocks. Bend the wire so that the landing gear legs angle forward at the angle shown on the plan.

Pre-Cover Assembly

62. Glue the stabilizer into position on top of the fuselage.
63. **Moveable Rudder (4 channel)**
Glue the base of the fin to the stabilizer.

Fixed Rudder (2 or 3 channel)
Glue the base of the fin to the stabilizer. Do not glue the lower end of the rudder to the fuselage.
64. Make the rudder filler strips from the 1/4"x 3/4" x 2" block. Sand them to shape and then glue them into position.
65. Bend the tail wheel wire to the proper shape for either the fixed rudder or the moveable rudder. If you are using a moveable rudder, attach the tail wheel wire to the rudder at this time. If you are using a fixed rudder then your tail wheel wire will be attached to the bottom of the fuselage after covering.
66. Temporarily (do not glue) hinge the elevators to the stabilizer. If you are using a fixed rudder you need to spring the bottom of the rudder to one side to allow the elevator joiner to slide through.
67. If you are using a moveable rudder then cut a slot in the rudder and the lower fuselage for the lower hinge. Temporarily (do not glue) hinge the rudder to the model.
68. Mount the elevator servo to the fuselage side with servo tape. (For the tape to stick securely you should lightly clean the side of the servo with alcohol to remove any oil. Remove the paper backing from the tape and apply two strips of servo tape to the servo. Remove the paper backing from the tape on the servo and lightly coat the exposed face of the tape with thick C/A glue. Press the servo into position on the inside of the fuselage side and hold securely until the glue dries.) If you are using throttle and/or rudder then attach these servos to the fuselage.
69. Attach the control horns to the elevator (and to the rudder if moveable).
70. Install the pushrods from the tail to the servos. You will have to remove the control horns to attach the "Z" bend end of the pushrod to the horns. Attach the pushrods to the servos with servo connectors and trim the pushrods to length.

71. Attach the motor mount to the firewall and then install the engine on the mount. When using the Norvel engine, the muffler is positioned so the exhaust is in the front.
72. Mark and drill the holes in the firewall for the fuel and vent lines and the throttle cable.
73. Install the throttle pushrod. Route the housing along the fuselage side for tank clearance.
74. Assemble the fuel tank and install in the model.
75. Trim the cowl approximately 1/8" up from the base, and remove the front circle.
76. Tape the cowl to the front of the model in the proper position. Glue the cowl blocks to the firewall. Drill 3 1/16" holes in the cowl at the center of each cowl block and install the screws.
77. Cut holes in the cowl for glow plug and needle valve access. You may need to add an extension on the needle valve. Use a piece of silicone tube to route the exhaust out of the cowl. Cut a hole in the cowl for this tube.
78. Temporarily install the receiver and battery and cut an opening in the fuselage side for the switch. Drill a 1/16" hole in F10 immediately behind F-4 for the antenna exit. The antenna can also exit the top of the fuselage behind the canopy or run through a plastic tube to exit the rear of the fuselage under the stabilizer.
79. Trim the canopy and test fit to the fuselage.

Covering

80. Remove the cowl, engine, control surfaces and other items. Sand the entire model smooth with 320 grit sandpaper.
81. Cover the model with your choice of iron on covering materials. Cover the landing gear fairings (LG) at this time.
82. Paint the cowl, canopy frame and wing dowels to match the covering. Paint the firewall and cowl blocks with fuel proof paint.
83. Apply the decals and other markings as desired. An ultra fine Sharpie Marker can be used to draw panel lines and other details.

Final Assembly

84. Install the elevators and glue the hinges.
85. On the fixed rudder version glue the bottom of the rudder to the fuselage and cover the joint between the rudder and the fuselage with a small strip of covering material. Glue the tail wheel to the bottom of the fuselage. For the moveable rudder, install the rudder onto the model and glue the hinges.
86. Glue the wing dowels into the fuselage.
87. Re-install the control horns, pushrods, engine, tank, cowl and other items.
88. Glue the canopy onto the model.
89. Cut an opening in the wing for the aileron servo. Remove the covering from the servo rail location.
90. Cut the aileron servo rails from scrap ply sheet LC-501-05. Glue 1 servo rail (1/8") to the wing at the front of the servo. Use 2 (1/4") servo rails at the rear of the servo. You may need to customize the rails to fit your particular servo.
91. Mount aileron servo. Attach the ailerons and glue the hinges. Make the aileron pushrods "Z" bends at the torque rod ends and servo connectors at the servo.
92. Cut the covering away from the slots in the landing gear blocks and install the landing gear wires. Use two #4 x 1/2" screws to retain each landing gear wire. Install the main and tail wheels. Glue the landing gear fairings to the landing gear with silicone rubber. You may need to use brass tube bushings if you use wheels with 1/8" holes.

93. 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.
94. Attach the wing to the model with a minimum of 4 rubber bands on each side. Set the control throws to the measurements shown on the plan.
95. 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.
96. 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.

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.