

*Lanier R/C*

# **30% Edge 540T**

## **A**lmost **R**eady to **F**ly



**WARNING! THIS IS NOT A TOY!**  
**THIS IS NOT A BEGINNERS AIRPLANE**

**This R/C kit and the model you will build from it is not a toy! It is capable of serious bodily harm and property damage. It is your responsibility, and yours alone -** to build this kit correctly, properly install all R/C components and flying gear (engine, tank, radio, pushrods, etc. and to test the model and fly it only with experienced, competent help, using commonsense and in accordance with all safety standards as set forth in the Academy of Model Aeronautics Safety Code. It is suggested that you join the AMA and become properly insured before attempting to fly this model. If you are just starting R/C modeling, consult your local hobby dealer or write to the Academy of Model Aeronautics to find an experienced instructor in your area. Write to: Academy of Model Aeronautics, 5151 Memorial Dr. Muncie, IN 47302

#### LIMITED WARRANTY

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No other warranty of any kind, expressed or implied, is made with respect to the merchandise sold by the company. The buyer acknowledges and understands that he is purchasing only a component kit from which the buyer will himself construct a finished flying model airplane. The company is neither the manufacturer of such a flying model airplane, nor a seller of it. The buyer hereby assumes the risk and all liability for personal or property damage or injury arising out of the buyers use of the components or the finished flying model airplane, whenever any such damage or injury shall occur.

Any action brought forth against the company, based on the breach of the contract of sale to the buyer, or on any alleged warranty thereunder, must be brought within one year of the date of such sale, or there after be barred. This one-year limitation is imposed by agreement of the parties as permitted by the laws of the state of Georgia.

# LANIER - 30% Edge 540T ARF - INSTRUCTIONS

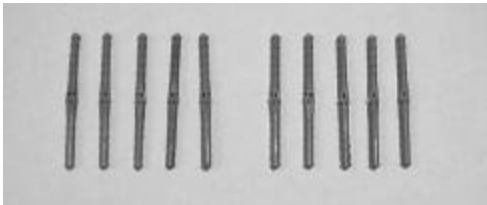
## BUILDING INSTRUCTIONS

Before starting to build this kit, we urge you to read through these instructions thoroughly. They contain some important building sequences as well as instructions and warnings concerning the assembly and use of the model.

## BUILDING SUPPLIES NEEDED

Hobby knife w/ #11 blade  
Medium Zap CA  
30 Minute Z-poxy  
Wire cutters  
Pliers  
Drill with bits: 1/32", 1/16", 1/8", 5/32", 1/4"  
6-32 tap and handle

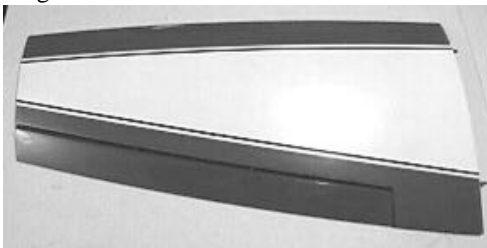
See the list at the end of the instruction book for a list of additional R/C equipment you will need to complete the 30% Edge 540.



1. Locate (10) hinges.



2. Use the picture as a guide to find the (5) holes in each aileron and each side of the wing. Test fit a hinge in each hole.



3. Put a small drop of oil on each hinge, then use 30 minute epoxy on each hinge and hole. Press the ailerons in place, leaving a 1/32" gap at the hinge line, then wipe off any excess epoxy off with alcohol and a paper towel.
4. At the two locations on the wing, remove the covering from the hole to install your aileron

servo.



5. Install your aileron servo with the hardware included with your radio. You may need to adjust the hole in the wing use a small piece of scrap ply if needed, depending on the size of the servo you use. Drill a small pilot hole (1/32") for each screw. Hook the servo to your radio and turn it on. Set the trim tabs to neutral and center the servo.

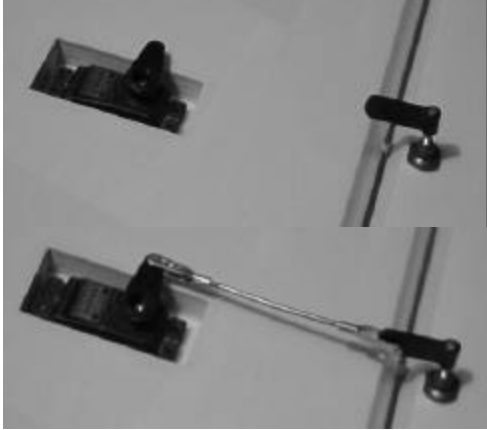


6. Locate the Sullivan aileron hardware, (2) 4" long 4-40 rods, (4) clevis, (2) couplers, (2) machined nuts, and (2) 8-32 screws. Trim and thread the rods as needed. Install a clevis on the end of each rod.

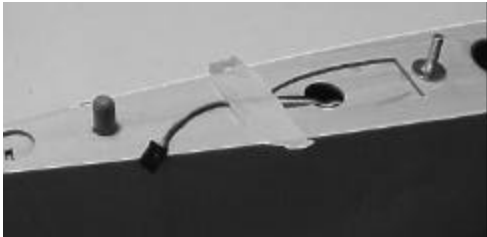


7. Install a servo wheel on the servo temporarily, making sure it is parallel to the wing. Locate the hard points in the ailerons, and pierce the covering with a sharp hobby blade. Install the (2) aileron control horn screws from the top of the wing, down through the aileron. Secure the bolt with a nut and thread lock. Install the (2)

couplers on the control horn bolts until the threads just show from the tops. Hook the links to the aileron couplers and lay the rods across the servo arm.



8. Thread a clevis on both ends of a 4" rod, then install one end on the coupler. Adjust the other end so that the aileron is level, then install.
9. Check again that the servo is centered with your radio, then reinstall the servo horn and screw it in place. If the ailerons are not level, disconnect the links and adjust them until they are level. Secure with a clevis clip.



10. Pass the servo wire through the wing by taping it to a wood dowel, tape it to the wing root until you are ready to pass it into the fuse.



11. Using a sharp hobby blade, cut the covering away from the wing tube and locating pin holes. You may want to seal the covering down with CA or a sealing iron.



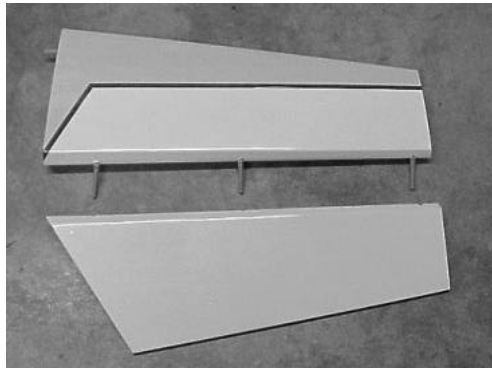
12. Test fit the wing tube through the fuselage.



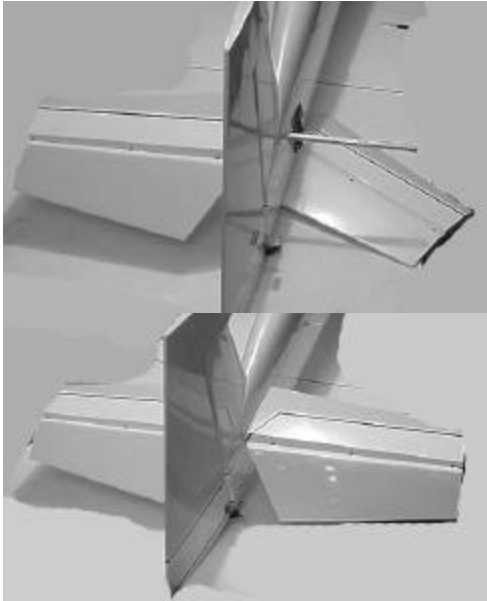
13. Temporarily mount the wing on the wing tube, sliding the dowels in the locator holes. Secure the wing to the fuse using the wing nuts and washers on the threaded stud coming into the fuse.



14. Install the rudder on the rear of the fuselage using (4) hinges and 30 minute epoxy. Press in place and leave a 1/32" gap. Wipe off any excess glue with alcohol and a paper towel. Let set until cured.



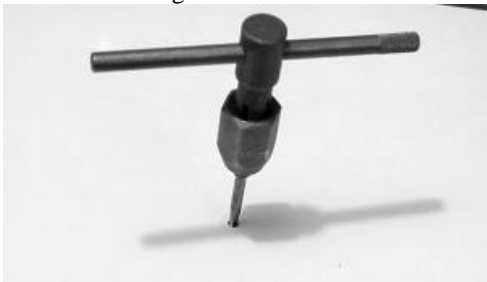
15. Prepare the horizontal stab as the wing was done. Install (3) hinges in each half, and let set until cured.



16. Cut the covering from the holes in the rear of the fuse for the horizontal stabilizer. Install the horizontal stabilizer using the stab tube to hold it in place. Center it as was done with the wing tube.



17. Locate the hole in the mounting block of the stab and pierce the covering with a sharp hobby blade. Check the fit of the locating pins in the fuse holes. If needed, run a bead of ca around the pins and spray with kicker, then sand the glue down to fit in the holes with a tight fit.
18. Locate the (2) 6-32 x 5/8" bolts with the stabilizer halves tight against the fuse. Drill (2) 0.1" holes through the aluminum tube.



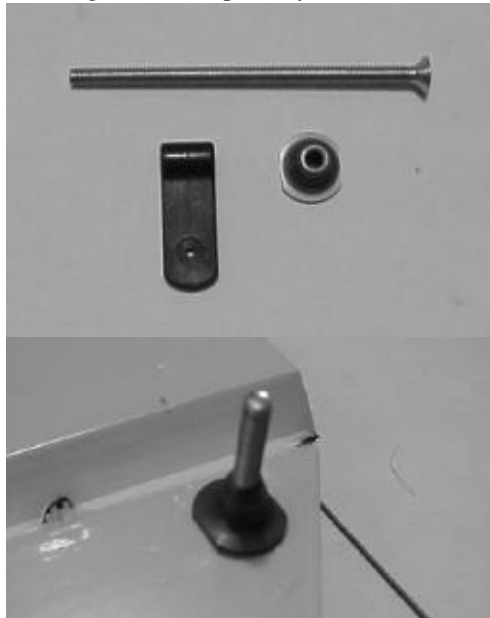
19. Use a 6-32 tap to thread the holes in the tube, then install the 6-32 x 5/8" screws.



20. Cover the heads of both screws with 3M clear tape.

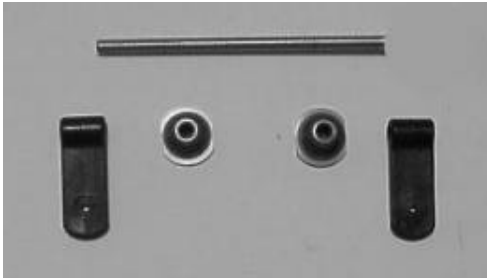


21. Locate the hard points for the control horn screws in the elevator halves and pierce the covering with a sharp hobby blade.





22. Install the (2) 8-32 screws from the top of the surface and fasten with a nut, and thread lock. Screw a coupler on the end of the screws until the first thread is exposed.



23. Locate the rudder hardware, (1) threaded rod, (2) couplers, (2) nuts.



24. Locate the rudder hard point and pierce the hole on both sides with a sharp hobby blade. Put the threaded rod through the hole and capture in place with a nut, and thread lock on each side. Use your ruler to make sure the sides are of equal length.
25. Before you cut through the covering for the servos, you may want to decide your rudder servo location. If you use a lightweight engine, such as a high performance 3.2, you may need additional weight in the nose. This can be

overcome by placing the rudder servos in the wing saddle area of the fuse and using a pull pull set up, not included.



26. Locate the holes in the side of the fuse for the tail servos. There is one on each side. Cut the covering from the slots with a sharp hobby knife.



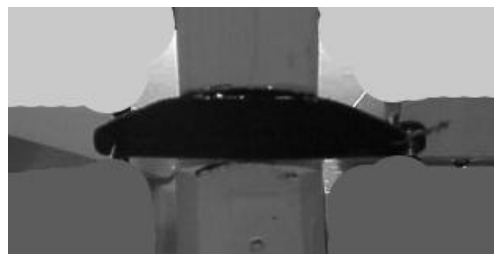
27. Install the rudder and elevator servos using the hardware included with your radio.



28. Locate the two elevator 4" 4-40 push rods. Install a clevis on the end of each rod, then install a servo horn on each servo, making sure the arms are square to the tail surfaces. Adjust the rods to make the elevators level.



29. Thread a clevis into each rudder control rod, then install them on the servo arm. Make sure each rod is equal length, then install on the rudder horns.



30. Install the tail wheel control horn on the bottom of the rudder using 30 minute epoxy. Pin in

place with (2) #4 screws.



31. Locate the tail wheel bracket and parts.



32. Install the wheel on the bracket with the two 1/8" collars and set screws.



33. Fasten the tail bracket at the rear of the fuselage with two #6 screws. Drill two 1/16 pilot holes before installing. Install so the angle is aligned with the edge of the vertical stabilizer.



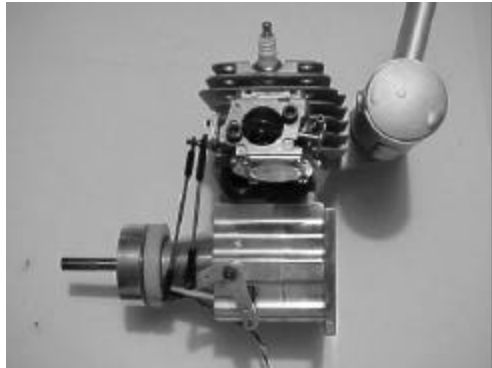
34. Locate the springs for the tail, and prepare the ends by bending a loop on each end.



35. Install a spring on each side of the rudder. Shorten the springs if needed to put even tension on the arms and keep the axle centered.



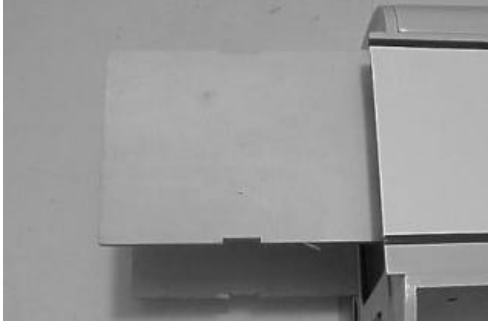
36. Place the fiberglass cowling on the fuselage and fasten with the 6-32 x 5/8" screws through the holes. Measure the distance back from the first former to the spinner opening.



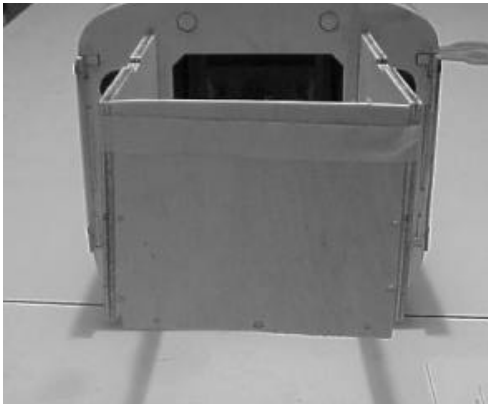
37. Place your engine in your engine mount and bolt in place.

38. Now measure the length of your motor with the motor mount installed, from the front of the prop backing plate to the rear of the mount. Subtract 1/4" from this length (for prop clearance of the

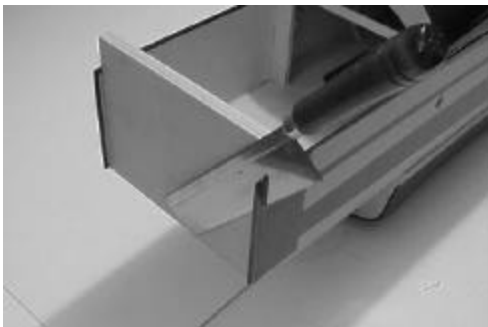
cowl).



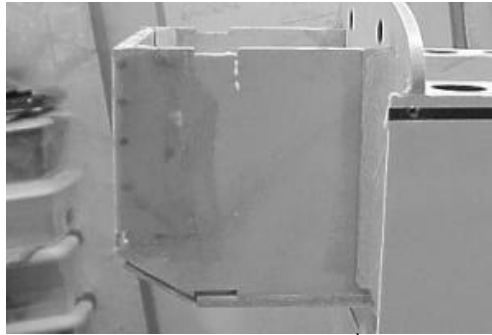
39. Subtract the motor measurement from the cowl measurement. This will be the distance the firewall needs to be from the first former. Use a ruler and straight edge to make a 90 degree line on the fuse sides where the firewall should be installed.



40. Glue the firewall in the fuse at the marks you just scribed. Use 30 minute epoxy and clamp in place until cured.  
41. Adjust the length of the 1/4ply lower so the beveled edge is even with the front of the firewall. Remove the covering from the bottom of the firewall formers to allow glue to penetrate, and epoxy the plate in place. Clamp in place until cured.



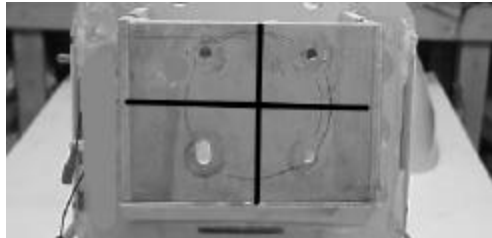
42. When all is cured, cut the fuse sides flush with the firewall.



43. Pin the firewall in place with 1/16<sup>th</sup> inch holes and tooth picks. Glue in place with thin CA. Now also make any adjustments for the clearance of your muffler.



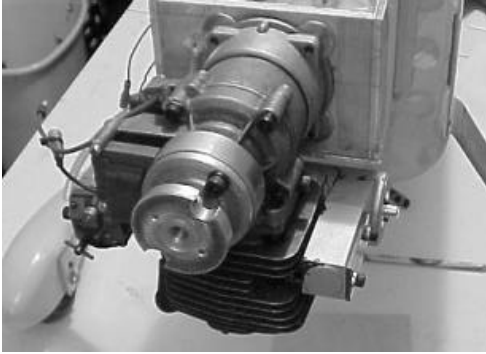
44. Glue the balsa triangle stock in place with CA.



45. Use a ruler and measure down from the top of the firewall **1-3/4"**. Mark a horizontal line across the firewall at that point.  
46. Use your ruler again to find the center of the firewall, approximately 3" from the left side (facing the firewall), then draw a line perpendicular.  
47. Center your engine mount on these lines, then mark the holes on the firewall.



48. Drill the holes for bolts and temporarily mount the engine on the firewall.



49. Measure the distance from the firewall to the front of the prop back plate and compare to the measurement you calculated earlier. You should have a minimum of 1/8" clearance from the back of the prop to the front of the cowling. If needed, use some scrap plywood spacers to space the engine forward.



50. Place two #8 washers between the firewall and engine mount on both right side engine mounting bolts (facing the firewall) to give the engine right thrust.
51. When the engine is aligned properly, install nylon lock nuts in place inside the firewall, behind the blind nuts.
52. Mark on the firewall the location where the throttle control rod should pass through. Drill the marked hole with a 1/8" aircraft drill bit.



53. Using your servo as a guide, glue the two hardwood servo blocks to the fuse side using 30 minute epoxy. Cut a small piece of balsa triangle stock to fillet the servo rails and fasten with CA.



54. Install your throttle servo with the supplied hardware.



55. Make sure your carburetor and throttle servo are at low position. Reverse your servo if necessary. Thread the 2-56 clevis on the 12" rod, then snap the clevis on the carb arm. Install an EZ connector in the hole on your carburetor approximately the same length of the servo arm. Trim the throttle control rod to approximate length, then insert through the hole in the EZ connector. Tighten the connector enough to test the throw of the servo and adjust as needed to allow for maximum throw, but not bind the servo. When satisfied, trim the control rod to 1/4" past the EZ connector. Install the servo horn screw. When everything is fit, then fuel proof



the firewall with polyurethane or thinned epoxy.



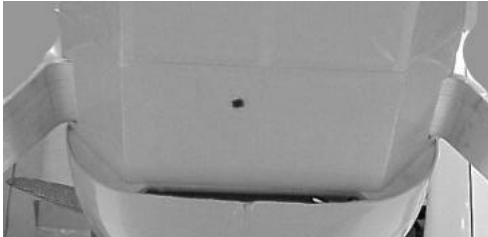
- 56. Test fit the cowl over the engine to see what needs to be relieved. Use a dremel tool or razor saw to trim the cowl to fit.
- 57. Reinstall your engine and test fit the cowl. Use the 6-32 screws and washers to secure the cowl.



- 58. Install your muffler on the engine and test fit the cowl again.
- 59. Center the gear on the landing gear plate and mark the holes with a marker.
- 60. Drill through the landing gear plate with a 5/32" bit.



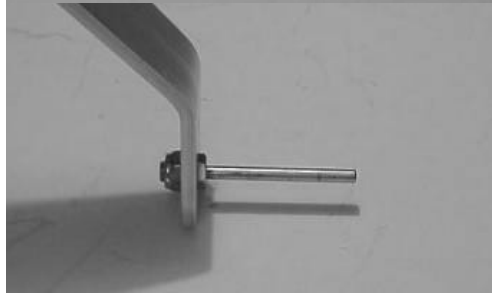
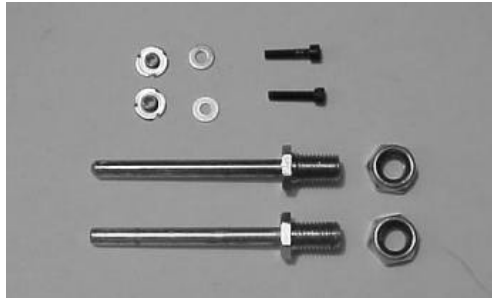
- 61. Install the landing gear on the bottom of the fuse with the included 10-32 screws and washers. Make sure the bolts go through the aluminum angles inside the fuse.



- 62. Install the fiberglass landing gear fairing over the landing gear. Secure in place with 3M clear tape.



- 63. Open the holes in the wheel pants with a drill. Press the 4-40 blind nut into the plate using a small clamp or large pliers.



- 64. Bolt the axle through the landing gear with the axles pointing out. Use thread lock on the bolt.
- 65. Install the tip of the axle through the pant, then a collar, the 4" wheel and collar, then slide the assembly all the way down the axle. Tighten the wheel collar so that it does not bind the wheel against the wheel.



- 66. Align each wheel pant to the fuse so that it is level with the thrust line and the rear does not drag the ground, and keep the pair equal. Drill a 1/8" hole in the landing gear to align with the 4-40 blind nut, then install the bolt and washer. **USE LOCKTITE ON THIS BOLT!**



67. Locate the fuel tank and remove all the components for assembly. Check the inside of the tank for any dust or plastic shavings. Blow out if needed. If you are going to use a glow engine, you need to replace the stopper and line with silicone parts.

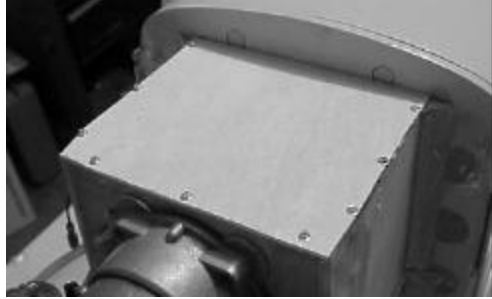


68. Bend the metal fuel tubes so the vent line fits into the button on the top, and the pickup line is angled toward the bottom just a few degrees, then insert in the fuel stopper. Insert the clunk on the end of the neoprene fuel tubing and cut to required length that allow it to move freely at the end of the tank. Insert the nut and bolt in the stopper, then install the stopper in the tank and tighten.

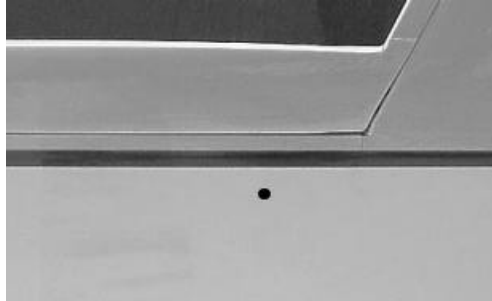


69. Secure the tank in the fuse with cable ties through holes in the fuse floor.

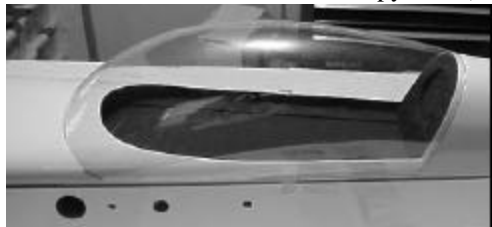
70. Install your fuel line on the end of the tank lines to the muffler pressure and carburetor fittings. Make sure to allow enough extra line to the needle valve line to give access for filling.



71. Install the upper motor box plate on the fuse. Secure in place with (10) #4 screws.



72. Test fit your top fuse hatch in place, then secure with (2) 6-32 cap head screws into the tabs at the bottom of the hatch (press (2) 6-32 blind nuts into the tabs at the rear of the canopy hatch).



73. Trim the clear plastic canopy 1/4" from the scribed line, then test fit on the fuselage. Trim if needed. Wash the canopy out with cool water and dish detergent, then dry with a paper towel.



74. Now is the time to install any cockpit details, such as dashboards or pilots (NOT INCLUDED). Secure them firmly in the cockpit with epoxy.

75. Install the canopy on the fuselage with zpoxy or zap a dap a goo. Hold in place with tape until cured.



76. Install your prop and 4" spinner. (We recommend Tru Turn spinners.)



77. Temporarily place your battery and receiver in the fuse, then install the wing. You want the plane to balance at a point 5-1/4" to 5-1/2" back from the leading edge, measured at the fuselage side.
78. Move your battery for or aft as needed to achieve a balance. If needed, put the battery in the forward compartment, behind the firewall. If you use a lightweight engine, you may need to put some lead in the compartment also. When the proper radio gear position is found, wrap the gear with foam and secure in place with Velcro or rubber bands.

**CONTROL THROWS**

**Rudder:** Low rate – 1-1/2” each way  
High rate - all you can get

**Elevator:** Low rate - 1” each way  
High rate – all you can get

**Ailerons:** Low rate – 1/2” each way  
High rate – all you can get

**PRE-FLIGHT NOTES**

Before the first flight you should double check a few things to ensure a long life for your new plane.

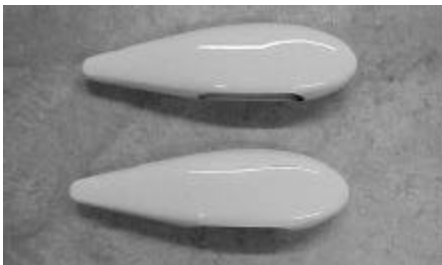
1. Balance the Edge with the fuel tank empty. Adjust as needed for your particular flying style, but start with the CG forward for the first few flights.
2. Check the control surface throws twice. You may want to change them later, but use the suggestions as a starting point.
3. Break in the engine and test run it. Have it ready before you head to the field.
4. Range check the radio with the engine running to make sure there are no intermittent radio problems.

Double check that all the hardware, nuts, bolts, and hinges are tight.

**INCLUDED MATERIALS**



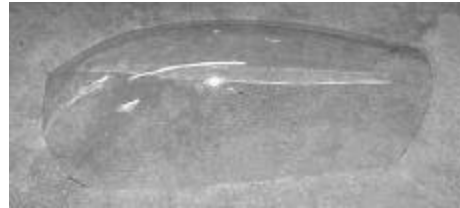
Horizontal Stab and elevator halves



Fiberglass wheel pants



Fiberglass cowling



Clear canopy



Fuselage and cockpit hatch



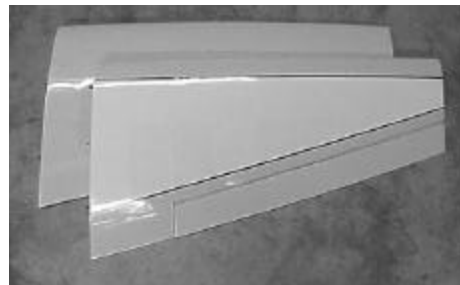
Wood bag and firewall



Aluminum wing tube



Aluminum tail tube





Wing halves and ailerons



Rudder and Vertical stab

## HARDWARE LIST

### Wings

- 2 HD adjustable control horn
- 2 4" 4-40 threaded rods
- 2 Wing nut and washer
- 10 large hinge points
- 4 4-40 clevis

### Tail

- 10 large hinge points
- 2 HD adjustable control horn
- 2 8" 4-40 threaded rod
- 2 4" 4-40 threaded rod
- 8 4-40 clevis
- 2 #6 x 3/4" pan head screw
- 1 1-1/4 tail wheel
- 1 tail wheel bracket
- 2 1/8" wheel collars
- 2 6-32 x 5/8 button head screw
- 1 HD adjustable rudder horn
- 2 Tail wheel control springs

### Cowl

- 4 6-32 x 5/8 cap head screw
- 1 24 oz fuel tank
- 2 Large nylon cable ties
- 4 6-32 blind nuts

### Engine

- 1 12" 2-56 rod
- 1 2-56 clevis
- 1 ez connector
- 12 #4 x 1/2 sheet metal screws

### Landing gear

- 4 10-32 x 1-1/2 cap screw
- 8 #10 washer
- 4 10-32 nylon lock nuts

- 2 4-40 blind nuts
- 2 248 3/16 axle
- 2 4" wheel
- 2 4-40 x 1/2 cap screw
- 2 #4 washer
- 1 Aluminum landing gear

### Canopy

- 2 6-32 x 3/4 cap head screw
- 2 6-32 blind nuts

## ADDITIONAL EQUIPMENT NEEDED TO COMPLETE YOUR 1/3<sup>rd</sup> EDGE ARF

### General

- 3.2 - 4.2 2 stroke R/C engine and muffler
- Gas fuel line
- Minimum of 4 chan. radio set req. with (7) servos
- 30 minute Z-poxy
- Medium Zap CA (green)
- Thin Zap CA (pink)
- Zap a dap goop
- (1) radio foam
- Tru Turn 4" spinner
- 6/32 tap
- 3M vinyl tape
- Williams Bro. Pilot figure