

Lanier R/C

.40-.46 F-4 Phantom



***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, consul 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

Lanier R/C is proud of the care and attention that goes into the manufacture of parts for its model kits. The company warrants that for a period of 30 days, it will replace, at the buyers request, any part or material shown to the company's satisfaction to have been defective in workmanship or material at the time of purchase.

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.

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

Wire cutters

Pliers

Drill with bits: 1/32", 1/16", 13/64" (or 5mm), 5/32"

Screw drivers

Hex driver for 3 and 4 mm bolts

Moto tool with bits

Water soluble marker

Masking tape

Ruller

Square

Alcohol and towels

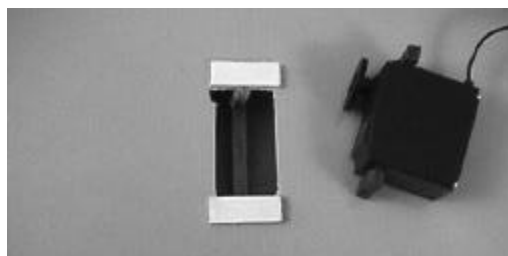
See the list at the end of the instruction book for a list of additional R/C equipment you will need to complete the P-47 arf.



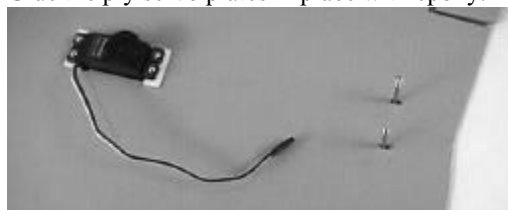
- 1.
2. Overall view of parts.



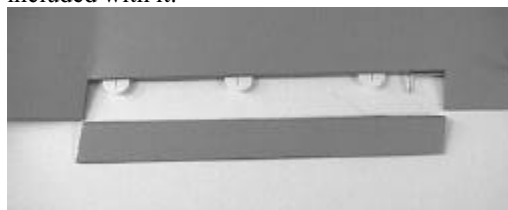
3. Locate the servo opening in the wing and test fit your servo, some may require the opening to be enlarged a little. Trim away the covering from the areas above and below the servo opening for the ply servo mounts.



4. Glue the ply servo plates in place with epoxy.



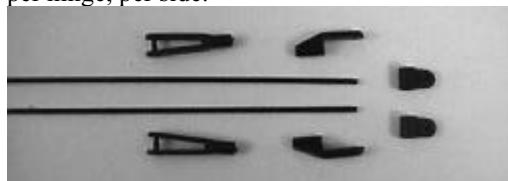
5. Install your aileron servo with the screws included with it.



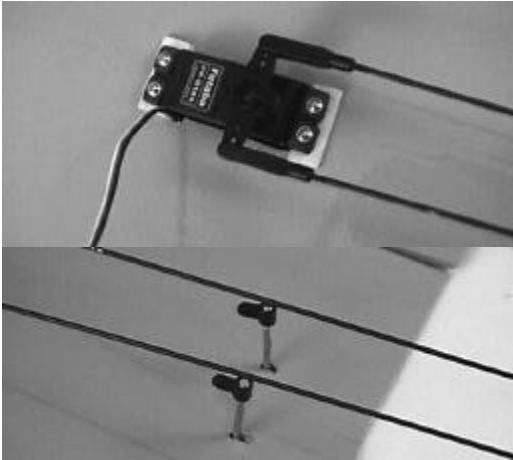
6. Check the fit of the ailerons with the CA style hinges. Each aileron should have (3) hinges.



7. Slide the ailerons in place, then glue the hinges in place with thin CA. Use two or three drops per hinge, per side.



8. Locate the bag with the aileron hardware and pull out for the ailerons; (2) aileron couplers, (2) clevis, and (2) rod keepers. Pull out (2) black control rods 8" long from the wire bundle.
9. Connect your servo to the radio and center the trims.



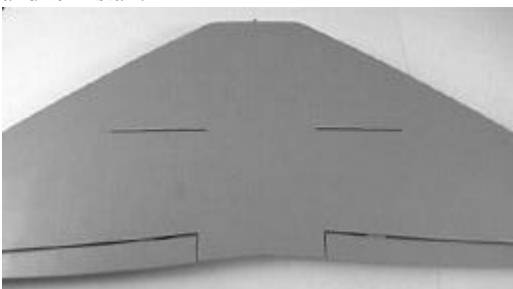
10. Install a (2) arm servo horn on the aileron servo (trim 2 arms from a 4 arm servo horn). Thread the aileron coupler on the horn and the clevis on the control rod. Snap the clevis on the servo horn at the holes furthest from the center.



11. Align the control rod with the horn and bend the rod 90 degrees at the position where the rod should pass through the coupler. When bent, use wire cutters to cut the excess off, leaving 1/4 to 3/8" to pass through the coupler.

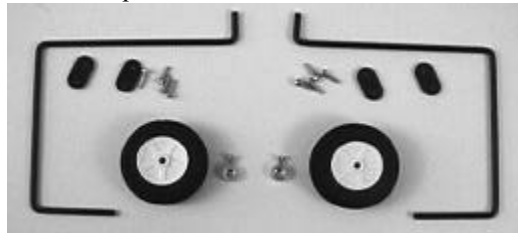


12. Snap the aileron rod keeper on the end of the rod as shown. Make sure you install both the left and right side ailerons. If you need to adjust the aileron linkage, just pop off the keeper, adjust, and re-install.

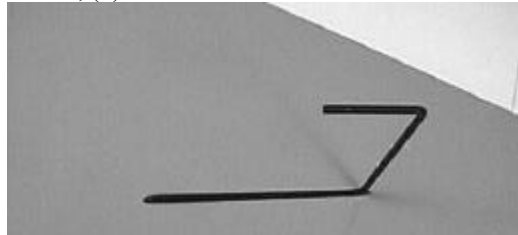


13. Locate the landing gear grooves through the covering on the bottom of the wing and mark

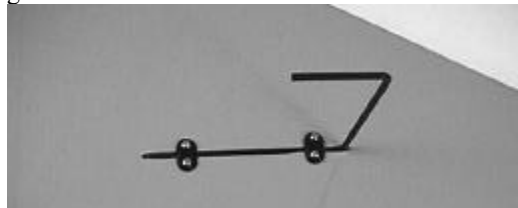
with a water-soluble marker. Slit the covering with a sharp blade.



14. Locate the bag containing the fixed landing gear components. Each side will require (1) wheel, (1) wire gear, (2) plastic gear straps, (4) 1/2 screws, (1) wheel collar and screw.



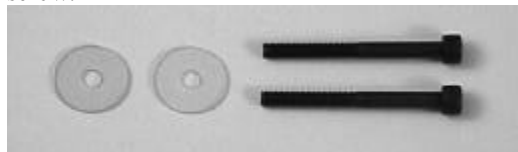
15. Fit the landing gear wire in the notches of the gear block.



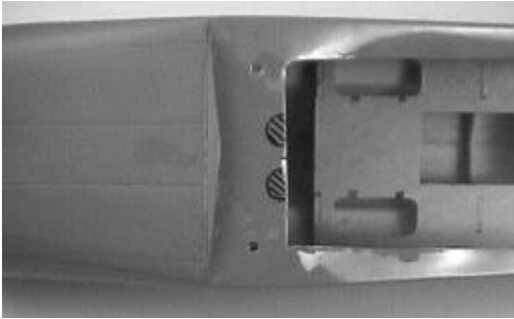
16. Mark, then drill 1/16" pilot holes for the 1/2 screws, using the gear straps as guides. Fasten the gear straps in place using (4) 1/2 screws.



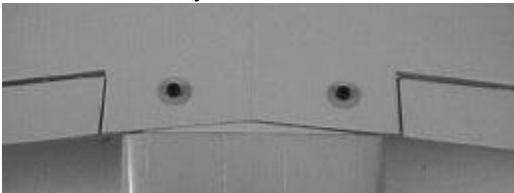
17. Install the wheel on the axle, then the wheel collar and screw. Use some thread lock on the screw.



18. Locate the 4mm wing bolts and (2) plastic washers in the engine mount hardware bag.



19. Check the fit of the wing on the fuse and look for interference from the aileron rods on the fuse opening. If needed, trim the area indicated above with a rotary tool.



20. Locate the holes behind the wing covering and pierce them with a sharp hobby blade. Test fit the wing on the fuse, then install the bolts.



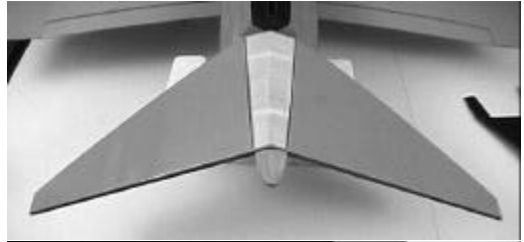
21. Test fit the alignment of the horizontal stabilizer on the rear of the fuse. It should align parallel to the wing. Align the stabilizer by measuring from each side to the center and equalizing the distance, then measure from the stabilizer tips to the trailing edge of the wing and set each side equal.



22. Mark the fuse/stab junction with a felt marker, then carefully trim the covering away from the joint area and not cutting the balsa underneath. Glue the horizontal stab in place with 30 minute epoxy, keeping the alignment parallel and then clean up the excess epoxy.



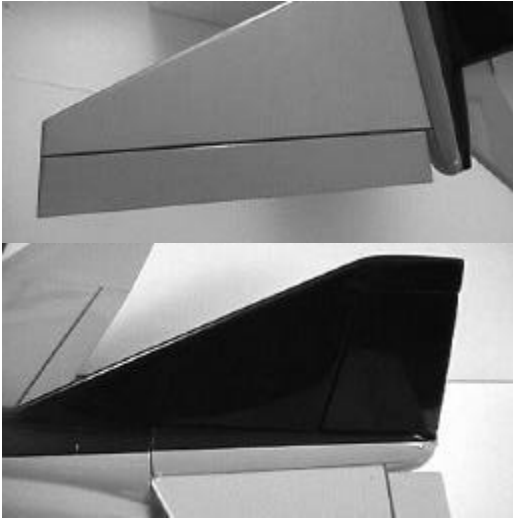
23. Temporarily install the vertical stabilizer in the horizontal slot at the rear of the fuse.



24. Mark the joint with a felt tip marker. Make sure the stabilizer is aligned at 90° to the horizontal stabilizer, then remove the stabilizer and remove the covering as was done with the horizontal stabilizer. Put some 30 minute epoxy in the slot and on the exposed balsa on the stabilizer, then slide together. Check that it is at 90° to the wing. Wipe off any excess glue with alcohol and a paper towel. Let set until cured.



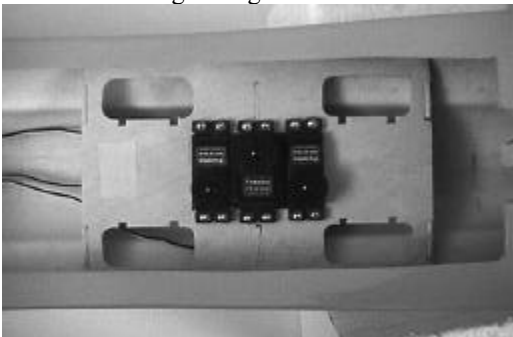
25. Locate the hinge slots in each of the elevator halves, rudder, and corresponding slots on the stabilizers, then open the covering with a sharp hobby blade. Test fit one of the (8) hinges in each of the slots.



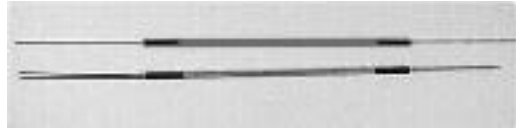
26. Install the control surfaces with the (8) hinges, leaving a small (1/32") gap, then place 1-2 drops of thin CA (Pink Zap) on each side of each hinge. A soft rag with some acetone or nail polish remover will clean up any excess CA.



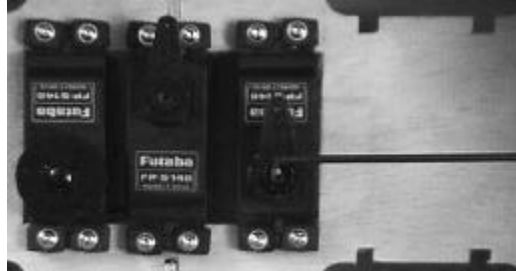
27. Locate the holes in the side of the fuse for the control rods to exit. There is one on both sides. Cut the fiberglass with a sharp hobby knife or a dremel tool and grinding bit..



28. Install your servos in the servo tray in the fuselage. Depending on what servos you use, you may need to widen the servo openings. Drill a small pilot hole (1/32") for each servo screw, then install. Connect the servos to your radio and center trim tabs and controls. Temporarily press a straight servo horn in each servo.



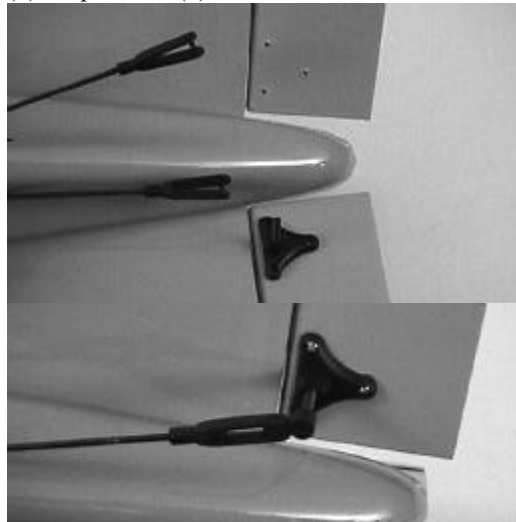
29. Locate the two push rods, the pre-assembled "Y" push rod, and the single rod push rod.



30. Install the "y" control rod in the fuse, and line the end of the rod up with the hinge lines of the tail.



31. Hardware needed for each control surface (2 elevator halves). Locate the bag with the control hardware and pull out for each surface: (3) long screws, and upper and lower control horn half, (1) coupler, and (1) clevis.



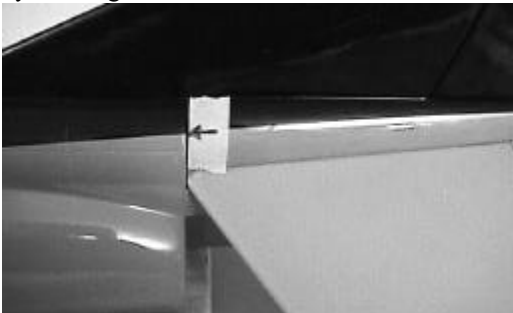
32. Locate (2) control horns and line them up with the ends of the control rods. Mark through the holes with a pen, then drill through with a 1/16" drill. Install the horns with (3) screws in each horn, into the horn backing plates. Screw a clevis on each side of the elevator control rod and a coupler on each control horn, then snap the clevis onto the control horns.



33. Locate the intersection of the control rod and the servo wheel, then mark with a permanent marker.



34. Make a "z" bend on the servo end of the rod at the mark on the rod, then install on the servo. You can adjust the center of the control surface by twisting the clevis.



35. Locate the position for the hole in the top of the fuse for the rudder control rod to exit. An oval shape hole approximately 1/8" high and 1/4" wide, at the joint between the fuse and tail fairing is needed. Cut the fiberglass with a sharp hobby knife or a dremel tool and drill bit.



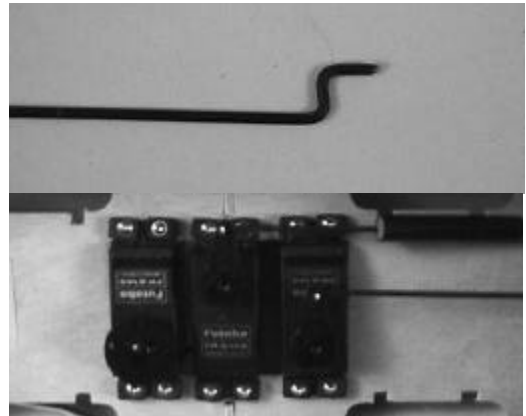
36. Install the "y" control rod in the fuse, and line the end of the rod up with the hinge lines of the tail.



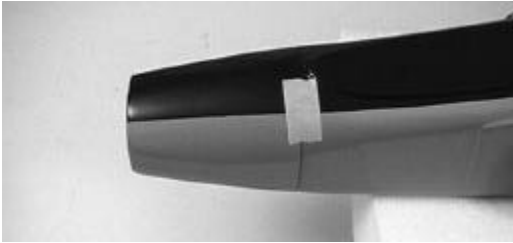
37. Install the rudder control horn similarly to the elevator halves. Locate (1) control horn and line it up with the end of the control rod. Mark through the holes with a pen, then drill through with a 1/16" drill. Install the horn with (3) screws, into the horn backing plate. Screw a clevis on the control rod and a coupler on the control horn, then snap the clevis onto the control horn.



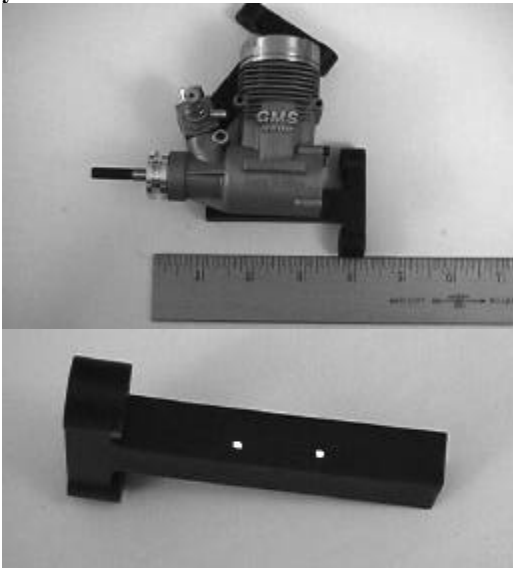
38. Locate the intersection of the control rod and the servo wheel, then mark with a permanent marker.



39. Make a "z" bend on the servo end of the rod at the mark on the rod, then install on the servo. You can adjust the center of the control surface by twisting the clevis.
40. **Put a small piece of fuel tubing on each clevis to assure that they stay closed.**



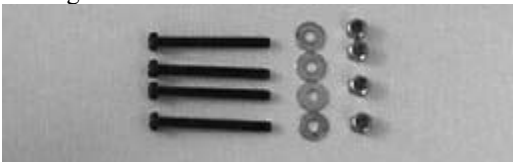
41. Place the fiberglass cowl on the nose of the aircraft and measure from the engine crank hole to the firewall with a ruler. Write down the length. **Add 1/8". This is the distance that will be from the firewall to the prop back plate on your motor.**



42. Place your engine in the engine mount. Space the engine from the rear of the engine mount using your ruler, until the prop back plate is at your required dimension. Use a pencil to mark the location of the engine mounting bolts on the mounts.



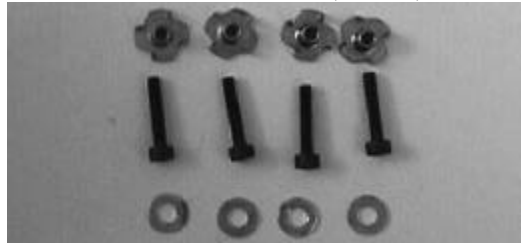
43. With the centers located, drill (4) .125" holes for the engine bolts.



44. Temporarily install your engine using the engine bolts, washers, and nuts.



45. Draw two lines on the firewall, one centered vertically, one horizontal, centered on the fuse sides. Position the engine and mount on the firewall with the engine side mounted (muffler down), aligning the center lines of the engine to the lines on the firewall, then mark the centers of the mount holes on the firewall with a pencil. Drill the holes out with a 13/64 (or 5mm) drill.



46. Use the 4mm bolts, blind nuts, and washers to mount the engine mount to the firewall. Use thread lock on the bolts. Drill a 1/8" hole for the engine control rod in the firewall, below the mount, aligned with the carb.



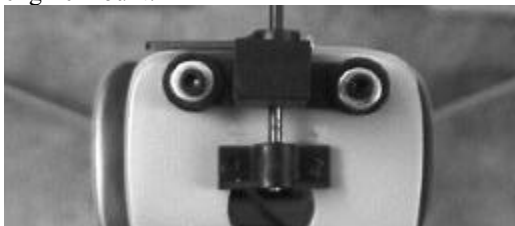
47. Make a "z" bend on the end of the engine control rod. Pull the carb off the engine and install the rod into the carb arm, then install the rod through firewall and reinstall.



48. Make sure your carburetor and throttle servo are at low position. Reverse your servo if necessary. Install a servo horn on the throttle servo, with an arm back at an angle to the servo.
49. Install an EZ connector in the hole approximately the same length of the carburetor arm.
50. 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 $\frac{1}{4}$ " past the EZ connector. Install the servo horn screw, but don't fasten the EZ connector yet, you will need to pull the engine out again.



51. Mark the center of the firewall base using a ruler and a pen. Center a nose gear bracket on the engine mount and mark through the hole. Drill through the engine mount with a $\frac{5}{32}$ " drill bit. Be careful to keep the hole perpendicular to the engine mount.



52. Slide the nose gear through the engine mount and position the bracket approximately $\frac{1}{4}$ " from the mount.



53. Mark then drill a $\frac{1}{16}$ " hole through the mounting holes. Screw the bracket in place with (2) #4 screws.



54. Assemble the steering arm. Drill a $\frac{1}{8}$ " hole in the end of the plastic arm, then install the wheel collar and screw.



55. Install the steering arm then a collar, then slide the gear into the engine mount. Next, slide a second collar on the gear, then slide the rest of the way into the bracket. Push the gear flush with the top of the bracket, then tighten the collars on each side of the mount to hold it in place. Leave a small gap to allow the gear to pivot.



56. Align the steering arm to be at a small angle from the firewall. Use thread lock on all the

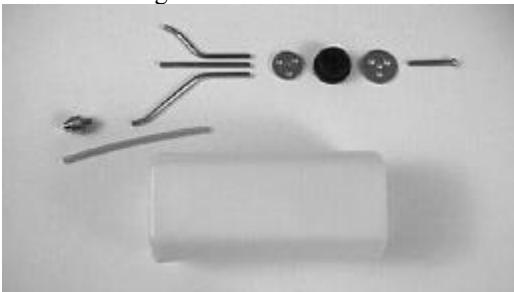
nose gear screws. Cut a small oval shaped hole approximately 1/8" high and 1/4" wide, about 1" back from the firewall, aligned with the last hole in the steering arm.



57. Twist a clevis on the end of the nose steering rod, then slide into the hole in the fuse. Snap the clevis in the last hole of the steering arm. Cut the length of the rod about 1/2 longer than the length to the rudder servo. Install an "ez" connector on the closest in hole of the rudder horn, then install the nose steering rod. Straighten the axle, then fasten the rod in place. If you need to adjust the taxi tracking later, do it here at the connector.



58. Install the nose wheel on the axle, then hold in place with a wheel collar and screw.
59. Reinstall the engine on the mounts. Make sure the bolts are tight.



60. 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. The parts are shown in approximate assembly order.



61. Insert the metal fuel tubes in the fuel stopper. The long tube is for the fuel pickup, the med is for the vent line, and the straight is for an optional three line system for fueling. Insert the clunk on the end of the silicone 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.

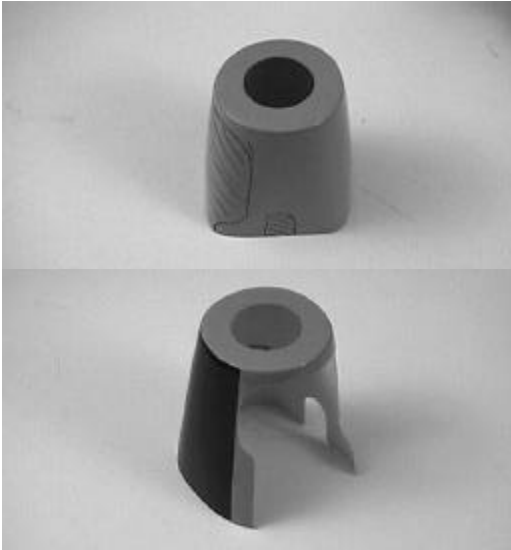


62. Slide the tank in the fuselage through the cut opening with the metal lines out through the firewall. Secure in place with foam.



63. 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.
64. Test fit the cowl over the engine to see what needs to be relieved.

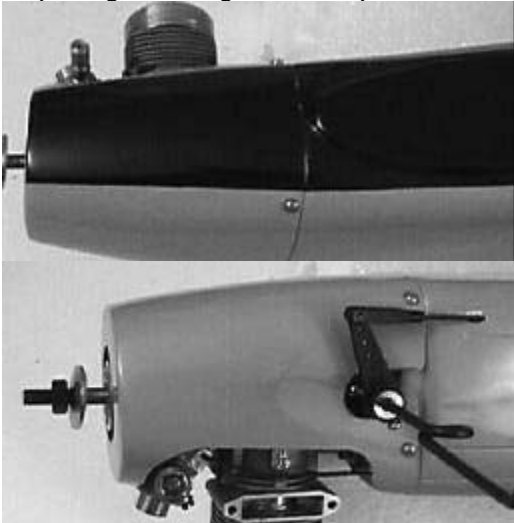




65. An area, as illustrated above will need to be removed. Use a dremel tool and sanding drum to remove the area. Work in small amounts, cutting a little, then test fitting until the engine is cleared. You will also need to cut a small notch for the nose gear.



66. Check the fit of the cowl with the spinner and keep it aligned during the next step.



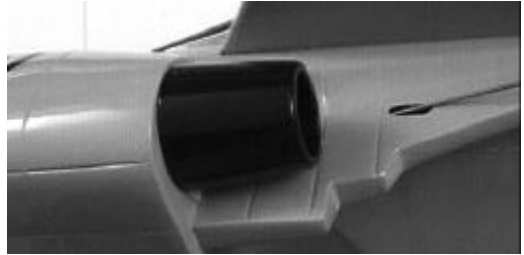
67. Mount the cowl on the fuse, and fasten in place with (4) 1/4 " screws. Drill 1/32" holes through the cowl into the firewall.



68. Install your muffler on the engine and test fit the cowl.



69. Check the fit of the canopy, and trim if needed. Wash the canopy out with cool water and dish detergent, then dry with a paper towel.
70. Now is the time to install any cockpit details, such as dashboards or pilots (NOT INCLUDED). Secure them firmly in the cockpit with epoxy.
71. Install the canopy on the fuselage with epoxy or "goop". Hold in place with tape until cured.

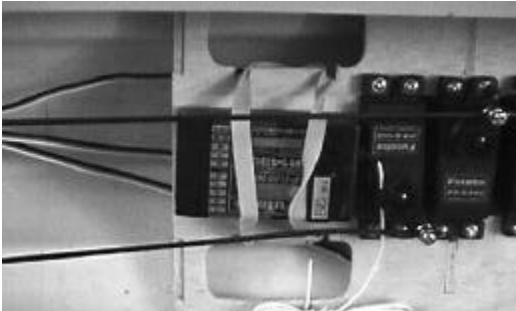


72. Install the tail cones on the rear of the fuse. Scuff the area to be glued with sand paper, then fasten in place with 30 minute epoxy.





73. Use the pictures on the box label and above to locate the decals on the fuse sides and the wing. Clean the area for the decal with alcohol and a paper towel.



74. Temporarily place your battery and receiver in the fuse, then install the wing.
75. You want the plane to balance at a point 6-3/4" to 7-1/4" back from the leading edge, measured at the fuselage side.
76. Move your battery for or aft as needed to achieve a balance. 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 - 3/4" each way
 High rate - all you can get
- Elevator: Low rate – 3/8" each way
 High rate – 3/4" each way
- Ailerons: Low rate - 1/4" each way
 High rate - 1/2" each way

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 F-4 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.
5. Double check that all the hardware, nuts, bolts, and hinges are tight.

LANIER – .40-.46 F-4 Phantom ARF - INSTRUCTIONS

INCLUDED MATERIALS

- Hardware Pack
- 1 Fuselage
- 1 Canopy
- 1 Fiberglass cowl
- 1 Horizontal stabilizer
- 1 Vertical stabilizer
- 2 Elevator half
- 1 Rudder
- 2 Fiberglass tail cones
- 1 Wing
- 2 Aileron
- 13 CA Hinges
- 2 Main Gear wires
- 4 Gear straps
- 8 Strap screws
- 6 Wheel collars w/screws
- 3 Control horns
- 5 Couplers
- 6 Clevis
- 2 L bend connectors
- 9 Horn screws
- 4 ¼ cowl, servo hatch screws
- 2 Wing bolts
- 2 Wing washers
- 1 Nose Bracket
- 1 Nose gear
- 1 Small collar w/screw
- 1 Control arm
- 3 Wheels
- 1 Rudder control rod
- 2 Nose bracket screws
- 1 Engine control rod
- 1 “y” tail control rod
- 2 Aileron rods
- 1 36” rudder control rod
- 2 Aileron servo blocks
- 2 Engine mounts
- 4 3mm engine bolts
- 4 3mm Lock nuts
- 4 3mm Washers
- 4 Engine mount bolts 4mm
- 4 4mm blind nuts
- 4 4mm washers
- 2 Ez connectors
- 1 Fuel tank w/hardware
- 1 Decal sheet

ADDITIONAL EQUIPMENT NEEDED TO COMPLETE YOUR F-4 ARF

General

- .40 to .46 Size two stroke R/C engine and muffler fuel line
- Minimum of 4 channel radio set required with 4 servos
- 30 minute Z-poxy
- Thin Zap CA (pink)
- Tru Turn 2-1/2 spinner and adaptor