FEI BAO JETS

F-9F Panther Assembly Manual

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In collaboration with R/C Jet Models

DISCLAIMER:

T**HIS IS NOT A TOY**. This is a high-performance miniature aircraft, capable of high speeds and damage to life, limb, and property. The manufacturer and its distributors cannot control how you assemble this model, what equipment you use to fit it out, or how you fly it, and can assume no liability whatsoever for any damages that may occur when you fly your aircraft. By assembling this model, you are agreeing to indemnify and hold blameless the manufacturer and/or his agents from any and all torts and liability associated with the use of this product. Please inspect all parts before beginning assembly. If any parts appear to be suspect, contact your dealer or the manufacturer for repair or replacement BEFORE you begin. Once you have assembled the aircraft, you are the pilot in command and assume any and all responsibility for the use of the model and any damages that might occur by flying or attempting to fly this aircraft.
R/C model jets require a high level of skill in both their assembly and their flying. If you do not feel confident in either your building or flying skills, PLEASE seek assistance from more experienced modelers. It is a wise idea, no matter what level of skills you possess, to have a second experienced modeler go over your installation after assembly. A second set of eyes may spot a problem you have missed. If you have not flown a model like this before, it is HIGHLY recommended that you get an experienced turbine pilot to do your maiden flight. Very often, the first few seconds of a maiden flight are critical until the aircraft is trimmed out, and having an experienced pilot at the controls can make the difference between a wrecked aircraft and once that enjoys many hundreds of flights. Be sure to select a suitable field for flying...take the time to find a large paved runway if at all possible, especially for test flights, until you feel comfortable getting the aircraft in and out of smaller grass fields.

BEFORE YOU BEGIN:

Keep this in mind as you proceed:
Look at EVERY assembly step you finish, and ask yourself:
"Is this going to crash my airplane?"
A chain is only as strong as its weakest link, and this is a high-performance aircraft that will be very intolerant of sloppy assembly techniques. Even the smallest component is important and can cause the loss of your airplane, so take the time to do things right. Or REdo them if they are wrong. Careful work will result in a long-lasting plane that gives you years of pleasure, one loose component could result in the complete loss of the aircraft and all the components inside it, and someone can even get hurt. So pause every once in a while when building it and double-check your workmanship.

F9F as it comes from the factory with combo and factory Installation option:

Accessories included:

Stainless steel double-walled tailpipe
Two wooden formers for tailpipe
Two wooden engines mount spacers for Jetcat engines
One whip antenna
Three coils of airline
One coil of fuel line
One brake valve
One retract valve
One bag of air y-connectors
One bag of fuel y-connectors
One bag of fuel plugs
One bag of air disconnects
7 linkages
2 air tanks
One bag of servo mounts with hardware
One bag of screws and bolts
One bag with steering cable and tubing for crimping

Aircraft parts included:
One forward fuselage with landing gear and doors installed
One rear fuselage section with lower rudder installed
Two wings with flaps and ailerons installed
One stab with elevator installed
One upper fin with rudder installed
Two tip tanks
One center hatch
One canopy assembly
One cockpit tub assembly

A. Introduction:

You have chosen a model that represents the pinnacle of ARF technology. While there is not a lot of building to do, there is enough to keep you busy for a few evenings.
Even if you have assembled maybe other ARF jets, we highly recommend following our assembly sequence and procedures anyway.
Chances are it will save you a lot of time, prevent you from running down dead ends, and perhaps remind you of a few small things that might end up saving your aircraft.
We have tried to arrange a construction sequence that will allow you to keep moving forward, rather than standing around waiting for glue to dry before you can proceed to the next step.
Just because the model is almost completely built does not mean you can rush through the final assembly.
You need to employ fine craftsmanship every step of the way, turbine models are critical. Keep this in mind with everything you do, every part you install...look at the work you just did, evaluate it critically, and ask yourself "is this going to potentially crash my airplane?" If there is any doubt about the work you have done, back up, and re-do it properly.

B. Adhesives:

The correct adhesive to use for all procedures is Loctite Hysol 9462. This is a very strong white epoxy that is thixotropic. "Thixotropic" means it does not run at all, but stays only where you put it. It is infinitely superior to regular epoxy, even slow-setting epoxy, for our purposes, because of this characteristic.
Regular epoxy will run downhill with gravity as it dries, taking it away from where it is supposed to be.
A good example is in the hinges...using regular epoxy, a good portion of the glue will migrate down away from the hinge into the inside of the wing as it dries, and you won't even know it is happening. Hysol stays where you put it.
The downside of Hysol is it takes overnight to dry properly, but we have tried to arrange things to keep you busy while waiting for glue to dry.
We also highly recommend that you only use a proper Hysol dispensing gun, and only the long-type mixing nozzles.
The short nozzles do not mix this glue enough, and only a thin nozzle and gun will let you fill the hinge and control horn holes properly with glue, you can't do it mixing your Hysol on a flat surface and trying to get the glue in the proper place by a brush or stick.
You can buy a complete Hysol setup with a gun, nozzles, and two cartridges of glue from your dealer for approximately $60.
Consider it a great investment, the glue is the best you will use. One cartridge is plenty to assemble your F-9F.

C. WORKING WITH PNEUMATIC SYSTEMS:

The F-9F uses pneumatic brakes and retracts. If you follow a few tips, you should have very reliable, leak-free operation. Neatness counts.
All airlines should be secured to the airframe to keep them from flopping around or getting kinked. Use tie wraps for this.
The other very important thing is to cut off the end of each airline dead square before installing it on the nipple.
This is VITAL. You can either purchase a professional tubing cutter from your dealer (they are approximately $10), or you can make up a little jig to hold the airline and keep a sharp, new razor blade perfectly upright as you cut.
Either one works, just ensure that all ends of all airlines are cut off dead square. Make sure all airlines are pushed ALL THE WAY onto their nipples.
They should not need to be secured otherwise, but you can add fine wire safety wraps if you like. Make sure all left and right matching airlines are the same length, particularly the brake lines, or you will get uneven retraction or braking action.
It's worth taking the time to get everything pneumatic right the first time, as having your landing gear fail to retract is not THAT bad, but having it fail to deploy can really ruin you day and the paint on the bottom of your model.

D. FUEL SYSTEM:

The F-9F has a very simple fuel system...one main tank leading to a UAT or similar header tank.

There is not much to go wrong, but like the pneumatic system, it does need to be done right the first time, with some careful craftsmanship.
Like the airlines, all fuel lines must be cut off Dead Square. Each fuel connection should be given a tie-wrap or two for extra security.
Everything needs to be dead clean, especially the inside of the main tank.
The front tray is set up to accommodate a BVM Ultimate Air Trap or it's equivalent, to keep any bubbles from getting to your engine.
You can also make up your own header tank with a bubbles filter, or a geometrically centered pickup, but any way you do it, you should not attempt to fly without a header tank system. Move on to the main fuel tank. Blow out the main fuel tank, be sure that no debris of any sort is left in there before proceeding. This is a vital step, do not omit it.

1. Remove the servo cover from the rudder servo bay. Keep the orientation of the servo cover correct, do not flip or rotate the servo covers, as there may be slight variations in the screw holes and they may not fit perfectly if you rotate the covers.

Figure 1

2. Fit the supplied aluminum mounts to the servo, using the supplied screws. Do not over tighten and strip the screws. Do not use any grommets or other servo hardware. Secure the screws with Locktite

Figure 2

3. Check the depth of the servo mount with the servo. Relieve if needed with a sharp exacto knife.

Figure 3

4. Make up some scrap hardwood or plywood blocks the same size as the servo mounts.

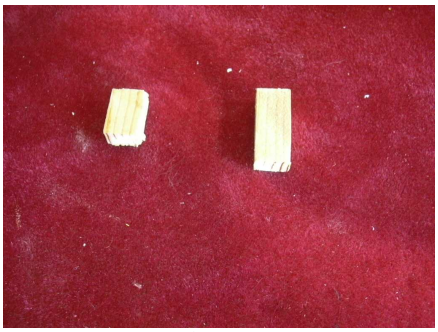

Figure 4

5. Epoxy the scrap blocks on the inside of the mounts to provide extra strength.

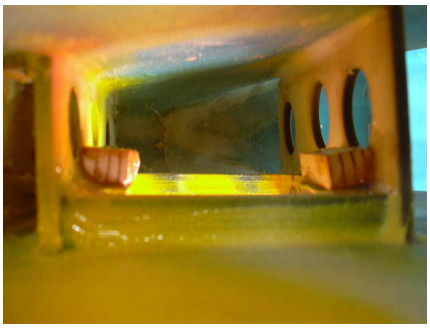

Figure 5

6. Attach a 36" heavy-duty 22 gauge extension to the servo. Tape the connection for safety.

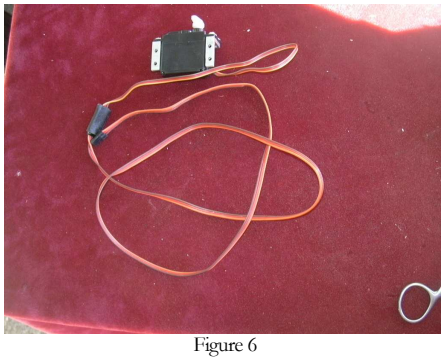

Figure 6

7. Dril pilot holes in the wooden mounts

Figure 7

8. Screw the servo with the kit provided screws. Do not over tighten and strip the screw holes.

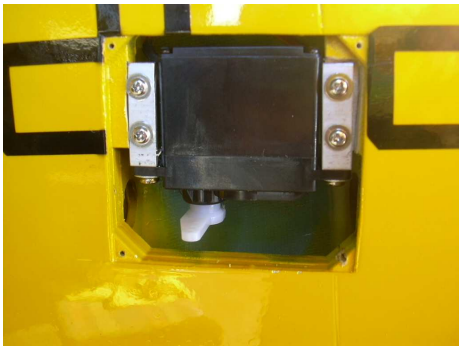

Figure 8

9. Fit the servo cover up against the model and mark the location for the servo horn.

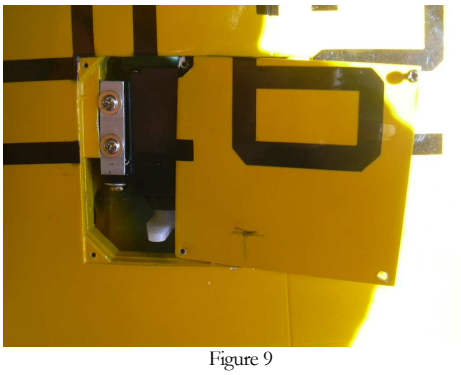

Figure 9

10. Drill a hole at each end of the slot. Be sure to put a piece of scrap plywood on the back side before you drill, it will give you a clean hole without marking up the finish that way.

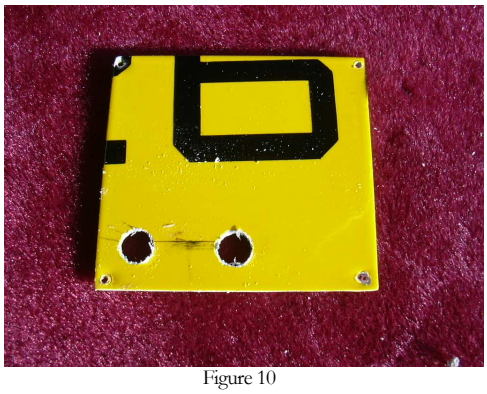

Figure 10

11. Draw two lines between the holes with a straightedge and soft pencil. Cut at the lines using an exacto with a new sharp blade.

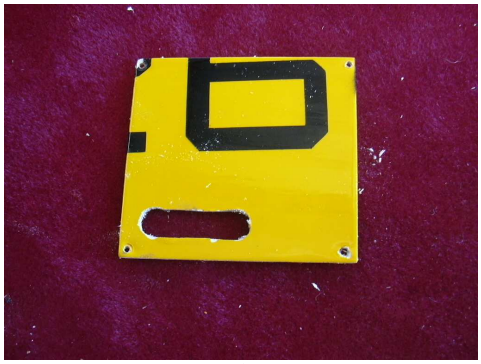

Figure 11

12. Screw the servo cover into place.

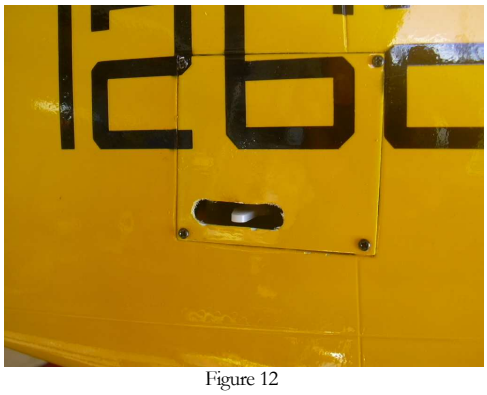

Figure 12

13. Fit the ruder pushrod to the servo horn

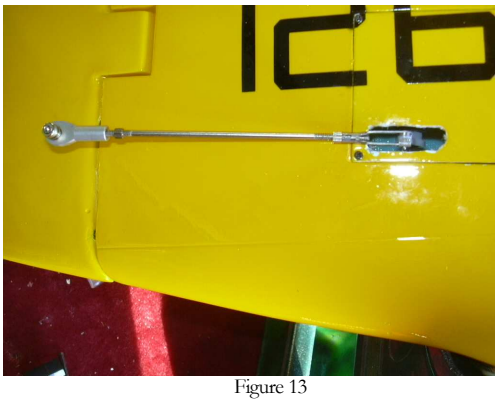

Figure 13

14. Using the rod for reference, mark the location of the rudder control horn.

Figure 14

15. Cut the slot for the control horn.

Figure 15

16. Prepare the control horn by drilling out the top hole to accomodate the bolt for the link and roughen the lower portion of the horn for better glue adhesion.

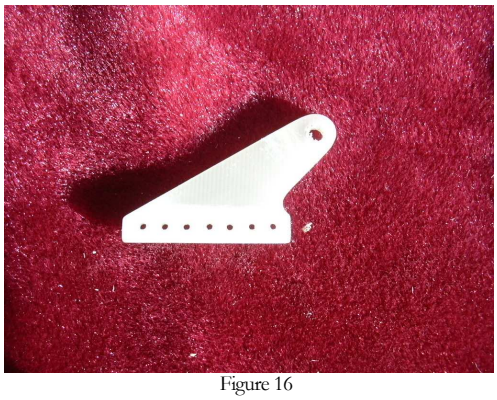

Figure 16

17. Box in the control horn with masking tape as shown.

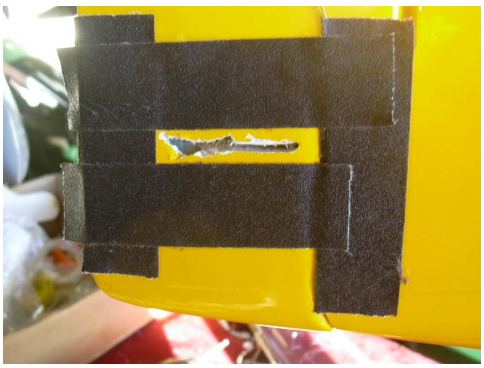

Figure 17

18. Hysol the horn into place, leaving a nice fillet all around.

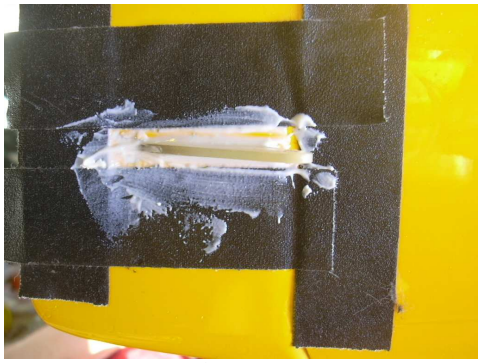

Figure 18

19. Pull the tape away, leaving a nice clean edge.

Figure 19

20. Painting the horns to match the airframe greatly enhances the appearance. When dry, hook up the link to the horn as shown. Loctite the nut.

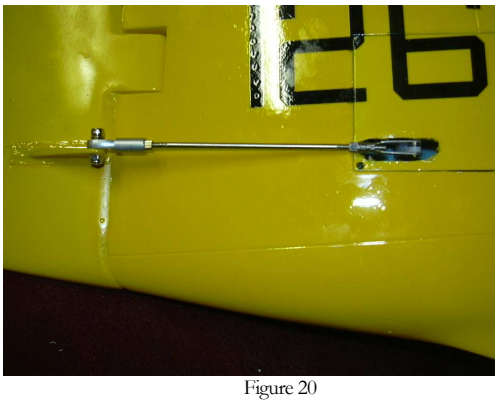

Figure 20

21. Remove one of the servo covers from the bottom of the stabilizer

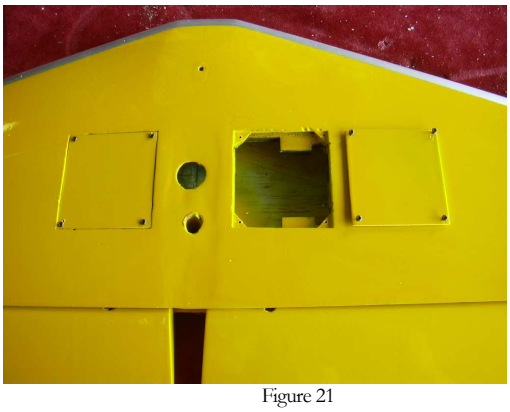

Figure 21

22. Prepare an elevator servo with the provided mounts and a horn.

Figure 22

23. Test fit the servo in place and drill pilot holes. Run the servo lead out through the hole shown.

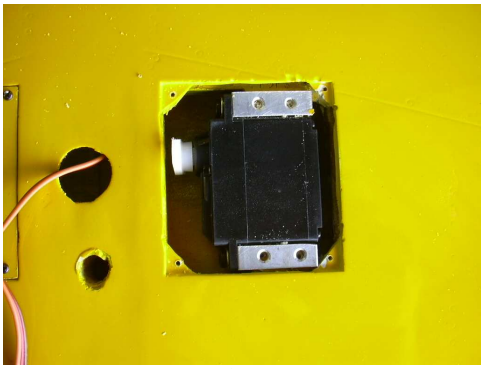

Figure 23

24. Screw the servo mounts into place.

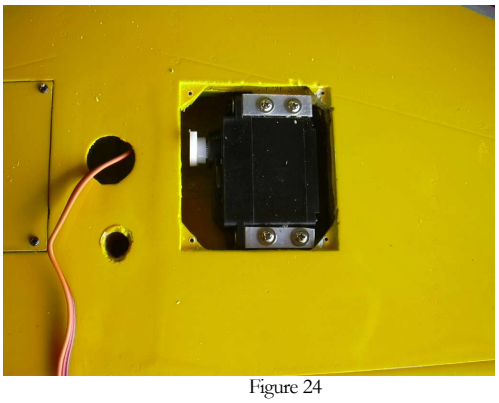

Figure 24

25. Cut a notch for the servo horn and screw the servo cover into place.

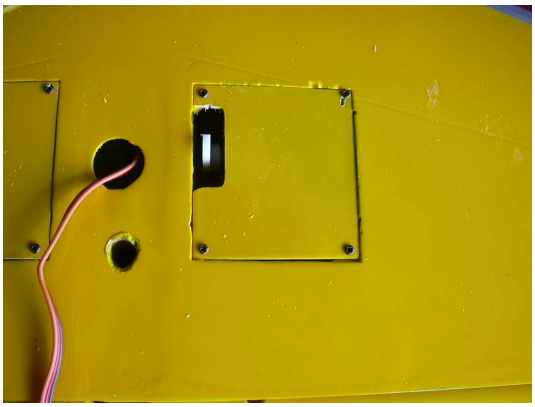

Figure 25

26. Find the titanium pushrods and prepare for linkage.

Figure 26

27. Fit the linkage to the servo horn. Follow all the same procedures for the other elevator servo.

Figure 27

28. Use the rods to mark the position for the control horns, and cut the slots for the horns.

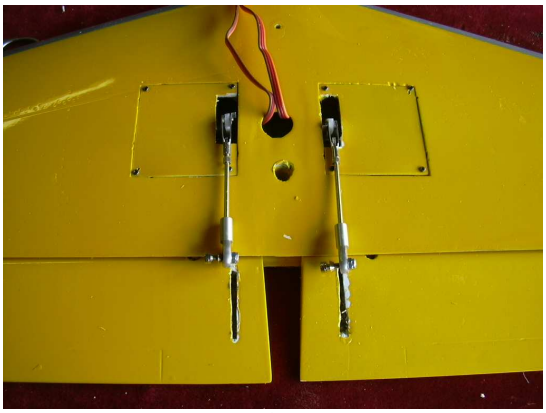

Figure 28

29. Hysol the horns into place. Do both at the same time to establish symmetry.

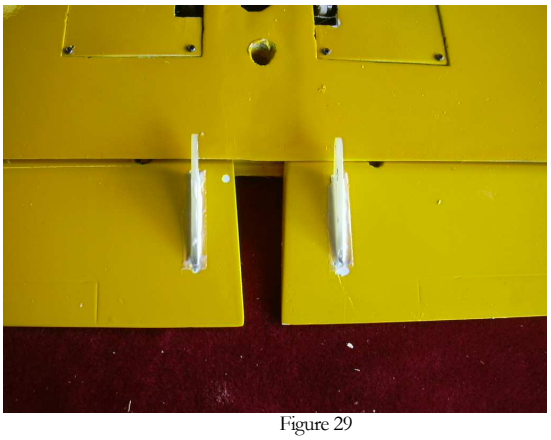

Figure 29

30. Carefully check alignment while drying. The horns need to be identical.

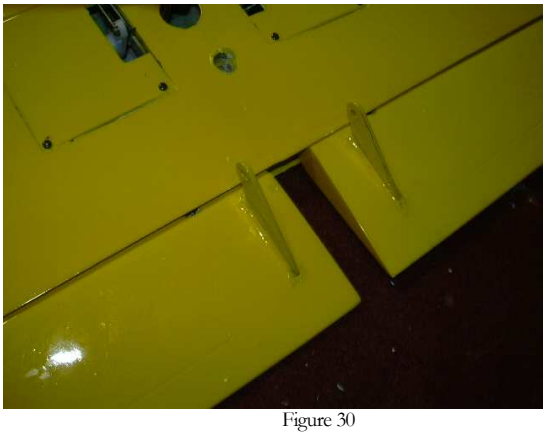

Figure 30

31. Paint the horns, if you like, and add the linkages to the horns as shown.

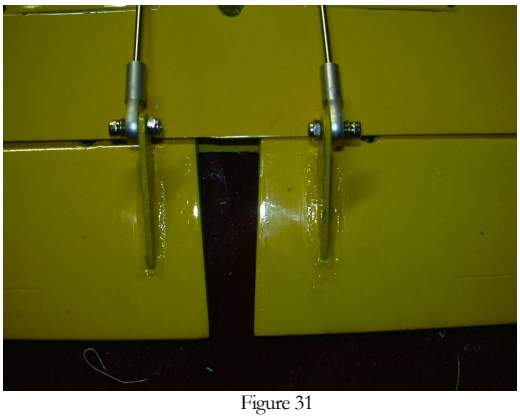

Figure 31

32. Add two 36 inch extensions to the elevator servos and secure the connections with tape.

Figure 32

33. Fit the upper fin into place on top of the stab assembly and bolt into place.

Figure 33

34. Fit the elevator and fin assembly to the rear fuselage.

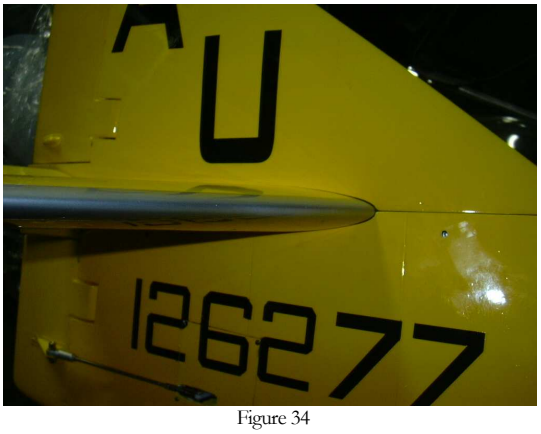

Figure 34

35. Mark the outline of the fuse on the bottom of the stab with a pencil.

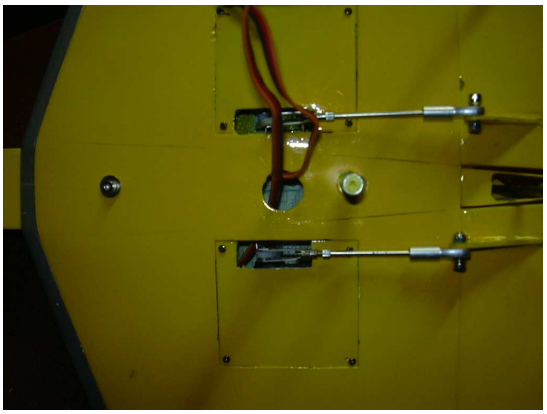
Figure 35

36. Roughen and remove the paint from the bottom of the stab where it meets the fuse.


Figure 36

37. Do the same on the upper surface of the stab. Glue will not stick to paint at all, so do a good job here.

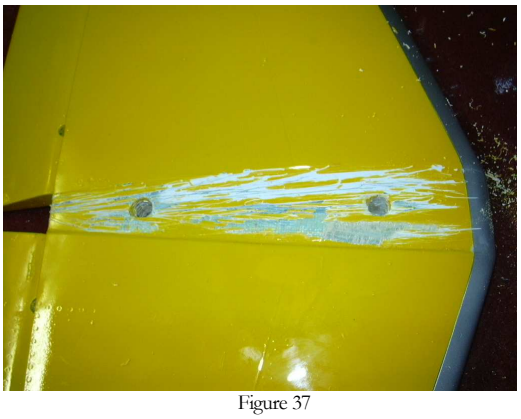

Figure 37

38. Do the same with the top-mating surface of the fuse and the bottom of the upper fin.

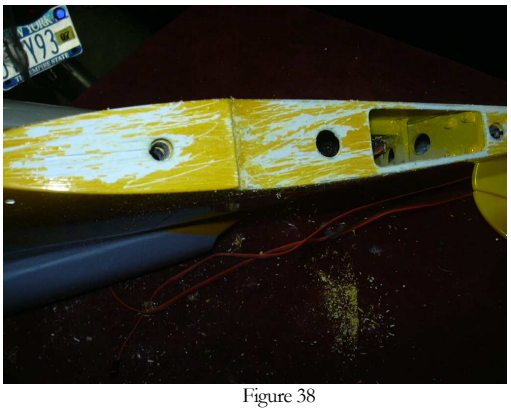

Figure 38

39. Apply a nice even layer of hysol to the bottom of the fin. Not a squiggly bead, but a nice even layer. Bolt the fin to the stab.

Figure 39

40. Apply a nice even layer of hysol to the top of the fuse. Thread the elevator servo wires in and through the holes in the bulkheads.

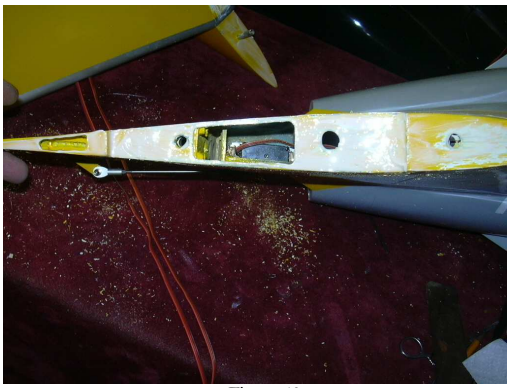

Figure 40

41. Push the stab and rudder assembly into place and tighten up the two bolts in the side of the fuse.

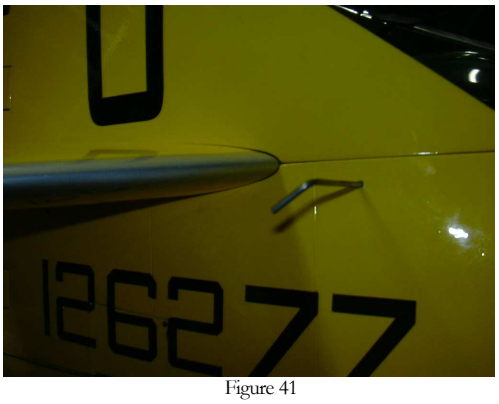

Figure 41

42. Wipe up any excess hysol that oozes out with a rag soaked in mineral spirits, and set aside to dry. Carefully check squareness and alignment while drying.

Figure 42

43. Remove the screws holding the main retracts in place and gently rotate the retracts out, without breaking the linkage to the gear doors.

Figure 43

44. Add up and down airlines to the retracts. These should be about 18 inches long, and color-code them for easier plumbing.

Figure 44

45. Slide the retract back into place and secure with four screws. Be sure that the airlines are not kinked or pinched.

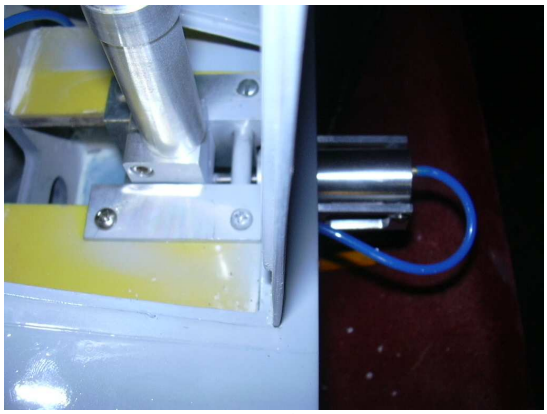

Figure 45

46. Use hemostats to add the brake lines. They should also be about 18 inches long. Secure the brake lines to the struts with tie wraps.

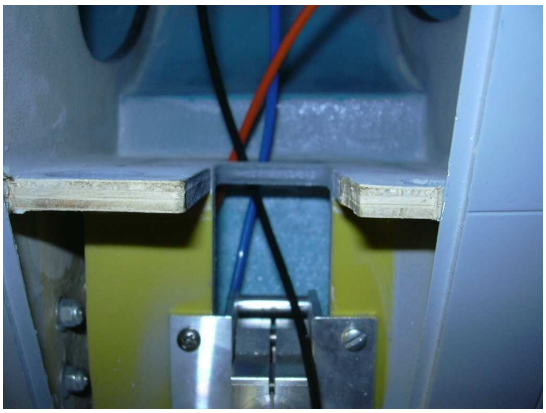

Figure 46

47. Route the three air lines through the hole in the former as shown.

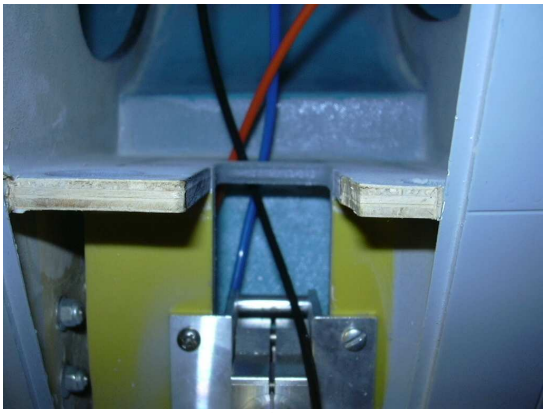

Figure 47

48. Run the matching lines for the retracts forward through the holes in the former and link together with a y connector in the tank compartment.

Figure 48

49. Add another length of tubing about 18 inches long to the y connector and run it forward through the former and out of the way.

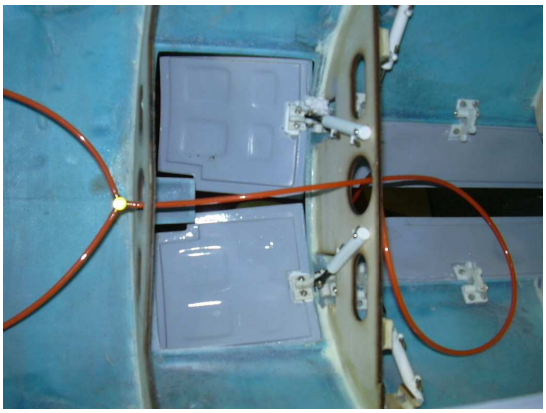

Figure 49

50. Repeat this procedure for the other two pairs of airlines.

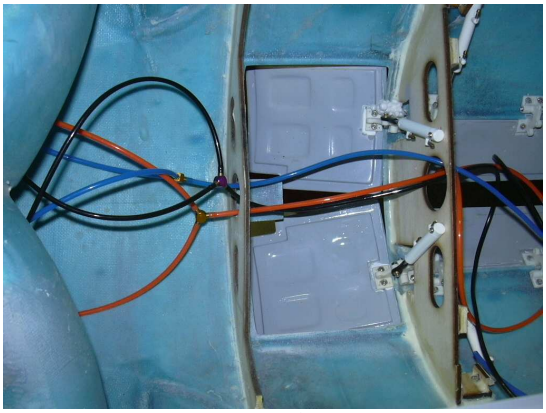

Figure 50

51. Add a length of airline about 14 inches long to each of the flap cylinders. Hemostats help to get the lines on.

Figure 51

52. Link the two lines together with a y connector and add a length of tubing about 24 inches long. Route through the former as shown.

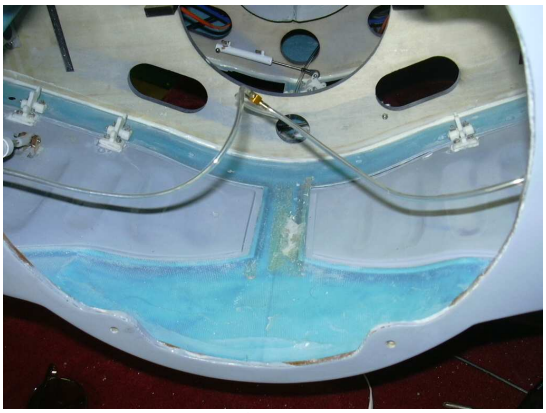

Figure 52

53. Secure the flap airlines to the bottom of the fuse as shown. Metal tape or plastic airline clips work well for this.

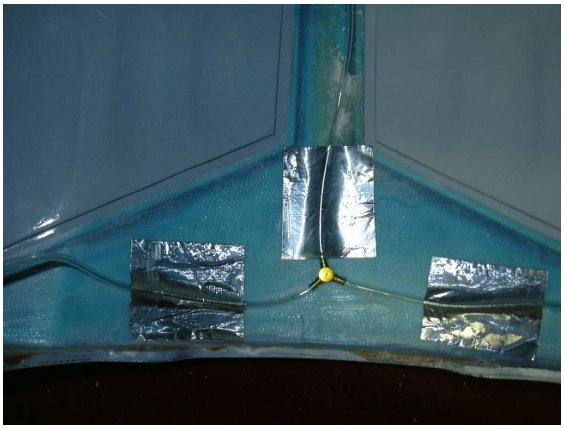

Figure 53

54. Add an airline approx. 8 inches long to the upper nipples of each gear door cylinder. Use hemostats and be careful not to break the nipples off.

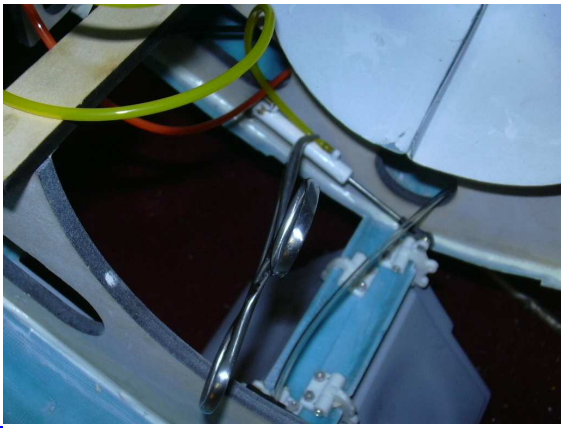

Figure 54

55. Add a length of airline 24 inches long and y the two cylinders together. Run the line forward as shown.

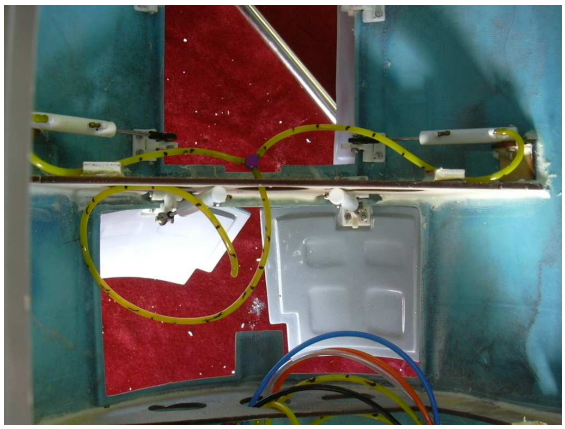

Figure 55

56. Link the bottom two nipples on the cylinders together the same way.

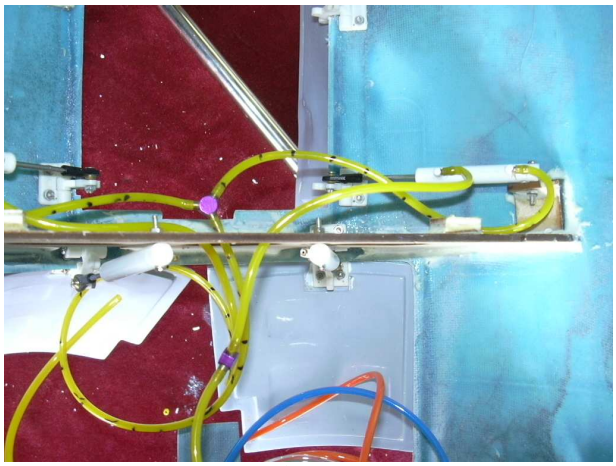

Figure 56

57. Connect the speed brake airlines.

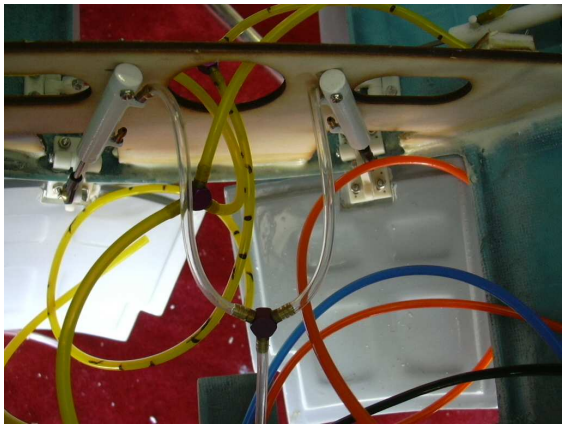

Figure 57

58. Do the same with the other nipples for the speed brake cylinders. The lengths of these lines are about 3 inches long, with the line out about one foot long.

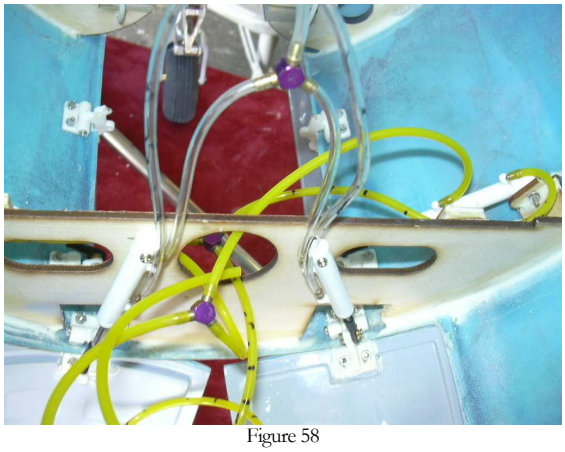

Figure 58

59. Flip the plane over and remove the nose gear assembly.

Figure 59

60. Remove the trail board.

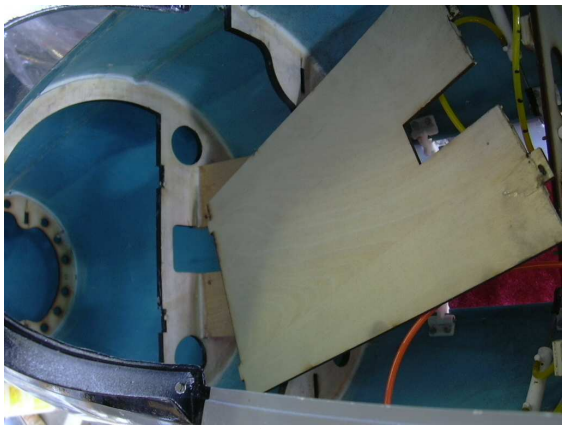

Figure 60

61. Add 14 inches of tubing to each air tank, and silicone glue them into place as shown.

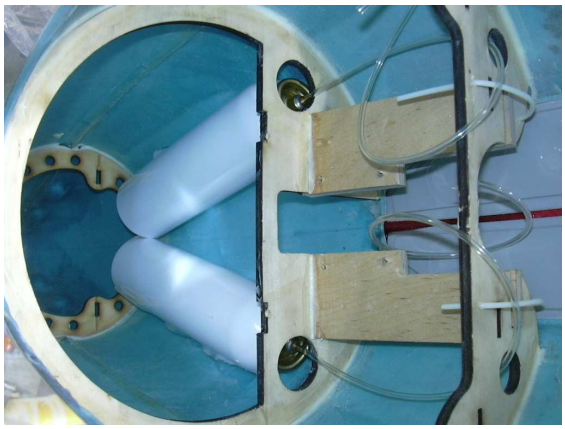

Figure 61

62. Route the lines from the air tanks backwards to the speed brake compartment and link together with a y connector as shown.

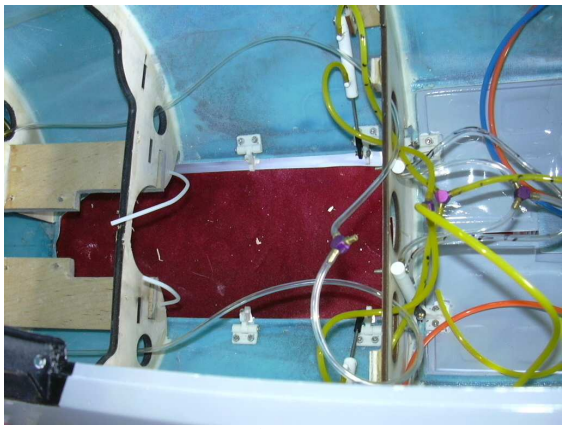

Figure 62

63. Add up and down lines 16 inches long to the front retract.

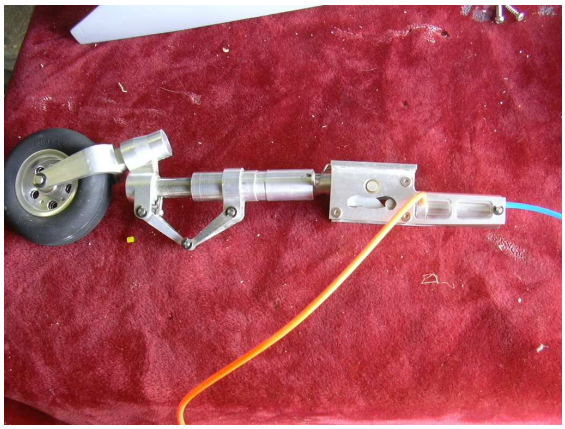

Figure 63

64. Divide the provided steering cable in two and crimp it to the inner holes on the steering arm.

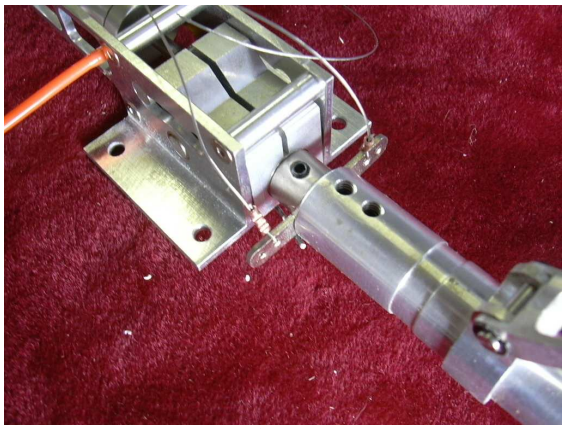

Figure 64

65. Reinstall the nose gear with four screws. Feed the steering lines through the white plastic tubes.

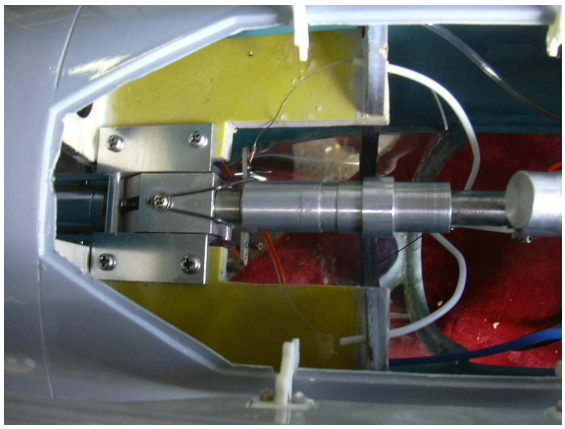

Figure 65

66. Route the airlines as shown. Pull the white plastic tubes out of the upper holes as shown.

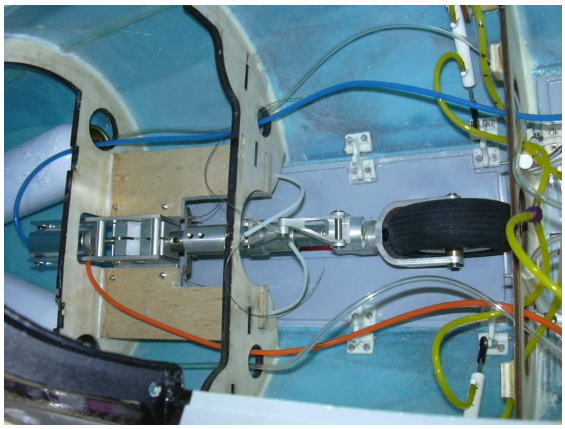

Figure 66

67. You will need to make up a tray for the nose gear steering servo. Here is a top and side view of what is needed.

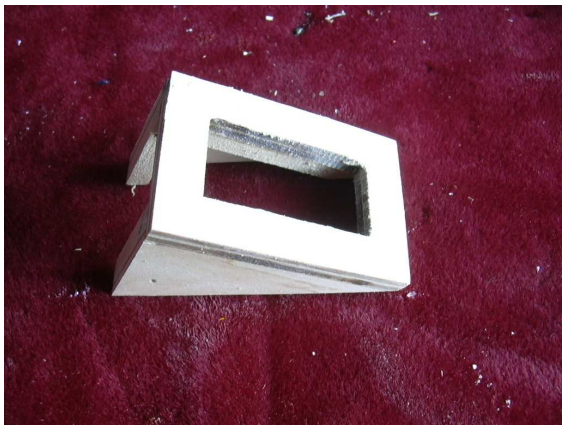

Figure 67

68. Add balsa blocks to the front to increase the gluing surface.

Figure 68

69. Add balsa blocks to the bottom for additional strength.

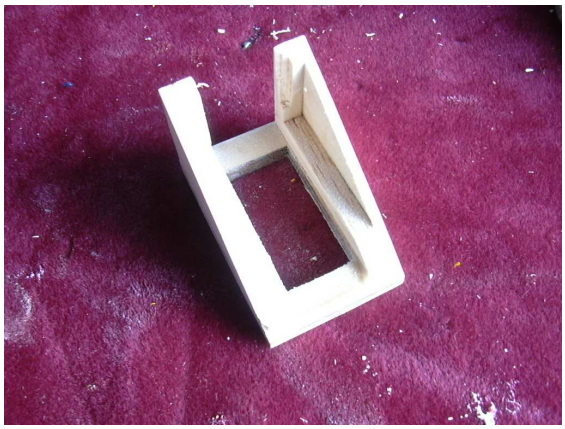

Figure 69

70. Add a servo to the tray.

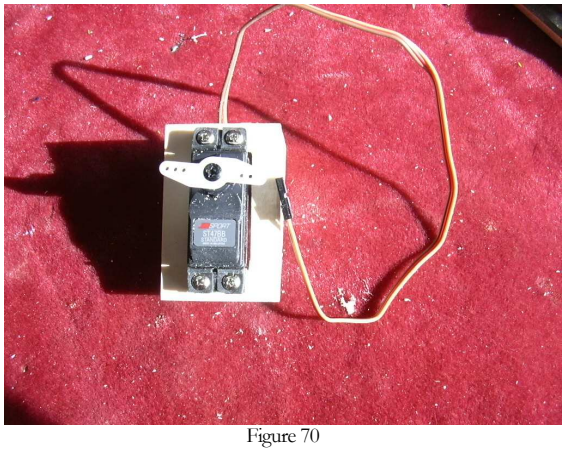

Figure 70

71. Glue the servo mount as shown.

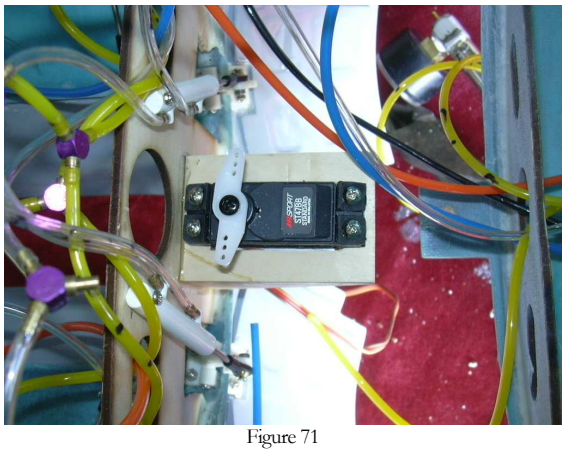

Figure 71

72. Link the steering cables to the servo. They should be taut, but not too tight, or they will keep the nose gear from locking down.

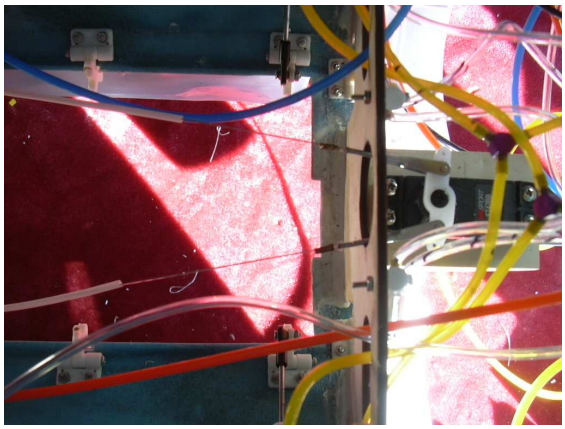

Figure 72

73. Bundle all the airlines

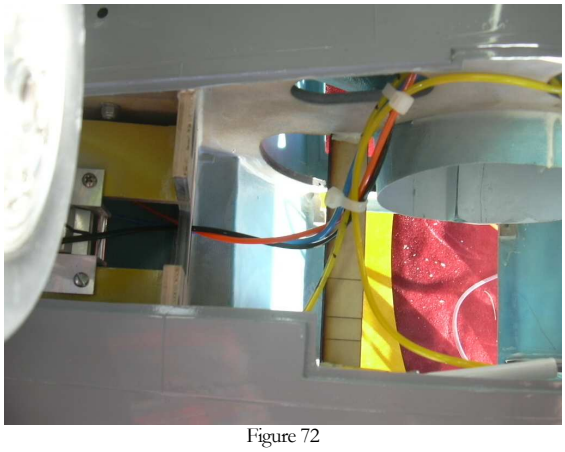

Figure 72

74. Bundle all the airlines leading forward together

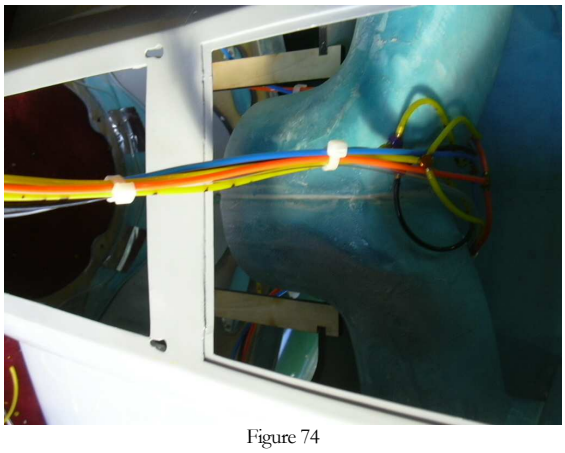

Figure 74

75. Remove the fuel bung. Blow out any debris inside the tank. Observe which line is for fuel, and which is the vent. Mark them. Fit the fuel tank into place.

Figure 75

76. The y connectors and excess tubing all get stored in the space behind the tank. The lines leading forward must go around the tank to one side.

Figure 76

77. Check each lines with your air pump to make sure it is not pinched or kinked, then secure the tank into place with a little silicone to the former and the intakes.

Figure 77

78. Secure the fuel tank into place with silicone.

Figure 78

79. Cut off any excess line and y together the front and rear retract and gear door lines. Add a length of tubing about 10 inches long to each y connector.

Figure 79

80. Paint the forward tray if you like and epoxy it back into place in the nose above the air tanks.

Figure 80

Optional procedures from instruction 81 to 90

81. Clean the bottom leading edge of the wing perfectly.

Figure 81

82. Apply the tape to the leading edge. Trim it very carefully, leaving a slight overlap around the leading edge top.

Figure 82

83. The tape should overlap the top by perhaps one eighth of an inch.

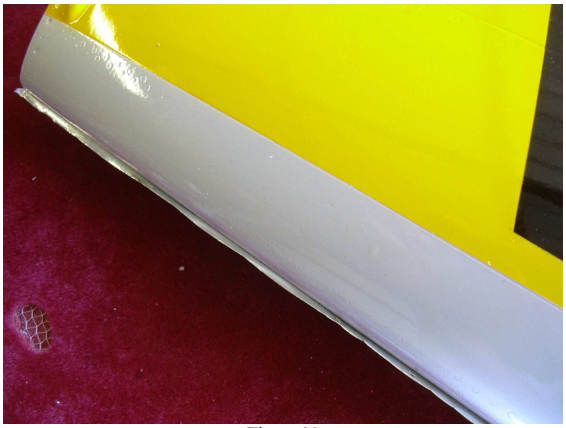

Figure 83

84. Burnish the edge down as flat as possible. Sand it, if need be.

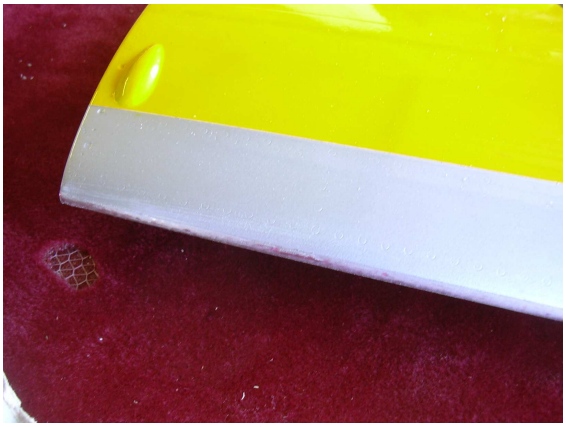

Figure 84

85. Now cover the top of the leading edge the same way.

Figure 85

86. Again, you want just a small overlap over the bottom covering.

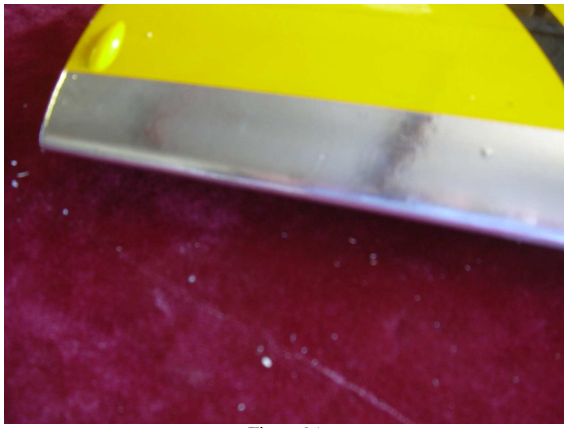

Figure 86

87. Standard width tape may be too narrow to cover the root area. Finish out the missing portion at the root with a small triangular piece.

Figure 87

88. Burnish the metal tape with a soft cloth to restore the rivets and other surface detail.

Figure 88

89. Add these strips the same way to the rudder and stabs.

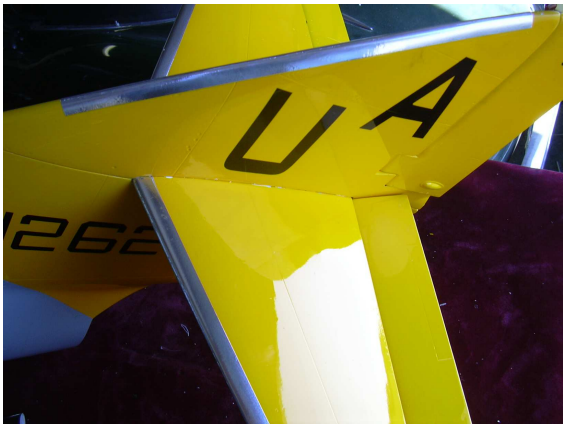

Figure 89

90. Do the wing roots and intakes. You will need some small pieces to do around the intakes.

Figure 90

91. Prepare the aileron servos with aluminum mounts as you did the tail servos. Add 18-inch extensions and tape for security.

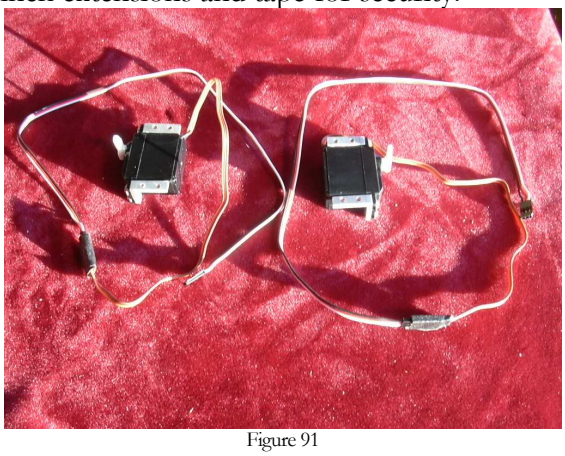

Figure 91

92. Tape a wheel collar to a piece of string. Tie the string to the aileron servo extension.

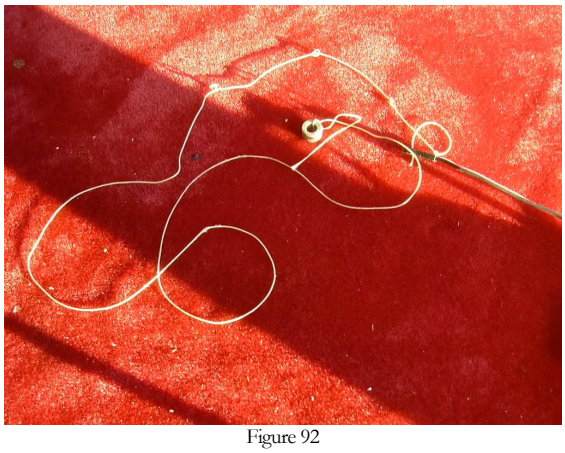

Figure 92

93. Drop the wheel collar and string through the wing and out the hole in the wing root and use it to pull the extensions through. Install the servos and their covers.

Figure 93

94. You may need to shorten the aileron linkages slightly to get the correct throws.

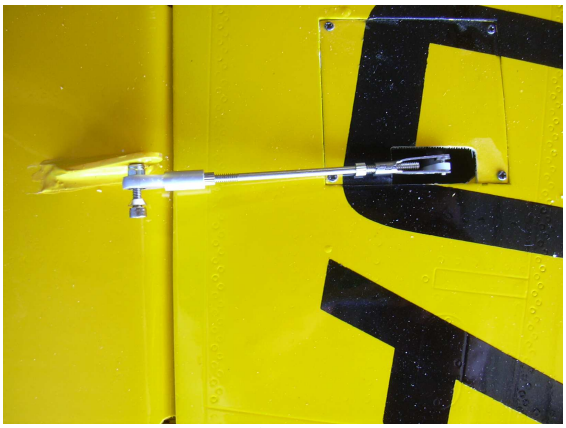

Figure 94

95. Remove the clevises from both ends, but leave the locknuts on. Clip off the excess as shown on the bottom link.

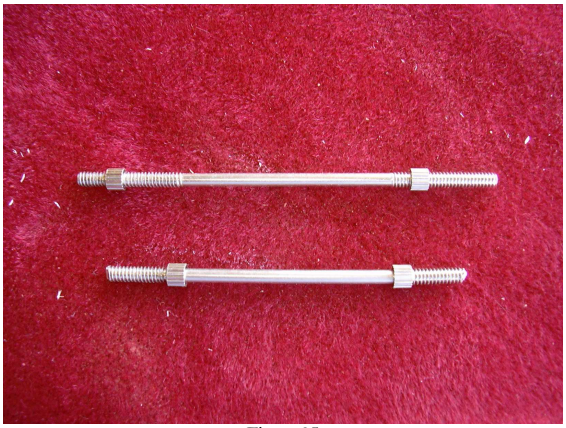

Figure 95

96. Now bevel off the rough edge as shown in the top link using your power sander and then run the lock nut over the threads to clean them.

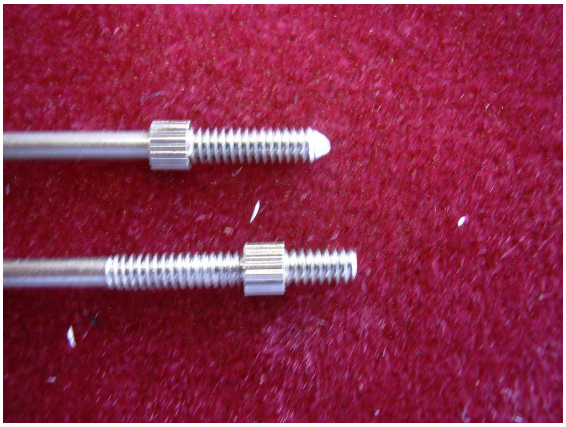

Figure 96

97. Now mount the aileron linkage.

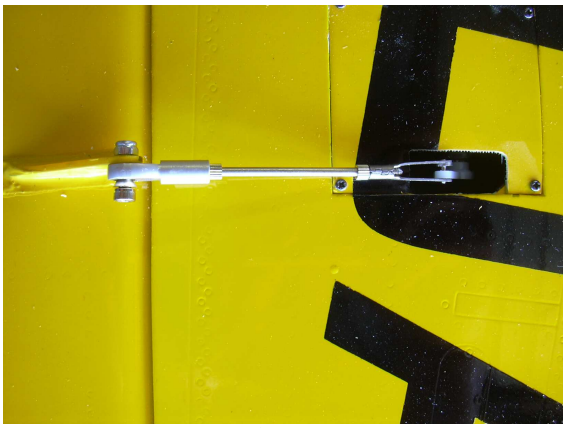

Figure 97

98. Install a hardwood beam in the upper rear fuselage, which is shown here upside down.

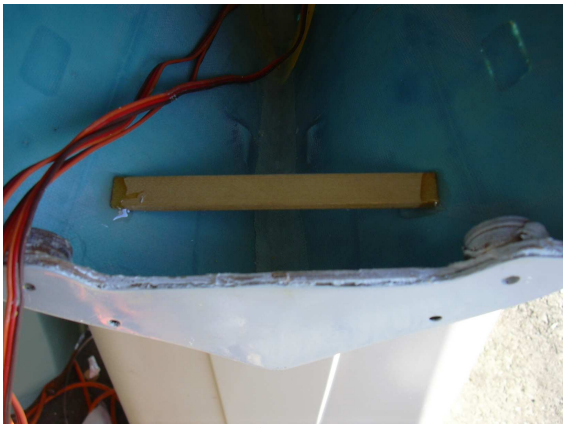

Figure 98

99. Attach the tail servo leads to this beam to keep them from falling on the hot tailpipe.

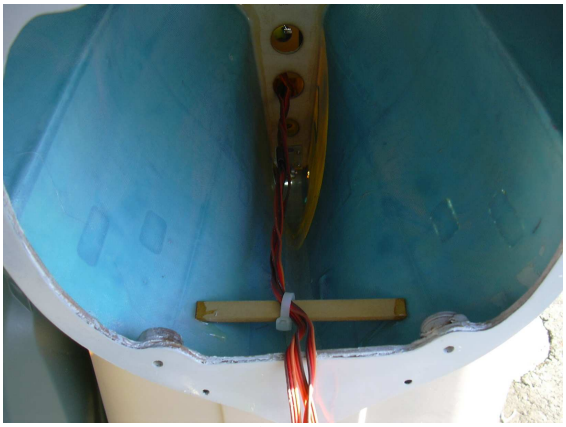

Figure 99

100. Slide the rear-centering ring over the tailpipe.

Figure 100

101. Insert the tailpipe into the fuse from the front and check for fit and centering.

Figure 101

102. You can also use scraps of wood to establish centering for the ring.

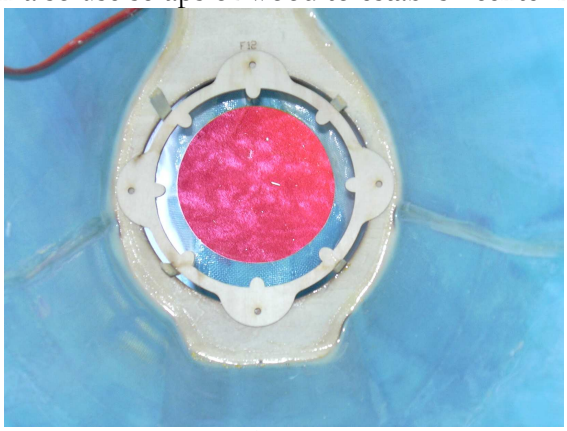

Figure 102

103. When satisfied, glue and screw the centering ring into place.

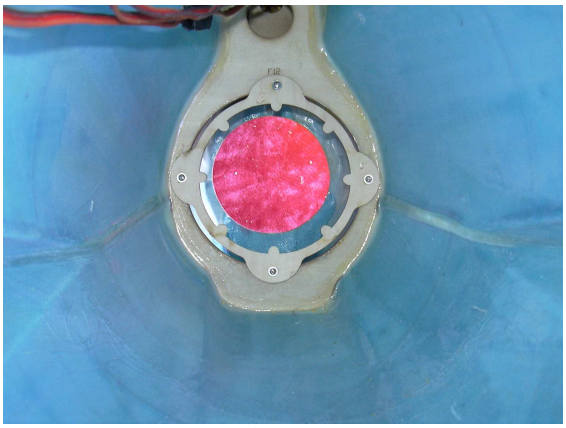

Figure 103

104. Put the former up against the rear fuselage and mark off the areas as shown.

Figure 104

105. Remove the excess wood from the ears of the former.

Figure 105

106. Slip the pipe through the former and slide the pipe and former into place. Do not glue the former yet.

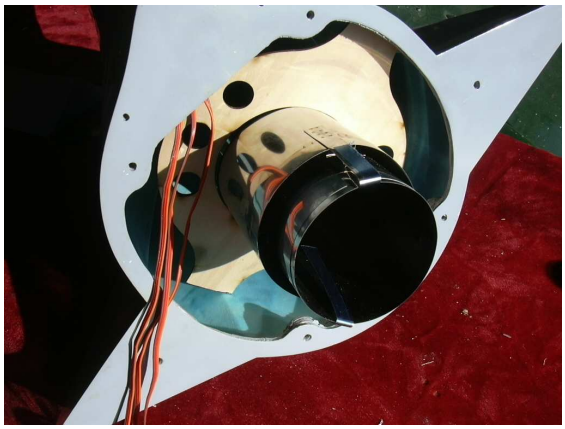

Figure 106

107. Install the six bolts and washers into the forward fuse section.

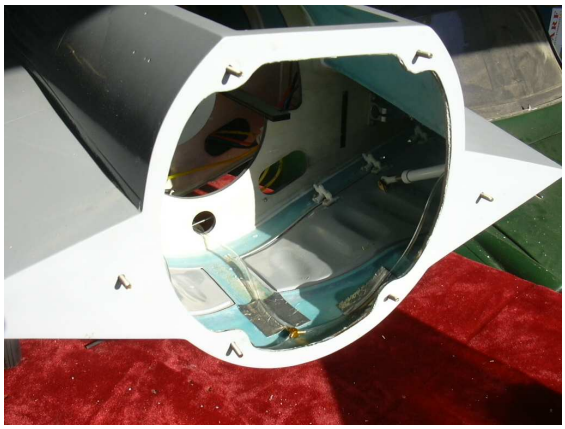

Figure 107

108. Bolt the rear fuselage section into place. You may access the side bolts easier by opening the center flaps. Do not glue the tailpipe former into place yet.

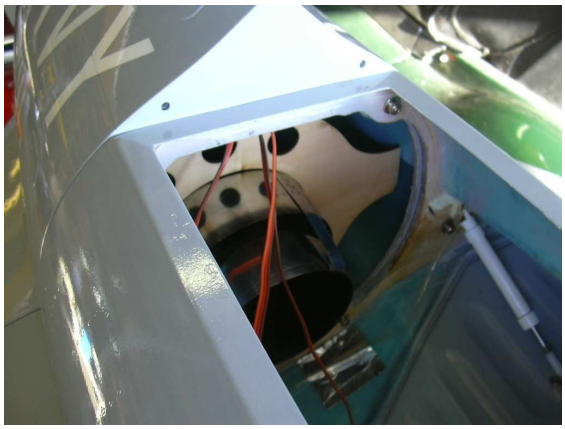

Figure 108

109. Drill or notch the former to accommodate the radio leads from the tail and secure the leads to the side of the fuselage.

Figure 109

110. Install two hardwood rails as shown, about an inch down from the top of the fuse. Make sure the rails are level to each other.

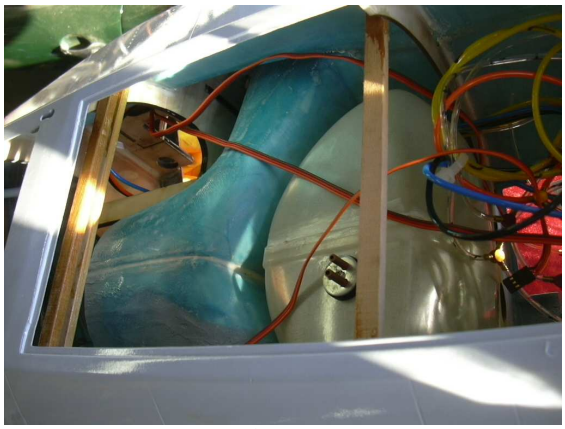

Figure 110

111. Install a second rail above the rear one, one eighth of an inch above it.

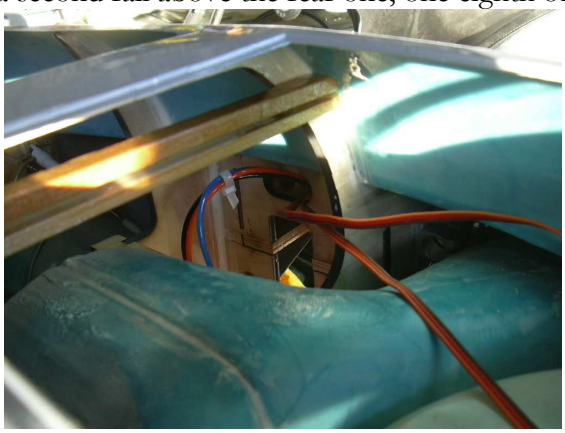

Figure 111

112. Make up an eighth inch thick plywood rear radio tray. Paint it if you like.

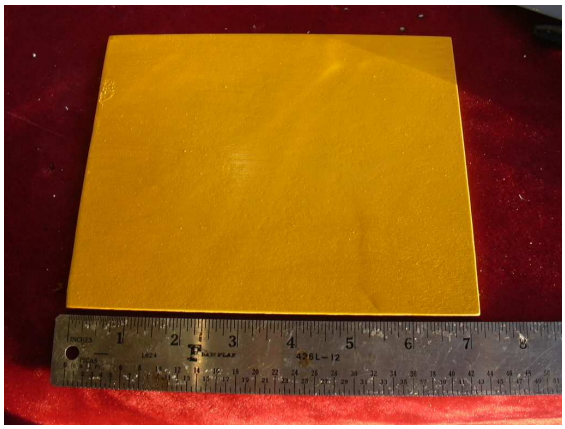

Figure 112

113. Install the rear radio tray and secure with two screws to the front rail.

Figure 113

114. Install two extensions into each wing root. Leave an inch or two of slack and secure to the retract with a tie wrap.

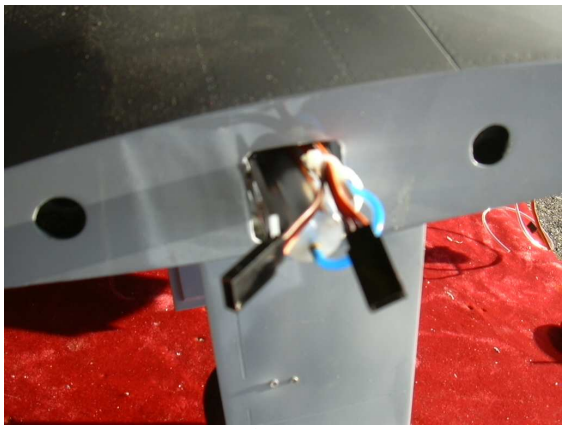

Figure 114

115. Run all the leads from the wings and tail to the rear radio tray and tape them to the tray for now.

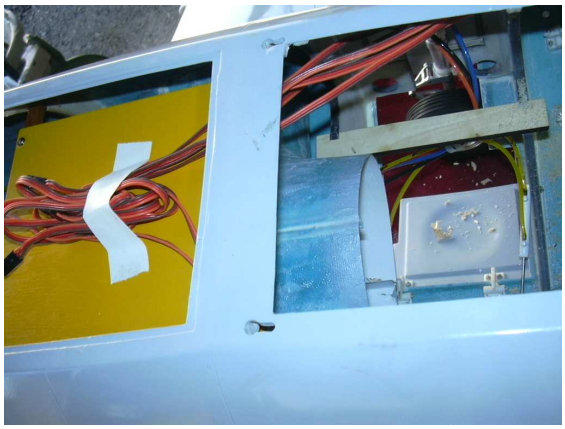

Figure 115

116. Install two miniservos as shown for the air valves. Use reinforcements on the bottom of the tray for the mounting screws.

Figure 116

117. Install ball links to two of the air valves as shown.

Figure 117

118. Make up a small hardwood block to mount the air valves to the tray.

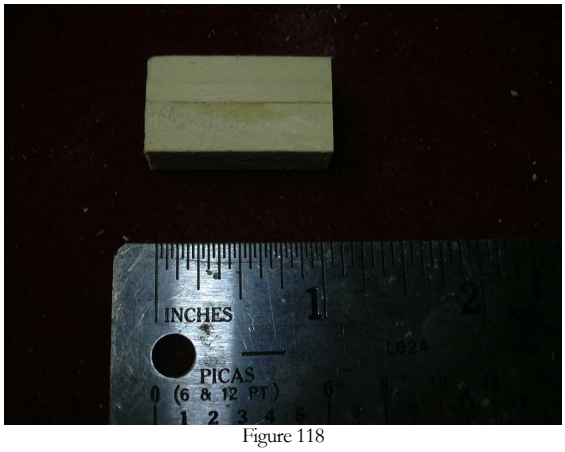

Figure 118

119. Screw the air valves to the block, then glue and screw the block to the forward radio tray.

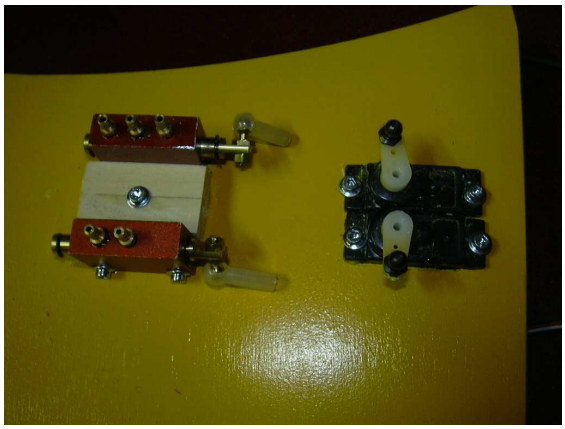
Figure 119

120. Complete the linkages with ball links at the servo end.

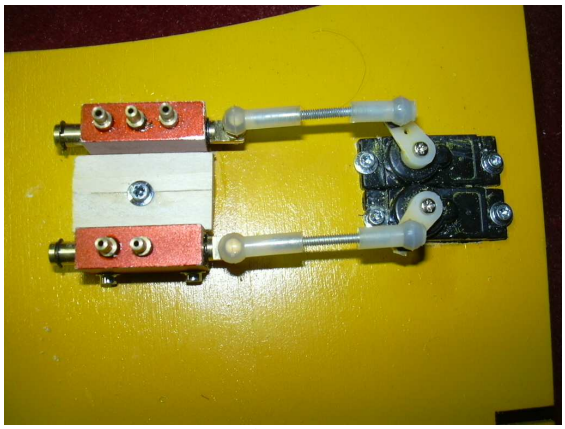
Figure 120

121. Add the third valve in the same fashion.

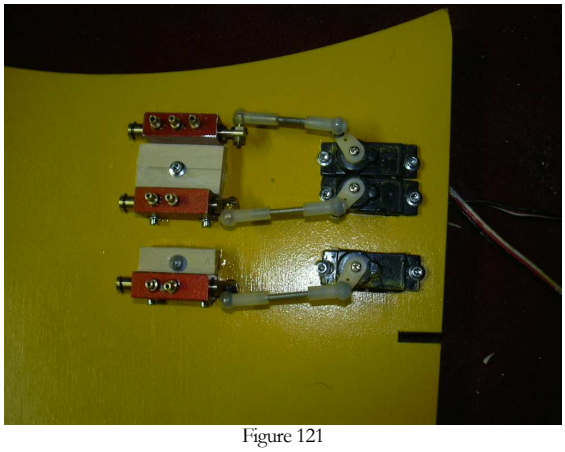

Figure 121

122. Install your UP3 valve using two bolt.

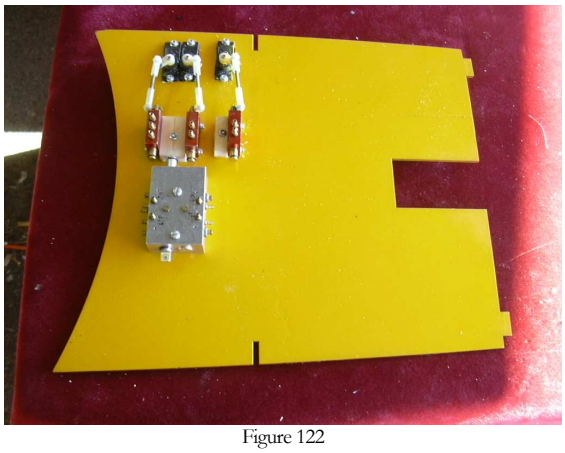

Figure 122

123. Install a servo for the UP3.

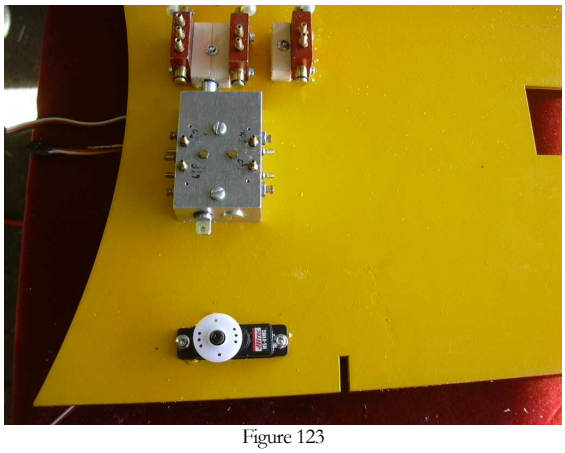

Figure 123

124. Link the valve to the servo.

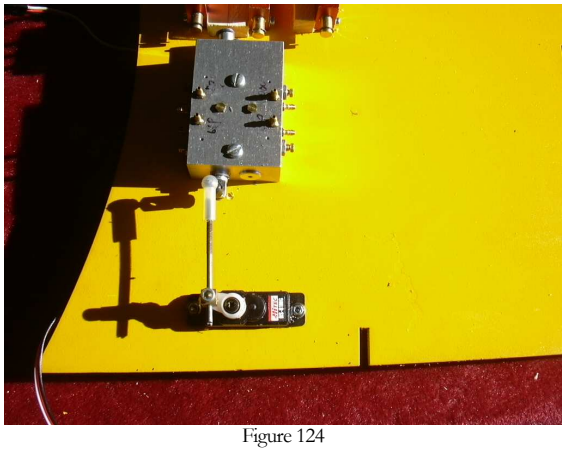

Figure 124

125. Test fit your turbine on the mounts.

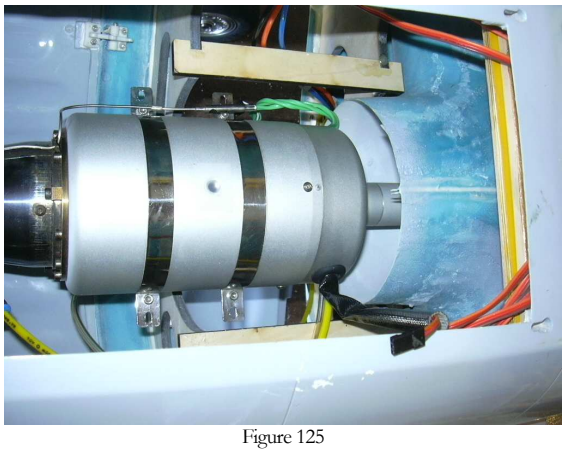

Figure 125

126. Cut the intake as shown.

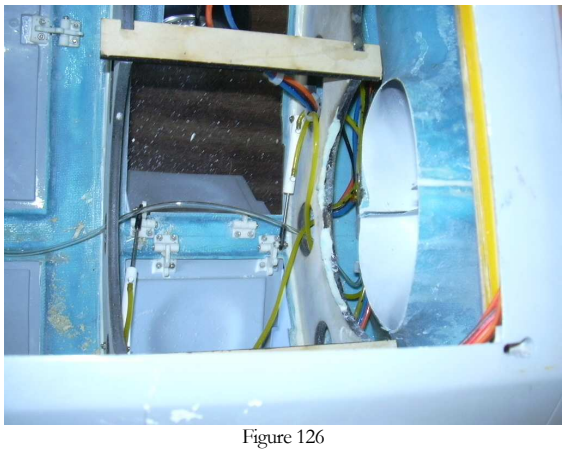

Figure 126

127. Cut a hole in the intakes to accommodate your starter motor. Be sure to not cut into the fuel tank.

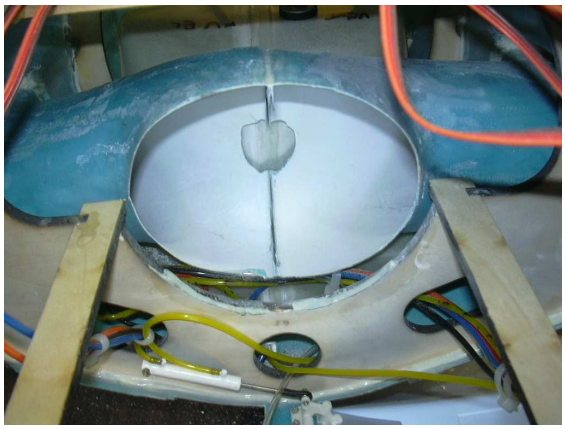

Figure 127

128. You will need to use the supplied spacers for anything but the largest engines. Test fit them and your engine, and adjust the width if need be.

Figure 128

129. You may need to relieve the back of the spacers slightly to accommodate the fuselage formers.

Figure 129

130. When satisfied with the fit, epoxy the spacers firmly to the mounts and formers. Use clamps while drying for a good strong bond.

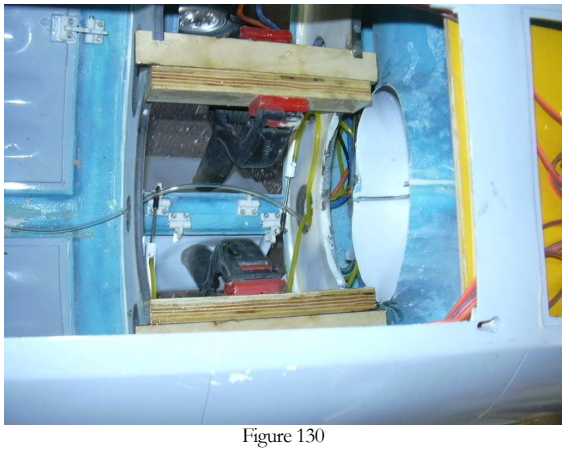

Figure 130

131. Screw the turbine to the mounts. You want it to be as far forward as possible for balance purposes.

Figure 131

132. Insert spacers between the turbine and former and glue them in place.

Figure 132

133. When dry, push the tailpipe back into place, bend the metal straps as shown, trim if required, and screw the straps to the former.

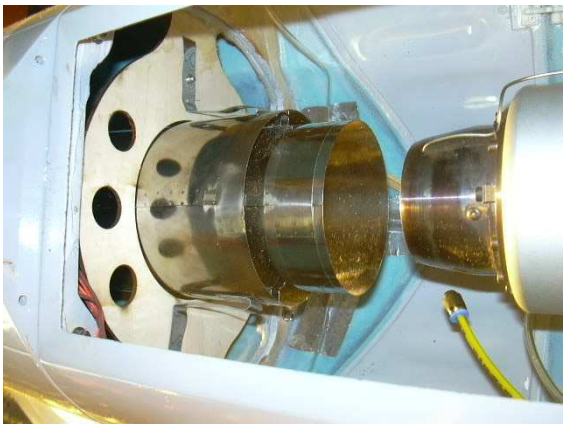

Figure 133

134. Install your UAT to the tray as shown using tie wraps.

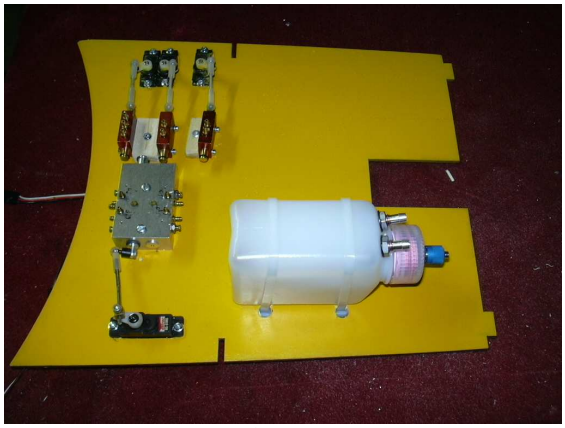

Figure 134

135. Mount the fuel pump as shown.

Figure 135

136. Connect the fuel pump to the UAT.

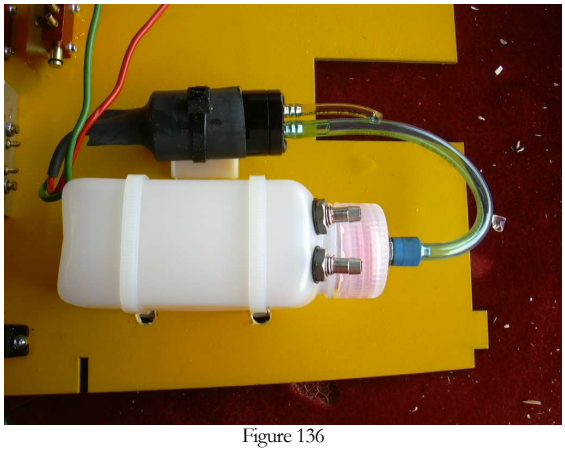

Figure 136

137. Install the fuel and gas solenoids next to the fuel pump.

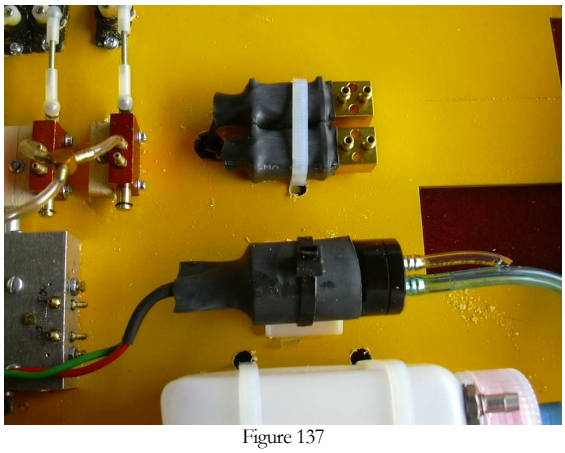

Figure 137

138. Connect the fuel pump to the fuel solenoid.

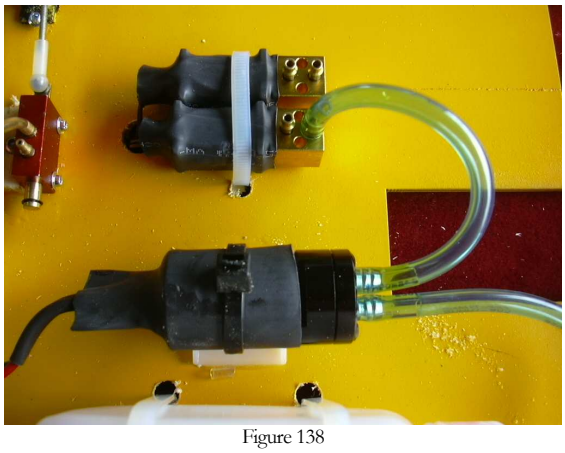

Figure 138

139. Cut a hole and install the propane tank. Check that it does not hit the bottom of the fuselage when the tray is installed.

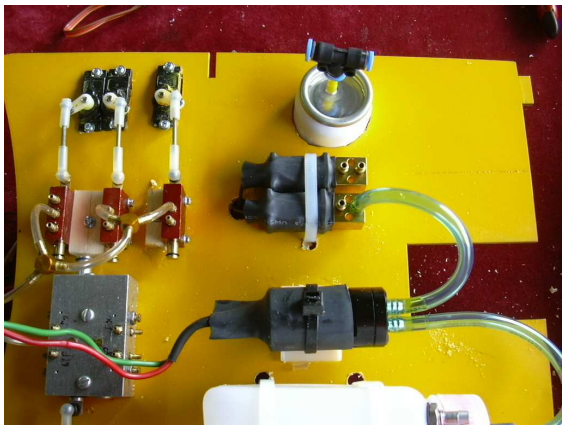

Figure 139

140. Connect the propane tank to the solenoid, and add all the other propane fittings.

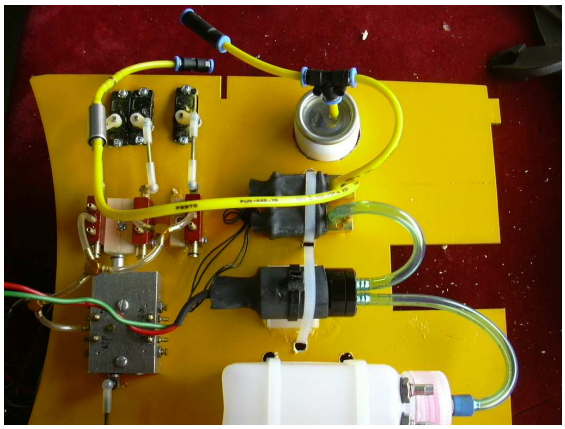

Figure 140

141. Connect your fuel filter and secure it and the fuel pump with a tie wrap. Leave a long length of tubing coming out of the fuel filter for now.

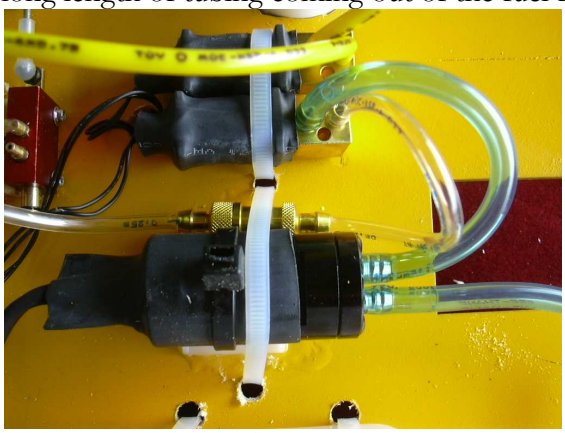

Figure 141

142. Add a fill line and plug to the appropriate port on the UAT.

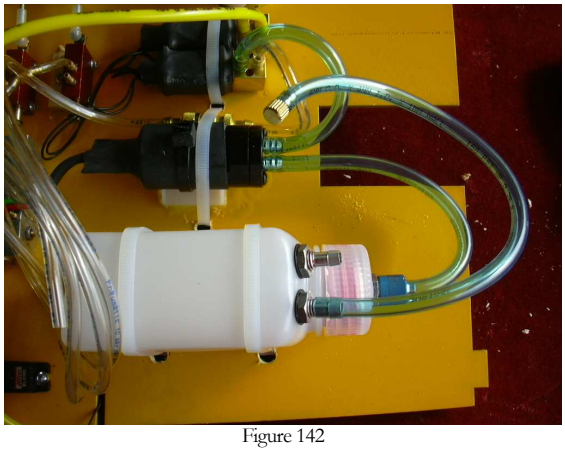

Figure 142

143. Connect the two air in nipples on the two valves as shown using tubing and a y connector.

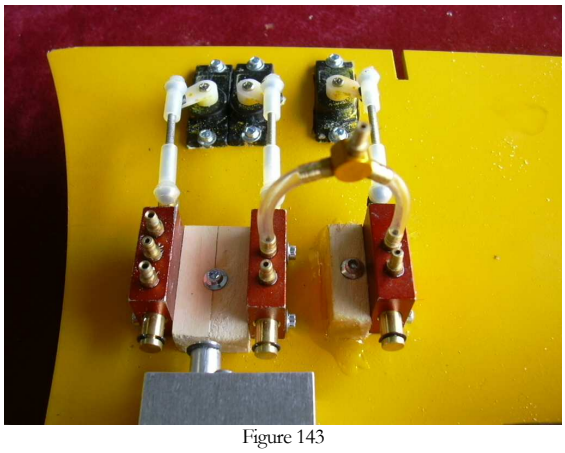

Figure 143

144. Connect the third valve with more tubing and another y connector.

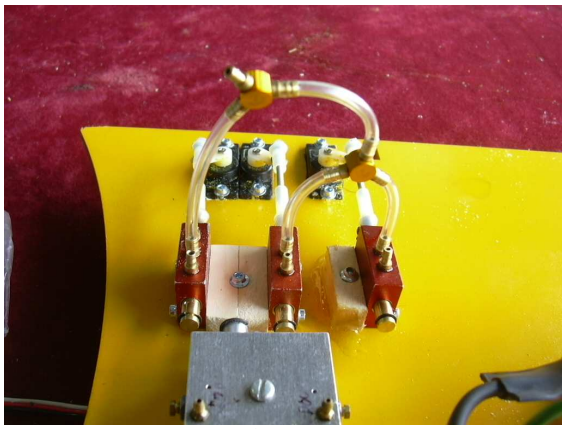

Figure 144

145. Connect the UP3 valve and the other valves with tubing and another y-connector.

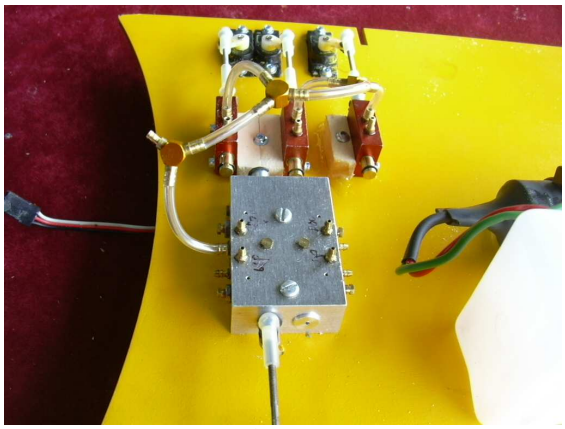

Figure 145

146. Add a short section of line to the y-connector, add another y-connector, then add a loop of tubing about a foot long to the y-connector.

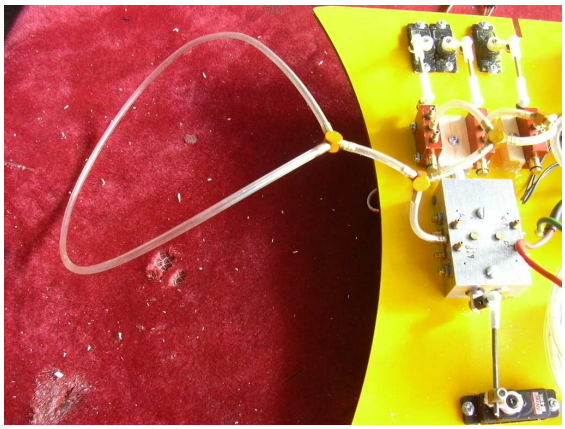

Figure 146

147. Flip the tray over and add extensions to the four air valve servos and bundle them together.

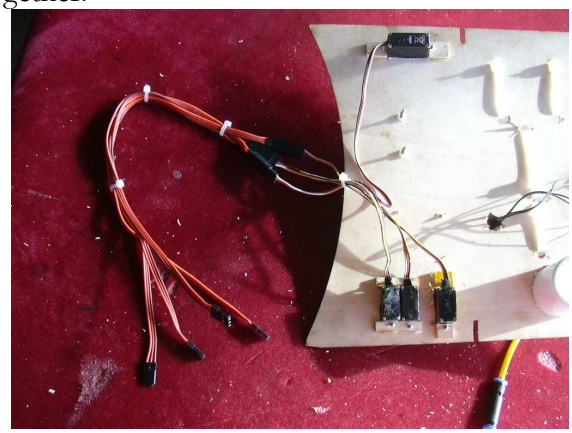

Figure 147

148. Add extensions to the air and gas solenoids and bundle them together.

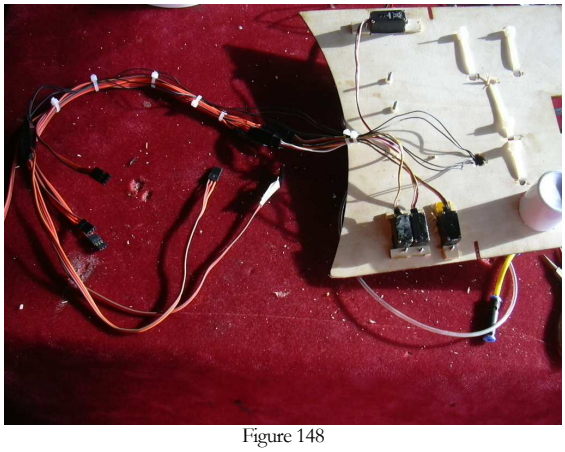

Figure 148

149. Connect the lines as shown.

Figure 149

150. Connect the airlines to the valves.

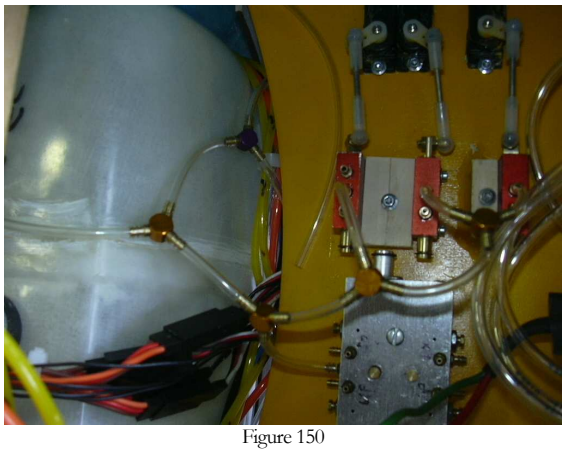

Figure 150

151. Connect the line from the pneumatic flaps to the first valve as shown.

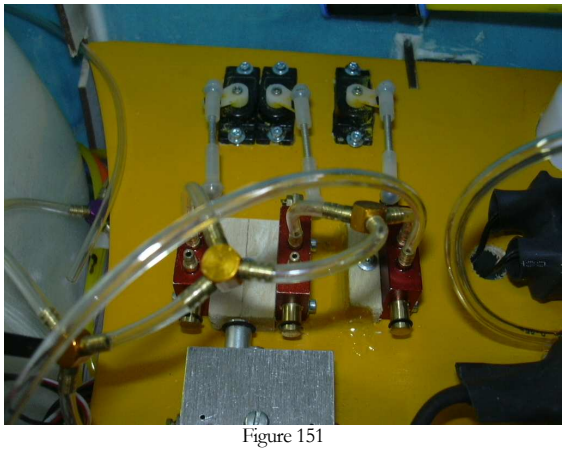

Figure 151

152. Connect the line from the brakes to the second valve as shown.

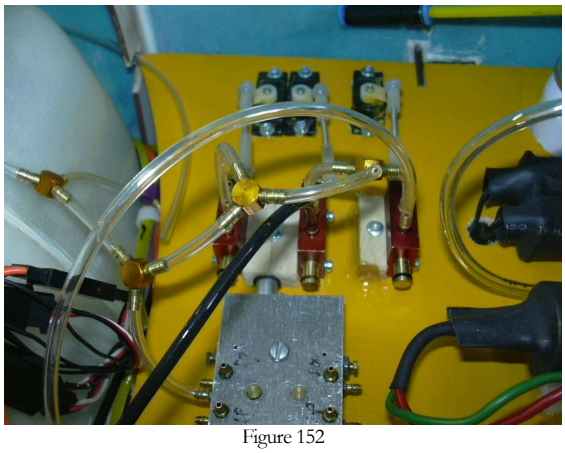

Figure 152

153. Connect the lines from the dive brakes to the third valve as shown.

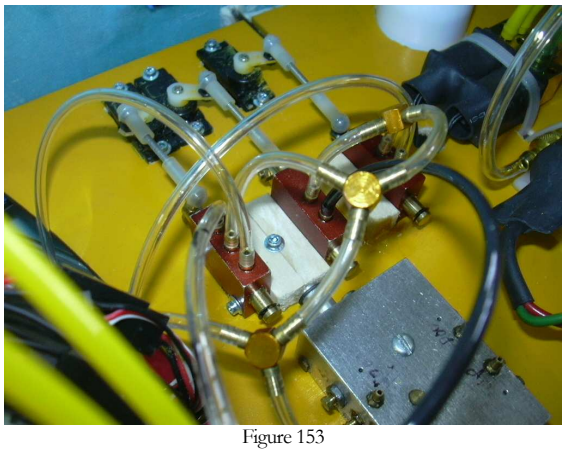

Figure 153

154. Connect the gear and gear door lines according to the diagram provided with the UP3 valve.

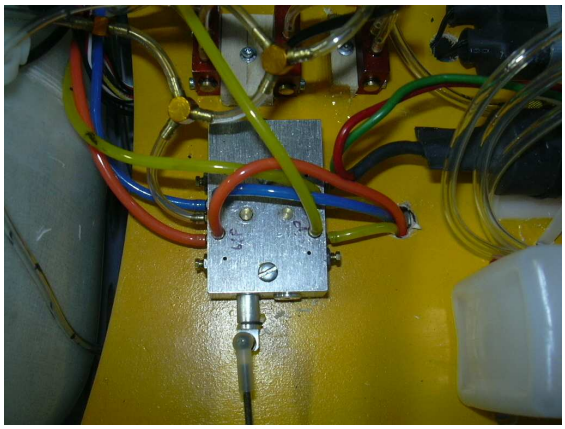

Figure 154

155. Connect the UAT to the main tank.

Figure 155

156. Add a vent line to the tank.

Figure 156

157. Mount the ECU to the rear of the radio tray. Test fit the tray to make sure the ECU does not hit the rear of the cockpit opening.

Figure 157

158. Install the fuel shutoff valve on the radio tray.

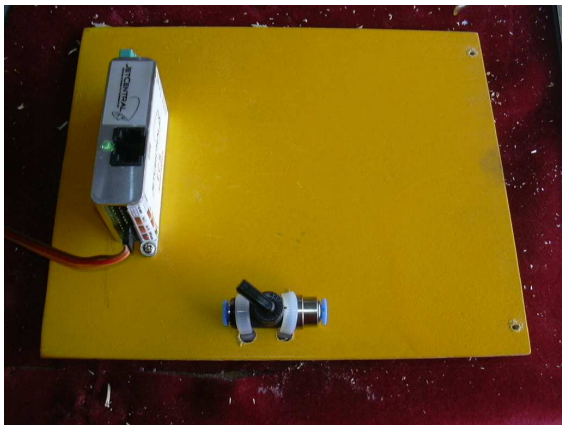

Figure 158

159. Install the air filler valve to the tray. Make sure it does not hit the front mounting rails for the tray.

Figure 159

160. Install your radio switches to the tray.

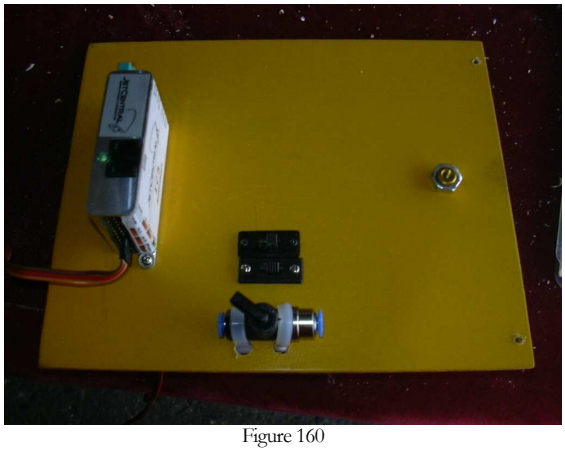

Figure 160

161. Install your receiver, and cut a hole for the radio leads to come up through the bottom of the tray.

Figure 161

162. Attach the loose airline left over to the filler valve.

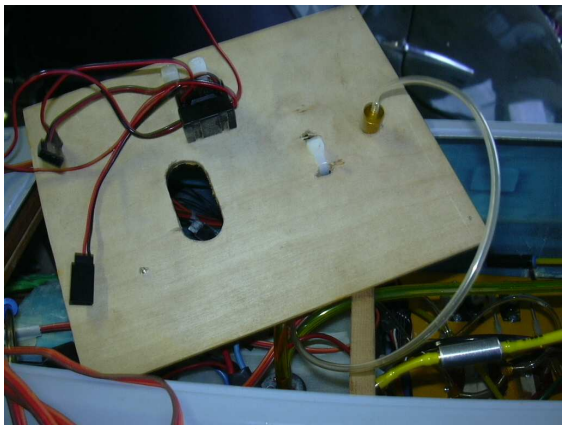

Figure 162

163. Attach all the radio leads to the receiver.

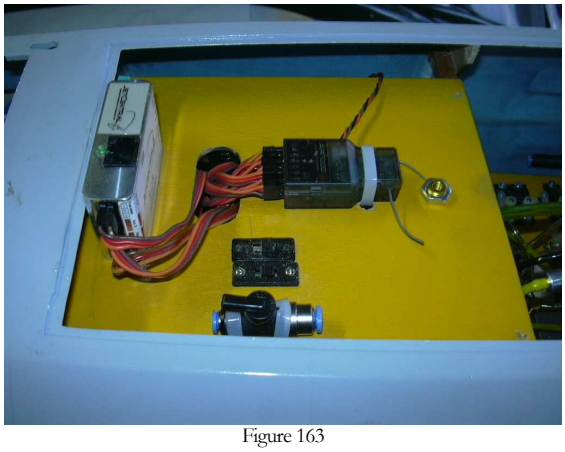

Figure 163

164. Attach the line from the fuel filter to the shutoff valve and connect the valve to the turbine.

Figure 164

165. Attach the solenoids and RX to the ECU.

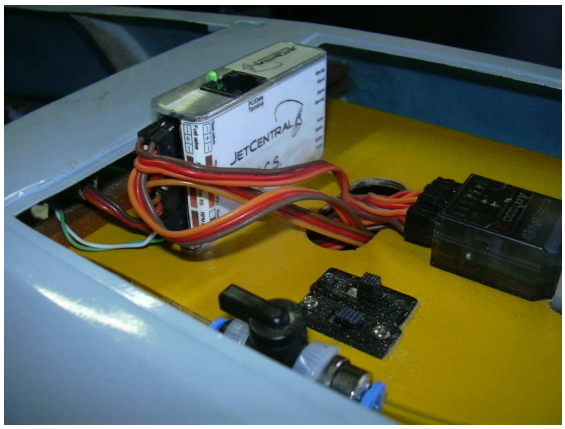

Figure 165

166. Connect the fuel pump, battery, and glow leads to the ECU.

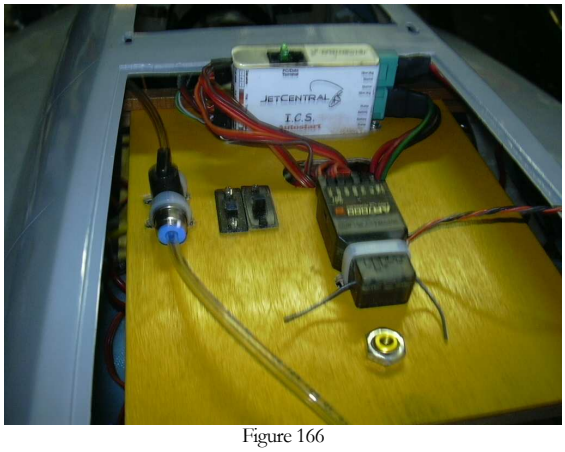

Figure 166

167. Install the flap servo into place with four screws.

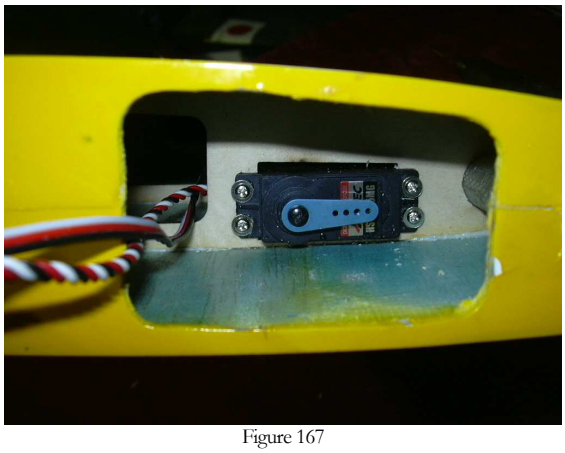

Figure 167

168. Drill a pilot hole through the wing skin to locate the flap servo horn, then cut a slot for the horn to emerge from the wing.

Figure 168

169. Install the linkage and control horn for the flap.

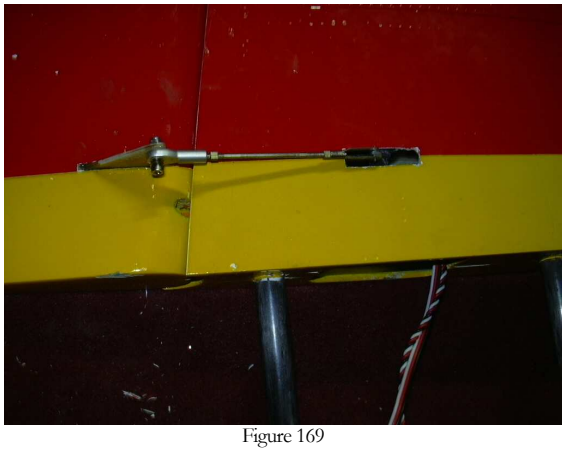

Figure 169

170. Install the tip tanks using the provided bolts.

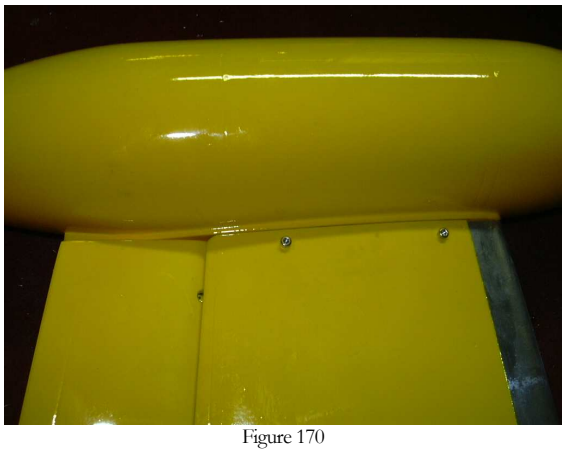

Figure 170

171. You may flip one flap servo over and shorten the linkage, to reverse one flap, saving a spare channel or a reversed servo.

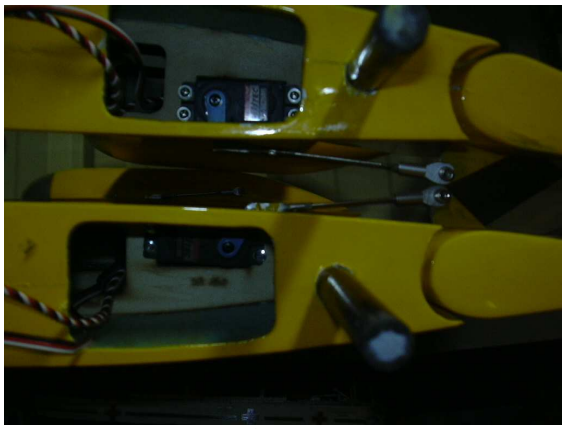

Figure 171

172. Flap travel is measured as shown, four inches at full flap.

Figure 172

173. Test fit the cockpit tub into the fuselage and trims as required.

Figure 173

174. Test fit the cockpit tub into the canopy.

Figure 174

175. Apply silicone glue to the dashboard to glue it into the forward fuselage, and tape the cockpit tub into place.

Figure 175

176. Put a rag or piece of foam over the rear portion of the cockpit tub to keep it level.

Figure 176

177. Put some tape on the top of the fuselage to keep any glue from sticking.

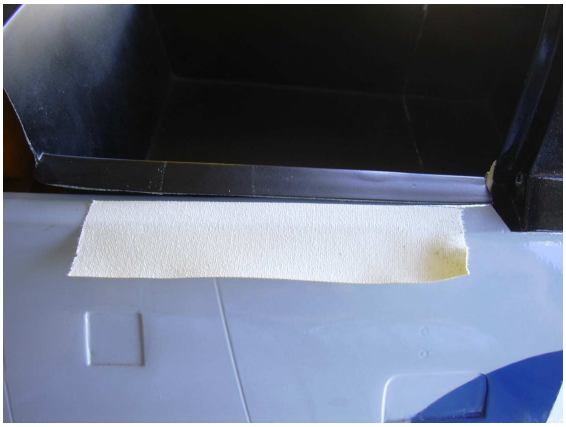

Figure 177

178. Apply silicone to the edges of the cockpit tub.

Figure 178

179. Latch the canopy into place and allow to dry.

Figure 179

Congratulations, you have completed construction on your F-9F Panther See the Pilots Notes for balance and control throws.

Pilot Notes
CG, Control Throws and recommendations

BALANCE AND THROWS:

The Panther should be balanced right at the front carbon fiber spar, with the LG down and the UAT full, but tanks empty. This is 25% of the chord of the plane, 4" back from the leading edge, not including the small extensions at the root, only the straight part of the LE and TE. It is recommended that you use lead shot mixed with epoxy, poured into the extreme nose while standing the model on the nose, to get the weight all the way forward. You may also glue your batteries to the extreme nose interior, but it makes maintenance on them very difficult if need be. You can move the CG forward slightly 1/2" from the spar for first flights, but you will probably need up-elevator to compensate. Move the CG back from the spar at your own risk, only take small steps moving the CG aft.

FLAP TRAVEL:
4" at full travel, measured as shown in the picture. You may need a small amount of up elevator mixed in with full flap. You can also add the pneumatic center flaps with a mix or on a separate switch. Be sure to apply flaps for the first time high up to gauge the reaction. Flaps are not needed for takeoff.

AILERON THROW:
The ailerons are not terribly sensitive. 1" throw up and down is a good place to start, no differential is needed.

ELEVATOR THROW:
3/4" both up and down.

RUDDER THROW:
1" left and right.

NOSEGEAR STEERING:
1/4" left and right is plenty for takeoffs and landings. Set up dual rates if you want additional throw for harder turns steering into and out of the pits, but be sure to switch back to low rate on takeoff, very little steering is needed once the plane is moving.

The FeiBao Panther is a very graceful, scale-like flyer. It will slow down very nicely for landings. Takeoffs with 22 pounds of thrust only take about 250 feet from pavement. The gear is extremely strong and will take hard landings, and should give you good service off grass, too.

Credits:

Written by Curtis Mattikow