WARRANTY

Alien Aircraft Corp. guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damaged by use or modification. In no case shall Alien Aircraft Corp.’s liability exceed the original cost of the purchased kit. Further, Alien Aircraft Corp. reserves the right to change or modify this warranty without notice. The quality and flyability of your finished model depends on how you build it; therefore, we cannot in any way guarantee the performance of your completed model, and no representations are expressed or implied as to the performance or safety of your completed model.

In that Alien Aircraft Corp. has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user-assembled product. By the act of using the user-assembled product, the user accepts all resulting liability. If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

WARNING!!!

Failure to follow these safety precautions may result in severe injury to yourself and others.

Use safety glasses when running the motor. Do not run the motor in an area of loose gravel or sand; the propeller may throw such material in your face or eyes. Keep your face and body as well as all spectators away from the plane of rotation of the propeller as you run the motor. Keep these items away from the prop: loose clothing, shirt sleeves, ties, scarfs, long hair or loose objects such as pencils or screwdrivers that may fall out of shirt or jacket pockets into the prop. Always remove the LiPo battery from the plane before charging. Always use a charger designed to charge LiPo batteries for charging the LiPo flight battery. Never leave the LiPo battery unattended while charging. If the battery becomes more than just warm, discontinue charging.
Notes about the laser cut parts

1. The first thing that you need to do is to identify and mark the part numbers on the laser cut parts using the drawings on the following pages as a guide.
2. It is possible that several of the laser cut parts may not be completely cut through. If this is the case you can free the part from the sheet quickly using an X-acto knife.
3. The slight discoloration on the edges of the laser cut parts may be removed by lightly sanding the edges with 400 grit sandpaper.

Kit Contents:

Your kit contains the following parts. Please check your kit for any missing or damaged parts before starting construction.

Wood Bag:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Name</th>
<th>Description</th>
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<tr>
<td>2</td>
<td>LC-307-01</td>
<td>.1/16” X 4” X 24” Laser Cut Balsa</td>
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<tr>
<td>2</td>
<td>LC-307-02</td>
<td>.1/16” X 4” X 24” Laser Cut Balsa</td>
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<td>LC-307-03</td>
<td>.3/32” X 4” X 24” Laser Cut Balsa</td>
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<tr>
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<td>LC-307-04</td>
<td>.3/32” X 4” X 24” Laser Cut Balsa</td>
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<td>LC-307-05</td>
<td>.1/8” X 4” X 24” Laser Cut Balsa</td>
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<td>LC-307-06</td>
<td>.1/8” X 4” X 24” Laser Cut Balsa</td>
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<td>LC-307-11</td>
<td>.3mm X 4” X 24” Laser Cut Poplar Ply</td>
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<td>1</td>
<td>LC-307-12</td>
<td>.3mm X 4” X 24” Laser Cut Poplar Ply</td>
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<tr>
<td>1</td>
<td>LC-307-13</td>
<td>.1/16” X 3” X 12” Laser Cut Birch Ply</td>
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<td>LC-307-14</td>
<td>.1/32” X 3” X 12” Laser Cut Birch Ply</td>
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<td>LC-307-15</td>
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<td>3</td>
<td>Wing Sheet</td>
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<tr>
<td>1</td>
<td>K-307 PLAN A</td>
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<tr>
<td>1</td>
<td>K-307 PLAN B</td>
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<tr>
<td>6</td>
<td>Main Wing Spars</td>
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<tr>
<td>2</td>
<td>Wing Leading Edges</td>
<td>.1/4” sq. X 24” Balsa</td>
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<tr>
<td>13</td>
<td>Fuselage Stringers</td>
<td>.1/8” sq. X 36” Balsa</td>
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<td>8</td>
<td>Stringer Spars</td>
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<td>1</td>
<td>Pushrod Supports &amp; F-12 Brace</td>
<td>.3/32” X 3/16” X 12” Balsa</td>
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Hardware Bag

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<tr>
<td>5</td>
<td>Blind Nuts</td>
<td>.4-40 Blind Nuts</td>
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<td>1</td>
<td>Elevator Joiner</td>
<td>.1/8” x 3 1/2” Birch Dowel</td>
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<td>Control Horn</td>
<td>Control Horns</td>
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<tr>
<td>5</td>
<td>C/A Hinges</td>
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<td>16</td>
<td>Aileron Servo &amp; L/G Screws</td>
<td># 2 X 1/2” Sheet Metal Screws</td>
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<td>1</td>
<td>Wing Attach</td>
<td>.4-40 X 2” Machine Screw</td>
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<td>Tailwheel Reinforcement</td>
<td>.1” X 1 1/2” Nylon Tape</td>
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<td>1</td>
<td>Tail Wheel Wire</td>
<td>.1/16” x 3” Tail Wheel Wire</td>
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<td>2</td>
<td>Landing Gear Blocks</td>
<td>.3/8” Hardwood Blocks</td>
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<tr>
<td>1</td>
<td>Wing Dowel</td>
<td>.3/16” X 1 1/2” Dowel</td>
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<tr>
<td>1</td>
<td>Tailwheel Retainer</td>
<td>Nylon Wheel Retainer</td>
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<tr>
<td>1</td>
<td>Landing Gear Door Standoff</td>
<td>.3/16” X 3/16” X 3” Balsa</td>
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<tr>
<td>1</td>
<td>Wing Attach Block</td>
<td>.3/8” sq. X 1” Drilled Hardwood Block</td>
</tr>
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### Kit Contents:
Your kit contains the following parts. Please check your kit for any missing or damaged parts before starting construction.

#### Misc. Loose Parts

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Name</th>
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<td>2</td>
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<tr>
<td>1</td>
<td>K-307 Plastic Canopy</td>
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<tr>
<td>1</td>
<td>K-307 Right Landing Gear</td>
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</tr>
<tr>
<td>1</td>
<td>K-307 Left Landing Gear</td>
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#### Additional Items Required (Not Included in Kit)

Note: These are parts that we have used and are familiar with. There are many other brands available and you may substitute other items that you are more comfortable with or have on hand.

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Name</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Motor</td>
<td>Himax HC2816-0890 Brushless Motor (Alien Aircraft P/N: AE-035)</td>
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<tr>
<td>1</td>
<td>Speed Control</td>
<td>Castle Creation Thunderbird-18 Electronic Speed Control (Alien Aircraft P/N: AE-019) with connectors matching motor &amp; battery</td>
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<tr>
<td>1</td>
<td>Battery Connector</td>
<td>Male Deans Ultra connector (Alien Aircraft P/N: AE-027)</td>
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<td>1</td>
<td>Heat Shrink Tube</td>
<td>3/16” Heat Shrink Tube (Alien Aircraft P/N: AE-029)</td>
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<tr>
<td>2</td>
<td>Tail Pushrods</td>
<td>Dubro Micro Pushrod Set (Alien Aircraft P/N: AH-001)</td>
</tr>
<tr>
<td>2</td>
<td>Aileron Pushrods</td>
<td>Alien Aircraft 5” pushrod set (Alien Aircraft P/N: AH-012)</td>
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<tr>
<td>1</td>
<td>Propeller</td>
<td>APC 9 X 3.8 SF Propeller (Alien Aircraft P/N: AE-036)</td>
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<tr>
<td>2</td>
<td>Velcro</td>
<td>6” Velcro (Alien Aircraft P/N: AE-012)</td>
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<td>4</td>
<td>2816-0890 Motor Mount Screws</td>
<td>4-40 X 1/2” Machine Screws (Alien Aircraft P/N: AE-037)</td>
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<td>2</td>
<td>Main Wheels</td>
<td>DuBro 2 1/2” Diamond Lite Wheels (DuBro # 250DL)</td>
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<tr>
<td>1</td>
<td>Tail Wheel</td>
<td>DuBro 1” Mini Lite Wheel (DuBro # 100MW)</td>
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<td>Spinner</td>
<td>Great Planes Aluminum E-Spinner 2-1/4” (P/N: GPMQ4727)</td>
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<tr>
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<td>Spinner Adapter</td>
<td>Great Planes Aluminum E-Spinner 1/4”-28 Adapter (P/N: GPMQ4731)</td>
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<tr>
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<td>Prop Adapter</td>
<td>Great Planes Collet Prop Adapter 4.0mm to 1/4x28 (P/N: GPMQ4965)</td>
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<td>Wheel Collars</td>
<td>DuBro 3/32” Wheel Collars (P/N: #138)</td>
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<td>Battery</td>
<td>3 Cell 1250Mah to 1800mAh 20C Lipo Battery</td>
</tr>
<tr>
<td>1</td>
<td>Covering Material</td>
<td>Light Weight Covering Material Plus Trim Colors</td>
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<tr>
<td>1</td>
<td>Radio</td>
<td>4 Channel Radio with 4 micro servos &amp; Receiver with one “Y” connector and servo extensions if required.</td>
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</tbody>
</table>
Building Instructions:

General Note: Cover the plans with wax paper before assembling your model to prevent the parts from sticking to the plan.

Building the Tail Surfaces:

1... Glue R-1 and R-2 together. Bevel the front edge of R-3 as shown on the plan, and sand the other edges round.

Mark the hinge locations and cut the hinge slots in R-2 and R-3. Temporarily install the hinges without glue. Sand the front edge of R-1 & R-2 round. Leave the other edges square.

2... Bend the tail wheel wire from the 1/16” x 3” music wire. Leave the axle end long. It will be trimmed to length when the tail wheel is installed later.

3... Drill a hole in the rudder (R-3) for the tail wheel wire at the location shown on the plan. Cut a groove in the front of the rudder for the tail wheel wire to fit into so that it is flush with the front of the rudder. Glue the tail wheel wire into the rudder.

Tightly wrap and glue the 1” nylon tape reinforcement into position around the tail wheel wire. Trim any excess and sand the tape smooth.

4... Join the elevators (S-2) using the 1/8” x 3 1/2” dowel. Use the stabilizer as a guide. Bevel the front edge of the S-2’s as shown on the plan, and sand the other edges round.

Sand the front and ends of the stabilizer (S-1) round. Leave the back edge square.

Mark the hinge locations and cut the hinge slots. Temporarily install the hinges without glue.
Building the Fuselage:

5. Glue F-1L and F-1R to the front of the two F-2’s over the drawing on the plan. The F-1L / F-2 will be longer than the F-1R / F-2.

6. Pin F-3 and F-4 into position on the fuselage plan as shown and glue them together.

7. Pin F-5, F-6 and F-7 into position on the fuselage plan as shown. Glue F-5 to F-4 and F-6.

8. Crack the two F-13’s at the dashed lines and angle the top section up. Use part FX to set the proper angle and apply glue to the part to lock the angle in. Be sure to make one left and one right.

9. Crack the two F-15’s at the dashed lines and angle the bottom section up. Use part FX to set the proper angle and apply glue to the part to lock the angle in. Be sure to make one left and one right.
10...Place former F-9 into position on F-3 and F-7. The top edge should angle forward for the right thrust for the motor. Use part FY to hold the proper angle while you glue F-9 into position.

Place former F-8 into position on F-3 and F-7. The top edge should angle forward for the right thrust for the motor. Use part FY to hold the proper angle while you glue F-8 into position.

11...Place formers F-10 thru F-18 into position. These formers should be 90 degrees to the building board. When properly positioned, glue them in place. Pin the bottom of F-12 and F-13 securely in position on the plan. Pin former F-14 securely to the plan. Line up the notches for F-1/F-2 with the plan to be sure that you do not glue any of the formers on upside down.

12...Place F-1L/F-2 into position on the formers. Working from the back to the front, glue F-1L/F-2 to F-5 and then to the formers. Formers F-14, F-13 and F-12 sit a little low so you will have to press F-1L/F-2 into the notches and hold it in position while the glue dries. Use part FY to make sure that you do not change the angle of F-8 and F-9. Make sure all of the other formers are 90 degrees to the building board.

13..Trim a taper on the two F-20’s as shown. The angle extends from the marked line and tapers to a point at the back edge.
14...Position the left F-20 into position on the fuselage as shown with the taper down. The front end fits in the notch and is flush with the front of F-18. The bottom end sits tight against F-1L/F-2 and the back end sits on top of F-5. When properly positioned, glue F-20 in place.

15...Place the two 1/8” sq. full length stringers into position on the fuselage directly above and below F-1L/F-2. The upper stringer ends in the notch in F-20. Taper the back end of the lower stringer as you did F-20. When properly positioned, glue the stringers in place. Leave the front ends long, extending past F-8. They will trimmed flush with the former later.

16...Moisten both sides of the front half of F-19 with an ammonia based glass cleaner such as Windex and allow it to sit for several minutes. Place it into position on the fuselage. Working from the back to the front, glue F-19 securely to the formers. Bend / roll the front end down so it fits tight in the notches in F-12 and F-11.

17...Cut, fit and glue the three lower front 1/8” sq. stringers into position as shown. Leave the front ends long, extending past F-8. They will trimmed flush with the former later.
18...Cut, fit and glue the two upper front 1/8” sq. stringers into position as shown. Leave the front ends long, extending past F-8. They will trimmed flush with the former later.

19...Cut, fit and glue the five lower rear 1/8” sq. stringers into position as shown. The first and third stringer from the bottom end against the front face of F-17. The others extend back to F-5. Taper the back ends as you did F-20. Leave the front ends long.

20...Do not glue the top rear stringers into place until later. Remove the fuselage from the plan.

21...Glue F-8 and F-9 to the right side of the fuselage. Make sure that they match the angle of the formers on the left side. You can use a small flat piece of scrap wood to help align the formers and make sure that they are flush with the opposite side.
22...Place formers F-10 thru F-18 into position. These formers should match the 90 degree angle of the formers on the opposite side. When properly positioned, glue them in place. Be careful to not glue any formers in upside down.

23...Place F-1R/F-2 into position on the formers. Working from the back to the front, glue F-1R/F-2 to F-5 and then to the formers. Make sure that you do not change the angle of F-8 and F-9.

24...Moisten both sides of the front half of F-19 with an ammonia based glass cleaner such as Windex and allow it to sit for several minutes. Place it into position on the fuselage. Working from the back to the front, glue F-19 securely to the formers. Bend / roll the front end down so it fits tight in the notches in F-12 and F-11.

Glue a piece of 3/32” x 3/16” balsa across the bottom front of Former F-12.

25...Position F-20 into position on the fuselage as shown. The front end fits in the notch and is flush with the front of F-18. The bottom end sits tight against F-1R/F-2 and the back end sits on top of F-5. When properly positioned, glue F-20 in place.
26...Press four 4-40 blind nuts into F-21. Use a small drop of thin C/A to secure them in place.

27...Glue F-21, both F-22 and both F-23 securely together as shown to make the motor mount assembly. Use several small applications of thin C/A glue until it stops soaking into the plywood.

28...Position the motor mount assembly in place on the front of F-9. Make sure that it is completely seated and glue in place with several applications of thin C/A glue until it stops soaking into the plywood.

29...Cut the bottoms away from Formers F-13 and F-14 as shown.

30...Place F-25 on the front of former F-11. Align the holes. When properly positioned, glue F-25 to the former.
31...Place part F-24 into position as shown, centered left and right. It should rest on the bottom of the F-1/F-2’s on each side and formers F-13 and F-14 should be centered in the slots. When properly positioned, glue F-24 to the F-1/F-2’s on each side.

32...Fit and glue the 1/8” sq. stringers into place as you did the opposite side.

33...Trim F-3/F4 from between formers F-13 and F-15. Trim the stringers and sand flush with the formers.

34...Make the tail fairings by gluing parts F-26 thru F-31 together as shown. Be sure that you make one left hand and one right hand.
35...Glue the tail fairings to the back of the fuselage against F-4 and F-18. There should be a 1/8” gap between the fairings and the F-20’s. Slide the stabilizer in position as a temporary spacer. Be careful to not glue the stabilizer.

36...Place F-32 on the fuselage. The front legs fit in the notches in former F-13. It should rest on top of former F-14 and tightly against the front of F-15. Trim an angle in the notches in F-13 as required to achieve the proper fit. Make sure the front and back ends are centered and that the back end is level and not twisted. When properly positioned, glue F-32 to the formers.

37...Fit and glue the top rear stringers into position. The lower stringer ends against the rear face of F-14, touching the bottom of F-32, and flush with the outside edge of F-14.

38...Glue the two F-33’s to the inside of parts F-19.
39...Position F-34 securely in the notched in the F-33’s. Glue it to the F-33’s, the F-19’s and F-15.

40...Glue the two F-35’s, F-36, two F-37’s and F-38 together as shown.

41...Trim and sand any stringers flush with the front of F-8. Glue the nose assembly to the front of the fuselage.

42...Sand the nose assembly as shown.
43...Sand the fuselage smooth all over. Blend and shape the canopy rails (F-32) and the tail fairings.

44...Test fit the motor to the mount with 4-40 x 1/2” screws. The motor wires will pass through one of the holes in the bottom of F-9.

45...Install the prop adapter, spinner back plate, propeller, washer and prop nut. Screw the prop adapter onto the prop shaft.

46...Install the spinner with the screw through the front into the spinner adapter. Make sure that the motor spins freely. There should be a 1/16” to 3/32” gap between the spinner back plate and the front of the fuselage. Sand the front of the fuselage if required to achieve the proper gap. Now remove the spinner, propeller and motor from the model.
Building the Belly Scoop:

47...Pin P-1 and P-2 to the plan.

48...Glue formers P-3, P-4 and P-5 in place. The should be 90 degrees to the building board.

49...Glue part P-6 into position.

50...Glue the 1/8” sq. stringers into position.

51...Glue formers P-3, P-4 and P-5 into position on the opposite side. Make sure that they are straight and aligned with the formers on the opposite side.
52...Glue part P-6 into position on this side of the scoop.

53...Glue the 1/8” sq. stringers into position.

54...Glue P-7 and P-8 together and then glue them to the front of the scoop.

55...Sand the scoop smooth all over and shape the front end.
56...Glue the two P-10’s to one end of P-9.

57...Glue P-9/P-10 into position one one side of P-1 and P-2 as shown here and on the plan. It doesn’t matter which side you choose.

Sand the P-10’s flush with the scoop.

**Building the Wing:**

Note: Cover the wing plan with wax paper to prevent the parts from sticking to the plan.

**Building the Left Wing:**

58...Cut one of the 3/32” x 1/4” x 24” balsa spars into two 12” lengths. Glue each of these 12” pieces to one of the 3/32” x 1/4” x 24” balsa spars as shown on the plan. This makes the upper and lower main spars.

59...Pin one main spar assembly to the plan with the 12” section on the top. Align the end of the 12” doubler with the mark on the plan. The inboard end will extend past the W-1 rib. The outboard end will extend past the W-9 tip rib. Note: The double section is the inboard end.
60...Glue the W-1A, W-4A and W-5A doublers to the front of ribs W-1, W-4 and W-5. Be sure to make a left and right hand assembly of each rib as shown.

61...Pin and glue rib W-2 into position on the bottom spar 90 degrees to the building board.

62...Place shear web “A” into position and glue to the front face of the spar. The small “X” on the shear web marks the top outboard corner.

63...Glue rib W-1 into position. It should be tight against shear web “A” and the top edge will angle slightly toward the wing tip.

64...Pin and glue ribs W-3 thru W-9 into position on the bottom spar 90 degrees to the building board.

Note: The W-4A and W-5A doublers should face each other with the landing gear mount between them as shown on the plan.
65...Glue the top main spar assembly into the notches in the top of the ribs. Align the end of the 12” doubler with the mark on the plan. The inboard end will extend past the W-1 rib. The outboard end will extend past the W-9 tip rib.

66...Glue the shear webs (B thru D) into position on the front faces of the main spars. The small “X” marked on the shear web marks the top outboard corners of the shear webs.

67...Slide the bottom trailing edge sheet (W-10) into position in the slots in the back end of the ribs. Align the inboard end of the aileron cutout with the W-5 rib. The inboard and outboard ends will be slightly long and extend past the W-1 and W-9 ribs. Be sure the trailing edge is fully forward in the notches and glue in place.

68...Glue two W-11’s together to make the aileron spar.

69...Glue the aileron spar into position between ribs W-5 and W-9. Sand the ends slightly if required to get the proper fit. Be sure it is tight against the back of the ribs and the trailing edge sheet.
70...Glue the top trailing edge sheet into position.

71...Glue the 1/4" sq. balsa leading edge into position. Notch it at the W-2 and W-4 ribs so it will form the angles as shown on the plan. Make sure that the leading edge is completely seated in the notches in the wing ribs.

72...Glue the rear 3/32" sq. stringer spar into position. Crack it at the bends at the W-2 and W-4 ribs. Do not install the forward stringer spar at this time.

73...Cut pieces 3" x 1 7/8" wide from one of the 1/16" x 3" x 12" sheets. Use these pieces to sheet the top wing center section. The sheet should be between and flush with the spars, trailing edge and stringer spar.

74...Remove the wing from the plan. Break or cut off the support tabs from the lower back end of the ribs.

Glue W-14 into position between the spar and the trailing edge, on top of ribs W-5 and W-6.
75...Glue W-12, W-13 and W-13A together as shown here and on the plan to make the landing gear mount. The hole in W-12 is outboard with the W-13&W-13A on top of it.

76...Position the landing gear mount tightly in the notches in the W-4 and W-5 ribs. Make sure that it is completely seated and glue in place with several applications of thin C/A glue until it stops soaking into the wood.

77...Cut a 1” piece from the excess 1/4” sq. leading edge and securely glue into place in the corner of the W-4A rib and the landing gear mount.

78...Trim or sand the corner from one of the 3/8” hardwood cubes as shown.

79...Glue this hardwood cube into place in the corner of the W-5A rib and the landing gear mount. The cut corner should be on the top front and the cube should be centered on the hole in part W-12.
80...Drill a 3/32” hole thru the hardwood cube using the hole in W-12 as a guide. Be sure to hold the drill 90 degrees to the landing gear mount.

81...Flip the wing over and install the forward 3/32” sq. stringer spar.

82...Finish adding the top 1/16” center section sheet between the stringer spars, and between the forward stringer spar and the leading edge.

83...Flip the wing over and install the lower 1/16” center section sheet between the trailing edge and the main spar.

84...Install the lower 3/32” sq. stringer spars.
85...Finish adding the lower 1/16” center section sheet.

86...Glue four of the W-15 pieces together, making the wingtip.

87...Glue the wing tip to the W-9 rib.

88...Sand the leading edge of the wing round to match the profile shown on the plan. Sand the wing tip round. Leave the edges of the aileron cutout square. Now sand the wing smooth all over.
89...Glue the four W-16’s into position on the inside of W-14 in the position shown on the plan. Align the holes in the W-16’s with the holes in W-14.

Repeat steps 58 thru 89 to build the right wing.

**Building the ailerons:**

Build the right aileron.

90...Glue two A-2’s together to make the aileron leading edge.

91...Glue the A-2 onto and flush with the front of A-1

92...Position A-3 at the inboard end of the aileron. The edge should be flush with the end of A-1 and be tight against A-2. When properly positioned, glue in place.

93...Position A-9 at the inboard end of the aileron. The edges should be tight against A-2 and A-3. When properly positioned, glue in place.
94...Position A-4 thru A-7 as you did A-1. When properly positioned, glue in place.

65...Trim or sand an angle on the top of the A-2’s to match the angle of the ribs as shown on the plan.

96...Glue the top A-1 sheet in place.

97...Draw a line centered on the front of the aileron. Draw a line 1/8” back from the leading edge on the top and bottom of the aileron.

98...Use these lines as a guide to trim or sand the proper angles on the front of the aileron as shown on the plan.
99...Mark a centerline on the back of the aileron spar (W-11) on the wing. Mark the hinge locations and cut slots in the wing and ailerons for the hinges.

Temporarily install the hinges and check the aileron for proper fit on the wing. Do not glue the hinges at this time.

100...Repeat steps 90 thru 99 to build the right aileron.

101...Cut slots in both W-1 ribs at the dashed lines to accept the wing joiner. Cut the 1/16” top sheet away from the slot in the front.

102...Slide the wing joiner into the slot in the left wing. It should be tight against the spars and tight against the back of the shear web. Glue the wing joiner into the wing with 5 minute epoxy. Use a small scrap of wood to spread the epoxy inside the wing on the spars and shear web. Spread a thin film of epoxy on the joiner and then insert it into the wing completely. Wipe off any excess glue that may squeeze out and allow the epoxy to dry.

103...Test Fit the right wing onto the left. Apply epoxy to the wing joiner and inside the right wing. Spread glue on the W-1 rib. Slide the wings together and align the W-1 ribs. Wipe off any excess glue and hold the wings in the proper alignment with several strips of masking tape. Sand the top, bottom, leading edge and trailing edge to match each other.

104...Glue the 3/16” dowel securely into the pocket in the leading edge of the wing.
105...Cut the holes in the top center section sheet for the aileron servo wire access in the location shown on the plan.

106...Press a 4-40 blind nut into F-34A. Use a small drop of thin C/A to secure it in place.

107...Place the wing on the fuselage. Trim as required to achieve a good fit. Place the belly scoop on the wing and tightly against former F-15. When properly centered and aligned, press the scoop & wing tightly against the fuselage and drill a 1/8” hole in F-34, using the hole in the belly scoop as a guide.

108...Position F-34A on top of F-34. Use the 4-40 wing screw to align the holes and then glue into position.
109...Place the wing and belly scoop on the fuselage and secure with the 4-40 wing screw. Sand the belly scoop and fuselage flush with each other.

Remove the scoop and wing from the fuselage. The scoop is not glued to the wing until after covering.

Covering:
110...Sand all parts smooth with 400 grit sandpaper. Feed strings from the aileron servo mounts to the center section. You will use these strings to pull the servo wires thru the wing after the model is covered. Cover the model with a light weight iron on covering material. Paint the canopy with paint designed for plastic models. We use Testors Spray Enamel. DO NOT USE PAINTS SUCH AS Top Flite LustreKote. IT WILL DAMAGE THE PLASTIC PARTS.

Note: For smoother looking covering, scallop the formers as shown on the plan. You can use a small piece of sandpaper wrapped around a small dowel to make the scallops.

Note: After the model is covered you must check the tail surfaces, wings and ailerons for warps or twists. If there are any they can be removed by twisting the parts straight and heating the covering.

Final Assembly:
111...Cut the covering away from the stabilizer, fin and pushrod slots in the back end of the fuselage. Trim part F-5 away from the rear of the stabilizer slot.

112...Cut the covering away from the stabilizer in the areas that makes contact with the fuselage. Place the stabilizer into position in the fuselage. Make sure that it is straight and square and then glue it into position. NOTE: When trimming the covering, DO NOT cut into the wood. This will cause the tail surfaces to fail in flight.
113...Attach the elevators with the hinges and glue in place.

114...Glue part S-3 into position. Make sure that there is a gap between S-3 and the elevator joiner so the movement of the elevator is not restricted.

115...Carefully cut the covering away from area on the fin that will make contact with the fuselage. Place the fin into position and make sure that it is straight and square. Glue the fin into position.

116......Attach the rudder with the hinges and glue in place.
117...Attach the tail wheel with the press on retainer. Trim the axle as required to minimize any play in the tail wheel while still allowing it to rotate freely.

118...Screw the rudder and elevator servos to the servo tray.

119...Insert the pushrod housings into the exit slots in the back of the fuselage. They should extend out to about 1 1/2” from the hinge lines. The rudder housing will extend farther back than the one for the elevators. Glue the housings to the rear exits.

120...Glue the rudder and elevator control horns into position. Drill 1/16” holes for the pins to pass thru. Trim the covering away from the wood in the area where the base of the control horn makes contact. When the glue is dry, cut off the excess pins flush.

**NOTE:** Make sure that the rudder horn is low enough so it will not hit the elevator when the rudder is deflected and the elevator is in the down position. You may trim the end off of the rudder horn if required.

121...Install the pushrods into the housings from the rear. Secure the rear of the pushrods to the control horns with Mini E/Z Links.
122...The front ends of the pushrods are attached to the servos with Mini E/Z Connectors. Glue the two 3/32” x 3/16” pushrod supports to former F-15. Glue the housings to the supports.

Trim the front ends of the pushrods 1/2” in front of the connectors when the control surfaces are in neutral.

123...Pass the motor wires from the speed controller thru one of the lower holes in former F-9 and out thru the hole in the front of the fuselage.

124...Plug the motor wires into the speed controller. Attach the motor to the model using 4-40 x 1/2” screws.

Pull the speed controller and wires back into the fuselage.
125...Cut a piece of hook and a piece of loop velcro 5” long. Attach the pieces together with a 1” overlap and glue them together.

126...Glue a piece of velcro to the top of the battery tray. We use the loop side of the velcro on the fuse-lage and the hook side of the velcro on the battery and receiver, but you may orient them either way. Pass this piece of velcro from step 126 under the battery tray. Center the overlap at the center of the battery tray and securely glue it to the bottom of the battery tray.

127...Glue a piece of velcro in place to mount the receiver. Mount the receiver to the fuselage. Plug the servos and speed controller into the receiver. We just let the speed controller hang from its wires.

128...Attach the ailerons to the wings with the hinges and glue in place.

129...Glue the aileron servos into position on the W-17 mounting plates. The servo arms should be angled about 30 degrees forward to the plate when the servo is in neutral. Be sure to make a left and a right hand assembly.
130...Screw the servo mount plates to the W-14’s. The servo arms should be forward and inboard as shown. Use the strings in the wing to feed the servo wires through the wing and out the holes in the center section sheet.

131...Glue the aileron control horns to the bottom of the ailerons in the position shown on the plan. Drill 1/16” holes for the pins to fit into.

132...Bend the aileron pushrods to the shape shown on the plan.
Install the pushrods and attach them to the servos and control horns with with Mini E/Z Links.

133...Attach the wing and belly scoop on the fuselage and secure with the 4-40 wing screw. Mark the area on the bottom of the wing where the scoop makes contact. Remove the wing and scoop and cut the covering away where the wing and scoop make contact.

134...Attach the wing and belly scoop on the fuselage and secure with the 4-40 wing screw. Glue the belly scoop to the wing.
135...Secure the landing gear wires to the wing using the W-18 straps and the #2 sheet metal screws.

136...Adjust the bend on the top of the landing gear wire so the landing gear legs angle forward as shown on the plan. Make sure that the angle matches on the left and right sides.

137...Secure the wheels onto the landing gear legs with 3/32” wheel collars.

138...Apply covering to the 3/16” sq. x 3” balsa strip.
139...Make the landing gear door supports following the drawing on the plan.

140...Using the pattern on the plan, bark the support locations on the landing gear doors. Be sure to make a left and right.

141...Remove the covering from the gear doors where the supports make contact. Glue the supports to the doors making sure the slots are aligned up and down and the supports are 90 degrees to the doors.

142...Epoxy the gear doors to the landing gear legs with 5 minute epoxy.
143...Glue parts E-1 and E-2 together. Make one right and one left.

144...Glue part E-3 on top of the E-2’s.

145...Sand the exhausts to the shape shown. Paint them as desired.

146...Attach the exhausts to the side of the fuselage as shown. Scuff up the covering and use a small amount of thick C/A or contact cement.

147...Trim the canopy on the trim lines. Test fit it on the fuselage.
148...Mask the clear areas on the canopy and paint the framework.

149...Place the canopy on the fuselage. Mark where the canopy contacts the fuselage. Cut away a small strip of covering from the wood areas to expose the wood. In the areas where the covering is not supported by wood, scuff up the covering. Using glue sparingly to attach the canopy to the fuselage.

150...WITH THE PROPELLER REMOVED...Turn the transmitter on. Place the throttle stick in the low position. Plug the battery into the speed controller. Check the motor for proper operation and direction of rotation. Follow the instructions with the speed controller to make any adjustments.

151...Attach the wing to the model and plug in the aileron servos using a “Y” connector. Check the servos for proper operation and direction. Adjust the control throws to the values shown on the plan. Now disconnect the battery and then turn off the transmitter.

152...Install the prop adapter, spinner back plate, propeller, washer and prop nut. Screw the prop adapter onto the prop shaft.

153...Install the spinner with the screw through the front into the spinner adapter. Make sure that the motor spins freely.

154...Place the battery in the model.
155...Check the balance of the model. It should balance at the position shown on the plan. Move the battery forward or aft to achieve the proper balance. Use the velcro straps to secure the battery in the model in this position. Mark the location of the battery on the fuselage. This will allow you to quickly reinstall the battery at the location that gives the proper balance.

Note: If moving the battery will not achieve the proper balance, you will have to add weight to the nose or tail. Glue any weight securely to the model.

Make sure that the battery will not interfere with the rudder and elevator servos. If the battery is too far back, move it forward and add weight to the tail to achieve the proper balance.

156...Your model is now ready to fly. Fully charge the transmitter and airborne battery before attempting to fly the model. Always range check and do a thorough pre-flight of the model before every flight. Always follow established safety guidelines while operating the motor, radio and flying your model.

LIPO BATTERY SAFETY ALERT

Lithium Battery Fires
Lithium batteries are becoming very popular for powering the control and power systems in our models. This is true because of their very high energy density (amp-hrs/wt. ratio) compared to NiCd’s or other batteries. With high energy comes increased risk in their use. The principal risk is FIRE which can result from improper charging, crash damage, or shorting the batteries. All vendors of these batteries warn their customers of this danger and recommend extreme caution in their use. In spite of this, many fires have occurred as a result of the use of Lithium Polymer batteries resulting in loss of models, automobiles, and other property. Homes and garages and workshops have also burned. A lithium battery fire is very hot (several thousand degrees) and is an excellent initiator for ancillary (resulting) fires. Fire occurs due to contact between Lithium and oxygen in the air. It does not need any other source of ignition, or fuel to start, and burns almost explosively. These batteries must be used in a manner that precludes ancillary fire. The following is recommended:

1. Store, and charge, in a fireproof container; never in your model.
2. Charge in a protected area devoid of combustibles. Always stand watch over the charging process. Never leave the charging process unattended
3. In the event of damage from crashes, etc, carefully remove to a safe place for at least a half hour to observe. Physically damaged cells could erupt into flame and after sufficient time to ensure safety, should be discarded in accordance with the instructions which came with the batteries. Never attempt to charge a cell with physical damage, regardless of how slight.
4. Always use chargers designed for the specific purpose, preferably having a fixed setting for your particular pack. Many fires occur in using selectable/adjustable chargers improperly set. Never attempt to charge Lithium cells with a charger which is not specifically designed for charging Lithium cells. Never use chargers designed for Nickel Cadmium batteries.
5. Use charging systems that monitor and control the charge state of each cell in the pack. Unbalanced cells can lead to disaster if it permits overcharge of a single cell in the pack. If the batteries show any sign of swelling, discontinue charging and remove them to a safe place outside as they could erupt into flames.
6. Most important: NEVER PLUG IN A BATTERY AND LEAVE IT TO CHARGE UNATTENDED OVERNIGHT. Serious fires have resulted from this practice.
7. Do not attempt to make your own battery packs from individual cells. These batteries CANNOT be handled and charged casually such as has been the practice for years with other types of batteries. The consequence of this practice can be very serious resulting in major property damage and/or personal harm.