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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<tbody>
<tr>
<td>2</td>
<td>LC-305-01</td>
<td>1/16” X 4” X 24” Laser Cut Balsa</td>
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<tr>
<td>1</td>
<td>LC-305-02</td>
<td>1/16” X 4” X 24” Laser Cut Balsa</td>
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<td>LC-305-04</td>
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<td>LC-305-05</td>
<td>3/32” X 4” X 24” Laser Cut Balsa</td>
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<tr>
<td>1</td>
<td>LC-305-06</td>
<td>3/32” X 4” X 24” Laser Cut Balsa</td>
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<td>LC-305-07</td>
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<td>LC-305-08</td>
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<td>LC-305-09</td>
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<td>LC-305-10</td>
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<td>LC-305-11</td>
<td>3mm X 4” X 24” Laser Cut Poplar Ply</td>
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<td>LC-305-12</td>
<td>1/16” X 3” X 12” Laser Cut Birch Ply</td>
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<td>LC-305-13</td>
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<td>LC-305-14</td>
<td>1/32” X 3” X 6” Laser Cut Birch Ply</td>
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<td>3</td>
<td>Wing &amp; Cockpit Sheet</td>
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<tr>
<td>1</td>
<td>K-305 PLAN A</td>
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<tr>
<td>1</td>
<td>K-305 PLAN B</td>
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<td>1</td>
<td>Main Wing Spars &amp; Fuselage top</td>
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<tr>
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<td>Wing Leading Edges</td>
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<td>25</td>
<td>Stringer Spars / Fuselage Stringers</td>
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<td>Cockpit Sides</td>
<td>3/16” sq. X 18” Balsa</td>
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<tr>
<td>2</td>
<td>Bottom Stringers</td>
<td>3/32” sq. X 24” Balsa</td>
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<tr>
<td>4</td>
<td>Trailing Edge</td>
<td>1/16” X 3/4” X 18” Balsa</td>
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<tr>
<td>1</td>
<td>Canopy Attach &amp; Tailwheel Wire</td>
<td>1/32” X 12” Music Wire</td>
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Hardware Bag

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<th>Qty</th>
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<td>4-40 Blind Nuts</td>
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<td>Elevator Joiner</td>
<td>1/8” x 3” Birch Dowel</td>
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<td>4</td>
<td>Control Horn</td>
<td>Control Horns</td>
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<td>4</td>
<td>Sig EZ Hinge</td>
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<td>12</td>
<td>Aileron Servo &amp; Cowl Screws</td>
<td># 2 X 1/2” Sheet Metal Screws</td>
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<td>2</td>
<td>Axles</td>
<td>4-40 X 1 1/4” Machine Screws</td>
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<td>6</td>
<td>Axle Nuts</td>
<td>4-40 Nuts</td>
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<td>1</td>
<td>Tailwheel Reinforcement</td>
<td>1” X 1 1/2” Nylon Tape</td>
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<td>Tail Wheel &amp; Retainer</td>
<td>Plastic Tail Wheel &amp; Retainer</td>
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<tr>
<td>4</td>
<td>Cowl Blocks</td>
<td>3/8” Hardwood Blocks</td>
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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

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<tr>
<td>1</td>
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<tr>
<td>1</td>
<td>K-305 Plastic Cowl Right side</td>
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<tr>
<td>2</td>
<td>K-305 Plastic Wheel Pants Sets</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>K-305 Plastic Canopy</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>K-305 Right Landing Gear</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>K-305 Left Landing Gear</td>
<td></td>
</tr>
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</table>

### 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>
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<th>Description</th>
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<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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<tr>
<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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<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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<tr>
<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>Main Wheels</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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<td>Motor Mount Hardware</td>
<td>Great Planes Collet Prop Adapter 4.0mm to 1/4x28 (P/N: GPMQ4965)</td>
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<td>Battery</td>
<td>3 Cell 1250Mah 20C Lipo Battery</td>
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<tr>
<td>1</td>
<td>Covering Material</td>
<td>1 Roll 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>
</tr>
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</table>
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-2 and R-3 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-1 and R-3. Temporarily install the hinges without glue. Sand the front edge of R-1 round. Leave the other edges square.

2. Cut the 1/32” x 12” music wire into two 6” pieces. Bend the tail wheel wire from one of these 6” pieces. 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 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.

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

5. Join the elevators (S-3) using the 1/8” x 3” dowel. Use the stabilizer as a guide. Glue the S-2’s to each end of the S-3’s. Bevel the front edge of the S-3’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. Be sure that the gap between the stabilizer and the S-2’s is large enough so that they will not rub after the covering is applied.
Building the Fuselage:

6...Glue two 3/32” sq. X 18” stringers to the inside of each fuselage side. One is on the top and one is on the bottom. Use the detail drawing on the plan as a guide to properly position these stringers. The back end of the stringers stop just in front of the slot for former F-9. **Be sure to make a right hand and a left hand side.**

7...Glue the F-2 doublers to the inside of the fuselage sides. Use the drawing on the plan and the photo to properly locate the doublers on the fuselage sides.

8...Lightly tack glue formers F-3, F-5, and servo tray F-4 into position on the left fuselage side with several small drops of thin C/A glue. The narrow end of F-4 is at the back. Be sure that the formers are completely seated against the fuselage sides.

9...Place the right fuselage side into position and square up the fuselage. Glue the right fuselage to the formers with several small drops of thin C/A glue. Be sure that the formers are completely seated against the fuselage sides.

10...Use a clothes pin to hold the back end of the fuselage together. The ends should be flush and even with each other. Make sure that the fuselage is square and then completely glue the formers F-3, F-4 and F-5 to the fuselage sides. Be sure that the formers are completely seated against the fuselage sides.
11...Glue 3/32” sq. braces to the front of F-7 and F-8. Cut the braces from one of the 3/32” sq. x 18” strips. The location for these braces are marked on the formers with dashed lines.

Note: cut these braces from an 18” strip. **DO NOT USE THE 24” PIECES.**

12...Place former F-9 into position and pull the rear of the fuselage sides together. Adjust the back end until the fuselage is straight and square. Glue the fuselage sides together and glue the former in place.

13...Place former F-8 into position and glue it in place. Gently squeeze the fuselage sides tightly against the former so that it is completely seated against the fuselage sides.

Place former F-7 into position and glue in place as you did former F-8.

14..Press the four 4-40 blind nuts into the holes in the back of M-2 and secure them with a small drop of glue.

15...Tack glue parts M-1R and M-1L to the front of former F-6. Be sure that they are completely seated and are tight against the edges of the opening at the top.
16...Position and tack glue M-2 to the front of the F-1’s. It will angle slightly to the right as M-1R is shorter than M-1L.

17...Trim a small amount of wood away from the bottom of M-3 to provide clearance for the blind nuts installed on the back of M-2.

18...Place M-3 into position on top of the motor mount assembly. Be sure it is completely seated and tack glue into place.

19...Place part M-4 into position on the motor mount assembly. Place the tab on the back edge of M-4 into the slot in F-6 and then rotate it forward into position. Make sure that M-4 is completely seated and tack glue it into position.

Check to make sure that all of the motor mount parts are still in the proper position and then thoroughly glue them together. Apply thin C/A to all of the joints. Allow it to soak into the wood. When the C/A has cured, apply another coat to each joint. Repeat this process until the wood stops soaking up the glue. It should take a minimum of 3 or 4 applications.

20...Place the motor mount assembly+F-6 into position on the front of the fuselage. Be sure that it is fully seated and tightly in position. Now apply several applications of thin C/A to the joints until it is securely glued into position.
21...Glue LG-2 to the top of LG-1. Make sure that the front and sides are flush. Apply the glue sparingly and make sure that there is no excess glue build up in the slots for the landing gear legs.

22...Glue LG-3 to the top of LG-2. Make sure that the front and sides are flush. Apply the glue sparingly and make sure that there is no excess glue build up in the slots for the landing gear legs.

When the glue is dry, test fit the landing gear legs into the slots. Scrape out any excess glue if required to allow the legs to be fully inserted in the slots.

23...Place the landing gear mount assembly into position on the bottom of the fuselage. Be sure that it is fully seated and tightly in position. Now apply several applications of thin C/A to the joints until it is securely glued in place.

24...Cut four pieces of 3/32” sq. balsa and glue them into the corners between the fuselage sides and the landing gear mount and between the fuselage sides and F-6.

Note: Use the same strip you used to make the former braces in step 11. DO NOT USE THE 24” Pieces.

25...Glue F-10 into position on the bottom of the fuselage. Spread and squeeze the sides, and wiggle the formers fore and aft as required to get F-10 to fit in the proper position.
26...Glue F-11 into position on the top of the fuselage. Spread and squeeze the sides as required to get F-11 to fit in the proper position.

27...Place the battery tray (F-12) into position and glue securely to the M-1’s, M-2, F-6 and F-3.

28...Place F-13 into position on the top of the fuselage. Place F-13A on the back side as shown to establish the proper angle on F-13. While maintaining the proper angle, securely glue F-13 to the top of the fuselage. Hold the proper angle until the glue is dry. Do not glue F-13A to the model.

29...Glue formers F-14, F-15 and F-16 into position on the top of the fuselage. These formers should be 90 degrees to the fuselage top.

30...Place a 3/32” x 3/16” balsa strip into position in the slots in the top of formers F-13 thru F-16. Let the ends of the strip extend past formers F-13 and F-16. Make sure not to change the angle of former F-13. Glue the strip to the formers.

When the glue is dry, trim the ends of the strip flush with the front of F-13 and the back of F-16.
31...Place parts F-17 into position on the back of the fuselage top. Place a scrap of 1/8” balsa sheet between them to maintain the proper spacing. Make sure that the top front edges of the F-17’s are centered on the back of F-16. Glue the F-17’s to the fuselage top and the back of F-16. Do not glue the spacer.

32...Glue the bottom 3/32” sq. balsa stringer into position between F-13 and F-17. The back end of the stringer ends at the back edge of F-17. Trim a taper in the inside of the back end so it matches the angle where it meets F-17.

Glue the stringer into position. When the glue is dry, trim the front end of the stringer flush with the front of F-13.

Note: Use 18” strips to make these stringers. DO NOT USE THE 24” Pieces.

33...Place the next two stringers into position. Trim, fit and glue them into position as you did the first stringer.

34...Place the top two stringers into position. These stringers end against the front of F-16, and flush with with the top of the former.

35...Glue formers F-18 thru F-25 into position on the bottom of the fuselage. These formers should be 90 degrees to the fuselage bottom.
36...Use the two 3/32” sq. x 24” balsa strips, install the bottom stringers into position between former F-18 and the end of the fuselage. Make sure that they are fully seated in the slots in the formers and glue them into place. When the glue is dry, trim the front ends flush with the front face of F-6.

**Building the Hatch:**

37...Cut the 3/16” sq.X 18” balsa strip into two 9” lengths. Glue these strips to the top of part H-1. They should be flush with the sides and extend slightly past each end.

38...Glue H-3A to the back of H-3.

Glue H-2 and H-3 to H-1. They should be 90 degrees to H-1. H-3A should be on the back side of H-3.

Trim the ends of the 3/16” sq. strips flush with the front of H-2.

39...Place the hatch on the fuselage. The front should be tight against F-6. Trim the back ends of the 3/16” strips to match the angle of F-13. Place H-4 on the back of H-1. It should match the angle and be tight against F-13.

Tack Glue H-4 into position on H-1. USE THE GLUE SPARINGLY. DO NOT GLUE H-1 OR H-4 TO THE FUSELAGE. Remove the hatch from the fuselage and securely glue H-4 to H-1 being careful to maintain the angle of H-4.

40...Bend the hatch latch wire using the remaining 1/32” X 6” wire. Use the drawing on the plan as a guide.
41...Place the hatch back on the fuselage. Place the latch wire into position.

Press the hatch down tightly against the fuselage. Pull the top end of the hatch wire up until it makes full contact with the top of the slot in F-13.

42...Apply a small drop of glue to the bottom 1/2" of the hatch wire to glue it to the front of H-4. Glue sparingly.

43...Place H-5 tightly into position trapping the latch wire against H-4 and glue into position.

Remove the hatch from the fuselage by gently pulling the top of the wire forward. Replace the hatch on the fuselage and try the operation of the latch several times. Adjust the top of the notch in F-13 as shown on plan sheet #2 as required to achieve proper operation.

44...Use one of the 1/16" x 3" x 12" balsa sheets to sheet the top front of the hatch between H-2 and H-3. The back of the sheet should stop at the back edge of H-3 and not cover H-3A. The side edges of the sheet should fit against the inside edges of the 3/16" sq. sides and not overlap them on the top. Sand the front edge of the sheet flush with the front of H-2.

45...Glue the two H-6 pieces into position to sheet the back of the hatch. The front ends rest on top of H-3A and should be trimmed to meet on the hatch centerline. The back ends fit in the notches in the side of H-4. These pieces will not fit perfectly against the 3/16” sides and will be blended in when the hatch is sanded. When the glue is dry, trim the back ends of the H-6’s flush with the back of H-4.
46...Replace the hatch on the fuselage. Sand the hatch round and flush with the fuselage sides. Sand the fuselage smooth all over. Sand H-4 and F-13 flush.

47...Trim the canopy on the marked trim lines in the plastic. Cut out the slot in the top rear for the latch wire.

48...Test fit the canopy to the hatch. Use tape to hold it in position and adjust the canopy if necessary to obtain a tight fit.

49...Reinstall the hatch on the fuselage and test the function of the latch. Adjust the slot in the canopy if required to achieve the proper operation.

50...Cut the rear of the fuselage on the dashed lines and remove the wood from the stabilizer slots on the fuselage sides.
51...Test fit the tail surfaces on the fuselage. Sand or trim if required to obtain the proper fit.

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

Building the Left Wing:
Note: The wing is built upside down.

52...Pin the 3/32” x 3/16” x 18” lower main spar to the plan. Center it and let the ends extend past the W-1 and W-8 ribs.

53...Pin and glue rib W-1 into position on the bottom spar 90 degrees to the building board.

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

55...Pin and glue rib W-3 into position on the bottom spar 90 degrees to the building board.
56...Pin and glue ribs W-4, W-5, W-6, W-7 and W-8 into position. They should be 90 degrees to the building board.

57...Glue the 3/32” x 3/16” x 18” top main spar into the notches in the top of the ribs. Center it and let the ends extend past the W-1 and W-8 ribs.

Glue the 1/4” sq. x 18” leading edge into the notches in the front of the ribs. Center it and let the ends extend past the W-1 and W-8 ribs.

58...Slide the lower 1/16” x 3/4” x 18” trailing edge sheet into position in the slots in the back of the ribs. Make sure it is all of the way forward in the slots. Center it and let the ends extend past the W-1 and W-8 ribs and glue into place.

59...Glue two W-9’s together. Put into position and glue to the ribs and bottom trailing edge sheet.

60...Glue the top trailing edge sheet into position.
61...Position part W-10 on top of the rear of ribs W-1 and W-2, and glue to the ribs and trailing edge sheet.

62...Glue the shear webs ( A thru F ) into position on the front faces of the main spars. Trim the ends to get the proper fit if needed. The small “X” marked on the shear web marks the top outboard corners of the shear webs.

63...Position the 3/32” sq. stringer spars into the notches in the front of the ribs. Center them and let the ends extend past the W-1 and W-8 ribs and glue in place.

64...Glue the W-11A reinforcements to the bottom of W-11 as shown. The holes in the reinforcements should line up with the holes in W-11.
65...Position W-11 onto ribs W-4 and W-5. Glue it to the ribs, main spar and trailing edge sheet.

66...Cut pieces from the 1/16” x 3” x 12” balsa sheet to sheet the inboard end of the wing. The sheet should end just past rib W-3. The sheet fits against the edges of the trailing edge sheet and main spars and not on top of them. The sheet fits against the edges of the stringer spars and leading edge and not on top of them. After achieving the proper fit, glue the sheet in place.

67...Remove the wing from the plan. Trim the support tabs from the back end of the wing ribs. Sheet the inboard end on the opposite side as you did the the first side. Glue W-10 into position.

68...Trim the spars, sheet, leading edge and trailing edge flush with each end of the wing.

69...Glue the two W-12 ribs to W-8, making the wingtip.
70...Sand the leading edge of the wing round to match the profile shown on the plan. Sand the edges of the wing tip round. Leave the edges of the aileron cutout square. Now sand the wing smooth all over.

71...Glue part W-13 into the slot in wing rib W-1.

Repeat steps 52 thru 71 to build the right wing.

**Building the ailerons:**

Build the left aileron.

72...Glue two A-2’s together. Trim an angle on the top and bottom edges of the A-2’s

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

74...Set the aileron on the building board with A-2 flat on the board and A-1 pointing up.
75...Position A-3 at the inboard end of the aileron. The front should be flush with the end of A-1 and be square against A-2. Adjust the angle of A-1 to match A-3 and glue A-3 to A-1 and A-2.

76...Position A-4 thru A-8 as you did A-1. The front should be square against A-2. Adjust the angle of A-1 to match these pieces and glue them to A-1 and A-2.

77...With A-2 flat on the building board and the first A-1 pointing up, position the opposite A-1 on the assembly. Glue the second A-1 to A-2. Sight down the trailing edge (top edge) and adjust it so it is a straight line. Now glue the trailing edges of the A-1's together while keeping the trailing edge straight. Glue the ribs to the second A-2.

78...Glue part A-9 to the inside of the bottom aileron sheet. It should be glued to A-1, A-2 and A-5.

79...Draw a line centered on the front of the aileron. Draw a line 3/16” back from the leading edge on the top and bottom of the aileron.
80...Use these lines as a guide to trim or sand the proper angles on the front of the aileron as shown on the plan.

81...Mark a centerline on the back of the aileron spar (W-9) 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.

82...Repeat steps 72 thru 81 to build the right aileron.

83...Cut slots in both W-1 ribs at the dashed lines to accept the wing joiner.

84...Test fit the wings on the fuselage. Slide the wings onto the joiners extending the the fuselage sides. The W-13 tab should fit into the slot in the fuselage side to align the back end of the wing. The W-1 ribs should fit tight against the fuselage sides.

**Assembling the wheel pants:**

85...Draw the trim line on the the wheel pant halves on the marked trim lines in the plastic.
86...Trim the wheel pant halves on the marked trim lines.

87...Cut several 1/4” wide joiner strips from the scrap plastic base of the wheel pants.

88...Draw a centerline on each of the 1/4” plastic joiner strips.

89...Glue the joiner strips to the inside of the right hand wheel pant halves. The centerline on the joiner strips should be aligned with the trimmed edge of the wheel pant. The joiner strips should stop about 1/2” to 3/4” from the back end of the wheel pant.

90...Test fit the wheel pant halves together. Trim and bevel the joiner strip at the front end of the wheel pant as required to allow the two halves to fit tightly together.
91...When the wheel pant halves fit properly, glue them together. When the glue is dry, sand the wheel pants smooth. Use a filler designed for plastic models to fill any gaps in the seam.

92...Carefully trim the opening on the bottom of the wheel pants. Sand the edges smooth.

Drill a 1/16” hole for the axle on the inside half of each wheel pant. Be sure to make a right and left wheel pant.

93...Place part “LG” on the inside of the wheel pants. Align the hole in part “LG” with the hole in the wheel pant. When properly positioned, glue “LG” to the wheel pant.

94...Insert the 4-40 x 1 1/4” axle screw into the wheels. Thread one 4-40 nut onto the screw. Tighten the screw finger tight against the wheel. Now loosen the nut about 1/2 turn to provide some play and allow the wheel to turn freely on the axle.

Thread a second 4-40 nut on the axle. Tighten this second nut securely against the first to lock it in place. Make sure the axle turns freely on the axle. USE A THREAD LOCKING COMPOUND ON THESE NUTS.

95...Carefully spread the wheel pant and insert the wheel assembly into the wheel pants.
96. Temporarily attach the wheel pant / wheels to the landing gear legs. Thread a 4-40 nut onto the axle and tighten finger tight.

97. Cut four pieces of scrap plastic 1/4” x 3/4”. These are the anti-rotation strips.

98. Temporarily slide the landing gear legs into the slot in the plywood landing gear mount on the fuselage. Place the fuselage on the wheels and block up the back of the fuselage so that the top of F-1 is level to the building board.

Rotate the wheel pants on the axle until they are parallel to the building board. Tighten the nuts slightly to hold the wheel pants in this position.

99. Position the anti-rotation strips on the wheel pants. They should be tight against the landing gear leg. Carefully glue the anti-rotation strips to the wheel pants. Be sure not to glue the landing gear leg to the wheel pant.
100...Remove the wheel pants from the landing gear legs. Remove the wheel assemblies. Sand the wheel pants smooth to prepare them for painting.

**Assembling the cowl:**
NOTE: The cowl is assembled in the same manner as the wheel pants.

101...Draw the trim line on the the cowl halves on the marked trim lines in the plastic. Trim the cowl halves on the marked trim lines.

102...Cut several 3/8” wide joiner strips from the scrap plastic from the cowl. Draw a centerline on each of the 3/8” plastic joiner strips.

Glue the joiner strips to the inside of the right hand cowl halve. The centerline on the joiner strips should be aligned with the trimmed edge of the cowl. The joiner strips should extend to the back end of the cowl.

103...Test fit the cowl halves together. Trim and bevel the joiner strip as required to allow the two halves to fit tightly together. Temporarily hold the cowl halves together with strips of masking tape

104...When the cowl halves fit properly, glue them together.
105...Carefully trim the openings on the front of the cowl. Sand the edges smooth.

106...Glue the four 3/8” hardwood blocks to the front of F-6 in the location shown on the plan. These blocks should be flush with the fuselage sides.

107...Temporarily attach the motor to the model using 4-40 x 1/2” screws.

108...Place strips of masking tape on each side of the fuselage as shown in the photo. Mark the location of the hardwood blocks and the center of the blocks as shown.

109...Install the prop adapter collet and flange on the motor.
110...Carefully peel the masking tape strips back part way to provide clearance while positioning the cowl. Place the cowl on the fuselage. Slide the spinner backplate onto the prop shaft. Position the cowl so the prop shaft is centered in the opening in the cowl and there is a 1/16” to 3/32” gap between the front of the cowl and the spinner backplate. The back of the spinner should be down tight against the top of F-6 and tight against the fuselage sides. When the cowl is positioned properly on the fuselage, securely tape the cowl to the fuselage.

111...Without moving the cowl on the fuselage, carefully reposition the masking tape strips marked with the hardwood block location onto the cowl as shown.

112...After carefully checking that the cowl is still in the proper position, Drill a 1/16” hole in the center of one of the cowl attach blocks. Carefully peel the masking tape back from that hole and install a 2-56 x 1/2” sheet metal screw. Continuing one at a time, drill and install a screw in the remaining three cowl blocks while constantly checking that the cowl has not moved from the proper position.

113...Install the propeller and spinner on the motor and verify the proper clearance with the cowl. Slide the wings onto the model and mark the area where they overlap the cowl.

114...Remove the spinner, propeller, cowl and motor from the fuselage. Sand the cowl smooth. Trim away the areas of the cowl on the back sides to allow it to clear the wing. Use a filler designed for plastic models to fill any gaps in the seam.
Covering:
115...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 cowl and wheel pants 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: 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:

116...Cut the covering away from the stabilizer, fin and pushrod slots in the back end of the fuselage.

117...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.

118...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.

119...Attach the elevators with the hinges and glue in place.
120.....Attach the rudder with the hinges and glue in place.

121...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.

122...Insert the pushrod housings into the exit slots in the back of the fuselage. They should extend out about 1 3/4” from the fuselage side.

The front ends of the pushrod housings should pass thru the slot in former F-5. Glue the housings to the rear exits. Do not glue the front ends to the former at this time.

123...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.
124...Screw the rudder and elevator servos to the servo tray. Cut the pushrod housings so they end about 1 1/2: from the servo arms.

125...Install the pushrods into the housings from the rear. Secure the rear of the pushrods to the control horns with Mini E/Z Links. The front ends of the pushrods are attached to the servos with Mini E/Z Connectors. Glue the pushrod housings to former F-5. Trim the front ends of the pushrods 3/4” in front of the connectors when the control surfaces are in neutral.

126...Glue a piece of velcro to the top of the battery tray. We use the loop side of the velcro on the fuselage and the hook side of the velcro on the battery and receiver, but you may orient them either way.
127...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.

128...Pass this piece of velcro 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.

129...Glue the aileron servos into position on the W-14 mounting plates. The servo arms should be angled 90 degrees to the plate when the servo is in neutral. Be sure to make a left and a right hand assembly.

The servo arms should be centered in the slots in the plate when the servo is in neutral.

130...Attach the ailerons to the wings with the hinges and glue in place.
130...Screw the servo mount plates to the W-11’s. The servo arms should be forward and outboard as shown. Use the strings in the wing to feed the servo wires through the wing and out the holes in the W-1’s.

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.

133...Install the pushrods and attach them to the servos and control horns with with Mini E/Z Links.

134...Slide the wings onto the fuselage. Mark around them and then remove the covering from the fuselage where the wings will make contact.
135...Attach the left wing to the fuselage with 5 minute epoxy. Use a small stick to spread some glue inside the slot in the wing coating the top and bottom spars. Sparingly spread glue on the end of the wing and the plywood joiner. Slide the wing on the joiner. Pull the aileron servo wire thru the hole in the fuselage. Press and hold the wing tightly against the fuselage side. Wipe off any excess glue that squeezes out between the fuselage and the wing. Hold the wing tightly in position until the glue dries.

136...Attach the right wing to the fuselage as you did the left.

137...Secure the receiver to the fuselage bottom with velcro. Connect the aileron servos with a “Y” harness. Plug all of the servos into the receiver. Run the antenna thru the back of the fuselage.

138...Reinstall the wheels and wheel pants onto the landing gear legs. Use a thread locking compound on the nuts to prevent loosening.

139...Cut the covering away from the landing gear slots in the fuselage sides.
140. Glue the landing gear legs into the slots in the fuselage with 5 minute epoxy. Wipe away any excess glue before it dries. Check that the wheels are parallel to the fuselage centerline. They should point straight ahead and not angle in or out. Bend the bottom of the gear legs if required to straighten out the wheels.

141. Place the canopy on the hatch. Mark where the canopy contacts the hatch. Cut away a small strip of covering to expose the wood. Using glue sparingly to attach the canopy to the hatch.

142. Test fit the hatch to the model and verify the function of the latch.

143. Trim the hatch latch wire about 1/4” long above the canopy.

144. Attach the motor to the model using 4-40 x 1/2” screws.
145...Connect the speed controller to the motor. Tuck the speed controller into place under the battery tray as shown.

146...Pass the receiver connector from the speed controller straight back under the battery tray and plug into the receiver. Pass the battery connector from the speed controller back thru the oval hole on the right side of F-6 and pull up along side of the battery tray.

147...Attach the cowl to the model with the sheet metal screws.

148...Install the hatch on the model by tucking the front end under the cowl and lowering the back end until the latch catches.

149...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.

150...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.

151...Install the propeller and spinner.
152...Place the battery in the nose of the model.

153...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 side. 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.

154...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.