

# A-1 SKYRAIDER



Recognizing early into World War II that the SBD Dauntless was rapidly becoming obsolete, the Douglas company started work on its replacement, the XSB2D Destroyer. During the development of the Destroyer, the Navy changed its requirements, and it was canceled. Douglas went back to the drawing board, and literally overnight, created the drawings for the XBT2D, which went into production as the AD-1 Skyraider.

Later variants, the AD-2, AD-3, and AD-4 Skyraiders, saw combat in the Korean War. The Skyraider demonstrated its usefulness by performing many varied functions, from dive bomber to ASW to electronic intelligence. In the early '60s the military branches standardized their aircraft designators, and the AD- series became the A-1. With the outbreak of the Vietnam War, the A-1 was again pressed into service. The Skyraider flew with all branches of the service throughout the conflict, and with the Vietnamese Air Force. A-1s were particularly effective in the close air support role, especially as support for rescue of downed airmen. Known as "Sandy", the A-1 was a welcome sight to a downed pilot.

The Skyraider has a wingspan of 50', a length of 39'2", a maximum weight of 25,000 pounds, and a maximum speed of over 300 mph. A-1s are powered by the Wright R-3350, a double row, eighteen cylinder engine producing 2,700 hp. With a maximum of

thirteen hardpoints on the wing, the Skyraider could and did carry just about every type of weapon available. Combined with four 20mm cannons mounted in the wings, the Skyraider was a formidable aircraft. Enough fuel could be carried to allow mission durations exceeding four hours.



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Thank you for purchasing the A-1 Skyraider from Skyshark R/C Corporation. For the first time, R/C enthusiasts have a choice in scale aircraft designs. Our goal, through computer technology and state-of-the-art production techniques, is to offer aircraft which in the past have not been modeled simply because they weren't popular enough to justify mass production. Our production techniques allow us to produce aircraft which, though not as popular and well known as P-51s and P-47s, still offer historical significance (good or bad!), Good looks and flying characteristics, and a uniqueness that is sure to turn heads wherever you take your airplane!

***Your airplane has many unique features in its design:***

### **CAD Design**

CAD design allows strength to be built into the airplane without sacrificing weight. Accurate parts design and placement ensures a perfect fit.

### **CAD Drawn Plans**

The plans in this kit are not copied from a master set! They are originals drawn directly from the CAD program where the airplane was designed. We do this because it allows us to use color, which helps you better visualize the various components of the airplane, and we can use better quality paper, which greatly reduces the possibility of shrinkage. Since you're going to build directly on the plans, they ought to be the proper size! Also, parts placement is guaranteed to be accurate, so you can build a better, straighter model.

### **Laser Cut Parts**

The same program that generates the design and plans also drives the laser, so every part is reproduced exactly as it was designed. Laser cutting also allows us to fit more

parts on each sheet of wood, reducing the waste, and lowering the cost to you. Since laser cutting does not have the same limitations that mechanical cutters do, small and hard-to-produce parts are simply a computer file away, so you get a more accurate airplane.

### **Plastics and Fiberglass**

The cowl is accurately reproduced in high quality fiberglass. The canopy is accurately reproduced in clear plastic, and incorporates the upper scoop. The lower scoop is reproduced in styrene plastic.

## ***A Word About the Building Options***

### **Engine Options**

Many parts of the country (and the world) sit at higher elevations. At 7200 feet, a .40 size airplane will barely fly with a .40 engine. The engine size range of .45 to .61 for this kit is designed to compensate for engine performance loss due to elevation. Below 3500 feet in elevation, a good .45 will fly the Skyraider with authority. Above 3500 feet, a larger engine will help return the airplane to sea level performance.

### **Retract Options**

Retract installation is shown on the plans and explained in these instructions for typical retract installations. The Skyraider retract option is designed around the Robart rotating retracts. You may choose the retracts you desire, But please follow the instructions provided with the retracts of your choice for proper installation.

### **Flaps**

Flaps on an airplane this size add complexity and weight that is not offset by better performance. For this reason, flaps are not shown as a building option. If you wish to add flaps, you're on your own!

## General Building Information

The Skyraider can be built by a person with average building skills. It is designed for someone who has built a trainer or low wing sport plane. No unusual building techniques are required, although more difficult areas are explained in detail where necessary. Certain steps in the building process must be followed as depicted, or you might find yourself digging back into the structure to redo something. These areas are outlined when necessary.

Occasionally hints will be included at certain building steps. These are not required for completion, rather they are tips intended to ease a particular process.

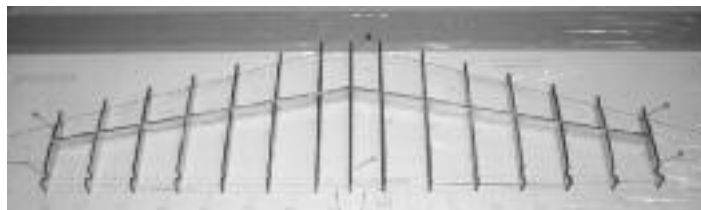
The laser does not cut through the wood, it burns its way through. As a result of this, occasionally there will be scorching on the surface of the wood. This is normal, and is only a surface discoloration, and does not affect the wood in any other way. Similarly, the laser settings are optimized for wood density averages, so occasionally, due to variations even in individual sheets, some areas might not cut through completely. This is apparent mainly with the plywood. Simply use care in removing the parts from the sheets; most of the time, the parts will literally fall out of the sheets!

The Center Wing Section building steps are shown for both Fixed Gear and Retractable installation. Decide which gear installation you want to go with, and use the appropriate building section.

Hardware and a motor mount are not included in the kit. There are so many choices for quality hardware that these choices are left to the individual preferences of the builder, rather than include something in the kit that you'll probably throw away anyway. A vibration-dampening motor mount is recommended for use regardless of engine choice, so select a mount suited to your particular engine. The decals provided are fuel-proof but still should be clear-coated to insure that fuel doesn't soak underneath them.

This aircraft is not a toy. It must be flown in a responsible manner according to the rules set forth by the Academy of Model Aeronautics. The builder assumes the responsibility for the proper assembly and operation of this product. Skyshark R/C Corporation shall have no liability whatsoever, implied or expressed, arising out of the intentional or unintentional neglect, misuse, abuse, or abnormal usage of this product. Skyshark R/C Corporation shall have no liability whatsoever arising from the improper or wrongful assembly of the product nor shall it have any liability due to the improper or wrongful use of the assembled product. Skyshark R/C Corporation shall have no liability for any and all additions, alterations, and modifications of this product.

## Horizontal Stabilizer Assembly



1. Slide H9 into the slots in H2 - H8. It might help to do this upside down, then flip the assembly over.

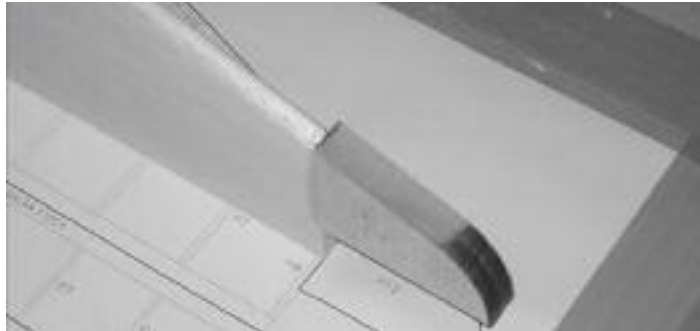


2. Align the left and right sides on the plans and pin the pieces in place. Align and pin H1 in place.

3. Glue all the pieces.

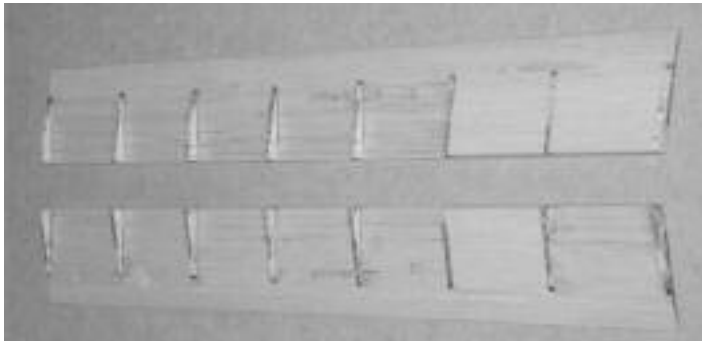
4. Slide the 1/4 x 1/4 balsa trailing edge stock into the slots in the rib tabs and glue in place.

5. Slide H10 into the slots in the rib tabs and glue in place. Slide H11s into the slots in the rib tabs and glue in place.



- 6. Carefully remove the tabs from the front and rear of the ribs. Try to leave the bottom jig for the ribs.
- 7. Using soft sheets of 1/16 x 4 balsa, cut a 20" piece and test fit to the stab. Cut an additional filler piece for the front edge. Edge glue these sheets.
- 8. Sheet the stab. Remove the stab from the building board and trim at the leading edge, trailing edge, and H8.
- 9. Repeat the sheeting process for the other side of the stab. Trim and sand at the leading edge, trailing edge, and H8.
- 10. Glue 3/8 x 1/4 balsa stock flush to the leading edges at H10 and H11. Sand to airfoil shape.
- 11. Glue two H12s together. Glue this assembly to the stab tip at H8 and sand to shape. Repeat for the other tip.

## Elevator Assembly



- 1. Glue E2 to E1.
- 2. Glue 7 E3s to E1.

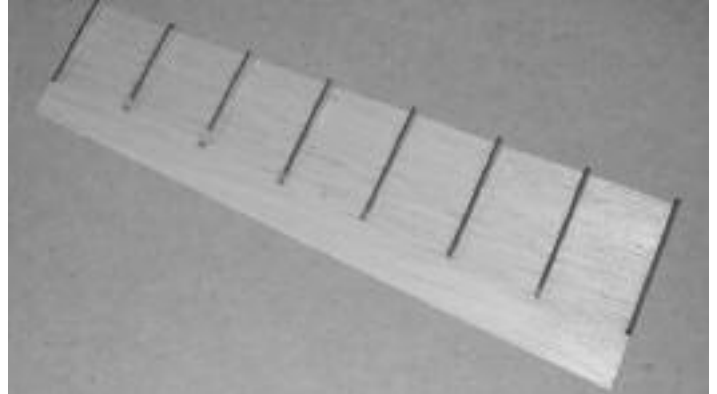


- 3. Add scrap balsa between the ribs so that the elevator joiner wire will fit into the scrap balsa and keep the elevators aligned to the plans.
- 4. Sand the trailing edge to a taper matching the angle of the ribs. Sand the scrap balsa added previously to match the ribs.



- 5. Cut the elevator leading edge from 1/4 x 3/8 balsa stock. Glue to the elevator assembly.
- 6. Cut the elevator top sheeting from 1/16 x 3 x 36 balsa sheet. Glue to the elevator assembly. Trim and sand the sheeting.
- 7. Glue two H13s together. Glue this assembly to the end of the elevator. Sand to the taper of the elevator, and sand the balance tab (the part sticking forward of the elevator leading edge!) To match the notch in the horizontal stabilizer. Repeat for the other elevator.

## Rudder Assembly

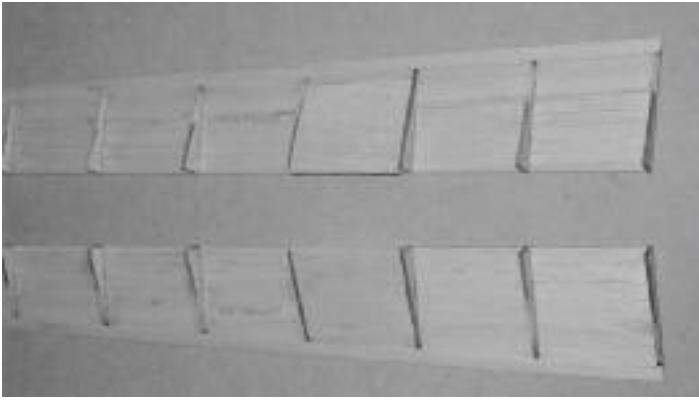


- 1. Glue R2 thru R9 to R1. Fill the bays indicated on the plans with scrap balsa for control horn support.
- 2. Bevel the trailing edge to match the rib taper.
- 3. Cut the rudder leading edge from 1/4 x 3/8 balsa stock and glue to the rudder assembly. Leave approximately one inch of the leading edge beyond the base of the rudder.

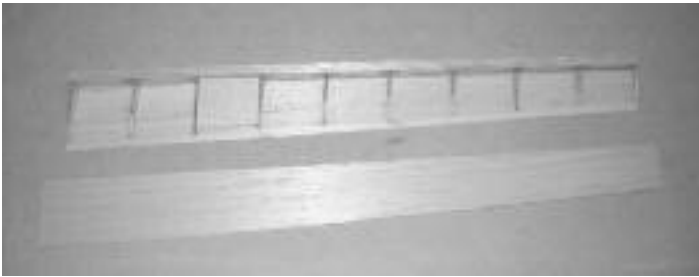


- 4. Cut the remaining sheet half from 1/6 x 4 balsa sheet. Glue to the rudder assembly. Trim and sand to shape.
- 5. Glue two R11s together. Glue these to the bottom of the rudder assembly. Sand to shape.
- 6. Glue two R10s together. Glue these to the top of the rudder assembly. Sand to shape, but do not sand the balance tab yet. This will be shaped after the vertical stab assembly.

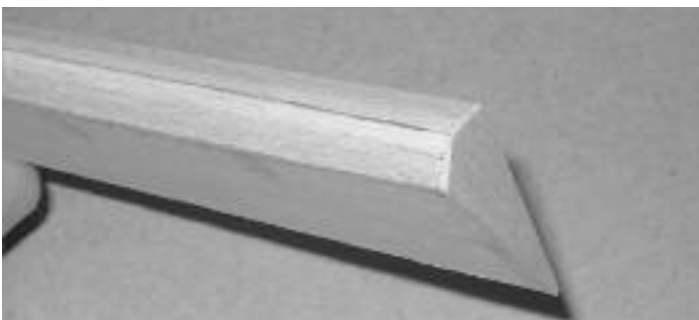
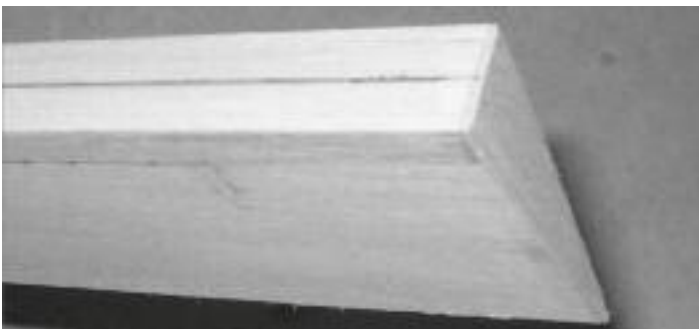
## Aileron Assembly



1. Glue A2 thru A11 in place on A1.
2. Fill the third bay with scrap balsa for control horn support. See plans for details.
3. Bevel the trailing edge to match the angle of the ribs. Sand the filled bay to match the ribs.
4. Cut the aileron leading edge from  $\frac{1}{4} \times \frac{3}{4}$  balsa stock and glue to the aileron assembly.



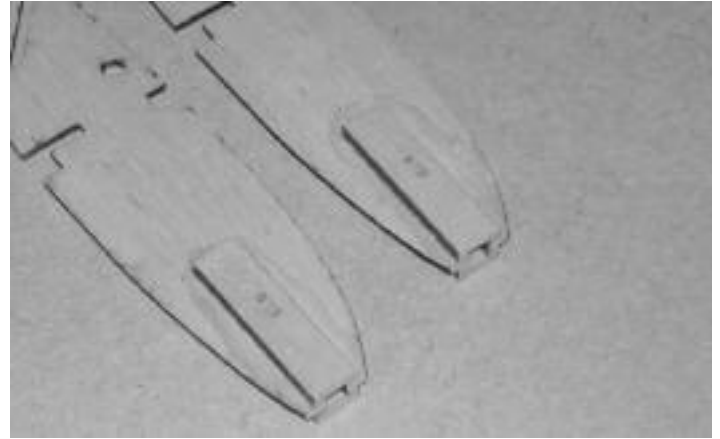
5. Cut the top sheeting from  $\frac{1}{16} \times 3$  balsa sheeting. Glue in place. Trim and sand the edges.



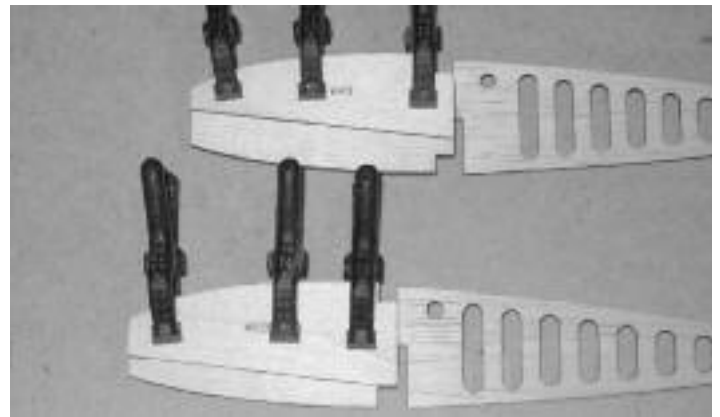
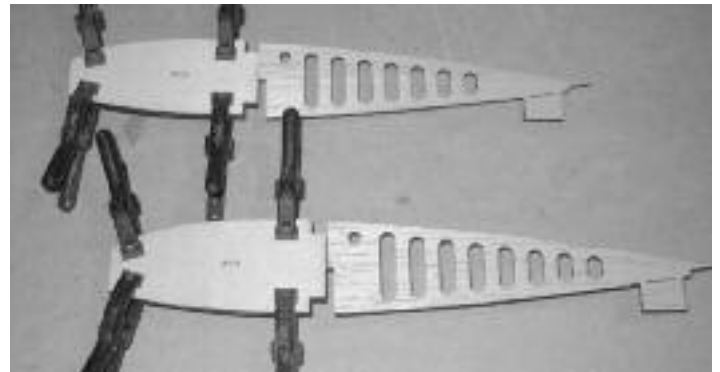
6. The leading edge can be shaped now or later when the aileron is fitted to the wing.

## Wing Assembly

The wing assembly for fixed gear is very similar to retract assembly, with only a few differences. Those differences are noted by boxes outlining the steps for retracts only. Skip these steps for fixed gear installations.

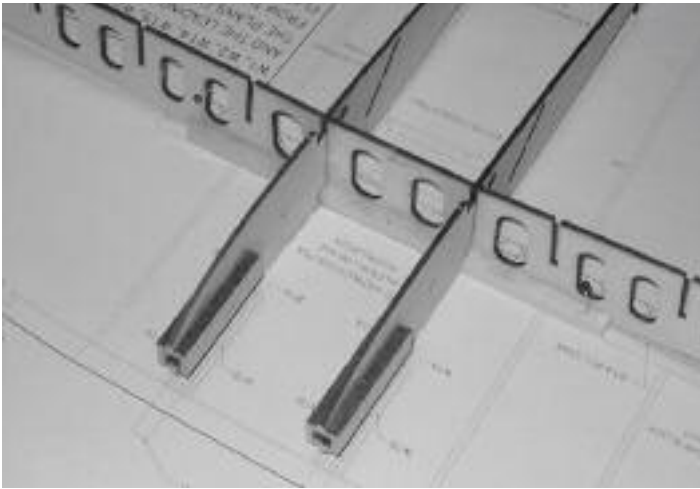


1. Align the notch in W1A with the slot in W1 and glue W1A in place. Turn W1 over and glue another W1A in place.
2. Align W1B with W1A and glue in place. Turn W1 over and repeat.
3. Repeat for the remaining W1.



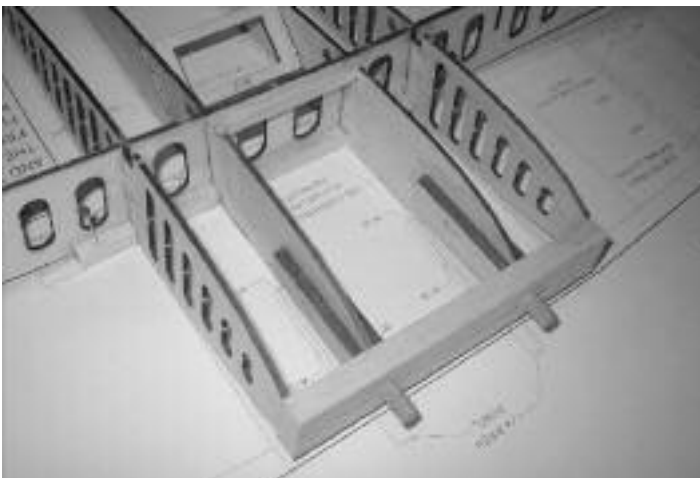
4. Epoxy W4A Ply Gear Support to W4. Glue W4B to W4A, aligning the upper edges. Make a left and right side (double check yourself here - it's easy to make two left sides!).
5. Epoxy W5A Ply Gear Support to W5. Glue W5B to W5A, aligning the upper edges. Make a left and right side (repeat the double-check procedure!).

## Wing Center Section



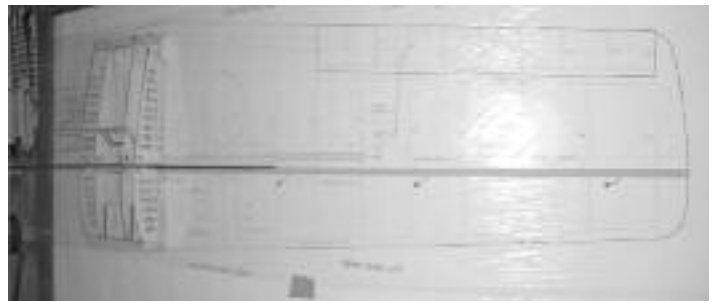
The center section builds using the left wing section on the plans. Frame up the center section flat on the plans then remove and align the wing to continue with the left wing section.

6. Cut a 5-1/4" piece of 1/4 x 1/4 balsa stock as the lower spar and pin in place.
7. Align W14 Ply Spar, and slide W1s into place and pin to the board. Glue the pieces in place.
8. Slide W17 Ply Servo Tray into the slots in W1s and glue.



9. Slide W2s into the slots in W14 and align with the plans. Glue in place.

10. Cut a 2-7/16" piece of 1/4 x 1/4 balsa stock for the upper spar and center between W1s. Glue in place.
11. Glue W15 to the trailing edges of W1 and W2. Sand W15 to match W2s.
12. Cut a section of 3/8 x 1 x 18 to fit at W2s. Glue in place. Trim the leading edge to match W2s.



13. Remove the center section from the board. Glue a piece of 1/4 x 1/4 balsa stock to the lower edge of W14 for the lower spar.

14. Align the wing assembly at W2 on the left wing section on the plans.



15. Glue W3 in place.

16. Glue W4 assembly in place - make sure the ply attachments face outward - towards the tip.

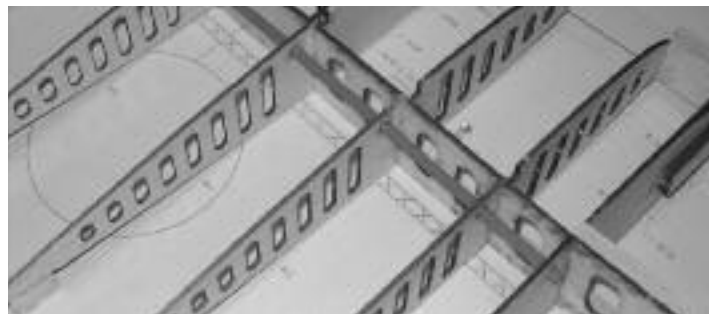
17. Glue W5 assembly in place - make sure the ply attachments face inward.

18. Fixed gear: Epoxy W18 in place, making sure W18 fits flush in the slot created by the ply attachments to W4 and W5.

Retract gear: Do not install W18 at this time.

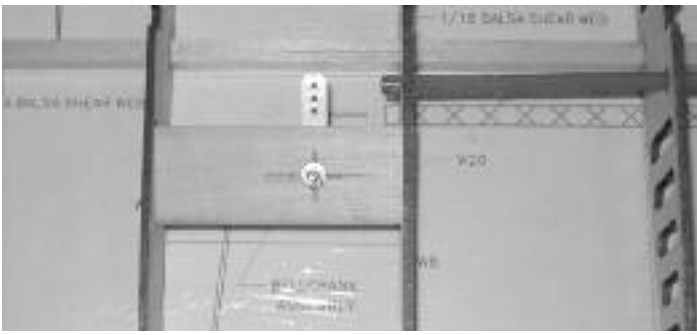
19. Glue W6 and W7 in place.

20. Glue W16 to the trailing edges of W2 thru W7.



21. Glue W8 in place.

22. Using Sullivan flexible pushrods, use the following procedure: cut the red pushrod housing to 16". Slide the housing through the holes in the ribs, and glue at W3 thru W7. Leave the pushrod free-floating at W1 and W8. Cut the yellow pushrod to 18", install the 2-56 studs, and slide into the housing.



- 23. Drill a hole in W20 to attach the bellcrank. Assemble the bellcrank to W20.
- 24. Slide W20/bellcrank assembly into the slot in W8 and attach a clevis to the pushrod.
- 25. Glue W9 in place, and glue W20 to W8 and W9.



- 26. Glue W10, W11, W12, and W13 in place.



- 27. Cut the top spar from  $\frac{1}{4} \times \frac{1}{4}$  balsa stock and glue in place.
- 28. Cut the aileron spar from  $\frac{1}{4} \times \frac{3}{8}$  balsa stock and glue in place.
- 29. Cut the leading edge from  $\frac{3}{8} \times 1$  balsa stock, shape at W2, and glue in place.
- 30. Cut  $\frac{1}{16}$  balsa shear webs and glue in place.

**Fixed Gear Only:**

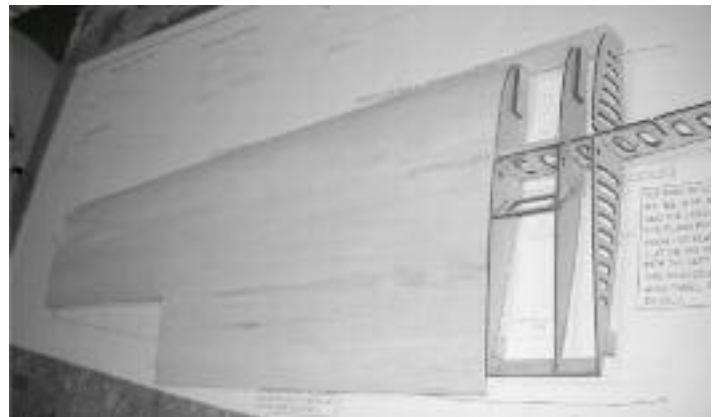
- 31. Glue W19 in place against W18, W4B, W5B, and the top spar.



- 30. Cut  $\frac{1}{16}$  balsa shear webs and glue in place.



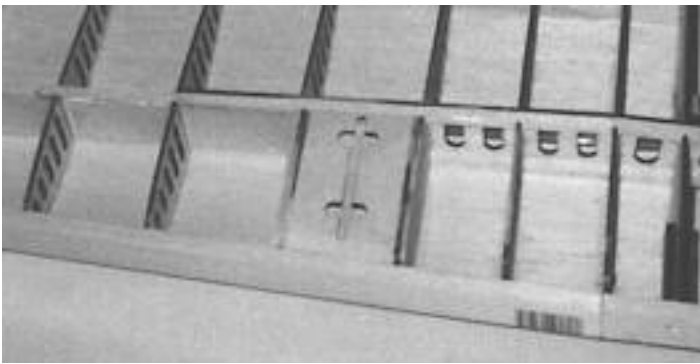
- 32. Trim the Maple Gear Block Anchor to shape (it should be perpendicular to W18) and epoxy in place. Epoxy tri-stock to the gear block anchor for additional support.



- 33. Sand the aileron spar to match the rib contours. Lightly sand the top wing surface.
- 34. Cut two  $\frac{1}{16} \times 4 \times 36$  balsa sheets to 29". Cut an additional sheet to 18". Edge glue these sheets to make the top wing sheeting.

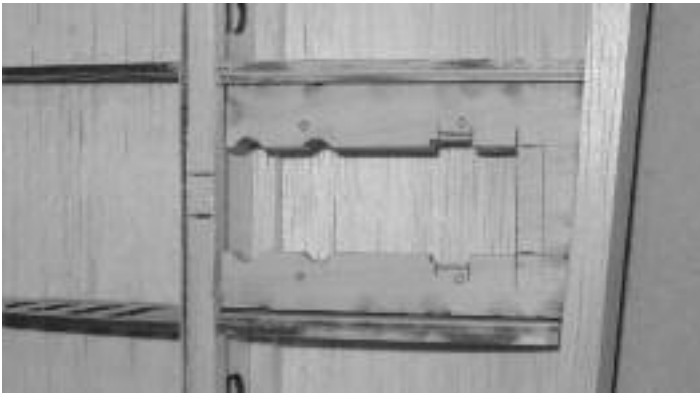
- 35. Sheet the top surface of the left wing panel. The sheeting should extend to W1, but stops there - the area between W1s will be sheeted separately.





36. Trim and sand the sheeting at W13, W1, and the aileron spar. Measure and trim the sheeting 0.6" aft of W15 and W16. Bevel the trailing edge of the sheeting to match the rib contour.

37. Glue W21 in place. Sand W21 to match the rib contour.



**Retracts Only:**

Test fit the retract into the well. Cut W18 to fit and epoxy in place. Trim the spar to allow for the gear leg. Run the air lines for the retracts at this time, and temporarily mount the retract/gear leg/wheel to form the wheel well (wheel wells can be formed simply from 1/16 balsa, using the blue template on the plans). W21 can be trimmed to support the sheeting around the retracts. Glue W21 in place.

38. Install the 2-56 pushrod on the bellcrank. On the leading edge and aileron spar, mark the location as shown in Figure 21 to locate the pushrod. This will help locate the exit slot in the bottom sheeting.

39. Sand the aileron spar to match to lower rib contour.



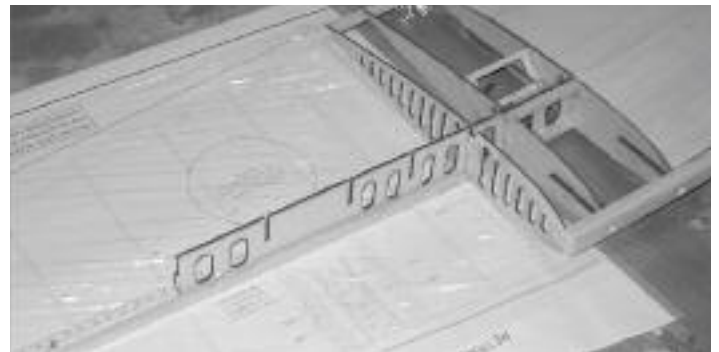
40. Cut two 1/16 x 4 x 36 sheets to 29". Cut an additional sheet to 18". Edge glue these sheets to form the bottom sheeting.

41. Lightly sand the bottom surface of the wing, and sheet the bottom of the left wing panel.

42. Trim the sheeting at W13, the trailing edge, and the aileron spar.

43. Trim the sheeting at W2. The bottom center section between W2s will be sheeted separately.

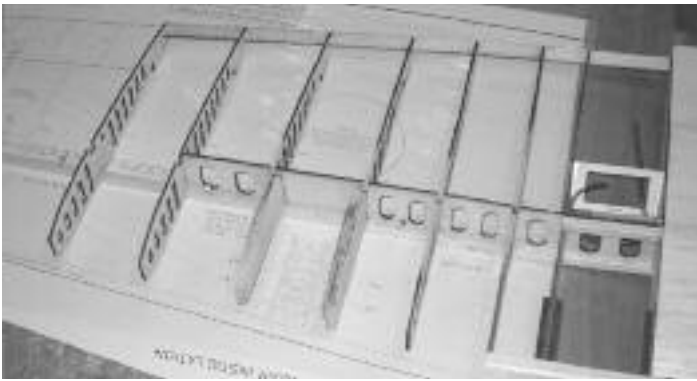
44. Using the marks made previously, mark the location for the pushrod exit and cut the slot for the pushrod.



44. Align the wing on the plans at W2.

45. Cut the lower spar from 1/4 x 1/4 balsa stock, and glue to W2 and W14.

## Right Wing Panel



- 46. Glue W3 in place.
- 47. Glue W4 assembly in place - make sure the ply attachments face outward - towards the tip.
- 48. Glue W5 assembly in place - make sure the ply attachments face inward.

- 49. Fixed gear: Epoxy W18 in place, making sure W18 fits flush in the slot created by the ply attachments to W4 and W5.

Retract gear: Do not install W18 at this time.

50. Glue W6 and W7 in place.

51. Glue W16 to the trailing edges of W2 thru W7.



- 52. Glue W8 in place.
- 53. Using Sullivan flexible pushrods, use the following procedure: cut the red pushrod housing to 16". Slide the housing through the holes in the ribs, and glue at W3 thru W7. Leave the pushrod free-floating at W1 and W8. Cut the yellow pushrod to 18", install the 2-56 studs, and slide into the housing.
- 54. Drill a hole in W20 to attach the bellcrank. Assemble the bellcrank to W20.
- 55. Slide W20/bellcrank assembly into the slot in W8 and attach a clevis to the pushrod.
- 56. Glue W9 in place, and glue W20 to W8 and W9.



- 57. Glue W10, W11, W12, and W13 in place.
- 58. Cut the top spar from  $\frac{1}{4} \times \frac{1}{4}$  balsa stock and glue in place.
- 59. Cut the aileron spar from  $\frac{1}{4} \times \frac{3}{4}$  balsa stock and glue in place.



- 60. Cut the leading edge from  $\frac{3}{8} \times 1$  balsa stock, shape at W2, and glue in place.
- 61. Cut  $\frac{1}{16}$  balsa shear webs and glue in place.

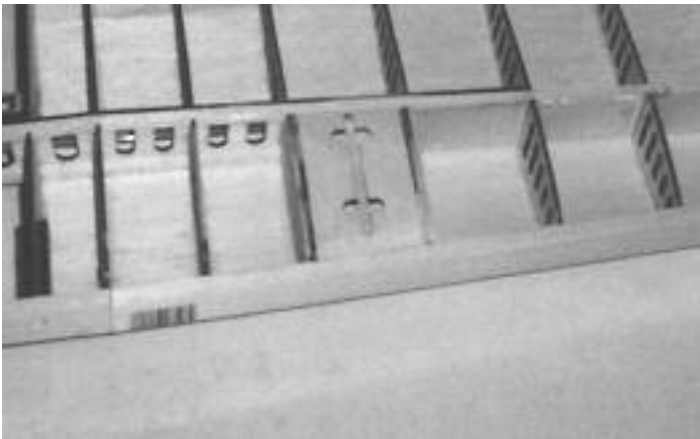


**Fixed Gear Only:**

- 62. Glue W19 in place against W18, W4B, W5B, and the top spar.
- 63. Trim the Maple Gear Block Anchor to shape (it should be perpendicular to W18) and epoxy in place. Epoxy tri-stock to the gear block anchor for additional support.



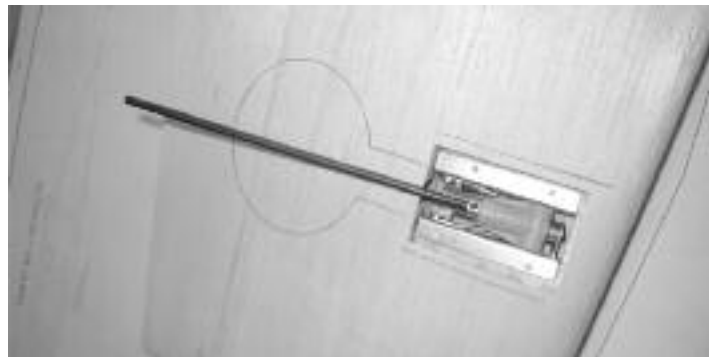
- 64. Sand the aileron spar to match the rib contours. Lightly sand the top wing surface.
- 65. Cut two 1/16 x 4 x 36 balsa sheets to 29". Cut an additional sheet to 18". Edge glue these sheets to make the top wing sheeting.
- 66. Sheet the top surface of the left wing panel. The sheeting should extend to W1, but stops there - the area between W1s will be sheeted separately.



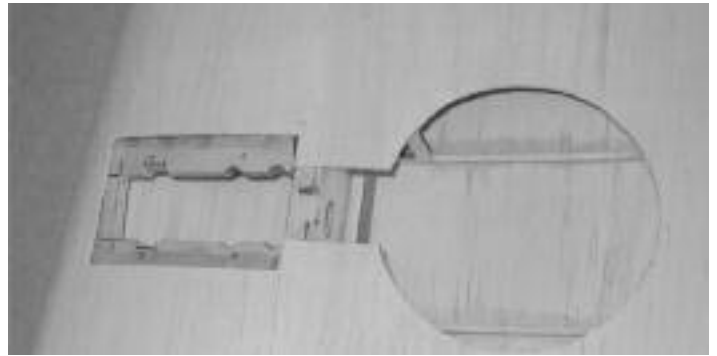
- 67. Trim and sand the sheeting at W13, W1, and the aileron spar. Measure and trim the sheeting 0.6" aft of W15 and W16. Bevel the trailing edge of the sheeting to match the rib contour.
- 68. Glue W21 in place. Sand W21 to match the rib contour.

**Retracts Only:**

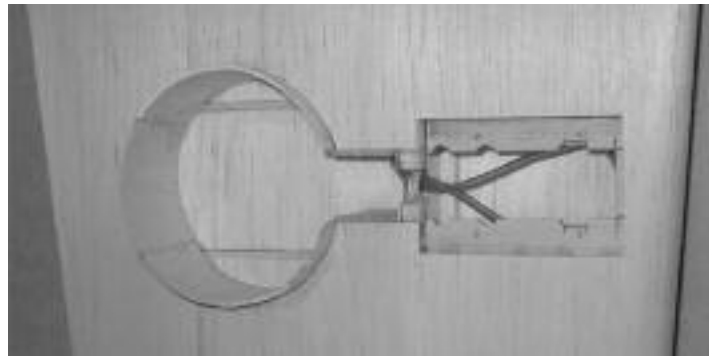
Test fit the retract into the well. Cut W18 to fit and epoxy in place. Trim the spar to allow for the gear leg. Run the air lines for the retracts at this time, and temporarily mount the retract/gear leg/wheel to form the wheel well (wheel wells can be formed simply from 1/16 balsa, using the blue template on the plans). W21 can be trimmed to support the sheeting around the retracts. Glue W21 in place.



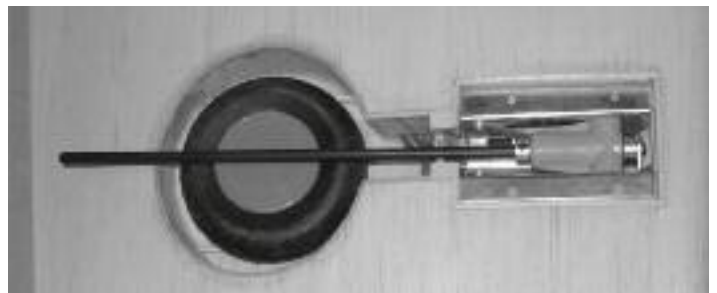
- Fit retract into the mounting plate and use the plans as a guide to mark the wheel location on the sheeting.



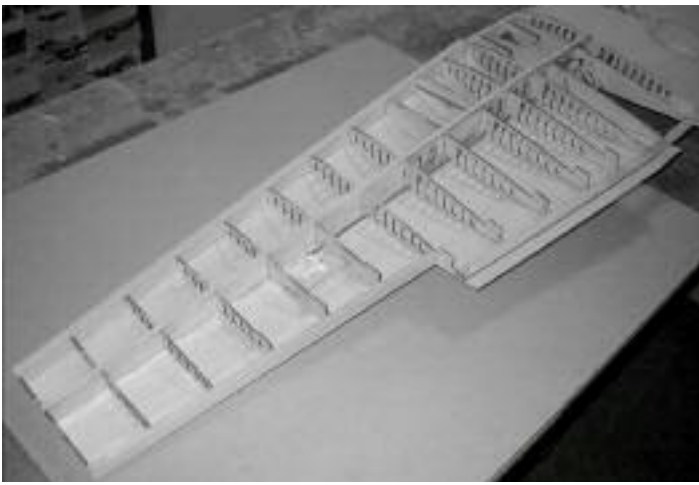
- Carefully cut out the wheel well.



- Use 1/16" scrap balsa to sheet the insides of the wheel well. Trim flush with the bottom sheeting.

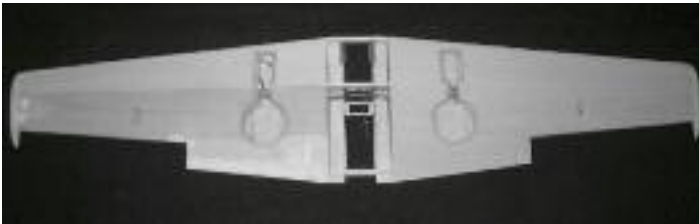


- Mark the center of the wheel on the gear wire and make a 90 degree bend in the wire.



69. Install the 2-56 pushrod on the bellcrank. On the leading edge and aileron spar, mark the location as shown in Figure 21 to locate the pushrod. This will help locate the exit slot in the bottom sheeting.

70. Sand the aileron spar to match to lower rib contour.



71. Cut two 1/16 x 4 x 36 sheets to 29". Cut an additional sheet to 18". Edge glue these sheets to form the bottom sheeting.

72. Lightly sand the bottom surface of the wing, and sheet the bottom of the left wing panel.

73. Trim the sheeting at W13, the trailing edge, and the aileron spar.

74. Trim the sheeting at W2. The bottom center section between W2s will be sheeted separately.

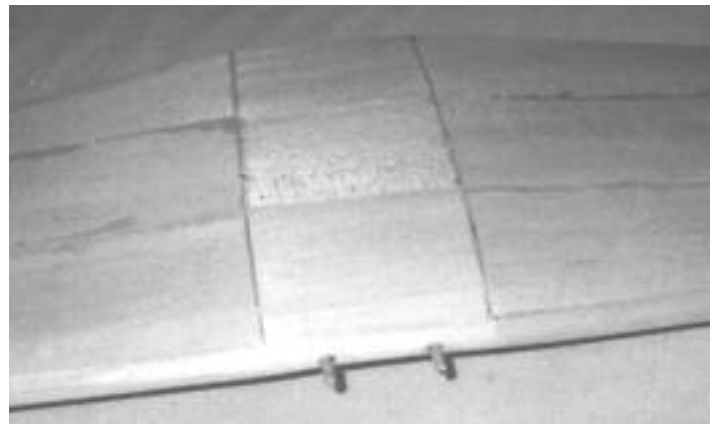
75. Using the marks made previously, mark the location for the pushrod exit and cut the slot for the pushrod.



76. Cut short pieces of 1/8 x 1/4 balsa scrap and glue to the sides of W1 to use as supports for the center sheeting.

77. Cut segments of 1/16" sheeting to fit and sheet the center wing section.

78. Cut the sheeting to match the trailing edge and bevel to match.



79. Clean out the slot in W1s and glue W22 ply hold down plate in place.

80. Cut short pieces of 1/8 x 1/4 balsa and glue in place for sheeting supports, cut 1/16" sheets to fit, and sheet the bottom of the center section.

81. Trim the sheeting at the trailing edge. Install the Birch Dowels into the leading edge.

82. Glue the wingtips on and sand to shape.



82. Glue the wingtips on and sand to shape.

## Fuselage Assembly



1. Pin  $\frac{1}{4} \times \frac{1}{4} \times 36$  balsa stock to the board.



2. Using the Firewall Angle Gauge provided, align F1A with the plans (note also that there is right thrust built in), set the angle of F1A, and glue in place.
3. Glue F2A, F3A and F4A in place.
4. Slide F17 Cockpit Floor in place between F3A and F4A and glue.
5. Glue F5A thru F12 into place. Glue F14 Stab Saddle to F10A, F11A, F12, and the fin post.
6. Cut a  $\frac{1}{4} \times \frac{1}{4}$  balsa keel and fit into the notches from F8A to F1A.
7. Glue F13 to F8A, F9A and F10A.



3. Glue F2A, F3A and F4A in place.
4. Slide F17 Cockpit Floor in place between F3A and F4A and glue.
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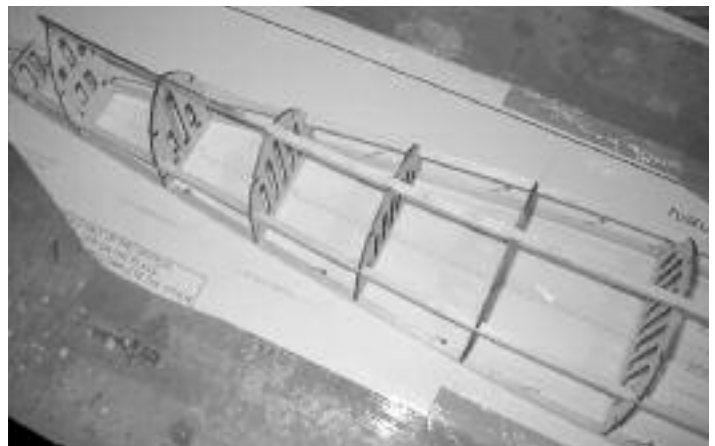
5. Glue F5A thru F12 into place.



6. Cut a short piece of  $\frac{1}{4} \times \frac{1}{4}$  balsa and glue to the aft portion of the crutch as a fin post.



7. Glue F5A thru F12 into place. Glue F14 Stab Saddle to F10A, F11A, F12, and the fin post.



8. Cut a  $\frac{1}{4} \times \frac{1}{4}$  balsa keel and fit into the notches from F8A to F1A. Glue F13 to F8A, F9A and F10A.



9. Starting at the lowest notches in the formers, add  $\frac{1}{4} \times \frac{1}{8}$  balsa stringers to the fuse assembly. Start at the bottom, alternate side to side up the fuse to keep the structure straight. Note that the third series of stringers extends to F10A only.

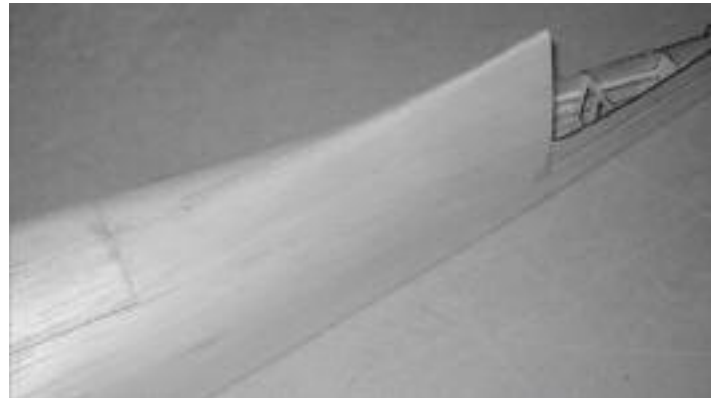
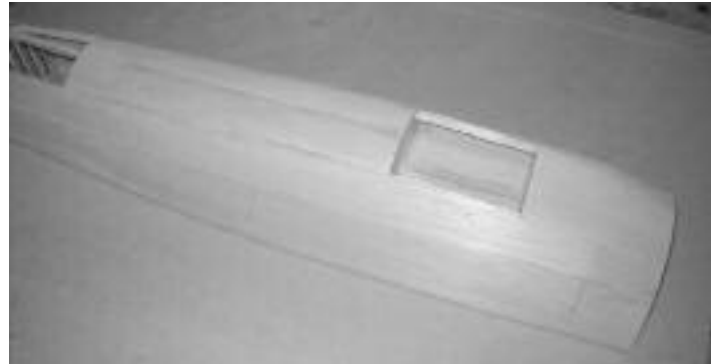
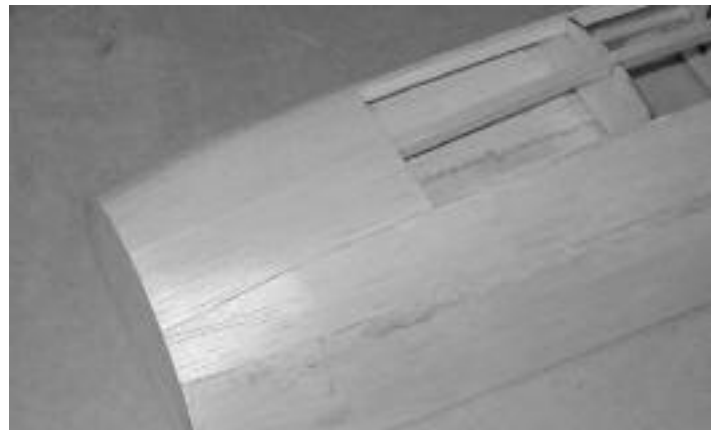


10. Cut short lengths of scrap  $\frac{1}{4} \times \frac{1}{8}$  balsa and butt these pieces against the sides of the crutch. Do not glue - just pin in place; these pieces will be discarded after sheeting.

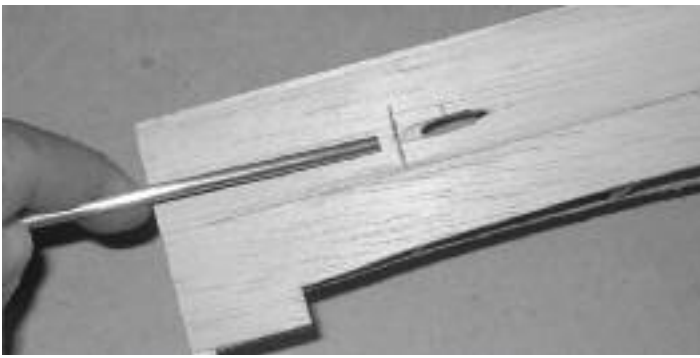
11. Edge glue a  $\frac{1}{16} \times 4 \times 36$  balsa sheet and a  $\frac{1}{16} \times 3 \times 36$  balsa sheet. Repeat for the opposite side.

12. The upper fuselage has a few areas where making the sheeting conform is difficult. The fuse pictured was sheathed with continuous sheets, both sides together. This method will require that the sheeting be cut after being glued to the second row of stringers. Cut at F2A and F5A and continue sheeting the middle section and forward section. Note that the forward sheeting stops at the last row of stringers. After that's complete, start working the sheeting aft, cutting where necessary to relieve the stresses in the sheet.

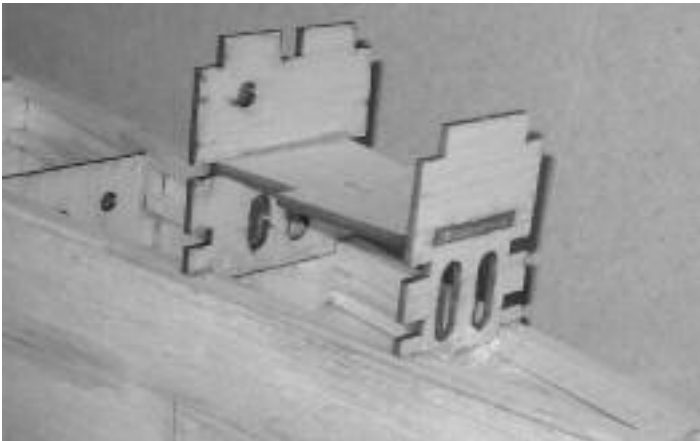
13. Sheet the fuelage. After sheeting, trim at the stab saddle and the fin post, but do not trim to F1A. Leave the extra here until adding the firewall.



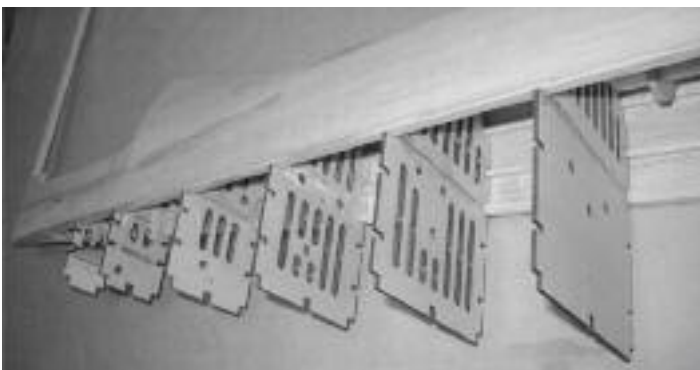
14. Using  $\frac{1}{16}$ " balsa, sheet the remaining portion of the forward fuselage. Cut the cockpit area out along F3A, F4A, and the last row of stringers.



- 15. Remove the top half of the fuse from the board. Using the pushrod holes in F10A as a guide, cut exit holes for the pushrods through the sheeting and F14.



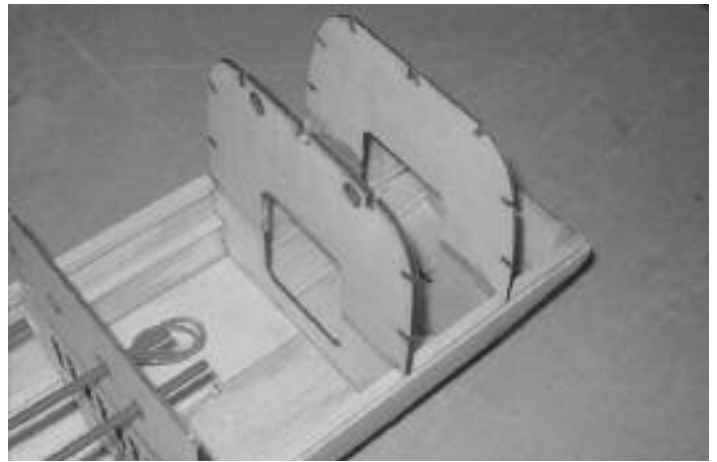
- 16. Glue F11B and F10B in place.
- 17. Glue F18 Ply Tailwheel Support in place between F10B and F11B.
- 18. Glue F9B, F8B, F7B, and F6B in place.
- 19. Cut the keel and side stringers from  $\frac{1}{4} \times \frac{1}{4}$  balsa stock, and glue in place.



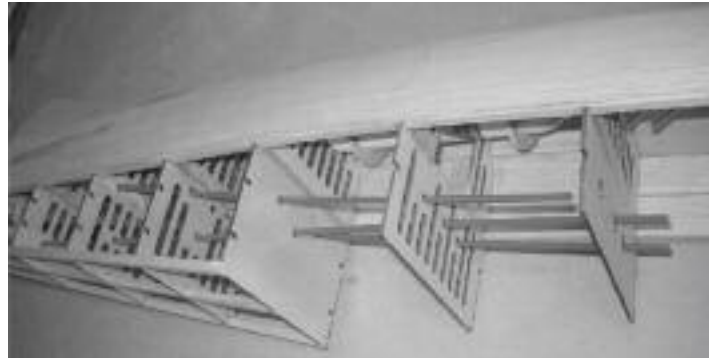
- 18. Glue F9B, F8B, F7B, and F6B in place.



- 19. Cut the keel and side stringers from  $\frac{1}{4} \times \frac{1}{4}$  balsa stock, and glue in place.



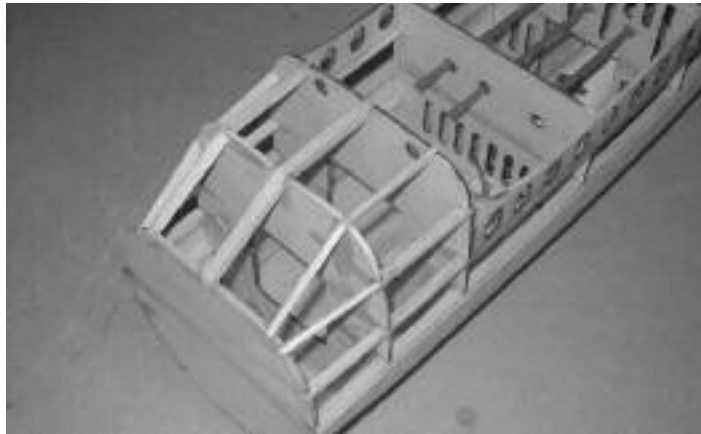
- 22. Glue F3B and F2B in place.
- 23. Glue F1B in place, making sure that F1B matches the angles of F1A.
- 24. Glue F15 to F1A and F1B, aligning F15 with the balsa keels.



- 20. Glue F5B and F4B in place.
- 21. Cut pushrod housings to length and slide through the holes for the formers. Note that there is an elevator pushrod, a rudder pushrod, and a tailwheel pushrod.



- 25. Using 1/4 x 1/8 balsa, add the first row of stringers.
- 26. Glue F16 Ply Wing Saddle to F3B, F6B, and the stringer. Bend F14 at F3B to conform to the curve.
- 27. Add the remaining stringer to the aft fuselage.
- 28. Add a 1/4 x 1/4 balsa keel to F3B and F2B, and to F2B and F1B/F15.



- 29. Add the remaining stringers to the forward fuselage.



- 30. Slide F19 through the slots in F16, and epoxy in place.



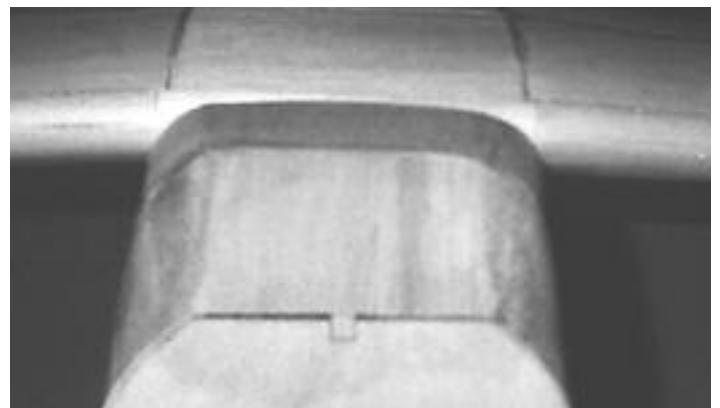
- 31. Sheet the bottom of the fuse. Sheet the aft sides first, and working forward, cut and relieve the sheeting as necessary to conform to the curves at F2B. Leave the opening shown above for now - you'll need to access this area for wing mounting.



- 32. Trial fit the wing. Note that the dowel holes cut in F3B are over-size to allow for adjustment. Center the wing and mark its location.

33. Slide F20 over the wing dowels and epoxy in place.

34. Recheck the wing alignment; when satisfied, drill a hole through the wing (through W22 in the wing structure) and through F19. Tap the hole in F19 for the holddown bolt.



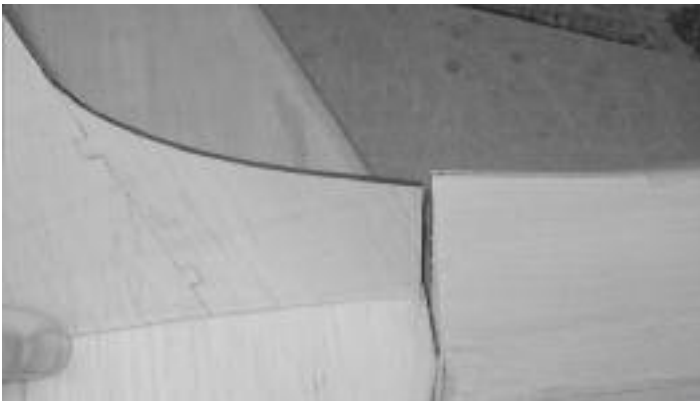
- 35. Using 1/16" sheeting, sheet the remaining portion of the forward fuselage.

36. Trim and sand the sheeting at F15.



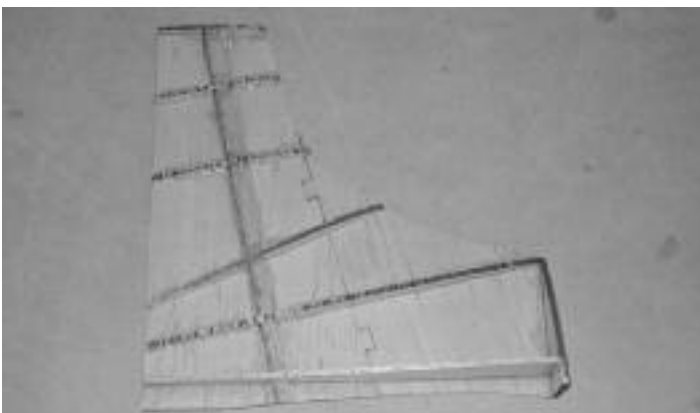
- 37. Add a few short pieces of tri-stock to the inside of F14 for extra support when gluing the stab.

38. Align and epoxy the horizontal stab in place.



- 39. The vertical stab builds partially flat on the board, and is finished on the fuse. This area will require some trimming and fitting, due to small variances created during the building process. Always test fit the pieces and assemblies and trim to fit before gluing.

40. Glue S1 to S2. Test fit this to the fuse and trim as necessary to fit.



- 41. Glue S3 to the front edge of S1/S2.
- 42. Glue S4 to S3 and S1/S2.
- 43. Cut a piece of 1/8 x 1/4 balsa for a half spar and glue to S1/S2 along the engraved marks.
- 44. Glue S5, S6, S7, S8, and S9 to S1/S2. Align with the engraved marks.
- 45. Remove the assembly from the board and on the opposite side, glue the spar and S3 thru S9 in place, verifying alignment with the other side.
- 46. Add a 1/4 x 1/4 fin post to the trailing edge.



- 47. Trial fit the stab assembly to the fuse and trim as necessary. Note that S3s on the front will have 1/16" sheeting over the top, so trim S3 1/16" inside to fuse sheeting. Trim S4 to match S3.

48. Glue the stab in place, verifying that it is perpendicular to the horizontal stab.



- 49. Trim the laser-cut lower stab sheet to fit as shown. Glue both sides to the vertical stab structure, the horizontal stab, and the fuse sheeting. Trim and sand smooth.

50. Trim the laser-cut upper stab sheet to fit and add it in place above the lower sheeting. Repeat for the opposite side.

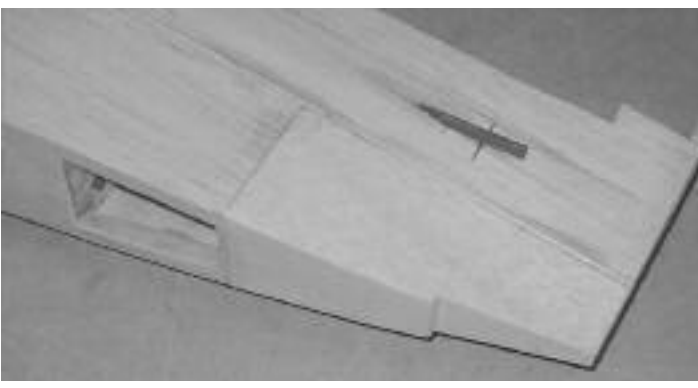
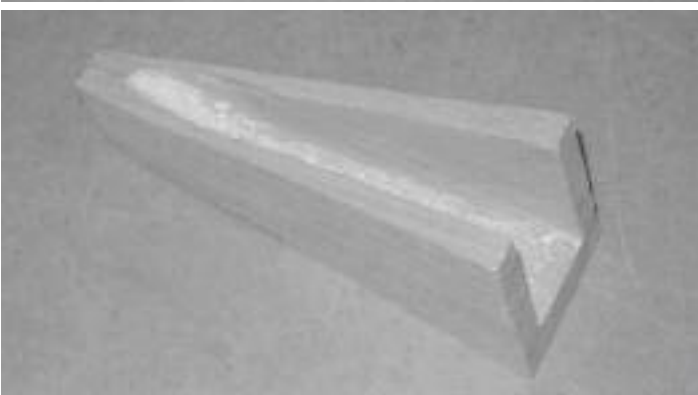
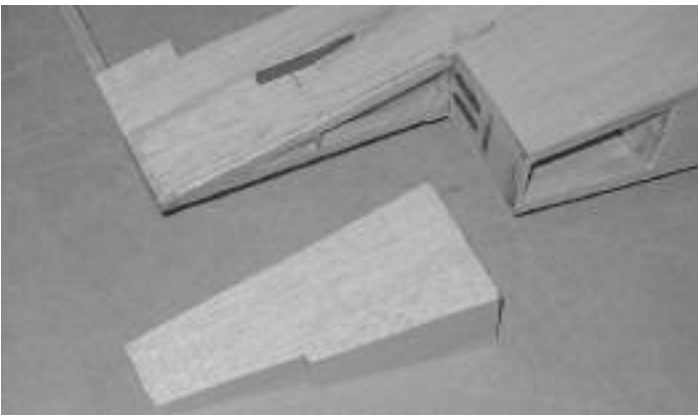
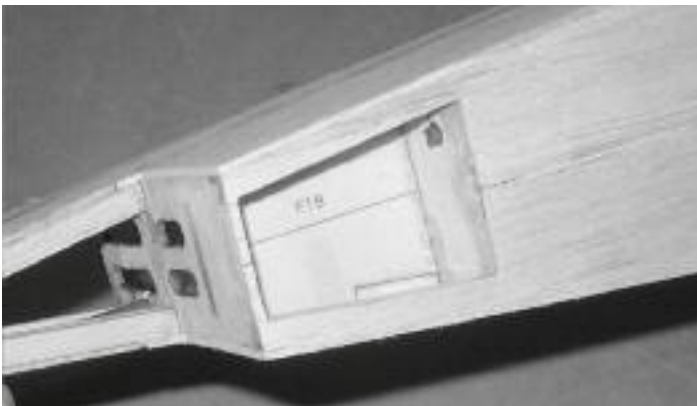


51. Using 1/16 x 4 balsa sheet, sheet the remaining areas of the stab. Position the grain of the sheets vertically for maximum strength.

52. Sand the sheeting smooth.

53. Glue two S10s together. Glue this assembly to the top of the stab at S9. Sand to shape.

(You may also finish sanding the balance tab on the rudder now.)

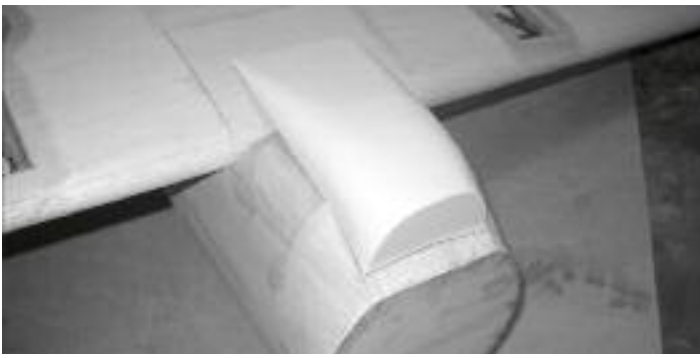


54. Trail fit the tail block in place. This block may be hollowed out to save weight. Glue in place and sand to match the fuselage.

55. Cut an access hole in the aft sheeting for the tail-wheel.

56. Mount the tail wheel and connect the steering linkage.

57. A hatch cover may be made from scrap balsa or ply.



- 58. Remount the wing to the fuse. Cut the lower scoop to fit, noting that it extends onto the wing surface. (Note: the forward portion of the scoop does not have to be cut out; leaving the plastic front intact will cause less drag)

59. Glue the scoop to the fuse and wing.

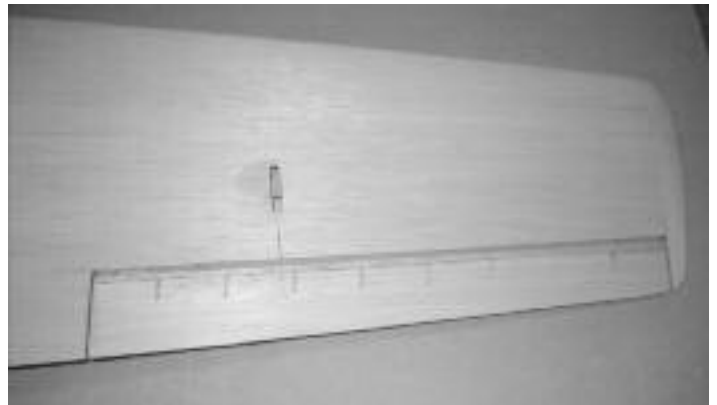
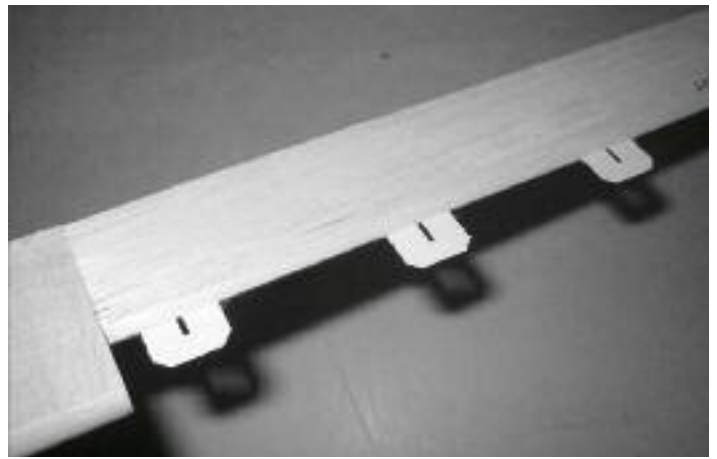
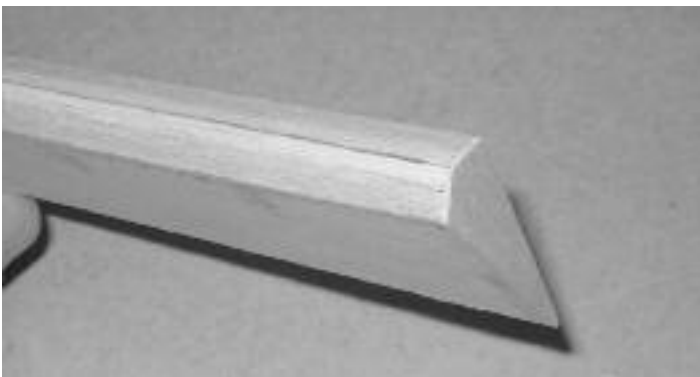
60. Cut the scoop along the wing parting line and separate the wing from the fuse. The open ends of the scoop may be filled with scrap balsa.

- 63. Test fit the cowl to the fuse. The cowl is designed so that the rear edges of the cowl flaps overlap the fuse itself.

64. Add short pieces of maple as cowl anchor blocks to the firewall and mount the cowl.

65. Finish the cockpit to suit your tastes. Cut the canopy from the plastic base and trim to fit. Note that the forward scoop is not flush with the firewall; rather, it is set back approximately 3/8".

66. Glue the canopy in place.



## Final Assembly

The remainder of the construction consists of attaching the rest of the components to the airplane. Most of this is builder's choice, and individual tastes, styles, and component selection, so any detailed descriptions would be impossible. The remainder of assembly is described in general terms only.

### **Engine Installation:**

Measure and mark a point at the center horizontally and vertically of the firewall. From this point, measure 0.1 inches up and 0.05 inches to the right. Mark this point; this point will be the centerpoint for motor mount installation. (This allows for the down- and right- thrust built in and will center the prop shaft at the cowl opening). Install the motor mount and engine of your choice.

### **Servo and receiver installation:**

3/8 maple blocks are provided for servo rails.. Mount these as shown on the plans and mount the servos. Mount the receiver and connect the components.

### **Covering:**

Cover the airplane with the covering of your choice. The covering choices are too numerous to mention, but the airplane shown on the box was covered with film, painted, and clear-coated. It is recommended that the airplane and control surfaces be covered separately.

### **Cockpit and canopy:**

Finish the cockpit to the level of detail you desire. Several 1/10th scale pilot figures are available. Glue the canopy in place and paint the canopy bows to match your airplane.

### **Control surfaces:**

Locate the control horn positions. Final sand the control surfaces. Locate the hinge points (hinges and other hardware are not provided in the kit because everyone has his own preferences. Rather than put in stuff that most of you will throw away, we left it out to keep the kit price down) and install the hinges and control surfaces. Use at least three hinges per control surface for best results. Connect and adjust the pushrods.

### **Fuel Tank and Throttle Cable:**

After deciding which direction the engine will point (up, down, or sideways) drill holes for and install the throttle cable. Mount the fuel tank of your choice and connect the lines.

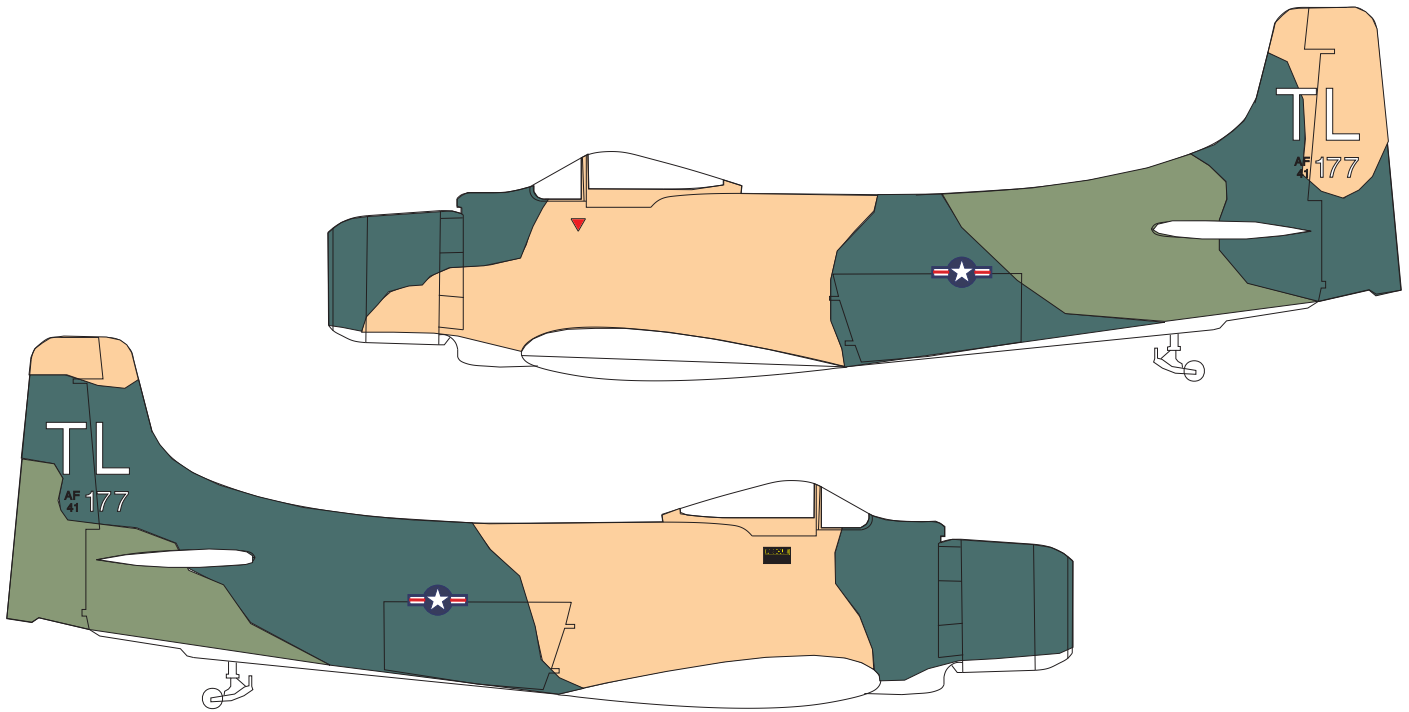
### **Landing Gear (Fixed):**

Insert the main gear wire legs into the slots in the wings, secure with straps, and mount the wheels of your choice. Landing gear (Retracts): Bend the gear wire to match the angle shown on the plans, and install the gear legs and wheels. Install the remainder of the retract components per the retract instructions.

### **Control Throws:**

Aileron: 7/16" up & down  
Elevator: 7/16" up, 3/8" down  
Rudder: 3/4" left & right

The rest is up to you! Fly and enjoy!



Through all the research done on the Skyraider, no common camouflage scheme was found. Use the three top colors of Forest Green, Olive Drab and Desert Sand, with White undersides. Some Special Ops A-1s had Black or Dark Gray undersides.

