

PITTS SPECIAL S-2 (BIG STINKER)

FUSELAGE CONSTRUCTION

1. Glue F10 and the 5x10mm balsa longerons together, then mark the locations of the bulkheads F4 through F9 on the 5x10mm balsa longeron. Mark the locations of bulkheads F3 and F4 on F11, then join F11 and F12 together. (At this time be careful not to make only a left or only a right assembly.) Glue to this assembly the 5x5mm balsa longerons.
2. Join together F1 through F3 as well as the assembly made in Step No. 1. Now join together F4 through F6 and the hardwood screw blocks as well as F7 through F9. Insert the 5x5mm balsa on the inside of F10. Trim the 5x5mm balsa longerons at the rear just a little in order to fit F9.
3. Install all of the longerons, then glue in place F24, F17A, F19A, F17, F18, F19 and F20.
4. Insert then glue EM1 through EM3, and also reinforce the engine mount with EM4 through EM7.
5. Make the cockpit floor and the fuel tank compartment bed with 2mm balsa. Plank the upper part of the fuselage and the front nose area with 3mm balsa. Plank the upper area between F6 and F8 with 1.5mm balsa planking laminated together.
6. Make the lower part of the nose with F14, F15 and the 10mm triangular stock. Glue F25 to the tail.
7. Make the cowling.
 - A. Glue C9, C10 and the 20mm triangular stock together.
 - B. Glue C6 and C7 to the above assembly. Now glue in place, C8, the 5x5mm balsa and C13. C13 is positioned directly above EM1 then glued on.
 - C. Plank the upper surfaces with 3mm balsa planking.
 - D. C1 and C2 and C3 through C5 respectively, are glued together first then glued in place then glued to the main cowl assembly.
8. Roughly shape around the nose area and also around the 3mm planking area. Cut the cockpit out of the 3mm balsa.
9. Using C11 and C12, make the air intake on the bottom of the cowl. Cut out enough of C10 to allow the intake to be functional.
10. Construct the cowl hold down devices using three bolts and two dowels.
11. Cut out the 3mm planking for insertion of the main strut plywood between F2 and F3. After inserting the main strut, fill in the void with scrap balsa. Shape the portion of the main strut that protrudes above the planking to an airfoil shape. Glue the triangular hardwood block at the top of the main strut in place with epoxy glue. Align the wing on the strut then drill a hole for the wing hold down bolts and glue the nut in place with epoxy glue.

12. Vertical Stabilizer
 - A. First glue together V1 and V2. Glue V3, V5 through V7 and the 3x5mm balsa to both sides of the above assembly.
 - B. After shaping the leading edge of V6 and V7, glue V4 in place.
 - C. Line up V4 with the fuselage, then carve and sand to shape. Glue the fin in place after the horizontal stabilizer.
 - D. After gluing the rudder pieces R1 and R2 together, glue R3 through R8 along with the 3x5mm balsa to both sides of the rudder.
 - E. Shape the assembly as per the cross section. Make the trim tab from scrap balsa. When hinging the rudder, install the tail wheel.
13. Glue F32 to the inside of the wheel pant piece F30, then glue F31 to both sides of F30. Carve and sand to shape.
14. Secure the main gear in place with "J" bolts and the 3mm bolt. Cut out F16 to fit the piano wire and hold in place with two wood screws. The wheel pants are secured in place with the shaft and one more nut and bolt. F16 is made using two layers.

BOTTOM WING CONSTRUCTION

1. First be careful not to build only two left or two right panels. Build the framework using W2, the main spar, the rear spar and the trailing edge sheet.
2. To the above assembly, glue the leading edge, then W17 to the main spar as well as W3. Now trim the main spar along the edge of W17 as well as the rear spar by W3. Glue W13 to the trailing edge planking.
3. Make the wing tips using W16, W18 and W19.
4. Cut out the aileron by cutting the along the rear spar. Cut the aileron ribs once again at an angle then glue on the 2x15mm balsa to the upper and lower surfaces. Glue the aileron horn to one side of W12 then another W12 is glued to the root side of the horn. Now glue W14 to the leading edge of the aileron and to the trailing edge of the rear spar. W14, which has been glued to the rear spar, is trimmed to match the rear spar. Plank the upper and lower surfaces with 2x15mm balsa out to the wing tip.
5. Hinge the aileron then connect the bellcrank to W15 with a nut and bolt, and with the 5x5mm balsa, glue in place. At the exit of the aileron pushrod, glue a piece of 2mm balsa planking in place.
6. Glue the spar reinforcer W10 in place, then connect both wing panels with W8 and W9. Cut out W1 then glue in place.
7. Plank the upper and lower leading edges with 2mm balsa.
8. Install the aileron pushrod, then plank the upper and lower center section with 2mm balsa.
9. Plank the leading and trailing edges of the wing tips with 2mm balsa. Trim W19 before planking.
10. Plank the upper surface around the interplane strut support piece W21 with 2mm balsa. Glue on the rib caps using 2x5mm balsa.
11. Shape the leading and trailing edges.
12. Cut out the leading edge and glue W7 in place then shape. Install the wing hold down dowels. Drill a hole in the fuselage piece F19 for the wing attachment. Glue W11 in place on the lower surface, then drill a hole through it for the wing hold down bolt.

13. Align wing with the fuselage, then build the fuselage belly with F21, F22, F23 and the 2mm balsa. Drill a hole for the wing hold down bolts.

UPPER WING CONSTRUCTION

1. The upper wing is built almost the same as the lower wing. The part numbers used are different though. The upper wing is also swept back so be careful. The essential points are described below.
2. Use W6, W2, W3, the main and rear spars along with the trailing edge to make the frame.
3. Use W26, W27 and W28 to make the tips.
4. Shape and use W25, then glue to the left and right wing panels. Use W22 and W23 to connect the both panels. The upper wing has no dihedral. After gluing W4 and W5 in place, glue on W24.
5. The center upper and lower planking is one piece from W2 to W2.
6. Cut off the center leading edge.
7. The aileron is actuated by a drive rod from the bottom wing.
8. Reinforce the area of the wing hold down bolt holes with 1.5mm plywood.
9. The interplane strut is attached to the "L" shaped bracket. Round off the edges of the interplane strut.

HORIZONTAL STABILIZER

1. Glue S1 and S2 as well as E1 and E2 together.
2. Glue on S3 through S7 and E3 through E6 and the 3x5mm ribs respectively, to the upper and lower surfaces.
3. Shape according to the cross section, then connect the elevators with the elevator horn.