30” Stuka Build Instructions

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Tail surfaces and Fuselage

1. Vertical: Infill the top two slots with 3/32” stringers on V2- do not infill the bottom as this is for the horizontal. Pre-round the leading edge.
2. Horizontal: infill slots with 3/32” stringers on H1. The E1s can be removed, and surface edges rounded.
3. Pin K1 trough K8 and V1/V2 over the plans, adding the vertical 3/32” sqr stringers to connect the upper to the lower keel parts- note stringer at K3 is 1/8” wide. Sand all surfaces flush with a sanding block.
4. Glue F4B to F4 and F7B to F7. Add the scrap stringer per the plans on K4. Starting with F10, glue the left-hand former halves to the keels and vertical stringers, using the center stringer (#5 stringer per the F3 detail) for reference. Add F11 and the scrap stringer between F9 and F10 per the plans.
5. The center stringer butts up against the vertical stringer of K4 and goes all the way forward into F2. Note, between F3 and F2 the “piggy-back” stringer process is used (see piggy-back detail). Add the lower hatch rail from 3/32” x 1/4” balsa cut to length. Add stringer #4 (F2 to K4). Add stringer #3 from F2 and ending at the top notch of F5- blend into the hatch rail. Stringer #3 continues from the next notch down on F5 to K4.
6. Add the wing saddle (WS) and notch #6 stringer from F2 into WS. Add #7 from F2 to the bottom of WS. Stringers #8 and #9 need to use a piggy-back stringer of 3/32” X 1/4" between F2 and F3. Stringers under the “chin” are from hard 1/16” balsa. Stringers #1 and #2 between F2 and F4 are not added at this time.
7. Add the remaining stringers from F7 back, noting that #1 stops at F10, and stringer #6’s rear is sanded to fit between #5 and #7 stringers at K4. Stringers #8 and #9 end at F10.
8. Glue two V3 and V4 together and use F10 to mark their shape. Sand V3 and the forward section of V4 to blend the fuse with the vertical (but keeping the rear section of V4 to allow for greater gluing surface of H1).
9. Sand the overall fuselage half before removing from the board.
10. Using the motor and the mount planned for the model along with the spinner, determine how many “F3As” are needed in addition to FW, to allow for the best spacing between the spinner backplate and F1. FW is noted for the offset needed. Glue the needed F3As to F3 before adding FW on top. Test mount the motor mount and screw in place using a 1/32” shim to create 1.5-2\* right thrust.
11. Remove the cut-out section on F3 under the F3A location. Add the right former halves and stringers.
12. Add clear tape to the top of the lower hatch rail, the rear face of F4, and the forward face of F7. Slide the top hatch rail, F4A, F5A, and F7A in place. Glue F4A and F5A to K1 and the upper hatch rail, and F7A to the upper hatch rail. Add a stringer from hard balsa or basswood on top of the inside edge of the upper hatch rail from F5A to F7A (review hatch details per the plans). Sand/contour the upper and lower rails to match the fuse sides. Add the remaining upper forward stringers.
13. Add the 1/16” cross grain balsa decking per the plans. Cut out a section for the elevator and rudder servos and mount them per the plans.
14. Add F1 and shape the piggy-back stringers to match the fuse contour using K1 and K8 as reference.
15. Cut the hatch free. Add a 1/8” x 3/32” round magnet in F7 and add .008 metal to the rear of F7A per the plans. Use the plans to mark the locations for the “C” parts on the hatch. Trim away/notch the stringer as needed and glue C1-C3 in place, noting the angle on C2. Add a scrap stringer along the centerline between the two C1s and C2.

Wing Construction

1. Cut the leading-edge (L.E.) blanks from medium balsa using the plan templates. Cut the trailing edges (T.E.) from 3/32” sheet using the marks on the plans. Make the spar sub-assemblies using medium to hard balsa stringers per the plan templates. Glue W13A to W13 per marked line.
2. Center Panel: pin the L.E. blank and T.E. in place over the plans. Slide Spar 1 and 2 in place with W1 on each end, making sure that the W1s are 90\* to the board. Glue in place along with the stringers- note there is an additional notch (top and bottom) behind the stringers on Spar 1 and 2. These notches accept the stringers for the Inner Panel- review the Spar Detail on the plan.
3. Inner Panel: pin the L.E. blank and T.E. in place over the plans. Slide Spar 3 and 4 in place, and angle W2 and W3 per the spars. Glue in place along with the stringers- note there is an additional notch (top and bottom) in front the stringers on Spar 3 and 4. These notches accept the stringers for the Outer Panel- review the Spar Detail on the plan.
4. Outer Panel: pin the Washout Jig (WOJ) in place over the plans and add clear tape over the area that will be under W13. Pin the L.E. blank and T.E. in place over the plans- note the pin location on the T.E. near W11 per the plans. Set bottom stringers #1 and #3 in place over the plans. add stringer #2 and Spar 5 assembly in position with #2/3 stringers sitting on tip of the WOJ. Set W13 over the stringers and WOJ, slide #4 stringer to butt against the side of W13 and sitting on the WOJ- set W8 in place to help align the stringers. Making sure W8 and W13 are 90\* to the board, glue the ribs, stringers, L.E. and T.E. together. add W9 through W12 in place along with the servo plate and glue. Add W7 and Spar 6 in place- use Spar 5 and 6 to set angel of W7 before gluing. Add the top stringers- note #4 top stringer ends at w12. Mark the location of the pinned hinges and shave/sand the surface to be approximately 1/32” below the height of the T.E. (creating a slot for the hinge). Test fit the hinge (the top of the hinge should be level with the top surface of the T.E.) before adding scrap balsa to “box in” the top of the slot for the hinge. Shape/contour the scrap to match the ribs.
5. Remove all wing panels from the board. add masking tape along the rear of the L.E. (top and bottom)- covering the ribs (this will protect the ribs when shaping the L.E.). Use a small plane and sanding block to shape the L.E.- there are 6 L.E. templates to assist with shaping. Add the wing tip parts and contour to shape.
6. Gear mount- glue W4 through W6 together and sand smooth.
7. Make the Center Section Dihedral Jig per the plans and set the Center Panel on top of it. Test fit the Inner Panel- the bottom of W3 will be flush against the board and the side of W2 will be flat against the side of W1. The bottom #2 and #3 stringers will slide in the notches behind the Center Panel’s Spar 1 and 2. Adjust the notches as needed before gluing.
8. Slide the Gear Mount Panel in place against W7 before sliding this assembly into place against the Inner Panel. Elevate the tip of the Outer Panel 1.5” at W12. The top #2 and #3 stringers of the Outer Panel will slide into the notches in front of Spar 3 and 4. Adjust the notches as needed before gluing the Inner Panel, Gear mount and Outer Panel together.
9. Test the aileron servo, adding the horn and EZ connector before gluing to the plate. Mark a line on the Aileron 3/32” behind the L.E. before marking the edges of the 2 hinges on this line. Cut a slot for the hinges (top to bottom) and test fit the hinges to the wing T.E. and Aileron (review the W10 and W12 details). The hinges and ailerons are not added until after the wings and ailerons are covered. The scrap to support the hinges and horn on the underside of the aileron are not added until after the aileron is covered.
10. Make 8 flap mounts from 3/32” basswood (or hard balsa) stringers. The flaps are added after the wing and flaps have been covered.

Wheel Pants

1. Glue WP6A to WP6, and WP4 to WP5. Glue WP6 assembly to WP4 and WP5 with WP6 flush with the inside of WP4. Sand WP6A to be flush with WP5. Glue this assembly to WP3, then to WP2 and finally to WP1. Build the opposite side the same. Sand/contour to a teardrop shape when viewed from above.
2. Make the axle from 1/32” wire.

Canopy Frame Construction

1. It is recommended to print out a test canopy to practice (see templates and canopy frames sheets).
2. There are 2 options for the finished versions- with glass or with faux glass (light blue).
3. Print the version chosen and trim around the black box frame for each section. Lightly score the dashed fold line before folding so that the color and details are on the outside. Open and use spray adhesive or a glue stick applied to the insides before folding closed again. This will double the paper thickness and make the interior green for the backside of the “glass” version.
4. If making the glass version, cut out all the interior “glass” panels. It is helpful to use a pin to push through the corner of each glass panel- this allows for a cleaner corner of the finished frame. If using the faux glass, skip to number 6.
5. Glue the framed canopy panel over 3-4 mil clear plastic sheet. A “report cover” with a clear plastic cover can be used.
6. Trim the outside edges of each canopy frame. Note the grey area on the Turret can be cut free at this time as well- taking care not to cut off the triangular tab.

Canopy Frame Application to The Hatch

1. Use canopy glue to attach either version of the canopy panels.
2. If using the glass version, paint the canopy framing interior green. The canopy frame sheet has a sample of this color for matching purposes.
3. Add the forward hatch tissue template between F4A and F5A. the Cockpit Combing is then added from F5A to C1.
4. Pre-bend/curl the Mid and Rear canopies- this will help them lay easier over the C parts.
5. Glue the Rear Canopy first, attaching it to C2, C3, and along the hatch rail edges- do not try to fold down the rear section at this time- allow to fully dry before folding over the rear section- each half is slightly longer than needed and will need to be trimmed.
6. The Mid Canopy is next. Mark line at the top of the forward most C1 making a “forward and rear half”. Glue the forward 2 glass sections behind this line to the scrap stringer between C1 and C1- allow to dry. Next glue the forward 2 glass sections to the sides of C1 and the rail edges- allow to dry. Finally glue the rear section to the hatch rail, C2, and the top center stringer.
7. When installing the Front canopy section, refer to plan detail and the numbers marking the sections of the Front Canopy.
8. Lightly score and fold along the lines marking the center glass section. Glue section marked 1 to the top of C1 in front of the Mid Canopy- allow to dry. Hold section 2 to the Cockpit Combing while folding both section 3s to the side and on C1. Note the location of where section 2 is now on the combing. Add glue to the bottom of section 2 and attach it to the combing on the position marked- allow to dry. Next glue sections 3 to C1 in front of the Mid Canopy framing. Finally, glue section 4 to C1.
9. Prebend/curl the Turret. Using the tab, glue the two section 1s together and allow to dry. Next glue section 2 to C3 and the triangular tabs on the back of the Rear Canopy. Once dry glue section 3 down. Finally glue the 2 glass sections together with canopy glue.

Tissue And Covering Instructions

1. All templates are printed on white tissue or exam (crepe) paper.
2. Adhere tissue to 8.5” x 14” sheets using temporary spray adhesive.
3. Print in color without borders and allow time for ink to dry- lightly coat the sheet with Krylon crystal clear spray to help seal the ink.
4. Trim along part outline while still attached to the sheet, carefully remove paper sheet before applying to model.
5. Use the marks on each end of the part- they are spaced 3/32” apart and line up with stringers. Each panel notes which former or rib location.
6. Fuse: Start with the rear of the fuse/vertical and move forward section by section. The fuse section with the cross (Balkenkreuz) has 2 dashed lines that need to be cut before attaching to the fuse. The Fuse Center section and Hatch are covered next, followed by the Cowl. The Chin is added, cutting slits as needed along the stingers to help it lay close to the frame and reduce wrinkles. There are 3 Under Nose sections- the light blue ones are added first. Mark and trim them for the best fit before adding the third (green) one. The Nose section is added starting at the center, move up and down attaching the panel to F3. moving towards the nose, cut the panel along the stringer lines (3/4” in from the front edge- overlapping as needed) to reduce wrinkles.
7. Wing: cover the bottom of the wing first, starting with the Outer Panel. Test fit using the tick marks to align with the stringer. Trim the front/back edges as needed. Appy glue to the outside framing and be sure to add glue on the servo plate and the stringers around it as the servo horn area will need to be cut free later. Add the Wing Tip, cutting slits to help it lay down smoothly. Add the Inner Panel. Tape a scrap 3/32” stringer to the outer rear trailing edge (where WOJ was located), this will help retain the washout when covering. The top of the wing is covered in four sections. Section 1 is added first, and it covers from W5 to W10. Section 2 is next from W10 to W13. The Tip (section 3) is added before the Inner wing Panel (section 4).
8. Wheel pants: cover the center area- top and bottom first, cutting slits as needed for the best fit. Then the main sides before the top masts.
9. Cover the rest of the model parts.
10. Shrink and then seal the tissue on the model with Krylon crystal clear spray.
11. Add the detail parts and small insignias/markings.