

Easy Built Models Kit JX-02 MiG-15 Conversion to Rubber-Power

By Matt Payne, October 2011

The fuselage is restructured. The Jetex-related structural components, the stock keel parts, and the formers are replaced. The keel is made from laminated 1/16-inch strips, and is continuous from nose to tail, top and bottom. The first three fuselage formers (#1, 2, and 3) are moved aft 3/8-inch, and a nose nacelle is added. The original plan-length of the fuselage is preserved. The first two fuselage formers are cut for a nose plug. The rest of the formers are hollow-cut "doughnuts." The rubber motor extends the entire length of the fuselage, and emerges out the back through a hole in the end formers. A removable motor-stick holder holds back the motor. The fuselage side spars are 1/16-inch strip. Three continuous stringers are installed evenly-spaced between the keels and spars, for a total 12 stringers. The front of the fuselage is sheeted between the stringers to the third former. The fuselage between the spars and next higher stringer from the fifth to the eighth formers is sheeted for butt-joining the wing root ribs. Except for the first and last fuselage formers, the formers are notched top and bottom only 1/16-inch for the keel. An additional new former 12 is added. The keel and stringers stand above the formers 1/16th inch. The formers are not notched for the stringers or spars, which are glued to the rim-surface of the formers. This makes all surfaces smooth for covering and eliminates the need to scallop out the formers between the stringers. Construction of the first half of the fuselage is done on the plan. The half-fuselage is transferred to a building box for completion.

Step 1. Mark up the construction plan. Complete the bottom keel outline if necessary. The bottom keel line is a mirror-image of the top keel. Move the locations of formers 1, 2, and 3 aft 3/8-inch. Measure the length of all formers on the plan and note this on the plan or on a separate sheet of paper. The length will be the diameter of each new former, except for formers 1 and 12, which are 1/8-inch larger in diameter than formers 2 and 11, respectively. The end-formers #1 and 12 are added after the fuselage is complete. The keel and stringers will be flush with the end-formers.

Step 2. Cover the plan with wax paper. On the plan, pin down and laminate together the top and bottom keel strips of 1/16-inch balsa strips. You may want to premeasure the former dimensions to verify. Measure the distance between the outer edge of the opposite inner keel strips, or, measure the total distance outside to outside and subtract 1/8-inch, except for formers 1 and 12 as noted above. Draw patterns for the formers on paper with a compass. Each former, except for 1, 2 and 11 and 12 will be hollowed-out like a doughnut, and the outside radius will be longer than the inside radius by about 3/8ths -inch. In other words, draw a circle within each former circle, leaving sufficient room for the rubber motor. Draw quadrant lines on each former pattern. Mark each former pattern top and bottom center, except formers 1 and 12, for a 1/16-inch wide and deep notch. On the patterns for formers 1 and 2, draw a centered 1/2-inch square box or 1/2-inch diameter circle for the nose plug hole. Cut out and glue-stick the patterns to sheet balsa, then cut out all formers. Cut the 1/16-inch deep notches for the keel. A cutting wheel on a Dremel-type tool is best for cutting the notches. Cut all the formers in half, except for formers 1 and 12. Cut the center hole of each former, except for formers 1, 2, 11 and 12. Stack and align formers 1 and 2, and cut the nose plug hole. Remove the pattern paper from the formers, and number each one according to its station.

Step 3. Glue the formers to the keel, except for 1 and 12. Glue on the stringers.

Step 4. Transfer the half-fuselage to a building box. Using a building box will keep the fuselage straight and true. Glue on the formers 2 through 11. Glue on the stringers. Keep them symmetrical with their opposites. Remove the fuselage from the building box.

Step 5. Sheet in the fuselage between the stringers from former 2 to former 3 with 1/16th-inch sheet balsa. Sheet in the fuselage between the side spar and adjacent stringer, from formers #5 to #8, for mounting the wings. Glue on formers 1 and 12. Sand down the fuselage. Bore a 1/2-inch diameter hole through formers 11 and 12. Start the hole with a 1/8-inch bit. Enlarge the hole with a conical grinding bit(s) so as not to tear out the formers, and to achieve a smooth finish. Parts "E" on the printed sheet wood can be cut out and used for patterns to locate the wing spar holes in the sheet fill in the fuselage.

Step 6. Make the nose nacelle ring. Carve from a block or build it up and sand to shape and finish. The inside diameter should be about 1 1/16-inch - large enough for the nose block to overlap the plug hole and to hold a shim. Glue the nacelle to former 1A. Sand to flush with former 1.

Step 7. Build the fin and stab as per plan. On the wings, increase the thickness of the wing tip laminations for better results after sanding. (See end note regarding root rib cant.)

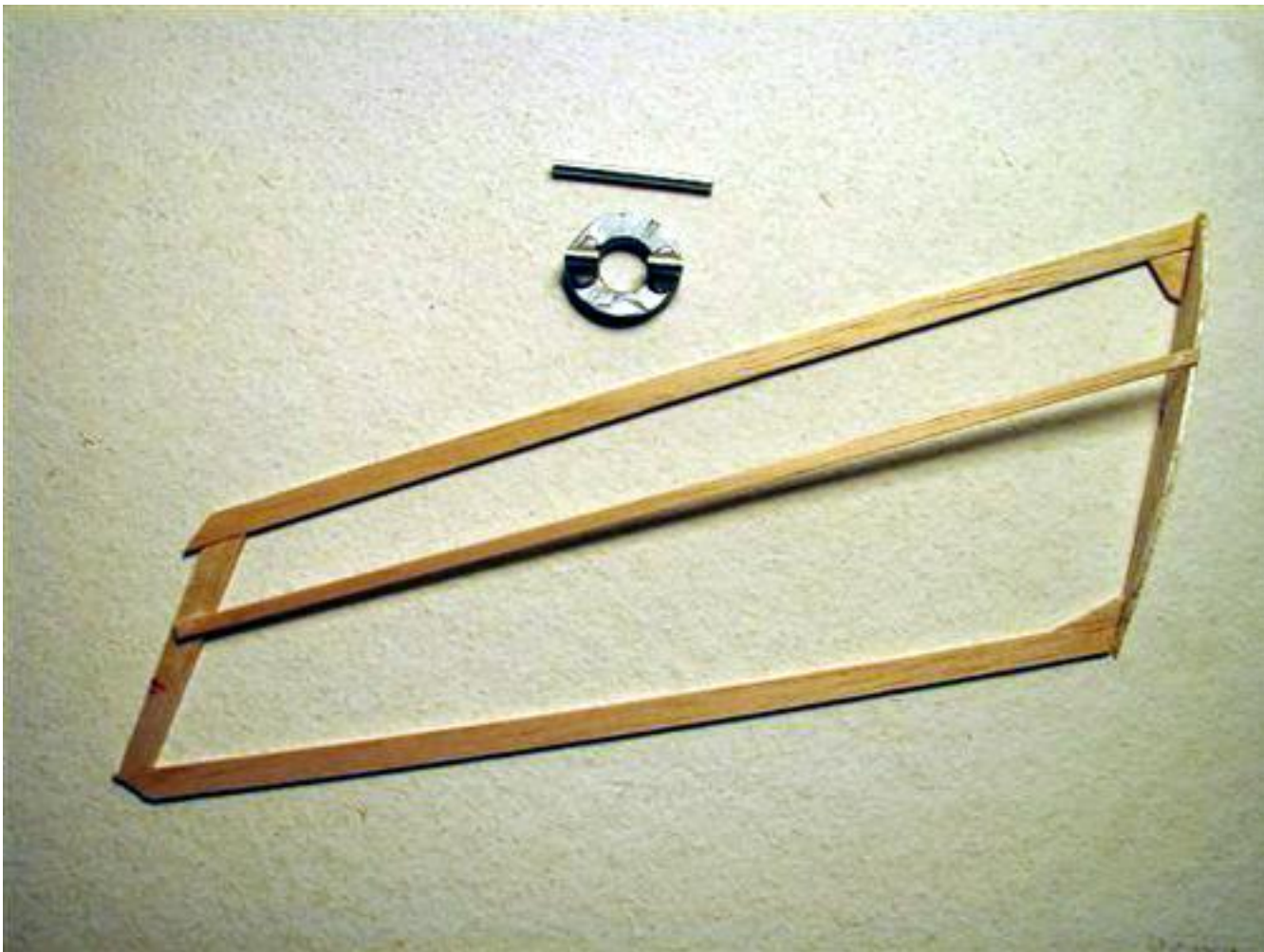
Step 8. Make the nose block and plug. Laminate 1-inch diameter discs of 1/16" hard balsa to a thickness equal to the depth of the nose nacelle. Drill out for the shaft bearing. A brass tube bush-bearing is recommended.

Step 9. Tissue-cover the wings (add wing fences if desired after covering) and fuselage and install the wings. Tissue-cover or paint the fin and stab and install. Add the canopy and markings.

Step 10. Make a motor-stick holder. Laminate two 1/16-inch balsa "doughnuts" 1-inch in diameter with a 1/2-inch hole in the center. Glue on pieces of aluminum tubing to the rim to hold an aluminum-tube motor stick.

Note: It is suggested that the fuselage be built before the wings, and that a "dummy" wing frame be constructed with the root rib at 90 degrees instead of canted, to test the dihedral angle when held to the fuselage. If you find that the resultant dihedral is sufficient, build the wings as per the dummy, or adjust the root rib cant accordingly.

Easy Built Models kit # JX-02 MiG 15. See this kit online <http://www.easybuiltmodels.com/jx02.htm>



Mig-15 motor holder and dummy frame wing.



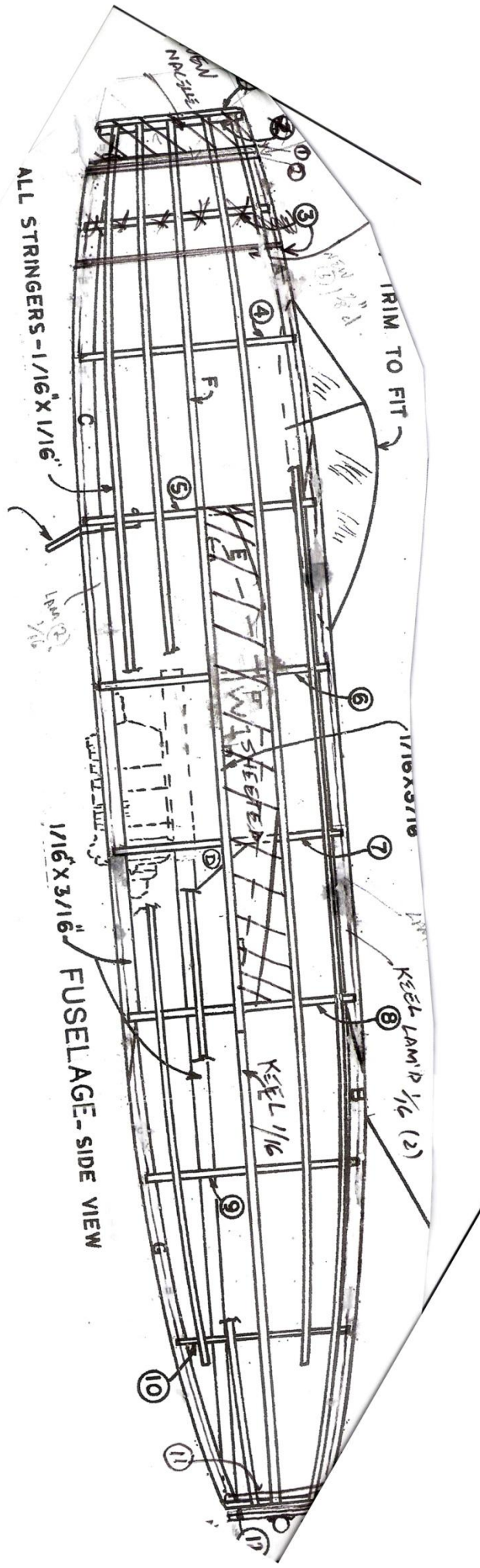
Mig-15 back end shows hole for motor, and formed fairing.



Mig-15 wing mount to flush sheeting



Mig-15 nacelle



ALL STRINGERS - 1/16" X 1/16"

1/16" X 3/16" FUSELAGE - SIDE VIEW

TRIM TO FIT

1/16" X 3/16"

KEEL LAMP 1/16" (2)

KEEL 1/16"

NOSE

1 2 3

4

5

6

7

8

9

10

11

12

LAMP 3/16"

WASHERS

F

C

G

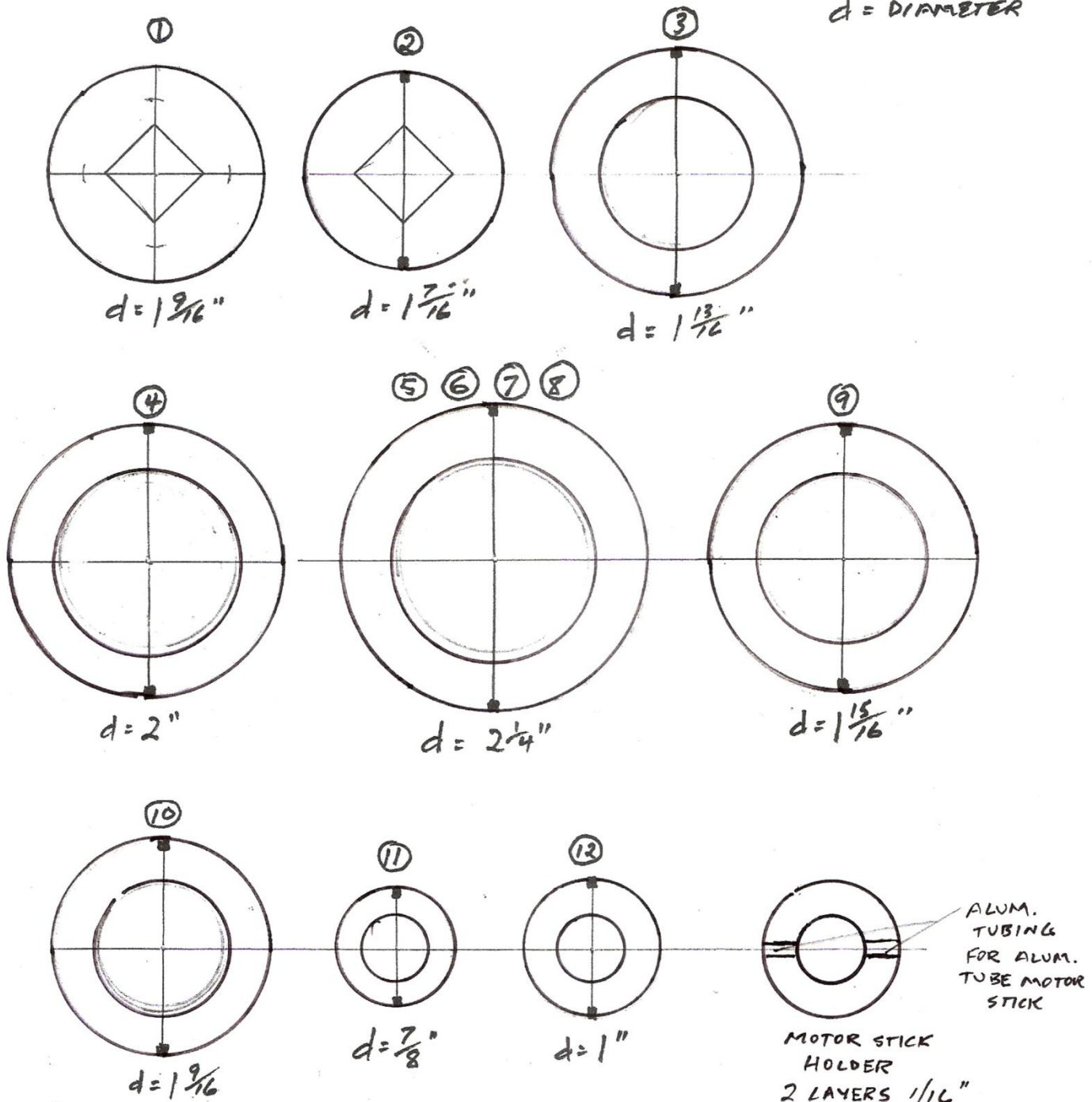
D

E

P

E-B MIG-15 JX02 RUBBER CONVERSION — FUSELAGE FORMERS

d = DIAMETER



ALUM.
TUBING
FOR ALUM.
TUBE MOTOR
STICK

MOTOR STICK
HOLDER
2 LAYERS $\frac{1}{16}$ "
MICRO LIQUITAPE
TACK-CEMENT USED
TO HOLD MOTOR STICK
HOLDER TO FUSELAGE
FORMER ⑫

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