

NOTE: This page describes making the left longeron. The right is a mirror of the left.

Step 1: Cut the F-1255-L and -R Longersons from AA6-125X3/4X3/4 per the dimensions in Figure 1.

Step 2: Mark the end of the twist, start and end of the curve, aft end of template and start of bend lines on the F-1255-L and -R Longersons as shown in Figure 1.

Step 3: Open the angle of the longeron as shown in Figure 4 from the start of the longeron to the end of twist & open line as shown in Figure 1. Clamp the longeron in a padded vise at the end of twist & open line as shown in Figure 1. Use a crescent wrench as shown in Figure 3 to twist the longeron inboard as shown and per the dimensions in Figure 1. When finished the top faces of the longeron both fore and aft of the end of twist & open should lay flat against a table. See Figure 6.

Step 4: Clamp the F-1255-L Longeron in a padded vise at the start of curve line and pre load the free end. Using a rubber mallet, firmly strike the longeron adjacent to the vise to produce a bend. Repeat this process at one inch intervals to produce a curve that matches the Template (F-1234-L Canopy Deck) within a sixteenth of an inch. See Figure 1.

Check the curve often to prevent over bending. The longeron can be placed in a six-inch vise without removing any of the bend, so it is easy to add more curve later. Remove curve by clamping the mid fuse longeron at the required point and pulling back slightly.

Check that the mid fuse longeron does not bend out of plane vertically as it is being bent in the horizontal direction. If this occurs, rotate the mid fuse longeron 90°, clamp it in a vise, bend it back straight with your hands, then recheck the curve with the template.

Clamp the longeron at the start of bend line at the aft portion of the longeron as shown in Figure 1. Using the method described above bend a single bend in the longeron as shown in Figure 1. As before check that the angle has not bent out of plane and adjust as before.

Step 5: Deburr the edges of the F-1234-L & -R Canopy Decks.

Step 6: Using a scrap piece of .025 thick aluminum to simulate the F-1270 Fuselage Side Skin, position the F-1234-L Canopy Deck to the F-1255-L Longeron as shown in Figure 2 (the canopy template will overhang the longeron by .025). Flush the aft edge of the canopy deck with the aft end of the template mark, then clamp the parts together. Match-Drill #30 the longeron using the canopy deck as a drill guide. Take care when drilling to ensure that the drill is perpendicular to the canopy deck. Repeat this step to match-drill the F-1255-R Longeron.

Step 7: Deburr the F-1255-L and -R Longersons.

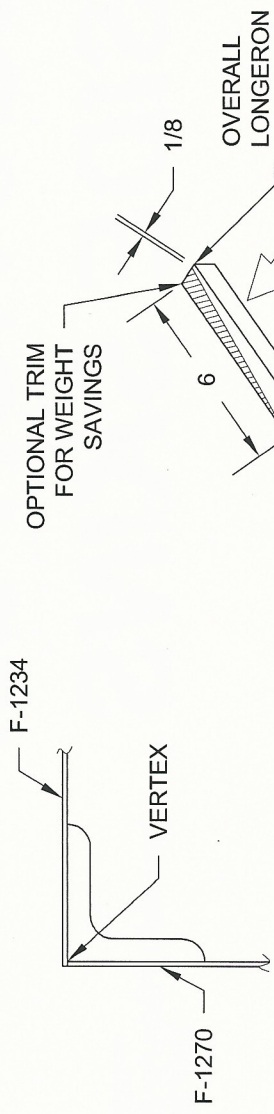


FIGURE 2: LONGERON CROSS SECTION

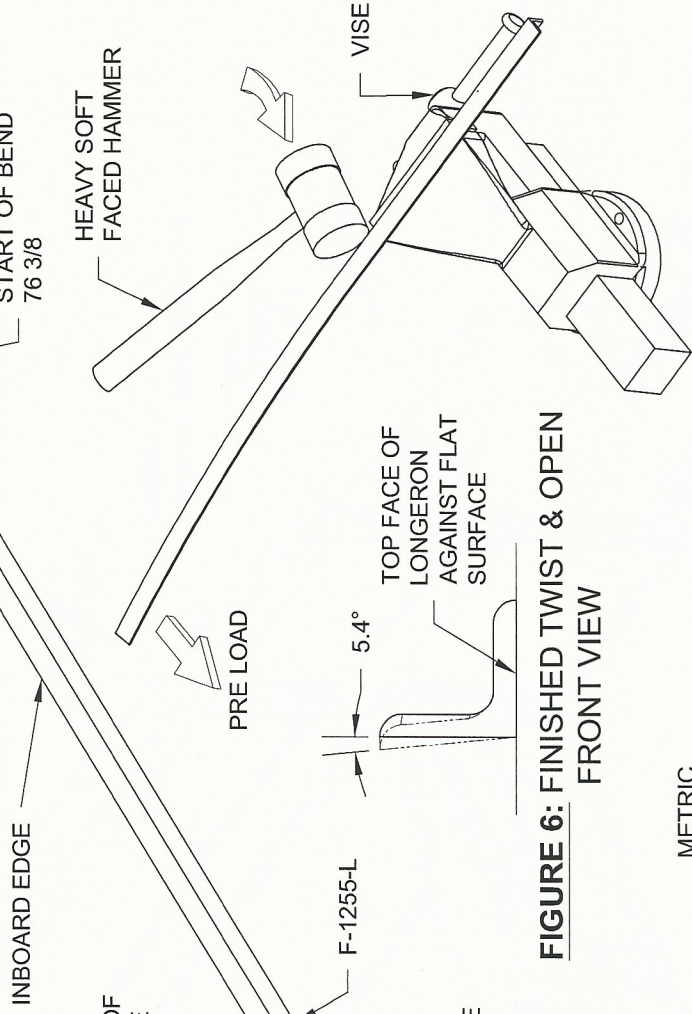


FIGURE 6: FINISHED TWIST & OPEN FRONT VIEW

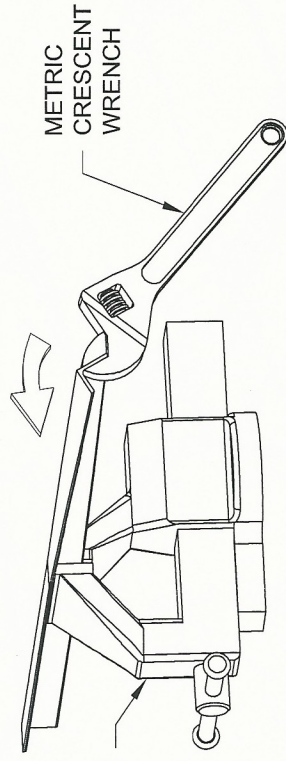


FIGURE 3: LONGERON TWISTING

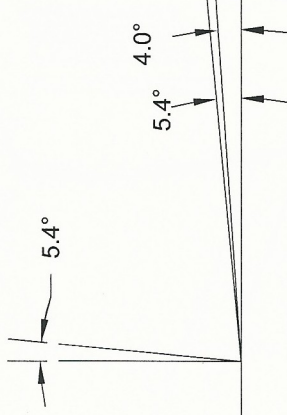


FIGURE 5: ANGLES

IF THE TEMPLATE INTERFERES WITH THE VISE USE F-1234-R FLIPPED UPSIDE DOWN

TWIST 2.7°

OPEN ANGLE 5.4°

END OF TWIST & OPEN 12 11/16

START OF TEMPLATE 12 7/16

START OF CURVE 23

TEMPLATE (F-1234-L)

TWO CLOSELY SPACED HOLES FWD

THREE EVENLY SPACED HOLES AFT

AFT END OF TEMPLATE 45 1/4

END OF CURVE 43 3/4

5.4°

PRE LOAD

TOP FACE OF LONGERON AGAINST FLAT SURFACE

VISE

HEAVY SOFT FACED HAMMER

START OF BEND 76 3/8

BEND 4°

INBOARD EDGE

OVERALL LONGERON LENGTH 82 3/8

1/8

OPTIONAL TRIM FOR WEIGHT SAVINGS

F-1234

VERTICE

F-1270

FIGURE 7: LONGERON BENDING

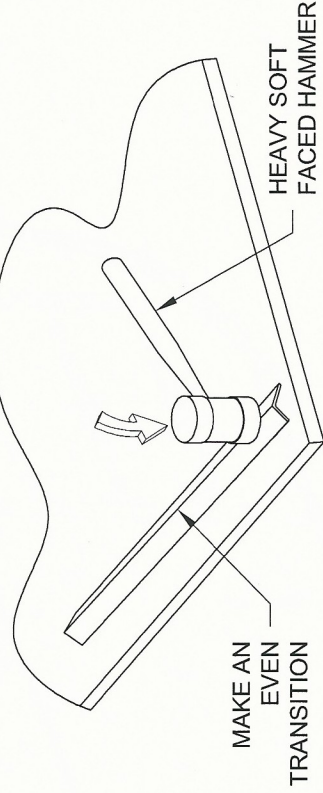


FIGURE 4: LONGERON OPENING

FIGURE 1: CREATING THE LONGERON

START (FWD END) OF LONGERON 0