



7F2-3 Bottom Skin

CHECK: Edge distance
 $e = 2d$
 The distance from the center of the pre-drilled pilot hole is twice the diameter of the #30 rivet hole to the inside edge of the line.
 Approximate edge distance: $e = 10\text{mm}$

First start by trimming along the black line on the bottom skin. After trimming, use a body file to smooth the edges. Since the skin will sit on the inside of the longeron the skin does not have to be perfectly filed, see 7-F-3 and 7-F-4.



7F2-3 Bottom Skin

LAYOUT CENTER LINE
 Layout the aircraft centerline through the middle of the sheet on the inside side (if the sheet has markings on one side, make this the inside side).

Cutout the hole for the access hole. The access hole will need to be filed to a smooth finish. The top skin and side skin (7F2-1 & 7F2-2) can be trimmed in the same manner as the bottom skin. After the trimming is done it is very helpful to layout centerlines on the top and bottom skin on both sides, they will be used later when squaring the rear fuselage (7F2-1 & 7F2-3).



**7F1-3 Rear Horizontal
Tail Frame
7F1-4 Front Horizontal
Tail Frame**

Positioning the Rear Tail Frames.



**7F1-3 Rear Horizontal
Tail Frame**

Layout a centerline on both Tail Frames (7F1-3 & 7F1-4). Mark rivet centerlines on all flanges.



7F1-3 Rear HT Frame

The bottom flange is clecoed to the bottom skin.

Drawing 7-F-3

A4 PITCH 30

(top right 7-F-6)

Locate the center on the bottom flange of both Tail Frames and drill with # 40 bit. Position 7F1-3 on the predrilled holes, 166mm from the rear on the bottom skin. Then 285mm from 7F1-3 will be the location of 7F1-4 and cleco. Square each Tail Frame and drill the remaining holes (#30 holes).



ORIENTATION:

7F1-3 Rear HT Frame
The flanges point back

7F1-4 Rear HT Frame
The flanges point forward

CHECK: The centerline of the HT frames lines up with the aircraft centerline on the bottom skin.

Note: It is normal for the Horizontal Frames to be wider than the width of the bottom skin.



7F2-3 Bottom Skin

ORIENTATION: The blend on the L angle is towards the front.

A4 PITCH 40

2ND hole 30mm from
Longerons
(middle diagram 7-F-3)

To position the Standard 'L' on the bottom skin, place the 'L' on a board and drill through the predrilled holes on the skin. There are two 'L's and one 'Z' angle on the bottom skin (DWG 7-F-3). Allow the extra length of 'L' to hang over; will be trimmed after drilling.



With a marker, trace along the edge of the skin to mark the length of the 'L' Angle.

After drilling the 'L' Angle to the skin, the angle can be marked and trimmed to the same size as the skin. Position the Standard 'L' Angles on the Top and Side Skins (7F2-1 & 7F2-2). Make sure to check the correct placement of the 'L' and the correct way the 'L' faces (DWG 7-F-3).



**7F3-1 Rear Fuselage
Longerons
7F2-3 Bottom Skin**

The Longerons have a 22mm flange on one side, and a 20mm flange on the other side. Overlap the 22mm flange underneath the Fuselage Bottom Skin 7F2-3 (the wider flange is to allow for proper edge distance at the rear longeron splice: see top diagram on 7-F-4). Mark a line 10mm from the back end of the Longeron on the 22mm flange.



**7F3-1 Rear Fuselage
Longerons
7F2-3 Bottom Skin**

OVERLAP: Don't push the skin too far in the bent: keep the edge even with the bent tangent line. Check there is no vertical gap between the edge of the skin and the bottom flange of the Longeron.

Locate the slice section on the bottom skin. This will be in the area of 1785mm from the rear, with three holes spaced 20mm apart. At the front hole mark a 10mm line and line up the Rear Longeron. Slide the Longeron up against the skin and check for proper edge distance.



**7F3-1 Rear Fuselage
Longerons
7F2-3 Bottom Skin**

CLECOES: When viewing this document in color the color code of the cleco is silver for #40 hole. It is also acceptable to drill and cleco with #30 without first drilling #40 holes in the Longerons

A4 PITCH 40
(see middle diagram 7-F-6)

Drill and cleco the first hole and check for proper edge distance.



**7F3-1 Rear Fuselage
Longerons
7F2-3 Bottom Skin**

TIP: The manufacture markings on the sheet will be on the inside of the fuselage.

Drill and cleco every other hole on the Longerons. Adjust the position of the Longerons as you drill.



**7F3-1 Rear Fuselage
Longeron
7F1-3 Rear Horizontal
Tail Frame**

Clamp the Longerons at the Rear Horizontal Tail Frame (7F1-3 & 7F1-4).



**7F3-1 Rear Fuselage
Longerons**

The Longerons will not be cut to length until the rear fuselage is completed (it will be trimmed flush with the aft edge of the bottom and side skins). Do not worry about the overhang on the Longerons at this time.



7F3-1 Rear Fuselage Longerons

REMINDER: the 22mm flange overlaps the skin.

To position the Front Longerons is done in the same manner as the Rear Longeron. Mark a 10mm line on the Longerons and line up the line with the predrill holes for slice. The Front Longerons will over lap the Rear Longeron 60mm with three A5 rivets.

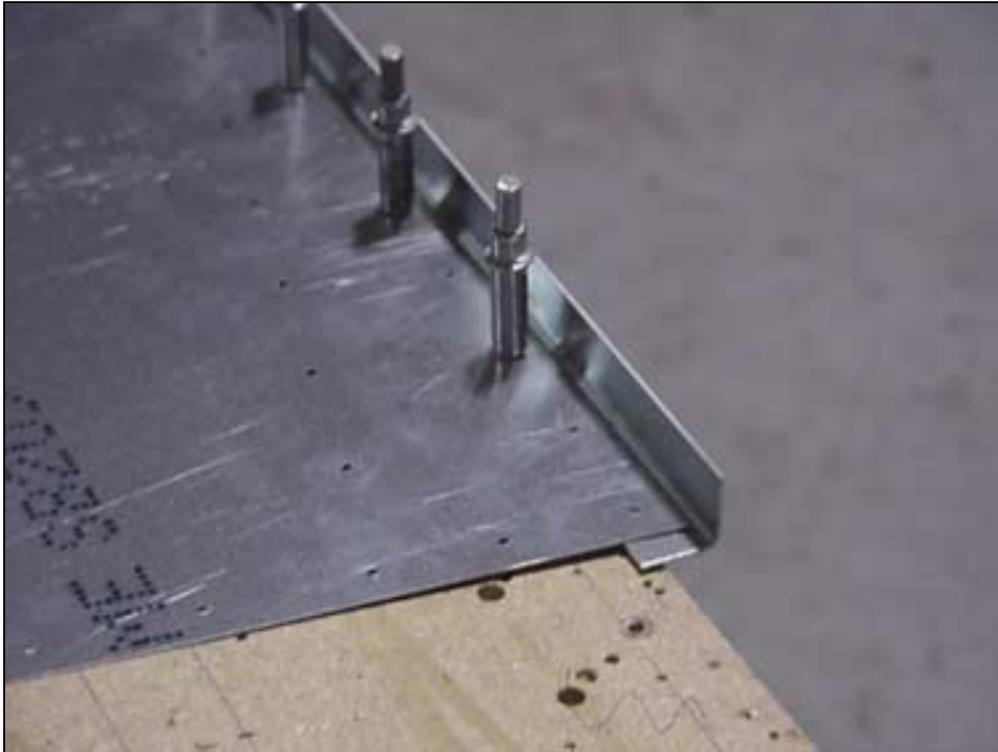


7F3-1 Rear Fuselage Longerons

Longeron splice
(see 7-F-4 and 7-F-6)

3 RIVETS A5

Before drilling clamp the two Longerons together and check for proper edge distance. Drill and cleco the Longerons.



**7F3-1 Rear Fuselage
Longerons**

The Longerons at the front will extend past the skin; do not trim the Longerons until the rear fuselage is completed.



This is the way the bottom skin should look after the longerons and 'L's are in position.



The 'L' Angles between the Longerons.



Another view of the rear bottom fuselage assembly.