

STOL CH 801 FINAL ASSEMBLY- DOORS

DRAWING 8XF-5

ASSEMBLY OF THE DOORS

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SECTIONS	#4a	DOOR FRAME
	#4b	DOOR GUSSETS & BOTTOM SKIN
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Helpful building tips:

Use a flat, unwrapped piece of plywood for the door template.

Trial fit and secure all parts to the template before drilling.

1. Cut and fit a template of each door.
2. Set up the parts on the template.
3. Rivet the inside sections together.
4. Fit the outside skins.
5. Fit the latch.
6. Fit the window material and rivet everything together.

Section 4a: ASSEMBLY OF DOORS



Outside

The assembled left door prior to installing the window and door latch, as viewed from the outside.



Inside

The inside of the assembled left door.



Place the door sill (8F19-5) to the cabin frame.
Trim the sill (8F19-5) to fit around the cabin frame.



Bottom flange is on the inboard side.



Detail of the rear end of the trimmed door sill, right side (8F19-5)



Detail of the front end of the trimmed door sill, right side (8F19-5)



Detail of front cutout.



The positioned door sill, right side (8F19-5)



3 RIVETS A5
In front steel tab
welded on the cabin
frame

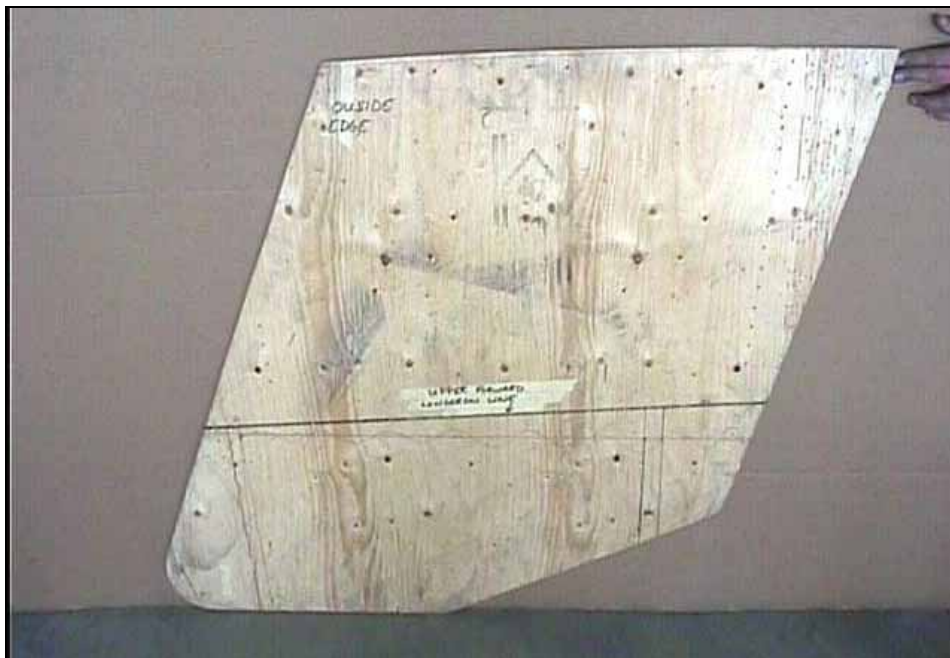


3 RIVETS A5
In front steel tab
welded on the cabin
frame



Mark two pieces, one for each side of the fuselage: left and right door opening.

Place a piece of 3/8 thick plywood against the opening of each door and hold it in place while an assistant accurately traces the opening on it. Measure the top up to the doorsill (8F19-5).



Mark INSIDE and OUTSIDE on the template. The Door frame will be build on the inside of the template.

Test fit each door in the opening. Adjust the size as required until a slick fit is obtained which accurately reflects the opening shape and size of the fuselage.



Layout the horizontal line as shown above. This will be used later to locate the lower edge of the door window. The line runs parallel with the top surface of the aluminum extruded "L" 8F14-8



right door.

Rivet line on door is in line with the rivet line on the fuselage.

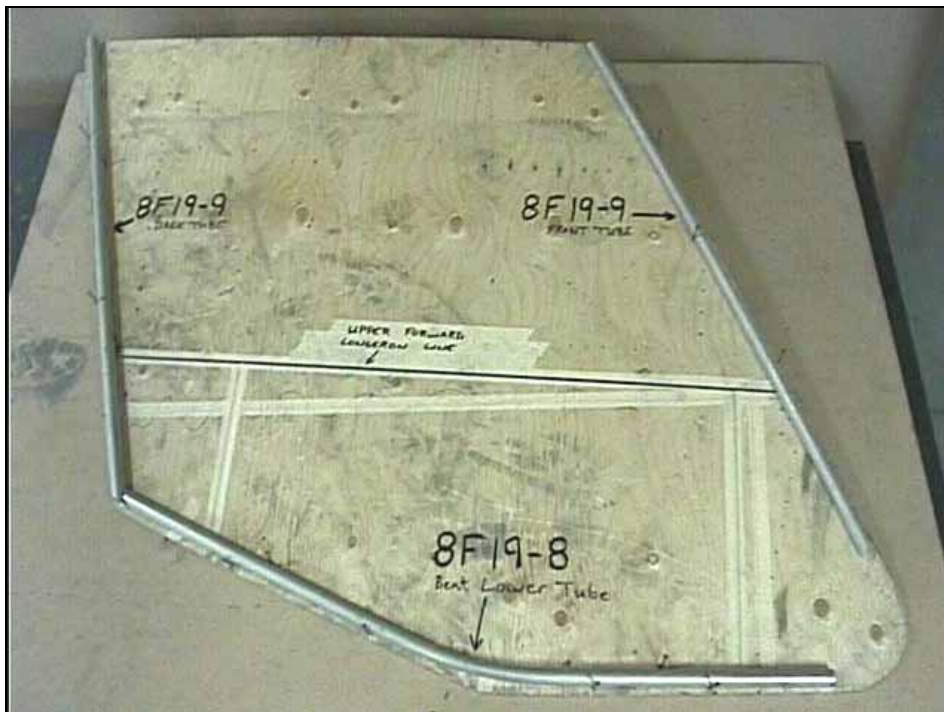


Position the template on the workbench with the OUTSIDE side down on top of the workbench.

The door is now built on the INSIDE of the plywood template.

The frame of the doors is to be constructed smaller than the actual opening size.

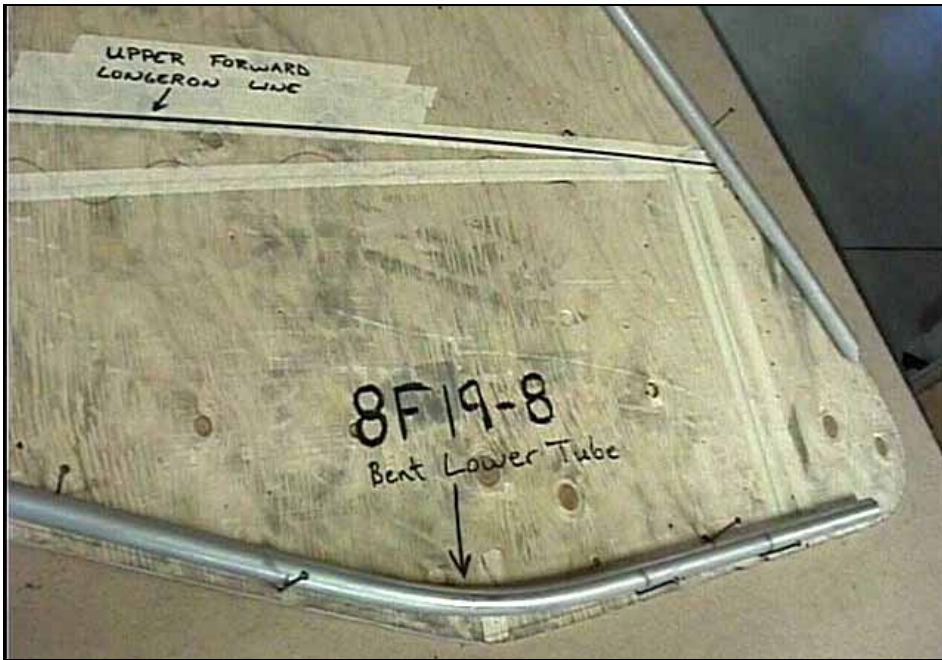
Layout a construction line which is $\frac{1}{4}$ " (6mm) back from the edge on the front, rear and bottom and 3mm from the top of the plywood template.



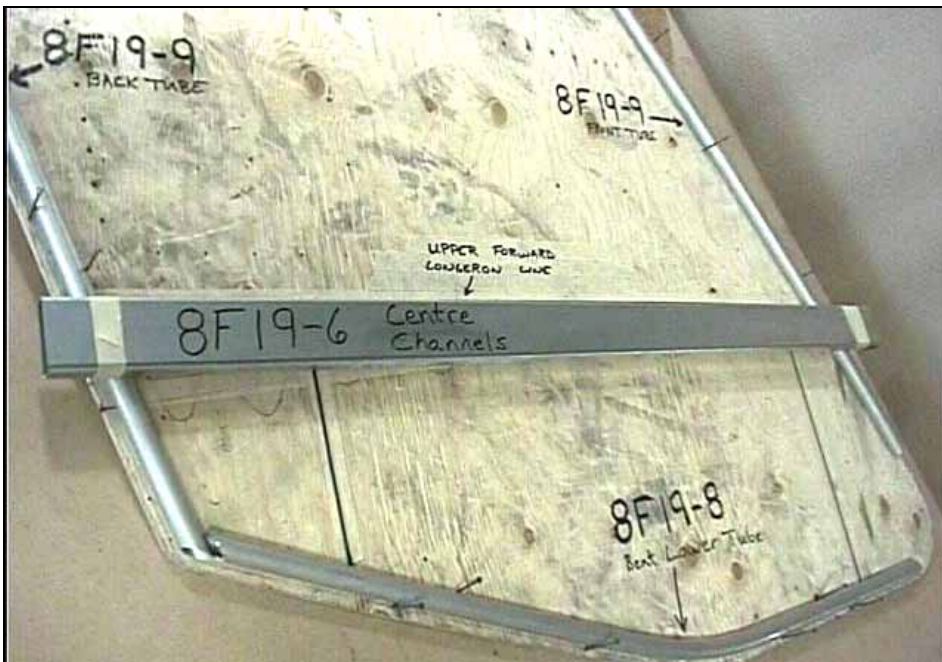
**8F19-9
FRONT & BACK TUBE**

**8F19-8
BENT LOWER TUBE**

Along the construction lines drive two to four finishing nails to act as stops when placing the tubes.



Holding the tubes against the row of nails drive a second row on the inside edge of the tubes to secure them in position. Be careful not to damage the tubes.



Assemble two pieces of the 8F19-6 channel together to make a box beam and secure with masking tape. Place them so that the smooth radius of the channel will be on the inside of the finished door. The top edge of the assembled channels will be located below the horizontal line that was drawn on the template board.



Short flange O/B



8F19-6
CENTER CHANNEL
Qty=2



Layout the vertical lines for the Gussets on the plywood template, SEE PAGE 2

Layout **165mm** along the top flange of the channel, measured from the aft edge of the tube. With a square mark a vertical line to make the position of the bend of rear gusset 8F19-4

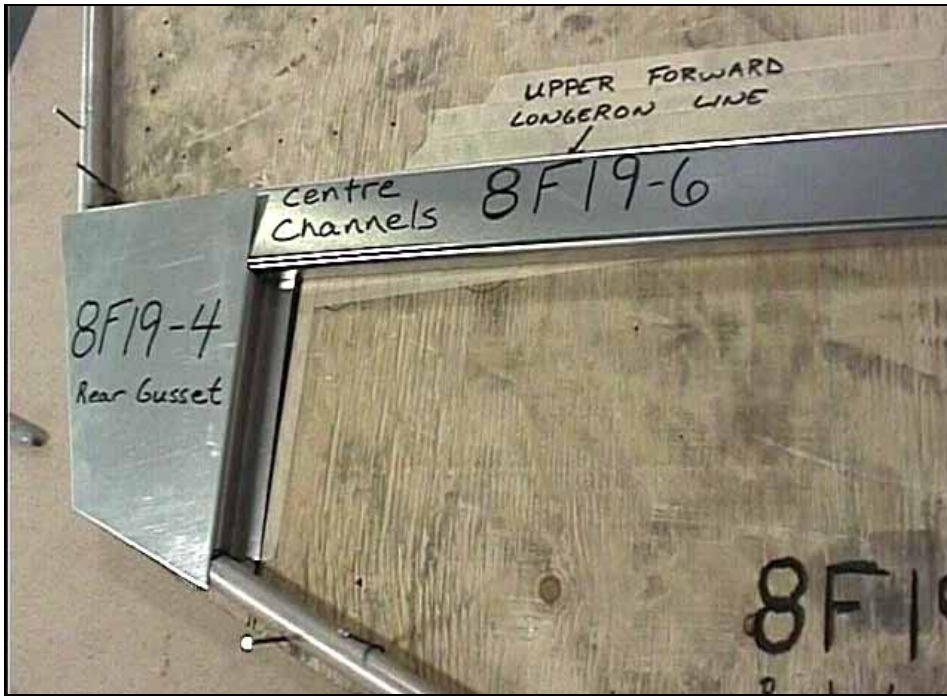
Layout **70mm** along the top flange of the channel measured from the front of the tube. Use a square to mark the vertical line for the position of the bend for the front Gusset 8F19-3

Mark the channel assembly for trimming at both ends.

CHECK: Approximately **650mm** inside distance between 8F19-3 at front & 8F19-4 at the rear



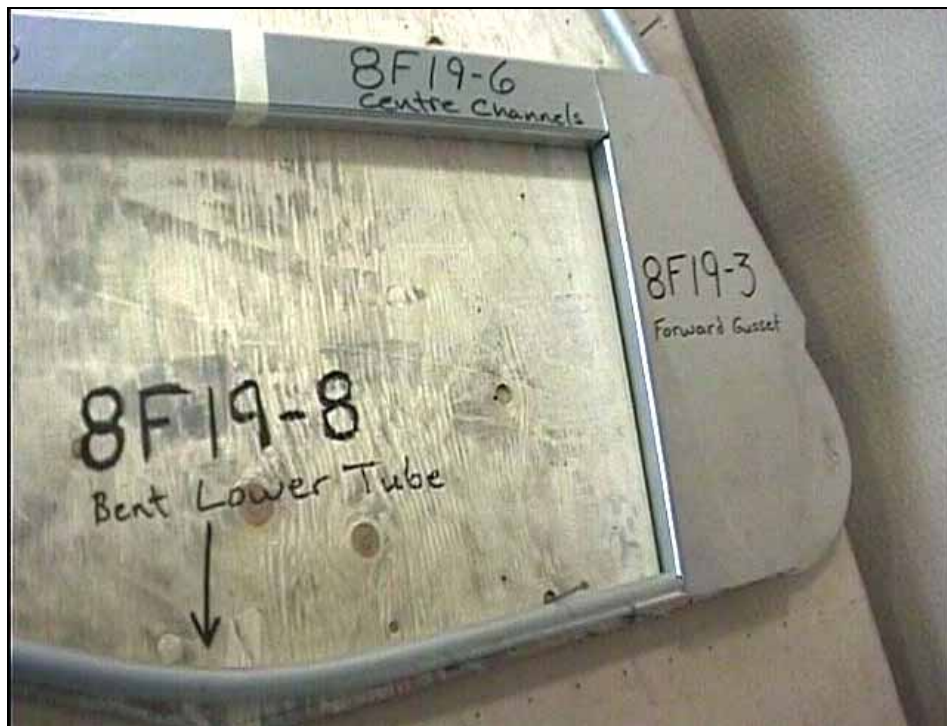
The trimmed end of the center channel assembly.



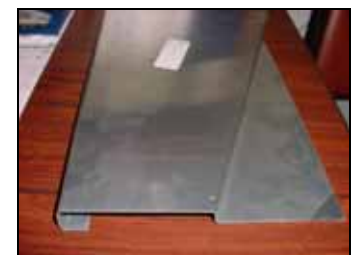
8F19-4 BOTTOM REAR GUSSET



Place the center channel in place. It can be held in place by driving a few finishing nails along the horizontal line on the plywood template. Fit the corner gusset 8F19-4 .



8F19-3 BOTTOM FORWARD GUSSET



Fit the front gusset 8F19-3 as illustrated. The horizontal distance (measured along the center channel assembly) between the inside (straight) edge of 8F19-4 and 8F14-3 is a nominal 650mm.

Cut the notch in the flange of 8F19-3&4 to clear the tubes and channel 8F19-6.



Length of rear tube
approximately 760mm

Photos of our demo with
the door in the open
position.

Right door – standing under the wing looking up at the aft end of the door.



REFERENCE: The front
bend on the Gusset
8F19-3 is positioned
along the front end of
the tubes 8F19-8 and
8F19-9

Right door – bottom front detail of Gusset.
Photo: standing in front of the aircraft looking up at the door.



SUGGESTION: Hammer the edges of the Gusset over the round tube

Right door – Bent Lower Tube 8F19-8
Standing under the wing looking up at the bottom of the door.



6B19-9 FRONT
Length of front tube,
approximately 790mm

Right door, leaning against the fuselage looking up at the front bottom of the door.



The upper door channel assembly consists of an 8F9-6 channel inside the 8F19-7. Trim the ends of 8F19-6 to fit the tubes. Do not trim 8F19-7 just yet. The largest flange on 8F19-6 is to be placed towards the inside surface of the door. The large flange on 8F19-7 is placed to the outside of the door assembly. Remember to ensure that the top edge of 8F19-7 is positioned 3mm back from the edge of the template.



**8F19-7
TOP OUTSIDE
CHANNEL**
Joggle is O/B



INSIDE – LEFT DOOR

With all the parts in place you may drill and cleco everything together. Pitch is 40 along the center and top channels, 30 where the corner gussets attach to the tubes. Drill #30. Do not rivet yet.



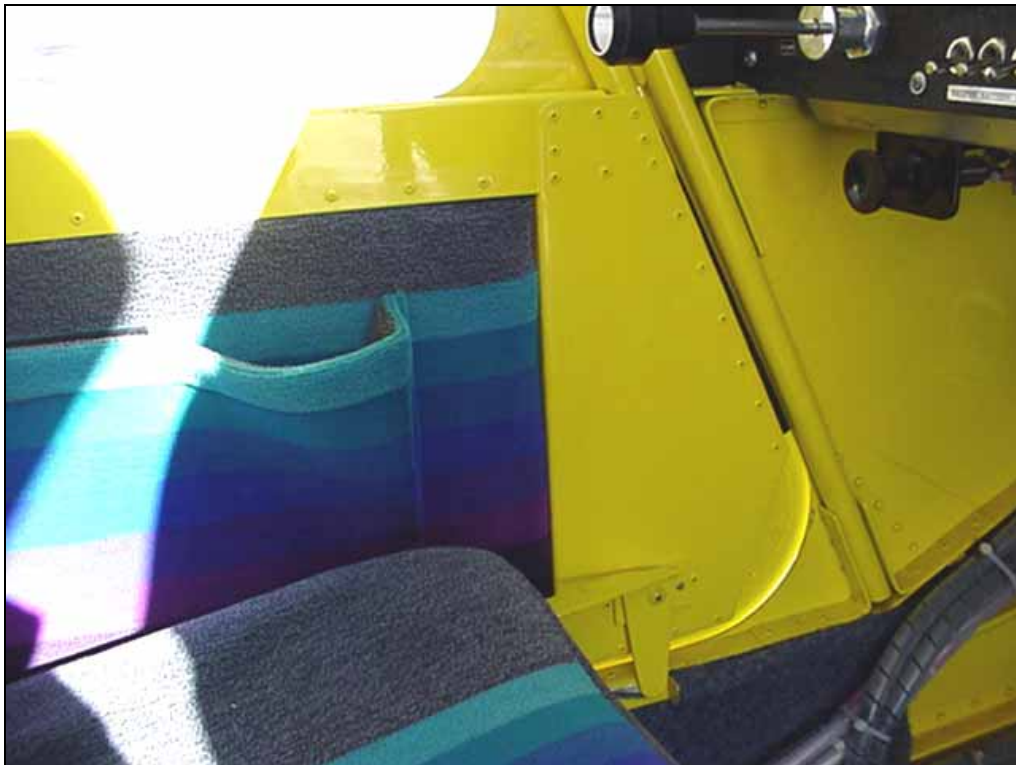
**8F19-6
TOP CHANNEL**

Shorter flange is O/B
The top of the O/B flange is position even with the joggle on 8F19-7



8F19-4 bottom rear gusset

Left – inside door



8F19-3 bottom forward gusset.

NOTE: The front bend on the gusset is to make room for the radius on the cabin side skin.

Note: upholstery between the gussets.