Applies To:

Falcon 195's shipped from Wills Wing prior to 8/25/94.

Modification Requirement / Background:

The Falcon 195's shipped to date feature a quick breakdown leading edge design. A slot in the forward end of the rear leading edge engages a 3/16" pin in the front leading edge. (See the diagrams next page.) 50mm front and rear leading edge sections butt together within a 52 mm xbar junction oversleeve. In the original quick breakdown configuration, a short 48mm innnersleve is pinned to the 50 mm rear leading edge with a press fit flush mounted steel pin which passes through both the 48mm sleeve and the 50mm rear leading edge, but does not protrude above the surface of the 50mm. An identical pin is installed in the 50mm front leading edge, press fit into and flush with the outer surface of the 50mm front leading edge and captive within the 52 mm oversleeve. The 48 mm innersleeve protrudes from the front of the rear leading edge, and during assembly slides inside the 50 mm front leading edge where a slot in the front of the 48mm innersleeve engages the pin in the front leading edge.

Problem:

Due to the critical tolerance of the pin lengths, hole sizes, and due to slight eccentricities in the tubing diameters, we have found that the press fit pins may loosen and become disengaged. If this happens, it would allow the rear leading edge to rotate, changing the washout tip angle and the sail mount angle, and putting a turn in the glider.

Solution:

For the present, we are going to convert all Falcon leading edges to the normal construction method used on Spectrums and other 52mm/50mm leading edge models. After the conversion is done, the rear flush mounted pin and the 48mm innersleeve will be removed, and the front pin will remain but not be used. A new clevis pin which passes through both the 52mm oversleeve and the 50mm rear leading edge will secure the rear leading edge to the front. The steps to make the conversion are as follows:

1) Dismount the sail at the rear of the leading edge, and slide it forward until you have exposed the rear twelve inches or so of the xbar junction oversleeve.

2) With a felt tip marker, mark the rear leading edges to identify left and right, and make a scribe line along the axis of the tube across the rear edge of the xbar oversleeve, marking both the rear leading edge and xbar oversleeve. This is to provide a reference for full engagement of the rear leading edge into the front, and for proper alignment of the rear leading edge.

3) Remove the rear leading edge, and using a flashlight look up inside the front leading edge to verify that the flush pin in the leading edge is properly engaged in the holes in the 50mm front leading edge. If this pin has been twisted out of position, (one end of the pin has come out of the hole in the 50mm, and moved some distance around the tube circumference), you will have to re-position it before proceeding with the modification. To do this, note the direction in which the pin has rotated, re-insert the rear leading edge, and using the washout tube for leverage, rotate the rear leading edge until you feel the pin snap back into position. If you are unable to re-engage this pin, stop here and call Wills Wing. If you need to re-engage the pin, you will have to re-do your alignment scribe mark.

4) Once you have confirmed that the forward flush mounted pin is properly located, insert the alignment jig into the front leading edge, making sure that the reference line on the jig aligns with the rear edge of the xbar junction oversleeve showing that the jig is fully inserted, and that the slots in the jig are engaged on the pin in the front leading edge. The guide bar on the jig will slide up over the xbar oversleeve. Using the snap punch provided, punch a mark on the leading edge xbar oversleeve using the hole in the guide bar to locate the snap punch.

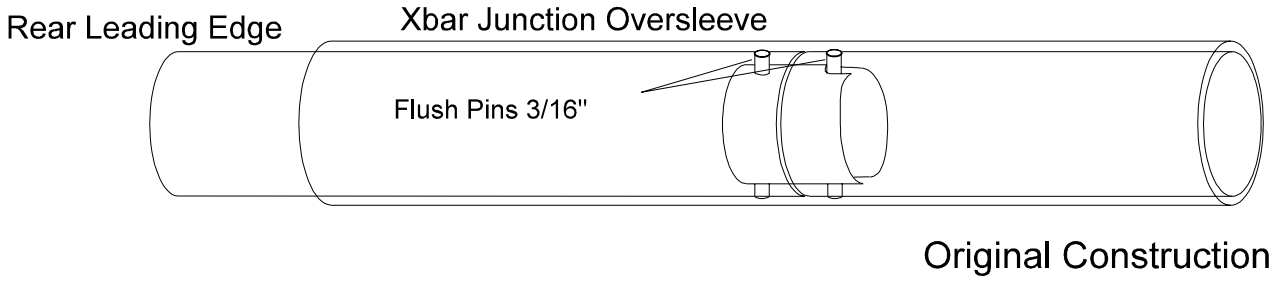
5) Disengage the alignment jig, rotate it 180 degrees, re-engage it fully, and mark the opposite side of the oversleeve with the snap punch.

6) Remove the alignment jig and re-insert the rear leading edge, using the scribe mark to insure that you have it fully engaged and properly aligned. Snap punch each of the marks several times again, to make sure you have a good starting point to drill the hole in the tube.

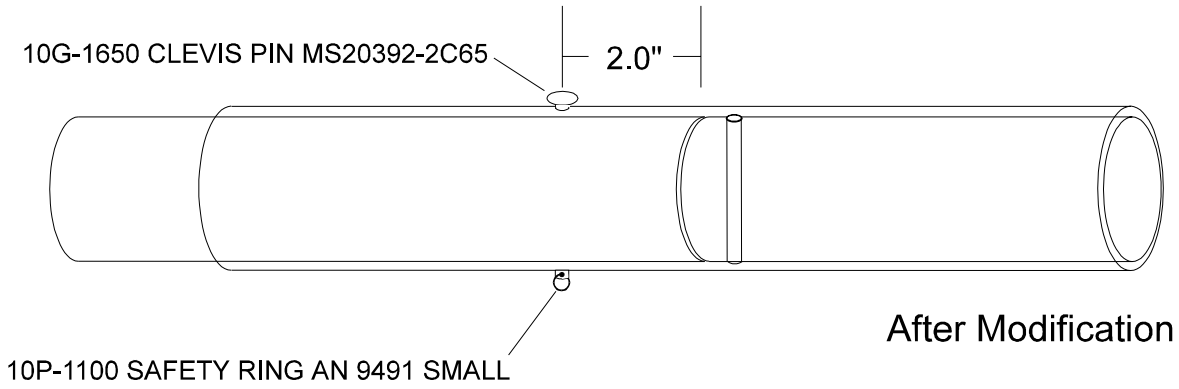
7) Using the 1/8" drill bit first, carefully drill a pilot hole at each of the snap punch marks. Take care that the drill does not wander. Then using the 3/16" drill, drill each of the holes out to 3/16".

8) Remove the rear leading edge, press out the flush mounted pin and remove the 48 mm notched innersleeve. Discard the pin and the notched sleeve.

9) Re-install the rear leading edge, again using the scribe mark to insure that you have it fully engaged and properly aligned, and install the 2C65 clevis pin and safety ring.



Original Construction



After Modification