

LOWER SKIN PANEL - WING CENTER TANK

CW-216
C-2148
GREEN

This segment is the lower skin panel from BL 0 to RBL 98 and from S-20 to the front spar. It includes portions of the front spar chord and portions of S-21 and S-21.

The skin panel is relatively flat but the aft right hand end is bent up and a local portion near the front spar at the outbd end is bent down. The skin flange portion of the front spar chord and the skin has the forward edge bent down from BL 0 to RBL 50. Only the skin flange portion of S-21 and S-22 remain with the fasteners intact. The remaining rivets in the skin panel at S-22 and S-23 exhibit shear failure in the outbd direction but the hi-loks at S-23 and RBL 57.5 show no bending of the fastener that remains above the skin panel.

The failure of the front spar shear ties have been documented in the shear tie/fastener hole elongation study. All of the shear ties have failed with only a portion of the skin flange of the shear tie remaining except at RBL 42 which has failed at the front spar stiffener attachment. There is a small triangular fatigue crack on the aft edge of the shear tie at RBL 84 that is documented in the metallurgical report. There is also a small fatigue crack at the fillet radius of the front spar chord near the longeron splice at RBL 80 that is also documented in the metallurgical report. The tension fitting on the inside of the skin panel at the underwing longeron splice (RBL 79) has the outbd leg broken off passing thru the tension bolt hole. The tension bathtub fitting on the lower surface of the skin panel has elongation in the bolt hole vertically but the fitting is not fractured. The forward facing lug on the longeron splice fitting exhibits a tension failure at the aft bolt hole with some bending to the right. The remaining fasteners in the skin panel common to the keel beam chord indicate tension failure of the rivet with some bias toward BL 0.

There is soot accumulation on the upper and lower surface of the skin panel. See the Fire and Explosion Group notes for further documentation.

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