

UPPER SKIN PANEL - WING CENTER TANK

CW-101
C-808
GREEN

This is the section of upper skin panel, stringers, and floor beams that extends from the right S.O.B. to LBL 30 and from S-22 to the front spar.

The fracture edge at the right SOB includes a portion of the double plus chord. The underside of the skin panel contains a large percentage of the stringers from S-22 to S-33 and includes the skin flange of the front spar upper chord. The floor beam at LBL 11.33 remains intact from the front spar to S-27 except a portion of the upper chord. The floor beam at RBL 11.33 remains intact from the front spar to S-27. The floor beam at RBL 34 minus the upper chord remains intact from the FS to S-22. The floor beam at RBL 57.50 remains intact from the front spar to SWB3. The floor beam at RBL 76.00 remains intact from FS to S-23. A portion of the floor beam at RBL 98.6 remains from FS to S-23. The floor beams are separated from the skin at various locations.

The panel is bowed up about 12" in the middle at RBL 57.5 and the stringer at S-31,32 and 33 are buckled and broken at RBL 57.5. The stringer free flange at S-29, 30 and 31 are buckled and bent both forwards and backwards at multiple locations from RBL 57.5 to RBL 98. The free flanges of the attached stringers inbd of RBL 57.5 have generally remained straight. The tension fittings at SWB3 remain intact on the lower side of the skin panel as well as the portion that remains attached to the floor beam on the upper surface. See sketch in CW-602 for complete definition of remaining tension fitting on the lower surface. The stringer free flanges are fractured and are missing at multiple locations but generally the skin flanges of all stringers remain attached. The skin flange of the front spar upper chord remains attached to the skin. A portion of the front spar stiffener/skin shear ties remain attached to the FS chord skin flange. See the shear tie/bolt hole elongation study for complete definition. The end of the panel at LBL 30.00 has a very jagged fracture and has portions curled upwards as much as 45° and downwards 30°.

The stringer splice fittings at RBL 127.5 (which attach to the right SOB) from S-30 to S-33 remain attached to the stringer. The fitting fastener holes common to the double plus chord are

elongated outboard at the lower surface of the hole.

There is evidence of small metal fragments embedded in the sealant on the inner surface of this panel. Refer to attached sketch for exact location.

There is no evidence of pre-existing cracks or corrosion on this section of the panel.

There is some evidence of soot venting from below the skin at the shear tie fastener holes for SWB #3. This sooting is on the upper surface of the skin.

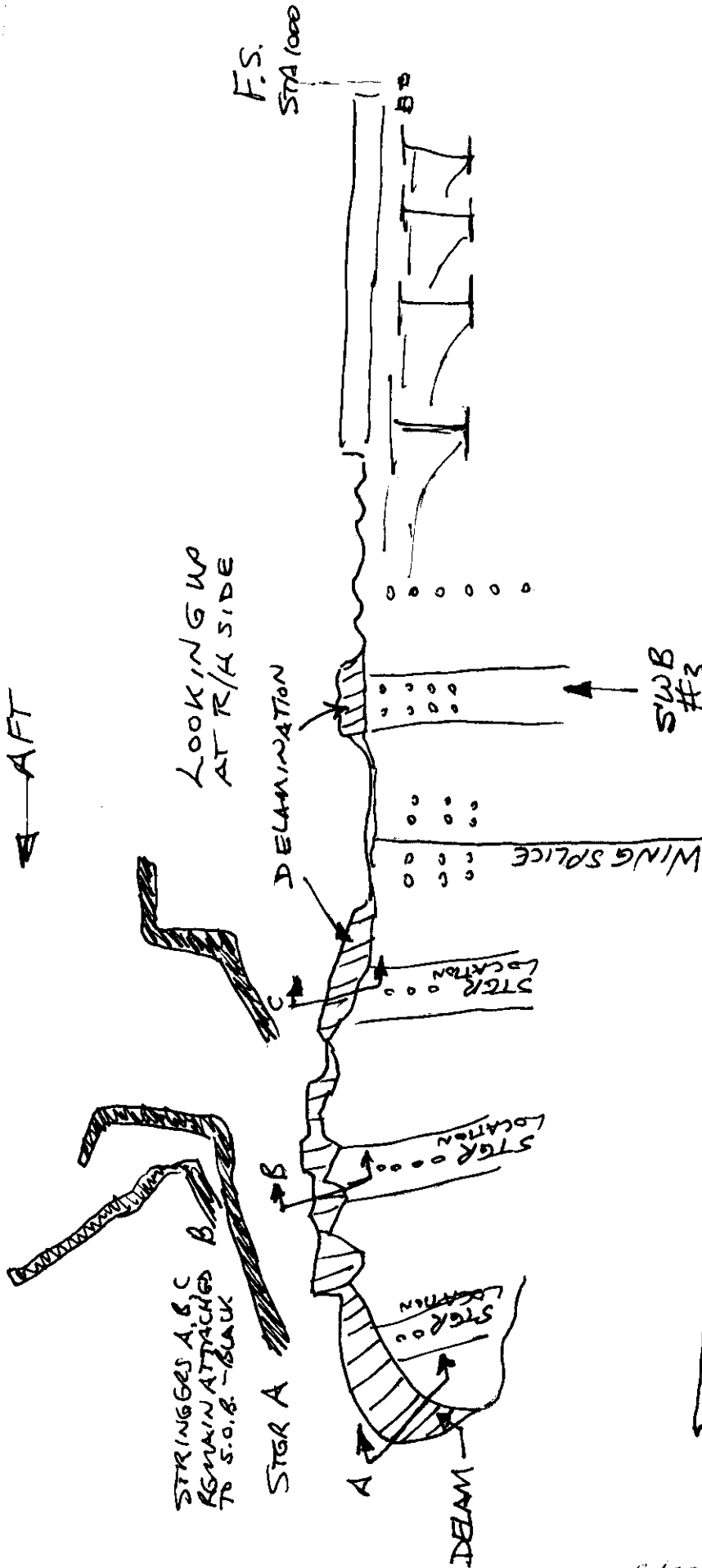
There is some sooting on the inner surface of the panel. See the fire and explosion group notes for complete documentation.

Stephen F. Klapach
FAA 12-05-96
R. Barrett JAM 12-5-96

Wann Stewart ROBIN 12/5/96
A. W. W. TWA 12-6-96

SD GREEN ALPA 12-6-96

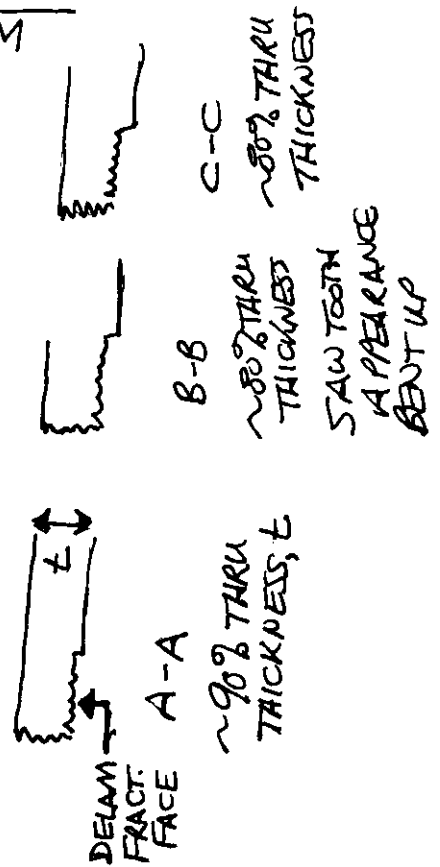
WING CENTER SECTION UPPER SKIN
 ← AFT



LOG # CW-101
~~29~~
 TAG# C808

DESIGN ARGV GREEN

J. TRZIL
 8/22/96



Stephen F. Killebrew
 FAA 11-04-96 No Photo



WING CENTER SECTION
UPPER SKIN

101
CW-29

8/21/96

J. TRZIL

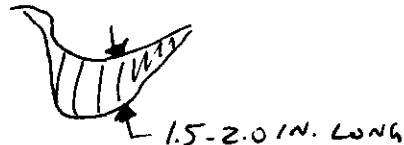
① LEFT SIDE OF MAT'L RETRIEVED

F.S. TO S.W.B. NO 3 THEN BACK ALMOST TO SWB NO. 2
SOME BENDING UP; RAPID TEARING; ABOUT 4 TEARS
BETWEEN S.W.B. # 3 AND # 2 (15-20 IN. LONG)
NEAREST TEAR TO S.W.B. NO. 2 BENT UP THEN NEXT
TWO BENT DOWN (GOING FWD)

DELAMINATION APPEARS ABOUT MID-THICKNESS LOOKING
DOWN ON FRACTURE (DELAMINATED) SURFACES.

② RIGHT SIDE

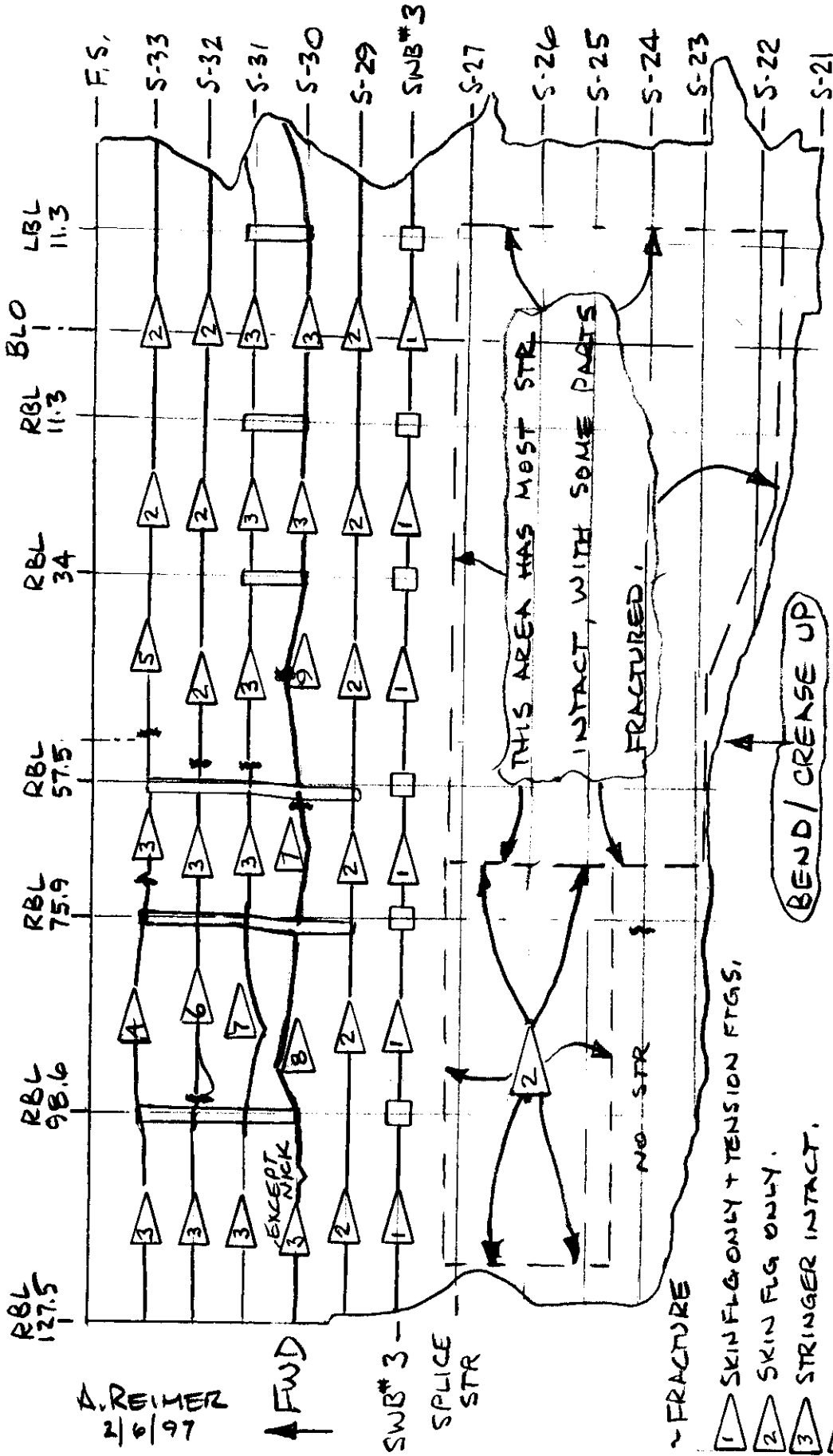
"SAW TOOTH" APPEARANCE OF FRACTURE AND
DELAMINATIONS VISIBLE LOOKING UP FROM
NEAR R/H S.O.B. SUGGESTS RAPID TEARING
("SAW TOOTH") AND BENDING (SOME SKIN FRACTURE
TIPS BENT UP), SAWTOOTH ABOUT 2" PEAK-TO-PEAK.
DELAMINATIONS NEAR AFT SURFACE WERE ABOUT
1.5-2.0 INCHES LONG



SKIN APPEARED TO HAVE BEEN PUSHED UP AT APEX AND
PEELED AWAY FROM R/H S.O.B.

NOTE: WHERE FASTENERS AND SKIN ARE INTACT AT S.O.B. SOME
BENDING UP IS INDICATED BY FRACTURES AT REMNANT
SKIN AND AT DOUBLE PLUS CHORD. SOME STRINGERS
ARE BENT UP AND BLACKENED WHERE ATTACHED AT S.O.B.

WING CENTER SECTION ~ CW-101 PANEL ~ LWR SIDE



BOTTOM SIDE
VIEW LOOKING UP

- 1 > SKIN FLG ONLY + TENSION FTGS,
 - 2 > SKIN FLG ONLY.
 - 3 > STRINGER INTACT.
 - 4 > FREE FLG INTACT - WEB FLG BROKEN TOP & BOTTOM.
 - 5 > SKIN FLG + PARTIAL WEB FLG,
 - 6 > FRACTURE + WEB FLG BENT AFT.
 - 7 > FREE FLG BENT AFT - HIT BY SHARP OBJECT A WEB BENT / SHEARED ABOUT SKIN FLG, (BRUCKLED)
 - 8 > FREE + WEB FLG BENT FWD 4", WEB SHEARED AT SKIN FLG, SCRAPED UP SKIN FOR 1/2".
 - 9 > SIMILAR TO 8 EXCEPT SKIN SCRAPE SMALLER 1" LONG.
- NOTES: 1. STABILIZATION STRAPS ~ PARTIAL AS SHOWN,
2. SHEAR LIP EXISTS ON S-28 & S-29 INDICATING FWD MOVEMENT.

A. REIMER
2/6/97

