CONDUCTIVITY STUDY

Conductivity Study on Selected Aluminium Tubes/Ducts identified by Bob Swaim (to go to NTSB Lab on 10/9/96)

(using a Sigma scope SMP1)

Conductivity measurements were taken on the tubes with conductivity probe to determine if their temper was altered due to fire damage during the accident. The tubes are either fabricated from 6061-T4 or T6 Aluminum. However, since not all part numbers could be identified an exact material could not always be confirmed. Table I from BAC 5946 "Temper Inspection of Aluminum Alloys" gives an acceptable conductivity range for 6061-T4 as 36.0 - 45.5 % IACS and 40.0 - 51.0 for 6061-T6. When material is thinner than .063 inch a correction factor must be applied to readings (see Table XIII from BSS 7351). Material that has been heated to a point which can cause brittle fracture under load (exceeding the solution treatment temperature) will result in conductivity values usually in the low to mid 30's %IACS. Material that has been heated above it's normal aging temperature but below the solution treatment temperature will result in an increase in conductivity. The following results were obtained from the tubes examined.

1). Fuel Vent Tube in R/H Side of SWB #2 (RBL 98.5)

Conductivity = 40.24 - 40.77 %IACS
Thickness = .045"
Correction factor for thickness = +0.5%
Resulting corrected range = 40.74 - 41.27

Based on these values, it appears that the materials' temper was not affected by heat.

2). Fuel Vent Tube pieces, R/H Wing, Front Spar

- Tube is fractured in two pieces
- Tube has ink Marking of 6061-T4 per WW-T-700/6, 028" x 1 3/4" dia.
- Tube was identified as 6SB92232-2: Drawing was checked and verified ink stamp identification of material, heat treat, and thickness.

Conductivity measurements were taken on both pieces in various area:

Conductivity range = 44.08 - 46.77% IACS
Thickness correction factor = + 2.5 % IACS
Resulting corrected range = 46.58 - 49.27% IACS

Since acceptance range for -T4 material is 36.0 - 45.5 % IACS, it appears that the material was artificially aged to a T6 type temper during the accident.

* This tube is going to the NTSB lab

3) Fuel Vent Tube, R/H Wing, Trailing Edge

- Identified as 1007-4, Tank 4R, 2½" Dia.
- Material thickness = 065"

Conductivity range = 41.32 - 43.99 % IACS
No thickness correction factor

Material falls within the acceptable conductivity range of -T6 and -T4 therefore it appears the temper of the material was not altered.

4). Air Distribution Ducts - No part number identification

A). .063" thick,

Conductivity range = 40.31 - 41.8 % IACS
No thickness correction factor.

B). .065" Thick,

Conductivity range = 40.90 - 41.47% IACS
No thickness correction.

Both distribution ducts exhibit conductivity values which indicate that no temper alterations took place due to temperature exposure during the accident.

JR Straus 10/2/96

Frank decided to send all three to the NTSB Lab - couldn't get in touch with Bob Swaim.

Conductivity Results provided by Boeing Personnel, Not independently verified by other parties

J Whitby II
1/24/97

11.2.1 BARE ALLOYS (Continued)

TABLE I CONDUCTIVITY AND HARDNESS ACCEPTANCE LIMITS (Continued)

ALLOY AND TEMPER		CONDUCTIVITY PERCENT IACS		ROCKWELL HARDNESS			
		MIN.	MAX.	SCALE	THICKNESS RANGE (INCH)	MIN.	MAX.
5386	HXX	- - -	- - -	E 15T	0.060 and up 0.026 to 0.059	80 72	- - - - - -
5456	0 H112 H311 H321 H323 H343	- - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - -	**FL 4** **FL 4** **FL 4** **FL 4** **FL 4** **FL 4**	- - - - - - - - - - - - - - - - - -	- - - 70 75 90 90 94	70 - - - - - - - - - - - - - - -
6013	T4X	37.0	40.0	B 15T	0.040 and up 0.026 to 0.039	41 74	60 80
	T6X	41.0	44.0	B 15T	0.040 and up 0.026 to 0.039	64 79.5	79 86
6061	0	47.0	56.0	E 15T	0.060 and up 0.026 to 0.059	- - - - - -	25 40.5
	T4XXX	36.0	45.5	E 15T	0.060 and up 0.026 to 0.059	64 63	- - - - - -
	T42	36.0	45.5	E 15T	0.060 and up 0.026 to 0.059	60 60.5	- - - - - -
	T6XXX **FL 5**	40.0	51.0	E 15T	0.040 and up 0.026 to 0.039	87 78	90 86.5
6063	0	57.0	65.0	H	- - -	- - -	70
	T1X	48.0	58.0	E 15T	0.060 and up 0.026 to 0.059	37.0 47.5	- - - - - -
	T4X	48.0	58.0	E 15T	0.060 and up 0.026 to 0.059	40 49	- - - - - -
	T5X	50.0	60.0	E 15T	0.060 and up 0.026 to 0.059	44 51	- - - - - -
	T6X	50.0	60.0	E 15T	0.060 and up 0.026 to 0.059	70 66	- - - - - -
7049 **FL 6**	0	44.0	50.0	E 15T	0.060 and up 0.026 to 0.059	- - - - - -	70 66
	T73XXX	40.0	44.0	B 15T	0.040 and up 0.026 to 0.039	82 87	- - - - - -
	T76XXX	38.0	44.0	B 15T	0.040 and up 0.026 to 0.039	86 88.5	- - - - - -

5.5.2.1 Bare Thin Gauge (Continued)

TABLE XIII SIGMASCOPE SMP1 – BARE THIN GAUGE

UNCORRECTED CONDUCTIVITY VALUES IN PERCENT IACS	SINGLE THICKNESS (GAUGE), INCHES						
	0.016	0.020	0.025	0.032	0.040	0.050	0.063 AND ABOVE
	CORRECTED CONDUCTIVITY VALUES IN PERCENT IACS						
26.0	16.5	20.0	25.0	28.5	27.5	26.5	26.0
27.0	17.5	21.5	26.5	30.0	28.5	27.5	27.0
28.0	18.0	22.5	28.0	31.5	29.5	28.5	28.0
29.0	19.0	23.5	30.0	33.0	30.5	29.5	29.0
30.0	20.0	25.0	31.5	34.0	31.5	30.5	30.0
31.0	21.0	26.0	32.5	35.0	32.5	31.5	31.0
32.0	22.0	27.5	34.0	35.5	33.5	32.5	32.0
33.0	23.0	29.0	35.5	36.5	34.0	33.5	33.0
34.0	24.0	30.0	36.5	37.5	35.0	34.0	34.0
35.0	25.5	31.5	38.0	38.0	36.0	35.0	35.0
36.0	26.5	33.0	39.5	39.0	37.0	36.0	36.0
37.0	27.5	34.0	41.0	40.0	38.0	37.0	37.0
38.0	28.5	35.5	42.0	41.0	39.0	38.0	38.0
39.0	29.5	37.0	43.5	42.0	40.0	39.0	39.0
40.0	31.0	38.5	45.0	42.5	41.0	40.0	40.0
41.0	32.0	40.0	46.5	43.5	42.0	41.0	41.0
42.0	33.0	41.5	48.0	44.5	43.0	42.0	42.0
43.0	34.0	43.0	49.5	45.5	44.0	43.0	43.0
44.0	35.5	44.5	51.0	46.5	45.0	44.0	44.0
45.0	36.5	46.0	52.5	47.5	45.5	45.0	45.0
46.0	38.0	47.5	54.0	48.5	46.5	46.0	46.0
47.0	39.0	49.0	55.5	49.5	47.5	47.0	47.0
48.0	40.5	50.5	56.5	50.0	48.5	48.0	48.0
49.0	41.5	52.0	57.0	51.0	49.5	49.0	49.0
50.0	43.0	53.0	58.5	52.0	50.5	50.0	50.0
51.0	44.0	54.5	60.0	53.0	51.0	51.0	51.0
52.0	45.5	56.0	60.5	54.0	52.0	52.0	52.0
53.0	47.0	57.0	61.5	55.0	53.0	53.0	53.0
54.0	48.0	58.5	62.5	55.5	54.0	54.0	54.0
55.0	49.5	60.0	63.5	56.5	55.0	55.0	55.0

CENTER FUEL TANK – LOCATIONS OF POSSIBLE SIGNIFICANT* THERMAL DAMAGE AS INDICATED BY ELECTRICAL CONDUCTIVITY SURVEY

* VARIATION OF MORE THAN 2% IACS WITHIN A PART OR % IACS OUTSIDE OF ACCEPTANCE RANGE

2024-T351 LOWER SKIN PANEL	FRAGMENT NUMBER	S/B 28.5-32.0 % IACS	THERMAL DAMAGE
#5	CW-216, CW-201, CW-221	29.4 - 30.6	NO
#4	CW-201, CW-221	29.7 - 33.0	(1)
#3	CW-206, CW-214, CW-218, CW-219	28.9 - 29.1	NO
	CW-207	29.1 - 30.0	NO
	CW-209, CW-208, CW-201	29.5 - 30.1	NO
#2	CW-205, CW-201	29.6 - 30.9	NO
#1	CW-210, CW-212, CW-204, CW-202, CW-203, CW-217	28.5 - 30.1	NO

(1) MODERATE THERMAL DAMAGE ARTIFICIAL AGING APPEARS TO HAVE OCCURRED AT APPROXIMATELY RBL 50 – RBL 90 AND S-15 TO S-18

7075-T651 All except front spar 2024-T351
All spanwise

UPPER SKIN PANELS 7075-T651 S/B 30.0-35.0

PANEL NUMBER	FRAGMENT NUMBERS	%IACS	THERMAL DAMAGE
#3	{CW-101, CW-114}	31.3 - 31.7	NO
#2	{CW-102, CW-104, CW-105, CW-122}	30.7 - 31.9	NO
#1	CW-115	31.5 - 31.9	NO
	CW-102	30.8 - 34.0	(1)
	CW-103	30.8 - 32.7	(2)
	CW-105	31.3 - 32.0	NO

(1) SHARP INCREASE IN %IACS. APPROX. C/L (±) AND JUST FWD OF SPAN-WISE BEAM #1

(2) POSSIBLY SLIGHT THERMAL DAMAGE, LOCALLIZED INCREASE IN %IACS AT BL 0 TO RBL 10 BETWEEN S-2 AND S-4 AND AT RBL 76 - RBL 98 FROM REAR SPAR TO S-4.

BL 0.00 RIB	7075-T6XX	S/B 30.0 - 35.0
PORTION ATTACHED TO MID-SPAR	31.5% - 33.2%	NO
PORTION ATTACHED TO REAR SPAR	30.3% - 36.2%	YES

REAR SPAR VERTICAL STIFFENERS AT RBL 11 AND LBL 11 *

P/N 65B10835-1,-3	7075-T73	S/B 38.0 - 42.0%
RBL 11	35.9% - 41.8%	(1)
LBL 11	40.1% - 40.9%	NO

(1) VERY LOCALLIZED LOW IACS (35.9%) ON AFT FLANGE APPROXIMATELY 20 INCHES ABOVE LOWER SKIN PANEL

* THESE STIFFENERS ARE STILL ATTACHED TO THE KEEL BEAM.

UPPER STRINGERS 7075-T6571 S/B 30.0 – 35.0 %

	STRINGER #	LOCATION (%IACS)		THERMAL DAMAGE
	1			
	2	RBL 11 – RBL 105 (29.7 – 30.2)		NO
	3	LBL 100 – RBL 105 (32.9 – 33.1)		NO
	4	LBL 100 – RBL 110 (32.6 – 32.9)		NO
	5			
	6	LBL 25 – RHSOB (28.9 – 32.5)		(1)
	7	LBL 25 – RHSOB (28.9 – 32.5		(1)
SWB 1	8			
	9	LBL 44 – RBL 52 (32.2 – 33.0)		(2)
	10	LBL 33 – RHSOB (33.1 – 33.5),	LBL 98 – LBL 52 (32.4 – 33.2)	(3)
	11	LBL 33 – RHSOB (33.1 – 33.5),	LBL 98 – LBL 52 (32.4 – 33.2)	(3)
	12	LBL 45 – RHSOB (32.4 – 33.5)		NO
	13	LBL 40 – RHSOB (31.5 – 33.0)		NO
MS	14			
	15			
	16	LBL 34 – RBL 50 (26.7 – 29.9).		(4)
	17			
	18			
	19	LBL 34 – LBL 11 (31.4 – 33.2),	RBL 76 – RHSOB (33.0%)	(5)
SWB 2	20			
	21	RBL 34 – RBL 76 (32.7 – 32.8),	RHSOB (32.5)	NO
	22	LBL 28 – RBL 34 (32.6 – 32.7),	RBL 98 – RHSOB (32.7 – 32.8)	NO
	23	LBL 11 – RHSOB (32.2 – 32.4)	FEW INCHES BREAK AT ~RBL 80	NO
	24	LBL 11 – RBL 76 (29.5 – 29.8),	RBL 90 – RHSOB (27.0 – 29.6)	(6)
	25	RBL 11 – RBL 76 (32.2 – 32.5),	RBL 80 – RHSOB (28.0 – 32.5)	(7)
	26	BLO – RBL 76 (33.3 – 33.5),	RBL 80 – RHSOB (28.6 – 33.4)	(8)
	27	BLO – RBL 57 (31.3 – 31.4)		NO
SWB 3	28			
	29			
	30	LBL 76 – RHSOB (32.5 – 33.0)		NO
	31	LBL 76 – RHSOB (32.6 – 33.5)		NO
	32	LBL 76 – RHSOB (32.7 – 32.9)		NO
	33	LBL 76 – RHSOB (28.8 – 29.2)		NO
FS	34			

(1) SHARP DROP IN %IACS AT LBL 25 END

(2) BROOM STRAW FRACTURES ON END AT LBL 44

(3) BROOM STRAW FRACTURE ON END AT LBL 33

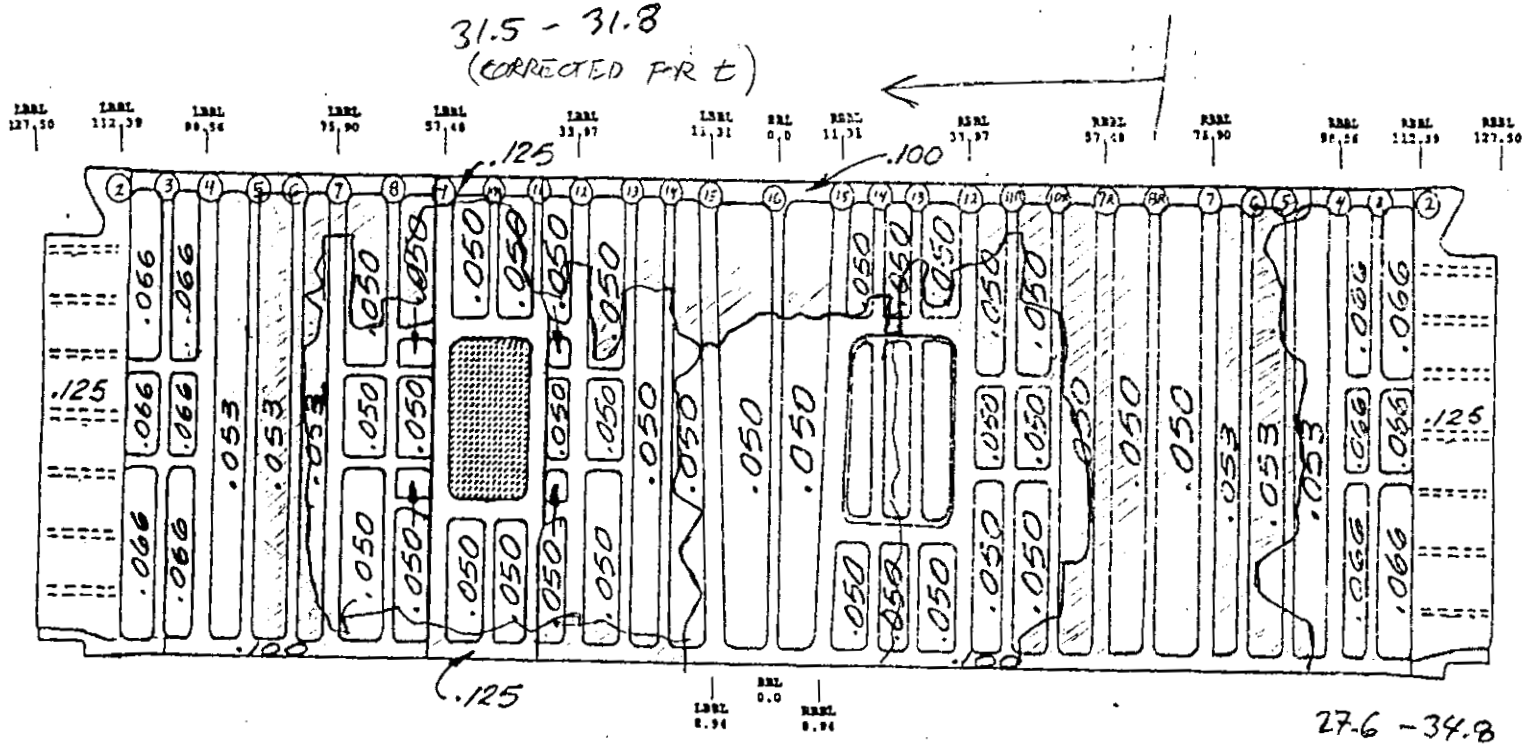
(4) ENTIRE PIECE IS BELOW SPEC MINIMUM (SLIGHTLY) BUT WAY LOW FROM APPROXIMATELY LBL 34 - LBL 20, BROOM STRAW FRACTURE AT LBL 34

(5) SHARP DROP IN IACS FROM LBL 11 (33.2%) TO LBL 34 (31.4%)

(6) SHARP DROP IN IACS FROM RHSOB (29.6%) TO RBL 90 FRACTURE (27.0%)

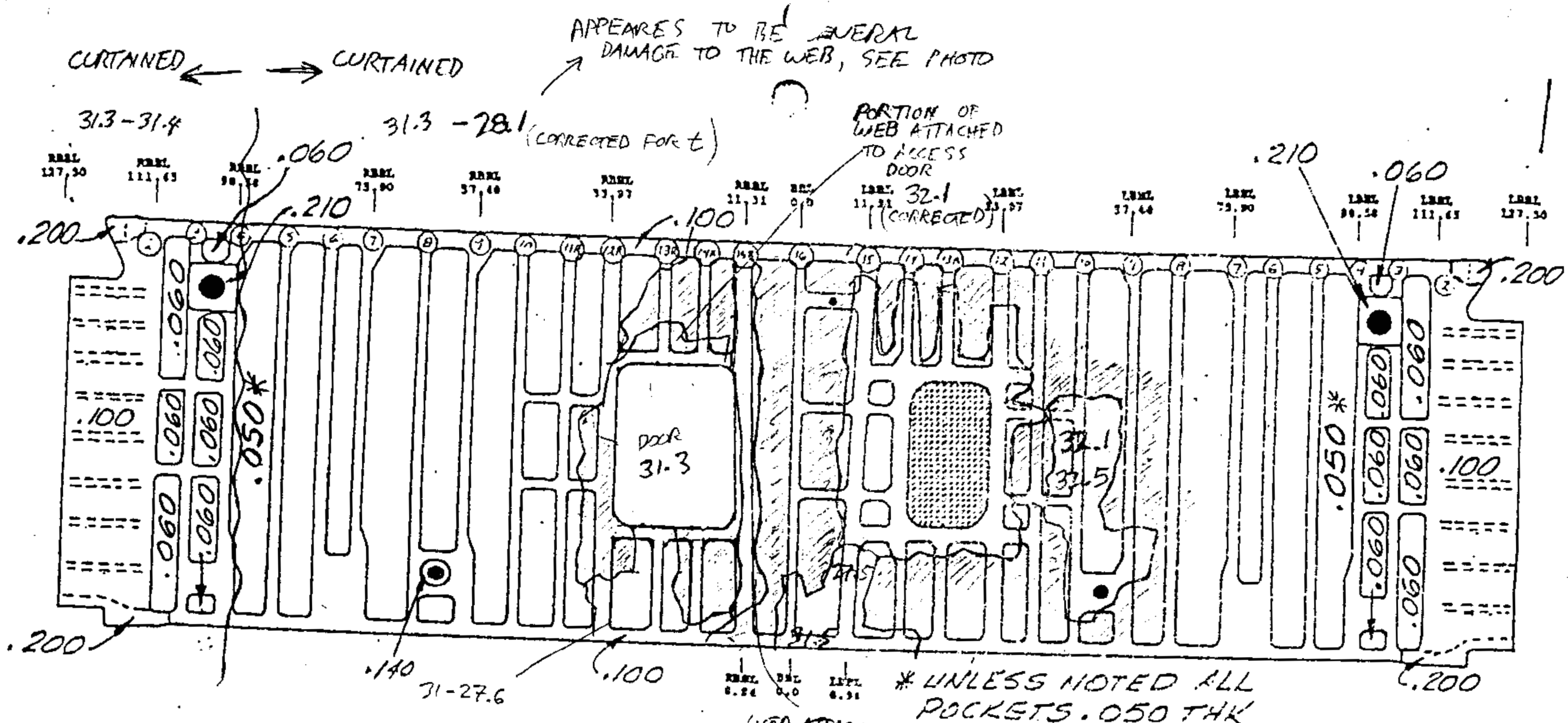
(7) SHARP DROP IN IACS FROM RHSOB (32.5%) TO RBL 80 FRACTURE (28.0%)

(8) SHARP DROP IN IACS FROM RHSOB (33.4%) TO RBL 80 FRACTURE (28.6%)



SPANWISE BEAM NO 3

SPANWISE BEAM NO. 3
WEB DRW 63810277-3
DOOR DRW 45810778-1



SPANWISE BEAM NO 2 STIFFENERS

65B10278-4

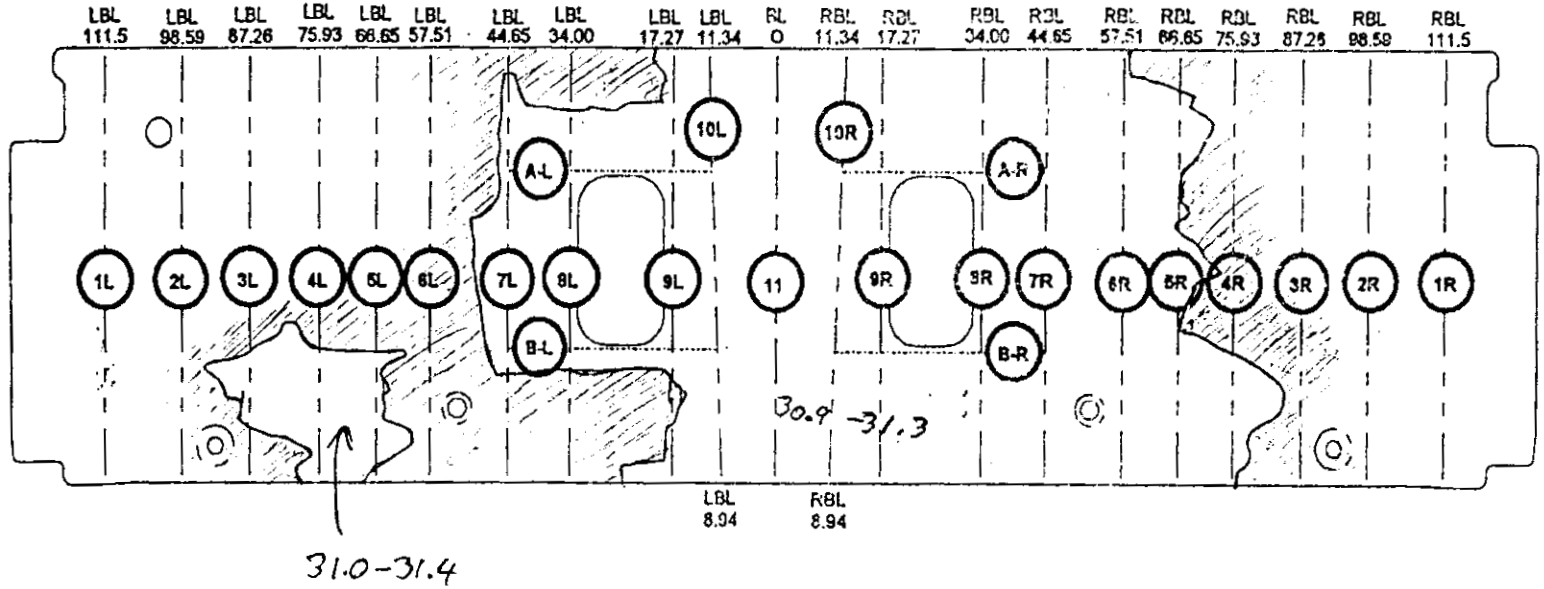
STIFF. NO.	BBL	DRW.NO.	EXTRUSION	MATERIAL	PROFILE	PAD THICK	PAD WIDTH
1A	END BAY	69B02437-3	AND10139-1107	2024-T3511	CONST.	0.100	1.25
1B	END BAY	69B02437-3	AND10139-1107	2024-T3511	CONST.	0.100	1.25
1C	END BAY	69B02437-3	AND10139-1107	2024-T3511	CONST.	0.100	1.25
1D	END BAY	69B02437-3	AND10139-1107	2024-T3511	CONST.	0.100	1.25
1E	END BAY	69B02437-3	AND10139-1107	2024-T3511	CONST.	0.100	1.25
1F	END BAY	69B02437-3	AND10139-1107	2024-T3511	CONST.	0.100	1.25
1G	END BAY	69B02437-3	AND10139-1107	2024-T3511	CONST.	0.100	1.25
1H	END BAY	69B02437-3	AND10139-1107	2024-T3511	CONST.	0.100	1.25
2	112.35	65B10892-1	BAC1506-2369	7178-T6511	CONST.	0.100	1.25
3	106.20	65B10654-1	BAC1506-2369	7178-T6511	CONST.	0.100	1.34
4	98.56	65B10657-1	BAC1518-446	7178-T6511	TRIMMED	0.100	1.68
5	91.14	65B10654-1	BAC1506-2369	7178-T6511	CONST.	0.100	1.68
6	83.24	65B10654-1	BAC1506-2369	7178-T6511	CONST.	0.100	1.68
7	75.00	65B10657-1	BAC1518-446	7178-T6511	TRIMMED	0.100	1.68
8	66.65	65B10654-1	BAC1506-2369	7178-T6511	CONST.	0.100	1.68
9	57.48	65B10657-2	BAC1518-446	7178-T6511	TRIMMED	0.100	1.68

STIFF. NO.	BBL	DRW.NO.	EXTRUSION	MATERIAL	PROFILE	PAD THICK	PAD WIDTH
10	49.63	65B10654-1	BAC1506-2369	7178-T6511	CONST.	0.100	1.68
11	41.77	65B10654-1	BAC1506-2369	7178-T6511	CONST.	0.100	1.68
11B	UPR HO	65B10813-12	AND10136-2403	7178-T6511	TRIMMED	0.100	2.79 /1.31
11D	LWR HO	65B10813-11	AND10136-2408	7178-T6511	TRIMMED	0.100	2.78 /1.30
12	33.97	65B10774-1	BAC1518-446	7178-T6511	TRIMMED	0.100	2.92
13A	25.28	69B02438-2	AND10135-1603	7075-T6511	CONST.	0.100	1.61
13E	25.28	69B02438-1	AND10135-1603	7075-T6511	CONST.	0.100	1.61
14	17.27	65B10773-1	BAC1518-446	7178-T6511	TRIMMED	0.100	2.90 /1.68
15	11.31	65B10658-1	BAC1518-446	7178-T6511	TRIMMED	0.100	2.90
16	0.00	65B10654-1	BAC1506-2369	7178-T6511	CONST.	0.100	1.68
15R	11.31	65B10658-2	BAC1518-446	7178-T6511	TRIMMED	0.100	2.90
14R	17.27	65B10651-2	BAC1506-2369	7178-T6511	CONST.	0.100	1.68
13R	25.28	65B10654-2	BAC1506-2369	7178-T6511	CONST.	0.100	1.68
12R	33.97	65B10774-2	BAC1518-446	7178-T6511	TRIMMED	0.100	2.90
11R	41.77	65B10654-2	BAC1506-2369	7178-T6511	CONST.	0.100	[illegible]

7075-T651 [illegible]

747-100 MID SPAR ASSEMBLY
65B01104-1 INSTL / 65B01104-2 ASSY

WEB> 65B10279-4, BASIC THICKNESS = .160

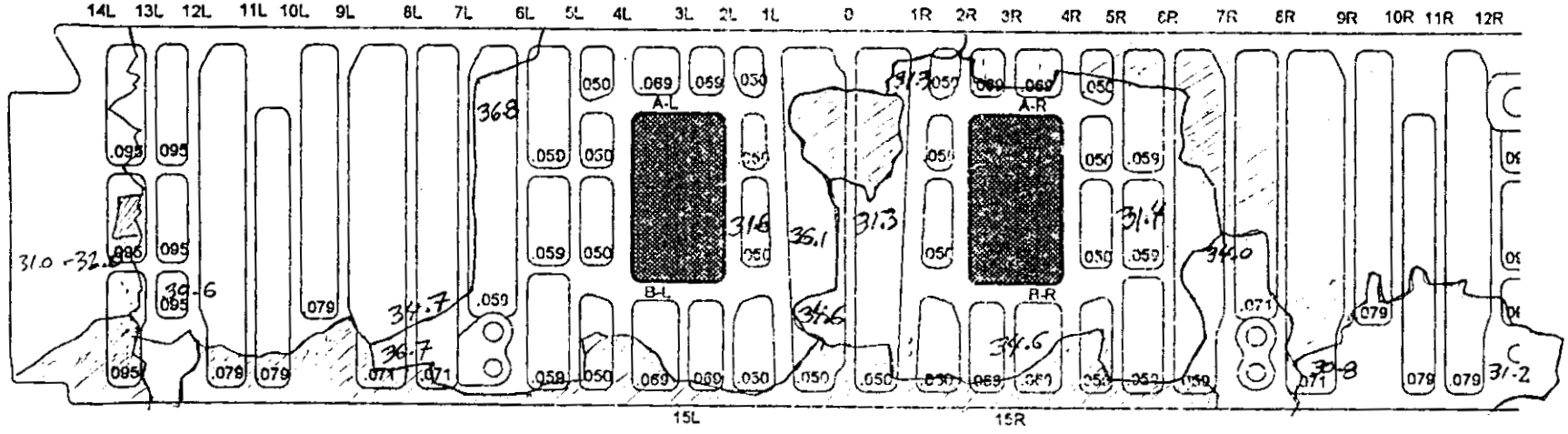


STFF NO.	BBL	PART NO	PAD "T"	PAD "W"	EXTRUSION	MATL	PROFILE
1L	111.5 AFT	65B10897			FORGE	7075-T73	BATHTUB
1L	111.5 FWD	65B10898-3			FORGE	7075-T73	BATHTUB
2L	98.59 AFT	65B10680-5			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT UPR 47"
3L	87.26 AFT	65B10682-1			BAC1506-2046	7178-T6511	CONST = 'J'
4L	75.93 AFT	65B10680-1			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT UPR 47"
5L	66.65 AFT	65B10682-1			BAC1506-2046	7178-T6511	CONST = 'J'
6L	57.51 AFT	65B10680-3			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT UPR 47"
7L	44.65 AFT	65B10682-3			BAC1506-2046	7178-T6511	CONST = 'J'
8L	34.00 AFT	65B10764-1			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT UPR 10"
9L	17.27 AFT	65B10687-1			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT LWR 14" & UPR 10"
10L	8.94 LWR 11.34 UPR AFT SIDE	65B10681-1			BAC1518-468	7178-T6511	TRIM = 'T WITH WIDE FLANGE AT LWR 5" & 'J' AT UPR 5"
11	BL 0 AFT	65B01104-9			AND10133-1203	2024-T3511	CONST = 'L'
A-L	12 - 44 FWD-UPR	65B10813-3			AND10136-2408	7178-T6511	TRIM = 'T TOL' AT BOTH ENDS LAST 5"
B-L	10 - 44 FWD-LWR	65B10813-1			AND10136-2408	7178-T6511	TRIM = 'T TOL' AT BOTH ENDS LAST 5"

STFF NO.	BBL	PART NO	PAD "T"	PAD "W"	EXTRUSION	MATL	PROFILE
1R	111.5 AFT	65B10897			FORGE	7075-T73	BATHTUB
1R	111.5 FWD	65B10898-4			FORGE	7075-T73	BATHTUB
2R	98.59 AFT	65B10680-6			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT UPR 47"
3R	87.26 AFT	65B10682-2			BAC1506-2046	7178-T6511	CONST = 'J'
4R	75.93 AFT	65B10680-2			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT UPR 47"
5R	66.65 AFT	65B10682-6			BAC1506-2046	7178-T6511	CONST = 'J'
6R	57.51 AFT	65B10680-4			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT UPR 47"
7R	44.65 AFT	65B10682-4			BAC1506-2046	7178-T6511	CONST = 'J'
8R	34.00 AFT	65B10764-2			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT UPR 10"
9R	17.27 AFT	65B10687-2			BAC1518-446	7178-T6511	TRIM = 'T TO 'J' AT LWR 14" & UPR 10"
10R	8.94 LWR 11.34 UPR AFT SIDE	65B10681-2			BAC1518-458	7178-T6511	TRIM = 'T WITH WIDE FLANGE AT LWR 5" & 'J' AT UPR 5"
A-R	12 - 44 FWD-UPR	65B10813-4			AND10136-2408	7178-T6511	TRIM = 'T TOL' AT BOTH ENDS LAST 5"
B-R	10 - 44 FWD-LWR	65B10813-2			AND10136-2408	7178-T6511	TRIM = 'T TOL' AT BOTH ENDS LAST 5"

747-100 SPANWISE BEAM #1 ASSEMBLY
65B01108-1 INSTL / 65B01108-2 ASSY

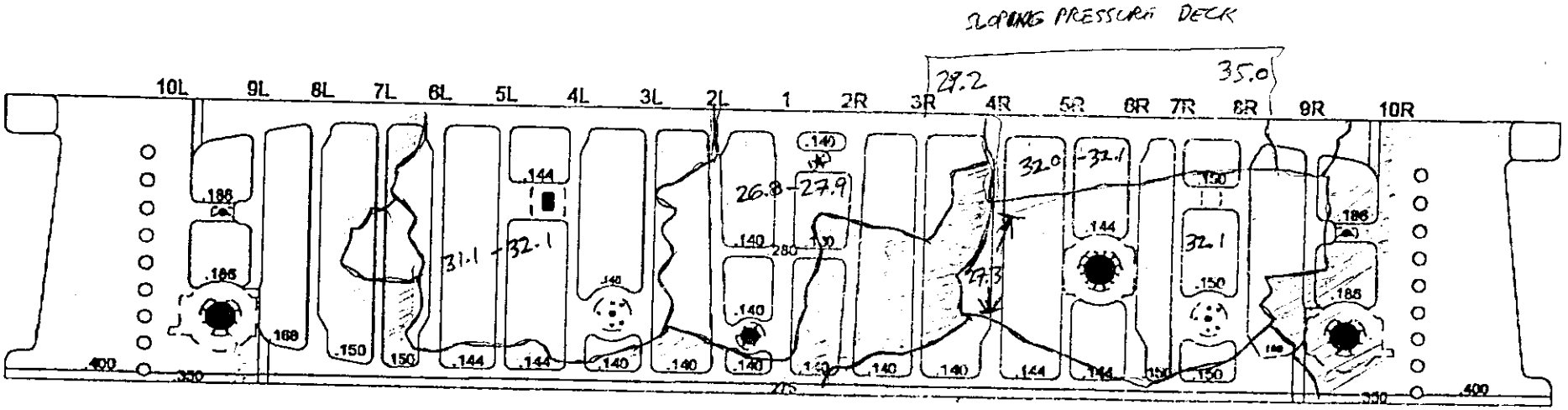
65B10280-4 WEB



STFF NO.	LBBL	PART.NO	PAD "T"	PAD "W"	EXTRUSION	MATL	PROFILE
0	0.00	65B01108-14	.125	1.55	AND10133-1203	7075-T73511	"L" ANGLE
1L	8.94 - 11.34	65B10770-1	.125	2.83	BAC1518-446	7178-T6511	"I" ANGLE
2L	17.27	65B10768-1	.125	1.62	BAC1518-446	7178-T6511	"I" ANGLE
3L	25.26	69B10952-1	.125	1.55	AND10137-1606	7075-T6511	"L" ANGLE
4L	34.00	65B10771-1	.125	2.83	BAC1518-446	7178-T6511	"I" ANGLE
5L	41.77	65B10766-1	.125	1.63	BAC1506-2369	7178-T6511	"J" ANGLE
6L	49.60	65B10766-1	.125	1.63	BAC1506-2369	7178-T6511	"J" ANGLE
7L	57.51	65B10769-3	.125	1.62	BAC1518-446	7178-T6511	"I" ANGLE
8L	66.65	65B10766-1	.125	1.63	BAC1506-2369	7178-T6511	"J" ANGLE
9L	75.93	65B10769-3	.125	1.65	BAC1518-446	7178-T6511	"I" ANGLE
10L	83.24	65B10766-2	.125	1.68	BAC1506-2369	7178-T6511	"J" ANGLE
11L	91.14	65B10766-1	.125	1.68	BAC1506-2369	7178-T6511	"J" ANGLE
12L	98.59	65B10769-1	.125	1.67	BAC1518-446	7178-T6511	"I" ANGLE
13L	106.20	65B10766-1	.125	1.68	BAC1506-2369	7178-T6511	"J" ANGLE
14L	112.39	65B10767-1	.125		BAC1506-2369	7178-T6511	"J" ANGLE
15L	25.26	69B10952-1	.125	1.55	AND10137-1606	7075-T6511	"L" ANGLE
A-L	HORIZ	65B10813-7	.125	2.74	AND10136-2408	7178-T6511	"T" ANGLE
B-L	HORIZ	65B10813-5	.125	2.78	AND10136-2408	7178-T6511	"T" ANGLE

STFF NO.	RBBL	PART.NO	PAD "T"	PAD "W"	EXTRUSION	MATL
1R	8.94 - 11.24	65B10770-2	.125	2.83	BAC1518-446	7178-T6511
2R	17.27	65B10768-2	.125	1.62	BAC1518-446	7178-T6511
3R	25.26	69B10952-2	.125	1.55	AND10137-1606	7075-T6511
4R	34.00	65B10771-2	.125	2.83	BAC1518-446	7178-T6511
5R	41.77	65B10766-2	.125	1.63	BAC1506-2369	7178-T6511
6R	49.60	65B10766-2	.125	1.63	BAC1506-2369	7178-T6511
7R	57.51	65B10769-4	.125	1.62	BAC1518-446	7178-T6511
8R	66.65	65B10766-2	.125	1.63	BAC1506-2369	7178-T6511
9R	75.93	65B10769-2	.125	1.65	BAC1518-446	7178-T6511
10R	83.24	65B10766-1	.125	1.68	BAC1506-2369	7178-T6511
11R	91.14	65B10766-2	.125	1.68	BAC1506-2369	7178-T6511
12R	98.59	65B10769-2	.125	1.67	BAC1518-446	7178-T6511
13R	106.20	65B10766-2	.125	1.68	BAC1506-2369	7178-T6511
14R	112.39	65B10767-2	.125		BAC1506-2369	7178-T6511
15R	25.26	69B10952-2	.125	1.55	AND10137-1606	7075-T6511
A-R	HORIZ	65B10813-8	.125	2.74	AND10136-2408	7178-T6511
B-R	HORIZ	65B10813-6	.125	2.78	AND10136-2408	7178-T6511

747-100 REAR SPAR ASSEMBLY
65B01102-1 INSTL / 65B01102-2 ASSY



STFF NO.	STA. LOCATION	PART NO.	PAD "T"	PAD "W"	EXTRUSION	MATL	PROFILE
1	0.0 AFT	65B10604-1	.280	3.19	BAC1505-180694	7075-T6511	TRIM - NARROW FLANGES
1	0.0 FWD	65B10630-1	.280	3.19	BAC1505-180693	7075-T6511	TRIM - NARROW FLANGES
1L	11.30	65B10635-3	.280	1.98	FORGING	7075-T73	FLOOR BEAM STIFFENER
2L	21.50	65B10671-3	.280	1.66	BAC1517-1672	7178-T6511	TRIM - THINNER MATERIAL
3L	33.96	65B10671-9	.280	1.80	FORGING	7075-T73	FLOOR BEAM STIFFENER
5L	45.68	65B10671-1	.280	1.67	BAC1517-1672	7178-T6511	TRIM - THINNER MATERIAL
6L	57.47	65B10672-12	.280	1.80	FORGING	7075-T73	FLOOR BEAM STIFFENER
7L	64.65	65B10691-1	.280	1.68	BAC1517-1672	7178-T6511	TRIM - THINNER MATERIAL
8L	75.89	65B10672-8	.280	1.80	FORGING	7075-T73	FLOOR BEAM STIFFENER
9L	85.68	65B10671-7	.280	2.02	BAC1517-1672	7178-T6511	TRIM - THINNER MATERIAL
10L	98.55	65B10672-16	.400	6.14	FORGING	7075-T73	FLOOR BEAM STIFFENER

STFF NO.	STA. LOCATION	PART NO.	PAD "T"	PAD "W"	EXTRUSION	MATL	PROFILE
2R	11.30	65B10635-4	.280	1.98	FORGING	7075-T73	FLOOR BEAM STIFFENER
3R	21.50	65B10671-4	.280	1.66	BAC1517-1672	7178-T6511	TRIM - THINNER MATERIAL
4R	33.96	65B10671-10	.280	1.80	FORGING	7075-T73	FLOOR BEAM STIFFENER
5R	45.68	65B10671-2	.280	1.67	BAC1517-1672	7178-T6511	TRIM - THINNER MATERIAL
6R	57.47	65B10672-11	.280	1.98	FORGING	7075-T73	FLOOR BEAM STIFFENER
7R	63.62	65B10691-1	.280	1.67	BAC1517-1672	7178-T6511	TRIM - THINNER MATERIAL
8R	75.89	65B10672-8	.280	1.80	FORGING	7075-T73	FLOOR BEAM STIFFENER
9R	85.68	65B10671-8	.280	2.02	BAC1517-1672	7178-T6511	TRIM - THINNER MATERIAL
10R	98.55	65B10672-15	.400	6.14	FORGING	7075-T73	FLOOR BEAM STIFFENER