December 1983

MCIC-HB-01R
Volume 3

(1)

Damage Tolerant Design Handbook

A Compilation of Fracture and Crack-Growth Data for High Strength Alloys

Metals and Ceramics Information Center
Battelle
Columbus Laboratories

Prepared by

University of Dayton Research Institute

Materials Laboratory
Air Force Wright Aeronautical Laboratories
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This edition entirely revamps the 1975 edition. This edition is arranged by alloy rather than by property as in the previous addition. The data are presented in eight chapters and four volumes. Plane-strain fracture toughness (K_{IC}), critical plane stress fracture toughness, apparent fracture toughness, R-curve, fatigue crack growth rates, sustained-load crack growth rate and threshold stress intensity (K_{ISCC}) data are presented for stainless steels, titanium alloys, nickel-base alloys, alloy steels, 2000-, 6000- and 7000-series aluminum alloys.

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Compiled by
J. Gallagher
Program Manager
University of Dayton Research Institute
Dayton, Ohio

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Metals and Ceramics Information Center
BATTELLE
Columbus Laboratories
505 King Avenue
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MCIC is publishing this revised and expanded edition of the Damage Tolerant Design Handbook to increase the availability of information to the technical community. The loose leaf format was selected to facilitate updating the handbook as new information becomes available. This edition is a completely revised and expanded version of the original handbook first published by MCIC in 1972 and revised in 1973 and 1975.

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TABLE 1.4

ABBREVIATIONS FOR MATERIAL SYSTEMS

Abbreviation	Materials
ALUM	Aluminum Alloys
TITAN.	Titanium Alloys
NICKEL	Nickel-Base Alloys
STAIN. STEEL	Stainless Steel Alloys
ALLOY STEEL	Steel Alloys

TABLE 1.5

ABBREVIATIONS FOR ALLOY CONDITIONING AND HEAT TREATMENTS

Abbreviation	Condition/Heat Treatment
OQ	Oil Quenched
ABQ	Aus-Bay Quench
AC	Air Cool
WC	Water Quench
MA	Mill Anneal
BA	Beta Anneal
DA	Duplex Anneal
RA	Recrystallize Annea..
ST	Solution Treated
STA	Solution Treat[illegible] Aged

TABLE 1.6

ABBREVIATIONS FOR PRODUCT FORMS

Abbreviations	Product Form
S	Sheet
P	Plate
E	Extrusion
F	Forging
FB	Forged Bar
BT	Billet
BR	Round Bar
RB	Rolled Bar
C	Casting
W	Weldment
D	Disk
EB	Extruded Bar
B	Bar

TABLE 1.7

ABBREVIATIONS FOR ENVIRONMENTAL SYSTEMS

Abbreviations	Environmental System
R. T.	Room Temperature (65°F-80°F)
L. H. A.	Low Humidity Air (< 10% RH)
Dry Air	Low Humidity Air (< 10% RH)
H. H. A.	High Humidity Air (> 80% RH)
Lab. Air	Laboratory Air (% RH unspecified)
Dist. H_2O	Distilled Water
Dist. Water	Distilled Water
3.5 PCT Nacl	3.5% Salt Water Solution
JP.4	JP-4 Aircraft Fuel
JP.4 - Fuel	JP-4 Aircraft Fuel
S. T. W.	Sump Tank Water
S. S. W.	Simulated Sea Water
S. C. S.	Shop Cleaning Solvent
F. C. S.	Field Cleaning Solvent
Salt Fog	Salt Fog
Temp.	Temperature

TABLE 1.8

ABBREVIATIONS FOR SPECIMEN DESIGNS

Abbreviations	Specimen Design*
CT	Compact Tension
NB	3Pt. Notched Bend
WOL	Wedge Open Load
CCP	Center Cracked Panel
BWOL	Bolt Loaded-Wedge Open Load
CANT	Cantilever Beam
TDCB	Tapered Double Cantilever Beam
CHAR	Charpy
PTSC	Part Through Surface Crack
SENT	Single Edge Notch Tension
K_BBAR	K_B Bar
4-NB	4 Pt. Notched Bend
MCT	Modified Compact Tension
CNT	Center Notched Tension
DCB	Double Cantilever Beam
BDCB	Bolt Loaded Double Cantilever Beam

*Also note that when "SG" is used in conjunction with a specimen design, the specimen is side-grooved along the path of the crack.

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TABLE 7.0.1

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KIBCC
2014	T451	PLATE					X	
	T6	FORGING	X			X		X
		FORGED BAR	X					
		SHEET		X		X		
		PLATE		X				
		ROLLED BAR				X		
	T61	FORGING	X					
	T611	FORGING	X					
	T651	PLATE	X	X			X	X
	T652	FORGING	X					
2020	T6	PLATE	X					
		EXTRUSION	X					
		SHEET		X		X		
	T651	PLATE	X	X		X		X
		SHEET		X				
2020 (ALCLAD)	T6	SHEET		X				
2021	T81	PLATE	X					X
	T81 OVERHEATED WELD	PLATE						X
	T81 REPAIR WELD + AGE WITH 2319 FILLER WIRE	PLATE	X					
	T81 REPAIRED WELD AGED 16HR 325F WELD FUSION LINE	PLATE						X
	T81 REPAIRED WELD AGED 16HR 325F WELD CENTER LINE	PLATE						X
	T81 REPAIRED WELD AGED 16HR 325F HEAT AFFECTED ZONE	PLATE						X
	T81 WELD + AGE WITH 2319 FILLER WIRE	PLATE	X					

TABLE 7.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
2021	T81 WELDED AGED 16HR 325F HEAT AFFECTED ZONE	PLATE						X
	T81 WELDED AGED 16HR 325F WELD CENTER LINE	PLATE						X
	T81 WELDED AGED 16HR 325F FUSION LINE	PLATE						X
	T8151	PLATE	X					
2024	T3	SHEET		X		X		
		PLATE		X		X		
	T351	PLATE	X	X	X	X	X	X
		EXTRUSION	X					
		FORGED BAR	X					
		SHEET			X	X		
	T3511	EXTRUSION	X			X		
	T352	FORGING						X
	T36	SHEET		X				
	T4	SHEET		X				
		FORGING					X	
	T42	PLATE				X		
	T6	SHEET		X				
	T62	SHEET				X		
	T62 (OB)	SHEET		X				
		PLATE			X			
	T62 (W8)	SHEET		X				
		PLATE			X			
	T81	SHEET		X		X		
		PLATE			X			
	T851	PLATE	X	X		X		X
		SHEET		X				
	T8510	EXTRUSION	X					

TABLE 7.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
2024	T8511	EXTRUSION	X					
	T852	FORGING	X			X		X
	T86	SHEET		X				
	T861	SHEET				X		
		PLATE				X		
2024 (ALCLAD)	T3	SHEET		X		X		
	T86	SHEET		X				
2048	T851	PLATE	X			X		
2124	T351 (417)	PLATE	X					
	T851	PLATE	X	X	X	X		X
	T851 (BP)	PLATE	X					
	T851 (417)	PLATE	X					
2214	T651	PLATE	X					
	T651 (417)	PLATE	X					
2219	T37	PLATE					X	X
	T81	SHEET		X				
	T851	PLATE	X	X				X
		FORGING	X					
		SHEET		X				
		----				X		

TABLE 7.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
2219	T8511	EXTRUDED BAR				X		
	T852	FORGING	X			X		
		BILLET				X		
	T87	PLATE	X	X				X
		SHEET		X				
	T87-300F 100HRS	PLATE	X					
2324	T39	PLATE				X		
2419	T851	PLATE	X			X		
2618	T61	SHEET		X				
	T651	PLATE	X					
	T81	SHEET				X		
6061	T6	SHEET		X				X
	T651	PLATE	X	X		X		X
		FORGED BAR	X					
	T652	FORGING	X					X

TABLE 7.0.2

PLANE STRAIN FRACTURE TOUGHNESS VALUES OF ALUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/ HT	PRODUCT FORM	RANGE OF PRODUCT THICKNESSES (IN)	K_{IC} (KSI SQRT(IN))								
				L-T			T-L			S-L		
				SPECIMEN THICK *	MEAN	STD. DEV.	SPECIMEN THICK *	MEAN	STD. DEV.	SPECIMEN THICK *	MEAN	STD DEV
2014	T6	FORGING	0.89-8.00	0.71	27.9	0.8	0.25	17.4	1.7	0.75	16.9	1.9
		FORGED BAR	4.50	----	----	----	0.25	16.7	0.6	----	----	----
	T611	FORGING	1.00	----	----	----	----	----	----	0.75	17.8	0.6
	T651	PLATE	1.00-5.00	1.00	23.3	1.0	1.00	21.4	1.2	0.50	17.8	0.1
	T652	FORGING	2.00-6.00	0.75	28.8	3.6	0.75	21.9	3.2	0.50	18.1	1.4
2020	T651	PLATE	1.37	1.00	23.0	2.4	1.00	17.2	0.3	----	----	----
2021	T81	PLATE	1.00	0.99	27.0	0.5	----	----	----	----	----	----
	T81 REPAIR WELD + AGE WITH 2319 FILLER WIRE	PLATE	1.00	----	----	----	1.00	15.8	0.7	----	----	----
	T81 WELD + AGE WITH 2319 FILLER WIRE	PLATE	1.00	----	----	----	1.00	19.4	2.7	----	----	----
2024	T351	PLATE	2.00-3.00	1.00	35.0	7.1	----	----	----	----	----	----
		EXTRUSION	3.00-5.00	----	----	----	1.50	25.0	0.9	----	----	----
	T3511	EXTRUSION	-----	1.20	38.0	2.6	----	----	----	----	----	----
	T851	PLATE	0.37-4.00	0.38	23.3	2.4	0.38	20.7	1.9	----	----	----
	T8510	EXTRUSION	2.76-4.50	1.86	30.4	2.7	2.00	16.5	1.0	1.00	15.7	1.4
	T8511	EXTRUSION	3.50	1.00	24.1	0.4	1.00	16.0	0.0	----	----	----
	T852	FORGING	2.00-6.00	0.75	29.2	5.2	0.75	18.9	2.6	0.25	15.9	0.8
2048	T851	PLATE	1.00-4.00	1.00	37.9	1.9	1.00	30.6	2.5	0.75	25.4	1.9

* MINIMUM SPECIMEN THICKNESS (IN.)

TABLE 7.0.2 (con't)

PLANE STRAIN FRACTURE TOUGHNESS VALUES OF ALUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/ HT	PRODUCT FORM	RANGE OF PRODUCT THICKNESSES (IN)	KIC (KSI SQRT(IN))								
				L-T			T-L			S-L		
				SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD. DEV.	SPECIMEN THICK *	MEAN	STD DEV
2124	T851	PLATE	0.62-6.00	0.50	29.7	2.8	0.50	25.1	2.3	0.50	21.7	2.1
	T851 (SP)	PLATE	2.00-6.00	0.75	27.2	4.7	0.75	23.1	2.7	0.75	21.4	3.2
	T851 (417)	PLATE	1.57-5.50	0.50	28.9	2.8	0.50	23.8	2.4	0.50	21.3	2.0
2214	T651	PLATE	1.50-2.37	1.00	35.3	2.7	1.00	31.8	0.9	----	----	----
	T651 (417)	PLATE	1.50-3.93	1.50	36.0	3.4	1.49	29.4	1.8	1.00	26.6	1.8
2219	T851	PLATE	1.00-3.25	0.97	33.4	2.3	0.75	29.7	3.2	0.50	23.0	2.4
		FORGING	-----	----	----	----	----	----	----	1.00	25.6	3.1
	T852	FORGING	2.00-7.50	1.50	39.2	3.2	1.50	27.1	2.2	0.75	25.3	3.1
	T87	PLATE	1.00-2.00	1.00	28.0	3.0	0.97	22.0	0.4	----	----	----
	T87-300F 100HRS	PLATE	1.50	1.47	34.8	0.4	----	----	----	----	----	----
2419	T851	PLATE	1.75-3.00	1.50	42.6	5.3	1.40	37.2	4.2	1.00	24.8	2.5
2618	T651	PLATE	3.34	----	----	----	----	----	----	1.00	14.9	1.2
6061	T651	PLATE	1.50-2.50	----	----	----	1.00	26.6	0.9	1.00	21.5	0.4

* MINIMUM SPECIMEN THICKNESS (IN.)

TABLE 7.0.3.1

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS OF
2000 AND 6000 SERIES ALUMINUM ALLOYS (WITH BUCKLING CONSTRAINTS)

ALLOY	CONDITION/HT	TEST TEMP. (°F)	SPECIMEN ORIENT	SPECIMEN WIDTH	YIELD STRENGTH (Ksi)	SPECIMEN THICKNESS (IN.) = 0.063	K_c (Ksi $\sqrt{in.}$) 0.100	0.125	0.200
2014	T6	-320	L-T	4.0	74.1	59.2/1.1(2)			
				18.0	74.1	74.2/3.2(4)			
		R. T.	L-T	16.0	68.4	65.0/3.4(5)			
				18.0	65.2	72.0/3.4(5)			
		-320	T-L	3.0	75.9	46.6/5.3(9)			
				6.0	75.9	48.3/4.6(5)			
				12.0	75.9	49.7/3.9(15)			
2024	T3	R. T.	L-T	30.0	51.9	108.9/8.2(3)			
	T62(GQ)	R. T.	T-L	6.0	57.0			63.0/1.4(2)	
	T62(WQ)	R. T.	L-T	6.0	----			77.1/5.8(2)	
				16.0	----			139.2	
			T-L	6.0	----			72.4/2.1(2)	
	T81	R. T.	L-T	6.0	64.8			65.4/3.8(2)	
			T-L	6.0	64.1			57.3/2.0(3)	
2124	T851	R. T.	T-L	5.8	55.0				50.9/2.0(4)
2219	T87	-423	L-T	16.0	73.8	90.6/3.2(2)			
		R. T.	L-T	24.0	58.5		90.6/15.0(6)		
				48.0	58.5		109.8/12.1(7)		

Mean/Standard Deviation (Number of Specimens)

TABLE 7.0.3.2

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS
OF 2000 AND 6000 SERIES ALUMINUM ALLOYS (WITHOUT BUCKLING CONSTRAINTS)

ALLOY	CONDITION/H.T.	TEST TEMP. (°F)	SPECIMEN ORIFNT	SPECIMEN WIDTH	YIELD STRENGTH (Ksi)	SPECIMEN THICKNESS (IN.) = 0.063	K_c (Ksi $\sqrt{in.}$) 0.127	0.250	0.400	1.000
2014	T6	-423	T-L	4.0	31.8	59.1/3.5(5)				
		R. T.	T-L	15.8	65.4	58.4/2.7(5)				
2020	T6	R. T.	L-T	2.0	76.5	34.6/7.0(5)				
				3.0	75.9	30.2/1.3(2)				
				15.8	76.9	36.9/2.9(4)				
			T-L	2.0	75.9	30.5/6.6(5)				
				3.0	75.8	27.8/0.8(2)				
				15.8	75.6	34.5/2.0(5)				
	T651	R. T.	L-T	3.0	76.3		41.3/2.7(12)	26.4/0.3(3)		
				4.0	77.4			24.2/2.3(3)		
				20.0	76.3					30.5/2.5(11)
			T-L	3.0	77.5		23.5/2.4(12)	17.2/2.6(3)		
				4.0	78.0			20.9/0.1(2)		
				20.0	78.0					19.4/0.8(12)
2020(Alclad)	T6	R. T.	L-T	15.8	68.0	34.1/1.8(2)				
				3.0	68.6		40.2/3.3(7)			
			T-L	15.8	67.2	33.9/1.2(2)				
				3.0	68.4		30.4/5.0(7)			

Mean/Standard Deviation (Number of Specimens)

TABLE 7.0.3.2 (con't)

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS
OF 2000 AND 6000 SERIES ALUMINUM ALLOYS (WITHOUT BUCKLING CONSTRAINTS)

ALLOY	CONDITION/H.T.	TEST TEMP. (°F)	SPECIMEN ORIENT	SPECIMEN WIDTH	YIELD STRENGTH (Ksi)	K_c (Ksi $\sqrt{in.}$) SPECIMEN THICKNESS (IN.) = 0.063	0.127	0.250	0.400	1.000
2024	T351	R. T.	L-T	20.0	58.2					107.1/1.8(2)
	81	R. T.	T-L	6.0	62.0	57.9/3.2(2)				
				9.0	62.0	61.2/5.1(3)				
				15.0	62.0	54.6/0.0(2)				
				18.0	62.0	54.6/0.7(2)				
				21.0	62.0	55.9/2.9(2)				
				24.0	62.0	52.2/0.9(2)				
	T851	R. T.	L-T	20.0	66.0					48.4/3.8(12)
			T-L	3.0	65.4		44.8/1.7(9)	31.3/2.5(6)		
				4.0	66.2			47.1/8.1(7)		
				20.0	65.0					33.7/1.9(12)
	T86	R. T.	L-T	15.8	72.9	53.0/4.7(5)				
			T-L	2.0	71.6	42.5/0.6(4)				
				15.8	71.2	45.9/2.3(5)				
2124	T851	R. T.	L-T	6.0	55.0				68.9/2.3(2)	
			T-L	3.0	59			36.2/2.3(6)		
2219	T851	R. T.	L-T	20.0	51.1					84.7/9.0(10)
			T-L	20.0	50.2					
	T87	R. T.	L-T	16.0	57.7	75.9/1.1(2)				66.3/4.2(12)

Mean/Standard Deviation (Number of Specimens)

TABLE 7.0.4.1

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS:

SPECIMEN ORIENTATION: L-T

ENVIRONMENT: LAB AIR AT R.T.

STRESS RATIO: 0.00-0.10

FREQUENCY: 0.10-30.00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2.5	5.0	10.0	20.0	50.0	100.0
2014	T6	SHEET	0.05	2.00			6.41			
2020	T6	SHEET	0.00	13.30				104.		
	T651	PLATE	0.00	5.20			3.45			
2024	T3	SHEET	0.00	13.30				28.6		
	T3	PLATE	0.05	20.00			4.36			
	T351	SHEET	0.00	3.00- 6.00			6.16	44.0		
	T351	PLATE	0.00	1.00- 16.00					2324.	
	T351	PLATE	0.00	5.00- 20.00		.156				
	T351	PLATE	0.01	1.00- 10.00		.205	7.09	39.8		
	T351	PLATE	0.01	20.00			5.98	52.1		
	T351	PLATE	0.10	3.00				55.0		
	T351	PLATE	0.10	20.00			8.62			
	T3511	EXTRUSION	0.05	9.00		.129				
	T42	PLATE	0.02	10.00			4.25	23.6	1131.	
	T81	SHEET	0.05	2.00			8.08	68.1		
	T851	PLATE	0.02	1.00- 10.00			3.92	57.0		
2124	T851	PLATE	0.02	1.00- 30.00	.0474	.272	3.84	56.7		

TABLE 7.0.4.1 (con't)

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS.

SPECIMEN ORIENTATION: L-T

ENVIRONMENT: LAB AIR AT R.T.

STRESS RATIO: 0.00-0.10

FREQUENCY: 0.10-30.00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2.5	5.0	10.0	20.0	50.0	100.0
2219	T851	PLATE	0.00	5.20			8.25	54.8		
	T851	PLATE	0.00	6.00			4.33	34.6		
	T851	PLATE	0.01	3.00				44.5	1622.	
	T851	PLATE	0.01	6.00				46.2	1788.	
	T851	PLATE	0.01	1.00- 20.00				44.9		
	T851	PLATE	0.04	1.00- 20.00			4.24			
	T851	PLATE	0.05	1.00- 20.00			2.46	33.9		
	T851	PLATE	0.05	1.00- 20.00			3.58			
	T851	PLATE	0.05	1.00- 20.00			5.14	48.3		
	T851	PLATE	0.08	6.00			5.74			
	T851	PLATE	0.10	1.00- 20.00				44.9		
2419	T851	PLATE	0.10	30.00			6.30	53.9		
6061	T651	PLATE	0.00	.10				57.4		

TABLE 7.0.4.2

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: LAB AIR AT R T

STRESS RATIO: 0 00-0 10

FREQUENCY: 0 10-30 00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS KSI SQRT(IN) = 2 5	5 0	10	20 0	50 0	100 0
2014	T6	SHEET	0 05	2 00						
	T6	FORGING	0 05	30 00						
2024	T3	SHEET	0 00	13 30						
	T3	SHEET	0 05	30 00						
	T861	SHEET	0 08	10- 15 00						
	T861	SHEET	0 10	10						
	T861	SHEET	0 10							
	T861	SHEET	10							
	T861	SHEET	10							
	T861	SHEET								
	T861	PLATE								
	T861	PLATE								
2419	T851	PLATE								

TABLE 7.0.5

STRESS CORROSION CRACKING THRESHOLD DATA FOR 2000 AND 6000 SERIES ALUMINUM ALLOYS AT ROOM TEMPERATURE

				ENVIRONMENTS			K_{Iscc} (Ksi $\sqrt{in.}$)			
ALLOY	CONDITION/HT	PRODUCT FORM	SPECIMEN ORIENTATION	INDUSTRIAL ATMOSPHERE	SEACOAST ATMOSPHERE	SUMP TANK WATER	3.5% NaCl	SALT DICHROMATE ACETATE	SYNTHETIC SEAWATER	SHOP CLEANING SOLVENT
2014	T6	F	S-L						16.0	
	T651	P	S-L	7.0	7.0			7.0		
2020	T651	P	S-L				9.0			
2021	T81	P	S-L	19.0	19.0			19.0		
	T81-Overheated Weld	P	S-L				11.3			
	T81-Repaired Weld-Aged 16HR 325F-Weld Fusion Line						7.7			
	T81- Repaired Weld-Aged 16HR 325F-Heat Affected Zone	P	S-L				11.9			
	T81-Welded Aged 16HR 325F Weld Center Line	P	S-L				7.2			
	T81-Welded Aged 16HR 325F Heat Affected Zone	P	S-L				13.3			
	T81-Welded Aged 16HR 325F Fusion Line	P	S-L				8.5			

TABLE 7.0.5 (con't)

STRESS CORROSION CRACKING THRESHOLD DATA FOR 2000 AND 6000 SERIES ALUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/HT	PRODUCT FORM	SPECIMEN ORIENTATION	ENVIRONMENTS			K_{Iscc} (Ksi $\sqrt{in.}$)			
				INDUSTRIAL ATMOSPHERE	SEACOAST ATMOSPHERE	SUMP TANK WATER	3.5% NaCl	SALT DICHROMATE ACETATE	SYNTHETIC SEAWATER	SHOP CLEANING SOLVENT
2024	T351	P	S-L	10.0	10.0		10.0	9.0		
	T851	P	L-T				21.5			
			S-L	16.0	16.0			15.0		
	T852	F	L-T			22.5(2)				28.1(2)
			T-L			20.2(2)				
			S-L			20.0				
2124	T851	L-T				26.6(3)				
		S-L				22.7(3)				
2219	T37	P	S-L	13.0	13.0			9.0		
	T851	P	L-T			34.5(2)				34.3(3)
			T-L			27.0				
	T87	P	S-L	19.0	19.0			19.0		
6061	T651	P	S-L	20.0	20.0			20.0		

TABLE 7.1.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2014 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN))		(NUMBER OF SPECIMENS)
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T651	23.3 ± 1.0 (10)	21.4 ± 1.2 (19)	17.8 ± 0.1 (2)
	FORGING		
CONDITION/HT	L-T	T-L	S-L
T6	27.9 ± 0.8 (2)	17.4 ± 1.7 (4)	16.9 ± 1.9 (5)
T611	-----	-----	17.8 ± 0.6 (2)
T652	28.8 ± 3.6 (12)	21.9 ± 3.2 (13)	18.1 ± 1.4 (3)
	FORGED BAR		
CONDITION/HT	L-T	T-L	S-L
T6	-----	16.7 ± 0.6 (2)	-----

TABLE 7.1.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2014

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT LAB AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T6	SHEET	0.05	2.00				6.41			
T6	SHEET	0.25	2.00				9.59			
T6	SHEET	0.40	2.00			1.37	13.5			
T6	SHEET	0.50	2.00			1.57				
T6	SHEET	0.57	2.00			1.02				

TABLE 7.1.1.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2014

[FS] CONDITIONS

SPECIMEN ORIENTATION T-L ENVIRONMENT LAB AIR AT R.T.

CONDITION/TEMPER	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T6	SHEET	0.05	2.00				7.03			
T6	SHEET	0.25	2.00				11.0			
T6	SHEET	0.40	2.00			1.29	16.3			
T6	SHEET	0.50	2.00			1.59				
T6	SHEET	0.57	2.00			1.25				
T6	FORGING	0.05	---				1.93			

TABLE 7.1.1.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2014

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT H H A AIR T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5		20	50	100
T6	FORGING	.05				1.20	22.0			
T6	FORGING	-1.00	9.00			1.26	17.4			

TABLE 7.1.2.1

ALUMINUM 2014 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T6	F	0.89	R.T.	L-T	63.8	1.500	0.714	NB	0.798	0.50	28.50			1973	86213
		0.89			63.8	1.500	0.713	NB	0.778	0.46	27.30	27.9/	0.8	1973	86213
T6	F	0.89	R.T.	T-L	62.4	0.500	0.249	NB	0.266	0.15	15.50			1973	86213
		0.89			62.4	0.500	0.249	NB	0.269	0.17	16.50			1973	86213
		0.89			63.0	0.490	0.249	NB	0.258	0.23	19.20			1973	86213
		0.89			63.0	0.500	0.249	NB	0.266	0.21	18.20	17.4/	1.7	1973	86213
T6	F	0.89	84	T-L	62.4	1.500	0.750	CT	0.753	0.14	14.90			1973	86213
T6	F	8.00	R.T.	S-T	61.0	2.000	1.000	NB	1.000	0.24	19.10			1972	82675
		8.00			61.0	2.000	1.000	NB	----	0.24	19.10			1972	82675
		8.00			61.0	2.000	1.000	NB	1.000	0.24	19.00			1972	82675
		8.00			61.0	2.000	1.000	NB	----	0.24	19.00	19.1/	0.1	1972	82675
T6	F	8.00	R.T.	S-L	61.0	1.000	1.000	NB	0.500	0.18	16.40			1972	82675
		8.00			61.0	1.000	1.000	NB	----	0.17	15.70			1972	82675
		8.00			61.0	1.000	1.000	NB	----	0.18	16.40			1972	82675
		8.00			61.0	1.000	1.000	NB	0.500	0.17	15.70			1972	82675
		1.00			63.8	1.500	0.749	CT	0.778	0.25	20.30	16.9/	1.9	1973	86213
T6	F	----	R.T.	L-C	63.8	1.500	0.750	NB	0.750	0.50	28.50			1972	82879
		----			63.8	1.500	0.750	NB	0.750	0.46	27.30	27.9/	0.8	1972	82879
T6	F	----	R.T.	C-L	62.7	0.500	0.250	NB	0.250	0.21	18.20			1972	82879
		----			62.7	1.500	0.750	CT	0.750	0.14	15.10			1972	82879
		----			62.7	1.500	0.750	CT	0.750	0.13	14.30			1972	82879
		----			62.7	0.500	0.250	NB	0.250	0.23	19.20	16.7/	2.4	1972	82879
T6	FB	4.50	R.T.	L-T	64.2	1.490	0.689	NB	0.737	0.49	28.40			1973	86213
T6	FB	4.50	R.T.	T-L	62.4	0.500	0.249	NB	0.258	0.19	17.10			1973	86213
		4.50			62.4	0.500	0.249	NB	0.267	0.17	16.30	16.7/	0.6	1973	86213
T6	FB	4.50	82	T-L	62.4	1.500	0.749	CT	0.762	0.19	17.40			1973	86213
T6	FB	4.50	85	T-L	62.4	1.500	0.750	CT	0.783	0.21	17.90			1973	86213
		4.50			62.4	1.500	0.751	CT	0.749	0.18	16.60	17.3/	0.9	1973	86213

TABLE 7.1.2.1 (Con't)

ALUMINUM 2014 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T61	F	1.50	R.T.	S-T	56.6	1.000	0.500	CT	0.486	0.31	19.90			1973	86213
		1.50			56.6	1.000	0.500	CT	0.508	0.31	19.90	19.9/	0.0	1973	86213
T61	F	1.95	82	S-L	62.4	1.000	0.499	CT	0.491	0.22	18.70			1973	86213
		1.95			62.4	1.000	0.499	CT	0.479	0.20	17.70	18.2/	0.7	1973	86213
T611	F	1.00	R.T.	S-L	60.2	1.490	0.750	CT	0.783	0.23	18.20			1973	86213
		1.00			60.2	1.490	0.749	CT	0.771	0.21	17.30	17.8/	0.6	1973	86213
T611	F	1.00	86	S-L	61.3	1.500	0.749	CT	0.778	0.24	19.00			1973	86213
		1.00			61.3	1.500	0.749	CT	0.767	0.23	18.60			1973	86213
		1.00			62.0	1.500	0.747	CT	0.797	0.22	18.50			1973	86213
		1.00			62.0	1.500	0.749	CT	0.802	0.23	18.80	18.7/	0.2	1973	86213
T651	P	1.50	88	L-S	66.7	1.000	0.500	CT	0.490	0.31	23.40			1973	86213
		1.50			66.7	1.000	0.499	CT	0.503	0.33	24.10	23.8/	0.5	1973	86213
T651	P	5.00	R.T.	L-T	58.6	2.000	0.999	NB	0.975	0.37	22.40			1973	86213
		2.50			64.4	1.990	1.001	CT	0.970	0.33	23.30			1973	86213
		2.50			64.4	2.000	1.000	CT	0.966	0.34	23.60			1973	86213
		1.00			66.4	2.000	1.020	NB	0.966	0.35	24.70			1973	86213
		1.00			66.4	2.000	1.018	NB	0.970	0.32	23.60			1973	86213
		1.00			66.4	2.000	1.019	NB	0.961	0.35	24.80			1973	86213
		1.00			66.4	2.000	1.020	NB	1.000	0.33	24.00			1973	86213
		1.75			68.4	2.000	0.999	NB	0.957	0.26	21.90			1973	86213
		1.75			68.4	2.000	0.998	NB	0.960	0.27	22.40			1973	86213
		1.75			68.4	1.990	0.999	NB	0.960	0.27	22.30	23.3/	1.0	1973	86213
T651	P	1.00	84	L-T	62.7	2.000	1.001	CT	1.006	0.39	24.90			1973	86213
		1.00			63.5	2.000	1.002	CT	0.966	0.26	20.30			1973	86213
		1.00			66.4	2.000	1.002	CT	0.973	0.29	22.50			1973	86213
		1.00			66.4	2.000	1.002	CT	0.949	0.30	23.00			1973	86213
		1.00			66.4	2.000	1.002	CT	0.960	0.29	22.70	22.7/	1.6	1973	86213
T651	P	1.50	88	L-T	66.7	1.000	0.501	CT	0.499	0.21	19.20			1973	86213

TABLE 7.1.2.1 (Con't)

ALUMINUM 2014 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T651	P	1.50	88	L-T	66.7	1.000	0.501	CT	0.495	0.21	19.50			1973	86213
		1.50			66.7	1.000	0.501	CT	0.491	0.21	19.30	19.3/	0.2	1973	86213
T651	P	1.50	88	T-S	63.2	1.000	0.500	CT	0.504	0.33	22.80			1973	86213
		1.50			63.2	1.000	0.500	CT	0.506	0.30	21.80			1973	86213
		1.50			63.2	1.000	0.501	CT	0.510	0.32	22.50	22.4/	0.5	1973	86213
T651	P	1.00	- 320	T-L	75.0	2.000	1.020	NB	1.010	0.30	26.10			1971	84288
		1.00			75.0	2.000	1.018	NB	1.008	0.30	26.10	26.1/	0.0	1973	86213
T651	P	5.00	R.T.	T-L	57.8	2.000	1.000	NB	0.997	0.27	19.10			1973	86213
		1.00			65.8	2.000	1.016	NB	0.981	0.23	20.10			1973	86213
		1.00			65.8	2.000	1.016	NB	0.960	0.24	20.20			1973	86213
		1.00			65.8	2.000	1.016	NB	0.989	0.26	20.90			1971	84288
		1.00			65.8	2.000	1.016	NB	0.985	0.26	20.90			1971	84288
		1.00			65.8	2.000	1.022	NB	1.008	0.27	21.80			1973	86213
		1.00			65.8	1.990	1.023	NB	1.000	0.28	22.00			1973	86213
		1.00			65.8	2.000	1.016	NB	0.966	0.24	20.30			1973	86213
		1.00			65.8	2.000	1.000	CT	1.084	0.26	21.20			1973	86213
		1.00			65.8	2.000	1.016	NB	0.970	0.25	21.00			1971	84288
		1.00			65.8	2.000	1.023	NB	0.980	0.28	21.90			1973	86213
		1.00			65.8	2.000	1.022	NB	1.023	0.29	22.30			1973	86213
		1.00			65.8	2.000	1.023	NB	0.997	0.28	22.10			1973	86213
		1.00			65.8	2.000	1.016	NB	0.961	0.25	20.70			1973	86213
		1.00			65.8	2.000	1.016	NB	1.001	0.24	20.70			1971	84288
		1.00			65.8	2.000	1.016	NB	0.998	0.29	22.60			1971	84288
		1.75			66.2	2.000	0.997	NB	1.058	0.32	23.60			1973	86213
		1.75			66.2	2.000	1.000	NB	0.980	0.29	22.50			1973	86213
		1.75			66.2	2.000	1.000	NB	1.010	0.32	23.60	21.4/	1.2	1973	86213
T651	P	1.00	84	T-L	63.5	2.000	1.002	CT	0.981	0.27	20.70			1973	86213
		1.00			65.8	2.000	1.000	CT	0.984	0.22	19.50			1973	86213
		1.00			65.8	2.000	1.001	CT	0.978	0.23	20.00			1973	86213
		1.00			65.8	2.000	1.001	CT	0.964	0.22	19.60	20.0/	0.5	1973	86213
T651	P	1.50	88	T-L	63.2	1.000	0.500	CT	0.500	0.22	18.70			1973	86213
		1.50			63.2	1.000	0.500	CT	0.519	0.24	19.70	19.2/	0.7	1973	86213
T651	P	5.00	R.T.	S-L	55.0	1.000	0.501	NB	0.529	0.26	17.90			1973	86213

TABLE 7.1.2.1 (Con't)

ALUMINUM 2014 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T651	P	5.00	R.T.	S-L	55.0	1.000	0.498	NB	0.522	0.26	17.70	17.8/	0.1	1973	86213
T652	F	5.00	R.T.	L-T	60.7	3.000	1.500	NB	1.498	0.62	30.20			1970	77720
		5.00			60.7	3.000	1.500	NB	1.460	0.54	28.20			1970	77720
		5.00			60.7	3.000	1.500	NB	1.530	0.58	29.20			1970	77720
		4.00			62.5	3.000	1.502	NB	1.485	0.75	34.20			1970	77720
		4.00			62.5	3.000	1.502	NB	1.577	0.80	35.40			1970	77720
		4.00			62.5	3.000	1.502	NB	1.442	0.69	32.80			1970	77720
		3.00			66.2	2.000	1.000	NB	0.925	0.39	26.30			1970	77720
		3.00			66.2	1.990	1.000	NB	0.970	0.40	26.50			1970	77720
		3.00			66.2	2.000	1.000	NB	0.968	0.42	27.10			1970	77720
		2.00			66.5	1.500	0.750	NB	0.688	0.35	24.90			1970	77720
		2.00			66.5	1.500	0.752	NB	0.728	0.33	24.30			1970	77720
		2.00			66.5	1.500	0.751	NB	0.752	0.41	26.90	28.8/	3.6	1970	77720
T652	F	5.00	R.T.	T-L	57.3	3.000	1.500	NB	1.662	0.24	17.90			1970	77720
		5.00			57.3	3.000	1.500	NB	1.597	0.33	20.70			1970	77720
		5.00			57.3	3.000	1.500	NB	1.612	0.31	20.10			1970	77720
		6.00			57.7	4.000	2.005	NB	2.092	0.49	25.40			1970	77720
		6.00			57.7	4.000	2.004	NB	2.215	0.39	22.80			1970	77720
		6.00			57.7	4.000	2.003	NB	1.987	0.66	29.80			1970	77720
		4.00			59.2	3.000	1.502	NB	1.562	0.37	22.70			1970	77720
		4.00			59.2	3.000	1.502	NB	1.497	0.38	23.00			1970	77720
		4.00			59.2	3.000	1.502	NB	1.642	0.40	23.70			1970	77720
		2.00			64.9	1.500	0.754	NB	0.748	0.22	19.20			1970	77720
		2.00			64.9	1.500	0.753	NB	0.727	0.22	19.30			1970	77720
		3.00			65.1	2.000	0.999	NB	1.030	0.24	20.30			1970	77720
		3.00			65.1	1.990	0.999	NB	1.025	0.22	19.50	21.9/	3.2	1970	77720
T652	F	5.00	R.T.	S-L	56.1	1.000	0.500	NB	0.467	0.25	17.80			1970	77720
		5.00			56.1	1.000	0.501	NB	0.470	0.31	19.60			1970	77720
		5.00			56.1	1.000	0.498	NB	0.510	0.22	16.80	18.1/	1.4	1970	77720

TABLE 7.1.2.2

ALUMINUM 2014 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
								BUCKLING OF CRACK EDGES RESTRAINED											
T6	S	0.06	- 423	L-T	83.4	4.000	0.062	1.220	1.700	---	41.80	61.43			77.08*			1963	51527
		0.06			83.4	4.000	0.062	1.240	1.620	---	42.00	62.35			74.70*			1963	51527
		0.06			83.4	4.000	0.063	1.230	1.650	---	40.50	59.82			73.02*			1963	51527
		0.06			83.4	4.000	0.062	1.290	1.700	---	36.10	54.95			66.57			1963	51527
		0.06			83.4	4.000	0.062	1.240	1.650	---	41.20	61.16	59.9/	2.9	74.28*	----/	---	1963	51527
T6	S	0.06	- 320	L-T	74.1	3.950	0.062	1.230	1.660	---	40.70	60.21			73.95*			1963	51527
		0.06			74.1	3.990	0.063	1.230	1.420	---	37.00	54.67			60.02			1963	51527
		0.06			74.1	3.990	0.063	1.230	1.740	---	39.80	58.80			74.77*			1963	51527
		0.06			74.1	3.990	0.063	1.240	----	---	38.20	56.73			----			1963	51527
		0.06			74.1	3.990	0.063	1.230	1.410	---	36.20	53.49	56.8/	2.8	58.44	59.2/	1.1	1963	51527
T6	S	0.06	- 320	L-T	74.1	18.040	0.063	5.490	7.300	---	19.40	60.46			73.23			1963	51527
		0.06			74.1	18.040	0.063	5.480	7.100	---	19.40	60.39			71.77			1963	51527
		0.06			74.1	18.040	0.064	5.480	6.980	---	19.90	61.95			72.73			1963	51527
		0.06			74.1	18.050	0.064	5.480	----	---	----	----			----			1963	51527
		0.06			74.1	18.060	0.063	5.480	7.400	---	20.70	64.43	61.8/	1.9	78.91	74.2/	3.2	1963	51527
T6	S	0.06	R.T.	L-T	66.2	2.000	0.067	0.625	0.980	---	38.10	40.16*			55.78*			1973	86213
		0.06			67.5	2.000	0.064	0.625	0.970	---	38.60	40.68*			56.01*			1973	86213
		0.06			67.5	2.000	0.065	0.620	0.860	---	40.10	42.09*			52.76*			1973	86213
		0.06			67.5	2.000	0.064	0.625	1.020	---	38.30	40.37*			58.11*			1973	86213
		0.06			67.5	2.000	0.065	0.624	0.860	---	39.80	41.95*			52.36*			1973	86213
		0.06			67.5	2.000	0.065	0.622	0.890	---	40.10	42.18*			54.19*			1973	86213
		0.06			67.6	2.000	0.064	0.624	0.950	---	38.90	41.00*			55.45*			1973	86213
		0.06			67.6	2.000	0.064	0.622	0.850	---	39.50	41.55*			51.50*			1973	86213
		0.06			67.6	2.000	0.064	0.623	0.840	38.90	38.90	40.92*			50.27*			1973	86213
T6	S	0.06	R.T.	L-T	65.2	3.980	0.063	1.240	1.600	---	38.10	56.60*			67.23*			1963	51527
		0.06			65.2	3.990	0.063	1.240	1.540	---	38.20	56.73*			65.54*			1963	51527
		0.06			65.2	3.990	0.063	1.230	1.540	---	36.90	54.52*			63.31*			1963	51527
		0.06			65.2	3.990	0.063	1.230	1.550	---	37.80	55.85*			65.15*			1963	51527
		0.06			65.2	4.000	0.063	1.250	1.550	---	37.90	56.55*			65.29*			1963	51527
T6	S	0.06	R.T.	L-T	68.4	15.810	0.063	6.000	7.020	---	16.40	55.35			62.20			1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH VALUE NOT INCLUDED IN MEAN OR STD DEV

TABLE 7.1.2.2 (Con't)

ALUMINUM 2014 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN MEAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN MEAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																	
T6	S	0 06	R T	L-T	68 4	15 810	0 064	3 010	3 570	---	27 40	60 95		67 00		1973	86213
		0 06			68 4	15 810	0 064	4 000	5 230	---	22 50	58 73		69 22		1973	86213
		0 06			68 4	15 820	0 064	6 000	7 000	---	16 10	54 33		60 92		1973	86213
		0 06			68 4	15 820	0 064	1 000	1 520	---	42 10	52 69	56 9/ 3 3	65 43	65 0/ 3 4	1973	86213
T6	S	0 06	R T	L-T	65 2	18 040	0 063	5 490	6 350	---	20 70	64 51		70 87		1963	51527
		0 06			65 2	18 040	0 063	5 490	6 110	---	20 60	64 20		68 75		1963	51527
		0 06			65 2	18 050	0 063	5 490	6 400	---	20 80	64 82		71 58		1963	51527
		0 06			65 2	18 060	0 063	5 490	6 800	---	21 70	67 62		77 84		1963	51527
		0 06			65 2	18 060	0 063	5 480	6 300	---	20 80	64 74	65 2/ 1 4	70 82	72 0/ 3 4	1963	51527
T6	S	0 06	- 320 T-L		75 9	3 000	0 058	0 130	0 210	---	63 70	28 82*		36 70*		1967	68908
		0 06			75 9	3 000	0 058	0 130	0 160	---	63 30	28 64*		31 79*		1967	68908
		0 06			75 9	3 000	0 058	0 300	0 410	---	49 90	34 47		40 51		1967	68908
		0 06			75 9	3 000	0 059	0 300	0 430	---	49 70	34 33		41 37		1967	68908
		0 06			75 9	3 000	0 059	0 300	0 420	---	50 40	34 81		41 44		1967	68908
		0 06			75 9	3 000	0 061	0 500	0 850	---	43 40	39 13		52 79		1967	68908
		0 06			75 9	3 000	0 061	0 130	0 190	---	66 50	30 09*		36 42*		1967	68908
		0 06			75 9	3 000	0 060	1 000	1 400	---	30 50	41 08		52 47		1967	68908
		0 06			75 9	3 000	0 061	0 500	0 580	---	42 10	37 96		41 14		1967	68908
		0 06			75 9	3 000	0 061	1 010	1 300	---	30 40	41 21		49 28		1967	68908
		0 06			75 9	3 000	0 060	0 500	0 730	---	44 20	39 86		49 14		1967	68908
		0 06			75 9	3 010	0 061	1 000	1 390	---	29 90	40 25	38 1/ 2 9	51 08	46 6/ 5 3	1967	68908
T6	S	0 06	- 320 T-L		75 9	6 000	0 061	0 130	0 200	---	64 90	29 34*		36 40*		1967	68908
		0 06			75 9	6 000	0 060	0 130	0 200	---	66 80	30 19*		37 47*		1967	68908
		0 06			75 9	6 000	0 061	0 250	0 380	---	56 20	35 26		43 53		1967	68908
		0 06			75 9	6 000	0 061	0 250	0 370	---	56 50	35 44		43 17		1967	68908
		0 06			75 9	6 000	0 060	0 130	0 180	---	65 90	29 79*		35 06*		1967	68908
		0 06			75 9	6 000	0 061	2 000	2 540	---	22 30	42 47		50 21		1967	68908
		0 06			75 9	6 000	0 061	2 000	2 550	---	22 90	43 62		51 72		1967	68908
		0 06			75 9	6 000	0 061	2 000	2 580	---	23 10	44 00		52 64		1967	68908
		0 06			75 9	6 000	0 061	0 250	0 400	---	56 80	35 63	39 4/ 4 4	45 15*	48 3/ 4 6	1967	68908
T6	S	0 06	- 320 T-L		75 9	12 000	0 059	0 260	0 400	---	57 50	36 76		45 61		1967	68908

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

TABLE 7.1.2.2 (Con't)

ALUMINUM 2014 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T6	S	0.06	- 320	T-L	75.9	12.000	0.059	0.130	0.240	---	65.20	29.47*			40.04*			1967	68908
		0.06			75.9	12.000	0.058	0.500	0.910	---	43.50	38.59			52.19			1967	68908
		0.06			75.9	12.000	0.058	0.500	0.690	---	44.50	39.48			46.42			1967	68908
		0.06			75.9	12.000	0.058	0.500	0.690	---	43.40	38.50			45.28			1967	68908
		0.06			75.9	12.000	0.060	0.250	0.450	---	56.30	35.29			47.38			1967	68908
		0.06			75.9	12.000	0.061	2.000	2.220	---	25.10	45.27			47.89			1967	68908
		0.06			75.9	12.000	0.061	1.000	1.610	---	29.10	36.63			46.80			1967	68908
		0.06			75.9	12.000	0.061	1.000	1.560	---	33.30	41.92			52.68			1967	68908
		0.06			75.9	12.000	0.060	2.000	2.610	---	27.60	49.78			57.57			1967	68908
		0.06			75.9	12.000	0.061	4.000	4.760	---	17.30	46.60			52.49			1967	68908
		0.06			75.9	12.000	0.060	0.130	0.240	---	65.80	29.74*			40.41*			1967	68908
		0.06			75.9	12.000	0.060	0.130	0.250	---	66.20	29.92*			41.50*			1967	68908
		0.06			75.9	12.000	0.060	4.000	4.650	---	17.00	45.79			50.72			1967	68908
		0.06			75.9	12.000	0.060	1.000	1.530	---	35.30	44.43			55.28			1967	68908
		0.06			75.9	12.000	0.060	4.000	4.920	---	16.70	44.98			51.92			1967	68908
		0.06			75.9	12.000	0.060	4.000	4.800	---	15.90	42.83			48.54			1967	68908
		0.06			75.9	12.010	0.059	0.250	0.440	---	53.90	33.79	41.4/	4.7	44.85	49.7/	3.9	1967	68908
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	S	0.12	R.T.	L-T	64.0	3.000	0.126	1.120	1.760	---	33.30	48.40*			71.21*			1973	86213
		0.12			64.0	3.000	0.126	1.090	1.900	---	34.90	49.78*			81.70*			1973	86213
T6	P	0.25	R.T.	L-T	65.0	3.000	0.247	1.100	1.720	---	31.60	45.36			65.90*			1973	86213
		0.25			65.0	3.000	0.247	1.220	1.810	---	29.20	45.11	45.2/	0.2	64.45*	----/	---	1973	86213
T6	S	0.06	- 423	T-L	81.8	4.000	0.063	1.230	1.370	---	36.00	53.17			56.99			1963	51527
		0.06			81.8	4.000	0.063	1.210	1.550	---	36.30	53.07			62.53			1963	51527
		0.06			81.8	4.000	0.063	1.230	1.250	---	37.80	55.83			56.40			1963	51527
		0.06			81.8	4.000	0.064	1.230	1.620	---	35.60	52.58			63.32			1963	51527
		0.06			81.8	4.000	0.063	1.230	1.450	---	34.30	50.66	53.1/	1.8	56.41	59.1/	3.5	1963	51527

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.1.2.2 (Con't)

ALUMINUM 2014 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	S	0.06	- 320	T-L	69.3	4.000	0.062	1.230	----	---	35.30	52.14			----			1963	51527
		0.06			69.3	4.000	0.063	1.230	----	---	30.30	44.75			----			1963	51527
		0.06			69.3	4.000	0.063	1.230	1.740	---	35.90	53.03			67.40*			1963	51527
		0.06			69.3	4.000	0.063	1.240	1.800	---	36.30	53.89			70.00*			1963	51527
		0.06			69.3	4.000	0.063	1.230	1.860	---	36.70	54.21	51.6/	3.9	72.68*	----/	---	1963	51527
T6	S	0.06	R.T.	T-L	64.3	2.000	0.065	0.624	0.790	---	36.90	38.89*			45.57*			1973	86213
		0.06			64.3	2.000	0.064	0.625	0.930	---	36.30	38.26*			50.83*			1973	86213
		0.06			64.3	2.000	0.065	0.623	0.850	---	37.60	39.55*			49.03*			1973	86213
		0.06			64.3	2.000	0.064	0.625	0.910	---	36.20	38.16*			49.80*			1973	86213
		0.06			64.3	2.000	0.065	0.623	0.900	---	37.40	39.34*			50.99*			1973	86213
		0.06			65.6	2.000	0.065	0.623	0.830	---	37.50	39.45*			48.02*			1973	86213
		0.06			65.6	2.000	0.067	0.625	0.760	---	35.60	37.52			42.77*			1973	86213
		0.06			65.6	2.000	0.064	0.621	0.820	---	37.00	38.84*			46.76*			1973	86213
		0.06			65.6	2.000	0.067	0.625	0.860	---	35.10	37.00	37.3/	0.4	46.18*	----/	---	1973	86213
T6	S	0.06	R.T.	T-L	63.2	3.970	0.063	1.230	1.620	---	34.20	50.56			60.94*			1963	51527
		0.06			63.2	3.970	0.063	1.240	1.480	---	33.60	49.93			56.12*			1963	51527
		0.06			63.2	3.970	0.063	1.240	1.650	---	32.80	48.74			59.25*			1963	51527
		0.06			63.2	3.980	0.063	1.230	1.680	---	33.80	49.96			61.85*			1963	51527
		0.06			63.2	3.980	0.063	1.240	1.650	---	30.70	45.61	49.0/	2.0	55.42*	----/	---	1963	51527
T6	S	0.06	R.T.	T-L	65.4	15.810	0.063	3.000	3.550	---	24.10	53.51			58.75			1973	86213
		0.06			65.4	15.810	0.064	4.000	4.830	---	20.40	53.25			59.66			1973	86213
		0.06			65.4	15.820	0.064	1.020	1.620	---	38.40	48.73			61.66			1973	86213
		0.06			65.4	15.820	0.064	6.010	6.860	---	14.60	49.32			54.38			1973	86213
		0.06			65.4	15.830	0.064	6.000	7.000	---	15.20	51.28	51.2/	2.2	57.50	58.4/	2.7	1973	86213
T6	S	0.12	R.T.	T-L	62.2	3.000	0.126	1.130	1.620	---	29.40	42.99			57.67*			1973	86213
		0.12			62.2	3.000	0.126	1.110	1.580	---	29.50	42.61	42.8/	0.3	56.49*	----/	---	1973	86213
T6	P	0.25	R.T.	T-L	62.8	3.000	0.247	1.130	1.590	---	24.60	35.97			47.39*			1973	86213
		0.25			62.8	3.000	0.247	1.160	1.640	---	24.00	35.75	35.9/	0.2	47.65*	----/	---	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.1.2.2 (Con't)

ALUMINUM 2014 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN DEV MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T651	P	0.25	R.T.	L-T	62.2	4.000	0.249	1.330	2.120	---	32.80	50.92			72.96*			1973	86213
		0.25			62.2	4.000	0.248	1.400	2.310	---	32.00	51.39			77.66*			1973	86213
		0.25			64.3	4.000	0.252	1.400	2.380	---	32.10	51.55			80.52*			1973	86213
		0.25			64.3	4.000	0.251	1.330	2.260	---	33.90	52.63			80.38*			1973	86213
		0.25			64.3	4.000	0.252	1.330	2.140	---	33.50	52.01	51.7/	0.6	75.20*	----/	---	1973	86213
T651	P	1.00	R.T.	L-T	66.4	20.000	1.000	6.950	9.950	---	14.50	51.82			68.04			1973	86213
T651	P	0.25	R.T.	T-L	60.7	4.000	0.250	1.420	2.110	---	26.20	42.48			58.02*			1973	86213
		0.25			60.7	4.000	0.250	1.330	1.960	---	27.20	42.23			56.32*			1973	86213
		0.25			62.2	4.000	0.252	1.330	1.840	---	27.10	42.07			53.20*			1973	86213
		0.25			62.2	4.000	0.252	1.410	2.140	---	25.90	41.79			58.14*			1973	86213
		0.25			62.2	4.000	0.252	1.330	1.900	---	27.20	42.23	42.2/	0.3	54.84*	----/	---	1973	86213
T651	P	1.00	R.T.	T-L	65.8	20.000	1.000	6.940	9.370	---	9.10	32.49			40.55			1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.1.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.1 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2014
CONDITION: T6
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.05	R=+0.25	R=+0.40	
DELTA K MIN	A:	5.69	.79			
	B:	5.86		2.14		
	C:	4.82			1.16	
	D:					
		5.00			1.37	
		6.00	1.06	2.27	2.74	
		7.00	2.11	3.39	4.39	
		8.00	3.38	4.90	6.46	
		9.00	4.80	6.91	9.30	
		10.00	6.41	9.59	13.5	
		13.00	13.6	24.0		
DELTA K MAX	A:	13.77	16.4			
	B:	14.47		36.6		
	C:	11.62			26.0	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			8.62	9.37	5.28	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8	1			
		0.8-1.25	5	4	4	
		1.25-2.0				
		>2.0				

CONDITION/HT: T6
FORM: 0.04- 0.06"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 2.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 67.0 KSI
ULT. STRENGTH: 74.0 KSI
SPECIMEN THK: 0.040- 0.064"
SPECIMEN WIDTH: 6.000"
REFERENCES:86734

ALUM. ALLOY
2014

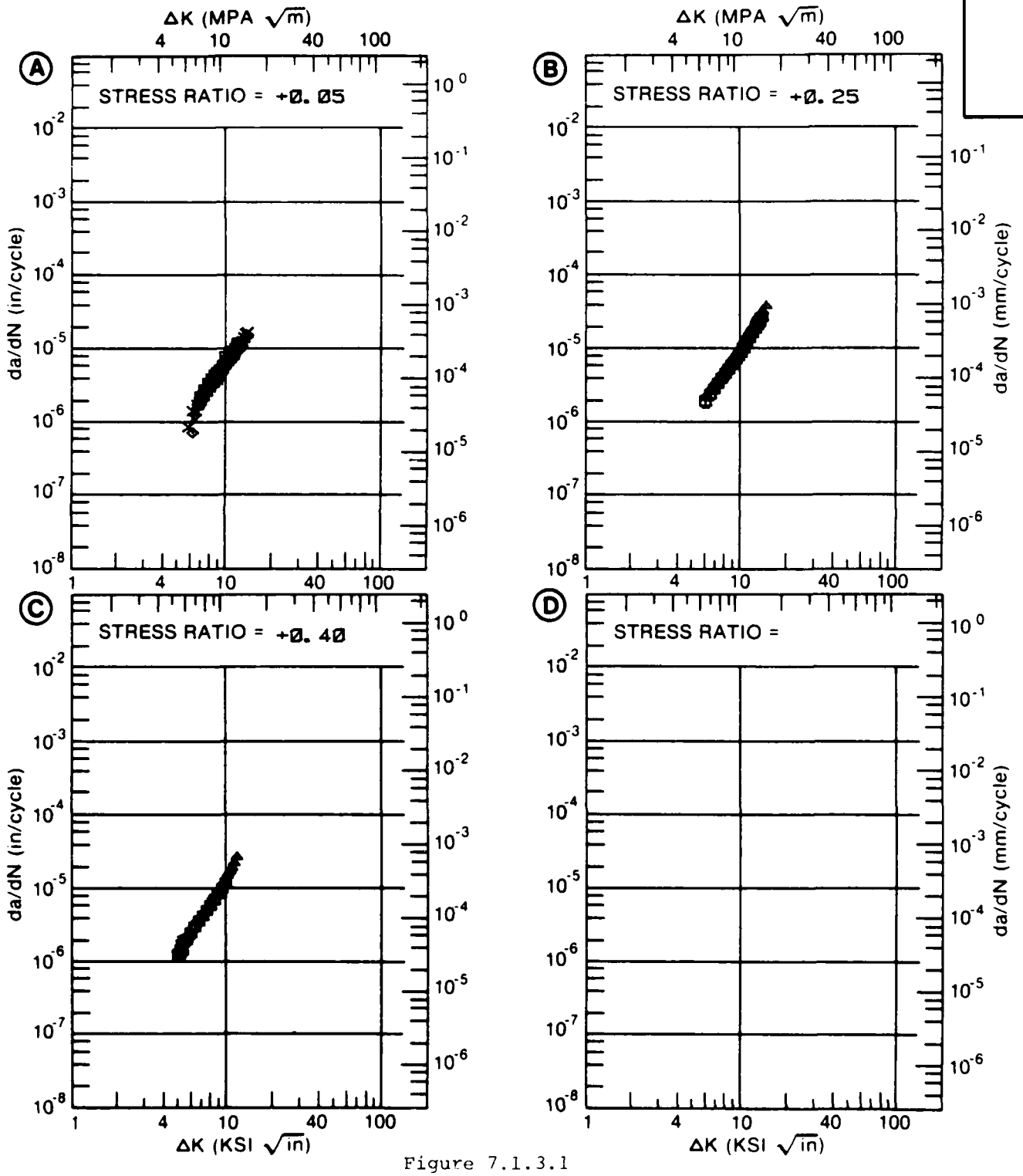


Figure 7.1.3.1

TABLE 7.1.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.2 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2014
CONDITION: T6
ENVIRONMENT: R.T., LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.50	R=+0.57		
DELTA K MIN	A:	4.13	.667			
	B:	4.14		.435		
	C:					
	D:					
		5.00	1.57	1.02		
		6.00	2.88	2.01		
		7.00	4.58	3.34		
		8.00	7.15			
DELTA K MAX	A:	8.87	10.8			
	B:	7.73		4.59		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			6.27	6.15		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	4	1		
		1.25-2.0		1		
		>2.0				

CONDITION/HT: T6
FORM: 0.04- 0.06"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 2.00
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 67.0 KSI
ULT. STRENGTH: 74.0 KSI
SPECIMEN THK: 0.040- 0.063"
SPECIMEN WIDTH: 6.000"
REFERENCES:86734

ALUM. ALLOY
2014

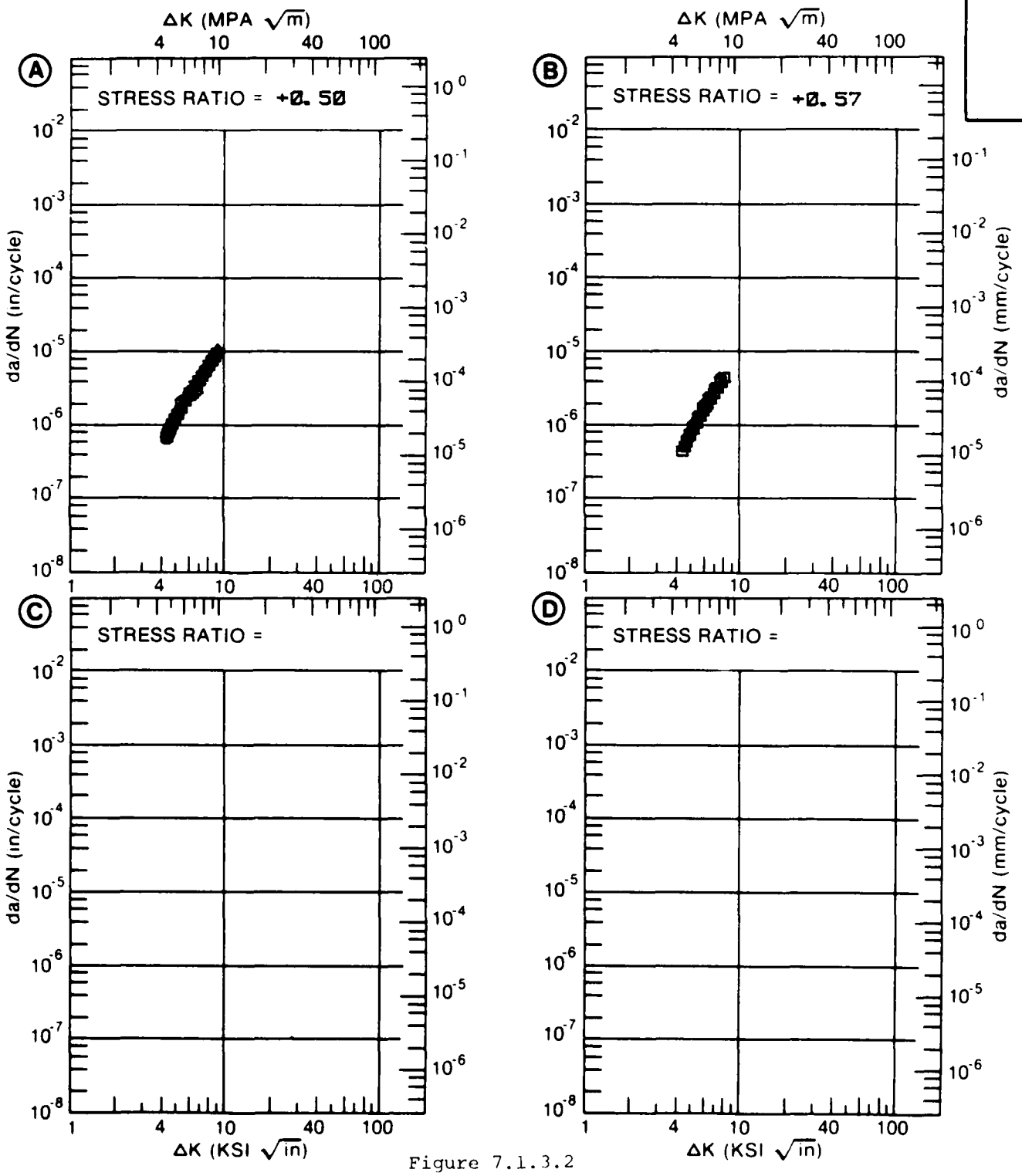


Figure 7.1.3.2

TABLE 7.1.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.3 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2014
CONDITION: T6
ENVIRONMENT: R.T., LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.05	R=+0.25	R=+0.40	
DELTA K MIN A:	5.65	1.11			
DELTA K MIN B:	5.54		1.61		
DELTA K MIN C:	4.88			1.14	
DELTA K MIN D:					
	5.00			1.29	
	6.00	1.39	2.10	2.70	
	7.00	2.33	3.42	4.40	
	8.00	3.50	5.18	6.66	
	9.00	5.00	7.60	10.2	
	10.00	7.03	11.0	16.3	
	13.00	19.8			
DELTA K MAX A:	13.51	23.9			
DELTA K MAX B:	12.91		33.1		
DELTA K MAX C:	11.48			36.6	
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		12.89	12.95	13.84	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8	1			
	0.8-1.25	3	4	4	
	1.25-2.0				
	>2.0				

CONDITION/HT: T6
FORM: 0.04- 0.06"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 2.00
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 67.0 KSI
ULT. STRENGTH: 74.0 KSI
SPECIMEN THK: 0.040- 0.063"
SPECIMEN WIDTH: 6.000"
REFERENCES:86734

ALUM. ALLOY

2014

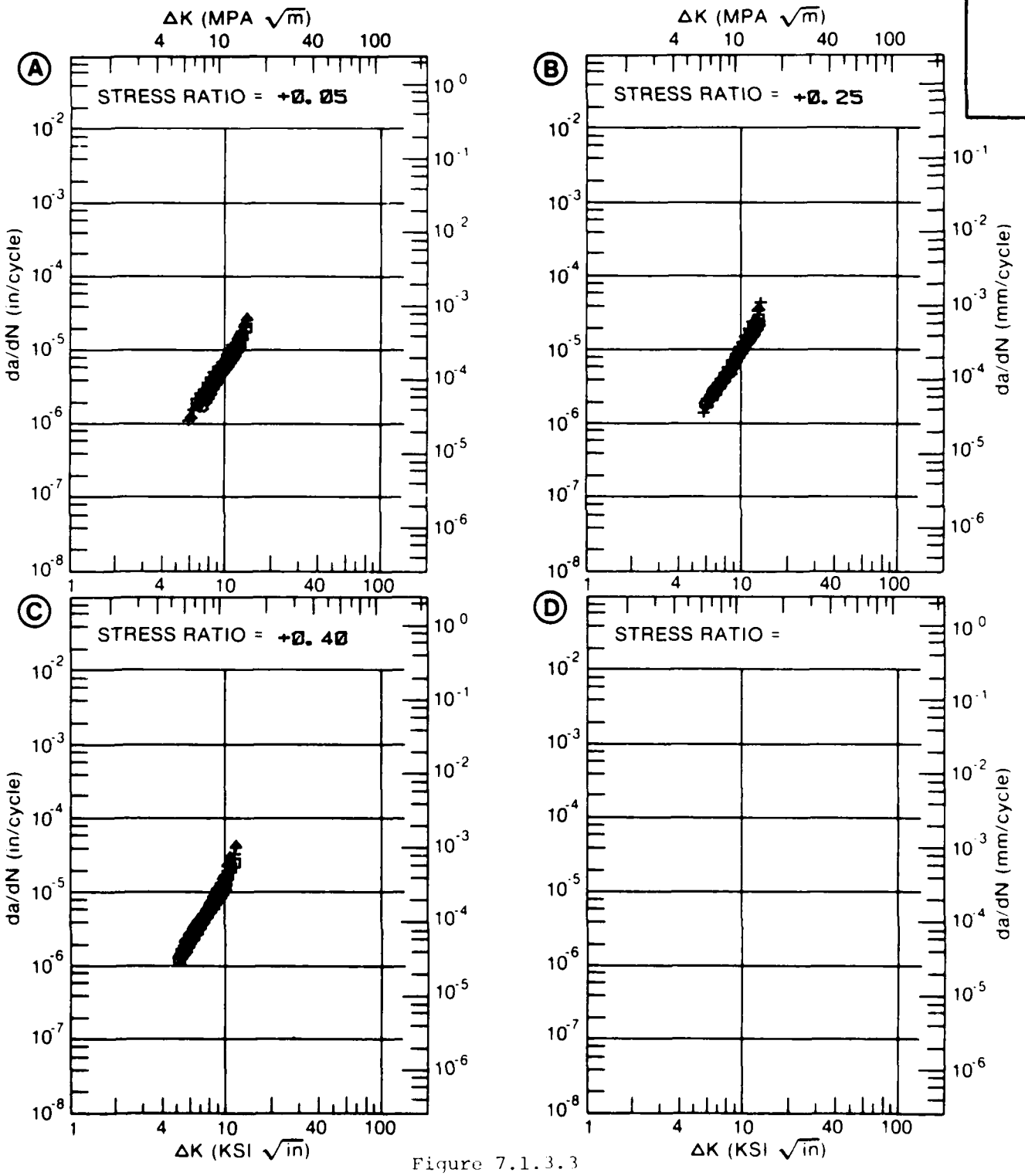


Figure 7.1.3.3

TABLE 7.1.3.4

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.4 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2014
CONDITION: T6
ENVIRONMENT: R.T., LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.50	R=+0.57		
DELTA K MIN	A:	4.17	.731			
	B:	3.66		.345		
	C:					
	D:					
		4.00		.497		
		5.00	1.59	1.25		
		6.00	3.10	2.56		
		7.00	5.36	4.39		
		8.00	8.87			
DELTA K MAX	A:	8.66	12.3			
	B:	7.88		6.28		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			11.45	16.08		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8	1			
		0.8-1.25	3	4		
		1.25-2.0				
		>2.0				

CONDITION/HT: T6
FORM: 0.04- 0.06"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 2.00
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 67.0 KSI
ULT. STRENGTH: 74.0 KSI
SPECIMEN THK: 0.040- 0.063"
SPECIMEN WIDTH: 6.000"
REFERENCES:86734

ALUM. ALLOY

2014

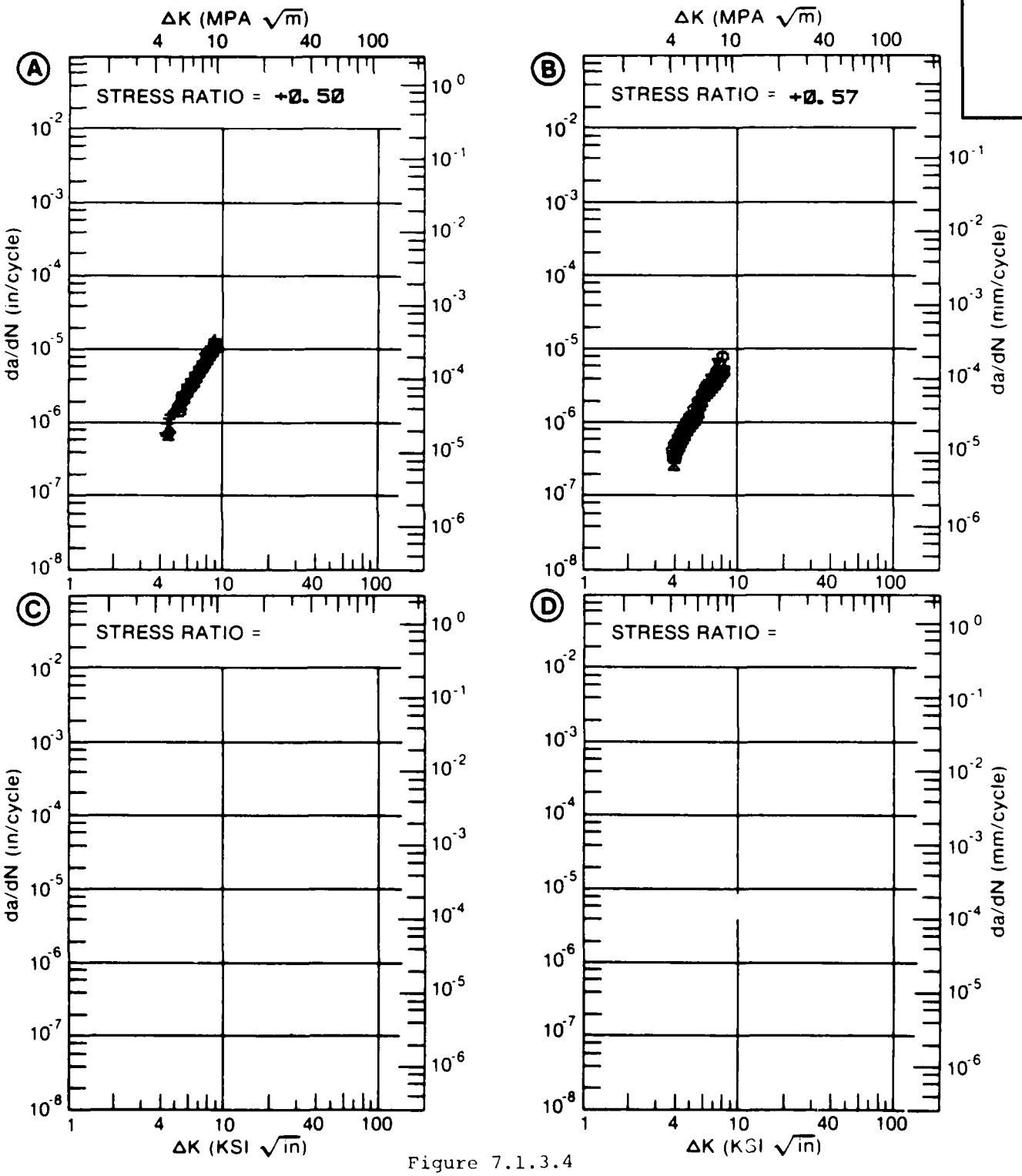


Figure 7.1.3.4

TABLE 7.1.3.5

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.5 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2014
CONDITION: T6

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R. T. LAB AIR	E= R. T. H. H. A.		
DELTA K MIN	A:	6.53	.315			
	B:	4.08		.543		
	C:					
	D:					
		5.00		1.20		
		6.00		2.41		
		7.00	.479	4.42		
		8.00	.885	7.73		
		9.00	1.35	13.2		
		10.00	1.93	22.0		
		13.00	7.89	97.4		
DELTA K MAX	A:	15.67	60.8			
	B:	15.39		309.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			18.38	21.24		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T6
FORM: FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.05
FREQUENCY:

YIELD STRENGTH: 64.1 KSI
ULT. STRENGTH: 68.2 KSI
SPECIMEN THK: 0.400"
SPECIMEN WIDTH: 2.000- 4.000"
REFERENCES:BW001

ALUM. ALLOY

2014

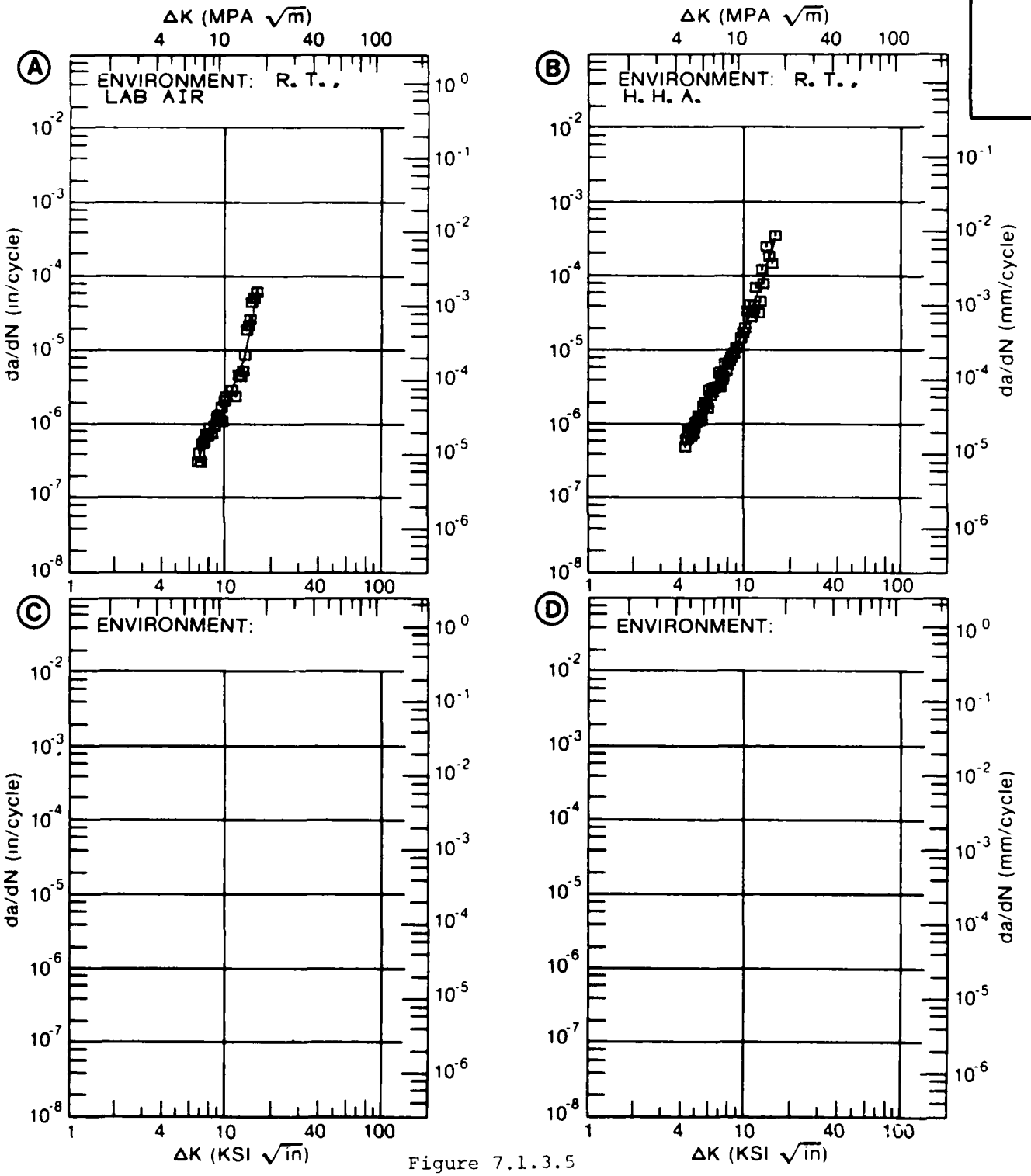


Figure 7.1.3.5

TABLE 7.1.3.6

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.6 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2014
CONDITION: T6
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=-1.00			
DELTA K MIN	A: 4.85	.662			
	B:				
	C:				
	D:				
	5.00	.783			
	6.00	1.88			
	7.00	3.42			
	8.00	5.26			
	9.00	7.31			
	10.00	9.51			
	13.00	17.1			
	16.00	27.3			
	20.00	48.8			
DELTA K MAX	A: 21.09	57.2			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 8.35

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T6
FORM: 5.00"TH FORGING
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 9.00 HZ
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.400"
SPECIMEN WIDTH: 2.000"
REFERENCES:BW001

ALUM. ALLOY

2014

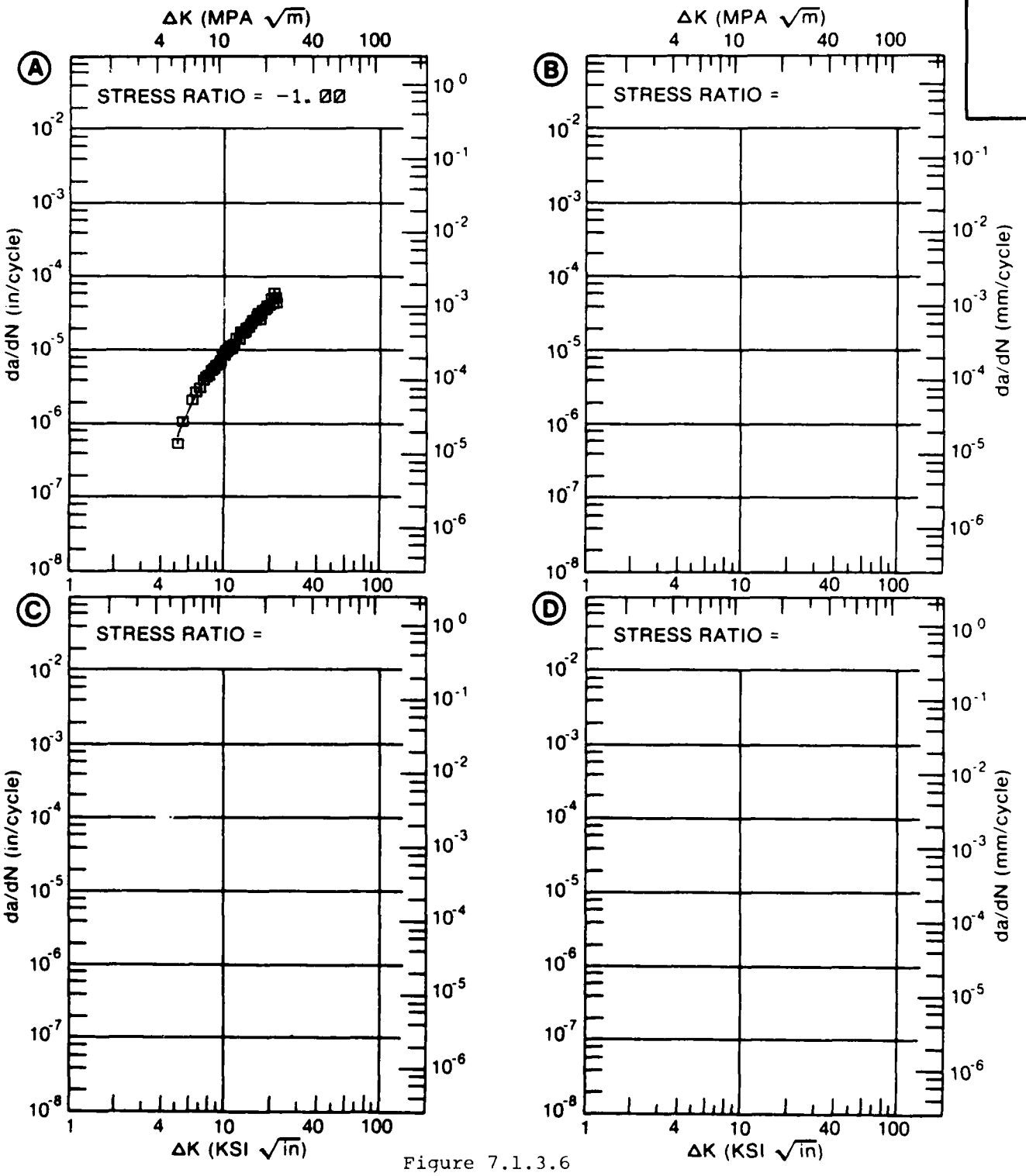


Figure 7.1.3.6

TABLE 7.1.3.7

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.7 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2014
CONDITION: T6
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-1.00			
DELTA K MIN	A:	4.79	1.01			
	B:					
	C:					
	D:					
		5.00	1.26			
		6.00	2.86			
		7.00	5.18			
		8.00	8.23			
		9.00	12.1			
		10.00	17.4			
		13.00	58.2			
		16.00	224.			
DELTA K MAX	A:	17.10	284.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 26.13

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T6
FORM: 5.00"TH FORGING
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 9.00 HZ
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 64.1 KSI
ULT. STRENGTH: 68.2 KSI
SPECIMEN THK: 0.400"
SPECIMEN WIDTH: 4.000"
REFERENCES:BW001

ALUM. ALLOY
2014

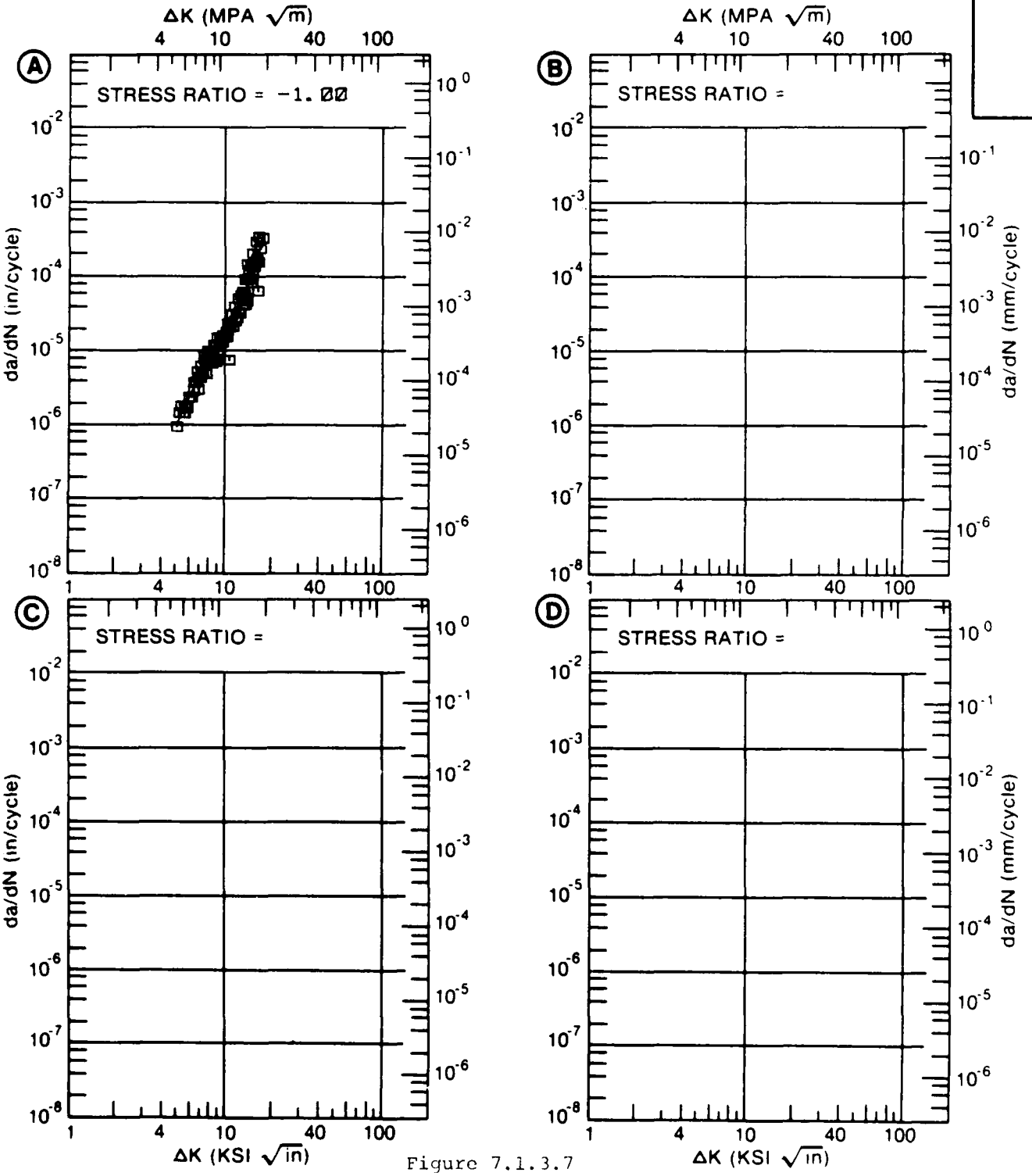


Figure 7.1.3.7

TABLE 7.1.3.8

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.8 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2014
CONDITION: T6

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN A:	24.55	196.			
DELTA K MIN B:					
DELTA K MIN C:					
DELTA K MIN D:					
	25.00	236.			
	30.00	549.			
	35.00	1271.			
	40.00	1575.			
DELTA K MAX A:	46.11	2655.			
DELTA K MAX B:					
DELTA K MAX C:					
DELTA K MAX D:					

ROOT MEAN SQUARE PERCENT ERROR 28.37

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	4
	1.25-2.0	
	>2.0	

CONDITION/HT: T6
FORM: 1.00"TH ROLLED BAR
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.00
FREQUENCY: 5.20 HZ

YIELD STRENGTH: 60.2- 60.5 KSI
ULT. STRENGTH: 66.0- 67.3 KSI
SPECIMEN THK: 0.253- 0.260"
SPECIMEN WIDTH: 7.500- 7.517"
REFERENCES:86213

ALUM. ALLOY

2014

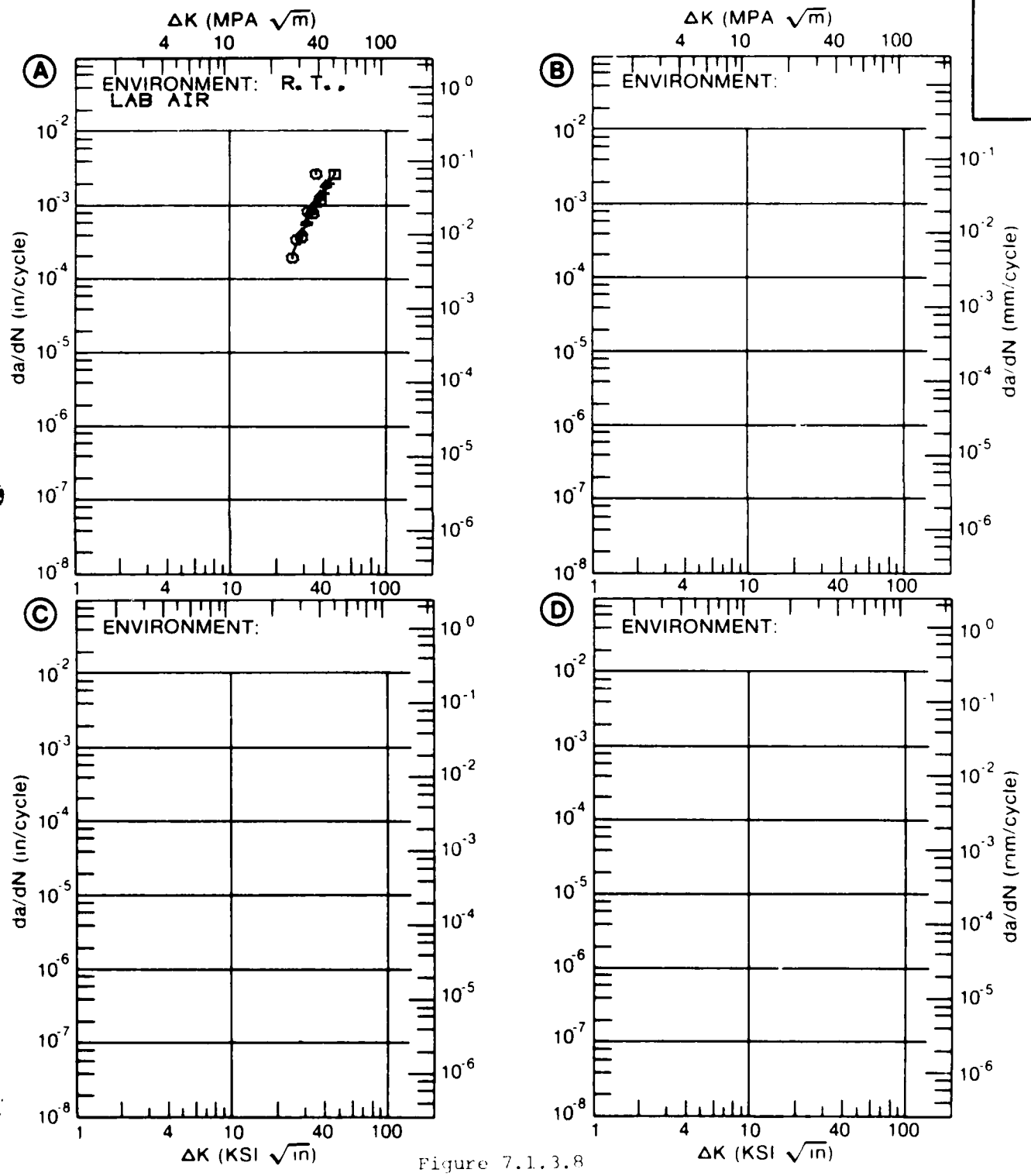


Figure 7.1.3.8

TABLE 7.1.3.10

SUSTAINED CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.10 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2014
CONDITION: T451

K MAX (KSI*IN**1/2)		DA/DT (10**-6 IN/HOUR)			
		A	B	C	D
		E= F 3X/DAY-3.5NACL			
K MAX MIN	A:				
	B:				
	C:				
	D:				
200.00					
K MAX MAX	A:				
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 0.00

CONDITION/HT: T451
FORM: 1.5"TH PLATE
SPECIMEN TYPE: DCB
ORIENTATION: S-L
YIELD STRENGTH:
ULT. STRENGTH:

SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 5.000"
CRACK LENGTH (A_0):
K_{ISCC}:
REFERENCES: 78313

ALUM. ALLOY

2014

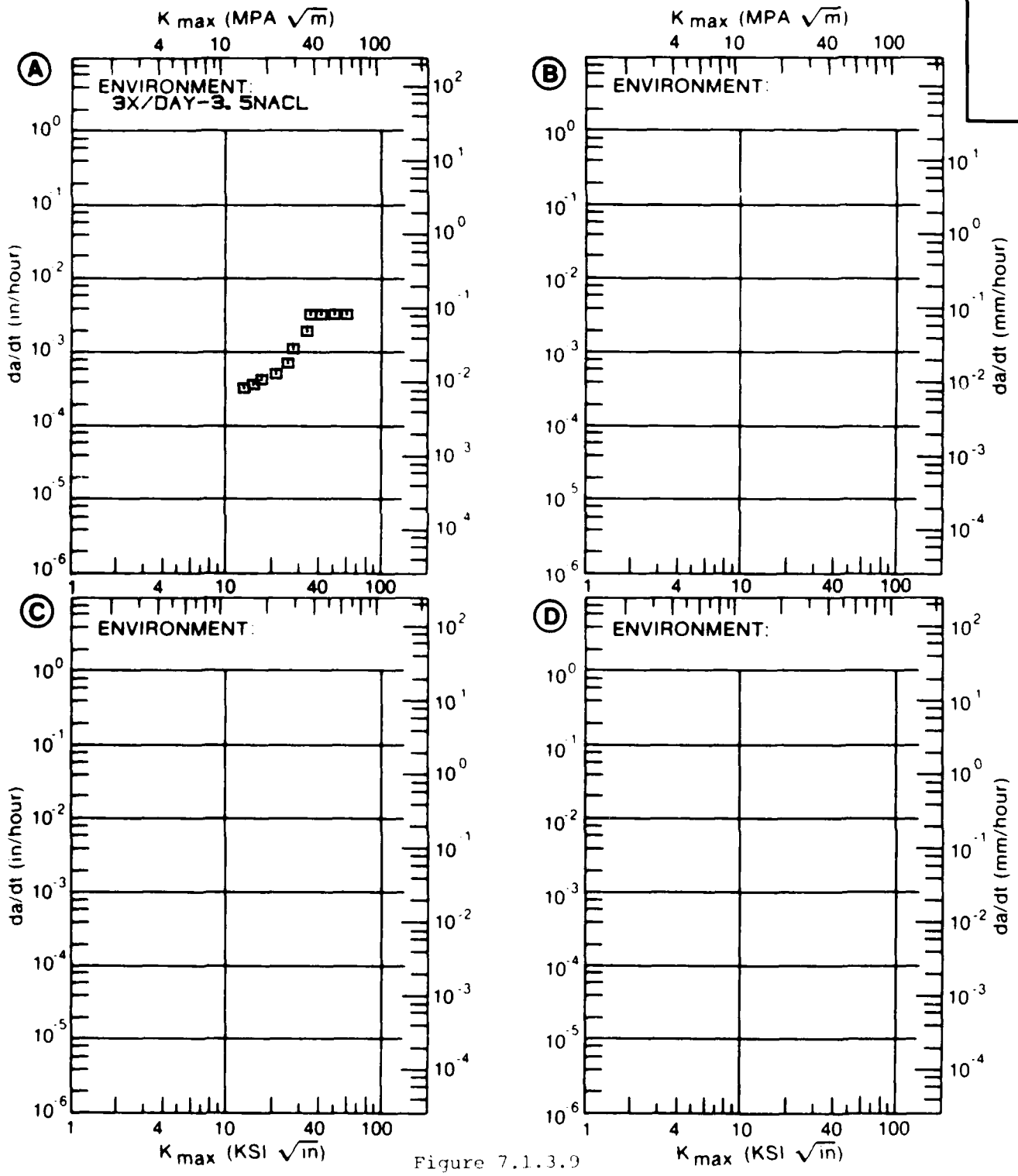


Figure 7.1.3.9

TABLE 7.1.3.9

SUSTAINED CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.1.3.9 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2014
CONDITION: T651

K MAX (KSI*IN**1/2)		DA/DT (10**-6 IN/HOUR)			
		A	B	C	D
		E: 3X/DAY-3.5NACL	F		
K MAX MIN	A:				
	B:				
	C:				
	D:				
200.00					
K MAX MAX	A:				
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 0.00

CONDITION/HT: T651
FORM: 2.0"TH PLATE
SPECIMEN TYPE: DCB
ORIENTATION: S-L
YIELD STRENGTH:
ULT. STRENGTH:

SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 5.000"
CRACK LENGTH (A_o):
K_{ISCC}:
REFERENCES: 78313

ALUM. ALLOY

2014

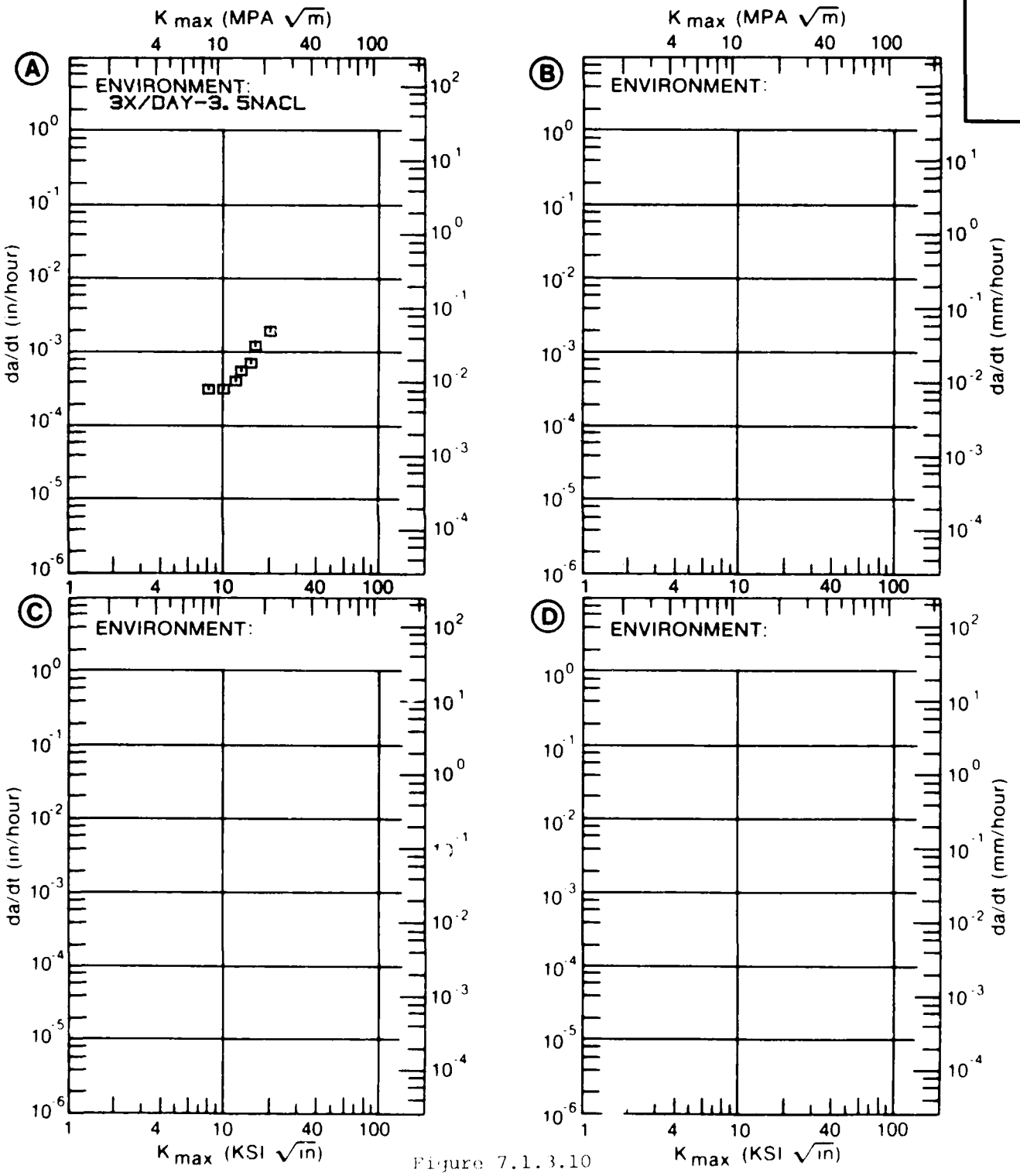


Figure 7.1.3.10

TABLE 7.1.3.11

ALUMINUM 2014 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SC)	CRACK LENGTH (IN) A	K(G) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T6	F	6.00	R.T.	S-L	61.0	SYNTH SEAWATER	2.000	1.000	CANT	----	19.00	16.00			----	1972	82675
T651	P	2.50	R.T.	S-L	59.6	INDUSTRIAL ATM	2.000	1.000	CT	----	18.70	7.00			----	1973	86688
T651	P	2.50	R.T.	S-L	59.6	SALT-DICHRO-MATE-ACETATE	2.000	1.000	CT	----	18.70	7.00			----	1973	86688
T651	P	2.50	R.T.	S-L	59.6	SEACOAST ATM	2.000	1.000	CT	----	18.70	7.00			----	1973	86688

TABLE 7.2.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2020 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN))		(NUMBER OF SPECIMENS)
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T651	20.0 ± 2.4 (8)	17.2 ± 0.3 (4)	-----

TABLE 7.2.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2020

IFSI CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT LAB AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T6	SHEET	0.05	13.30					104		
T651	PLATE	-0.30	5.00				2.22			
T6	PLATE	0.05	5.20				3.45			

TABLE 7.2.2.1

ALUMINUM 2020 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T6	P	0.78	86	L-T	75.5	1.500	0.751	CT	0.745	0.18	20.50			1973	86213
		0.78			75.5	1.500	0.752	CT	0.728	0.17	19.90			1973	86213
		0.78			75.5	1.500	0.752	CT	0.697	0.18	20.00	20.1/	0.3	1973	86213
T6	E	0.69	R.T.	L-T	75.5	1.500	0.652	NB	0.747	0.22	22.40			1973	86213
T651	P	1.37	R.T.	L-T	76.3	3.000	1.376	NB	1.413	0.17	19.70			1973	86213
		1.37			77.0	3.000	1.355	NB	1.390	0.18	20.90			1973	86213
		1.37			77.5	3.000	1.375	NB	1.460	0.24	23.80			1973	86213
		1.37			77.5	2.000	0.999	CT	0.967	0.22	22.90			1973	86213
		1.37			77.5	3.000	1.375	NB	1.400	0.31	27.20			1973	86213
		1.37			77.5	3.000	1.375	NB	1.450	0.23	23.60			1973	86213
		1.37			77.5	3.000	1.375	NB	1.420	0.26	24.80			1973	86213
		1.37			77.5	2.000	0.999	CT	1.007	0.19	21.10	23.0/	2.4	1973	86213
T651	P	1.37	84	L-T	76.3	2.000	1.000	CT	0.963	0.18	20.30			1973	86213
		1.37			76.3	2.000	1.000	CT	0.943	0.22	22.80			1973	86213
		1.37			76.3	2.000	1.001	CT	0.950	0.18	20.50	21.2/	1.4	1973	86213
T651	P	1.37	R.T.	T-L	77.4	3.000	1.379	NB	1.526	0.12	17.00			1973	86213
		1.37			77.5	3.000	1.378	NB	1.560	0.12	16.80			1973	86213
		1.37			78.4	2.000	0.999	CT	1.024	0.12	17.50			1973	86213
		1.37			78.4	1.990	0.999	CT	0.964	0.12	17.40	17.2/	0.3	1973	86213
T651	P	1.37	84	T-L	77.4	2.000	1.002	CT	1.015	0.12	17.00			1973	86213
		1.37			77.4	2.000	1.002	CT	1.020	0.13	17.80			1973	86213
		1.37			77.4	2.000	1.001	CT	1.021	0.12	17.10	17.3/	0.4	1973	86213
T651	P	1.37	88	S-L	74.4	0.990	0.500	CT	0.506	0.11	15.30			1973	86213
		1.37			74.4	1.000	0.500	CT	0.508	0.11	15.50	15.4/	0.1	1973	86213

TABLE 7.2.2.2

ALUMINUM 2020 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T6	S	0.06	R.T.	L-T	75.9	2.000	0.062	0.622	0.890	---	30.80	32.40		41.62		1973	86213
		0.06			75.9	2.000	0.062	0.622	0.760	---	29.60	31.14		35.56		1973	86213
		0.06			75.9	2.000	0.062	0.621	0.890	---	30.40	31.91		41.08		1973	86213
		0.06			77.0	2.000	0.064	0.625	0.650	---	24.40	25.72		26.39		1973	86213
		0.06			77.0	2.000	0.064	0.625	0.680	---	25.50	26.88	29.6/ 3.1	28.41	34.6/ 7.0	1973	86213
T6	S	0.06	R.T.	L-T	75.9	3.000	0.061	1.070	1.140	---	21.10	29.72		31.05		1973	86213
		0.06			75.9	3.000	0.062	1.100	1.140	---	19.90	28.56	29.1/ 0.8	29.28	30.2/ 1.3	1973	86213
T6	S	0.06	R.T.	L-T	76.9	15.800	0.063	3.000	3.480	---	17.00	37.75		40.98		1973	86213
		0.06			76.9	15.810	0.063	6.010	6.010	---	10.20	34.46		34.46		1973	86213
		0.06			76.9	15.810	0.063	3.020	3.020	---	16.60	36.99		36.99		1973	86213
		0.06			76.9	15.820	0.063	1.020	1.020	---	27.80	35.28	36.1/ 1.5	35.28	36.9/ 2.9	1973	86213
T6	S	0.06	R.T.	T-L	75.8	2.000	0.062	0.622	0.870	---	26.60	27.98		35.31		1973	86213
		0.06			75.8	2.000	0.062	0.622	0.880	---	27.20	28.61		36.43		1973	86213
		0.06			75.8	2.000	0.062	0.624	0.870	---	25.60	26.98		33.98		1973	86213
		0.06			76.0	2.000	0.064	0.625	0.660	---	21.70	22.87		23.71		1973	86213
		0.06			76.0	2.000	0.064	0.625	0.625	---	21.70	22.87	25.9/ 2.8	22.87	30.5/ 6.6	1973	86213
T6	S	0.06	R.T.	T-L	75.8	3.000	0.061	1.190	1.240	---	17.40	26.40		27.21		1973	86213
		0.06			75.8	3.000	0.062	1.070	1.120	---	19.50	27.47	26.9/ 0.8	28.34	27.8/ 0.8	1973	86213
T6	S	0.06	R.T.	T-L	75.6	15.810	0.063	6.000	6.000	---	9.30	31.39		31.39		1973	86213
		0.06			75.6	15.810	0.063	3.010	3.010	---	16.10	35.81		35.81		1973	86213
		0.06			75.6	15.820	0.063	1.020	1.020	---	28.00	35.53		35.53		1973	86213
		0.06			75.6	15.820	0.063	4.010	4.010	---	13.80	36.07		36.07		1973	86213
		0.06			75.6	15.820	0.063	6.000	6.000	---	10.00	33.74	34.5/ 2.0	33.74	34.5/ 2.0	1973	86213
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T651	S	0.12	R.T.	L-T	76.1	3.000	0.127	1.060	1.310	---	25.50	35.69		41.58		1973	86213
		0.12			76.1	3.000	0.127	1.080	1.300	---	25.80	36.57		41.82		1973	86213
		0.12			76.1	3.000	0.127	1.070	1.400	---	27.30	38.45		46.96		1973	86213

TABLE 7.2.2.2 (Con't)

ALUMINUM 2020 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV MEAN	K(C) (KSI*SQRT IN)	K(C) STAN DEV MEAN	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T651	S	0.12	R.T.	L-T	76.1	3.000	0.127	1.060	1.270	---	25.80	36.11		41.08		1973	86213
		0.12			76.3	3.000	0.127	1.100	1.400	---	25.20	36.17		43.35		1973	86213
		0.12			76.3	3.000	0.127	1.070	1.260	---	24.20	34.09		38.30		1973	86213
		0.12			76.3	3.000	0.127	1.090	1.320	---	23.00	32.81		37.73		1973	86213
		0.12			76.3	3.000	0.127	1.060	1.320	---	27.40	38.35		44.95		1973	86213
		0.12			77.5	3.000	0.127	1.070	1.390	---	23.90	33.66		40.87		1973	86213
		0.12			77.5	3.000	0.127	1.060	1.270	---	24.30	34.01		38.69		1973	86213
		0.12			77.5	3.000	0.127	1.080	1.380	---	24.00	34.02		40.80		1973	86213
		0.12			77.5	3.000	0.127	1.070	1.360	---	23.80	33.52	35.3/ 1.9	39.98	41.3/ 2.7	1973	86213
T651	P	0.25	R.T.	L-T	77.4	3.000	0.256	1.200	1.490	---	14.50	22.13		26.31		1973	86213
		0.25			77.4	3.000	0.256	1.170	1.420	---	15.00	22.48		26.11		1973	86213
		0.25			77.4	3.000	0.255	1.000	1.310	---	16.40	22.09	22.2/ 0.2	26.74	26.4/ 0.3	1973	86213
T651	P	0.25	R.T.	L-T	77.4	4.000	0.256	1.330	1.700	---	14.60	22.67		26.92		1973	86213
		0.25			77.4	4.000	0.256	1.330	1.330	---	14.70	22.82		22.82		1973	86213
		0.25			77.4	4.000	0.256	1.480	1.660	---	12.70	21.18	22.2/ 0.9	23.00	24.2/ 2.3	1973	86213
T651	P	1.00	R.T.	L-T	76.1	20.000	1.000	7.000	8.600	---	7.60	27.29		31.62		1973	86213
		1.00			76.1	20.000	1.000	7.000	10.050	---	7.00	25.14		33.14		1973	86213
		1.00			76.1	20.000	1.000	7.000	9.040	---	7.50	26.93		32.45		1973	86213
		1.00			76.1	20.000	1.000	7.000	9.080	---	7.50	26.93		32.57		1973	86213
		1.00			76.3	20.000	1.000	7.000	7.600	---	7.50	26.93		28.49		1973	86213
		1.00			76.3	20.000	1.000	7.000	8.850	---	7.60	27.29		32.33		1973	86213
		1.00			76.3	20.000	1.000	7.000	8.500	---	7.50	26.93		30.92		1973	86213
		1.00			76.3	20.000	1.000	7.000	8.400	---	7.60	27.29		31.06		1973	86213
		1.00			77.5	20.000	1.000	7.000	8.450	---	6.90	24.78		28.32		1973	86213
		1.00			77.5	20.000	1.000	7.000	8.500	---	7.30	26.21		30.10		1973	86213
		1.00			77.5	20.000	1.000	7.000	7.910	---	6.30	22.62	26.2/ 1.5	24.63	30.5/ 2.5	1973	86213
T651	S	0.12	R.T.	T-L	77.4	3.000	0.127	1.100	1.280	---	14.50	20.81		23.23		1973	86213
		0.12			77.4	3.000	0.126	1.090	1.280	---	15.70	22.39		25.15		1973	86213
		0.12			77.4	3.000	0.126	1.100	1.140	---	15.90	22.82		23.40		1973	86213
		0.12			77.4	3.000	0.128	1.100	1.280	---	14.80	21.24		23.71		1973	86213
		0.12			77.5	3.000	0.127	1.080	1.180	---	15.70	22.25		23.67		1973	86213
		0.12			77.5	3.000	0.127	1.080	1.350	---	17.10	24.24		28.56		1973	86213

TABLE 7.2.2.2 (Con't)

ALUMINUM 2020 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T651	S	0.12	R.T.	T-L	77.5	3.000	0.127	1.090	1.170	---	17.00	24.25		25.48		1973	86213
		0.12			77.5	3.000	0.126	1.080	1.110	---	15.90	22.54		22.97		1973	86213
		0.12			78.4	3.000	0.127	1.070	1.150	---	14.60	20.57		21.62		1973	86213
		0.12			78.4	3.000	0.127	1.090	1.090	---	14.60	20.83		20.83		1973	86213
		0.12			78.4	3.000	0.127	1.080	1.320	---	14.90	21.12		24.44		1973	86213
		0.12			78.4	3.000	0.127	1.090	1.100	---	13.30	18.97	21.8/ 1.5	19.09	23.5/ 2.4	1973	86213
T651	P	0.25	R.T.	T-L	78.0	3.000	0.256	1.120	1.140	---	10.70	15.55		15.74		1973	86213
		0.25			78.0	3.000	0.256	1.000	1.000	---	15.00	20.20		20.20		1973	86213
		0.25			78.0	3.000	0.256	1.140	1.140	---	10.70	15.74	17.2/ 2.6	15.74	17.2/ 2.6	1973	86213
T651	P	0.25	R.T.	T-L	78.0	4.000	0.256	1.330	1.330	---	13.50	20.96		20.96		1973	86213
		0.25			78.0	4.000	0.257	1.330	1.330	---	13.40	20.80	20.9/ 0.1	20.80	20.9/ 0.1	1973	86213
T651	P	1.00	R.T.	T-L	77.4	20.000	1.000	7.000	7.000	---	5.40	19.39		19.39		1973	86213
		1.00			77.4	20.000	1.000	7.000	7.000	---	5.60	20.11		20.11		1973	86213
		1.00			77.4	20.000	1.000	7.000	7.000	---	5.90	21.19		21.19		1973	86213
		1.00			77.4	20.000	1.000	7.000	7.000	---	5.60	20.11		20.11		1973	86213
		1.00			77.5	20.000	1.000	7.000	7.000	---	5.40	19.39		19.39		1973	86213
		1.00			77.5	20.000	1.000	7.000	7.000	---	5.40	19.39		19.39		1973	86213
		1.00			77.5	20.000	1.000	7.000	7.000	---	5.40	19.39		19.39		1973	86213
		1.00			77.5	20.000	1.000	7.000	7.000	---	5.50	19.75		19.75		1973	86213
		1.00			78.4	20.000	1.000	7.000	7.000	---	5.20	18.67		18.67		1973	86213
		1.00			78.4	20.000	1.000	7.000	7.000	---	5.30	19.03		19.03		1973	86213
		1.00			78.4	20.000	1.000	7.000	7.000	---	5.10	18.31		18.31		1973	86213
		1.00			78.4	20.000	1.000	7.000	7.000	---	5.10	18.31	19.4/ 0.8	18.31	19.4/ 0.8	1973	86213

TABLE 7.2.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.2.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2020
CONDITION: T6

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. LAB AIR			
DELTA K MIN	A:	16.10	29.5			
	B:					
	C:					
	D:					
		20.00	104.			
DELTA K MAX	A:	24.15	415.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 27.51

LIFE PREDICTION RATIO SUMMARY (NP/NA)			
	0.0-0.5		
	0.5-0.8	2	
	0.8-1.25	2	
	1.25-2.0		
	>2.0		

CONDITION/HT: T6
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.00
FREQUENCY: 13.30

YIELD STRENGTH: 78.4 KSI
ULT. STRENGTH: 84.7 KSI
SPECIMEN THK: 0.125- 0.126"
SPECIMEN WIDTH: 4.000"
REFERENCES: 86213

ALUM. ALLOY

2020

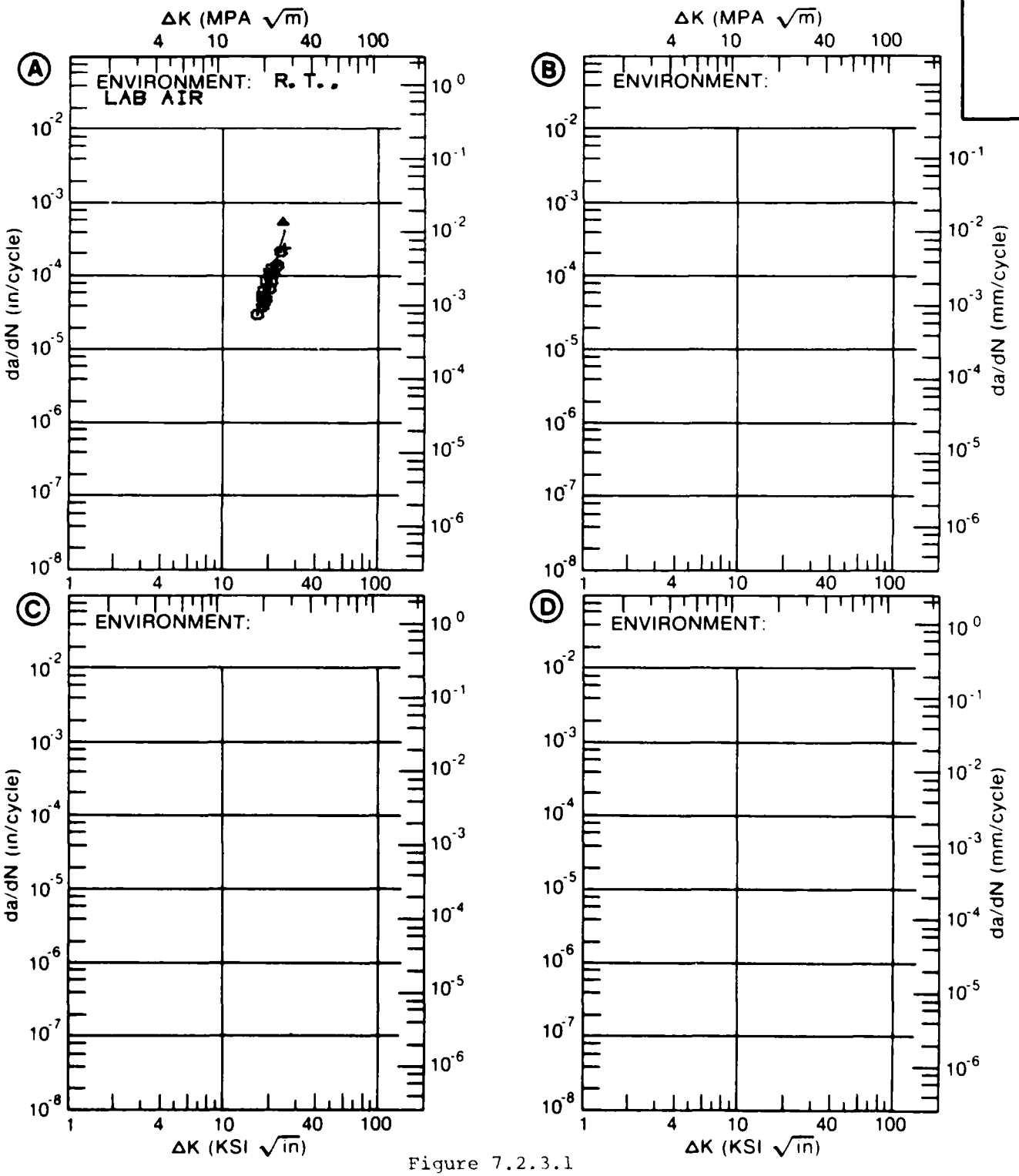


Figure 7.2.3.1

TABLE 7.2.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.2.3.2 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2020
CONDITION: T651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R. T. H. H. A.	E= R. T. H. H. A. - 25HZ		
DELTA K MIN	A:	3.15	.0956			
	B:	3.72		.157		
	C:					
	D:					
		3.50	.205			
		4.00	.352	.203		
		5.00		.396		
		6.00		.704		
		7.00		1.25		
		8.00		2.12		
		9.00		3.33		
		10.00		4.61		
		13.00		9.17		
DELTA K MAX	A:	4.98	.574			
	B:	15.96		29.4		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			17.57	12.36		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8	1			
		0.8-1.25		1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T651
FORM: 1.28"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY:

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.248- 0.250"
SPECIMEN WIDTH: 2.500- 2.501"
REFERENCES:AL002

ALUM. ALLOY

2020

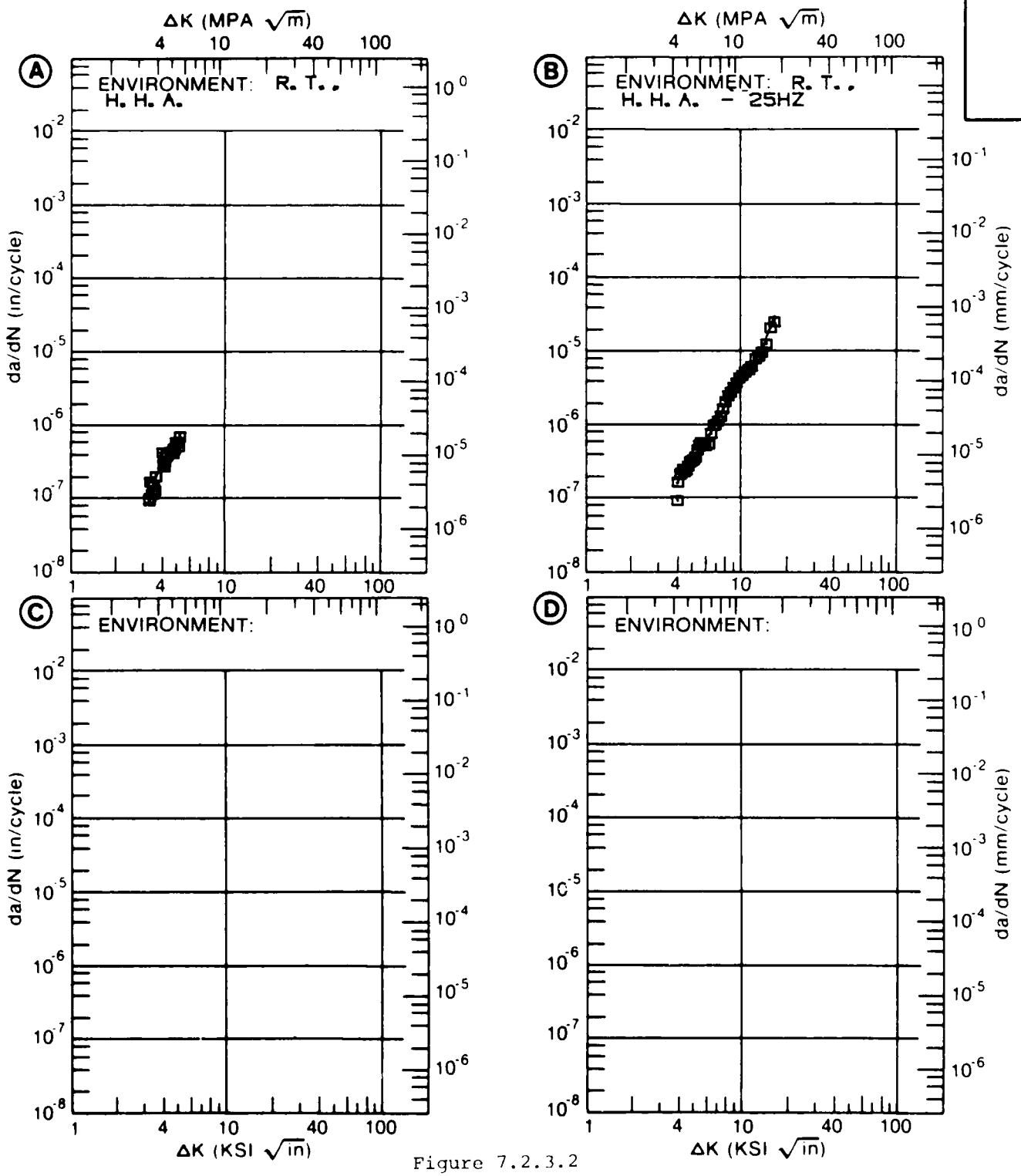


Figure 7.2.3.2

TABLE 7.2.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.2.3.3 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2020
CONDITION: T651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. H.H.A.			
DELTA K MIN	A:	2.68	.027			
	B:	0				
	C:					
	D:					
		3.00	.0598			
		3.50	.147			
		4.00	.282			
		5.00	.706			
		6.00	1.42			
		7.00	2.67			
		8.00	4.99			
		9.00	9.49			
		10.00	18.5			
DELTA K MAX	A:	11.13	40.8			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 43.54

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
0.0-0.5	
0.5-0.8	1
0.8-1.25	
1.25-2.0	
>2.0	

CONDITION/HT: T651
FORM: 1.28"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 25.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.248"
SPECIMEN WIDTH: 2.500"
REFERENCES: AL002

ALUM. ALLOY

2020

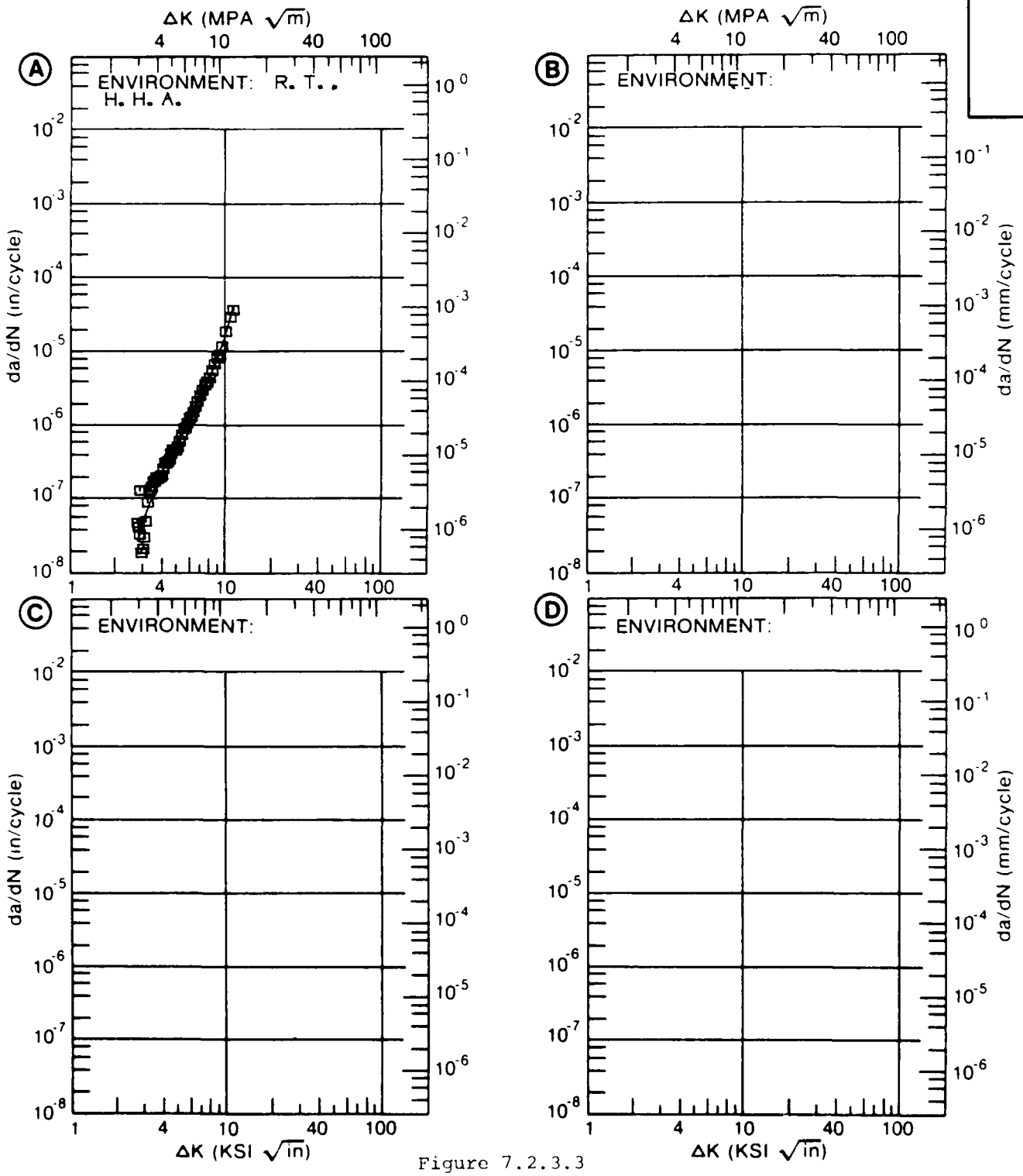


Figure 7.2.3.3

TABLE 7.2.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.2.3.4 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2020
CONDITION: T651
ENVIRONMENT: R.T., LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=-0.50	R=+0.00		
DELTA K MIN	A: 5.76	.549			
	B: 5.25		.0908		
	C:				
	D:				
	6.00	.580	.254		
	7.00	.840	.672		
	8.00	1.35	1.35		
	9.00	2.16	2.28		
	10.00	3.33	3.45		
	13.00	9.63	8.55		
	16.00	21.1	17.4		
DELTA K MAX	A: 18.95	64.6			
	B: 16.95		21.5		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		36.60	32.02		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8	1	1		
	0.8-1.25	2	3		
	1.25-2.0	1	1		
	>2.0				

CONDITION/HT: T651
FORM: 1.38"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 5.20
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 76.2 KSI
ULT. STRENGTH: 81.7 KSI
SPECIMEN THK: 0.748- 0.754"
SPECIMEN WIDTH: 2.997- 3.003"
REFERENCES:86213

ALUM. ALLOY

2020

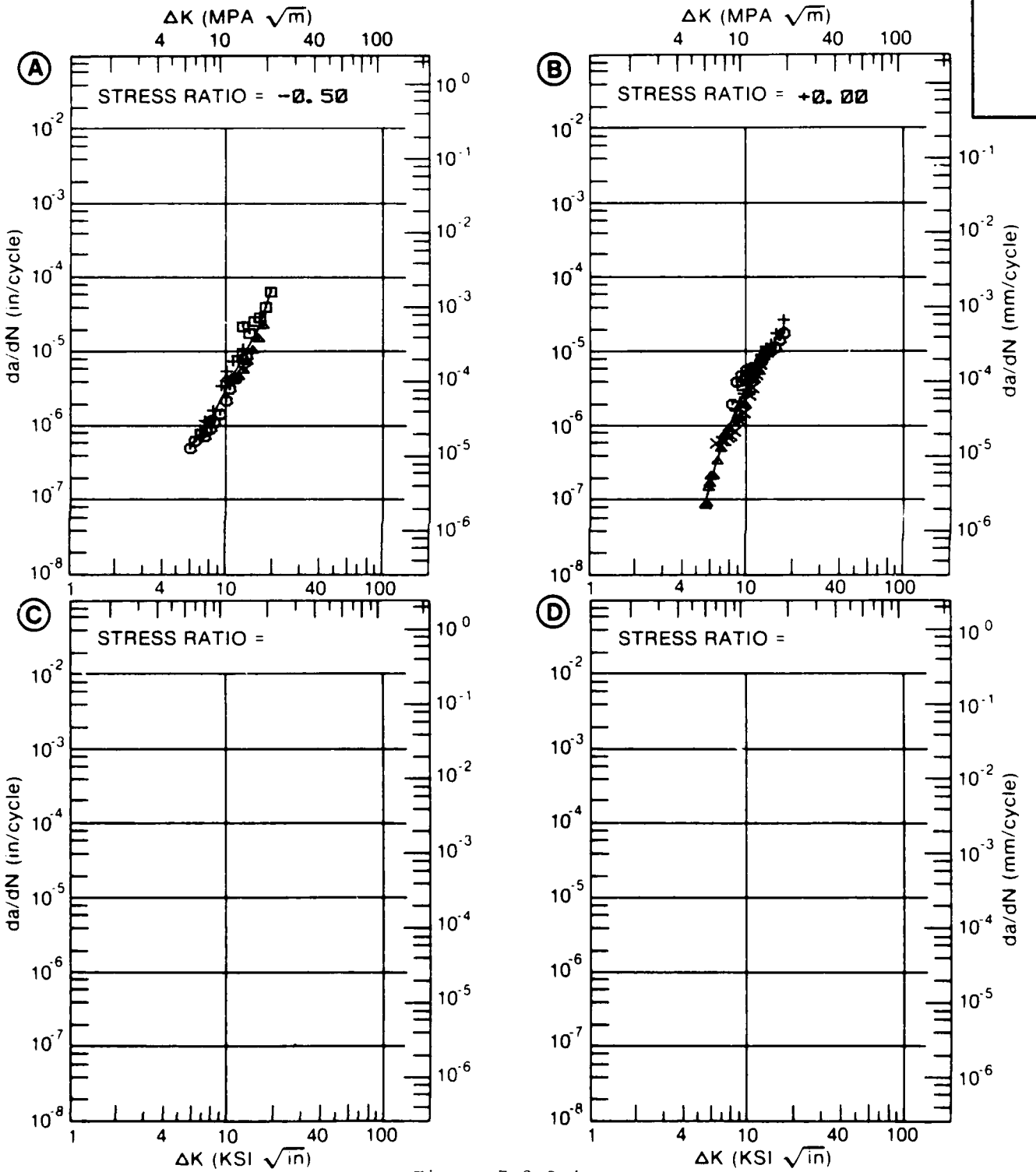


Figure 7.2.3.4

TABLE 7.2.3.5

ALUMINUM 2020 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	SPECIMEN DESIGN (*=SG)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T651	P	1.00	R.T.	S-L	60.0	3.5 PCT NACL	4.000	1.000	DCB	----	13.00	9.00			----	1968	84331

TABLE 7.3.2.1

ALUMINUM 2020 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	S	0.06	R.T.	L-T	68.0	15.800	0.062	4.000	4.130	---	13.30	34.72			35.38			1973	86213
		0.06			68.0	15.800	0.062	3.990	----	---	14.10	36.76			----			1973	86213
		0.06			68.0	15.800	0.063	3.990	4.090	---	12.40	32.32	34.6/	2.2	32.80	34.1/	1.8	1973	86213
T6	S	0.12	R.T.	L-T	68.6	2.970	0.123	0.990	1.570	---	24.00	32.16			45.89			1973	86213
		0.12			68.6	2.970	0.123	0.985	1.550	---	23.10	30.83			43.63			1973	86213
		0.12			68.6	2.980	0.122	0.988	1.350	---	23.10	30.90			38.65			1973	86213
		0.12			68.6	3.000	0.122	1.100	1.410	---	22.50	32.30			38.94			1973	86213
		0.12			68.6	3.000	0.122	1.290	1.610	---	20.20	32.55			39.39			1973	86213
		0.12			68.6	3.000	0.123	1.000	1.260	---	24.50	33.00			38.78			1973	86213
		0.12			68.6	3.000	0.123	1.000	1.250	---	23.00	30.98	31.8/	0.9	36.18	40.2/	3.3	1973	86213
T6	S	0.06	R.T.	T-L	67.2	15.800	0.064	4.020	----	---	12.10	31.68			----			1973	86213
		0.06			67.2	15.820	0.064	4.010	4.400	---	12.60	32.94			34.80			1973	86213
		0.06			67.2	15.820	0.064	4.000	4.200	---	12.30	32.11	32.2/	0.6	33.04	33.9/	1.2	1973	86213
T6	S	0.12	R.T.	T-L	68.4	2.960	0.122	0.993	1.540	---	18.90	25.37			35.54			1973	86213
		0.12			68.4	2.970	0.122	0.997	1.540	---	17.90	24.08			33.61			1973	86213
		0.12			68.4	2.970	0.122	0.989	1.500	---	18.10	24.22			33.17			1973	86213
		0.12			68.4	2.970	0.122	0.983	1.500	---	19.10	25.46			35.01			1973	86213
		0.12			68.4	3.000	0.123	1.000	----	---	18.40	24.78			----			1973	86213
		0.12			68.4	3.000	0.121	1.100	1.380	---	15.90	22.82			27.03			1973	86213
		0.12			68.4	3.000	0.123	1.000	1.000	---	18.00	24.24			24.24			1973	86213
		0.12			68.4	3.000	0.122	1.110	1.310	---	15.00	21.67	24.1/	1.3	24.46	30.4/	5.0	1973	86213

TABLE 7.4.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2021 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN))	(NUMBER OF SPECIMENS)

PLATE

CONDITION/HT	L-T	T-L	S-L
T81	27.0 ± 0.5 (3)	-----	-----
T81 REPAIR WELD + AGE WITH 2319 FILLER WIRE	-----	15.8 ± 0.7 (6)	-----
T81 WELD + AGE WITH 2319 FILLER WIRE	-----	19.4 ± 2.7 (9)	-----

TABLE 7.4.2.1

ALUMINUM 2021 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T81	P	1.00	R.T.	L-T	61.2	1.990	0.996	CT	0.937	0.47	26.60			1972	84363
		1.00			61.2	2.000	0.995	CT	0.933	0.50	27.50			1972	84363
		1.00			61.2	2.000	0.993	CT	0.961	0.48	26.80	27.0/	0.5	1972	84363
T81 REPAIR WELD + AGE WITH 2319 FILLER WIRE	P	1.00	R.T.	T-L	----	2.000	1.000	CT	1.000	0.15	15.90			1970	80073
		1.00			----	2.000	1.000	CT	1.010	0.14	15.20			1970	80073
		1.00			----	2.000	1.000	CT	0.990	0.14	15.20			1970	80073
		1.00			----	2.000	1.000	CT	1.030	0.16	16.00			1970	80073
		1.00			----	2.000	1.000	CT	1.040	0.14	15.20			1970	80073
		1.00			----	2.000	1.000	CT	1.020	0.18	17.00	15.8/	0.7	1970	80073
T81 WELD + AGE WITH 2319 FILLER WIRE	P	1.00	R.T.	T-L	----	2.000	1.000	CT	1.040	0.19	17.60			1970	80073
		1.00			----	2.000	1.000	CT	1.030	0.20	18.40			1970	80073
		1.00			----	2.000	1.000	CT	0.990	0.16	16.40			1970	80073
		1.00			----	2.000	1.000	CT	1.020	0.32	22.90			1970	80073
		1.00			----	2.000	1.000	CT	1.080	0.22	18.90			1970	80073
		1.00			----	2.000	1.000	CT	1.050	0.33	23.20			1970	80073
		1.00			----	2.000	1.000	CT	1.040	0.18	17.20			1970	80073
		1.00			----	2.000	1.000	CT	1.010	0.31	22.60			1970	80073
		1.00			----	2.000	1.000	CT	1.040	0.19	17.50	19.4/	2.7	1970	80073
T8151	P	1.00	84	L-T	64.8	1.500	0.749	CT	0.706	0.32	23.10			1973	86213
		1.00			64.8	1.500	0.749	CT	0.714	0.29	22.00	22.6/	0.8	1973	86213
T8151	P	1.00	84	T-L	63.4	1.500	0.751	CT	0.726	0.23	19.10			1973	86213

TABLE 7.4.3.1

ALUMINUM 2021 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SC)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T81	P	2.50	R.T.	S-L	59.1	INDUSTRIAL ATM	2.000	1.000	CT	----	19.60	19.00			----	1973	86688
T81	P	2.50	R.T	S-L	59.1	SALT-DICHROMATE-ACETATE	2.000	1.000	CT	----	19.60	19.00			----	1973	86688
T81	P	2.50	R.T.	S-L	59.1	SEACOAST ATM	2.000	1.000	CT	----	19.60	19.00			----	1973	86688
T81 OVERHEATED WELD	P	1.00	R.T.	S-L	18.3	3.5 PCT NACL	2.500	1.000	WOL	----	14.00	11.30		>	4320	1970	80073
T81 REPAIRED WELD AGED 16HR 325F FUSION LINE	P	1.00	R.T.	S-L	24.7	3.5 PCT NACL	2.500	1.000	WOL	----	14.00	7.70		>	4320	1970	80073
T81 REPAIRED WELD AGED 16HR 325F CENTER LINE	P	1.00	R.T.	S-L	24.7	3.5 PCT NACL	2.500	1.000	WOL	----	14.00	> 10.30		>	4320	1970	80073
T81 REPAIRED WELD AGED 16HR 325F HEAT AFFECTED ZONE	P	1.00	R.T.	S-L	28.0	3.5 PCT NACL	2.500	1.000	WOL	----	14.00	11.90		>	4320	1970	80073
T81 WELDED AGED 16HR 325F HEAT AFFECTED ZONE	P	1.00	R.T.	S-L	25.0	3.5 PCT NACL	2.500	1.000	WOL	----	14.00	13.30		>	4560	1970	80073
T81 WELDED AGED 16HR 325F WELD CENTER LINE	P	1.00	R.T.	S-L	23.4	3.5 PCT NACL	2.500	1.000	WOL	----	17.00	7.20		>	4320	1970	80073
T81 WELDED AGED 16HR 325F FUSION LINE	P	1.00	R.T.	S-L	23.4	3.5 PCT NACL	2.500	1.000	WOL	----	17.00	8.50		>	4320	1970	80073

TABLE 7.5.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2024 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN)) (NUMBER OF SPECIMENS)		
PLATE			
CONDITION/HT	L-T	T-L	S-L
T351	35.0 ± 7.1 (2)	-----	-----
T851	23.3 ± 2.4 (65)	20.7 ± 1.9 (63)	-----
FORGING			
CONDITION/HT	L-T	T-L	S-L
T852	29.2 ± 5.2 (24)	18.9 ± 2.6 (16)	15.9 ± 0.8 (8)
EXTRUSION			
CONDITION/HT	L-T	T-L	S-L
T351	-----	25.0 ± 0.9 (5)	-----
T3511	38.0 ± 2.6 (4)	-----	-----
T8510	30.4 ± 2.7 (3)	16.5 ± 1.0 (3)	15.7 ± 1.4 (3)
T8511	24.1 ± 0.4 (2)	16.0 ± 0.0 (2)	-----

TABLE 7.5.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-S

ENVIRONMENT H H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.10	20.00			0.50				
T851	PLATE	0.10	30.00			0.34				
T851	PLATE	0.10	20.00				5.84			

TABEL 7.5.1.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT DRY AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T81	SHEET	-0 25	6 00				4 17	46 1		
T81	SHEET	0 10	6 00				5 65	52 2		
T81	SHEET	0 30	6 00				10 2	66 4		
T81	SHEET	0 50	6 00			1 26	14 8	288		

TABLE 7.5.1.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT L H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T81	SHEET	0 08	1 00				5 82	79 2		
T81	SHEET	0 08	6 00				4 78	71 8		
T81	SHEET	0 30	6 00				8 64	193		
T81	SHEET	0 50	6 00			1 26	17 6	686		
T851	PLATE	0 08	1 00	SPEC THK=0 50"			5 52			
T851	PLATE	0 08	1 00	SPEC THK=1 00"			7 37			
T851	PLATE	0 08	6 00	SPEC THK=1 00"			8 93			
T851	PLATE	0 30	1 00				12 9			
T852	FORGING	0 08	0 10				5 88			
T852	FORGING	0 08	1 00	SPEC THK=1 00"		1 06	9 01			
T852	FORGING	0 08	6 00	SPEC THK=0 25" -0 50"			3 72	27 4		

TABLE 7.5.1.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT AIR AT - 65 F

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T351	SHEET	0.00	---				0.36	19.7		
T351	SHEET	0.80	---				20.4			
T351	PLATE	0.00	1.00- 2.00						2098	

TABLE 7.5.1.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T ENVIRONMENT LAB AIR AIR T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T3	SHEET	0.00	13.30					28.6		
T3	SHEET	0.20	10.00			0.21	5.72	27.9		
T3	SHEET	0.33	3.33					18.8		
T3	PLATE	-1.00	20.00				9.29	70.3		
T3	PLATE	-0.50	20.00			0.14	13.2	67.2		
T3	PLATE	0.05	20.00				9.36			
T351	SHEET	0.00	3.00- 6.00				6.16	44.0		
T351	SHEET	0.40	3.00- 6.00					16.3		
T351	SHEET	0.80	3.00- 6.00				39.2			
T351	PLATE	-1.00	1.00-16.00					74.6		
T351	PLATE	-1.00	3.00- 5.00			0.27	9.44	41.3		
T351	PLATE	-0.50	3.00- 5.00			0.25	7.67	47.2		
T351	PLATE	0.00	1.00-16.00						23.24	
T351	PLATE	0.00	5.00-20.00			0.15				
T351	PLATE	0.01	1.00-10.00			0.20	7.09	39.8		
T351	PLATE	0.01	20.00				5.98	52.1		

TABLE 7.5.1.6 (Con't)

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT LAB AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T351	PLATE	0.10	3.00					55.0		
T351	PLATE	0.10	20.00				8.62			
T351	PLATE	0.30	20.00				10.4			
T351	PLATE	0.33	25.00				7.88			
T351	PLATE	0.40	1.00-10.00			0.70	11.7			
T351	PLATE	0.40	1.00-16.00					232		
T351	PLATE	0.40	5.00-20.00			0.47				
T351	PLATE	0.50	20.00				13.1			
T351	PLATE	0.60	1.00-10.00			0.88	13.8			
T351	PLATE	0.60	20.00				14.4			
T351	PLATE	0.80	1.00-16.00	SPEC THK=0.189-0.250"			40.9			
T351	PLATE	0.80	5.00-20.00	SPEC THK=0.250"			1.41			
T351	PLATE	0.80	1.00-10.00			1.71	33.2			
T3511	EXTRUSION	0.05	9.00			129				
T3511	EXTRUSION	0.50	9.00		0818					

TABLE 7.5.1.6 (Con't)

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT LAB AIR AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T42	PLATE	-1.00	10.00				5.41	44.3	2809	
T42	PLATE	0.02	10.00				4.25	23.6	1131	
T42	PLATE	0.50	10.00			424	7.89	42.5		
T81	SHEET	0.05	2.00					68.1		
T81	SHEET	0.40	2.00					106		
T851	PLATE	0.02	1.00-10.00				3.90	57.0		

TABLE 7.5.1.7

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT AIR AT 200 F

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T351	PLATE	0.01	20.00				.92			
T351	PLATE	0.10	20.00				8.70			
T351	PLATE	0.30	20.00				10.8			
T351	PLATE	0.50	20.00				13.5			
T351	PLATE	0.60	20.00				14.3			

TABLE 7.5.1.8

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT AIR AT 300 F

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T351	PLATE	0.01	20.00				7.43			
T351	PLATE	0.10	20.00				9.35			
T351	PLATE	0.30	20.00				12.3			
T351	PLATE	0.50	20.00				13.6			
T351	PLATE	0.60	20.00				15.6			

TABLE 7.5.1.9

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT AIR AT 400 F

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T351	PLATE	0.01	20.00				6.89			
T351	PLATE	0.10	20.00				10.6			
T351	PLATE	0.30	20.00				12.4			
T351	PLATE	0.50	20.00			1.47	14.6			
T351	PLATE	0.60	20.00			1.56	17.6			

TABLE 7.5.1.10

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT H H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T3	SHEET	0 05	2 00					35 3		
T351	SHEET	0 00	9 00				4 09			
T351	PLATE	0 33	25 00			0 35	10 8	96 4		
T351	PLATE	0 33	25 00			1 10	17 0			
T351	SHEET	0 70	9 00			0 63	8 42			
T3511	EXTRUSION	0 05	9 00			0 06	7 05			
T3511	EXTRUSION	0 50	9 00			0 43	8 35	62 3		
T3511	EXTRUSION	0 50	9 00		0 05					
T62	SHEET	0 10	1 00			0 31	4 68			
T62	SHEET	0 30	1 00			0 46	10 1	96 4		

TABLE 7.5.1.10 (Con't)

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT H H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T81	SHEET	-0.25	1.00			0.28	6.45	51.3		
T81	SHEET	0.10	0.10				43.9			
T81	SHEET	0.10	1.00				8.15	70.1		
T81	SHEET	0.30	1.00			1.04	15.2			
T81	SHEET	0.50	1.00			1.50	17.2			
T851	PLATE	0.33	25.00			0.92	12.2			

TABLE 7.5.1.11

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT J P 4 AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T81	SHEET	0 08	1 00				7 53	72 0		
T851	PLATE	0 08	1 00				8 55	108		

TABLE 7.5.1.12

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT S T W AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T351	SHEET	0.00	1.00-10.00				3.21			
T351	SHEET	0.33	1.00-10.00					113		
T62	SHEET	0.10	1.00			0.77	7.61			
T62	SHEET	0.50	1.00		0.13	1.43				
T62	SHEET	0.70	1.00			2.05				
T81	SHEET	-0.20	1.00			0.74	11.2			
T81	SHEET	0.08	1.00				8.00	94.0		
T81	SHEET	0.10	1.00			0.36	8.25			
T851	PLATE	0.08	1.00				7.92	112		

TABLE 7.5.1.13

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT H.H.A. AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.10	20.00			0.57	4.87			
T851	PLATE	0.10	20.00			0.63	5.24			
T851	PLATE	0.50	2.00			0.99	11.7			
T851	PLATE	0.50	20.00		0.07	1.13	6.47			

TABLE 7.5.1.14

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION T-S

ENVIRONMENT 3.5% NACL AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.10	20.00			1.18	5.81			
T851	PLATE	0.10	20.00				6.73			
T851	PLATE	0.10	20.00				5.92			
T851	PLATE	0.50	20.00				10.7	265		
T851	PLATE	0.50	20.00			0.96	10.0			

TABLE 7.5.1.15

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT DRY AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T62	SHEET	0.10	6.00			0.81	11.3			
T62	SHEET	0.30	6.00			0.71	11.3			
T62	SHEET	0.50	6.00		0.04	0.94	13.1			
T81	SHEET	-0.25	6.00				0.81	48.3		
T81	SHEET	0.10	6.00				3.51			

TABLE 7.5.1.16

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: L H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T81	SHEET	0 08	1 00- 6 00			0 73	4 29	72 8		
T851	PLATE	0 08	1 00				5 90			
T851	PLATE	0 08	6 00				5 45			

TABLE 7.5.1.17

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION T-L ENVIRONMENT LAB AIR AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T3	SHEET	0.00	13.30				3.32	21.6		
T3	SHEET	0.05	30.00			0.25				
T3	SHEET	0.33	13.30				2.07	62.6		
T3	SHEET	0.40	30.00			0.94				
T3	SHEET	0.60	30.00			1.22				
T85	FORGING	0.33	5.17				5.59			
T851	SHEET	0.08	0.10-15.00			0.71	5.10	595		
T851	SHEET	0.10	0.10- .40					696		
T851	SHEET	0.10	1.00-10.00					642		
T861	SHEET	0.10	2.00- 9.00				0.00	100		
T851	SHEET	0.10	10.00-13.00			0.99	2.91			
T861	SHEET	0.10	10.00-20.00			1.05	10.0			
T851	SHEET	0.40	10.00-15.00			1.23	11.5			
T861	PLATE	0.10	1.00- 5.00					127		
T861	PLATE	0.10	10.00				6.91			

TABLE 7.5.1.18

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT AIR
AT 140 F

SPECIMEN	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	20	50	100
SHEET		0.43	5.00-10.00		0.79	3.43			
SHEET		0.70	5.00-10.00		1.77	7.7			

TABLE 7.5.1.19

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: H H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2.5	5	10	20	50	100
T62	SHEET	0.30	1.00			0.78	11.7			
T62	SHEET	0.50	1.00		0.12	1.26	14.5			
T81	SHEET	-0.25	1.00				4.89	64.7		
T81	SHEET	0.10	1.00				6.37	129		
T81	SHEET	0.50	1.00			1.44	22.2			
T851	PLATE	0.10	20.00				7.38	71.4		
T851	PLATE	0.10	20.00			0.50	9.04			
T851	PLATE	0.50	20.00		0.17	1.31	17.2			

TABLE 7.5.1.20

FATIQUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT 3.5% NACL AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ. (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIQUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.10	0.10-10.00				18.2			
T851	PLATE	0.10	20.00			1.47	11.1	126		
T851	PLATE	0.10	20.00			0.91	9.93			
T851	PLATE	0.50	20.00		0.21	2.28	22.4			

TABLE 7.5.1.21

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2024

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: S T W AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2.5	5	10	20	50	100
T62	SHEET	-0.25	1.00			0.86	4.87			
T62	SHEET	0.10	1.00			0.69	9.87			
T62	SHEET	0.30	1.00			1.24	17.0			
T62	SHEET	0.50	1.00		0.15	2.83	25.7			
T81	SHEET	0.08	1.00- 6.00				6.90	96.3		
T81	SHEET	0.10	1.00			0.39	7.27	101		
T852	FORGING	0.08	1.00				5.19			

TABLE 7.5.2.1

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T351	P	2.50	R.T.	L-T	53.8	2.000	1.000	CT	0.995	0.78	30.00			1973	86213
		3.00			54.5	4.000	2.000	NB	----	----	40.00	35.0/	7.1	1972	82878
T351	P	2.50	85	L-T	55.9	2.000	1.000	CT	1.032	0.63	28.10			1973	86213
		2.50			55.9	2.000	1.000	CT	1.001	0.60	27.40	27.8/	0.5	1973	86213
T351	P	2.00	R.T.	T-L	43.8	4.010	2.000	CT	2.147	1.51	34.00			1973	86213
T351	P	1.00	84	T-L	49.0	1.500	0.749	CT	0.749	0.72	26.30			1973	86213
		1.00			49.0	1.500	0.750	CT	0.755	0.74	26.60	26.5/	0.2	1973	86213
T351	P	3.00	R.T.	S-T	64.0	2.500	1.250	CT	----	0.30	22.00			1974	90011
		3.00			64.0	2.500	1.250	CT	----	0.27	21.00			1974	90011
		3.00			64.0	2.500	1.250	CT	----	0.27	21.00	21.3/	0.6	1974	90011
T351	P	2.50	85	S-L	44.8	2.000	0.999	CT	0.928	0.59	21.80			1973	86213
T351	P	2.50	90	S-L	42.4	2.040	1.000	CT	1.021	0.50	18.90			1973	86213
T351	E	3.00	R.T.	T-L	41.8	2.990	1.498	CT	1.561	0.92	25.30			1973	86213
		3.00			41.8	2.990	1.498	CT	1.555	0.93	25.50			1973	86213
		5.00			43.4	2.990	1.500	CT	1.558	0.73	23.40			1973	86213
		3.00			43.5	3.000	1.500	CT	1.579	0.83	25.10			1973	86213
		3.00			43.5	3.000	1.499	CT	1.562	0.86	25.50	25.0/	0.9	1973	86213
T351	E	3.50	82	T-L	38.7	2.000	1.000	CT	1.048	0.95	23.80			1973	86213
		5.00			41.1	3.000	1.498	CT	1.528	0.88	24.40			1973	86213
		5.00			41.1	3.000	1.499	CT	1.514	0.85	24.00	24.1/	0.3	1973	86213
T351	E	3.00	82	S-L	41.7	2.000	0.999	CT	1.017	0.72	22.40			1973	86213
		3.00			41.7	2.000	1.000	CT	1.012	0.63	21.00			1973	86213
		3.00			42.8	2.000	1.000	CT	0.988	0.73	23.20			1973	86213
		3.00			42.8	2.000	1.000	CT	1.007	0.75	23.50	22.5/	1.1	1973	86213
T351	FB	3.50	82	T-L	41.5	2.000	0.999	CT	1.050	0.94	25.50			1973	86213
		3.50			41.5	2.000	1.000	CT	1.045	0.92	25.20			1973	86213
		5.00			44.5	3.000	1.500	CT	1.594	0.75	24.40			1973	86213
		5.00			44.5	3.000	1.500	CT	1.506	0.80	25.10			1973	86213
		3.00			45.7	3.000	1.500	CT	1.504	0.63	23.00			1973	86213

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T351	FB	3.00	82	T-L	45.7	3.000	1.500	CT	1.480	0.69	24.00	24.5/	0.9	1973	B6213
T351	FB	3.00	82	S-L	42.1	1.990	1.002	CT	0.963	0.75	23.00			1973	B6213
		3.00			42.1	1.990	1.001	CT	0.970	0.73	22.70	22.9/	0.2	1973	B6213
T3511	E	----	R.T.	L-T	61.2	----	1.200	--	----	1.06	39.90			1978	BW007
		----			61.2	----	1.200	--	----	1.03	39.30			1978	BW007
		----			61.2	----	1.200	--	----	0.98	38.40			1978	BW007
		----			61.2	----	1.200	--	----	0.78	34.20	38.0/	2.6	1978	BW007
T851	P	3.00	- 65	L-S	64.4	1.500	0.750	CT	0.750	0.55	30.30			1972	B3243
		3.00			64.4	1.500	0.750	CT	0.750	0.59	31.40			1972	B3243
		3.00			64.4	1.500	0.750	CT	0.750	0.52	29.30	30.3/	1.1	1972	B3243
T851	P	3.00	0	L-S	63.3	1.500	0.750	CT	0.750	0.63	31.70			1972	B3243
		3.00			63.3	1.500	0.750	CT	0.750	0.62	31.40	31.6/	0.2	1972	B3243
T851	P	3.00	R.T.	L-S	61.0	1.500	0.750	CT	0.750	0.69	32.20			1972	B3243
		3.00			61.0	1.500	0.750	CT	0.750	0.67	31.70			1972	B3243
		3.00			61.0	1.500	0.750	CT	0.750	0.61	30.00			1972	B3243
		1.37			66.1	1.006	0.499	CT	0.513	0.27	21.90			1978	MPC01
		1.37			66.1	[illegible]06	0.499	CT	0.493	0.28	22.90			1978	MPC01
		1.50			[illegible]	[illegible]00	0.602	CT	0.623	0.38	26.20	27.5/	4.5	1973	B6429
T851	P	1.37	86	L-S	65.9	[illegible]	0.500	CT	0.504	0.26	21.30			1973	B6213
		1.37			65.8	[illegible]	0.500	CT	0.484	0.27	21.60			1973	B6213
		1.37			65.8	[illegible]	0.500	CT	0.491	0.23	20.10	21.0/	0.8	1973	B6213
T851	P	1.37	88	L-S	66.1	1.000	0.499	CT	0.493	0.31	23.40			1973	B6213
		1.37			66.1	1.000	0.500	CT	0.513	0.29	22.40	22.9/	0.7	1973	B6213
T851	P	3.00	200	L-S	56.4	1.500	0.750	CT	0.750	0.70	29.70			1972	B3243
		3.00			56.4	1.500	0.750	CT	0.750	0.75	30.90	30.3/	0.8	1972	B3243
T851	P	3.00	- 65	L-T	66.8	1.500	0.750	CT	0.750	0.39	26.50			1972	B3243

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	3.00	- 65	L-T	66.8	1.500	0.750	CT	0.750	0.43	27.60			1972	83243
		3.00			66.8	1.500	0.750	CT	0.750	0.33	24.40	26.2/	1.6	1972	83243
T851	P	3.00	0	L-T	65.5	1.500	0.750	CT	0.750	0.37	25.20			1972	83243
		3.00			65.5	1.500	0.750	CT	0.750	0.51	29.50			1972	83243
		3.00			65.5	1.500	0.750	CT	0.750	0.45	27.90	27.5/	2.2	1972	83243
T851	P	3.20	R.T.	L-T	59.3	2.500	1.243	CT	1.206	0.25	18.70			1971	84360
		3.20			59.3	2.500	1.254	CT	1.226	0.25	18.60			1971	84360
		2.50			60.0	1.990	1.000	CT	1.005	0.40	23.90			1973	86213
		4.00			62.4	2.000	1.020	NB	----	0.39	24.60			1974	90981
		4.00			62.4	2.000	1.020	NB	----	0.38	24.40			1974	90981
		3.00			63.4	1.500	0.750	CT	0.750	0.45	26.90			1972	83243
		3.00			63.4	1.500	0.750	CT	0.750	0.47	27.30			1972	83243
		2.00			63.8	2.500	1.251	CT	1.311	0.41	25.70			1971	84360
		2.00			63.8	2.500	1.250	CT	1.303	0.40	25.50			1971	84360
		2.00			63.9	2.500	1.250	CT	1.203	0.30	22.10			1971	84360
		2.00			63.9	2.500	1.250	CT	1.207	0.30	22.30			1971	84360
		3.00			65.0	2.500	0.626	CT	1.239	0.34	23.80			1972	84306
		3.00			65.0	3.000	1.000	CT	----	0.26	21.00			1974	90011
		3.00			65.0	2.490	0.625	CT	1.259	0.27	21.30			1972	84306
		3.00			65.0	2.000	0.750	CT	----	0.37	25.00			1974	90011
		3.00			65.0	2.480	0.624	CT	1.292	0.25	20.70			1972	84306
		3.00			65.0	3.000	1.000	CT	----	0.26	21.00			1974	90011
		3.00			65.0	3.000	1.000	CT	----	0.28	22.00			1974	90011
		1.75			65.0	3.000	0.755	CT	1.500	0.32	23.40			1972	84306
		3.00			65.0	2.000	0.750	CT	----	0.34	24.00			1974	90011
		3.00			65.0	2.000	0.620	CT	----	0.50	29.00			1974	90011
		3.00			65.0	2.500	0.625	CT	1.232	0.28	21.90			1972	84306
		3.00			65.0	2.000	0.750	CT	----	0.37	25.00			1974	90011
		3.00			65.0	2.000	0.620	CT	----	0.50	29.00			1974	90011
		1.75			65.0	3.000	0.756	CT	1.515	0.31	22.90			1972	84306
		1.75			65.0	5.990	0.499	CT	3.035	0.44	27.30			1972	84306
		3.00			65.0	2.300	0.750	CT	----	0.60	32.00			1974	90011
		1.75			65.0	5.990	0.499	CT	3.064	0.46	27.80			1972	84306
		3.00			65.0	2.490	0.624	CT	1.263	0.25	20.40			1972	84306
		1.00			65.3	1.987	0.988	CT	1.093	0.32	23.70			1978	MPC01
		0.87			65.3	1.989	0.877	CT	1.074	0.28	22.50			1978	MPC01
		1.37			65.6	3.000	1.385	NB	1.480	0.37	25.20			1973	86213

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.37	R.T.	L-T	65.6	1.998	1.001	CT	1.059	0.30	23.20			1978	MPC01
		1.37			65.6	2.980	1.383	NB	1.490	0.27	22.20			1978	MPC01
		1.37			65.6	1.990	1.001	CT	0.975	0.28	22.50			1978	MPC01
		1.37			65.6	3.020	1.383	NB	1.480	0.27	21.80			1978	MPC01
		1.37			65.6	3.000	1.386	NB	1.545	0.31	23.20			1973	86213
		1.37			65.6	3.000	1.383	NB	1.500	0.31	23.20			1973	86213
		1.37			65.6	2.000	1.001	CT	1.048	0.30	22.80			1973	86213
		1.37			65.6	3.000	1.386	NB	1.531	0.33	23.70			1973	86213
		1.37			65.8	3.020	1.393	NB	1.510	0.36	25.40			1978	MPC01
		1.37			65.8	2.980	1.393	NB	1.490	0.34	25.00			1978	MPC01
		3.00			66.0	3.000	0.994	CT	1.540	0.33	24.00			1972	84306
		3.00			66.0	3.000	0.757	CT	1.526	0.35	24.30			1973	85836
		3.00			66.0	3.000	0.995	CT	1.533	0.32	23.50			1972	84306
		1.37			66.1	2.990	1.400	NB	1.525	0.25	21.80			1978	MPC01
		1.37			66.1	3.000	1.401	NB	1.445	0.25	20.90			1973	86213
		1.37			66.1	3.000	1.400	NB	1.536	0.28	22.10			1973	86213
		0.75			66.1	1.502	0.761	CT	0.781	0.27	22.10			1978	MPC01
		1.37			66.1	3.008	1.401	NB	1.474	0.25	21.50			1978	MPC01
		1.00			66.2	2.016	1.009	CT	1.149	0.25	21.50			1978	MPC01
		0.62			66.2	1.508	0.616	CT	0.769	0.25	21.50			1978	MPC01
		4.00			66.5	2.000	1.020	NB	----	0.24	20.40			1974	90981
		4.00			66.5	2.000	1.020	NB	----	0.25	21.00			1974	90981
		0.75			67.0	1.500	0.709	CT	----	0.27	22.00			1982	NC003
		0.75			67.0	1.500	0.709	CT	----	0.27	22.00			1982	NC003
		0.50			67.1	1.506	0.481	CT	0.768	0.24	20.90			1978	MPC01
		0.50			67.1	1.500	0.518	CT	0.765	0.24	21.10			1978	MPC01
		0.37			67.1	1.000	0.375	CT	----	0.26	21.90			1974	90981
		1.50			67.5	2.000	1.001	CT	1.018	0.35	25.20			1973	86429
		1.50			67.5	1.980	1.000	CT	1.004	0.33	24.60			1973	86429
		0.62			68.0	1.504	0.631	CT	0.767	0.28	23.60			1978	MPC01
		0.75			70.1	1.500	0.750	CT	----	0.29	24.00			1974	90981
		0.75			70.1	1.500	0.750	CT	----	0.26	22.80			1974	90981
		0.75			70.1	1.500	0.750	CT	----	0.25	22.00	23.3/	2.4	1974	90981
T851	P	1.37	82	L-T	65.6	2.000	1.002	CT	1.030	0.32	23.40			1973	86213
		1.37			65.6	2.000	1.001	CT	0.975	0.29	22.50			1973	86213
		1.37			65.6	2.000	1.002	CT	1.036	0.32	23.40			1973	86213
		1.37			65.6	2.000	1.001	CT	0.981	0.29	22.40			1973	86213
		1.37			65.6	2.000	1.001	CT	0.982	0.30	22.80			1973	86213

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.37	82	L-T	65.6	2.000	1.002	CT	1.033	0.32	23.40	23.0/	0.5	1973	86213
T851	P	1.75	84	L-T	65.0	2.990	1.007	CT	1.650	0.32	23.30			1972	84306
		1.00			68.9	1.500	0.750	CT	0.726	0.22	20.60			1973	86213
		1.00			68.9	1.500	0.750	CT	0.739	0.23	20.80			1973	86213
		1.00			68.9	1.500	0.750	CT	0.742	0.24	21.30	21.5/	1.2	1973	86213
T851	P	3.00	200	L-T	58.6	1.500	0.750	CT	0.750	0.49	25.90			1972	83243
		3.00			58.6	1.500	0.750	CT	0.750	0.56	27.80			1972	83243
		3.00			58.6	1.500	0.750	CT	0.750	0.52	26.80	26.8/	1.0	1972	83243
T851	P	3.00	300	L-T	54.9	1.500	0.750	CT	0.750	0.60	26.80			1972	83243
		3.00			54.9	1.500	0.750	CT	0.750	0.62	27.30			1972	83243
		3.00			54.9	1.500	0.750	CT	0.750	0.59	26.60	26.9/	0.4	1972	83243
T851	P	1.37	R.T.	T-S	65.4	0.996	0.500	CT	0.488	0.28	22.50			1978	MPC01
T851	P	1.37	86	T-S	65.4	1.000	0.500	CT	0.510	0.30	22.50			1973	86213
T851	P	1.37	88	T-S	65.5	1.000	0.500	CT	0.515	0.24	20.40			1973	86213
		1.37			65.5	1.000	0.500	CT	0.496	0.25	20.60			1973	86213
		1.37			65.5	1.000	0.500	CT	0.511	0.25	20.80	20.6/	0.2	1973	86213
T851	P	1.39	- 320	T-L	79.0	3.000	1.390	NB	1.490	0.20	22.10			1971	84288
		1.39			79.0	3.000	1.390	NB	1.480	0.20	22.20	22.2/	0.1	1971	84288
T851	P	1.39	- 112	T-L	69.2	3.000	1.390	NB	1.520	0.24	21.30			1971	84288
		1.39			69.2	3.000	1.390	NB	1.570	0.27	22.70	22.0/	1.0	1971	84288
T851	P	3.00	- 65	T-L	66.5	1.500	0.750	CT	0.750	0.31	23.30			1972	83243
T851	P	3.00	0	T-L	65.5	1.500	0.750	CT	0.750	0.30	22.90			1972	83243
		3.00			65.5	1.500	0.750	CT	0.750	0.25	20.80	21.9/	1.5	1972	83243
T851	P	4.00	R.T.	T-L	61.5	2.000	1.020	NB	----	0.26	19.80			1974	90981
		4.00			61.5	2.000	1.020	NB	----	0.26	19.90			1974	90981
		3.00			63.5	1.500	0.750	CT	0.750	0.32	22.60			1972	83243
		3.00			63.5	1.500	0.750	CT	0.750	0.24	19.70			1972	83243
		3.00			63.5	1.500	0.750	CT	0.750	0.31	22.20			1972	83243

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	3.00	R.T.	T-L	64.0	2.000	0.750	CT	----	0.32	23.00			1974	90011
		3.00			64.0	2.000	0.620	CT	----	0.35	24.00			1974	90011
		3.00			64.0	2.490	0.624	CT	1.233	0.20	17.90			1972	84306
		3.00			64.0	3.000	1.000	CT	----	0.20	18.00			1974	90011
		3.00			64.0	2.500	0.750	CT	----	0.32	23.00			1974	90011
		3.00			64.0	2.000	0.620	CT	----	0.32	23.00			1974	90011
		3.00			64.0	2.500	0.626	CT	1.222	0.21	18.50			1972	84306
		3.00			64.0	2.500	0.750	CT	----	0.38	25.00			1974	90011
		3.00			64.0	2.000	0.750	CT	----	0.30	22.00			1974	90011
		3.00			64.0	2.000	0.750	CT	----	0.32	23.00			1974	90011
		3.00			64.0	2.500	0.625	CT	1.240	0.22	18.80			1972	84306
		1.37			64.4	3.020	1.383	NB	1.510	0.21	18.90			1978	MPC01
		1.38			64.4	2.000	1.000	NB	0.995	0.23	19.60			1972	82880
		1.39			64.4	3.000	1.388	NB	1.507	0.24	20.20			1971	84288
		1.39			64.4	3.000	1.380	NB	----	0.25	20.50			1972	82880
		1.37			64.4	3.020	1.383	NB	1.510	0.21	19.10			1978	MPC01
		1.37			64.4	2.980	1.383	NB	1.520	0.21	19.10			1978	MPC01
		1.37			64.4	3.020	1.384	NB	1.540	0.28	22.50			1978	MPC01
		1.37			64.4	3.002	1.384	NB	1.501	0.28	22.10			1978	MPC01
		1.38			64.4	2.000	1.000	NB	0.986	0.26	20.90			1972	82880
		1.39			64.4	3.000	1.387	NB	1.512	0.24	20.10			1971	84288
		1.38			64.4	1.500	0.750	NB	0.777	0.30	22.40			1972	82880
		1.39			64.4	3.000	1.390	NB	----	0.24	20.20			1972	82880
		1.39			64.4	3.000	1.390	NB	----	0.24	20.00			1972	82880
		1.39			64.4	3.000	1.385	NB	1.508	0.25	20.50			1971	84288
		1.37			64.4	3.021	1.383	NB	1.450	0.19	18.20			1978	MPC01
		1.38			64.4	1.000	0.500	NB	0.512	0.27	21.30			1972	82880
		1.38			64.4	1.000	0.500	NB	0.503	0.22	19.30			1972	82880
		1.38			64.4	2.000	1.000	NB	0.977	0.24	20.00			1972	82880
		1.38			64.4	1.000	0.500	NB	0.512	0.26	20.60			1972	82880
		4.00			64.6	2.000	1.020	NB	----	0.19	17.80			1974	90981
		4.00			64.6	2.000	1.020	NB	----	0.20	18.20			1974	90981
		1.37			64.8	2.000	1.000	CT	1.009	0.20	18.30			1973	86213
		1.37			64.8	2.000	1.000	CT	1.038	0.23	19.80			1973	86213
		1.37			64.8	2.000	1.000	CT	1.055	0.22	19.20			1973	86213
		1.37			65.0	3.002	1.392	NB	1.501	0.27	21.80			1978	MPC01
		3.00			65.0	2.500	1.246	CT	1.293	0.31	23.00			1973	85836
		3.00			65.0	2.500	1.245	CT	1.293	0.31	23.00			1973	85836
		1.37			65.0	2.978	1.392	NB	1.489	0.19	18.30			1978	MPC01

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.37	R.T.	T-L	65.0	3.024	1.392	NB	1.512	0.27	22.00			1978	MPC01
		1.37			65.0	3.000	1.392	NB	1.565	0.23	19.80			1973	86213
		0.75			65.2	1.494	0.761	CT	0.792	0.21	19.10			1978	MPC01
		1.37			65.5	3.018	1.400	NB	1.539	0.22	20.20			1978	MPC01
		1.37			65.5	2.000	0.999	CT	1.097	0.21	19.10			1973	86213
		1.37			65.5	2.000	0.999	CT	1.065	0.19	18.20			1973	86213
		1.37			65.5	3.000	1.400	NB	1.520	0.23	19.80			1973	86213
		1.37			65.6	2.978	1.385	NB	1.489	0.36	25.40			1978	MPC01
		1.00			65.7	2.016	0.987	CT	1.109	0.24	21.00			1978	MPC01
		0.62			65.7	1.498	0.616	CT	0.779	0.19	18.90			1978	MPC01
		0.50			65.9	1.490	0.481	CT	0.760	0.21	19.30			1978	MPC01
		0.37			66.6	1.000	0.375	CT	----	0.28	22.10			1974	90981
		0.37			66.6	1.000	0.375	CT	----	0.29	22.70			1974	90981
		0.37			66.6	1.000	0.375	CT	----	0.32	23.80			1974	90981
		0.50			67.2	1.508	0.518	CT	0.784	0.21	19.50			1978	MPC01
		0.62			67.3	1.498	0.631	CT	0.794	0.22	20.20			1978	MPC01
		0.75			68.6	1.500	0.750	CT	----	0.25	21.80			1974	90981
		0.75			68.6	1.500	0.750	CT	----	0.25	21.90			1974	90981
		0.75			68.6	1.500	0.750	CT	----	0.26	22.00	20.7/	1.9	1974	90981
T851	P	1.37	82	T-L	64.4	2.000	1.000	CT	1.010	0.24	19.90			1973	86213
		1.37			64.4	2.000	0.999	CT	1.021	0.24	20.00			1973	86213
		1.37			64.4	2.000	1.000	CT	0.992	0.24	20.00			1973	86213
		1.37			64.8	2.000	1.001	CT	1.058	0.25	20.40			1973	86213
		1.37			64.8	2.000	1.002	CT	1.032	0.25	20.50			1973	86213
		1.37			64.8	2.000	1.000	CT	1.049	0.24	20.10	20.2/	0.2	1973	86213
T851	P	1.00	84	T-L	67.6	1.500	0.750	CT	0.740	0.20	18.90			1973	86213
		1.00			67.6	1.490	0.749	CT	0.754	0.19	18.80			1973	86213
		1.00			67.6	1.500	0.750	CT	0.749	0.18	18.30	18.7/	0.3	1973	86213
T851	P	3.00	200	T-L	58.3	1.500	0.750	CT	0.750	0.32	20.70			1972	83243
		3.00			58.3	1.500	0.750	CT	0.750	0.38	22.80			1972	83243
		3.00			58.3	1.500	0.750	CT	0.750	0.35	21.80	21.8/	1.1	1972	83243
T851	P	3.00	300	T-L	54.1	1.500	0.750	CT	0.750	0.40	21.70			1972	83243
		3.00			54.1	1.500	0.750	CT	0.750	0.42	22.30	22.0/	0.4	1972	83243
T851	P	3.00	R.T.	S-T	64.0	2.500	0.750	CT	----	0.35	24.00			1974	90011

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.37	86	S-T	64.2	1.000	0.500	CT	0.499	0.15	15.70			1973	86213
		1.37			64.2	1.000	0.500	CT	0.510	0.16	16.00			1973	86213
		1.37			64.2	1.000	0.500	CT	0.511	0.18	17.00	16.2/	0.7	1973	86213
T851	P	1.37	88	S-T	64.1	1.000	0.500	CT	0.502	0.15	15.90			1973	86213
		1.37			64.1	1.000	0.500	CT	0.479	0.15	15.80			1973	86213
		1.37			64.1	1.000	0.500	CT	0.480	0.15	15.80	15.8/	0.1	1973	86213
T851	P	1.37	88	S-L	64.1	1.000	0.501	CT	0.506	0.18	17.20			1973	86213
		1.37			64.1	1.000	0.500	CT	0.496	0.16	16.30			1973	86213
		1.37			64.1	1.000	0.501	CT	0.478	0.15	15.60	16.4/	0.8	1973	86213
T8510	E	4.50	R.T.	L-T	58.5	4.023	2.000	CT	2.132	0.78	33.10			1978	MPC01
		4.00			61.8	3.981	1.858	CT	2.110	0.57	30.20			1978	MPC01
		2.76			63.2	4.018	2.000	CT	2.009	0.46	27.80	30.4/	2.7	1978	MPC01
T8510	E	4.50	R.T.	T-L	58.9	5.042	2.500	CT	2.622	0.21	17.50			1978	MPC01
		4.00			60.5	5.034	2.499	CT	2.527	0.16	16.30			1978	MPC01
		2.76			61.8	4.018	1.999	CT	2.049	0.15	15.60	16.5/	1.0	1978	MPC01
T8510	E	4.50	R.T.	S-L	56.6	3.022	1.500	CT	1.541	0.21	16.50			1978	MPC01
		4.00			58.2	2.998	1.498	CT	1.529	0.19	16.50			1978	MPC01
		2.76			59.6	2.018	0.999	CT	0.989	0.13	14.10	15.7/	1.4	1978	MPC01
T8511	E	3.50	R.T.	L-T	66.5	1.996	1.000	CT	0.978	0.32	24.40			1978	MPC01
		3.50			66.5	2.004	1.000	CT	0.982	0.30	23.80	24.1/	0.4	1978	MPC01
T8511	E	3.50	R.T.	T-L	61.8	2.015	1.000	CT	1.048	0.15	16.00			1978	MPC01
		3.50			61.8	1.980	1.000	CT	1.010	0.15	16.00	16.0/	0.0	1978	MPC01
T8511	E	3.50	R.T.	S-T	61.6	2.014	1.001	CT	1.007	0.16	16.10			1978	MPC01
		3.50			61.6	2.014	1.001	CT	1.007	0.16	16.30	16.7/	0.6	1978	MPC01

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T852	F	4.75	84	L-S	64.4	2.000	0.997	CT	0.923	0.41	26.20			1973	86213
T852	F	5.00	R.T.	L-T	55.1	3.000	1.502	NB	1.400	0.56	26.10			1970	77720
		5.00			55.1	3.000	1.504	NB	1.542	0.66	28.30			1970	77720
		5.00			55.1	3.000	1.503	NB	1.395	0.60	27.00			1970	77720
		6.00			56.1	4.000	2.001	NB	2.008	0.76	30.80			1970	77720
		6.00			56.1	4.000	1.999	NB	1.925	0.63	28.20			1970	77720
		6.00			56.1	4.000	2.002	NB	2.202	0.75	30.80			1970	77720
		3.00			58.0	2.500	1.254	CT	1.324	0.71	30.90			1973	85836
		3.00			58.0	2.490	1.250	CT	1.279	0.55	27.20			1973	85836
		3.00			58.0	2.490	1.247	CT	1.251	0.48	25.50			1973	85836
		5.00			58.0	2.500	1.252	CT	1.295	0.99	36.90			1973	85836
		5.00			58.0	2.500	1.252	CT	1.302	1.02	37.10			1973	85836
		5.00			60.0	2.500	1.004	CT	1.265	0.99	37.80			1973	85836
		2.00			64.6	1.500	0.752	NB	0.667	0.36	24.30			1970	77720
		2.00			64.6	1.500	0.752	NB	0.707	0.30	22.60			1970	77720
		2.00			64.6	1.500	0.751	NB	0.770	0.40	25.90			1970	77720
		3.00			65.0	2.500	1.250	CT	----	0.77	36.00			1974	90011
		3.00			65.0	2.500	1.250	CT	----	0.81	37.00			1974	90011
		3.00			65.0	2.500	1.250	CT	----	0.81	37.00			1974	90011
		4.00			65.4	3.000	1.500	NB	1.445	0.49	28.90			1970	77720
		4.00			65.4	3.000	1.500	NB	1.482	0.36	25.00			1970	77720
		4.00			65.4	3.000	1.502	NB	1.645	0.46	28.10			1970	77720
		3.00			66.7	2.000	1.000	NB	0.950	0.27	21.90			1970	77720
		3.00			66.7	2.000	0.999	NB	0.940	0.29	22.60			1970	77720
		3.00			66.7	1.990	1.000	NB	0.935	0.34	24.60	29.2/	5.2	1970	77720
T852	F	7.00	82	L-T	49.5	1.500	0.751	CT	0.706	0.70	26.20			1973	86213
		7.00			58.6	1.490	0.758	CT	0.719	0.28	19.70	23.0/	4.6	1973	86213
T852	F	7.00	83	L-T	58.6	1.500	0.753	CT	0.720	0.27	19.30			1973	86213
T852	F	5.00	84	L-T	61.9	1.490	0.750	CT	0.735	0.31	21.80			1973	86213
		4.75			64.4	2.000	0.999	CT	1.061	0.34	23.60	22.7/	1.3	1973	86213
T852	F	3.00	265	L-T	----	2.500	1.250	CT	----	----	31.00			1974	90011
		5.00			65.0	2.490	1.248	CT	1.485	0.90	38.90	35.0/	5.6	1973	86210
T852	F	4.75	84	T-S	65.2	2.000	0.997	CT	0.937	0.14	15.20			1973	86213

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T852	F	5.00	R.T.	T-L	56.7	3.000	1.502	NB	1.507	0.25	17.80			1970	77720
		5.00			56.7	3.000	1.500	NB	1.422	0.23	17.30			1970	77720
		5.00			56.7	3.000	1.501	NB	1.553	0.24	17.60			1970	77720
		6.00			57.8	4.000	2.005	NB	2.005	0.17	15.10			1970	77720
		6.00			57.8	3.990	2.003	NB	2.035	0.25	18.10			1970	77720
		6.00			57.8	3.990	2.003	NB	2.035	0.25	18.20			1973	86213
		6.00			57.8	4.000	2.005	NB	2.005	0.17	15.20			1973	86213
		3.00			58.0	2.000	1.000	CT	----	0.30	20.00			1974	90011
		3.00			58.0	2.000	1.000	CT	----	0.33	21.00			1974	90011
		3.00			58.0	2.000	1.000	CT	----	0.33	21.00			1974	90011
		2.00			63.8	1.500	0.754	NB	0.697	0.34	23.50			1970	77720
		2.00			63.8	1.500	0.752	NB	0.667	0.36	24.10			1970	77720
		2.00			63.8	1.500	0.749	NB	0.763	0.24	19.80			1970	77720
		3.00			69.0	2.000	1.001	NB	1.020	0.15	16.90			1970	77720
		3.00			69.0	1.990	0.999	NB	1.010	0.15	16.70			1970	77720
		3.00			69.0	2.000	1.000	NB	0.905	0.20	19.40	18.9/	2.6	1970	77720
T852	F	7.00	82	T-L	59.0	1.500	0.750	CT	0.719	0.47	25.50			1973	86213
T852	F	7.00	83	T-L	53.2	1.500	0.754	CT	0.757	0.39	21.00			1973	86213
		7.00			59.5	1.500	0.753	CT	0.767	0.21	17.20	19.1/	2.7	1973	86213
T852	F	5.00	84	T-L	62.9	1.490	0.750	CT	0.752	0.15	15.40			1973	86213
T852	F	3.00	265	T-L	----	2.500	1.250	CT	----	----	24.00			1974	90011
T852	F	6.00	R.T.	S-T	53.9	1.400	0.700	NB	0.700	0.27	17.70			1972	82675
		6.00			53.9	1.400	0.700	NB	0.700	0.26	17.50	17.6/	0.1	1972	82675
T852	F	7.00	83	S-T	50.1	1.000	0.506	CT	0.495	0.40	20.00			1973	86213
		7.00			50.5	1.000	0.499	CT	0.481	0.32	18.00			1973	86213
		7.00			57.2	1.000	0.505	CT	0.494	0.23	17.40	18.5/	1.4	1973	86213
T852	F	5.00	84	S-T	57.6	0.990	0.501	CT	0.542	0.23	17.60			1973	86213
T852	F	6.00	R.T.	S-L	53.9	1.000	0.500	NB	0.512	0.23	16.40			1970	77720
		6.00			53.9	1.000	0.500	NB	0.505	0.19	14.80			1970	77720
		6.00			53.9	1.000	0.500	NB	0.507	0.26	17.30			1970	77720
		5.00			54.5	1.000	0.500	NB	0.490	0.22	16.00			1970	77720

TABLE 7.5.2.1 (Con't)

ALUMINUM 2024 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T852	F	5.00	R.T.	S-L	54.5	1.000	0.500	NB	0.473	0.21	15.80			1970	77720
		4.00			60.6	0.500	0.250	NB	0.267	0.15	15.00			1970	77720
		4.00			60.6	0.500	0.250	NB	0.272	.17	15.80			1970	77720
		4.00			60.6	0.500	0.250	NB	0.258	0.18	16.10	15.9/	0.8	1970	77720
T852	F	4.75	84	S-L	60.9	2.000	0.997	CT	0.946	0.17	16.10			1973	86213

TABLE 7.5.2.2

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T3	S	0.03	R.T.	L-T	52.0	20.000	0.032	0.640	1.200	47.60	48.50	48.66*			66.74*			1966	67821
		0.03			52.0	20.000	0.032	1.120	2.060	43.10	47.00	62.46*			85.10*			1966	67821
		0.03			52.0	20.000	0.032	7.460	9.500	16.30	22.40	84.00			100.98*			1966	67821
		0.03			52.0	20.000	0.032	5.260	7.070	20.00	27.60	82.90			99.78*			1966	67821
		0.03			52.0	20.000	0.032	3.450	4.860	22.80	36.40	86.33*	83.5/	0.8	104.40*	----/	---	1966	67821
T3	S	0.04	R.T.	L-T	50.6	6.450	0.040	2.820	----	---	26.30	62.95*			----			1966	86734
		0.04			50.6	6.450	0.040	2.650	----	---	26.70	60.95*			----			1966	86734
		0.04			50.6	6.450	0.040	3.900	----	---	16.90	54.84*			----			1966	86734
T3	S	0.04	R.T.	L-T	51.7	9.700	0.040	3.980	----	---	28.60	79.98*			----			1966	86734
T3	S	0.05	R.T.	L-T	52.7	8.000	0.049	4.770	5.750	17.10	19.20	68.27*			88.25*			1970	78982
		0.05			52.7	8.000	0.051	2.660	3.600	19.10	31.30	68.73*			85.36*			1970	78982
T3	S	0.05	R.T.	L-T	52.7	24.000	0.049	7.000	13.500	17.00	27.60	96.64			159.57*			1970	78982
		0.05			52.7	24.000	0.049	7.160	11.000	16.20	28.30	100.48			135.67*			1970	78982
		0.05			52.7	24.000	0.049	14.270	18.000	12.70	16.50	101.30			141.83*			1970	78982
		0.05			52.7	24.000	0.049	2.320	7.400	34.00	42.20	81.03*	99.5/	2.5	152.94*	----/	---	1970	78982
T3	S	0.06	R.T.	L-T	51.9	12.000	0.063	4.720	5.420	24.40	27.70	83.54*			92.79*			1966	67821
		0.06			51.9	12.000	0.063	3.080	3.810	23.30	33.20	76.14*			86.67*			1966	67821
T3	S	0.06	R.T.	L-T	51.9	20.000	0.063	4.310	7.770	26.70	30.60	81.98			118.90*			1966	67821
		0.06			51.9	20.000	0.063	0.870	2.200	43.60	43.60	51.03*			81.66*			1966	67821
		0.06			51.9	20.000	0.063	7.200	13.500	23.20	23.20	84.91			152.84*			1966	67821
		0.06			51.9	20.000	0.063	0.960	2.600	38.50	43.60	53.62*			89.04*			1966	67821
		0.06			51.9	20.000	0.063	3.270	5.030	19.20	37.70	86.88*			110.30*			1966	67821
		0.06			51.9	20.000	0.063	4.930	6.900	25.60	32.20	93.12*	83.4/	2.1	114.53*	----/	---	1966	67821
T3	S	0.06	R.T.	L-T	51.9	30.000	0.063	7.130	10.710	19.80	26.40	91.56			117.67			1966	67821
		0.06			51.9	30.000	0.063	5.730	8.090	22.00	28.80	88.40			107.53			1966	67821
		0.06			51.9	30.000	0.063	3.670	6.710	27.50	39.70	96.21*			133.01*			1966	67821
		0.06			51.9	30.000	0.063	10.860	14.400	17.60	18.20	81.89	87.3/	4.9	101.38	108.9/	8.2	1966	67821

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																	
T3	S	0.08	R.T.	L-T	53.3	20.000	0.080	7.350	8.950	20.80	24.80	92.09		106.46*		1966	67821
		0.08			53.3	20.000	0.080	5.090	6.450	21.30	29.00	85.44		98.71*		1966	67821
		0.08			53.3	20.000	0.080	3.310	4.950	29.20	34.20	79.33		99.14*		1966	67821
		0.08			53.3	20.000	0.080	1.270	1.900	46.46	48.00	67.96*		83.39*		1966	67821
		0.08			53.3	20.000	0.080	0.700	1.440	51.90	51.80	54.36*	85.6/ 6.4	78.16*	----/ ---	1966	67821
T3	S	0.12	R.T.	L-T	53.8	4.000	0.122	2.390	3.100	---	20.30	51.17*		76.14*		1970	78982
		0.12			53.8	4.000	0.123	1.190	1.800	---	35.20	50.93*		67.88*		1970	78982
		0.12			53.8	4.000	0.123	2.340	2.900	---	20.50	50.46*		67.62*		1970	78982
		0.12			53.8	4.000	0.123	0.390	1.000	---	46.00	36.22*		59.98*		1970	78982
		0.12			53.8	4.000	0.123	2.400	----	---	44.90	113.71*		----		1970	78982
		0.12			53.8	4.000	0.123	1.200	1.900	---	36.60	53.23*		73.79*		1970	78982
T3	S	0.12	R.T.	L-T	53.8	8.000	0.123	0.800	1.900	---	46.40	52.34*		83.07*		1970	78982
		0.12			53.8	8.000	0.124	2.600	3.300	---	34.30	74.21*		87.46*		1970	78982
		0.12			53.8	8.000	0.123	4.700	4.900	---	20.50	71.70*		75.21*		1970	78982
		0.12			53.8	8.000	0.123	4.740	5.260	---	19.60	69.20*		78.70*		1970	78982
		0.12			53.8	8.000	0.123	0.800	2.000	---	46.40	52.34*		85.56*		1970	78982
T3	S	0.12	R.T.	L-T	53.8	24.000	0.123	14.350	16.200	---	15.40	95.15		111.14*		1970	78982
		0.12			53.8	24.000	0.123	14.390	17.800	---	13.10	81.20		110.25*		1970	78982
		0.12			53.8	24.000	0.123	2.400	3.250	---	44.60	87.13*		101.93*		1970	78982
		0.12			53.8	24.000	0.123	2.400	4.400	---	44.60	87.13*		119.74*		1970	78982
		0 12			53.8	24.000	0.123	7.650	11.600	---	29.20	108.07		146.35*		1970	78982
		0.12			53.8	24.000	0.123	6.220	11.800	---	28.00	91.33	93.9/11.1	142.43*	----/ ---	1970	78982
T3	S	0.06	R.T.	T-L	43.4	6.000	0.060	2.000	2.350	---	30.25	57.62*		64.31*		1966	86734
T3	S	0.06	R.T.	T-L	43.4	9.000	0.060	3.000	3.600	---	30.50	71.15*		80.64*		1966	86734
T3	S	0.06	R.T.	T-L	43.4	15.000	0.060	5.000	5.800	---	28.00	84.32*		93.27*		1966	86734
T3	S	0.06	R.T.	T-L	43.4	18.000	0.060	6.000	7.200	---	27.50	90.72*		102.82*		1966	86734
T3	S	0.06	R.T.	T-L	43.4	21.000	0.060	7.000	8.600	---	27.40	97.63*		112.58*		1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T3	S	0.06	R.T.	T-L	43.4	24.000	0.060	8.000	9.600	---	26.70	101.71*			115.27*			1966	86734
T3	S	0.08	R.T.	T-L	46.8	48.000	0.080	24.000	28.420	---	18.30	133.62			158.14*			1962	62308
		0.08			46.8	48.010	0.080	24.000	28.390	---	18.60	135.80	134.7/	1.5	160.52*	----/	---	1962	62308
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T3	S	0.06	R.T.	L-T	50.0	2.000	0.063	0.626	0.920	32.40	36.20	38.23*			50.25*			1973	86213
		0.06			50.0	2.000	0.063	0.624	0.870	30.10	36.20	38.16*			48.06*			1973	86213
		0.06			50.0	2.000	0.063	0.626	0.900	---	36.30	38.34*			49.30*			1973	86213
		0.06			53.2	2.000	0.064	0.621	1.000	---	36.10	37.90*			53.80*			1973	86213
		0.06			55.5	2.000	0.061	0.621	0.800	---	39.30	41.26*			48.98*			1973	86213
		0.06			55.5	2.000	0.061	0.624	1.030	35.90	38.90	41.00*			59.56*			1973	86213
		0.06			55.5	2.000	0.061	0.622	0.960	35.40	38.80	40.81*			55.80*			1973	86213
T3	S	0.06	R.T.	L-T	51.6	15.800	0.062	3.990	6.080	---	32.20	83.94*			109.70*			1973	86213
		0.06			51.6	15.810	0.063	6.010	7.080	---	24.20	81.77			92.41*			1973	86213
		0.06			51.6	15.810	0.063	3.010	4.260	---	37.10	82.52*			100.51*			1973	86213
		0.06			51.6	15.820	0.062	1.010	1.440	---	49.80	62.88*			75.28*			1973	86213
T3	S	0.08	R.T.	L-T	52.7	12.000	0.081	4.820	----	---	27.90	85.43*			----			1956	84367
		0.08			52.7	12.000	0.081	1.280	----	---	50.90	72.69*			----			1956	84367
		0.08			52.7	12.000	0.081	2.430	----	---	43.20	86.60*			----			1956	84367
		0.08			52.7	12.000	0.081	1.330	----	---	51.70	75.30*			----			1956	84367
		0.08			52.7	12.000	0.081	2.960	----	---	41.40	92.77*			----			1956	84367
		0.08			52.7	12.000	0.081	2.910	----	---	43.10	95.64*			----			1956	84367
		0.08			52.7	12.000	0.081	2.980	----	---	44.30	99.66*			----			1956	84367
		0.08			52.7	12.000	0.081	4.830	----	---	28.80	88.32*			----			1956	84367
		0.08			52.7	12.000	0.081	3.180	----	---	39.70	92.78*			----			1956	84367
		0.08			52.7	12.000	0.081	4.740	----	---	26.80	81.07*			----			1956	84367
		0.08			52.7	12.000	0.081	4.950	----	---	17.60	86.19*			----			1956	84367

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T3	S	0.09	R.T.	L-T	51.1	3.000	0.092	1.210	2.002	---	30.30	46.53*			76.06*			1973	86213
		0.09			51.1	3.000	0.092	1.190	1.992	---	30.50	46.27*			76.02*			1973	86213
		0.09			51.1	3.000	0.092	1.240	2.215	---	29.90	46.76*			88.16*			1973	86213
T3	S	0.12	R.T.	L-T	53.7	3.000	0.124	1.143	2.080	17.10	32.40	47.73*			86.04*			1973	86213
		0.12			53.7	3.000	0.124	1.223	2.040	17.40	31.20	48.26*			80.47*			1973	86213
		0.12			53.7	3.000	0.124	1.123	1.940	19.90	33.30	48.46*			80.08*			1973	86213
		0.12			53.8	3.000	0.125	1.167	1.830	16.30	32.30	48.29*			72.22*			1973	86213
		0.12			53.8	3.000	0.127	1.140	1.760	15.70	33.10	48.70*			70.78*			1973	86213
		0.12			53.8	3.000	0.126	1.190	1.790	15.00	31.60	47.94*			68.87*			1973	86213
		0.12			55.8	3.000	0.129	1.165	1.780	16.70	32.30	48.23*			69.95*			1973	86213
		0.12			55.8	3.000	0.130	1.257	1.840	15.10	29.70	46.89*			66.84*			1973	86213
		0.12			55.8	3.000	0.130	1.150	1.800	17.80	32.50	48.12*			71.28*			1973	86213
T3	S	0.12	R.T.	L-T	56.0	4.000	0.125	1.645	2.749	---	31.40	56.46*			94.95*			1973	86213
		0.12			56.9	4.000	0.125	1.627	2.678	---	31.50	56.18*			91.72*			1973	86213
T3	S	0.16	R.T.	L-T	50.4	3.000	0.160	1.140	1.780	15.90	31.10	45.76*			67.35*			1973	86213
		0.16			50.4	3.000	0.161	1.163	1.820	16.90	30.40	45.34*			67.53*			1973	86213
		0.16			50.4	3.000	0.162	1.162	1.850	17.80	30.50	45.49*			69.08*			1973	86213
		0.16			50.6	3.000	0.163	1.163	1.780	17.70	30.50	45.49*			66.05*			1973	86213
		0.16			50.6	3.000	0.163	1.255	1.710	15.70	28.70	45.26*			59.49*			1973	86213
		0.16			50.6	3.000	0.163	1.150	1.760	17.20	31.20	46.19*			66.72*			1973	86213
		0.16			53.8	3.000	0.163	1.140	1.840	16.60	32.80	48.26*			73.81*			1973	86213
		0.16			53.8	3.000	0.163	1.162	1.810	16.10	32.10	47.88*			70.85*			1973	86213
		0.16			53.8	3.000	0.164	1.127	1.800	17.10	33.10	48.28*			72.60*			1973	86213
T3	S	0.16	R.T.	L-T	50.8	29.990	0.163	15.000	18.360	---	20.70	119.51*			146.96*			1962	62308
		0.16			50.8	30.010	0.163	15.000	18.880	---	20.60	118.90*			151.24*			1962	62308
T3	P	0.25	R.T.	L-T	53.6	15.000	0.255	7.500	11.440	---	21.50	87.76*			151.02*			1966	86734
		0.25			53.6	15.000	0.253	7.500	11.250	---	21.30	86.94			144.74*			1966	86734
T3	P	0.50	R.T.	L-T	54.8	7.960	0.509	4.820	5.000	12.80	18.00	64.99*			67.93*			1970	78982
		0.50			54.8	8.000	0.500	2.600	2.770	21.00	30.60	66.20*			69.00*			1970	78982

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	STAN DEV	DATE	REFER
								BUCKLING OF CRACK EDGES NOT RESTRAINED											
T3	P	0.50	R.T.	L-T	54.8	8.050	0.509	4.850	4.900	13.20	18.00	64.98*			65.76*			1970	78982
T3	P	0.50	R.T.	L-T	55.4	15.000	0.517	7.500	10.080	---	18.70	76.33			106.01*			1966	86734
		0.50			55.4	15.000	0.515	7.500	10.420	---	18.70	76.33	76.3/	0.0	111.37*	----/	---	1966	86734
T3	P	0.50	R.T.	L-T	54.8	24.000	0.509	7.250	12.000	17.20	26.80	95.89			138.37*			1970	78982
		0.50			54.8	24.150	0.509	7.200	11.500	18.50	27.60	98.26			137.01*			1970	78982
		0.50			54.8	24.150	0.509	14.100	17.400	---	15.50	93.54			124.29*			1970	78982
		0.50			54.8	24.150	0.509	2.300	4.800	25.70	42.80	81.81*	95.9/	2.4	120.47*	----/	---	1970	78982
T3	S	0.06	R.T.	T-L	44.4	2.000	0.064	0.625	1.080	32.30	33.20	34.99*			53.17*			1973	86213
		0.06			44.4	2.000	0.063	0.626	1.030	28.30	34.10	36.01*			52.21*			1973	86213
		0.06			46.2	2.000	0.064	0.620	0.980	---	33.90	35.59*			49.63*			1973	86213
		0.06			47.8	2.000	0.061	0.623	0.900	---	35.40	37.24*			48.27*			1973	86213
		0.06			47.8	2.000	0.061	0.621	1.040	34.40	35.20	36.93*			54.38*			1973	86213
		0.06			47.8	2.000	0.062	0.625	1.050	28.00	34.70	36.57*			54.09*			1973	86213
T3	S	0.06	R.T.	T-L	46.0	15.810	0.064	6.010	----	---	22.50	76.02			----			1973	86213
		0.06			46.0	15.810	0.063	4.000	----	---	29.10	75.96*			----			1973	86213
		0.06			46.0	15.810	0.064	3.010	4.110	---	32.80	72.96*			86.99*			1973	86213
		0.06			46.0	15.820	0.064	1.020	1.780	---	43.00	54.57*			72.47*			1973	86213
T3	S	0.06	R.T.	T-L	44.0	24.000	0.063	8.000	9.600	---	27.80	105.90*			120.02*			1966	86734
		0.06			44.0	24.000	0.063	8.000	9.600	---	28.40	108.18*			122.61*			1966	86734
		0.06			44.0	24.000	0.063	8.000	9.600	---	27.20	103.61*			117.43*			1966	86734
		0.06			44.0	24.000	0.063	8.000	9.600	---	27.90	106.28*			120.45*			1966	86734
T3	S	0.09	R.T.	T-L	45.3	3.000	0.093	1.190	2.480	---	28.70	43.54*			109.23*			1973	86213
		0.09			45.3	3.000	0.093	1.200	2.336	---	28.60	43.66*			93.86*			1973	86213
		0.09			45.3	3.000	0.092	1.220	2.372	---	28.00	43.26*			95.11*			1973	86213
T3	S	0.12	R.T.	T-L	45.7	3.000	0.124	1.130	2.250	15.20	30.50	44.60*			92.69*			1973	86213
		0.12			45.7	3.000	0.124	1.178	----	16.60	29.30	44.13*			----			1973	86213
		0.12			45.7	3.000	0.124	1.148	----	16.90	29.80	44.06*			----			1973	86213
		0.12			46.0	3.000	0.127	1.180	2.250	14.80	28.50	42.98*			86.61*			1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T3	S	0.12	R.T.	T-L	46.0	3.000	0.127	1.233	2.200	13.70	27.70	43.11*			80.74*			1973	86213
		0.12			46.0	3.000	0.128	1.137	2.160	15.00	29.50	43.30*			83.28*			1973	86213
		0.12			48.1	3.000	0.129	1.110	2.190	17.10	30.10	43.47*			87.03*			1973	86213
		0.12			48.1	3.000	0.129	1.107	2.110	16.90	30.10	43.37*			81.75*			1973	86213
T3	S	0.16	R.T.	T-L	43.2	3.000	0.161	1.183	2.110	14.70	27.50	41.52*			74.69*			1973	86213
		0.16			43.2	3.000	0.161	1.260	2.120	15.50	26.00	41.15*			71.15*			1973	86213
		0.16			43.2	3.000	0.162	1.160	2.050	15.20	27.40	40.82*			71.18*			1973	86213
		0.16			43.5	3.000	0.162	1.137	2.090	14.40	28.10	41.24*			75.18*			1973	86213
		0.16			43.5	3.000	0.162	1.202	2.110	15.90	27.00	41.26*			73.33*			1973	86213
		0.16			43.5	3.000	0.162	1.242	2.070	14.20	26.10	40.86*			68.80*			1973	86213
		0.16			45.6	3.000	0.162	1.255	2.240	15.60	27.70	43.68*			83.47*			1973	86213
		0.16			45.6	3.000	0.162	1.117	2.110	16.90	30.30	43.93*			82.29*			1973	86213
		0.16			45.6	3.000	0.162	1.130	2.160	15.70	30.20	44.16*			85.25*			1973	86213
T3	S	0.16	R.T.	T-L	45.4	30.000	0.164	15.000	18.900	---	18.20	105.06*			133.83*			1966	86734
		0.16			45.4	30.000	0.165	15.000	18.450	---	18.20	105.06*			129.94*			1966	86734
T3	S	0.09	84	T-L	44.3	16.000	0.095	4.000	6.420	18.10	29.80	77.71*			105.29*			1973	86213
		0.09			44.3	16.000	0.095	4.000	6.530	15.80	29.30	76.41*			104.82*			1973	86213
T3	P	0.25	R.T.	T-L	47.3	15.000	0.255	7.500	9.950	---	19.40	79.19*			107.98*			1966	86734
		0.25			47.3	15.000	0.254	7.500	9.650	---	19.30	78.78*			103.08*			1966	86734
T3	P	0.50	R.T.	T-L	49.2	15.000	0.519	7.500	10.400	---	16.20	66.12			96.20*			1966	86734
		0.50			49.2	15.000	0.516	7.500	10.350	---	15.70	64.08	65.1/	1.4	92.54*	----/	---	1966	86734
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T351	P	0.25	R.T.	L-T	55.4	4.000	0.246	1.733	2.627	---	29.00	54.25*			82.17*			1973	86213
		0.25			55.8	4.000	0.247	1.727	2.706	---	29.80	55.60*			88.08*			1973	86213
T351	P	0.50	R.T.	L-T	49.0	4.000	0.498	1.789	----	---	28.00	53.70*			----			1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T351	P	0.50	R.T.	L-T	49.0	4.000	0.503	1.880	----	---	28.00	55.95*			----			1966	86734
		0.50			54.0	4.000	0.507	1.673	----	19.80	30.30	55.17*			----			1973	86213
		0.50			54.3	4.000	0.508	1.653	----	19.70	30.70	55.40*			----			1973	86213
T351	P	0.50	R.T.	L-T	49.0	12.000	0.441	7.750	----	---	18.00	86.42*			----			1966	86734
		0.50			49.0	12.000	0.444	5.000	----	---	29.10	91.56*			----			1966	86734
		0.50			49.0	12.000	0.448	9.620	----	---	9.00	63.19*			----			1966	86734
T351	P	1.00	R.T.	L-T	58.2	20.000	1.023	4.850	7.550	---	28.00	80.21			105.89			1973	86213
		1.00			58.2	20.000	1.023	2.610	6.250	---	35.60	72.85			118.78*			1973	86213
		1.00			58.2	20.000	1.023	7.000	10.000	---	23.00	82.59	78.6/	5.1	108.40	107.1/	1.8	1973	86213
T351	P	0.25	R.T.	T-L	47.1	4.000	0.255	1.790	2.500	---	23.80	45.69*			63.28*			1973	86213
		0.25			47.1	4.000	0.255	1.860	2.240	---	22.90	45.35*			53.90*			1973	86213
T351	P	0.50	R.T.	T-L	48.6	14.970	0.507	4.970	7.900	---	23.80	71.41			102.00*			1973	86213
		0.50			48.6	15.000	0.507	5.000	8.600	---	23.50	70.77	71.1/	0.5	109.59*	-----/	---	1973	86213
T351	P	1.00	R.T.	T-L	52.0	20.000	1.023	4.850	8.500	---	24.00	68.75			98.96*			1973	86213
		1.00			52.0	20.000	1.023	7.000	10.100	---	19.90	71.46			94.63			1973	86213
		1.00			52.0	20.000	1.023	2.610	6.450	---	30.90	63.23	67.8/	4.2	105.18*	-----/	---	1973	86213
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T36	S	0.06	R.T.	L-T	63.6	2.000	0.062	0.625	1.160	---	41.30	43.53*			71.21*			1973	86213
		0.06			63.6	2.000	0.062	0.625	1.250	---	41.90	44.16*			78.77*			1973	86213
T36	S	0.06	R.T.	T-L	56.4	2.000	0.062	0.625	1.280	---	37.40	39.42*			72.45*			1973	86213
		0.06			56.4	2.000	0.062	0.625	1.220	---	37.50	39.53*			68.46*			1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																		
T4	S	0.04	R.T.	L-T	37.5	7.500	0.040	1.950	----	---	27.40	50.06*		----			1966	86734
		0.04			37.5	7.500	0.040	1.930	----	---	29.00	52.66*		----			1966	86734
		0.04			37.5	7.500	0.040	0.500	----	---	40.30	35.81*		----			1966	86734
		0.04			37.5	7.500	0.040	1.100	----	---	35.60	47.43*		----			1966	86734
		0.04			37.5	7.500	0.040	0.500	----	---	40.50	35.99*		----			1966	86734
		0.04			37.5	7.500	0.040	4.100	----	---	16.83	52.84*		----			1966	86734
		0.04			37.5	7.500	0.040	0.540	----	---	39.60	36.59*		----			1966	86734
		0.04			37.5	7.500	0.040	5.000	----	---	12.14	48.11*		----			1966	86734
		0.04			37.5	7.500	0.040	4.600	----	---	12.13	43.16*		----			1966	86734
		0.04			37.5	7.500	0.040	1.000	----	---	36.30	46.00*		----			1966	86734
		0.04			37.5	7.500	0.040	0.500	----	---	39.20	34.84*		----			1966	86734
		0.04			37.5	7.500	0.040	3.860	----	---	17.47	51.76*		----			1966	86734
T4	S	0.06	R.T.	L-T	41.6	7.500	0.064	1.500	----	---	34.90	54.93*		----			1966	86734
		0.06			41.6	7.500	0.064	1.020	----	---	37.60	48.14*		----			1966	86734
		0.06			41.6	7.500	0.064	0.500	----	---	42.00	37.32*		----			1966	86734
		0.06			41.6	7.500	0.064	0.800	----	---	40.00	45.16*		----			1966	86734
		0.06			41.6	7.500	0.064	1.000	----	---	37.70	47.77*		----			1966	86734
		0.06			41.6	7.500	0.064	2.100	----	---	30.70	58.62*		----			1966	86734
		0.06			41.6	7.500	0.064	0.500	----	---	41.20	36.61*		----			1966	86734
		0.06			41.6	7.500	0.064	4.030	----	---	17.80	54.94*		----			1966	86734
		0.06			41.6	7.500	0.064	5.000	----	---	12.13	48.08*		----			1966	86734
		0.06			41.6	7.500	0.064	0.500	----	---	42.30	37.59*		----			1966	86734
		0.06			41.6	7.500	0.064	3.100	----	---	12.13	29.99		----			1966	86734
		0.06			41.6	7.500	0.064	3.900	----	---	18.50	55.34*		----			1966	86734
T4	S	0.04	R.T.	T-L	37.7	7.500	0.040	0.550	----	---	38.10	35.53*		----			1966	86734
		0.04			37.7	7.500	0.040	4.020	----	---	14.87	45.79*		----			1966	86734
		0.04			37.7	7.500	0.040	0.500	----	---	38.90	34.57*		----			1966	86734
		0.04			37.7	7.500	0.040	0.500	----	---	39.30	34.92*		----			1966	86734
		0.04			37.7	7.500	0.040	2.020	----	---	27.70	51.67*		----			1966	86734
		0.04			37.7	7.500	0.040	1.050	----	---	35.50	46.15*		----			1966	86734
		0.04			37.7	7.500	0.040	0.530	----	---	38.10	34.87*		----			1966	86734
		0.04			37.7	7.500	0.040	1.100	----	---	34.20	45.56*		----			1966	86734
		0.04			37.7	7.500	0.040	2.060	----	---	27.30	51.53*		----			1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
						BUCKLING OF CRACK EDGES NOT RESTRAINED											
T4	S	0.04	R.T.	T-L	37.7	7.500	0.040	5.350	----	---	12.13	53.30*		----		1966	86734
		0.04			37.7	7.500	0.040	4.000	----	---	16.00	49.03*		----		1966	86734
		0.04			37.7	7.500	0.040	5.000	----	---	12.14	48.11*		----		1966	86734
T4	S	0.06	R.T.	T-L	41.4	7.500	0.064	2.080	----	---	28.00	53.15*		----		1966	86734
		0.06			41.4	7.500	0.064	1.100	----	---	35.20	46.89*		----		1966	86734
		0.06			41.4	7.500	0.064	4.300	----	---	14.63	48.24*		----		1966	86734
		0.06			41.4	7.500	0.064	0.510	----	---	37.90	34.02*		----		1966	86734
		0.06			41.4	7.500	0.064	0.500	----	---	39.40	35.01*		----		1966	86734
		0.06			41.4	7.500	0.064	1.960	----	---	29.70	54.42*		----		1966	86734
		0.06			41.4	7.500	0.064	3.900	----	---	17.58	52.59*		----		1966	86734
		0.06			41.4	7.500	0.064	0.500	----	---	40.80	36.26*		----		1966	86734
		0.06			41.4	7.500	0.064	5.200	----	---	11.54	48.45*		----		1966	86734
		0.06			41.4	7.500	0.064	0.560	----	---	38.80	36.52*		----		1966	86734
		0.06			41.4	7.500	0.064	4.100	----	---	16.00	50.23*		----		1966	86734
		0.06			41.4	7.500	0.064	1.150	----	---	34.70	47.33*		----		1966	86734
						BUCKLING OF CRACK EDGES NOT RESTRAINED											
T6	S	0.06	R.T.	L-T	54.7	2.000	0.062	0.621	0.860	---	39.10	41.05*		51.44*		1973	86213
		0.06			54.7	2.000	0.062	0.622	0.930	---	39.70	41.76*		55.60*		1973	86213
		0.06			54.7	2.000	0.062	0.624	0.850	---	39.30	41.42*		51.24*		1973	86213
T6	S	0.06	R.T.	T-L	54.2	2.000	0.062	0.622	0.790	---	35.80	37.66*		44.21*		1973	86213
		0.06			54.2	2.000	0.062	0.623	0.840	---	36.00	37.87*		46.52*		1973	86213
		0.06			54.2	2.000	0.062	0.622	0.880	---	35.10	36.92*		47.01*		1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T62 (QQ)	S	0.13	R.T.	L-T	58.7	5.980	0.126	2.010	----	---	29.71	56.60			91.80			1978	QD005
T62 (QQ)	S	0.13	R.T.	L-T	58.7	15.970	0.126	4.000	----	---	28.87	75.30			82.30			1978	QD005
		0.13			58.7	16.000	0.126	4.030	----	---	29.17	76.40	75.9/	0.8	143.70*	----/	---	1978	QD005
T62 (QQ)	S	0.13	R.T.	T-L	57.0	5.990	0.125	2.030	----	---	25.78	49.40			64.00			1978	QD005
		0.13			57.0	5.990	0.125	1.960	----	---	27.78	52.20	50.8/	2.0	62.00	63.0/	1.4	1978	QD005
BUCKLING OF CRACK EDGES RESTRAINED																			
T62 (WQ)	S	0.13	R.T.	L-T	----	5.980	0.126	1.990	----	---	28.40	53.90			81.20			1978	QD005
		0.13			----	6.000	0.125	2.080	----	---	27.87	54.50	54.2/	0.4	73.00	77.1/	5.8	1978	QD005
T62 (WQ)	S	0.13	R.T.	L-T	----	15.980	0.126	4.000	----	---	29.37	76.60			139.20			1978	QD005
T62 (WQ)	S	0.13	R.T.	T-L	----	5.980	0.126	1.960	----	---	27.45	51.60			70.90			1978	QD005
		0.13			----	5.990	0.125	1.960	----	---	27.51	51.70	51.7/	0.1	73.80	72.4/	2.1	1978	QD005
BUCKLING OF CRACK EDGES RESTRAINED																			
T81	S	0.04	R.T.	L-T	65.6	6.450	0.040	2.500	----	---	21.90	47.92			----			1966	86734
		0.04			65.6	6.450	0.040	2.100	----	---	21.90	42.59			----			1966	86734
		0.04			65.6	6.450	0.040	2.250	----	---	23.70	48.23	46.2/	3.2	----	----/	---	1966	86734
T81	S	0.04	R.T.	L-T	65.1	9.700	0.040	4.000	----	---	19.69	55.27			----			1966	86734
T81	S	0.13	R.T.	L-T	64.8	5.980	0.125	2.010	----	---	30.64	58.60			91.10*			1978	QD005
		0.13			64.8	5.990	0.126	1.990	----	---	28.09	53.30			62.70			1978	QD005
		0.13			64.8	5.990	0.126	2.010	----	---	28.35	54.20	55.4/	2.8	68.10	65.4/	3.8	1978	QD005
T81	S	0.06	R.T.	T-L	62.0	6.000	0.060	2.000	2.500	---	27.10	51.62			60.29			1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN MEAN	DEV	K(C) (KSI*SQRT IN)	K(C) STAN MEAN	DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T81	S	0.06	R.T.	T-L	62.0	15.000	0.060	5.000	6.000	---	18.90	56.92			64.51			1966	86734
T81	S	0.06	R.T.	T-L	62.0	18.000	0.060	6.000	7.000	---	18.50	61.03			67.78			1966	86734
T81	S	0.06	R.T.	T-L	62.0	21.000	0.060	7.000	8.200	---	17.60	62.71			69.85			1966	86734
T81	S	0.06	R.T.	T-L	62.0	24.000	0.060	8.000	9.100	---	16.40	62.47			68.15			1966	86734
T81	S	0.13	R.T.	T-L	64.1	5.990	0.126	2.020	----	---	23.32	44.70			59.50			1978	GD005
		0.13			64.1	6.000	0.126	1.980	----	---	22.88	43.30			55.70			1978	GD005
		0.13			64.1	6.010	0.126	2.060	----	---	23.24	45.10	44.4/	0.9	56.80	57.3/	2.0	1978	GD005
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T81	S	0.06 - .65		L-T	67.0	9.000	0.065	2.950	----	---	28.50	65.76			----			1966	86734
T81	S	0.06	R.T.	L-T	68.0	2.000	0.062	0.625	1.040	---	36.00	37.94			55.61*			1973	86213
		0.06			68.0	2.000	0.061	0.619	1.065	---	36.10	37.82			56.99*			1973	86213
		0.06			68.0	2.000	0.061	0.619	0.940	---	38.20	40.02*			53.97*			1973	86213
		0.06			68.0	2.000	0.061	0.617	1.040	---	36.60	38.26			56.54*			1973	86213
		0.06			68.0	2.000	0.061	0.625	0.970	---	35.40	37.31			51.37*			1973	86213
		0.06			68.0	2.000	0.061	0.620	1.070	---	37.00	38.84			58.73*			1973	86213
		0.06			69.1	2.000	0.062	0.624	0.840	---	35.90	37.84			46.39*			1973	86213
		0.06			69.1	2.000	0.062	0.623	0.870	---	35.40	37.24			46.99*			1973	86213
		0.06			69.1	2.000	0.062	0.623	0.960	---	36.50	38.39	38.0/	0.5	52.50*	----/	---	1973	86213
T81	S	0.06	R.T.	L-T	59.0	9.000	0.064	3.320	----	---	27.70	69.15			----			1966	86734
		0.06			59.0	9.000	0.065	3.380	----	---	28.70	72.54	70.8/	2.4	----	----/	---	1966	86734
T81	S	0.06	R.T.	L-T	59.0	20.000	0.065	11.500	----	---	14.00	75.62			----			1966	86734
		0.06			59.0	20.000	0.065	11.250	----	---	14.70	77.58	76.6/	1.4	----	----/	---	1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD DEV

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T81	S	0.12	R.T.	L-T	64.9	3.000	0.125	1.040	1.660	---	33.90	46.85			68.14*			1973	86213
		0.12			64.9	3.000	0.125	1.000	1.580	---	33.70	45.39			64.53*			1973	86213
		0.12			64.9	3.000	0.125	1.060	1.620	---	33.10	46.33			64.93*			1973	86213
		0.12			65.2	3.000	0.123	1.070	1.680	---	32.70	46.06			66.53*			1973	86213
		0.12			65.2	3.000	0.123	1.000	1.550	---	35.20	47.41*			66.20*			1973	86213
		0.12			65.2	3.000	0.123	1.080	1.690	---	34.00	48.19*	46.2/	0.6	69.61*	----/	---	1973	86213
T81	S	0.06	250	L-T	59.0	9.000	0.065	3.600	----	---	32.40	85.66*			----			1966	86734
T81	S	0.06	R.T.	T-L	66.7	2.000	0.061	0.617	0.985	---	33.30	34.81			48.93*			1973	86213
		0.06			66.7	2.000	0.061	0.625	0.980	---	35.20	37.10			51.54*			1973	86213
		0.06			66.7	2.000	0.061	0.613	0.960	---	33.70	35.09			48.47*			1973	86213
		0.06			66.7	2.000	0.061	0.625	1.065	---	35.40	37.31			55.88*			1973	86213
		0.06			66.7	2.000	0.061	0.625	0.940	---	33.00	34.78			46.63*			1973	86213
		0.06			66.7	2.000	0.061	0.617	0.985	---	33.60	35.13			49.37*			1973	86213
		0.06			67.2	2.000	0.062	0.622	0.840	---	32.30	33.98			41.74*			1973	86213
		0.06			67.2	2.000	0.062	0.623	0.860	---	34.40	36.18			45.26*			1973	86213
		0.06			67.2	2.000	0.062	0.622	0.950	---	33.60	35.34	35.5/	1.1	47.90*	----/	---	1973	86213
T81	S	0.06	R.T.	T-L	62.0	6.000	0.060	2.000	2.420	---	25.60	48.76			55.60			1966	86734
		0.06			62.0	6.000	0.060	2.000	2.360	---	28.20	53.71	51.2/	3.5	60.14	57.9/	3.2	1966	86734
T81	S	0.06	R.T.	T-L	62.0	9.000	0.060	3.000	3.700	---	24.80	57.85			66.90			1966	86734
		0.06			62.0	9.000	0.060	3.000	3.260	---	23.20	54.12			57.20			1966	86734
		0.06			62.0	9.000	0.060	3.000	3.500	---	23.00	53.65	55.2/	2.3	59.59	61.2/	5.1	1966	86734
T81	S	0.06	R.T	T-L	62.0	15.000	0.060	5.000	5.600	---	16.80	50.59			54.60			1966	86734
		0.06			62.0	15.000	0.060	5.000	5.600	---	16.80	50.59	50.6/	0.0	54.60	54.6/	0.0	1966	86734
T81	S	0.06	R.T.	T-L	62.0	18.000	0.060	6.000	6.640	---	15.60	51.46			55.08			1966	86734
		0.06			62.0	18.000	0.060	6.000	6.600	---	15.40	50.80	51.1/	0.5	54.14	54.6/	0.7	1966	86734
T81	S	0.06	R.T.	T-L	62.0	21.000	0.060	7.000	8.200	---	14.60	52.02			57.95			1966	86734
		0.06			62.0	21.000	0.060	7.000	8.000	---	13.80	49.17	50.6/	2.0	53.82	55.9/	2.9	1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T81	S	0.06	R.T.	T-L	62.0	24.000	0.060	8.000	8.800	---	13.00	49.52			52.78			1966	86734
		0.06			62.0	24.000	0.060	8.000	9.000	---	12.50	47.62	48.6/	1.3	51.54	52.2/	0.9	1966	86734
T81	S	0.12	R.T.	T-L	66.0	3.000	0.125	1.000	1.470	---	31.20	42.02			55.95*			1973	86213
		0.12			66.0	3.000	0.125	1.070	1.600	---	30.00	42.26			58.14*			1973	86213
		0.12			66.0	3.000	0.125	1.070	1.480	---	30.00	42.26			54.12*			1973	86213
		0.12			66.4	3.000	0.123	1.060	1.420	---	30.50	42.69			53.09*			1973	86213
		0.12			66.4	3.000	0.123	1.000	1.340	---	31.00	41.75			51.46*			1973	86213
		0.12			66.4	3.000	0.123	1.050	1.570	---	30.90	42.98	42.3/	0.4	58.81*	----/	---	1973	86213
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T851	S	0.12	R.T.	L-T	65.8	3.000	0.125	1.000	1.510	19.50	31.50	42.42			57.84*			1973	86213
		0.12			65.8	3.000	0.125	1.090	1.530	14.50	29.00	41.37			53.89*			1973	86213
		0.12			65.8	3.000	0.127	1.110	1.510	16.90	29.70	42.90			54.54*			1973	86213
		0.12			65.8	3.000	0.125	1.000	1.330	18.70	32.30	43.50			53.30*			1973	86213
		0.12			65.8	3.000	0.125	1.080	1.700	15.50	29.40	41.67			60.56*			1973	86213
		0.12			65.8	3.000	0.125	1.100	1.520	15.30	28.60	41.05			52.83*			1973	86213
		0.12			65.8	3.000	0.125	1.000	1.400	19.90	31.60	42.56			54.36*			1973	86213
		0.12			65.8	3.000	0.125	1.000	1.500	19.50	32.40	43.64			59.14*			1973	86213
		0.12			66.1	3.000	0.125	1.000	1.300	17.40	30.70	41.35			49.76*			1973	86213
		0.12			66.1	3.000	0.125	1.070	1.430	14.60	28.60	40.29			50.08*			1973	86213
		0.12			66.1	3.000	0.125	1.000	1.460	20.40	30.90	41.62			55.08*			1973	86213
		0.12			66.1	3.000	0.125	1.050	1.560	17.50	29.80	41.45			56.38*			1973	86213
		0.12			62.2	3.000	0.132	1.000	1.640	---	34.20	46.06*			67.91*			1973	86213
		0.12			62.2	3.000	0.132	1.090	1.740	---	33.20	47.36*			70.11*			1973	86213
		0.12			62.2	3.000	0.132	1.060	1.750	---	33.20	46.47*	42.0/	1.0	70.55*	----/	---	1973	86213
T851	P	0.25	R.T.	L-T	65.2	4.000	0.242	1.330	2.140	---	31.90	49.53			71.60*			1973	86213
		0.25			65.2	4.000	0.242	1.330	2.140	---	30.90	47.97			69.36*			1973	86213
		0.25			65.2	4.000	0.243	1.410	2.290	---	30.00	48.41			72.13*			1973	86213
		0.25			66.4	4.000	0.256	1.330	2.210	---	33.80	52.48			78.33*			1973	86213
		0.25			66.4	4.000	0.256	1.440	2.210	---	31.30	51.23	49.9/	1.9	72.53*	----/	---	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(APP) MEAN	K(C) (KSI*SQRT IN)	K(C) STAN DEV	K(C) MEAN	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T851	P	1.00	R.T.	L-T	65.8	20.000	1.000	7.000	9.170	---	10.70	38.42			46.84			1973	86213
		1.00			65.8	20.000	1.000	7.000	9.920	---	11.20	40.22			52.41			1973	86213
		1.00			65.8	20.000	1.000	7.000	9.570	---	11.00	39.50			49.90			1973	86213
		1.00			65.8	20.000	1.000	7.000	9.540	---	10.70	38.42			48.41			1973	86213
		1.00			65.8	20.000	1.000	7.000	9.680	---	11.40	40.94			52.22			1973	86213
		1.00			65.8	20.000	1.000	7.000	9.300	---	10.90	39.14			48.27			1973	86213
		1.00			65.8	20.000	1.000	7.000	9.300	---	11.50	41.30			50.93			1973	86213
		1.00			65.8	20.000	1.000	7.000	10.050	---	11.50	41.30			54.44			1973	86213
		1.00			66.1	20.000	1.000	7.000	9.250	---	10.00	35.91			44.09			1973	86213
		1.00			66.1	20.000	1.000	7.000	9.170	---	10.70	38.42			46.84			1973	86213
		1.00			66.1	20.000	1.000	7.000	9.710	---	9.80	35.19			45.01			1973	86213
		1.00			66.1	20.000	1.000	7.000	8.900	---	9.70	34.83	38.6/	2.3	41.45	48.4/	3.8	1973	86213
T851	S	0.12	R.T.	T-L	64.4	3.000	0.125	1.000	1.300	14.90	28.10	37.84			45.55			1973	86213
		0.12			64.4	3.000	0.125	1.100	1.490	12.90	26.00	37.32			47.18*			1973	86213
		0.12			64.4	3.000	0.120	1.130	1.450	13.80	25.00	36.56			44.30			1973	86213
		0.12			64.4	3.000	0.124	1.000	1.420	19.40	25.90	34.88			45.09			1973	86213
		0.12			65.4	3.000	0.125	1.000	1.320	19.40	29.10	39.19			47.74			1973	86213
		0.12			65.4	3.000	0.125	1.100	1.560	13.90	25.40	36.46			48.06*			1973	86213
		0.12			65.4	3.000	0.125	1.000	1.410	17.20	28.20	37.98			48.80*			1973	86213
		0.12			65.4	3.000	0.125	1.070	1.380	14.80	26.90	37.89			45.73			1973	86213
		0.12			65.4	3.000	0.125	1.120	1.490	15.00	24.30	35.32			44.09			1973	86213
		0.12			65.4	3.000	0.125	1.050	1.300	15.80	26.90	37.41			43.60			1973	86213
		0.12			65.4	3.000	0.125	1.000	1.300	18.00	28.20	37.98			45.71			1973	86213
		0.12			65.4	3.000	0.125	1.000	1.250	16.70	26.40	35.55			41.53			1973	86213
		0.12			64.1	3.000	0.132	1.060	1.600	---	29.70	41.57			57.56*			1973	86213
		0.12			64.1	3.000	0.132	1.000	1.540	---	32.10	43.23			60.01*			1973	86213
		0.12			64.1	3.000	0.132	1.060	1.580	---	30.00	41.99	38.1/	2.5	57.44*	44.8/	1.7	1973	86213
T851	P	0.25	R.T.	T-L	56.6	3.000	0.245	1.120	1.320	---	17.00	24.71			27.89			1973	86213
		0.25			59.2	3.000	0.249	1.180	1.560	---	17.30	26.09			32.73			1973	86213
		0.25			56.6	3.000	0.250	1.170	1.420	---	17.30	25.93			30.11			1973	86213
		0.25			56.6	3.000	0.251	1.160	1.500	---	18.60	27.71			33.95			1973	86213
		0.25			59.2	3.000	0.252	1.220	1.260	---	18.50	28.58			29.28			1973	86213
		0.25			59.2	3.000	0.252	1.180	1.540	---	18.00	27.14	26.7/	1.4	33.65	31.3/	2.5	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T851	P	0.25	R.T.	T-L	66.2	4.000	0.243	1.330	1.900	---	25.00	38.81			50.40			1973	86213
		0.25			66.2	4.000	0.243	1.440	1.940	---	23.30	38.14			47.82			1973	86213
		0.25			66.2	4.000	0.243	1.330	1.800	---	25.10	38.97			48.40			1973	86213
		0.25			65.8	4.000	0.256	1.330	1.860	---	28.00	43.47			55.45			1973	86213
		0.25			65.8	4.000	0.256	1.430	1.940	---	27.00	43.98			55.41			1973	86213
		0.25			68.0	4.000	0.256	1.400	1.670	---	19.30	31.00			35.11			1973	86213
		0.25			68.0	4.000	0.255	1.390	1.740	---	19.90	31.81	38.0/	5.1	37.36	47.1/	8.1	1973	86213
T851	P	1.00	R.T.	T-L	64.4	20.000	1.000	7.000	9.200	---	7.10	25.50			31.16			1973	86213
		1.00			64.4	20.000	1.000	7.000	9.230	---	7.40	26.57			32.57			1973	86213
		1.00			64.4	20.000	1.000	7.000	9.100	---	7.20	25.86			31.32			1973	86213
		1.00			64.4	20.000	1.000	7.000	9.000	---	7.50	26.93			32.34			1973	86213
		1.00			65.4	20.000	1.000	7.000	8.980	---	7.90	28.37			34.00			1973	86213
		1.00			65.4	20.000	1.000	7.000	8.840	---	8.00	28.73			34.01			1973	86213
		1.00			65.4	20.000	1.000	7.000	8.880	---	7.80	28.01			33.27			1973	86213
		1.00			65.4	20.000	1.000	7.000	8.890	---	7.90	28.37			33.73			1973	86213
		1.00			65.4	20.000	1.000	7.000	9.320	---	8.00	28.73			35.49			1973	86213
		1.00			65.4	20.000	1.000	7.000	9.320	---	8.40	30.17			37.27			1973	86213
		1.00			65.4	20.000	1.000	7.000	8.770	---	7.70	27.65			32.53			1973	86213
		1.00			65.4	20.000	1.000	7.000	9.700	---	7.90	28.37	27.8/	1.3	36.25	33.7/	1.9	1973	86213
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T86	S	0.06	R.T.	L-T	72.4	2.000	0.064	0.619	0.820	---	35.90	37.61			45.56*			1973	86213
		0.06			72.4	2.000	0.064	0.622	0.900	---	35.00	36.82			47.72*			1973	86213
		0.06			72.4	2.000	0.064	0.623	0.850	---	34.60	36.40			45.11*			1973	86213
		0.06			72.5	2.000	0.062	0.614	0.970	---	38.70	40.38			56.16*			1973	86213
		0.06			72.5	2.000	0.062	0.616	0.960	---	35.90	37.53			51.63*			1973	86213
		0.06			72.5	2.000	0.062	0.619	0.860	---	37.30	39.08			49.07*			1973	86213
		0.06			72.5	2.000	0.062	0.617	0.900	---	36.40	38.06			49.63*			1973	86213
		0.06			73.4	2.000	0.062	0.623	0.720	---	38.40	40.39			44.44*			1973	86213
		0.06			73.4	2.000	0.062	0.622	0.900	---	36.90	38.81			50.31*			1973	86213
		0.06			73.4	2.000	0.062	0.624	0.910	---	36.90	38.89	38.4/	1.4	50.76*	----/	---	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.5.2.2 (Con't)

ALUMINUM 2024 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T86	S	0.06	R.T.	L-T	72.9	15.800	0.064	3.000	3.400	---	22.20	49.29			52.82			1973	86213
		0.06			72.9	15.810	0.063	6.010	6.930	---	16.10	54.40			60.45			1973	86213
		0.06			72.9	15.810	0.064	3.990	4.660	---	18.20	47.44			52.06			1973	86213
		0.06			72.9	15.820	0.064	5.990	6.800	---	12.80	43.14			47.35			1973	86213
		0.06			72.9	15.820	0.064	1.010	1.420	---	34.70	43.82	47.6/	4.6	52.08	53.0/	4.7	1973	86213
T86	S	0.06	R.T.	T-L	70.8	2.000	0.064	0.624	0.870	---	32.20	33.94			42.75*			1973	86213
		0.06			70.8	2.000	0.064	0.622	0.880	---	31.60	33.24			42.33			1973	86213
		0.06			70.8	2.000	0.064	0.623	0.890	---	31.70	33.34			42.84*			1973	86213
		0.06			71.6	2.000	0.062	0.615	0.915	---	32.40	33.80			44.73*			1973	86213
		0.06			71.6	2.000	0.062	0.616	0.800	---	34.70	36.28			43.25*			1973	86213
		0.06			71.6	2.000	0.062	0.618	0.875	---	33.20	34.78			44.23*			1973	86213
		0.06			71.6	2.000	0.062	0.617	0.815	---	33.90	35.44			42.79			1973	86213
		0.06			72.6	2.000	0.063	0.620	0.860	---	32.70	34.33			43.02			1973	86213
		0.06			72.6	2.000	0.063	0.620	0.910	---	32.60	34.22			44.85*			1973	86213
		0.06			72.6	2.000	0.063	0.623	0.820	---	32.90	34.61	34.4/	0.9	41.75	42.5/	0.6	1973	86213
T86	S	0.06	R.T.	T-L	71.2	15.810	0.063	3.010	3.430	---	19.70	43.82			47.10			1973	86213
		0.06			71.2	15.810	0.064	6.020	6.630	---	11.80	39.92			42.82			1973	86213
		0.06			71.2	15.820	0.063	3.020	3.360	---	21.50	47.91			50.81			1973	86213
		0.06			71.2	15.820	0.064	4.000	4.620	---	15.70	40.98			44.67			1973	86213
		0.06			71.2	15.820	0.064	1.000	1.200	---	31.90	40.08	42.5/	3.4	43.95	45.9/	3.2	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

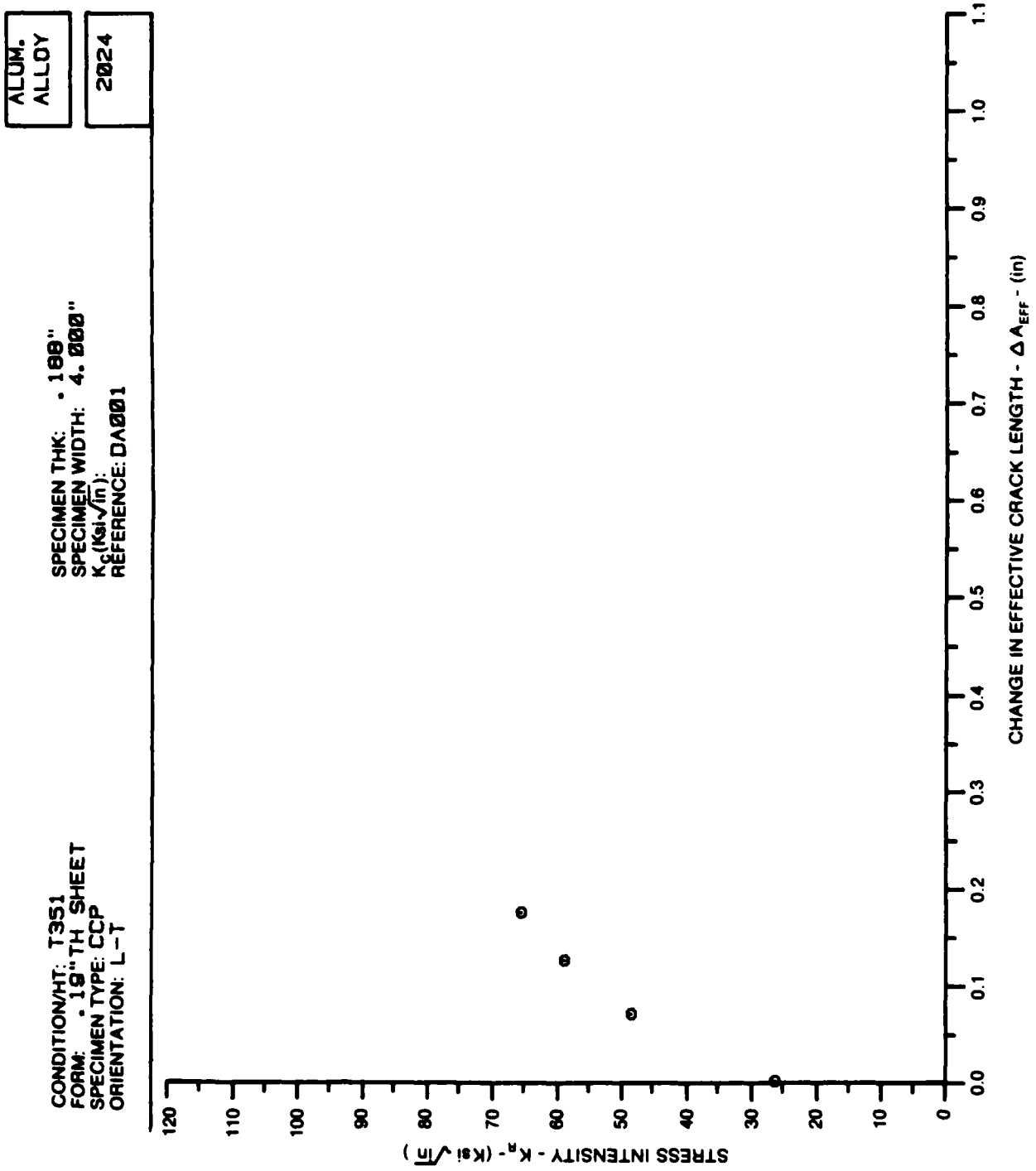


Figure 7.5.2.3

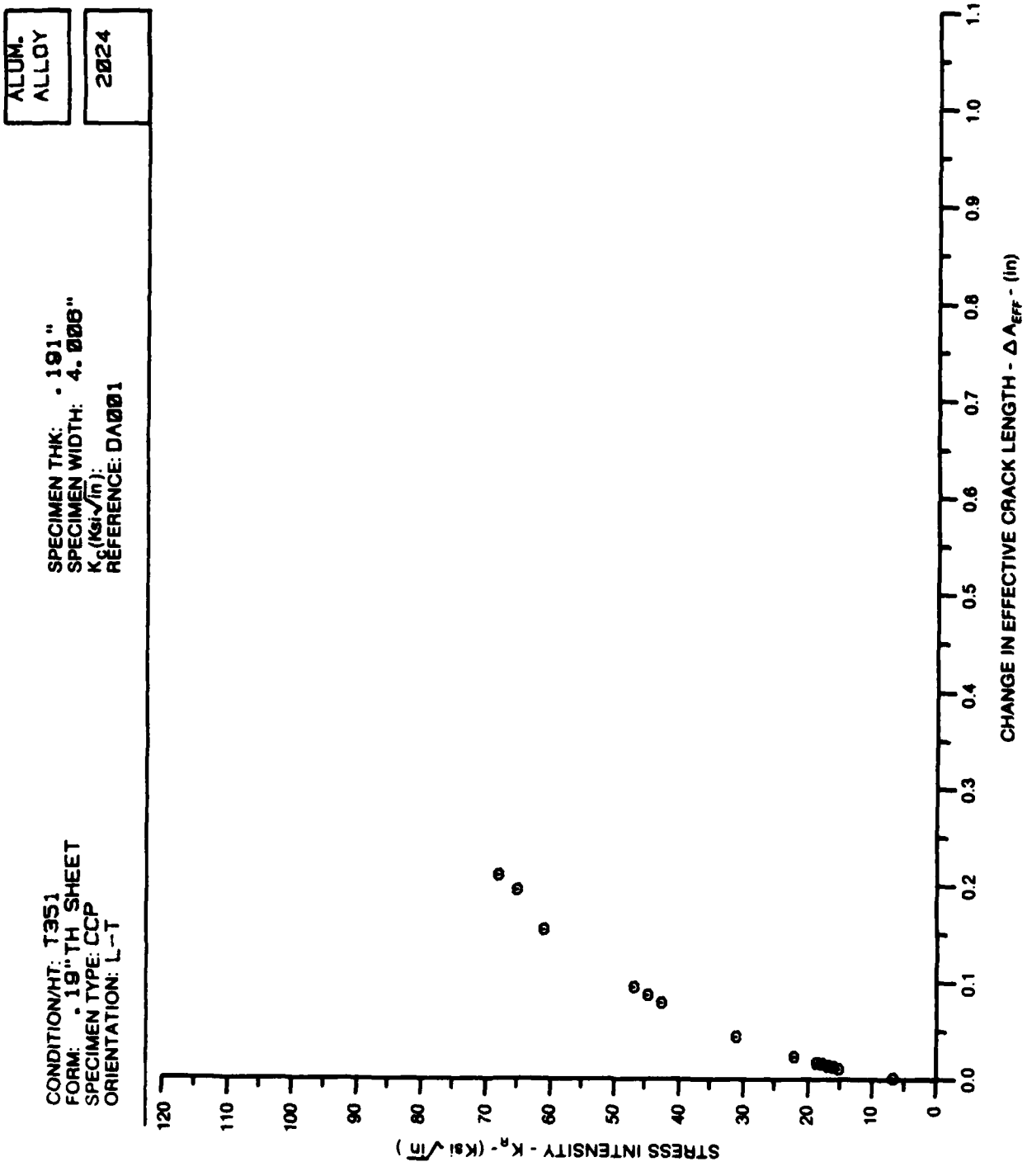


Figure 7.5.2.4

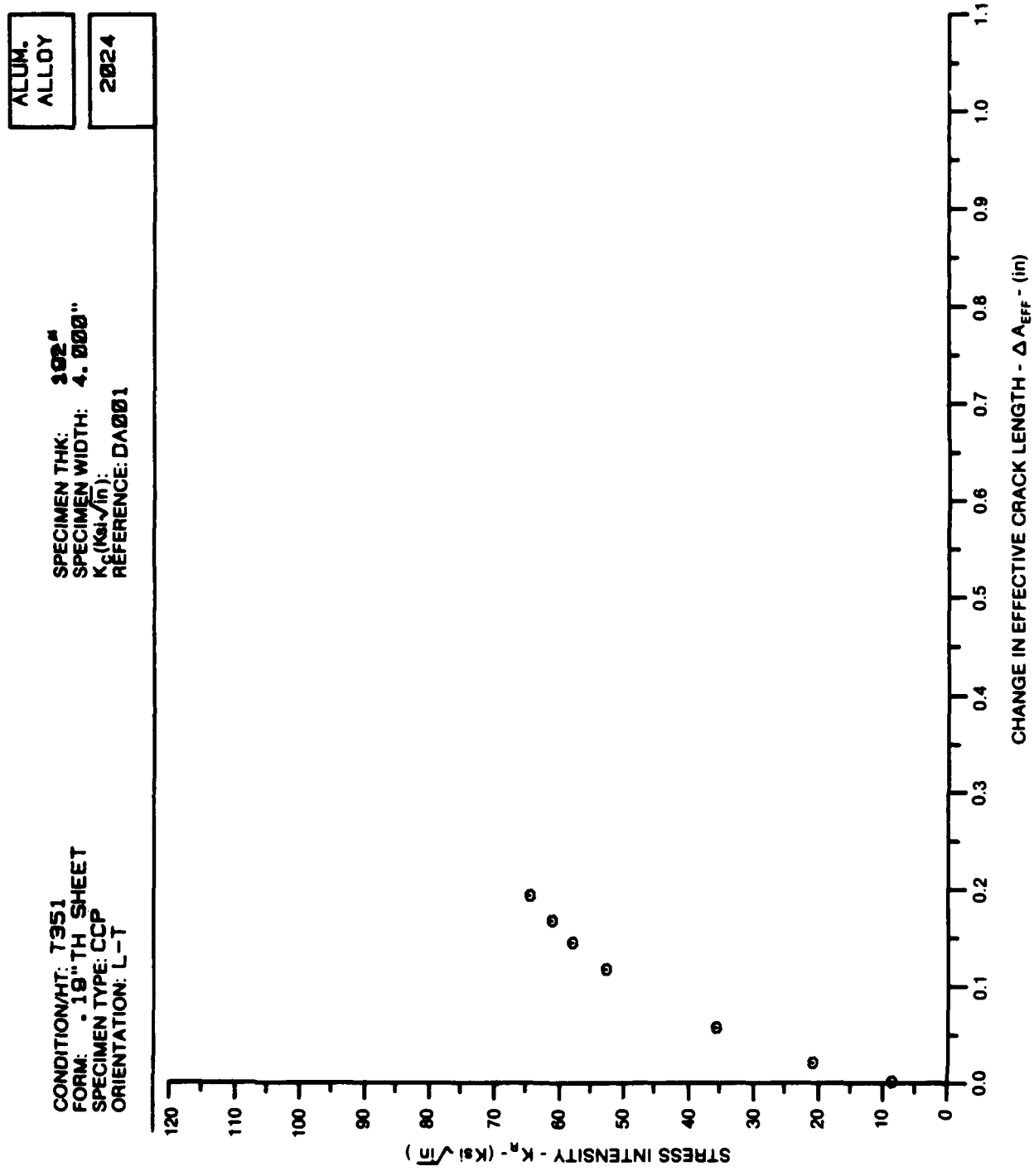


Figure 7.5.2.5

CONDITION/HT: T351
FORM: .19"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T

SPECIMEN THK: .181"
SPECIMEN WIDTH: 11.998"
K_c(Ksi$\sqrt{in}$):
REFERENCE: DA001

ALUM. ALLOY
2024

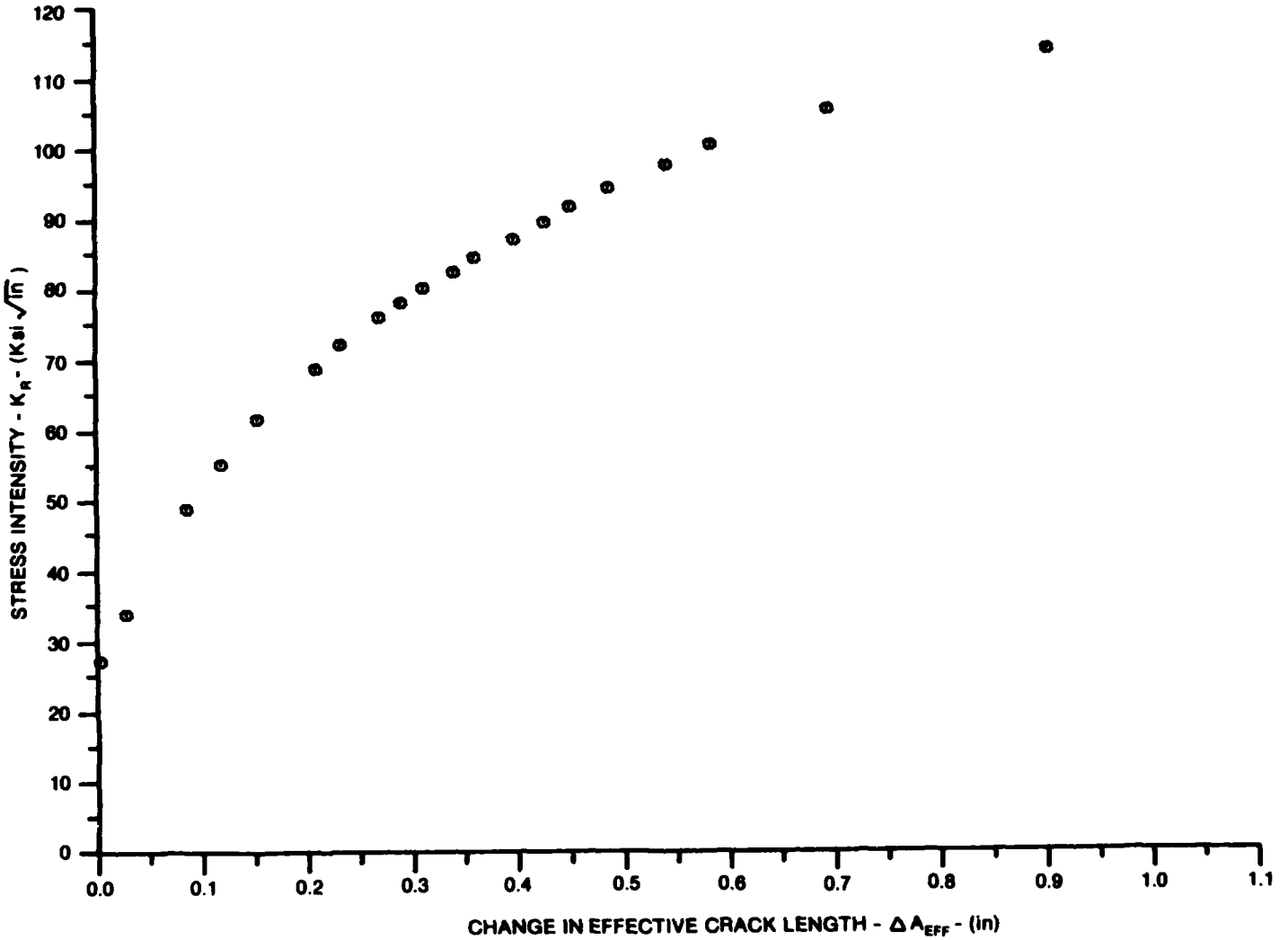


Figure 7.5.2.6

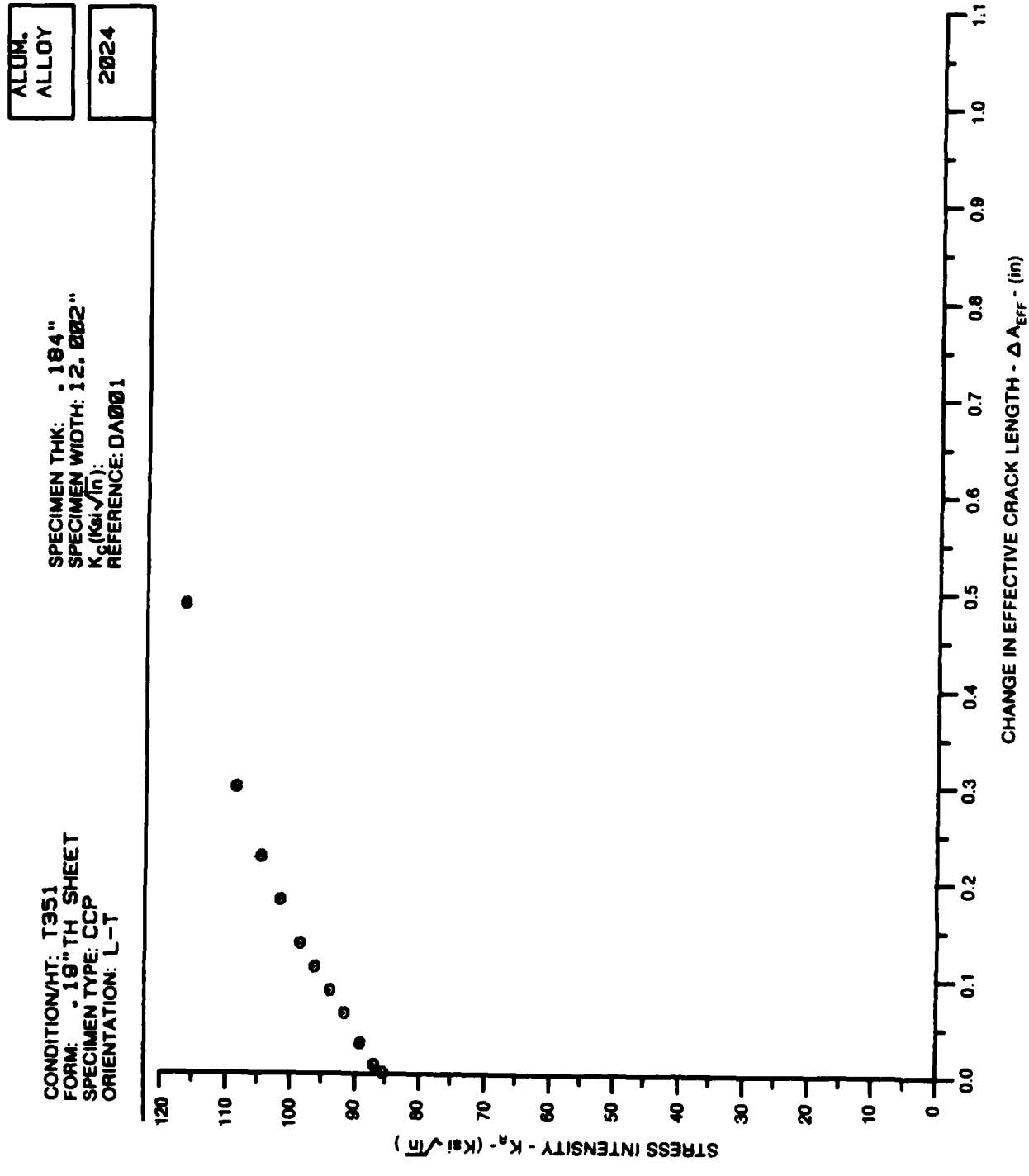


Figure 7.5.2.7

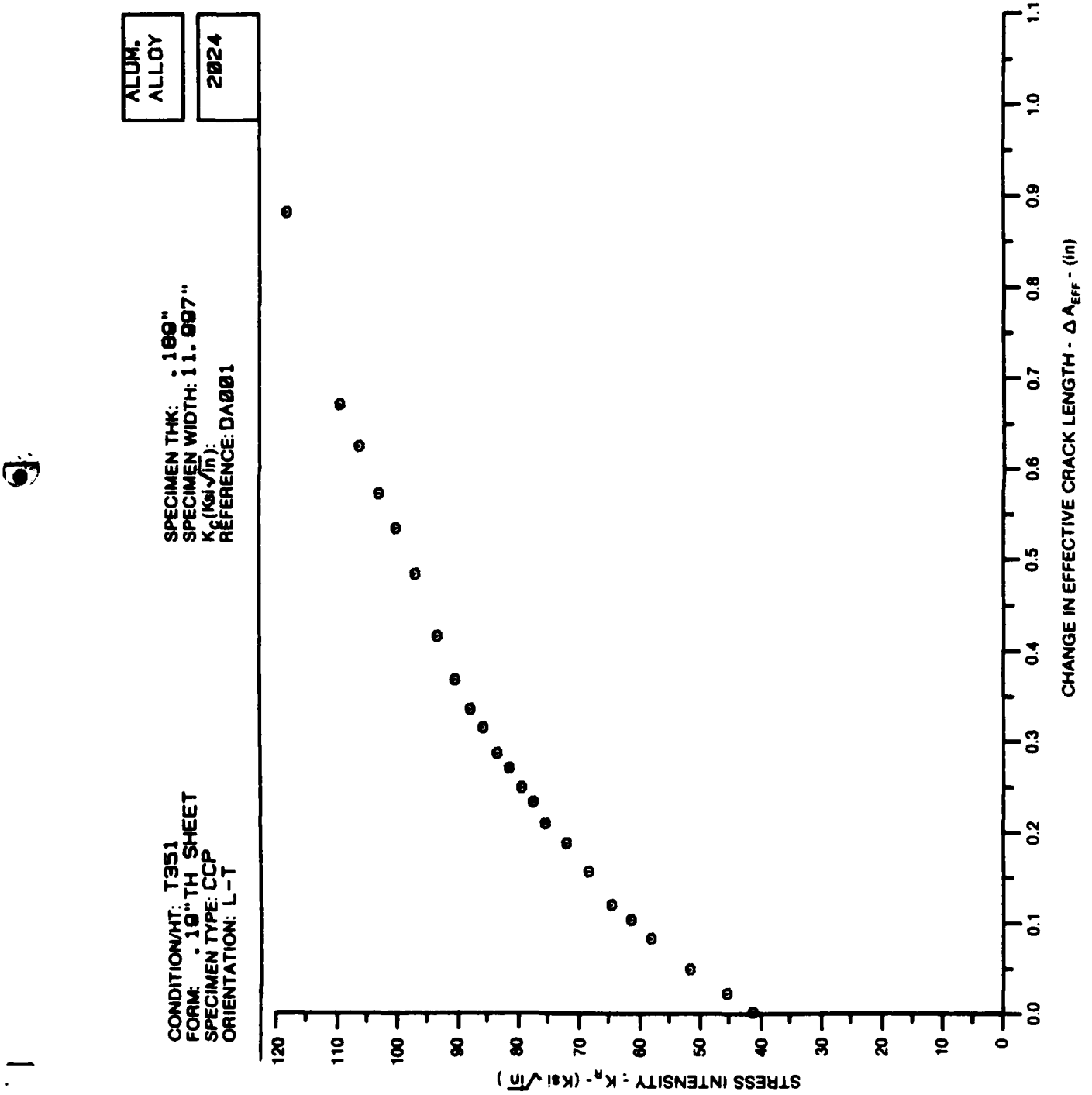


Figure 7.5.2.8

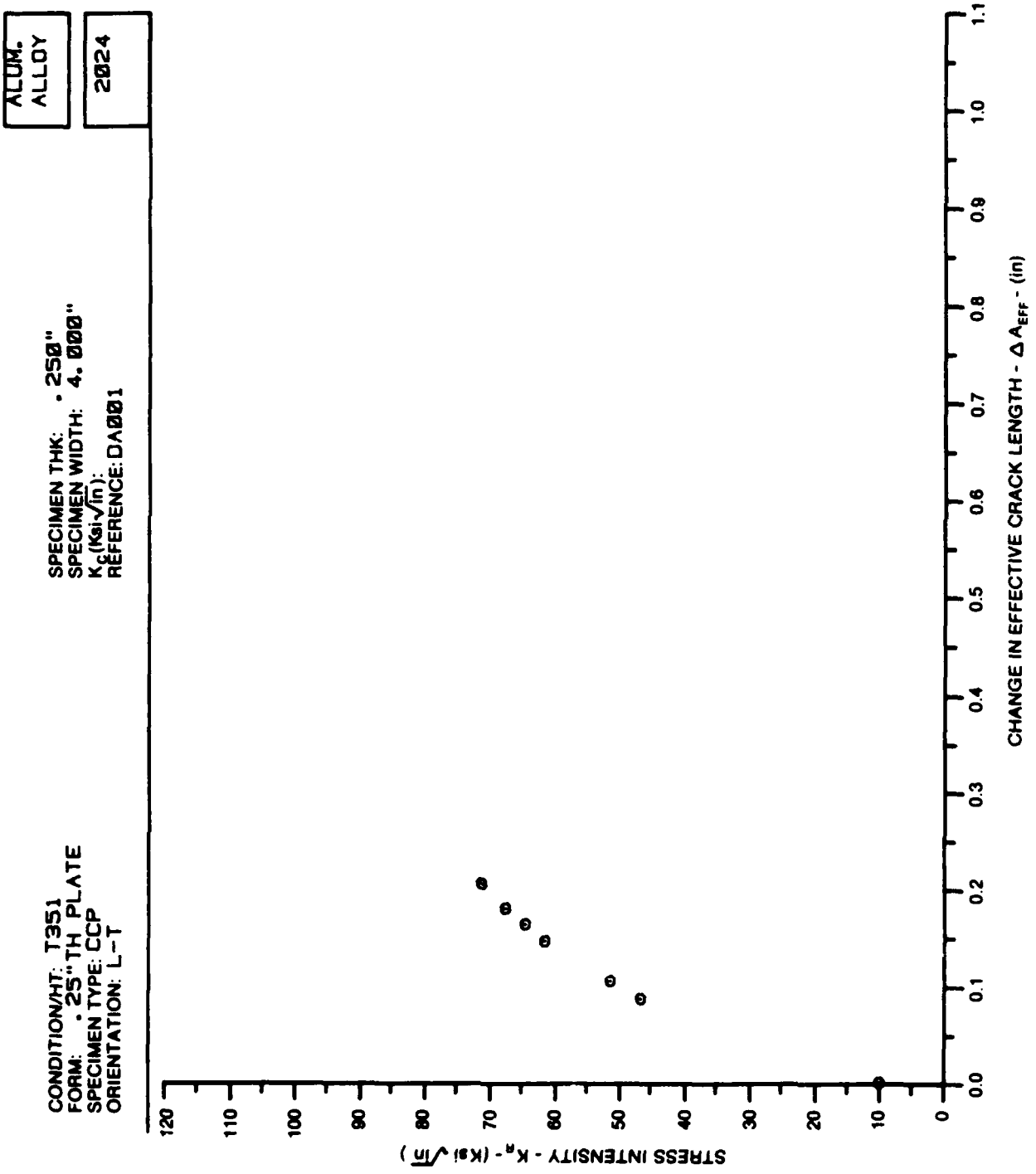


Figure 7.5.2.9

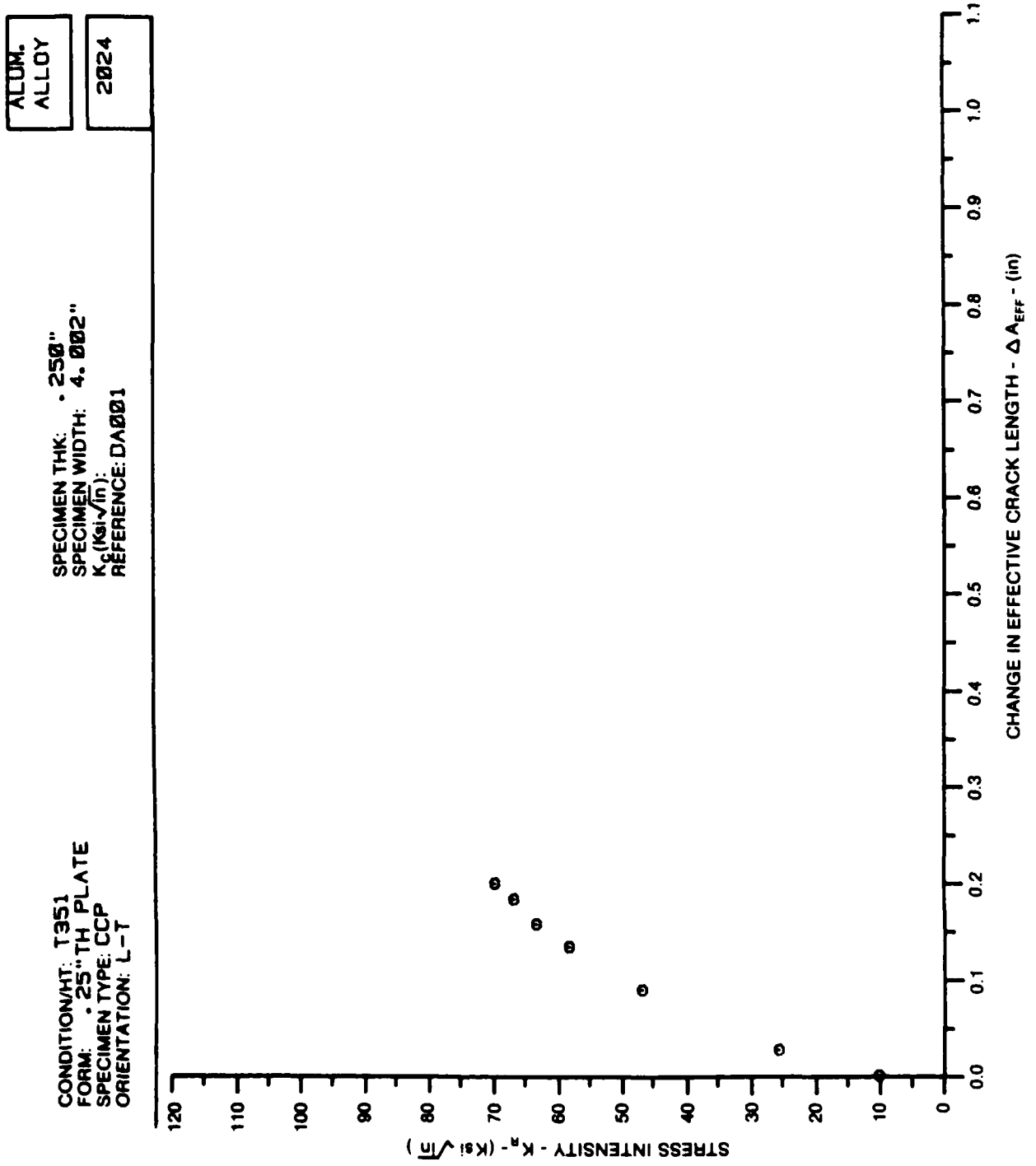


Figure 7.5.2.10

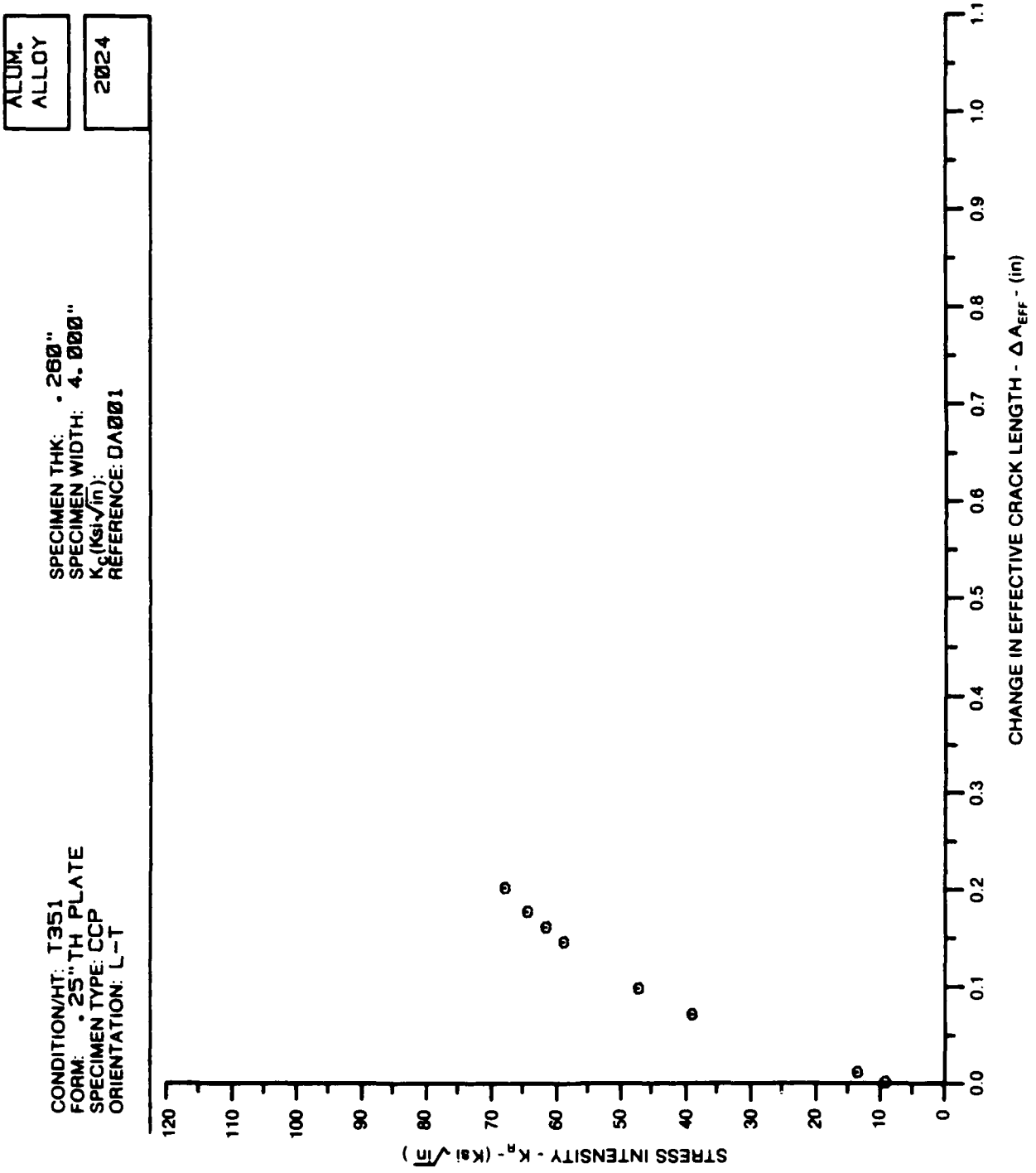


Figure 7.5.2.11

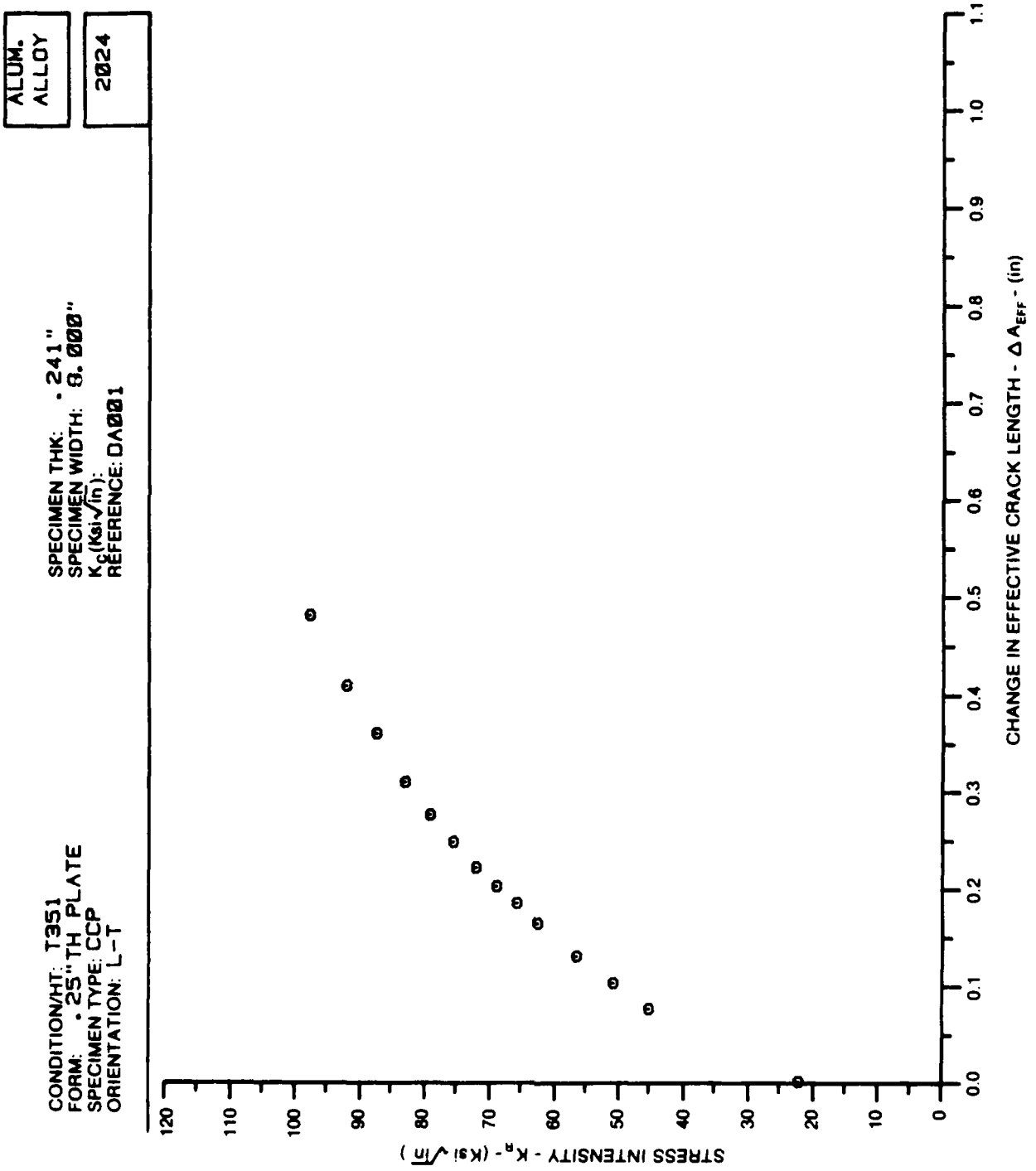


Figure 7.5.2.12

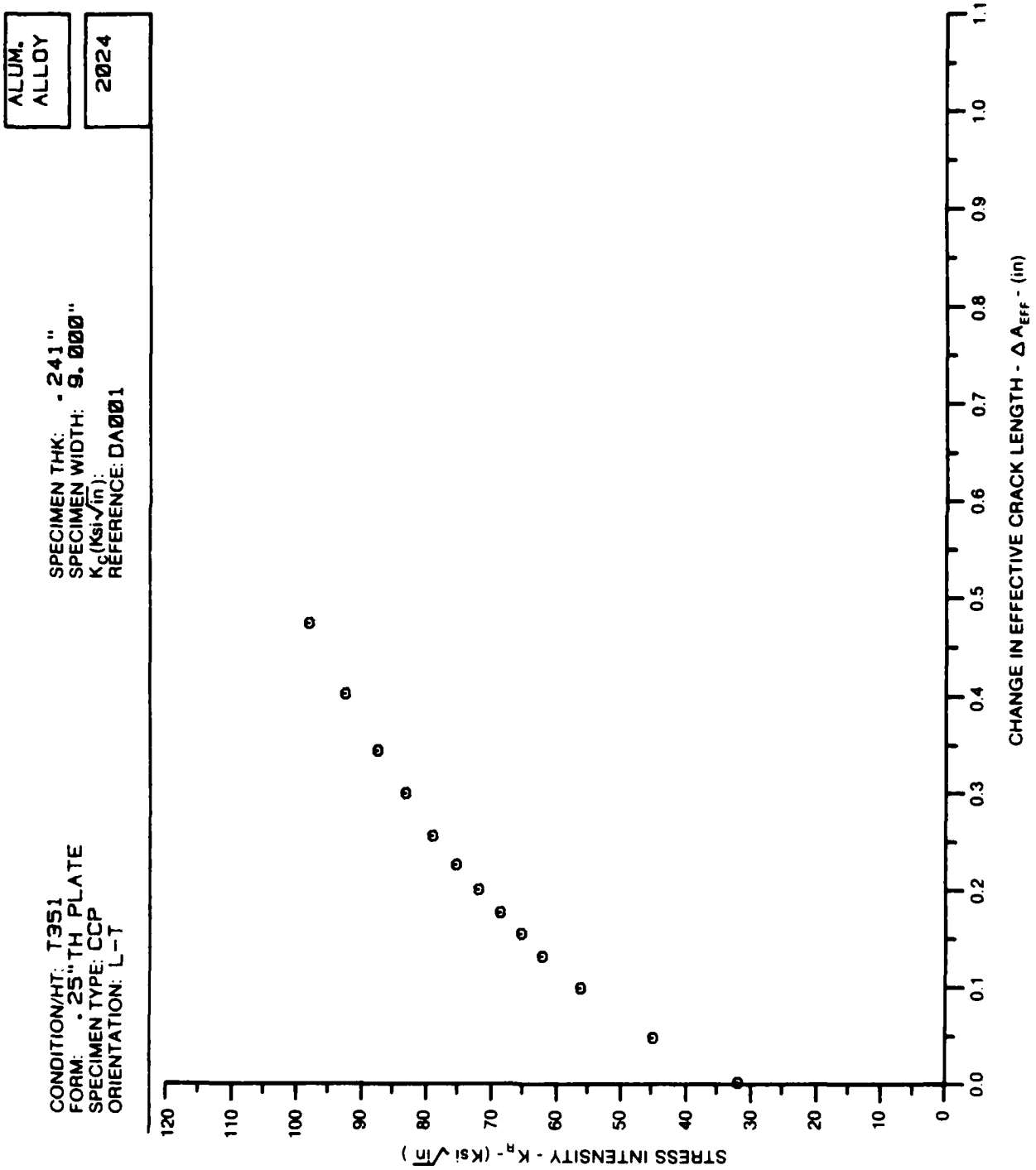


Figure 7.5.2.13

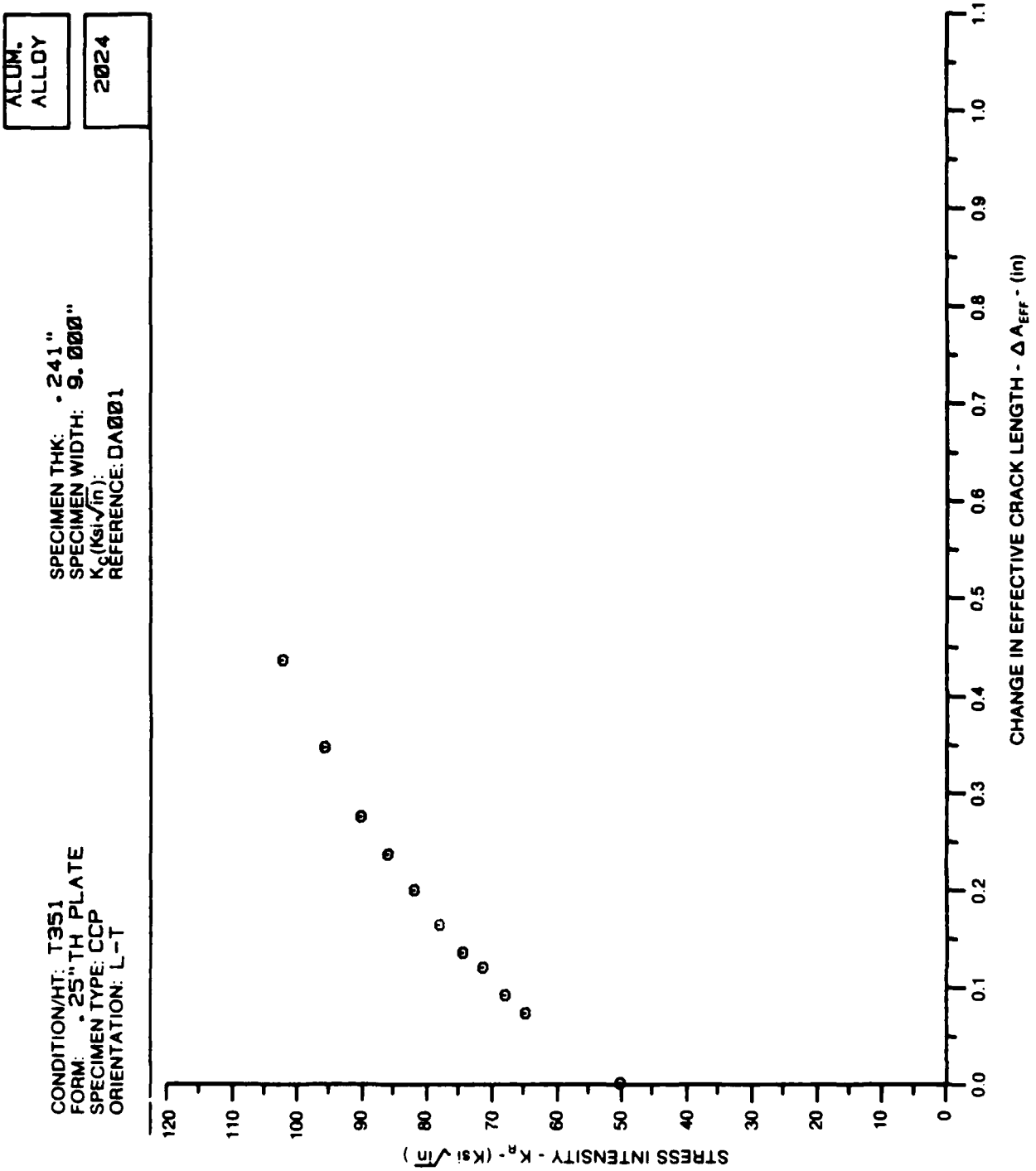


Figure 7.5.2.14

ALUM. ALLOY

2024

CONDITION/HT: T351
FORM: .25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T

SPECIMEN THK: .242"
SPECIMEN WIDTH: 8.995"
K_c(Ksi$\sqrt{in}$):
REFERENCE: DA001

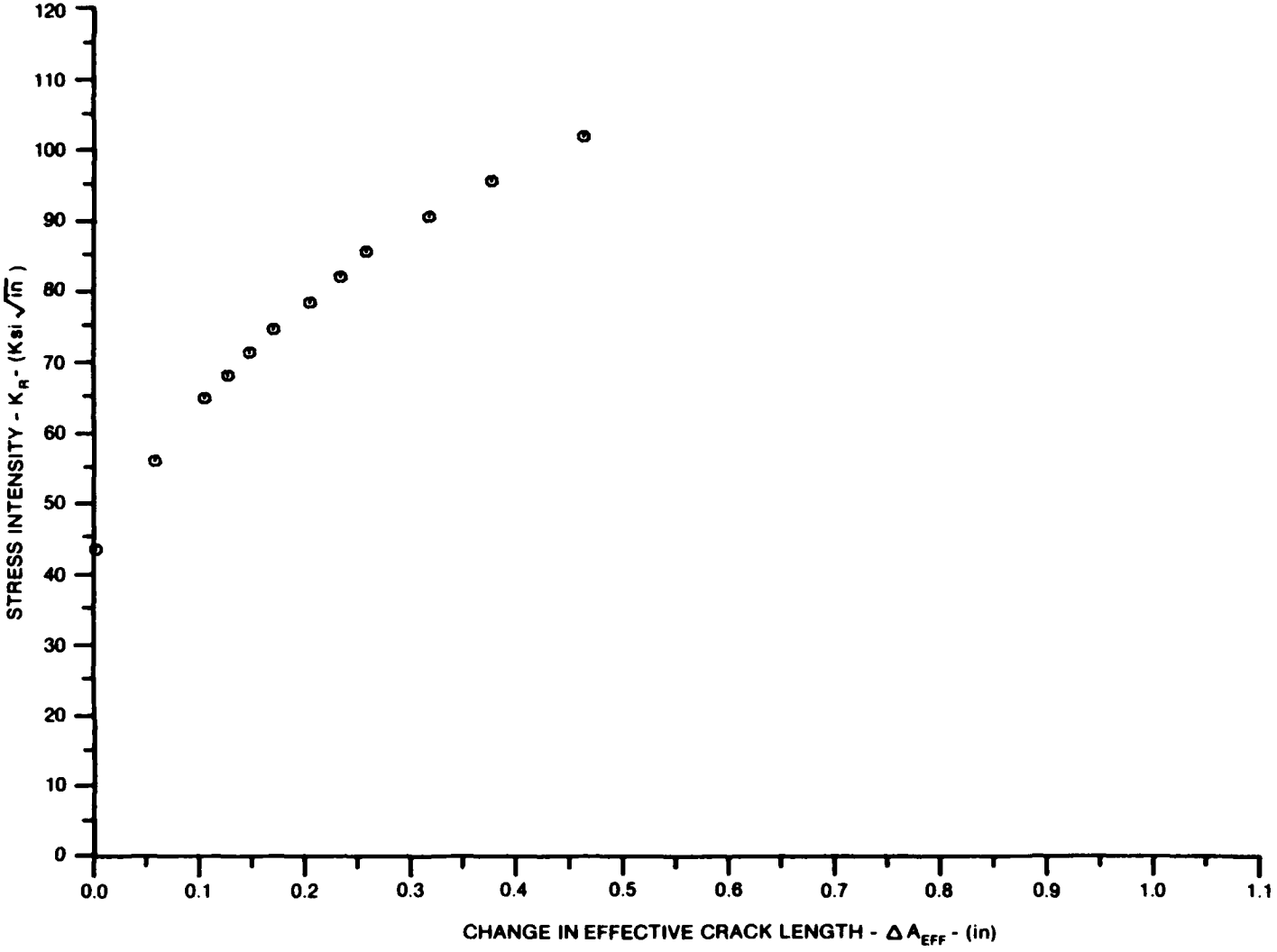


Figure 7.5.2.15

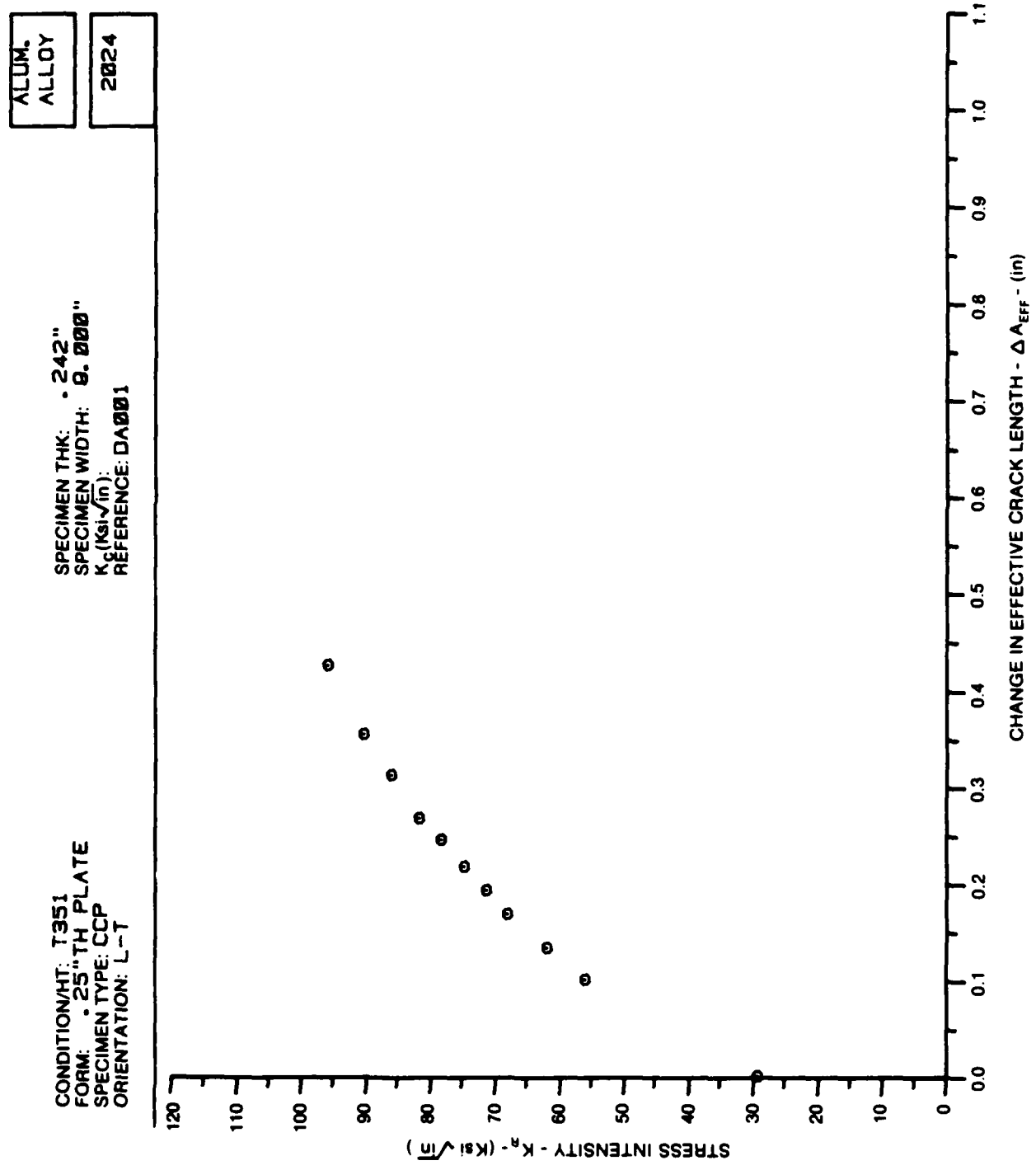


Figure 7.5.2.16

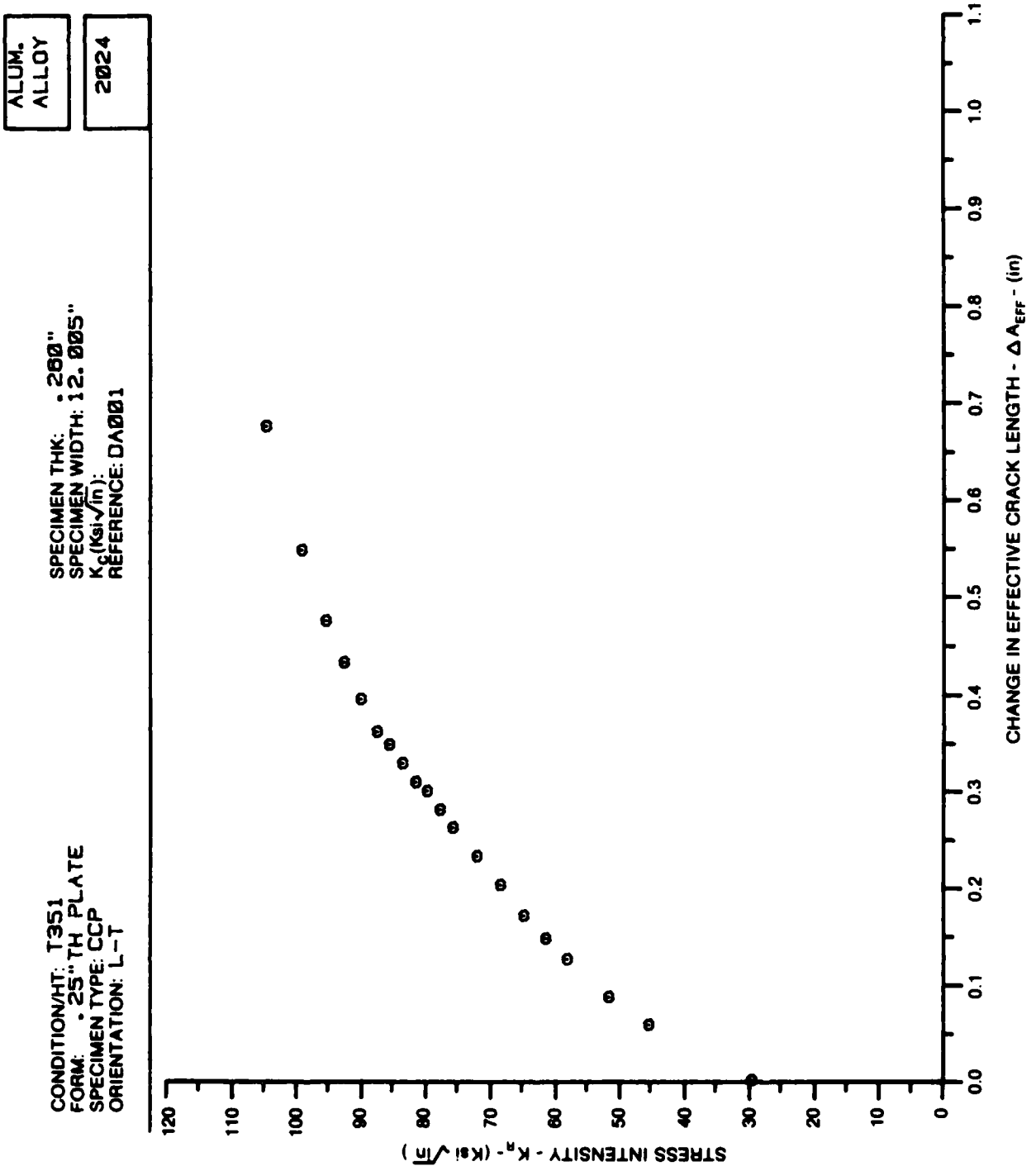


Figure 7.5.2.17

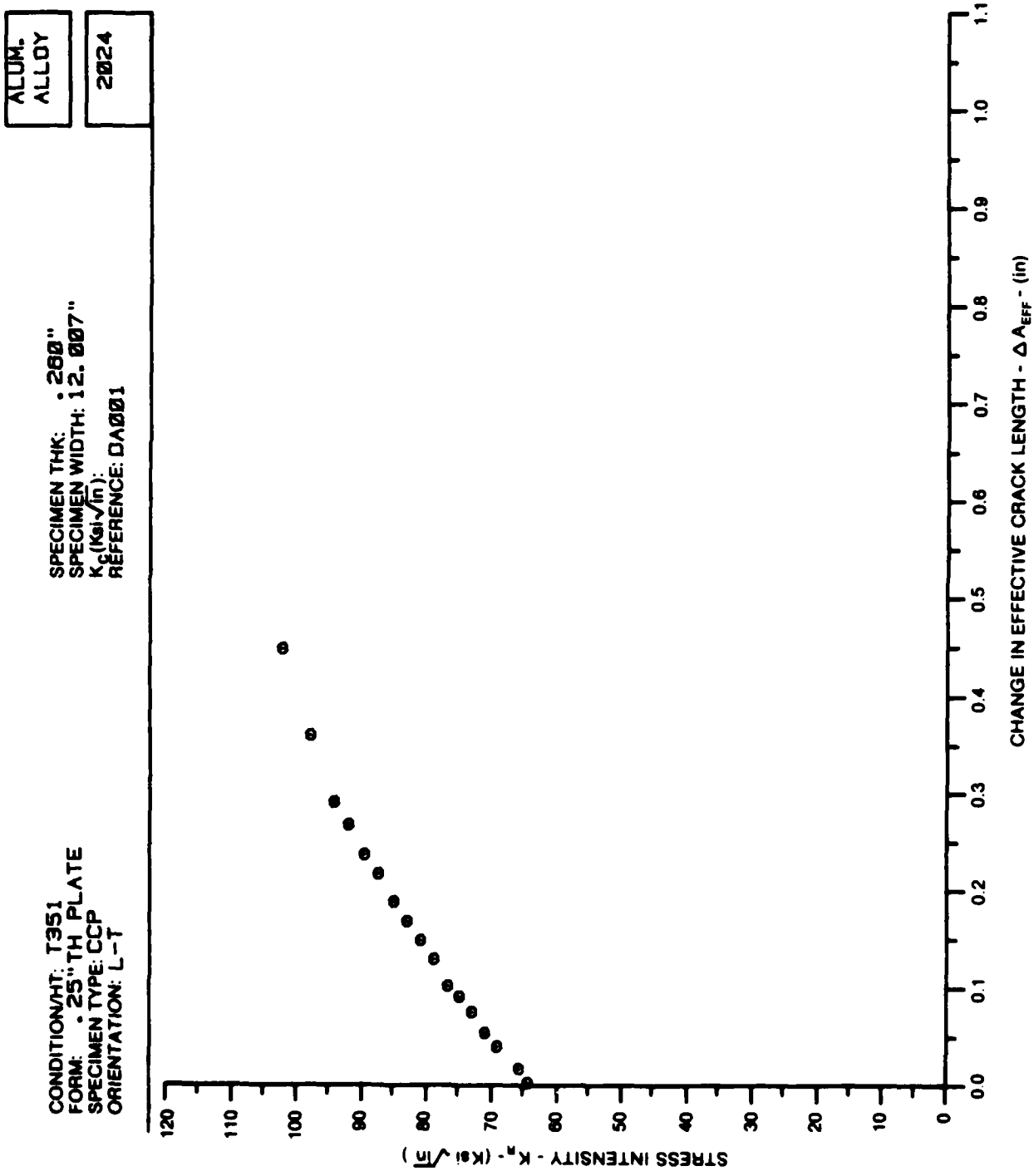


Figure 7.5.2.18

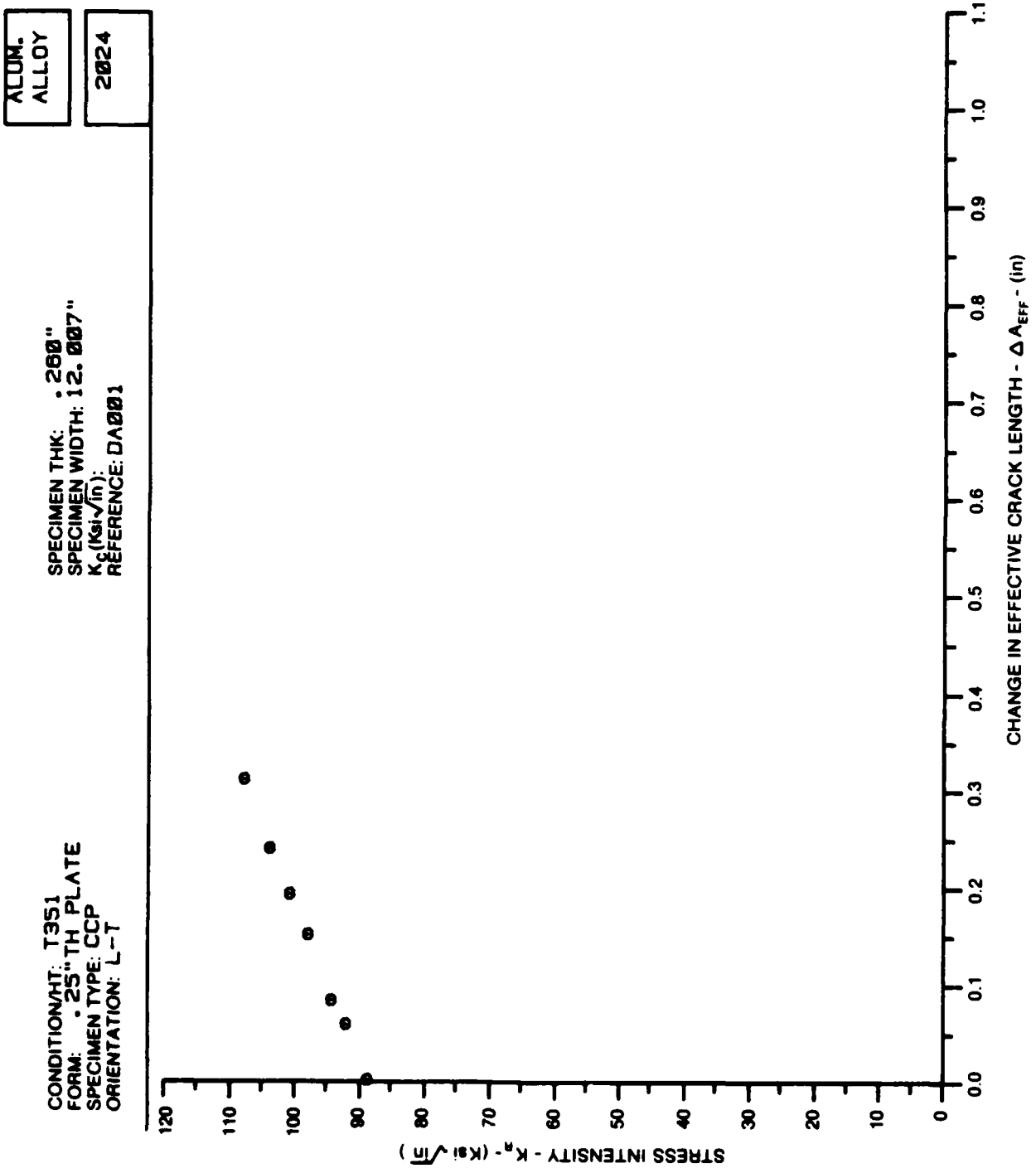


Figure 7.5.2.19

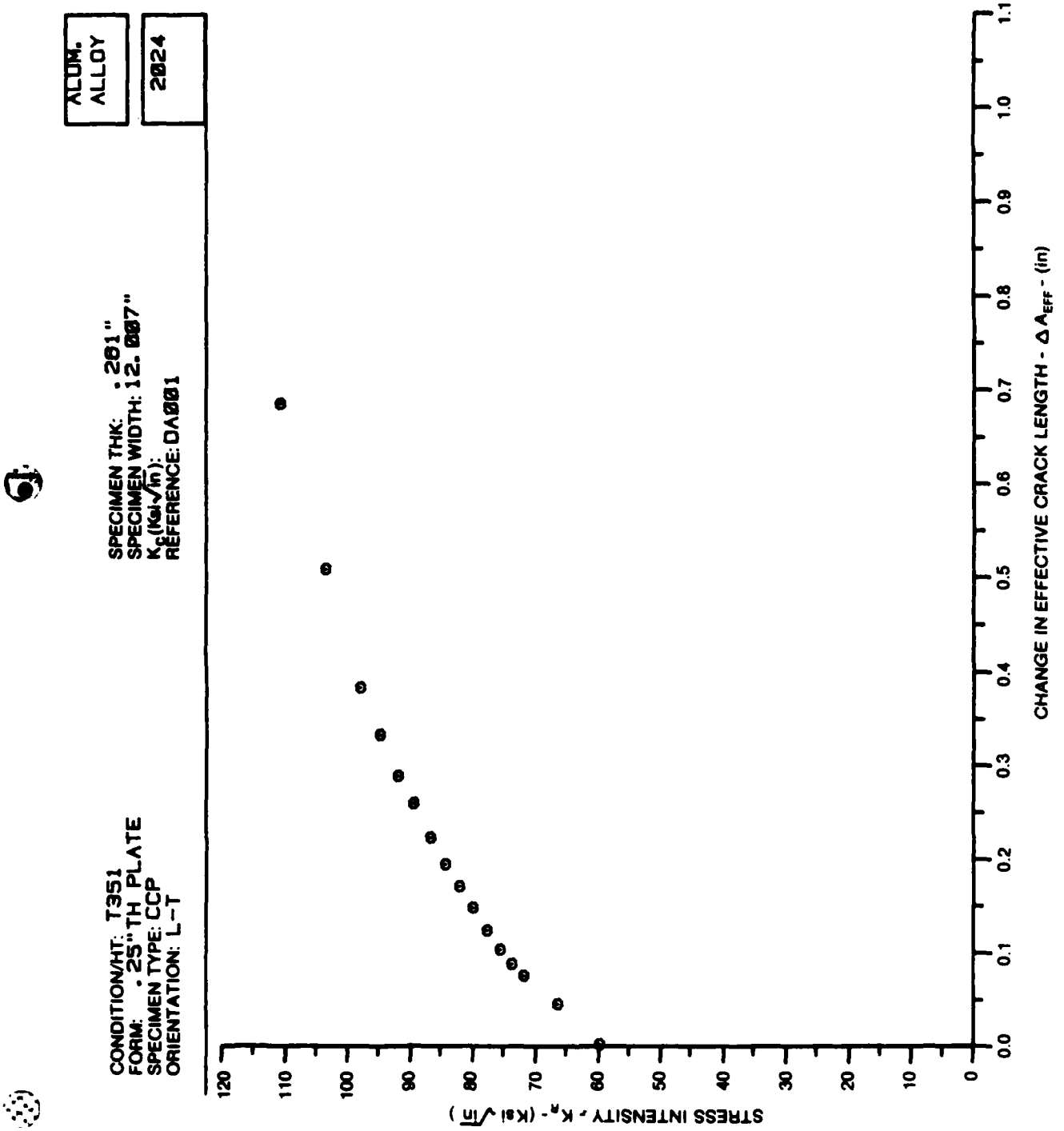


Figure 7.5.2.20

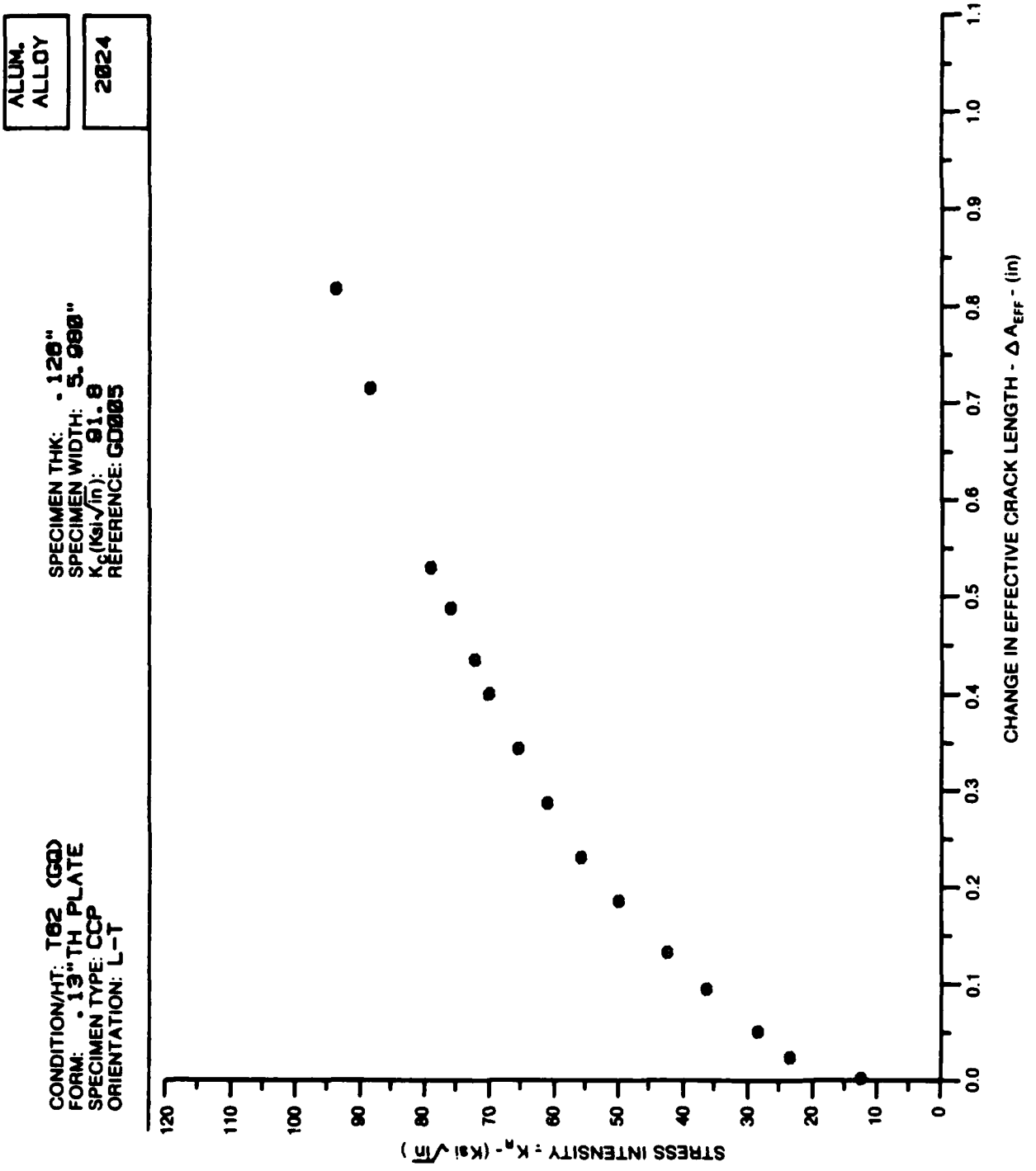


Figure 7.5.2.21

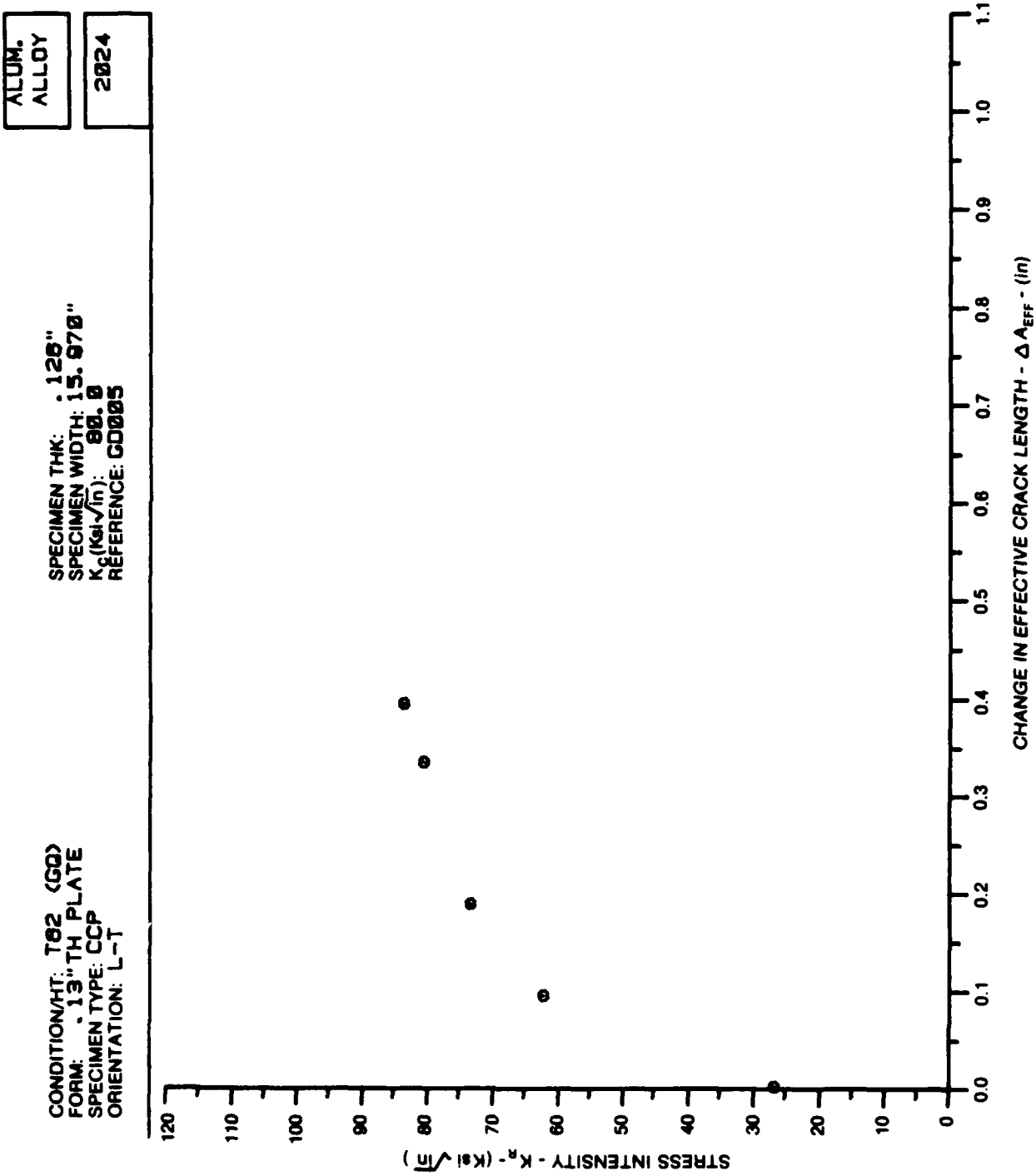


Figure 7.5.2.22

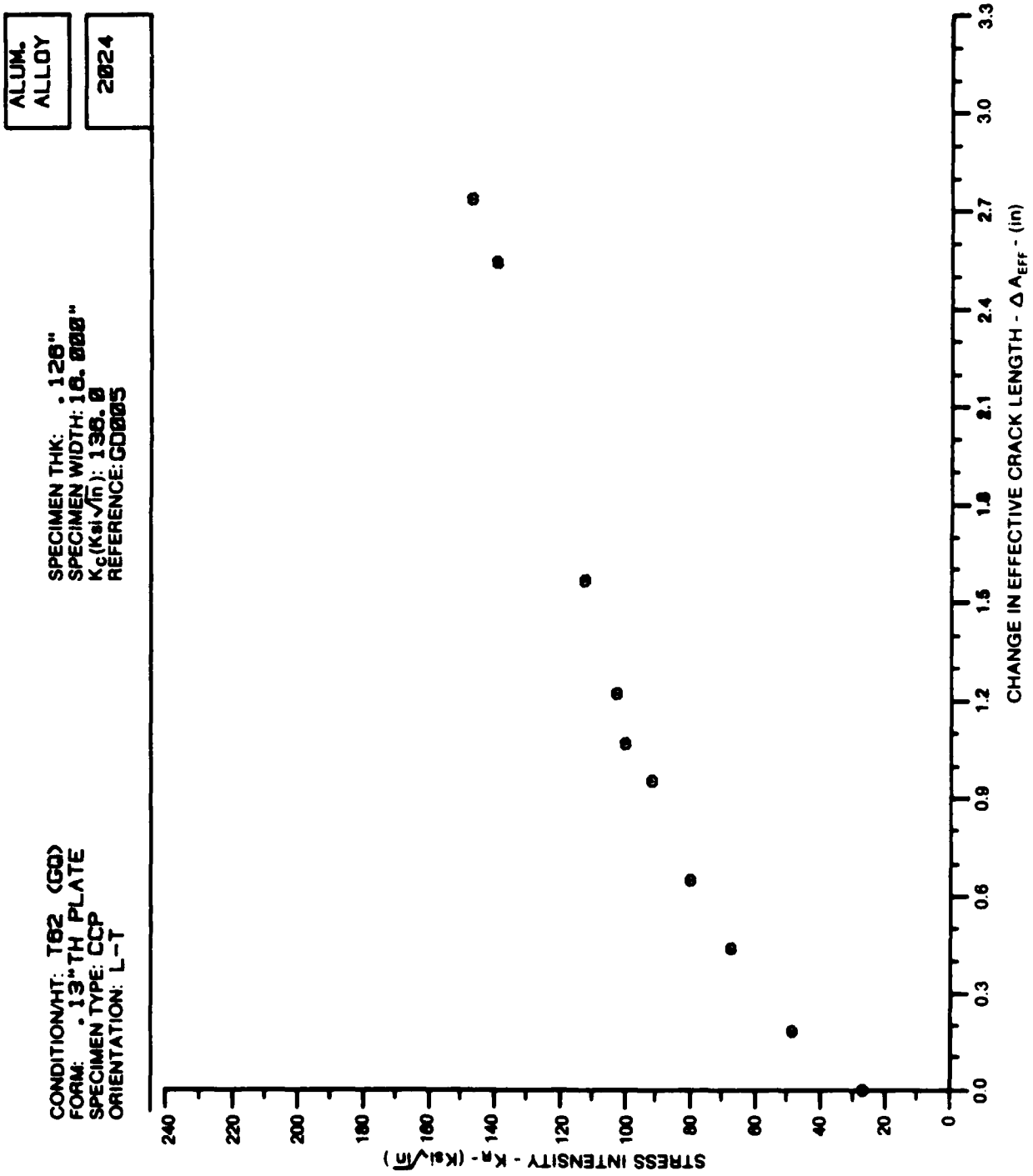


Figure 7.5.2.23

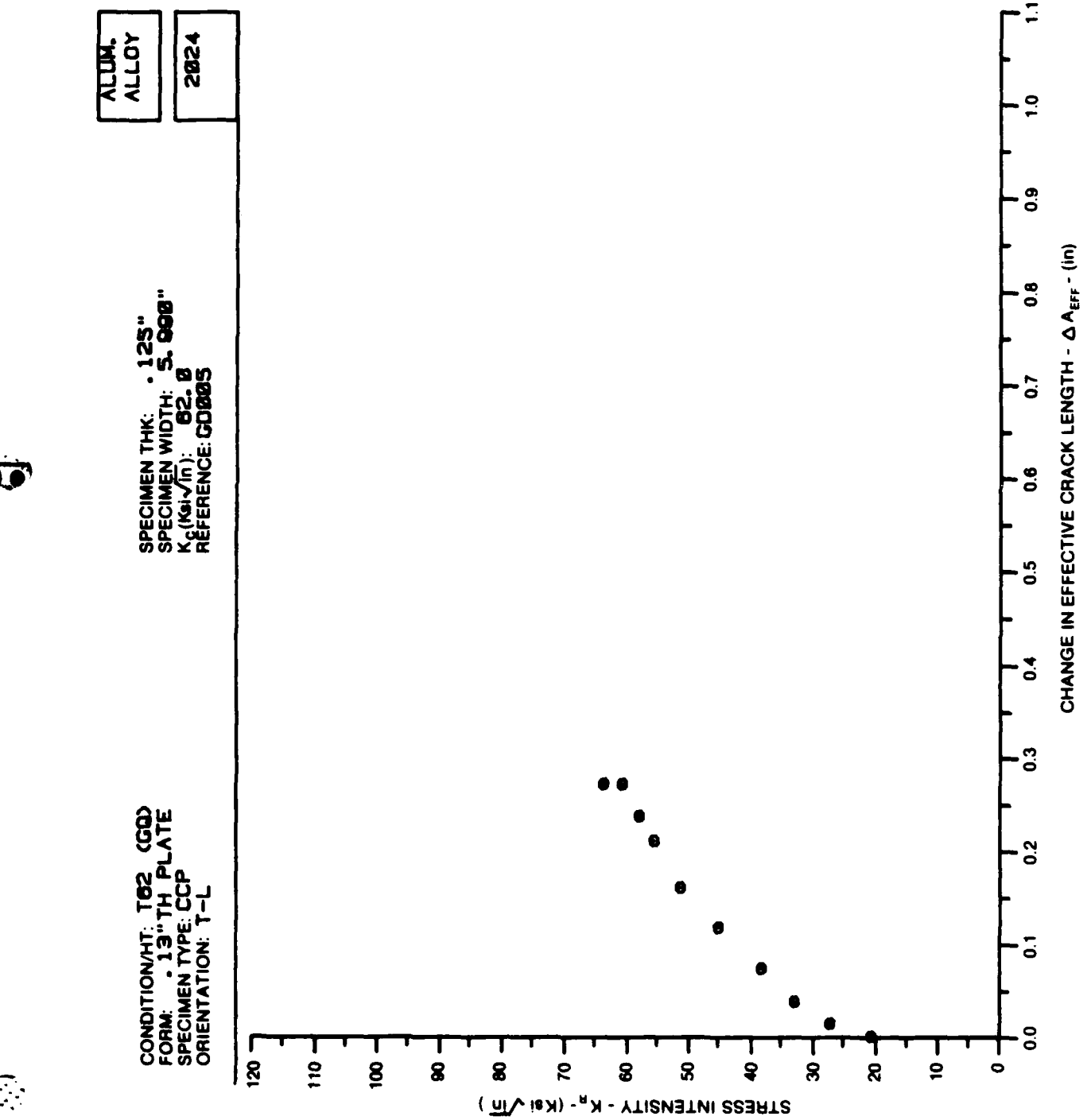


Figure 7.5.2.24

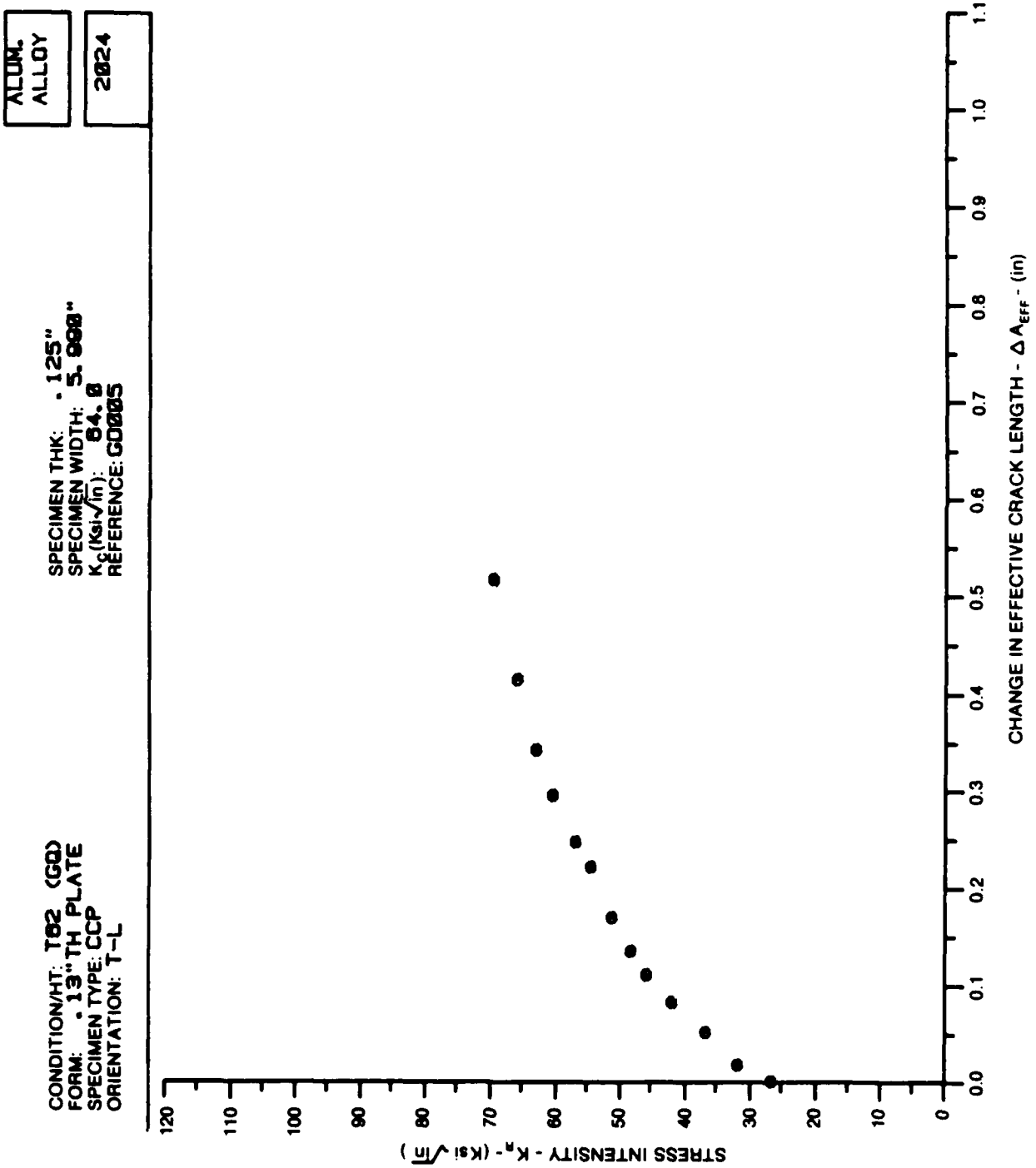


Figure 7.5.2.25

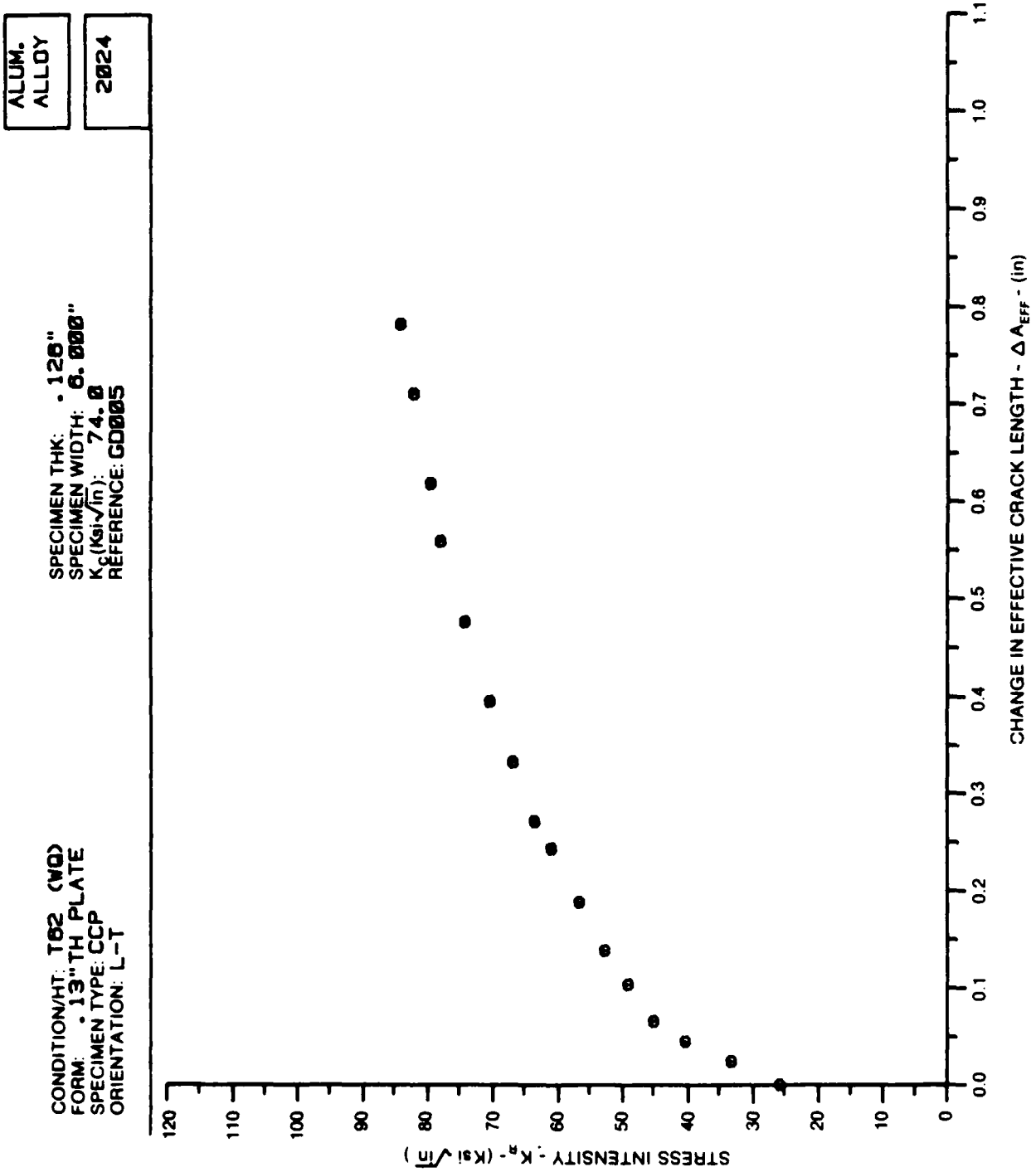


Figure 7.5.2.26

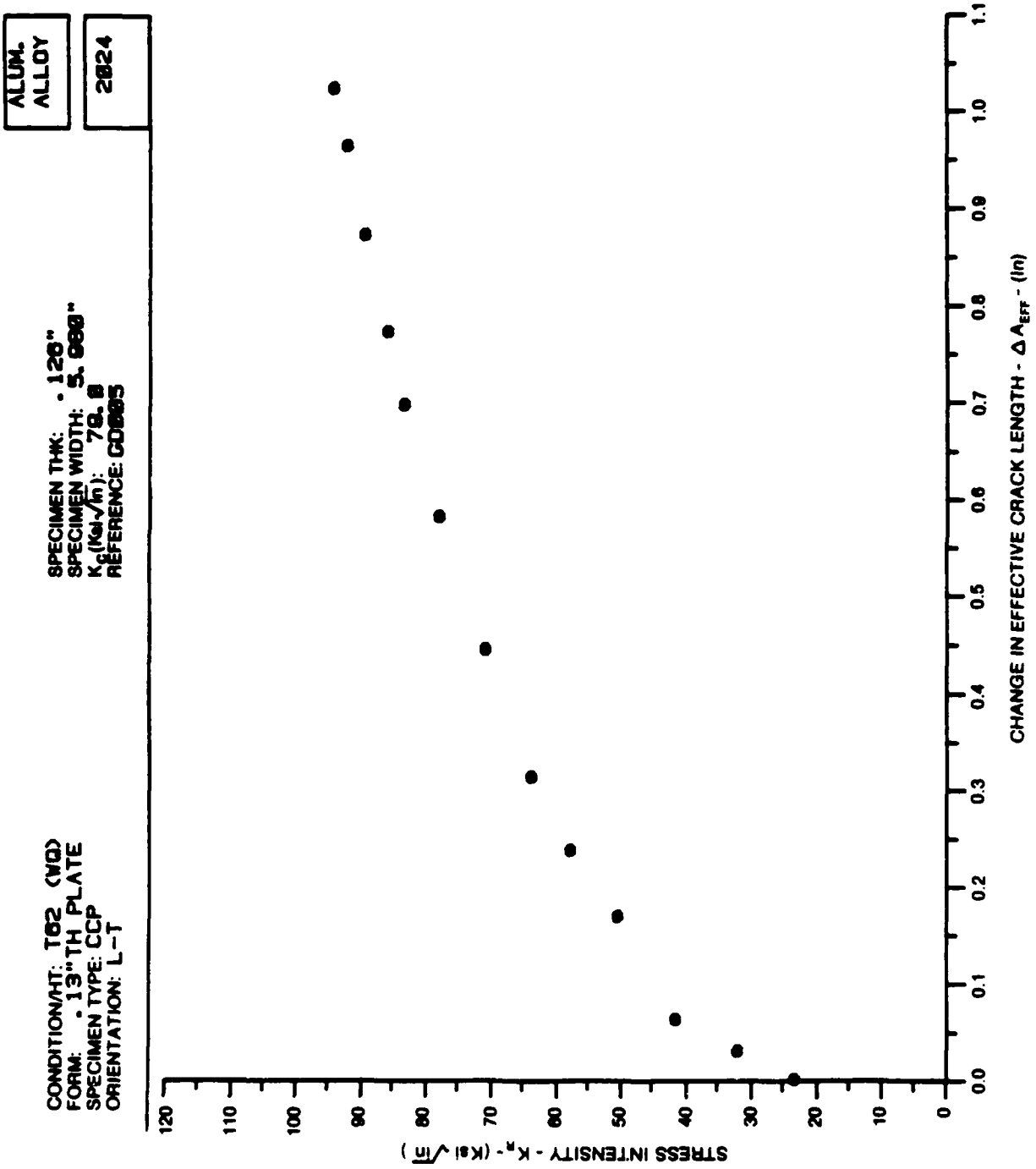


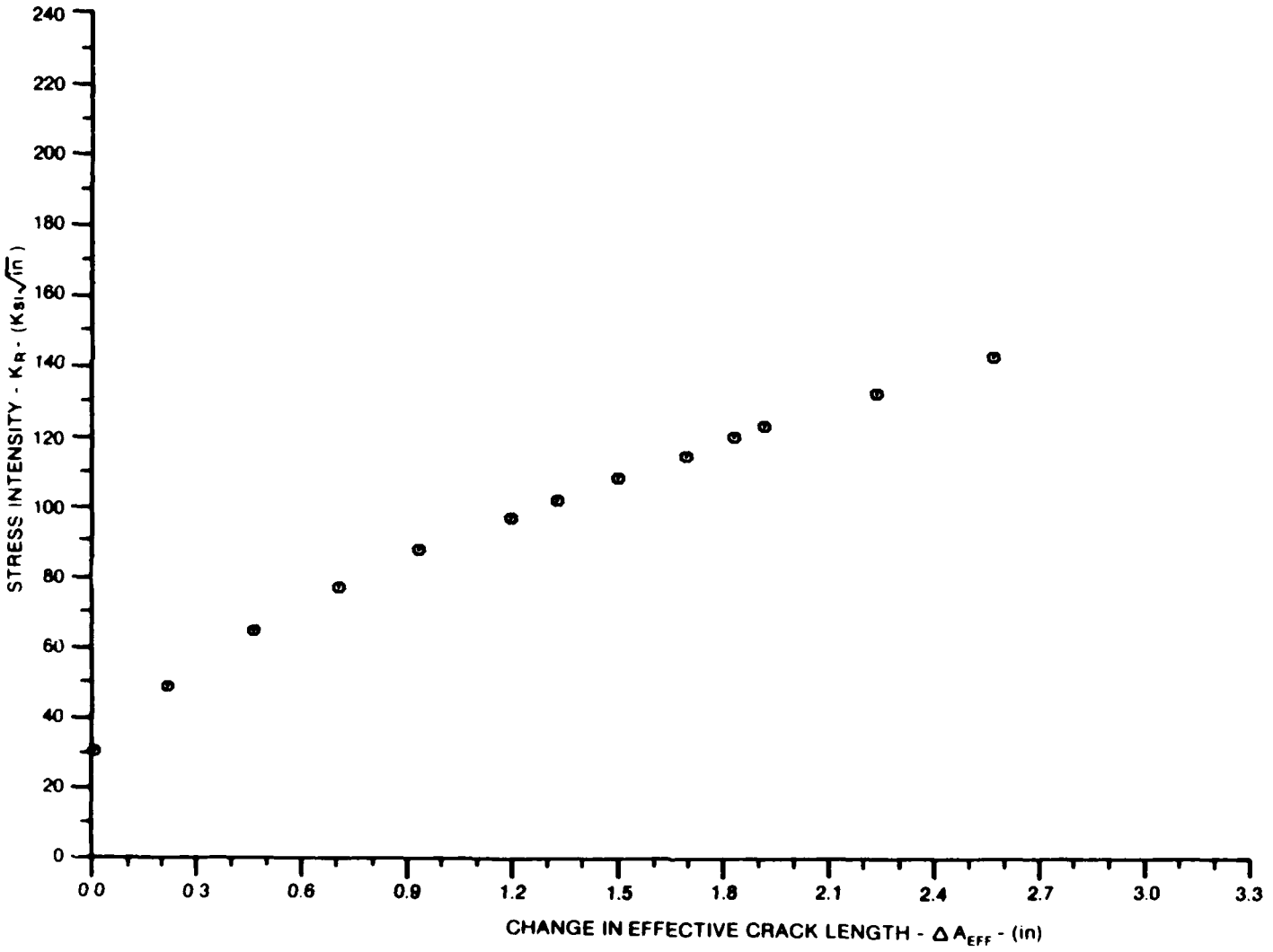
Figure 7.5.2.27

CONDITION/HT: T62 (WQ)
FORM: .13"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T

SPECIMEN THK: .126"
SPECIMEN WIDTH: 15.980"
K_C(Ksi$\sqrt{in}$): 139.0
REFERENCE: GD005

ALUM. ALLOY

2024



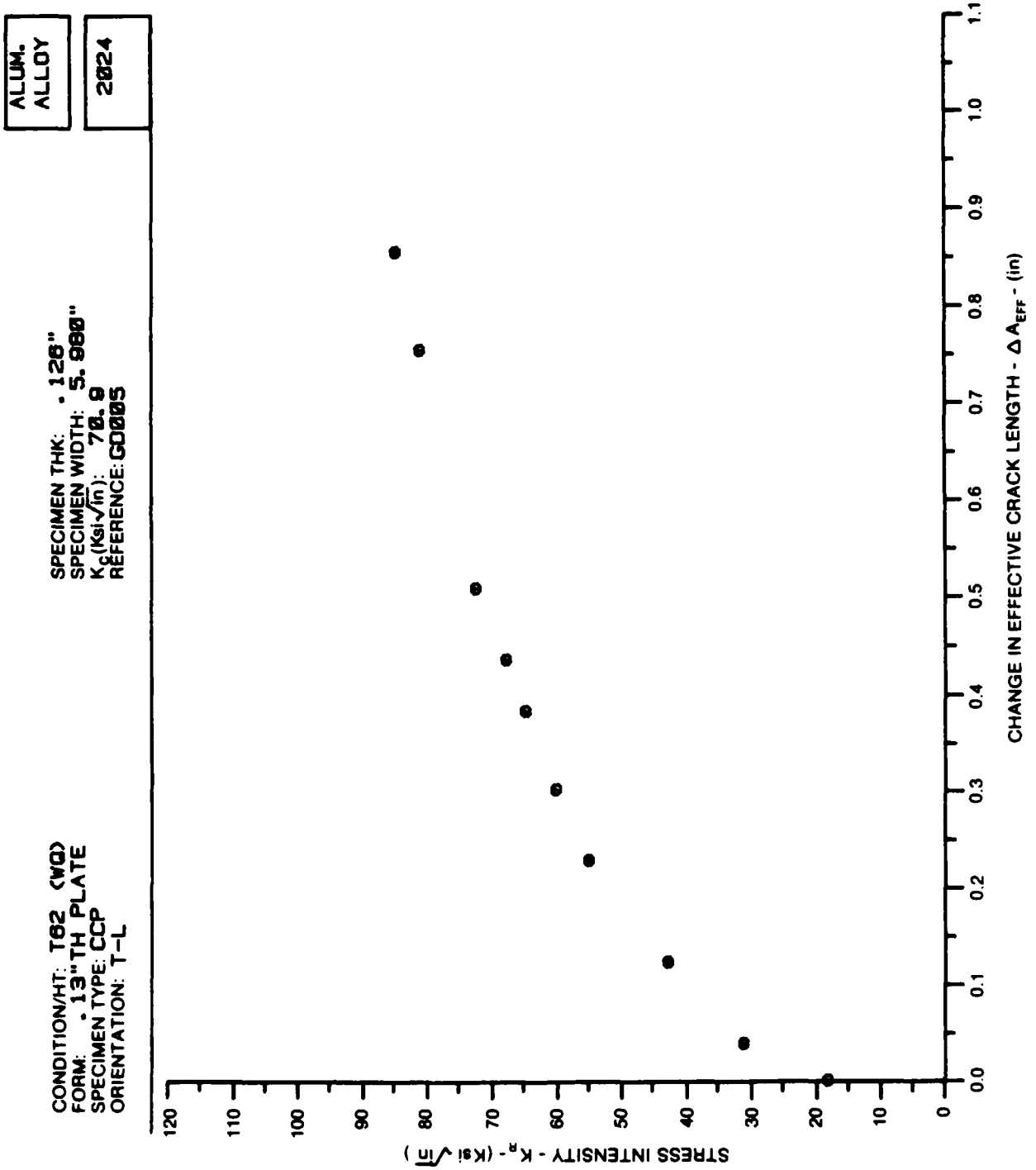


Figure 7.5.2.29

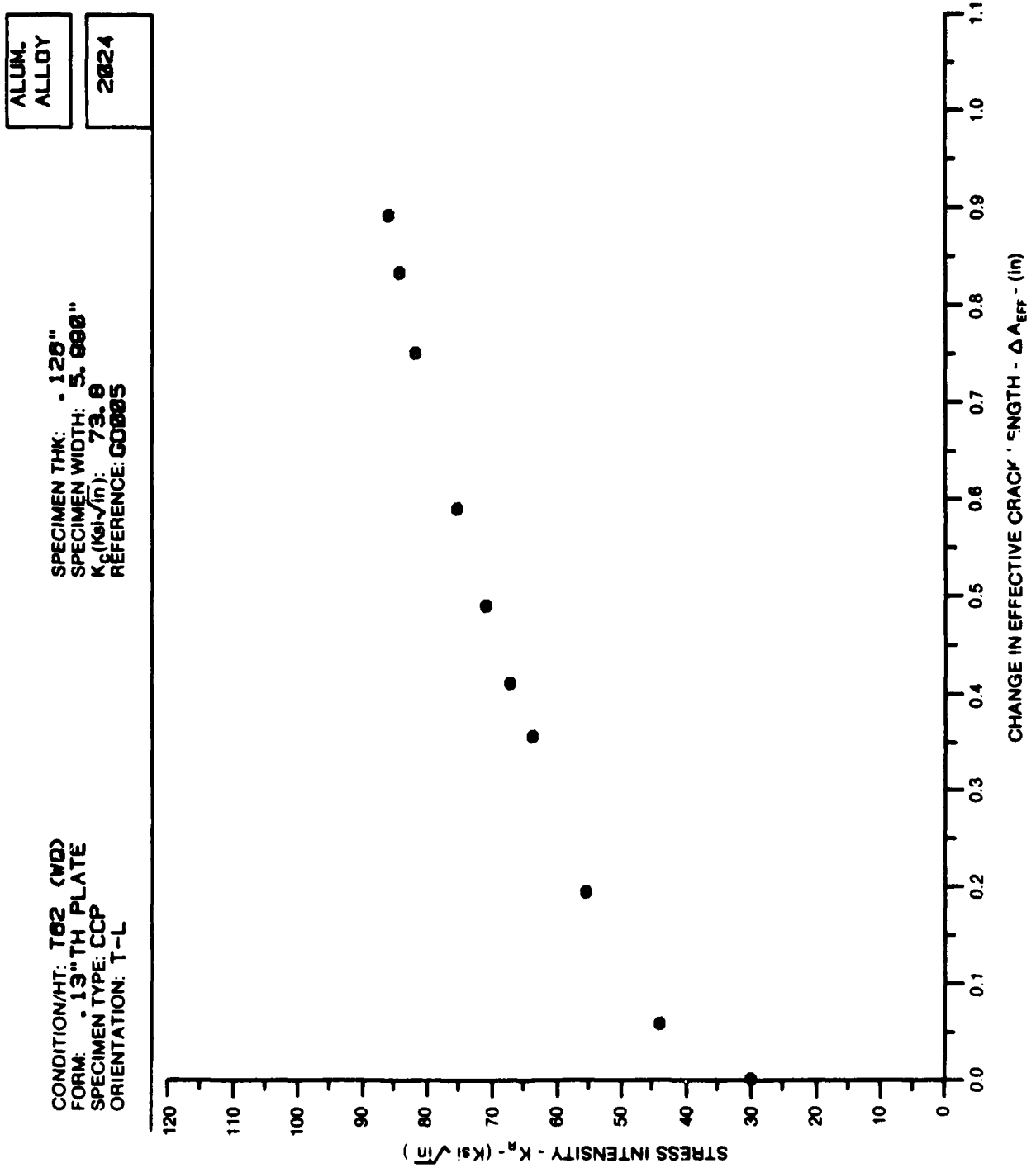


Figure 7.5.2.30

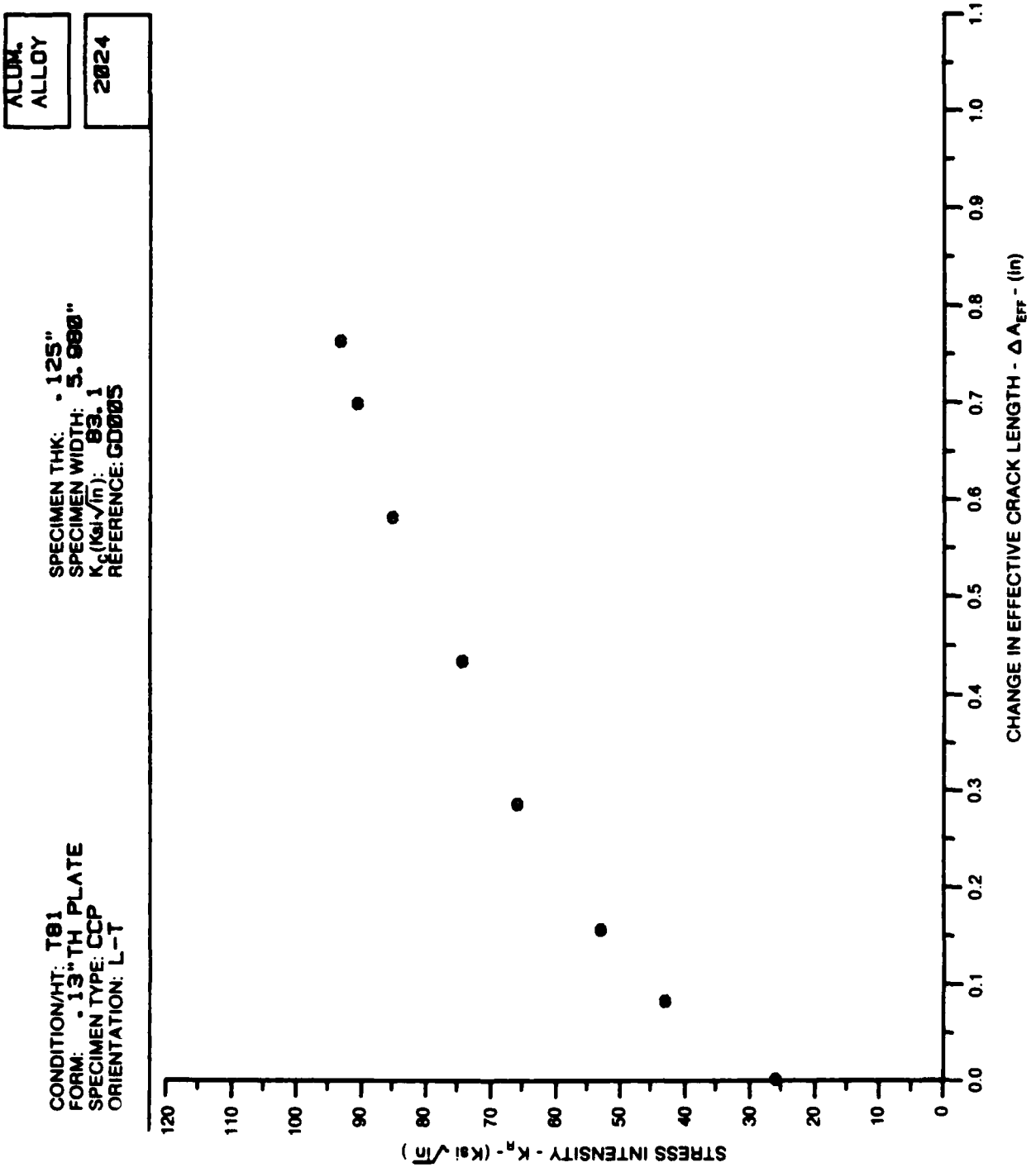


Figure 7.5.2.31

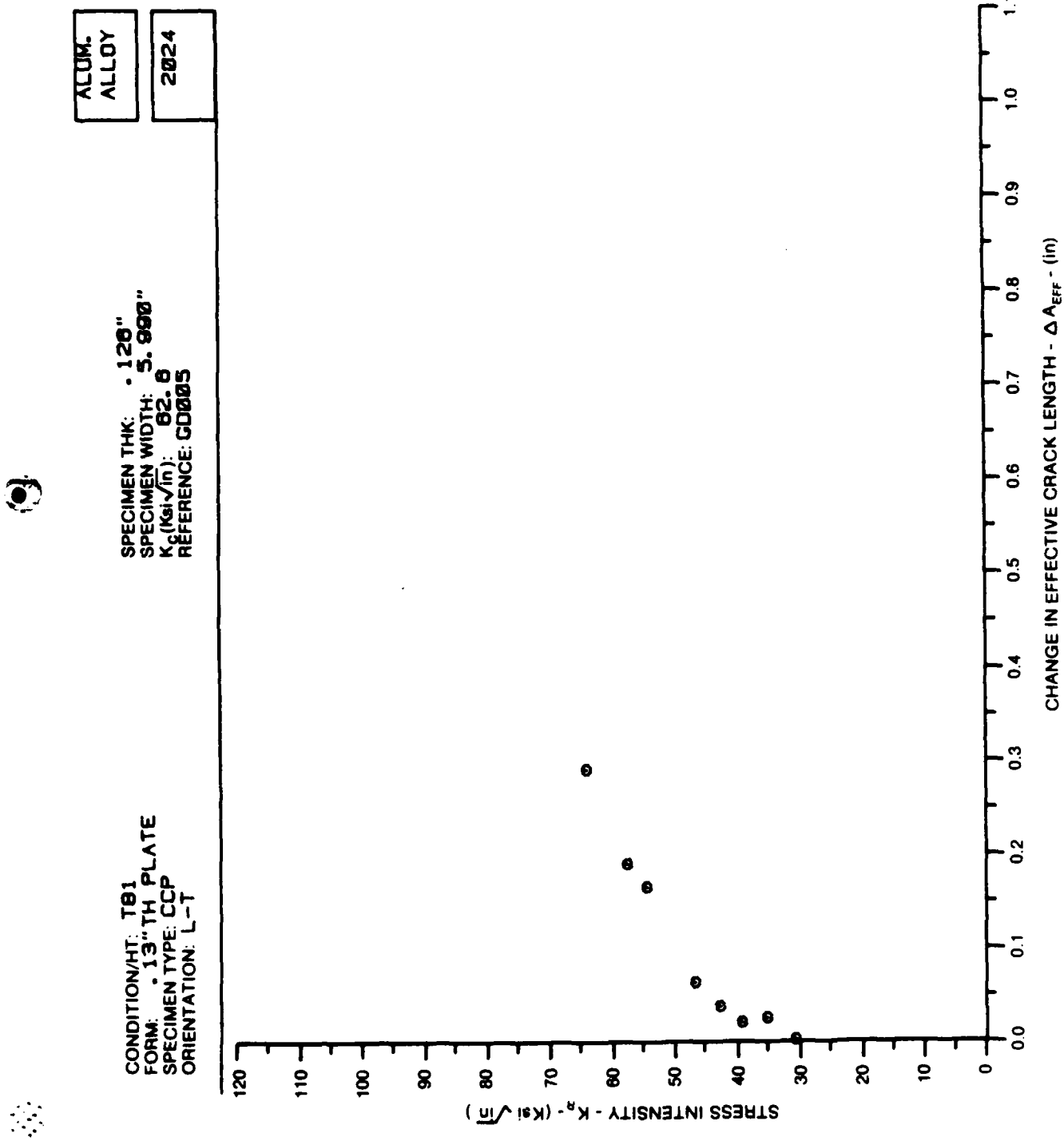


Figure 7.5.2.32

CONDITION/HT: T81
FORM: .13"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T

SPECIMEN THK: .128"
SPECIMEN WIDTH: 5.000"
K_C(Ksi$\sqrt{in}$): 68.0
REFERENCE: GD005

ALUM. ALLOY

2024

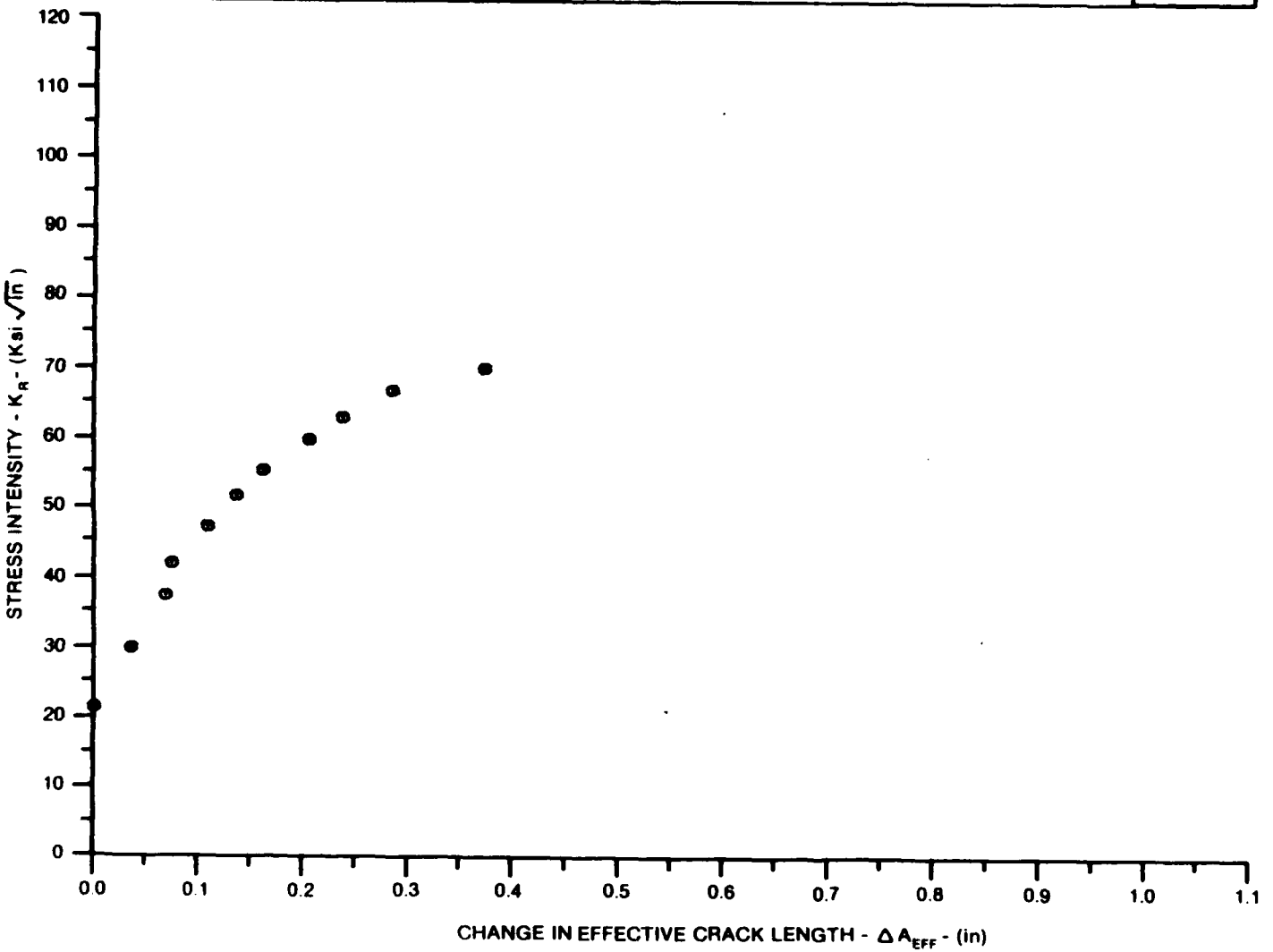


Figure 7.5.2.33

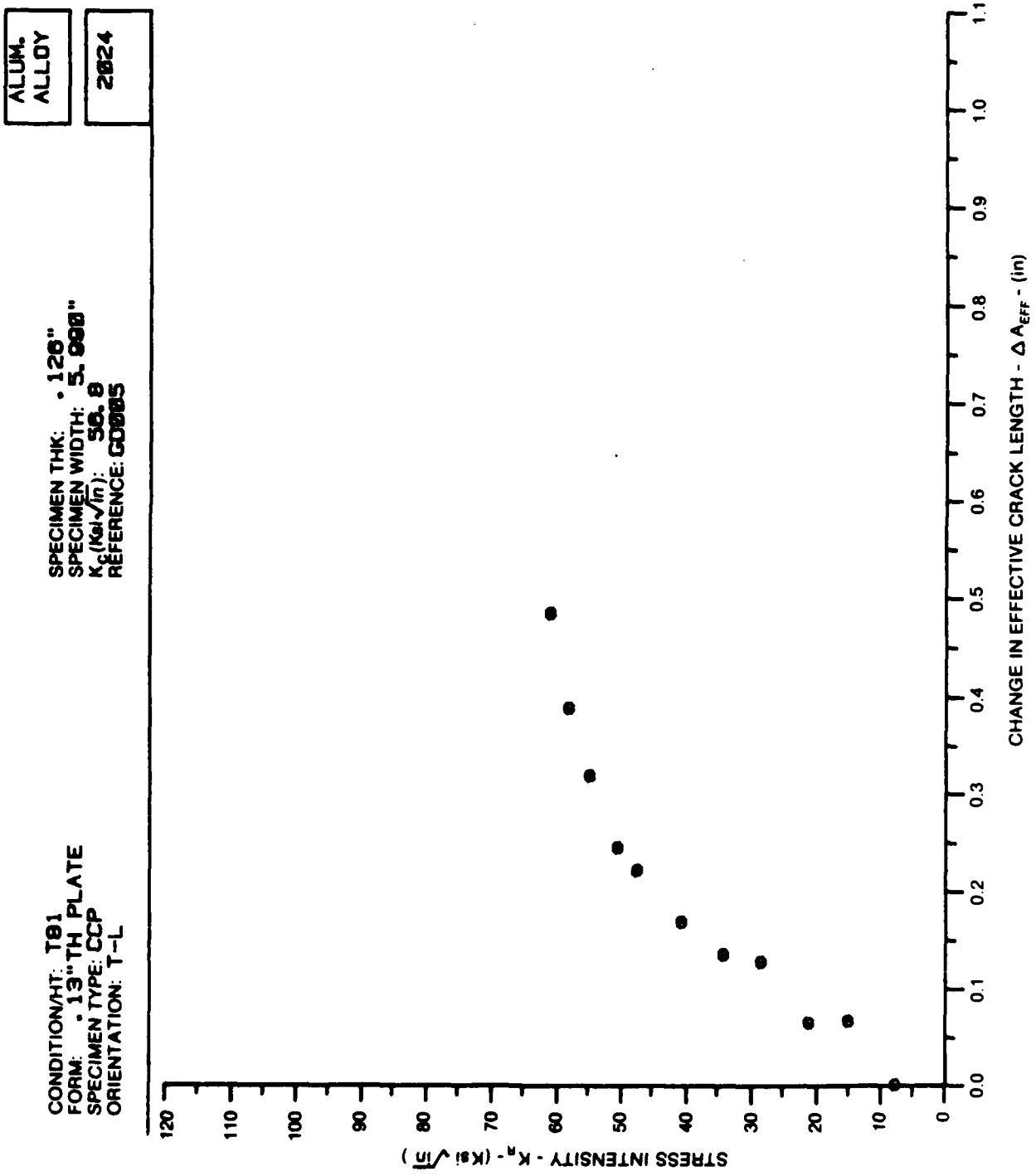


Figure 7.5.2.34

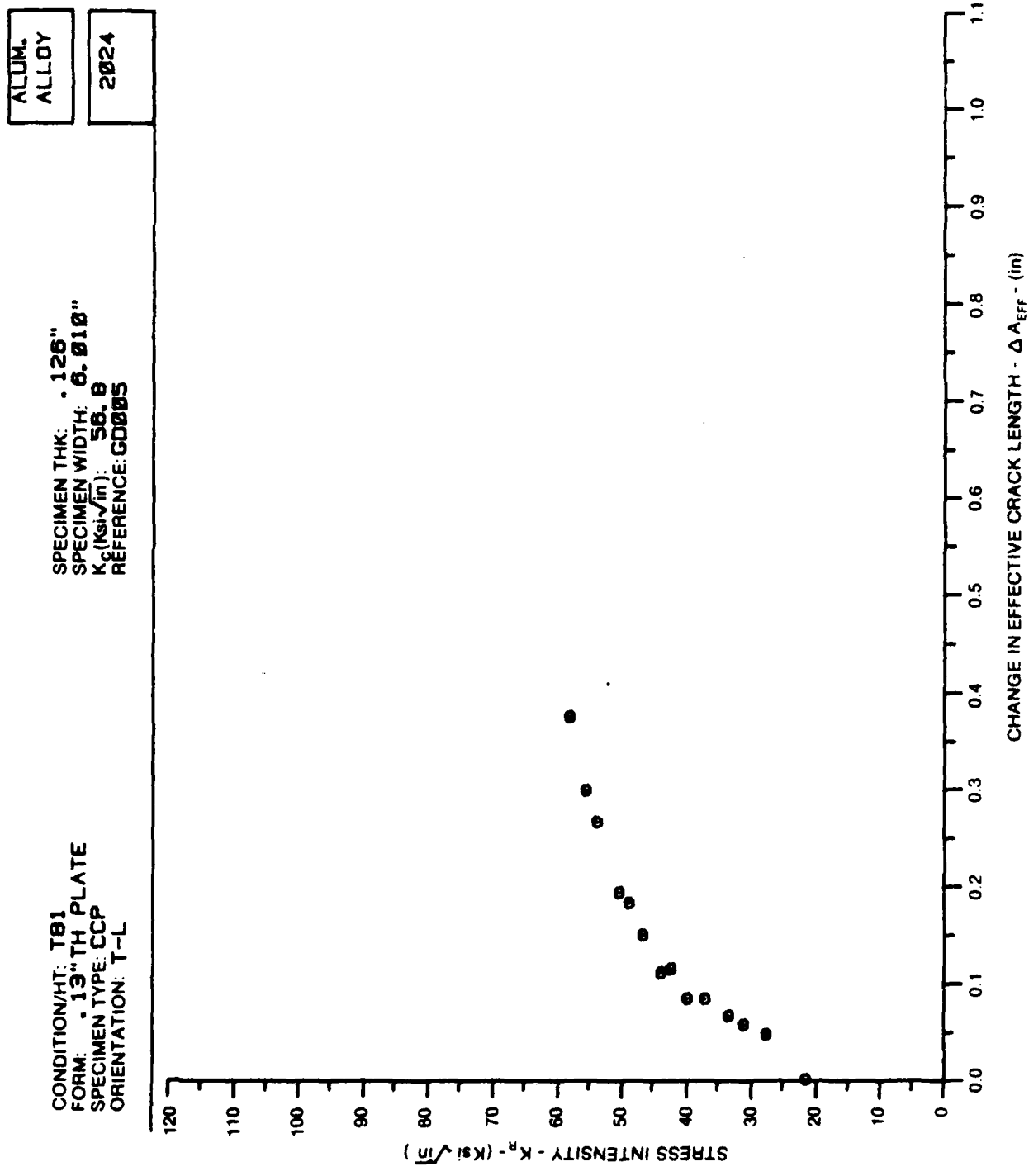


Figure 7.5.2.35

TABLE 7.5.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.1 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.05	R=+0.40	R=+0.60	
DELTA K MIN	A:	2.63	.11			
	B:	4.24		.32		
	C:	3.58			.25	
	D:					
		3.00	.110			
		3.50	.120			
		4.00	.146		.373	
		5.00	.258	.946	1.22	
		6.00	.497	1.92		
		7.00	.976			
		8.00	1.89			
		9.00	3.57			
DELTA K MAX	A:	9.56	5.03			
	B:	6.24		2.19		
	C:	5.02			1.24	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			33.02	2.95	8.28	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8	1			
		0.8-1.25	3	1	1	
		1.25-2.0	1			
		>2.0				

CONDITION/HT: T3
FORM: SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 30.00 HZ
ENVIRONMENT: R.T.,LAB AIR

YIELD STRENGTH: 47.2 KSI
ULT. STRENGTH: 68.2 KSI
SPECIMEN THK: 0.090"
SPECIMEN WIDTH: 13.985- 14.030"
REFERENCES:EFM01

ALUM. ALLOY

2024

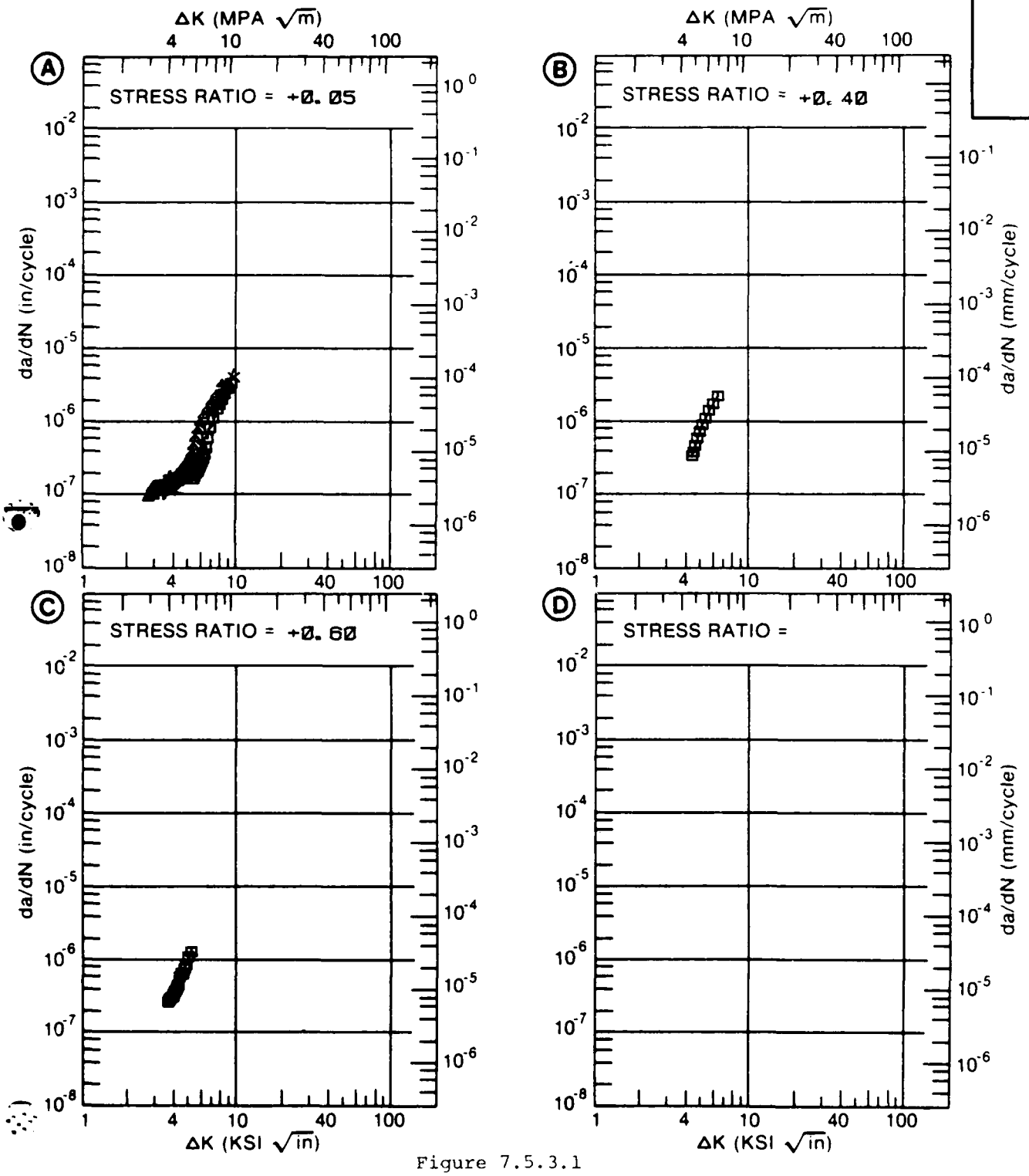


Figure 7.5.3.1

TABLE 7.5.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.2 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3
ENVIRONMENT: + 140F, AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.40	R=+0.70		
DELTA K MIN A:	3.16	.131			
DELTA K MIN B:	3.05		.151		
DELTA K MIN C:					
DELTA K MIN D:					
	3.50	.181	.343		
	4.00	.301	.679		
	5.00	.794	1.77		
	6.00	1.80	3.45		
	7.00	3.40	5.85		
	8.00	5.48	9.27		
	9.00	7.65	14.2		
	10.00	9.43	21.3		
DELTA K MAX A:	11.11	10.5			
DELTA K MAX B:	11.74		42.7		
DELTA K MAX C:					
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		15.62	7.32		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	1		
	1.25-2.0				
	>2.0				

CONDITION/HT: T3
FORM: SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 5.00- 10.00 HZ
ENVIRONMENT: + 140° F, AIR

YIELD STRENGTH: 47.2 KSI
ULT. STRENGTH: 68.2 KSI
SPECIMEN THK: 0.090"
SPECIMEN WIDTH: 36.000"
REFERENCES:EFM01

ALUM. ALLOY

2024

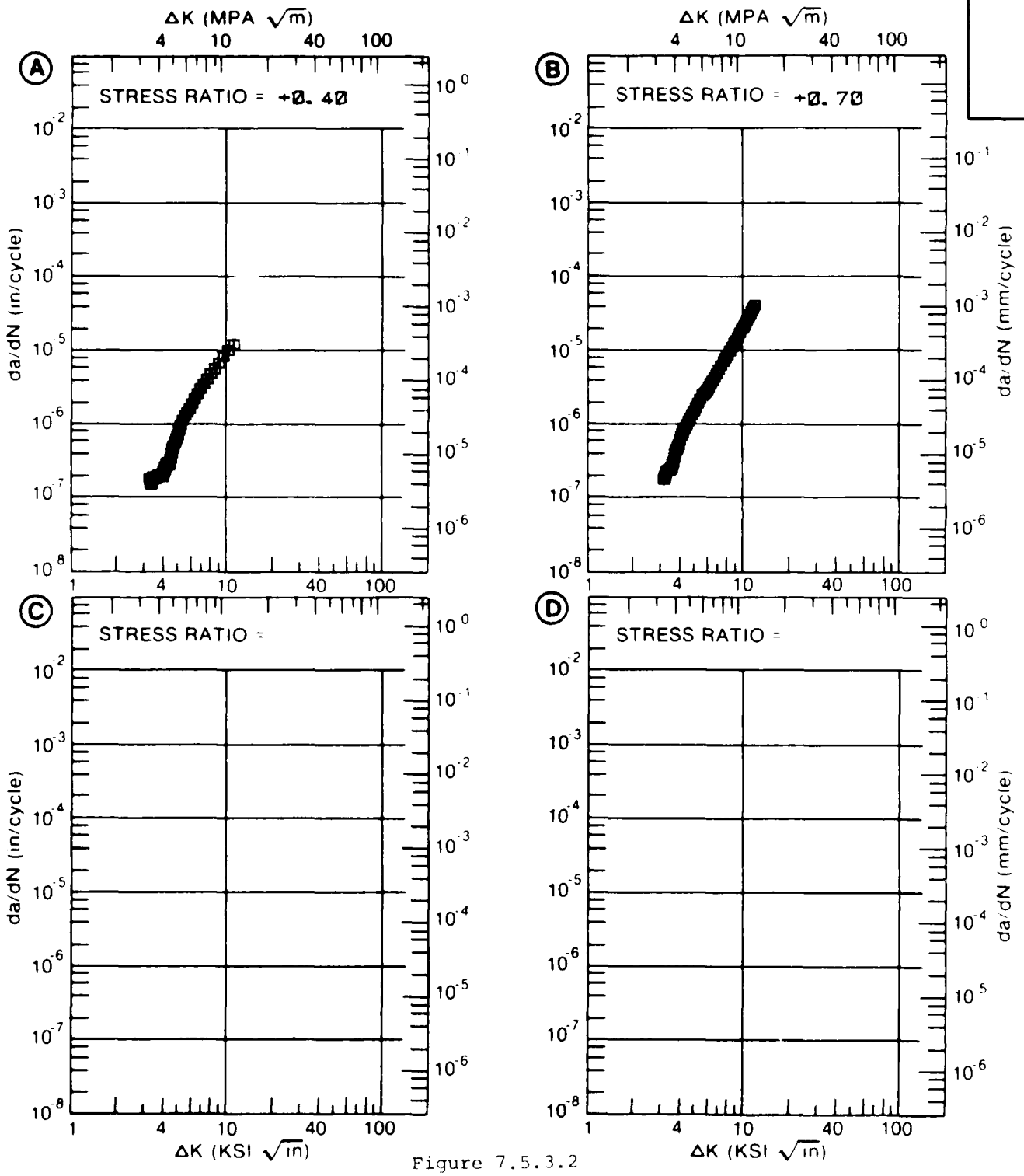


Figure 7.5.3.2

TABLE 7.5.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.3 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.33			
DELTA K MIN	A:	12.30	16.4			
	B:					
	C:					
	D:					
		13.00	19.3			
		16.00	48.3			
		20.00	188.			
		25.00	887.			
		30.00	3138.			
DELTA K MAX	A:	31.48	4312.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 22.14

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	2
	0.8-1.25	4
	1.25-2.0	
	>2.0	

CONDITION/HT: T3
FORM: Ø.Ø4"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 3.33 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 45.Ø KSI
ULT. STRENGTH: 69.Ø KSI
SPECIMEN THK: Ø.Ø39"
SPECIMEN WIDTH: 16.ØØØ"
REFERENCES:87398

ALUM. ALLOY

2024

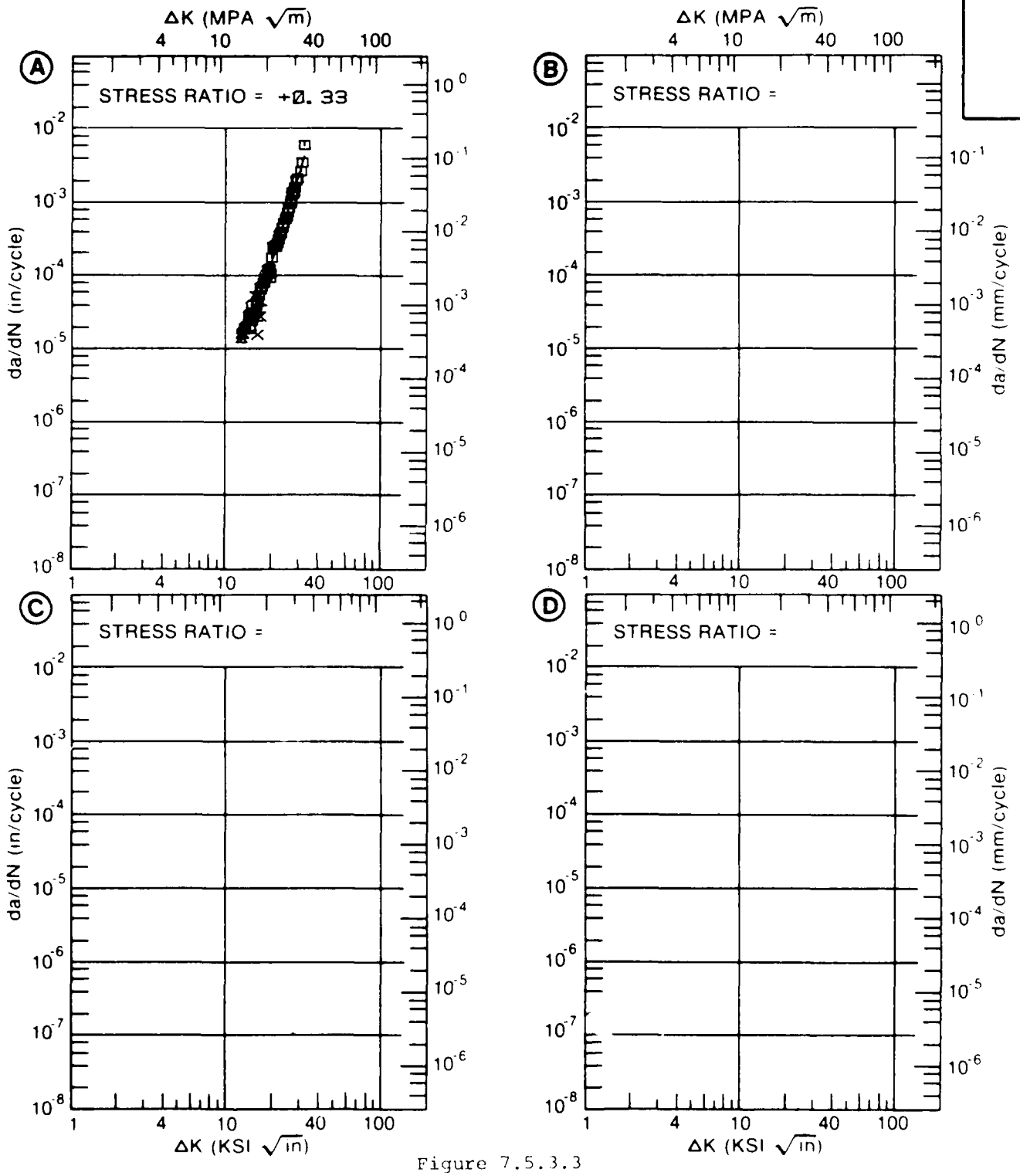


Figure 7.5.3.3

TABLE 7.5.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.4 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		R=+0.20			
DELTA K MIN	A: 4.73	.0896			
	B:				
	C:				
	D:				
	5.00	.219			
	6.00	2.20			
	7.00	4.76			
	8.00	6.90			
	9.00	8.55			
	10.00	9.72			
	13.00	12.1			
	16.00	15.6			
	20.00	27.9			
	25.00	85.0			
DELTA K MAX	A: 27.13	153.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 17.00

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	2
	0.8-1.25	
	1.25-2.0	
	>2.0	

CONDITION/HT: T3
FORM: 0.09"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 10.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.090"
SPECIMEN WIDTH: 4.010"
REFERENCES:FR001

ALUM. ALLOY

2024

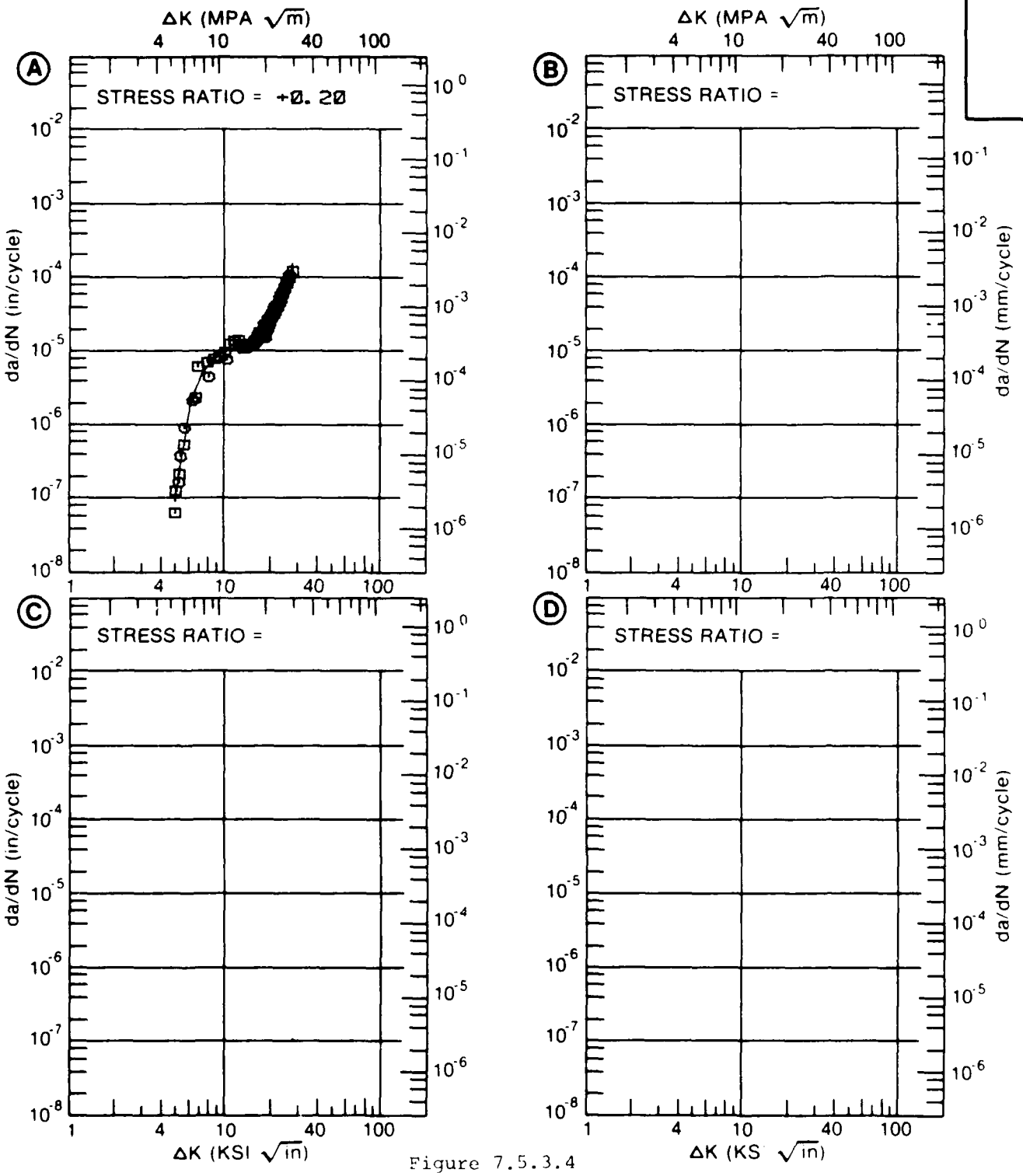


Figure 7.5.3.4

TABLE 7.5.3.5

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.5 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.00			
DELTA K MIN	A:	16.84	15.3			
	B:					
	C:					
	D:					
		20.00	28.6			
		25.00	76.3			
		30.00	184.			
		35.00	390.			
DELTA K MAX	A:	35.36	410.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 19.64

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	1
	0.8-1.25	7
	1.25-2.0	
	>2.0	

CONDITION/HT: T3
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 13.30 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 68.2 KSI
SPECIMEN THK: 0.125- 0.126"
SPECIMEN WIDTH: 4.000"
REFERENCES:86213

ALUM. ALLOY

2024

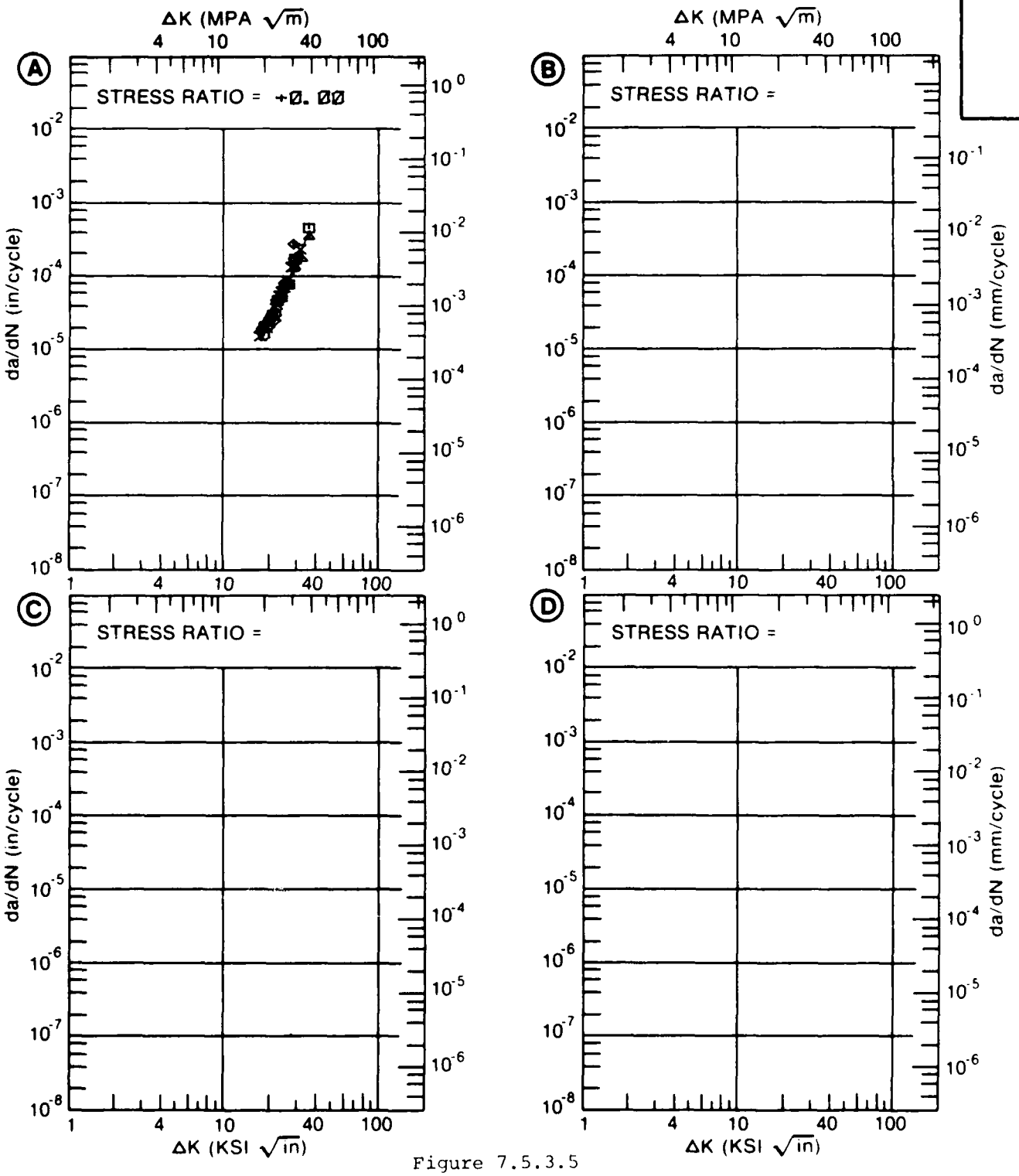


Figure 7.5.3.5

TABLE 7.5.3.6

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.6 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T3

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. 90% R.H.			
DELTA K MIN	A:	13.10	10.6			
	B:					
	C:					
	D:					
		16.00	18.4			
		20.00	35.3			
		25.00	71.3			
		30.00	133.			
		35.00	234.			
DELTA K MAX	A:	37.88	318.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 21.03

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T3
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.05
FREQUENCY: 2.00 HZ

YIELD STRENGTH: 49.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.128"
SPECIMEN WIDTH: 12.000"
REFERENCES:86212

ALUM. ALLOY

2024

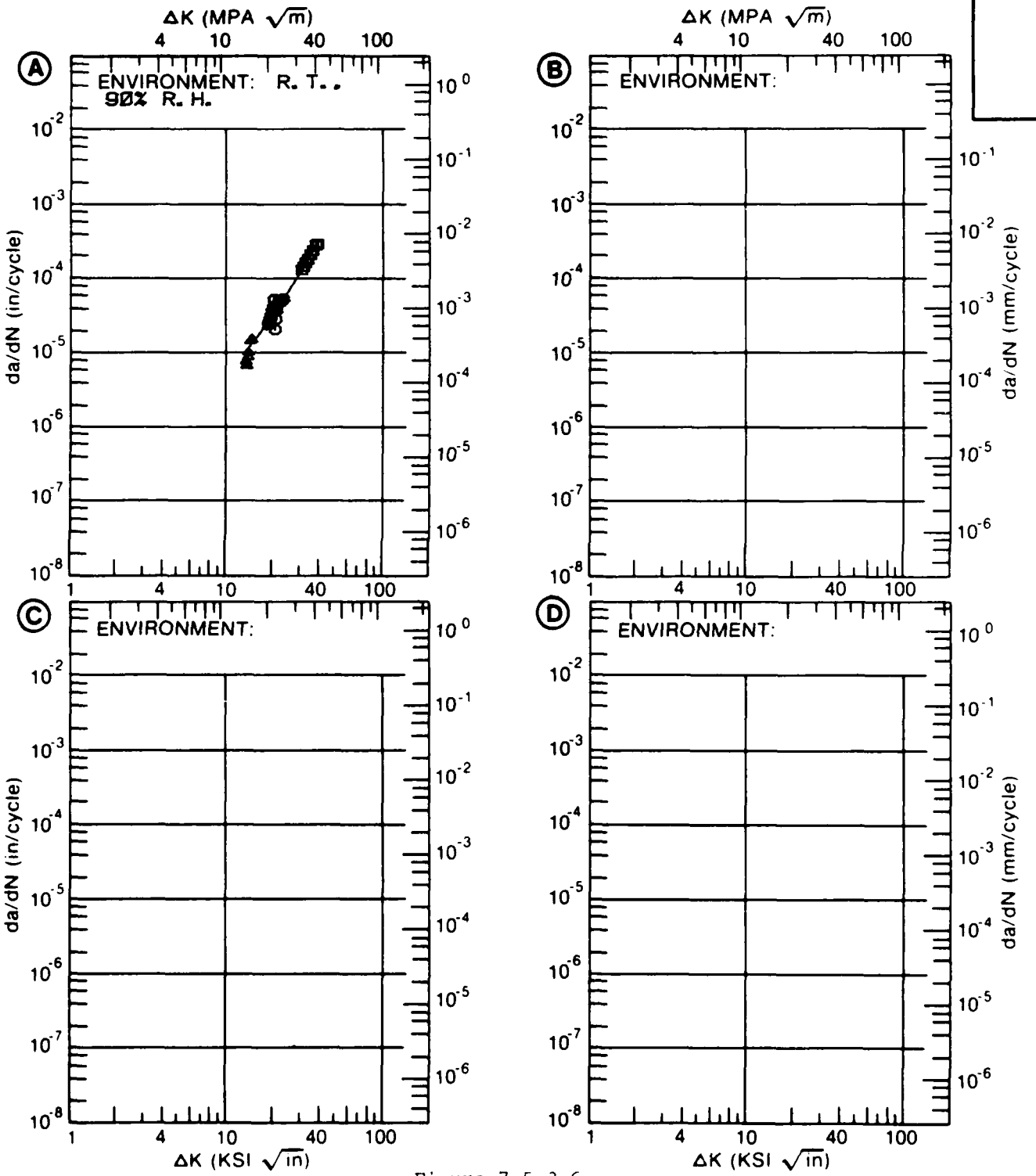


Figure 7.5.3.6

TABLE 7.5.3.7

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.7 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-1.00	R=-0.50	R=+0.05	
DELTA K MIN	A:	5.03	.119			
	B:	4.59		.129		
	C:	5.78			.238	
	D:					
		5.00		.144		
		6.00	.495	.755	.351	
		7.00	1.43	2.66	1.34	
		8.00	3.15	5.78	3.25	
		9.00	5.77	9.49	5.99	
		10.00	9.29	13.2	9.36	
		13.00	24.0	23.1	22.7	
		16.00	41.4	35.2	45.3	
		20.00	70.3	67.2		
DELTA K MAX	A:	24.85	264.			
	B:	24.91		175.		
	C:	19.55			102.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			24.20	19.99	12.63	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T3
FORM: 0.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 20.00 HZ
ENVIRONMENT: R.T.,LAB AIR

YIELD STRENGTH: 50.9 KSI
ULT. STRENGTH: 68.5 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 3.000"
REFERENCES:UD006

ALUM. ALLOY

2024

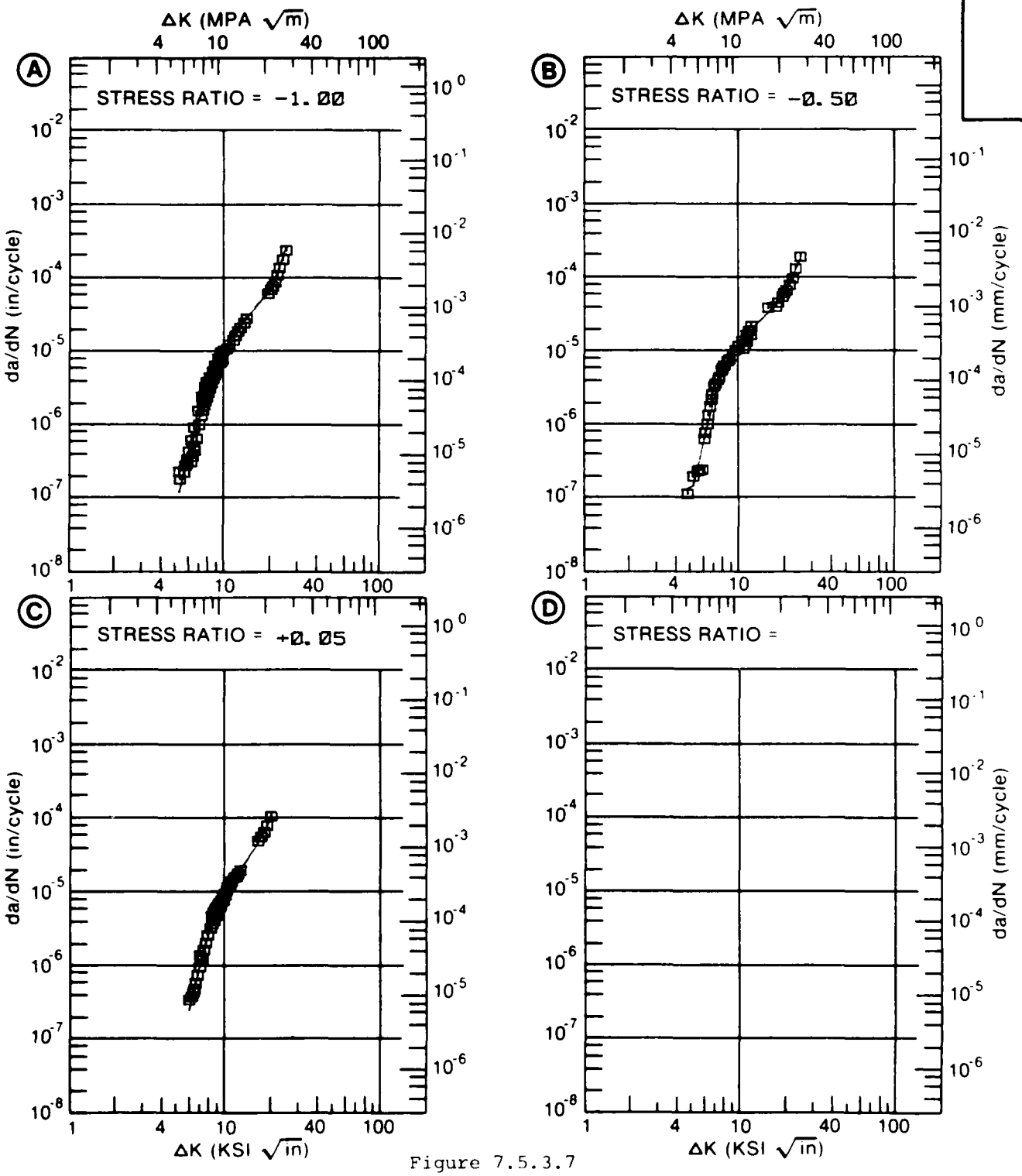


Figure 7.5.3.7

TABLE 7.5.3.8

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.8 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: - 65F, AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.00	R=+0.80		
DELTA K MIN	A:	9.84	.354			
	B:	6.02		.766		
	C:					
	D:					
		7.00		1.96		
		8.00		4.70		
		9.00		10.2		
		10.00	.360	20.4		
		13.00	1.06	102.		
		16.00	4.50	303.		
		20.00	19.7			
		25.00	69.4			
DELTA K MAX	A:	29.42	208.			
	B:	17.13		414.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			26.82	10.41		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	A	B	C	D
0.0-0.5				
0.5-0.8	1			
0.8-1.25		1		
1.25-2.0				
>2.0				

CONDITION/HT: T351
FORM: SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY:
ENVIRONMENT: - 65° F, AIR

YIELD STRENGTH: 56.9 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.184- 0.188"
SPECIMEN WIDTH: 11.997- 12.000"
REFERENCES:DA001

ALUM. ALLOY

2024

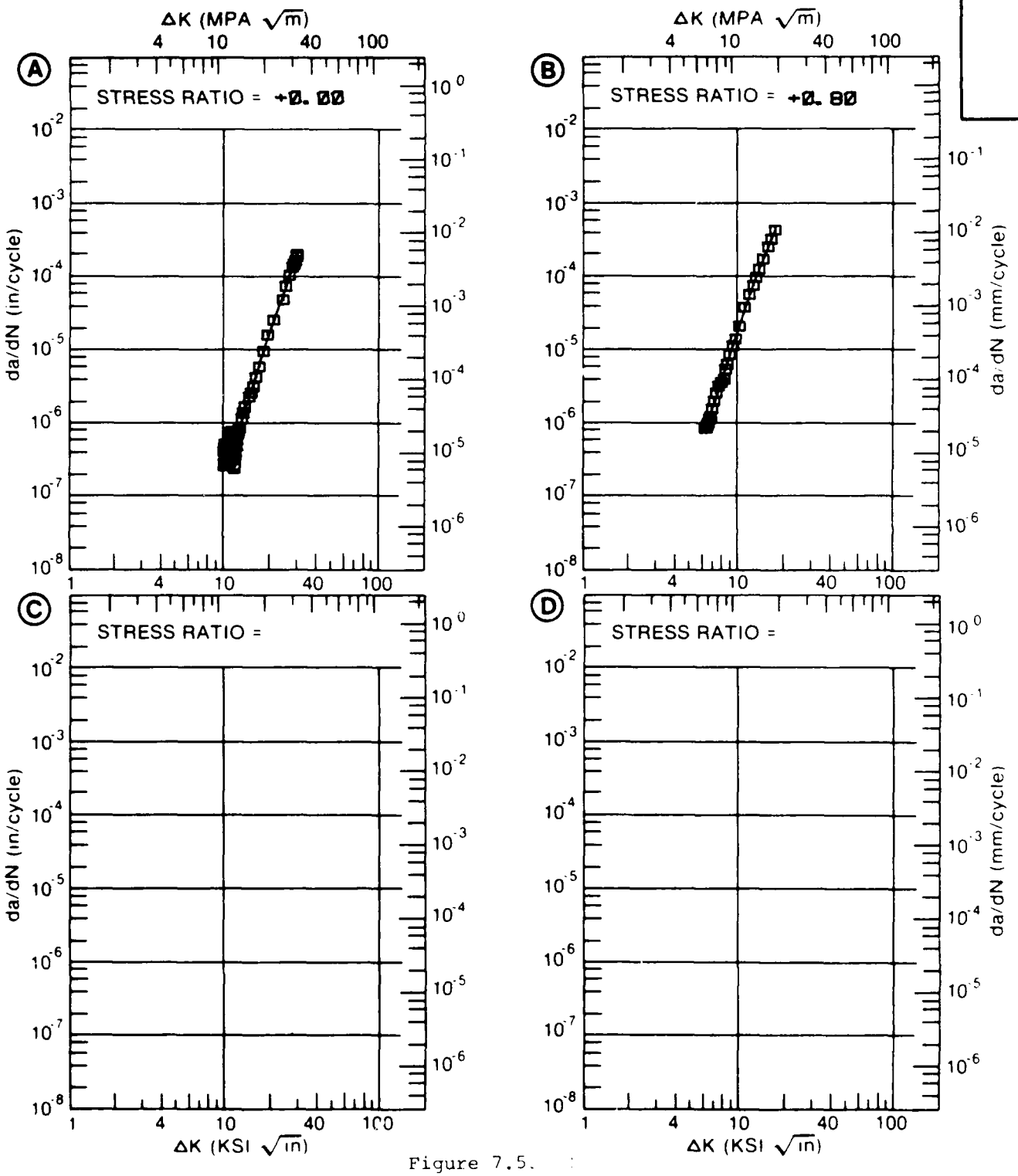


Figure 7.5.

TABLE 7.5.3.9

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.9 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.00	R=+0.40	R=+0.80	
DELTA K MIN	A:	9.51	5.14			
	B:	15.81		60.3		
	C:	7.98			13.8	
	D:					
		8.00			14.0	
		9.00			23.4	
		10.00	6.16		39.2	
		13.00	13.6		167.	
		16.00	23.5	63.5	553.	
		20.00	44.0	163.		
		25.00		419.		
		30.00		935.		
DELTA K MAX	A:	24.94	95.5			
	B:	33.80		1628.		
	C:	17.04			790.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			3.46	5.76	15.15	

LIFE PREDICTION RATIO SUMMARY (NP/NA)				
	0.0-0.5			
	0.5-0.8			
	0.8-1.25	1	1	1
	1.25-2.0			
	>2.0			

CONDITION/HT: T351
FORM: SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 3.00- 6.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 56.9 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.181- 0.186"
SPECIMEN WIDTH: 11.998- 12.009"
REFERENCES:DA001

ALUM. ALLOY

2024

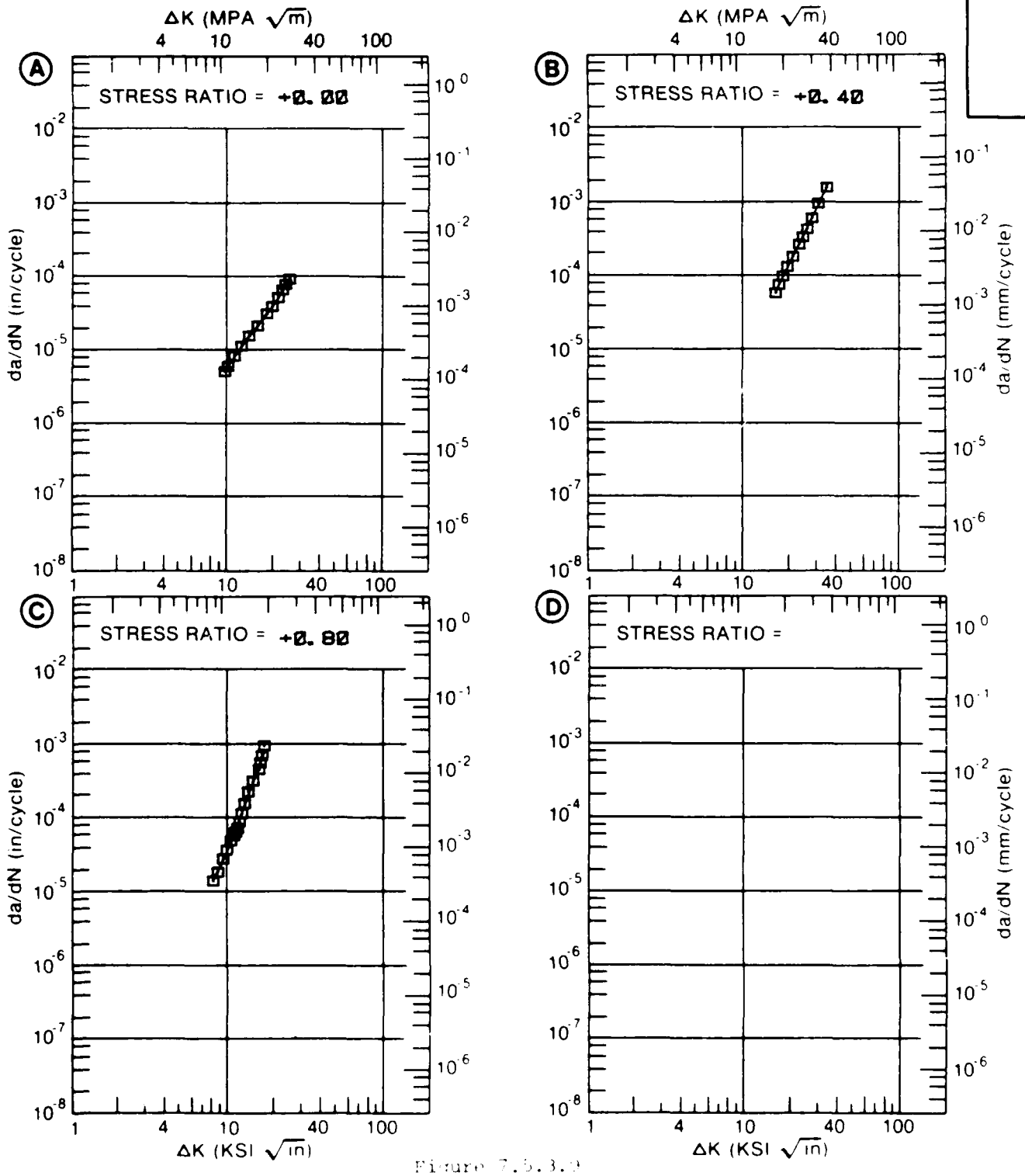


Figure 7.5.3.9

TABLE 7.5.3.10

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.10 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.00	R=+0.70		
DELTA K MIN	A:	7.32	1.35			
	B:	4.72		.464		
	C:					
	D:					
		5.00		.636		
		6.00		1.50		
		7.00		2.72		
		8.00	1.80	4.25		
		9.00	2.75	6.13		
		10.00	4.09	8.42		
		13.00	9.26	19.4		
DELTA K MAX	A:	15.05	11.4			
	B:	14.38		28.1		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			18.10	14.22		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T351
FORM: SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 9.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.163"
SPECIMEN WIDTH: 5.000"
REFERENCES: BW002

ALUM. ALLOY

2024

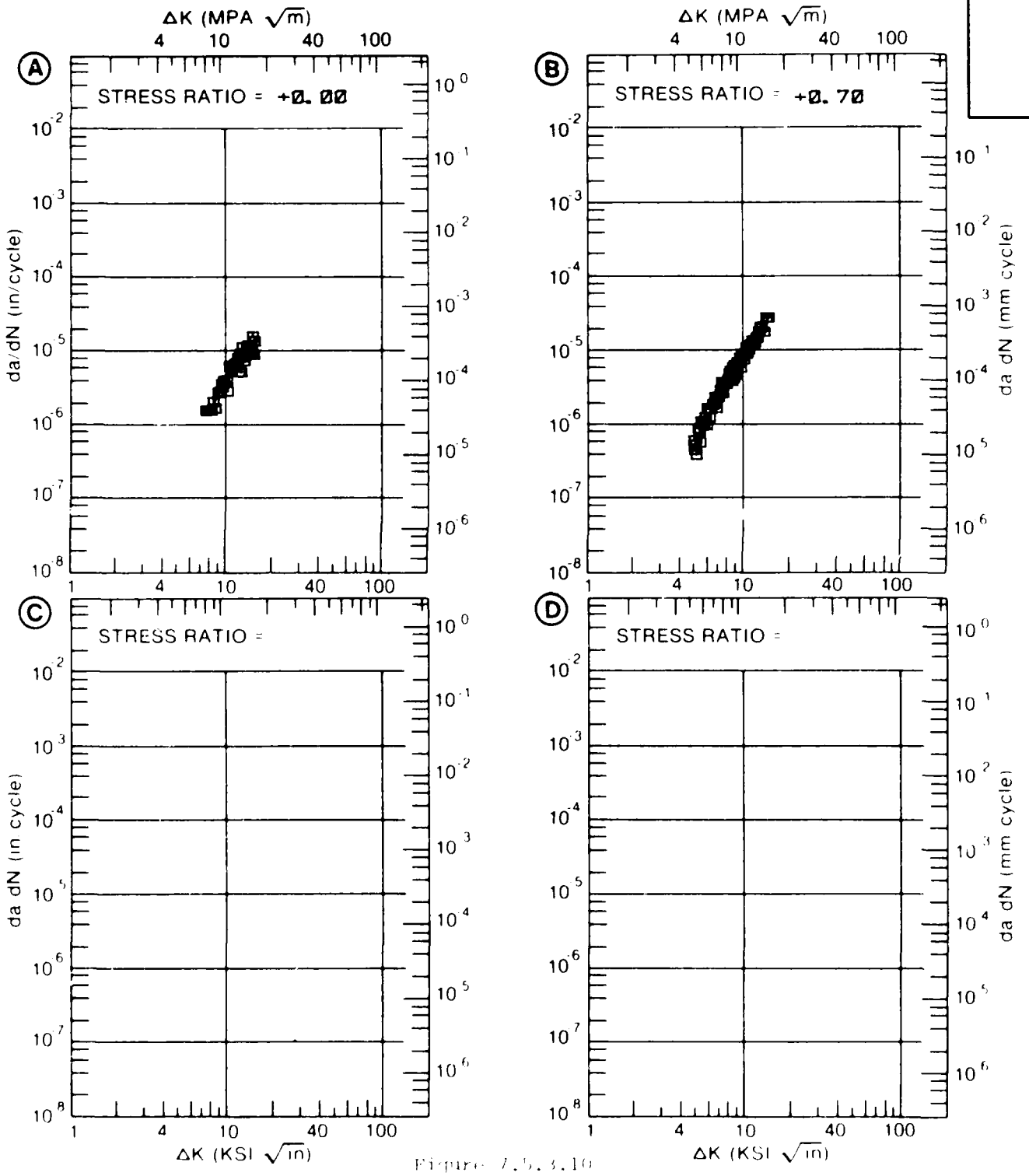


Figure 7.5.3.10

TABLE 7.5.3.11

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.11 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: R.T. , S.T.W.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.00	R=+0.33		
DELTA K MIN	A:	8.77	2.31			
	B:	11.68		19.2		
	C:					
	D:					
		9.00	2.46			
		10.00	3.21			
		13.00		25.1		
		16.00		49.6		
		20.00		113.		
DELTA K MAX	A:	11.81	7.19			
	B:	24.00		211.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			9.30	6.30		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T351
FORM: SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00- 10.00 HZ
ENVIRONMENT: R. T., S. T. W.

YIELD STRENGTH: 56.9 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.182- 0.192"
SPECIMEN WIDTH: 12.000"
REFERENCES:DA001

ALUM. ALLOY

2024

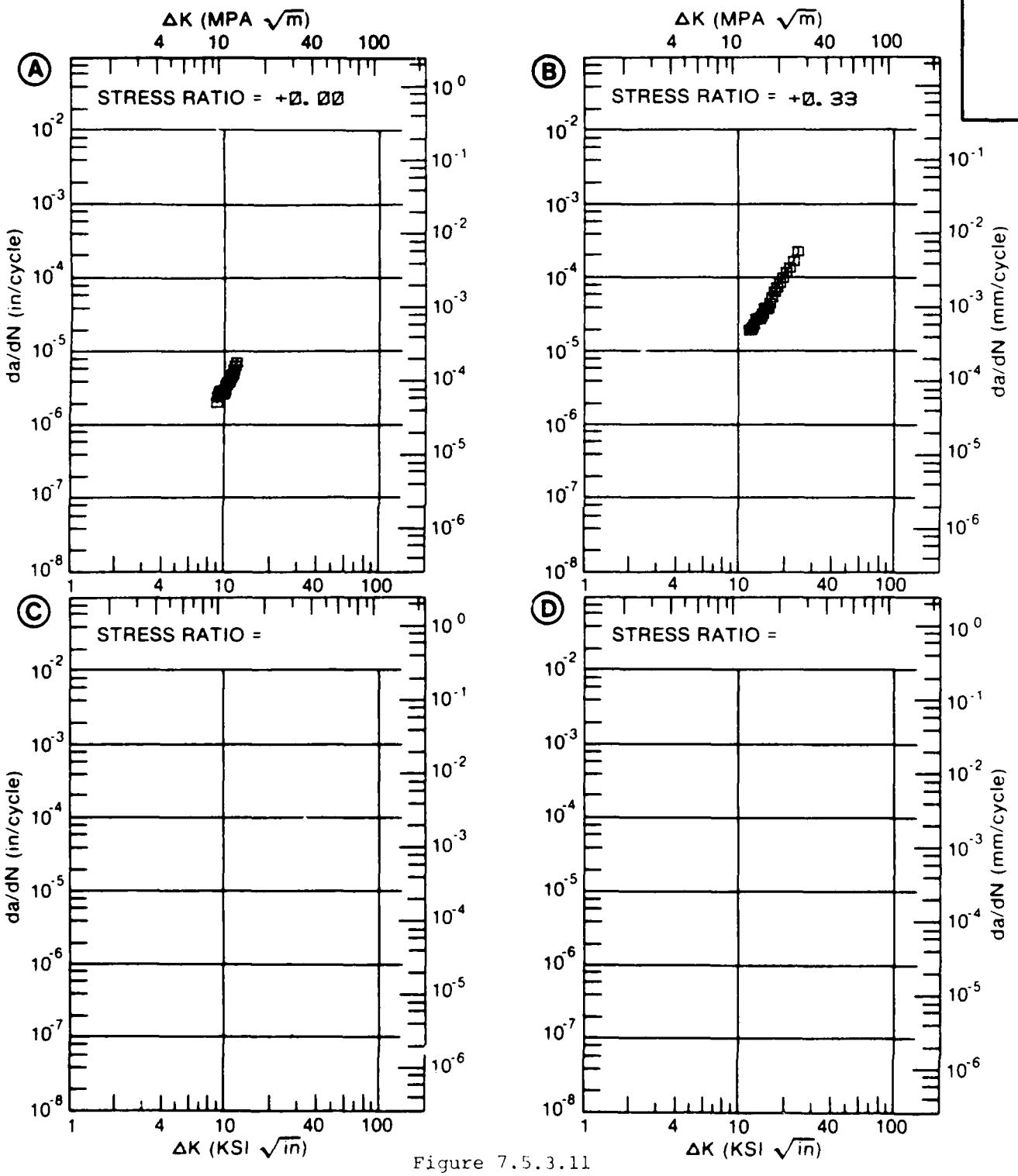


Figure 7.5.3.11

TABLE 7.5.3.12

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.12 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: R.T ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-1.00	R=-0.50		
DELTA K MIN	A:	3.50	.159			
	B:	2.80		.0919		
	C:					
	D:					
		3.00		.0936		
		3.50	.159	.107		
		4.00	.161	.133		
		5.00	.270	.254		
		6.00	.620	.575		
		7.00	1.60	1.40		
		8.00	3.91	3.04		
		9.00	7.26	5.43		
		10.00	9.44	7.87		
		13.00	12.4	13.7		
		16.00	27.3	21.0		
		20.00	41.3	47.3		
		25.00		115.		
DELTA K MAX	A:	20.00	41.3			
	B:	27.15		140.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			10.20	15.32		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: ;351
FORM: PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 3.00- 5.00 HZ
ENVIRONMENT: R.T.,LAB AIR

YIELD STRENGTH: 54.5 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.242"
SPECIMEN WIDTH: 9.000"
REFERENCES:DA001

ALUM. ALLOY

2024

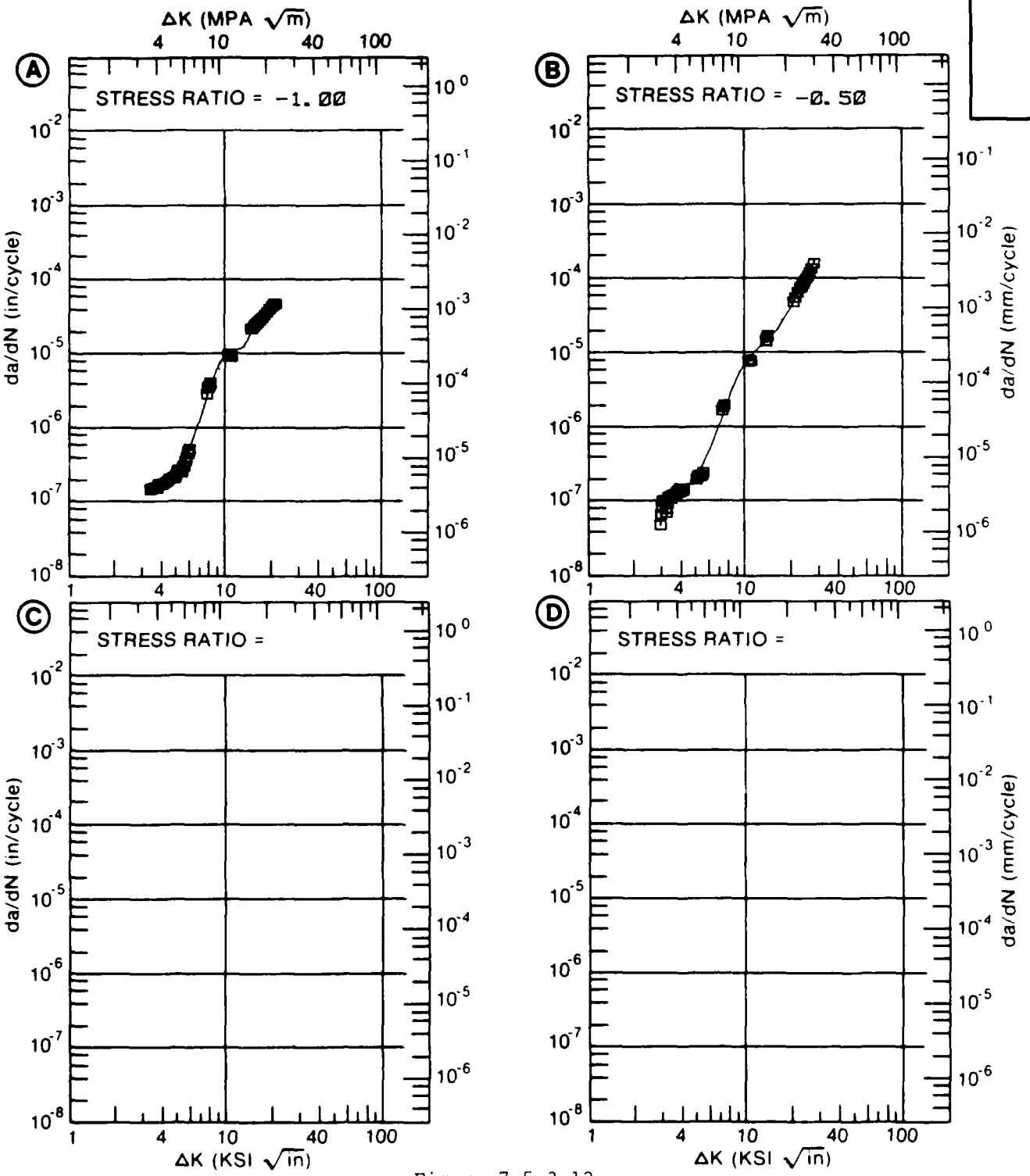


Figure 7.5.3.12

TABLE 7.5.3.13

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.13 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.01	R=+0.40	R=+0.60	R=+0.80
DELTA K MIN	A: 5.00	.205			
	B: 3.27		.182		
	C: 5.50			.161	
	D: 3.34				.316
	3.50		.177	.161	.327
	4.00		.235	.250	.520
	5.00	.205	.704	.878	1.71
	6.00	.521	2.00	2.15	3.89
	7.00	1.57	3.99	4.08	7.00
	8.00	3.19	6.24	6.60	11.4
	9.00	5.11	8.73	9.77	18.8
	10.00	7.09	11.7	13.8	33.2
	13.00	13.0	24.0	33.9	175.
	16.00	20.9	44.8	78.0	
	20.00	39.8			
	25.00	91.2			
	30.00	205.			
	35.00	389.			
DELTA K MAX	A: 39.11	546.			
	B: 17.04		55.1		
	C: 18.46			153.	
	D: 14.85				309.
ROOT MEAN SQUARE PERCENT ERROR		14.88	7.66	6.94	8.45
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	1	1	1
	1.25-2.0				
	>2.0				

CONDITION/HT: T351
FORM: PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00- 10.00 HZ
ENVIRONMENT: R.T.,LAB AIR

YIELD STRENGTH: 54.5 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.241- 0.242"
SPECIMEN WIDTH: 8.995- 9.000"
REFERENCES:DA001

ALUM. ALLOY

2024

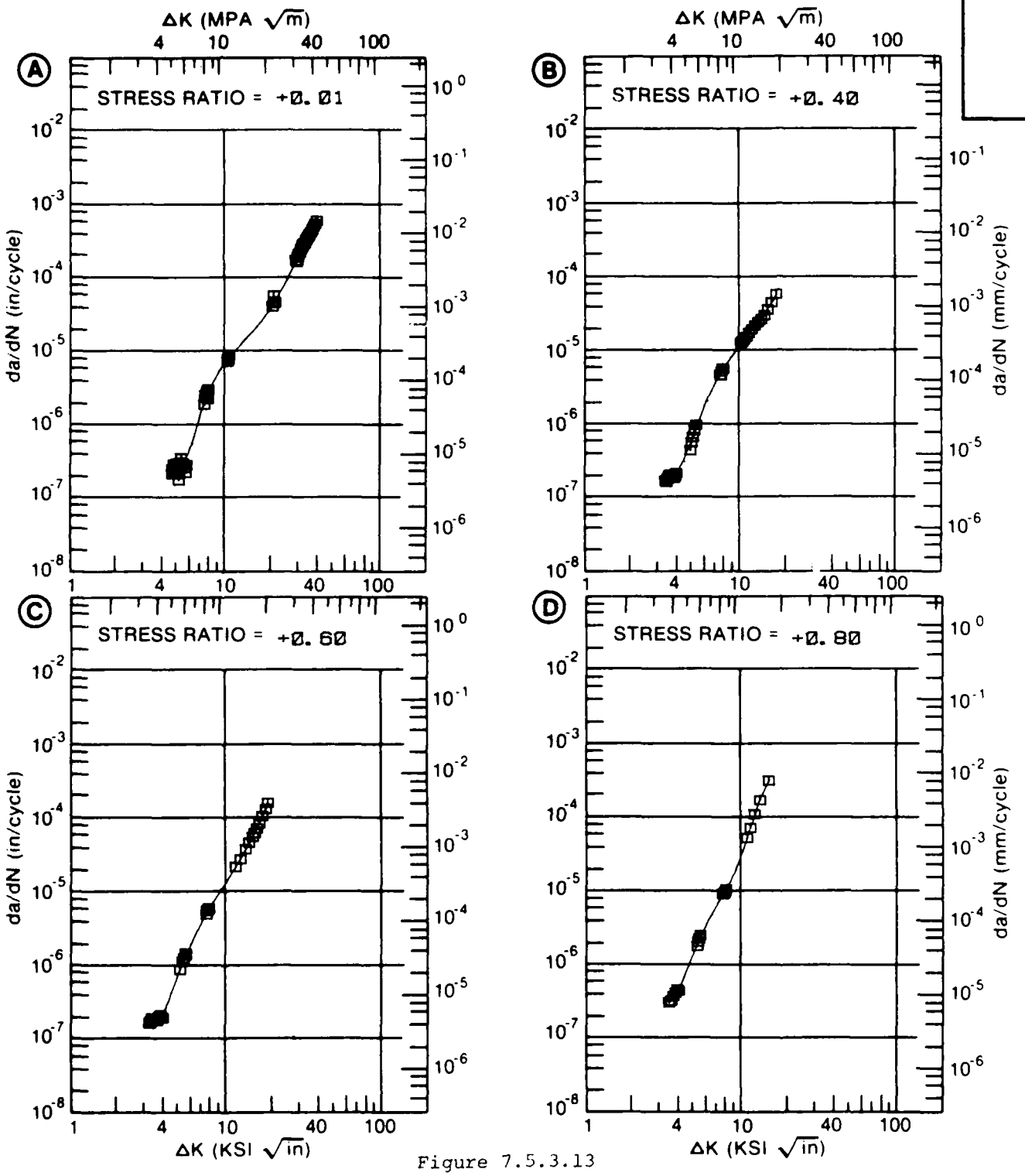


Figure 7.5.3.13

TABLE 7.5.3.14

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.14 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: - 65F, AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.00			
DELTA K MIN A:	27.49	176.			
DELTA K MIN B:					
DELTA K MIN C:					
DELTA K MIN D:					
	30.00	261.			
	35.00	503.			
	40.00	866.			
	50.00	2098.			
	60.00	4367.			
DELTA K MAX A:	60.32	4463.			
DELTA K MAX B:					
DELTA K MAX C:					
DELTA K MAX D:					

ROOT MEAN SQUARE PERCENT ERROR 7.04

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T351
FORM: 0.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00- 2.00 HZ
ENVIRONMENT: - 65° F, AIR

YIELD STRENGTH: 56.9 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.259"
SPECIMEN WIDTH: 12.002"
REFERENCES:DA001

ALUM. ALLOY

2024

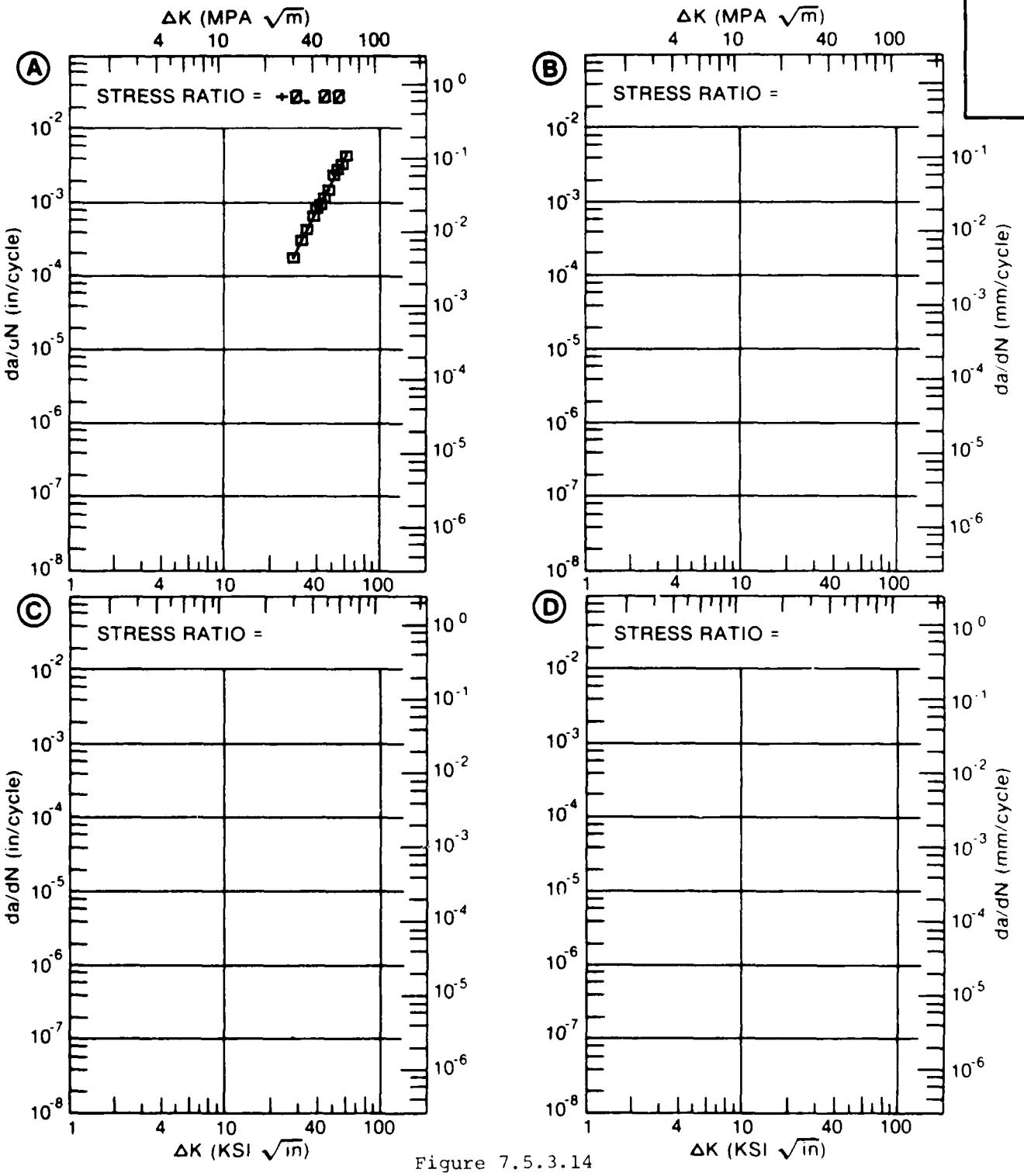


Figure 7.5.3.14

TABLE 7.5.3.15

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.15 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.00	R=+0.40	R=+0.80	
DELTA K MIN	A:	4.49	.109			
	B:	3.67		.219		
	C:	4.71			1.06	
	D:					
		4.00		.227		
		5.00	.156	.478	1.41	
		6.00	.244	1.30	3.08	
		7.00	.792	3.07	5.46	
		8.00		5.65		
		9.00		7.80		
DELTA K MAX	A:	7.41	1.79			
	B:	9.80		8.28		
	C:	7.53			7.04	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			15.52	12.18	2.83	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T351
FORM: Ø.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 5.ØØ- 2Ø.ØØ HZ
ENVIRONMENT: R.T.,LAB AIR

YIELD STRENGTH: 56.9 KSI
ULT. STRENGTH:
SPECIMEN THK: Ø.188- Ø.192"
SPECIMEN WIDTH: 3.999- 4.ØØ3"
REFERENCES:DAØØ1

ALUM. ALLOY
2024

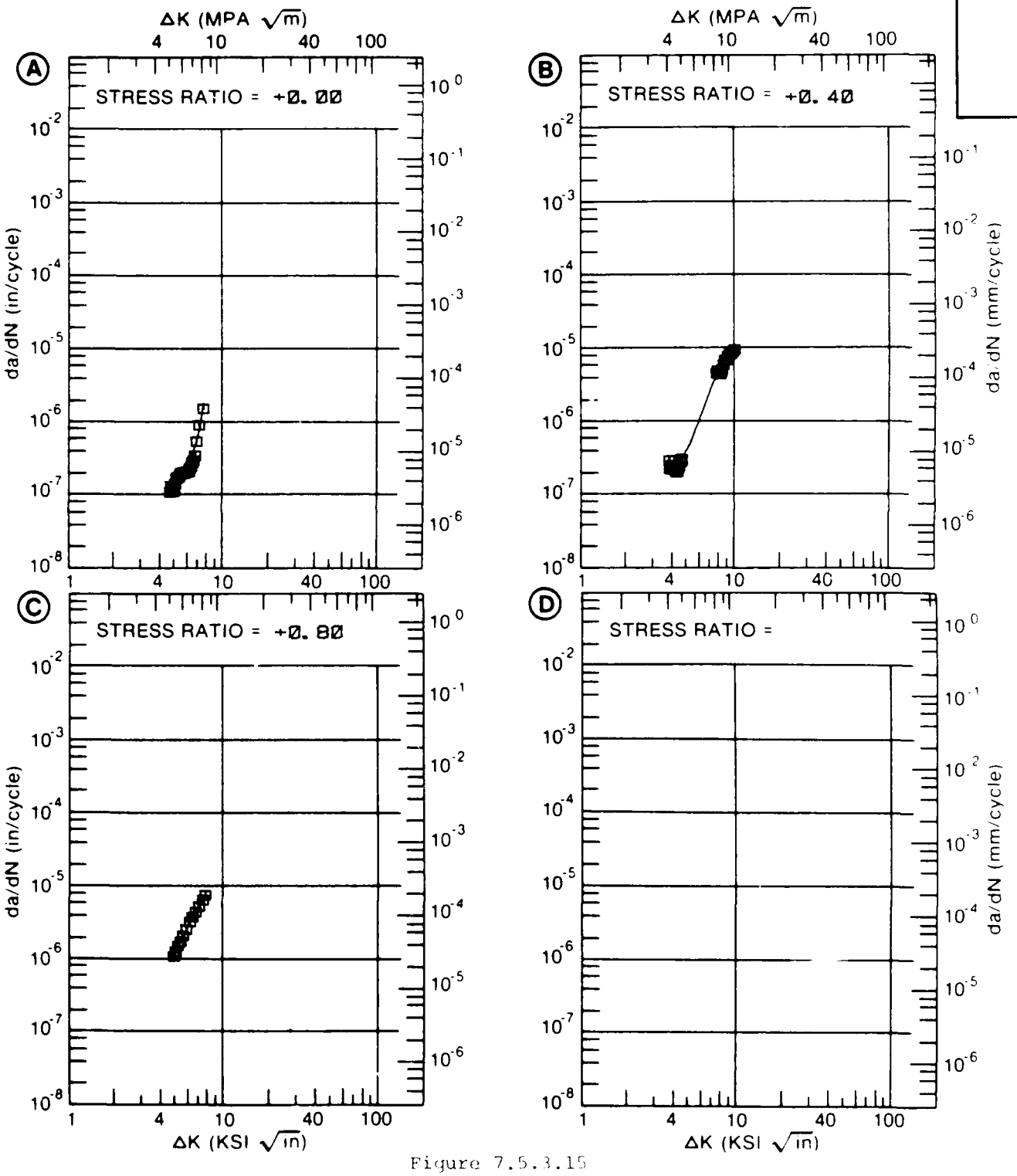


Figure 7.5.3.15

TABLE 7.5.3.16

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.16 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-1.00	R=+0.00	R=+0.40	R=+0.80
DELTA K MIN	A:	11.83	12.2			
	B:	23.72		119.		
	C:	10.67			17.9	
	D:	5.32				2.68
		6.00				4.16
		7.00				8.61
		8.00				17.7
		9.00				34.2
		10.00				60.9
		13.00	17.5		28.0	204.
		16.00	36.2		70.2	
		20.00	74.6		232.	
		25.00	159.	148.		
		30.00	325.	306.		
		35.00	658.	552.		
		40.00		924.		
		50.00		2324.		
DELTA K MAX	A:	38.29	1051.			
	B:	52.44		2877.		
	C:	22.69			444.	
	D:	14.31				275.
ROOT MEAN SQUARE PERCENT ERROR			17.03	3.77	7.82	9.27
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	2	1	1	1
		1.25-2.0				
		>2.0				

CONDITION/HT: T351
FORM: 0.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00- 16.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 56.9 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.189- 0.261"
SPECIMEN WIDTH: 11.997- 12.007"
REFERENCES:DA001

ALUM. ALLOY
2024

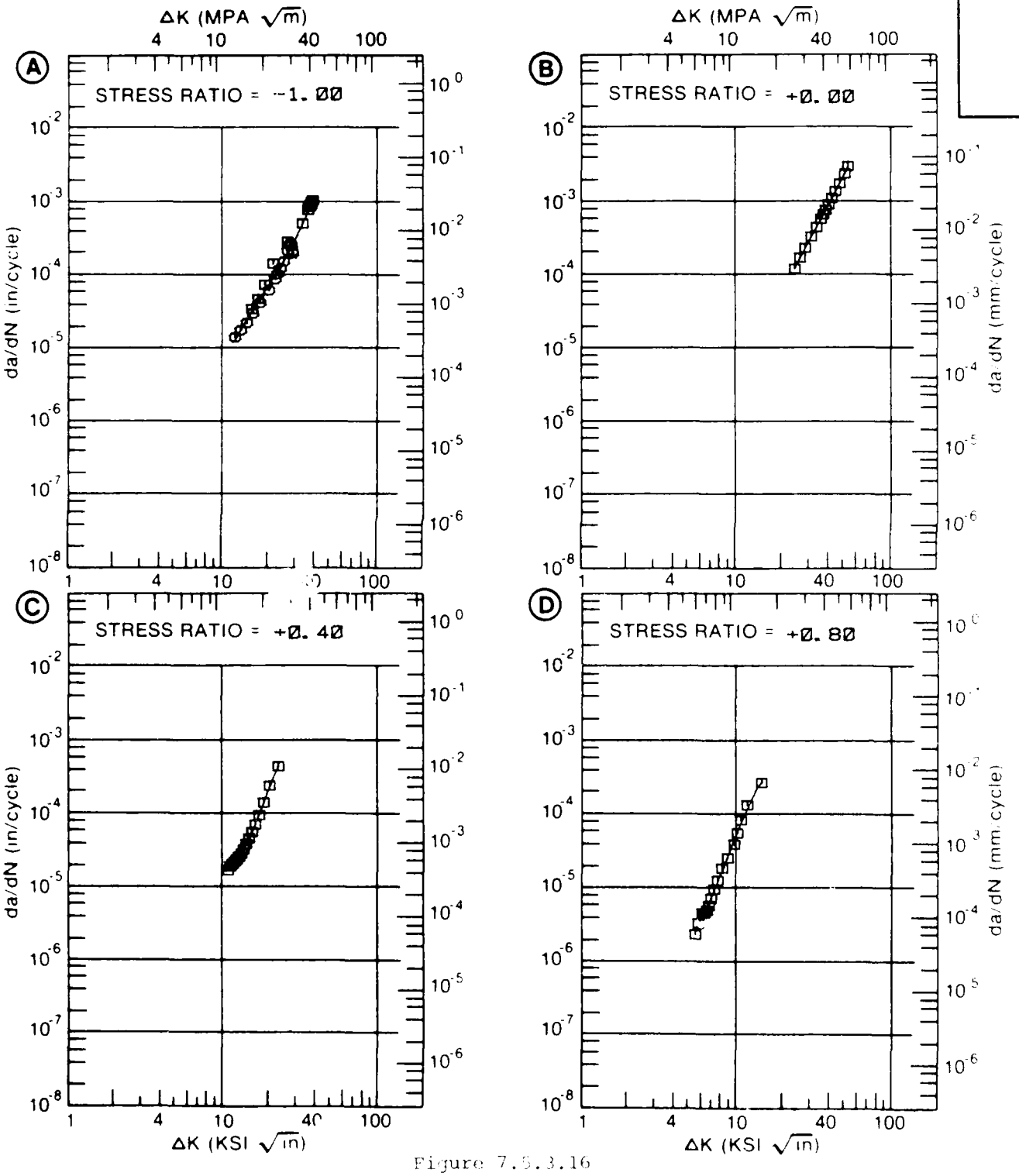


Figure 7.3.3.16

TABLE 7.5.3.17

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.17 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10			
DELTA K MIN	A: 12.37	14.6			
	B:				
	C:				
	D:				
	13.00	17.5			
	16.00	29.5			
	20.00	55.0			
DELTA K MAX	A: 24.93	209.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR	13.67

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T351
FORM: 0.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 3.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 5.000"
REFERENCES: FR001

ALUM. ALLOY
2024

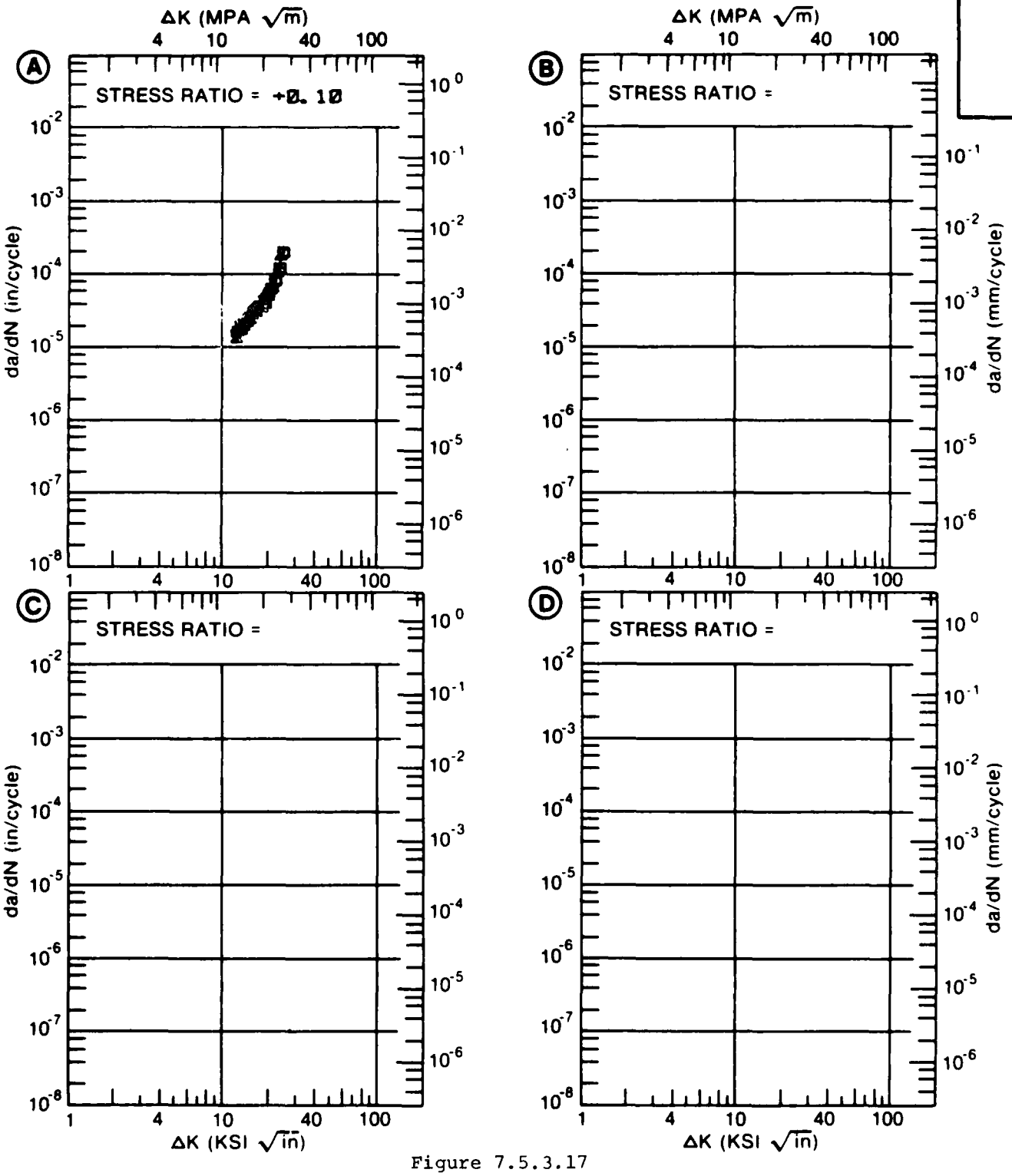


Figure 7.5.3.17

TABLE 7.5.3.18

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.18 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T351

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T.	E=+ 200F	E=+ 300F	E=+ 400F
		LAB AIR	AIR	AIR	AIR
DELTA K MIN	A: 8.19	2.84			
	B: 7.67		3.23		
	C: 6.72			2.15	
	D: 6.52				2.02
	7.00			2.38	2.44
	8.00		3.58	3.50	3.54
	9.00	4.06	4.96	5.14	4.99
	10.00	5.98	6.92	7.43	6.89
	13.00	14.8	17.5	19.2	16.4
	16.00	28.3	37.2	38.6	35.2
	20.00	52.1			
DELTA K MAX	A: 21.86	64.7			
	B: 16.64		42.7		
	C: 19.19			63.7	
	D: 19.04				70.9
ROOT MEAN SQUARE PERCENT ERROR		12.74	10.27	10.95	17.31

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T351
FORM: 0.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.01
FREQUENCY: 20.00 HZ

YIELD STRENGTH: 51.5 KSI
ULT. STRENGTH: 65.9 KSI
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 2.000"
REFERENCES:UD009

ALUM. ALLOY

2024

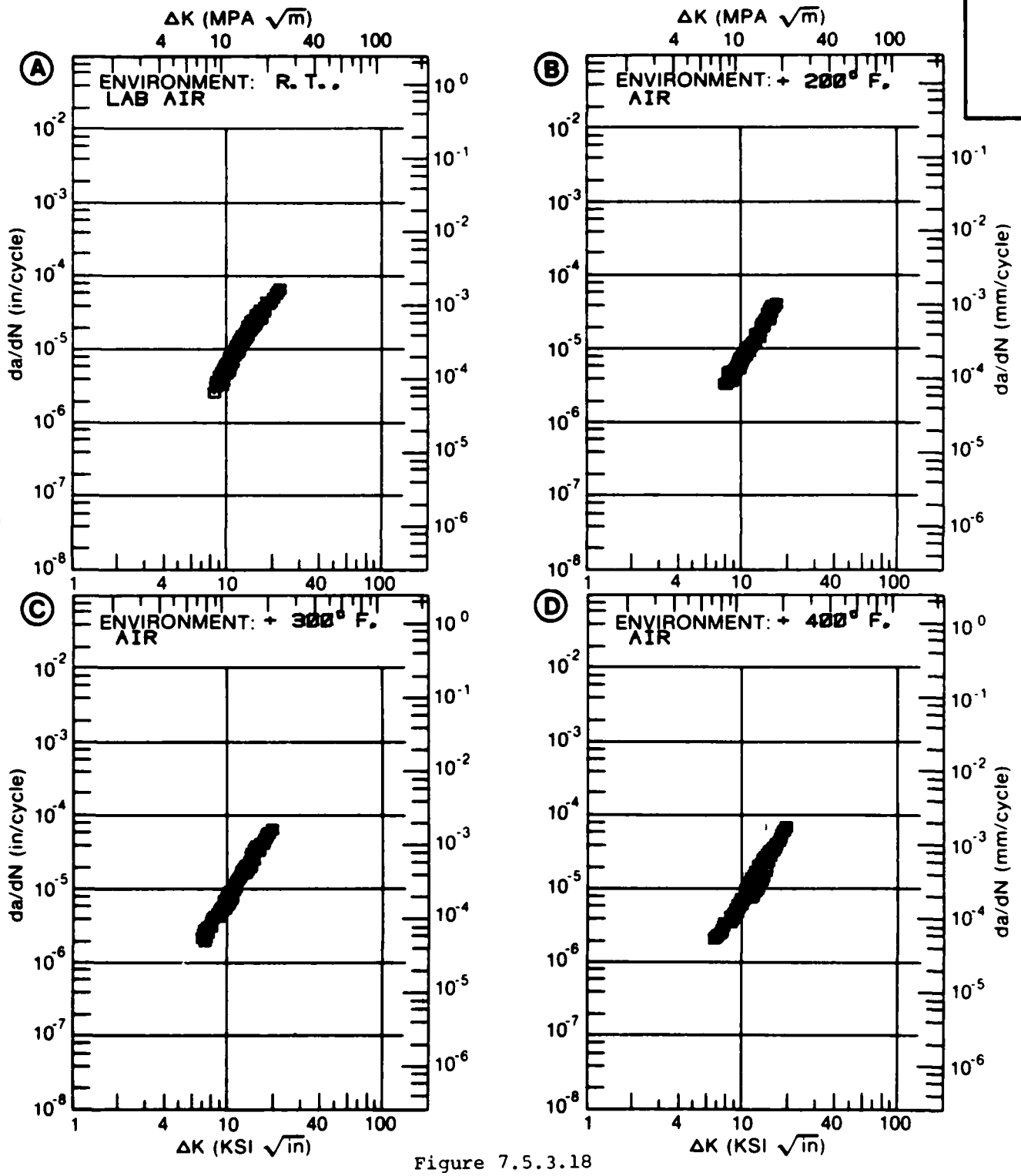


Figure 7.5.3.18

TABLE 7.5.3.19

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.19 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T351

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. LAB AIR	E=+ 200F AIR	E=+ 300F AIR	E=+ 400F AIR
DELTA K MIN	A: 7.96	4.07			
	B: 6.84		2.95		
	C: 6.93			2.44	
	D: 6.68				2.73
	7.00		3.11	2.54	3.11
	8.00	4.14	4.37	4.28	4.77
	9.00	6.03	6.18	6.47	7.27
	10.00	8.62	8.70	9.35	10.6
	13.00	21.4	22.2		
DELTA K MAX	A: 13.55	24.5			
	B: 13.54		25.8		
	C: 11.58			16.5	
	D: 11.82				18.5
ROOT MEAN SQUARE PERCENT ERROR		7.41	21.25	5.04	4.60

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T351
FORM: 0.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 20.00 HZ

YIELD STRENGTH: 51.5 KSI
ULT. STRENGTH: 65.9 KSI
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 2.000"
REFERENCES:UD009

ALUM. ALLOY

2024

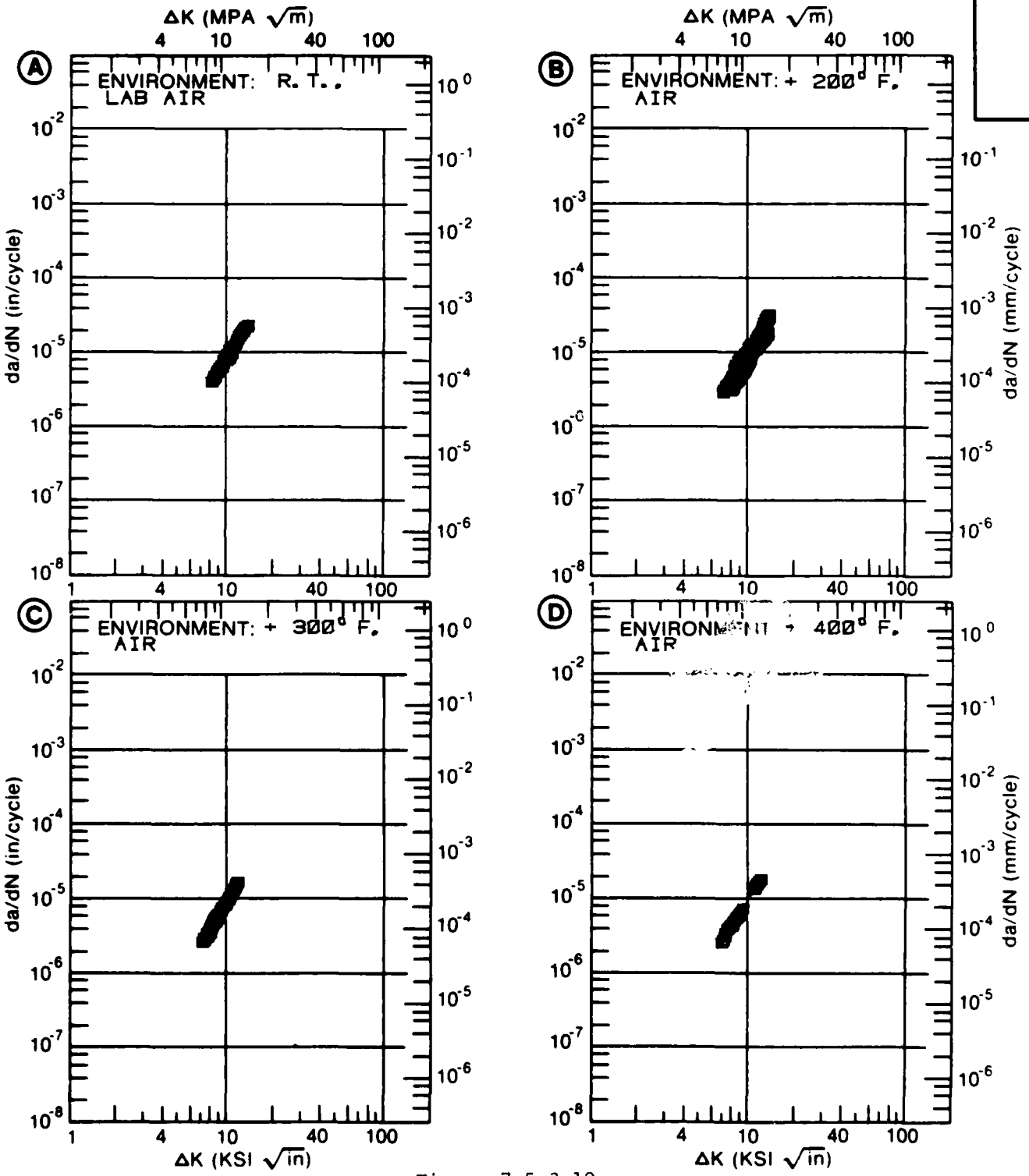


Figure 7.5.3.19

TABLE 7.5.3.20

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.20 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T351

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR	E=+ 200F AIR	E=+ 300F AIR	E=+ 400F AIR
DELTA K MIN	A:	6.16	1.90			
	B:	5.35		1.66		
	C:	5.60			1.47	
	D:	5.49				1.54
		6.00		2.11	1.94	2.17
		7.00	2.92	3.21	3.48	3.78
		8.00	4.67	4.93	5.65	5.96
		9.00	7.12	7.42	8.54	8.80
		10.00	10.4	10.8	12.3	12.4
		13.00	24.8	27.2	29.7	30.3
		16.00	43.5	50.2	59.8	
DELTA K MAX	A:	16.29	45.4			
	B:	17.32		60.7		
	C:	16.43			65.5	
	D:	15.83				62.8
ROOT MEAN SQUARE PERCENT ERROR			14.89	16.14	9.06	11.01

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T351
FORM: 0.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.30
FREQUENCY: 20.00 HZ

YIELD STRENGTH: 51.5 KSI
ULT. STRENGTH: 65.9 KSI
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 2.000"
REFERENCES:UD009

ALUM. ALLOY

2024

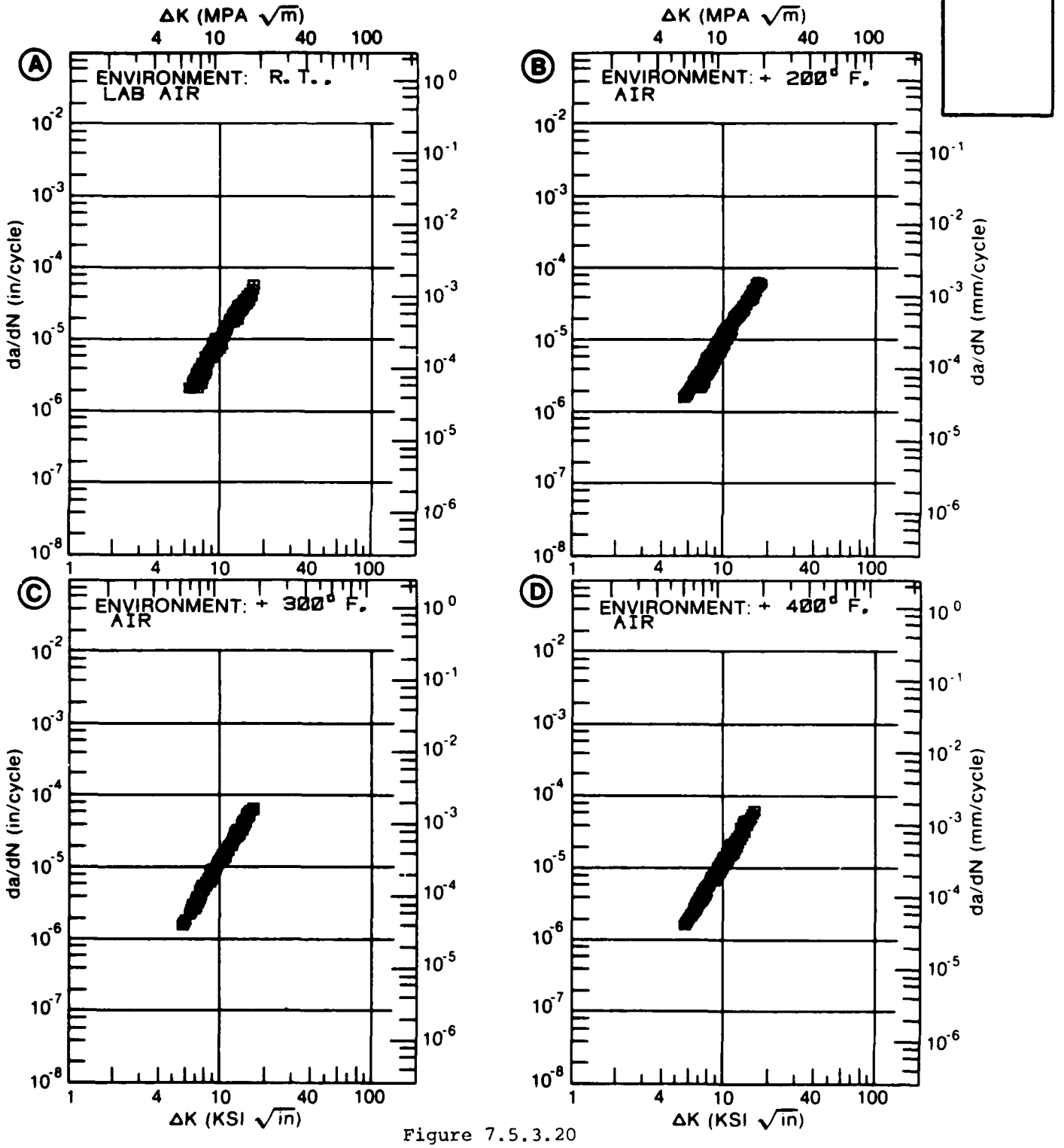


Figure 7.5.3.20

TABLE 7.5.3.21

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.21 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T351

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR	E=+ 200F AIR	E=+ 300F AIR	E=+ 400F AIR
DELTA K MIN	A:	5.77	1.92			
	B:	5.60		1.59		
	C:	5.46			1.62	
	D:	4.93				1.41
		5.00				1.47
		6.00	2.25	2.09	2.35	2.57
		7.00	3.94	3.77	4.14	4.08
		8.00	6.13	6.13	6.55	6.27
		9.00	9.06	9.31	9.66	9.55
		10.00	13.1	13.5	13.6	14.6
		13.00		33.8	31.7	
DELTA K MAX	A:	12.59	35.0			
	B:	13.83		42.2		
	C:	13.79			38.6	
	D:	12.26				39.4
ROOT MEAN SQUARE PERCENT ERROR			15.96	7.06	7.78	17.54

LIFE PREDICTION RATIO SUMMARY (NP/NA)
0.0-0.5
0.5-0.8
0.8-1.25
1.25-2.0
>2.0

CONDITION/HT: T351
FORM: 0.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.50
FREQUENCY: 20.00 HZ

YIELD STRENGTH: 51.5 KSI
ULT. STRENGTH: 65.9 KSI
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 2.000"
REFERENCES:UD009

ALUM. ALLOY

2024

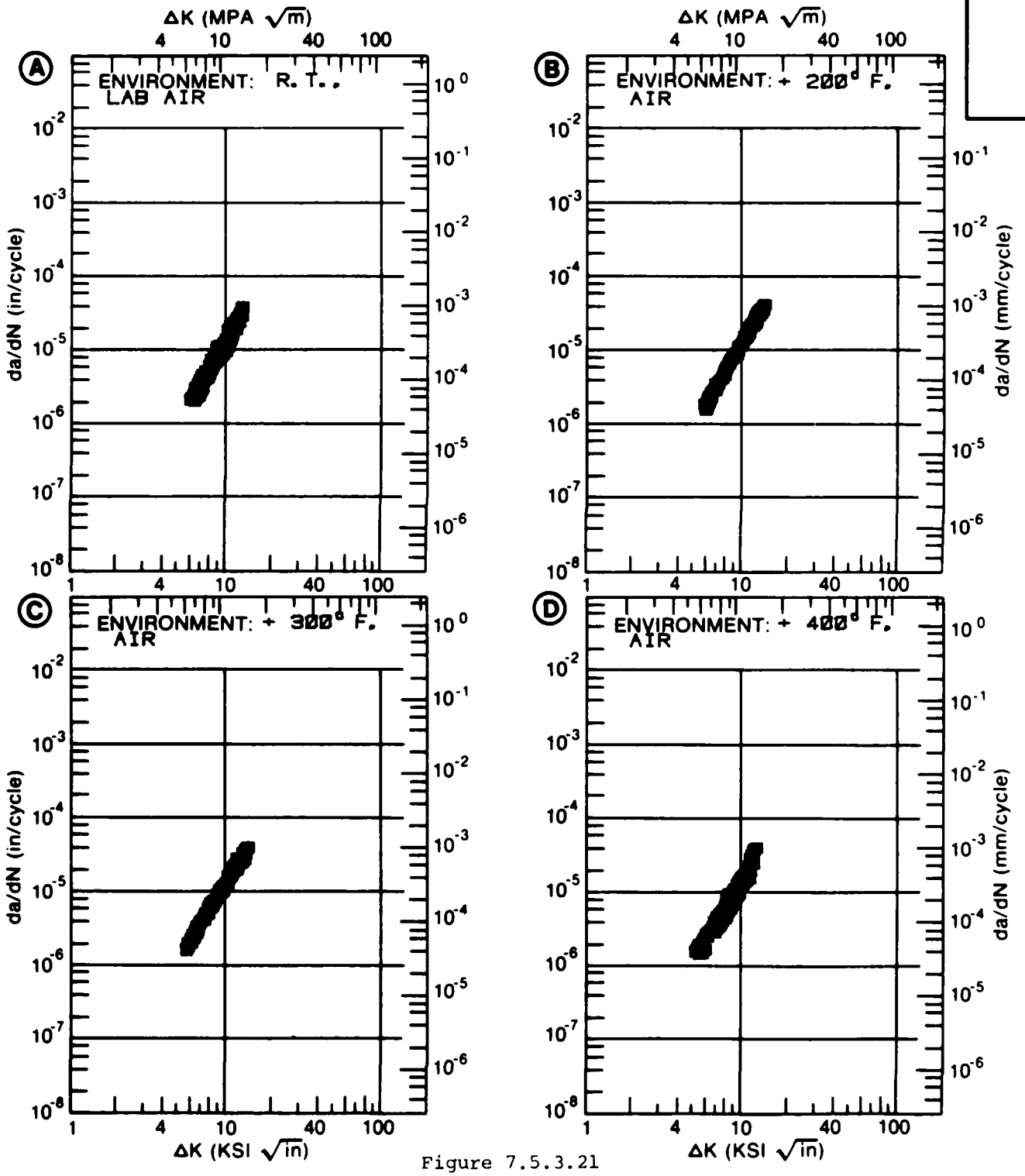


Figure 7.5.3.21

TABLE 7.5.3.22

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.22 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T351

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR	E=+ 200F AIR	E=+ 300F AIR	E=+ 400F AIR
DELTA K MIN	A:	5.67	1.67			
	B:	6.63		3.96		
	C:	6.14			3.03	
	D:	4.18				1.05
		5.00				1.56
		6.00	2.18			2.85
		7.00	4.10	4.44	4.62	5.10
		8.00	6.60	6.71	7.24	8.47
		9.00	9.89	10.2	10.9	12.8
		10.00	14.4	14.3	15.6	17.6
DELTA K MAX	A:	10.96	20.5			
	B:	10.11		14.7		
	C:	10.71			19.8	
	D:	10.12				18.2
ROOT MEAN SQUARE PERCENT ERROR			6.39	5.54	6.01	15.04

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T351
FORM: 0.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.60
FREQUENCY: 20.00 HZ

YIELD STRENGTH: 51.5 KSI
ULT. STRENGTH: 65.9 KSI
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 2.000"
REFERENCES:UD009

ALUM. ALLOY

2024

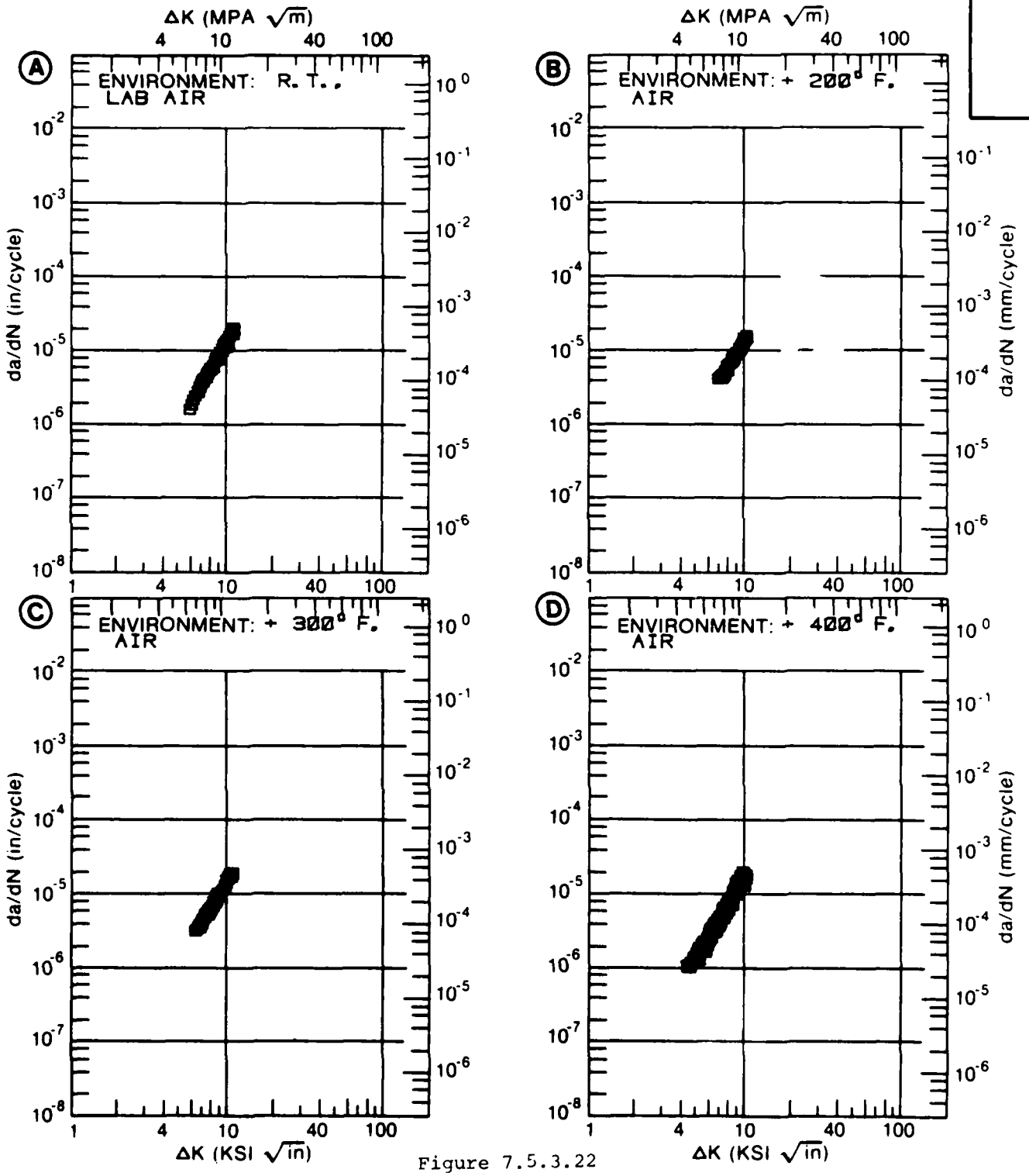


Figure 7.5.3.22

TABLE 7.5.3.23

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.23 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T351

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A: 5.32	.130			
	B:				
	C:				
	D:				
	6.00	.411			
	7.00	1.34			
	8.00	2.97			
	9.00	5.22			
	10.00	7.88			
	13.00	17.0			
	16.00	27.7			
DELTA K MAX	A: 19.53	45.9			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 18.92

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T351
FORM: 0.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 25.00 HZ

YIELD STRENGTH: 54.4 KSI
ULT. STRENGTH: 68.3 KSI
SPECIMEN THK: 0.248"
SPECIMEN WIDTH: 2.500"
REFERENCES:AL002

ALUM. ALLOY

2024

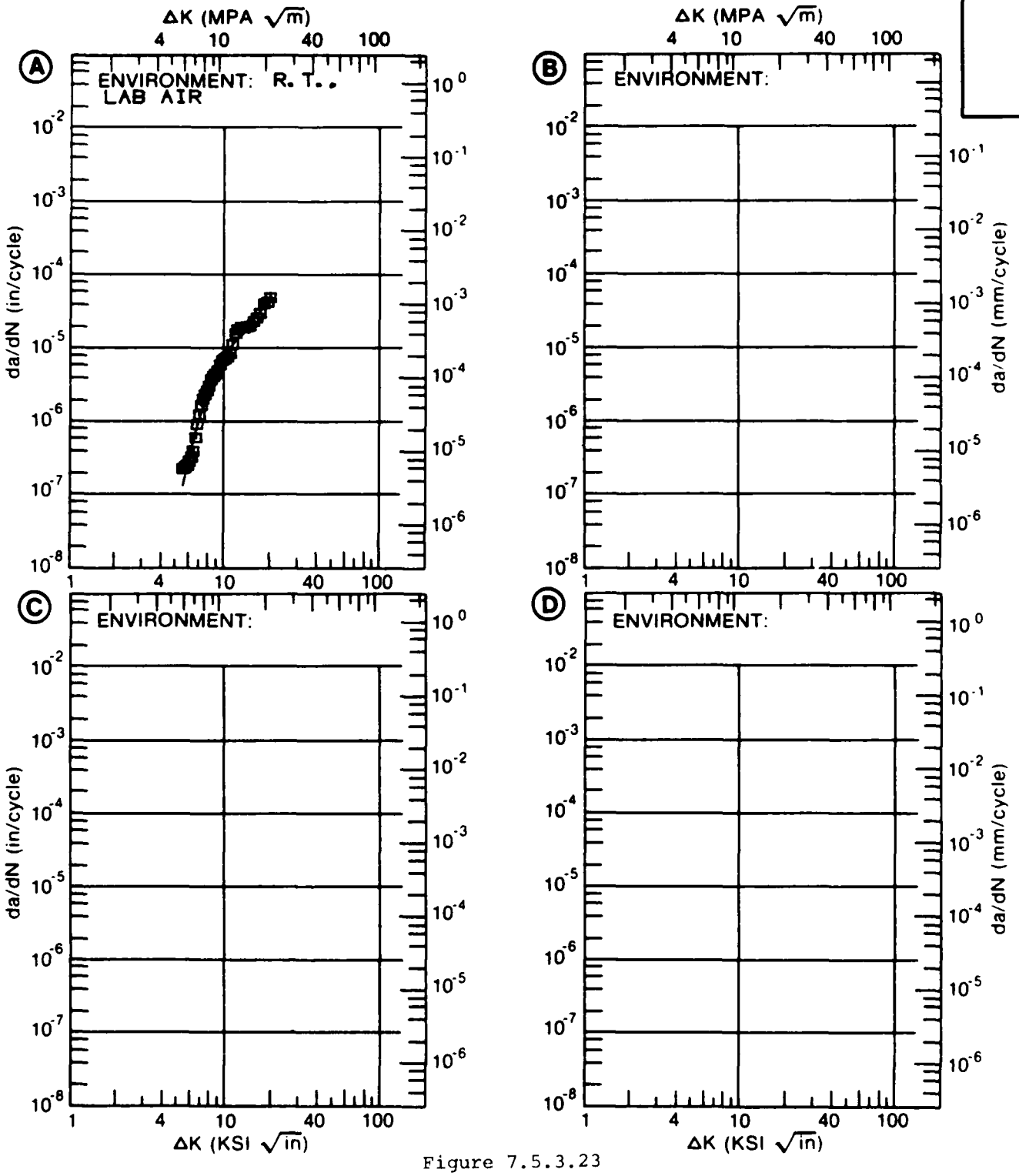


Figure 7.5.3.23

TABLE 7.5.3.24

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.24 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T351

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A (E= R.T. H.H.A.)	B	C	D
DELTA K MIN A:	3.11	.085			
B:	5				
C:					
D:					
	3.50	.150			
	4.00	.183			
	5.00	.356			
	6.00	1.02			
	7.00	2.61			
	8.00	5.12			
	9.00	7.96			
	10.00	10.8			
	13.00	20.2			
	16.00	36.3			
	20.00	96.4			
DELTA K MAX A:	24.63	138.			
B:					
C:					
D:					

ROOT MEAN SQUARE PERCENT ERROR 18.66

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T351
FORM: 0.75"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 25.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.249"
SPECIMEN WIDTH: 2.546"
REFERENCES:AL010

ALUM. ALLOY
2024

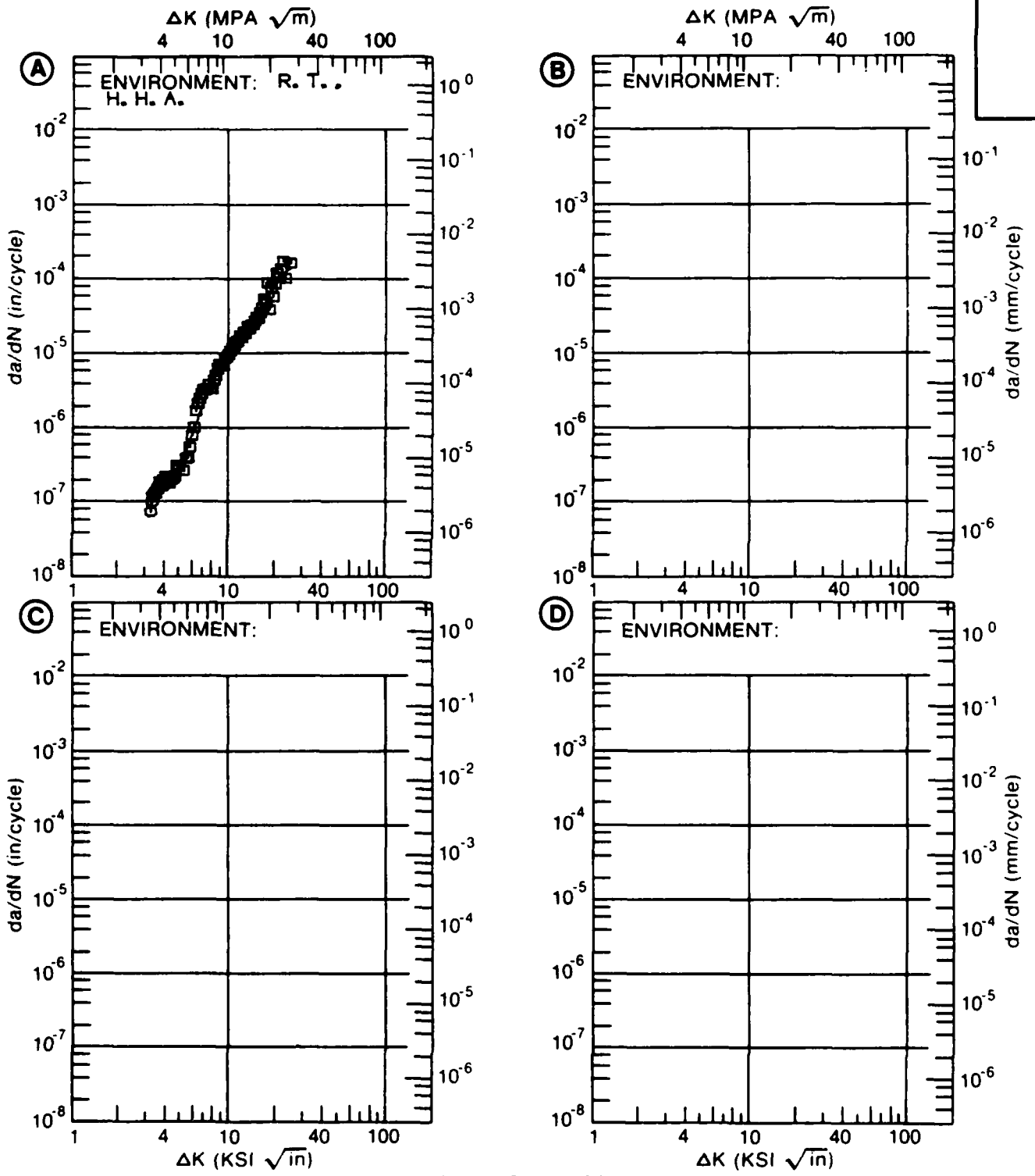


Figure 7.5.3.24

TABLE 7.5.3.25

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.25 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T351

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R. T. H. H. A.			
DELTA K MIN	A:	3.20	.0726			
	B:					
	C:					
	D:					
		3.50	.139			
		4.00	.330			
		5.00	1.10			
		6.00	2.44			
		7.00	4.33			
		8.00	6.72			
		9.00	9.60			
		10.00	13.0			
		13.00	26.9			
		16.00	49.6			
DELTA K MAX	A:	16.73	57.1			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 26.03

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	1
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T351
FORM: 1.25"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 25.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.248- 0.249"
SPECIMEN WIDTH: 2.545- 2.546"
REFERENCES:AL010

ALUM. ALLOY
2024

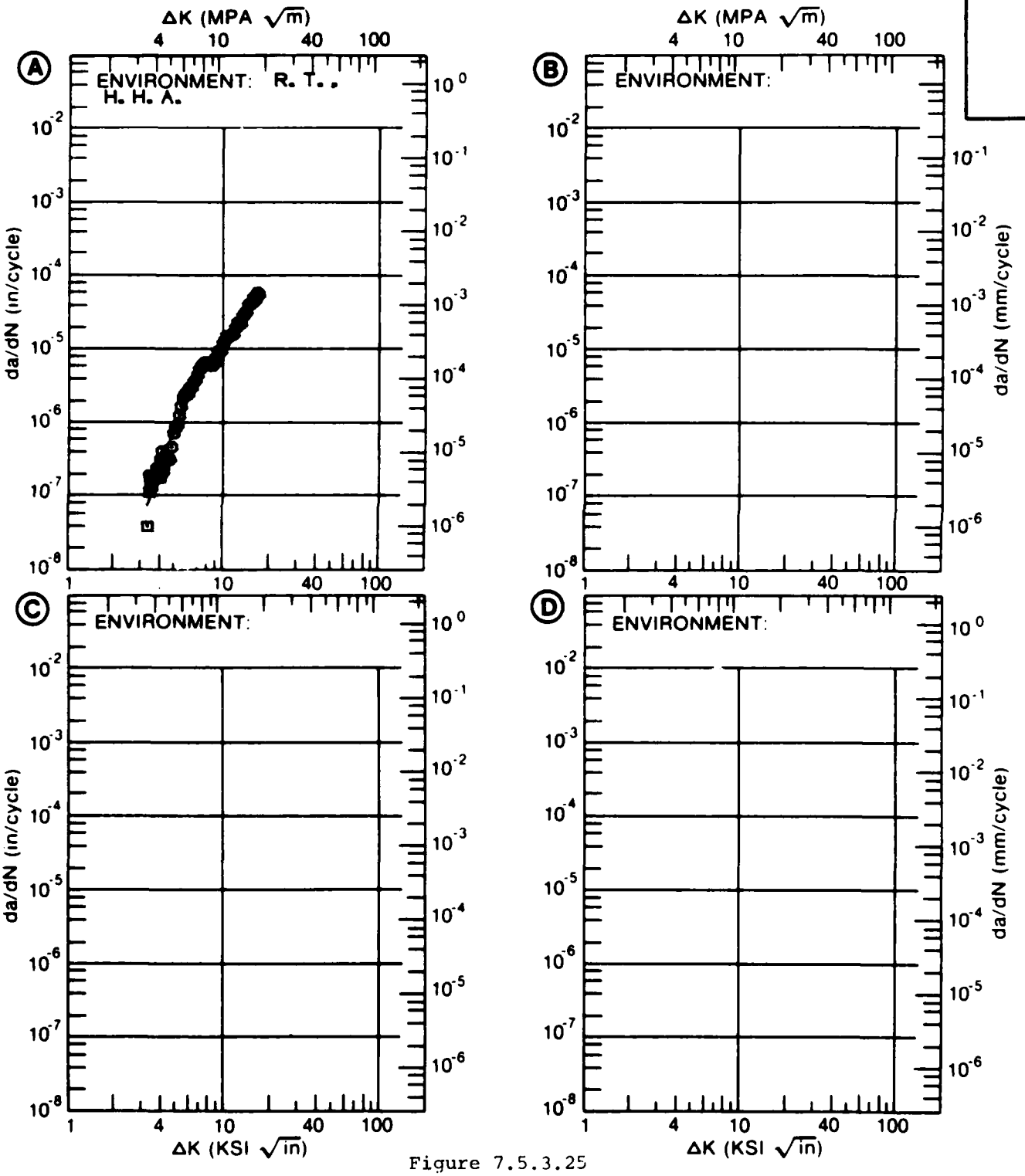


Figure 7.5.3.25

TABLE 7.5.3.26

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.26 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3511
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.05	R=+0.50		
DELTA K MIN	A:	4.39	.0786			
	B:	2.35		.0724		
	C:					
	D:					
		2.50		.0818		
		3.00		.113		
		3.50		.144		
		4.00		.175		
		5.00	.129			
		6.00	.177			
		7.00	.229			
DELTA K MAX	A:	7.98	.361			
	B:	4.49		.204		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			31.67	22.07		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T3511
FORM: EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 9.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 58.7 KSI
ULT. STRENGTH: 79.3 KSI
SPECIMEN THK: 0.370"
SPECIMEN WIDTH: 4.000"
REFERENCES:BW001

ALUM. ALLOY

2024

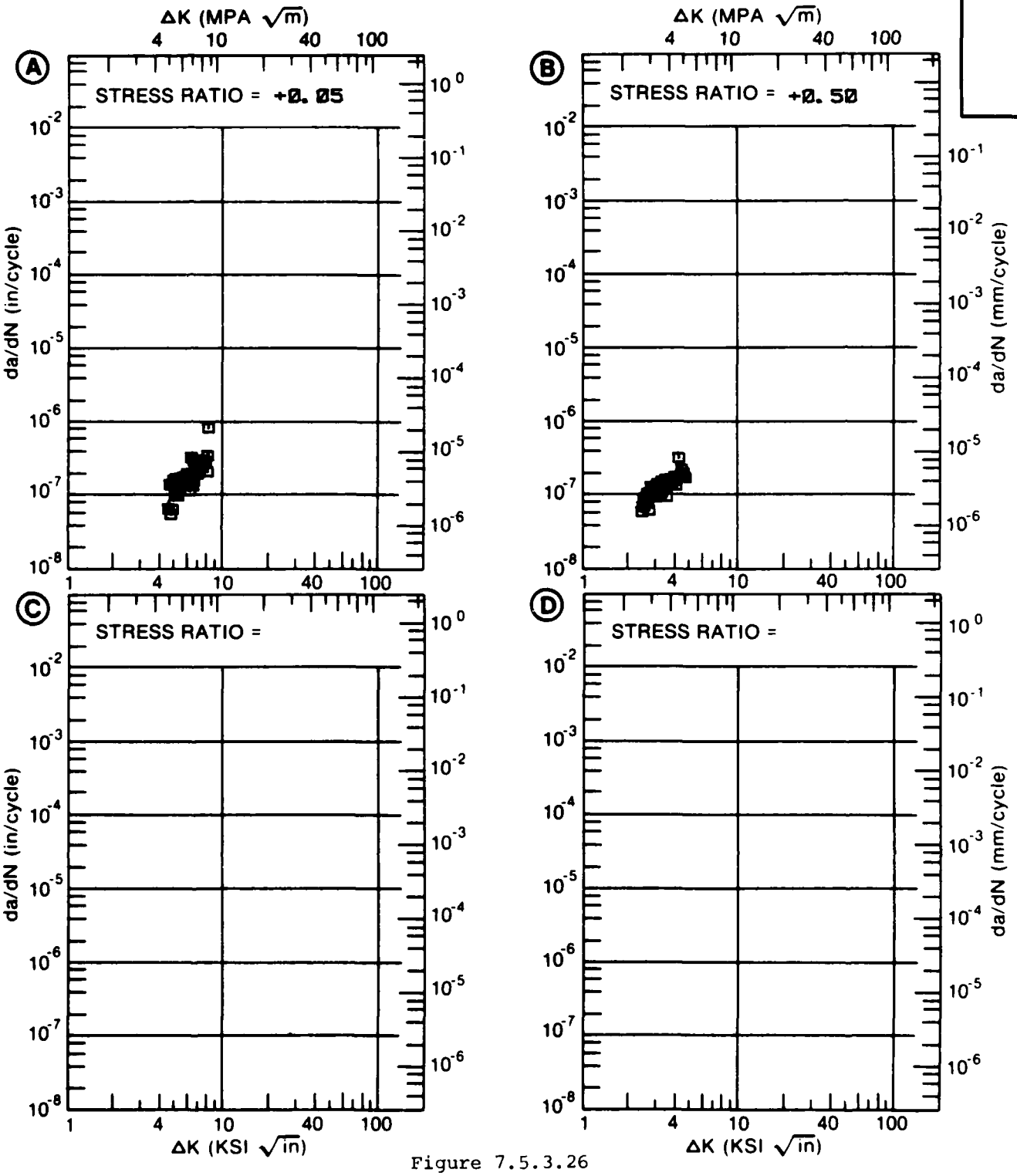


Figure 7.5.3.26

TABLE 7.5.3.27

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.27 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3511
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.05	R=+0.50		
DELTA K MIN	A:	5.00	.0615			
	B:	2.35		.0342		
	C:					
	D:					
		2.50		.0555		
		3.00		.114		
		3.50		.160		
		4.00		.280		
		5.00	.0615			
		6.00	.141			
		7.00	.514			
		8.00	1.72			
		9.00	4.22			
		10.00	7.05			
DELTA K MAX	A:	10.62	7.90			
	B:	4.18		.380		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			33.49	26.13		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T3511
FORM: EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 9.00 HZ
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 58.7 KSI
ULT. STRENGTH: 79.3 KSI
SPECIMEN THK: 0.370"
SPECIMEN WIDTH: 4.000"
REFERENCES:BW001

ALUM. ALLOY
2024

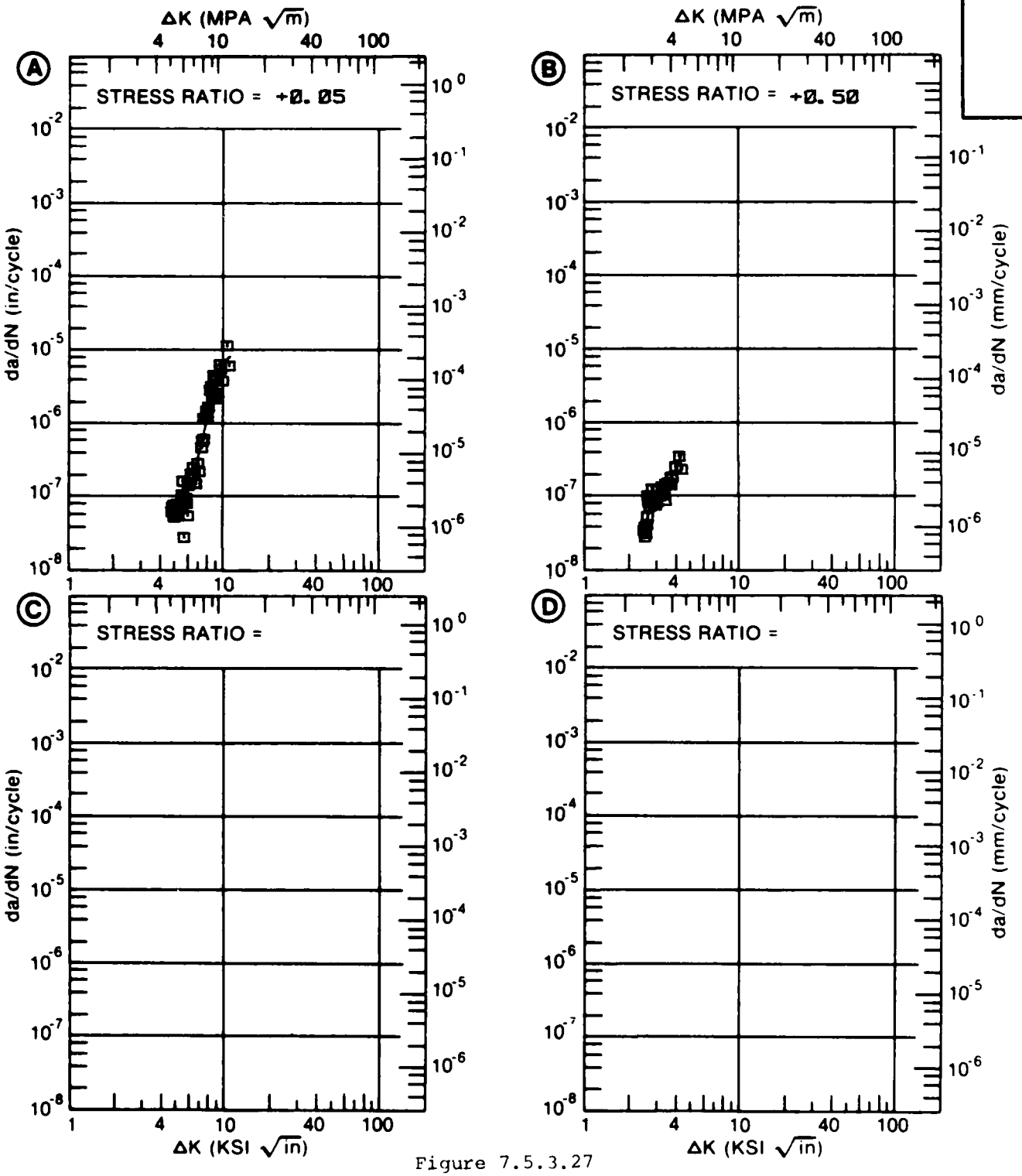


Figure 7.5.3.27

TABLE 7.5.3.28

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.28 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3511
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.50			
DELTA K MIN	A: 3.57	.169			
	B:				
	C:				
	D:				
	4.00	.164			
	5.00	.431			
	6.00	1.38			
	7.00	3.12			
	8.00	5.19			
	9.00	7.30			
	10.00	9.35			
	13.00	16.2			
	16.00	28.0			
	20.00	62.3			
	25.00	173.			
DELTA K MAX	A: 28.79	239.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 29.74

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T3511
FORM: EXTRUSION
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 9.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 58.7 KSI
ULT. STRENGTH: 79.3 KSI
SPECIMEN THK: 0.370"
SPECIMEN WIDTH: 5.000"
REFERENCES:BW001

ALUM. ALLOY

2024

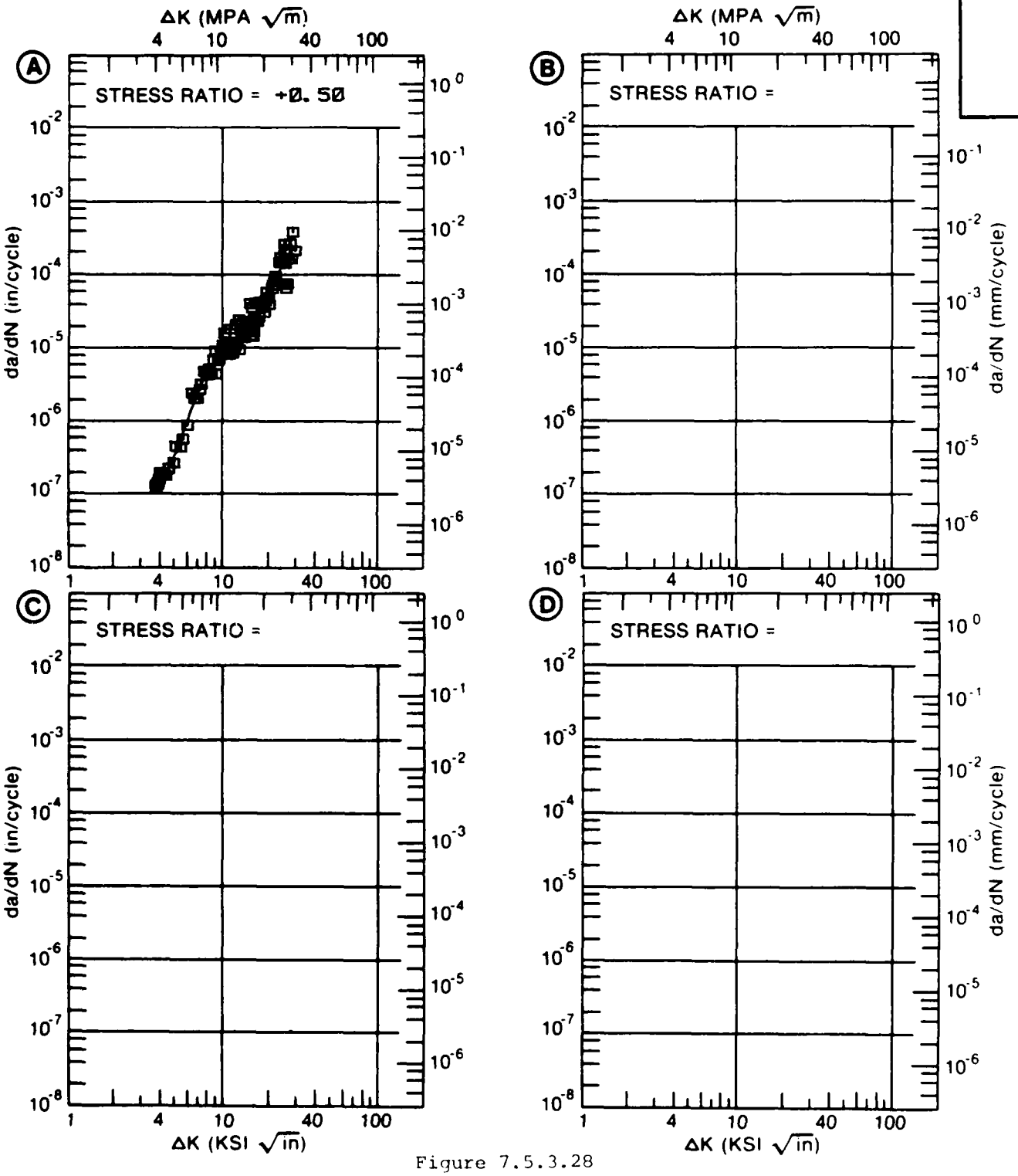


Figure 7.5.3.28

TABLE 7.5.3.29

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.29 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3511
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (.0**-6 IN./CYCLE)			
		A	B	C	D
		R=-1.00	R=-0.20	R=+0.04	R=+0.40
DELTA K MIN	A:				
	B:				
	C:				
	D:				
	200.00				
DELTA K MAX	A:				
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		0.00	0.00	0.00	0.00

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T3511
FORM: 0.20"TH EXTRUSION
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 6.0 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 61.2 KSI
ULT. STRENGTH: 80.4 KSI
SPECIMEN THK:
SPECIMEN WIDTH: 4.000"
REFERENCES:BW005

ALUM. ALLOY
2024

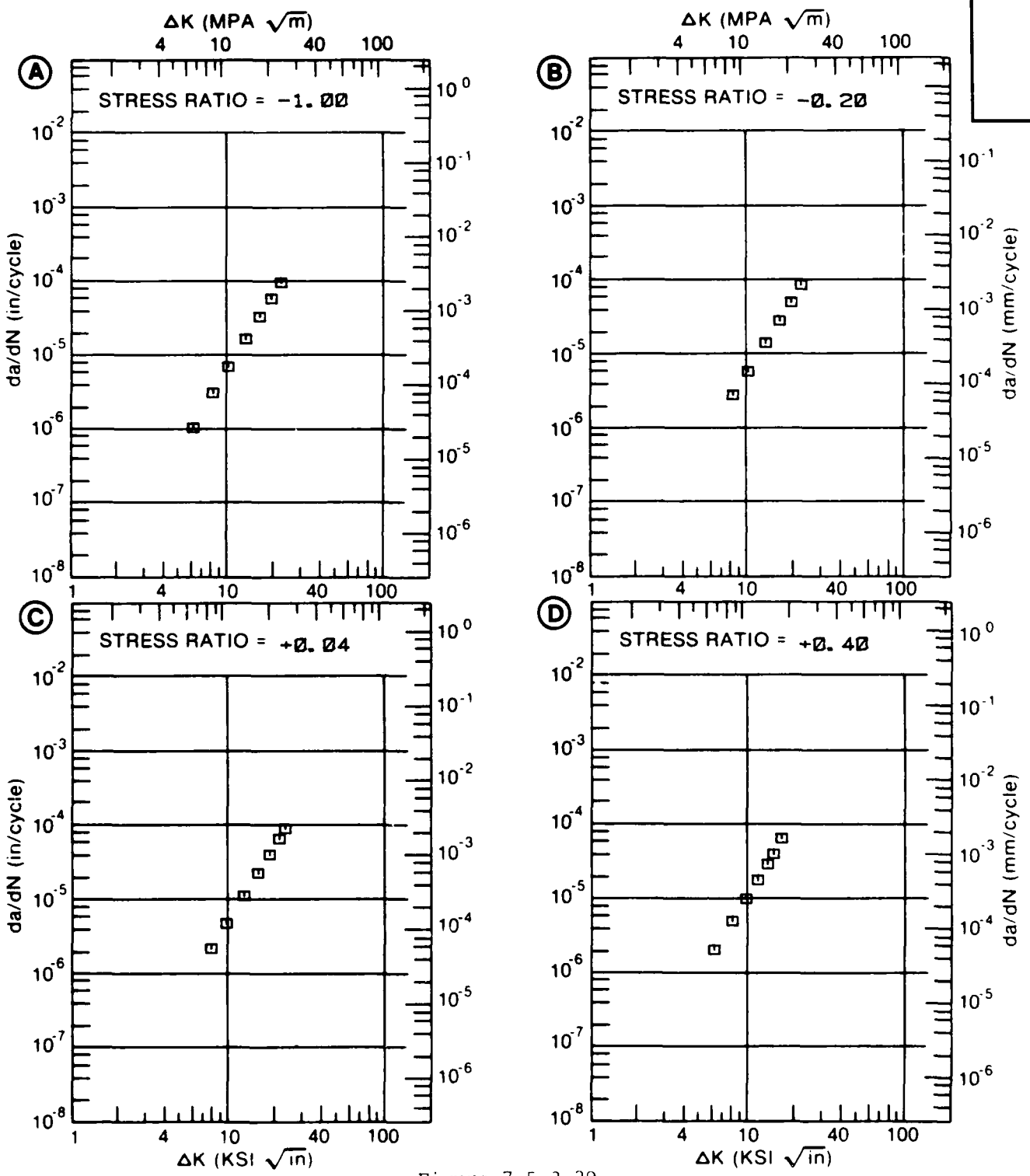


Figure 7.5.3.29

TABLE 7.5.3.30

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.30 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T42
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-1.00	R=+0.02	R=+0.50	
DELTA K MIN	A:	5.48	.651			
	B:	5.32		.187		
	C:	4.18			.187	
	D:					
		5.00			.424	
		6.00	1.04	.275	1.20	
		7.00	2.03	.685	2.33	
		8.00	3.29	1.53	3.86	
		9.00	4.76	2.75	5.73	
		10.00	6.41	4.25	7.89	
		13.00	12.7	9.49	15.8	
		16.00	22.2	15.1	25.7	
		20.00	44.3	23.6	42.5	
		25.00	101.	40.0	72.3	
		30.00	223.	70.9	118.	
		35.00	468.	134.	188.	
		40.00	939.	271.		
		50.00	2809.	1131.		
		60.00		3097.		
DELTA K MAX	A:	55.92	4173.			
	B:	67.71		4480.		
	C:	39.01			271.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			28.64	47.76	16.10	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T42
FORM: 0.75"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 10.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 45.4 KSI
ULT. STRENGTH: 68.5 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 4.000"
REFERENCES:MA006

ALUM. ALLOY
2024

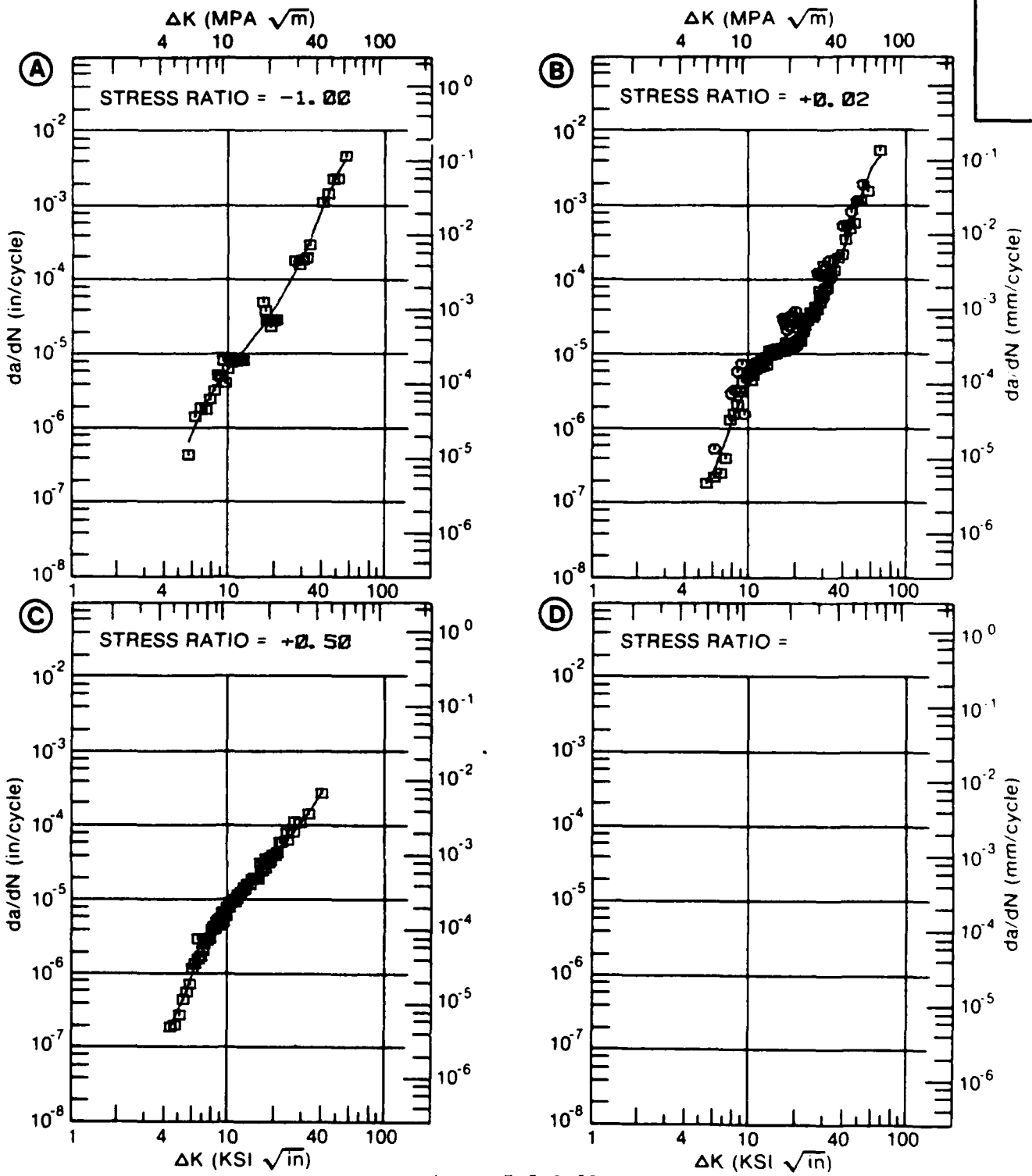


Figure 7.5.3.30

TABLE 7.5.3.31

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.31 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T62
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.30		
DELTA K MIN	A:	4.12	.24			
	B:	3.95		.08		
	C:	1				
	D:					
		4.00		.0912		
		5.00	.312	.465		
		6.00	.503	1.32		
		7.00	.916	2.74		
		8.00	1.74	4.68		
		9.00	3.03	7.13		
		10.00	4.68	10.1		
		13.00	11.8	22.4		
		16.00	23.1	42.8		
		20.00		96.4		
DELTA K MAX	A:	19.00	37.5			
	B:	20.04		97.2		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			14.55	35.15		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1			
		1.25-2.0		1		
		>2.0				

CONDITION/HT: T62
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00 HZ
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 60.3 KSI
ULT. STRENGTH: 74.9 KSI
SPECIMEN THK: 0.125"
SPECIMEN WIDTH: 6.000"
REFERENCES:GD004

ALUM. ALLOY

2024

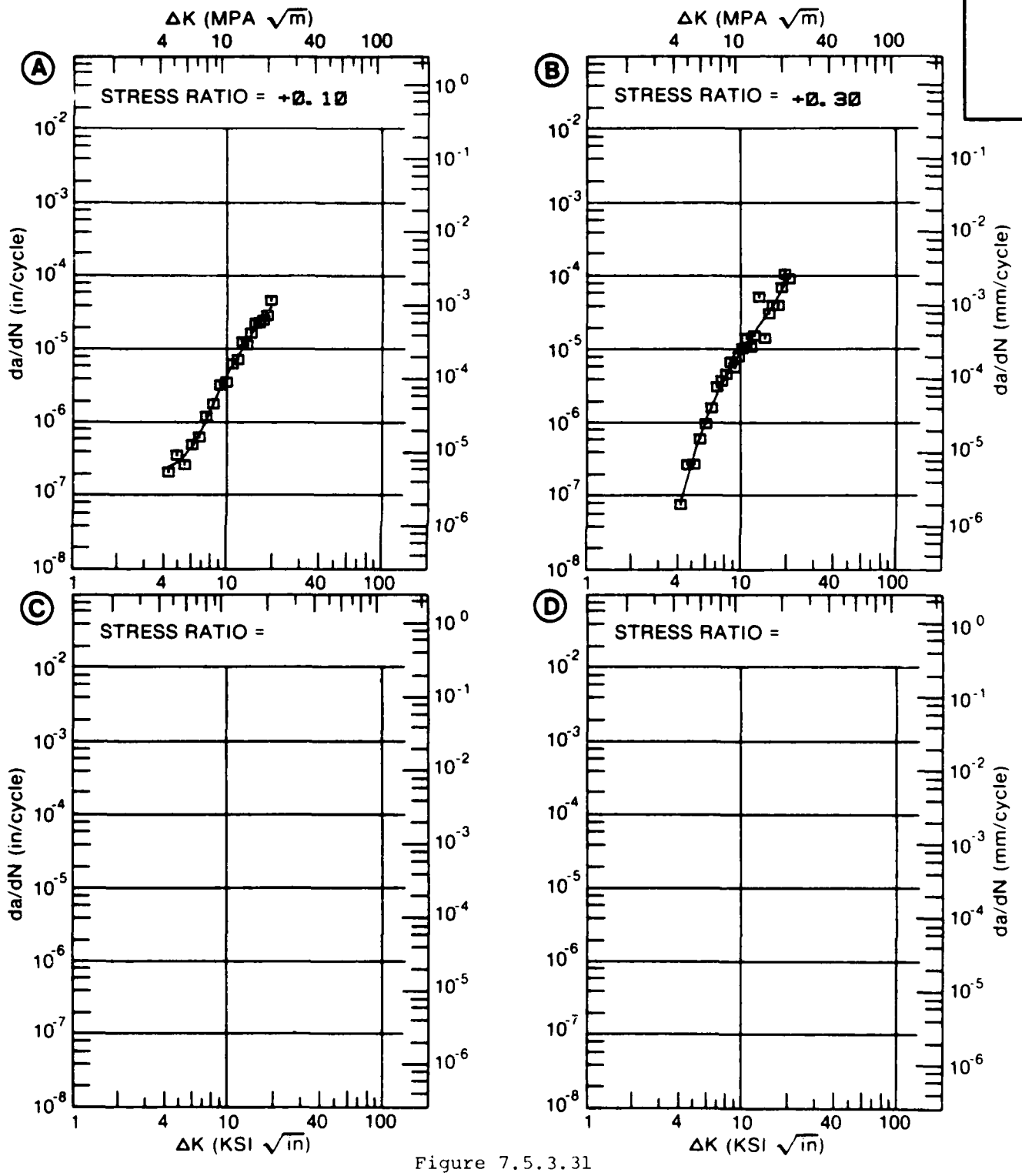


Figure 7.5.3.31

TABLE 7.5.3.32

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.32 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T62
ENVIRONMENT: R. T. , S. T. W.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.50	R=+0.70	
DELTA K MIN	A:	4.46	.336			
	B:	2.50		.138		
	C:	2.69			.150	
	D:					
		3.00		.279	.268	
		3.50		.374	.413	
		4.00		.561	.716	
		5.00	.772	1.43	2.05	
		6.00	1.73	3.17	3.66	
		7.00	3.63	5.53	5.78	
		8.00	5.17	7.59	10.7	
		9.00	6.29			
		10.00	7.61			
		13.00	20.8			
		16.00	53.1			
DELTA K MAX	A:	19.67	57.0			
	B:	8.83		8.35		
	C:	8.21			12.0	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			17.67	32.04	13.00	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25			1	
		1.25-2.0	1	1		
		>2.0				

CONDITION/HT: T62
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00 HZ
ENVIRONMENT: R.T., S.T.W.

YIELD STRENGTH: 60.3 KSI
ULT. STRENGTH: 74.9 KSI
SPECIMEN THK: 0.125"
SPECIMEN WIDTH: 6.000"
REFERENCES:GD004

ALUM. ALLOY
2024

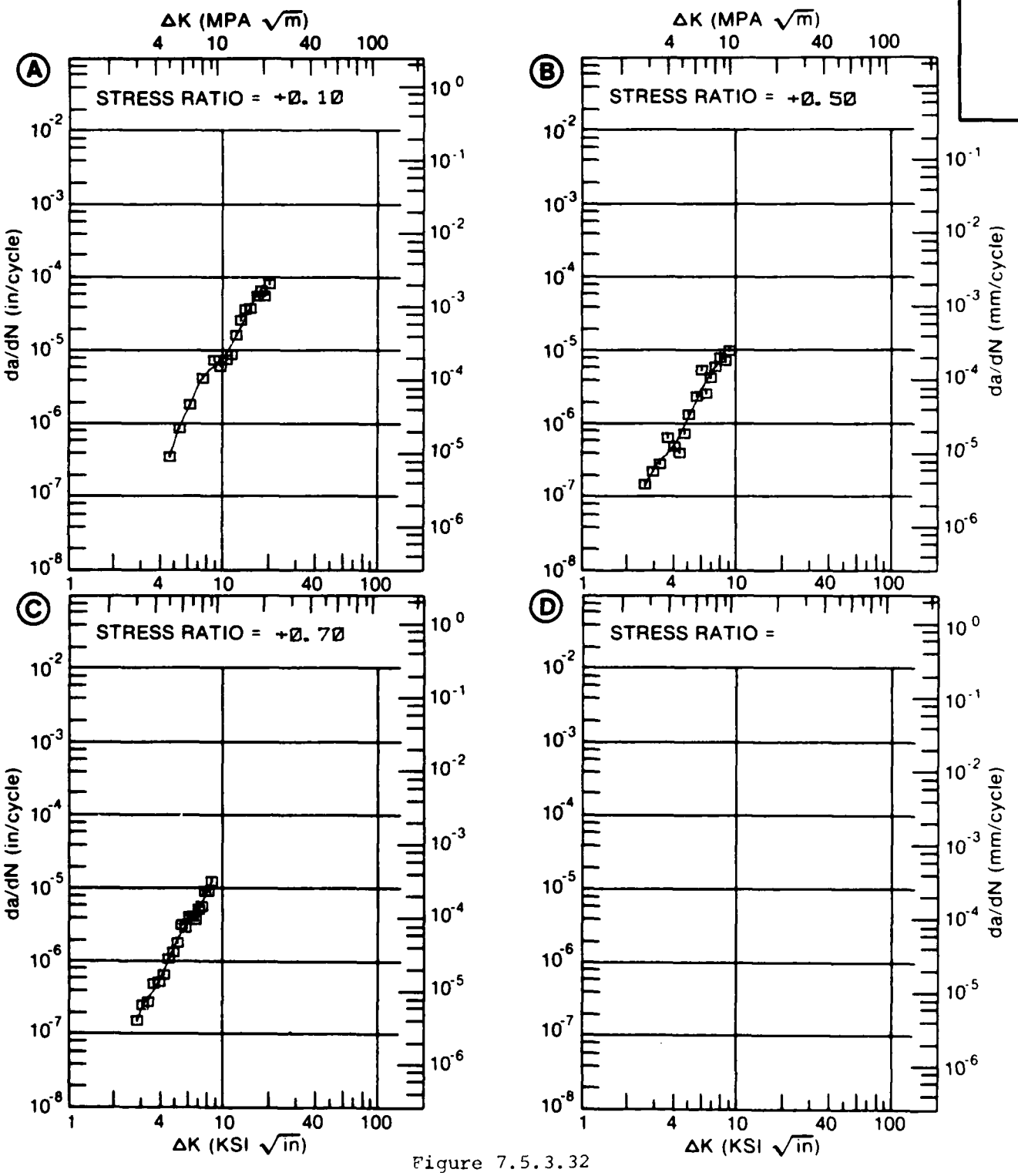


Figure 7.5.3.32

TABLE 7.5.3.33

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.33 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T62
ENVIRONMENT: R.T. ,DRY AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10	R=+0.30	R=+0.50	
DELTA K MIN A:	4.17	.299			
DELTA K MIN B:	3.56		.129		
DELTA K MIN C:	2.36			.0347	
DELTA K MIN D:					
	2.50			.0456	
	3.00			.105	
	3.50			.206	
	4.00		.190	.366	
	5.00	.812	.711	.947	
	6.00	1.89	1.86	2.07	
	7.00	3.47	3.54	4.08	
	8.00	5.56	5.68	7.43	
	9.00	8.15	8.24	10.6	
	10.00	11.3	11.3	13.1	
	13.00	24.6	25.8		
	16.00	46.7	58.9		
DELTA K MAX A:	16.21	48.7			
DELTA K MAX B:	19.40		125.		
DELTA K MAX C:	12.69			29.0	
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		10.91	11.42	22.01	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25				
	1.25-2.0	1	1	1	
	>2.0				

CONDITION/HT: T62
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 6.ØØ HZ
ENVIRONMENT: R.T., DRY AIR

YIELD STRENGTH: 58.2 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: Ø.125"
SPECIMEN WIDTH: 6.ØØØ"
REFERENCES: GDØØ4

ALUM. ALLOY

2024

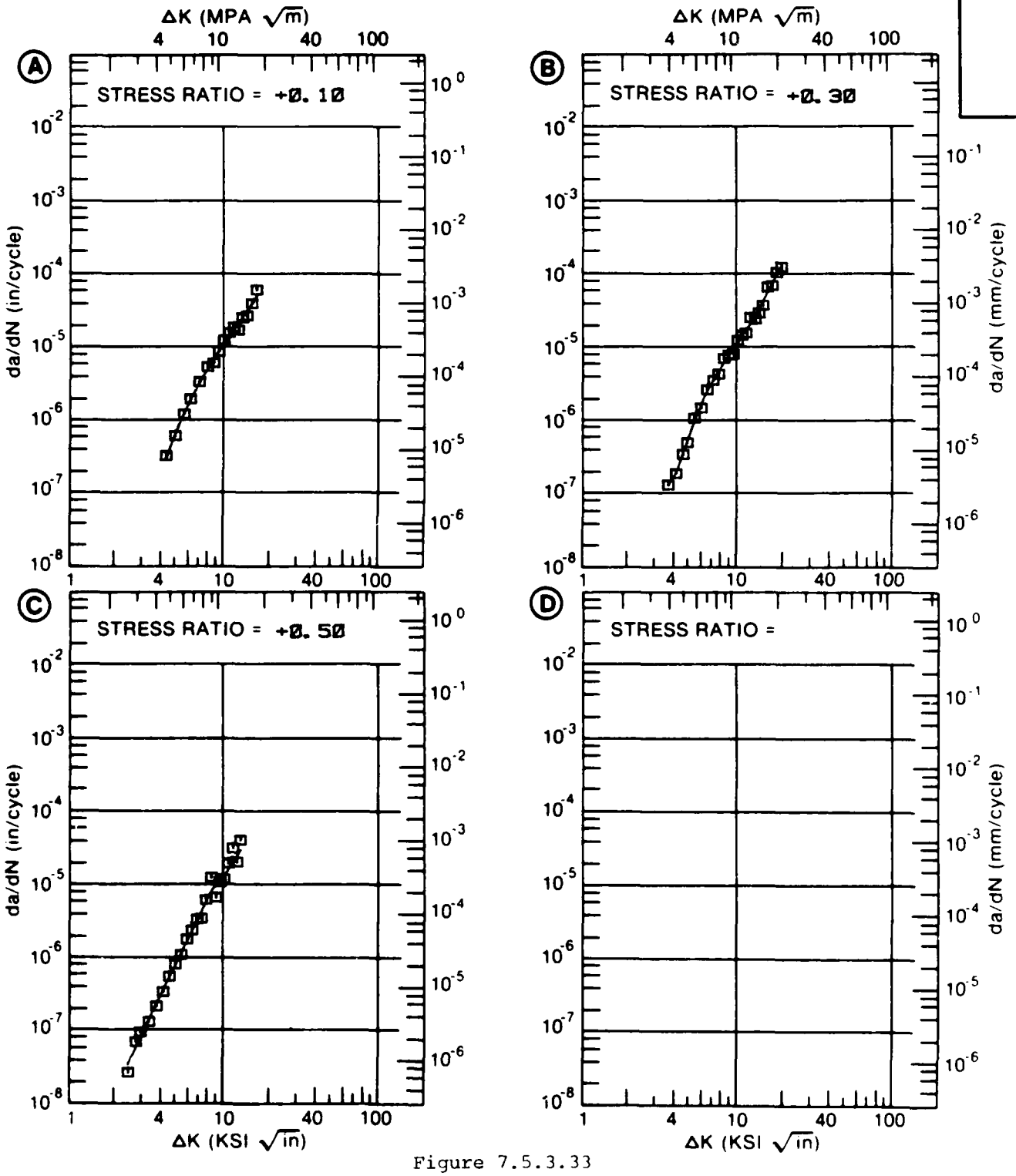


Figure 7.5.3.33

TABLE 7.5.3.34

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.34 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T62
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10	R=+0.30	R=+0.50	
DELTA K MIN	A:				
	B: 4.77		.573		
	C: 2.25			.118	
	D:				
	2.50			.126	
	3.00			.178	
	3.50			.289	
	4.00			.484	
	5.00		.787	1.26	
	6.00		2.12	2.70	
	7.00		3.94	4.70	
	8.00		6.07	6.84	
	9.00		8.59	9.52	
	10.00		11.7	14.5	
	13.00		29.9	48.5	
DELTA K MAX	A:				
	B: 13.80		39.3		
	C: 14.13			56.2	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		0.00	28.43	19.50	

LIFE PREDICTION RATIO SUMMARY (NP/NA)				
	0.0-0.5			
	0.5-0.8			
	0.8-1.25			1
	1.25-2.0		1	
	>2.0			

CONDITION/HT: T62
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 1.ØØ HZ
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 58.2 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: Ø.125"
SPECIMEN WIDTH: 6.ØØØ"
REFERENCES:GDØØ4

ALUM. ALLOY

2024

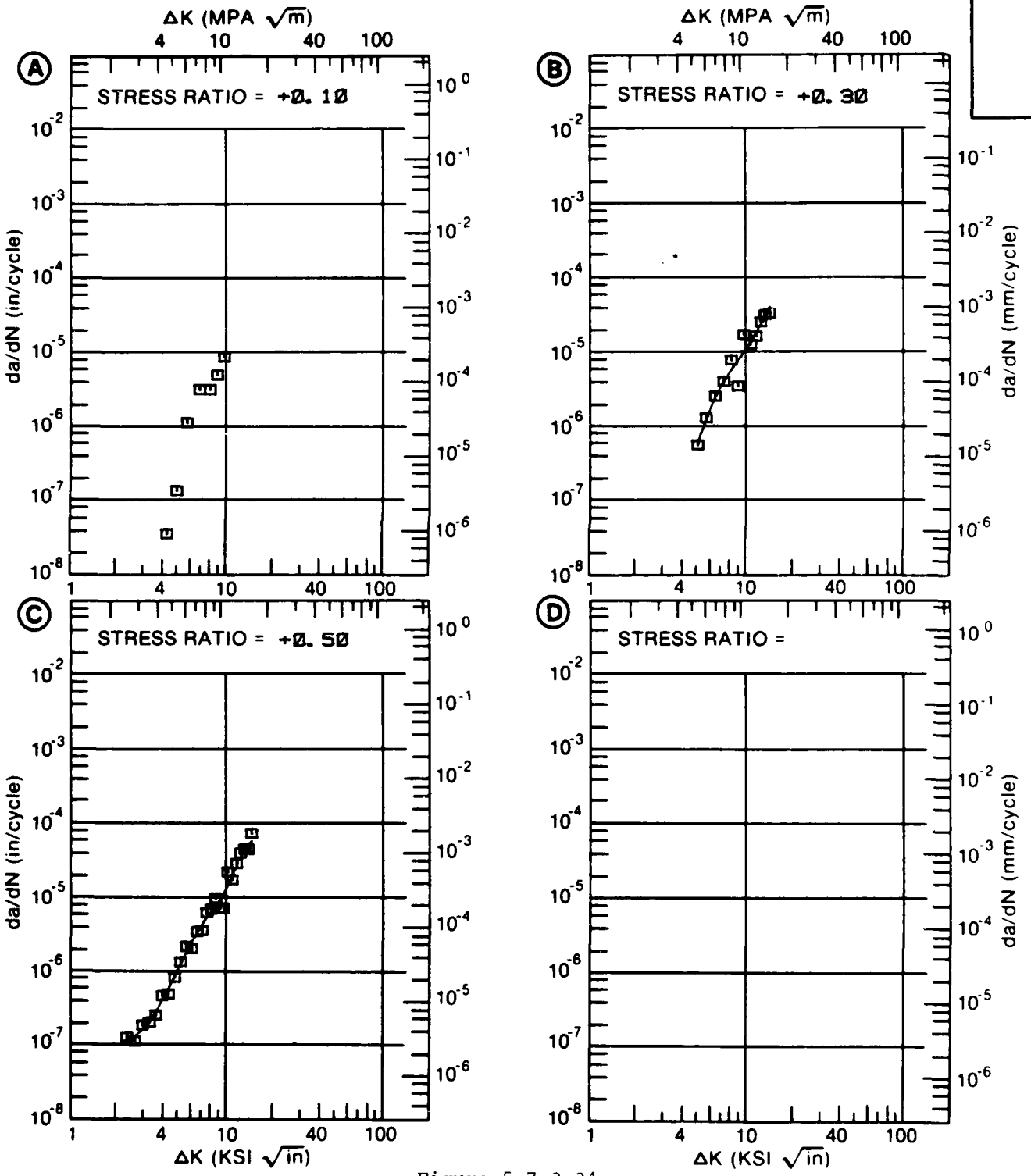


Figure 5.7.3.34

TABLE 7.5.3.35

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.35 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T62
ENVIRONMENT: R. T. , S. T. W.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-0.25	R=+0.10	R=+0.30	R=+0.50
DELTA K MIN	A:	5.00	.862			
	B:	4.32		.573		
	C:	3.26			.385	
	D:	2.24				.0837
		2.50				.151
		3.00				.166
		3.50			.482	.294
		4.00			.665	.721
		5.00	.862	.696	1.24	2.83
		6.00	1.87	2.08	2.55	4.58
		7.00	3.43	3.91	4.96	6.03
		8.00	3.48	4.86	8.66	9.09
		9.00	3.55	5.26	13.1	15.6
		10.00	4.87	5.87	17.0	25.7
		13.00	23.6	17.0	29.2	
		16.00			92.6	
DELTA K MAX	A:	15.39	43.8			
	B:	15.29		22.2		
	C:	16.37			114.	
	D:	11.22				39.8
ROOT MEAN SQUARE PERCENT ERROR			13.05	11.67	23.59	19.16
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25				
		1.25-2.0	1	1	1	1
		>2.0				

CONDITION/HT: T62
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 1.ØØ HZ
ENVIRONMENT: R.T..S.T.W.

YIELD STRENGTH: 58.2 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: Ø.125"
SPECIMEN WIDTH: 6.ØØØ"
REFERENCES:GDØØ4

ALUM. ALLOY

2024

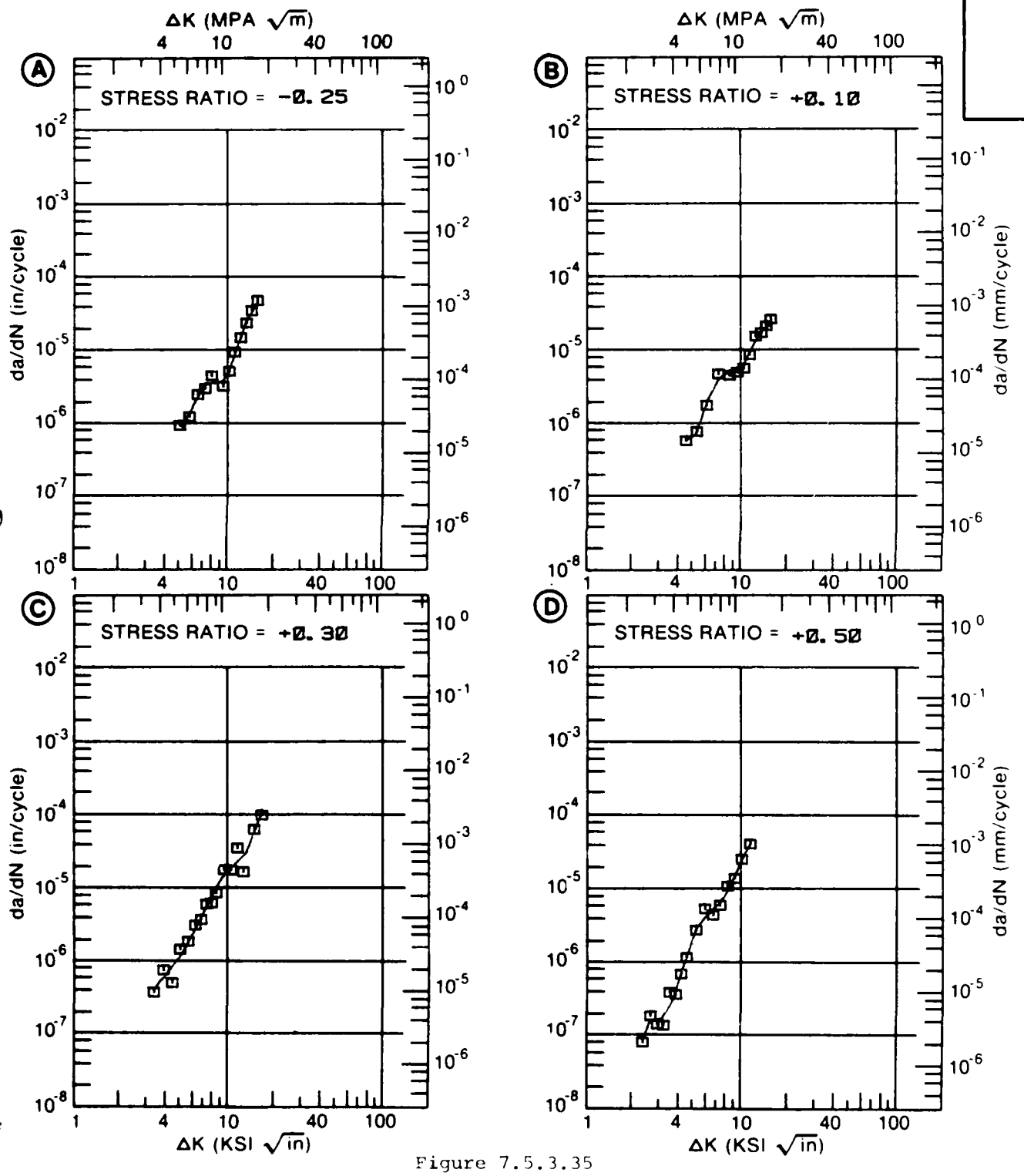


Figure 7.5.3.35

TABLE 7.5.3.36

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.36 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.05			
DELTA K MIN	A:	10.00	8.08			
	B:					
	C:					
	D:					
		13.00	13.3			
		16.00	26.8			
		20.00	68.1			
		25.00	183.			
		30.00	392.			
		35.00	684.			
DELTA K MAX	A:	36.74	795.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR		16.24
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	4
	1.25-2.0	
	>2.0	

CONDITION/HT: T81
FORM: 0.03- 0.04"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 2.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 64.4 KSI
ULT. STRENGTH: 70.5 KSI
SPECIMEN THK: 0.032- 0.040"
SPECIMEN WIDTH: 6.000- 9.700"
REFERENCES:86734

ALUM. ALLOY

2024

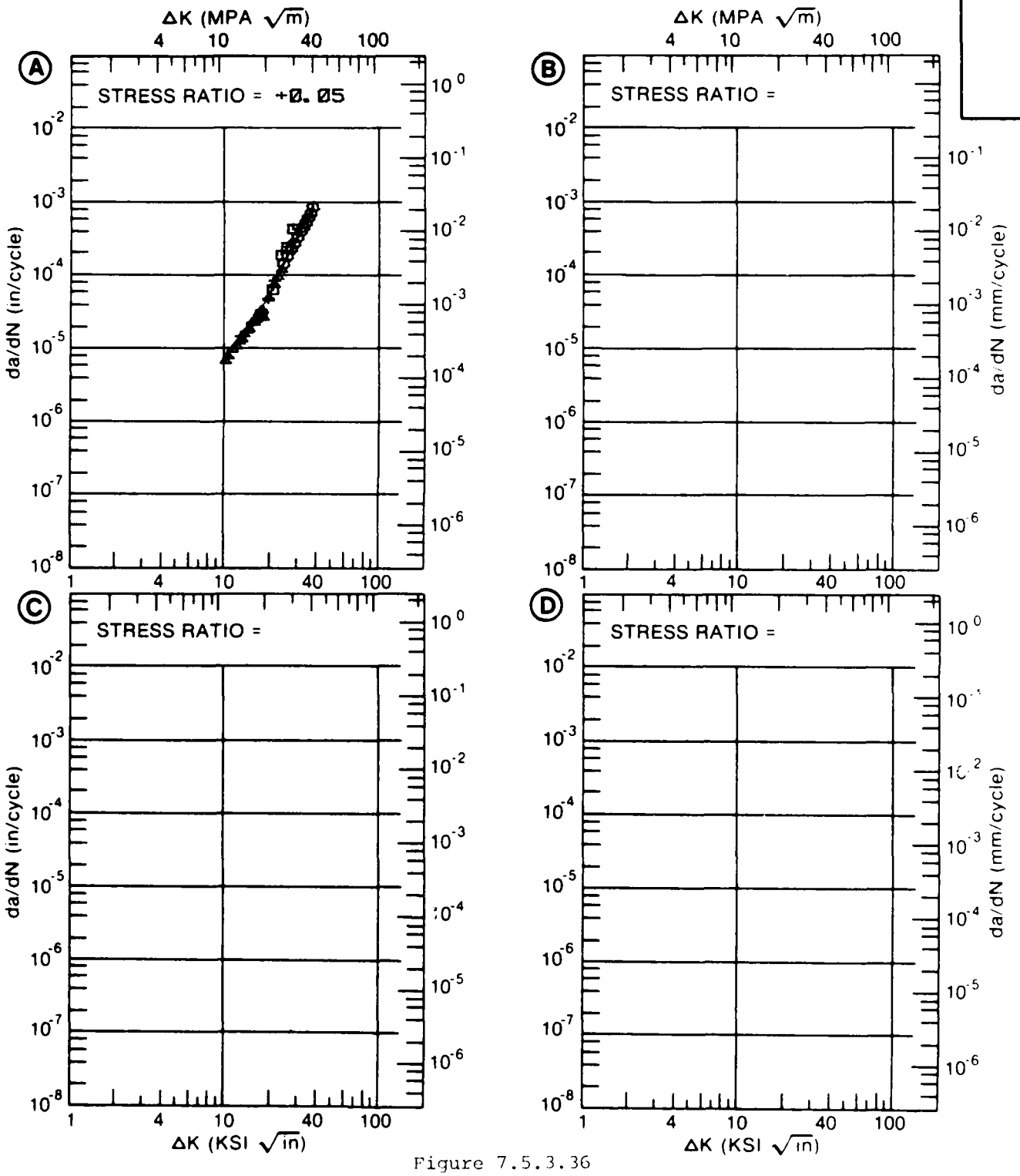


Figure 7.5.3.36

TABLE 7.5.3.37

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.37 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T81

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR			
DELTA K MIN	A:	10.39	12.0			
	B:					
	C:					
	D:					
		13.00	28.7			
		16.00	58.8			
		20.00	106.			
DELTA K MAX	A:	21.09	117.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 3.94

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T81
FORM: 0.07"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.40
FREQUENCY: 2.00 HZ

YIELD STRENGTH: 64.4 KSI
ULT. STRENGTH: 70.5 KSI
SPECIMEN THK: 0.065"
SPECIMEN WIDTH: 4.000"
REFERENCES: 86734

ALUM. ALLOY

2024

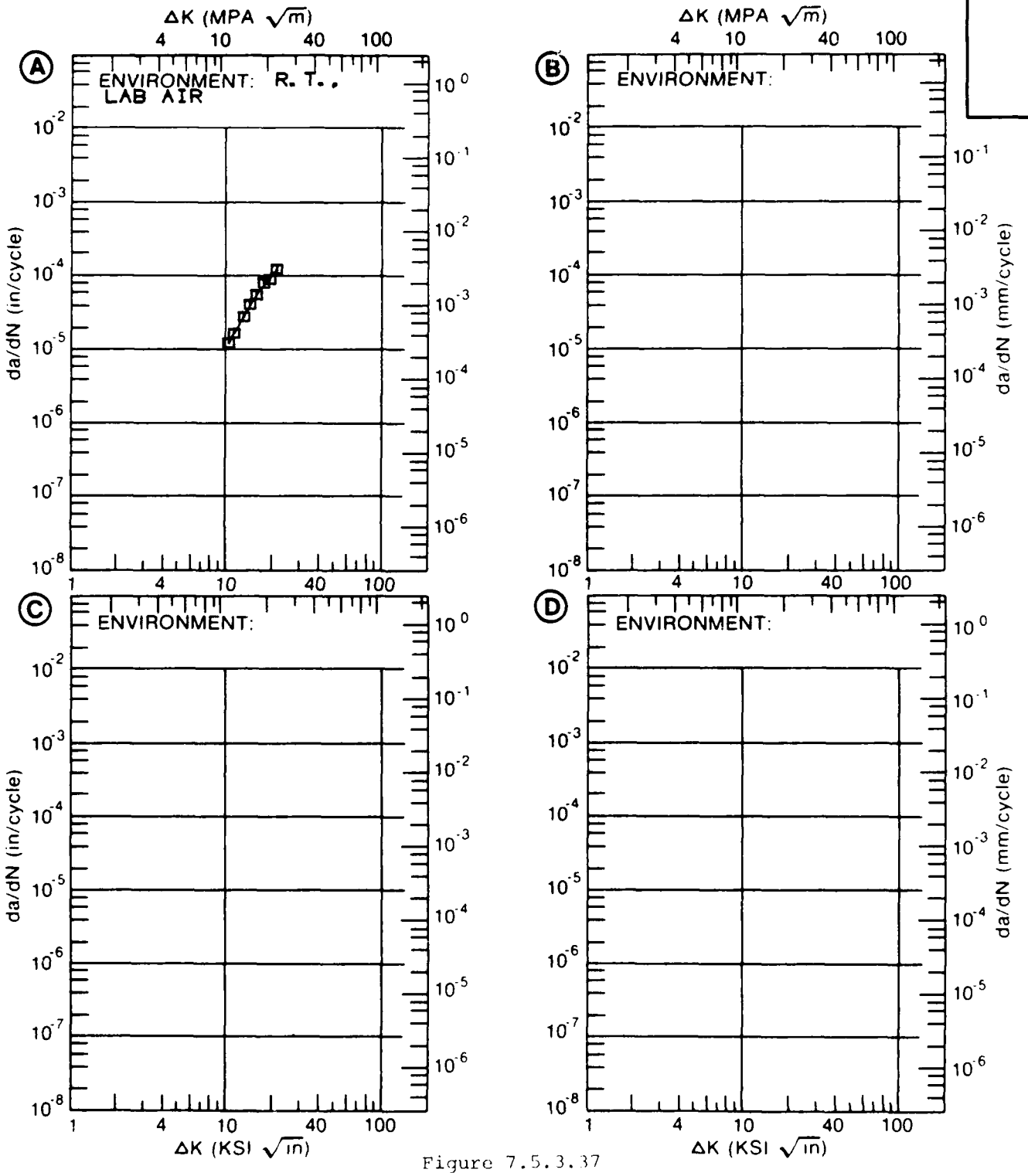


Figure 7.5.3.37

TABLE 7.5.3.38

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.38 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R. T. , L. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.08	R=+0.30	R=+0.50	
DELTA K MIN	A:	5.82	1.16			
	B:	6.20		1.81		
	C:	3.21			.125	
	D:					
		3.50			.299	
		4.00			.533	
		5.00			1.26	
		6.00	1.28		2.46	
		7.00	1.98	3.00	4.31	
		8.00	2.77	4.67	7.11	
		9.00	3.68	6.51	11.3	
		10.00	4.78	8.64	17.6	
		13.00	10.3	19.9	61.3	
		16.00	23.4	54.3	202.	
		20.00	71.8	193.	686.	
		25.00	261.	355.		
		30.00	802.			
DELTA K MAX	A:	32.00	1197.			
	B:	25.06		355.		
	C:	22.07			2750.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			11.07	21.88	19.67	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25		2	1	
		1.25-2.0	2		1	
		>2.0				

CONDITION/HT: T81
FORM: 0.10"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R.T.,L.H.A.

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.097- 0.101"
SPECIMEN WIDTH: 23.660- 23.820"
REFERENCES:86575

ALUM. ALLOY

2024

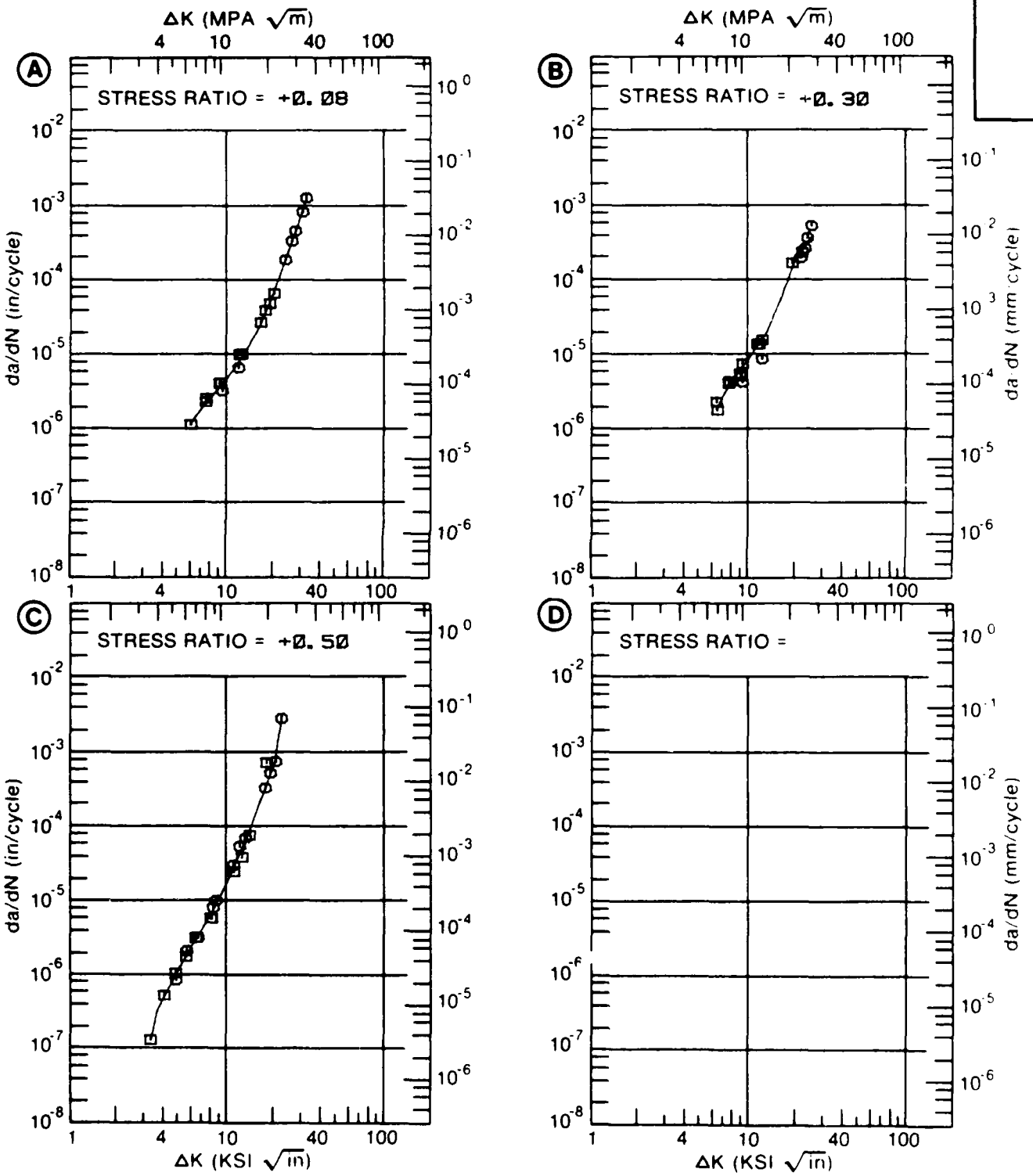


Figure 7.5.3.38

TABLE 7.5.3.39

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.39 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T81

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. J.P.4	C E= R.T. S.T.W.	D
DELTA K MIN	A: 6.04	.769			
	B: 6.04		1.42		
	C: 6.24			1.87	
	D:				
	7.00	1.71	2.47	2.68	
	8.00	2.93	3.85	4.04	
	9.00	4.29	5.53	5.78	
	10.00	5.82	7.53	8.00	
	13.00	12.9	16.1	18.6	
	16.00	29.0	31.1	38.8	
	20.00	79.2	72.0	94.0	
	25.00	230.	206.	260.	
	30.00	489.	602.		
DELTA K MAX	A: 34.01	710.			
	B: 34.23		1510.		
	C: 29.89			663.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		22.88	18.36	17.00	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	1	1	
	1.25-2.0	1	1	1	
	>2.0				

CONDITION/HT: T81
FORM: 0.10"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 1.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.098- 0.101"
SPECIMEN WIDTH: 23.660- 23.820"
REFERENCES:86575

ALUM. ALLOY

2024

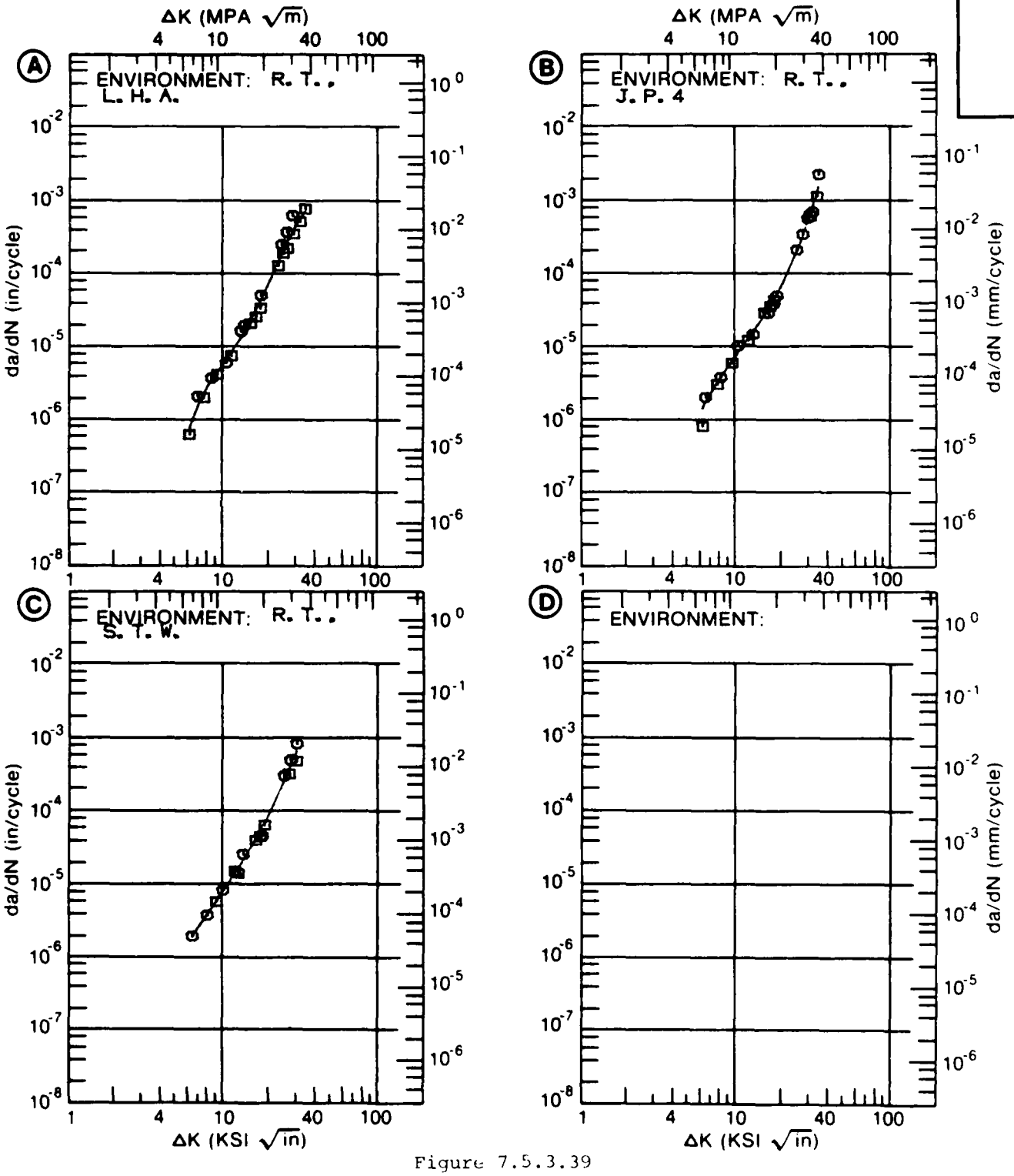


Figure 7.5.3.39

TABLE 7.5.3.40

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.40 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T81

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. L.H.A. 6HZ	E= R.T. S.T.W. 1HZ		
DELTA K MIN	A:	6.20	1.20			
	B:	5.70		.75/		
	C:					
	D:					
		6.00		1.03		
		7.00	1.80	2.18		
		8.00	2.69	3.57		
		9.00	3.56	5.11		
		10.00	4.34	6.83		
		13.00	8.21	14.3		
		16.00	20.6	30.7		
		20.00	74.0	97.9		
		25.00	303.	456.		
		30.00	997.	979.		
DELTA K MAX	A:	31.13	1271.			
	B:	31.22		983.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			23.21	14.91		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	2		
		1.25-2.0	1			
		>2.0				

CONDITION/HT: T81
FORM: 0.10"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +0.08
FREQUENCY:

YIELD STRENGTH: 67.0 KSI
ULT. STRENGTH: 73.0 KSI
SPECIMEN THK: 0.099- 0.100"
SPECIMEN WIDTH: 23.810- 23.910"
REFERENCES:86575

ALUM. ALLOY

2024

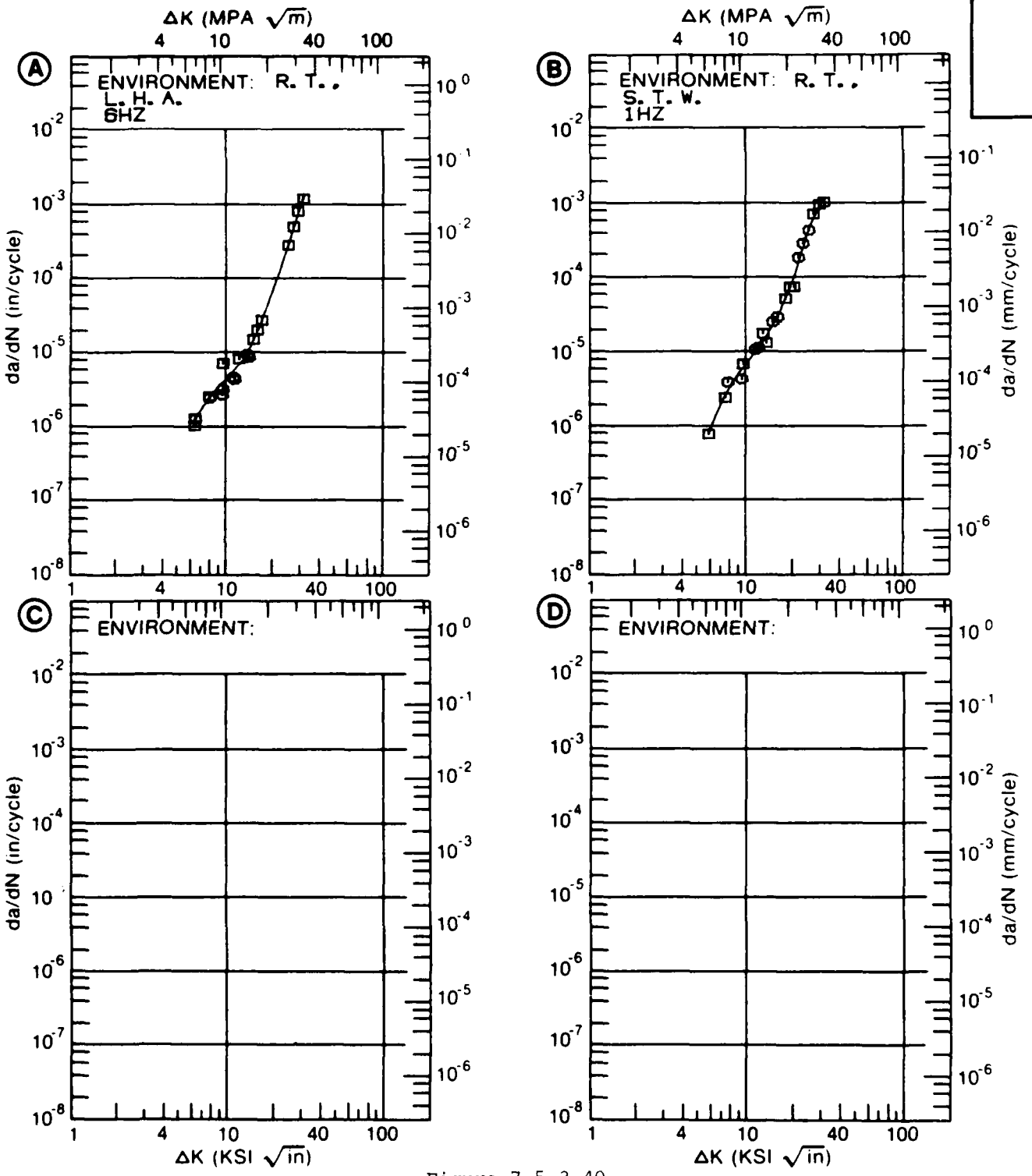


Figure 7.5.3.40

TABLE 7.5.3.41

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.41 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R.T. ,DRY AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=-0.25	R=+0.10	R=+0.30	R=+0.50
DELTA K MIN	A: 5.19	.542			
	B: 5.48		1.57		
	C: 5.14			1.02	
	D: 2.94				.151
	3.00				.182
	3.50				.496
	4.00				.777
	5.00				1.26
	6.00	.892	1.61	1.89	2.21
	7.00	1.44	2.01	3.31	3.95
	8.00	2.15	2.79	5.16	6.64
	9.00	3.05	3.99	7.45	10.2
	10.00	4.17	5.65	10.2	14.8
	13.00	9.35	13.2	21.1	37.0
	16.00	18.7	24.7	36.7	84.5
	20.00	46.1	52.2	66.4	288.
	25.00		138.		
DELTA K MAX	A: 24.54	146.			
	B: 26.90		204.		
	C: 21.75			83.4	
	D: 21.91				556.
ROOT MEAN SQUARE PERCENT ERROR		10.78	20.94	24.98	24.30
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25		1	1	
	1.25-2.0	1			1
	>2.0				

CONDITION/HT: T81
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 6.ØØ HZ
ENVIRONMENT: R.T., DRY AIR

YIELD STRENGTH: 65.3 KSI
ULT. STRENGTH: 7Ø.9 KSI
SPECIMEN THK: Ø.125"
SPECIMEN WIDTH: 6.ØØØ"
REFERENCES:GDØØ4

ALUM. ALLOY

2024

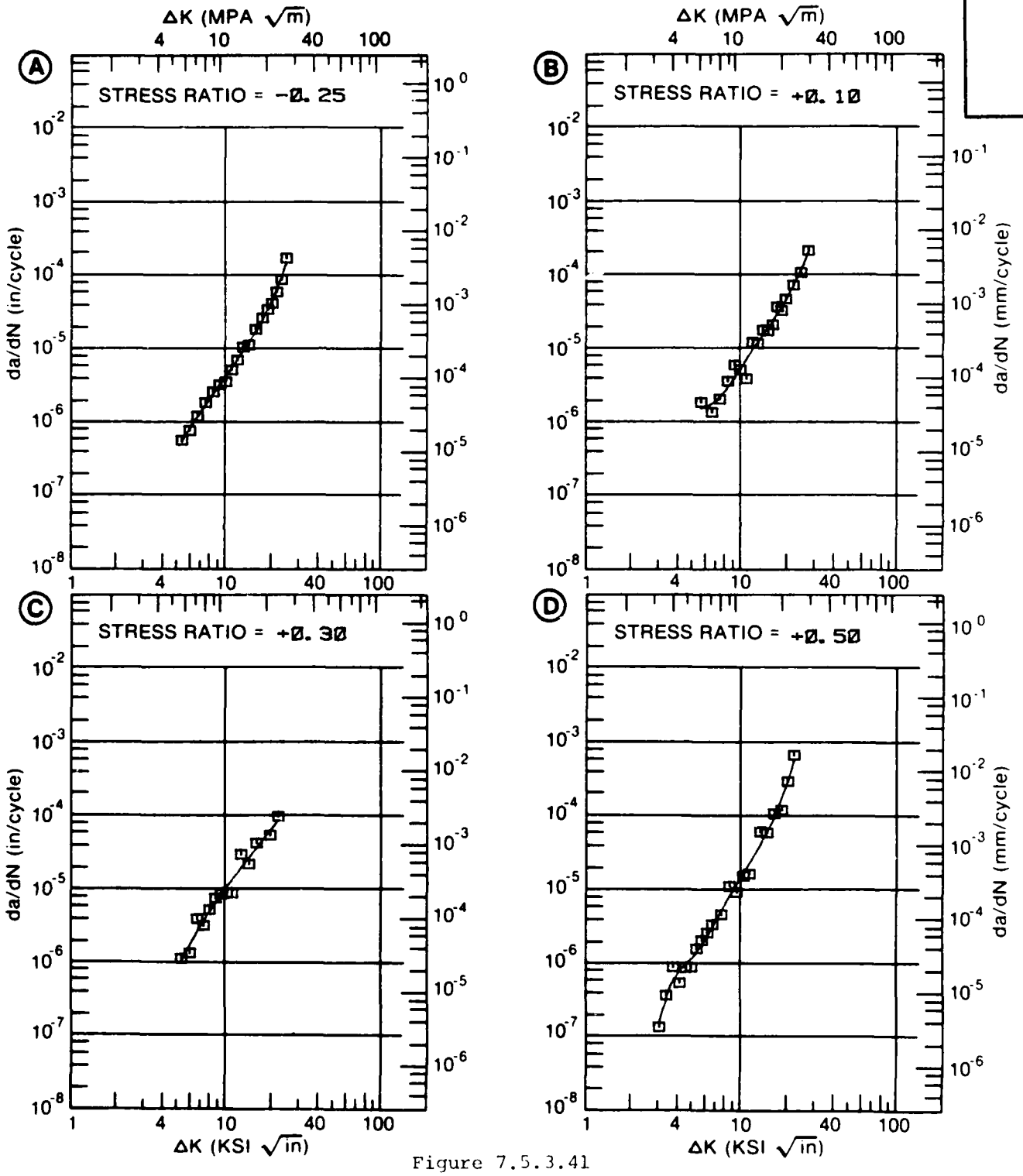


Figure 7.5.3.41

TABLE 7.5.3.42

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.42 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=-0.25	R=+0.10	R=+0.30	R=+0.50
DELTA K MIN	A: 4.56	.206			
	B: 5.09		.783		
	C: 3.52			.206	
	D: 3.89				.612
	4.00			.464	.685
	5.00	.289		1.04	1.50
	6.00	.675	1.25	1.99	2.76
	7.00	1.46	2.17	4.25	4.72
	8.00	2.70	3.62	8.07	7.60
	9.00	4.37	5.64	12.2	11.7
	10.00	6.45	8.15	15.2	17.2
	13.00	15.0	18.0	22.9	46.7
	16.00	26.9	32.4		115.
	20.00	51.3	70.1		
	25.00	118.	216.		
	30.00	302.	572.		
DELTA K MAX	A: 32.56	344.			
	B: 32.48		682.		
	C: 14.10			29.1	
	D: 19.90				360.
ROOT MEAN SQUARE PERCENT ERROR		14.71	13.39	25.78	15.27
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25				1
	1.25-2.0	1	1	1	
	>2.0				

CONDITION/HT: T81
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00 HZ
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 65.3 KSI
ULT. STRENGTH: 70.9 KSI
SPECIMEN THK: 0.125"
SPECIMEN WIDTH: 6.000"
REFERENCES: GD004

ALUM. ALLOY
2024

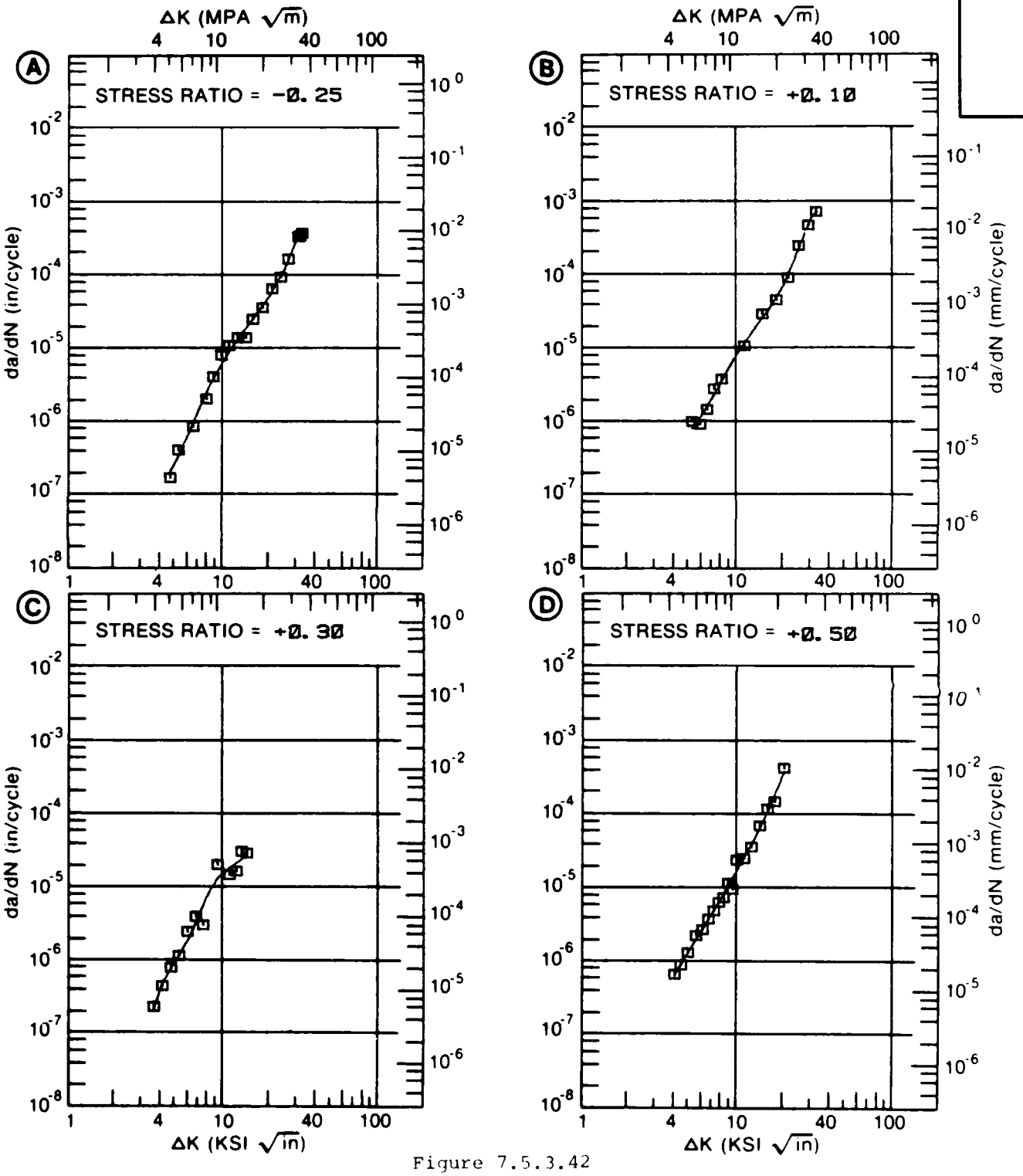


Figure 7.5.3.42

TABLE 7.5.3.43

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.43 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R.T. ,S.T.W.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-0.20	R=+0.10		
DELTA K MIN	A:	4.03	.309			
	B:	4.55		.196		
	C:					
	D:					
		5.00	.749	.365		
		6.00	1.56	1.04		
		7.00	2.87	2.19		
		8.00	4.82	3.82		
		9.00	7.56	5.86		
		10.00	11.2	8.25		
		13.00	29.2	16.7		
		16.00		26.4		
DELTA K MAX	A:	15.95	59.3			
	B:	18.76		36.2		
	C:					
	D:					
MEAN SQUARE			16.72	34.46		
PERCENT [illegible]						
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5					
	0.5-0.8					
	0.8-1.25					
	1.25-2.0		1	1		
	>2.0			1		

CONDITION/HT: T81
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00 HZ
ENVIRONMENT: R.T., S.T.W.

YIELD STRENGTH: 65.3 KSI
ULT. STRENGTH: 70.9 KSI
SPECIMEN THK: 0.125"
SPECIMEN WIDTH: 6.000"
REFERENCES:GD004

ALUM. ALLOY

2024

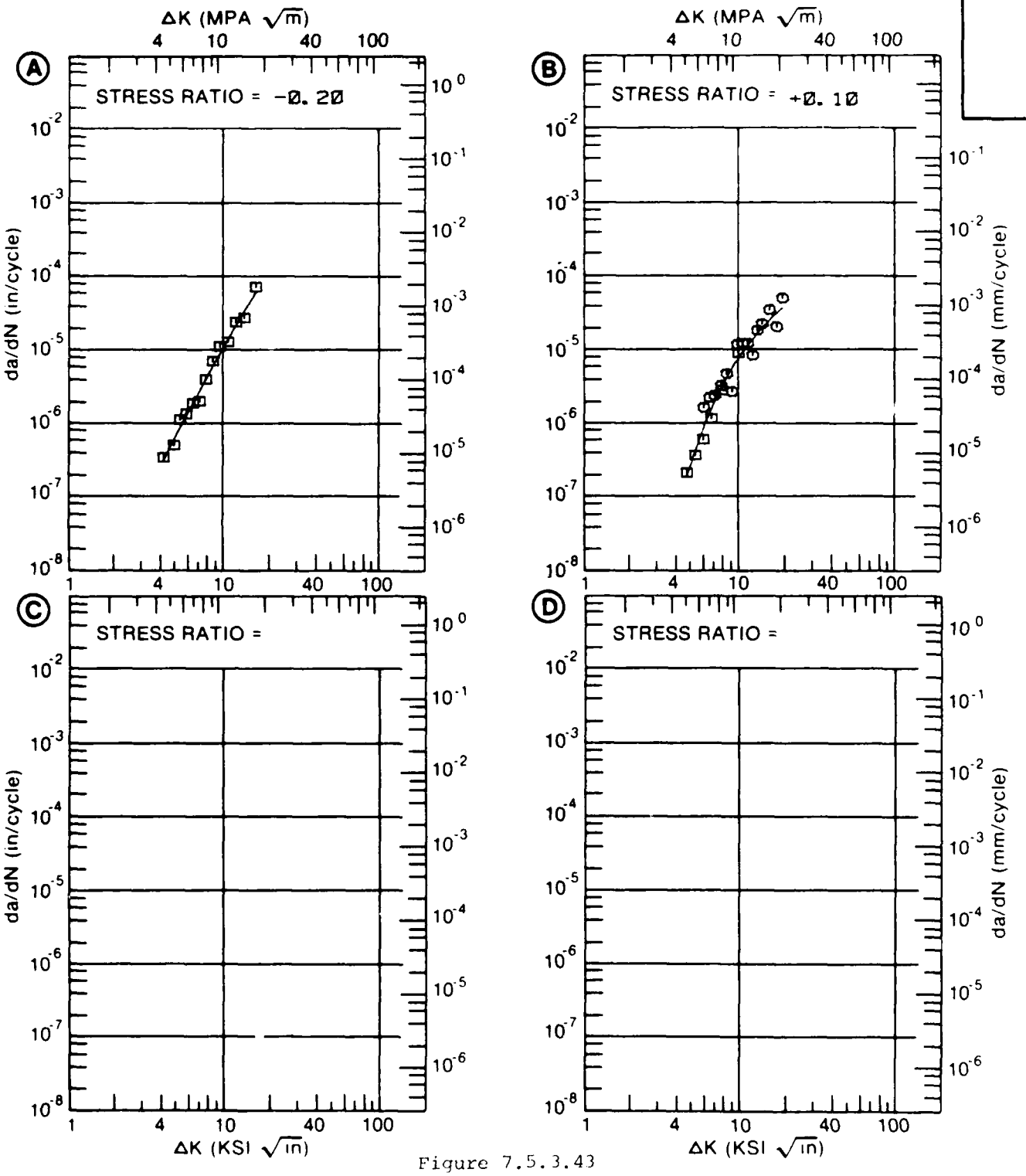


Figure 7.5.3.43

TABLE 7.5.3.44

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.44 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			F(HZ)= 0.10	F(HZ)= 1.00		
DELTA K MIN	A:	5.09	1.14			
	B:	5.09		.785		
	C:					
	D:					
		6.00	3.88	1.25		
		7.00	9.64	2.17		
		8.00	18.3	3.61		
		9.00	29.8	5.63		
		10.00	43.9	8.15		
		13.00	107.	18.2		
		16.00	232.	32.3		
		20.00		69.4		
		25.00		220.		
		30.00		565.		
DELTA K MAX	A:	17.46	339.			
	B:	32.48		681.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			43.37	13.16		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25				
		1.25-2.0	1	1		
		>2.0				

CONDITION/HT: T81
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.10
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 65.3 KSI
ULT. STRENGTH: 70.9 KSI
SPECIMEN THK: 0.125"
SPECIMEN WIDTH: 6.000"
REFERENCES:GD004

ALUM. ALLOY

2024

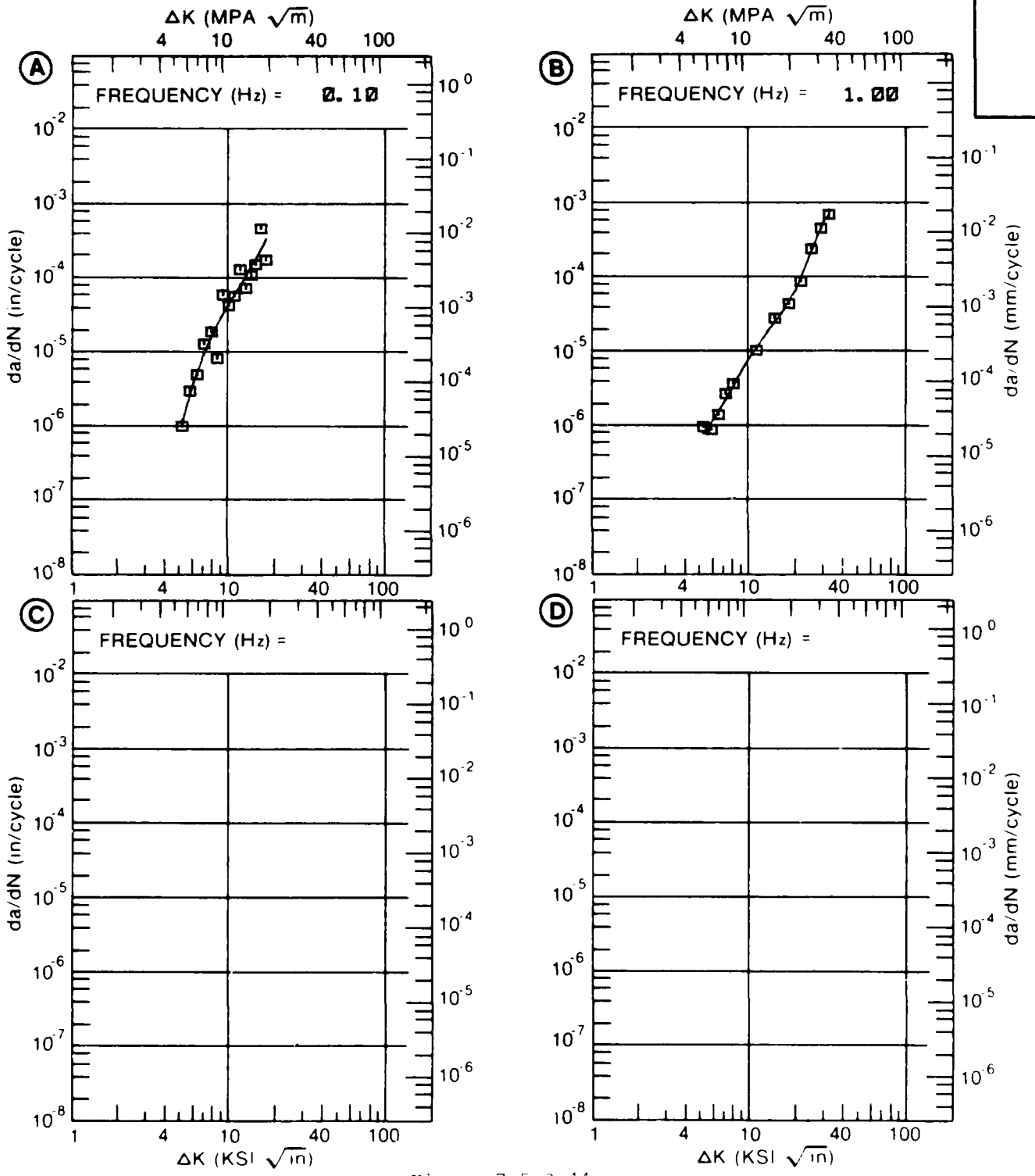


Figure 7.5.3.44

TABLE 7.5.3.45

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.45 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R.T. ,DRY AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=-0.25	R=+0.10		
DELTA K MIN	A:	5.21	.472			
	B:	5.26		.266		
	C:					
	D:					
		6.00	.653	.472		
		7.00	1.21	.831		
		8.00	1.98	1.41		
		9.00	2.85	2.31		
		10.00	3.81	3.51		
		13.00	7.82	9.93		
		16.00	16.1			
		20.00	48.3			
		25.00	209.			
		30.00	719.			
DELTA K MAX	A:	33.50	1351.			
	B:	13.58		18.7		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			13.58	10.33		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25				
		1.25-2.0	1	1		
		>2.0				

CONDITION/HT: T81
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 6.00 HZ
ENVIRONMENT: R.T., DRY AIR

YIELD STRENGTH: 65.8 KSI
ULT. STRENGTH: 73.1 KSI
SPECIMEN THK: 0.125"
SPECIMEN WIDTH: 6.000"
REFERENCES:GD004

ALUM. ALLOY
2024

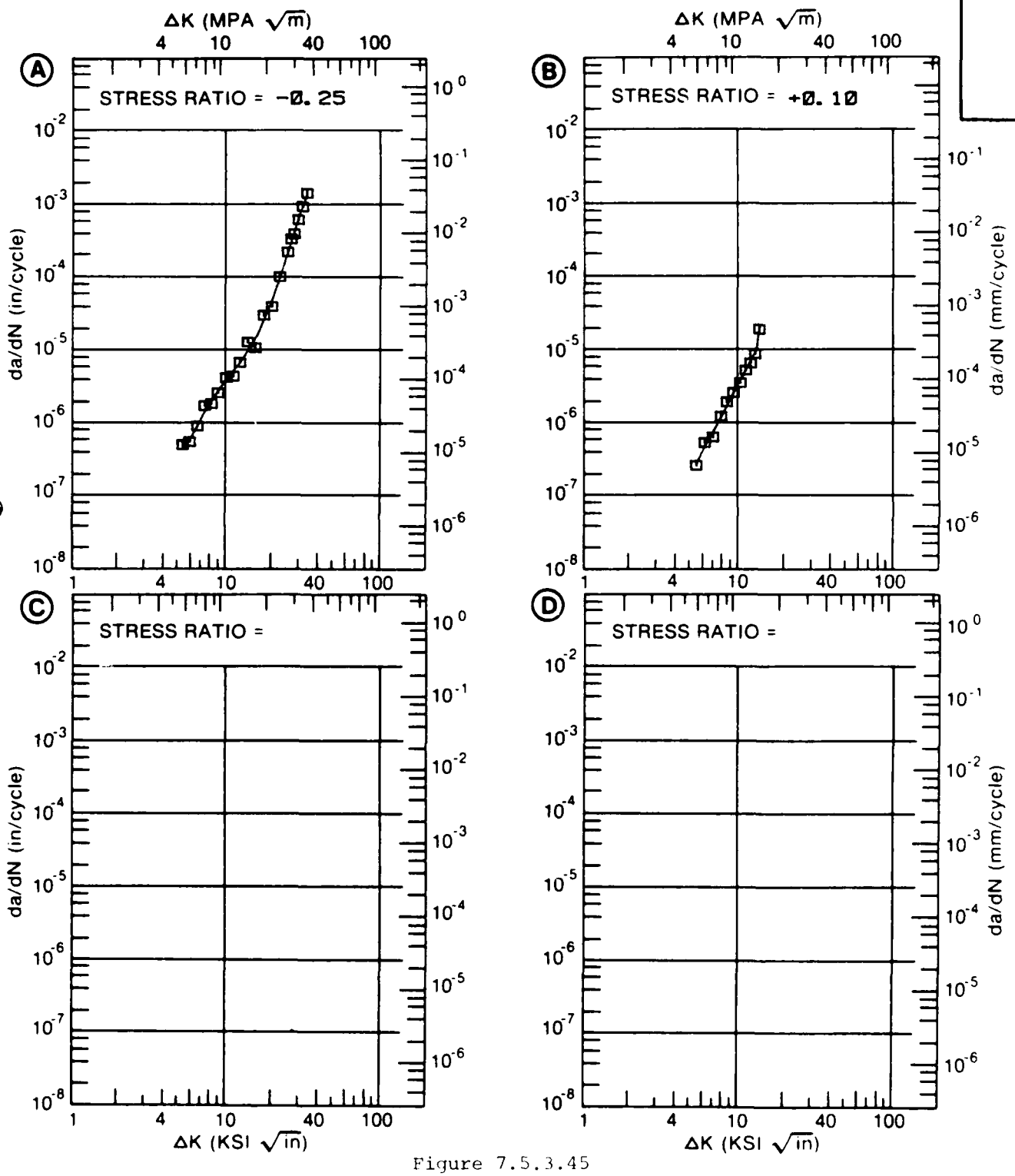


Figure 7.5.3.45

TABLE 7.5.3.46

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.46 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-0.25	R=+0.10	R=+0.50	
DELTA K MIN	A:	5.22	1.04			
	B:	5.53		.551		
	C:	2.80			.0957	
	D:					
		3.00			.175	
		3.50			.451	
		4.00			.756	
		5.00			1.44	
		6.00	1.53	.870	2.66	
		7.00	2.13	1.86	4.78	
		8.00	2.77	3.16	8.20	
		9.00	3.62	4.66	13.6	
		10.00	4.89	6.37	22.2	
		13.00	13.8	14.4	90.5	
		16.00	32.8	35.8	283.	
		20.00	64.7	129.		
		25.00		435.		
DELTA K MAX	A:	23.07	121.			
	B:	28.46		634.		
	C:	18.14			467.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			21.79	13.25	14.02	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25				
		1.25-2.0	1	1	1	
		>2.0				

CONDITION/HT: T81
FORM: 0.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 1.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 65.8 KSI
ULT. STRENGTH: 73.1 KSI
SPECIMEN THK: 0.125"
SPECIMEN WIDTH: 6.000"
REFERENCES:GD004

ALUM. ALLOY

2024

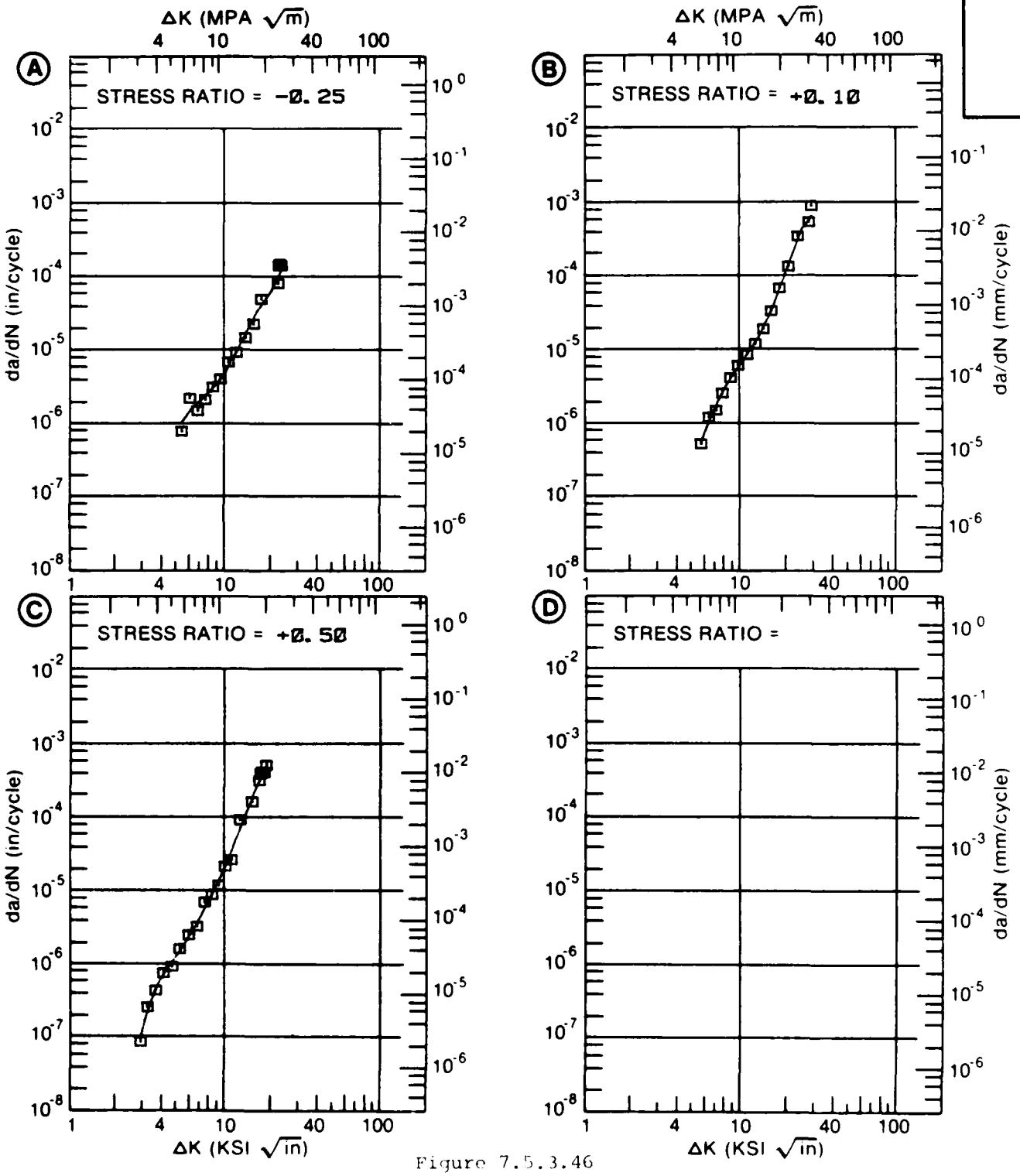


Figure 7.5.3.46

TABLE 7.5.3.47

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.47 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T81
ENVIRONMENT: R.T. ,S.T.W.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10	R=+0.30		
DELTA K MIN	A: 4.03	.094			
	B: 7				
	C:				
	D:				
	5.00	.395			
	6.00	1.03			
	7.00	2.03			
	8.00	3.38			
	9.00	5.12			
	10.00	7.27			
	13.00	17.3			
	16.00	37.2			
	20.00	101.			
DELTA K MAX	A: 20.39	111.			
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		34.62	0.00		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	1

CONDITION/HT: T81
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 1.ØØ HZ
ENVIRONMENT: R.T., S.T.W.

YIELD STRENGTH: 65.8 KSI
ULT. STRENGTH: 73.1 KSI
SPECIMEN THK: Ø.125"
SPECIMEN WIDTH: 6.ØØØ"
REFERENCES:GDØØ4

ALUM. ALLOY
2024

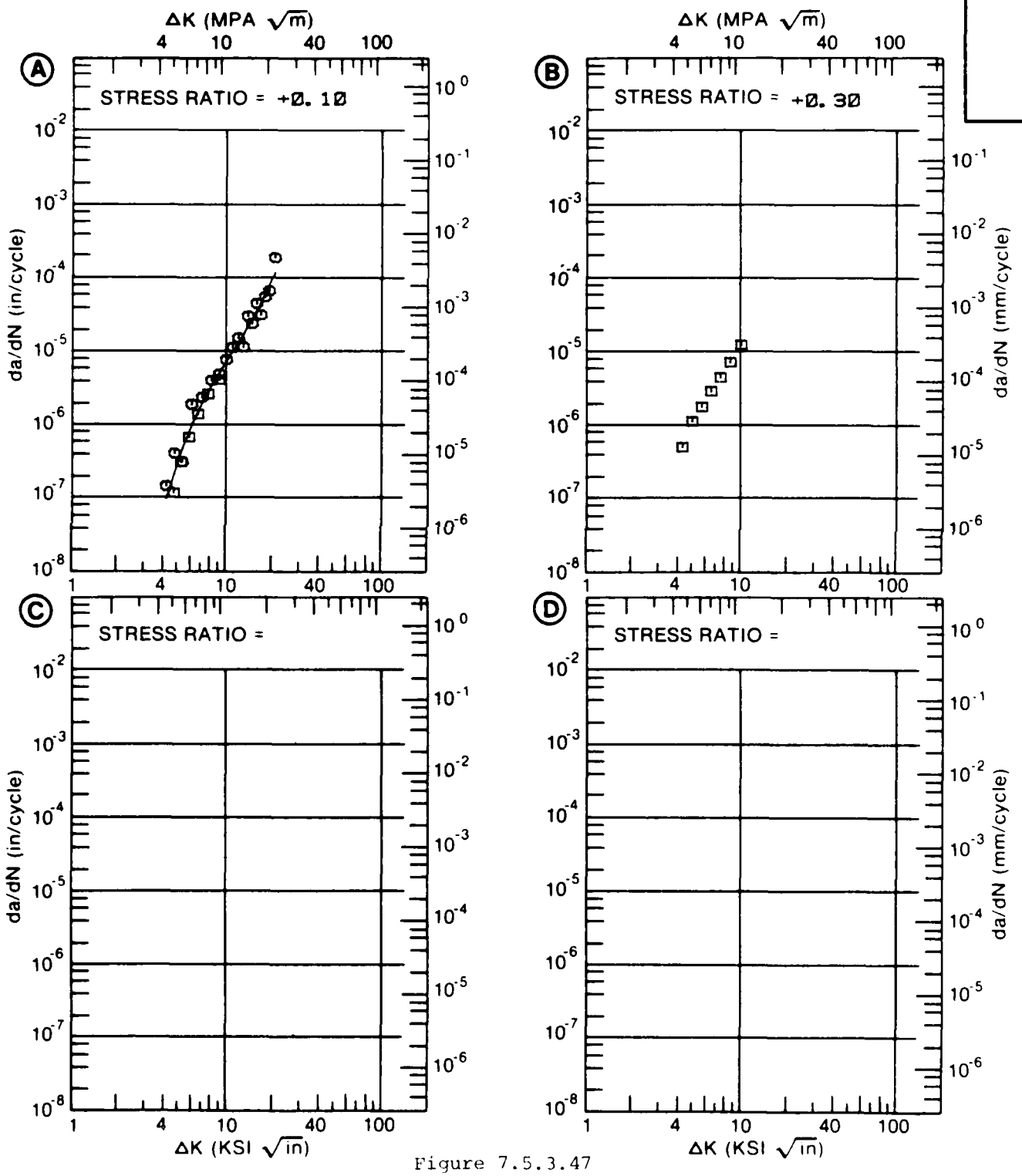


Figure 7.5.3.47

TABLE 7.5.3.48

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.48 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10			
DELTA K MIN	A: 5.47	.653			
	B:				
	C:				
	D:				
	6.00	1.37			
	7.00	3.08			
	8.00	4.49			
	9.00	5.33			
	10.00	5.84			
	13.00	8.06			
DELTA K MAX	A: 15.84	16.5			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 11.86

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 0.38"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: L-S
FREQUENCY: 20.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 70.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: 0.374- 0.377"
SPECIMEN WIDTH: 5.004- 5.006"
REFERENCES:90981

ALUM. ALLOY

2024

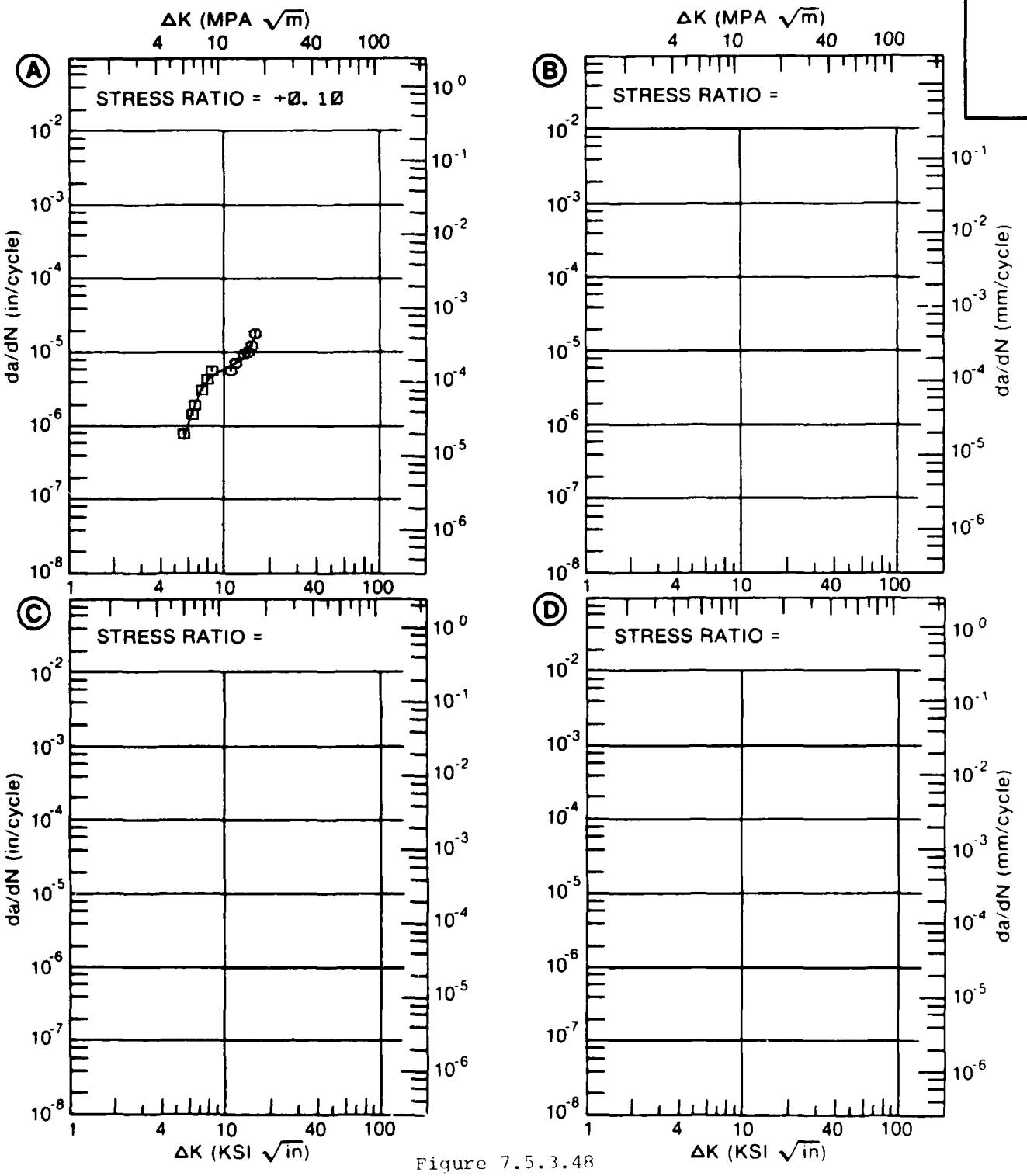


Figure 7.5.3.48

TABLE 7.5.3.49

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.49 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10	R=+0.50		
DELTA K MIN	A: 3.37	.24			
	B:				
	C:				
	D:				
	3.50	.259			
	4.00	.328			
	5.00	.576			
	6.00	1.01			
	7.00	1.66			
	8.00	2.55			
	9.00	3.65			
	10.00	4.87			
	13.00	9.08			
	16.00	17.2			
DELTA K MAX	A: 16.73	33.8			
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		21.69	0.00		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 0.38"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: T-S
FREQUENCY: 20.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 70.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: 0.376- 0.380"
SPECIMEN WIDTH: 5.003- 5.006"
REFERENCES90981

ALUM. ALLOY
2024

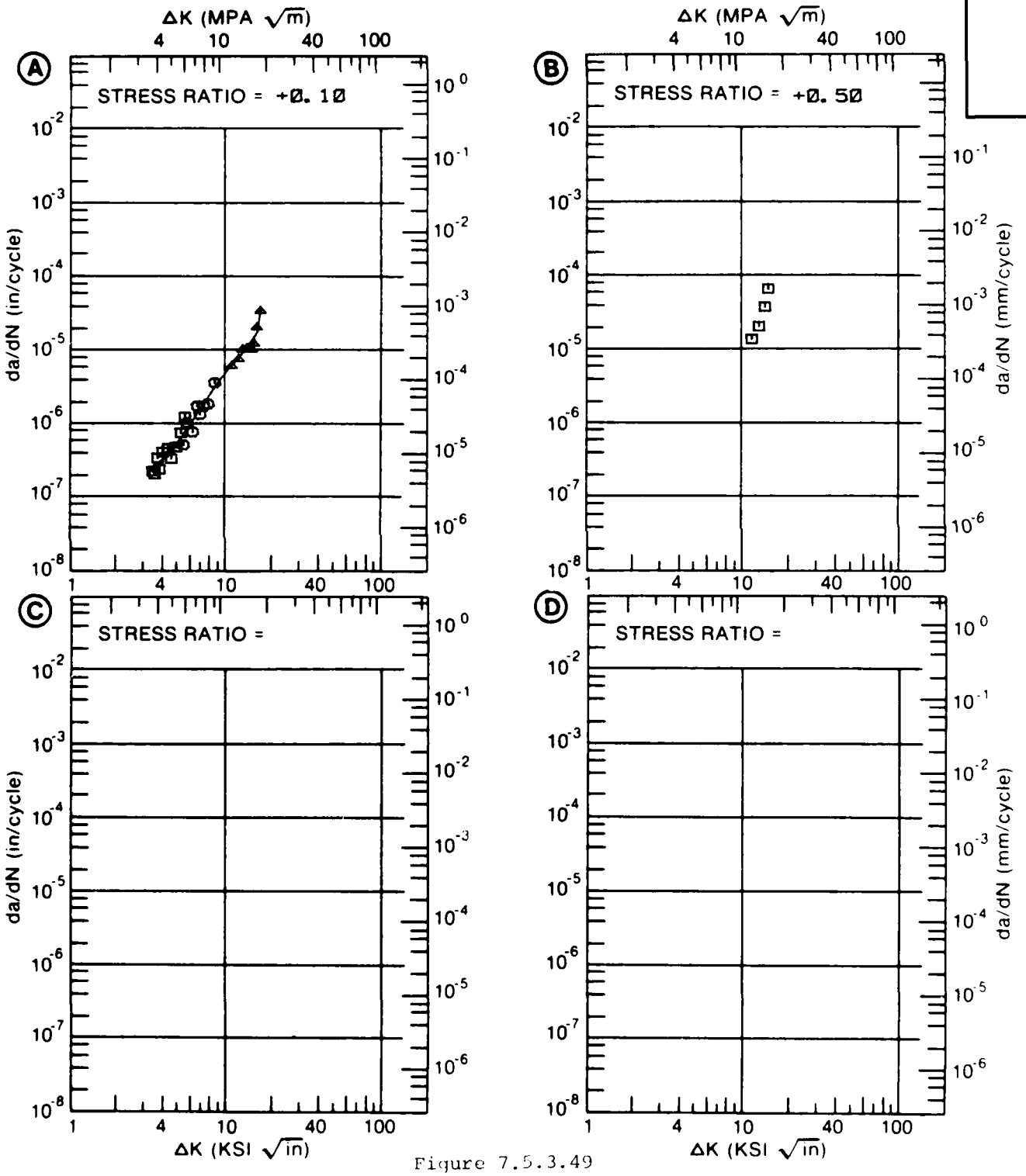


Figure 7.5.3.49

TABLE 7.5.3.50

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.50 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R.T. ,3.5% NACL

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.10	R=+0.50		
DELTA K MIN	A:	5.15	.421			
	B:	3.28		.245		
	C:					
	D:					
		3.50		.286		
		4.00		.426		
		5.00		.960		
		6.00	.958	1.94		
		7.00	1.95	3.38		
		8.00	3.30	5.07		
		9.00	4.92	6.91		
		10.00	6.73	9.96		
		13.00	12.3			
DELTA K MAX	A:	13.84	13.8			
	B:	10.28		11.3		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			33.64	26.04		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: Ø.38"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: T-S
FREQUENCY: 20.ØØ HZ
ENVIRONMENT: R.T.,3.5% NACL

YIELD STRENGTH: 7Ø.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: Ø.377- Ø.38Ø"
SPECIMEN WIDTH: 5.ØØ2- 5.ØØ5"
REFERENCES:9Ø981

ALUM. ALLOY

2024

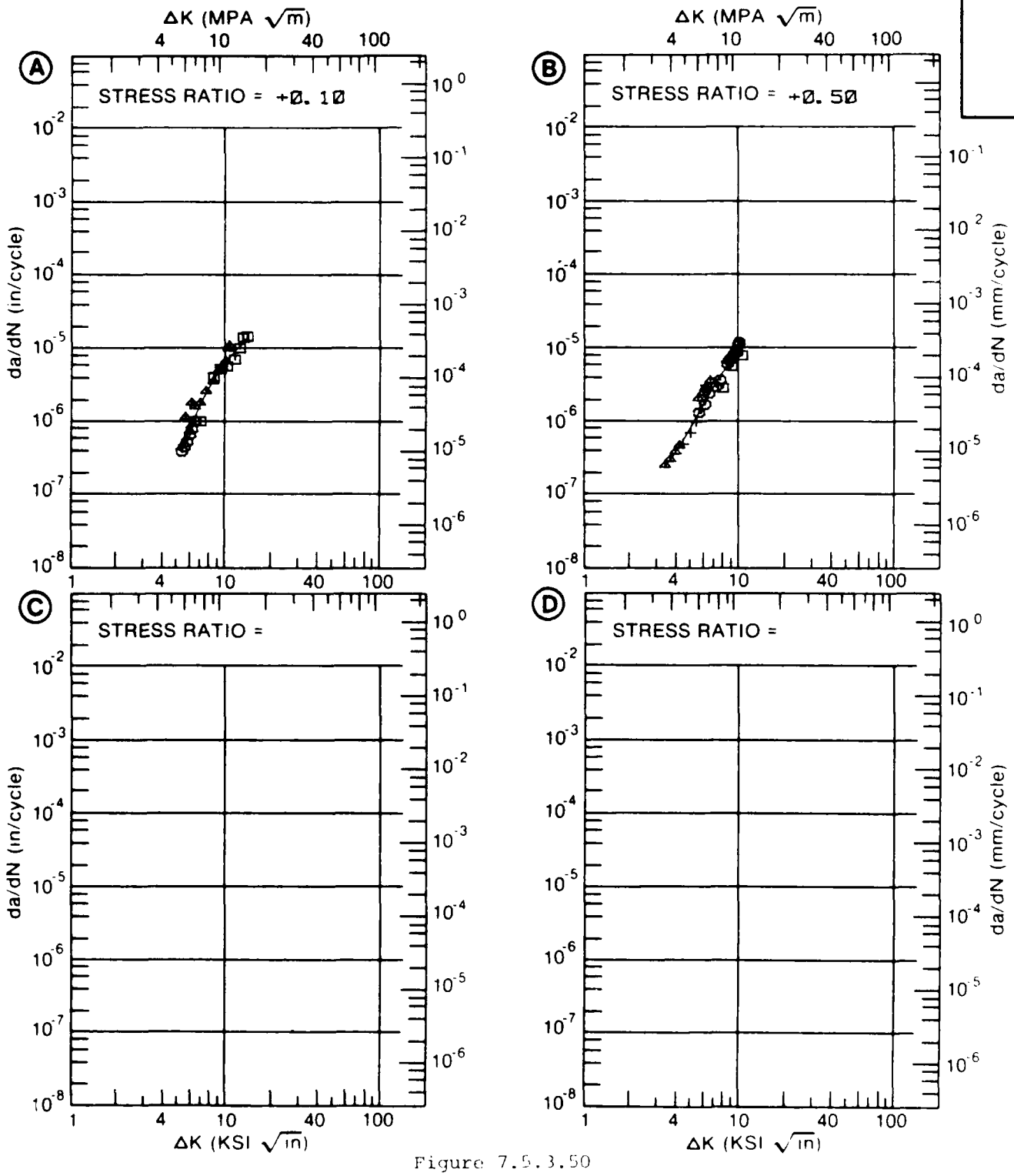


Figure 7.5.3.50

TABLE 7.5.3.51

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.51 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10	R=+0.50		
DELTA K MIN A:	8.03	3.73			
DELTA K MIN B:	2.48		.187		
DELTA K MIN C:					
DELTA K MIN D:					
	2.50		.176		
	3.00		.140		
	3.50		.298		
	4.00		.564		
	5.00		1.31		
	6.00		2.79		
	7.00		5.94		
	8.00		10.8		
	9.00	5.50	15.4		
	10.00	7.38	17.2		
	13.00	19.5			
	16.00	39.2			
	20.00	71.4			
DELTA K MAX A:	22.79	166.			
DELTA K MAX B:	10.53		16.5		
DELTA K MAX C:					
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		11.73	16.85		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	1		
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: 0.38"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 20.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 66.6 KSI
ULT. STRENGTH: 72.0 KSI
SPECIMEN THK: 0.375"
SPECIMEN WIDTH: 5.000"
REFERENCES:90981

ALUM. ALLOY

2024

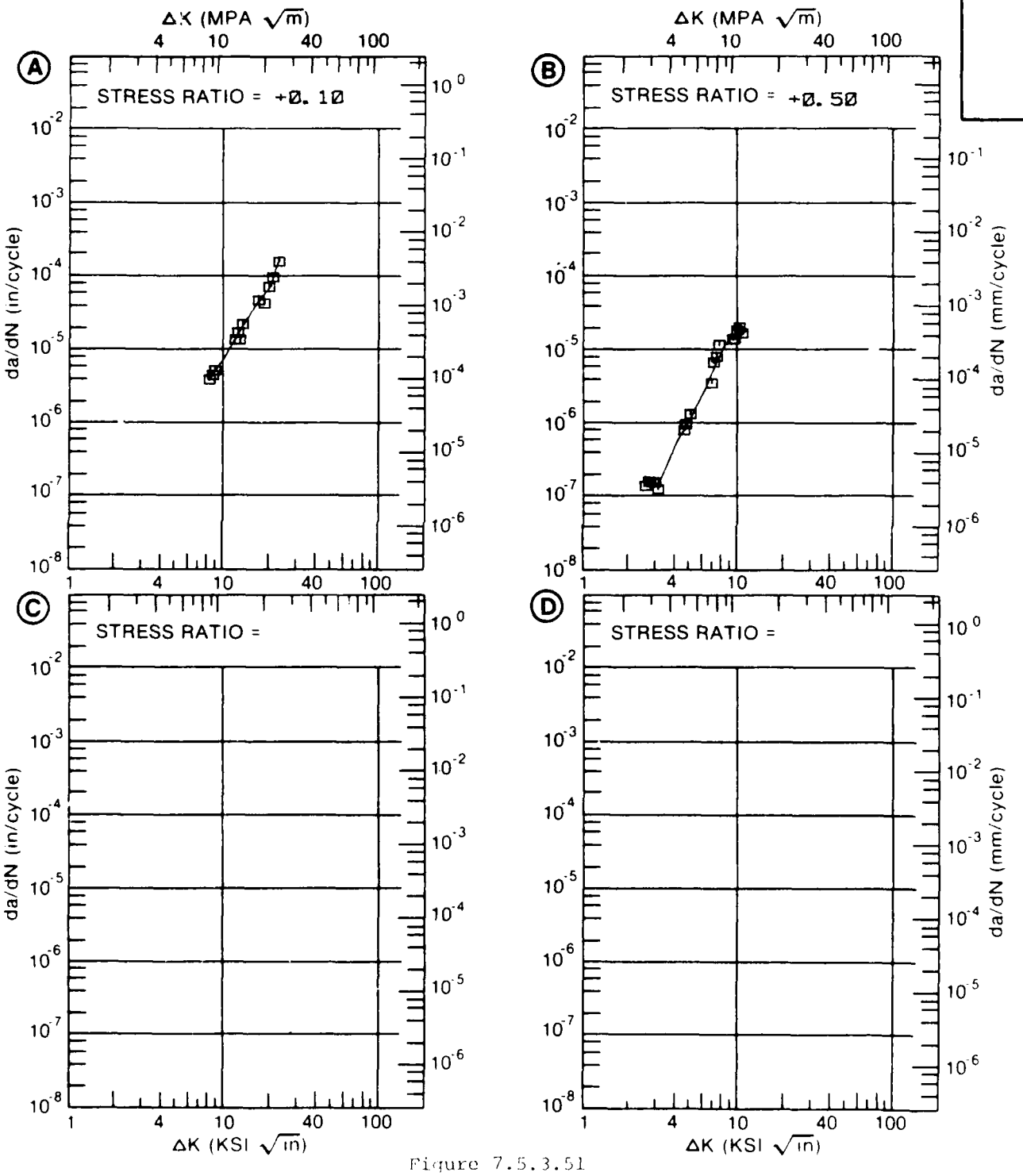


Figure 7.5.3.51

TABLE 7.5.3.52

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.52 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R.T. ,3.5% NACL

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10			
DELTA K MIN	A: 4.70	1.16			
	B:				
	C:				
	D:				
	5.00	1.47			
	6.00	2.70			
	7.00	4.24			
	8.00	6.10			
	9.00	8.34			
	10.00	11.1			
	13.00	23.6			
	16.00	48.4			
	20.00	126.			
	25.00	428.			
DELTA K MAX	A: 28.22	952.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 13.07

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: Ø.38"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 20.ØØ HZ
ENVIRONMENT: R.T., 3.5% NACL

YIELD STRENGTH: 66.6 KSI
ULT. STRENGTH: 72.Ø KSI
SPECIMEN THK: Ø.375"
SPECIMEN WIDTH: 5.ØØØ"
REFERENCES:9Ø9Ø1

ALUM. ALLOY
2024

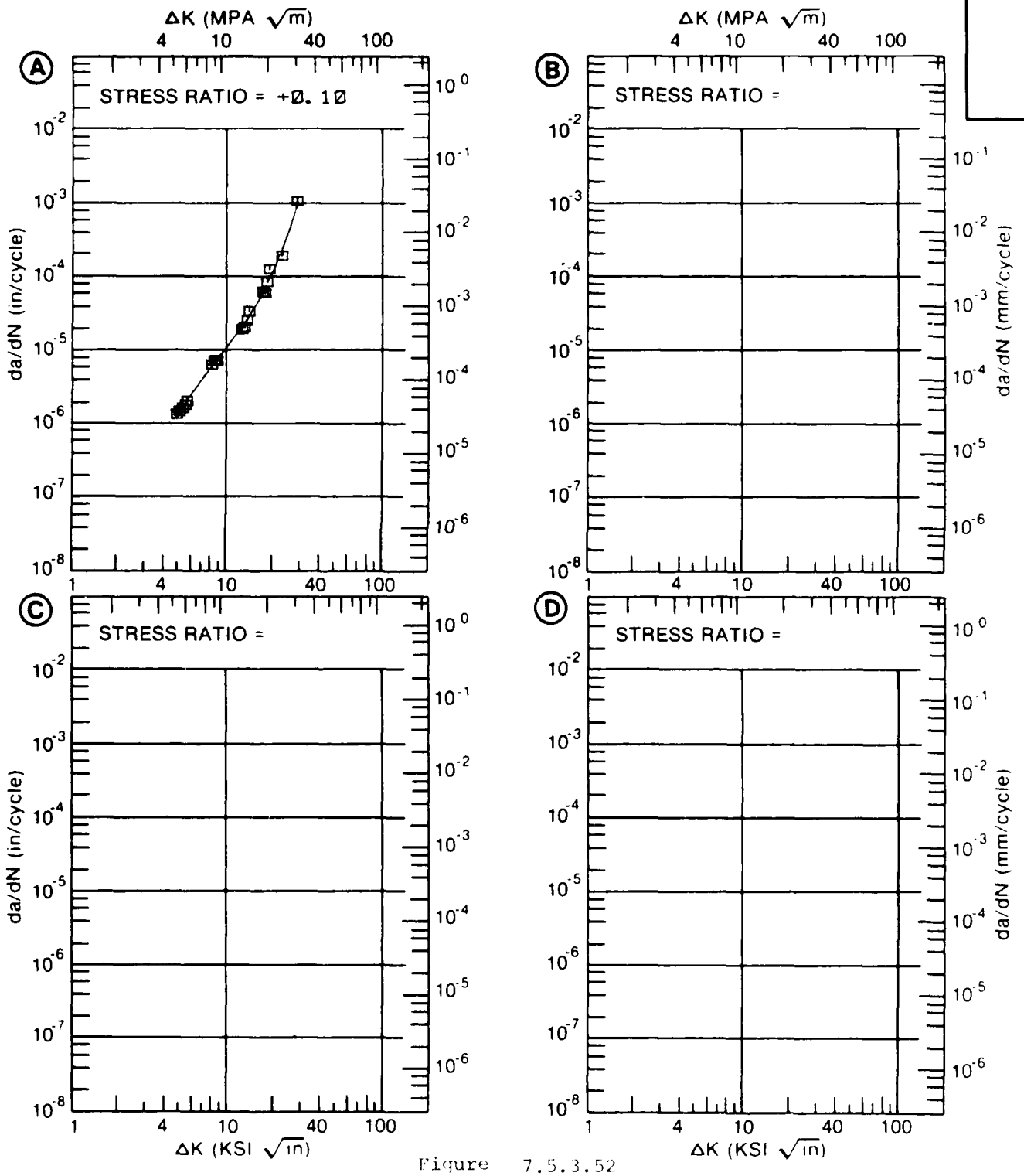


Figure 7.5.3.52

TABLE 7.5.3.53

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.53 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R.T. , H.H.A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			F(HZ)= 20.00	F(HZ)= 30.00		
DELTA K MIN	A:	4.52	.487			
	B:	4.77		.335		
	C:					
	D:					
		5.00	.501	.344		
		6.00	1.18	.492		
		7.00		.957		
		8.00		2.30		
		9.00		5.08		
DELTA K MAX	A:	6.88	2.95			
	B:	9.90		5.11		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			13.49	12.28		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: Ø.75"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: L-S
STRESS RATIO: +Ø.1Ø
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 70.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: Ø.759- Ø.76Ø"
SPECIMEN WIDTH: 5.ØØ3"
REFERENCES: 9Ø981

ALUM. ALLOY

2024

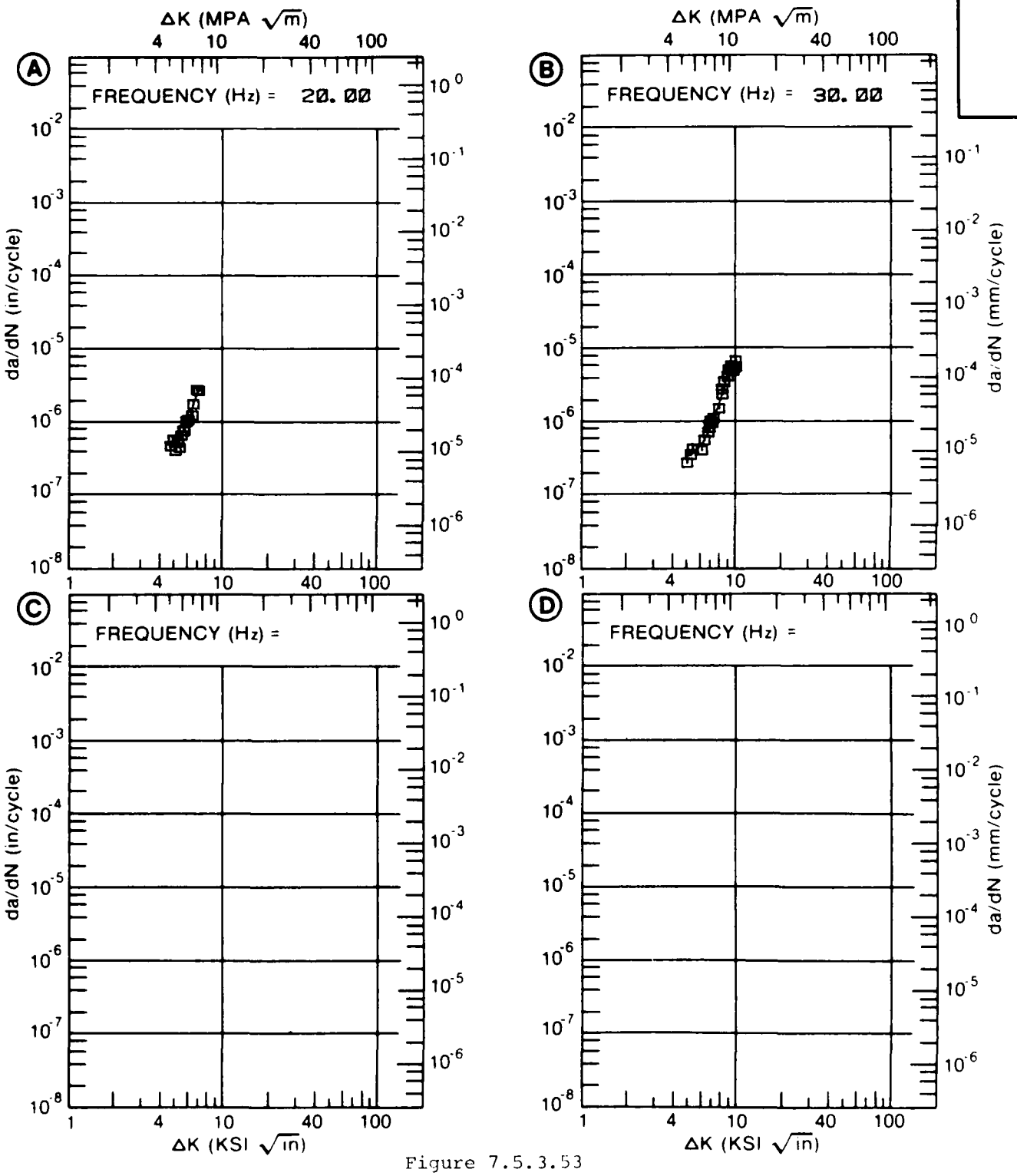


Figure 7.5.3.53

TABLE 7.5.3.54

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.54 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. H.H.A.			
DELTA K MIN	A: 2.75	.0113			
	B:				
	C:				
	D:				
	3.00	.0269			
	3.50	.101			
	4.00	.261			
	5.00	.929			
	6.00	2.09			
	7.00	3.72			
	8.00	5.85			
	9.00	8.61			
	10.00	12.2			
	13.00	32.3			
	16.00	85.6			
DELTA K MAX	A: 16.67	107.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 17.12

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 0.75"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 25.00 HZ

YIELD STRENGTH: 67.0 KSI
ULT. STRENGTH: 71.0 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 2.550"
REFERENCES:NC003

ALUM. ALLOY
2024

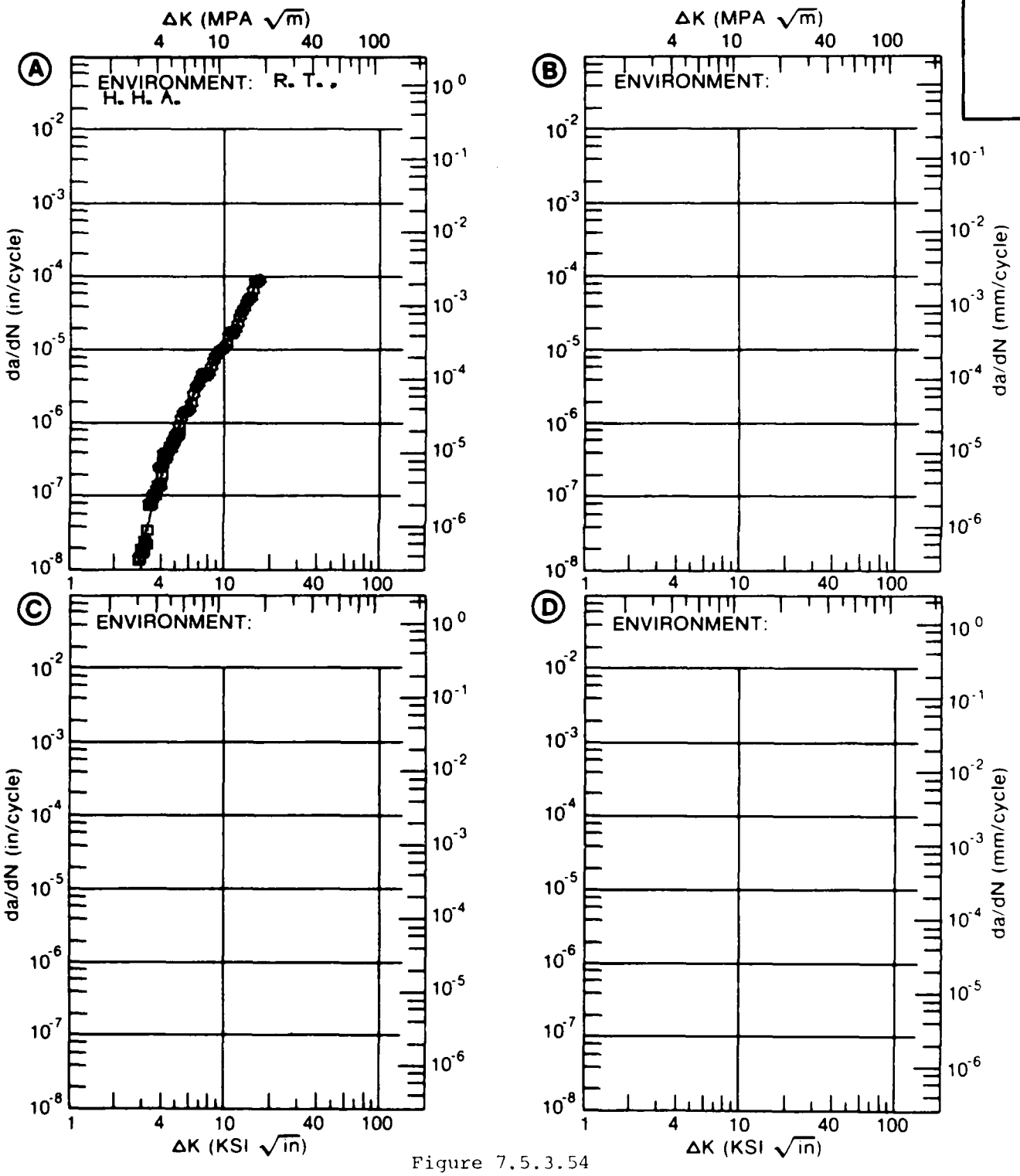


Figure 7.5.3.54

TABLE 7.5.3.55

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.55 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.50		
DELTA K MIN	A:	3.22	.16			
	B:	1.82		.04		
	C:	2				
	D:					
		2.00		.0515		
		2.50		.0796		
		3.00		.142		
		3.50	.211	.255		
		4.00	.314	.443		
		5.00	.639	1.13		
		6.00	1.16	2.26		
		7.00	1.89	3.70		
		8.00	2.84	5.10		
		9.00	3.97	6.09		
		10.00	5.24	6.47		
		13.00	9.14			
		16.00	12.0			
DELTA K MAX	A:	18.47	13.0			
	B:	10.31		6.46		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			36.98	35.40		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 0.75"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: T-S
FREQUENCY: 20.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 70.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: 0.758- 0.764"
SPECIMEN WIDTH: 5.000- 5.005"
REFERENCES:90981

ALUM. ALLOY

2024

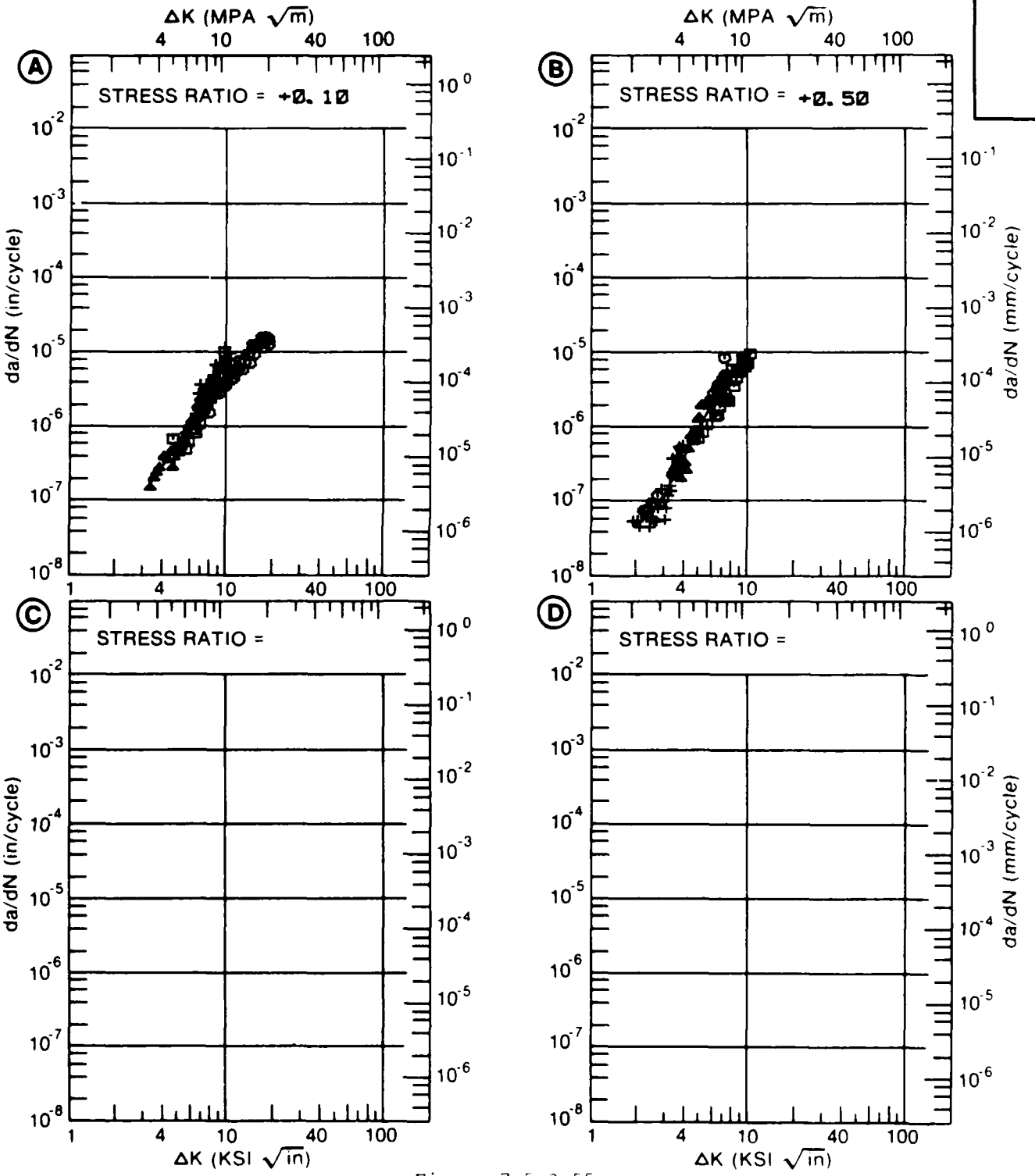


Figure 7.5.3.55

TABLE 7.5.3.56

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.56 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.50		
DELTA K MIN	A:	11.66	7.64			
	B:	4.25		.34		
	C:					
	D:					
		5.00		.991		
		6.00		2.04		
		7.00		3.05		
		8.00		4.37		
		9.00		6.73		
		10.00		11.7		
		13.00	9.86			
		16.00	19.7			
DELTA K MAX	A:	18.52	52.3			
	B:	10.47		16.0		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			19.13	22.28		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 0.75"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: T-S
FREQUENCY: 2.00 HZ
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 70.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: 0.759- 0.763"
SPECIMEN WIDTH: 5.004- 5.006"
REFERENCES:90981

ALUM. ALLOY

2024

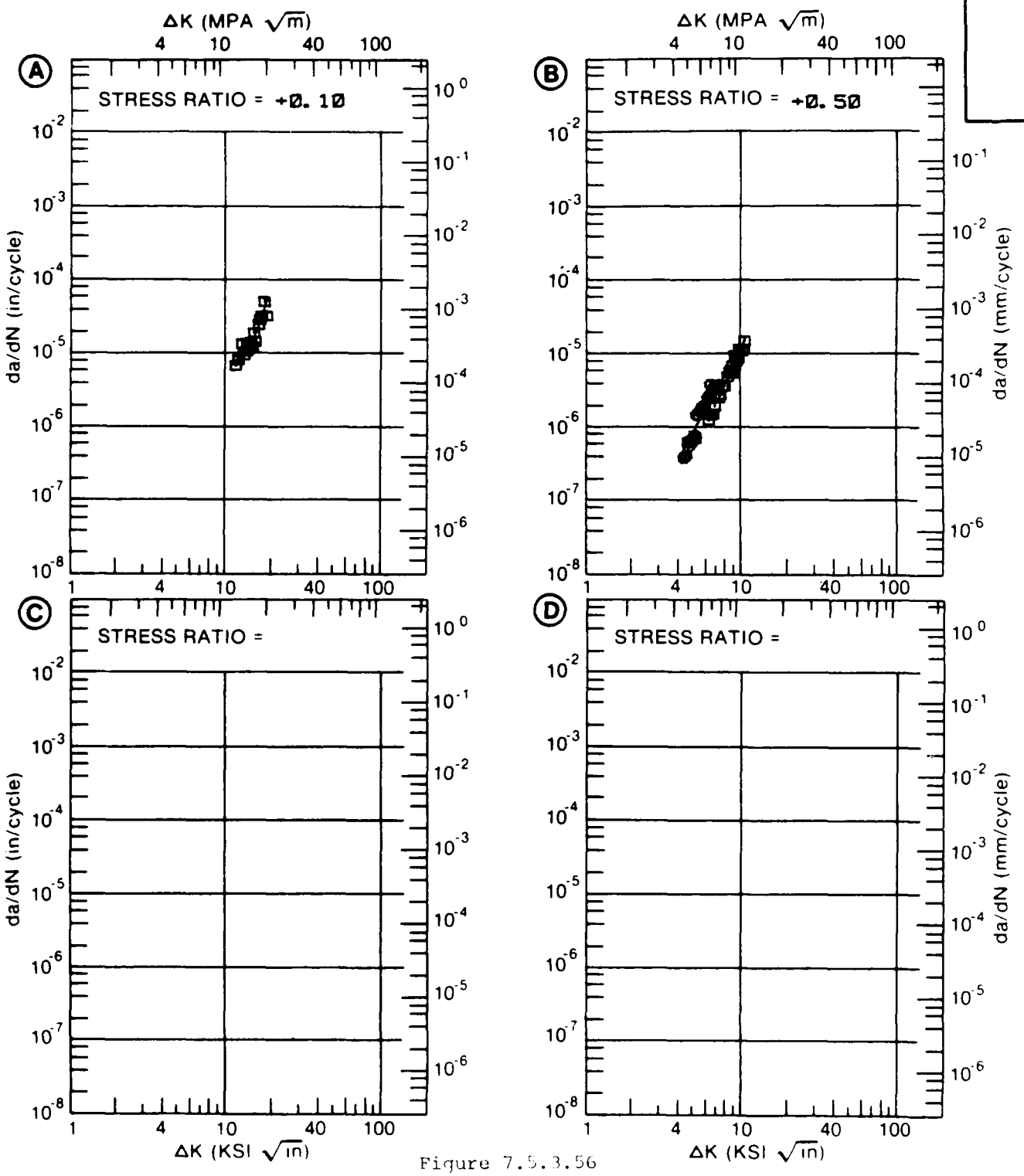


Figure 7.5.3.56

TABLE 7.5.3.57

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.57 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R.T. ,3.5% NACL

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10			
DELTA K MIN	A. 8.12	4.28			
	B:				
	C:				
	D:				
	9.00	5.11			
	10.00	5.92			
	13.00	10.6			
	16.00	33.0			
DELTA K MAX	A: 17.38	67.8			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 17.89

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: Ø.76"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: T-S
FREQUENCY: 20.ØØ HZ
ENVIRONMENT: R.T.,3.5% NACL

YIELD STRENGTH: 70.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: Ø.763"
SPECIMEN WIDTH: 5.ØØ3"
REFERENCES:90981

ALUM. ALLOY

2024

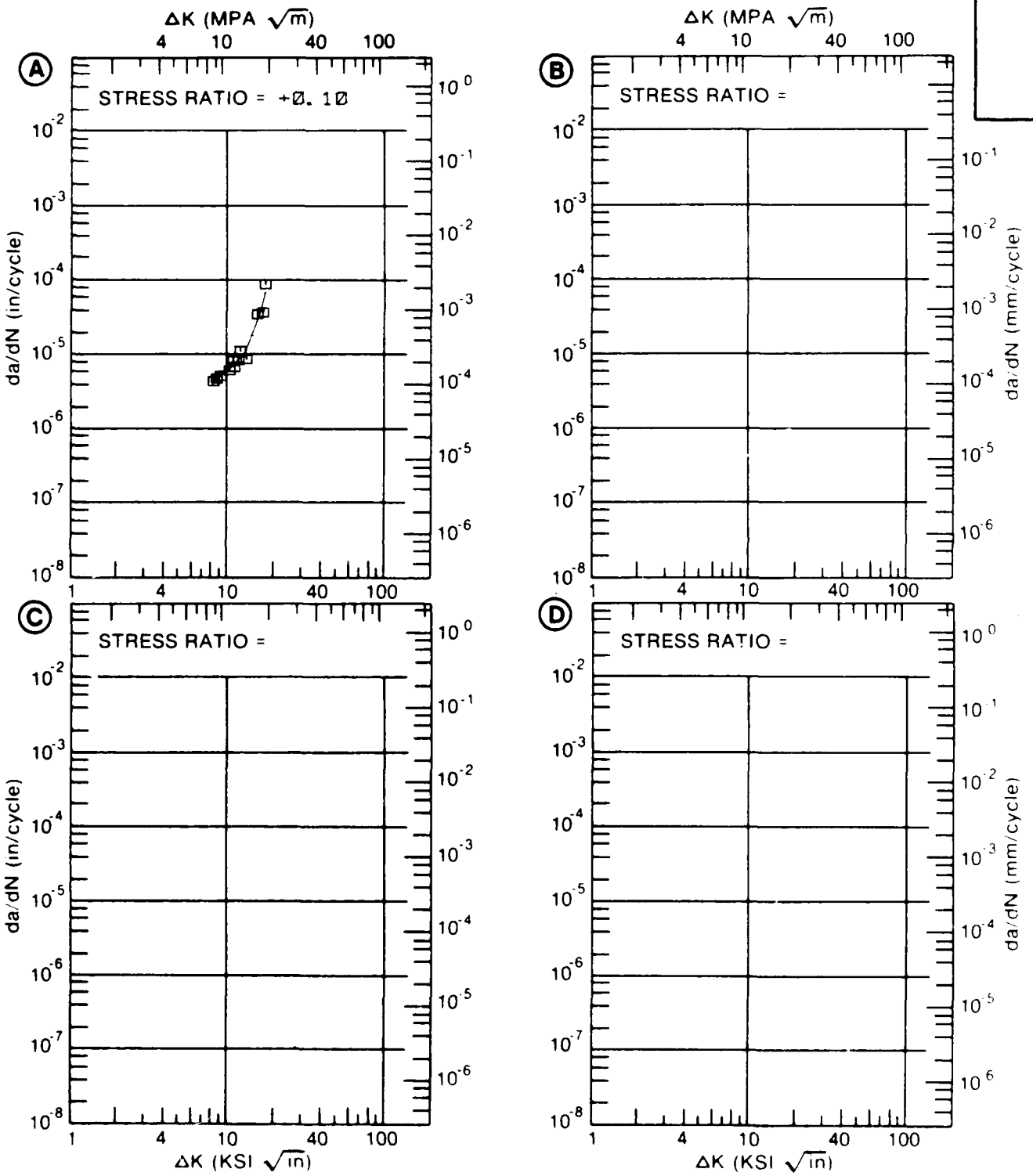


Figure 7.5.3.57

TABLE 7.5.3.58

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.58 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R.T. ,3.5% NACL

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.50		
DELTA K MIN	A:	4.82	.988			
	B:	5.20		968		
	C:					
	D:					
		5.00	1.18			
		6.00	2.08	1.78		
		7.00	2.68	3.18		
		8.00	3.23	5.04		
		9.00	4.12	7.48		
		10.00	5.81	10.7		
		13.00		28.3		
		16.00		72.8		
		20.00		265.		
DELTA K MAX	A:	11.40	11.5			
	B:	20.76		340.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			16.87	21.52		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: Ø.75"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: T-S
FREQUENCY: 20.ØØ HZ
ENVIRONMENT: R.T., 3.5% NACL

YIELD STRENGTH: 7Ø.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: Ø.75Ø- Ø.763"
SPECIMEN WIDTH: 5.ØØØ- 5.ØØ5"
REFERENCES:9Ø981

ALUM. ALLOY

2Ø24

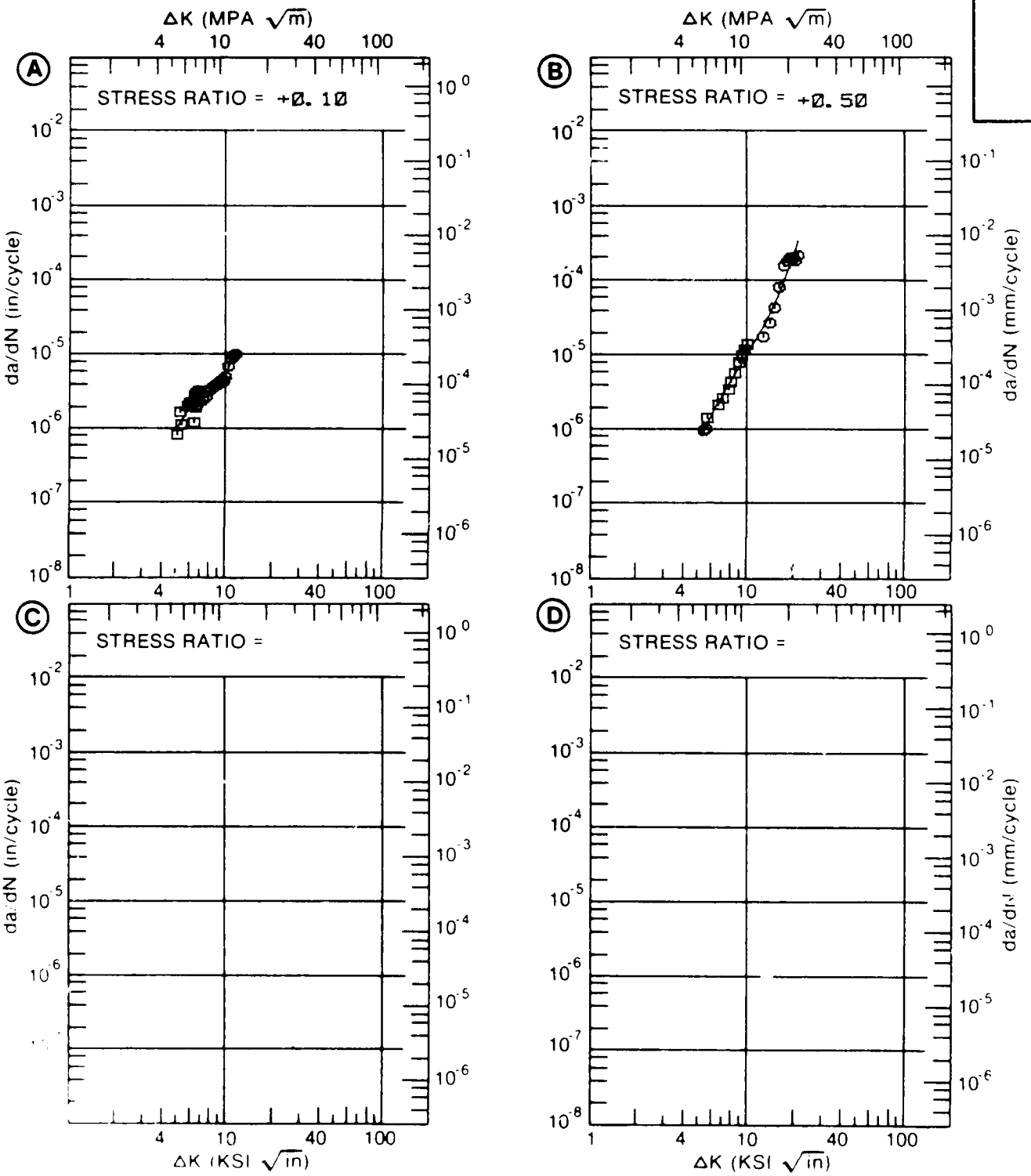


Figure 7.5.3.58

TABLE 7.5.3.59

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.59 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10			
DELTA K MIN	A: 4.01	.339			
	B:				
	C:				
	D:				
	5.00	.509			
	6.00	1.26			
	7.00	2.58			
	8.00	4.36			
	9.00	6.54			
	10.00	9.04			
	13.00	18.0			
	16.00	29.5			
DELTA K MAX	A: 18.82	57.7			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 7.74

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: Ø.75"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 20.ØØ HZ
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 68.6 KSI
ULT. STRENGTH: 73.Ø KSI
SPECIMEN THK: Ø.761"
SPECIMEN WIDTH: 5.ØØØ"
REFERENCES:9Ø981

ALUM. ALLOY

2024

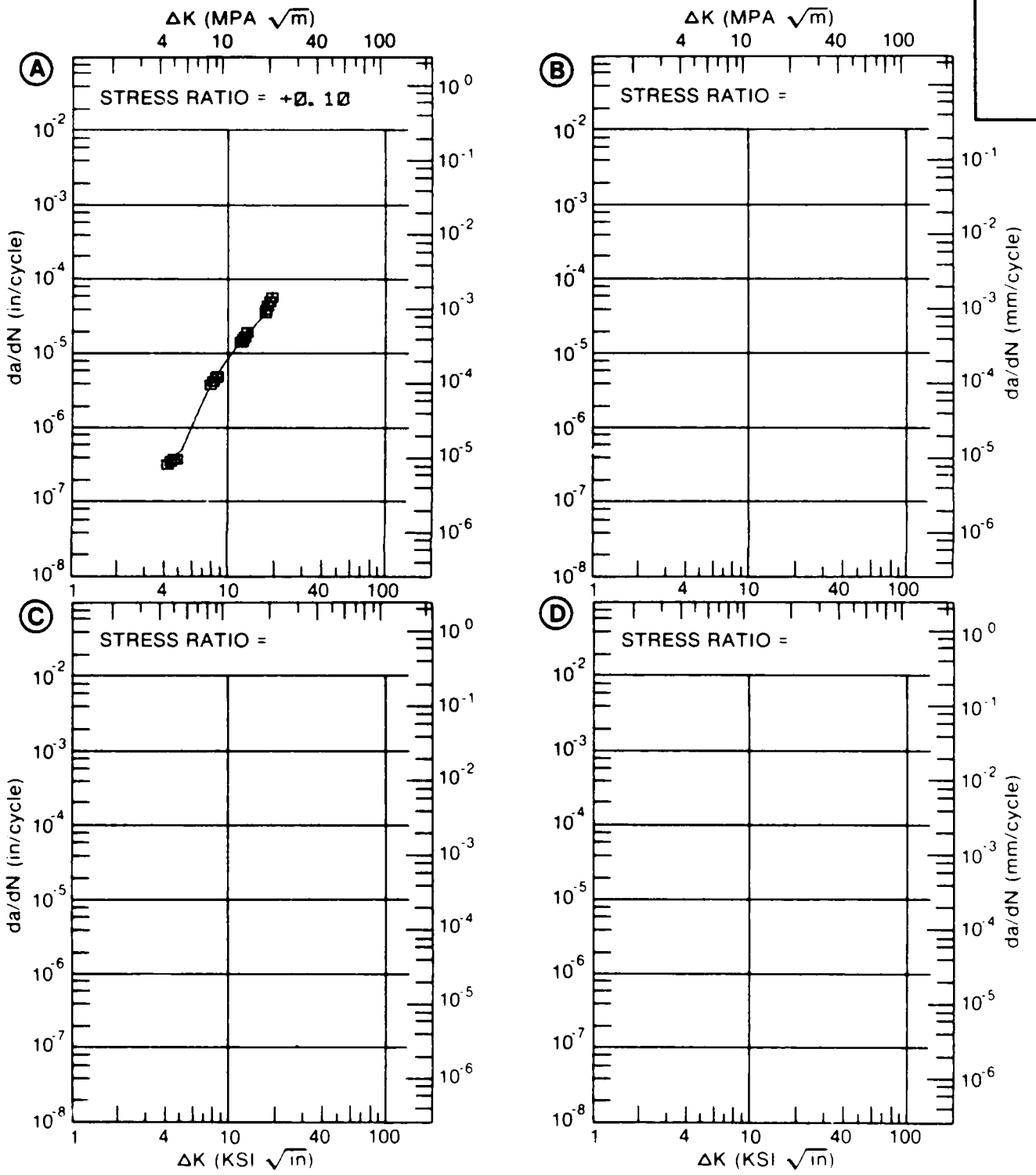


Figure 7.5.3.59

TABLE 7.5.3.60

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.60 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. H.H.A.	E= R.T. 3.5% NACL		
DELTA K MIN	A: 11.66	7.64			
	B:				
	C:				
	D:				
	13.00	9.86			
	16.00	19.7			
DELTA K MAX	A: 18.52	52.3			
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		19.13	0.00		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 0.75"TH PLATE
SPECIMEN TYPE: PTSF
ORIENTATION: T-S
STRESS RATIO: +0.10
FREQUENCY: 2.00 HZ

YIELD STRENGTH: 70.1 KSI
ULT. STRENGTH: 73.5 KSI
SPECIMEN THK: 0.759- 0.763"
SPECIMEN WIDTH: 5.003- 5.004"
REFERENCES:90981

ALUM. ALLOY

2024

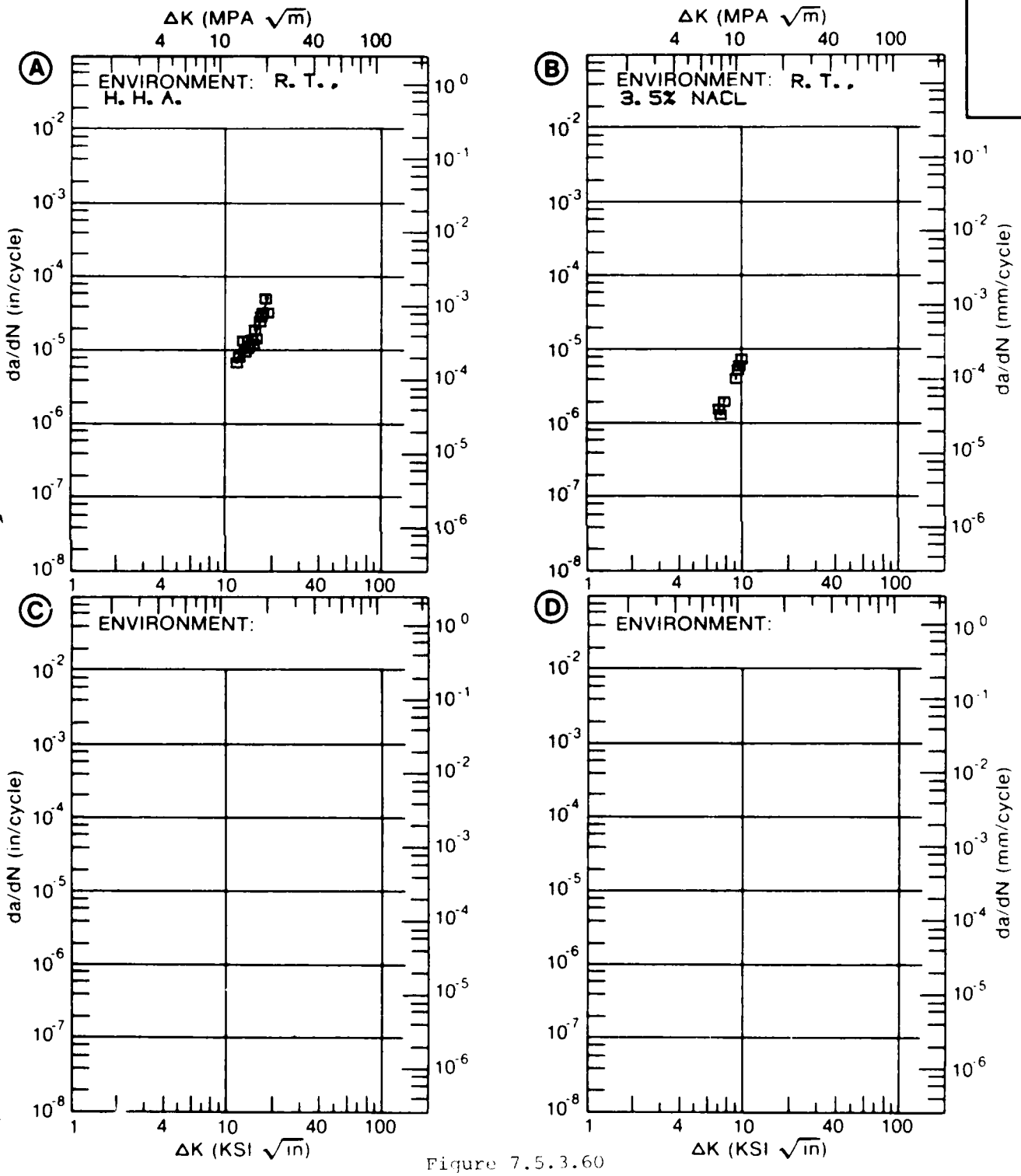


Figure 7.5.3.60

TABLE 7.5.3.61

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.61 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R.T. ,3.5% NACL

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10	R=+0.50		
DELTA K MIN A:	3.33	.193			
DELTA K MIN B:	2.12		.119		
DELTA K MIN C:					
DELTA K MIN D:					
	2.50		.215		
	3.00		.406		
	3.50	.236	.689		
	4.00	.399	1.08		
	5.00	.915	2.28		
	6.00	1.75	4.17		
	7.00	2.98	6.93		
	8.00	4.68	10.7		
	9.00	6.96	15.8		
	10.00	9.93	22.4		
	13.00	24.3			
	16.00	50.5			
DELTA K MAX A:	16.68	58.8			
DELTA K MAX B:	11.10		31.7		
DELTA K MAX C:					
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		22.26	18.87		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	1		
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: 0.75"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 20.00 HZ
ENVIRONMENT: R.T., 3.5% NACL

YIELD STRENGTH: 68.6 KSI
ULT. STRENGTH: 73.0 KSI
SPECIMEN THK: 0.760"
SPECIMEN WIDTH: 5.000"
REFERENCES: 90981

ALUM. ALLOY

2024

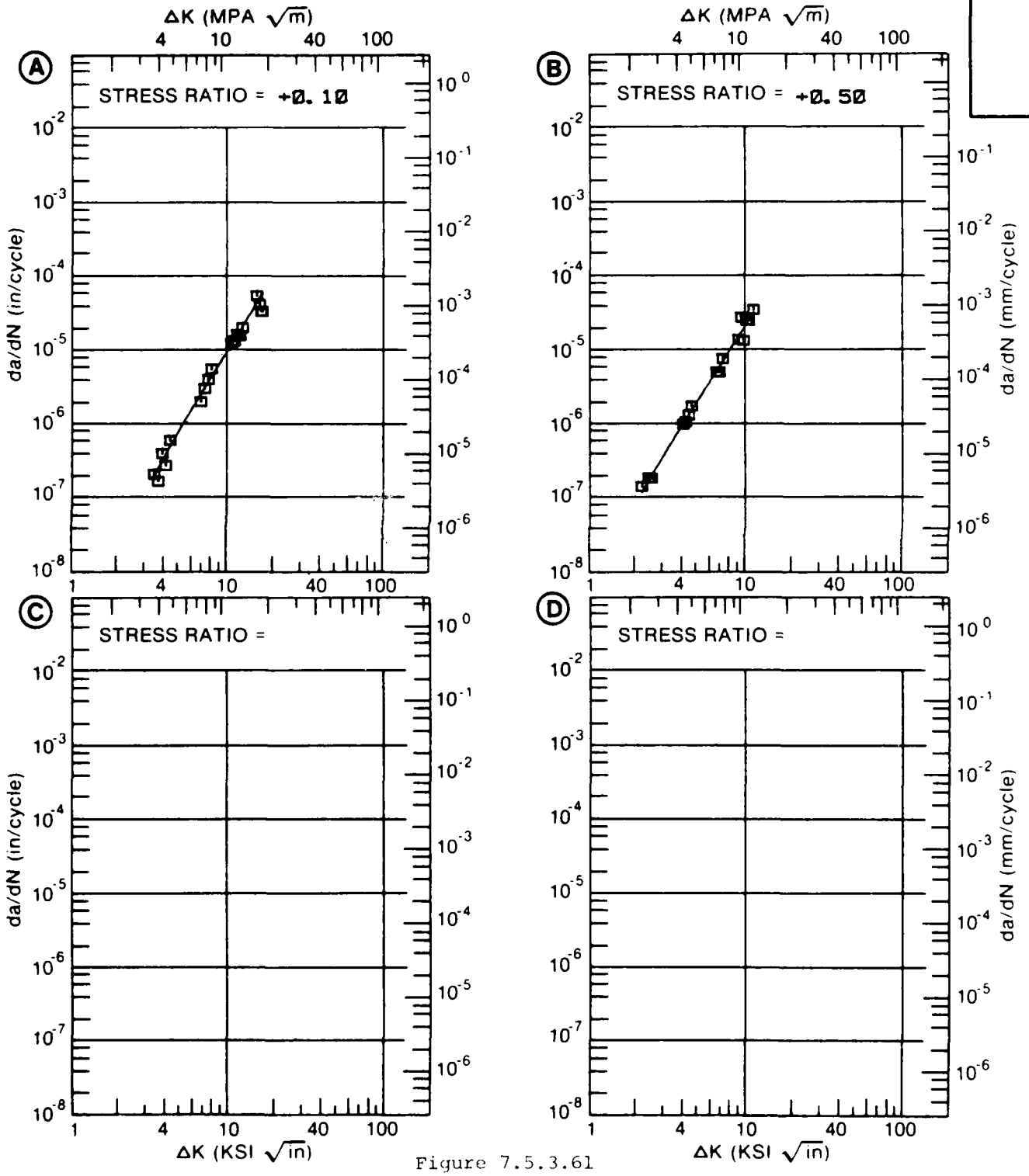


Figure 7.5.3.61

TABLE 7.5.3.62

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.62 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R.T. ,DRY AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.20	R=+0.40		
DELTA K MIN	A:				
	B:				
	C:				
	D:				
	200.00				
DELTA K MAX	A:				
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		0.00	0.00		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 2.00"TH PLATE
SPECIMEN TYPE: DCB
ORIENTATION: L-T
FREQUENCY: 10.00 HZ
ENVIRONMENT: R.T., DRY AIR

YIELD STRENGTH: 64.0 KSI
ULT. STRENGTH: 71.0 KSI
SPECIMEN THK: 0.750"
SPECIMEN WIDTH: 5.500"
REFERENCES:84360

ALUM. ALLOY
2024

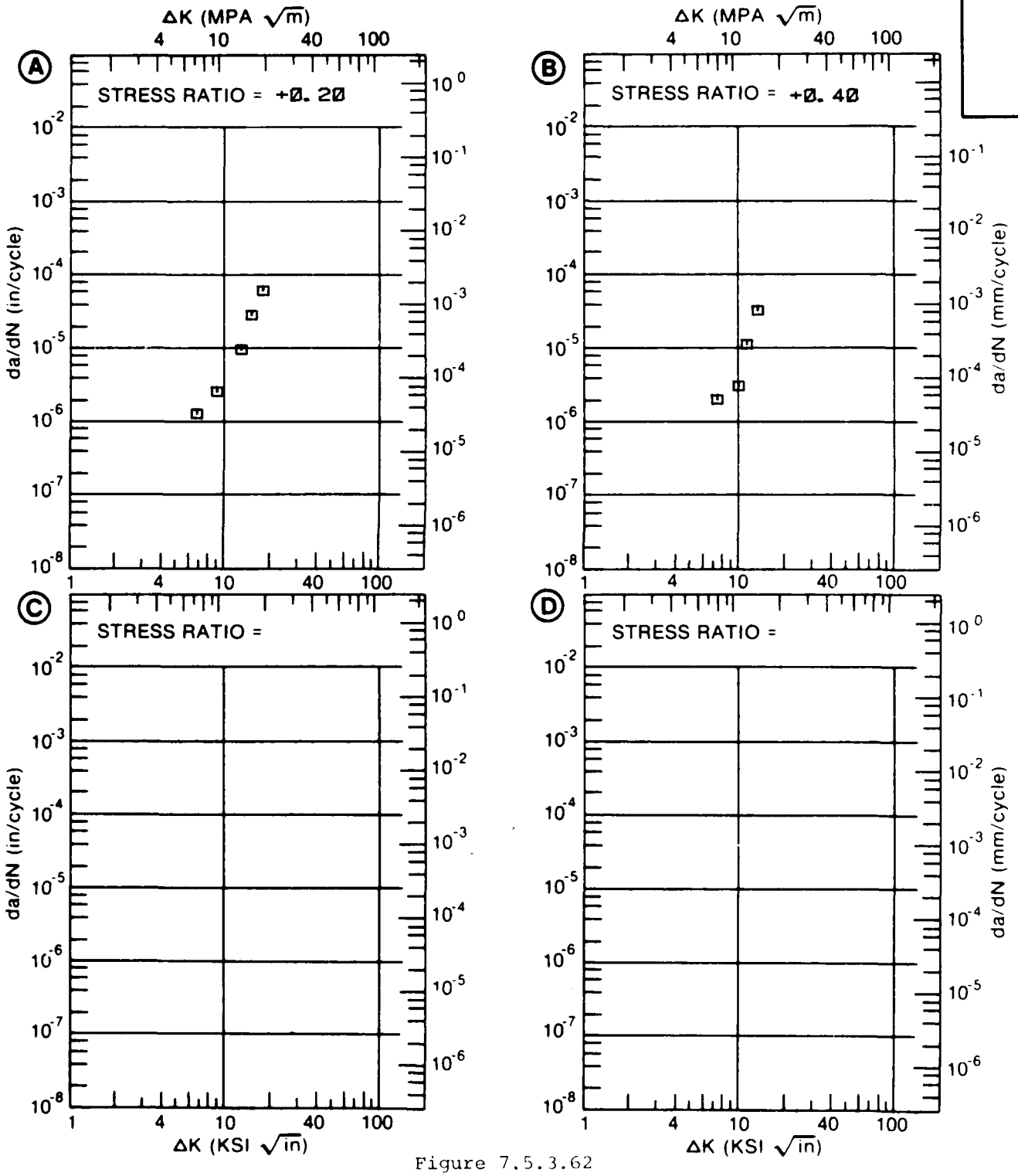


Figure 7.5.3.62

TABLE 7.5.3.63

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.63 INDICATING EFFECT
OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. DRY AIR	E= R.T. LAB AIR	E= R.T. JP-4 FUEL	
DELTA K MIN	A:				
	B: 6.40		1.10		
	C: 6.66			.95	
	D:				
	7.00		1.41	1.19	
	8.00		2.04	2.14	
	9.00		2.86	3.50	
	10.00		3.92	5.36	
	13.00		9.28	14.4	
	16.00		20.6	29.3	
	20.00		57.0	58.8	
	25.00		192.	109.	
DELTA K MAX	A:				
	B: 25.87		236.		
	C: 29.26			162.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		0.00	78.83	32.26	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 2.00- 3.00"TH PLATE
SPECIMEN TYPE: DCB
ORIENTATION: L-T
STRESS RATIO: +0.02
FREQUENCY: 1.00- 10.00 HZ

YIELD STRENGTH: 59.0- 64.0 KSI
ULT. STRENGTH: 66.0- 71.0 KSI
SPECIMEN THK: 0.750- 1.000"
SPECIMEN WIDTH: 5.500"
REFERENCES:84360

ALUM. ALLOY

2024

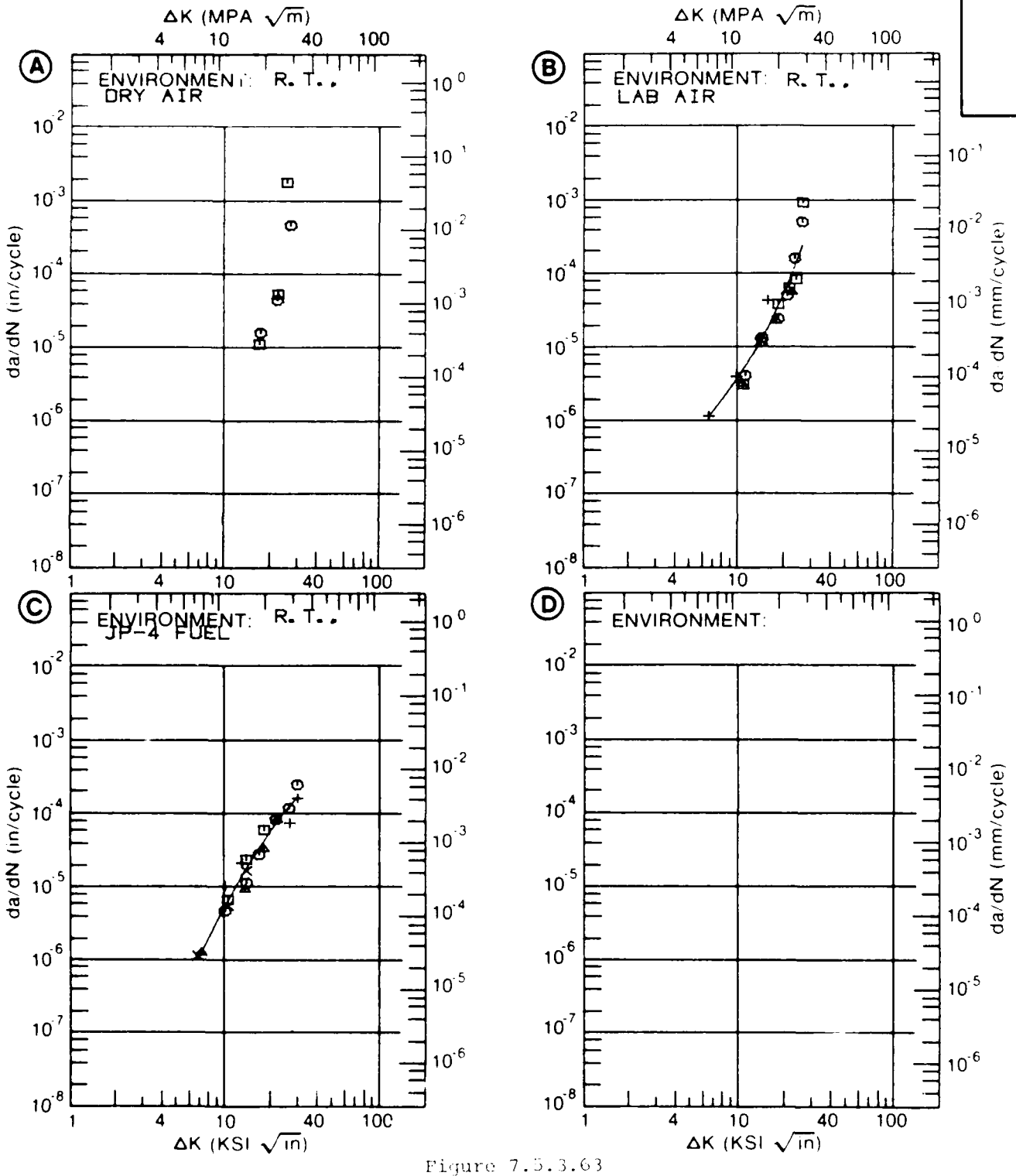


Figure 7.5.3.63

TABLE 7.5.3.64

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.64 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. 3.5% NACL	B E= R.T. SIMULATED FUEL	C	D
DELTA K MIN	A:	9.58	6.74			
	B:	9.62		5.14		
	C:					
	D:					
		10.00	7.28	6.23		
		13.00	14.8	16.7		
		16.00	31.5	34.4		
		20.00	74.2			
DELTA K MAX	A:	24.72	156.			
	B:	19.61		97.2		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			37.42	22.28		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 2.00- 3.00"TH PLATE
SPECIMEN TYPE: DCB
ORIENTATION: L-T
STRESS RATIO: +0.02
FREQUENCY: 1.00- 10.00 HZ

YIELD STRENGTH: 59.0- 64.0 KSI
ULT. STRENGTH: 66.0- 71.0 KSI
SPECIMEN THK: 0.625- 0.875"
SPECIMEN WIDTH: 5.500"
REFERENCES: 84360

ALUM. ALLOY

2024

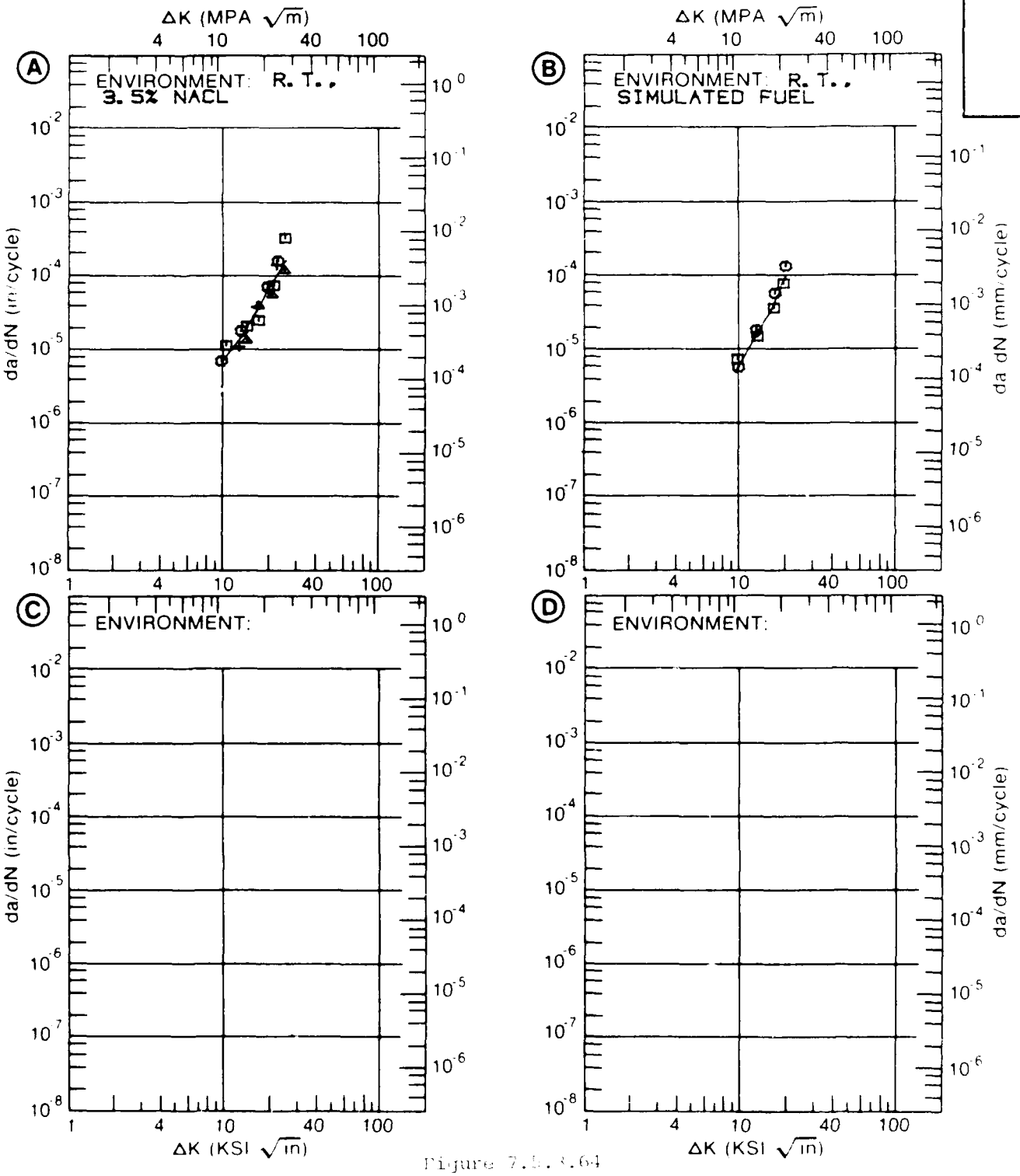


Figure 7.5.3.64

TABLE 7.5.3.65

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.65 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R.T. ,L.H.A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.08			
DELTA K MIN	A:	6.45	.716			
	B:					
	C:					
	D:					
		7.00	2.06			
		8.00	4.10			
		9.00	6.40			
		10.00	8.93			
		13.00	22.1			
		16.00	74.3			
DELTA K MAX	A:	16.92	140.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 17.92

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	
	1.25-2.0	2
	>2.0	

CONDITION/HT: T851
FORM: 3.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH: 51.0- 66.0 KSI
ULT. STRENGTH: 71.0 KSI
SPECIMEN THK: 0.990- 1.000"
SPECIMEN WIDTH: 5.990- 6.010"
REFERENCES:88579

ALUM. ALLOY
2024

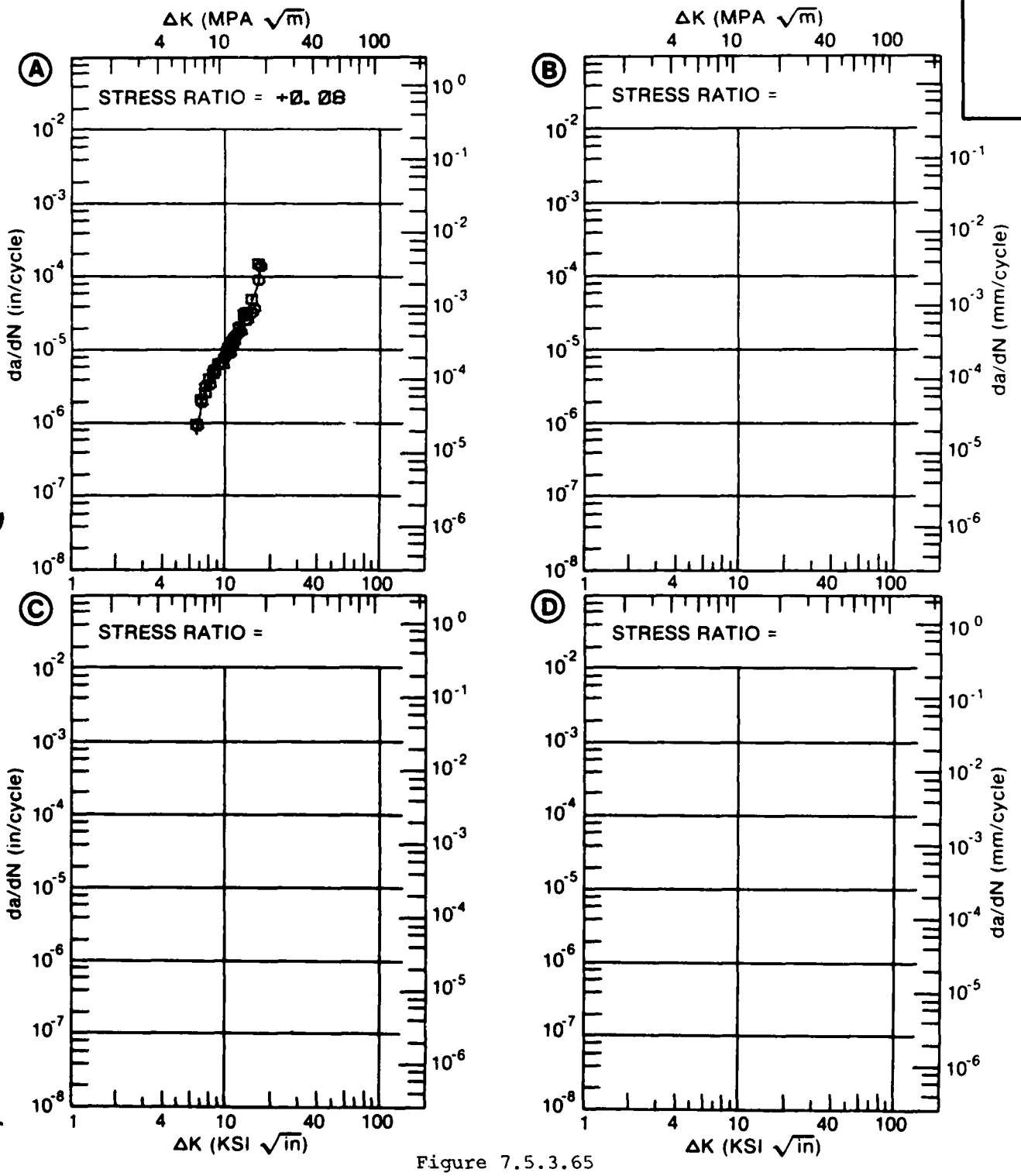


Figure 7.5.3.65

TABLE 7.5.3.66

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.66 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , L. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.08			
DELTA K MIN	A:	7.09	1.36			
	B:					
	C:					
	D:					
		8.00	2.39			
		9.00	3.81			
		10.00	5.52			
		13.00	12.5			
		16.00	24.4			
DELTA K MAX	A:	19.44	52.0			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR		5.86
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 3.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 1.00 HZ
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH: 66.0 KSI
ULT. STRENGTH: 71.0 KSI
SPECIMEN THK: 0.494"
SPECIMEN WIDTH: 6.000"
REFERENCES:85837

ALUM. ALLOY

2024

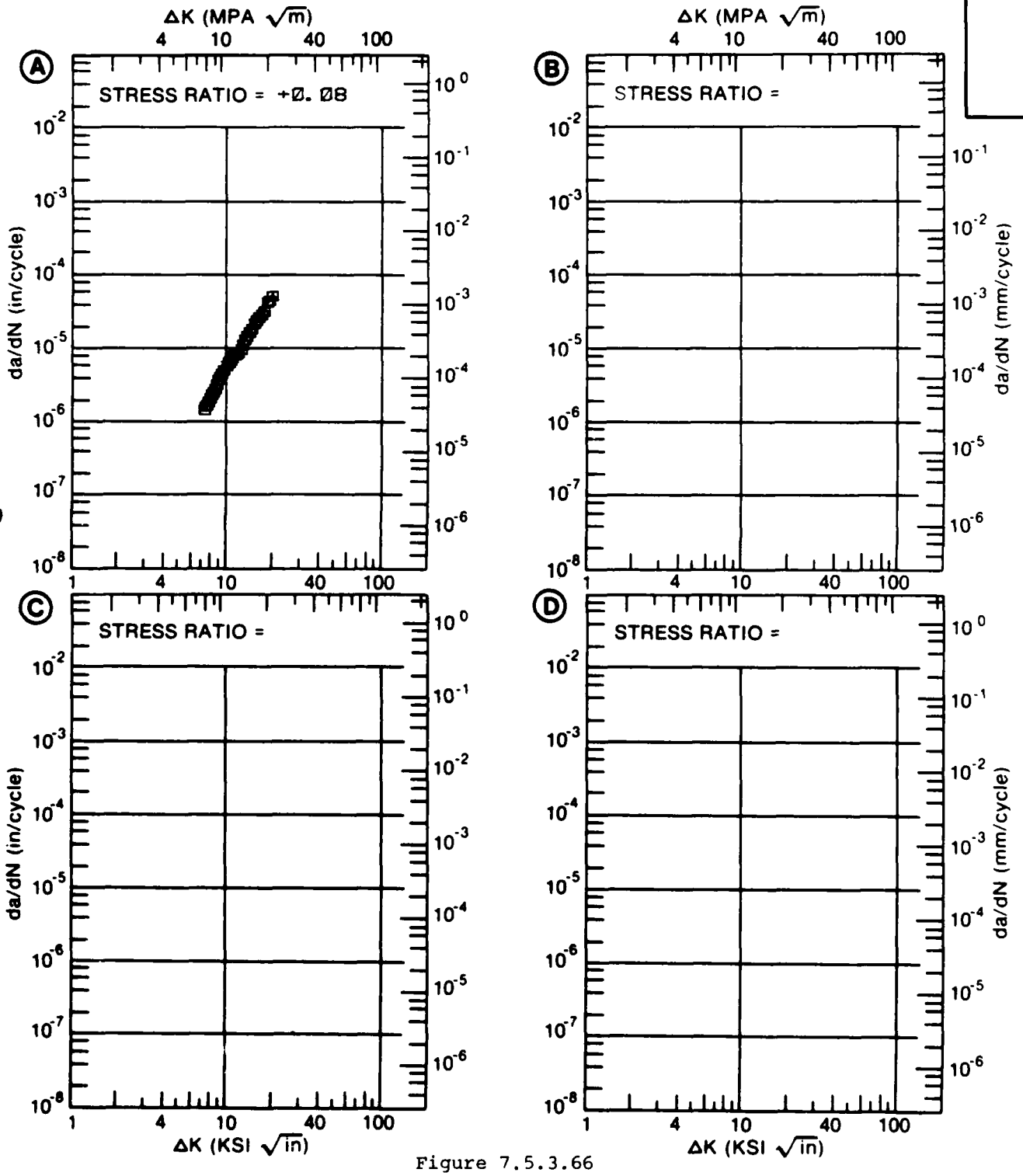


Figure 7.5.3.66

TABLE 7.5.3.67

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.67 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , L. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		R=+0.30			
DELTA K MIN	A: 6.19	2.25			
	B:				
	C:				
	D:				
	7.00	3.42			
	8.00	5.46			
	9.00	8.45			
	10.00	12.9			
DELTA K MAX	A: 12.46	36.2			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 11.31

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	
	1.25-2.0	1
	>2.0	

CONDITION/HT: T851
FORM: 3.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 1.00 HZ
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH: 66.0 KSI
ULT. STRENGTH: 71.0 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 6.000"
REFERENCES88579

ALUM. ALLOY

2024

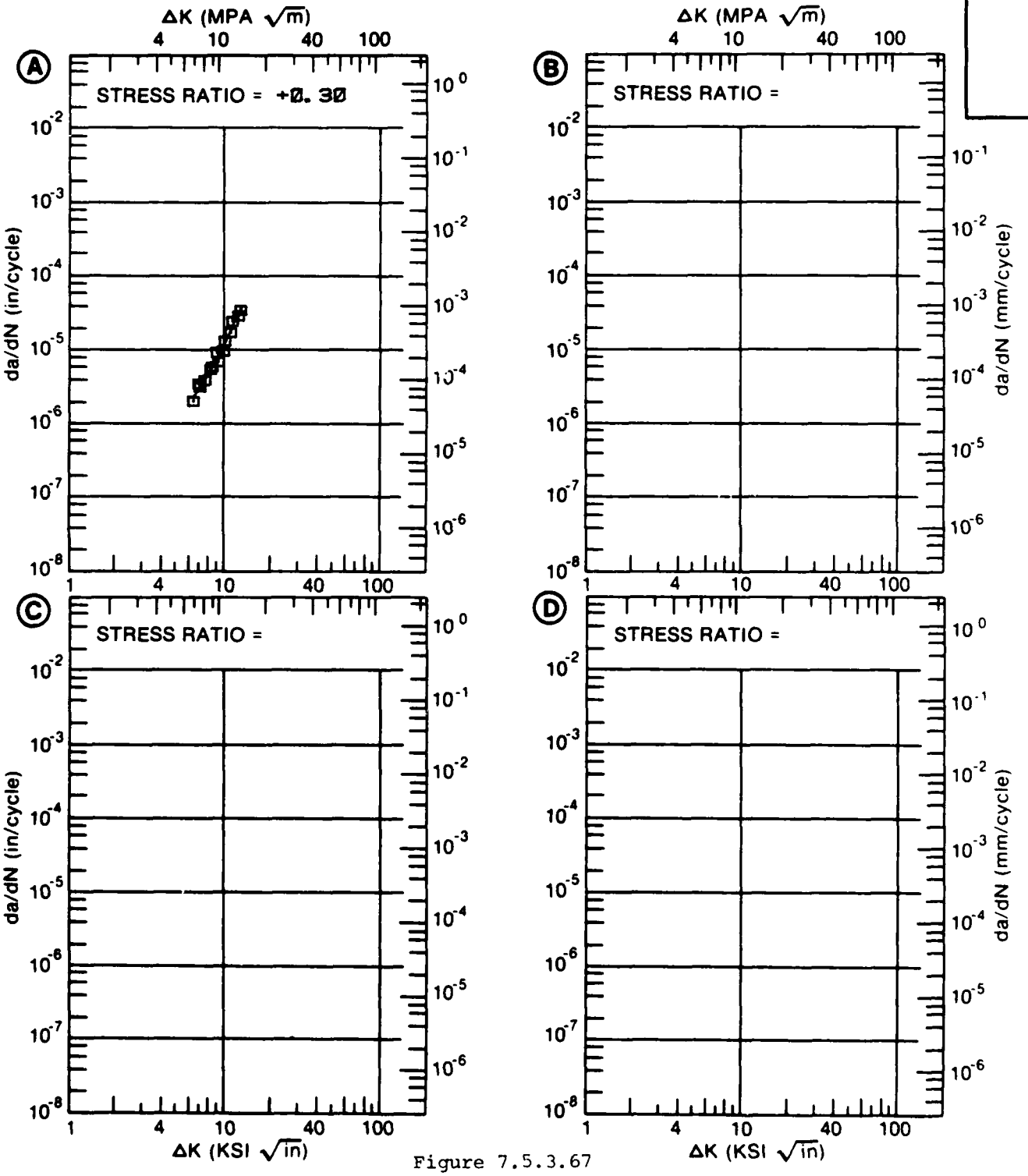


Figure 7.5.3.67

TABLE 7.5.3.68

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.68 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. L.H.A.	E= R.T. J.P.4	E= R.T. DIST. H2O	E= R.T. S.T.W.
DELTA K MIN	A: 7.16	1.75			
	B: 5.85		.987		
	C: 5.87			1.51	
	D: 7.37				2.71
	6.00		1.13	1.57	
	7.00		2.38	2.43	
	8.00	2.99	4.06	3.79	3.52
	9.00	4.91	6.12	5.22	5.34
	10.00	7.27	8.55	6.99	7.92
	13.00	17.4	19. .	23.0	19.8
	16.00	34.8	39.5	112.	35.6
	20.00		108.		112.
DELTA K MAX	A: 19.69	78.9			
	B: 21.48		241.		
	C: 16.35			211.	
	D: 22.77				415.
ROOT MEAN SQUARE PERCENT ERROR		15.20	10.17	21.77	15.52
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	2	1	1	2
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: 3.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 1.00 HZ

YIELD STRENGTH: 59.0- 66.0 KSI
ULT. STRENGTH: 71.0- 74.0 KSI
SPECIMEN THK: 0.990- 1.000"
SPECIMEN WIDTH: 5.990- 6.000"
REFERENCES:88579

ALUM. ALLOY

2024

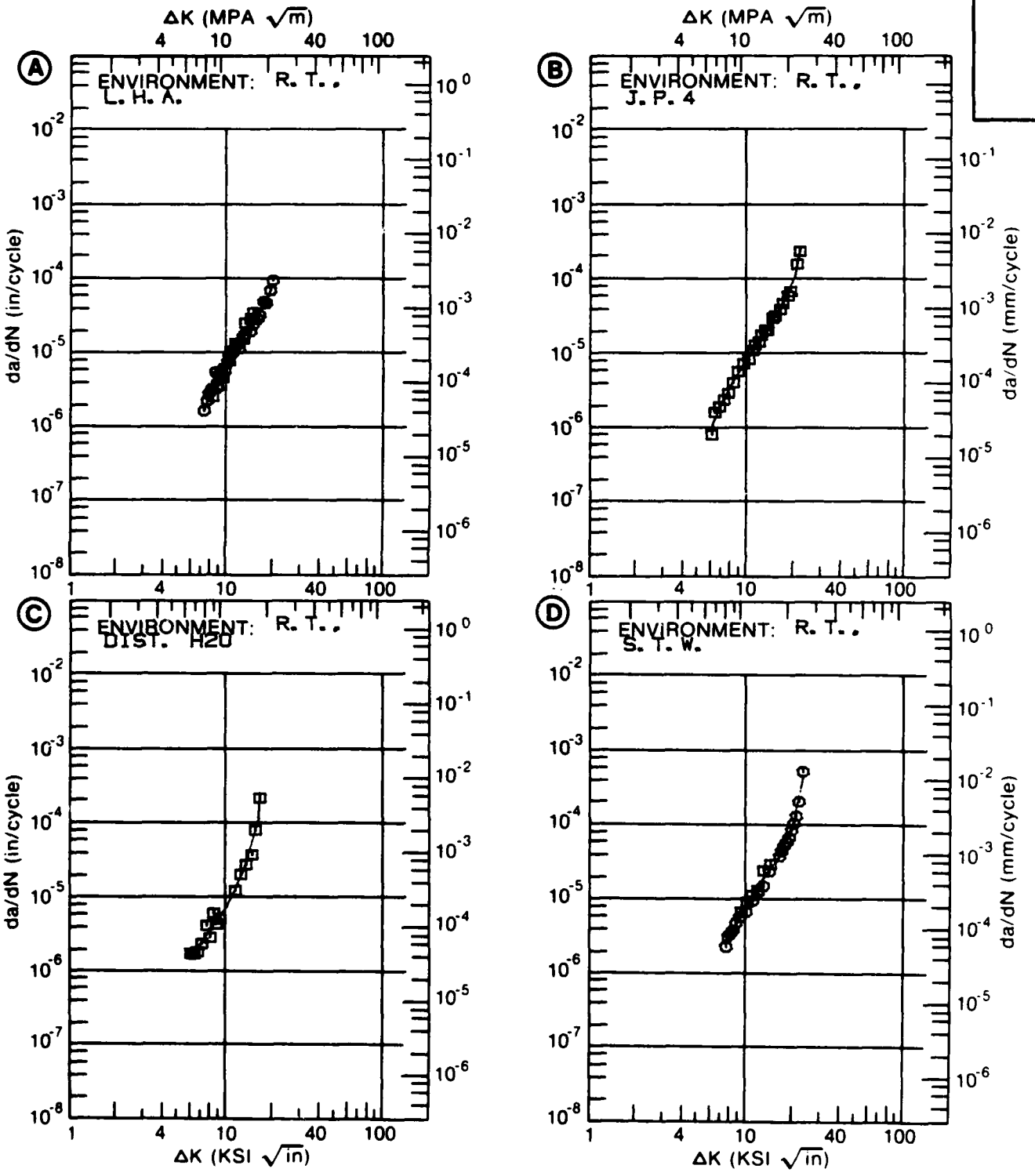


Figure 7.5.3.68

TABLE 7.5.3.69

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.69 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , L. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			F(HZ)= 1.00	F(HZ)= 6.00		
DELTA K MIN	A:	9.67	4.65			
	B:	6.86		1.67		
	C:					
	D:					
		7.00		1.92		
		8.00		4.12		
		9.00		6.66		
		10.00	5.90	9.45		
		13.00	17.6	24.5		
		16.00	50.2			
DELTA K MAX	A:	16.70	72.4			
	B:	15.93		88.2		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			13.07	13.Ca		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM: 3.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.08
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 65.0 KSI
ULT. STRENGTH: 71.0 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 5.990- 6.000"
REFERENCES:88579

ALUM. ALLOY
2024

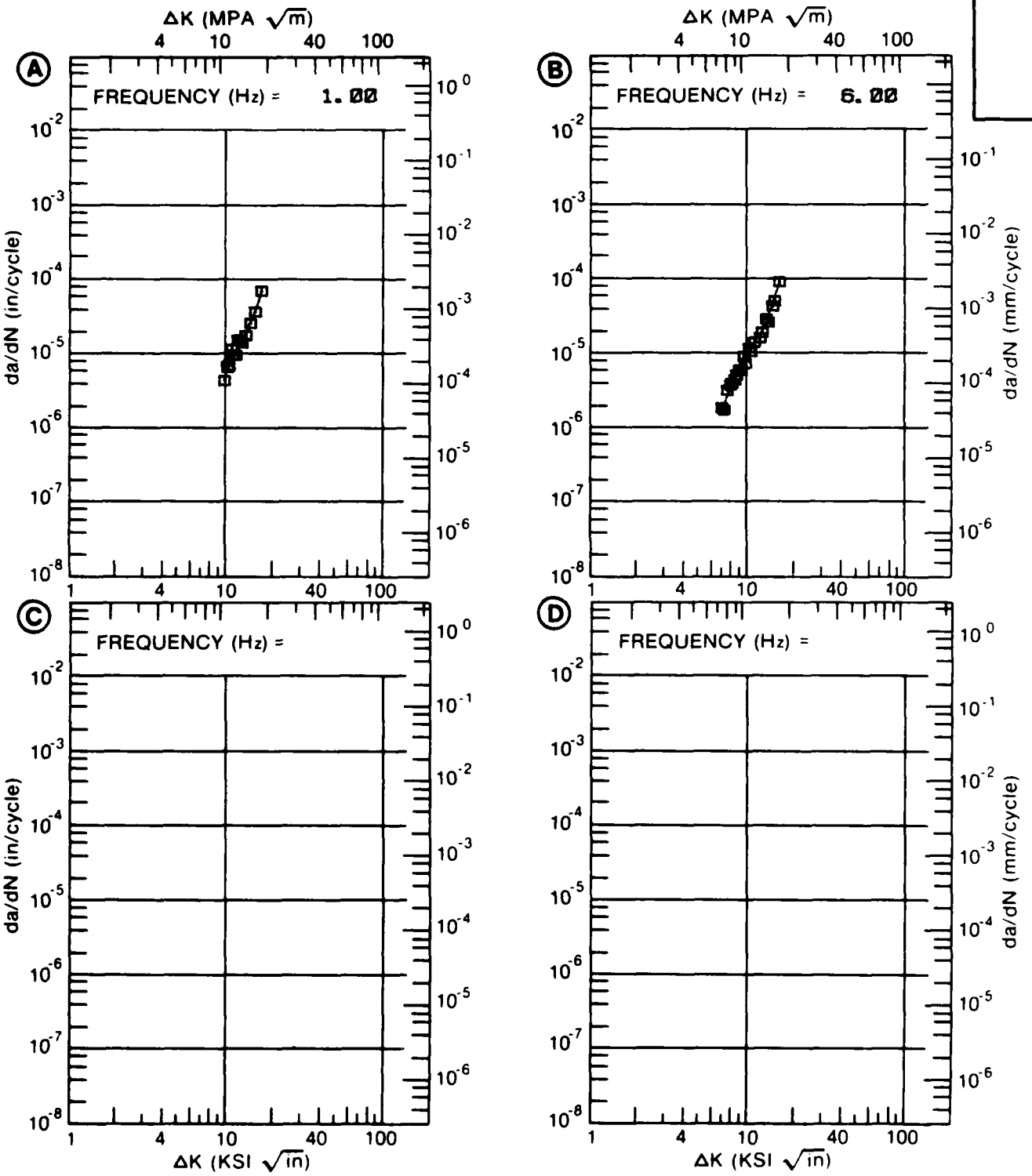


Figure 7.5.3.69

TABLE 7.5.3.70

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.70 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T851
ENVIRONMENT: R. T. , 3. 5% NACL

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN. /CYCLE) A	B	C	D
			R=+0. 10			
DELTA K MIN	A:	8. 35	9. 90			
	B:					
	C:					
	D:					
		9. 00	10. 5			
		10. 00	18. 2			
		13. 00	62. 2			
DELTA K MAX	A:	14. 30	228.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 38. 36

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0. 0-0. 5	
	0. 5-0. 8	2
	0. 8-1. 25	1
	1. 25-2. 0	
	>2. 0	

CONDITION/HT: T851
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 0.10- 10.00 HZ
ENVIRONMENT: R.T., 3.5% NACL

YIELD STRENGTH: 64.6 KSI
ULT. STRENGTH: 71.3 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 2.550"
REFERENCES:90981

ALUM. ALLOY
2024

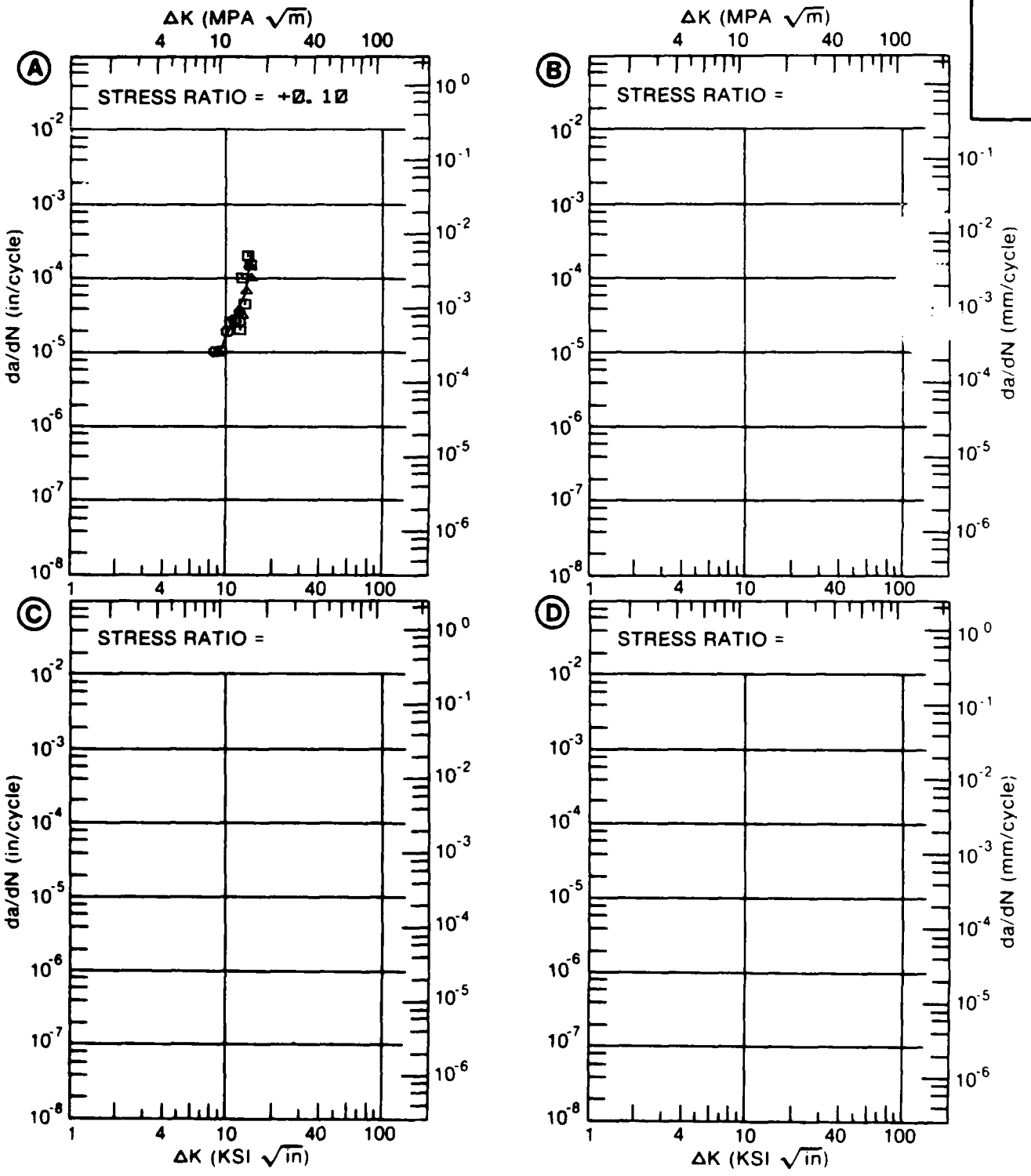


Figure 7.5.3.70

TABLE 7.5.3.71

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.71 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T852
ENVIRONMENT: R. T. , L. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.08			
DELTA K MIN	A:	5.43	1.19			
	B:					
	C:					
	D:					
		6.00	1.36			
		7.00	1.74			
		8.00	2.25			
		9.00	2.91			
		10.00	3.72			
		13.00	7.43			
		16.00	13.6			
		20.00	27.4			
DELTA K MAX	A:	21.81	36.3			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 19.83

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
0.0-0.5	
0.5-0.8	
0.8-1.25	3
1.25-2.0	
>2.0	

CONDITION/HT: T852
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 53.0 KSI
ULT. STRENGTH: 68.0- 70.0 KSI
SPECIMEN THK: 0.250- 0.502"
SPECIMEN WIDTH: 7.400"
REFERENCES:88579, 85837

ALUM. ALLOY
2024

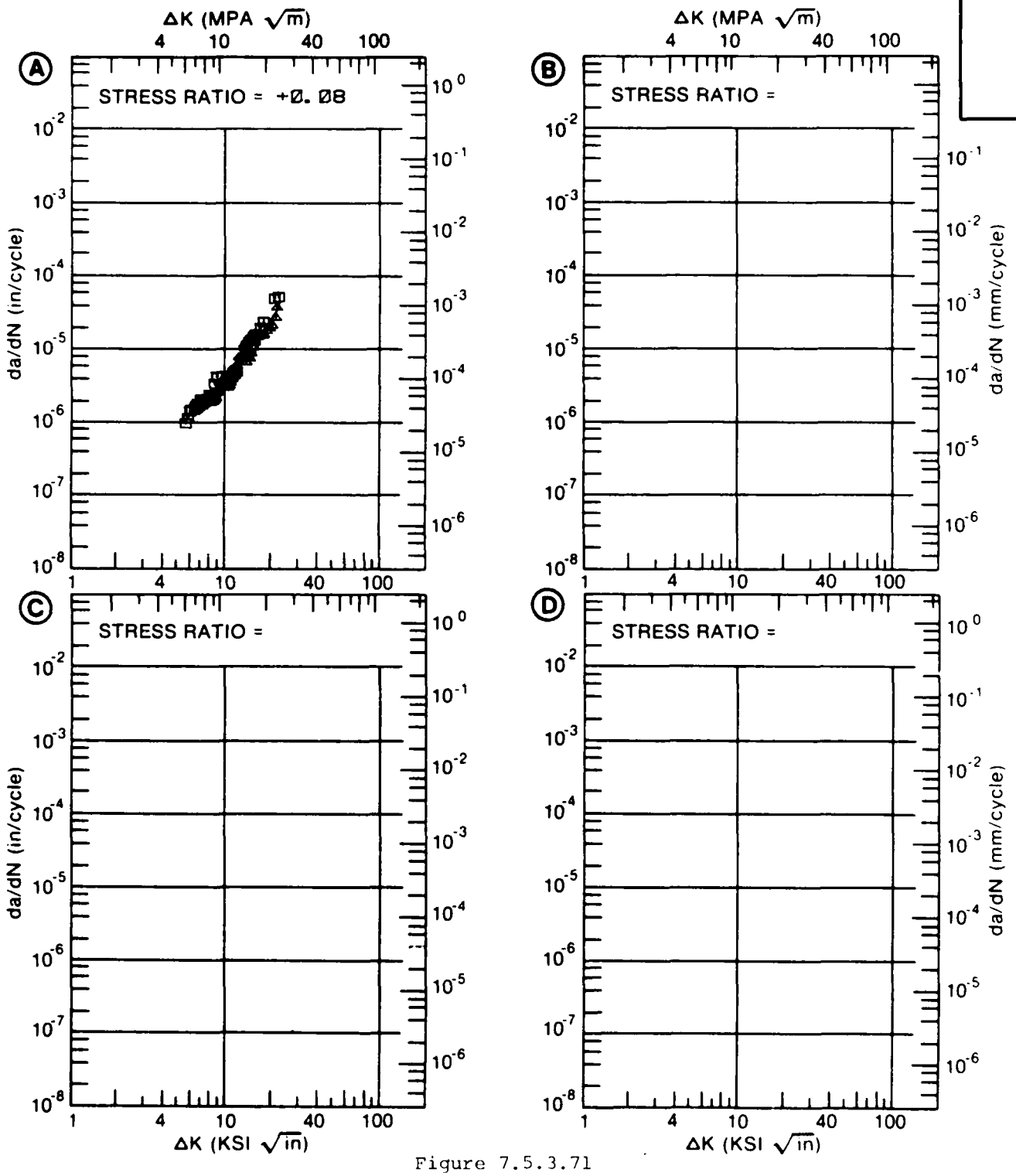


Figure 7.5.3.71

TABLE 7.5.3.72

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.72 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T852

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
		E=	R. T.			
		S. C. S.				
DELTA K MIN	A:	4.09	.688			
	B:					
	C:					
	D:					
		5.00	1.69			
		6.00	2.36			
		7.00	3.49			
		8.00	5.12			
		9.00	7.30			
		10.00	9.98			
		13.00	19.8			
DELTA K MAX	A:	14.86	25.5			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR		9.72
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T852
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 1.00 HZ

YIELD STRENGTH: 53.0 KSI
ULT. STRENGTH: 70.0 KSI
SPECIMEN THK: 1.004"
SPECIMEN WIDTH: 7.400"
REFERENCES:85837

ALUM. ALLOY

2024

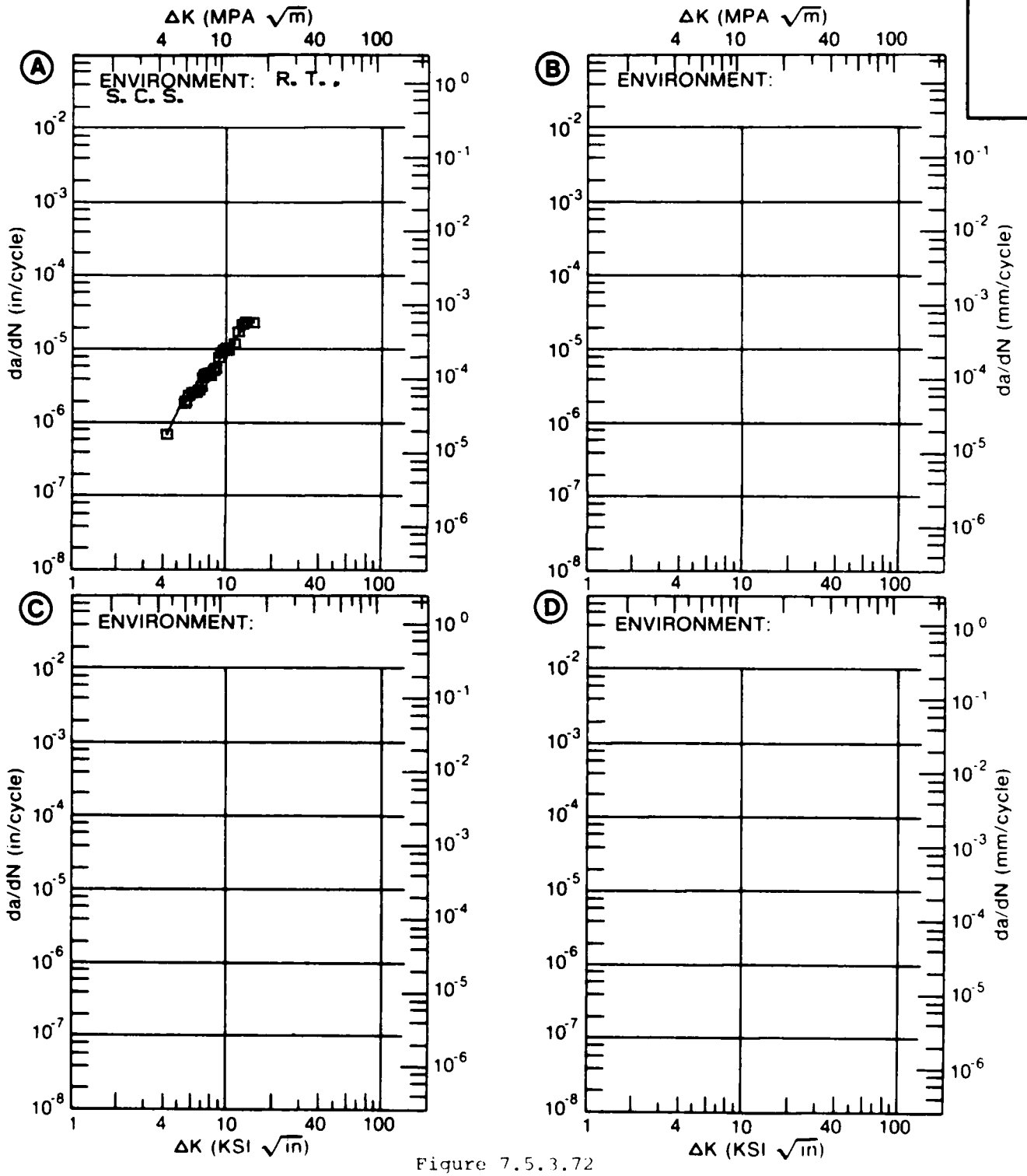


Figure 7.5.3.72

TABLE 7.5.3.73

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.73 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 2024
CONDITION: T852
ENVIRONMENT: R. T. , L. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			F(HZ)= 0.10	F(HZ)= 1.00		
DELTA K MIN	A:	6.91	1.57			
	B:	3.80		.373		
	C:					
	D:					
		4.00		.462		
		5.00		1.06		
		6.00		1.94		
		7.00	1.65	3.14		
		8.00	2.73	4.75		
		9.00	4.12	6.90		
		10.00	5.88	9.81		
		13.00	14.7	26.3		
		16.00	34.4			
DELTA K MAX	A:	16.31	37.6			
	B:	14.60		43.9		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			6.74	17.41		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T852
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 53.0 KSI
ULT. STRENGTH: 70.0 KSI
SPECIMEN THK: 1.000- 1.002"
SPECIMEN WIDTH: 7.400"
REFERENCES:85837

ALUM. ALLOY

2024

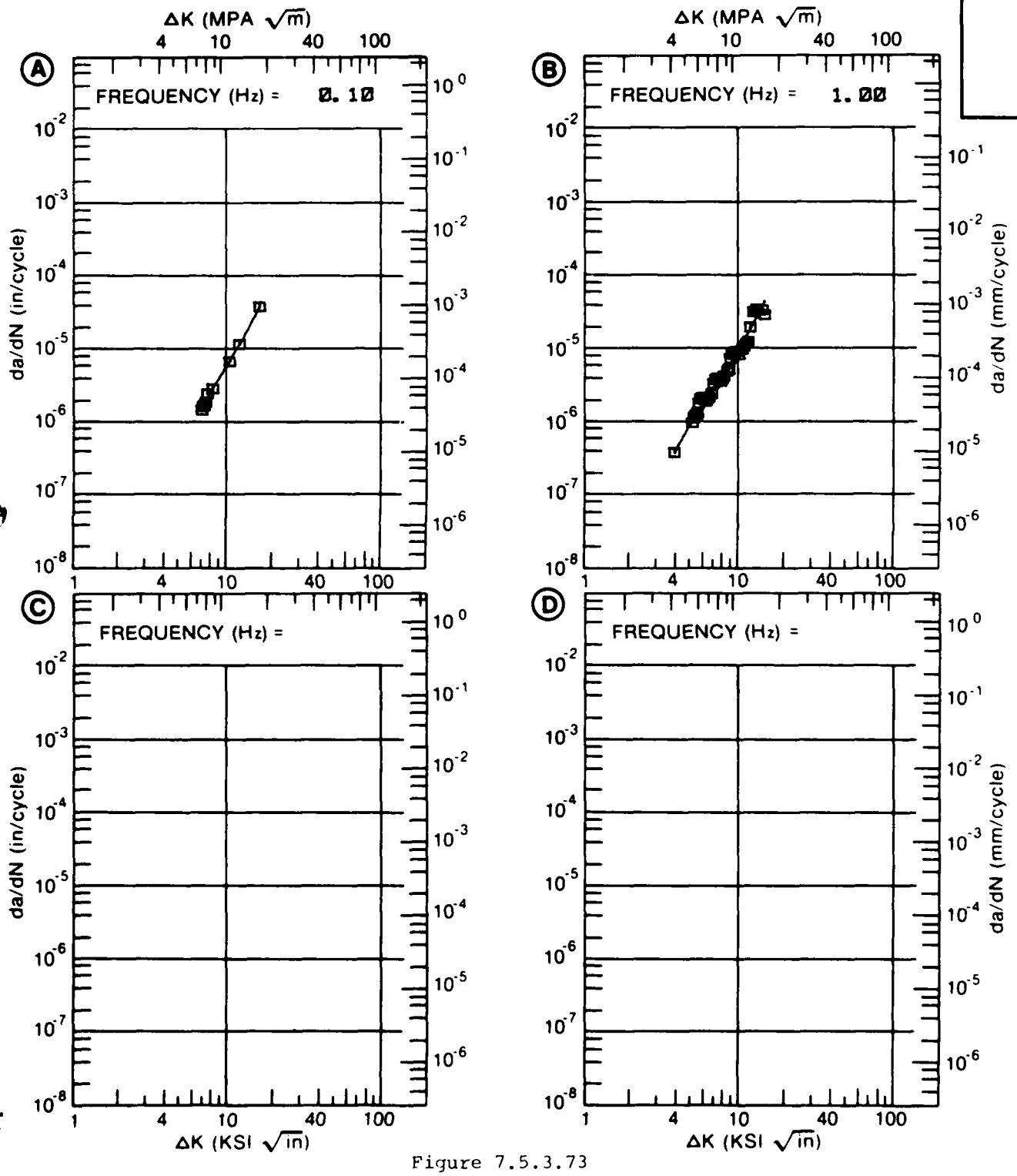


Figure 7.5.3.73

TABLE 7.5.3.74

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.74 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T852

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E=+ 265F L.H.A			
DELTA K MIN	A:	6.27	1.60			
	B:					
	C:					
	D:					
		7.00	2.50			
		8.00	4.25			
		9.00	6.77			
		10.00	10.3			
		13.00	29.2			
		16.00	74.9			
DELTA K MAX	A:	17.44	155.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 15.22

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T852
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.08
FREQUENCY: 6.00 HZ

YIELD STRENGTH: 54.0 KSI
ULT. STRENGTH: 68.0 KSI
SPECIMEN THK: 0.999"
SPECIMEN WIDTH: 7.400"
REFERENCES:85837

ALUM. ALLOY
2024

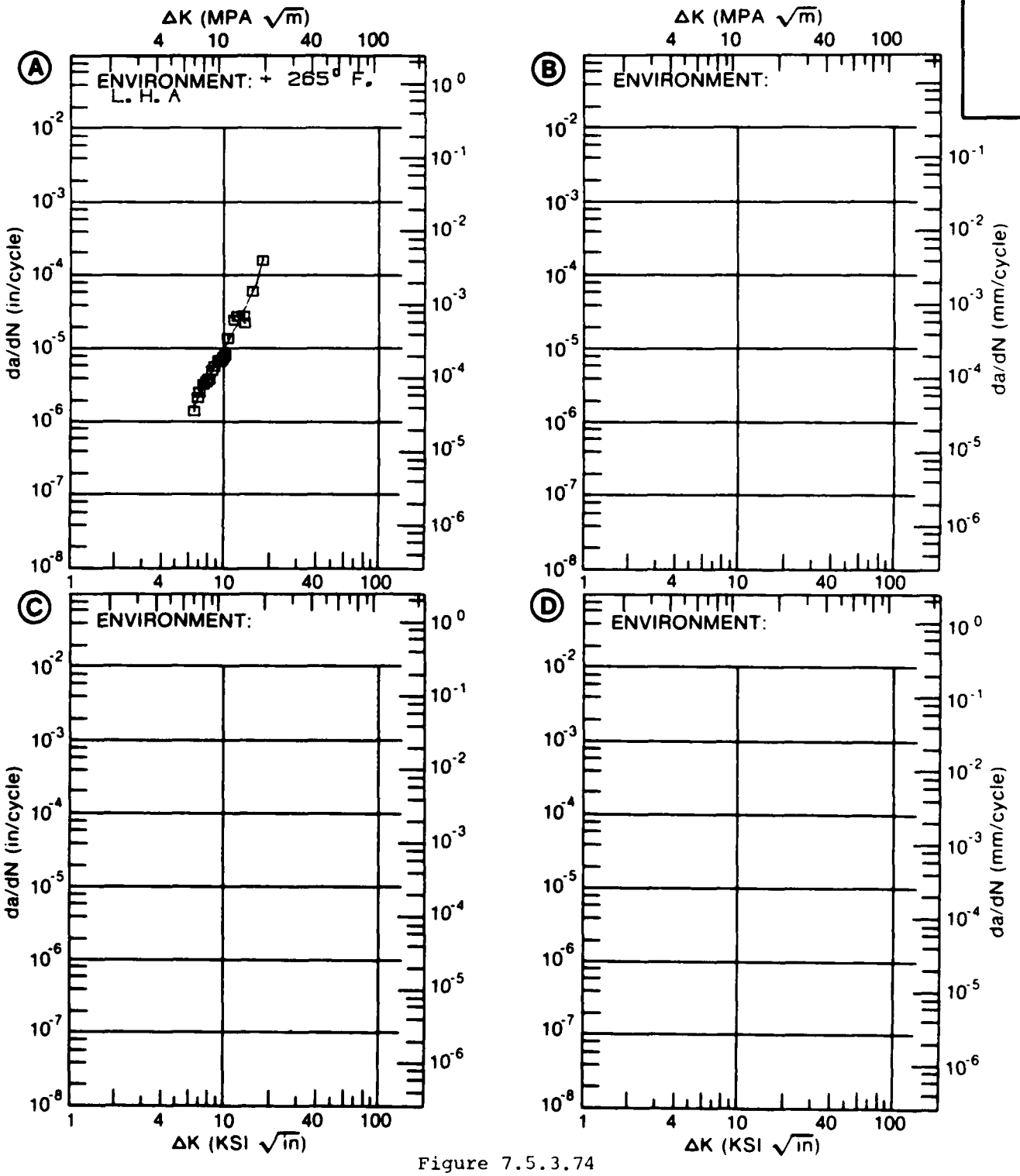


Figure 7.5.3.74

TABLE 7.5.3.75

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.75 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T852

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. S.T.W.			
DELTA K MIN	A:	8.03	2.81			
	B:					
	C:					
	D:					
		9.00	3.50			
		10.00	5.19			
		13.00	18.5			
DELTA K MAX	A:	15.99	36.5			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 22.22

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	1
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T852
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.08
FREQUENCY: 1.00 HZ

YIELD STRENGTH: 54.0 KSI
ULT. STRENGTH: 68.0 KSI
SPECIMEN THK: 0.998- 0.999"
SPECIMEN WIDTH: 7.400"
REFERENCES:85837

ALUM. ALLOY

2024

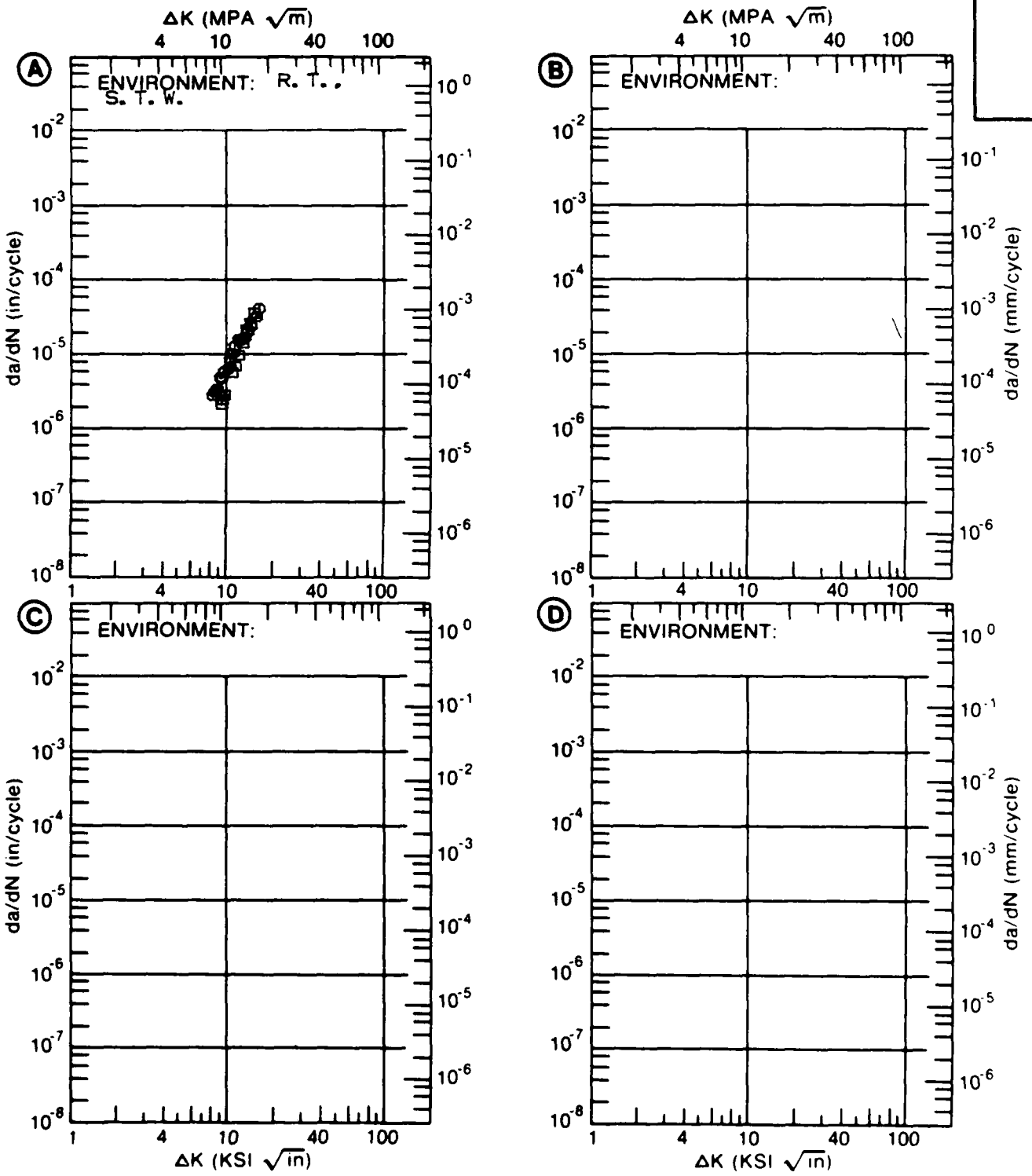


Figure 7.5.3.75

TABLE 7.5.3.76

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.76 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T852
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.33			
DELTA K MIN	A:	6.07	1.26			
	B:					
	C:					
	D:					
		7.00	2.13			
		8.00	3.14			
		9.00	4.25			
		10.00	5.59			
		13.00	13.5			
DELTA K MAX	A:	15.89	39.3			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 30.64

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	1
	0.8-1.25	4
	1.25-2.0	1
	>2.0	

CONDITION/HT: T852
FORM: 8.00"TH FORGING
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 5.17 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.750"
SPECIMEN WIDTH: 3.000"
REFERENCES:77720

ALUM. ALLOY

2024

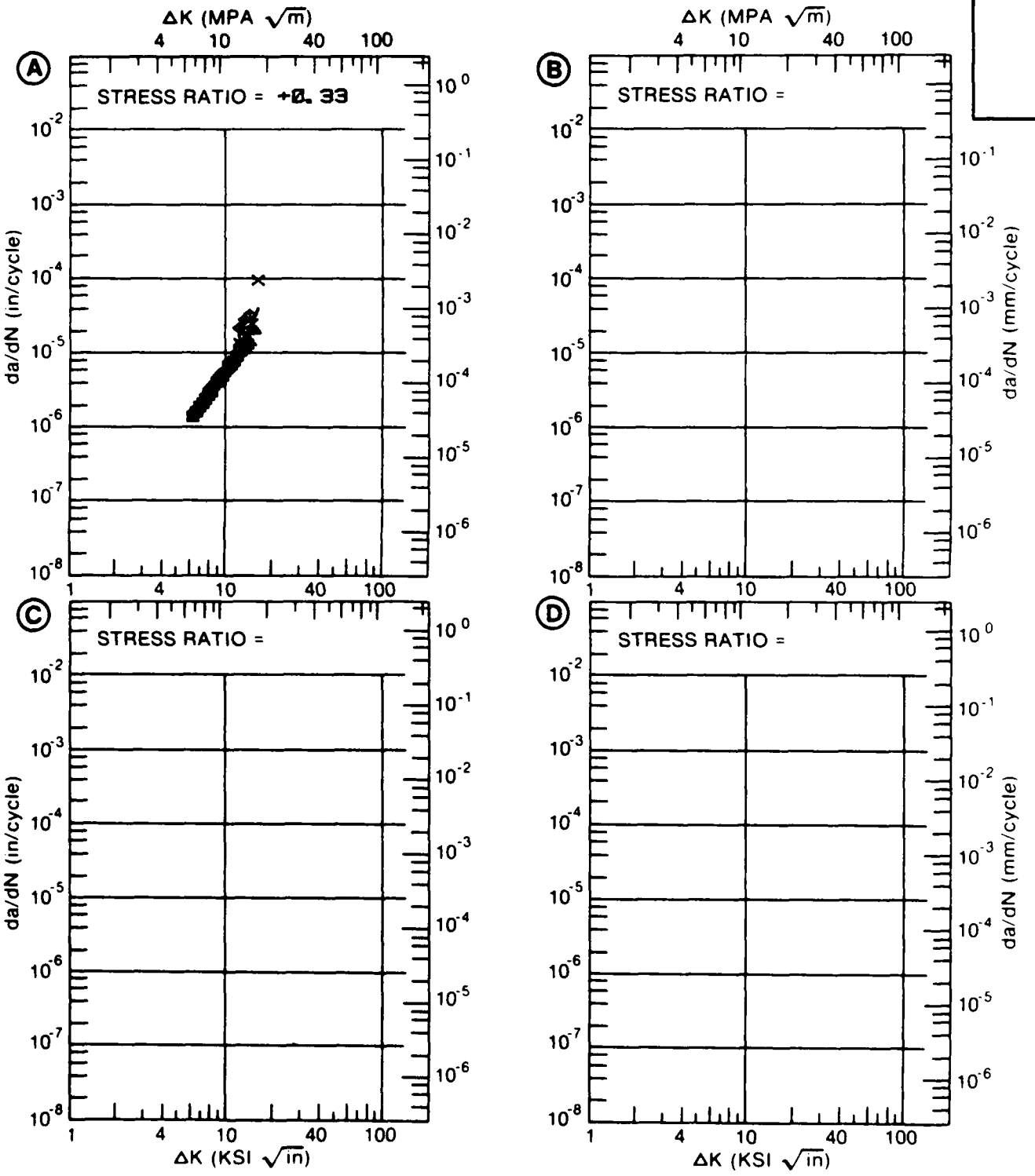


Figure 7.5.3.76

TABLE 7.5.3.77

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.77 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T861
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10			
DELTA K MIN	A:	20.67	104.			
	B:					
	C:					
	D:					
		25.00	236.			
		30.00	570.			
		35.00	3094.			
DELTA K MAX	A:	38.64	20484.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 31.76

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
0.0-0.5	1
0.5-0.8	4
0.8-1.25	3
1.25-2.0	1
>2.0	

CONDITION/HT: T861
FORM: 0.02"TH SHEET
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 0.10- 1.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 65.7 KSI
ULT. STRENGTH: 70.8 KSI
SPECIMEN THK: 0.020"
SPECIMEN WIDTH: 5.000"
REFERENCES:88578

ALUM. ALLOY

2024

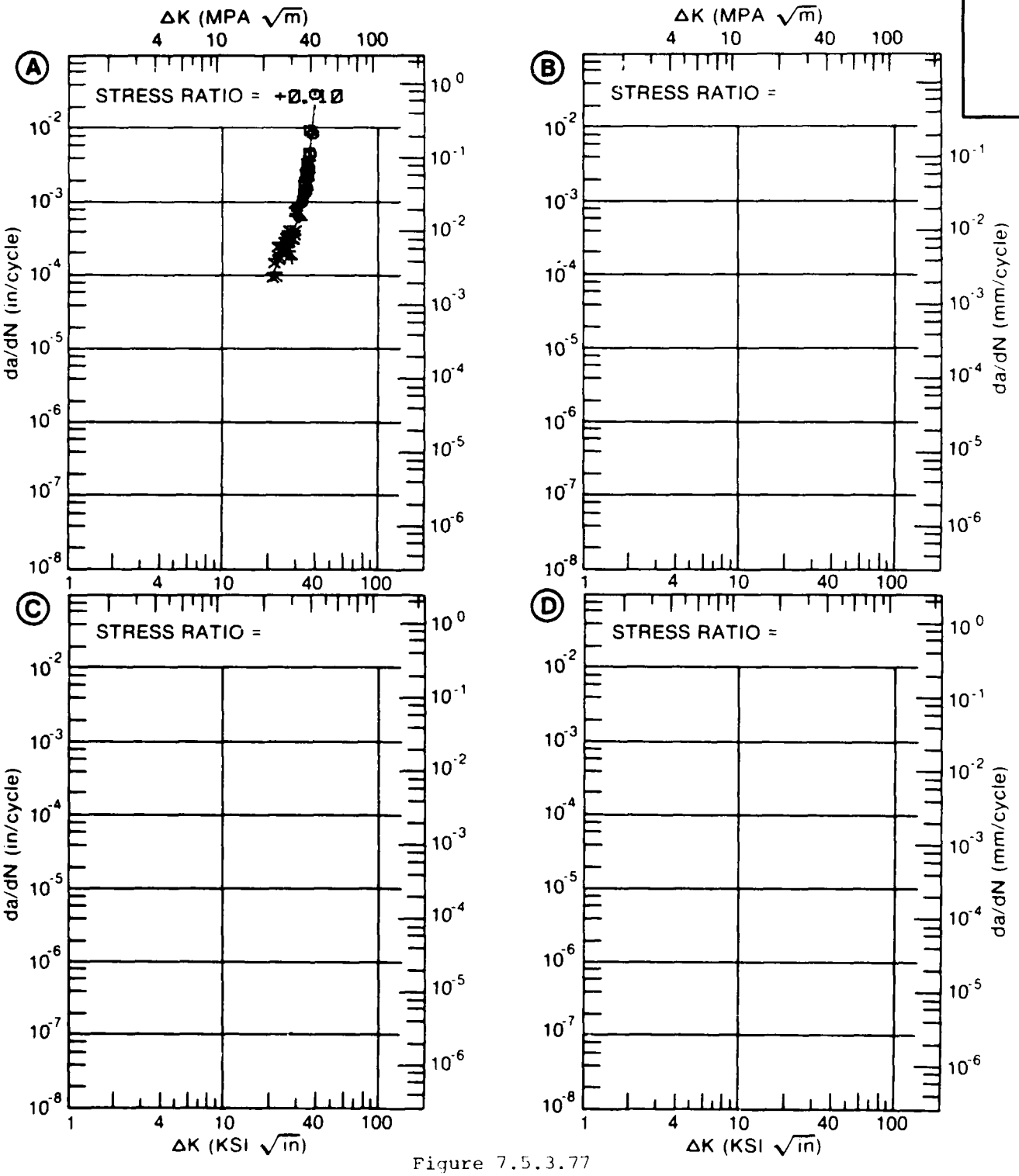


Figure 7.5.3.77

TABLE 7.5.3.78

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.78 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 2024
CONDITION: T861
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			F(HZ)= 2.00-9.00	F(HZ)= 10.00-13.00		
DELTA K MIN	A:	8.65	4.75			
	B:	3.38		.438		
	C:					
	D:					
		3.50		.463		
		4.00		.591		
		5.00		.998		
		6.00		1.68		
		7.00		2.73		
		8.00		4.27		
		9.00	6.59	6.44		
		10.00	8.06	9.37		
		13.00	17.4	24.1		
		16.00	40.3	49.8		
		20.00	99.9			
DELTA K MAX	A:	22.81	156.			
	B:	18.90		86.5		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			14.48	22.93		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	4	9		
		1.25-2.0				
		>2.0				

CONDITION/HT: T861
FORM: 0.02"TH SHEET
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.10
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 65.7 KSI
ULT. STRENGTH: 70.8 KSI
SPECIMEN THK: 0.020"
SPECIMEN WIDTH: 5.000"
REFERENCES:88578

ALUM. ALLOY

2024

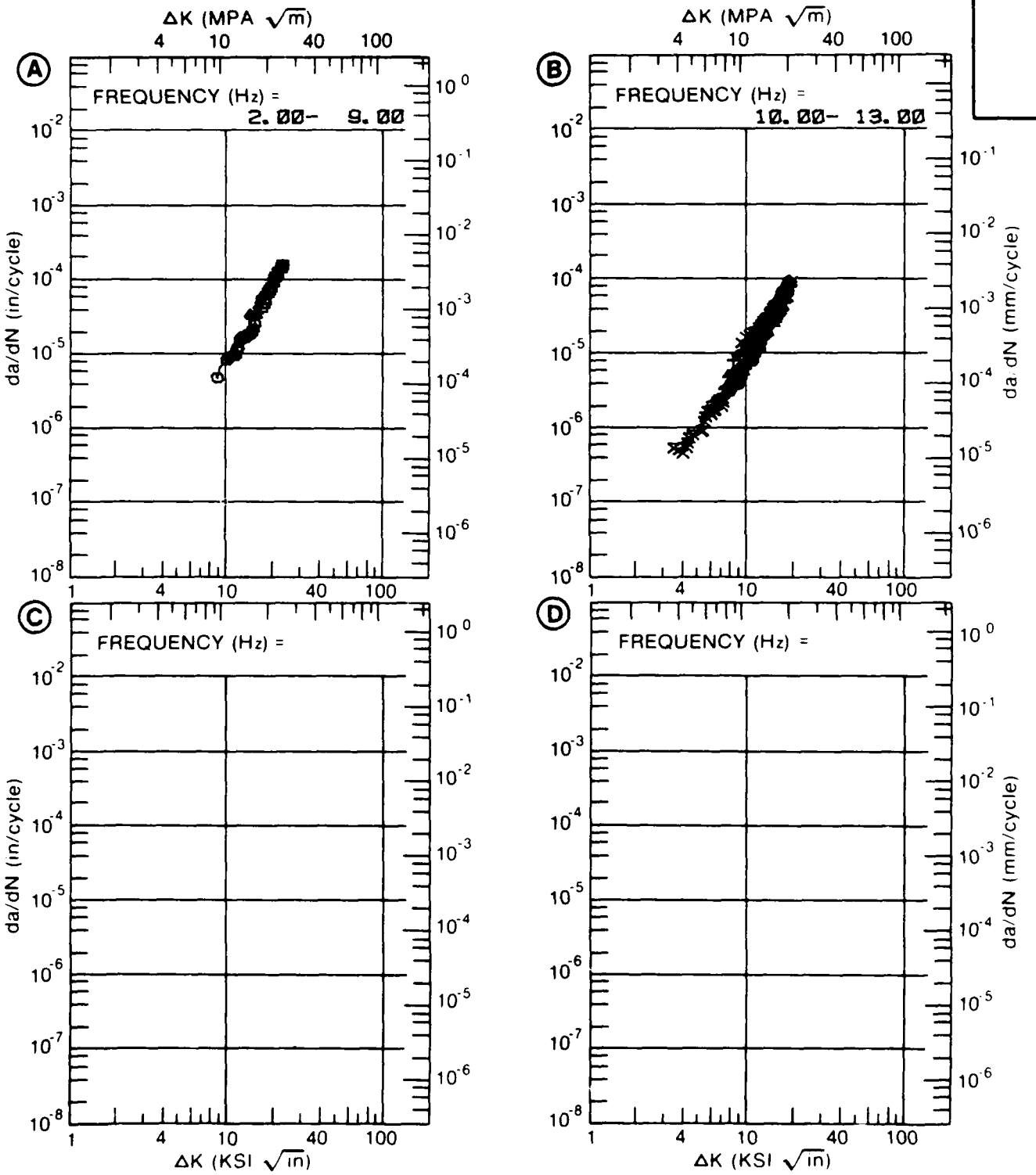


Figure 7.5.3.78

TABLE 7.5.3.79

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.79 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T861
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.08	R=+0.10		
DELTA K MIN	A: 4.55	.48			
	B:				
	C:				
	D:				
	5.00	.710			
	6.00	1.40			
	7.00	2.41			
	8.00	3.87			
	9.00	5.99			
	10.00	9.12			
	13.00	31.4			
	16.00	111.			
	20.00	595.			
	25.00	2845.			
DELTA K MAX	A: 26.94	11616.			
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		19.73	0.00		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
0.0-0.5	
0.5-0.8	
0.8-1.25	3
1.25-2.0	
>2.0	

CONDITION/HT: T861
FORM: 0.09"TH SHEET
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 0.10- 15.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 73.0 KSI
ULT. STRENGTH: 76.6 KSI
SPECIMEN THK: 0.090"
SPECIMEN WIDTH: 5.000"
REFERENCES:88578

ALUM. ALLOY

2024

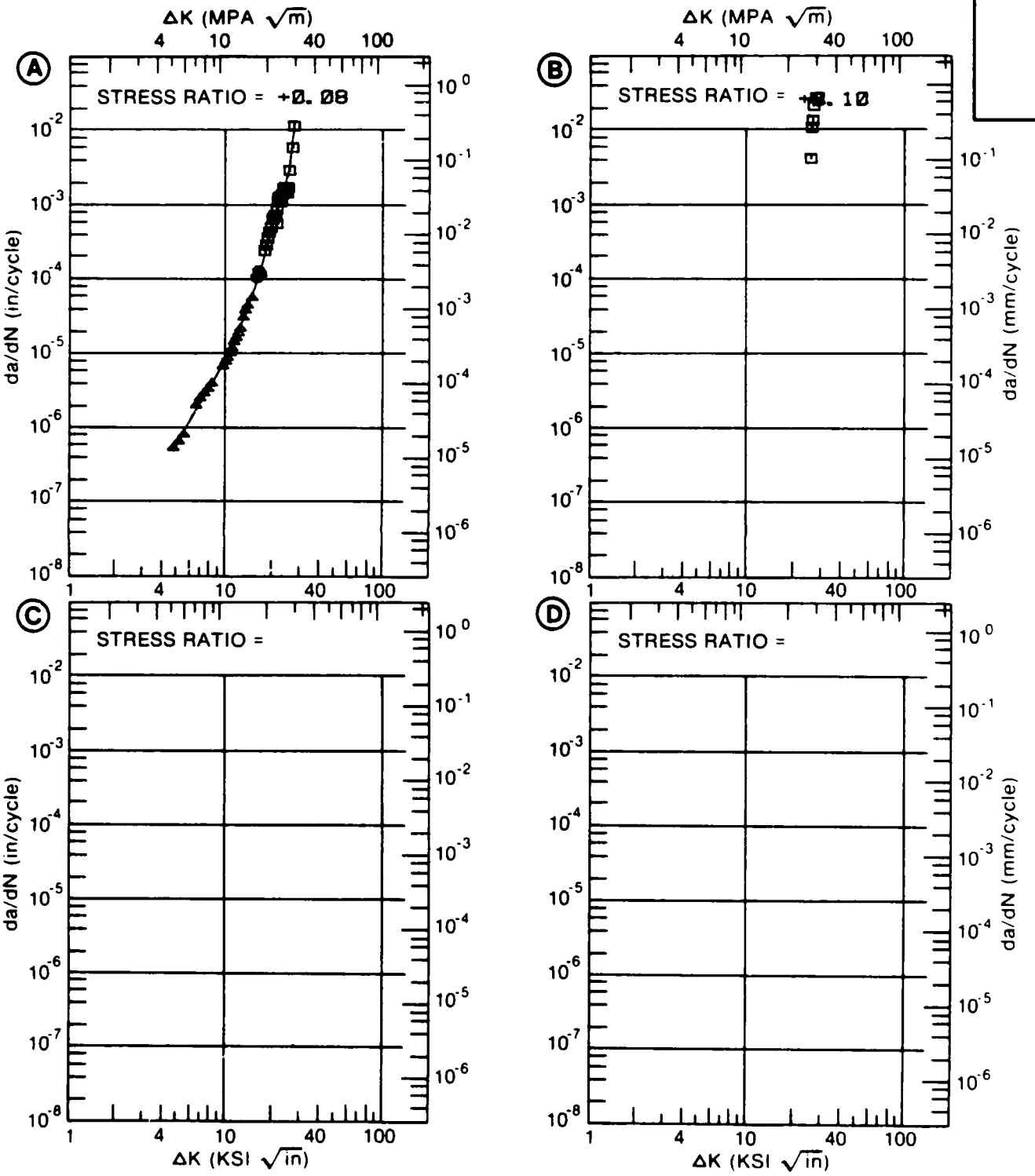


Figure 7.5.3.79

TABLE 7.5.3.80

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.80 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 2024
CONDITION: T861
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A F(HZ)= 0.10-0.40	B F(HZ)= 1.00-10.00	C F(HZ)= 10.00-20.00	D
DELTA K MIN	A:	16.87	167.			
	B:	13.66		65.8		
	C:	4.64			.90	
	D:					
		5.00			1.05	
		6.00			1.63	
		7.00			2.57	
		8.00			4.06	
		9.00			6.40	
		10.00			10.0	
		13.00			36.3	
		16.00		175.	121.	
		20.00	696.	642.		
		25.00	6906.			
DELTA K MAX	A:	27.35	22814.			
	B:	20.30		893.		
	C:	17.18			190.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			28.81	12.20	17.24	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8		1	1	
		0.8-1.25	2	3	6	
		1.25-2.0	1	1		
		>2.0				

CONDITION/HT: T861
FORM: 0.09"TH SHEET
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.10
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 73.0 KSI
ULT. STRENGTH: 76.6 KSI
SPECIMEN THK: 0.090"
SPECIMEN WIDTH: 5.000"
REFERENCES: 88578

ALUM. ALLOY
2024

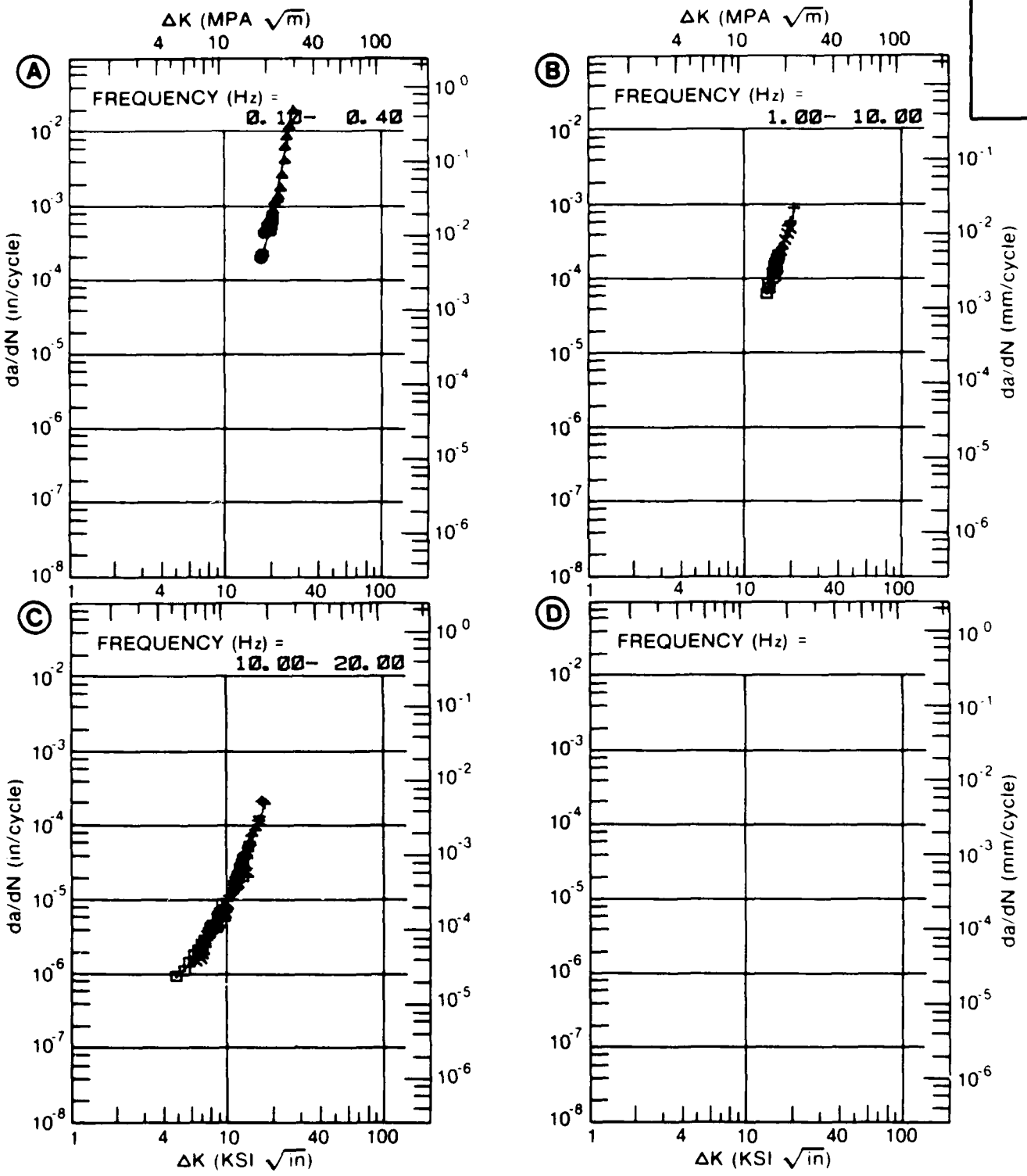


Figure 7.5.3.80

TABLE 7.5.3.81

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.81 INDICATING EFFECT OF FREQUENCY

MATERIAL: ALUMINUM 2024
CONDITION: T861
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A F(HZ)= 0.10	B F(HZ)= 1.00-5.00	C F(HZ)= 10.00-15.00	D
DELTA K MIN	A:	15.86	762.			
	B:	11.86		121.		
	C:	4.66			.582	
	D:					
		5.00			1.23	
		6.00			2.79	
		7.00			4.68	
		8.00			8.57	
		9.00			16.4	
		10.00			31.8	
		13.00		198.		
		16.00	730.			
DELTA K MAX	A:	18.41	3233.			
	B:	15.02		536.		
	C:	10.48			43.7	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			25.86	9.54	8.61	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T861
FORM: 0.09"TH SHEET
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.40
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 73.0 KSI
ULT. STRENGTH: 76.6 KSI
SPECIMEN THK: 0.090"
SPECIMEN WIDTH: 5.000"
REFERENCES:88578

ALUM. ALLOY

2024

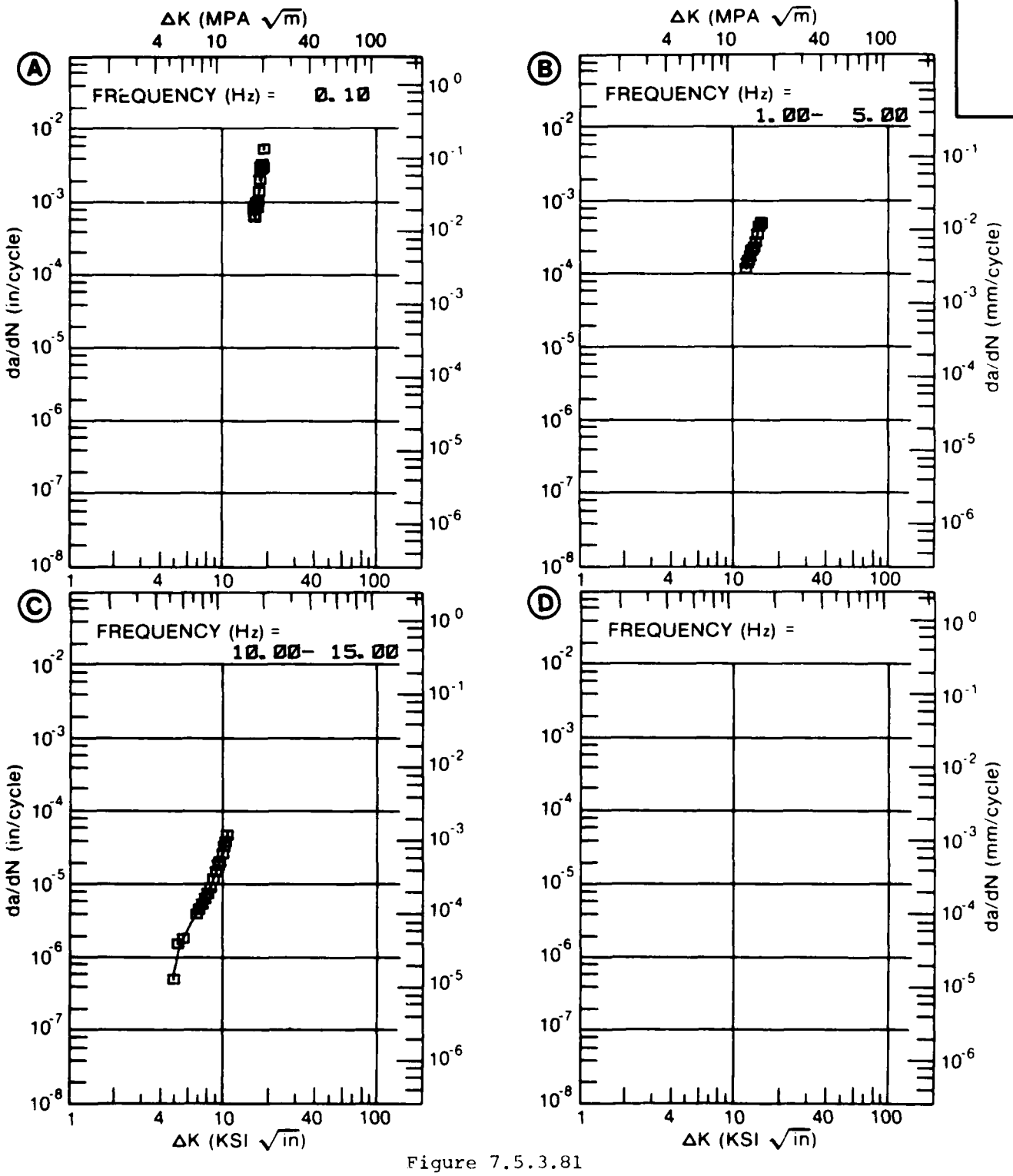


Figure 7.5.3.81

TABLE 7.5.3.82

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.82 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T861
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10			
DELTA K MIN	A:	9.69	6.16			
	B:					
	C:					
	D:					
		10.00	6.91			
		13.00	16.3			
		16.00	45.0			
DELTA K MAX	A:	17.41	84.3			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 16.15

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	4
	1.25-2.0	
	>2.0	

CONDITION/HT: T861
FORM: 0.25"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 10.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 70.6 KSI
ULT. STRENGTH: 74.9 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 5.000"
REFERENCES:88578

ALUM. ALLOY
2024

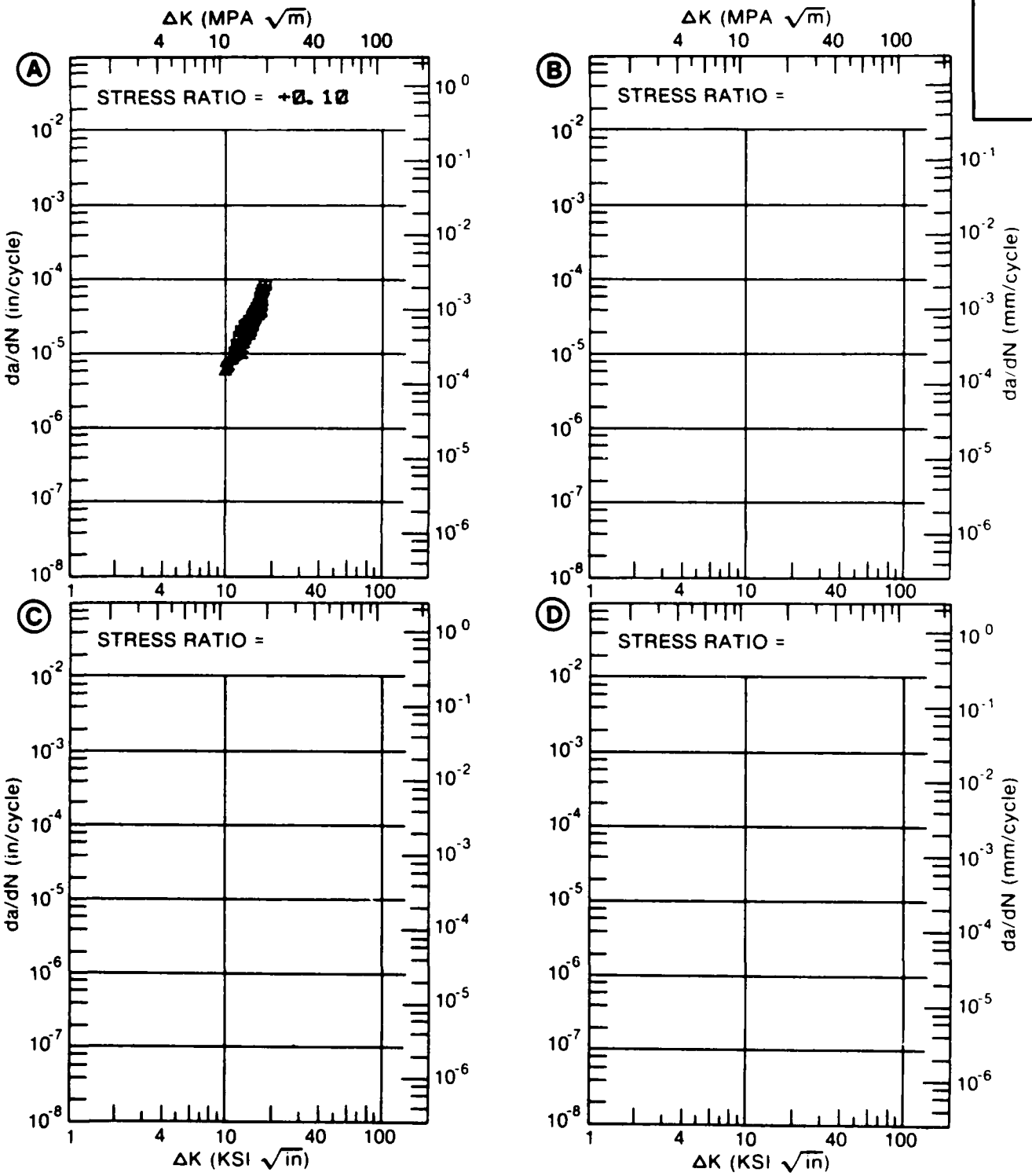


Figure 7.5.3.82

TABLE 7.5.3.83

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.83 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T861
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.40		
DELTA K MIN	A:	11.03	11.8			
	B:					
	C:					
	D:					
		13.00	17.4			
		16.00	38.5			
		20.00	127.			
		25.00	580.			
		30.00	2479.			
		35.00	9690.			
DELTA K MAX	A:	36.01	12618.			
	B:					
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			21.52	0.00		

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	3
	1.25-2.0	1
	>2.0	

CONDITION/HT: T861
FORM: 0.25"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 1.00- 5.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 70.6 KSI
ULT. STRENGTH: 74.9 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 5.000"
REFERENCES:88578

ALUM. ALLOY

2024

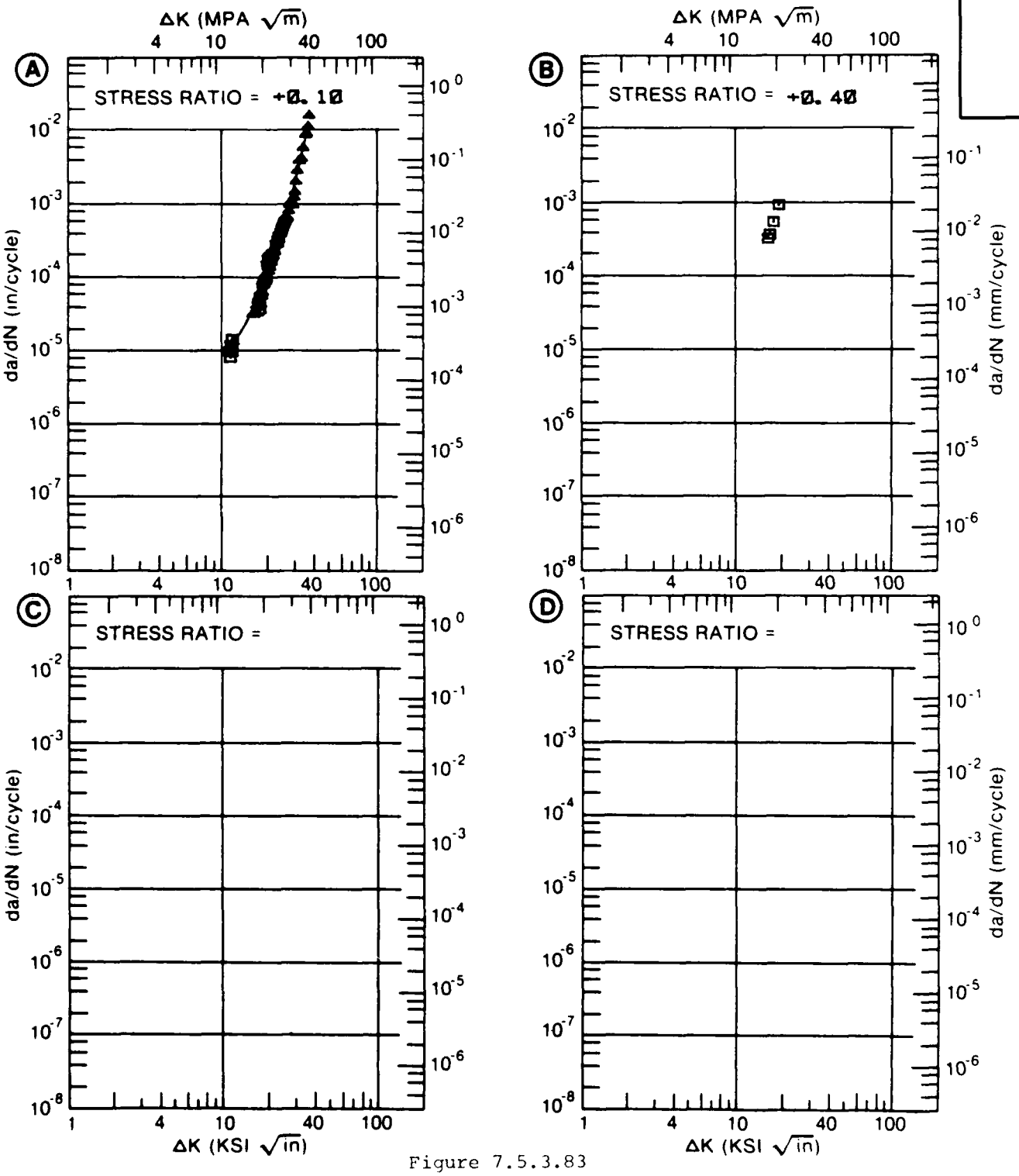


Figure 7.5.3.83

TABLE 7.5.3.84

SUSTAINED CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.84 INDICATING EFFECT OF FORM

MATERIAL: ALUMINUM 2024
CONDITION: T351
ENVIRONMENT: 3X/DAY-3.5NACL

K MAX (KSI*IN**1/2)			DA/DT (10**-6 IN/HOUR) A T(IN)= 1.0 PLATE	B T(IN)= 1.2 PLATE	C T(IN)= 2.0 PLATE	D
K MAX MIN	A:	14.00	826.			
	B:	9.50		312.		
	C:					
	D:					
		10.00		337.		
		13.00		518.		
		16.00	875.	743.		
		20.00	1006.	1087.		
		25.00	1141.	1535.		
		30.00	1184.	1947.		
		35.00	1130.	2278.		
K MAX MAX	A:	40.00	1001.			
	B:	39.00		2472.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			17.25	2.55	0.00	

CONDITION/HT: T351
ENVIRONMENT:3X/DAY-3.5NACL
SPECIMEN TYPE: DCB
ORIENTATION: S-L
YIELD STRENGTH:
ULT. STRENGTH:

SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 5.000"
CRACK LENGTH (A_o):
K_{ISCC}:
REFERENCES:78313, 84284

ALUM. ALLOY
2024

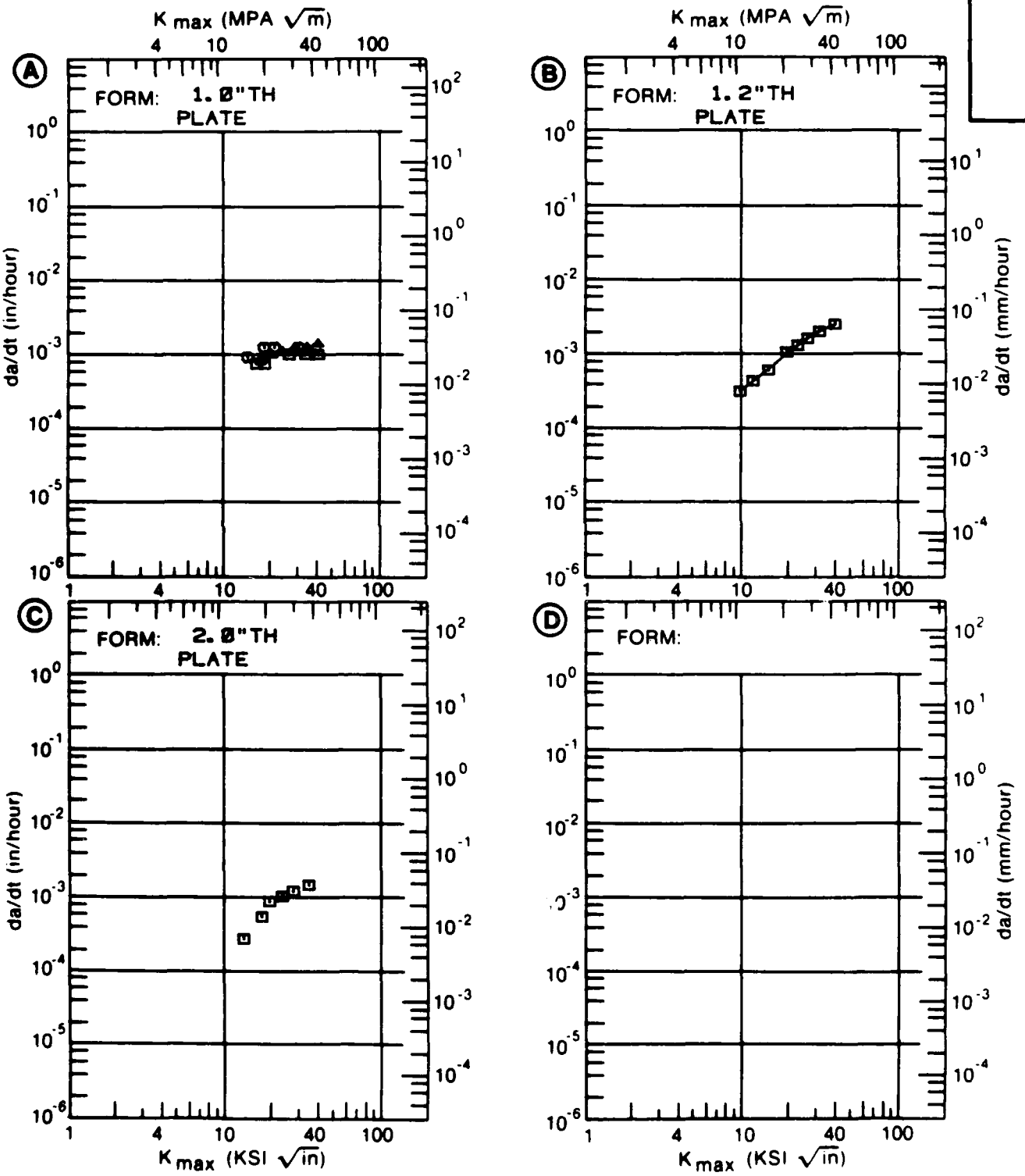


Figure 7.5.3.84

TABLE 7.5.3.85

SUSTAINED CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.5.3.85 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2024
CONDITION: T4

K MAX (KSI*IN**1/2)			DA/DT (10**-6 IN/HOUR) A	B	C	D
			E= WET 3X/DAY WITH 3.5% NACL			
K MAX MIN	A:	10.00	376.			
	B:					
	C:					
	D:					
		13.00	545.			
		16.00	654.			
		20.00	736.			
		25.00	788.			
		30.00	822.			
		35.00	856.			
		40.00	897.			
		50.00	1013.			
K MAX MAX	A:	60.00	1189.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 8.21

CONDITION/HT: T4
FORM: FORGING
SPECIMEN TYPE: DCB
ORIENTATION: S-L
YIELD STRENGTH:
ULT. STRENGTH:

SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 5.000"
CRACK LENGTH (A_o):
K_{ISCC}:
REFERENCES: 78313

ALUM. ALLOY

2024

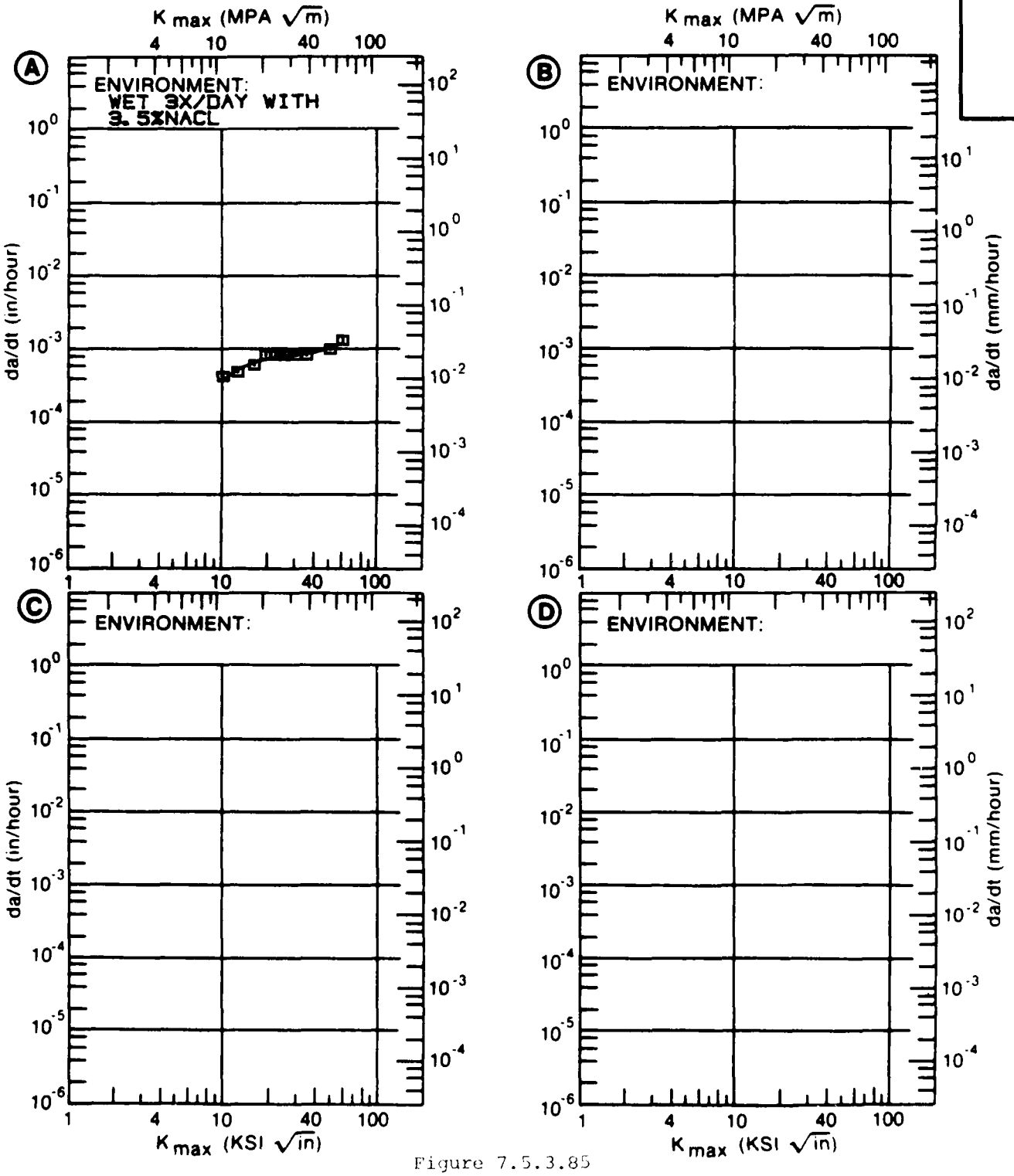


Figure 7.5.3.85

TABLE 7.5.3.86

ALUMINUM 2024 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SG)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T351	P	2.50	R.T.	S-L	42.4	INDUSTRIAL ATM	2.000	1.000	CT	----	21.20	10.00			----	1973	86688
T351	P	2.50	R.T.	S-L	42.4	SALT-DICHROMATE-ACETATE	2.000	1.000	CT	----	21.20	9.00			----	1973	86688
T351	P	2.50	R.T.	S-L	42.4	SEACOAST ATM	2.000	1.000	CT	----	21.20	10.00			----	1973	86688
T351	P	1.00	R.T.	S-L	47.0	3.5 PCT NACL	5.000	1.000	DCB	----	50.00	10.00			----	1969	78313
T352	F	6.00	R.T.	S-L	43.3	SEAWATER	1.400	0.700	DCB	----	27.60	23.00*			----	1972	82675
T851	P	3.20	R.T.	L-T	59.3	AIR 78PCT RH	5.000	1.250	TDCB	----	18.60	22.70			----	1971	84360
T851	P	3.20	R.T.	L-T	59.3	DIST WATER	5.000	1.250	TDCB	----	18.60	22.00			----	1971	84360
T851	P	3.20	R.T.	L-T	59.3	JP-4 FUEL	5.000	1.250	TDCB	----	18.60	21.60			----	1971	84360
T851	P	3.20	R.T.	L-T	59.3	3.5 PCT NACL	5.000	1.250	TDCB	----	18.60	21.50			----	1971	84360
T851	P	2.50	R.T.	S-L	61.8	INDUSTRIAL ATM	2.000	1.000	CT	----	16.70	16.00			----	1973	86688
T851	P	2.50	R.T.	S-L	61.8	SALT-DICHROMATE-ACETATE	2.000	1.000	CT	----	16.70	15.00			----	1973	86688
T851	P	2.50	R.T.	S-L	61.8	SEACOAST ATM	2.000	1.000	CT	----	16.70	16.00			----	1973	86688
T852	F	3.00	R.T.	L-T	53.0	S.C.S.	5.500	1.000	DCB	----	34.00	22.10			64920	1976	RI006
		3.00			53.0		5.500	1.000	DCB	----	34.00	34.00			61680	1976	RI006
													28.1/	8.4			
T852	F	3.00	R.T.	L-T	58.0	S.T.W.	5.500	1.000	DCB	----	37.00	22.50			76140	1976	RI006
		3.00			58.0		5.500	1.000	DCB	----	37.00	23.50			76140	1976	RI006
		3.00			58.0		5.500	1.000	DCB	----	37.00	22.50			76140	1976	RI006
													22.5/	0.0			

*NOTE-DATA WHICH DO NOT MEET MINIMUM SPECIMEN THICKNESS REQUIREMENTS OF 2.5(KISCC/TYS)SQUARED

TABLE 7.5.3.86 (Con't)

ALUMINUM 2024 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SQ)	CRACK LENGTH (IN) A	K(0) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T852	F	3.00	R.T.	T-L	54.0	S.T.W	5.500	1.000	DCB	----	34.00	19.80			133680	1976	RI006
T852	F	3.00	R.T.	T-L	54.0	S.T.W.	5.500	1.000	DCB	----	34.00	> 21.00			133680	1976	RI006
		3.00			54.0		5.500	1.000	DCB	----	34.00	> 21.00			133680	1976	RI006
		3.00			54.0		5.500	1.000	DCB	----	34.00	20.50			133680	1976	RI006
T852	F	3.00	R.T.	S-L	----	S.T.W.	5.500	1.000	DCB	----	37.00	20.00			133680	1976	RI006
		3.00			----		5.500	1.000	DCB	----	37.00	> 13.50			133680	1976	RI006
T852	F	6.00	R.T.	S-L	53.9	SEAWATER	1.400	0.700	CANT	----	17.60	14.00			----	1972	82675

TABLE 7.6.2.1

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																		
T3	S	0.01	R.T.	L-T	51.8	15.000	0.009	7.500	8.890	---	21.20	86.53*		102.53*			1966	86734
T3	S	0.01	R.T.	L-T	51.8	15.000	0.010	7.500	8.840	---	21.40	87.35*		102.84*			1966	86734
T3	S	0.02	R.T.	L-T	42.3	15.000	0.019	7.500	9.900	---	21.90	89.39*		121.04*			1966	86734
T3	S	0.03	R.T.	L-T	53.0	15.000	0.030	7.500	9.600	---	22.30	91.02*		118.30*			1966	86734
		0.03			53.0	15.000	0.030	7.500	9.330	---	22.80	93.06*		116.69*			1966	86734
T3	S	0.04	R.T.	L-T	45.0	11.800	0.039	4.720	6.530	18.10	24.20	73.26*		96.48*			1966	70519
		0.04			45.0	11.800	0.039	4.720	6.170	17.20	23.90	72.35*		90.15*			1966	70519
		0.04			45.0	11.800	0.039	3.540	5.240	20.40	29.20	72.95*		95.69*			1966	70519
		0.04			45.0	11.800	0.039	1.770	2.600	25.60	36.00	60.87*		75.01*			1966	70519
		0.04			45.0	11.800	0.039	1.770	2.400	30.50	36.20	61.21*		72.14*			1966	70519
		0.04			45.0	11.800	0.039	1.770	2.950	29.80	36.20	61.21*		81.07*			1966	70519
		0.04			45.0	11.800	0.039	1.180	1.930	33.80	40.10	54.93*		71.00*			1966	70519
		0.04			45.0	11.800	0.039	1.180	1.610	35.20	39.80	54.52*		64.03*			1966	70519
		0.04			45.0	11.800	0.039	3.540	5.150	20.60	29.50	73.70*		95.37*			1966	70519
T3	S	0.06	R.T.	L-T	52.8	48.000	0.060	24.000	29.850	---	19.10	139.46		174.83*			1966	86734
		0.06			52.8	48.000	0.061	24.000	28.250	---	19.60	143.11	141.3/ 2.6	168.24*	----/	---	1966	86734
T3	S	0.08	R.T.	L-T	50.1	5.900	0.079	1.580	1.890	31.90	37.30	61.50*		68.66*			1966	84366
		0.08			50.1	5.900	0.079	1.580	1.890	32.60	37.30	61.50*		68.66*			1966	84366
		0.08			50.1	5.900	0.079	1.180	----	---	41.20	57.52*		----			1966	84366
		0.08			50.1	5.900	0.079	0.790	1.020	43.00	46.00	51.82*		59.32*			1966	84366
		0.08			50.1	5.900	0.079	0.790	----	42.30	46.10	51.93*		----			1966	84366
		0.08			50.1	5.900	0.079	3.150	3.540	19.40	22.50	61.21*		69.20*			1966	84366
		0.08			50.1	5.900	0.079	3.150	3.460	17.60	22.10	60.13*		66.25*			1966	84366
		0.08			50.1	5.900	0.079	1.180	1.380	35.60	41.20	57.52*		62.79*			1966	84366
		0.08			50.1	5.900	0.079	0.790	0.980	42.70	45.90	51.70*		57.94*			1966	84366
		0.08			50.1	5.900	0.079	1.580	2.120	---	37.30	61.50*		74.05*			1966	84366
		0.08			50.4	5.900	0.079	0.790	1.140	---	43.70	49.23*		59.86*			1966	84366
		0.08			50.4	5.900	0.079	1.580	2.120	---	36.00	59.36*		71.47*			1966	84366
		0.08			50.4	5.900	0.079	0.790	1.220	40.30	43.90	49.45*		62.43*			1966	84366

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) MEAN (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																	
T3	S	0.08	R.T.	L-T	50.4	5.900	0.079	1.580	2.010	33.30	36.20	59.69*		69.35*		1966	84366
		0.08			50.4	5.900	0.079	3.150	3.540	15.90	21.40	58.22*		65.82*		1966	84366
		0.08			50.4	5.900	0.079	3.150	3.540	17.20	21.40	58.22*		65.82*		1966	84366
		0.08			50.4	5.900	0.079	1.180	1.610	36.70	40.30	56.26*		67.20*		1966	84366
		0.08			50.4	5.900	0.079	1.180	1.500	36.60	40.10	55.98*		64.13*		1966	84366
		0.08			50.4	5.900	0.079	1.180	1.610	35.20	39.80	55.56*		66.37*		1966	84366
		0.08			50.4	5.900	0.079	1.580	2.120	30.80	35.90	59.20*		71.27*		1966	84366
		0.08			50.4	5.900	0.079	0.790	1.180	39.30	43.10	48.55*		60.17*		1966	84366
		0.08			51.8	5.900	0.079	3.150	3.580	20.60	21.30	57.95*		66.37*		1966	84366
		0.08			51.8	5.900	0.079	1.180	1.580	34.60	40.90	57.10*		67.44*		1966	84366
		0.08			51.8	5.900	0.079	0.790	1.220	45.30	46.20	52.04*		65.70*		1965	70485
		0.08			51.8	5.900	0.079	0.790	1.140	43.10	44.00	49.56*		60.27*		1965	70485
		0.08			51.8	5.900	0.079	3.150	3.500	19.60	20.50	55.77*		62.24*		1966	84366
		0.08			51.8	5.900	0.079	1.180	1.530	33.60	41.10	57.38*		66.49*		1966	84366
		0.08			51.8	5.900	0.079	0.390	0.630	49.50	50.00	39.24*		50.09*		1965	70485
		0.08			51.8	5.900	0.079	0.790	1.140	43.10	44.00	49.56*		60.27*		1966	84366
		0.08			51.8	5.900	0.079	3.150	3.500	19.60	20.50	55.77*		62.24*		1965	70485
		0.08			51.8	5.900	0.079	1.580	2.160	31.20	36.60	60.35*		73.59*		1966	84366
		0.08			51.8	5.900	0.079	1.580	2.050	29.60	37.00	61.01*		71.82*		1966	84366
		0.08			51.8	5.900	0.079	1.580	2.160	31.20	36.60	60.35*		73.59*		1965	70485
		0.08			51.8	5.900	0.079	0.790	1.220	45.30	46.20	52.04*		65.70*		1966	84366
		0.08			51.8	5.900	0.079	1.580	2.050	29.60	37.00	61.01*		71.82*		1965	70485
		0.08			51.8	5.900	0.079	3.150	3.500	20.20	21.20	57.68*		64.37*		1965	70485
		0.08			51.8	5.900	0.079	3.150	3.580	20.60	21.30	57.95*		66.37*		1965	70485
		0.08			51.8	5.900	0.079	0.790	1.140	46.30	46.90	52.83*		64.25*		1966	84366
		0.08			51.8	5.900	0.079	0.790	1.140	46.20	46.80	52.72*		64.11*		1965	70485
		0.08			51.8	5.900	0.079	1.180	1.500	36.10	41.10	57.38*		65.73*		1966	84366
		0.08			51.8	5.900	0.079	1.580	2.090	33.40	36.60	60.35*		71.97*		1965	70485
		0.08			51.8	5.900	0.079	3.150	3.500	20.20	21.20	57.68*		64.37*		1966	84366
		0.08			51.8	5.900	0.079	0.390	0.670	49.10	49.40	38.77*		51.09*		1965	70485
		0.08			51.8	5.900	0.079	1.580	2.080	33.40	36.60	60.35*		71.73*		1966	84366
		0.08			53.0	5.900	0.079	1.180	1.650	37.20	40.70	56.82*		68.87*		1966	84366
		0.08			53.0	5.900	0.079	1.180	1.580	36.40	40.90	57.10*		67.44*		1966	84366
		0.08			53.0	5.900	0.079	0.790	1.140	---	45.00	50.69*		61.64*		1966	84366
		0.08			53.0	5.900	0.079	1.180	1.610	36.60	40.00	55.84*		66.70*		1966	84366

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																	
T3	S	0.08	R.T.	L-T	53.0	5.900	0.079	0.790	----	---	45.00	50.69*		----		1966	84366
		0.08			53.0	5.900	0.079	3.150	3.620	---	21.80	59.31*		68.83*		1966	84366
		0.08			53.0	5.900	0.079	0.790	----	---	44.90	50.58*		----		1966	84366
		0.08			53.0	5.900	0.079	1.580	2.050	---	37.70	62.16*		73.18*		1966	84366
		0.08			53.0	5.900	0.079	3.150	3.580	---	21.10	57.41*		65.75*		1966	84366
		0.08			53.0	5.900	0.079	1.580	1.970	29.00	36.20	59.69*		68.45*		1966	84366
		0.08			53.0	5.900	0.079	1.580	2.120	30.70	35.20	58.04*		69.88*		1966	84366
T3	S	0.08	R.T.	L-T	51.8	11.800	0.079	1.770	2.480	30.50	41.90	70.85*		85.03*		1965	70485
		0.08			51.8	11.800	0.079	1.180	1.580	31.00	45.10	61.78*		71.85*		1965	70485
		0.08			51.8	11.800	0.079	1.770	2.280	28.50	42.10	71.19*		81.56*		1965	70485
		0.08			51.8	11.800	0.079	4.720	5.830	17.40	28.50	86.28*		102.09*		1965	70485
		0.08			51.8	11.800	0.079	3.540	4.540	24.90	34.00	84.94*		100.09*		1965	70485
		0.08			51.8	11.800	0.079	3.540	4.610	25.80	33.80	84.44*		100.59*		1965	70485
		0.08			51.8	11.800	0.079	4.720	5.710	17.20	28.30	85.67*		99.56*		1965	70485
		0.08			51.8	11.800	0.079	1.180	1.610	33.40	45.80	62.74*		73.68*		1965	70485
		0.08			51.8	11.800	0.079	1.770	2.480	32.30	42.10	71.19*		85.43*		1965	70485
		0.08			51.8	11.800	0.079	1.180	2.240	32.00	45.50	62.33*		87.30*		1965	70485
T3	S	0.08	R.T.	L-T	51.8	23.600	0.079	1.180	2.620	37.80	49.20	67.09*		100.58*		1965	70485
		0.08			51.8	23.600	0.079	3.150	4.450	25.60	35.40	79.62		95.70*		1965	70485
		0.08			51.8	23.600	0.079	1.580	----	---	46.30	73.14*		----		1965	70485
		0.08			51.8	23.600	0.079	1.580	2.520	40.70	48.60	76.78*		97.38*		1965	70485
		0.08			51.8	23.600	0.079	4.720	5.750	22.20	29.80	83.20		92.99		1965	70485
		0.08			51.8	23.600	0.079	6.300	9.450	18.00	30.90	101.71*		132.39*		1965	70485
		0.08			51.8	23.600	0.079	8.660	11.720	13.20	25.20	101.50		128.24*		1965	70485
		0.08			51.8	23.600	0.079	15.750	----	---	13.70	96.46		----		1965	70485
		0.08			51.8	23.600	0.079	1.580	2.440	40.71	47.00	74.25*		92.62*		1965	70485
		0.08			51.8	23.600	0.079	3.150	4.490	25.30	37.00	83.22*		100.51*		1965	70485
		0.08			51.8	23.600	0.079	1.180	1.850	41.90	49.50	66.13*		82.99*		1965	70485
		0.08			51.8	23.600	0.079	3.150	4.600	28.00	34.60	77.82		95.25*		1965	70485
		0.08			51.8	23.600	0.079	1.180	2.090	41.70	50.00	68.18*		91.04*		1965	70485
		0.08			51.8	23.600	0.079	0.790	1.420	28.90	52.40	58.41*		78.43*		1965	70485
		0.08			51.8	23.600	0.079	0.790	1.690	46.20	50.40	56.18*		82.38*		1965	70485
		0.08			51.8	23.600	0.079	4.720	7.400	23.90	37.80	105.54*		137.29*		1965	70485

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T3	S	0.08	R.T.	L-T	51.8	23.600	0.079	1.970	3.190	32.60	45.10	79.68*			102.11*			1965	70485
		0.08			51.8	23.600	0.079	6.300	9.050	15.90	31.90	105.00*			132.50*			1965	70485
		0.08			51.8	23.600	0.079	11.800	12.520	12.70	20.20	103.42			109.24*			1965	70485
		0.08			51.8	23.600	0.079	4.720	6.300	23.60	31.30	87.39			103.03*			1965	70485
		0.08			51.8	23.600	0.079	0.790	-----	---	49.80	55.51*	89.9/10.5		-----	----/	---	1965	70485
T3	S	0.09	R.T.	L-T	56.0	5.900	0.095	0.790	1.060	46.40	47.60	53.62*			62.67*			1966	84366
		0.09			56.0	5.900	0.095	1.580	2.240	25.80	38.20	62.99*			78.78*			1966	84366
		0.09			56.0	5.900	0.095	1.580	2.400	31.80	38.20	62.99*			82.78*			1966	84366
		0.09			56.0	5.900	0.095	3.150	3.500	20.30	23.80	64.75*			72.26*			1966	84366
		0.09			56.0	5.900	0.095	3.150	3.740	21.60	23.60	64.21*			77.36*			1966	84366
		0.09			56.0	5.900	0.095	0.790	1.100	46.40	47.50	53.51*			63.81*			1966	84366
		0.09			56.0	5.900	0.095	1.180	1.540	39.80	43.00	60.03*			69.84*			1966	84366
T3	S	0.11	R.T.	L-T	53.2	11.800	0.118	3.540	4.690	23.30	32.20	80.44*			97.03*			1966	70519
		0.11			53.2	11.800	0.118	1.770	2.520	34.00	41.50	70.17*			84.97*			1966	70519
		0.11			53.2	11.800	0.118	1.770	2.720	31.90	41.60	70.34*			88.92*			1966	70519
		0.11			53.2	11.800	0.118	1.770	2.480	35.70	41.90	70.85*			85.03*			1966	70519
		0.11			53.2	11.800	0.118	4.720	5.400	20.40	25.60	77.50*			85.95*			1966	70519
		0.11			53.2	11.800	0.118	4.720	5.550	20.60	25.20	76.29			86.54*			1966	70519
		0.11			53.2	11.800	0.118	1.180	1.730	38.70	45.00	61.65*			75.18*			1966	70519
		0.11			53.2	11.800	0.118	3.540	4.560	25.20	32.20	80.44*			95.09*			1966	70519
		0.11			53.2	11.800	0.118	1.180	1.810	37.80	44.30	60.69*			75.80*			1966	70519
T3	S	0.16	R.T.	L-T	52.0	11.800	0.158	1.770	2.990	34.80	41.10	69.50*			92.77*			1966	70519
		0.16			52.0	11.800	0.158	3.540	4.210	23.30	32.20	80.44*			89.97*			1966	70519
		0.16			52.0	11.800	0.158	4.720	5.640	20.90	26.50	80.22*			92.24*			1966	70519
		0.16			52.0	11.800	0.158	1.180	1.610	38.10	44.30	60.69*			71.27*			1966	70519
		0.16			52.0	11.800	0.158	3.540	4.610	26.30	32.50	81.19*			96.72*			1966	70519
		0.16			52.0	11.800	0.158	4.720	6.060	19.80	26.90	81.43*			99.78*			1966	70519
		0.16			52.0	11.800	0.158	1.180	1.610	38.40	44.40	60.82*			71.43*			1966	70519
		0.16			52.0	11.800	0.158	1.770	2.440	33.80	41.60	70.34*			83.66*			1966	70519
		0.16			52.0	11.800	0.158	1.770	2.520	34.00	41.30	69.84*			84.56*			1966	70519
T3	S	0.01	R.T.	T-L	46.0	14.990	0.009	7.500	9.510	---	20.80	84.92*			109.08*			1962	62308

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T3	S	0.01	R.T.	T-L	46.0	14.990	0.010	7.500	9.060	---	21.20	86.56*			104.82*			1962	62308
T3	S	0.02	R.T.	T-L	46.5	15.000	0.020	7.500	8.680	---	20.40	83.27*			96.09*			1966	86734
T3	S	0.06	R.T.	T-L	44.9	48.000	0.061	24.000	28.650	---	17.10	124.86			149.12*			1966	86734
T3	S	0.08	R.T.	T-L	43.0	47.980	0.079	24.000	27.150	---	18.80	137.29*			154.64*			1966	86734
		0.08			43.0	47.980	0.080	24.000	27.810	---	18.90	138.02*			159.50*			1966	86734
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T3	S	0.06	60	L-T	47.0	12.000	0.061	3.000	----	---	31.60	71.37*			----			1966	86734
		0.06			47.0	12.000	0.061	3.910	----	---	26.82	71.18*			----			1966	86734
		0.06			47.0	12.000	0.061	3.000	----	---	32.10	72.50*			----			1966	86734
		0.06			47.0	12.000	0.061	3.000	----	---	31.60	71.37*			----			1966	86734
T3	S	0.03	R.T.	L-T	51.0	9.000	0.032	2.560	2.800	---	31.90	67.36*			71.20*			1965	62311
T3	S	0.04	R.T.	L-T	44.3	7.500	0.040	3.000	----	---	21.30	51.41*			----			1966	86734
		0.04			44.4	7.500	0.040	3.000	----	---	21.90	52.85*			----			1966	86734
		0.04			46.1	7.500	0.040	1.050	----	---	37.20	48.36*			----			1966	86734
		0.04			46.1	7.500	0.040	4.700	----	---	12.14	44.34			----			1966	86734
		0.04			46.1	7.500	0.040	4.150	----	---	15.27	48.53			----			1966	86734
		0.04			46.1	7.500	0.040	2.000	----	---	29.90	55.45*			----			1966	86734
		0.04			46.1	7.500	0.040	4.700	----	---	12.14	44.34			----			1966	86734
		0.04			46.1	7.500	0.040	0.550	----	---	41.30	38.52*			----			1966	86734
		0.04			46.1	7.500	0.040	1.100	----	---	39.60	52.76*			----			1966	86734
		0.04			46.1	7.500	0.040	3.900	----	---	16.73	50.05			----			1966	86734
		0.04			46.1	7.500	0.040	1.050	----	---	37.10	48.23*			----			1966	86734
		0.04			46.1	7.500	0.040	2.100	----	---	28.70	54.80*			----			1966	86734
		0.04			46.1	7.500	0.040	0.550	----	---	41.60	38.79*			----			1966	86734
		0.04			46.1	7.500	0.040	0.500	----	---	42.10	37.41*			----			1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T3	S	0.04	R.T.	L-T	47.4	7.500	0.040	4.700	----	---	13.00	47.48			----			1966	86734
		0.04			47.4	7.500	0.040	4.200	----	---	15.80	50.83			----			1966	86734
		0.04			47.4	7.500	0.040	4.100	----	---	16.20	50.86			----			1966	86734
		0.04			47.4	7.500	0.040	0.950	----	---	42.40	52.31*			----			1966	86734
		0.04			47.4	7.500	0.040	0.500	----	---	44.90	39.90*			----			1966	86734
		0.04			47.4	7.500	0.040	2.200	----	---	30.70	60.30*			----			1966	86734
		0.04			47.4	7.500	0.040	0.750	----	---	43.40	47.40*			----			1966	86734
		0.04			47.4	7.500	0.040	4.000	----	---	17.33	53.10			----			1966	86734
		0.04			47.4	7.500	0.040	2.000	----	---	32.90	61.01*			----			1966	86734
		0.04			47.4	7.500	0.040	1.050	----	---	41.90	54.47*			----			1966	86734
		0.04			47.4	7.500	0.040	0.500	----	---	45.40	40.35*			----			1966	86734
		0.04			51.0	7.500	0.040	1.150	----	---	43.90	59.87*			----			1966	86734
		0.04			51.0	7.500	0.040	5.900	----	---	12.14	64.45*			----			1966	86734
		0.04			51.0	7.500	0.040	1.150	----	---	44.10	60.15*			----			1966	86734
		0.04			51.0	7.500	0.040	0.650	----	---	50.70	51.47*			----			1966	86734
		0.04			51.0	7.500	0.040	4.280	----	---	14.80	48.56			----			1966	86734
		0.04			51.0	7.500	*0.040*	*0.810*	----	---	48.70	55.33*			----			1966	86734
		0.04			51.0	7.500	0.040	4.120	----	---	17.00	53.63			----			1966	86734
		0.04			51.0	7.500	0.040	0.500	----	---	51.30	45.59*			----			1966	86734
		0.04			51.0	7.500	0.040	4.870	----	---	12.14	46.41			----			1966	86734
		0.04			51.0	7.500	0.040	0.500	----	---	51.70	45.94*			----			1966	86734
		0.04			51.0	7.500	0.040	1.950	----	---	31.40	57.36*			----			1966	86734
		0.04			51.2	7.500	0.040	3.000	----	---	22.00	53.10			----			1966	86734
		0.04			51.5	7.500	0.040	3.000	----	---	24.70	59.61			----			1966	86734
		0.04			51.5	7.500	0.040	3.000	----	---	23.30	56.23	50.5/ 4.4		----	----/	---	1966	86734
T3	S	0.04	R.T.	L-T	51.0	9.000	0.040	4.420	4.880	18.10	20.50	63.80			69.93*			1965	62311
		0.04			51.0	9.000	0.040	6.280	6.500	9.60	9.90	45.99			48.66			1965	62311
		0.04			51.0	9.000	0.040	6.220	6.620	9.20	10.90	49.89			55.33*			1965	62311
		0.04			51.0	9.000	0.040	2.490	2.800	28.30	31.90	66.24*			71.20*			1965	62311
		0.04			51.0	9.000	0.040	4.480	4.980	18.20	20.70	65.19*	53.2/ 9.4		72.06*	----/	---	1965	62311
T3	S	0.04	R.T.	L-T	51.0	20.000	0.040	2.260	4.900	27.30	40.10	76.15*			115.56*			1965	62311
		0.04			51.0	20.000	0.040	2.260	7.370	27.00	40.10	76.15*			149.12*			1965	62311

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T3	S	0.04	R.T.	L-T	50.6	30.000	0.040	15.000	19.700	---	17.70	102.17		137.40*		1966	86734
		0.04			50.6	30.000	0.040	15.000	17.700	---	18.30	105.64		124.53*		1966	86734
		0.04			50.9	30.000	0.040	6.000	----	---	27.80	87.51		----		1966	86734
		0.04			51.3	30.000	0.040	12.000	----	---	17.50	84.47		----		1966	86734
		0.04			51.6	30.000	0.040	12.000	----	---	17.41	84.04		----		1966	86734
		0.04			52.1	30.000	0.040	3.000	----	---	36.10	78.85	90.4/10.8	----	----/ ---	1966	86734
T3	S	0.06	R.T.	L-T	53.2	2.000	0.064	0.621	0.980	31.60	36.20	38.00*		53.00*		1973	86213
		0.06			53.2	2.000	0.064	0.622	1.020	33.30	36.20	38.08*		54.93*		1973	86213
T3	S	0.06	R.T.	L-T	44.2	7.500	0.064	3.760	----	---	19.75	57.14*		----		1966	86734
		0.06			44.2	7.500	0.064	1.080	----	---	41.80	55.15*		----		1966	86734
		0.06			44.2	7.500	0.064	3.910	----	---	18.83	56.47*		----		1966	86734
		0.06			44.2	7.500	0.064	4.900	----	---	12.13	46.76		----		1966	86734
		0.06			44.2	7.500	0.064	1.940	----	---	34.30	62.47*		----		1966	86734
		0.06			44.2	7.500	0.064	0.500	----	---	44.80	39.81*		----		1966	86734
		0.06			44.2	7.500	0.064	0.960	----	---	45.80	56.82*		----		1966	86734
		0.06			44.2	7.500	0.064	0.500	----	---	46.00	40.88*		----		1966	86734
		0.06			44.2	7.500	0.064	5.450	----	---	12.13	55.01*		----		1966	86734
		0.06			44.2	7.500	0.064	0.500	----	---	45.20	40.17*		----		1966	86734
		0.06			44.2	7.500	0.064	0.500	----	---	46.10	40.97*		----		1966	86734
		0.06			44.2	7.500	0.064	1.930	----	---	34.10	61.92*		----		1966	86734
T3	S	0.06	R.T.	L-T	52.7	15.810	0.065	3.000	4.370	---	36.10	80.15*		99.30*		1973	86213
		0.06			52.7	15.810	0.064	6.010	7.310	---	22.80	77.04		89.35*		1973	86213
		0.06			52.7	15.820	0.062	4.000	----	---	30.90	80.66		----		1973	86213
		0.06			52.7	15.820	0.063	1.020	1.900	---	47.10	59.77*	78.9/ 2.6	72.70*	----/ ---	1973	86213
T3	S	0.08	R.T.	L-T	49.4	47.990	0.079	24.000	27.300	---	19.60	143.12		162.14*		1966	86734
		0.08			49.4	47.990	0.080	24.000	27.450	---	19.60	143.12	143.1/ 0.0	163.08*	----/ ---	1966	86734
T3	S	0.09	R.T.	L-T	51.0	9.000	0.091	4.480	4.860	20.10	23.20	73.06*		78.82*		1965	62311
		0.09			51.0	9.000	0.091	2.500	3.040	28.10	34.90	72.65*		82.12*		1965	62311
		0.09			51.0	9.000	0.091	4.480	5.060	20.10	23.10	72.75*		81.74*		1965	62311
		0.09			51.0	9.000	0.091	2.560	2.920	28.10	35.70	75.38*		81.83*		1965	62311

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T3	S	0.09	R.T.	L-T	51.0	9.000	0.091	6.230	6.520	10.90	14.00	64.24*			69.18*			1965	62311
		0.09			51.0	9.000	0.091	6.190	6.650	11.00	13.60	61.79*			69.61*			1965	62311
T3	S	0.10	R.T.	L-T	51.0	9.000	0.102	2.100	2.340	32.10	36.10	67.86*			72.25*			1965	62311
		0.10			51.0	9.000	0.102	----	1.700	---	39.20	----			65.50*			1965	62311
T3	S	0.10	R.T.	L-T	52.7	35.000	0.102	17.850	----	---	13.60	86.33			----			1956	84367
		0.10			52.7	35.000	0.102	1.480	----	---	48.10	73.42*			----			1956	84367
		0.10			52.7	35.000	0.102	4.950	----	---	37.40	105.59*			----			1956	84367
		0.10			52.7	35.000	0.102	17.900	----	---	19.10	121.55			----			1956	84367
		0.10			52.7	35.000	0.102	1.070	----	---	49.60	64.34*			----			1956	84367
		0.10			52.7	35.000	0.102	10.700	----	---	23.60	102.74	103.5	17.6	----	----/	---	1956	84367
T3	S	0.09	82	L-T	51.2	3.000	0.092	1.180	2.149	---	31.00	46.75*			86.69*			1973	86213
		0.09			51.2	3.000	0.092	1.230	2.229	---	30.10	46.79*			89.79*			1973	86213
		0.09			51.2	3.000	0.092	1.240	2.103	---	30.00	46.91*			80.99*			1973	86213
		0.09			52.0	3.000	0.091	1.280	2.135	---	29.60	47.41*			81.88*			1973	86213
		0.09			52.0	3.000	0.091	1.200	2.067	---	30.50	46.56*			80.16*			1973	86213
		0.09			52.0	3.000	0.092	1.270	2.164	---	29.30	46.65*			82.97*			1973	86213
		0.09			52.5	3.000	0.090	1.270	2.182	---	29.70	47.29*			85.32*			1973	86213
		0.09			52.5	3.000	0.090	1.320	2.240	---	28.60	46.92*			86.18*			1973	86213
		0.09			52.5	3.000	0.091	1.140	2.067	---	32.30	47.53*			84.89*			1973	86213
T3	S	0.02	R.T.	T-L	46.5	15.000	0.020	7.500	9.350	---	19.80	80.82*			101.60*			1966	86734
T3	S	0.03	R.T.	T-L	44.4	15.010	0.031	7.500	9.380	---	20.40	83.25*			105.05*			1962	62308
		0.03			44.4	15.010	0.031	7.500	9.560	---	20.40	83.25*			107.59*			1962	62308
T3	S	0.04	R.T.	T-L	59.5	7.500	0.040	0.970	----	---	40.10	50.02			----			1966	86734
		0.04			59.5	7.500	0.040	1.300	----	---	36.80	53.58			----			1966	86734
		0.04			59.5	7.500	0.040	4.060	----	---	15.07	46.85			----			1966	86734
		0.04			59.5	7.500	0.040	2.000	----	---	30.10	55.82			----			1966	86734
		0.04			59.5	7.500	0.040	0.750	----	---	44.70	48.82*			----			1966	86734
		0.04			59.5	7.500	0.040	0.500	----	---	46.00	40.88*			----			1966	86734
		0.04			59.5	7.500	0.040	4.200	----	---	12.14	39.06			----			1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																		
T3	S	0.04	R.T.	T-L	59.5	7.500	0.040	2.060	----	---	29.30	55.30		----			1966	86734
		0.04			59.5	7.500	0.040	0.500	----	---	45.70	40.61*		----			1966	86734
		0.04			59.5	7.500	0.040	0.550	----	---	45.00	41.97*		----			1966	86734
		0.04			59.5	7.500	0.040	4.000	----	---	15.76	48.29		----			1966	86734
		0.04			59.5	7.500	0.040	4.710	----	---	11.53	42.22	48 9/ 6.1	----	----/	---	1966	86734
T3	S	0.04	R.T.	T-L	43.3	29.990	0.041	15.000	18.620	---	17.20	99.30		124.20*			1962	62308
		0.04			43.3	30.020	0.040	15.000	16.200	---	19.10	110.23*		118.44*			1962	62308
T3	S	0.06	R.T.	T-L	46.2	2.000	0.064	0.623	1.120	32.30	33.50	35.24*		55.65*			1973	86213
		0.06			46.2	2.000	0.064	0.622	1.100	32.00	33.50	35.24*		54.64*			1973	86213
T3	S	0.06	R.T.	T-L	43.4	6.000	0.060	2.000	2.200	---	29.30	55.81*		59.48*			1966	86734
T3	S	0.06	R.T.	T-L	50.7	7.500	0.064	0.500	----	---	41.50	36.88*		----			1966	86734
		0.06			50.7	7.500	0.064	4.400	----	---	14.63	49.46		----			1966	86734
		0.06			50.7	7.500	0.064	4.500	----	---	12.14	42.10		----			1966	86734
		0.06			50.7	7.500	0.064	4.090	----	---	16.15	50.58		----			1966	86734
		0.06			50.7	7.500	0.064	2.000	----	---	30.50	56.56*		----			1966	86734
		0.06			50.7	7.500	0.064	4.160	----	---	15.92	50.72		----			1966	86734
		0.06			50.7	7.500	0.064	0.660	----	---	40.00	40.92*		----			1966	86734
		0.06			50.7	7.500	0.064	0.500	----	---	42.00	37.32*		----			1966	86734
		0.06			50.7	7.500	0.064	0.500	----	---	42.00	37.32*		----			1966	86734
		0.06			50.7	7.500	0.064	1.950	----	---	30.30	55.36*		----			1966	86734
		0.06			50.7	7.500	0.064	1.000	----	---	37.60	47.65*		----			1966	86734
		0.06			62.6	7.500	0.064	0.500	----	---	42.90	38.12		----			1966	86734
		0.06			62.6	7.500	0.064	0.750	----	---	42.30	46.20		----			1966	86734
		0.06			62.6	7.500	0.064	0.500	----	---	44.40	39.46		----			1966	86734
		0.06			62.6	7.500	0.064	2.300	----	---	27.10	54.72		----			1966	86734
		0.06			62.6	7.500	0.064	1.000	----	---	40.30	51.07		----			1966	86734
		0.06			62.6	7.500	0.064	2.170	----	---	30.00	58.43		----			1966	86734
		0.06			62.6	7.500	0.064	1.110	----	---	37.50	50.20		----			1966	86734
		0.06			62.6	7.500	0.064	0.750	----	---	41.70	45.54	48.1/ 6.0	----	----/	---	1966	86734
T3	S	0.06	R.T.	T-L	43.4	9.000	0.060	3.000	3.600	---	28.60	66.71*		75.61*			1966	86734

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T3	S	0.06	R.T.	T-L	43.4	15.000	0.060	5.000	5.900	---	23.70	71.37*			79.91*			1966	86734
		0.06			43.4	15.000	0.060	5.000	5.800	---	24.00	72.28*			79.94*			1966	86734
T3	S	0.06	R.T.	T-L	46.6	15.810	0.064	4.000	----	---	28.40	74.14*			----			1973	86213
		0.06			46.6	15.810	0.064	3.000	----	---	32.10	71.27*			----			1973	86213
		0.06			46.6	15.810	0.065	6.010	7.140	---	21.20	71.63			81.51*			1973	86213
		0.06			46.6	15.820	0.064	1.010	1.920	---	46.40	58.59*			81.32*			1973	86213
T3	S	0.06	R.T.	T-L	43.4	18.000	0.060	6.000	7.000	---	22.10	72.91			80.97*			1966	86734
		0.06			43.4	18.000	0.061	6.000	6.900	---	22.30	73.57	73.2/	0.5	80.87*	----/	---	1966	86734
T3	S	0.06	R.T.	T-L	43.4	21.000	0.060	7.000	8.400	---	20.70	73.76			83.60			1966	86734
		0.06			43.4	21.000	0.060	7.000	8.600	---	21.05	75.01	74.4/	0.9	86.49*	----/	---	----	86734
T3	S	0.06	R.T.	T-L	43.4	24.000	0.061	8.000	9.600	---	21.60	82.28			93.25*			1966	86734
		0.06			43.4	24.000	0.060	8.000	9.500	---	20.80	79.23	80.8/	2.2	89.12	----/	---	1966	86734
T3	S	0.06	R.T.	T-L	44.9	47.000	0.061	24.000	25.050	---	18.10	133.29*			138.76*			1966	86734
T3	S	0.09	82	T-L	44.3	3.000	0.092	1.230	2.473	---	27.60	42.90*			104.10*			1973	86213
		0.09			44.3	3.000	0.091	1.220	2.442	---	28.00	43.26*			102.18*			1973	86213
		0.09			44.3	3.000	0.092	1.220	2.514	---	28.00	43.26*			110.90*			1973	86213
		0.09			45.2	3.000	0.092	1.200	2.504	---	27.70	42.28*			108.41*			1973	86213
		0.09			45.2	3.000	0.092	1.200	2.480	---	27.10	41.37*			103.14*			1973	86213
		0.09			45.2	3.000	0.091	1.300	2.653	---	26.30	42.63*			126.10*			1973	86213
		0.09			45.4	3.000	0.092	1.250	2.539	---	26.90	42.32*			109.74*			1973	86213
		0.09			45.4	3.000	0.092	1.230	2.525	---	27.10	42.12*			108.65*			1973	86213
		0.09			45.4	3.000	0.092	1.220	2.381	---	27.80	42.95*			95.18*			1973	86213
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T86	S	0.06	R.T.	L-T	65.8	2.000	0.063	0.625	1.030	---	34.70	36.57			53.13*			1973	86213
		0.06			65.8	2.000	0.063	0.625	0.940	---	32.90	34.68	35.6/	1.3	46.48*	----/	---	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.2.1 (Con't)

ALUMINUM 2024 (ALCLAD) K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T86	S	0.06	R.T.	T-L	65.1	2.000	0.063	0.625	0.970	---	30.90	32.57			44.84*			1973	86213
		0.06			65.1	2.000	0.063	0.625	0.860	---	30.30	31.94	32.3/	0.4	39.86*	----/	---	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.6.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.6.3.1 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2024
CONDITION: T3
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.00	R=+0.33		
DELTA K MIN	A:	8.49	1.44			
	B:	5.87		1.12		
	C:					
	D:					
		6.00		1.23		
		7.00		2.32		
		8.00		3.67		
		9.00	2.02	5.25		
		10.00	3.32	7.07		
		13.00	7.71	14.4		
		16.00	12.3	27.0		
		20.00	21.6	62.6		
		25.00	51.1	192.		
		30.00	154.			
DELTA K MAX	A:	30.54	176.			
	B:	28.15		403.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			11.73	9.35		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	2	4		
		1.25-2.0				
		>2.0				

CONDITION/HT: T3
FORM: 0.09"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 13.30 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 45.8 KSI
ULT. STRENGTH: 66.6 KSI
SPECIMEN THK: 0.090"
SPECIMEN WIDTH: 4.000"
REFERENCES:86213

ALUM. ALLOY
2024 (ALCLAD)

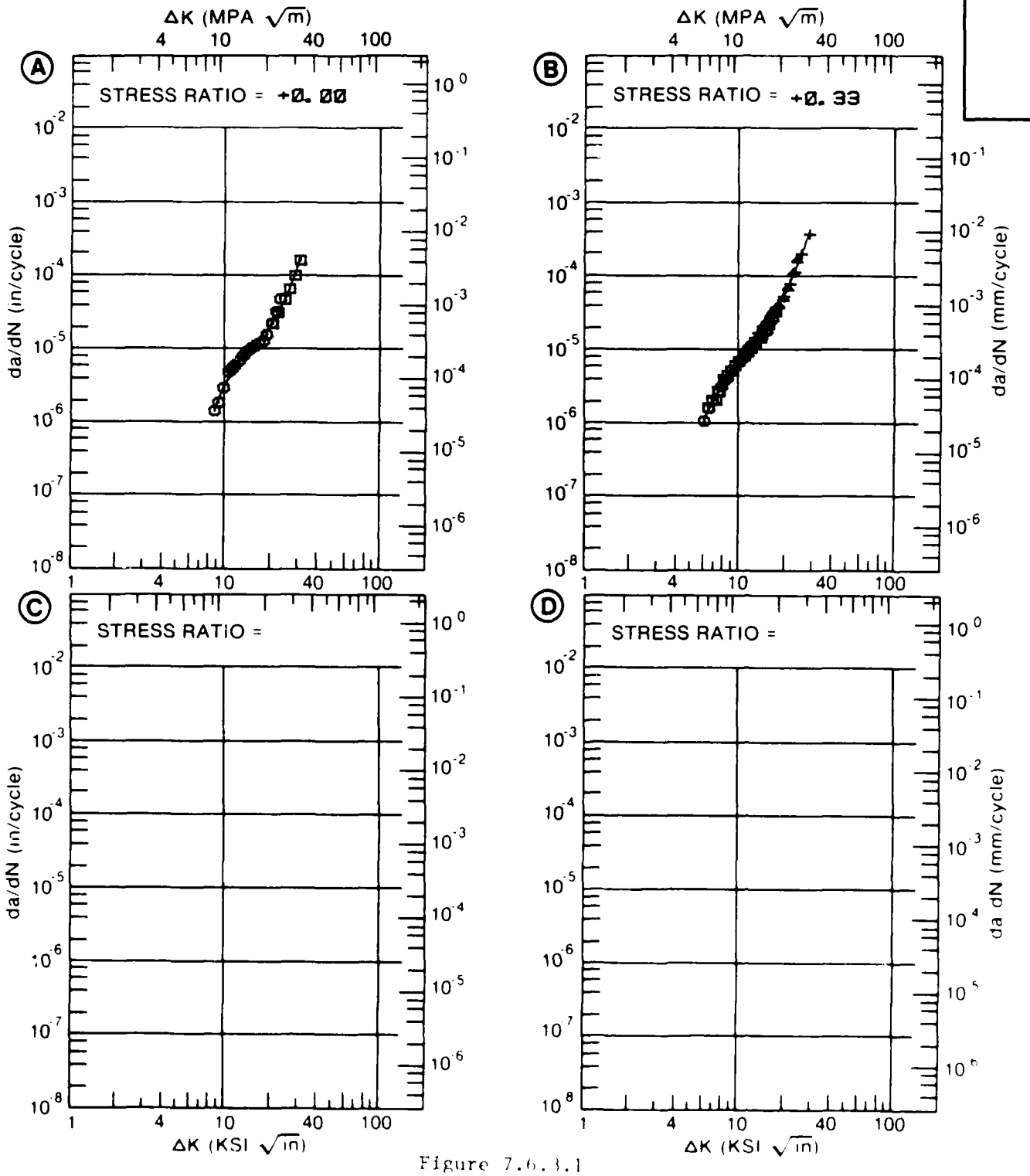


Figure 7.6.3.1

TABLE 7.7.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2048 AT ROOM TEMPERATURE

CONDITION/HT	MEAN K·C ± STANDARD (KSI SQRT(IN)) DEVIATION (NUMBER OF SPECIMENS)		
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T851	37 9 ± 1 9 (22)	30 6 ± 2 5 (24)	25 4 ± 1 9 (18)

TABLE 7.7.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2048

TEST CONDITIONS

SPECIMEN ORIENTATION: L-T

ENVIRONMENT: DRY AIR AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)						
					2.5	5	10	20	50	100	
T851	PLATE	0.33	2.00-20.00				4.99	56.3			
T851	PLATE	0.33	2.00-20.00				3.24				

TABLE 7.7.1.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2048

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT S.T.W. AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.33	2.00-20.00				9.14			
T851	PLATE	0.33	2.00-20.00				9.60			

TABLE 7.7.1.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2048

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: DRY AIR AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.33	2.00-20.00				5.58			
T851	PLATE	0.33	2.00-30.00				7.84			

TABLE 7.7.1.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2048

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: S.T.W. AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ. (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2.5	5	10	20	50	100
T851	PLATE	0.33	2.00-30.00		0.08	0.82	11.9			
T851	PLATE	0.33	2.00-20.00			1.01	10.4			
T851	PLATE	0.67	2.00-30.00			1.52	24.6			

TABLE 7.7.2.1

ALUMINUM 2048 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.00	R.T.	L-T	59.1	4.000	2.000	CT	2.000	1.07	38.60			1977	AL001
		4.00			59.1	4.000	2.000	CT	2.040	1.06	38.40			1977	AL001
		4.00			59.1	4.000	2.000	CT	2.020	1.00	37.40			1977	AL001
		1.00			62.1	2.000	1.000	CT	1.030	0.97	38.70			1977	AL001
		2.00			63.7	4.000	1.980	CT	2.060	1.11	42.40			1977	AL001
		2.00			63.7	4.000	1.980	CT	2.070	0.97	39.60			1977	AL001
		2.00			63.7	4.000	1.980	CT	2.050	1.05	41.20			1977	AL001
		3.00			64.2	6.000	3.000	CT	3.120	0.80	36.40			1977	AL001
		4.00			64.2	4.000	2.000	CT	2.010	0.75	35.20			1977	AL001
		3.00			64.2	6.000	3.000	CT	3.140	0.84	37.20			1977	AL001
		4.00			64.2	4.000	2.000	CT	2.020	0.79	36.20			1977	AL001
		3.00			64.2	6.000	3.000	CT	3.120	0.83	37.00			1977	AL001
		4.00			64.2	4.000	2.000	CT	2.020	0.80	36.40			1977	AL001
		3.00			64.7	6.000	3.000	CT	3.060	0.89	38.50			1977	AL001
		3.00			64.7	6.000	3.000	CT	3.080	0.84	37.60			1977	AL001
		3.00			64.7	6.000	3.000	CT	3.070	0.90	38.80			1977	AL001
		2.00			65.4	4.000	1.980	CT	2.060	0.88	38.70			1977	AL001
		2.00			65.4	4.000	1.980	CT	2.040	0.90	39.30			1977	AL001
		2.00			65.4	4.000	1.980	CT	2.040	0.91	39.40			1977	AL001
		1.00			67.5	2.000	1.000	CT	1.040	0.70	35.70			1977	AL001
		1.00			67.5	2.000	1.000	CT	1.040	0.70	35.70			1977	AL001
		1.00			67.5	2.000	1.000	CT	1.020	0.68	35.20	37.9/	1.9	1977	AL001
T851	P	4.00	R.T.	T-L	57.3	4.000	2.000	CT	2.020	0.61	28.40			1977	AL001
		4.00			57.3	4.000	2.000	CT	2.060	0.61	28.30			1977	AL001
		4.00			57.3	4.000	2.000	CT	2.030	0.60	28.00			1977	AL001
		1.00			61.1	2.000	1.000	CT	1.030	0.67	31.70			1977	AL001
		1.00			61.1	2.000	1.000	CT	1.030	0.67	31.70			1977	AL001
		1.00			61.1	2.000	1.000	CT	1.040	0.68	31.80			1977	AL001
		4.00			61.9	4.000	2.000	CT	2.030	0.45	26.20			1977	AL001
		4.00			61.9	4.000	2.000	CT	2.060	0.46	26.60			1977	AL001
		4.00			61.9	4.000	2.000	CT	2.040	0.48	27.00			1977	AL001
		2.00			62.6	4.000	1.980	CT	2.050	0.57	30.00			1977	AL001
		2.00			62.6	4.000	1.980	CT	2.060	0.55	29.40			1977	AL001
		2.00			62.6	4.000	1.980	CT	2.090	0.56	29.70			1977	AL001
		3.00			62.9	6.000	3.000	CT	3.100	0.70	33.30			1977	AL001
		3.00			62.9	6.000	3.000	CT	3.140	0.73	33.90			1977	AL001
		3.00			62.9	6.000	3.000	CT	3.070	0.71	33.60			1977	AL001
		3.00			63.9	6.000	3.000	CT	3.240	0.70	33.70			1977	AL001

TABLE 7.7.2.1 (Con't)

ALUMINUM 2048 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	3.00	R.T.	T-L	63.9	6.000	3.000	CT	3.280	0.72	34.30			1977	AL001
		3.00			63.9	6.000	3.000	CT	3.240	0.73	34.50			1977	AL001
		2.00			64.9	4.000	1.980	CT	2.090	0.52	29.90			1977	AL001
		2.00			64.9	4.000	1.980	CT	2.070	0.55	30.40			1977	AL001
		2.00			64.9	4.000	1.980	CT	2.050	0.53	29.90			1977	AL001
		1.00			65.4	2.000	1.000	CT	1.060	0.56	30.90			1977	AL001
		1.00			65.4	2.000	1.000	CT	1.050	0.55	30.70			1977	AL001
		1.00			65.4	2.000	1.000	CT	1.050	0.56	31.00	30.6/	2.9	1977	AL001
T851	P	4.00	R.T.	S-L	56.0	3.000	1.500	CT	1.530	0.55	26.20			1977	AL001
		4.00			56.0	3.000	1.500	CT	1.530	0.48	24.60			1977	AL001
		4.00			56.0	3.000	1.500	CT	1.530	0.52	25.60			1977	AL001
		3.00			58.5	2.500	1.250	CT	1.280	0.38	22.90			1977	AL001
		3.00			58.5	2.500	1.250	CT	1.280	0.41	23.70			1977	AL001
		3.00			58.5	2.500	1.250	CT	1.280	0.38	22.80			1977	AL001
		3.00			58.9	2.500	1.250	CT	1.290	0.65	30.00			1977	AL001
		3.00			58.9	2.500	1.250	CT	1.290	0.60	28.80			1977	AL001
		3.00			58.9	2.500	1.250	CT	1.300	0.52	26.80			1977	AL001
		2.00			59.3	1.500	0.750	CT	0.770	0.43	24.70			1977	AL001
		2.00			59.3	1.500	0.750	CT	0.770	0.43	24.70			1977	AL001
		2.00			59.3	1.500	0.750	CT	0.780	0.46	25.30			1977	AL001
		4.00			59.5	3.000	1.500	CT	1.520	0.42	24.50			1977	AL001
		4.00			59.5	3.000	1.500	CT	1.520	0.42	24.30			1977	AL001
		4.00			59.5	3.000	1.500	CT	1.520	0.40	23.90			1977	AL001
		2.00			59.9	1.500	0.750	CT	0.780	0.47	26.00			1977	AL001
		2.00			59.9	1.500	0.750	CT	0.780	0.48	26.20			1977	AL001
		2.00			59.9	1.500	0.750	CT	0.780	0.48	26.20	25.4/	1.9	1977	AL001

TABLE 7.7.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.7.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2048
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. DRY AIR	E= R.T. S.T.W.		
DELTA K MIN	A: 5.67	.484			
	B: 5.12		.924		
	C:				
	D:				
	6.00	.567	2.07		
	7.00	.909	3.56		
	8.00	1.43	5.32		
	9.00	2.19	7.58		
	10.00	3.24	9.60		
	13.00	8.78	14.5		
	16.00	19.0			
DELTA K MAX	A: 19.95	40.4			
	B: 14.65		23.7		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		20.95	12.60		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 1.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 2.00- 20.00 HZ

YIELD STRENGTH: 67.5 KSI
ULT. STRENGTH: 71.4 KSI
SPECIMEN THK: 1.00 "
SPECIMEN WIDTH: 3.805"
REFERENCES: AL001

ALUM. ALLOY

2048

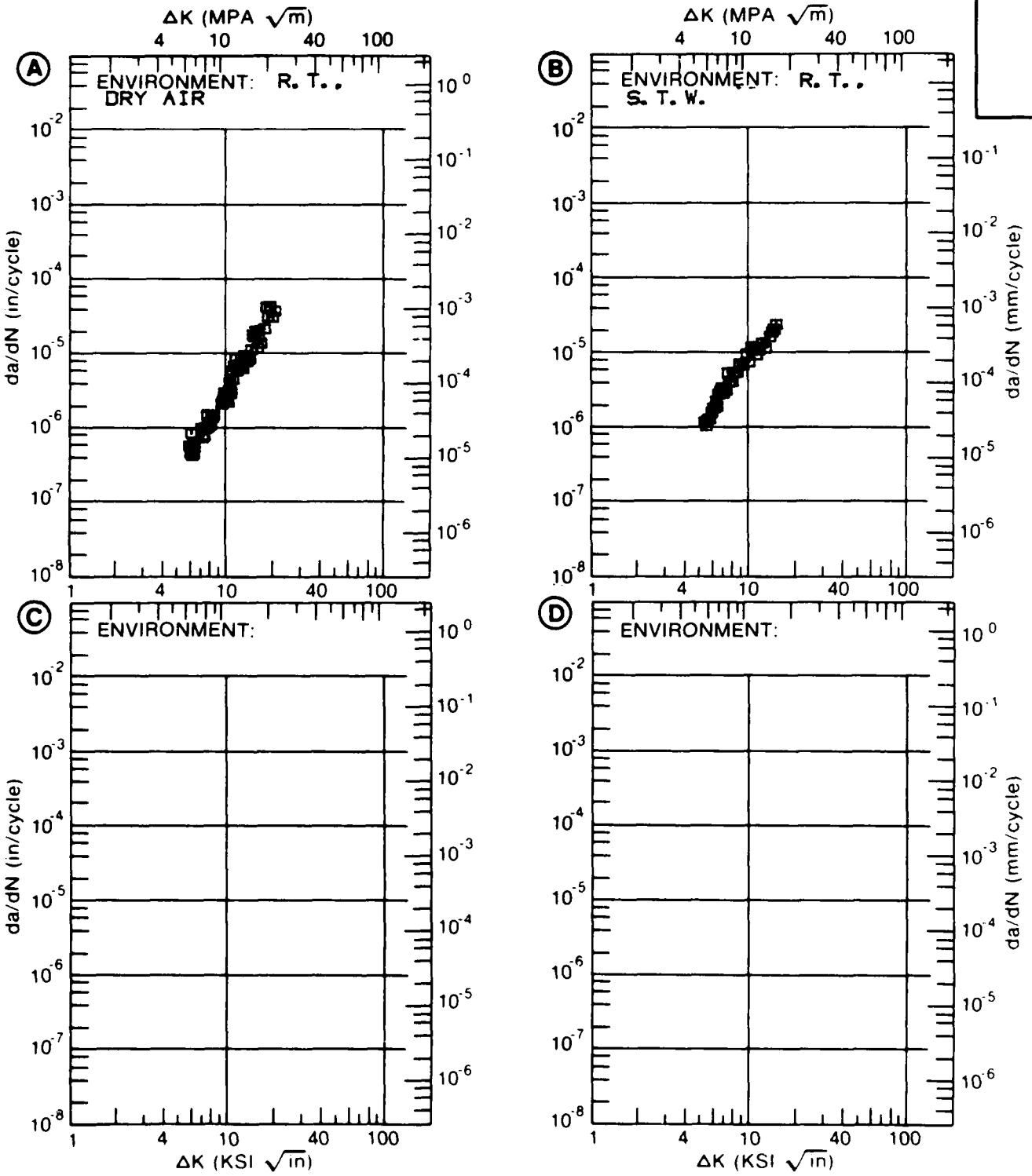


Figure 7.7.3.1

TABLE 7.7.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.7.3.2 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2048
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR	B E= R.T. H.H.A.	C E= R.T. S.T.W.	D
DELTA K MIN	A: 5.67	.855			
	B: 5.67		1.36		
	C: 4.50			.843	
	D:				
	5.00			1.01	
	6.00	.895	1.73	2.04	
	7.00	1.25	3.09	3.93	
	8.00	2.01	4.77	6.02	
	9.00	3.37	6.76	8.13	
	10.00	5.58	9.12	10.4	
	13.00	19.2	19.7	20.2	
	16.00	40.5	40.6		
DELTA K MAX	A: 19.81	152.			
	B: 18.55		76.1		
	C: 15.99			45.9	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		22.75	13.68	13.37	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 1.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 2.00- 20.00 HZ

YIELD STRENGTH: 65.4 KSI
ULT. STRENGTH: 70.5 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES: AL001

ALUM. ALLOY

2048

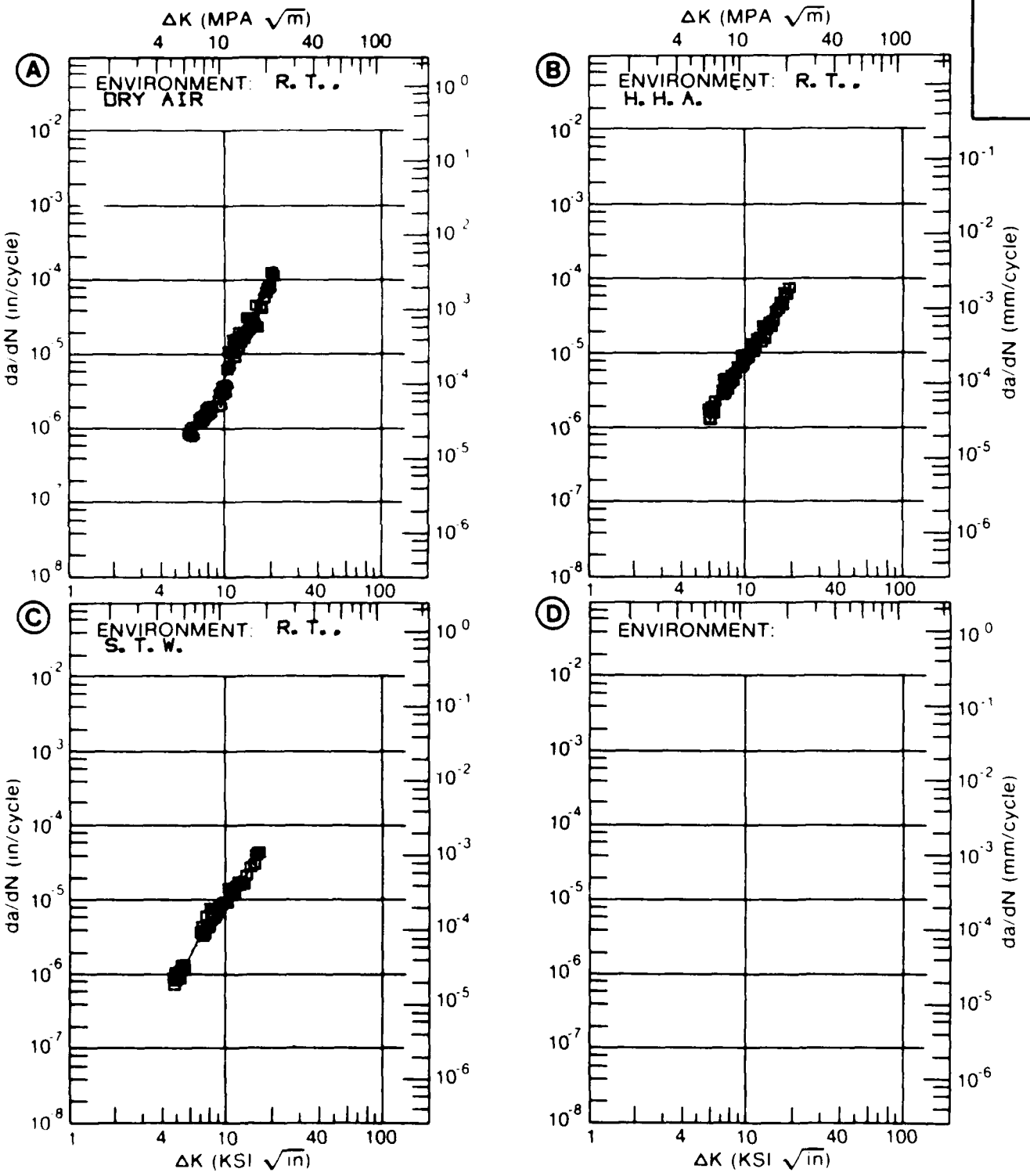


Figure 7.7.3.2

TABLE 7.7.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.7.3.3 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2048
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR	DA/DN (10**-6 IN./CYCLE) B E= R.T. S.T.W.	C	D
DELTA K MIN	A:	6.42	1.42			
	B:	5.10		.702		
	C:					
	D:					
		6.00		1.67		
		7.00	1.36	3.21		
		8.00	2.51	5.06		
		9.00	3.89	7.06		
		10.00	4.99	9.14		
		13.00	8.78	15.9		
		16.00	19.9			
		20.00	56.3			
DELTA K MAX	A:	20.35	66.6			
	B:	14.76		20.5		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			18.85	17.65		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 2.00- 20.00 HZ

YIELD STRENGTH: 59.1 KSI
ULT. STRENGTH: 64.4 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.100"
REFERENCES: AL001

ALUM. ALLOY

2048

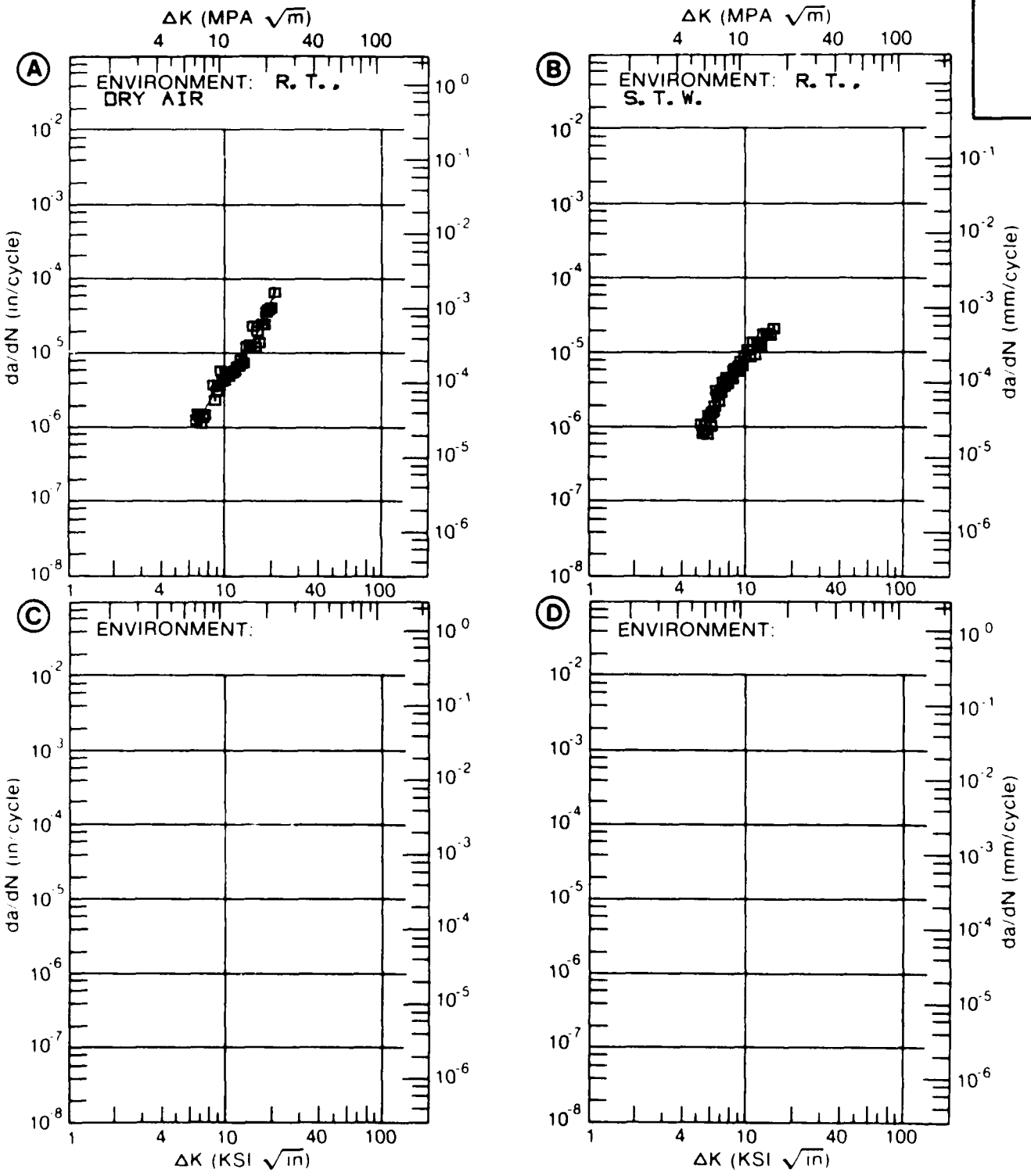


Figure 7.7.3.3

TABLE 7.7.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.7.3.4 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2048
CONDITION: T851
ENVIRONMENT: R.T., S.T.W.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.33	R=+0.67		
DELTA K MIN A:	2.46	.0795			
DELTA K MIN B:	4.19		1.16		
DELTA K MIN C:					
DELTA K MIN D:					
	2.50	.0819			
	3.00	.128			
	3.50	.212			
	4.00	.344			
	5.00	.825	1.52		
	6.00	1.72	2.61		
	7.00	3.17	4.81		
	8.00	5.30	8.72		
	9.00	8.22	15.1		
	10.00	11.9	24.6		
	13.00	27.7	73.6		
	16.00	55.8			
DELTA K MAX A:	16.89	118.			
DELTA K MAX B:	13.10		75.7		
DELTA K MAX C:					
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		21.89	16.75		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 2.00- 30.00 HZ
ENVIRONMENT: R.T., S.T.W.

YIELD STRENGTH: 57.3 KSI
ULT. STRENGTH: 63.7 KSI
SPECIMEN THK: 0.250- 1.000"
SPECIMEN WIDTH: 2.550"
REFERENCES:AL001

ALUM. ALLOY

2048

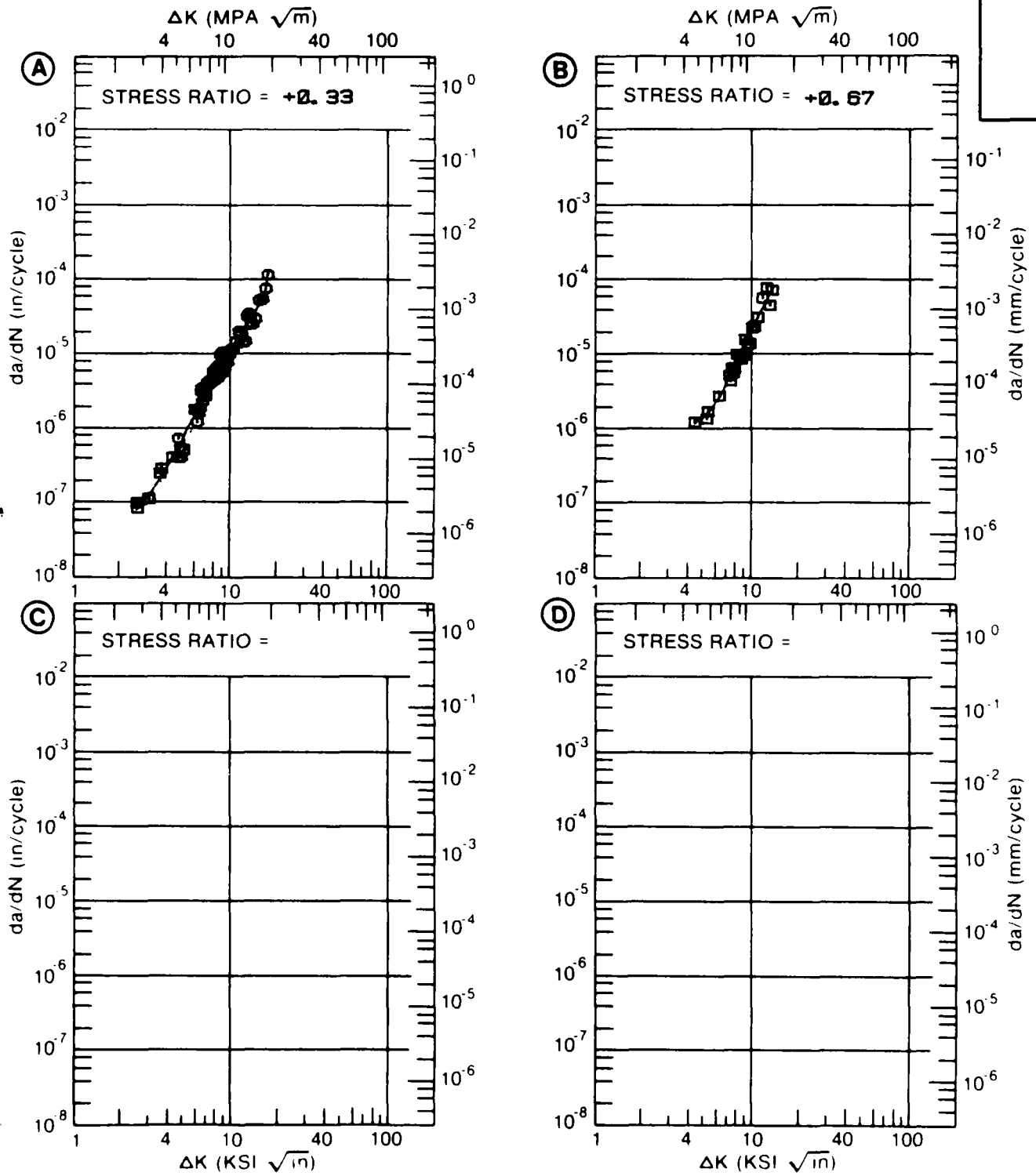


Figure 7.7.3.4

TABLE 7.7.3.5

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.7.3.5 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2048
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR	E= R.T. S.T.W.		
DELTA K MIN	A:	5.34	.416			
	B:	2.46		.0786		
	C:					
	D:					
		2.50		.0816		
		3.00		.129		
		3.50		.208		
		4.00		.340		
		5.00		.841		
		6.00	.615	1.76		
		7.00	1.16	3.18		
		8.00	2.12	5.20		
		9.00	3.65	7.94		
		10.00	5.84	11.5		
		13.00	15.3	28.6		
		16.00	41.9	58.7		
DELTA K MAX	A:	18.10	148.			
	B:	16.89		70.9		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			26.02	23.71		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 2.00- 30.00 HZ

YIELD STRENGTH: 57.3 KSI
ULT. STRENGTH: 63.7 KSI
SPECIMEN THK: 0.250- 1.000"
SPECIMEN WIDTH: 2.550"
REFERENCES:AL001

ALUM. ALLOY

2048

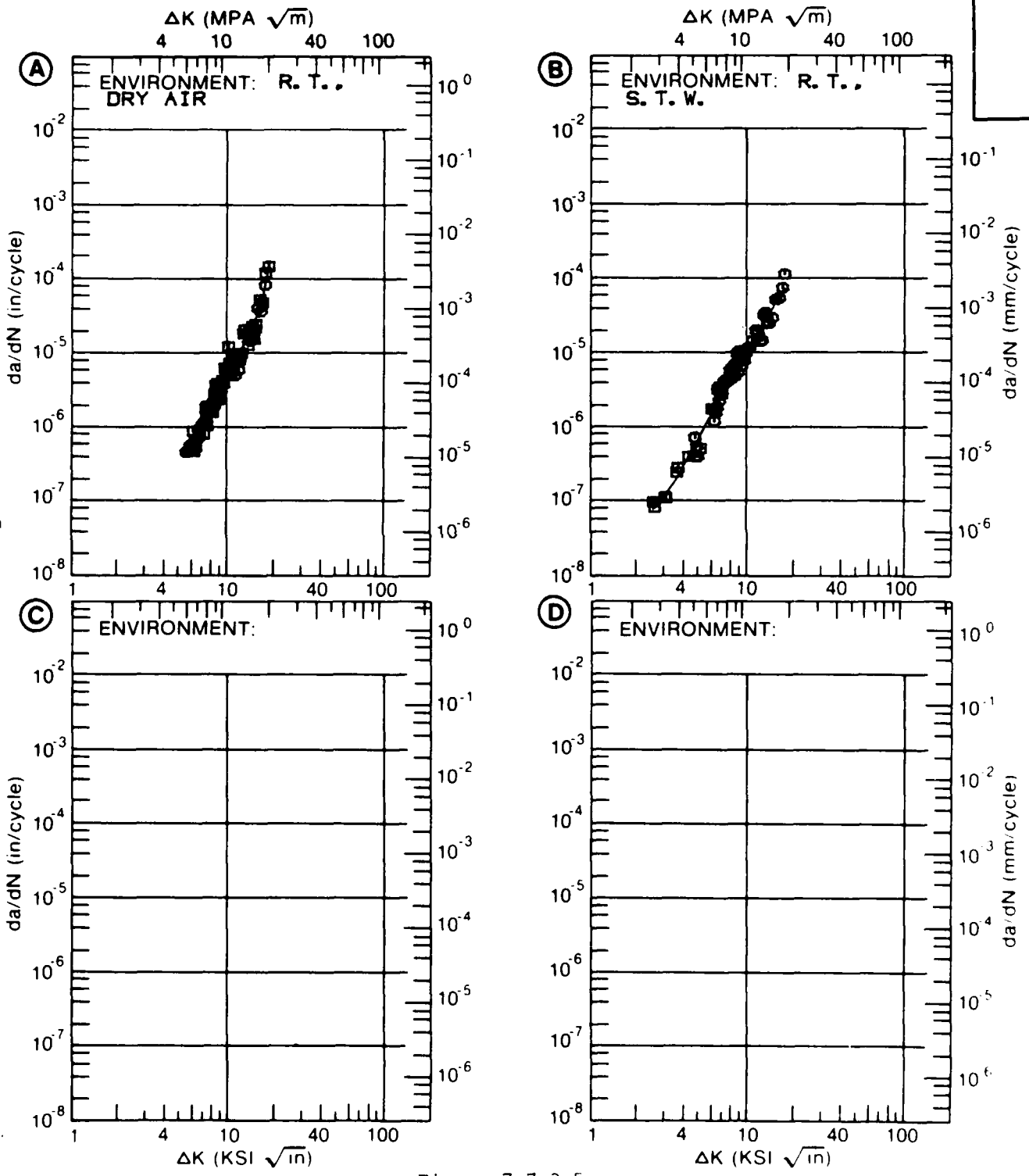


Figure 7.7.3.5

TABLE 7.7.3.6

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.7.3.6 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2048
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A: E= R.T. H.H.A.	B: E= R.T. S.T.W.	C	D
DELTA K MIN	A: 5.60	1.18			
	B: 4.50		1.08		
	C:				
	D:				
	5.00		1.48		
	6.00	1.70	2.51		
	7.00	3.33	3.97		
	8.00	5.39	6.06		
	9.00	7.99	9.06		
	10.00	11.5	13.4		
	13.00	35.7	41.5		
DELTA K MAX	A: 14.81	78.8			
	B: 15.41		101.		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		17	15.46		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: S-L
STRESS RATIO: +0.33
FREQUENCY: 2.00- 20.00 HZ

YIELD STRENGTH: 56.0 KSI
ULT. STRENGTH: 62.5 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES:AL001

ALUM. ALLOY

2048

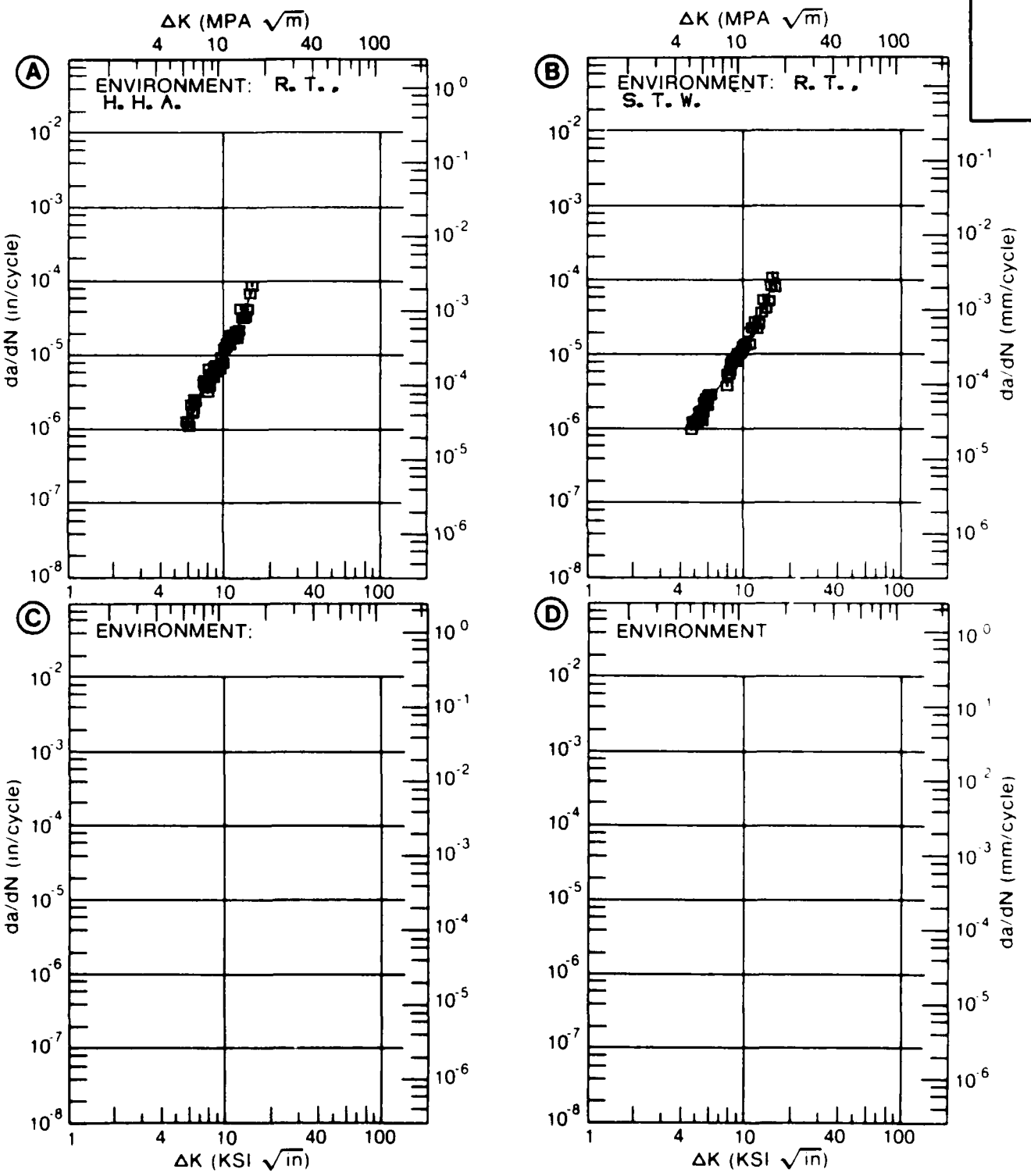


Figure 7.7.3.6

TABLE 7.8.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2124 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN)) (NUMBER OF SPECIMENS)		
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T851	29.7 ± 2.8 (364)	25.1 ± 2.3 (362)	21.7 ± 2.1 (393)
T851 (SP)	27.2 ± 4.7 (10)	23.1 ± 2.7 (7)	21.4 ± 3.2 (10)
T851 (417)	28.9 ± 2.8 (27)	23.8 ± 2.4 (28)	21.3 ± 2.0 (19)

TABLE 7.8.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2124

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT L H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2 5	5	10	20	50	100
T851	PLATE	0 10	30 00		0 01	0 26	2 69	44 6		
T851	PLATE	0 50	30 00		0 09	0 68	7 07			

TABLE 7.8.1.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2124

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT: S.T.W AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ. (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.10	1.00			0.26	6.04	50.4		
T851	PLATE	0.30	1.00			0.64	8.37	119		
T851	PLATE	0.50	1.00			1.07	9.52			

TABLE 7.8.1.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2124

TEST CONDITIONS

SPECIMEN ORIENTATION: T L

ENVIRONMENT: H H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2.5	5	10	20	50	100
T851	PLATE	0.10	1.00			0.23	5.53	92.9		
T851	PLATE	0.10	6.00-33.00			0.28	5.16			
T851	PLATE	0.25	6.00-33.00		0.03	0.75	6.15			
T851	PLATE	0.50	1.00			1.22	15.4			
T851	PLATE	0.50	6.00-33.00		0.13	1.17	28.8			

TABLE 7.8.1.5

FATIQUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2124

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT S T W AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIQUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.10	1.00			0.37	7.71			
T851	PLATE	0.30	1.00			0.59	10.0			
T851	PLATE	0.50	1.00			1.08	18.5			

TABLE 7.8.1.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2124

TEST CONDITIONS

SPECIMEN ORIENTATION S-L

ENVIRONMENT S T W AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2 5	5	10	20	50	100
T851	PLATE	0 10	1 00			0 44	7 59	156		
T851	PLATE	0 30	1 00			0 94	12 4			
T851	PLATE	0 50	1 00			1 35	19 4			

TABLE 7.8.2.1

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T351 (417)	P	2.50	82	T-L	44.2	3.990	1.999	CT	2.146	1.82	37.70			1973	86213
T851	P	2.55	R.T.	L-T	52.8	6.047	2.504	CT	3.084	1.26	37.90			1978	MPC01
		5.00			55.0	3.000	1.501	CT	1.545	0.95	34.00			1979	GD011
		5.00			55.0	3.003	1.502	CT	1.632	0.93	33.70			1979	GD011
		6.00			55.1	2.994	1.499	CT	1.497	1.02	35.30			1978	MPC01
		5.00			55.2	3.011	1.500	CT	1.596	0.60	27.20			1978	MPC01
		6.00			55.5	3.006	1.498	CT	1.503	0.70	29.90			1978	MPC01
		5.50			56.3	3.010	1.498	CT	1.505	1.08	37.20			1978	MPC01
		6.00			56.5	3.014	1.499	CT	1.767	0.81	32.50			1978	MPC01
		5.50			56.7	2.999	1.500	CT	1.513	0.64	28.90			1980	RA001
		5.50			56.8	3.020	1.493	CT	1.480	0.67	29.70			1978	MPC01
		6.00			56.8	1.998	0.998	CT	1.048	0.57	27.20			1978	RA001
		5.00			56.9	1.986	0.997	CT	1.013	0.65	29.50			1978	MPC01
		5.12			56.9	3.000	1.498	CT	1.500	0.90	34.30			1978	MPC01
		6.00			57.1	3.000	1.500	CT	1.550	0.67	29.70			1972	84368
		6.00			57.1	3.000	1.500	CT	1.520	0.65	29.10			1972	84368
		5.25			57.2	3.004	1.498	CT	1.502	0.65	29.30			1978	MPC01
		5.00			57.2	3.029	1.496	CT	1.484	0.84	33.60			1978	MPC01
		4.90			57.3	3.000	1.498	CT	1.530	0.77	32.00			1978	RA002
		5.50			57.4	3.010	1.499	CT	1.565	0.78	32.30			1978	MPC01
		4.50			57.4	3.001	1.499	CT	1.522	0.95	35.40			1980	RA001
		5.00			57.6	3.000	1.499	CT	1.537	0.62	28.90			1979	RA001
		5.25			57.7	2.973	1.502	CT	1.516	0.75	32.30			1978	MPC01
		5.00			57.7	2.999	1.500	CT	1.499	0.63	29.10			1980	RA001
		5.50			57.8	3.022	1.497	CT	1.481	0.65	29.50			1978	MPC01
		5.00			57.8	2.997	1.497	CT	1.521	0.66	29.90			1979	RA001
		4.62			57.9	2.998	1.500	CT	1.499	0.93	35.50			1978	MPC01
		5.50			58.0	3.010	1.497	CT	1.445	0.60	28.80			1978	MPC01
		5.50			58.1	2.971	1.498	CT	1.456	0.57	28.00			1978	MPC01
		5.25			58.1	3.026	1.500	CT	1.513	0.90	35.20			1978	MPC01
		5.00			58.1	3.000	1.498	CT	1.573	0.74	31.79			1978	RA001
		5.50			58.1	2.984	1.500	CT	1.522	0.84	33.90			1978	MPC01
		4.90			58.1	3.005	1.500	CT	1.498	0.57	27.90			1978	RA002
		4.25			58.2	2.999	1.499	CT	1.551	0.65	29.70			1980	RA001
		5.00			58.2	3.002	1.500	CT	1.561	0.48	25.90			1978	MPC01
		5.50			58.3	2.988	1.499	CT	1.464	0.57	28.40			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	5.00	R.T	L-T	58.4	2.980	1.498	CT	1.490	0.67	30.90			1978	MPC01
		3.50			58.7	3.004	1.498	CT	1.502	0.72	31.90			1978	MPC01
		5.00			58.7	1.592	0.998	CT	1.016	0.50	26.80			1978	MPC01
		2.50			58.8	3.000	1.498	CT	1.556	0.60	28.90			1980	RA001
		6.00			58.8	2.000	0.995	CT	0.975	0.97	36.70			1980	RA001
		4.50			58.9	2.982	1.498	CT	1.491	0.75	32.70			1978	MPC01
		6.00			58.9	3.014	1.499	CT	1.537	0.67	30.90			1978	MPC01
		4.50			59.0	3.016	1.499	CT	1.478	0.70	31.60			1978	MPC01
		5.50			59.1	2.985	1.501	CT	1.523	0.57	28.60			1978	MPC01
		4.55			59.1	3.001	1.496	CT	1.517	0.75	32.40			1980	RA001
		5.50			59.1	3.000	1.501	CT	1.530	0.70	31.50			1978	MPC01
		6.00			59.2	2.977	1.495	CT	1.518	0.70	31.80			1978	MPC01
		6.00			59.3	2.986	1.493	CT	1.493	0.55	27.90			1978	MPC01
		4.31			59.3	2.000	1.000	CT	1.000	0.50	26.50			1972	B4368
		4.31			59.3	2.000	1.000	CT	0.990	0.52	27.00			1972	B4368
		4.00			59.3	3.000	1.499	CT	1.542	0.61	29.50			1978	RA001
		4.90			59.4	2.990	1.368	CT	1.465	0.57	29.00			1978	MPC01
		4.00			59.4	2.000	1.000	CT	1.000	0.61	29.40			1972	B4368
		4.00			59.4	2.000	1.000	CT	1.000	0.59	28.90			1972	B4368
		4.62			59.5	2.988	1.498	CT	1.464	0.62	30.10			1978	MPC01
		5.25			59.6	3.018	1.501	CT	1.509	0.81	34.50			1978	MPC01
		6.00			59.6	1.998	0.998	CT	1.033	0.73	32.30			1978	RA001
		4.00			59.6	2.999	1.499	CT	1.527	0.62	29.90			1980	RA001
		4.00			59.6	3.002	1.498	CT	1.542	0.88	35.50			1980	RA001
		4.50			59.6	2.997	1.498	CT	1.532	0.79	33.59			1979	RA001
		4.50			59.6	3.012	1.499	CT	1.476	0.70	31.70			1978	MPC01
		1.81			59.7	3.011	1.498	CT	1.626	0.60	29.80			1978	MPC01
		4.50			59.8	3.000	1.500	CT	1.530	0.76	33.10			1972	B4368
		4.50			59.8	3.000	1.500	CT	1.510	0.71	31.90			1972	B4368
		6.00			59.9	3.004	1.499	CT	1.532	0.70	31.80			1978	MPC01
		4.00			59.9	3.012	1.497	CT	1.566	0.70	32.30			1978	MPC01
		5.00			59.9	3.004	1.499	CT	1.532	0.60	29.80			1978	MPC01
		3.00			59.9	2.994	1.406	CT	1.529	0.66	30.79			1980	RA001
		3.00			59.9	3.001	1.376	CT	1.484	0.60	29.40			1980	RA001
		4.00			60.0	3.000	1.499	CT	1.489	0.62	29.90			1980	RA001
		5.50			60.1	2.996	1.502	CT	1.528	0.57	29.40			1978	MPC01
		5.50			60.1	3.012	1.501	CT	1.506	0.52	27.70			1978	MPC01
		4.50			60.1	3.000	1.495	CT	1.533	0.69	31.60			1978	RA002
		2.50			60.3	3.002	1.102	CT	1.510	0.44	25.50			1980	RA001

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.50	R.T	L-T	60.3	3.000	1.499	CT	1.536	0.57	28.79			1978	RA002
		5.00			60.4	2.000	1.001	CT	1.011	0.56	28.79			1978	RA002
		5.50			60.4	3.016	1.500	CT	1.508	0.52	28.00			1978	MPC01
		5.25			60.4	2.994	1.500	CT	1.497	0.75	33.50			1978	MPC01
		5.50			60.4	3.002	1.500	CT	1.531	0.62	30.30			1978	MPC01
		2.50			60.5	3.004	1.499	CT	1.523	0.44	25.40			1980	RA001
		4.50			60.5	2.978	1.500	CT	1.489	0.65	31.00			1978	MPC01
		5.50			60.6	3.004	1.500	CT	1.532	0.52	28.10			1978	MPC01
		3.54			60.6	2.994	1.497	CT	1.587	0.62	30.70			1978	MPC01
		5.50			60.6	3.026	1.500	CT	1.513	0.60	30.20			1978	MPC01
		5.50			60.6	2.998	1.500	CT	1.529	0.48	26.90			1978	MPC01
		2.75			60.6	3.001	1.499	CT	1.591	0.48	26.79			1978	RA002
		3.00			60.6	3.000	1.400	CT	1.526	0.64	30.90			1980	RA001
		5.50			60.8	3.008	1.497	CT	1.534	0.48	27.10			1978	MPC01
		3.62			60.8	3.006	1.496	CT	1.473	0.65	31.40			1978	MPC01
		3.50			60.8	3.004	1.496	CT	1.492	0.42	25.00			1980	RA001
		5.50			60.9	2.980	1.500	CT	1.520	0.48	27.00			1978	MPC01
		4.31			60.9	3.004	1.498	CT	1.592	0.52	28.10			1978	MPC01
		5.00			60.9	3.010	1.500	CT	1.535	0.55	29.10			1978	MPC01
		5.50			60.9	3.028	1.501	CT	1.514	0.70	32.70			1978	MPC01
		4.00			60.9	2.999	1.499	CT	1.544	0.56	28.90			1978	RA001
		6.00			61.0	2.998	1.500	CT	1.559	0.70	32.50			1978	MPC01
		3.50			61.0	3.004	1.499	CT	1.502	0.72	33.00			1978	MPC01
		3.50			61.0	2.982	1.499	CT	1.461	0.70	32.50			1978	MPC01
		5.50			61.1	3.032	1.500	CT	1.516	0.48	26.90			1978	MPC01
		4.25			61.1	1.985	0.998	CT	1.032	0.78	34.60			1978	MPC01
		5.50			61.1	3.000	1.500	CT	1.500	0.53	28.10			1972	84368
		5.50			61.1	3.000	1.500	CT	1.500	0.55	28.80			1972	84368
		4.00			61.1	3.000	1.499	CT	1.571	0.73	33.09			1979	RA001
		4.00			61.2	3.000	1.497	CT	1.586	0.92	37.20			1978	RA001
		4.00			61.2	3.012	1.496	CT	1.536	0.67	31.90			1978	MPC01
		2.70			61.3	2.008	1.000	CT	1.024	0.81	35.50			1978	MPC01
		4.90			61.3	3.002	1.499	CT	1.550	0.50	27.50			1978	RA002
		3.00			61.3	3.002	1.497	CT	1.522	0.65	31.40			1980	RA001
		6.00			61.4	2.980	1.499	CT	1.520	0.70	32.80			1978	MPC01
		2.50			61.4	3.020	1.186	CT	1.540	0.55	29.10			1978	MPC01
		2.50			61.4	2.012	0.998	CT	1.006	0.44	26.00			1978	MPC01
		5.50			61.4	3.031	1.500	CT	1.546	0.52	28.80			1978	MPC01
		4.90			61.5	2.976	1.494	CT	1.488	0.48	27.50			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.00	R.T.	L-T	61.5	3.001	1.496	CT	1.610	0.65	31.50			1979	RA001
		3.00			61.5	3.002	1.379	CT	1.551	0.82	35.40			1980	RA001
		5.50			61.6	3.026	1.500	CT	1.513	0.52	28.80			1978	MPC01
		4.00			61.6	2.883	1.499	CT	1.550	0.55	29.20			1978	MPC01
		5.50			61.6	3.018	1.501	CT	1.509	0.42	25.70			1978	MPC01
		5.50			61.6	2.973	1.500	CT	1.516	0.48	27.40			1978	MPC01
		5.00			61.6	2.979	1.501	CT	1.549	0.57	30.00			1978	MPC01
		2.00			61.8	2.994	1.500	CT	1.537	0.59	30.20			1980	RA001
		3.00			61.9	3.000	1.449	CT	1.536	0.63	31.29			1980	RA001
		5.50			61.9	2.994	1.501	CT	1.527	0.52	29.00			1978	MPC01
		2.50			61.9	3.001	1.499	CT	1.513	0.48	27.29			1980	RA001
		4.25			61.9	3.018	1.502	CT	1.539	0.57	29.80			1978	MPC01
		5.50			61.9	2.998	1.501	CT	1.529	0.55	29.10			1978	MPC01
		3.00			61.9	2.980	1.245	CT	1.490	0.65	31.70			1978	MPC01
		5.50			61.9	3.030	1.501	CT	1.515	0.48	27.30			1978	MPC01
		5.00			61.9	3.020	1.502	CT	1.540	0.57	30.00			1978	MPC01
		4.00			62.0	3.008	1.498	CT	1.504	0.78	35.30			1978	MPC01
		5.00			62.0	2.991	1.499	CT	1.585	0.57	30.10			1978	MPC01
		5.50			62.0	3.016	1.501	CT	1.508	0.40	25.40			1978	MPC01
		5.50			62.0	3.012	1.500	CT	1.506	0.42	25.70			1978	MPC01
		3.50			62.0	3.001	1.490	CT	1.572	0.73	33.59			1979	RA001
		4.00			62.0	3.014	1.493	CT	1.477	0.67	32.70			1978	MPC01
		5.50			62.1	2.992	1.500	CT	1.526	0.46	27.10			1978	MPC01
		5.50			62.1	2.978	1.500	CT	1.519	0.55	29.60			1978	MPC01
		5.25			62.1	2.980	1.500	CT	1.520	0.62	31.30			1978	MPC01
		5.50			62.1	2.978	1.500	CT	1.519	0.50	28.20			1978	MPC01
		4.50			62.1	3.014	1.500	CT	1.507	0.60	30.80			1978	MPC01
		5.50			62.1	3.008	1.500	CT	1.504	0.46	27.20			1978	MPC01
		5.50			62.1	2.986	1.503	CT	1.523	0.57	29.90			1978	MPC01
		4.50			62.1	3.006	1.501	CT	1.503	0.60	30.80			1978	MPC01
		5.50			62.1	2.998	1.500	CT	1.559	0.55	29.30			1978	MPC01
		3.54			62.2	3.030	1.499	CT	1.515	0.65	32.10			1978	MPC01
		4.00			62.2	3.004	1.478	CT	1.562	0.52	29.20			1978	MPC01
		3.00			62.2	2.998	1.300	CT	1.485	0.63	31.29			1978	RA002
		1.75			62.2	3.000	1.495	CT	1.528	0.53	28.79			1980	RA001
		4.50			62.3	3.004	1.501	CT	1.502	0.55	29.90			1978	MPC01
		4.50			62.3	3.004	1.501	CT	1.502	0.67	32.80			1978	MPC01
		5.50			62.3	2.988	1.500	CT	1.524	0.42	25.80			1978	MPC01
		5.50			62.4	3.026	1.500	CT	1.513	0.46	27.30			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	3.25	R.T.	L-T	62.4	2.990	1.498	CT	1.435	0.72	34.00			1978	MPC01
		2.50			62.5	3.000	1.499	CT	1.600	0.60	30.79			1978	RA002
		6.00			62.5	3.010	1.499	CT	1.565	0.72	34.00			1978	MPC01
		4.90			62.5	3.000	1.499	CT	1.603	0.50	28.00			1978	RA002
		5.00			62.6	3.024	1.500	CT	1.542	0.48	28.00			1978	MPC01
		5.50			62.6	3.000	1.500	CT	2.100	0.56	29.70			1978	GD003
		5.50			62.6	3.000	1.500	CT	2.100	0.62	31.20			1978	GD003
		5.50			62.6	2.986	1.500	CT	1.523	0.52	28.80			1978	MPC01
		5.00			62.6	3.016	1.500	CT	1.508	0.44	26.90			1978	MPC01
		4.75			62.6	3.000	1.500	CT	1.546	0.66	32.20			1980	RA001
		5.50			62.6	3.000	1.500	CT	2.100	0.58	30.20			1978	GD003
		3.12			62.7	3.015	1.377	CT	1.447	0.65	32.00			1978	MPC01
		3.12			62.7	3.030	1.498	CT	1.515	0.62	31.60			1978	MPC01
		3.00			62.7	3.002	1.188	CT	1.581	0.51	28.50			1978	RA002
		3.75			62.8	3.029	1.497	CT	1.575	0.52	28.90			1978	MPC01
		4.00			62.8	3.001	1.251	CT	1.525	0.47	27.30			1980	RA001
		5.00			62.9	3.032	1.500	CT	1.516	0.48	28.20			1978	MPC01
		5.00			62.9	2.972	1.500	CT	1.486	0.46	27.20			1978	MPC01
		2.50			62.9	2.000	1.000	CT	----	0.67	32.10			1974	88742
		5.50			62.9	3.024	1.500	CT	1.512	0.48	28.00			1978	MPC01
		3.12			62.9	3.002	1.498	CT	1.514	0.67	32.59			1980	RA001
		4.25			62.9	3.039	1.500	CT	1.550	0.48	27.80			1978	MPC01
		2.50			62.9	2.000	1.000	CT	----	0.74	33.70			1974	88742
		2.50			62.9	2.000	1.000	CT	----	0.67	32.00			1974	88742
		3.12			63.0	3.025	1.498	CT	1.482	0.62	32.10			1978	MPC01
		4.25			63.0	3.010	1.500	CT	1.535	0.52	29.10			1978	MPC01
		6.00			63.1	3.002	1.499	CT	1.561	0.62	31.70			1978	MPC01
		2.00			63.1	3.006	1.500	CT	1.503	0.48	27.90			1978	MPC01
		2.50			63.1	2.970	1.201	CT	1.574	0.50	28.40			1978	MPC01
		2.00			63.1	3.020	1.499	CT	1.510	0.55	30.20			1978	MPC01
		4.25			63.2	2.977	1.500	CT	1.518	0.46	27.40			1978	MPC01
		4.50			63.2	3.016	1.500	CT	1.508	0.55	30.20			1978	MPC01
		4.50			63.2	2.984	1.500	CT	1.492	0.57	30.50			1978	MPC01
		5.00			63.2	3.008	1.500	CT	1.534	0.60	31.40			1978	MPC01
		4.50			63.2	3.012	1.500	CT	1.506	0.60	31.00			1978	MPC01
		2.00			63.2	3.000	1.497	CT	1.591	0.50	28.50			1978	RA001
		2.75			63.2	3.002	1.483	CT	1.520	0.50	28.29			1980	RA001
		4.50			63.4	3.022	1.499	CT	1.511	0.55	30.30			1978	MPC01
		4.50			63.4	3.000	1.500	CT	1.520	0.44	26.70			1972	B4368

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.50	R.T.	L-T	63.4	3.000	1.500	CT	1.540	0.46	27.20			1972	84368
		1.50			63.4	3.000	1.483	CT	1.568	0.59	30.79			1980	RA001
		4.25			63.5	2.986	1.500	CT	1.523	0.50	29.20			1978	MPC01
		4.00			63.5	3.014	1.499	CT	1.567	0.60	31.60			1978	MPC01
		1.75			63.5	3.004	1.500	CT	1.517	0.53	29.29			1978	RA002
		1.75			63.6	3.001	1.496	CT	1.583	0.52	29.10			1978	RA001
		3.00			63.6	1.998	0.999	CT	1.019	0.43	26.50			1979	RA001
		2.75			63.6	2.999	1.496	CT	1.543	0.54	29.60			1980	RA001
		3.00			63.6	2.986	1.499	CT	1.523	0.55	29.90			1978	MPC01
		3.12			63.6	2.985	1.499	CT	1.582	0.70	33.80			1978	MPC01
		2.50			63.7	3.002	1.499	CT	1.561	0.52	29.70			1978	MPC01
		4.00			63.7	3.019	1.499	CT	1.570	0.42	26.70			1978	MPC01
		2.50			63.7	3.001	1.495	CT	1.607	0.53	29.40			1978	RA002
		2.00			63.8	3.016	1.498	CT	1.508	0.46	27.60			1978	MPC01
		2.50			63.8	3.010	1.498	CT	1.535	0.52	29.40			1978	MPC01
		3.62			63.8	2.995	1.499	CT	1.529	0.49	28.29			1980	RA001
		2.50			63.8	3.000	1.499	CT	1.584	0.56	30.20			1978	RA002
		3.50			63.9	3.000	1.500	CT	1.520	0.61	31.50			1972	84368
		2.35			63.9	3.001	1.500	CT	1.581	0.51	29.00			1978	RA002
		3.00			63.9	3.000	1.397	CT	1.532	0.54	29.90			1980	RA001
		4.25			63.9	3.014	1.501	CT	1.507	0.62	32.50			1978	MPC01
		3.50			63.9	3.000	1.500	CT	1.510	0.61	31.60			1972	84368
		3.00			64.0	2.996	1.400	CT	1.618	0.50	29.40			1978	MPC01
		4.25			64.0	3.020	1.500	CT	1.510	0.62	32.30			1978	MPC01
		3.00			64.0	3.021	1.247	CT	1.450	0.44	27.50			1978	MPC01
		4.90			64.0	3.000	1.499	CT	1.572	0.56	30.29			1978	RA002
		5.50			64.0	2.977	1.500	CT	1.518	0.46	27.90			1978	MPC01
		3.00			64.1	2.999	1.488	CT	1.574	0.69	33.70			1978	RA001
		2.50			64.1	3.000	1.499	CT	1.623	0.56	30.40			1978	RA002
		2.35			64.1	1.498	0.751	CT	0.790	0.20	18.29			1978	RA002
		3.00			64.2	3.000	1.499	CT	1.548	0.57	30.70			1980	RA001
		4.25			64.2	3.024	1.500	CT	1.512	0.46	27.90			1978	MPC01
		2.00			64.2	2.000	1.002	CT	1.008	0.43	26.79			1978	RA002
		3.50			64.2	2.999	1.499	CT	1.550	0.67	33.40			1978	RA001
		2.25			64.2	2.989	0.999	CT	1.554	0.36	25.00			1978	MPC01
		3.00			64.2	3.002	1.495	CT	1.533	0.40	25.70			1980	RA001
		1.57			64.2	3.000	1.500	CT	1.590	0.46	27.40			1972	84368
		3.62			64.3	2.978	1.499	CT	1.608	0.46	27.80			1978	MPC01
		3.54			64.3	3.014	1.498	CT	1.507	0.48	28.50			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	K(IC) STAN DEV	DATE	REFER
T851	P	2.35	R.T	L-T	64.3	3.001	1.499	CT	1.527	0.51	29.20			1980	RA001
		4.25			64.4	3.008	1.500	CT	1.534	0.55	30.80			1978	MPC01
		3.00			64.4	2.975	1.300	CT	1.636	0.48	28.60			1978	MPC01
		2.00			64.4	3.016	1.499	CT	1.538	0.50	29.50			1978	MPC01
		4.50			64.4	3.024	1.500	CT	1.512	0.62	32.20			1978	MPC01
		1.12			64.4	3.000	1.140	CT	1.537	0.53	29.79			1980	RA001
		1.50			64.5	2.990	1.493	CT	1.525	0.57	31.60			1978	MPC01
		4.25			64.5	3.008	1.500	CT	1.534	0.50	29.60			1978	MPC01
		2.50			64.5	3.004	1.498	CT	1.546	0.44	27.10			1980	RA001
		2.50			64.5	2.010	0.998	CT	1.005	0.34	24.00			1978	MPC01
		2.50			64.5	2.510	1.249	CT	1.280	0.50	29.40			1978	MPC01
		2.50			64.5	2.999	1.494	CT	1.536	0.39	25.70			1980	RA001
		2.50			64.5	2.498	1.250	CT	1.274	0.48	28.50			1978	MPC01
		4.25			64.7	3.026	1.499	CT	1.543	0.60	31.80			1978	MPC01
		2.50			64.7	3.014	1.102	CT	1.567	0.40	26.50			1978	MPC01
		2.75			64.7	3.024	1.500	CT	1.542	0.70	34.80			1978	MPC01
		4.25			64.7	3.028	1.501	CT	1.514	0.62	32.50			1978	MPC01
		3.00			64.8	3.000	1.499	CT	1.558	0.40	26.00			1979	RA001
		2.00			64.8	3.002	1.496	CT	1.554	0.40	26.10			1980	RA001
		2.20			64.8	3.001	1.498	CT	1.554	0.52	29.70			1980	RA001
		2.50			64.9	2.010	1.000	CT	1.005	0.55	30.60			1978	MPC01
		2.50			64.9	2.508	1.250	CT	1.279	0.42	27.20			1978	MPC01
		2.50			64.9	2.486	1.250	CT	1.268	0.42	26.90			1978	MPC01
		3.25			64.9	3.016	1.497	CT	1.508	0.70	34.40			1978	MPC01
		1.81			64.9	2.982	1.493	CT	1.521	0.52	29.90			1978	MPC01
		2.75			64.9	2.997	1.498	CT	1.610	0.60	32.00			1980	RA001
		4.90			65.0	3.000	1.500	CT	1.591	0.49	28.90			1978	RA002
		2.00			65.0	3.017	1.499	CT	1.569	0.57	31.20			1978	MPC01
		0.62			65.1	1.006	0.500	CT	0.503	0.46	28.40			1978	MPC01
		1.50			65.1	3.000	1.479	CT	1.532	0.52	29.90			1980	RA001
		2.00			65.1	3.000	1.496	CT	1.581	0.59	31.79			1980	RA001
		4.00			65.2	3.979	2.000	CT	2.069	0.50	29.40			1978	MPC01
		2.00			65.2	2.008	0.899	CT	1.044	0.44	27.60			1978	MPC01
		2.50			65.2	2.999	1.498	CT	1.555	0.48	28.70			1980	RA001
		1.75			65.2	2.999	1.500	CT	1.567	0.61	32.30			1980	RA001
		1.57			65.2	3.000	1.500	CT	1.530	0.73	35.20			1972	84368
		3.00			65.2	3.008	1.400	CT	1.594	0.48	28.90			1978	MPC01
		1.57			65.2	3.000	1.500	CT	1.480	0.69	34.20			1972	84368
		3.00			65.2	2.001	0.997	CT	1.012	0.54	30.50			1978	RA002

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.35	R.T.	L-T	65.2	2.016	1.001	CT	0.988	0.40	26.70			1978	MPC01
		4.00			65.2	4.039	1.997	CT	2.060	0.48	29.10			1978	MPC01
		2.50			65.3	3.000	1.499	CT	1.522	0.45	28.00			1980	RA001
		2.00			65.3	1.994	0.999	CT	1.017	0.42	27.30			1978	MPC01
		2.50			65.4	2.000	1.000	CT	1.010	0.44	27.30			1972	84368
		2.04			65.4	1.500	0.750	CT	0.740	0.27	21.30			1972	84368
		2.50			65.4	2.000	1.000	CT	1.020	0.43	27.10			1972	84368
		1.81			65.4	2.012	0.998	CT	1.046	0.44	27.80			1978	MPC01
		2.00			65.4	3.003	1.501	CT	1.568	0.54	30.40			1978	RA002
		3.50			65.4	3.000	1.500	CT	1.540	0.44	27.90			1972	84368
		2.04			65.4	1.500	0.750	CT	0.750	0.26	21.10			1972	84368
		3.00			65.4	2.975	1.245	CT	1.517	0.55	30.80			1978	MPC01
		2.00			65.4	3.030	1.500	CT	1.515	0.48	29.00			1978	MPC01
		2.50			65.4	2.990	1.498	CT	1.525	0.55	30.90			1978	MPC01
		3.00			65.5	1.997	0.998	CT	1.014	0.59	32.00			1979	RA001
		2.50			65.5	1.998	0.998	CT	0.979	0.50	29.50			1978	MPC01
		4.00			65.5	3.000	1.500	CT	1.580	0.31	23.00			1972	84368
		4.00			65.5	3.000	1.500	CT	1.560	0.30	22.50			1972	84368
		2.50			65.6	4.000	2.000	CT	2.100	0.78	36.70			1972	84368
		2.50			65.6	4.000	2.000	CT	2.100	0.77	36.40			1972	84368
		3.00			65.6	3.001	1.478	CT	1.574	0.49	29.20			1978	RA001
		5.50			65.7	3.018	1.500	CT	1.509	0.44	28.10			1978	MPC01
		2.50			65.7	2.983	1.499	CT	1.551	0.42	27.00			1978	MPC01
		1.12			65.7	3.018	1.135	CT	1.479	0.34	24.70			1978	MPC01
		3.00			65.8	3.028	1.400	CT	1.605	0.62	33.10			1978	MPC01
		1.75			65.9	3.003	1.501	CT	1.583	0.60	32.50			1978	RA002
		2.40			65.9	3.003	1.498	CT	1.534	0.49	29.40			1980	RA001
		2.25			66.0	2.016	0.999	CT	1.068	0.38	26.30			1978	MPC01
		1.50			66.0	3.000	1.500	CT	----	0.52	30.00			1982	NC003
		3.00			66.0	2.400	0.755	CT	1.356	0.60	32.40			1972	84306
		1.25			66.0	2.006	0.998	CT	1.083	0.44	28.20			1978	MPC01
		2.50			66.0	3.003	1.187	CT	1.520	0.51	30.10			1978	RA002
		1.50			66.0	3.000	1.500	CT	----	0.52	30.00			1982	NC003
		1.50			66.1	3.001	1.496	CT	1.564	0.54	31.00			1980	RA001
		2.50			66.2	4.000	2.000	CT	2.150	0.65	33.70			1972	84368
		2.50			66.2	4.000	2.000	CT	2.160	0.69	34.90			1972	84368
		2.00			66.2	3.000	1.500	CT	1.550	0.52	30.30			1972	84368
		1.50			66.2	3.018	1.478	CT	1.509	0.50	29.80			1978	MPC01
		1.12			66.2	2.004	1.000	CT	1.022	0.46	28.90			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.00	R.T.	L-T	66.2	3.000	1.500	CT	1.560	0.53	30.40			1972	B4368
		1.50			66.2	2.996	1.448	CT	1.528	0.46	29.00			1978	MPC01
		0.87			66.2	1.500	0.750	CT	0.750	0.38	26.30			1978	MPC01
		2.50			66.2	2.999	1.497	CT	1.539	0.45	28.20			1978	RA002
		1.37			66.3	2.013	0.998	CT	1.067	0.34	25.10			1978	MPC01
		2.25			66.3	3.018	1.493	CT	1.539	0.48	29.30			1978	MPC01
		2.50			66.3	1.998	0.999	CT	1.021	0.36	25.50			1979	RA001
		2.00			66.4	4.000	2.000	CT	----	0.54	30.90			1978	UD005
		1.12			66.4	2.982	1.153	CT	1.461	0.34	25.00			1978	MPC01
		2.00			66.4	2.000	0.752	CT	1.014	0.26	21.40			1972	B4306
		2.00			66.4	2.000	0.748	CT	1.018	0.34	24.60			1972	B4306
		2.00			66.4	4.000	2.000	CT	----	0.51	30.10			1978	UD005
		1.75			66.4	3.003	1.503	CT	1.563	0.52	30.40			1978	RA002
		2.00			66.4	2.000	0.753	CT	1.255	0.35	24.70			1972	B4306
		2.50			66.4	1.994	0.999	CT	1.057	0.38	26.10			1978	MPC01
		2.00			66.4	4.000	2.000	CT	----	0.52	30.40			1978	UD005
		1.50			66.5	2.998	1.499	CT	1.541	0.50	29.79			1978	RA001
		2.00			66.6	2.983	1.499	CT	1.581	0.57	32.20			1978	MPC01
		2.75			66.6	3.002	1.503	CT	1.561	0.50	30.00			1978	RA002
		1.12			66.7	3.017	1.185	CT	1.599	0.48	29.80			1978	MPC01
		2.50			66.7	3.024	1.201	CT	1.542	0.42	27.80			1978	MPC01
		0.87			66.7	1.504	0.750	CT	0.752	0.46	28.90			1978	MPC01
		1.55			66.7	3.000	1.497	CT	1.487	0.42	27.50			1980	RA001
		1.62			66.7	3.001	1.501	CT	1.575	0.45	28.60			1978	RA002
		3.00			66.9	3.015	1.495	CT	1.628	0.62	33.50			1978	MPC01
		2.25			66.9	3.015	1.499	CT	1.598	0.48	29.80			1978	MPC01
		1.75			67.0	3.000	1.500	CT	1.580	0.45	28.30			1972	B4368
		3.00			67.0	2.993	1.435	CT	1.616	0.67	35.10			1978	MPC01
		1.55			67.0	2.978	1.496	CT	1.489	0.44	28.70			1978	MPC01
		1.50			67.0	3.030	1.441	CT	1.515	0.40	27.30			1978	MPC01
		1.50			67.0	3.012	1.481	CT	1.506	0.40	27.20			1978	MPC01
		1.75			67.0	3.000	1.500	CT	1.570	0.45	28.60			1972	B4368
		1.73			67.1	2.999	1.499	CT	1.536	0.48	29.60			1978	RA002
		1.75			67.1	3.011	1.499	CT	1.626	0.42	27.80			1978	MPC01
		1.57			67.2	3.000	1.500	CT	1.560	0.37	26.00			1972	B4368
		1.75			67.2	3.003	1.496	CT	1.587	0.48	29.50			1980	RA001
		2.03			67.2	2.982	1.501	CT	1.521	0.55	31.70			1978	MPC01
		2.03			67.2	2.998	1.501	CT	1.529	0.60	33.50			1978	MPC01
		1.57			67.2	3.000	1.500	CT	1.560	0.39	26.50			1972	B4368

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.50	R.T.	L-T	67.2	2.509	1.252	CT	1.282	0.45	28.79			1981	MA002
		1.50			67.2	2.512	1.253	CT	1.298	0.46	29.00			1981	MA002
		1.50			67.6	2.997	1.494	CT	1.525	0.45	28.79			1978	RA001
		1.55			67.7	3.000	1.501	CT	1.575	0.38	26.50			1979	RA001
		2.00			67.7	3.029	1.498	CT	1.545	0.44	28.60			1978	MPC01
		1.35			67.8	1.998	0.999	CT	1.019	0.40	27.70			1978	MPC01
		1.50			67.9	1.985	0.999	CT	1.032	0.42	28.00			1978	MPC01
		1.75			68.0	2.998	1.498	CT	1.589	0.55	32.40			1978	MPC01
		1.37			68.2	2.984	1.376	CT	1.462	0.38	26.90			1978	MPC01
		1.25			68.4	2.017	0.999	CT	1.089	0.38	26.90			1978	MPC01
		1.73			68.4	3.003	1.503	CT	1.611	0.48	30.20			1978	RA002
		1.62			68.8	3.001	1.451	CT	1.522	0.40	27.79			1980	RA001
		1.50			69.1	3.002	1.492	CT	1.528	0.36	26.70			1980	RA001
		1.75			69.5	2.998	1.500	CT	1.559	0.44	29.20			1978	MPC01
		2.52			69.7	2.000	1.000	CT	0.960	0.34	25.50			1972	84368
		2.52			69.7	2.000	1.000	CT	0.960	0.35	26.00			1972	84368
		2.52			69.7	2.000	1.000	CT	0.940	0.33	25.20	29.7/	2.8	1972	84368
T851	P	3.50	81	L-T	64.4	3.000	1.500	CT	1.547	0.45	27.40			1973	86213
		3.50			64.4	3.000	1.499	CT	1.533	0.53	29.60	28.5/	1.6	1973	86213
T851	P	2.50	250	L-T	56.9	2.000	1.000	CT	----	0.85	33.30			1974	88742
		2.50			56.9	2.000	1.000	CT	----	0.88	33.90			1974	88742
		2.50			56.9	2.000	1.000	CT	----	0.78	31.90	33.0/	1.0	1974	88742
T851	P	3.00	R.T.	T-L	----	3.014	1.372	CT	1.477	----	26.40			1978	MPC01
		5.00			53.0	3.004	1.502	CT	1.533	0.56	25.10			1979	GD011
		6.00			53.9	3.020	1.499	CT	1.510	0.44	23.10			1978	MPC01
		5.50			54.2	2.973	1.497	CT	1.516	0.50	24.80			1978	MPC01
		5.25			54.4	2.998	1.498	CT	1.559	0.50	24.80			1978	MPC01
		6.00			54.6	2.979	1.499	CT	1.579	0.57	26.60			1978	MPC01
		5.25			54.9	3.012	1.499	CT	1.536	0.42	22.90			1978	MPC01
		6.00			54.9	3.008	1.499	CT	1.594	0.55	26.00			1978	MPC01
		6.00			54.9	2.985	1.499	CT	1.552	0.67	28.80			1978	MPC01
		6.00			55.0	3.000	1.500	CT	1.580	0.48	24.10			1972	84368
		6.00			55.0	3.000	1.500	CT	1.560	0.46	23.70			1972	84368
		5.50			55.6	3.017	1.498	CT	1.569	0.70	29.90			1978	MPC01
		5.50			55.9	2.999	1.500	CT	1.582	0.50	25.00			1980	RA001
		5.75			56.4	2.001	0.995	CT	1.010	0.60	27.70			1980	RA001

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	5 50	R.T.	T-L	56.5	3.008	1.499	CT	1.564	0.55	27.00			1978	MPC01
		6 00			56.7	3.004	1.499	CT	1.622	0.50	26.00			1978	MPC01
		5 50			56.7	3.028	1.500	CT	1.544	0.48	25.10			1978	MPC01
		5 50			56.8	3.010	1.498	CT	1.505	0.57	27.60			1978	MPC01
		6 00			57.0	2.001	0.998	CT	1.000	0.56	27.20			1980	RA001
		6 00			57.0	3.014	1.498	CT	1.537	0.38	22.30			1978	MPC01
		5 00			57.0	3.010	1.498	CT	1.505	0.44	24.10			1978	MPC01
		5 00			57.0	3.026	1.500	CT	1.604	0.42	23.90			1978	MPC01
		4 90			57.1	3.000	1.498	CT	1.556	0.73	30.90			1978	RA002
		6 00			57.1	3.026	1.494	CT	1.513	0.57	27.80			1978	MPC01
		5 12			57.1	3.028	1.499	CT	1.544	0.55	27.20			1978	MPC01
		5 00			57.2	2.996	1.497	CT	1.528	0.60	28.30			1978	MPC01
		5 12			57.3	2.987	1.500	CT	1.583	0.70	30.50			1978	MPC01
		4 62			57.4	2.981	1.500	CT	1.550	0.60	28.50			1978	MPC01
		5 50			57.7	3.008	1.502	CT	1.564	0.36	22.40			1978	MPC01
		5 50			57.7	2.994	1.500	CT	1.557	0.44	24.40			1978	MPC01
		5 00			57.8	2.998	1.501	CT	1.585	0.51	26.29			1979	RA001
		5 00			57.8	2.006	0.998	CT	1.043	0.46	25.30			1978	MPC01
		6 00			57.9	1.998	0.997	CT	1.025	0.47	25.29			1978	RA001
		4 62			57.9	3.020	1.499	CT	1.510	0.42	24.20			1978	MPC01
		4 50			58.0	2.997	1.497	CT	1.548	0.47	25.40			1979	RA001
		5 50			58.0	2.986	1.500	CT	1.463	0.48	26.00			1978	MPC01
		5 50			58.1	3.006	1.501	CT	1.533	0.38	22.80			1978	MPC01
		5 50			58.2	2.984	1.498	CT	1.492	0.52	27.00			1978	MPC01
		5 00			58.4	3.001	1.498	CT	1.612	0.44	24.60			1978	RA001
		4 25			58.4	3.000	1.499	CT	1.595	0.48	25.60			1980	RA001
		5 00			58.4	2.996	1.499	CT	1.533	0.40	23.40			1979	RA001
		5 00			58.5	3.020	1.498	CT	1.540	0.40	23.50			1978	MPC01
		4 50			58.5	3.000	1.500	CT	1.570	0.51	26.50			1972	B4368
		4 00			58.5	2.999	1.498	CT	1.560	0.43	24.29			1980	RA001
		5 50			58.6	2.996	1.501	CT	1.528	0.44	25.10			1978	MPC01
		5 00			58.6	2.972	1.499	CT	1.605	0.44	24.80			1978	MPC01
		5 25			58.6	3.018	1.499	CT	1.509	0.52	27.20			1978	MPC01
		4 00			58.7	1.998	0.998	CT	1.005	0.36	22.50			1979	RA001
		5 50			58.7	2.982	1.500	CT	1.521	0.44	25.20			1978	MPC01
		5 50			58.8	3.031	1.500	CT	1.546	0.36	22.70			1978	MPC01
		5 50			58.8	3.008	1.500	CT	1.534	0.30	21.00			1978	MPC01
		4 90			58.9	3.000	1.499	CT	1.623	0.40	23.79			1978	RA002
		4 00			58.9	3.006	1.492	CT	1.533	0.48	26.40			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN DEV	STAN	DATE	REFER
T851	P	4.55	R.T	T-L	58.9	3.001	1.500	CT	1.563	0.57	28.20			1980	RA001
		4.00			58.9	2.998	1.496	CT	1.589	0.38	23.00			1978	MPC01
		6.00			59.0	2.987	1.500	CT	1.553	0.62	29.50			1978	MPC01
		4.00			59.0	3.012	1.501	CT	1.566	0.42	24.50			1978	MPC01
		5.50			59.0	2.977	1.501	CT	1.548	0.48	26.50			1978	MPC01
		5.50			59.1	3.006	1.500	CT	1.533	0.40	23.70			1978	MPC01
		4.90			59.1	3.006	1.493	CT	1.503	0.44	25.30			1978	MPC01
		4.50			59.1	2.994	1.498	CT	1.587	0.55	28.20			1978	MPC01
		4.90			59.1	3.000	1.499	CT	1.613	0.47	25.79			1978	RA002
		4.00			59.1	3.003	1.498	CT	1.604	0.56	28.10			1980	RA001
		5.50			59.2	3.028	1.500	CT	1.544	0.36	22.80			1978	MPC01
		4.50			59.2	2.987	1.498	CT	1.553	0.38	23.20			1978	MPC01
		4.50			59.2	3.017	1.498	CT	1.599	0.55	28.20			1978	MPC01
		4.00			59.2	3.004	1.499	CT	1.562	0.34	22.40			1978	MPC01
		5.50			59.2	2.983	1.497	CT	1.551	0.30	21.00			1978	MPC01
		5.50			59.3	3.000	1.500	CT	1.510	0.34	21.80			1972	84368
		6.00			59.3	2.976	1.500	CT	1.577	0.60	29.60			1978	MPC01
		5.50			59.3	3.000	1.500	CT	1.540	0.35	22.30			1972	84368
		4.50			59.4	3.001	1.501	CT	1.583	0.36	22.79			1978	RA002
		5.50			59.6	3.016	1.500	CT	1.538	0.32	21.50			1978	MPC01
		5.50			59.6	3.016	1.499	CT	1.538	0.30	20.90			1978	MPC01
		5.50			59.6	3.008	1.502	CT	1.534	0.32	21.90			1978	MPC01
		5.00			59.7	2.000	1.001	CT	1.045	0.37	23.20			1978	RA002
		5.00			59.8	3.026	1.500	CT	1.543	0.38	23.90			1978	MPC01
		5.50			59.8	3.018	1.500	CT	1.539	0.40	24.20			1978	MPC01
		5.50			59.8	2.996	1.500	CT	1.558	0.40	24.10			1978	MPC01
		4.00			59.9	2.999	1.499	CT	1.570	0.38	23.40			1980	RA001
		6.00			59.9	3.012	1.499	CT	1.566	0.65	30.60			1978	MPC01
		4.90			59.9	3.003	1.500	CT	1.572	0.42	24.60			1978	RA002
		4.50			60.0	3.000	1.500	CT	1.500	0.57	28.80			1978	MPC01
		4.00			60.0	2.000	1.000	CT	1.030	0.38	23.40			1972	84368
		4.50			60.0	3.000	1.496	CT	1.604	0.41	24.29			1978	RA002
		5.50			60.1	2.994	1.501	CT	1.557	0.34	22.50			1978	MPC01
		4.00			60.1	2.999	1.500	CT	1.493	0.54	28.10			1980	RA001
		5.00			60.1	3.000	1.501	CT	1.530	0.38	23.80			1978	MPC01
		5.50			60.1	3.002	1.500	CT	1.530	0.30	21.50			1978	MPC01
		5.50			60.1	2.994	1.501	CT	1.527	0.32	22.10			1978	MPC01
		5.25			60.1	3.026	1.500	CT	1.513	0.44	25.30			1978	MPC01
		5.50			60.1	2.992	1.500	CT	1.526	0.40	24.30			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.00	R.T.	T-L	60.2	3.000	1.497	CT	1.636	0.41	24.40			1978	RA001
		5.50			60.2	2.988	1.500	CT	1.524	0.36	22.90			1978	MPC01
		4.00			60.3	3.020	1.498	CT	1.540	0.50	27.20			1978	MPC01
		4.25			60.3	1.981	0.997	CT	1.030	0.46	26.40			1978	MPC01
		4.00			60.4	2.998	1.373	CT	1.588	0.51	27.40			1978	RA001
		5.50			60.4	3.000	1.500	CT	1.500	0.36	23.30			1978	MPC01
		5.00			60.4	3.214	1.499	CT	1.539	0.36	23.40			1978	MPC01
		5.50			60.4	2.978	1.500	CT	1.519	0.38	23.60			1978	MPC01
		3.50			60.4	3.016	1.497	CT	1.478	0.46	26.50			1978	MPC01
		5.50			60.6	2.998	1.500	CT	1.529	0.28	21.20			1978	MPC01
		5.25			60.6	3.018	1.500	CT	1.539	0.50	27.70			1978	MPC01
		1.81			60.6	3.002	1.498	CT	1.651	0.44	25.70			1978	MPC01
		3.75			60.6	2.996	1.497	CT	1.528	0.48	27.00			1978	MPC01
		5.50			60.6	3.014	1.500	CT	1.537	0.36	23.50			1978	MPC01
		5.50			60.6	2.996	1.500	CT	1.528	0.34	23.00			1978	MPC01
		5.50			60.6	3.018	1.500	CT	1.539	0.32	22.20			1978	MPC01
		4.50			60.7	3.020	1.501	CT	1.510	0.46	26.70			1978	MPC01
		4.31			60.8	2.000	1.000	CT	1.000	0.38	23.60			1972	84368
		4.31			60.8	2.000	1.000	CT	0.990	0.39	23.90			1972	84368
		5.00			60.9	2.988	1.500	CT	1.524	0.30	21.90			1978	MPC01
		3.00			60.9	3.002	1.498	CT	1.567	0.57	29.29			1980	RA001
		4.00			60.9	2.998	1.499	CT	1.608	0.43	25.29			1979	RA001
		5.00			61.0	3.020	1.501	CT	1.631	0.46	26.60			1978	MPC01
		3.00			61.0	3.001	1.418	CT	1.555	0.54	28.90			1980	RA001
		5.50			61.1	3.004	1.490	CT	1.532	0.32	22.00			1978	MPC01
		4.00			61.1	3.000	1.498	CT	1.562	0.59	29.70			1978	RA001
		5.25			61.1	2.985	1.500	CT	1.552	0.42	25.50			1978	MPC01
		3.00			61.1	2.999	1.498	CT	1.546	0.46	26.29			1980	RA001
		5.50			61.1	2.988	1.501	CT	1.524	0.32	22.50			1978	MPC01
		6.00			61.1	3.008	1.499	CT	1.594	0.67	31.80			1978	MPC01
		4.25			61.1	3.020	1.500	CT	1.540	0.34	22.70			1978	MPC01
		1.75			61.3	2.999	1.499	CT	1.563	0.40	24.70			1980	RA001
		4.90			61.3	3.000	1.499	CT	1.625	0.44	25.79			1978	RA002
		4.50			61.4	3.000	1.500	CT	1.570	0.36	23.30			1972	84368
		4.50			61.4	3.000	1.500	CT	1.520	0.34	22.50			1972	84368
		5.50			61.4	3.010	1.500	CT	1.535	0.32	22.30			1978	MPC01
		4.50			61.4	3.030	1.500	CT	1.515	0.52	28.60			1978	MPC01
		4.50			61.4	3.020	1.500	CT	1.510	0.50	27.70			1978	MPC01
		3.00			61.4	3.001	1.438	CT	1.613	0.42	25.40			1978	RA001

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN DEV	DATE	REFER
T851	P	5 00	R T	T-L	61.4	3.028	1.500	CT	1.544	0.32	22.30		1978	MPC01
		5 50			61.4	3.006	1.500	CT	1.533	0.28	21.30		1978	MPC01
		4 50			61.4	3.014	1.500	CT	1.507	0.50	27.90		1978	MPC01
		4 00			61.4	3.000	1.497	CT	1.657	0.50	27.70		1979	RA001
		3 50			61.5	3.000	1.497	CT	1.602	0.55	29.00		1978	RA001
		4 31			61.5	3.022	1.502	CT	1.632	0.42	25.50		1978	MPC01
		5 00			61.5	3.000	1.499	CT	1.547	0.37	23.70		1980	RA001
		2 25			61.6	2.994	1.502	CT	1.587	0.52	28.80		1978	MPC01
		3 50			61.6	3.006	1.499	CT	1.533	0.50	28.30		1978	MPC01
		4 90			61.6	3.030	1.494	CT	1.515	0.38	24.30		1978	MPC01
		5 50			61.6	3.029	1.500	CT	1.545	0.32	22.60		1978	MPC01
		3 50			61.6	2.990	1.497	CT	1.555	0.52	28.40		1978	MPC01
		4 25			61.6	2.990	1.500	CT	1.525	0.32	22.30		1978	MPC01
		4 00			61.7	2.994	1.499	CT	1.587	0.38	24.40		1978	MPC01
		3 00			61.7	.78	0.997	CT	1.031	0.37	24.00		1979	RA001
		5 00			61.7	[illegible]	1.500	CT	1.562	0.34	23.00		1978	MPC01
		3 00			61.7	2.[illegible]	1.404	CT	1.556	0.51	28.10		1980	RA001
		2 70			61.7	2.017	0.999	CT	1.049	0.55	29.30		1978	MPC01
		3 00			61.8	3.002	1.374	CT	1.505	0.37	23.79		1980	RA001
		2 50			61.8	2.994	1.056	CT	1.557	0.38	24.90		1978	MPC01
		2 50			61.8	3.000	1.499	CT	1.647	0.42	25.60		1978	RA001
		4 25			61.9	3.026	1.502	CT	1.543	0.32	22.90		1978	MPC01
		5 50			61.9	3.000	1.500	CT	2.100	0.44	26.00		1978	GD003
		3 12			61.9	3.022	1.499	CT	1.511	0.50	27.90		1978	MPC01
		5 50			61.9	3.000	1.500	CT	2.100	0.43	25.70		1978	GD003
		5 50			61.9	3.000	1.500	CT	2.100	0.43	25.70		1978	GD003
		2 50			61.9	3.000	1.499	CT	1.561	0.43	25.79		1978	RA002
		4 25			61.9	3.002	1.500	CT	1.531	0.28	21.60		1978	MPC01
		3 62			62.0	2.995	1.498	CT	1.544	0.34	22.90		1980	RA001
		2 00			62.0	2.994	1.499	CT	1.597	0.53	28.70		1980	RA001
		4 25			62.1	2.978	1.500	CT	1.519	0.36	24.00		1978	MPC01
		4 50			62.1	3.006	1.500	CT	1.533	0.50	28.20		1978	MPC01
		4 50			62.1	3.006	1.500	CT	1.503	0.55	29.40		1978	MPC01
		4 50			62.1	2.994	1.501	CT	1.527	0.50	28.30		1978	MPC01
		4 50			62.1	3.002	1.498	CT	1.600	0.48	27.40		1980	RA001
		2 50			62.1	2.000	1.000	CT	----	0.47	26.70		1974	88742
		2 00			62.1	2.002	1.002	CT	1.052	0.32	22.29		1978	RA002
		4 90			62.1	3.000	1.500	CT	1.617	0.40	25.10		1978	RA002
		2 50			62.1	2.000	1.000	CT	----	0.47	26.90		1974	88742

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.50	R T	T-L	62.1	3.016	1.500	CT	1.508	0.50	28.10			1978	MPC01
		2.50			62.1	2.000	1.000	CT	----	0.52	28.20			1974	88742
		2.50			62.2	3.021	0.869	CT	1.420	0.40	25.40			1978	MPC01
		1.73			62.3	1.992	1.000	CT	1.016	0.36	24.10			1978	MPC01
		3.50			62.3	3.001	1.500	CT	1.581	0.45	26.60			1979	RA001
		2.50			62.3	2.989	1.498	CT	1.584	0.36	24.10			1978	MPC01
		3.00			62.3	3.002	1.375	CT	1.551	0.61	31.00			1980	RA001
		2.50			62.3	2.000	0.997	CT	1.040	0.30	21.90			1978	MPC01
		4.00			62.4	3.002	1.251	CT	1.644	0.33	22.70			1980	RA001
		5.50			62.4	2.988	1.499	CT	1.524	0.48	27.70			1978	MPC01
		2.50			62.4	2.964	1.500	CT	1.526	0.42	25.70			1980	RA001
		3.12			62.4	3.003	1.498	CT	1.565	0.50	28.10			1980	RA001
		1.50			62.4	3.000	1.484	CT	1.556	0.42	25.60			1980	RA001
		4.25			62.4	3.020	1.500	CT	1.540	0.34	23.10			1978	MPC01
		3.00			62.4	3.008	1.482	CT	1.504	0.42	26.10			1978	MPC01
		3.00			62.5	2.999	1.363	CT	1.568	0.35	23.60			1980	RA001
		3.00			62.5	3.001	1.187	CT	1.641	0.39	25.00			1978	RA002
		4.25			62.5	2.986	1.500	CT	1.523	0.34	23.30			1978	MPC01
		2.75			62.5	3.000	1.496	CT	1.648	0.35	23.40			1978	RA002
		4.50			62.6	3.012	1.501	CT	1.506	0.44	26.80			1978	MPC01
		2.50			62.6	3.000	1.499	CT	1.592	0.41	25.60			1978	RA002
		3.00			62.6	2.999	1.301	CT	1.515	0.43	26.20			1978	RA002
		3.50			62.6	3.000	1.498	CT	1.559	0.35	23.60			1980	RA001
		4.00			62.7	3.019	1.500	CT	1.630	0.42	26.10			1978	MPC01
		3.50			62.7	3.000	1.500	CT	1.550	0.46	26.80			1972	B4368
		4.00			62.7	3.002	1.498	CT	1.591	0.46	27.20			1978	MPC01
		3.50			62.7	3.000	1.500	CT	1.550	0.44	26.40			1972	B4368
		3.12			62.7	3.000	1.498	CT	1.594	0.54	29.40			1978	RA001
		3.00			62.8	3.014	1.301	CT	1.567	0.46	27.20			1978	MPC01
		3.00			62.8	3.000	1.498	CT	1.505	0.32	22.60			1980	RA001
		4.25			62.8	2.977	1.500	CT	1.518	0.34	23.40			1978	MPC01
		3.00			62.9	2.999	1.399	CT	1.523	0.55	29.70			1980	RA001
		2.00			62.9	3.026	1.503	CT	1.513	0.38	25.00			1978	MPC01
		5.00			62.9	2.981	1.500	CT	1.550	0.38	24.70			1978	MPC01
		3.12			62.9	2.980	1.448	CT	1.609	0.48	28.20			1978	MPC01
		4.25			62.9	2.990	1.500	CT	1.525	0.28	21.80			1978	MPC01
		4.25			62.9	3.014	1.500	CT	1.537	0.36	24.00			1978	MPC01
		2.00			62.9	3.016	1.497	CT	1.508	0.40	25.30			1978	MPC01
		3.62			62.9	3.031	1.497	CT	1.485	0.40	25.20			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.50	R.T.	T-L	63.0	2.489	1.250	CT	1.294	0.40	25.70			1978	MPC01
		2.50			63.0	2.528	1.250	CT	1.289	0.40	25.50			1978	MPC01
		3.54			63.0	3.019	1.498	CT	1.630	0.46	27.40			1978	MPC01
		2.50			63.1	2.998	1.099	CT	1.589	0.36	24.20			1978	MPC01
		4.25			63.2	2.975	1.500	CT	1.547	0.32	22.90			1978	MPC01
		1.75			63.2	2.980	1.498	CT	1.490	0.28	22.00			1978	MPC01
		3.00			63.2	2.000	0.995	CT	1.036	0.41	25.90			1978	RA002
		3.25			63.4	3.027	1.499	CT	1.574	0.42	26.30			1978	MPC01
		2.25			63.4	2.985	1.503	CT	1.582	0.44	27.20			1978	MPC01
		4.25			63.4	2.983	1.499	CT	1.551	0.30	22.80			1978	MPC01
		5.50			63.4	2.988	1.500	CT	1.524	0.32	22.90			1978	MPC01
		1.37			63.4	1.996	0.998	CT	1.078	0.30	22.20			1978	MPC01
		2.50			63.5	3.001	1.496	CT	1.572	0.39	25.40			1980	RA001
		2.00			63.5	2.990	1.499	CT	1.555	0.32	23.40			1978	MPC01
		2.35			63.5	3.000	1.499	CT	1.541	0.35	24.00			1980	RA001
		3.12			63.6	3.027	1.499	CT	1.574	0.42	26.30			1978	MPC01
		2.50			63.6	3.001	1.499	CT	1.600	0.39	25.40			1978	RA002
		3.00			63.7	3.001	1.333	CT	1.574	0.33	23.40			1979	RA001
		2.90			63.7	2.992	0.996	CT	1.466	0.42	26.30			1978	MPC01
		3.54			63.7	3.000	1.497	CT	1.530	0.42	26.50			1978	MPC01
		3.00			63.7	3.004	1.400	CT	1.592	0.32	23.30			1978	MPC01
		2.75			63.8	2.999	1.498	CT	1.572	0.36	24.29			1980	RA001
		2.50			63.8	3.028	1.498	CT	1.544	0.36	24.30			1978	MPC01
		3.12			63.9	3.020	1.502	CT	1.480	0.46	27.60			1978	MPC01
		2.00			63.9	2.990	0.870	CT	1.465	0.34	24.20			1978	MPC01
		2.00			63.9	2.975	1.502	CT	1.517	0.44	27.20			1978	MPC01
		1.75			64.0	3.001	1.498	CT	1.554	0.33	23.29			1978	RA001
		2.50			64.0	2.989	1.499	CT	1.614	0.44	27.10			1978	MPC01
		5.00			64.1	3.028	1.498	CT	1.514	0.38	25.10			1978	MPC01
		3.00			64.1	1.998	0.998	CT	1.029	0.41	26.00			1979	RA001
		3.00			64.1	3.001	1.428	CT	1.391	0.43	26.60			1978	RA001
		1.25			64.1	2.016	0.999	CT	1.028	0.34	23.80			1978	MPC01
		2.50			64.1	2.999	1.498	CT	1.545	0.41	26.20			1980	RA001
		2.75			64.2	3.000	1.496	CT	1.570	0.47	27.90			1980	RA001
		3.50			64.2	3.000	1.500	CT	1.520	0.33	23.30			1972	84368
		2.75			64.2	2.987	1.497	CT	1.553	0.44	27.30			1978	MPC01
		3.00			64.2	3.017	1.496	CT	1.539	0.44	27.50			1978	MPC01
		4.00			64.2	3.975	1.999	CT	2.067	0.42	26.60			1978	MPC01
		3.50			64.2	3.000	1.500	CT	1.520	0.32	22.80			1972	84368

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.00	R.T.	T-L	64.2	3.000	1.500	CT	1.590	0.26	20.80			1972	B4368
		0.62			64.2	1.004	0.500	CT	0.512	0.46	28.00			1978	MPC01
		3.00			64.2	2.996	1.400	CT	1.648	0.34	24.20			1978	MPC01
		2.50			64.2	2.000	1.000	CT	1.040	0.42	26.30			1972	B4368
		4.00			64.2	3.000	1.500	CT	1.590	0.27	21.00			1972	B4368
		1.75			64.2	2.998	1.501	CT	1.588	0.44	27.20			1980	RA001
		4.00			64.2	4.004	2.000	CT	2.042	0.42	26.40			1978	MPC01
		1.75			64.2	2.996	0.751	CT	1.498	0.30	22.90			1978	MPC01
		2.50			64.2	3.001	1.497	CT	1.564	0.30	22.60			1980	RA001
		2.75			64.2	3.002	1.373	CT	1.539	0.39	25.60			1980	RA001
		2.00			64.2	3.003	1.495	CT	1.533	0.30	22.50			1980	RA001
		2.50			64.2	2.000	1.000	CT	1.050	0.41	26.10			1972	B4368
		2.50			64.4	4.000	2.000	CT	2.170	0.54	29.90			1972	B4368
		3.62			64.4	2.987	1.501	CT	1.643	0.30	22.80			1978	MPC01
		2.50			64.4	4.000	2.000	CT	2.180	0.54	30.00			1972	B4368
		2.00			64.4	2.993	1.499	CT	1.616	0.36	25.00			1978	MPC01
		3.25			64.4	3.030	1.498	CT	1.515	0.38	25.60			1978	MPC01
		2.00			64.4	3.000	1.498	CT	1.551	0.41	26.10			1980	RA001
		3.00			64.4	3.007	1.400	CT	1.624	0.36	25.00			1978	MPC01
		1.50			64.5	3.002	1.499	CT	1.512	0.36	24.79			1980	RA001
		1.75			64.5	3.004	1.500	CT	1.500	0.36	24.60			1978	RA002
		2.50			64.6	3.031	1.499	CT	1.576	0.32	23.40			1978	MPC01
		2.20			64.6	3.003	1.498	CT	1.553	0.35	24.20			1980	RA001
		2.50			64.6	2.998	1.500	CT	1.558	0.37	25.10			1980	RA001
		2.00			64.7	1.990	0.753	CT	1.025	0.32	23.20			1972	B4306
		2.00			64.7	1.990	0.751	CT	1.004	0.29	21.90			1972	B4306
		2.00			64.7	2.000	0.751	CT	1.038	0.33	23.40			1972	B4306
		2.50			64.8	2.489	1.250	CT	1.294	0.44	27.30			1978	MPC01
		2.50			64.8	4.000	2.000	CT	2.130	0.46	27.70			1972	B4368
		2.50			64.8	2.522	1.250	CT	1.286	0.42	27.10			1978	MPC01
		2.50			64.8	4.000	2.000	CT	2.150	0.47	28.10			1972	B4368
		2.00			64.8	3.011	1.499	CT	1.596	0.42	27.00			1978	MPC01
		2.50			64.9	2.012	0.999	CT	0.986	0.25	21.10			1978	MPC01
		2.35			64.9	3.001	1.500	CT	1.546	0.36	24.79			1978	RA002
		3.54			64.9	3.016	1.504	CT	1.508	0.48	28.70			1978	MPC01
		2.25			64.9	1.996	0.998	CT	1.508	0.30	23.00			1978	MPC01
		2.35			65.0	2.018	0.996	CT	1.009	0.32	23.80			1978	MPC01
		2.50			65.1	2.037	0.998	CT	0.986	0.30	23.00			1978	MPC01
		3.00			65.1	2.988	1.247	CT	1.464	0.32	23.60			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.12	R.T.	T-L	65.2	2.972	1.153	CT	1.486	0.28	22.20			1978	MPC01
		2.04			65.2	1.500	0.750	CT	0.740	0.22	19.50			1972	84368
		2.04			65.2	1.500	0.750	CT	0.730	0.22	19.40			1972	84368
		3.00			65.2	2.998	1.400	CT	1.619	0.38	26.00			1978	MPC01
		1.50			65.2	3.000	1.493	CT	1.500	0.38	26.00			1978	MPC01
		2.00			65.2	3.018	1.500	CT	1.509	0.38	25.80			1978	MPC01
		1.57			65.2	3.000	1.500	CT	1.520	0.51	29.40			1972	84368
		1.57			65.2	3.000	1.500	CT	1.540	0.54	30.30			1972	84368
		3.12			65.2	3.023	1.497	CT	1.602	0.44	27.70			1978	MPC01
		1.12			65.3	3.029	1.136	CT	1.484	0.27	22.10			1978	MPC01
		2.50			65.3	2.018	0.999	CT	1.009	0.55	30.80			1978	MPC01
		1.50			65.4	2.996	1.478	CT	1.528	0.42	27.10			1978	MPC01
		2.00			65.4	3.000	1.500	CT	1.540	0.34	24.10			1972	84368
		1.75			65.4	3.028	1.499	CT	1.514	0.38	25.80			1978	MPC01
		2.00			65.4	3.000	1.500	CT	1.540	0.35	24.40			1972	84368
		1.50			65.4	3.020	1.441	CT	1.540	0.42	27.20			1978	MPC01
		1.75			65.4	3.003	1.502	CT	1.568	0.40	26.20			1978	RA002
		1.50			65.4	2.999	1.478	CT	1.531	0.37	25.40			1980	RA001
		2.40			65.4	3.001	1.497	CT	1.554	0.32	23.70			1980	RA001
		2.50			65.4	3.000	1.500	CT	1.551	0.38	25.79			1980	RA001
		1.62			65.4	3.001	1.500	CT	1.558	0.38	25.50			1978	RA002
		2.00			65.5	1.994	0.899	CT	1.057	0.32	24.00			1976	MPC01
		2.00			65.6	3.001	1.500	CT	1.561	0.33	23.90			1978	RA002
		1.81			65.6	2.015	0.999	CT	1.048	0.32	24.10			1978	MPC01
		1.75			65.7	3.000	1.500	CT	1.560	0.33	24.00			1972	84368
		3.12			65.7	2.981	1.400	CT	1.580	0.34	24.90			1978	MPC01
		1.75			65.7	3.000	1.500	CT	1.580	0.33	23.90			1972	84368
		2.03			65.7	3.014	1.501	CT	1.537	0.46	28.70			1978	MPC01
		2.50			65.7	2.973	1.099	CT	1.546	0.28	22.80			1978	MPC01
		2.00			65.7	3.000	1.497	CT	1.564	0.34	24.50			1978	RA001
		0.87			65.8	1.502	0.750	CT	0.766	0.40	26.50			1978	MPC01
		0.87			65.8	1.508	0.750	CT	0.769	0.34	24.60			1978	MPC01
		2.50			65.8	2.999	1.499	CT	1.579	0.32	23.70			1978	RA002
		2.50			65.8	3.002	1.100	CT	1.528	0.31	23.40			1980	RA001
		2.25			65.8	2.002	0.999	CT	1.041	0.32	24.30			1978	MPC01
		2.25			65.8	3.008	1.493	CT	1.504	0.30	23.50			1978	MPC01
		1.75			65.9	3.003	1.503	CT	1.552	0.36	25.20			1978	RA002
		2.50			66.0	3.017	0.999	CT	1.448	0.30	23.30			1978	MPC01
		3.00			66.0	2.500	0.754	CT	1.279	0.29	22.60			1972	84306

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.03	R.T.	T-L	66.0	3.020	1.500	CT	1.510	0.50	30.20			1978	MPC01
		3.00			66.0	2.500	0.755	CT	1.270	0.35	24.60			1972	B4306
		3.00			66.0	3.026	1.247	CT	1.543	0.34	24.70			1978	MPC01
		2.75			66.2	3.003	1.502	CT	1.584	0.43	27.70			1978	RA002
		1.50			66.2	2.985	1.440	CT	1.552	0.40	26.60			1978	MPC01
		1.50			66.2	2.988	1.441	CT	1.524	0.38	26.20			1978	MPC01
		2.50			66.2	1.997	0.999	CT	1.035	0.27	22.10			1979	RA001
		1.50			66.2	2.997	1.499	CT	1.543	0.34	24.50			1978	RA001
		2.00			66.2	3.018	1.499	CT	1.539	0.38	26.10			1978	MPC01
		2.00			66.4	1.998	0.997	CT	1.019	0.32	24.50			1978	MPC01
		1.55			66.4	3.029	1.496	CT	1.484	0.30	23.70			1978	MPC01
		1.55			66.4	2.981	1.500	CT	1.550	0.28	23.00			1978	MPC01
		2.50			66.5	3.002	1.498	CT	1.544	0.36	25.50			1980	RA001
		1.12			66.5	2.004	1.000	CT	1.022	0.36	25.40			1978	MPC01
		1.81			66.5	2.990	1.497	CT	1.495	0.34	24.70			1978	MPC01
		1.55			66.6	1.998	0.999	CT	1.014	0.28	23.30			1978	MPC01
		1.25			66.6	1.981	1.000	CT	1.050	0.25	21.90			1978	MPC01
		1.73			66.7	2.999	1.499	CT	1.517	0.32	24.10			1978	RA002
		1.55			66.7	3.000	1.497	CT	1.522	0.31	23.60			1980	RA001
		2.50			66.8	1.987	0.998	CT	1.033	0.42	27.40			1978	MPC01
		1.50			66.9	1.983	0.999	CT	1.051	0.25	22.00			1978	MPC01
		1.50			67.1	2.998	1.496	CT	1.485	0.29	23.00			1978	RA001
		1.57			67.2	3.000	1.500	CT	1.590	0.35	25.10			1972	B4368
		1.57			67.2	3.000	1.500	CT	1.560	0.32	24.00			1972	B4368
		1.57			67.2	3.000	1.500	CT	1.560	0.32	24.00			1972	B4368
		1.57			67.2	3.000	1.500	CT	1.590	0.35	25.30			1972	B4368
		1.73			67.2	3.002	1.498	CT	1.550	0.32	24.10			1978	RA002
		1.50			67.2	3.002	1.492	CT	1.524	0.29	23.20			1980	RA001
		1.55			67.2	3.001	1.497	CT	1.563	0.28	22.50			1979	RA001
		1.75			67.3	3.002	1.496	CT	1.518	0.31	23.79			1980	RA001
		2.52			67.6	2.000	1.000	CT	0.980	0.29	23.10			1972	B4368
		2.52			67.6	2.000	1.000	CT	0.960	0.28	22.60			1972	B4368
		1.75			67.8	3.009	1.499	CT	1.595	0.28	23.60			1978	MPC01
		1.50			67.8	3.002	1.400	CT	1.591	0.27	22.60			1978	MPC01
		1.37			68.4	2.978	1.376	CT	1.489	0.25	22.50			1978	MPC01
		1.62			69.6	3.000	1.451	CT	1.524	0.29	24.10	25.1/	2.3	1980	RA001
T851	P	3.50	81	T-L	63.7	3.000	1.498	CT	1.618	0.37	24.40			1973	B6213
		3.50			63.7	3.000	1.498	CT	1.601	0.39	25.00	24.7/	0.4	1973	B6213

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.50	250	T-L	57.3	2.000	1.000	CT	----	0.56	27.10			1974	88742
		2.50			57.3	2.000	1.000	CT	----	0.56	26.90			1974	88742
		2.50			57.3	2.000	1.000	CT	----	0.59	27.70	27.2/	0.4	1974	88742
T851	P	2.50	R.T.	S-T	62.3	2.000	1.000	CT	----	0.40	24.70			1974	88742
		2.50			62.3	2.000	1.000	CT	----	0.43	[illegible].80			1974	88742
		2.50			62.3	2.000	1.000	CT	----	0.44	26.00	25.5/	0.7	1974	88742
T851	P	2.50	250	S-T	55.9	2.000	1.000	CT	----	0.53	26.20			1974	88742
		2.50			55.9	2.000	1.000	CT	----	0.46	24.60	25.4/	1.1	1974	88742
T851	P	1.50	R.T.	S-L	----	1.001	0.501	CT	0.501	----	19.50			1978	RA001
		1.50			----	1.001	0.502	CT	0.503	----	20.20			1978	RA001
		1.50			----	1.002	0.498	CT	0.489	----	18.40			1980	RA001
		1.50			----	1.001	0.497	CT	0.525	----	20.50			1980	RA001
		1.50			----	1.001	0.497	CT	0.518	----	20.40			1980	RA001
		6.00			52.7	2.015	0.999	CT	1.068	0.48	23.40			1978	MPC01
		6.00			52.7	1.994	1.000	CT	0.977	0.44	22.30			1978	MPC01
		6.00			52.8	1.998	0.997	CT	1.029	0.51	23.90			1978	RA001
		6.00			53.0	2.000	1.000	CT	0.940	0.42	22.20			1978	MPC01
		5.50			53.2	1.985	0.999	CT	1.052	0.44	22.50			1978	MPC01
		5.50			53.9	2.014	1.000	CT	0.987	0.52	24.80			1978	MPC01
		5.50			54.0	2.002	0.999	CT	1.021	0.50	24.60			1978	MPC01
		5.00			54.1	1.992	1.002	CT	0.996	0.48	24.30			1978	MPC01
		6.00			54.2	1.996	1.000	CT	0.998	0.34	20.10			1978	MPC01
		4.90			54.2	3.000	1.498	CT	1.480	0.43	22.70			1978	RA002
		5.00			54.2	2.004	0.998	CT	1.002	0.34	20.50			1978	MPC01
		6.00			54.3	1.006	0.496	CT	0.533	0.34	20.50			1978	MPC01
		5.50			54.3	2.019	0.999	CT	0.969	0.38	21.60			1978	MPC01
		5.12			54.4	1.991	0.999	CT	1.075	0.40	21.80			1978	MPC01
		4.90			54.4	1.988	1.000	CT	0.954	0.32	19.60			1978	MPC01
		6.00			54.6	3.000	1.500	CT	1.500	0.44	23.10			1978	MPC01
		5.75			54.6	1.999	0.996	CT	0.986	0.36	20.90			1980	RA001
		5.00			54.6	1.992	0.996	CT	0.996	0.38	21.80			1978	MPC01
		5.50			54.7	1.984	0.999	CT	0.972	0.42	22.80			1978	MPC01
		6.00			54.8	3.000	1.500	CT	1.530	0.50	24.50			1972	84368
		6.00			54.8	3.000	1.500	CT	1.530	0.50	24.50			1972	84368
		5.00			54.9	2.984	1.199	CT	1.552	0.38	21.90			1978	MPC01
		4.50			55.2	2.004	0.996	CT	0.973	0.43	23.10			1980	RA001

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	5.50	R.T.	S-L	55.2	1.988	1.000	CT	1.014	0.52	25.90			1978	MPC01
		5.00			55.2	2.974	1.500	CT	1.576	0.46	23.90			1978	MPC01
		5.12			55.2	2.015	0.998	CT	1.048	0.46	24.20			1978	MPC01
		5.50			55.2	2.000	0.998	CT	0.978	0.35	20.90			1980	RA001
		6.00			55.4	1.993	1.000	CT	1.056	0.48	24.60			1978	MPC01
		6.00			55.7	1.996	1.000	CT	1.018	0.48	24.80			1978	MPC01
		5.50			55.8	2.021	0.998	CT	0.970	0.40	22.40			1978	MPC01
		5.00			55.8	1.998	1.000	CT	0.988	0.36	21.29			1979	RA001
		4.90			55.8	3.005	1.500	CT	1.517	0.36	21.40			1978	RA002
		5.00			55.9	2.972	1.498	CT	1.486	0.36	21.60			1978	MPC01
		5.00			56.0	2.000	0.999	CT	0.997	0.36	21.29			1980	RA001
		6.00			56.0	2.002	0.996	CT	1.002	0.44	23.60			1980	RA001
		5.25			56.0	2.975	1.500	CT	1.547	0.38	22.00			1978	MPC01
		5.50			56.0	2.010	1.000	CT	1.005	0.28	19.20			1978	MPC01
		5.50			56.1	1.990	1.000	CT	1.035	0.32	20.30			1978	MPC01
		6.00			56.2	1.982	1.000	CT	1.011	0.48	24.80			1978	MPC01
		4.25			56.2	2.000	0.929	CT	0.957	0.33	20.60			1980	RA001
		5.00			56.3	2.980	1.498	CT	1.490	0.38	22.10			1978	MPC01
		5.50			56.3	2.010	1.000	CT	1.005	0.30	19.90			1978	MPC01
		4.50			56.3	2.000	1.001	CT	0.992	0.38	22.00			1978	RA002
		4.90			56.4	1.996	0.998	CT	1.018	0.32	20.60			1978	MPC01
		5.25			56.4	2.016	1.000	CT	1.008	0.28	19.30			1978	MPC01
		4.00			56.5	2.002	0.997	CT	1.026	0.38	22.29			1980	RA001
		5.50			56.6	2.008	1.000	CT	1.004	0.46	24.40			1978	MPC01
		5.50			56.6	1.994	0.999	CT	1.017	0.38	22.50			1978	MPC01
		6.00			56.6	1.998	0.998	CT	0.998	0.43	23.50			1978	RA001
		4.62			56.6	3.033	1.499	CT	1.456	0.46	24.70			1978	MPC01
		5.50			56.6	2.000	1.000	CT	1.020	0.36	22.00			1978	MPC01
		2.50			56.6	1.999	1.000	CT	1.052	0.35	21.29			1978	RA002
		4.90			56.7	3.000	1.499	CT	1.596	0.43	23.60			1978	RA002
		4.00			56.7	2.000	0.998	CT	0.980	0.36	21.60			1980	RA001
		5.50			56.7	1.992	0.997	CT	0.956	0.32	20.70			1978	MPC01
		4.50			56.7	1.998	0.998	CT	1.009	0.37	22.10			1979	RA001
		5.50			56.8	2.012	1.000	CT	1.006	0.36	21.80			1978	MPC01
		4.62			56.8	1.996	0.999	CT	0.996	0.30	20.20			1978	MPC01
		5.50			56.8	2.008	1.000	CT	1.004	0.28	19.70			1978	MPC01
		4.90			56.8	3.000	1.499	CT	1.526	0.37	22.00			1978	RA002
		5.00			56.9	2.988	1.499	CT	1.494	0.38	22.60			1978	MPC01
		5.00			56.9	1.997	0.998	CT	1.005	0.35	21.40			1979	RA001

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.00	R.T.	B-L	56.9	2.002	0.999	CT	0.984	0.35	21.50			1980	RA001
		5.50			57.0	2.002	1.000	CT	1.001	0.28	19.70			1978	MPC01
		5.50			57.0	1.994	1.000	CT	1.017	0.24	17.70			1978	MPC01
		5.50			57.0	2.014	1.000	CT	1.007	0.25	18.30			1978	MPC01
		5.50			57.0	1.994	1.000	CT	0.997	0.25	18.50			1978	MPC01
		4.50			57.0	2.017	0.999	CT	1.069	0.42	23.50			1978	MPC01
		5.50			57.1	2.000	1.000	CT	1.000	0.27	19.00			1978	MPC01
		4.75			57.1	2.000	0.998	CT	0.980	0.59	22.79			1980	RA001
		5.50			57.1	1.998	1.000	CT	0.999	0.30	20.50			1978	MPC01
		2.20			57.1	1.503	0.748	CT	0.774	0.27	19.00			1980	RA001
		5.50			57.1	2.008	1.000	CT	1.004	0.34	21.60			1978	MPC01
		5.50			57.1	2.010	1.000	CT	1.005	0.34	21.60			1978	MPC01
		5.00			57.1	2.012	1.000	CT	1.006	0.40	23.20			1978	MPC01
		5.50			57.3	2.010	1.000	CT	1.005	0.28	19.90			1978	MPC01
		4.50			57.3	3.000	1.500	CT	1.540	0.51	25.80			1972	84368
		4.50			57.3	3.000	1.500	CT	1.540	0.47	24.90			1972	84368
		4.00			57.3	1.998	0.999	CT	1.022	0.34	21.20			1978	RA001
		5.50			57.5	3.000	1.500	CT	1.470	0.43	23.90			1972	84368
		5.50			57.5	3.000	1.500	CT	1.500	0.42	23.60			1972	84368
		5.50			57.5	1.998	1.000	CT	0.999	0.28	20.00			1978	MPC01
		4.00			57.5	2.000	0.999	CT	0.984	0.33	21.20			1980	RA001
		5.50			57.5	1.988	1.000	CT	1.014	0.42	23.70			1978	MPC01
		5.50			57.6	1.988	1.000	CT	1.014	0.28	19.90			1978	MPC01
		4.31			57.6	1.992	0.999	CT	1.036	0.34	21.60			1978	MPC01
		5.50			57.6	2.006	0.999	CT	1.003	0.32	20.80			1978	MPC01
		4.00			57.6	3.001	1.500	CT	1.564	0.34	21.50			1978	RA001
		5.50			57.6	1.986	1.000	CT	0.993	0.34	21.60			1978	MPC01
		5.00			57.6	1.998	0.997	CT	0.997	0.36	22.10			1978	RA001
		5.00			57.6	1.992	1.000	CT	1.016	0.40	23.20			1978	MPC01
		4.55			57.6	2.004	0.999	CT	0.985	0.34	21.50			1980	RA001
		5.50			57.7	2.022	1.000	CT	1.011	0.30	20.20			1978	MPC01
		4.50			57.7	2.017	0.999	CT	1.049	0.38	22.90			1978	MPC01
		3.00			57.8	2.002	1.001	CT	1.001	0.30	20.70			1978	MPC01
		4.00			57.8	2.987	1.498	CT	1.643	0.40	23.50			1978	MPC01
		5.50			57.8	2.000	1.000	CT	1.000	0.36	22.00			1978	MPC01
		3.50			57.8	1.993	1.001	CT	1.096	0.32	21.00			1978	MPC01
		5.00			57.8	2.000	1.001	CT	1.009	0.29	19.70			1978	RA002
		5.50			57.8	1.984	1.000	CT	1.012	0.42	24.20			1978	MPC01
		5.50			57.9	1.992	1.000	CT	0.996	0.28	20.00			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	5.50	R.T.	S-L	57.9	2.008	1.000	CT	1.004	0.25	19.00			1978	MPC01
		3.62			58.0	2.006	0.998	CT	1.003	0.32	21.30			1978	MPC01
		5.50			58.0	3.008	1.501	CT	1.504	0.38	23.10			1978	MPC01
		4.00			58.0	2.004	1.001	CT	1.002	0.36	22.30			1978	MPC01
		5.00			58.1	2.010	1.000	CT	1.005	0.38	23.00			1978	MPC01
		2.50			58.1	1.986	1.000	CT	1.013	0.40	23.80			1978	MPC01
		5.50			58.1	2.016	1.000	CT	1.008	0.38	22.70			1978	MPC01
		5.50			58.1	2.002	1.000	CT	1.001	0.40	23.40			1978	MPC01
		5.50			58.1	3.024	1.500	CT	1.512	0.42	23.90			1978	MPC01
		2.50			58.1	2.008	0.996	CT	1.004	0.30	20.50			1978	MPC01
		5.00			58.1	1.992	1.000	CT	1.016	0.34	21.50			1978	MPC01
		4.90			58.1	2.000	1.001	CT	1.010	0.34	21.60			1978	RA002
		2.50			58.1	2.018	1.000	CT	1.029	0.42	24.30			1978	MPC01
		3.00			58.2	2.004	0.997	CT	1.030	0.31	20.70			1980	RA001
		5.50			58.2	2.010	1.000	CT	1.025	0.30	20.50			1978	MPC01
		2.70			58.2	1.988	1.002	CT	0.974	0.42	24.10			1978	MPC01
		5.00			58.2	2.006	0.999	CT	1.023	0.40	23.40			1978	MPC01
		5.00			58.2	1.984	0.999	CT	1.012	0.38	22.90			1978	MPC01
		5.50			58.2	3.008	1.500	CT	1.504	0.40	23.70			1978	MPC01
		5.50			58.3	1.996	1.000	CT	0.998	0.30	20.60			1978	MPC01
		5.25			58.3	3.020	1.500	CT	1.510	0.44	24.80			1978	MPC01
		3.12			58.3	2.016	1.001	CT	0.988	0.36	22.40			1978	MPC01
		5.50			58.3	1.998	1.000	CT	0.999	0.30	20.50			1978	MPC01
		5.50			58.3	1.998	1.000	CT	0.999	0.30	20.60			1978	MPC01
		5.50			58.3	2.014	1.000	CT	1.007	0.40	23.40			1978	MPC01
		5.50			58.3	2.014	1.000	CT	1.007	0.28	20.00			1978	MPC01
		3.00			58.3	2.000	0.998	CT	0.983	0.32	20.90			1980	RA001
		5.50			58.3	2.016	0.990	CT	1.008	0.30	20.90			1978	MPC01
		5.50			58.3	2.004	0.999	CT	1.002	0.50	26.60			1978	MPC01
		4.00			58.4	1.999	1.000	CT	1.015	0.28	19.79			1979	RA001
		1.81			58.4	1.502	0.748	CT	0.766	0.24	18.50			1978	MPC01
		4.50			58.4	2.978	1.500	CT	1.489	0.46	25.20			1978	MPC01
		5.50			58.4	2.020	0.997	CT	1.010	0.28	20.40			1978	MPC01
		5.00			58.4	3.010	1.500	CT	1.505	0.40	23.40			1978	MPC01
		2.50			58.5	1.996	1.000	CT	0.998	0.30	20.70			1978	MPC01
		5.50			58.5	2.018	1.000	CT	1.009	0.34	22.00			1978	MPC01
		4.25			58.5	1.987	0.999	CT	1.033	0.40	23.50			1978	MPC01
		4.25			58.5	1.996	1.000	CT	0.998	0.27	19.60			1978	MPC01
		5.00			58.6	1.983	0.999	CT	1.031	0.36	22.30			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	5.50	R.T.	S-L	58.6	2.006	0.999	CT	1.003	0.30	20.80			1978	MPC01
		3.50			58.6	2.008	1.000	CT	1.024	0.34	21.80			1978	MPC01
		5.00			58.6	1.988	1.000	CT	1.014	0.42	24.50			1978	MPC01
		5.50			58.6	2.008	1.000	CT	1.004	0.40	23.90			1978	MPC01
		4.50			58.6	2.996	1.500	CT	1.498	0.48	26.00			1978	MPC01
		5.00			58.6	1.994	0.999	CT	1.017	0.38	23.00			1978	MPC01
		4.00			58.6	1.996	0.999	CT	0.998	0.32	21.10			1978	MPC01
		5.50			58.6	1.998	1.000	CT	0.999	0.38	22.90			1978	MPC01
		5.50			58.6	2.018	0.999	CT	1.009	0.48	26.00			1978	MPC01
		5.50			58.7	2.010	1.000	CT	1.005	0.27	19.50			1978	MPC01
		3.54			58.7	1.998	0.997	CT	0.999	0.32	21.70			1978	MPC01
		5.50			58.8	2.016	1.000	CT	1.008	0.48	26.00			1978	MPC01
		5.50			58.8	2.004	0.998	CT	1.002	0.38	23.20			1978	MPC01
		5.50			58.8	2.000	1.000	CT	1.000	0.36	22.50			1978	MPC01
		4.25			58.8	2.002	1.000	CT	1.001	0.34	21.90			1978	MPC01
		3.50			58.8	1.996	1.000	CT	1.078	0.30	20.70			1978	MPC01
		5.50			58.8	2.014	1.000	CT	1.007	0.34	22.30			1978	MPC01
		4.50			58.8	2.999	1.500	CT	1.487	0.34	21.79			1978	RA002
		5.50			58.8	2.006	0.998	CT	1.003	0.40	23.80			1978	MPC01
		5.50			58.9	2.020	1.000	CT	1.010	0.28	20.30			1978	MPC01
		4.00			58.9	1.984	1.001	CT	1.012	0.38	23.10			1978	MPC01
		4.50			58.9	2.992	1.500	CT	1.496	0.44	25.00			1978	MPC01
		4.25			59.0	1.996	1.000	CT	1.018	0.36	23.00			1978	MPC01
		5.00			59.1	1.988	1.000	CT	1.014	0.34	22.00			1978	MPC01
		5.00			59.1	1.986	1.000	CT	1.013	0.34	22.00			1978	MPC01
		5.50			59.1	2.000	1.000	CT	1.400	0.30	20.79			1978	GD003
		5.50			59.1	2.002	1.000	CT	1.001	0.36	22.80			1978	MPC01
		5.50			59.1	2.000	1.000	CT	1.400	0.34	22.00			1978	GD003
		5.50			59.1	1.996	1.000	CT	0.998	0.28	20.20			1978	MPC01
		5.00			59.1	1.984	0.999	CT	1.012	0.32	21.60			1978	MPC01
		5.00			59.1	2.010	1.000	CT	1.005	0.36	23.00			1978	MPC01
		2.75			59.1	2.000	1.000	CT	1.013	0.29	20.29			1978	RA002
		5.50			59.1	1.980	1.000	CT	0.990	0.46	25.90			1978	MPC01
		5.50			59.1	2.000	1.000	CT	1.400	0.32	21.40			1978	GD003
		5.50			59.1	2.008	1.000	CT	1.004	0.42	24.30			1978	MPC01
		3.12			59.2	1.998	0.999	CT	1.004	0.40	23.70			1978	RA001
		5.00			59.2	1.986	1.001	CT	1.013	0.36	22.90			1978	MPC01
		3.12			59.2	2.018	0.996	CT	0.989	0.32	21.80			1978	MPC01
		4.50			59.2	2.998	1.500	CT	1.499	0.48	26.30			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.50	R.T.	S-L	59.2	3.018	1.500	CT	1.509	0.48	26.10			1978	MPC01
		5.00			59.2	2.024	1.001	CT	1.012	0.36	22.90			1978	MPC01
		5.00			59.3	1.992	1.001	CT	1.016	0.40	23.90			1978	MPC01
		5.50			59.3	1.998	1.000	CT	0.999	0.42	24.90			1978	MPC01
		4.00			59.3	2.000	1.000	CT	0.980	0.38	23.40			1972	B4368
		4.25			59.3	1.990	0.987	CT	1.015	0.42	24.40			1978	MPC01
		5.00			59.3	1.978	1.001	CT	1.009	0.42	24.70			1978	MPC01
		4.00			59.3	2.000	1.000	CT	0.980	0.44	24.80			1972	B4368
		5.50			59.3	2.008	1.000	CT	1.024	0.50	26.90			1978	MPC01
		4.25			59.3	2.024	1.000	CT	1.012	0.30	21.20			1978	MPC01
		5.00			59.3	2.014	1.001	CT	1.007	0.40	24.00			1978	MPC01
		5.50			59.4	2.018	1.000	CT	1.009	0.34	22.20			1978	MPC01
		4.25			59.4	1.998	1.000	CT	0.999	0.40	23.90			1978	MPC01
		4.25			59.4	1.994	1.000	CT	1.017	0.38	23.70			1978	MPC01
		3.12			59.4	2.000	0.992	CT	1.000	0.30	21.20			1978	MPC01
		2.50			59.4	2.000	1.001	CT	1.018	0.35	22.50			1978	RA002
		4.25			59.4	1.994	1.001	CT	0.997	0.50	27.20			1978	MPC01
		1.75			59.4	1.002	0.499	CT	0.511	0.30	20.70			1980	RA001
		4.25			59.5	1.990	1.000	CT	1.015	0.48	26.30			1978	MPC01
		5.50			59.5	2.006	1.000	CT	1.003	0.36	22.70			1978	MPC01
		3.00			59.5	2.000	0.999	CT	1.000	0.30	21.00			1978	MPC01
		5.25			59.5	3.012	1.500	CT	1.506	0.42	24.50			1978	MPC01
		4.31			59.6	2.000	1.000	CT	0.970	0.42	24.50			1972	B4368
		5.50			59.6	1.977	1.000	CT	1.008	0.40	24.30			1978	MPC01
		5.50			59.6	1.986	1.000	CT	1.013	0.32	21.80			1978	MPC01
		5.50			59.6	2.010	1.000	CT	1.005	0.34	22.50			1978	MPC01
		4.31			59.6	2.000	1.000	CT	0.950	0.41	24.10			1972	B4368
		3.00			59.6	1.997	0.998	CT	0.999	0.26	19.50			1978	RA001
		4.25			59.7	2.014	1.002	CT	1.007	0.44	25.30			1978	MPC01
		3.50			59.7	2.004	0.995	CT	0.999	0.27	19.70			1980	RA001
		2.00			59.7	1.500	0.749	CT	0.756	0.38	23.29			1980	RA001
		5.50			59.8	2.012	1.000	CT	1.006	0.34	22.50			1978	MPC01
		3.50			59.8	1.998	0.998	CT	1.001	0.32	21.70			1979	RA001
		3.25			59.8	1.989	0.999	CT	1.054	0.30	21.20			1978	MPC01
		5.50			59.8	1.987	1.000	CT	1.033	0.28	20.50			1978	MPC01
		4.50			59.8	3.000	1.500	CT	1.530	0.36	22.70			1972	B4368
		4.50			59.8	3.000	1.500	CT	1.520	0.35	22.50			1972	B4368
		3.54			59.8	2.014	1.000	CT	1.007	0.34	22.30			1978	MPC01
		5.00			59.8	2.010	1.000	CT	1.005	0.36	23.10			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	4.25	R.T.	S-L	59.9	1.994	1.000	CT	1.017	0.27	20.30			1978	MPC01
		2.00			59.9	1.502	0.751	CT	0.751	0.22	18.40			1978	MPC01
		2.50			59.9	1.498	0.744	CT	0.760	0.26	19.60			1980	RA001
		3.00			59.9	2.006	1.001	CT	1.003	0.27	19.80			1978	MPC01
		3.50			59.9	2.000	1.000	CT	0.990	0.27	19.80			1972	84368
		3.50			59.9	2.000	1.000	CT	0.990	0.32	21.40			1972	84368
		4.50			59.9	2.998	1.500	CT	1.499	0.48	26.50			1978	MPC01
		5.50			60.0	1.998	1.000	CT	0.999	0.28	20.40			1978	MPC01
		2.90			60.0	1.988	0.998	CT	0.974	0.30	21.00			1978	MPC01
		3.00			60.0	2.003	0.995	CT	1.004	0.39	23.70			1980	RA001
		5.00			60.1	1.996	0.999	CT	0.998	0.44	25.70			1978	MPC01
		4.00			60.1	2.002	0.998	CT	0.998	0.35	22.60			1980	RA001
		4.50			60.1	3.008	1.501	CT	1.504	0.38	23.80			1978	MPC01
		3.54			60.1	2.004	0.998	CT	1.002	0.42	24.80			1978	MPC01
		3.12			60.1	1.957	0.998	CT	1.019	0.36	23.40			1978	MPC01
		2.50			60.2	2.010	0.996	CT	1.005	0.32	22.00			1978	MPC01
		4.50			60.2	3.029	1.500	CT	1.484	0.42	24.70			1978	MPC01
		4.25			60.2	1.986	1.000	CT	1.013	0.32	21.70			1978	MPC01
		5.50			60.2	2.016	1.000	CT	1.008	0.24	19.00			1978	MPC01
		4.00			60.2	3.000	1.500	CT	1.540	0.27	20.00			1972	84368
		4.00			60.2	3.000	1.500	CT	1.560	0.27	19.90			1972	84368
		2.50			60.4	1.999	0.999	CT	1.096	0.28	20.40			1978	RA002
		4.00			60.5	2.014	0.999	CT	1.007	0.34	22.60			1978	MPC01
		5.00			60.6	1.996	0.999	CT	1.018	0.34	23.00			1978	MPC01
		5.50			60.6	2.004	0.999	CT	1.002	0.30	21.70			1978	MPC01
		5.00			60.6	2.004	0.999	CT	1.022	0.36	23.10			1978	MPC01
		3.00			60.6	1.999	1.000	CT	0.963	0.29	20.70			1978	RA002
		3.00			60.6	2.004	0.996	CT	0.998	0.29	20.90			1980	RA001
		3.00			60.6	1.999	0.998	CT	0.991	0.27	20.00			1980	RA001
		4.00			60.6	3.026	1.501	CT	1.513	0.38	23.70			1978	MPC01
		4.00			60.6	2.992	1.500	CT	1.526	0.36	[illegible]20			1978	MPC01
		4.25			60.7	2.016	1.000	CT	1.008	0.28				1978	MPC01
		3.12			60.7	1.998	0.997	CT	1.039	0.30	[illegible]			1978	MPC01
		2.50			60.7	0.986	0.502	CT	0.498	0.22	8.10			1978	RA002
		3.00			60.7	1.992	0.999	CT	1.019	0.24	[illegible]9.20			1978	MPC01
		3.00			60.8	1.997	0.998	CT	1.020	0.30	21.40			1978	RA001
		5.00			60.8	2.016	1.000	CT	1.008	0.25	20.00			1978	MPC01
		3.62			60.8	1.996	0.999	CT	0.979	0.25	19.50			1980	RA001
		3.00			60.9	2.006	1.001	CT	1.023	0.27	20.20			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	3.62	R.T.	S-L	60.9	3.014	1.499	CT	1.567	0.28	20.80			1978	MPC01
		4.25			60.9	1.984	1.000	CT	1.012	0.30	21.70			1978	MPC01
		3.50			60.9	2.016	0.997	CT	1.008	0.34	22.70			1978	MPC01
		3.00			60.9	2.000	1.000	CT	0.991	0.31	21.70			1978	RA002
		5.50			60.9	2.004	1.000	CT	1.002	0.27	20.30			1978	MPC01
		2.50			60.9	2.006	0.998	CT	1.003	0.28	21.30			1978	MPC01
		4.00			60.9	1.997	0.999	CT	1.002	0.36	23.20			1978	RA001
		2.00			61.0	1.498	0.751	CT	0.756	0.29	21.10			1978	RA002
		5.50			61.1	2.014	1.003	CT	1.007	0.32	22.30			1978	MPC01
		4.25			61.1	1.996	1.001	CT	0.998	0.36	23.50			1978	MPC01
		3.50			61.1	1.998	0.999	CT	1.022	0.33	22.20			1978	RA001
		1.62			61.2	0.986	0.503	CT	0.480	0.24	19.10			1978	RA002
		3.00			61.2	1.996	0.998	CT	1.018	0.25	19.70			1978	MPC01
		3.00			61.2	2.000	0.999	CT	0.980	0.28	20.79			1980	RA001
		3.75			61.3	3.016	1.499	CT	1.538	0.30	21.90			1978	MPC01
		2.50			61.3	1.499	0.745	CT	0.750	0.24	19.29			1980	RA001
		5.50			61.4	1.986	1.003	CT	1.013	0.34	23.00			1978	MPC01
		3.50			61.4	2.000	1.000	CT	0.990	0.43	25.40			1972	84368
		2.50			61.4	2.000	1.000	CT	1.100	0.27	20.80			1978	MPC01
		2.00			61.4	0.997	0.498	CT	0.504	0.25	19.60			1978	RA001
		3.50			61.4	2.000	1.000	CT	0.990	0.41	24.70			1972	84368
		4.90			61.4	3.000	1.500	CT	1.585	0.36	23.40			1978	RA002
		4.00			61.5	3.000	1.500	CT	1.530	0.30	21.70			1978	MPC01
		1.75			61.6	0.998	0.503	CT	0.520	0.21	17.90			1980	RA001
		3.00			61.6	2.000	1.001	CT	1.012	0.22	18.50			1978	RA002
		4.90			61.6	3.000	1.499	CT	1.592	0.35	23.10			1978	RA002
		5.50			61.6	1.986	1.000	CT	1.013	0.38	24.30			1978	MPC01
		2.35			61.7	1.502	0.750	CT	0.763	0.33	22.50			1980	RA001
		1.73			61.7	1.004	0.497	CT	0.542	0.21	18.40			1978	MPC01
		3.12			61.7	2.002	0.998	CT	0.996	0.29	21.29			1980	RA001
		3.00			61.8	1.999	0.994	CT	1.000	0.23	19.10			1980	RA001
		3.00			61.8	1.980	0.999	CT	1.010	0.27	20.80			1978	MPC01
		2.00			61.9	1.498	0.749	CT	0.794	0.25	20.10			1978	MPC01
		4.75			62.0	2.004	1.000	CT	1.002	0.25	20.40			1978	MPC01
		2.50			62.0	1.984	0.998	CT	1.012	0.24	19.70			1978	MPC01
		2.25			62.0	0.998	0.499	CT	0.539	0.24	19.80			1978	MPC01
		3.00			62.0	2.010	1.001	CT	1.005	0.27	20.80			1978	MPC01
		3.00			62.0	1.995	0.998	CT	0.960	0.30	21.60			1980	RA001
		3.00			62.0	1.997	0.999	CT	1.007	0.24	19.40			1979	RA001

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.50	R.T.	S-L	62.0	1.499	0.744	CT	0.741	0.23	18.90			1980	RA001
		5.50			62.1	2.001	1.000	CT	1.006	0.30	22.00			1978	MPC01
		2.50			62.1	2.000	1.000	CT	1.020	0.40	25.30			1978	MPC01
		2.50			62.1	2.000	1.000	CT	0.940	0.31	21.80			1972	84368
		3.00			62.1	1.997	0.998	CT	1.022	0.29	21.50			1979	RA001
		2.50			62.1	2.000	1.000	CT	0.960	0.34	22.90			1972	84368
		2.50			62.1	1.998	1.000	CT	1.019	0.38	24.50			1978	MPC01
		3.00			62.1	2.003	0.998	CT	0.995	0.29	21.50			1980	RA001
		1.50			62.2	0.996	0.501	CT	0.508	0.34	23.10			1978	MPC01
		2.00			62.2	1.489	0.746	CT	0.774	0.25	20.20			1978	MPC01
		2.75			62.2	1.988	1.001	CT	1.014	0.28	21.50			1978	MPC01
		2.75			62.2	2.004	0.996	CT	1.004	0.31	22.20			1980	RA001
		1.75			62.2	1.000	0.500	CT	0.503	0.21	18.10			1978	RA002
		1.50			62.2	0.998	0.501	CT	0.509	0.34	23.10			1978	MPC01
		2.50			62.2	1.502	0.750	CT	0.768	0.30	21.60			1980	RA001
		4.75			62.4	1.994	1.001	CT	1.017	0.30	22.40			1978	MPC01
		2.75			62.4	1.499	0.746	CT	0.755	0.33	22.79			1980	RA001
		2.50			62.5	2.000	1.001	CT	1.020	0.24	19.60			1978	MPC01
		5.50			62.6	2.000	1.000	CT	1.000	0.28	21.60			1978	MPC01
		1.75			62.6	0.979	0.500	CT	0.475	0.31	22.29			1978	RA002
		2.50			62.6	2.000	1.001	CT	0.979	0.28	21.10			1978	RA002
		5.50			62.6	2.000	1.000	CT	1.000	0.30	22.10			1978	MPC01
		2.50			62.6	2.020	0.998	CT	0.990	0.30	22.10			1978	MPC01
		2.00			62.6	1.512	0.751	CT	0.771	0.22	19.20			1978	MPC01
		2.04			62.7	1.500	0.750	CT	0.730	0.21	18.10			1972	84368
		2.04			62.7	1.500	0.750	CT	0.730	0.20	17.60			1972	84368
		2.50			62.7	1.500	0.751	CT	0.776	0.22	18.70			1980	RA001
		2.50			62.7	1.500	0.747	CT	0.738	0.28	21.00			1980	RA001
		2.03			62.8	1.471	0.750	CT	0.764	0.32	23.00			1978	MPC01
		1.50			62.8	1.008	0.498	CT	0.534	0.28	21.40			1978	MPC01
		2.25			62.8	1.510	0.749	CT	0.785	0.21	18.50			1978	MPC01
		2.00			62.8	1.493	0.748	CT	0.791	0.25	20.60			1978	MPC01
		2.00			62.9	1.489	0.749	CT	0.774	0.28	21.50			1978	MPC01
		3.00			62.9	2.015	1.001	CT	1.048	0.30	22.60			1978	MPC01
		2.03			62.9	1.496	0.750	CT	0.763	0.36	24.10			1978	MPC01
		2.50			62.9	2.000	1.000	CT	0.930	0.28	21.20			1972	84368
		2.50			62.9	2.000	1.000	CT	0.930	0.28	21.10			1972	84368
		1.81			63.0	1.006	0.496	CT	0.533	0.18	17.10			1978	MPC01
		1.50			63.0	1.002	0.500	CT	0.521	0.32	22.80			1978	MPC01

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.00	R.T.	S-L	63.0	1.002	0.495	CT	0.531	0.22	19.20			1978	MPC01
		1.50			63.0	1.000	0.500	CT	0.510	0.27	21.00			1978	MPC01
		1.57			63.0	1.000	0.500	CT	0.490	0.29	21.60			1972	84368
		2.40			63.2	1.500	0.747	CT	0.749	0.27	20.79			1980	RA001
		3.00			63.3	1.994	1.001	CT	1.017	0.30	22.40			1978	MPC01
		1.81			63.4	0.998	0.499	CT	0.509	0.16	17.00			1978	MPC01
		2.75			63.4	2.000	0.998	CT	0.983	0.32	22.79			1980	RA001
		2.50			63.5	2.000	1.000	CT	0.960	0.29	21.80			1972	84368
		2.50			63.5	2.000	1.000	CT	0.970	0.31	22.20			1972	84368
		1.55			63.5	0.999	0.501	CT	0.469	0.22	19.00			1980	RA001
		1.55			63.6	1.000	0.498	CT	0.540	0.28	22.10			1978	MPC01
		1.75			63.6	1.010	0.499	CT	0.525	0.18	17.50			1978	MPC01
		2.50			63.7	2.000	0.998	CT	0.960	0.27	21.20			1978	MPC01
		2.35			63.9	0.998	0.498	CT	0.539	0.18	17.40			1978	MPC01
		1.50			63.9	0.999	0.501	CT	0.487	0.27	21.00			1980	RA001
		2.00			64.1	1.502	0.751	CT	0.766	0.28	22.00			1978	MPC01
		3.12			64.2	2.006	0.999	CT	1.003	0.24	20.50			1978	MPC01
		2.75			64.3	1.499	0.752	CT	0.767	0.29	21.90			1978	RA002
		1.55			64.3	1.000	0.497	CT	0.540	0.28	21.90			1978	MPC01
		1.57			64.4	1.000	0.500	CT	0.490	0.27	21.30			1972	84368
		1.57			64.4	1.000	0.500	CT	0.500	0.25	20.50			1972	84368
		2.50			64.4	2.000	0.998	CT	0.964	0.26	20.90			1978	RA002
		2.50			64.4	1.499	0.745	CT	0.754	0.17	17.20			1980	RA001
		2.00			64.5	1.518	0.751	CT	0.774	0.25	20.70			1978	MPC01
		1.75			64.5	1.012	0.501	CT	0.526	0.19	18.30			1978	MPC01
		2.00			64.6	1.499	0.751	CT	0.793	0.19	18.00			1978	RA002
		1.75			64.8	0.979	0.502	CT	0.509	0.24	20.10			1978	RA002
		2.50			64.8	2.002	0.998	CT	1.021	0.18	18.00			1978	MPC01
		2.00			64.8	1.504	0.751	CT	0.782	0.22	20.00			1978	MPC01
		2.00			64.8	1.498	0.746	CT	0.746	0.18	17.79			1980	RA001
		2.25			64.9	1.489	0.749	CT	0.774	0.19	18.30			1978	MPC01
		2.00			64.9	1.491	0.750	CT	0.805	0.22	20.10			1978	MPC01
		2.00			64.9	1.500	0.750	CT	0.740	0.22	19.20			1972	84368
		2.00			64.9	1.500	0.750	CT	0.740	0.22	19.10			1972	84368
		1.73			65.0	0.986	0.502	CT	0.467	0.26	21.10			1978	RA002
		1.75			65.2	0.998	0.500	CT	0.495	0.18	17.50			1980	RA001
		1.75			65.2	1.000	0.500	CT	0.500	0.17	17.29			1978	RA001
		1.75			65.3	1.010	0.505	CT	0.505	0.18	18.10			1978	MPC01
		1.75			65.3	1.000	0.500	CT	0.460	0.19	18.20			1972	84368

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.75	R.T.	S-L	65.3	1.000	0.500	CT	0.490	0.22	19.50			1972	B4368
		1.57			65.4	1.000	0.500	CT	0.470	0.21	18.80			1972	B4368
		2.25			65.5	1.489	0.749	CT	0.774	0.22	19.90			1978	MPC01
		2.50			65.6	2.016	0.999	CT	1.028	0.21	19.60			1978	MPC01
		2.25			65.6	1.504	0.749	CT	0.782	0.25	21.30			1978	MPC01
		2.50			65.7	1.991	1.001	CT	1.055	0.24	21.00			1978	MPC01
		1.55			65.8	0.996	0.500	CT	0.528	0.18	18.00			1978	MPC01
		2.50			66.1	1.500	0.749	CT	0.760	0.16	16.79			1979	RA001
		2.52			66.3	2.000	1.000	CT	0.970	0.24	20.60			1972	B4368
		2.52			66.3	2.000	1.000	CT	0.950	0.20	18.80			1972	B4368
		1.62			66.6	1.001	0.498	CT	0.475	0.16	16.90			1980	RA001
		1.73			67.2	1.001	0.498	CT	0.519	0.21	19.90			1978	RA002
		1.75			67.4	1.000	0.520	CT	0.520	0.15	17.50			1978	MPC01
		1.55			68.1	1.001	0.499	CT	0.517	0.19	18.79	21.7/	2.1	1979	RA001
T851	P	3.50	82	S-L	59.8	2.000	0.998	CT	0.986	0.35	22.40			1973	B6213
		3.50			59.8	2.000	0.998	CT	0.941	0.33	21.80	22.1/	0.4	1973	B6213
T851	P	3.00	84	S-L	61.3	2.000	0.999	CT	0.931	0.38	23.90			1973	B6213
		3.00			61.6	2.000	0.999	CT	0.954	0.41	25.00	24.5/	0.8	1973	B6213
T851 (SP)	P	6.00	R.T.	L-T	57.1	3.000	1.500	CT	1.522	0.65	29.10			1973	B6213
		6.00			57.1	3.000	1.500	CT	1.549	0.68	29.70			1973	B6213
		4.50			59.8	3.000	1.501	CT	1.532	0.77	33.10			1973	B6213
		4.50			59.8	3.000	1.500	CT	1.509	0.71	31.90			1973	B6213
		2.04			65.4	1.500	0.752	CT	0.752	0.26	21.10			1973	B6213
		2.04			65.4	1.500	0.752	CT	0.738	0.27	21.30			1973	B6213
		4.00			65.5	3.000	1.500	CT	1.578	0.31	23.00			1973	B6213
		4.00			65.5	2.990	1.501	CT	1.562	0.30	22.50			1973	B6213
		2.00			66.2	3.000	1.501	CT	1.555	0.52	30.30			1973	B6213
		2.00			66.2	3.000	1.502	CT	1.564	0.53	30.40	27.2/	4.7	1973	B6213
T851 (SP)	P	6.00	R.T.	T-L	55.0	3.000	1.500	CT	1.563	0.46	23.70			1973	B6213
		6.00			55.0	3.000	1.500	CT	1.576	0.48	24.10			1973	B6213
		4.50			58.5	3.000	1.500	CT	1.567	0.51	26.50			1973	B6213
		2.04			65.2	1.500	0.752	CT	0.741	0.22	19.50			1973	B6213
		2.04			65.2	1.500	0.751	CT	0.729	0.22	19.40			1973	B6213

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851 (SP)	P	2.00	R.T.	T-L	65.4	3.000	1.502	CT	1.542	0.35	24.40			1973	86213
		2.00			65.4	3.000	1.500	CT	1.541	0.34	24.10	23.1/	2.7	1973	86213
T851 (SP)	P	6.00	R.T.	S-L	54.8	3.000	1.500	CT	1.526	0.50	24.50			1973	86213
		6.00			54.8	3.000	1.500	CT	1.535	0.50	24.50			1973	86213
		4.50			57.3	3.000	1.502	CT	1.543	0.51	25.80			1973	86213
		4.50			57.3	3.000	1.500	CT	1.542	0.47	24.90			1973	86213
		4.00			60.2	3.000	1.502	CT	1.560	0.27	19.90			1973	86213
		4.00			60.2	3.000	1.501	CT	1.540	0.28	20.00			1973	86213
		2.04			62.7	1.500	0.752	CT	0.729	0.20	17.60			1973	86213
		2.04			62.7	1.500	0.751	CT	0.726	0.21	18.10			1973	86213
		2.00			64.9	1.500	0.750	CT	0.739	0.22	19.20			1973	86213
		2.00			64.9	1.490	0.750	CT	0.739	0.22	19.10	21.4/	3.2	1973	86213
T851 (417)	P	4.50	- 320	L-T	76.4	3.000	1.500	CT	1.478	0.44	31.90			1973	86213
		1.75			80.9	3.000	1.500	CT	1.641	0.43	33.50	32.7/	1.1	1973	86213
T851 (417)	P	4.50	- 112	L-T	67.6	3.000	1.501	CT	1.474	0.43	27.90			1973	86213
		1.75			73.2	3.000	1.499	CT	1.642	0.41	29.60	28.8/	1.2	1973	86213
T851 (417)	P	4.00	R.T.	L-T	60.6	2.000	1.000	NB	0.925	0.80	34.30			1973	86213
		5.50			61.1	3.000	1.501	CT	1.495	0.56	28.80			1973	86213
		5.50			61.1	3.000	1.501	CT	1.496	0.53	28.10			1973	86213
		4.00			62.5	2.000	1.000	NB	0.932	0.65	31.90			1973	86213
		4.00			62.5	2.000	1.000	NB	0.941	0.68	32.70			1973	86213
		4.50			63.1	3.000	1.501	CT	1.479	0.44	26.60			1973	86213
		4.50			63.4	3.000	1.500	CT	1.536	0.46	27.70			1973	86213
		4.50			63.4	3.000	1.502	CT	1.518	0.44	26.70			1973	86213
		3.50			63.9	3.000	1.501	CT	1.523	0.61	31.50			1973	86213
		3.50			63.9	3.000	1.501	CT	1.510	0.61	31.60			1973	86213
		1.57			64.2	3.000	1.501	CT	1.589	0.46	27.40			1973	86213
		1.57			64.2	3.000	1.501	CT	1.581	0.48	28.00			1973	86213
		1.57			65.2	3.000	1.500	CT	1.526	0.73	35.20			1973	86213
		1.57			65.2	3.000	1.501	CT	1.477	0.69	34.20			1973	86213
		3.00			65.4	3.000	1.412	CT	1.546	0.48	28.70			1973	86213
		3.00			65.4	1.000	0.499	CT	0.519	0.36	24.80			1973	86213
		3.00			65.4	2.000	0.999	CT	1.014	0.42	26.80			1973	86213

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851 (417)	P	3.00	R.T.	L-T	65.4	3.000	0.999	CT	1.536	0.45	27.80			1973	86213
		3.00			66.2	3.000	1.412	CT	1.532	0.48	28.90			1973	86213
		3.00			66.2	1.000	0.498	CT	0.515	0.36	25.00			1973	86213
		3.00			66.2	2.000	0.998	CT	1.015	0.40	26.50			1973	86213
		3.00			66.2	3.000	0.998	CT	1.530	0.48	28.90			1973	86213
		1.75			67.0	3.000	1.501	CT	1.572	0.46	28.60			1973	86213
		1.75			67.0	3.000	1.502	CT	1.583	0.45	28.30			1973	86213
		1.57			67.2	3.000	1.502	CT	1.560	0.37	26.00			1973	86213
		1.57			67.2	3.000	1.502	CT	1.555	0.39	26.50			1973	86213
		1.75			67.6	3.000	1.499	CT	1.631	0.46	29.10	28.9/	2.8	1973	86213
T851 (417)	P	3.50	81	L-T	65.4	3.000	1.500	CT	1.537	0.45	27.90			1973	86213
		2.00			65.5	3.990	2.000	CT	2.087	0.62	32.50			1973	86213
		2.00			67.9	3.990	1.995	CT	2.032	0.43	28.10	29.5/	2.6	1973	86213
T851 (417)	P	3.75	82	L-T	61.3	2.000	0.999	CT	1.015	0.51	27.80			1973	86213
		3.38			61.6	2.000	1.000	CT	0.955	0.47	26.70			1973	86213
		3.38			61.6	2.000	1.000	CT	0.950	0.51	27.80			1973	86213
		3.15			63.0	2.000	0.998	CT	0.995	0.49	28.00			1973	86213
		3.75			64.2	2.000	0.998	CT	0.997	0.44	27.00			1973	86213
		3.75			64.2	2.000	1.001	CT	1.000	0.45	27.10			1973	86213
		3.75			64.6	2.000	1.000	CT	1.012	0.43	26.90			1973	86213
		3.15			65.1	2.000	0.999	CT	0.980	0.43	27.00			1973	86213
		3.38			65.3	2.000	1.000	CT	0.957	0.41	26.40			1973	86213
		3.38			65.3	2.000	0.998	CT	0.965	0.41	26.30			1973	86213
		2.50			65.4	1.990	1.002	CT	1.018	0.43	27.10			1973	86213
		2.50			65.4	1.990	1.001	CT	1.006	0.44	27.30			1973	86213
		2.50			65.6	4.000	1.997	CT	2.103	0.77	36.40			1973	86213
		2.50			65.6	4.000	1.997	CT	2.097	0.78	36.70			1973	86213
		3.15			65.7	2.000	0.999	CT	0.960	0.39	26.10			1973	86213
		3.15			65.7	2.000	0.998	CT	0.959	0.41	26.70			1973	86213
		2.50			65.8	4.000	1.998	CT	2.181	0.51	29.80			1973	86213
		2.50			66.2	3.990	1.998	CT	2.146	0.65	33.70			1973	86213
		2.50			66.2	3.990	2.000	CT	2.159	0.69	34.90			1973	86213
		2.75			67.0	2.000	1.000	CT	0.958	0.36	25.50			1973	86213
		2.75			67.4	2.000	0.998	CT	0.953	0.34	24.90			1973	86213
		2.75			67.4	2.000	0.998	CT	0.945	0.34	24.80			1973	86213
		2.75			68.6	2.000	0.999	CT	0.958	0.34	25.30			1973	86213
		2.52			69.7	2.000	0.999	CT	0.963	0.35	26.00			1973	86213

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851 (417)	P	2.52	82	L-T	69.7	2.000	0.998	CT	0.939	0.33	25.20			1973	86213
		2.52			69.7	2.000	1.001	CT	0.960	0.33	25.50	28.0/	3.5	1973	86213
T851 (417)	P	1.75	- 320	T-L	78.1	3.000	1.500	CT	1.648	0.35	29.10			1973	86213
T851 (417)	P	4.50	- 112	T-L	66.0	3.000	1.498	CT	1.567	0.33	24.10			1973	86213
		1.75			70.7	3.000	1.500	CT	1.623	0.30	24.60	24.4/	0.4	1973	86213
T851 (417)	P	5.50	R.T.	T-L	59.3	3.000	1.501	CT	1.514	0.34	21.80			1973	86213
		5.50			59.3	3.000	1.501	CT	1.540	0.35	22.30			1973	86213
		4.00			59.4	2.000	1.001	NB	0.938	0.49	26.40			1973	86213
		4.50			61.4	3.000	1.501	CT	1.566	0.36	23.30			1973	86213
		4.50			61.4	3.000	1.501	CT	1.523	0.34	22.50			1973	86213
		4.50			61.5	3.000	1.500	CT	1.482	0.29	21.10			1973	86213
		4.00			62.6	2.000	0.998	NB	0.918	0.40	24.90			1973	86213
		3.50			62.7	3.000	1.501	CT	1.550	0.44	26.40			1973	86213
		3.50			62.7	3.000	1.501	CT	1.546	0.46	26.80			1973	86213
		3.00			64.4	3.000	0.998	CT	1.520	0.31	22.70			1973	86213
		3.00			64.4	1.000	0.499	CT	0.525	0.27	21.10			1973	86213
		3.00			64.4	2.000	0.999	CT	0.996	0.26	20.70			1973	86213
		3.00			64.4	3.000	1.412	CT	1.553	0.31	22.70			1973	86213
		3.00			64.4	3.000	0.498	CT	1.526	0.31	22.70			1973	86213
		3.00			64.8	3.000	1.412	CT	1.551	0.29	22.20			1973	86213
		3.00			64.8	1.000	0.498	CT	0.516	0.28	21.80			1973	86213
		3.00			64.8	3.000	0.998	CT	1.541	0.31	22.70			1973	86213
		3.00			64.8	3.000	0.497	CT	1.512	0.30	22.50			1973	86213
		3.00			64.8	2.000	0.998	CT	1.034	0.28	21.50			1973	86213
		1.57			65.2	3.000	1.501	CT	1.522	0.51	29.40			1973	86213
		1.57			65.2	3.000	1.501	CT	1.541	0.54	30.30			1973	86213
		1.75			65.7	3.000	1.500	CT	1.577	0.33	23.90			1973	86213
		1.75			65.7	3.000	1.502	CT	1.565	0.33	24.00			1973	86213
		1.75			66.0	3.000	1.500	CT	1.643	0.34	24.50			1973	86213
		1.57			67.2	3.000	1.502	CT	1.561	0.32	24.00			1973	86213
		1.57			67.2	3.000	1.501	CT	1.591	0.35	25.30			1973	86213
		1.57			67.2	3.000	1.502	CT	1.565	0.32	24.00			1973	86213
		1.57			67.2	3.000	1.501	CT	1.591	0.35	25.10	23.8/	2.4	1973	86213
T851 (417)	P	3.50	81	T-L	64.2	3.000	1.498	CT	1.520	0.33	23.30			1973	86213
		3.50			64.2	3.000	1.499	CT	1.545	0.32	22.80			1973	86213

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851 (417)	P	2.00	81	T-L	65.3	4.000	2.000	CT	2.159	0.56	30.90			1973	86213
		2.00			66.7	4.000	1.999	CT	2.142	0.33	24.30	25.3/	3.8	1973	86213
T851 (417)	P	3.75	82	T-L	59.2	2.000	0.999	CT	1.014	0.42	24.20			1973	86213
		3.38			61.0	2.000	0.998	CT	0.958	0.54	28.40			1973	86213
		3.38			61.0	2.000	0.999	CT	0.974	0.51	27.50			1973	86213
		3.00			61.8	3.000	1.500	CT	1.560	0.29	21.10			1973	86213
		3.75			63.0	2.000	1.001	CT	1.005	0.34	23.30			1973	86213
		3.75			63.0	2.000	1.000	CT	0.999	0.34	23.20			1973	86213
		3.15			63.4	2.000	1.000	CT	1.000	0.43	26.30			1973	86213
		3.75			63.8	2.000	1.001	CT	1.011	0.34	23.50			1973	86213
		3.15			64.2	2.000	1.000	CT	1.003	0.38	24.90			1973	86213
		2.50			64.2	1.990	1.001	CT	1.039	0.42	26.30			1973	86213
		2.50			64.2	1.990	1.001	CT	1.055	0.41	26.10			1973	86213
		2.50			64.4	4.000	1.997	CT	2.099	0.35	24.00			1973	86213
		2.50			64.4	3.990	1.999	CT	2.172	0.54	29.90			1973	86213
		2.50			64.4	4.000	1.997	CT	2.183	0.54	30.00			1973	86213
		3.38			64.7	2.000	0.998	CT	0.989	0.41	26.10			1973	86213
		2.50			64.8	4.000	2.001	CT	2.134	0.46	27.70			1973	86213
		2.50			64.8	4.000	1.998	CT	2.153	0.47	28.10			1973	86213
		3.15			65.0	2.000	1.001	CT	0.982	0.37	25.00			1973	86213
		3.15			65.0	2.000	0.998	CT	0.995	0.36	24.60			1973	86213
		2.75			65.3	2.000	0.999	CT	0.968	0.35	24.30			1973	86213
		1.62			65.4	3.000	1.500	CT	1.581	0.26	21.20			1973	86213
		2.75			66.1	2.000	1.000	CT	0.957	0.34	24.40			1973	86213
		2.75			66.1	2.000	1.001	CT	0.949	0.32	23.60			1973	86213
		2.75			66.9	2.000	0.998	CT	0.940	0.27	22.10			1973	86213
		2.52			67.0	2.000	0.998	CT	0.979	0.31	23.70			1973	86213
		2.52			67.6	2.000	0.998	CT	0.955	0.28	22.60			1973	86213
		2.52			67.6	2.000	1.000	CT	0.976	0.29	23.10			1973	86213
		2.52			68.6	2.000	0.995	CT	0.987	0.29	23.40	25.0/	2.4	1973	86213
T851 (417)	P	4.50	- 320	S-L	72.3	3.000	1.501	CT	1.514	0.23	22.10			1973	86213
T851 (417)	P	4.50	- 112	S-L	64.8	3.000	1.500	CT	1.461	0.27	21.30			1973	86213
T851 (417)	P	5.50	R.T.	S-L	57.5	3.000	1.499	CT	1.500	0.42	23.60			1973	86213
		5.50			57.5	3.000	1.501	CT	1.466	0.43	23.90			1973	86213
		4.00			59.3	2.000	0.997	CT	0.981	0.44	24.80			1973	86213

TABLE 7.8.2.1 (Con't)

ALUMINUM 2124

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	SPECIMEN DESIGN	K(IC) CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN (KSI*SQRT IN)	K(IC) STAN DEV (KSI*SQRT IN)	DATE	REFER
T851 (417)	P	4.50	R.T.	S-L	59.8	3.000	1.501	CT	1.523	0.35	22.50			1973	86213
		4.50			59.8	3.000	1.501	CT	1.534	0.36	22.70			1973	86213
		3.00			60.0	2.000	1.000	CT	1.015	0.29	20.40			1973	86213
		4.50			60.9	3.000	1.501	CT	1.459	0.29	20.70			1973	86213
		2.50			62.1	2.000	0.998	CT	0.939	0.31	21.80			1973	86213
		2.50			62.1	2.000	0.996	CT	0.963	0.34	22.90			1973	86213
		2.50			62.9	2.000	0.998	CT	0.931	0.28	21.20			1973	86213
		2.50			62.9	2.000	0.998	CT	0.926	0.28	21.10			1973	86213
		1.57			63.0	1.000	0.500	CT	0.493	0.29	21.60			1973	86213
		1.57			63.0	1.000	0.501	CT	0.500	0.28	21.00			1973	86213
		2.50			63.1	2.000	0.998	CT	0.929	0.26	20.30			1973	86213
		1.57			64.4	1.000	0.500	CT	0.489	0.27	21.30			1973	86213
		1.57			64.4	1.000	0.500	CT	0.499	0.25	20.50			1973	86213
		1.75			65.3	0.990	0.501	CT	0.459	0.19	18.20			1973	86213
		1.57			65.4	0.990	0.500	CT	0.471	0.21	18.80			1973	86213
		1.62			65.4	1.000	0.500	CT	0.488	0.16	16.70	21.3/	2.0	1973	86213
T851 (417)	P	3.75	82	S-L	58.1	2.000	1.000	CT	0.976	0.37	22.30			1973	86213
		3.38			59.6	2.000	1.001	CT	0.947	0.40	23.90			1973	86213
		3.50			59.9	2.000	0.998	CT	0.987	0.27	19.80			1973	86213
		3.50			59.9	2.000	0.998	CT	0.992	0.32	21.40			1973	86213
		3.50			61.4	1.990	1.001	CT	0.985	0.40	24.70			1973	86213
		3.50			61.4	1.990	1.001	CT	0.988	0.43	25.40			1973	86213
		3.38			61.4	2.000	0.998	CT	0.962	0.48	26.90			1973	86213
		3.75			62.2	2.000	1.001	CT	0.983	0.36	23.60			1973	86213
		3.15			62.3	2.000	1.000	CT	0.938	0.34	22.90			1973	86213
		3.15			62.6	2.000	0.999	CT	0.955	0.33	22.90			1973	86213
		2.75			63.3	2.000	1.000	CT	0.935	0.28	21.30			1973	86213
		2.50			63.5	1.990	1.001	CT	0.965	0.29	21.80			1973	86213
		2.50			63.5	1.990	1.001	CT	0.974	0.31	22.20			1973	86213
		2.75			64.2	2.000	0.998	CT	0.929	0.25	20.50			1973	86213
		2.52			65.1	2.000	1.000	CT	0.963	0.29	22.00			1973	86213
		2.75			66.0	2.000	0.999	CT	0.948	0.18	17.80			1973	86213
		2.52			66.1	2.000	0.998	CT	0.947	0.21	19.30			1973	86213
		2.52			66.3	2.000	0.998	CT	0.945	0.20	18.80			1973	86213
		2.52			66.3	2.000	0.998	CT	0.974	0.24	20.60	22.0/	2.3	1973	86213
T851 (417)	P	3.75	84	S-L	62.2	2.000	0.998	CT	0.998	0.34	23.10			1973	86213

TABLE 7.8.2.2

ALUMINUM 2124 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T851	P	0.25	R.T.	T-L	59.8	3.000	0.249	1.220	1.780	18.80	26.80	41.41			58.04*			1973	86213
		0.25			62.9	3.000	0.249	1.240	1.700	13.40	18.60	29.09			38.31			1973	86213
		0.25			55.4	3.000	0.250	1.127	1.755	14.30	21.70	31.66			46.23*			1973	86213
		0.25			55.5	3.000	0.251	1 128	1.778	14.90	21.90	31.99			47.36*			1973	86213
		0.25			57.4	3.000	0.250	1.210	1.720	14.70	20.90	32.10			43.59*			1973	86213
		0.25			57.4	3.000	0.250	1.320	1.790	15.00	20.30	33.30			44.24*			1973	86213
		0.25			57.4	3.000	0.251	1.220	1.740	15.30	18.50	28.58			39.07			1973	86213
		0.25			59.7	3.000	0.250	1.190	1.700	16.40	25.00	37.93			51.50*			1973	86213
		0.25			59.7	3.000	0.250	1.220	1.690	16.30	22.20	34.30			45.45*			1973	86213
		0.25			59.8	3.000	0.252	1.220	1.680	16.80	23.60	36.46			54.52*			1973	86213
		0.25			59.8	3.000	0.250	1.230	1.700	16.00	23.40	36.37			48.20*			1973	86213
		0.25			59.9	3.000	0.250	1.220	1.700	14.00	20.90	32.29			43.05*			1973	86213
		0.25			59.9	3.000	0.250	1.250	1.640	13.30	17.10	26.90			33.95			1973	86213
		0.25			59.9	3.000	0.250	1.240	1.640	13.40	18.50	28.93			36.73			1973	86213
		0.25			61.1	3.000	0.250	1.240	1.800	17.30	29.10	45.51*			63.82*			1973	86213
		0.25			61.1	3.000	0.250	1.240	1.770	17.70	26.80	41.91			57.67*			1973	86213
		0.25			61.1	3.000	0.250	1.240	1.710	18.80	26.60	41.60			55.13*			1973	86213
		0.25			62.9	3.000	0.250	1.240	1.600	13.30	19.90	31.12			38.57			1973	86213
		0.25			62.9	3.000	0.250	1.200	1.650	14.00	21.20	32.36	33.3/	4.3	42.35	38.2/	2.8	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

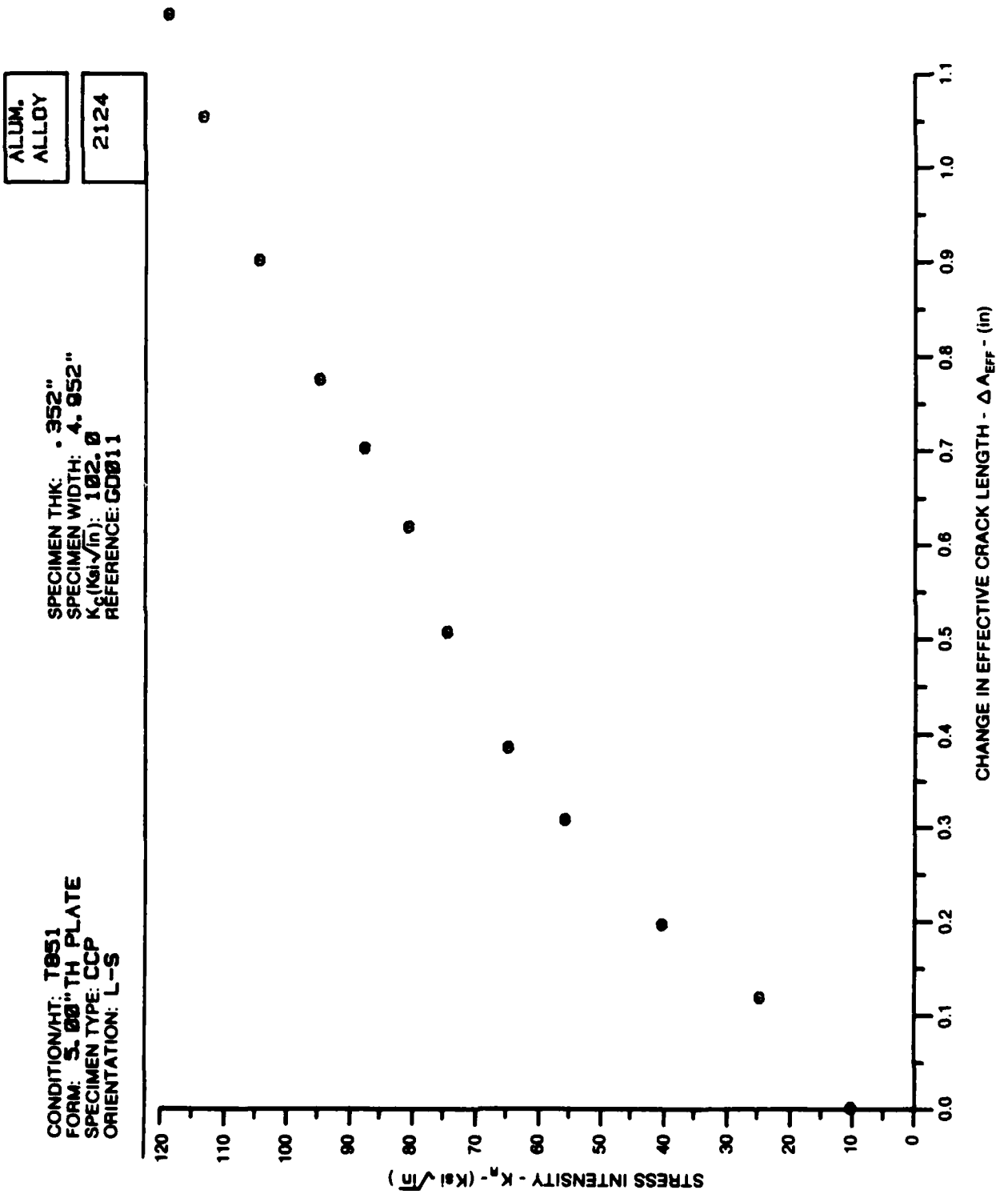


Figure 7.8.2.3

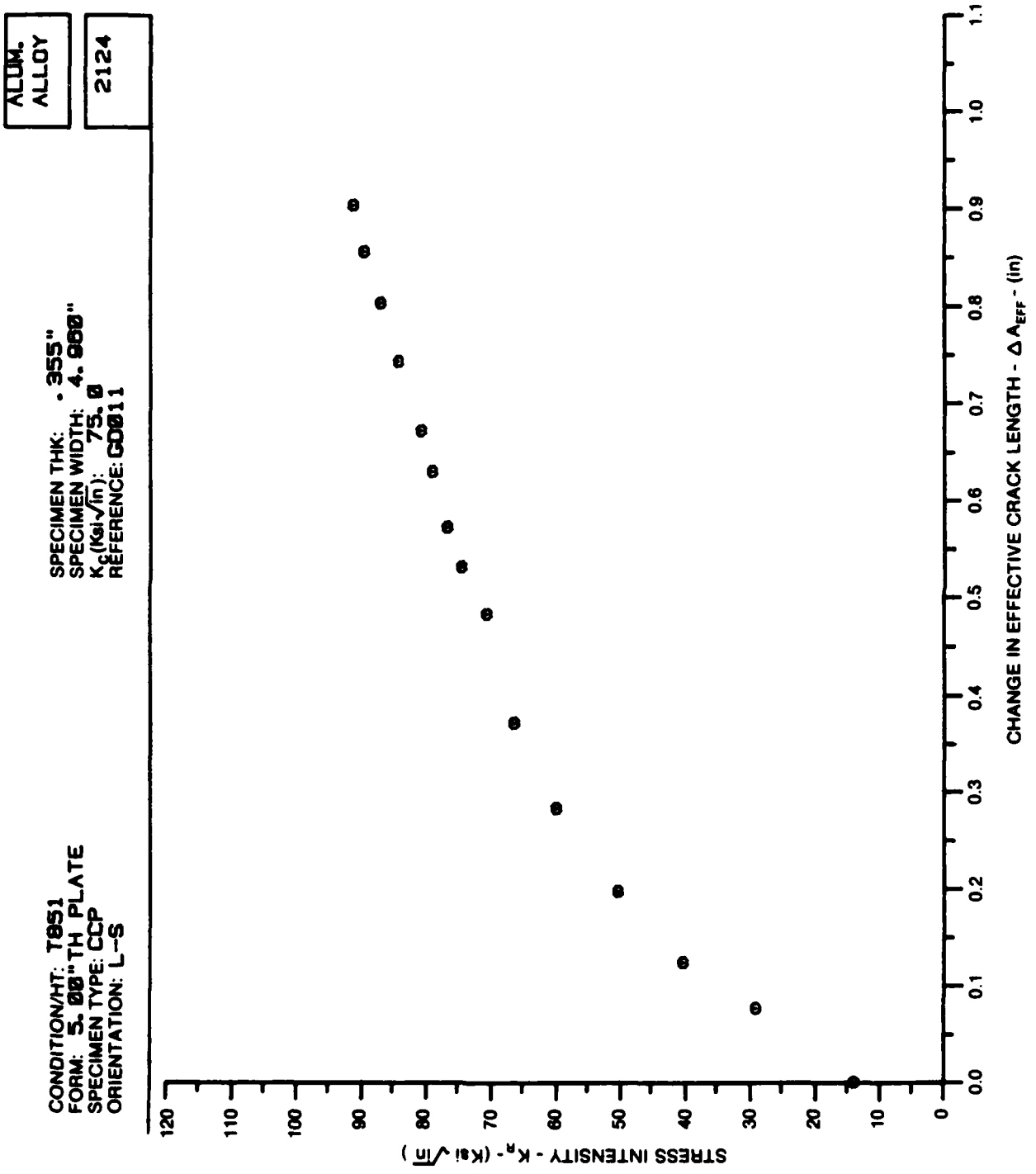


Figure 7.8.2.4

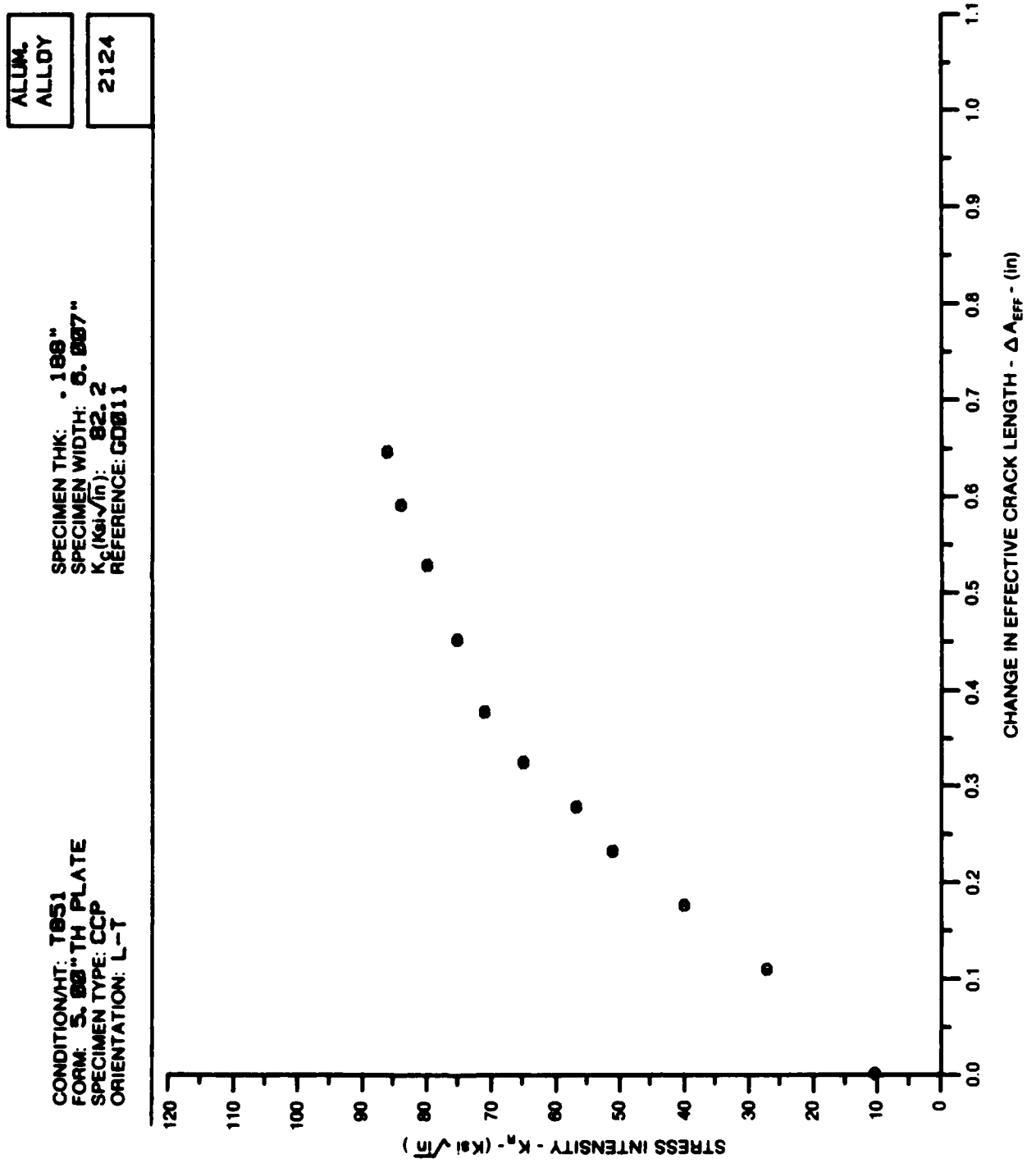


Figure 7.8.2.5

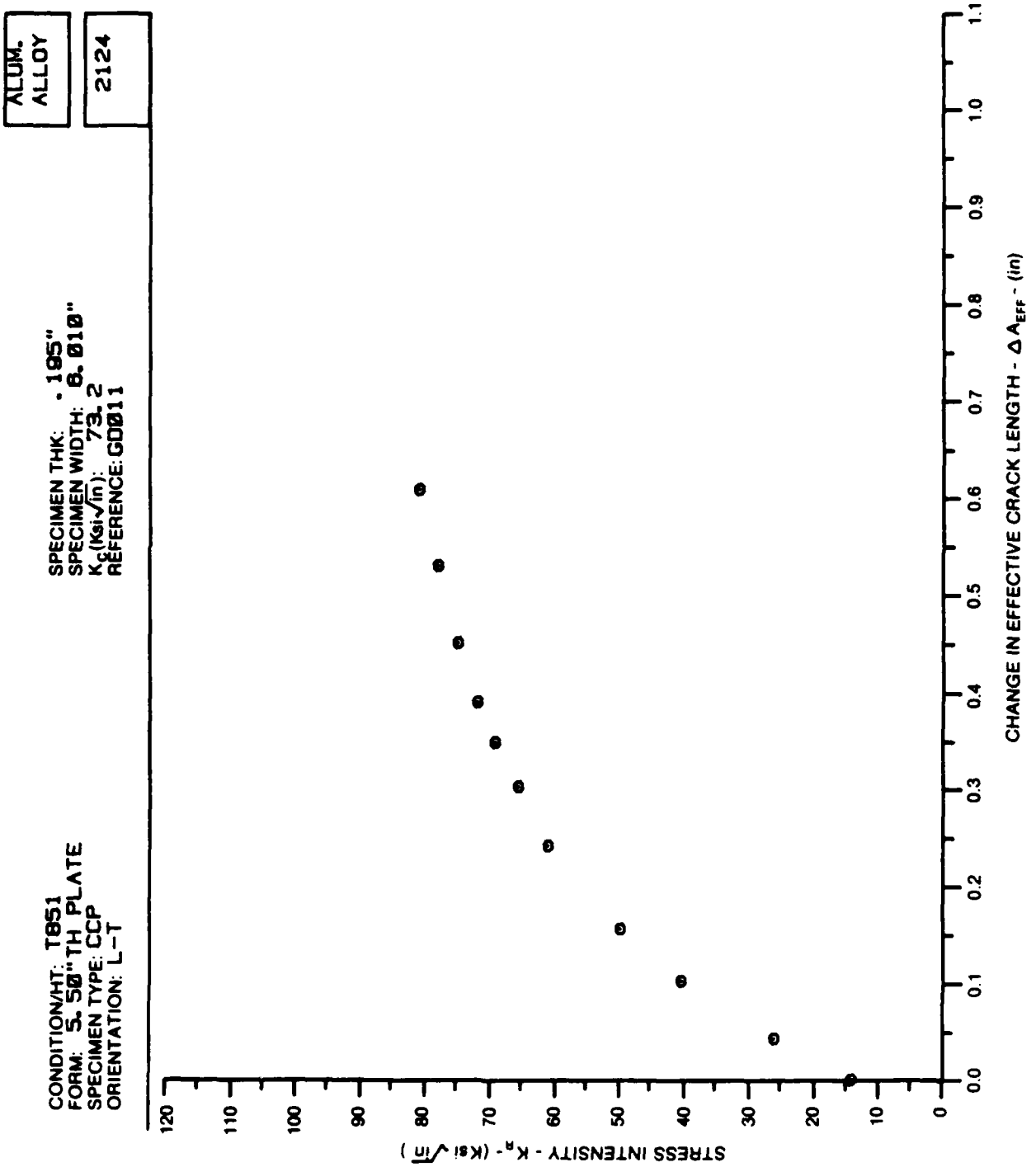


Figure 7.8.2.6

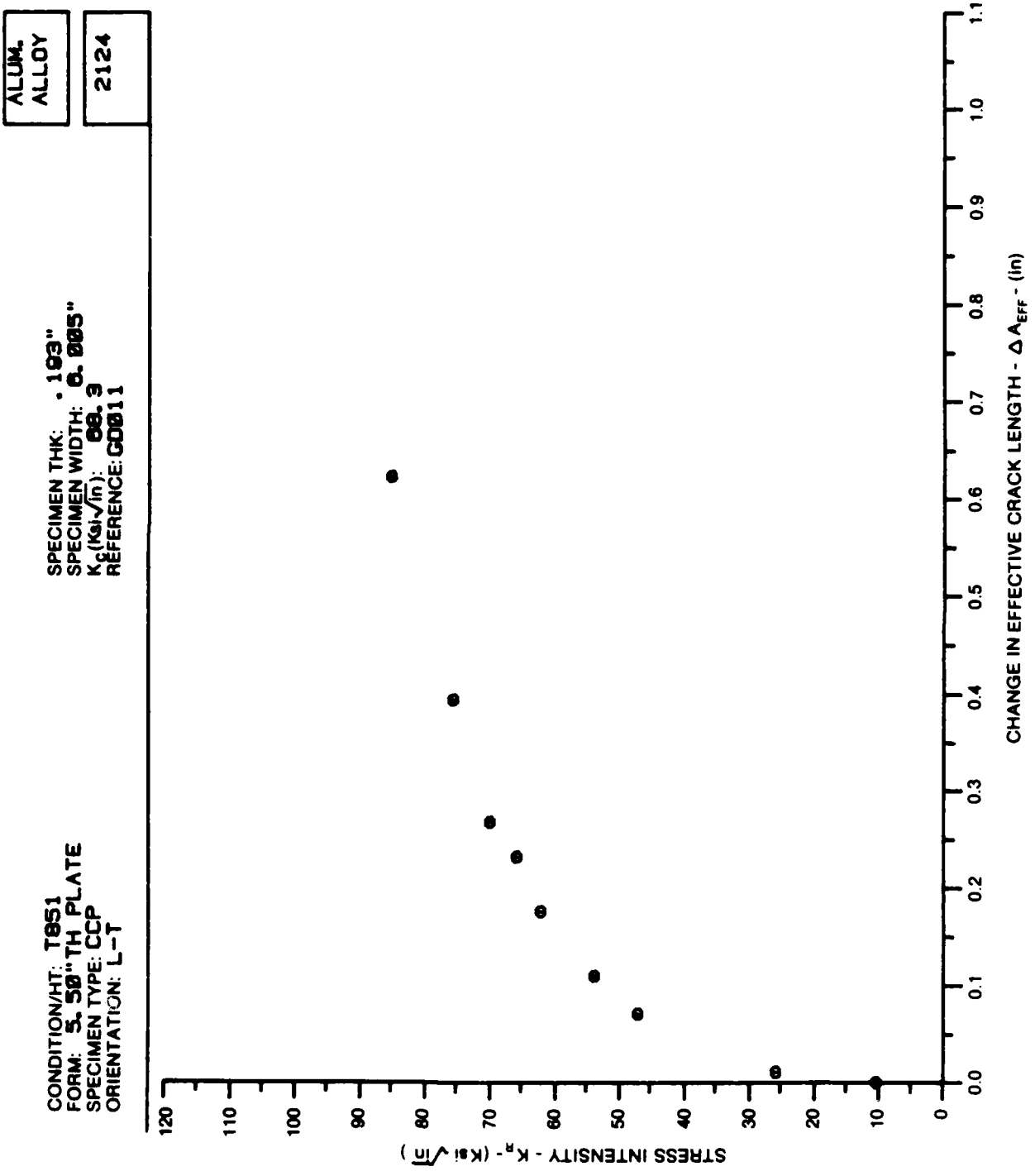


Figure 7.8.2.7

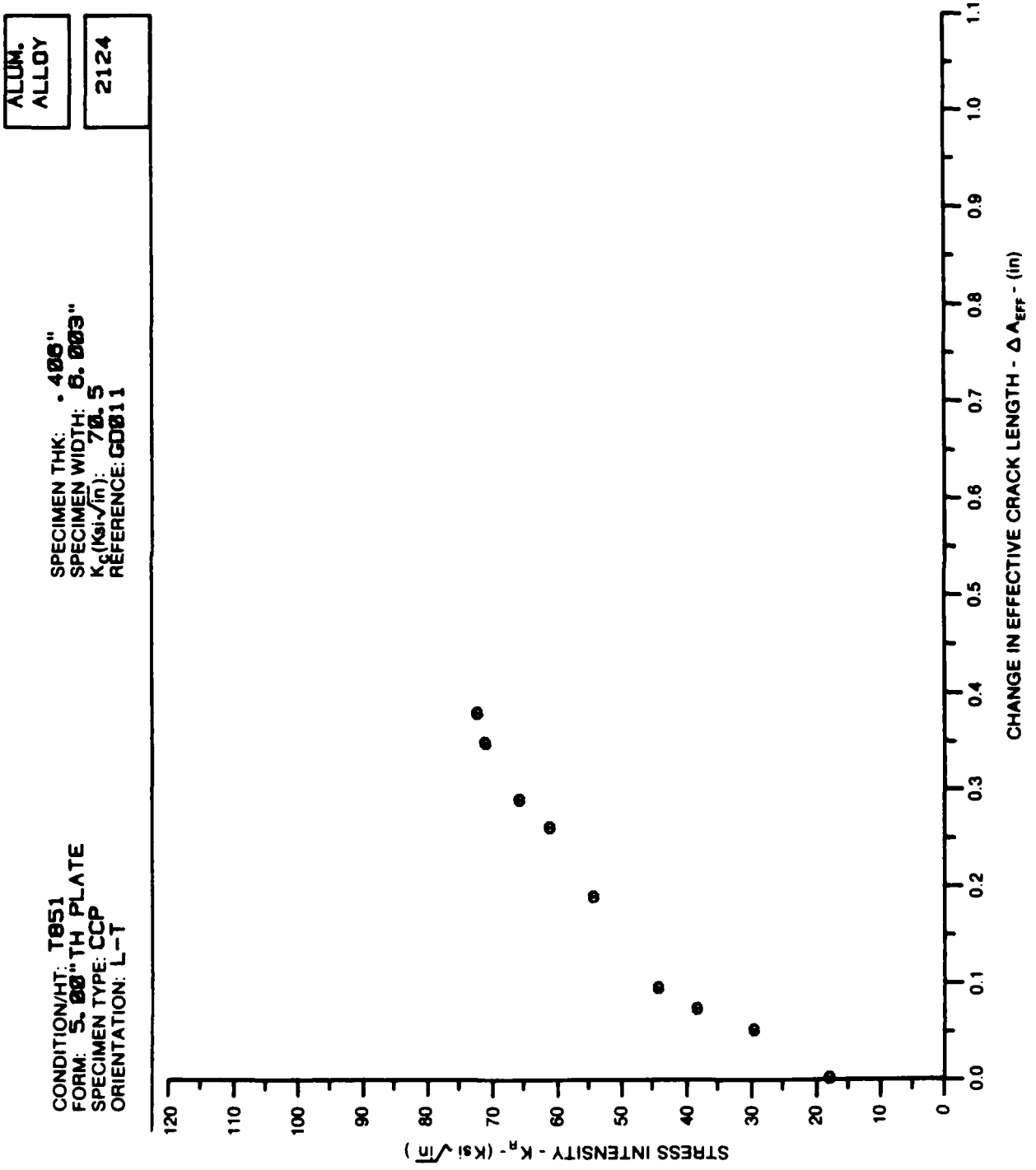


Figure 7.8.2.8

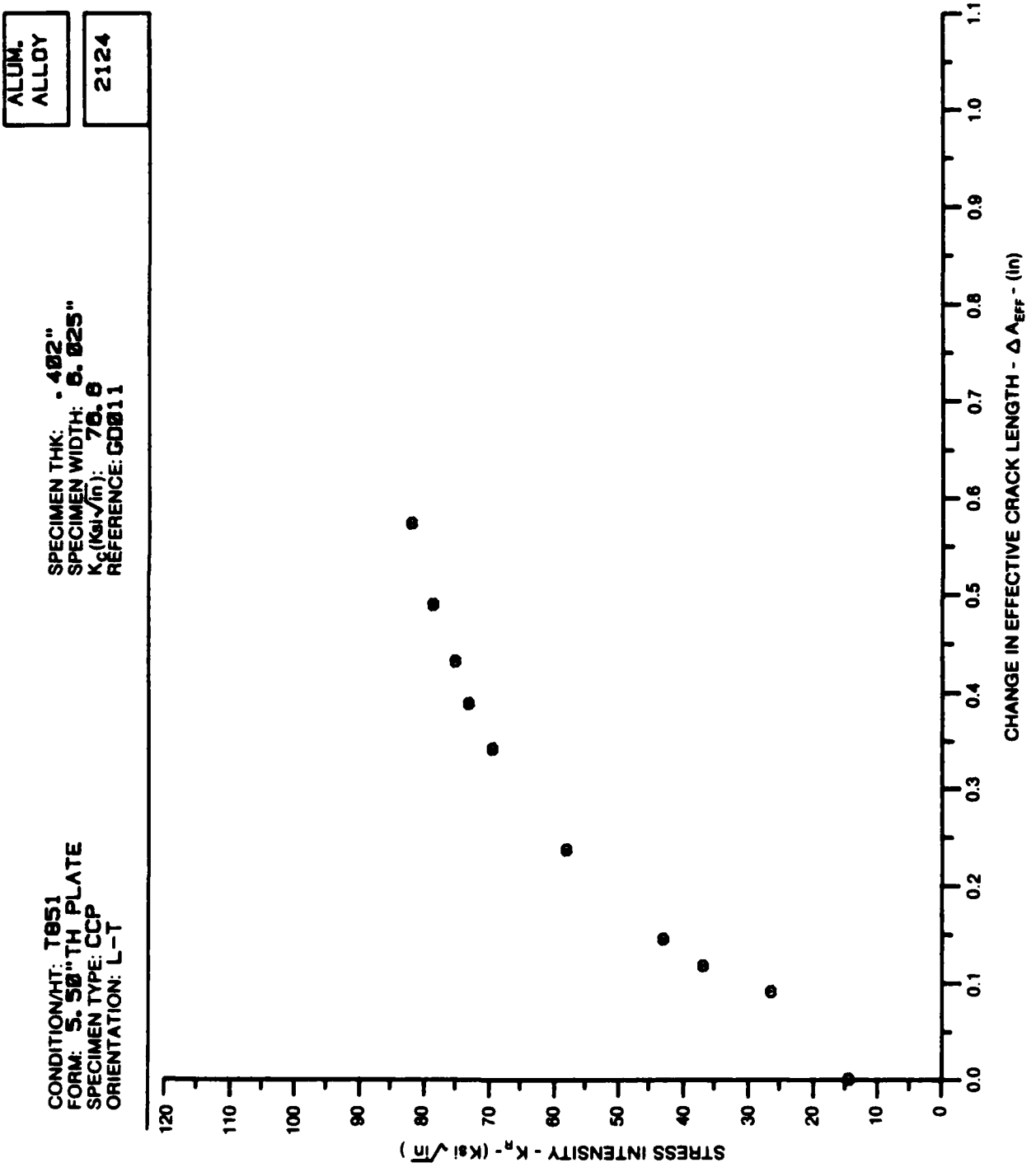


Figure 7.8.2.9

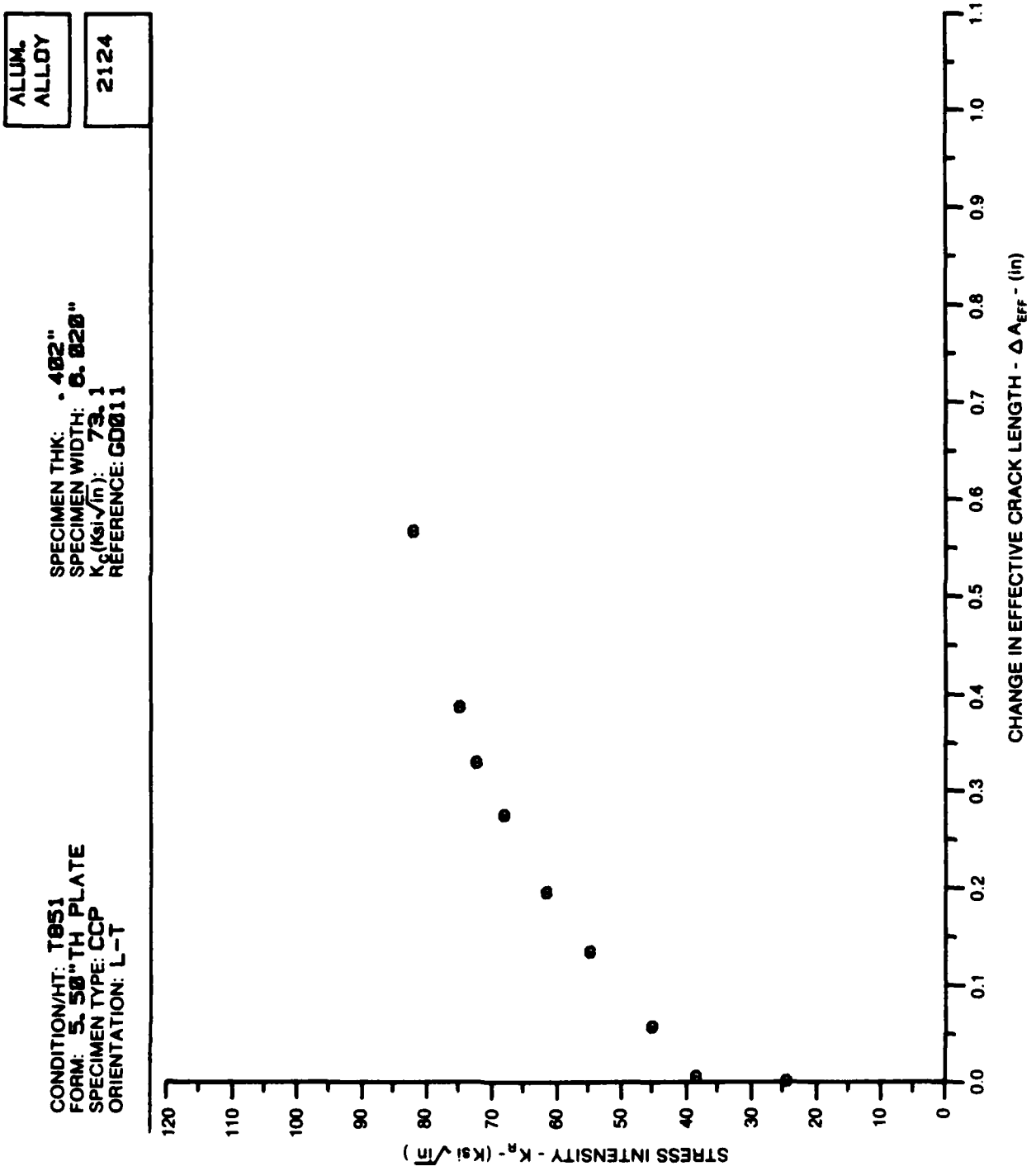


Figure 7.8.2.10

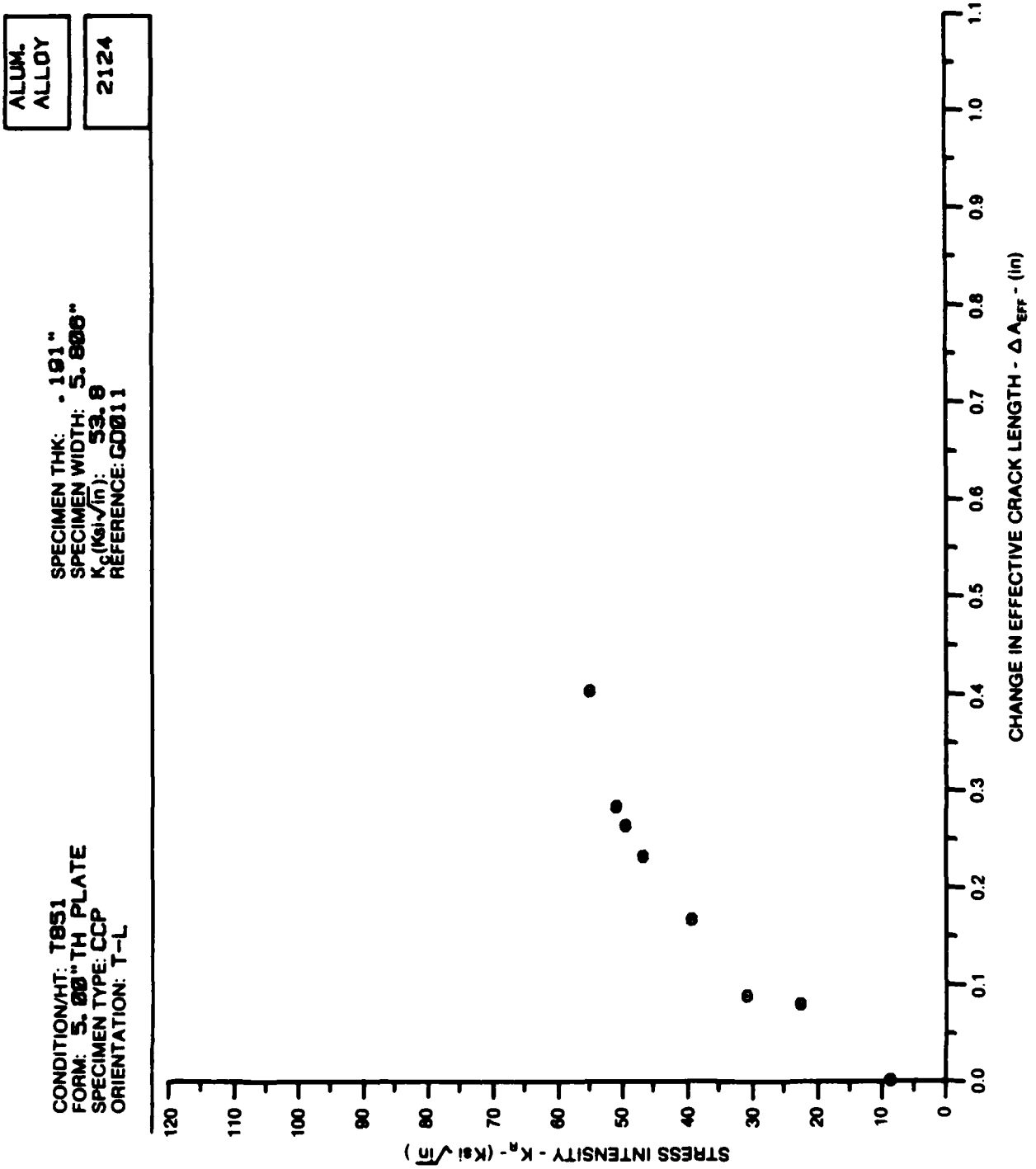


Figure 7.8.2.11

CONDITION/HT: T851
FORM: 5.00" TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: T-L

SPECIMEN THK: .203"
SPECIMEN WIDTH: 5.825"
K_C(Ksi$\sqrt{in}$): 48.6
REFERENCE: GD011

ALUM. ALLOY
2124

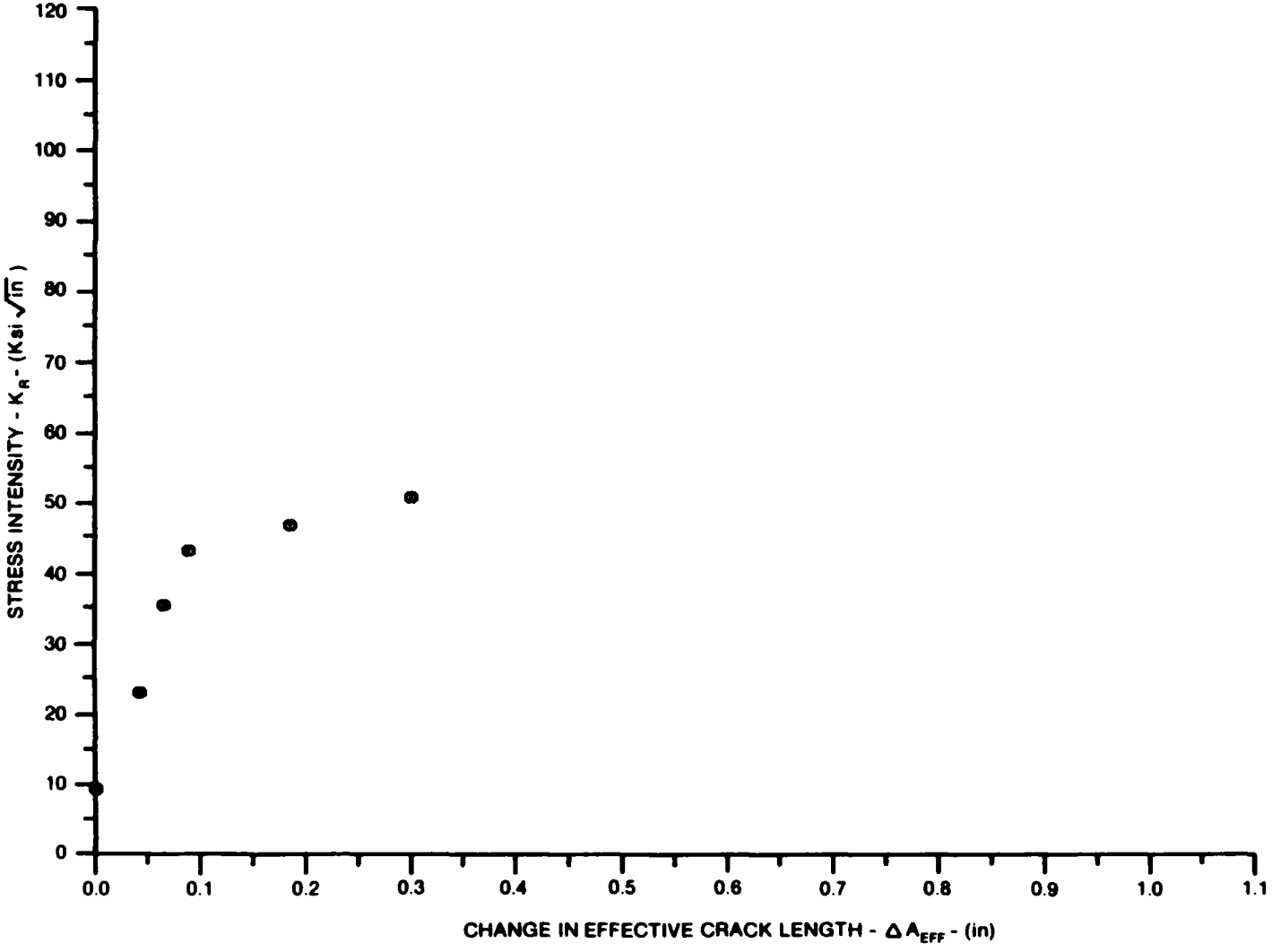


Figure 7.8.2.12

TABLE 7.8.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.1 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2124
CONDITION: T851
ENVIRONMENT: R.T., H.H.A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.33			
DELTA K MIN	A: 2.11	.00883			
	B:				
	C:				
	D:				
	2.50	.0441			
	3.00	.149			
	3.50	.317			
	4.00	.549			
	5.00	1.33			
	6.00	2.60			
	7.00	4.24			
	8.00	6.22			
	9.00	8.61			
	10.00	11.5			
	13.00	24.4			
	16.00	49.6			
	20.00	168.			
DELTA K MAX	A: 20.19	182.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 12.91

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 1.50"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: L-T
FREQUENCY: 25.00
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 66.0 KSI
ULT. STRENGTH: 71.0 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 2.550"
REFERENCES:NC003

ALUM. ALLOY
2124

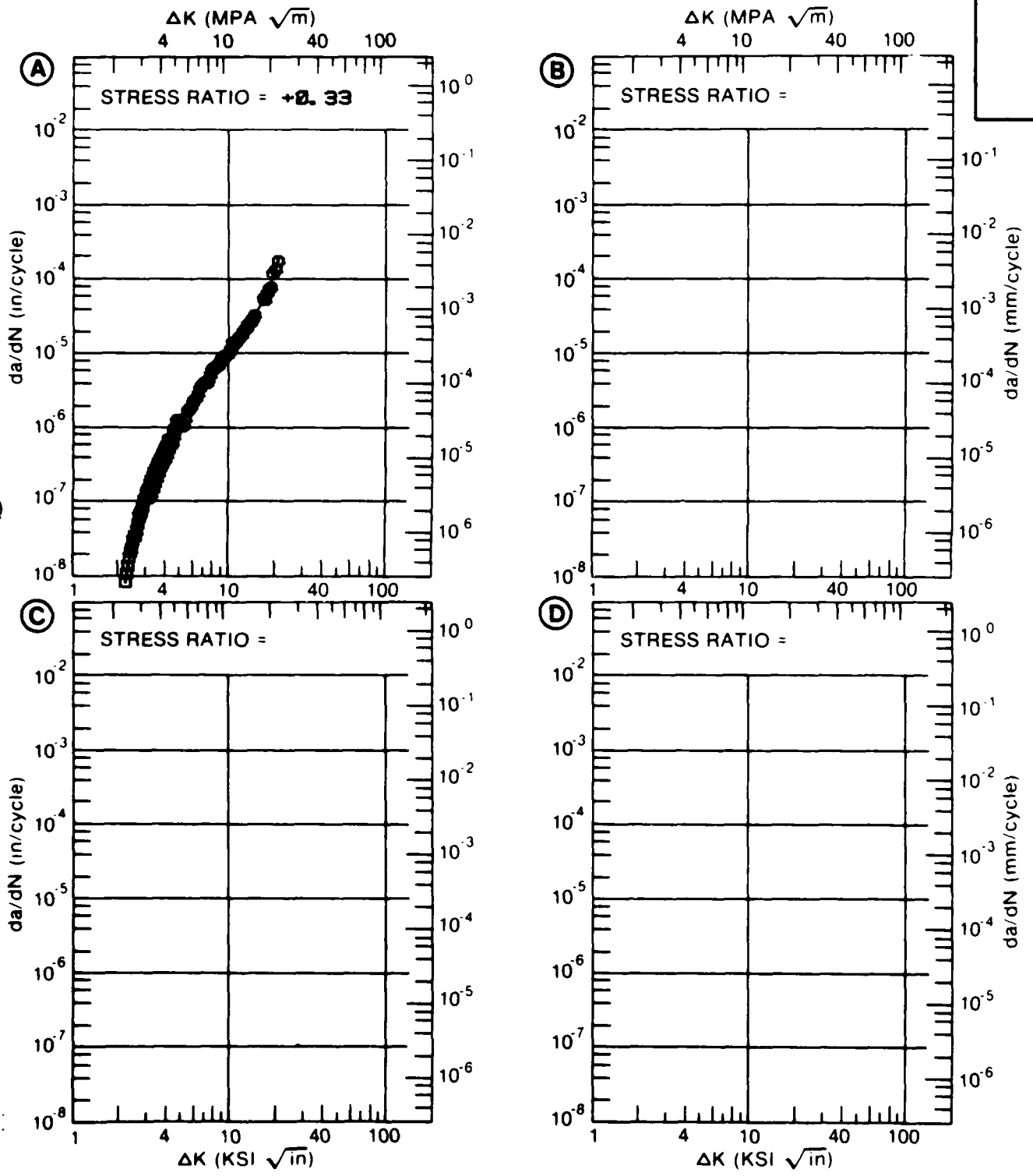


Figure 7.8.3.1

TABLE 7.8.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.2 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2124
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A: 2.05	.0155			
	B:				
	C:				
	D:				
	2.50	.0474			
	3.00	.0874			
	3.50	.115			
	4.00	.142			
	5.00	.272			
	6.00	.596			
	7.00	1.11			
	8.00	1.80			
	9.00	2.70			
	10.00	3.84			
	13.00	9.39			
	16.00	20.7			
	20.00	56.7			
DELTA K MAX	A: 22.02	93.8			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 32.48

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 1.50"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.02
FREQUENCY: 1.00- 30.00 HZ

YIELD STRENGTH: 67.2 KSI
ULT. STRENGTH: 71.5 KSI
SPECIMEN THK: 0.109- 0.111"
SPECIMEN WIDTH: 3.950- 3.954"
REFERENCES: MA002

ALUM. ALLOY

2124

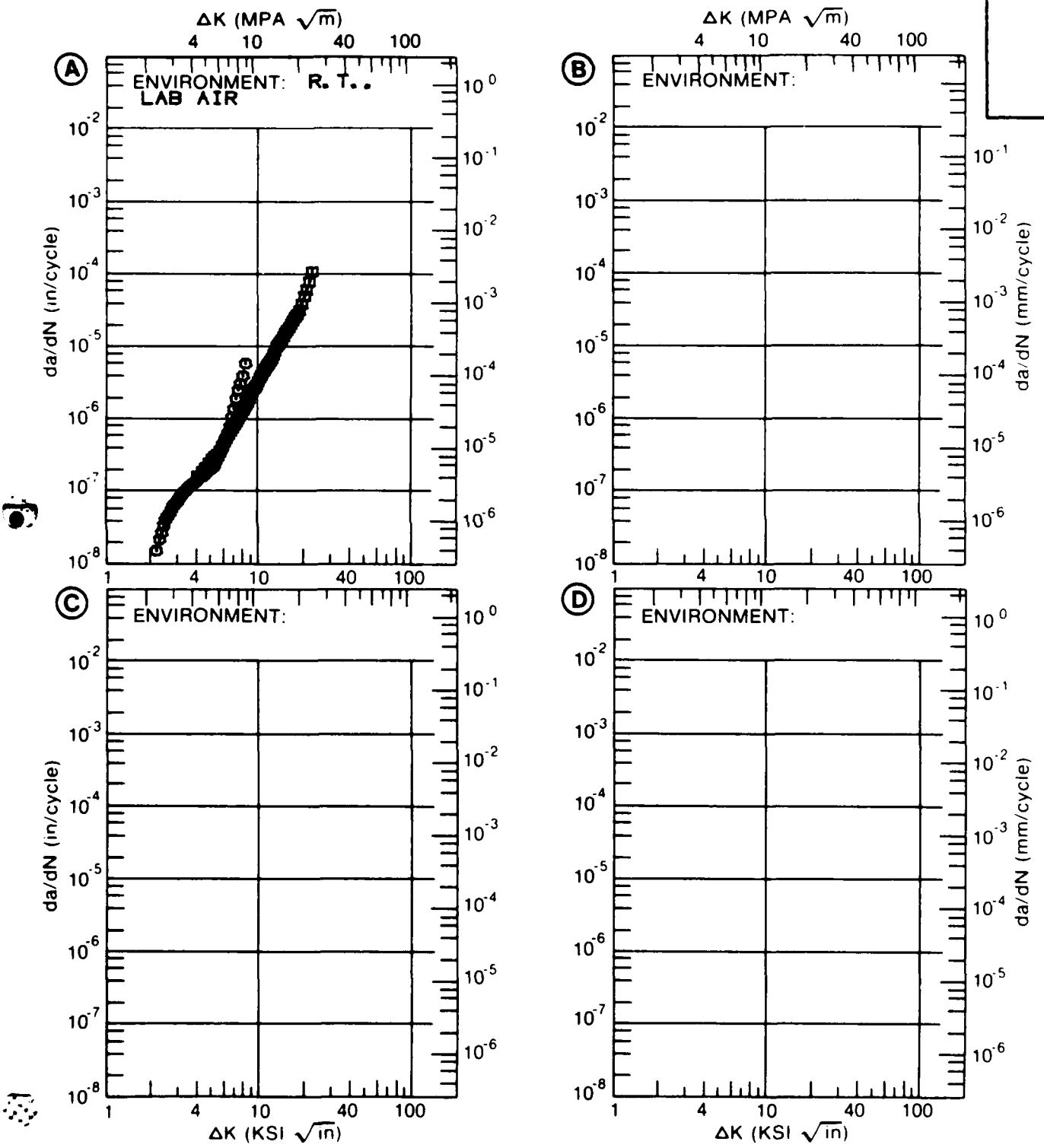


Figure 7.8.3.2

TABLE 7.8.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.3 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2124
CONDITION: T851
ENVIRONMENT: R.T., L.H.A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.10	R=+0.50		
DELTA K MIN A:	2.42	.0147			
DELTA K MIN B:	1.62		.00552		
DELTA K MIN C:					
DELTA K MIN D:					
	2.00		.0501		
	2.50	.0198	.0925		
	3.00	.0661	.111		
	3.50	.118	.173		
	4.00	.163	.295		
	5.00	.266	.682		
	6.00	.458	1.16		
	7.00	.776	1.78		
	8.00	1.25	2.72		
	9.00	1.89	4.29		
	10.00	2.69	7.07		
	13.00	6.60	34.6		
	16.00	15.1	83.9		
	20.00	44.6			
	25.00	133.			
DELTA K MAX A:	26.67	174.			
DELTA K MAX B:	16.28		86.4		
DELTA K MAX C:					
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		27.50	30.69		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 2.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 30.00
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 66.4 KSI
ULT. STRENGTH: 72.1 KSI
SPECIMEN THK: 0.375- 1.500"
SPECIMEN WIDTH: 2.550"
REFERENCES:UD005

ALUM. ALLOY
2124

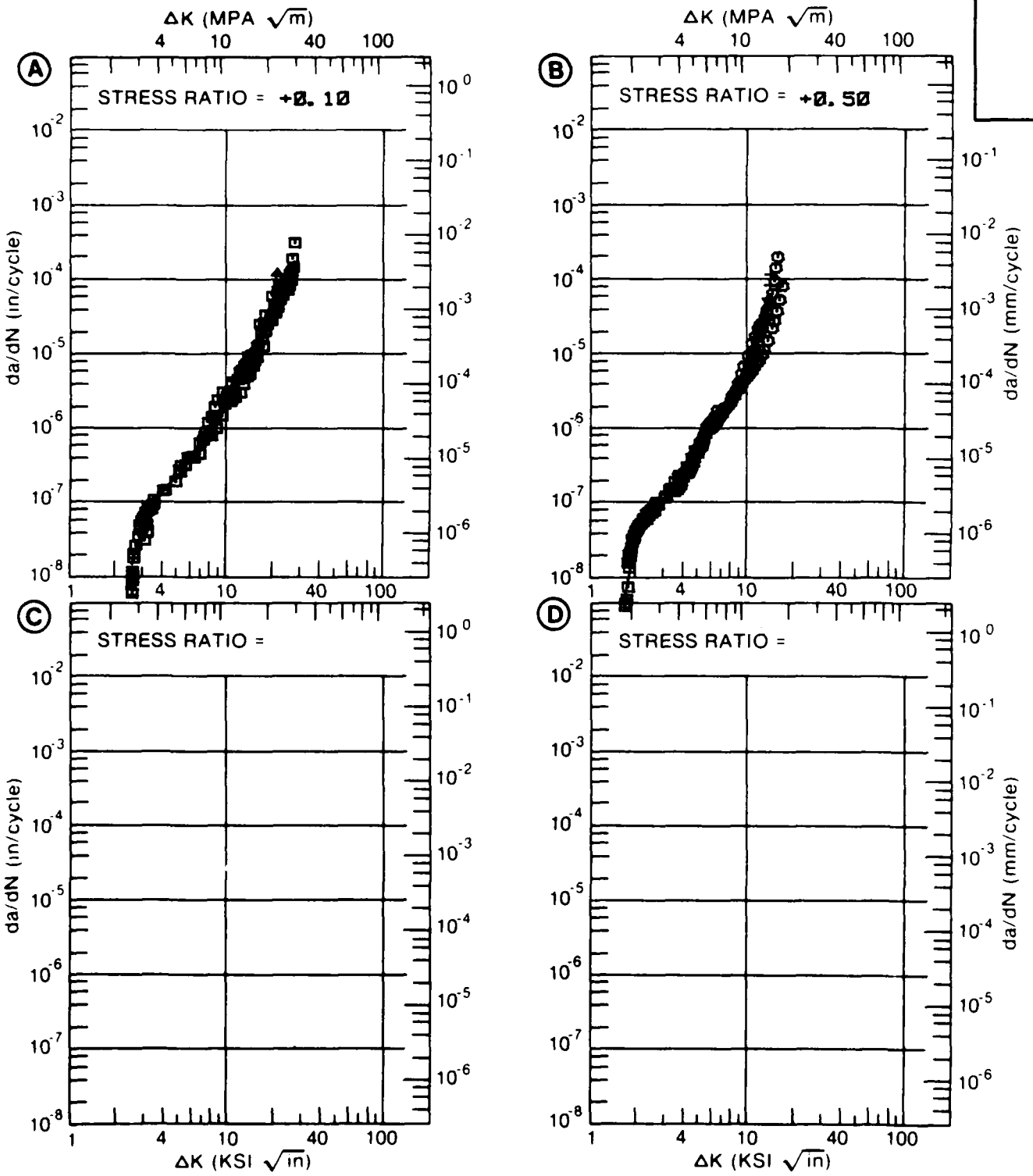


Figure 7.8.3.3

TABLE 7.8.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.4 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2124
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR	E= R.T. SALT FOG		
DELTA K MIN	A:	5.61	2.56			
	B:	7.00		6.99		
	C:					
	D:					
		6.00	2.70			
		7.00	3.82	6.99		
		8.00	4.16	7.73		
		9.00	5.28	11.3		
		10.00	8.77	16.9		
		13.00	60.3	32.7		
DELTA K MAX	A:	13.38	67.7			
	B:	13.38		42.7		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			13.83	6.22		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM: 4.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: S-L
STRESS RATIO: +0.33
FREQUENCY: 18.30

YIELD STRENGTH: 57.3 KSI
ULT. STRENGTH: 64.1 KSI
SPECIMEN THK: 1.489- I.491"
SPECIMEN WIDTH: 3.800"
REFERENCES:86842

ALUM. ALLOY

2124

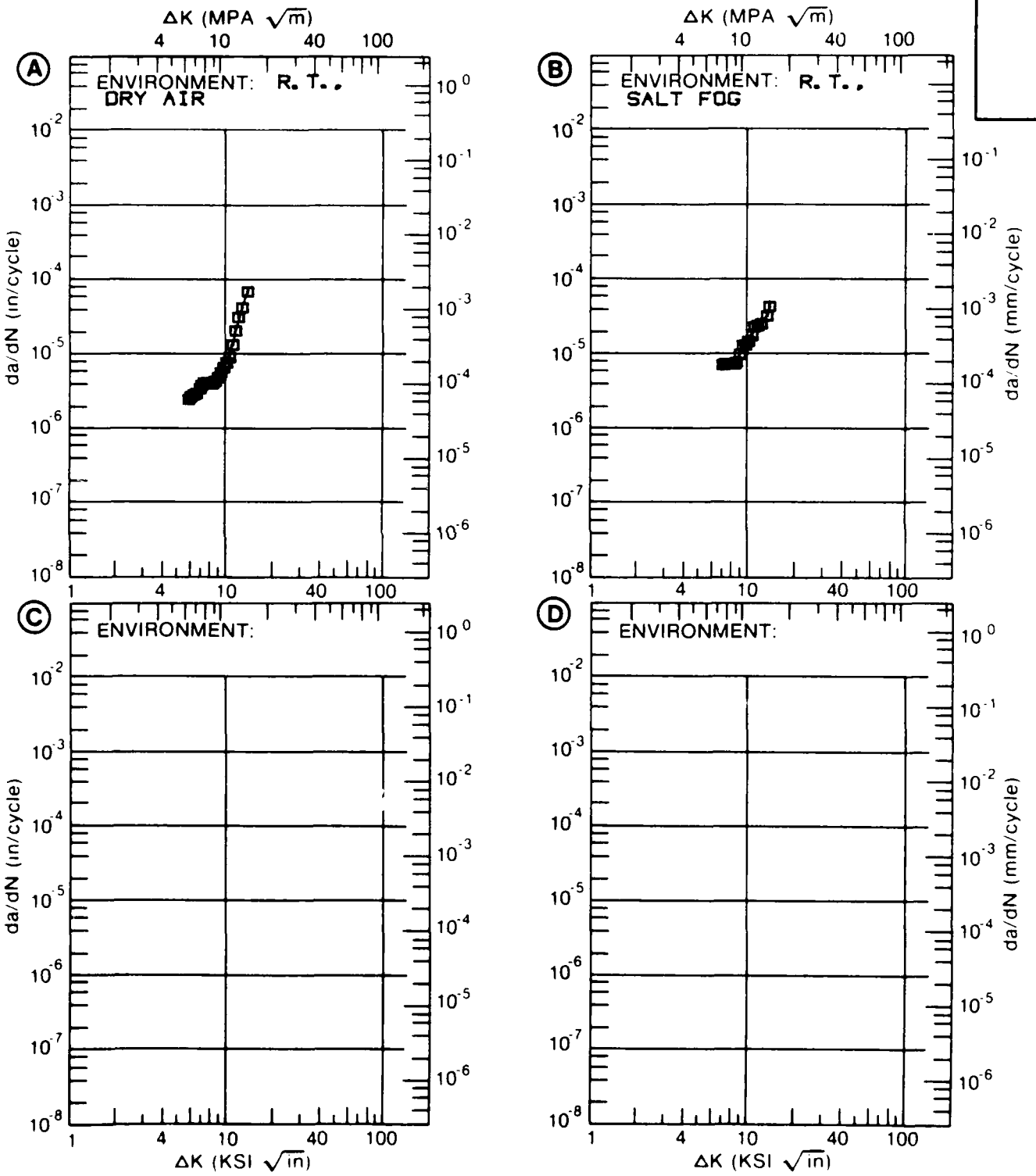


Figure 7.8.3.4

TABLE 7.8.3.5

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.5 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2124
CONDITION: T851
ENVIRONMENT: R.T., S.T.W.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.30	R=+0.50	
DELTA K MIN	A:	4.36	.105			
	B:	3.34		.135		
	C:	3.24			.199	
	D:					
		3.50		.143	.267	
		4.00		.219	.427	
		5.00	.265	.646	1.07	
		6.00	.458	1.45	2.27	
		7.00	1.16	2.63	3.64	
		8.00	2.48	4.17	5.16	
		9.00	4.15	6.08	7.02	
		10.00	6.04	8.37	9.52	
		13.00	12.6	17.9	27.1	
		16.00	22.2	33.5		
		20.00	50.4	119.		
		25.00	176.			
DELTA K MAX	A:	28.12	436.			
	B:	20.62		160.		
	C:	14.78			90.4	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			25.63	14.28	14.02	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5					
	0.5-0.8					
	0.8-1.25					
	1.25-2.0		1	2	2	
	>2.0		1			

CONDITION/HT: T851
FORM: 5.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 1.00
ENVIRONMENT: R.T., S.T.W.

YIELD STRENGTH: 62.6 KSI
ULT. STRENGTH: 69.4 KSI
SPECIMEN THK: 0.744- 0.750"
SPECIMEN WIDTH: 5.000"
REFERENCES:GD003

ALUM. ALLOY

2124

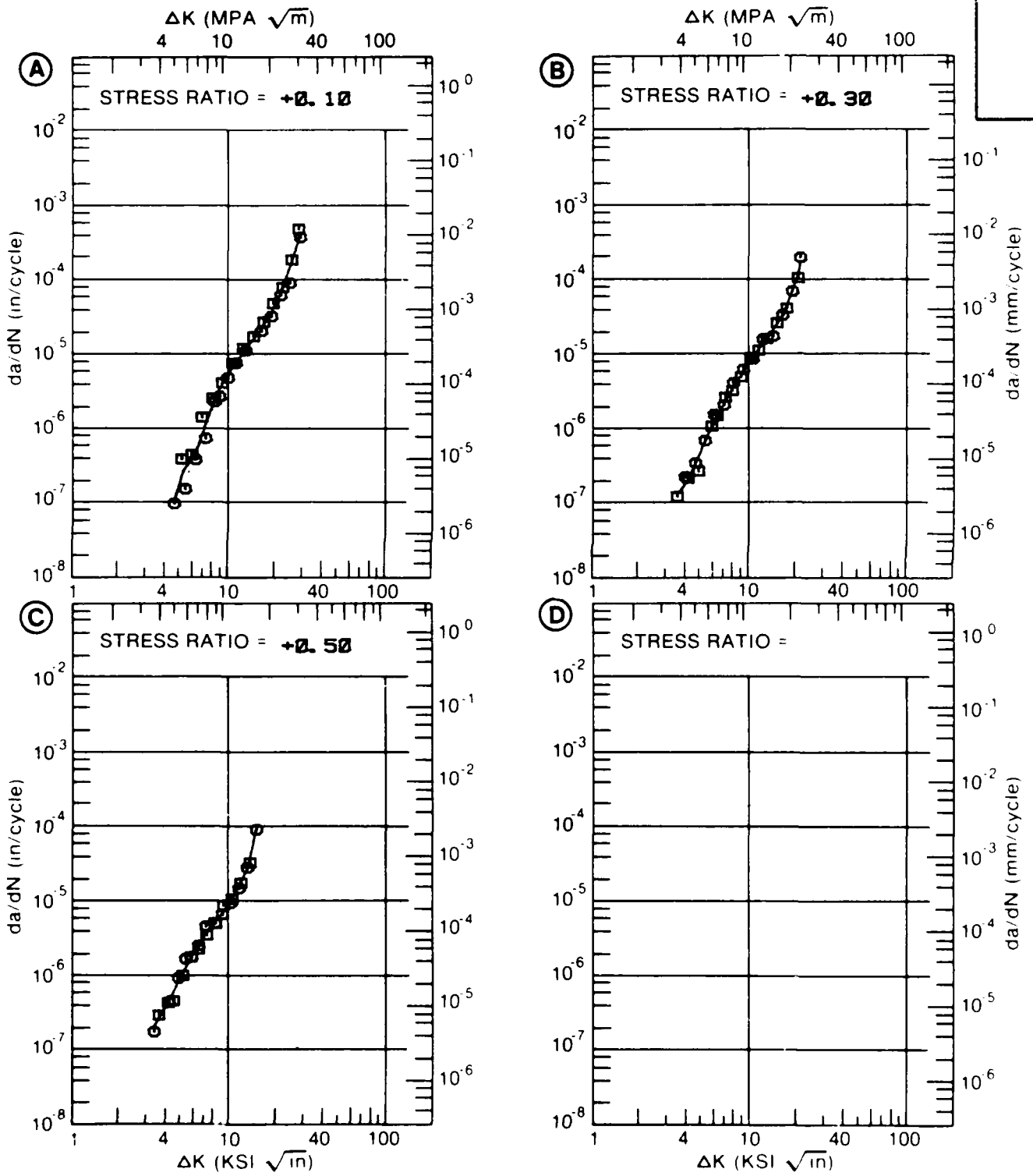


Figure 7.8.3.5

TABLE 7.8.3.6

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.6 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2124
CONDITION: T851
ENVIRONMENT: R.T. ,H.H.A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.07			
DELTA K MIN	A:	2.71	.0317			
	B:					
	C:					
	D:					
		3.00	.0952			
DELTA K MAX	A:	3.12	.0627			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 38.48

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	1
	0.5-0.8	1
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 5.50"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY:
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 57.0 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 6.000"
REFERENCES:BL002

ALUM. ALLOY

2124

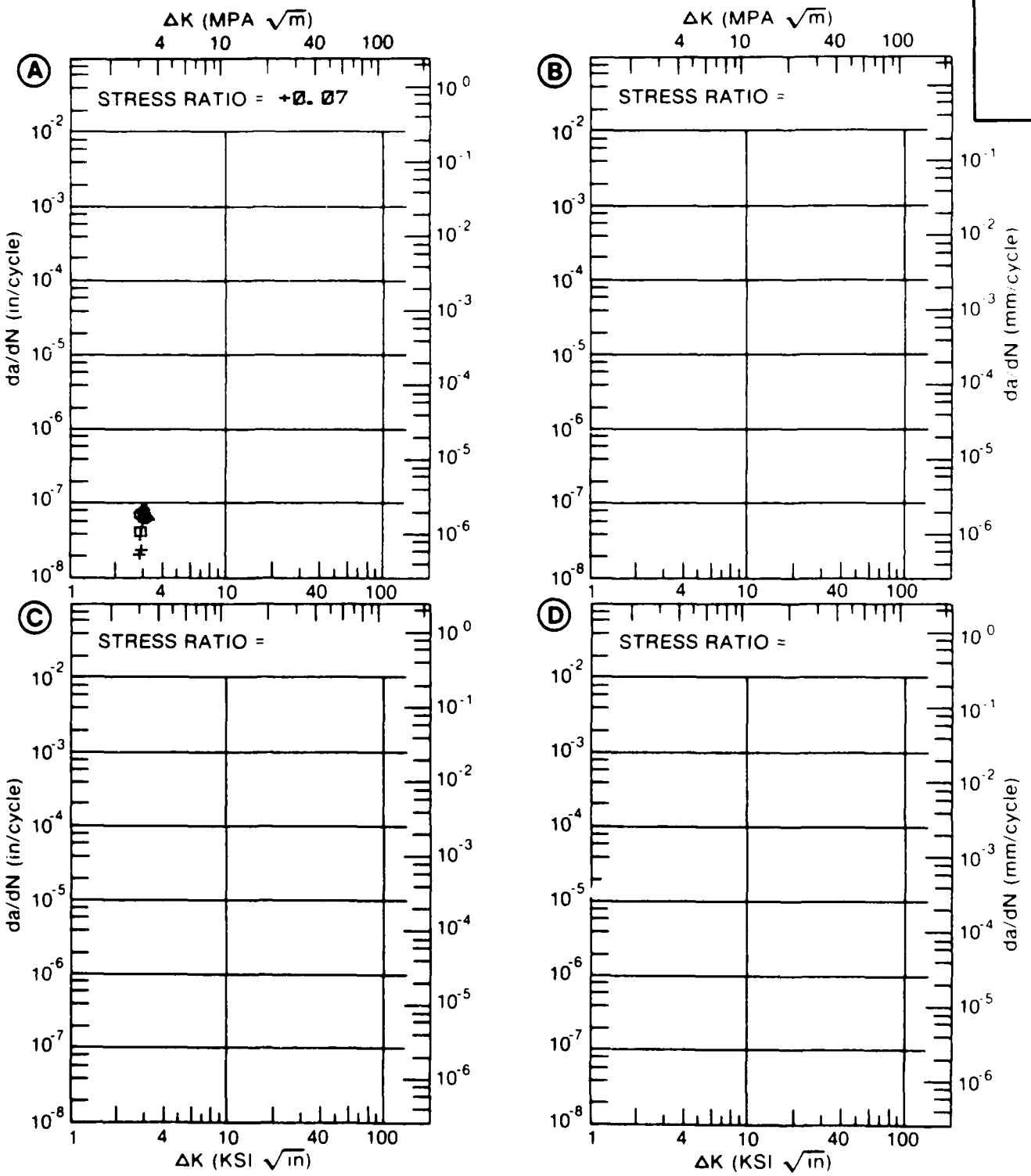


Figure 7.8.3.6

TABLE 7.8.3.7

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.7 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2124
CONDITION: T851
ENVIRONMENT: R. T. , H. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN. /CYCLE)			
		A	B	C	D
		R=+0. 10	R=+0. 25	R=+0. 50	
DELTA K MIN	A: 3. 20	. 050			
	B: 2. 03		. 007		
	C: 1. 79			. 045	
	D: 8				
	2. 00			. 0664	
	2. 50		. 0341	. 133	
	3. 00		. 0986	. 230	
	3. 50	. 0646	. 206	. 365	
	4. 00	. 105	. 353	. 553	
	5. 00	. 287	. 751	1. 17	
	6. 00	. 698	1. 29	2. 33	
	7. 00	1. 43	1. 99	4. 49	
	8. 00	2. 48	2. 95	8. 47	
	9. 00	3. 73	4. 27	15. 7	
	10. 00	5. 16	6. 15	28. 8	
	13. 00	12. 1	18. 5		
	16. 00	31. 1	58. 3		
DELTA K MAX	A: 16. 24	33. 8			
	B: 17. 43		102.		
	C: 12. 09			98. 9	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		35. 59	22. 28	17. 25	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0. 0-0. 5		1		
	0. 5-0. 8	1			
	0. 8-1. 25	6	3	5	
	1. 25-2. 0	5	4	3	
	>2 0		1	3	

CONDITION/HT: T851
FORM: 5.50"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 6.00- 33.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 63.2- 67.2 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 4.000- 6.000"
REFERENCES:BL002

ALUM. ALLOY
2124

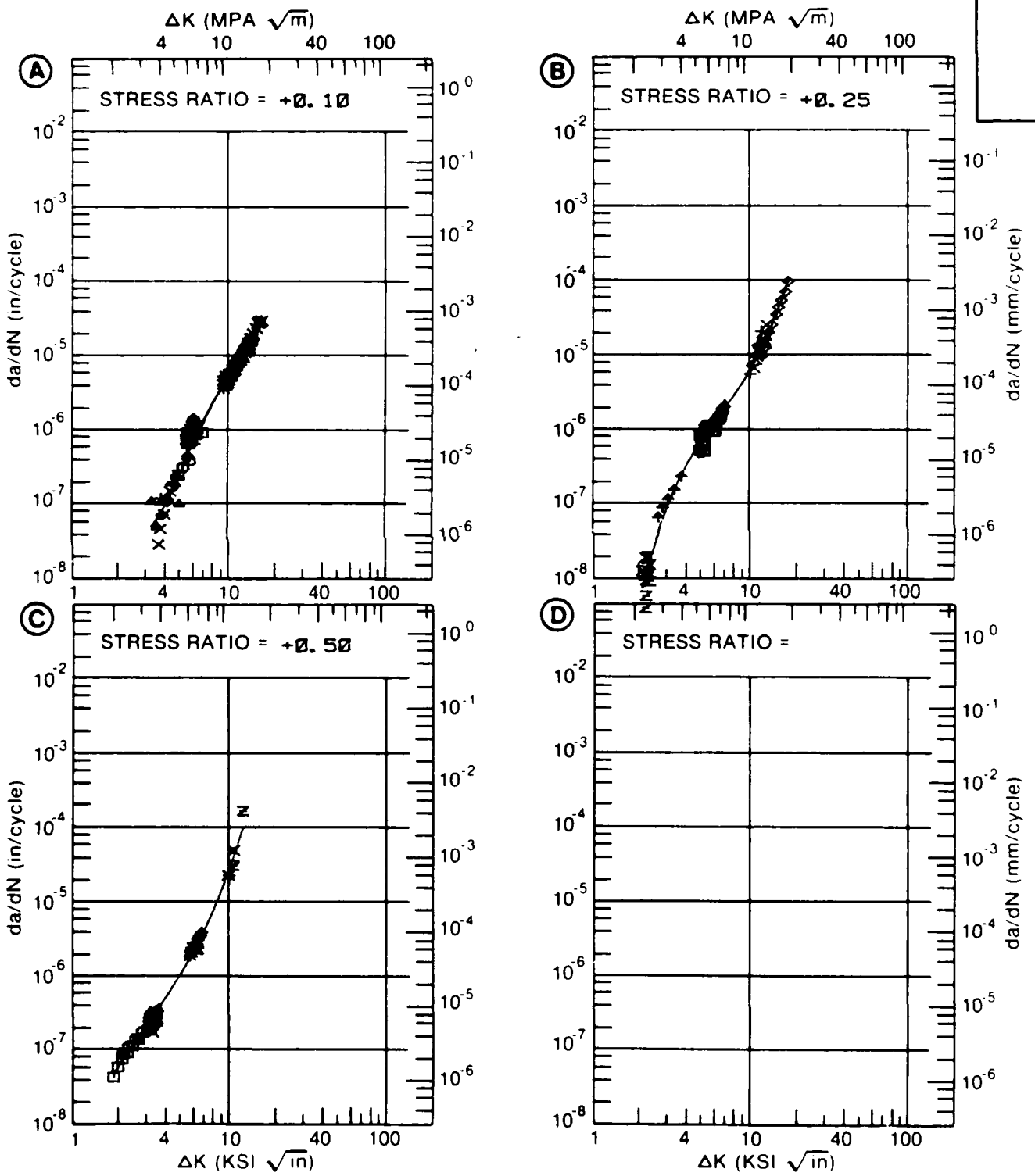


Figure 7.8.3.7

TABLE 7.8.3.8

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.8 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2124
CONDITION: T851
ENVIRONMENT: R. T., H. H. A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.50		
DELTA K MIN	A:	4.28	.133			
	B:	2.71		.0917		
	C:					
	D:					
		3.00		.150		
		3.50		.302		
		4.00		.527		
		5.00	.239	1.22		
		6.00	.567	2.27		
		7.00	1.19	3.73		
		8.00	2.18	5.87		
		9.00	3.60	9.23		
		10.00	5.53	15.4		
		13.00	15.0			
		16.00	32.0			
		20.00	92.9			
DELTA K MAX	A:	23.19	473.			
	B:	12.38		82.1		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			17.19	10.35		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25		1		
		1.25-2.0	1			
		>2.0				

CONDITION/HT: T851
FORM: 5.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 1.00
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH: 61.9 KSI
ULT. STRENGTH: 69.0 KSI
SPECIMEN THK: 0.750- 0.751"
SPECIMEN WIDTH: 5.000"
REFERENCES:GD003

ALUM. ALLOY

2124

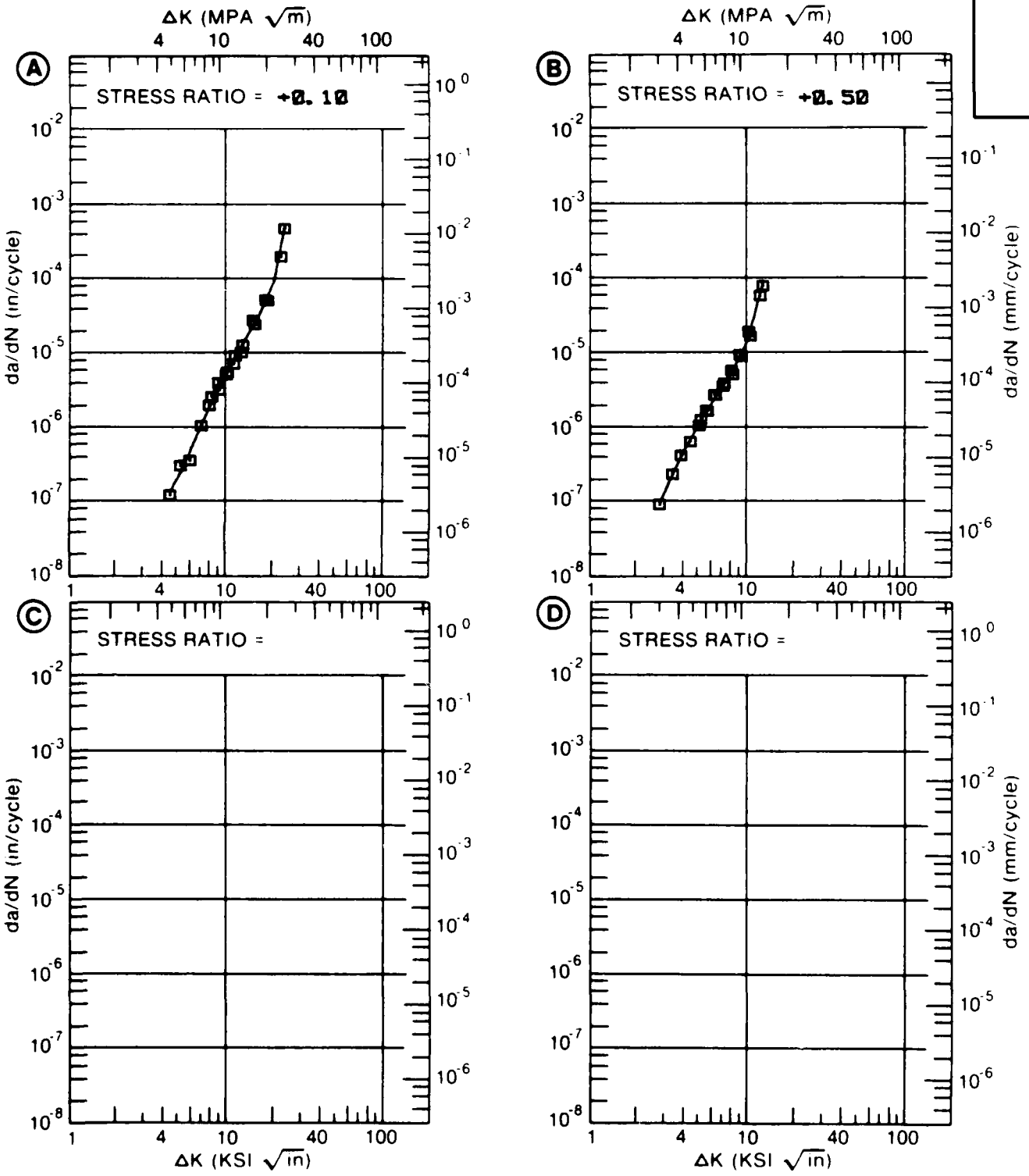


Figure 7.8.3.8

TABLE 7.8.3.9

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.9 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2124
CONDITION: T851
ENVIRONMENT: R.T., S.T.W.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.30	R=+0.50	
DELTA K MIN	A:	4.18	.240			
	B:	3.55		.214		
	C:	2.71			.157	
	D:					
		3.00			.184	
		3.50			.278	
		4.00		.312	.443	
		5.00	.372	.595	1.08	
		6.00	.687	1.39	2.32	
		7.00	1.66	2.98	4.41	
		8.00	3.47	4.94	7.62	
		9.00	5.55	7.18	12.2	
		10.00	7.71	9.97	18.5	
		13.00	16.2	29.2		
		16.00	38.8			
DELTA K MAX	A:	19.20	140.			
	B:	15.42		75.8		
	C:	12.15			80.0	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			22.48	12.07	12.52	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25				
		1.25-2.0	2	2	2	
		>2.0				

CONDITION/HT: T851
FORM: 5.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 1.00
ENVIRONMENT: R.T., S.T.W.

YIELD STRENGTH: 61.9 KSI
ULT. STRENGTH: 69.0 KSI
SPECIMEN THK: 0.748- 0.752"
SPECIMEN WIDTH: 5.000"
REFERENCES:CD003

ALUM. ALLOY

2124

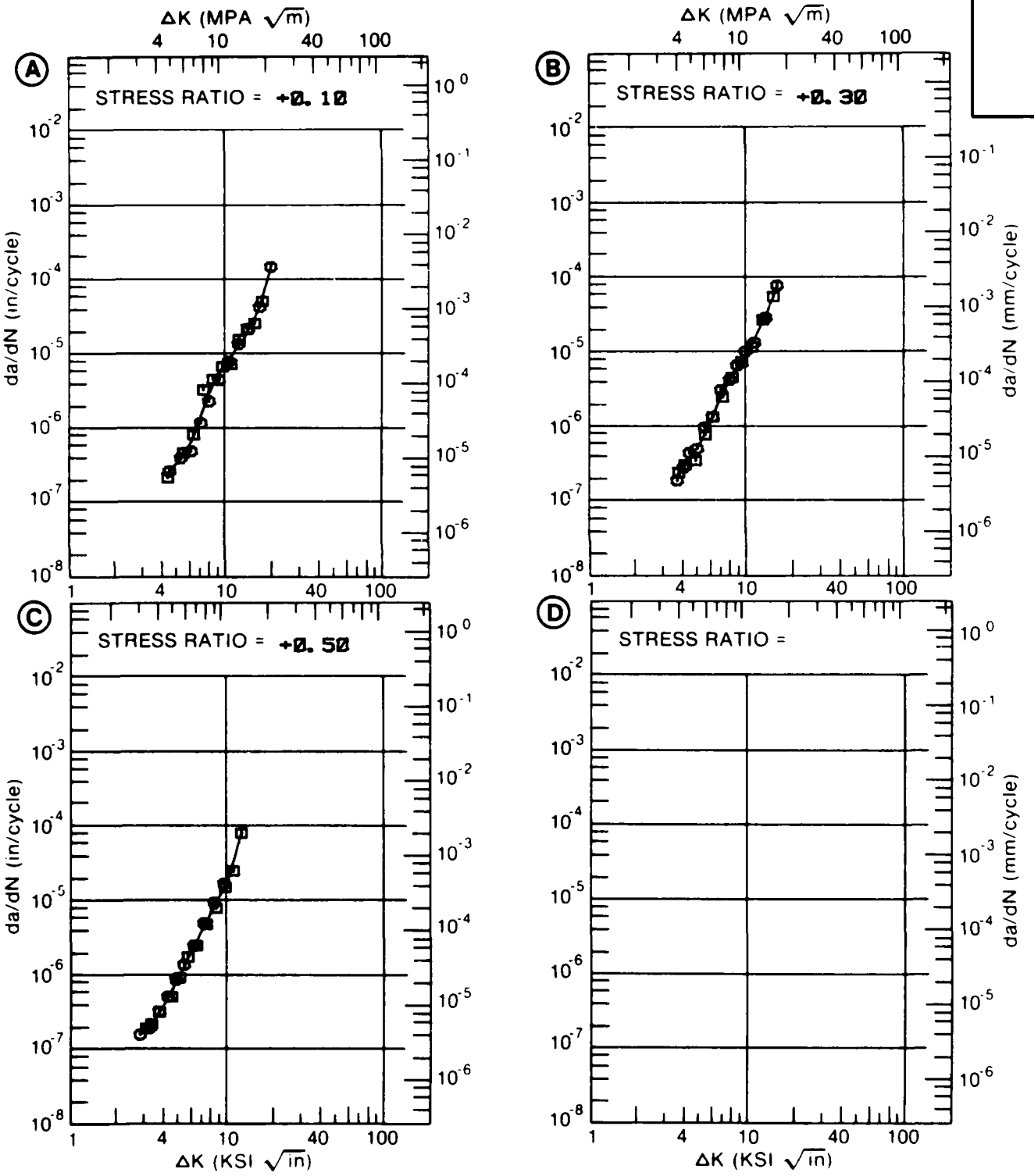


Figure 7.8.3.9

TABLE 7.8.3.10

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.8.3.10 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2124
CONDITION: T851
ENVIRONMENT: R. T. , S. T. W.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10	R=+0.30	R=+0.50	
DELTA K MIN	A:	4.52	.285			
	B:	3.72		.392		
	C:	2.67			.198	
	D:					
		3.00			.217	
		3.50			.336	
		4.00		.480	.568	
		5.00	.444	.949	1.35	
		6.00	.962	1.76	2.60	
		7.00	1.81	3.07	4.48	
		8.00	3.10	5.10	7.21	
		9.00	4.96	8.10	11.4	
		10.00	7.59	12.4	19.4	
		13.00	22.3	36.8	229.	
		16.00	55.1			
		20.00	156.			
DELTA K MAX	A:	24.53	443.			
	B:	14.61		60.5		
	C:	13.21			310.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			14.59	12.20	20.50	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25				
		1.25-2.0	2	2	2	
		>2.0				

CONDITION/HT: T851
FORM: 5.50"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: S-L
FREQUENCY: 1.00 HZ
ENVIRONMENT: R.T., S.T.W.

YIELD STRENGTH: 59.1 KSI
ULT. STRENGTH: 63.1 KSI
SPECIMEN THK: 0.495- 0.501"
SPECIMEN WIDTH: 3.990- 4.000"
REFERENCES:GD003

ALUM. ALLOY
2124

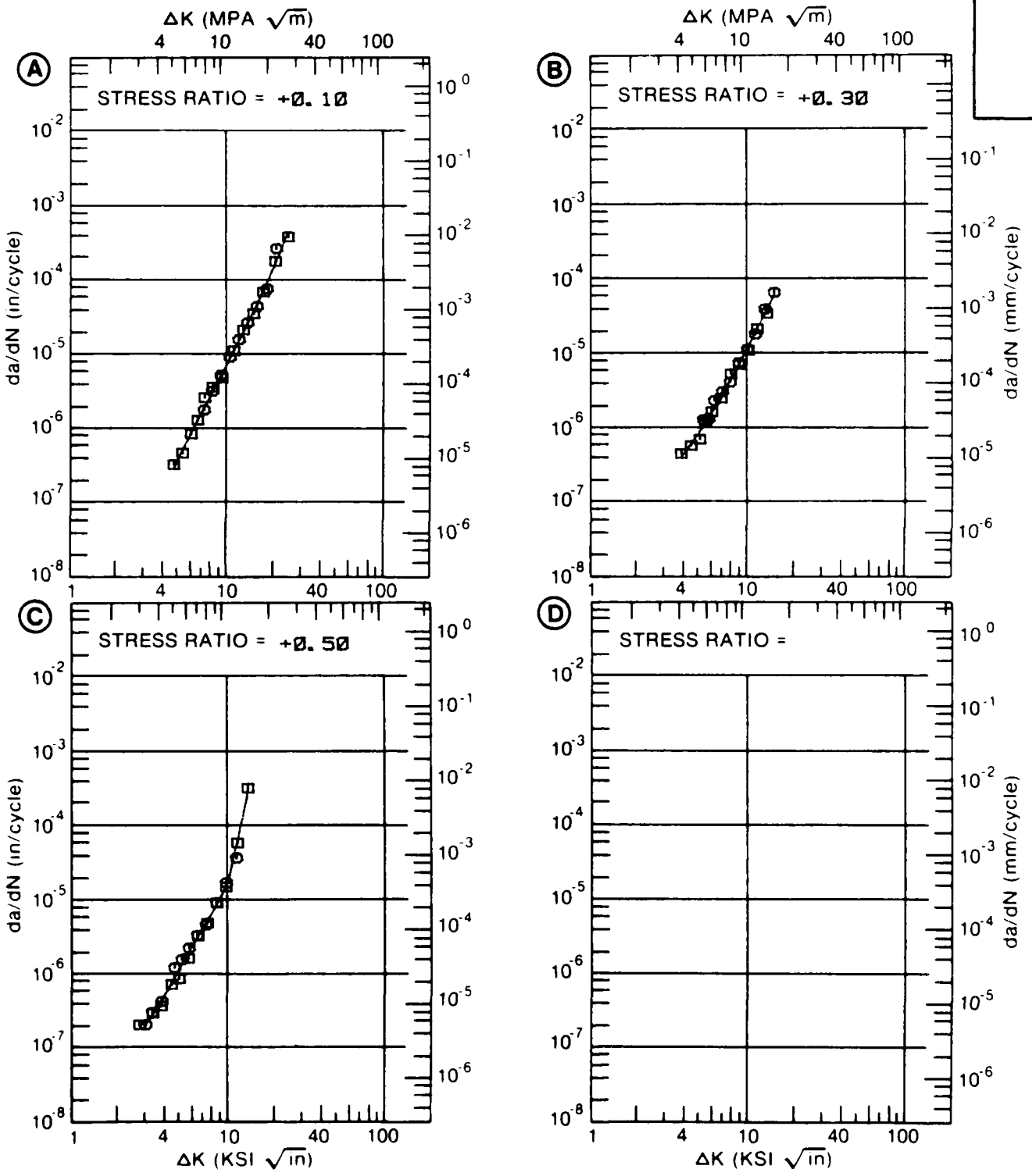


Figure 7.8.3.10

TABLE 7.8.3.11

ALUMINUM 2124 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SC)	CRACK LENGTH (IN) A	K(G) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T851	P	3.00	R.T.	L-T	65.0	S.T.W.	5.500	1.000	DCB	----	41.00	27.80			70320	1976	R1006
		3.00			65.0		5.500	1.000	DCB	----	41.00	26.70			70320	1976	R1006
		3.00			65.0		5.500	1.000	DCB	----	41.00	> 26.00			60300	1976	R1006
		3.00			65.0		5.500	1.000	DCB	----	41.00	25.20			54360	1976	R1006
													26.6/	1.3			
T851	P	3.00	R.T.	S-L	63.0	S.T.W.	5.500	1.000	DCB	----	40.00	> 25.00			51720	1976	R1006
		3.00			63.0		5.500	1.000	DCB	----	40.00	21.00			54360	1976	R1006
		3.00			63.0		5.500	1.000	DCB	----	40.00	26.00			130620	1976	R1006
		3.00			63.0		5.500	1.000	DCB	----	40.00	21.00			54360	1976	R1006
													22.7/	2.9			

Table 7.9.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2214 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD (KSI SQRT(IN)) DEVIATION (NUMBER OF SPECIMENS)		
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T651	35 3 ± 2 7 (11)	31 8 ± 0 9 (10)	-----
T651 (417)	36 0 ± 3 4 (10)	29 4 ± 1 8 (15)	26 6 ± 1 8 (2)

Table 7.9.2.1

ALUMINUM 2214 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T651	P	1.75	R.T.	L-T	64.1	2.000	1.002	NB	0.963	0.75	35.10			1973	86213
		1.75			64.1	2.000	1.002	NB	1.007	0.70	33.90			1973	86213
		1.75			64.1	2.000	1.001	NB	0.955	0.70	34.00			1973	86213
		1.75			64.3	2.000	1.002	NB	0.935	0.65	32.80			1973	86213
		1.75			64.3	2.000	1.002	NB	0.955	0.63	32.40			1973	86213
		1.75			64.3	2.000	1.002	NB	0.942	0.60	31.50			1973	86213
		1.50			66.0	3.000	1.500	CT	1.638	0.80	37.30			1973	86213
		1.50			66.0	3.000	1.500	CT	1.606	0.83	38.00			1973	86213
		2.37			66.2	4.000	1.999	CT	1.977	0.70	35.00			1973	86213
		1.50			66.4	3.000	1.499	CT	1.628	0.84	38.50			1973	86213
		1.50			66.4	3.000	1.500	CT	1.602	0.90	39.90	35.3/	2.7	1973	86213
T651	P	1.75	R.T.	T-L	63.1	2.000	1.002	NB	0.985	0.67	32.70			1973	86213
		1.75			63.1	2.000	1.001	NB	0.955	0.65	32.20			1973	86213
		1.75			63.1	2.000	1.001	NB	1.048	0.67	32.60			1973	86213
		1.75			63.2	2.000	1.001	NB	0.957	0.57	30.30			1973	86213
		1.75			63.2	2.000	1.002	NB	1.033	0.64	32.00			1973	86213
		1.75			63.2	2.000	1.001	NB	1.035	0.62	31.40			1973	86213
		1.50			64.9	3.000	1.500	CT	1.576	0.58	31.20			1973	86213
		1.50			64.9	3.000	1.499	CT	1.567	0.56	30.60			1973	86213
		1.50			65.2	3.000	1.500	CT	1.597	0.64	32.90			1973	86213
		1.50			65.2	3.000	1.500	CT	1.589	0.60	31.90	31.8/	0.9	1973	86213
T651	P	1.50	84	S-L	62.7	1.000	0.500	CT	0.483	0.33	22.90			1973	86213
		1.50			62.7	1.000	0.500	CT	0.495	0.39	24.90			1973	86213
		1.50			64.6	0.990	0.500	CT	0.492	0.33	23.30			1973	86213
		1.50			64.6	1.000	0.500	CT	0.485	0.37	25.00	24.0/	1.1	1973	86213
T651 (417)	P	2.00	R.T.	L-T	63.9	3.000	1.500	CT	1.560	0.85	37.20			1973	86213
		2.00			63.9	3.000	1.500	CT	1.586	0.89	38.20			1973	86213
		3.00			64.8	3.000	1.500	CT	1.584	0.79	36.50			1973	86213
		1.75			64.9	3.000	1.501	CT	1.533	1.15	44.10			1973	86213
		2.37			66.2	4.000	1.998	CT	2.046	0.71	35.30			1973	86213
		2.25			66.3	4.000	1.998	CT	2.123	0.68	34.70			1973	86213
		3.93			66.3	3.000	1.500	CT	1.464	0.65	33.80			1973	86213
		2.25			66.3	4.000	1.998	CT	2.021	0.67	34.40			1973	86213
		3.93			66.3	3.000	1.501	CT	1.444	0.60	32.60			1973	86213

Table 7.9.2.1 (Con't)

ALUMINUM 2214 K(IC)

CONDITION	PRODUCT FORM	PRODUCT THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	SPECIMEN DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	K(IC) STAN DEV	DATE	REFER
T651 (417)	P	2.25	R.T.	L-T	66.5	4.000	1.998	CT	2.047	0.62	33.00	36.0/	3.4	1973	86213
T651 (417)	P	3.00	R.T.	T-L	62.6	3.000	1.500	CT	1.540	0.49	27.70			1973	86213
		3.00			62.6	3.000	1.501	CT	1.549	0.53	28.90			1973	86213
		2.00			63.2	3.000	1.501	CT	1.592	0.57	30.10			1973	86213
		2.00			63.2	3.000	1.501	CT	1.568	0.55	29.60			1973	86213
		1.50			63.6	3.000	1.501	CT	1.598	0.58	30.60			1973	86213
		1.50			63.6	3.000	1.491	CT	1.606	0.62	31.60			1973	86213
		2.25			64.2	4.010	1.999	CT	2.122	0.47	27.90			1973	86213
		1.75			64.2	3.000	1.500	CT	1.623	0.63	32.30			1973	86213
		2.25			64.2	4.000	1.999	CT	2.141	0.43	26.60			1973	86213
		2.25			64.2	4.000	1.999	CT	2.126	0.46	27.40			1973	86213
		2.25			64.2	4.000	1.998	CT	2.179	0.48	28.00			1973	86213
		2.37			64.7	4.000	1.999	CT	2.093	0.48	28.40			1973	86213
		2.37			64.7	4.000	1.998	CT	2.150	0.48	28.40			1973	86213
		3.93			64.9	3.000	1.501	CT	1.484	0.58	31.30			1973	86213
		3.93			64.9	3.000	1.500	CT	1.484	0.60	31.70	29.4/	1.8	1973	86213
T651 (417)	P	3.00	R.T.	S-L	59.8	2.000	1.001	CT	0.962	0.45	25.30			1973	86213
		3.93			61.0	3.000	1.500	CT	1.532	0.52	27.90	26.6/	1.8	1973	86213
T651 (417)	P	1.50	82	S-L	59.2	1.000	0.499	CT	0.486	0.41	24.00			1973	86213
		1.50			59.2	1.000	0.500	CT	0.486	0.39	23.30			1973	86213
		3.00			59.8	1.000	0.500	CT	0.490	0.32	21.30			1973	86213
		3.00			59.8	1.000	0.498	CT	0.491	0.32	21.30			1973	86213
		1.50			60.0	1.000	0.500	CT	0.479	0.35	22.60			1973	86213
		2.00			60.0	1.000	0.501	CT	0.474	0.29	20.50			1973	86213
		1.75			60.0	1.000	0.499	CT	0.480	0.34	22.00			1973	86213
		1.50			60.0	1.000	0.500	CT	0.490	0.38	23.50			1973	86213
		2.00			60.0	1.000	0.501	CT	0.477	0.38	23.40			1973	86213
		2.00			60.2	1.000	0.500	CT	0.479	0.39	23.70			1973	86213
		1.75			61.1	1.000	0.501	CT	0.475	0.39	24.00			1973	86213
		1.75			61.1	1.000	0.499	CT	0.471	0.40	24.50	22.8/	1.3	1973	86213
T651 (417)	P	2.25	84	S-L	63.4	1.500	0.749	CT	0.757	0.37	24.40			1973	86213
		2.25			63.4	1.500	0.749	CT	0.770	0.37	24.30			1973	86213
		2.37			64.5	1.500	0.750	CT	0.782	0.29	22.00			1973	86213
		2.37			64.5	1.500	0.749	CT	0.734	0.41	26.00			1973	86213
		2.25			65.3	1.500	0.750	CT	0.739	0.29	22.30			1973	86213

Table 7.9.2.1 (Con't)

ALUMINUM 2214 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T651 (417)	P	2.25	84	S-L	65.3	1.500	0.750	CT	0.799	0.31	23.00	23.7/	1.5	1973	86213

Table 7.10.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2219 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN))		(NUMBER OF SPECIMENS)
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T851	33.4 ± 2.3 (48)	29.7 ± 3.2 (78)	23.0 ± 2.4 (14)
T87	28.0 ± 3.0 (6)	22.0 ± 0.4 (2)	-----
T87-300F 100HRS	34.8 ± 0.4 (2)	-----	-----
	FORGING		
CONDITION/HT	L-T	T-L	S-L
T851	-----	-----	25.6 ± 3.1 (85)
T852	39.2 ± 3.2 (25)	27.1 ± 2.2 (24)	25.3 ± 3.1 (60)

Table 7.10.1.2

FATIQUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2219

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT: L. H. A. AT R. T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ. (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIQUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.08	0.10				7.10			
T851	PLATE	0.08	1.00	SPEC. THK=1.00"			7.60	54.0		
T851	PLATE	0.08	1.00				8.48			
T851	PLATE	0.08	6.00	SPEC. THK=1.00"			7.74	60.3		
T851	PLATE	0.08	6.00			0.40	4.77			
T851	PLATE	0.08	6.00	SPEC. THK=0.50"			3.52	26.5		
T851	PLATE	0.08	6.00				3.95	24.4		
T851	PLATE	0.08	63.30			0.28	4.67			
T851	PLATE	0.30	6.00			0.90				
T851	PLATE	0.50	6.00			0.72	8 15			
T8511	EXTRUDED BAR	0.08	6.00			0.23	2 12			
T8511	EXTRUDED BAR	0.30	6.00				6.44			
T852	BILLET	0.08	6.00				2.35			

Table 7.10.1.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2219

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT: LAB AIR AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	-1.00	1.00-20.00				5.92	52.3		
T851	PLATE	-1.00	6.00				6.81			
T851	PLATE	-0.50	5.20				6.89			
T851	PLATE	-0.30	6.00				6.88	52.5	3617	
T851	PLATE	-0.10	6.00				6.79	44.9	3707	
T851	PLATE	0.00	5.20				8.25	54.8		
T851	PLATE	0.00	6.00				4.33	34.6		
T851	PLATE	0.01	3.00					44.5	1622	
T851	PLATE	0.01	6.00					46.2	1788	
T851	PLATE	0.04	1.00-20.00				4.24			
T851	PLATE	0.05	1.00-20.00				2.46	33.9		
T851	PLATE	0.05	1.00-20.00				3.58			
T851	PLATE	0.05	1.00-20.00				5.14	48.3		
T851	PLATE	0.08	6.00				5.74			
T851	PLATE	0.10	1.00-20.00					44.9		
T851	PLATE	0.20	6.00					90.9		
T851	PLATE	0.30	6.00			0.69	7.86	76.3		
T851	PLATE	0.50	1.00-20.00				10.1			
T851	PLATE	0.60	1.00-20.00				12.2			
T851	PLATE	0.70	6.00			1.37	17.8	1173		

Table 7.10.1.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2219

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT S.T.W. AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ. (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2.5	5	10	20	50	100
T851	PLATE	0.08	0.10					55.6		
T851	PLATE	0.08	1.00				7.14	64.0		
T851	PLATE	0.08	1.00			0.60				
T851	PLATE	0.08	6.00				10.6	59.5		
T851	PLATE	0.30	1.00				8.68	65.6		
T851	PLATE	0.50	1.00			0.80	11.6			
T8511	EXTRUDED BAR	0.08	1.00				7.39			
T852	FORGING	0.33	20.00				6.28			
T852	FORGING	0.33	20.00				10.2			

Table 7.10.1.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2219

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: DRY AIR AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ. (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T852	FORGING	0.33	2.00-20.00				7.08	480		
T852	FORGING	0.33	2.00-20.00				6.78			
T852	FORGING	0.33	40.00			0.363	3.97			

Table 7.10.1.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2219

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: L. H. A. AT R. T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ. (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T851	PLATE	0.08	6.00				5.43	33.3		
T851	PLATE	0.08	6.00				8.71	100.		
T8511	EXTRUDED BAR	0.08	6.00				4.26			

Table 7.10.1.7

FATIQUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2219

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT: H.H.A. AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ. (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIQUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T852	FORGING	0.33	2.00-20.00				8.32			
T852	FORGING	0.33	2.00-20.00				13.0			

Table 7.10.1.8

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 2219

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT S T W AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2.5	5	10	20	50	100
T851	PLATE	0.08	1.00			1.02	10.8	81.5		
T8511	EXTRUDED BAR	0.08	1.00			0.64	7.37			
T852	FORGING	0.33	2.00-20.00				9.83	204		
T852	FORGING	0.33	2.00-20.00				16.5			
T852	FORGING	0.33	20.00				10.3			

Table 7.10.2.1

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	K(IC) STAN DEV	DATE	REFER
T851	P	3.00	R.T.	L-T	50.0	8.000	2.000	CT	----	1.22	35.00			1974	90011
		3.00			50.1	5.044	1.503	CT	2.623	1.29	36.50			1978	MPC01
		3.00			50.1	6.016	1.998	CT	3.068	1.36	37.10			1978	MPC01
		3.00			50.1	4.019	1.999	CT	2.090	1.33	36.90			1978	MPC01
		3.00			50.1	6.000	1.999	CT	3.137	1.45	38.10			1973	86213
		3.00			50.1	5.010	1.987	CT	2.703	1.28	35.90			1973	86213
		3.00			50.1	5.010	1.503	CT	2.623	1.33	36.50			1973	86213
		3.00			50.1	4.000	1.999	CT	2.090	1.28	35.90			1973	86213
		3.00			50.1	4.000	1.998	CT	2.095	1.28	35.80			1973	86213
		3.00			50.1	5.010	2.000	CT	2.680	1.28	35.90			1973	86213
		1.37			51.0	2.982	1.374	CT	1.521	0.93	31.30			1978	MPC01
		1.37			51.0	2.977	1.374	CT	1.518	0.93	31.30			1978	MPC01
		1.37			51.0	3.000	1.420	NB	1.550	1.16	34.80			1973	86213
		1.37			51.0	3.000	1.420	NB	1.600	1.40	38.10			1973	86213
		1.37			51.0	3.000	1.420	NB	1.520	1.14	34.50			1973	86213
		1.37			51.0	2.978	1.374	CT	1.519	0.87	30.40			1978	MPC01
		2.62			51.6	3.027	1.500	CT	1.574	0.93	31.80			1978	MPC01
		2.62			51.6	3.004	1.500	CT	1.562	0.87	30.90			1978	MPC01
		3.25			51.7	4.989	1.750	CT	2.594	1.12	34.90			1978	MPC01
		1.37			52.0	3.022	1.376	CT	1.481	0.87	30.70			1978	MPC01
		3.00			52.0	5.000	1.498	CT	2.566	1.20	36.00			1973	86213
		1.37			52.0	2.975	1.376	CT	1.547	0.90	31.20			1978	MPC01
		3.00			52.0	5.000	1.498	CT	2.567	1.08	34.20			1973	86213
		3.00			52.4	3.026	1.499	CT	1.543	0.99	33.20			1978	MPC01
		2.90			52.4	3.022	1.500	CT	1.632	0.96	32.80			1978	MPC01
		3.00			52.4	2.996	1.499	CT	1.558	0.96	32.80			1978	MPC01
		3.00			52.5	2.987	1.499	CT	1.553	1.02	33.80			1978	MPC01
		3.00			52.5	2.977	1.499	CT	1.548	1.02	33.80			1978	MPC01
		2.90			52.5	4.973	2.000	CT	2.586	0.99	33.40			1978	MPC01
		2.90			52.5	4.987	2.503	CT	2.743	1.02	33.60			1978	MPC01
		1.75			52.6	4.962	1.751	CT	2.630	0.84	30.80			1978	MPC01
		2.90			52.8	4.987	2.001	CT	2.593	0.90	31.80			1978	MPC01
		2.90			53.0	3.027	1.503	CT	1.665	0.81	30.70			1978	MPC01
		2.90			53.0	5.045	2.000	CT	2.573	0.90	32.20			1978	MPC01
		3.00			53.4	5.010	1.997	CT	2.672	0.87	31.50			1973	86213
		2.90			53.5	4.965	2.002	CT	2.582	0.87	31.60			1978	MPC01
		2.90			53.5	4.967	2.501	CT	2.682	0.93	32.90			1978	MPC01
		2.90			53.5	5.018	2.002	CT	2.559	0.90	32.20			1978	MPC01
		2.90			53.6	4.954	2.002	CT	2.576	0.96	33.60			1978	MPC01

Table 7.10.2.1 (Con't.)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.90	R.T.	L-T	53.6	4.989	2.501	CT	2.644	0.99	33.80			1978	MPC01
		3.00			53.7	4.010	1.998	CT	2.043	0.79	30.10			1973	B6213
		1.00			53.8	1.990	0.965	CT	1.035	0.81	30.90			1978	MPC01
		1.00			53.8	2.016	0.965	CT	1.008	0.78	30.60			1978	MPC01
		1.00			53.8	1.990	0.965	CT	1.015	0.78	30.60			1978	MPC01
		3.00			54.0	8.000	1.996	CT	3.991	1.03	34.70			1973	B5836
		2.90			54.3	4.969	2.002	CT	2.584	0.81	31.20			1978	MPC01
		2.90			54.3	5.006	2.501	CT	2.703	0.81	31.00			1978	MPC01
		2.50			55.7	4.968	1.753	CT	2.633	0.96	34.60	33.4/	2.3	1978	MPC01
T851	P	1.37	-112	T-L	55.0	3.000	1.405	NB	1.612	1.00	34.70			1973	B6213
T851	P	1.37	R.T.	T-L	46.2	3.000	1.402	NB	1.524	1.10	32.60			1973	B6213
		1.37			47.4	1.994	1.000	CT	1.017	0.93	29.20			1978	MPC01
		1.75			48.0	3.000	1.508	CT	1.611	1.28	34.40			1972	B4306
		1.75			48.0	5.000	1.504	CT	2.615	1.48	37.00			1972	B4306
		1.75			48.0	5.000	1.504	CT	2.609	1.48	37.00			1972	B4306
		1.75			48.0	2.990	1.508	CT	1.573	1.24	33.90			1972	B4306
		1.37			49.2	2.985	1.405	NB	1.582	0.81	28.20			1978	MPC01
		1.37			49.2	3.016	1.402	NB	1.538	0.99	31.10			1978	MPC01
		1.37			49.2	2.974	1.402	NB	1.487	0.99	31.30			1978	MPC01
		1.37			49.2	2.974	1.405	NB	1.487	0.84	28.70			1978	MPC01
		1.37			49.2	3.000	1.403	NB	1.526	1.09	32.50			1973	B6213
		1.37			49.2	3.008	1.403	NB	1.534	1.08	32.80			1978	MPC01
		1.37			49.2	2.991	1.402	NB	1.585	1.08	32.80			1978	MPC01
		1.37			49.2	3.000	1.405	NB	1.535	0.94	30.20			1973	B6213
		3.25			49.2	4.977	1.750	CT	2.638	0.84	28.90			1978	MPC01
		1.37			49.2	3.000	1.405	NB	1.634	0.92	29.90			1973	B6213
		1.37			49.2	3.000	1.402	NB	1.584	1.10	32.70			1973	B6213
		1.37			49.2	3.000	1.402	NB	1.605	1.16	33.50			1973	B6213
		1.37			49.3	2.973	1.000	CT	1.546	0.90	29.70			1978	MPC01
		1.38			49.3	3.000	1.380	CT	1.538	0.88	29.30			1972	B2880
		1.37			49.3	2.990	1.000	CT	1.555	0.96	30.80			1978	MPC01
		1.37			49.3	3.002	1.000	CT	1.561	0.90	29.80			1978	MPC01
		1.37			49.3	2.000	0.875	CT	1.020	0.81	28.30			1978	MPC01
		1.37			49.3	2.014	0.875	CT	1.007	0.78	27.90			1978	MPC01
		1.37			49.3	2.975	1.125	CT	1.547	0.87	29.50			1978	MPC01
		1.38			49.3	2.000	1.000	CT	1.057	0.79	27.70			1972	B2880
		1.37			49.3	3.025	1.125	CT	1.573	0.87	29.30			1978	MPC01

Table 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.38	R.T	T-L	49.3	2.000	1.000	CT	1.082	0.77	27.40			1972	82880
		1.38			49.3	3.000	1.380	CT	1.557	0.86	28.90			1972	82880
		1.37			49.3	2.012	0.875	CT	1.026	0.84	28.70			1978	MPC01
		3.00			49.3	4.000	2.001	CT	2.077	1.07	32.30			1973	86213
		1.38			49.3	3.000	1.380	CT	1.555	0.86	28.90			1972	82880
		1.37			49.3	1.494	0.750	CT	0.792	0.67	25.80			1978	MPC01
		1.37			49.3	3.006	1.125	CT	1.563	0.90	29.70			1978	MPC01
		1.38			49.3	2.000	1.000	CT	1.069	0.77	27.40			1972	82880
		3.00			49.3	4.000	1.999	CT	2.085	1.05	32.00			1973	86213
		1.37			49.7	2.004	1.000	CT	1.042	0.75	27.40			1978	MPC01
		1.37			49.7	2.010	1.000	CT	1.045	0.84	29.10			1978	MPC01
		1.37			49.7	2.004	0.999	CT	1.042	0.81	28.60			1978	MPC01
		2.00			50.0	5.000	1.500	CT	----	1.30	36.00			1974	90011
		3.00			50.0	8.000	2.000	CT	----	1.15	34.00			1974	90011
		2.00			50.0	5.000	1.500	CT	----	1.15	34.00			1974	90011
		3.25			50.1	4.959	1.750	CT	2.628	0.81	28.80			1978	MPC01
		3.00			50.6	3.000	1.498	CT	1.550	0.72	27.20			1973	86213
		3.00			50.6	5.000	1.497	CT	2.582	0.82	28.90			1973	86213
		3.00			50.6	3.000	1.498	CT	1.550	0.71	26.90			1973	86213
		3.00			50.6	5.000	1.497	CT	2.575	0.80	28.60			1973	86213
		1.37			50.8	3.026	1.375	CT	1.543	0.78	28.80			1978	MPC01
		1.37			50.8	3.000	1.420	NB	1.500	0.81	29.00			1978	MPC01
		1.37			50.8	2.980	1.420	NB	1.520	0.93	31.40			1978	MPC01
		1.37			50.8	2.981	1.420	NB	1.550	1.29	36.60			1978	MPC01
		1.37			50.8	2.973	1.375	CT	1.546	0.72	27.50			1978	MPC01
		1.37			50.8	3.000	1.420	NB	1.560	1.05	33.30			1978	MPC01
		1.00			51.2	1.993	0.965	CT	1.096	0.75	28.40			1978	MPC01
		1.00			51.2	2.013	0.963	CT	1.067	0.78	28.90			1978	MPC01
		1.00			51.2	1.986	0.964	CT	1.013	0.72	28.00			1978	MPC01
		2.90			51.6	2.991	1.249	CT	1.645	0.78	29.40			1978	MPC01
		2.90			51.8	4.993	2.501	CT	2.696	0.70	27.90			1978	MPC01
		2.90			51.8	4.975	2.002	CT	2.587	0.62	26.20			1978	MPC01
		2.90			51.9	3.030	1.504	CT	1.697	0.65	26.80			1978	MPC01
		2.90			51.9	5.017	2.002	CT	2.609	0.70	27.60			1978	MPC01
		2.90			52.0	4.996	2.002	CT	2.598	0.72	28.20			1978	MPC01
		2.90			52.0	5.033	2.002	CT	2.617	0.65	27.00			1978	MPC01
		2.90			52.0	5.013	2.501	CT	2.657	0.70	28.00			1978	MPC01
		----			52.0	7.990	1.992	CT	4.067	1.05	33.70			1973	85836
		2.90			52.2	5.008	2.002	CT	2.604	0.75	28.90			1978	MPC01

Table 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.90	R.T.	L-T	53.6	4.989	2.501	CT	2.644	0.99	33.80			1978	MPC01
		3.00			53.7	4.010	1.998	CT	2.043	0.79	30.10			1973	86213
		1.00			53.8	1.990	0.965	CT	1.035	0.81	30.90			1978	MPC01
		1.00			53.8	2.016	0.965	CT	1.008	0.78	30.60			1978	MPC01
		1.00			53.8	1.990	0.965	CT	1.015	0.78	30.60			1978	MPC01
		3.00			54.0	8.000	1.996	CT	3.991	1.03	34.70			1973	85836
		2.90			54.3	4.969	2.002	CT	2.584	0.81	31.20			1978	MPC01
		2.90			54.3	5.006	2.501	CT	2.703	0.81	31.00			1978	MPC01
		2.50			55.7	4.968	1.753	CT	2.633	0.96	34.60	33.4/	2.3	1978	MPC01
T851	P	1.37	-112	T-L	55.0	3.000	1.405	NB	1.612	1.00	34.70			1973	86213
T851	P	1.37	R.T.	T-L	46.2	3.000	1.402	NB	1.524	1.10	32.60			1973	86213
		1.37			47.4	1.994	1.000	CT	1.017	0.93	29.20			1978	MPC01
		1.75			48.0	3.000	1.508	CT	1.611	1.28	34.40			1972	84306
		1.75			48.0	5.000	1.504	CT	2.615	1.48	37.00			1972	84306
		1.75			48.0	5.000	1.504	CT	2.609	1.48	37.00			1972	84306
		1.75			48.0	2.990	1.508	CT	1.573	1.24	33.90			1972	84306
		1.37			49.2	2.985	1.405	NB	1.582	0.81	28.20			1978	MPC01
		1.37			49.2	3.016	1.402	NB	1.538	0.99	31.10			1978	MPC01
		1.37			49.2	2.974	1.402	NB	1.487	0.99	31.30			1978	MPC01
		1.37			49.2	2.974	1.405	NB	1.487	0.84	28.70			1978	MPC01
		1.37			49.2	3.000	1.403	NB	1.526	1.09	32.50			1973	86213
		1.37			49.2	3.008	1.403	NB	1.534	1.08	32.80			1978	MPC01
		1.37			49.2	2.991	1.402	NB	1.585	1.08	32.80			1978	MPC01
		1.37			49.2	3.000	1.405	NB	1.535	0.94	30.20			1973	86213
		3.25			49.2	4.977	1.750	CT	2.638	0.84	28.90			1978	MPC01
		1.37			49.2	3.000	1.405	NB	1.634	0.92	29.90			1973	86213
		1.37			49.2	3.000	1.402	NB	1.584	1.10	32.70			1973	86213
		1.37			49.2	3.000	1.402	NB	1.605	1.16	33.50			1973	86213
		1.37			49.3	2.973	1.000	CT	1.546	0.90	29.70			1978	MPC01
		1.38			49.3	3.000	1.380	CT	1.538	0.88	29.30			1972	82880
		1.37			49.3	2.990	1.000	CT	1.555	0.96	30.80			1978	MPC01
		1.37			49.3	3.002	1.000	CT	1.561	0.90	29.80			1978	MPC01
		1.37			49.3	2.000	0.875	CT	1.020	0.81	28.30			1978	MPC01
		1.37			49.3	2.014	0.875	CT	1.007	0.78	27.90			1978	MPC01
		1.37			49.3	2.975	1.125	CT	1.547	0.87	29.50			1978	MPC01
		1.38			49.3	2.000	1.000	CT	1.057	0.79	27.70			1972	82880
		1.37			49.3	3.025	1.125	CT	1.573	0.87	29.30			1978	MPC01

Table 7.10.2.1 (Cont'd)

ALUMINUM 2219 K(IC)

CONDITION	PRODUCT FORM	PRODUCT THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	SPECIMEN DESIGN	CRACK LENGTH (IN) A	2.5*(K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	K(IC) STAN DEV	DATE	REFER
T851	P	1.37	88	S-L	52.3	1.000	0.500	CT	0.496	0.39	20.60	21.2/	1.0	1973	B6213
T851	F	----	R.T.	L-S	41.9	3.001	1.501	CT	1.563	1.16	28.58			1976	MD001
		----			41.9	3.001	1.499	CT	1.542	1.16	28.64			1976	MD001
		----			41.9	3.001	1.499	CT	1.584	1.37	31.03			1976	MD001
		----			46.1	3.003	1.500	CT	1.566	1.02	29.59			1976	MD001
		----			46.4	3.001	1.500	CT	1.580	1.15	31.58			1976	MD001
		----			46.4	3.003	1.499	CT	1.569	1.08	30.60			1976	MD001
		----			50.1	3.005	1.500	CT	1.418	1.13	33.71			1976	MD001
		----			50.1	3.005	1.500	CT	1.444	1.18	34.55			1976	MD001
		----			50.9	1.998	1.001	CT	0.995	0.57	24.49	30.3/	3.0	1976	MD001
T851	F	----	R.T.	T-S	45.2	2.997	1.495	CT	1.589	0.64	22.91			1977	MD001
		----			47.5	1.998	1.001	CT	1.000	0.63	23.96			1976	MD001
		----			47.5	3.001	1.502	CT	1.619	0.50	21.42			1976	MD001
		----			47.7	1.999	1.000	CT	1.003	0.71	25.50			1976	MD001
		----			47.9	2.998	1.502	CT	1.607	0.92	29.13			1977	MD001
		----			48.1	2.000	1.001	CT	1.059	0.73	26.01			1977	MD001
		----			48.1	2.996	1.496	CT	1.615	0.79	27.04			1977	MD001
		----			48.2	3.001	1.501	CT	1.555	0.51	21.78			1976	MD001
		----			48.3	3.001	1.501	CT	1.531	0.67	25.13			1976	MD001
		----			48.4	3.000	1.501	CT	1.621	0.52	22.14			1976	MD001
		----			48.5	1.998	1.001	CT	1.047	0.86	28.50			1976	MD001
		----			48.7	1.995	1.001	CT	1.033	0.75	26.67			1976	MD001
		----			49.0	2.997	1.495	CT	1.596	0.64	24.84			1977	MD001
		----			49.2	1.996	1.001	CT	0.999	0.66	25.29			1976	MD001
		----			49.2	1.997	1.000	CT	1.031	0.56	23.35			1976	MD001
		----			50.1	1.999	0.997	CT	1.033	0.69	26.35			1977	MD001
		----			50.4	3.000	1.501	CT	1.562	0.76	27.86			1976	MD001
		----			51.9	3.000	1.501	CT	1.563	0.71	27.77	25.3/	2.3	1976	MD001
T851	F	----	R.T.	S-L	46.2	2.997	1.495	CT	1.643	0.67	24.00			1977	MD001
		----			46.2	2.996	1.495	CT	1.661	0.67	24.08			1977	MD001
		----			46.2	2.996	1.496	CT	1.616	0.68	24.13			1977	MD001
		----			46.2	2.996	1.495	CT	1.614	0.61	22.84			1977	MD001
		----			46.8	3.003	1.502	CT	1.556	0.62	23.40			1976	MD001
		----			46.8	3.001	1.501	CT	1.569	0.62	23.47			1976	MD001
		----			47.1	3.007	1.504	CT	1.700	0.69	24.75			1979	MD001
		----			47.7	1.999	1.001	CT	1.047	0.65	24.45			1977	MD001

TAble 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	F	----	R.T.	S-L	47.7	1.998	1.001	CT	1.070	0.67	24.72			1977	MD001
		----			47.8	3.001	1.501	CT	1.542	0.52	21.89			1976	MD001
		----			47.8	3.003	1.501	CT	1.532	0.64	24.27			1976	MD001
		----			47.9	2.997	1.501	CT	1.584	0.80	27.12			1977	MD001
		----			48.6	2.999	1.502	CT	1.617	0.77	27.14			1977	MD001
		----			48.7	1.997	1.001	CT	1.083	0.52	22.29			1976	MD001
		----			49.0	1.997	1.001	CT	1.026	0.74	26.83			1976	MD001
		----			49.0	1.998	1.001	CT	1.040	0.69	25.79			1976	MD001
		----			49.1	3.001	1.499	CT	1.575	0.77	27.41			1977	MD001
		----			49.1	1.998	1.000	CT	1.038	0.60	24.23			1976	MD001
		----			49.1	1.998	1.000	CT	1.039	0.63	24.70			1976	MD001
		----			49.1	2.999	1.502	CT	1.552	1.19	33.88			1977	MD001
		----			49.1	1.998	1.001	CT	1.050	0.58	23.79			1976	MD001
		----			49.1	2.000	1.001	CT	1.080	0.74	26.73			1977	MD001
		----			49.1	1.998	0.999	CT	1.033	0.64	24.89			1976	MD001
		----			49.1	3.001	1.501	CT	1.586	0.58	23.84			1976	MD001
		----			49.1	3.003	1.501	CT	1.572	0.62	24.50			1976	MD001
		----			49.1	1.997	1.000	CT	1.057	0.64	25.00			1976	MD001
		----			49.1	1.998	1.000	CT	1.035	0.62	24.51			1976	MD001
		----			49.1	3.001	1.502	CT	1.531	0.82	28.16			1977	MD001
		----			49.1	3.000	1.500	CT	1.636	0.58	23.85			1977	MD001
		----			49.1	1.998	1.001	CT	1.044	0.68	25.64			1977	MD001
		----			49.2	2.999	1.502	CT	1.602	0.46	21.19			1976	MD001
		----			49.2	3.003	1.501	CT	1.608	0.45	20.97			1976	MD001
		----			49.3	2.997	1.496	CT	1.592	0.92	29.96			1977	MD001
		----			49.3	2.996	1.496	CT	1.633	0.83	28.54			1977	MD001
		----			49.4	3.007	1.502	CT	1.516	0.94	30.42			1977	MD001
		----			49.5	3.001	1.501	CT	1.535	0.58	24.00			1976	MD001
		----			49.5	3.002	1.500	CT	1.528	0.77	27.60			1976	MD001
		----			49.7	2.999	1.500	CT	1.595	0.80	28.16			1977	MD001
		----			49.7	3.000	1.500	CT	1.634	0.79	28.03			1977	MD001
		----			49.7	3.000	1.504	CT	1.641	0.57	23.89			1978	MD001
		----			49.7	3.000	1.499	CT	1.626	0.82	28.62			1977	MD001
		----			49.7	3.000	1.501	CT	1.586	0.63	25.12			1978	MD001
		----			49.8	1.996	1.001	CT	1.010	0.38	19.50			1976	MD001
		----			49.8	1.996	1.001	CT	1.040	0.43	20.75			1976	MD001
		----			49.9	1.996	1.002	CT	1.071	0.71	26.69			1976	MD001
		----			49.9	2.000	1.001	CT	1.053	0.51	22.66			1977	MD001
		----			49.9	1.997	1.002	CT	1.065	0.66	25.79			1976	MD001

Table 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T852	F	----	R.T	L-S	43.4	2.999	1.499	CT	1.539	0.89	25.92			1977	MD001
		----			43.4	2.999	1.499	CT	1.507	0.91	26.22			1977	MD001
		----			48.5	3.001	1.502	CT	1.548	1.14	32.82	28.3/	3.9	1976	MD001
T852	F	7.50	R.T	L-T	41.9	5.000	2.500	CT	2.580	1.72	34.80			1977	AL001
		7.50			41.9	5.000	2.500	CT	2.550	1.55	33.00			1977	AL001
		7.50			41.9	5.000	2.500	CT	2.570	1.79	35.50			1977	AL001
		7.50			43.4	5.000	2.500	CT	2.560	1.98	38.60			1977	AL001
		5.50			44.6	5.000	2.500	CT	2.520	1.91	39.00			1977	AL001
		5.50			44.6	5.000	2.500	CT	2.550	2.08	40.70			1977	AL001
		5.50			44.6	5.000	2.500	CT	2.520	1.81	38.00			1977	AL001
		4.50			45.2	5.000	2.500	CT	2.550	1.51	35.10			1977	AL001
		4.50			45.2	5.000	2.500	CT	2.580	1.68	37.00			1977	AL001
		4.50			45.2	5.000	2.500	CT	2.560	1.63	36.50			1977	AL001
		5.50			49.2	5.000	2.500	CT	2.530	1.83	42.10			1977	AL001
		5.50			49.2	5.000	2.500	CT	2.550	1.58	39.10			1977	AL001
		5.50			49.2	5.000	2.500	CT	2.610	1.56	38.90			1977	AL001
		4.50			50.2	5.000	2.500	CT	2.600	1.69	41.30			1977	AL001
		4.50			50.2	5.000	2.500	CT	2.560	2.16	46.70			1977	AL001
		3.50			50.3	5.000	2.500	CT	2.570	1.67	41.10			1977	AL001
		3.50			50.3	5.000	2.500	CT	2.650	1.97	44.70			1977	AL001
		3.50			50.3	5.000	2.500	CT	2.560	1.78	42.40			1977	AL001
		2.50			50.4	5.000	2.490	CT	2.540	1.33	36.80			1977	AL001
		2.50			50.4	5.000	2.500	CT	2.450	1.35	37.00			1977	AL001
		2.50			50.4	5.000	2.490	CT	2.530	1.49	38.90			1977	AL001
		2.00			50.7	3.000	1.500	CT	1.570	1.48	39.00			1977	AL001
		3.50			51.2	5.000	2.500	CT	2.510	1.56	40.40			1977	AL001
		3.50			51.2	5.000	2.500	CT	2.580	1.69	42.10			1977	AL001
		3.50			51.2	5.000	2.500	CT	2.620	1.59	40.80	39.2/	3.2	1977	AL001
T852	F	3.00	82	L-T	53.0	4.000	1.502	CT	2.055	0.99	33.30			1973	86213
T852	F	6.75	85	L-T	46.0	3.990	1.998	CT	1.985	1.41	34.60			1973	86213
		6.75			49.4	4.000	1.996	CT	1.970	1.27	35.20			1973	86213
		6.75			51.2	4.000	1.997	CT	1.978	1.20	35.50	35.1/	0.5	1973	86213
T852	F	----	R.T.	T-S	43.8	3.000	1.502	CT	1.617	1.06	28.53			1976	MD001
		----			45.7	2.998	1.500	CT	1.569	0.81	26.04			1976	MD001
		----			47.1	3.000	1.501	CT	1.566	1.30	34.08			1976	MD001

TAble 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T852	F	----	R.T.	T-S	47.2	3.000	1.500	CT	1.574	1.12	31.70			1976	MD001
		----			47.8	3.000	1.502	CT	1.562	0.77	26.66			1976	MD001
		----			47.9	2.999	1.501	CT	1.578	0.81	27.33			1976	MD001
		----			48.0	3.000	1.502	CT	1.549	0.91	29.10	29.1/	2.9	1976	MD001
T852	F	5.50	R.T.	T-L	43.1	5.000	2.500	CT	2.620	1.07	28.20			1977	AL001
		5.50			43.1	5.000	2.500	CT	2.570	1.10	28.60			1977	AL001
		----			44.0	5.000	1.984	CT	2.502	0.75	24.10			1973	85836
		----			44.0	5.000	1.998	CT	2.271	0.63	22.20			1973	85836
		7.50			44.2	3.000	1.500	CT	1.540	0.81	25.10			1977	AL001
		7.50			44.2	3.000	1.500	CT	1.530	0.69	23.30			1977	AL001
		4.50			45.7	5.000	2.500	CT	2.540	0.95	28.10			1977	AL001
		4.50			45.7	5.000	2.500	CT	2.530	0.97	28.40			1977	AL001
		5.50			46.4	5.000	2.500	CT	2.520	0.74	25.20			1977	AL001
		3.50			49.8	5.000	2.500	CT	2.580	0.80	28.20			1977	AL001
		3.50			49.8	5.000	2.500	CT	2.560	0.83	28.70			1977	AL001
		3.50			49.8	5.000	2.500	CT	2.560	0.80	28.10			1977	AL001
		2.50			49.9	5.000	2.490	CT	2.570	0.68	26.00			1977	AL001
		2.50			49.9	5.000	2.500	CT	2.560	0.94	30.60			1977	AL001
		2.50			49.9	5.000	2.490	CT	2.510	0.68	26.10			1977	AL001
		3.50			50.2	5.000	2.500	CT	2.530	0.68	26.20			1977	AL001
		3.50			50.2	5.000	2.500	CT	2.520	0.67	26.00			1977	AL001
		3.50			50.2	5.000	2.500	CT	2.500	0.62	24.90			1977	AL001
		2.00			50.6	3.000	1.500	CT	1.510	0.84	29.40			1977	AL001
		4.50			50.6	5.000	2.500	CT	2.570	0.83	29.10			1977	AL001
		2.00			50.6	3.000	1.500	CT	1.560	0.79	28.50			1977	AL001
		2.00			50.6	3.000	1.500	CT	1.560	0.83	29.20			1977	AL001
		4.50			50.6	5.000	2.500	CT	2.510	0.87	29.80			1977	AL001
		4.50			50.6	5.000	2.500	CT	2.510	0.74	27.50	27.1/	2.2	1977	AL001
T852	F	3.00	82	T-L	53.3	4.000	1.501	CT	2.037	0.43	22.00			1973	86213
T852	F	3.50	84	T-L	48.0	3.990	1.686	CT	2.077	0.87	28.30			1973	86213
T852	F	6.75	85	T-L	46.2	3.990	1.997	CT	2.067	0.89	27.50			1973	86213
		6.75			46.5	3.990	1.997	CT	2.127	0.95	28.70			1973	86213
		6.75			49.2	4.000	1.997	CT	2.080	0.56	23.30			1973	86213
		6.75			49.7	3.990	1.997	CT	1.987	0.62	24.70			1973	86213
		6.75			49.7	4.000	1.997	CT	2.019	0.51	22.50	25.3/	2.7	1973	86213

Table 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T852	F	----	R.T.	S-T	43.0	3.000	1.502	CT	1.565	1.20	29.88			1976	MD001
		----			44.7	2.999	1.501	CT	1.564	0.98	28.00			1976	MD001
		----			45.2	2.999	1.500	CT	1.562	0.82	25.89			1976	MD001
		----			48.8	3.000	1.502	CT	1.573	0.76	26.97			1976	MD001
		----			49.1	3.000	1.501	CT	1.546	1.03	31.64	28.5/	2.3	1976	MD001
T852	F	3.00	82	S-T	52.7	2.500	0.748	CT	1.244	0.46	22.60			1973	86213
T852	F	3.50	84	S-T	50.0	2.500	1.000	CT	1.231	0.73	27.10			1973	86213
T852	F	6.75	85	S-T	44.9	2.500	1.249	CT	1.233	0.67	23.30			1973	86213
		6.75			46.7	2.500	1.249	CT	1.234	0.62	23.30			1973	86213
		6.75			46.7	2.500	1.249	CT	1.243	0.69	24.60			1973	86213
		6.75			48.7	2.500	0.998	CT	1.267	0.60	23.80			1973	86213
		6.75			49.7	2.500	0.998	CT	1.185	0.51	22.50	23.5/	0.8	1973	86213
T852	F	----	R.T.	S-L	42.6	3.000	1.500	CT	1.594	0.59	20.72			1977	MD001
		----			42.9	1.997	0.999	CT	1.077	0.72	23.09			1976	MD001
		----			42.9	1.997	0.999	CT	1.047	0.69	22.65			1976	MD001
		----			43.2	3.001	1.502	CT	1.632	0.92	26.28			1977	MD001
		----			43.2	3.001	1.501	CT	1.666	0.77	24.02			1977	MD001
		----			43.6	1.999	0.999	CT	1.077	0.67	22.73			1976	MD001
		----			44.0	3.009	1.500	CT	1.570	0.66	22.66			1976	MD001
		----			44.0	3.001	1.501	CT	1.586	0.65	22.46			1976	MD001
		----			44.0	3.009	1.502	CT	1.586	0.68	22.96			1976	MD001
		----			44.0	2.998	1.500	CT	1.596	0.88	26.25			1976	MD001
		----			44.0	2.999	1.500	CT	1.570	0.83	25.39			1976	MD001
		7.50			44.1	4.000	2.000	CT	2.050	0.88	26.10			1977	AL001
		7.50			44.1	4.000	2.000	CT	2.020	0.87	26.00			1977	AL001
		----			44.2	2.999	1.500	CT	1.614	0.88	26.37			1976	MD001
		----			44.2	3.000	1.500	CT	1.590	1.20	30.73			1976	MD001
		----			44.2	2.999	1.500	CT	1.598	0.81	25.17			1976	MD001
		----			44.2	3.000	1.502	CT	1.568	0.91	26.71			1976	MD001
		----			44.2	3.000	1.499	CT	1.594	1.36	32.71			1976	MD001
		----			44.2	3.000	1.502	CT	1.566	0.90	26.65			1976	MD001
		----			44.2	3.000	1.500	CT	1.603	1.41	33.20			1976	MD001
		----			44.2	3.000	1.500	CT	1.572	1.19	30.55			1976	MD001
		----			44.5	3.001	1.499	CT	1.597	0.54	20.84			1976	MD001
		----			44.5	3.005	1.501	CT	1.586	0.62	22.32			1976	MD001

Table 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T852	F	----	R.T.	S-L	44.5	3.001	1.502	CT	1.468	1.07	29.23			1976	MD001
		----			44.5	3.000	1.500	CT	1.591	0.62	22.23			1976	MD001
		----			44.5	3.007	1.501	CT	1.607	0.60	21.91			1976	MD001
		----			44.7	1.998	0.999	CT	1.079	0.64	22.75			1976	MD001
		----			45.3	1.997	0.998	CT	1.097	0.68	23.66			1976	MD001
		----			45.4	3.000	1.501	CT	1.571	1.01	28.90			1976	MD001
		----			45.4	3.001	1.501	CT	1.582	0.95	28.07			1976	MD001
		----			45.6	3.001	1.501	CT	1.478	1.01	28.99			1976	MD001
		----			46.7	2.996	1.502	CT	1.486	1.43	35.32			1977	MD001
		----			46.8	1.995	1.000	CT	1.063	0.63	23.61			1976	MD001
		4.50			47.0	3.000	1.500	CT	1.510	0.56	22.20			1977	AL001
		4.50			47.0	3.000	1.500	CT	1.550	0.67	24.40			1977	AL001
		4.50			47.0	3.000	1.500	CT	1.530	0.67	24.30			1977	AL001
		5.50			47.2	2.000	1.000	CT	1.030	0.61	23.40			1977	AL001
		----			47.2	3.001	1.502	CT	1.514	0.90	28.45			1976	MD001
		5.50			47.2	2.000	1.000	CT	1.030	0.63	23.60			1977	AL001
		----			48.9	1.997	0.999	CT	1.051	0.58	23.67			1976	MD001
		----			49.1	3.000	1.501	CT	1.616	0.67	25.44			1977	MD001
		----			49.3	3.003	1.501	CT	1.586	0.81	28.09			1976	MD001
		----			49.6	3.003	1.502	CT	1.628	0.54	23.07			1977	MD001
		3.50			49.7	2.000	1.000	CT	1.030	0.65	25.30			1977	AL001
		3.50			49.7	2.000	1.000	CT	1.020	0.67	25.80			1977	AL001
		3.50			49.7	2.000	1.000	CT	1.040	0.64	25.10			1977	AL001
		5.50			50.8	4.000	2.000	CT	2.040	0.60	24.90			1977	AL001
		5.50			50.8	4.000	2.000	CT	2.050	0.69	26.60			1977	AL001
		5.50			50.8	4.000	2.000	CT	2.040	0.59	24.70			1977	AL001
		3.50			51.1	2.000	1.000	CT	1.040	0.62	25.50			1977	AL001
		2.50			51.1	2.000	1.000	CT	1.010	0.44	21.40			1977	AL001
		2.50			51.1	2.000	1.000	CT	1.010	0.43	21.20			1977	AL001
		2.50			51.1	2.000	1.000	CT	1.010	0.49	22.60			1977	AL001
		3.50			51.1	2.000	1.000	CT	1.020	0.61	25.20			1977	AL001
		3.50			51.1	2.000	1.000	CT	1.010	0.54	23.80			1977	AL001
		4.50			51.2	3.000	1.500	CT	1.570	0.52	23.40			1977	AL001
		4.50			51.2	3.000	1.500	CT	1.530	0.68	26.70			1977	AL001
		4.50			51.2	3.000	1.500	CT	1.570	0.63	25.70			1977	AL001
		2.00			51.5	1.500	0.750	CT	0.800	0.62	25.60			1977	AL001
		----			52.3	1.997	1.001	CT	1.044	0.60	25.63	25.3/	3.1	1976	MD001

Table 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T87	P	1.50	- 300	L-T	67.0	5.000	1.468	CT	2.528	0.95	41.30			1972	85631
		1.50			67.0	5.000	1.470	CT	2.593	0.92	40.50	40.9/	0.6	1972	85631
T87	P	2.00	R.T.	L-T	56.7	2.000	0.999	CT	1.012	0.50	25.40			1973	86213
		2.00			56.7	4.000	2.000	CT	2.039	0.59	27.50			1973	86688
		2.00			56.7	4.000	2.000	CT	1.998	0.58	27.40			1973	86688
		2.00			56.7	2.000	1.000	CT	1.003	0.54	26.30			1973	86213
		2.00			56.7	4.000	2.000	CT	2.044	0.60	27.70			1973	86688
		1.50			59.4	5.000	1.467	CT	2.570	0.82	33.90	28.0/	3.0	1972	85631
T87	P	1.50	300	L-T	----	5.000	1.466	CT	2.581	----	25.40			1972	85631
		1.50			----	5.000	1.466	CT	2.573	----	34.40	29.9/	6.4	1972	85631
T87	P	2.50	- 423	T-S	----	2.000	1.252	CT	1.100	0.58	35.00			1972	84319
		2.50			----	2.500	1.255	NB	1.220	1.00	47.20			1972	84319
		2.50			73.0	2.500	1.253	NB	1.240	1.10	48.80			1972	84319
		2.50			73.0	2.000	1.251	CT	1.110	0.51	33.00	41.0/	8.2	1972	84319
T87	P	2.50	- 320	T-S	----	2.000	1.249	CT	1.120	0.55	31.30			1972	84319
		2.50			----	2.500	1.249	NB	1.220	1.00	43.30			1972	84319
		2.50			67.0	2.000	1.251	CT	1.140	0.55	31.40			1972	84319
		2.50			67.0	2.500	1.254	NB	1.230	1.00	41.60	36.9/	6.4	1972	84319
T87	P	2.50	R.T.	T-S	----	2.500	1.253	NB	1.240	1.10	36.40			1972	84319
		2.50			----	2.000	1.252	CT	1.110	0.57	26.10			1972	84319
		2.50			55.0	2.500	1.250	NB	1.270	1.10	36.20			1972	84319
		2.50			55.0	2.000	1.252	CT	1.140	0.58	26.40	31.3/	5.8	1972	84319
T87	P	1.50	- 300	T-L	67.0	5.000	1.466	CT	2.671	----	32.50			1972	85631
T87	P	1.00	R.T.	T-L	57.1	2.000	0.970	CT	1.050	0.36	21.70			1973	86213
		1.00			57.1	2.000	0.970	CT	1.059	0.38	22.20	22.0/	0.4	1973	86213
T87	P	1.00	82	T-L	57.1	2.000	0.971	CT	1.034	0.40	22.70			1973	86213
T87	P	1.00	84	T-L	57.1	2.000	0.971	CT	1.051	0.37	21.90			1973	86213
		1.00			57.1	2.000	0.970	CT	1.052	0.36	21.80			1973	86213
		1.00			57.1	2.000	0.970	CT	1.072	0.36	21.70	21.8/	0.1	1973	86213

Table 7.10.2.1 (Con't)

ALUMINUM 2219 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T87-300F 100HR	P	1.50	R.T.	L-T	----	5.000	1.467	CT	2.560	----	34.50			1972	85631
		1.50			----	5.000	1.467	CT	2.572	----	35.10	34.8/	0.4	1972	85631

Table 7.10.2.2

ALUMINUM 2219 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																		
T81	S	0.06	R.T.	L-T	53.0	2.000	0.062	0.627	1.034	34.70	36.60	38.65*		56.24*			1973	86213
		0.06			53.0	2.000	0.062	0.627	0.875	34.60	36.30	38.34*		48.36*			1973	86213
T81	S	0.06	R.T.	T-L	53.0	2.000	0.062	0.626	0.863	34.50	35.80	37.81*		47.19*			1973	86213
		0.06			53.0	2.000	0.062	0.628	0.899	34.20	35.50	37.57*		48.32*			1973	86213
BUCKLING OF CRACK EDGES NOT RESTRAINED																		
T851	S	0.12	R.T.	L-T	50.6	3.000	0.123	1.090	1.700	---	33.00	47.07*		67.98*			1973	86213
		0.12			50.6	3.000	0.127	1.070	1.860	---	32.50	45.78*		74.10*			1973	86213
		0.12			50.6	3.000	0.127	1.090	1.720	---	32.10	45.79*		66.95*			1973	86213
		0.12			50.6	3.000	0.127	1.090	1.820	---	32.10	45.79*		71.31*			1973	86213
		0.12			51.1	3.000	0.127	1.110	1.760	---	31.60	45.64*		67.57*			1973	86213
		0.12			51.1	3.000	0.126	1.100	1.930	---	31.90	45.79*		76.19*			1973	86213
		0.12			51.1	3.000	0.127	1.100	1.670	---	31.70	45.50*		64.11*			1973	86213
		0.12			52.0	3.000	0.127	1.080	1.740	---	32.10	45.50*		67.79*			1973	86213
		0.12			52.0	3.000	0.127	1.100	2.000	---	31.40	45.07*		78.71*			1973	86213
		0.12			52.0	3.000	0.127	1.130	----	---	31.00	45.33*		----			1973	86213
		0.12			52.0	3.000	0.126	1.080	1.740	---	31.50	44.65*		66.52*			1973	86213
T851	P	1.00	R.T.	L-T	50.6	20.000	1.000	7.000	10.500	---	18.30	65.72		90.21			1973	86213
		1.00			50.6	20.000	1.000	7.000	10.350	---	19.60	70.39		95.32*			1973	86213
		1.00			50.6	20.000	1.000	7.000	9.770	---	19.30	69.31		89.12			1973	86213
		1.00			50.6	20.000	1.000	7.000	10.200	---	19.60	70.39		94.05			1973	86213
		1.00			51.1	20.000	1.000	7.000	10.050	---	16.00	57.46		75.75			1973	86213
		1.00			51.1	20.000	1.000	7.000	10.100	---	16.30	58.53		77.51			1973	86213
		1.00			51.1	20.000	1.000	7.000	9.450	---	16.00	57.46		71.81			1973	86213
		1.00			51.1	20.000	1.000	7.000	9.750	---	15.80	56.74		72.83			1973	86213
		1.00			52.0	20.000	1.000	7.000	10.400	---	18.60	66.79		90.86			1973	86213
		1.00			52.0	20.000	1.000	7.000	10.500	---	18.80	67.51		92.67			1973	86213
		1.00			52.0	20.000	1.000	7.000	10.870	---	18.00	64.64		91.75			1973	86213
		1.00			52.0	20.000	1.000	7.000	12.000	---	18.30	65.72	64.2/ 5.3	103.63*	84.7/ 9.0		1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

Table 7.10.2.2 (Con't)

ALUMINUM 2219 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T851	S	0.12	R.T.	T-L	49.3	3.000	0.126	1.100	1.680	---	30.10	43.20*			61.24*			1973	86213
		0.12			49.3	3.000	0.127	1.090	1.560	---	29.20	41.65*			55.25*			1973	86213
		0.12			49.3	3.000	0.126	1.100	1.740	---	29.80	42.77*			62.93*			1973	86213
		0.12			49.3	3.000	0.127	1.100	1.560	---	29.50	42.34*			55.81*			1973	86213
		0.12			50.8	3.000	0.127	1.080	1.600	---	28.80	40.82*			55.82*			1973	86213
		0.12			50.8	3.000	0.127	1.100	1.620	---	30.00	43.06*			58.85*			1973	86213
		0.12			50.8	3.000	0.127	1.090	1.590	---	28.30	40.37*			54.52*			1973	86213
		0.12			50.8	3.000	0.127	1.080	1.560	---	30.40	43.09*			57.52*			1973	86213
		0.12			51.2	3.000	0.127	1.100	1.580	---	30.30	43.49*			58.02*			1973	86213
		0.12			51.2	3.000	0.127	1.080	1.590	---	30.30	42.95*			58.37*			1973	86213
		0.12			51.2	3.000	0.127	1.100	1.480	---	29.20	41.91*			52.67*			1973	86213
		0.12			51.2	3.000	0.127	1.120	1.600	---	29.20	42.44*			56.59*			1973	86213
T851	P	1.00	R.T.	T-L	49.3	20.000	1.000	7.000	9.500	---	14.90	53.51			67.17			1973	86213
		1.00			49.3	20.000	1.000	7.000	10.100	---	15.10	54.23			71.81			1973	86213
		1.00			49.3	20.000	1.000	7.000	10.000	---	14.70	52.79			69.28			1973	86213
		1.00			49.3	20.000	1.000	7.000	9.300	---	14.80	53.15			65.54			1973	86213
		1.00			50.2	20.000	1.000	7.000	10.050	---	13.00	46.68			61.55			1973	86213
		1.00			50.2	20.000	1.000	7.000	9.200	---	13.50	48.48			59.25			1973	86213
		1.00			50.2	20.000	1.000	7.000	9.990	---	13.40	48.12			63.10			1973	86213
		1.00			50.2	20.000	1.000	7.000	9.850	---	13.40	48.12			62.32			1973	86213
		1.00			51.2	20.000	1.000	7.000	9.650	---	14.10	50.63			64.42			1973	86213
		1.00			51.2	20.000	1.000	7.000	10.000	---	14.80	53.15			69.76			1973	86213
		1.00			51.2	20.000	1.000	7.000	10.000	---	15.00	53.87			70.70			1973	86213
		1.00			51.2	20.000	1.000	7.000	10.000	---	15.10	54.23	51.4/ 2.8		71.17	66.3/ 4.2		1973	86213
BUCKLING OF CRACK EDGES RESTRAINED																			
T87	S	0.06	- 423	L-T	70.7	5.500	0.068	0.300	----	---	66.70	45.87*			----			1971	80104
		0.06			70.7	5.500	0.068	0.400	----	---	64.60	51.37*			----			1971	80104
		0.06			70.7	5.500	0.067	0.610	----	---	61.50	60.66*			----			1971	80104
		0.06			70.7	5.500	0.067	0.490	----	---	62.60	55.19*			----			1971	80104

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

Table 7.10.2.2 (Con't)

ALUMINUM 2219 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																		
T87	S	0.06	- 423	L-T	70.7	6.700	0.068	0.820	----	---	58.20	66.67*		----			1971	80104
		0.06			70.7	6.700	0.069	1.030	----	---	55.70	71.90*		----			1971	80104
		0.06			70.7	6.700	0.068	1.180	----	---	53.60	74.40*		----			1971	80104
		0.06			70.7	6.700	0.068	0.890	----	---	57.50	68.74*		----			1971	80104
T87	S	0.06	- 423	L-T	73.8	15.930	0.062	5.060	6.410	---	26.30	79.13		92.91			1966	69759
		0.06			73.8	15.990	0.061	5.000	5.980	---	26.30	78.49	78.8/ 0.5	88.35	90.6/ 3.2		1966	69759
T87	S	0.06	- 320	L-T	64.5	5.500	0.068	0.620	----	---	57.10	56.80*		----			1971	80104
		0.06			64.5	5.500	0.069	0.420	----	---	61.50	50.13*		----			1971	80104
		0.06			64.5	5.500	0.068	0.480	----	---	60.20	52.52*		----			1971	80104
		0.06			64.5	5.500	0.068	0.330	----	---	63.20	45.60*		----			1971	80104
T87	S	0.06	- 320	L-T	64.5	6.700	0.069	1.200	----	---	51.10	71.58*		----			1971	80104
		0.06			64.5	6.700	0.067	0.880	----	---	55.90	66.43*		----			1971	80104
		0.06			64.5	6.700	0.068	1.000	----	---	54.60	69.39*		----			1971	80104
T87	S	0.06	R.T.	L-T	55.0	5.500	0.068	0.620	----	---	47.90	47.64*		----			1971	80104
		0.06			55.0	5.500	0.067	0.400	----	---	51.30	40.80*		----			1971	80104
		0.06			55.0	5.500	0.067	0.520	----	---	49.80	45.26*		----			1971	80104
		0.06			55.0	5.500	0.068	0.330	----	---	52.50	37.88*		----			1971	80104
T87	S	0.06	R.T.	L-T	55.0	6.700	0.067	0.910	----	---	47.30	57.20*		----			1971	80104
		0.06			55.0	6.700	0.068	1.000	----	---	46.10	58.58*		----			1971	80104
		0.06			55.0	6.700	0.068	1.190	----	---	43.40	60.52*		----			1971	80104
T87	S	0.10	R.T.	L-T	58.5	3.500	0.100	0.750	0.980	---	46.40	51.84*		60.52*			1962	62306
T87	S	0.10	R.T.	L-T	58.5	6.000	0.100	2.000	2.460	---	34.60	65.90*		76.06*			1962	62306
T87	S	0.10	R.T.	L-T	58.5	12.000	0.100	2.000	2.680	---	41.30	74.48*		87.44*			1962	62306
		0.10			58.5	12.000	0.100	4.000	4.770	---	27.90	75.15		84.79			1962	62306
T87	S	0.10	R.T.	L-T	58.5	24.000	0.100	20.000	20.650	---	6.40	70.51		78.16			1962	62306
		0.10			58.5	24.000	0.100	4.000	5.730	---	33.90	86.46		105.43			1962	62306

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

Table 7.10.2.2 (Con't)

ALUMINUM 2219 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN MEAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN MEAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																	
T87	S	0.10	R.T.	L-T	58.5	24.000	0.100	8.000	9.580	---	24.00	91.42		103.46		1962	62306
		0.10			58.5	24.000	0.100	18.000	19.430	---	7.40	63.61		75.31		1962	62306
		0.10			58.5	24.000	0.100	18.000	18.620	---	8.40	72.20		77.36		1962	62306
		0.10			58.5	24.000	0.100	12.000	13.650	---	17.80	91.90		104.11		1962	62306
		0.10			58.5	24.000	0.100	2.000	2.590	---	42.40	75.48		86.14*		1962	62306
		0.10			58.5	24.000	0.100	1.000	1.400	---	48.40	60.73*		71.73*		1962	62306
		0.10			58.5	24.000	0.100	0.500	0.770	---	54.40	48.22*	78.8/11.1	59.87*	90.6/15.0	1962	62306
T87	S	0.10	R.T.	L-T	58.5	30.000	0.100	18.000	19.700	---	12.50	86.70		97.03		1962	62306
T87	S	0.10	R.T.	L-T	58.5	36.000	0.100	4.000	5.450	---	34.00	85.88		100.91		1962	62306
T87	S	0.10	R.T.	L-T	58.5	48.000	0.100	4.000	5.580	---	34.90	87.86		104.19		1962	62306
		0.10			58.5	48.000	0.100	12.000	15.050	---	23.20	104.79		120.17		1962	62306
		0.10			58.5	48.000	0.100	36.000	37.170	---	7.90	96.03		102.47		1962	62306
		0.10			58.5	48.000	0.100	41.900	43.180	---	4.30	78.34		89.35		1962	62306
		0.10			58.5	48.000	0.100	24.000	25.720	---	15.40	112.45		119.93		1962	62306
		0.10			58.5	48.000	0.100	8.000	9.250	---	28.20	101.71		110.02		1962	62306
		0.10			58.5	48.000	0.100	12.000	14.200	---	24.50	110.66	98.8/12.4	122.38	109.8/12.1	1962	62306
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T87	S	0.03	- 423	L-T	74.0	12.000	0.032	1.210	2.020	---	48.10	66.73		87.21		1966	66103
T87	S	0.03	- 423	L-T	74.0	16.000	0.032	4.240	7.030	---	27.80	75.02		105.20		1966	66103
T87	S	0.12	- 423	L-T	74.0	12.000	0.125	1.230	1.940	---	46.20	64.64		81.97		1966	66103
T87	S	0.12	- 423	L-T	74.0	16.000	0.125	4.830	6.310	---	26.90	78.55		93.86		1966	66103
T87	S	0.06	R.T.	L-T	59.2	2.000	0.065	0.625	1.110	---	38.10	40.16*		62.72*		1973	86213
		0.06			59.2	2.000	0.064	0.622	0.810	---	38.10	40.08*		47.92*		1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

Table 7.10.2.2 (Con't)

ALUMINUM 2219 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T87	S	0.06	R.T.	L-T	59.2	2.000	0.064	0.623	0.880	---	37.80	39.76*			50.63*			1973	86213
		0.06			59.2	2.000	0.064	0.609	0.940	---	38.70	40.13*			54.68*			1973	86213
		0.06			59.2	2.000	0.064	0.625	1.080	---	37.80	39.84*			60.54*			1973	86213
T87	S	0.06	R.T.	L-T	57.7	15.930	0.061	5.000	6.280	---	22.80	68.08			79.36			1966	69759
T87	S	0.06	R.T.	L-T	57.7	16.290	0.062	5.000	6.360	---	21.50	64.01			75.15			1966	69759
		0.06			57.7	16.290	0.062	4.980	5.910	---	23.10	68.60	66.3/	3.2	76.70	75.9/	1.1	1966	69759
T87	S	0.12	R.T.	L-T	58.1	2.990	0.125	0.993	1.250	---	36.40	48.79*			57.31*			1973	86213
		0.12			58.1	2.990	0.126	0.995	1.300	---	35.90	48.18*			58.25*			1973	86213
		0.12			58.1	2.990	0.126	0.992	1.250	---	36.30	48.66*			57.15*			1973	86213
		0.12			54.7	3.000	0.125	1.090	1.820	---	32.50	46.36*			72.20*			1973	86213
		0.12			54.7	3.000	0.125	1.080	1.800	---	32.50	46.07*			71.28*			1973	86213
		0.12			58.1	3.000	0.125	0.992	1.200	---	36.20	48.50*			55.26*			1973	86213
T87	P	0.25	R.T.	L-T	57.6	3.000	0.247	1.000	1.680	---	34.30	46.19*			69.79*			1973	86213
		0.25			57.6	3.000	0.247	1.160	1.790	---	31.40	46.77*			68.43*			1973	86213
		0.25			57.6	3.000	0.247	1.257	2.060	---	29.70	46.89*			77.72*			1973	86213
		0.25			57.6	3.000	0.247	1.130	1.900	---	32.10	46.94*			75.14*			1973	86213
T87	P	0.25	R.T.	L-T	56.0	4.000	0.244	1.330	2.250	---	32.40	50.30*			76.47*			1973	86213
		0.25			56.0	4.000	0.245	1.430	2.570	---	31.00	50.50*			85.35*			1973	86213
		0.25			56.0	4.000	0.246	1.330	2.260	---	32.20	49.99*			76.35*			1973	86213
		0.25			57.6	4.000	0.246	1.330	2.030	---	34.40	53.41*			73.49*			1973	86213
		0.25			57.6	4.000	0.246	1.330	2.250	---	34.10	52.94*			80.49*			1973	86213
		0.25			57.6	4.000	0.247	1.410	2.310	---	33.20	53.57*			80.58*			1973	86213
		0.25			56.0	4.000	0.256	1.330	2.160	---	32.10	49.84*			72.71*			1973	86213
		0.25			56.0	4.000	0.255	1.440	2.470	---	30.90	50.58*			80.95*			1973	86213
		0.25			56.0	4.000	0.255	1.330	2.180	---	32.40	50.30*			74.06*			1973	86213
T87	S	0.06	R.T.	T-L	59.0	2.000	0.064	0.623	0.900	---	36.10	37.97*			49.22*			1973	86213
		0.06			59.0	2.000	0.064	0.625	0.960	---	36.70	38.68*			52.78*			1973	86213
		0.06			59.0	2.000	0.064	0.619	0.880	---	37.40	39.18*			50.09*			1973	86213
		0.06			59.0	2.000	0.064	0.622	0.870	---	36.50	38.39*			48.45*			1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

Table 7.10.2.2 (Con't)

ALUMINUM 2219 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T87	S	0.06	R.T.	T-L	59.0	2.000	0.064	0.625	0.980	---	36.50	38.47*			53.44*			1973	86213
T87	S	0.12	R.T.	T-L	58.6	2.990	0.126	0.990	1.300	---	33.90	45.38*			55.00*			1973	86213
		0.12			58.6	2.990	0.126	0.994	1.280	---	34.10	45.77*			54.67*			1973	86213
		0.12			58.6	2.990	0.126	0.991	1.280	---	33.90	45.38*			54.35*			1973	86213
		0.12			58.6	2.990	0.126	0.992	1.350	---	34.30	45.98*			57.34*			1973	86213
		0.12			55.9	3.000	0.124	1.070	1.760	---	30.60	43.10*			65.43*			1973	86213
		0.12			55.9	3.000	0.124	1.080	1.690	---	30.50	43.23*			62.44*			1973	86213
T87	P	0.25	R.T.	T-L	57.2	3.000	0.247	1.000	1.530	---	32.00	43.10*			59.47*			1973	86213
		0.25			57.2	3.000	0.247	1.160	1.740	---	29.20	43.50*			61.66*			1973	86213
		0.25			57.2	3.000	0.247	1.120	1.710	---	30.40	44.18*			63.01*			1973	86213
T87	P	0.25	R.T.	T-L	55.9	4.000	0.246	1.330	2.120	---	28.60	44.40			63.62*			1973	86213
		0.25			55.9	4.000	0.246	1.330	2.060	---	28.70	44.56			62.14*			1973	86213
		0.25			55.9	4.000	0.245	1.460	2.310	---	26.60	43.95			64.56*			1973	86213
		0.25			57.2	4.000	0.246	1.330	2.040	---	30.80	47.82*			66.09*			1973	86213
		0.25			57.2	4.000	0.246	1.440	2.170	---	29.00	47.47			65.99*			1973	86213
		0.25			55.6	4.000	0.255	1.440	2.240	---	27.80	45.50			65.32*			1973	86213
		0.25			55.6	4.000	0.255	1.330	2.060	---	28.90	44.87			62.57*			1973	86213
		0.25			55.6	4.000	0.256	1.330	2.070	---	29.00	45.02	45.1/	1.2	63.07*	----/	---	1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.10.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.1 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.30	R=+0.50		
DELTA K MIN	A:	4.29	.417			
	B:	6.14		2.02		
	C:					
	D:					
		5.00	.741			
		6.00	1.38			
		7.00	2.23	2.81		
		8.00	3.34	4.10		
		9.00	4.76	6.05		
		10.00	6.55	9.15		
		13.00	15.2	36.8		
		16.00	32.5			
DELTA K MAX	A:	19.30	71.4			
	B:	15.80		161.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			9.32	21.19		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM:
SPECIMEN TYPE: CT
ORIENTATION:
FREQUENCY: 30.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 2.000"
REFERENCES:UD010

ALUM. ALLOY

2219

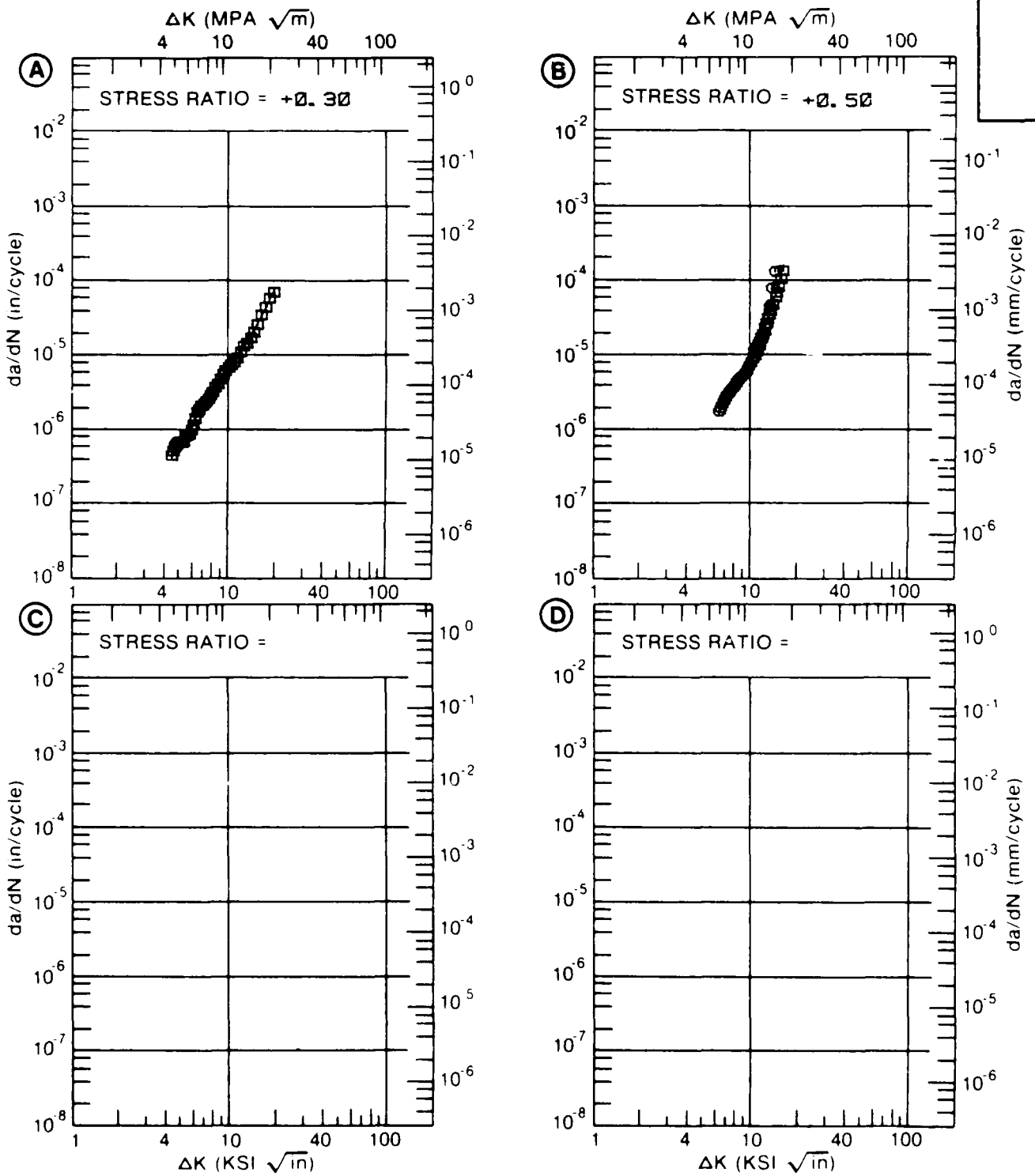


Figure 7.10.3.1

TABLE 7.10.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.2INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=-1.00			
DELTA K MIN	A: 5.84	.966			
	B:				
	C:				
	D:				
	6.00	1.06			
	7.00	1.71			
	8.00	2.44			
	9.00	3.23			
	10.00	4.09			
	13.00	7.45			
	16.00	13.1			
	20.00	28.5			
DELTA K MAX	A: 20.70	32.9			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 7.13

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM:
SPECIMEN TYPE: CCP
ORIENTATION:
FREQUENCY: 5.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 3.000"
REFERENCES:UD010

ALUM. ALLOY

2219

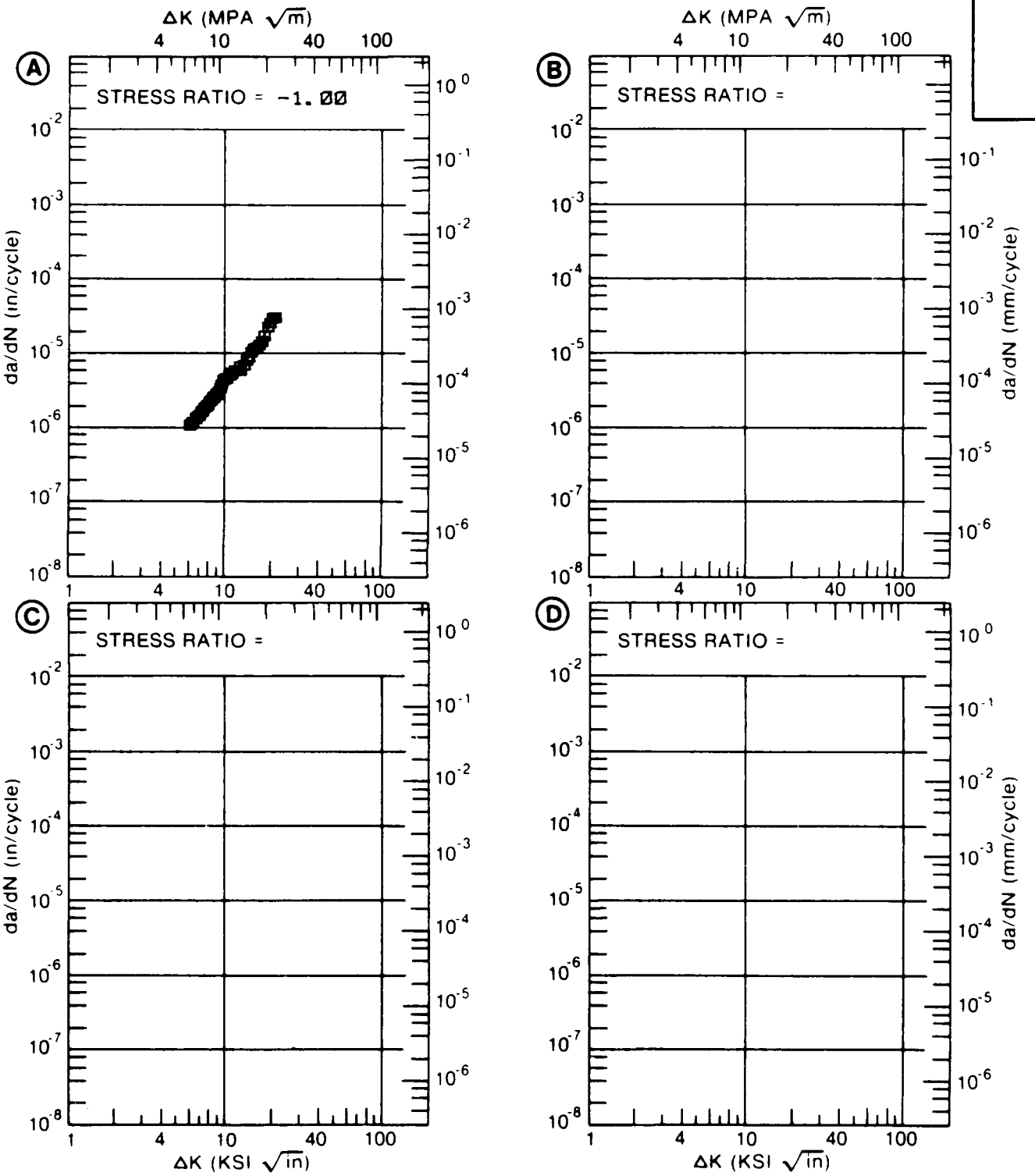


Figure 7.10.3.2

TABLE 7.10.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.3 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR			
DELTA K MIN	A:	2.93	.02			
	B:	1				
	C:					
	D:					
		3.00	.0239			
		3.50	.0669			
		4.00	.149			
		5.00	.477			
		6.00	1.09			
		7.00	2.03			
		8.00	3.35			
		9.00	5.10			
		10.00	7.33			
		13.00	17.8			
		16.00	36.9			
DELTA K MAX	A:	19.20	73.3			
	B:					
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			13.25			
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	3			
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM:
SPECIMEN TYPE: CT
ORIENTATION:
STRESS RATIO: +0.10
FREQUENCY: 5.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 2.000"
REFERENCES:UD010

ALUM. ALLOY

2219

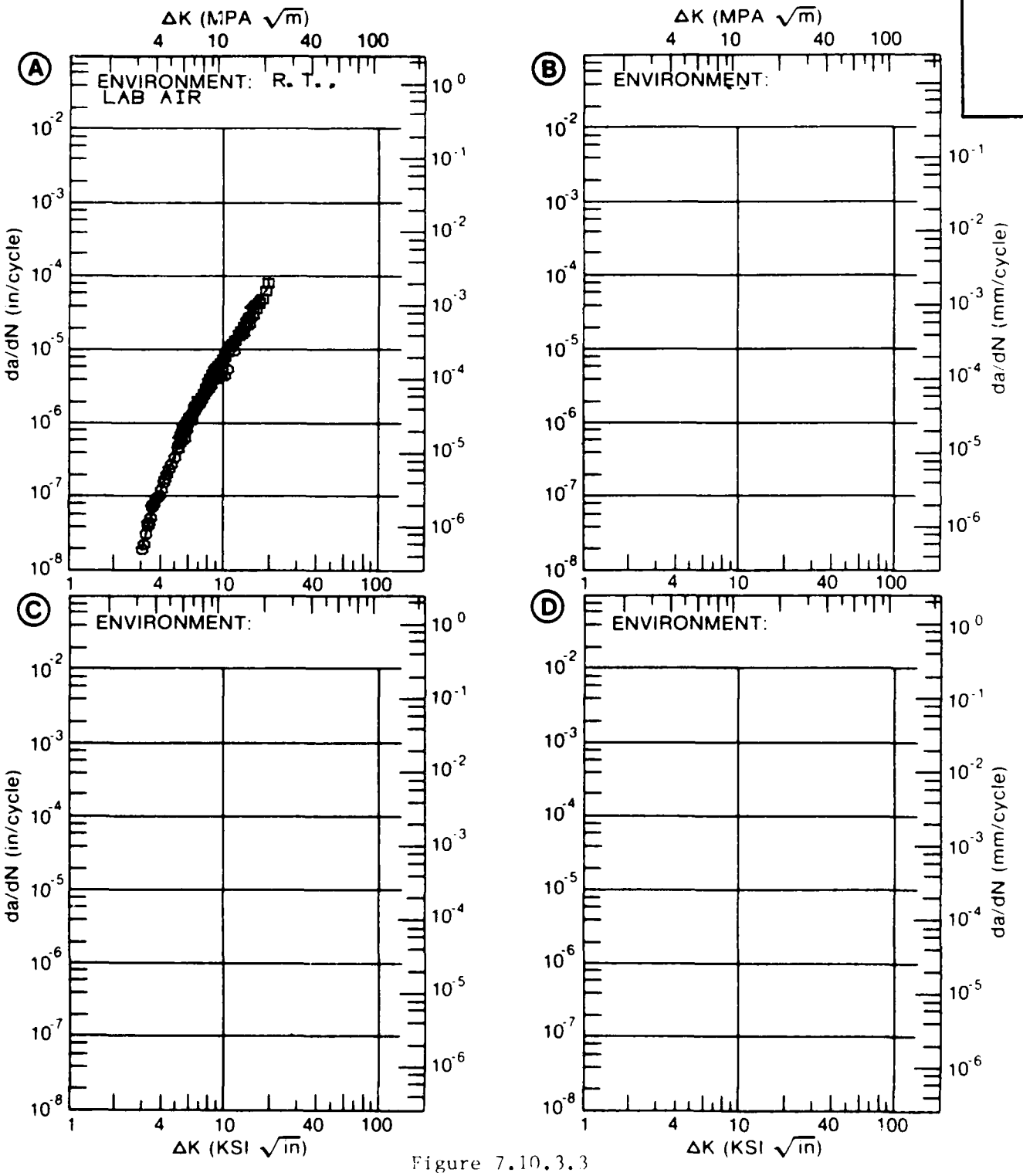


Figure 7.10.3.3

TABLE 7.10.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.4 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			F(HZ)= 0.10	F(HZ)= 5.00		
DELTA K MIN	A:	5.00	2.04			
	B:	2.45		.111		
	C:					
	D:					
		2.50		.122		
		3.00		.245		
		3.50		.429		
		4.00		.762		
		5.00		3.08		
		6.00	7.93			
		7.00	50.4			
DELTA K MAX	A:	7.01	51.9			
	B:	5.01		3.13		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			22.21	11.84		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM:
SPECIMEN TYPE: CT
ORIENTATION:
STRESS RATIO: +0.80
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 2.000"
REFERENCES:UD010

ALUM. ALLOY

2219

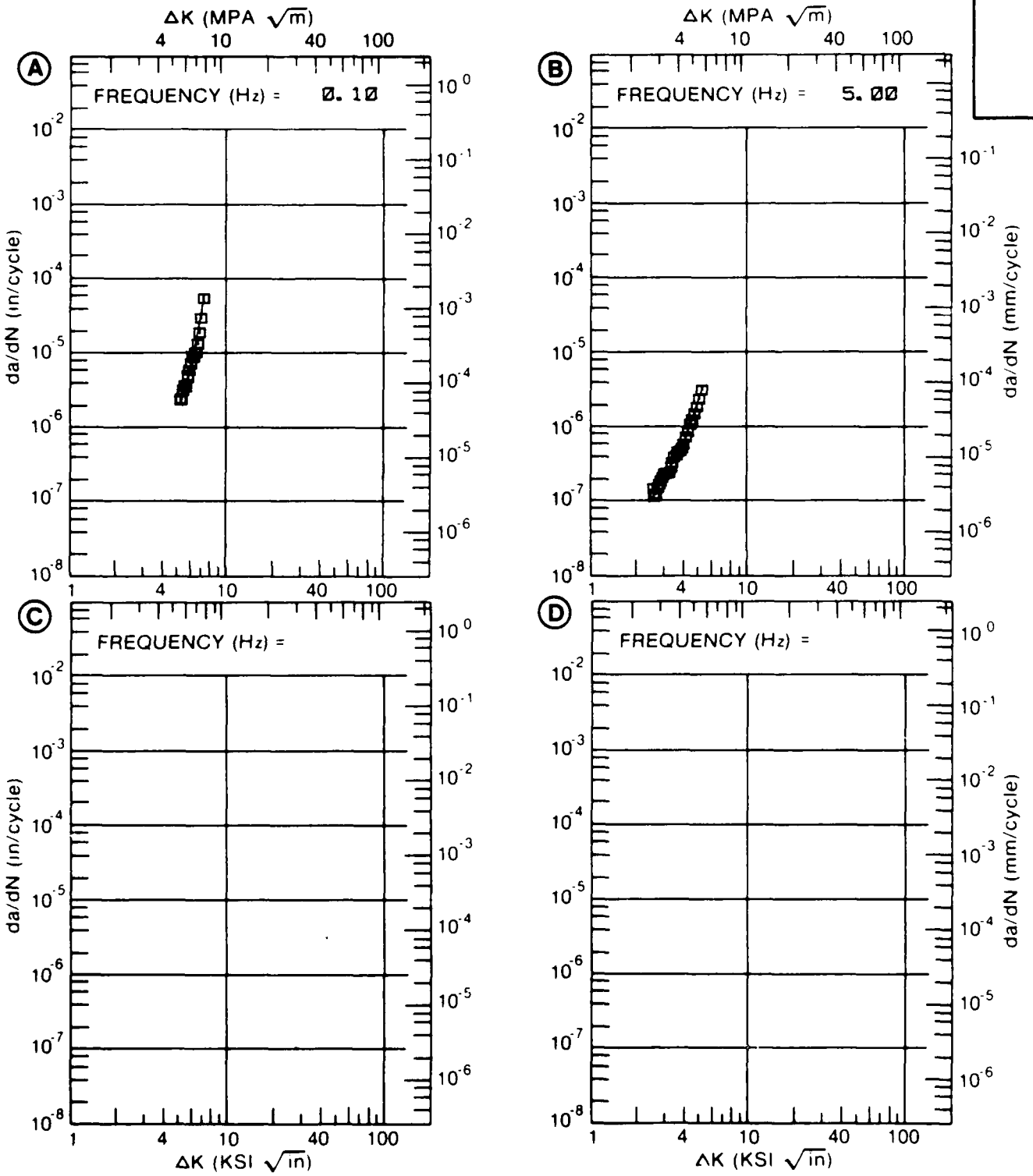


Figure 7.10.3.4

TABLE 7.10.3.5

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.5 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=-1.00	R=-0.30	R=-0.10	R=+0.00
DELTA K MIN	A:	6.61	2.98			
	B:	6.34		1.80		
	C:	6.17			1.23	
	D:	6.25				.791
		7.00	2.86	2.37	2.07	1.25
		8.00	3.30	3.50	3.36	2.05
		9.00	4.61	4.99	4.94	3.08
		10.00	6.81	6.88	6.79	4.33
		13.00	17.7	15.2	13.9	9.59
		16.00		27.6	24.0	17.6
		20.00		52.5	44.9	34.6
		25.00		107.	93.6	
		30.00		214.	193.	
		35.00		428.	401.	
		40.00		865.	837.	
		50.00		3618.	3707.	
		60.00			16519.	
DELTA K MAX	A:	14.09	21.3			
	B:	59.68		14767.		
	C:	63.72			28766.	
	D:	23.46				58.2
ROOT MEAN SQUARE PERCENT ERROR			18.45	38.38	20.98	4.31
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	2	3	1
		1.25-2.0				
		>2.0		1		

CONDITION/HT: T851
FORM: 0.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 46.0 KSI
ULT. STRENGTH: 62.0 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 6.000"
REFERENCES:RI003

ALUM. ALLOY

2219

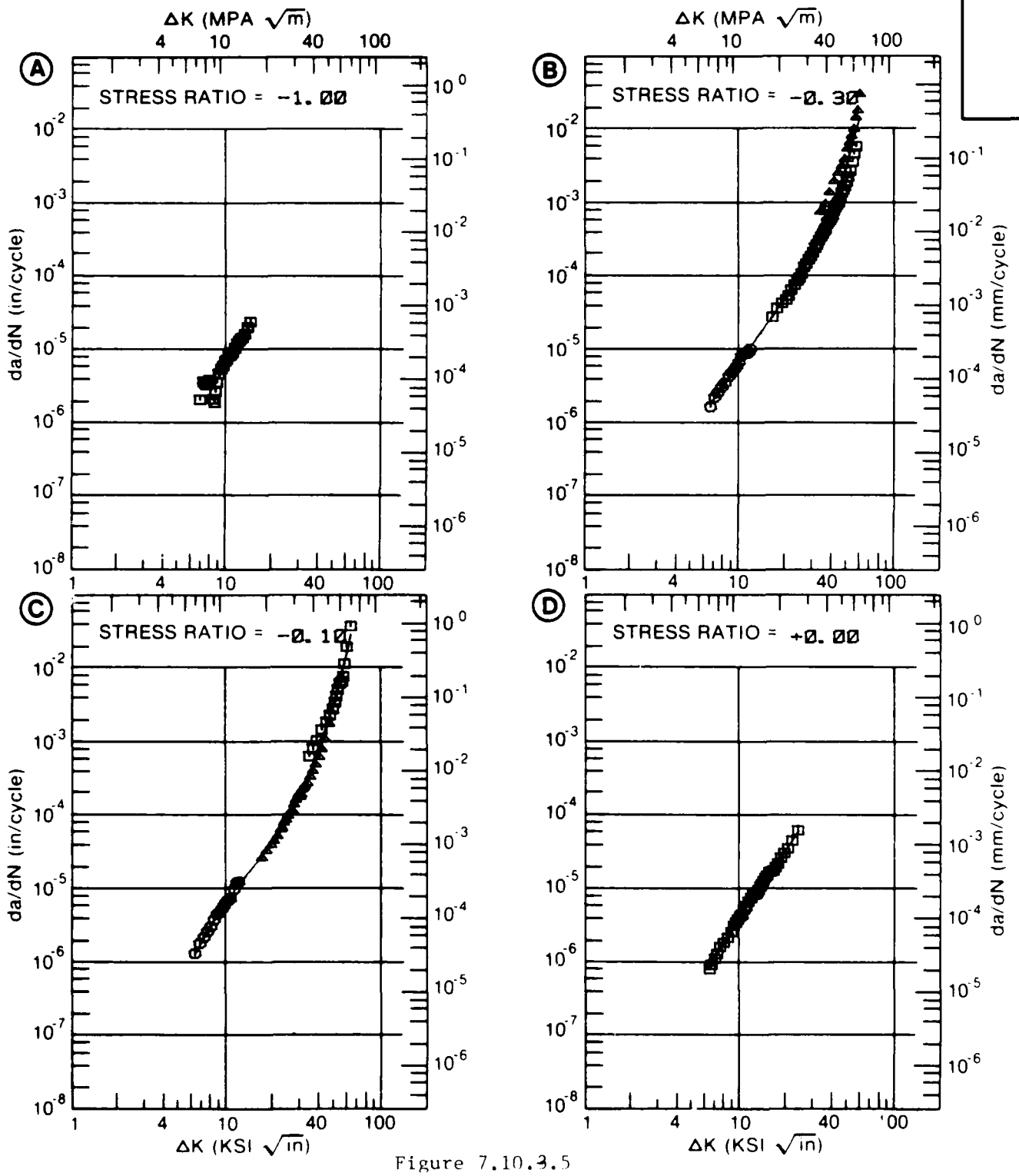


Figure 7.10.3.5

TABLE 7.10.3.6

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.6 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A R=+0.01	B R=+0.20	C R=+0.30	D R=+0.70
DELTA K MIN	A: 15.91	24.3			
	B: 14.07		25.9		
	C: 3.99			.332	
	D: 4.65				.977
	4.00			.334	
	5.00			.698	1.39
	6.00			1.33	2.59
	7.00			2.32	3.94
	8.00			3.73	6.02
	9.00			5.56	10.1
	10.00			7.86	17.8
	13.00			18.2	60.1
	16.00	24.7	42.1	35.5	144.
	20.00	46.2	90.9	76.3	1174.
	25.00	95.0	196.	179.	
	30.00	185.	392.	392.	
	35.00	344.	771.	824.	
	40.00	614.	1523.		
	50.00	1788.			
DELTA K MAX	A: 50.85	1949.			
	B: 44.27		2745.		
	C: 35.53			890.	
	D: 20.24				1827.
ROOT MEAN SQUARE PERCENT ERROR		9.45	9.18	16.06	24.37
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	3	1	3	2
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: 0.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 46.0 KSI
ULT. STRENGTH: 62.0 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 6.000"
REFERENCES:RI003

ALUM. ALLOY

2219

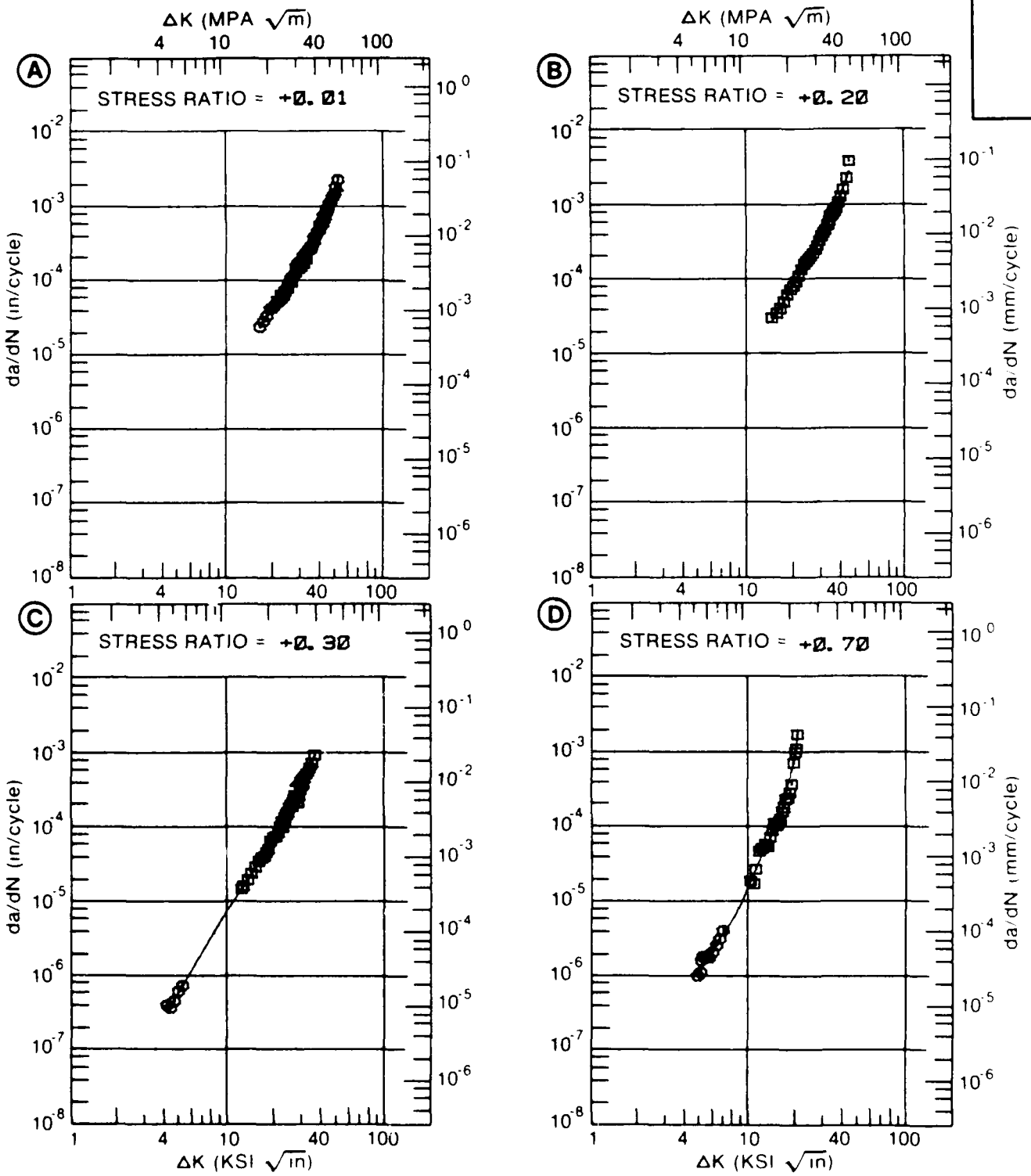


Figure 7.10.3.6

TABLE 7.10.3.7

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.7 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A: 14.80	15.1			
	B:				
	C:				
	D:				
	16.00	20.5			
	20.00	44.5			
	25.00	89.9			
	30.00	163.			
	35.00	287.			
	40.00	505.			
	50.00	1622.			
DELTA K MAX	A: 52.25	2126.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 10.58

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: Ø.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +Ø.Ø1
FREQUENCY: 3.ØØ HZ

YIELD STRENGTH: 46.Ø KSI
ULT. STRENGTH: 62.Ø KSI
SPECIMEN THK: Ø.25Ø"
SPECIMEN WIDTH: 6.ØØØ"
REFERENCES:RIØØ3

ALUM. ALLOY

2219

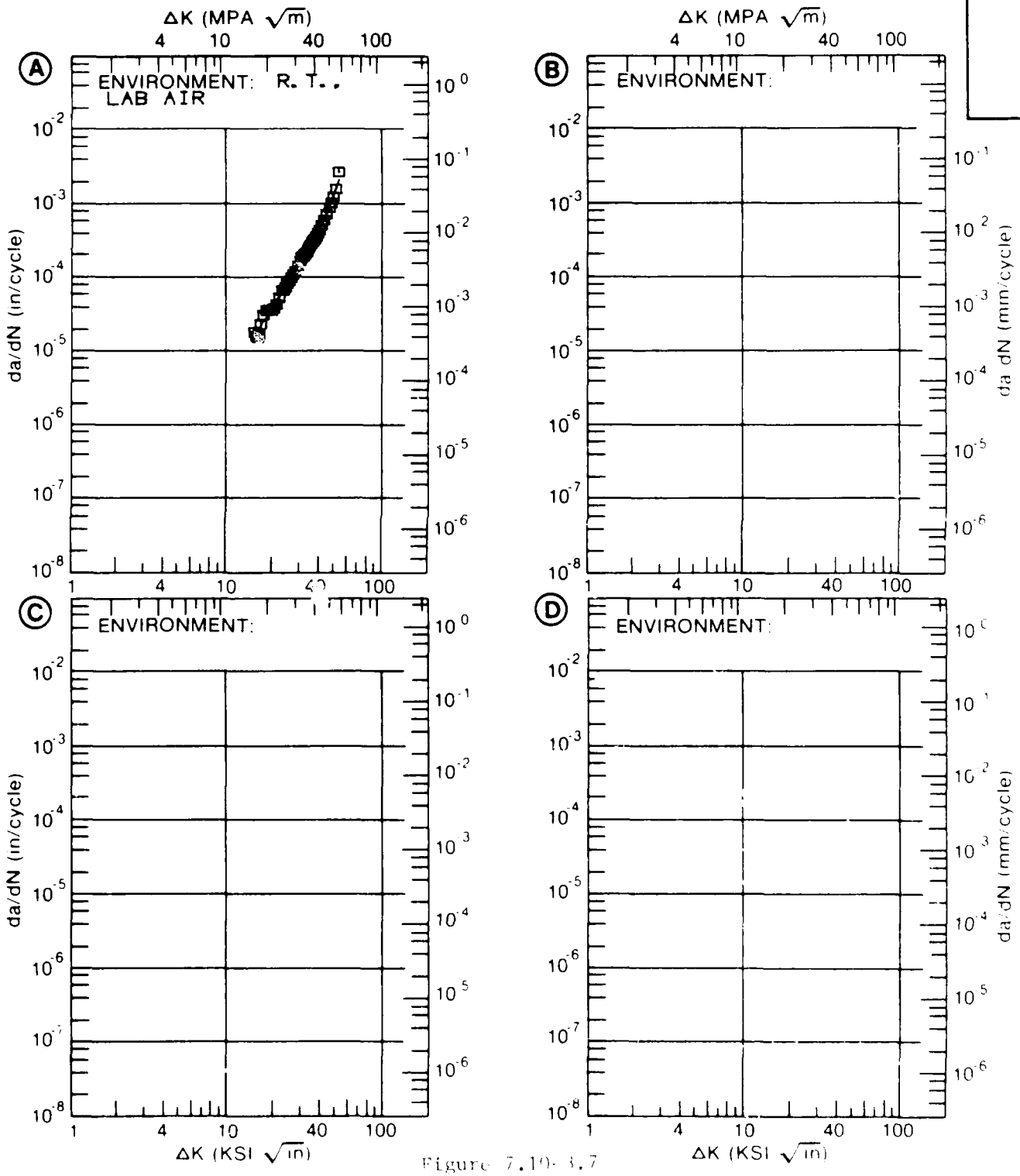


Figure 7.10-3.7

TABLE 7.10.3.8

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.8 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=-0.10	R=+0.05	R=+0.10	
DELTA K MIN	A: 25.44	90.5			
	B: 8.91		3.55		
	C: 16.46			18.8	
	D:				
	9.00		3.67		
	10.00		5.14		
	13.00		11.5		
	16.00		22.1		
	20.00		48.3	44.9	
	25.00		120.	81.0	
	30.00	230.	185.		
DELTA K MAX	A: 33.66	620.			
	B: 30.18		184.		
	C: 28.06			212.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		23.46	21.47	27.02	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8			1	
	0.8-1.25		1		
	1.25-2.0	1			
	>2.0				

CONDITION/HT: T851
FORM: 0.63"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 1.00- 20.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 54.7 KSI
ULT. STRENGTH: 66.9 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 2.500"
REFERENCES:88468

ALUM. ALLOY
2219

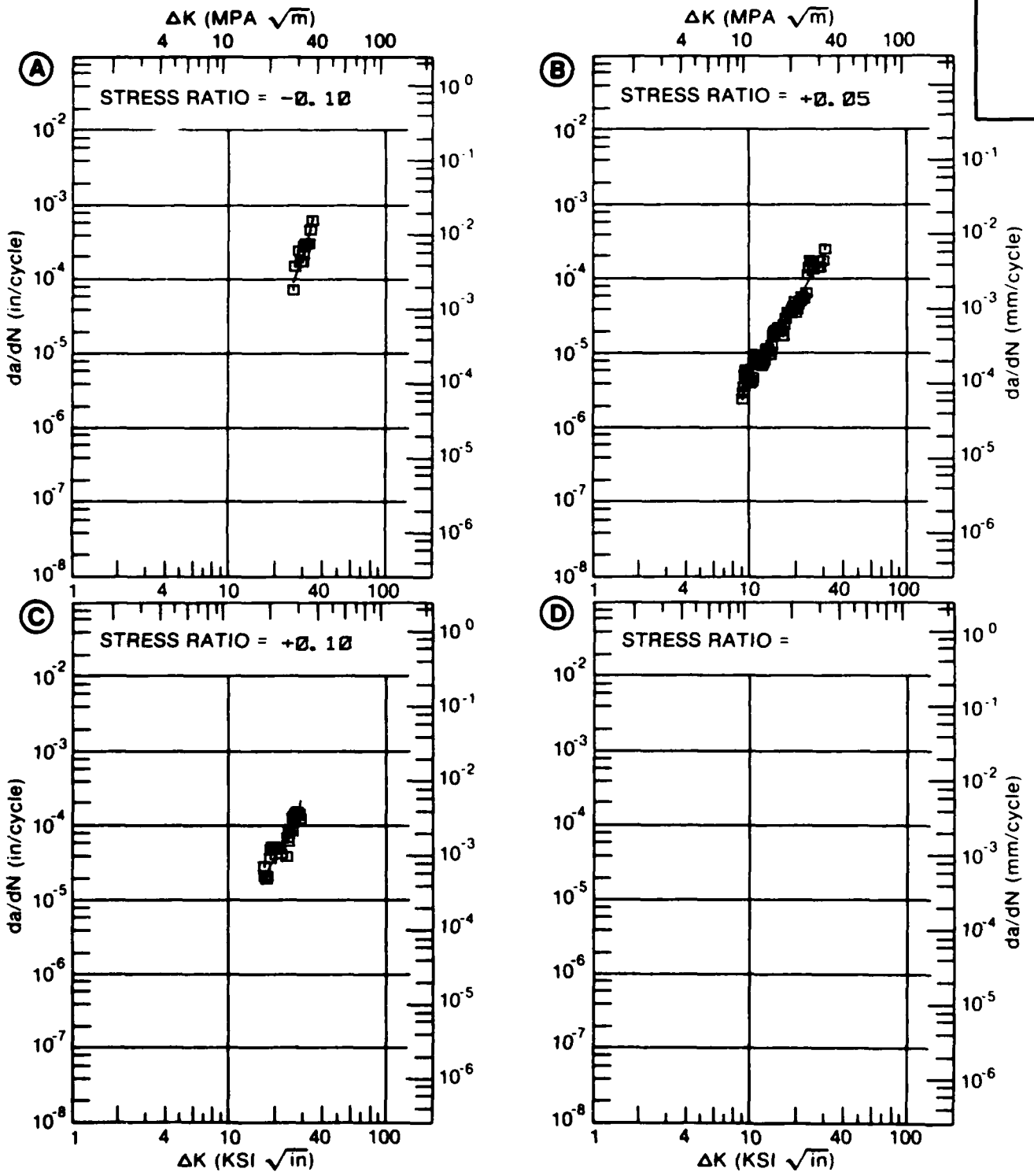


Figure 7.10-3.8

TABLE 7.10-3.9

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.9 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=-1.00	R=+0.04	R=+0.05	R=+0.30
DELTA K MIN	A: 7.34	1.68			
	B: 7.42		.41		
	C: 8.55			.79	
	D:				
	8.00	2.50	1.01		
	9.00	4.04	2.57	1.18	
	10.00	5.92	4.24	2.46	
	13.00	13.6		9.40	
	16.00	25.2		19.1	
	20.00	52.3		33.9	
	25.00			57.6	
	30.00			95.9	
DELTA K MAX	A: 24.44	116.			
	B: 11.28		7.87		
	C: 33.48			140.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		16.15	12.09	29.69	0.00
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8	1	1	1	
	0.8-1.25			1	
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: Ø.63"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.ØØ- 2Ø.ØØ HZ
ENVIRONMENT: R.T.,LAB AIR

YIELD STRENGTH: 54.7 KSI
ULT. STRENGTH: 66.9 KSI
SPECIMEN THK: Ø.25Ø- Ø.251"
SPECIMEN WIDTH: 6.ØØ5- 6.Ø7Ø"
REFERENCES:88468

ALUM. ALLOY

2219

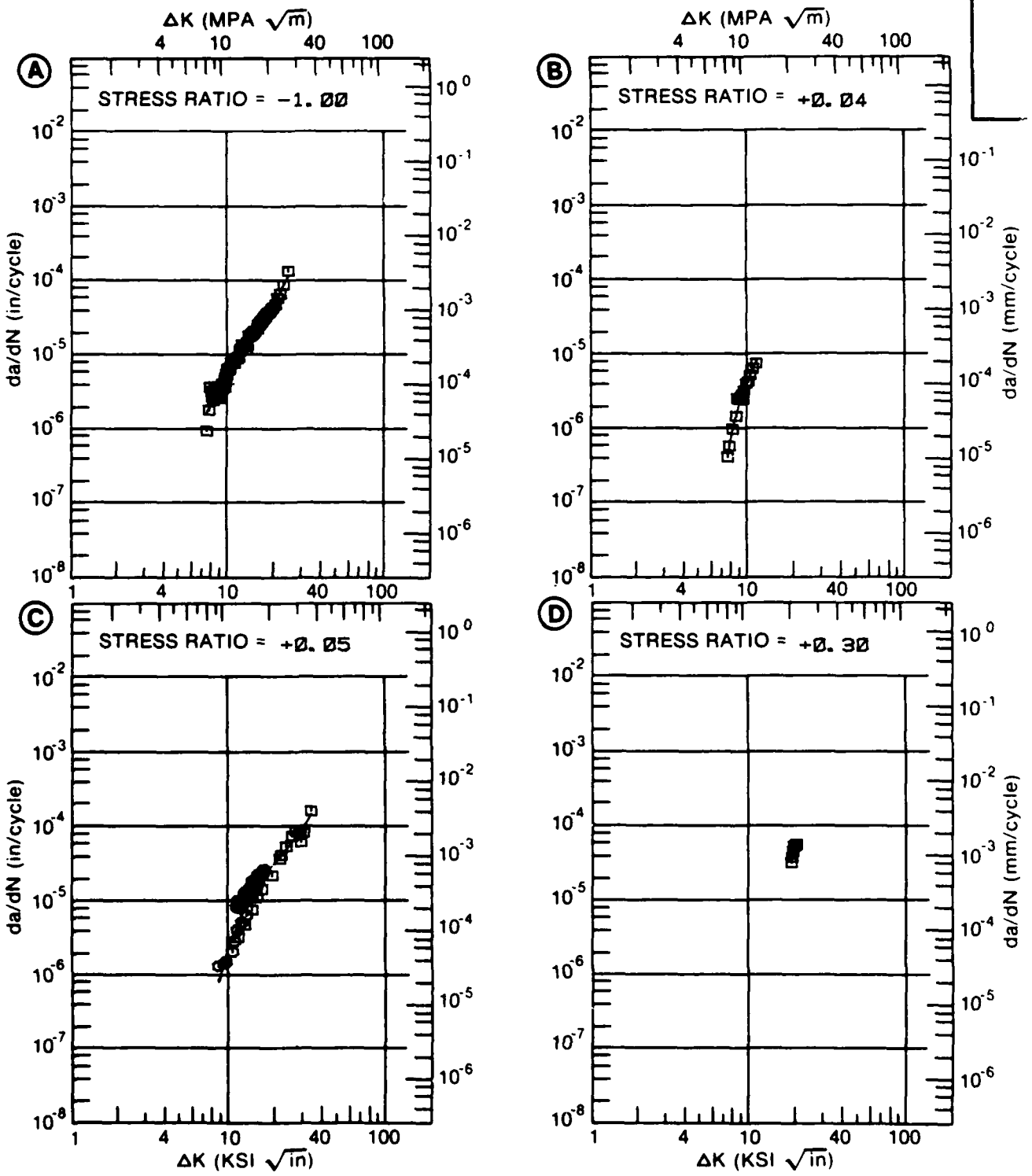


Figure 7.10.3.9

TABLE 7.10.3.10

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.10 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.05			
DELTA K MIN	A:	9.79	3.55			
	B:					
	C:					
	D:					
		10.00	3.58			
		13.00	13.2			
DELTA K MAX	A:	15.96	77.1			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 43.42

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
0.0-0.5	
0.5-0.8	1
0.8-1.25	
1.25-2.0	
>2.0	

CONDITION/HT: T851
FORM: Ø.63"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 1.ØØ- 2Ø.ØØ HZ
ENVIRONMENT: R.T.,LAB AIR

YIELD STRENGTH: 54.7 KSI
ULT. STRENGTH: 66.9 KSI
SPECIMEN THK: Ø.5ØØ"
SPECIMEN WIDTH: 2.5ØØ"
REFERENCES:88468

ALUM. ALLOY

2219

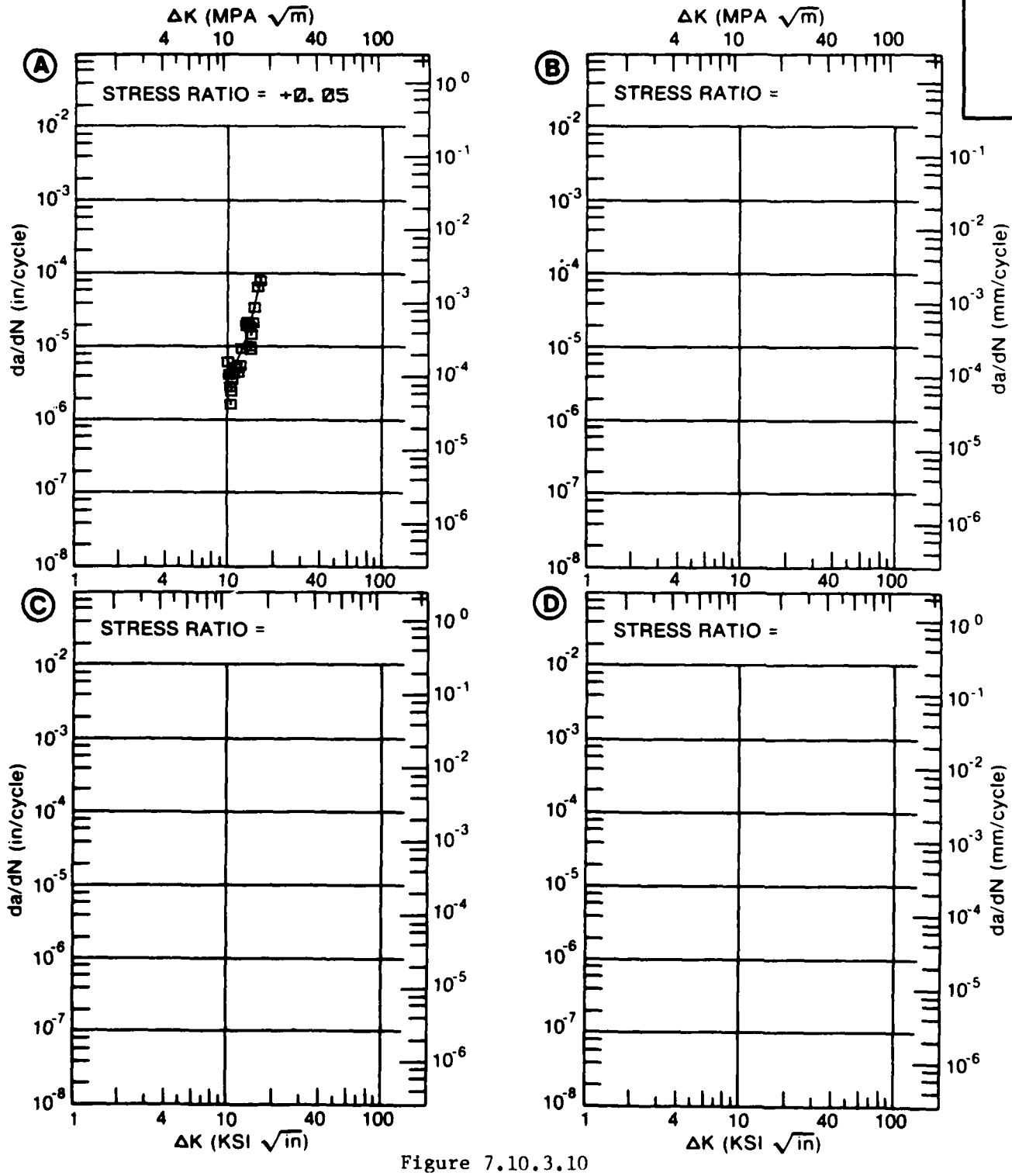


Figure 7.10.3.10

TABLE 7.10.3.11

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.11 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.40	R=+0.50	R=+0.60	R=+0.70
DELTA K MIN	A:	13.87	28.6			
	B:	8.00		4.62		
	C:	7.23			4.35	
	D:	6.44				3.55
		7.00				3.79
		8.00		4.62	6.09	6.31
		9.00		6.15	8.72	11.6
		10.00		10.1	12.2	
		13.00			36.9	
DELTA K MAX	A:	15.45	44.3			
	B:	10.28		10.6		
	C:	14.98			91.8	
	D:	9.77				16.7
ROOT MEAN SQUARE PERCENT ERROR			17.15	10.21	24.18	13.13
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	1
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM: 0.63"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 1.00- 20.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 54.7 KSI
ULT. STRENGTH: 66.9 KSI
SPECIMEN THK: 0.250- 0.251"
SPECIMEN WIDTH: 6.005- 6.070"
REFERENCES:88468

ALUM. ALLOY

2219

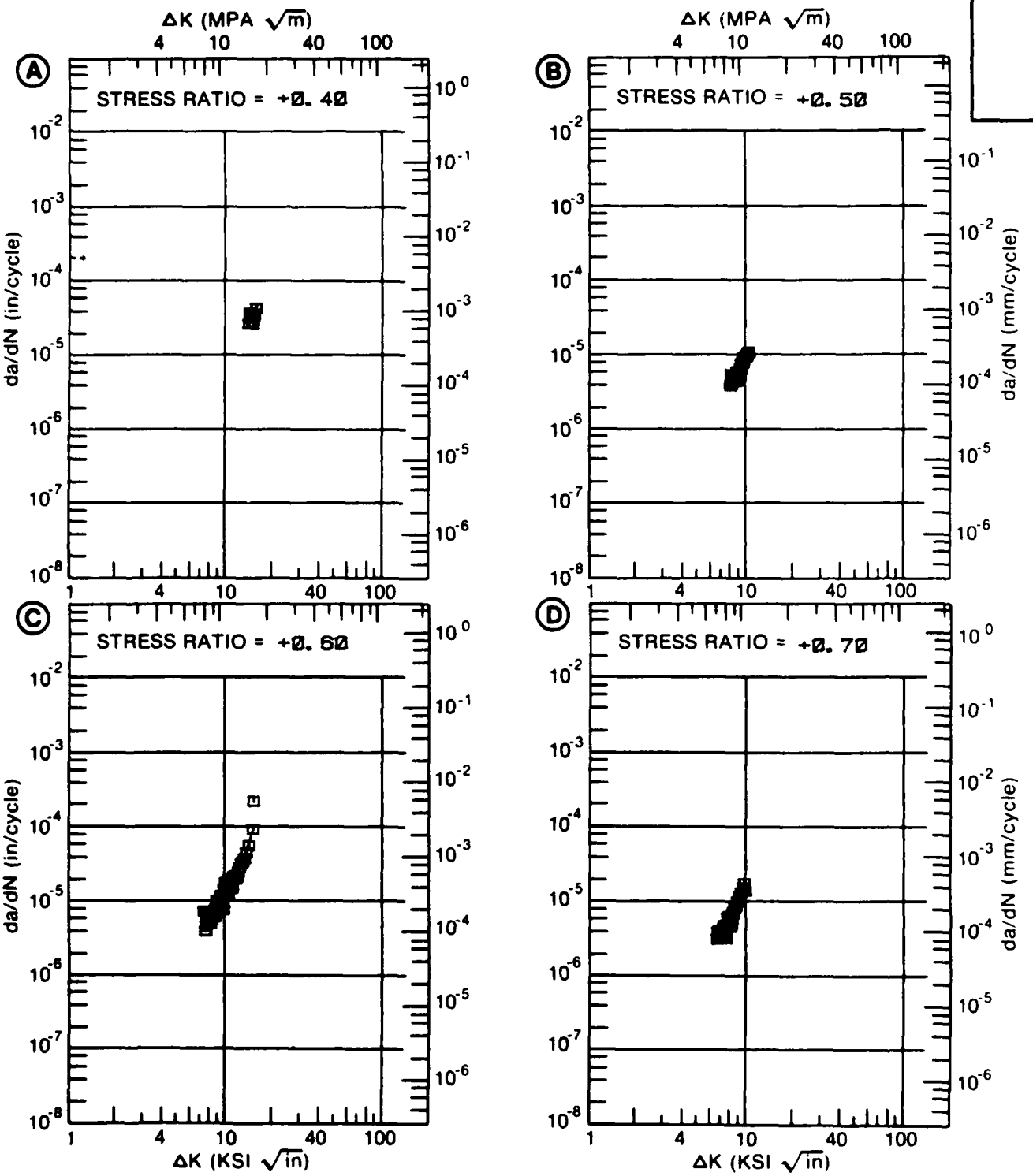


Figure 7.10.3.'1

TABLE 7.10.3.12

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.12INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=-0.50	R=+0.00		
DELTA K MIN	A: 5.96	1.53			
	B: 5.21		.360		
	C:				
	D:				
	6.00	1.59	1.22		
	7.00	3.08	2.67		
	8.00	4.48	4.19		
	9.00	5.71	6.02		
	10.00	6.89	8.25		
	13.00	12.6	17.5		
	16.00		30.8		
	20.00		54.8		
DELTA K MAX	A: 15.70	28.1			
	B: 20.85		60.8		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		19.95	9.86		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8	1			
	0.8-1.25	3	6		
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: 1.38"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 5.20 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 50.6 KSI
ULT. STRENGTH: 66.4 KSI
SPECIMEN THK: 0.748- 0.752"
SPECIMEN WIDTH: 2.997- 3.003"
REFERENCES:86213

ALUM. ALLOY
2219

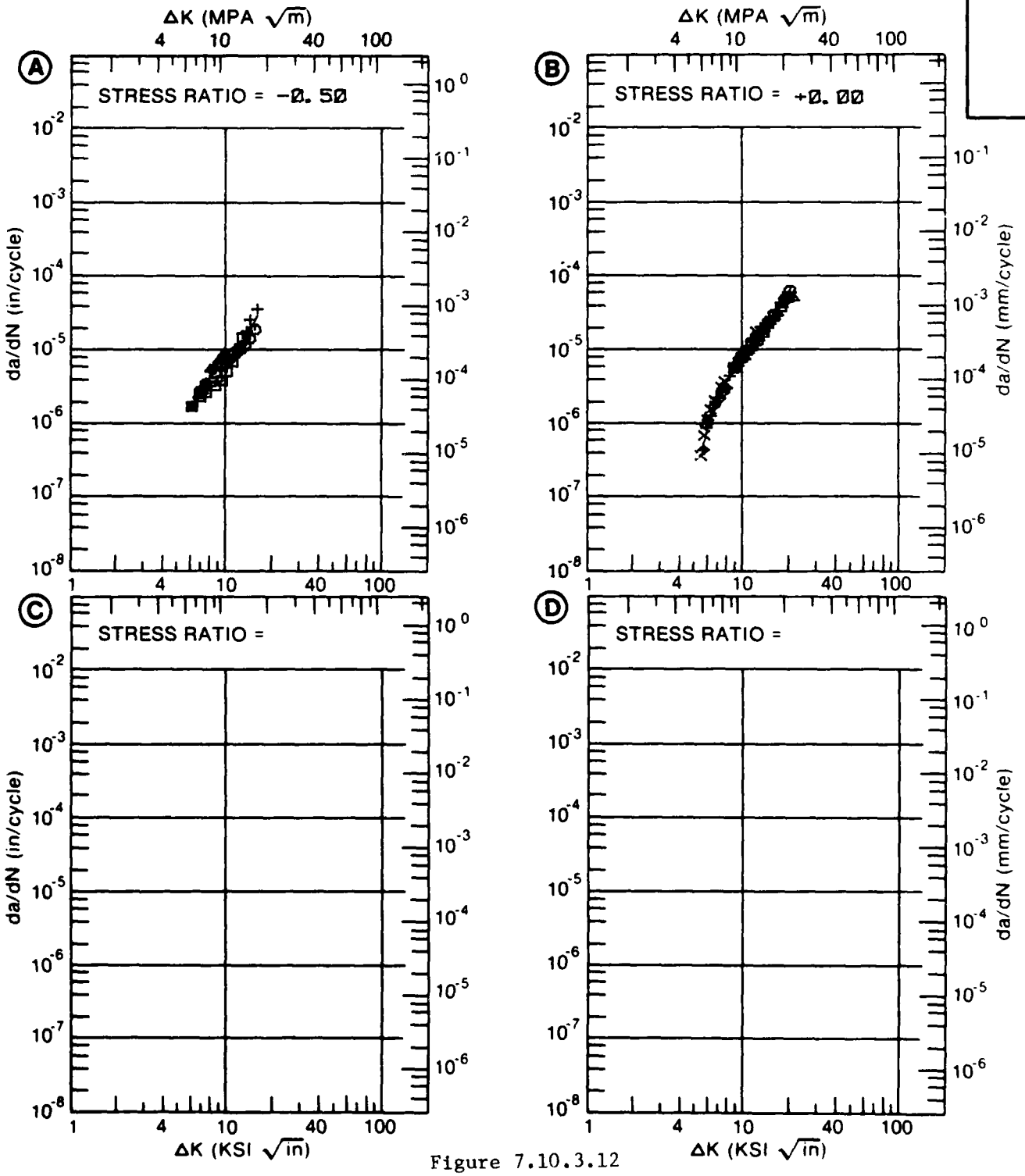


Figure 7.10.3.12

TABLE 7.10.3.13

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.13 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,L.H.A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.08	R=+0.30		
DELTA K MIN	A:	3.83	.232			
	B:	4.70		.673		
	C:					
	D:					
		4.00	.243			
		5.00	.407	.907		
		6.00	.779	1.84		
		7.00	1.40	3.11		
		8.00	2.25	5.19		
		9.00	3.36	9.20		
		10.00	4.77			
		13.00	11.2			
		16.00	22.6			
DELTA K MAX	A:	16.51	25.2			
	B:	9.78		15.2		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			9.44	7.15		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 48.0- 49.6 KSI
ULT. STRENGTH: 65.9- 66.2 KSI
SPECIMEN THK: 0.993- 1.000"
SPECIMEN WIDTH: 6.010- 7.400"
REFERENCES:85837

ALUM. ALLOY

2219

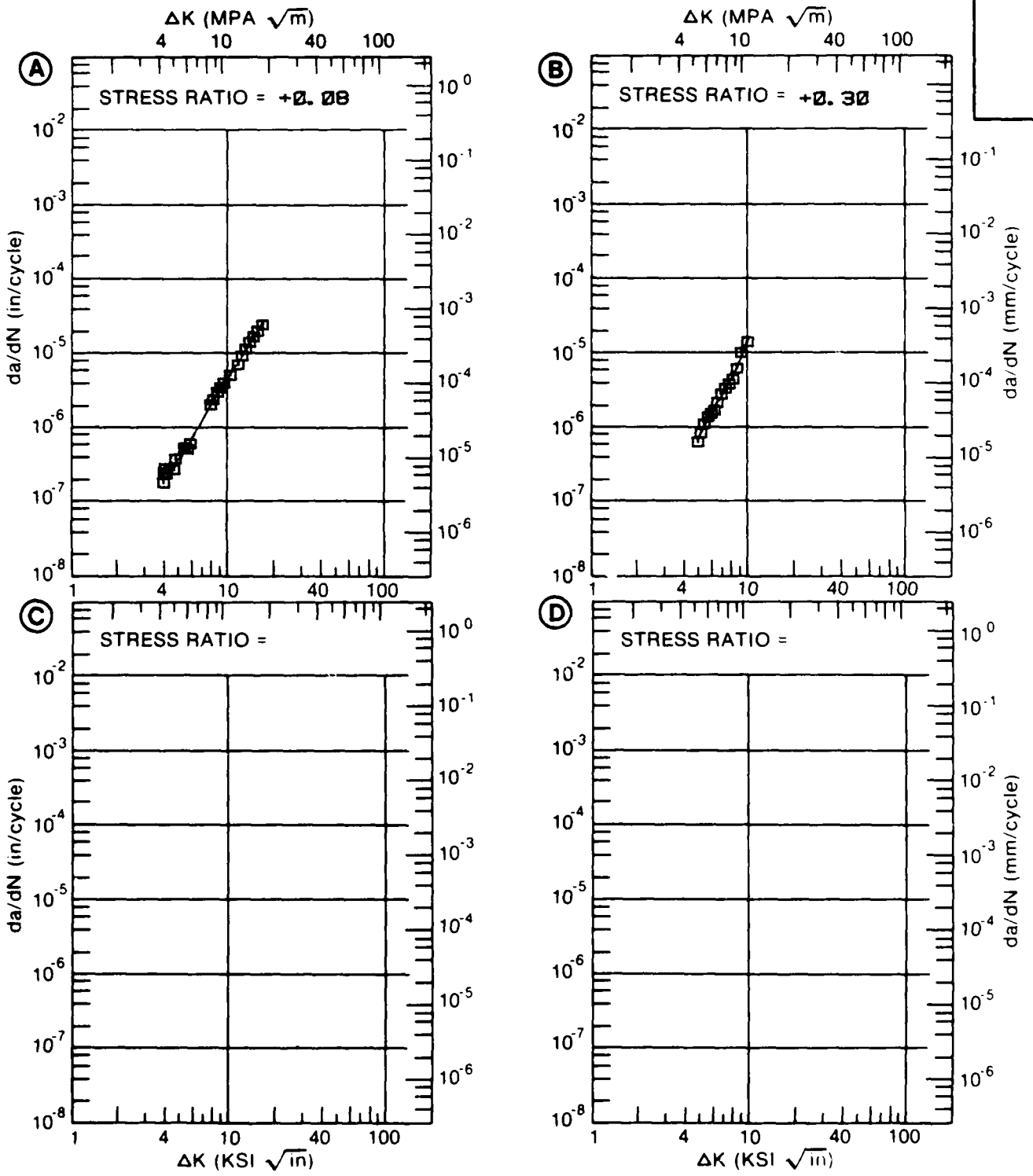


Figure 7.10.3.13

TABLE 7.10.3.14

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.14 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.08			
DELTA K MIN	A:	6.98	1.33			
	B:					
	C:					
	D:					
		7.00	1.35			
		8.00	2.41			
		9.00	3.86			
		10.00	5.74			
		13.00	14.6			
DELTA K MAX	A:	15.01	24.3			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 6.99

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.995"
SPECIMEN WIDTH: 2.000"
REFERENCES85837

ALUM. ALLOY
2219

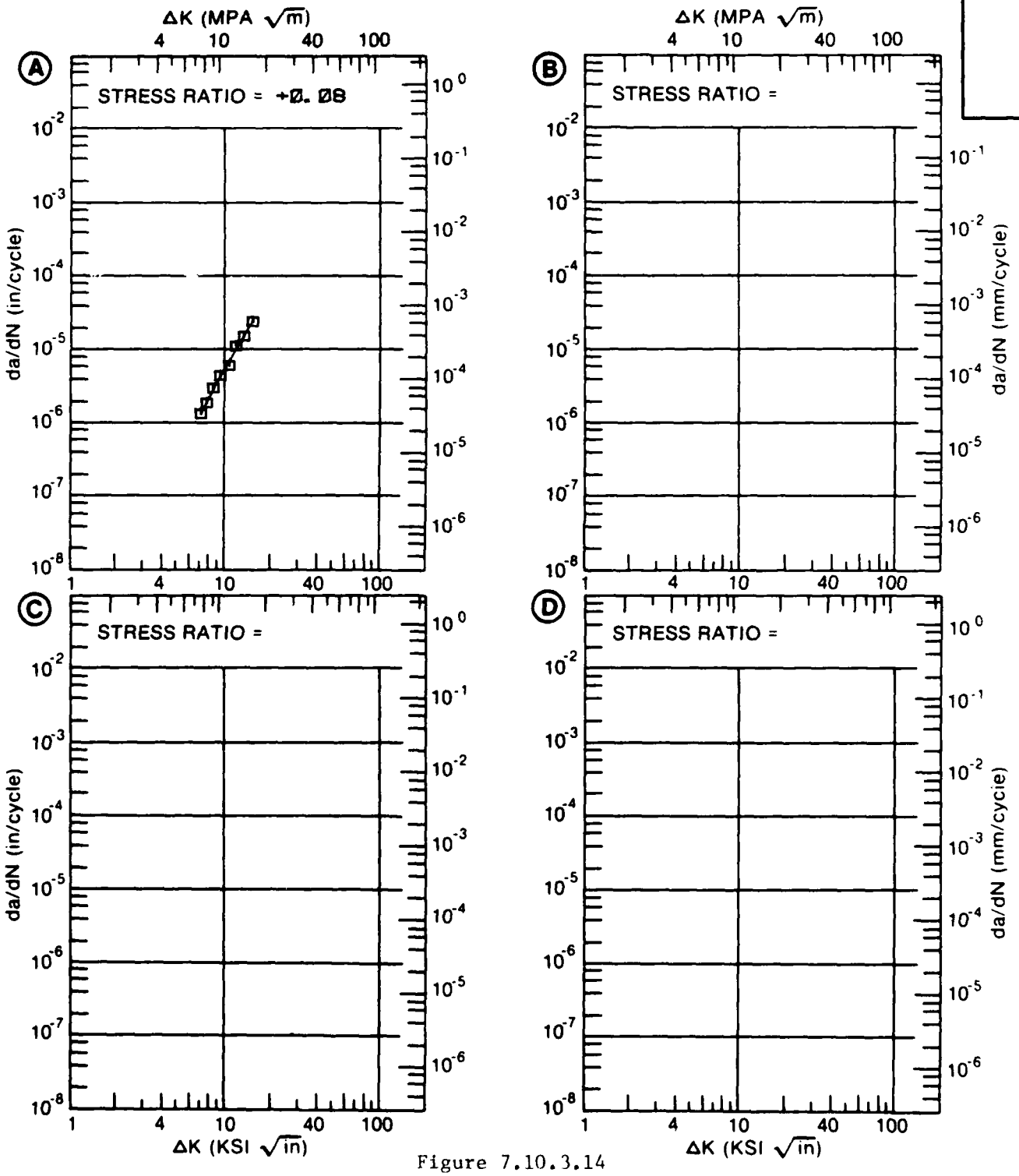


Figure 7.10.3.14

TABLE 7.10.3.15

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.15INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R. T. , S. T. W.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.30	R=+0.50		
DELTA K MIN	A: 5.54	.953			
	B: 4.67		.479		
	C:				
	D:				
	5.00		.809		
	6.00	1.33	2.09		
	7.00	2.46	3.88		
	8.00	4.04	6.06		
	9.00	6.10	8.62		
	10.00	8.68	11.6		
	13.00	19.7	25.1		
	16.00	35.7	53.6		
	20.00	65.6			
DELTA K MAX	A: 21.28	77.3			
	B: 16.41		59.7		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		5.63	17.56		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25		1		
	1.25-2.0	1			
	>2.0				

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 1.00 HZ
ENVIRONMENT: R. T., S. T. W.

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.990- 1.000"
SPECIMEN WIDTH: 6.000- 6.010"
REFERENCES:88579

ALUM. ALLOY

2219

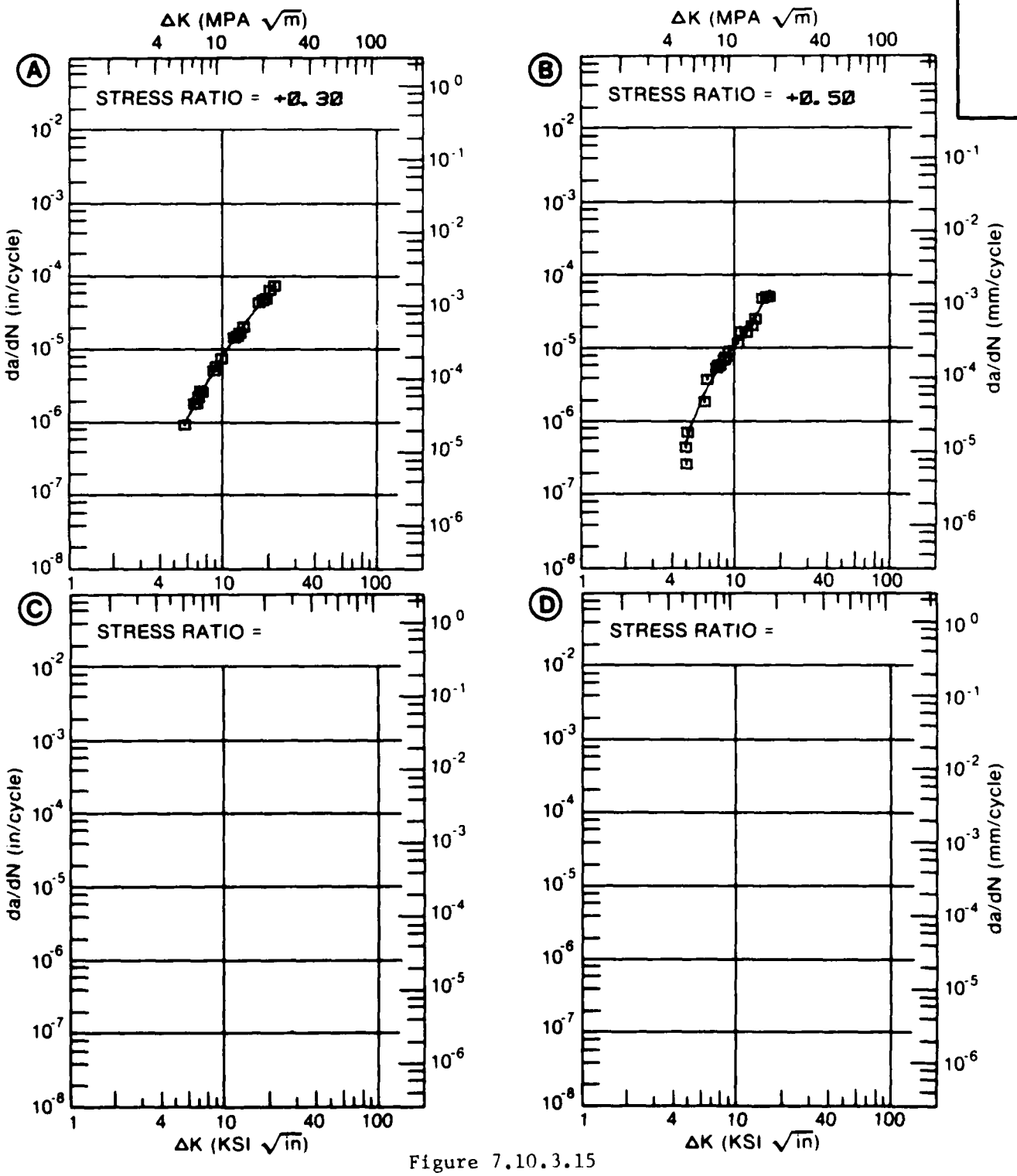


Figure 7.10.3.15

TABLE 7.10.3.16

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.16 INDICATING EFFECT
OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. L.H.A.			
DELTA K MIN	A: 6.84	.622			
	B:				
	C:				
	D:				
	7.00	.708			
	8.00	1.40			
	9.00	2.34			
	10.00	3.52			
	13.00	8.20			
	16.00	14.5			
	20.00	26.5			
	25.00	51.9			
	30.00	100.			
	35.00	197.			
	40.00	393.			
DELTA K MAX	A: 48.41	1306.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 11.38

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 6.00 HZ

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.250- 0.500"
SPECIMEN WIDTH: 5.990- 6.000"
REFERENCES:88579

ALUM. ALLOY
2219

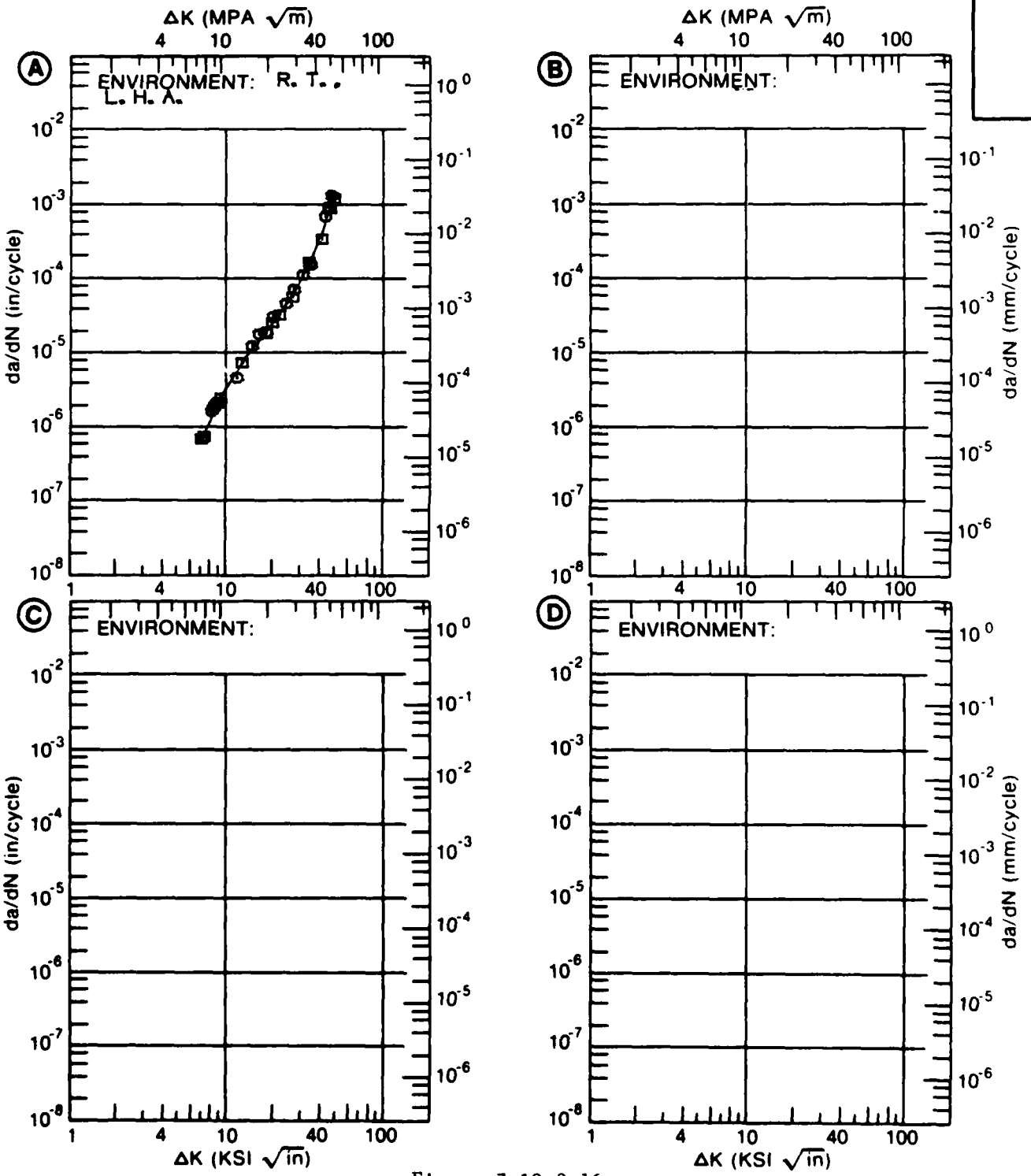


Figure 7.10.3.16

TABLE 7.10.3.17

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.17 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E=+ 265F L. H. A.			
DELTA K MIN	A: 6.74	2.06			
	B:				
	C:				
	D:				
	7.00	2.39			
	8.00	3.94			
	9.00	5.88			
	10.00	8.22			
	13.00	17.7			
	16.00	31.4			
	20.00	59.4			
	25.00	120.			
DELTA K MAX	A: 27.51	167.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 6.40

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 6.00 HZ

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.990"
SPECIMEN WIDTH: 6.000"
REFERENCES:88579

ALUM. ALLOY
2219

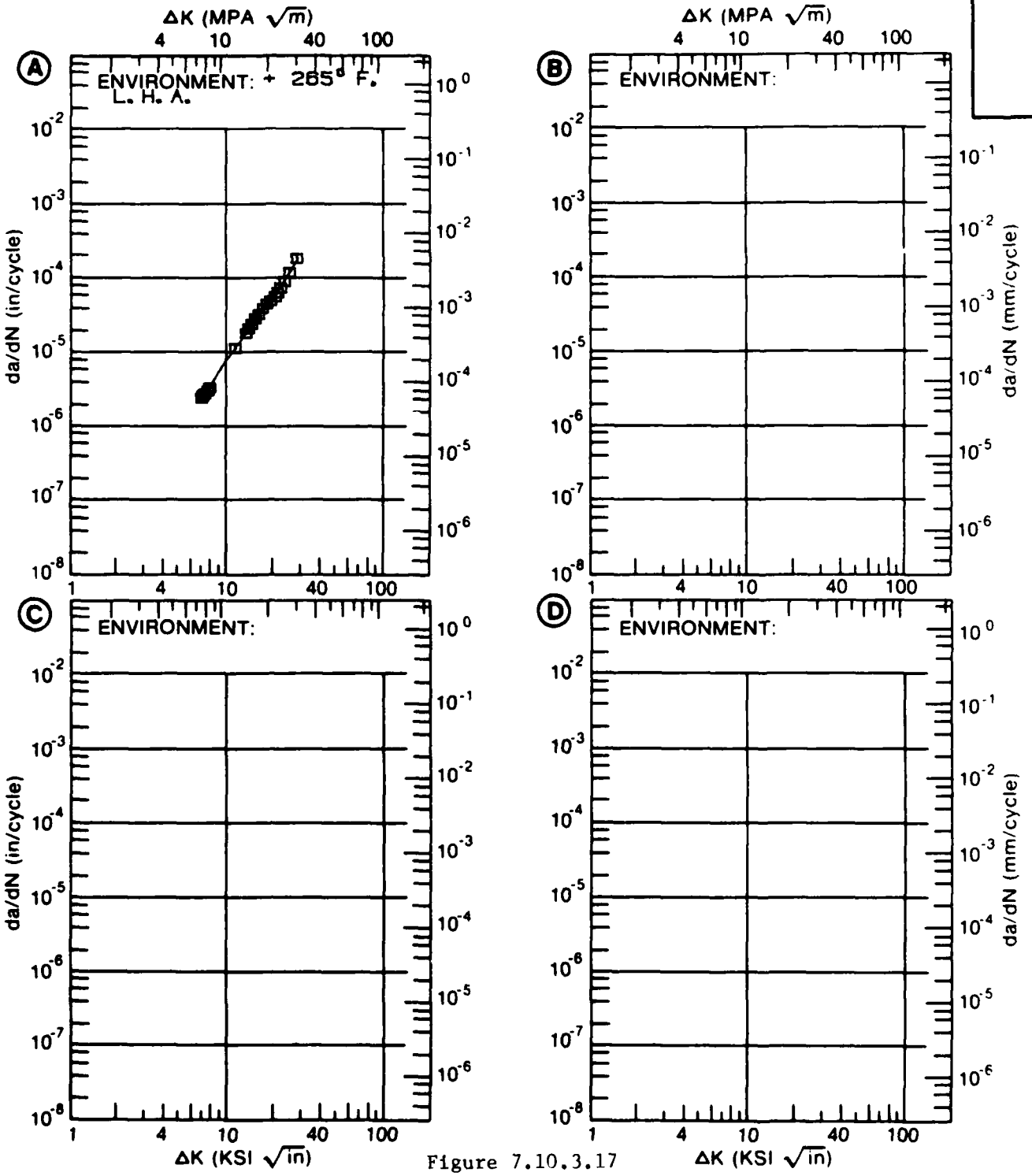


Figure 7.10.3.17

TABLE 7.10.3.18

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.18 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. S.T.W.	C E=+150F S.T.W.	D
DELTA K MIN	A:	6.23	1.37			
	B:	4.99		.599		
	C:	6.17			2.57	
	D:					
		5.00		.605		
		6.00		1.41		
		7.00	2.57	2.52	3.76	
		8.00	4.43	4.08	6.90	
		9.00	6.40		11.5	
		10.00	8.48		15.3	
		13.00	17.7		18.8	
DELTA K MAX	A:	15.42	35.6			
	B:	8.98		6.46		
	C:	14.97			32.2	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			11.91	7.75	12.49	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 1.00 HZ

YIELD STRENGTH: 49.6 KSI
ULT. STRENGTH: 66.2 KSI
SPECIMEN THK: 0.992- 0.998"
SPECIMEN WIDTH: 7.400"
REFERENCES:85837

ALUM. ALLOY
2219

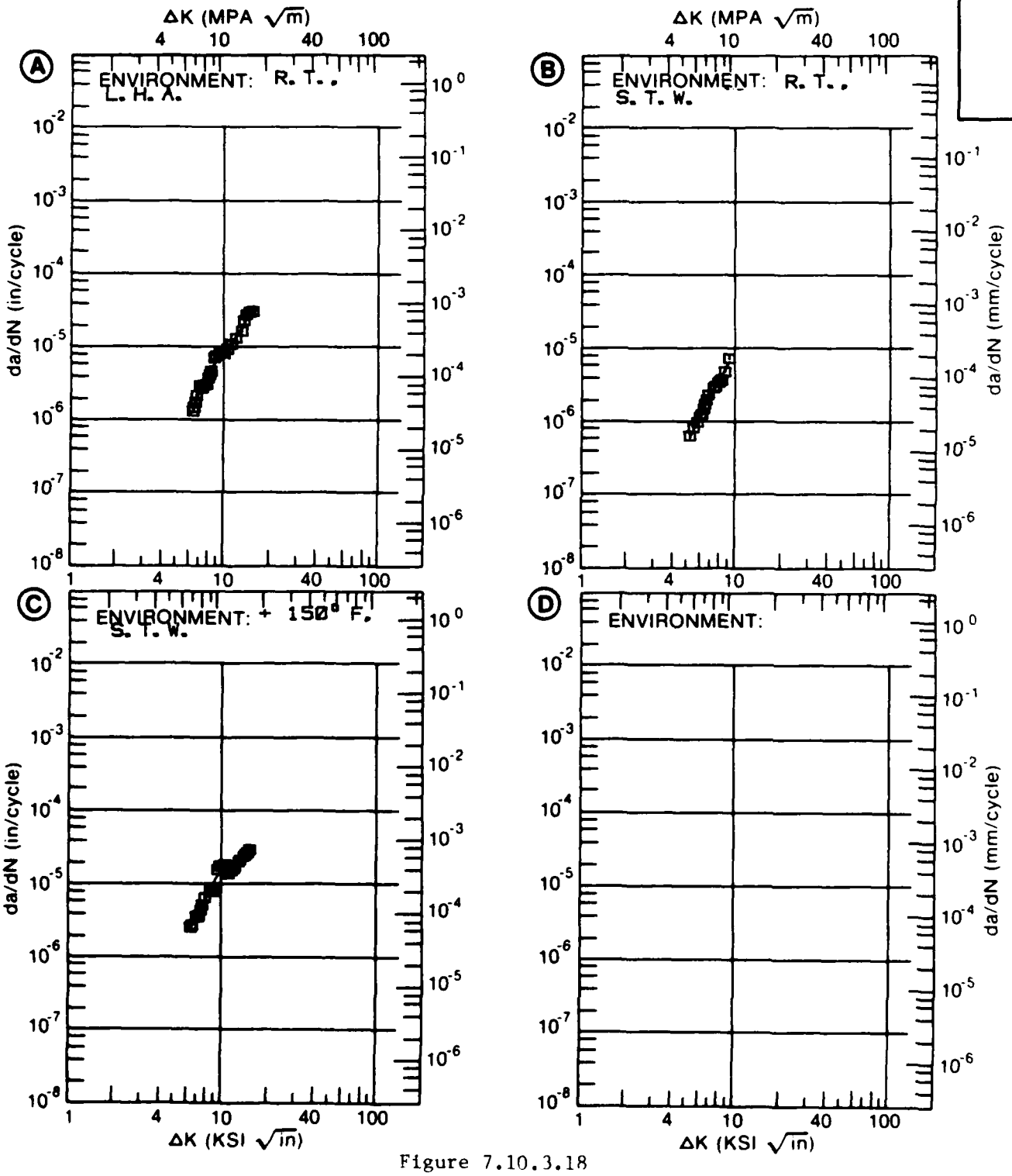


Figure 7.10.3.18

TABLE 7.10.3.19

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.19 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. F.C.S.	E= R.T. S.C.S.		
DELTA K MIN	A:	6.31	1.68			
	B:	6.13		1.62		
	C:					
	D:					
		7.00	2.43	2.48		
		8.00	3.76	3.77		
		9.00	5.37	5.41		
		10.00	7.26	7.42		
		13.00	14.8	15.9		
		16.00	26.1	28.4		
		20.00	50.0			
		25.00	104.			
		30.00	210.			
DELTA K MAX	A:	33.42	334.			
	B:	18.70		43.5		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			12.94	4.49		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 1.00 HZ

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.990"
SPECIMEN WIDTH: 6.010"
REFERENCES:88579

ALUM. ALLOY
2219

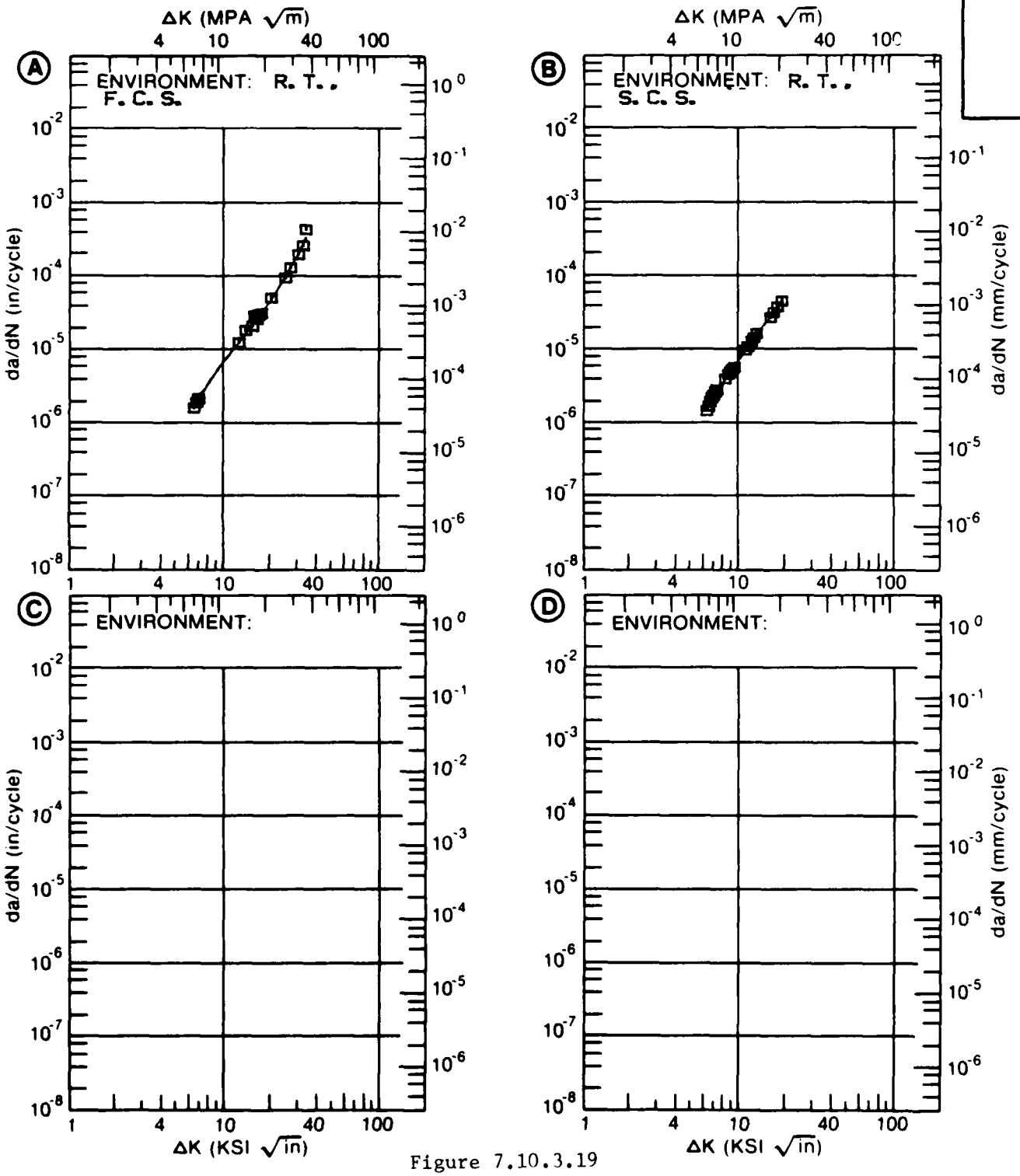


Figure 7.10.3.19

TABLE 7.10.3.20

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.20 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. S.T.W.	C	D
DELTA K MIN	A:	6.98	1.58			
	B:	13.00		11.8		
	C:					
	D:					
		7.00	1.60			
		8.00	3.03			
		9.00	4.89			
		10.00	7.10			
		13.00	15.5	11.8		
		16.00	26.9	22.9		
		20.00		55.6		
		25.00		115.		
		30.00		245.		
DELTA K MAX	A:	18.26	38.9			
	B:	30.86		300.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			6.74	8.86		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 0.10 HZ

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.994- 1.000"
SPECIMEN WIDTH: 6.000- 6.010"
REFERENCES:88579

ALUM. ALLOY

2219

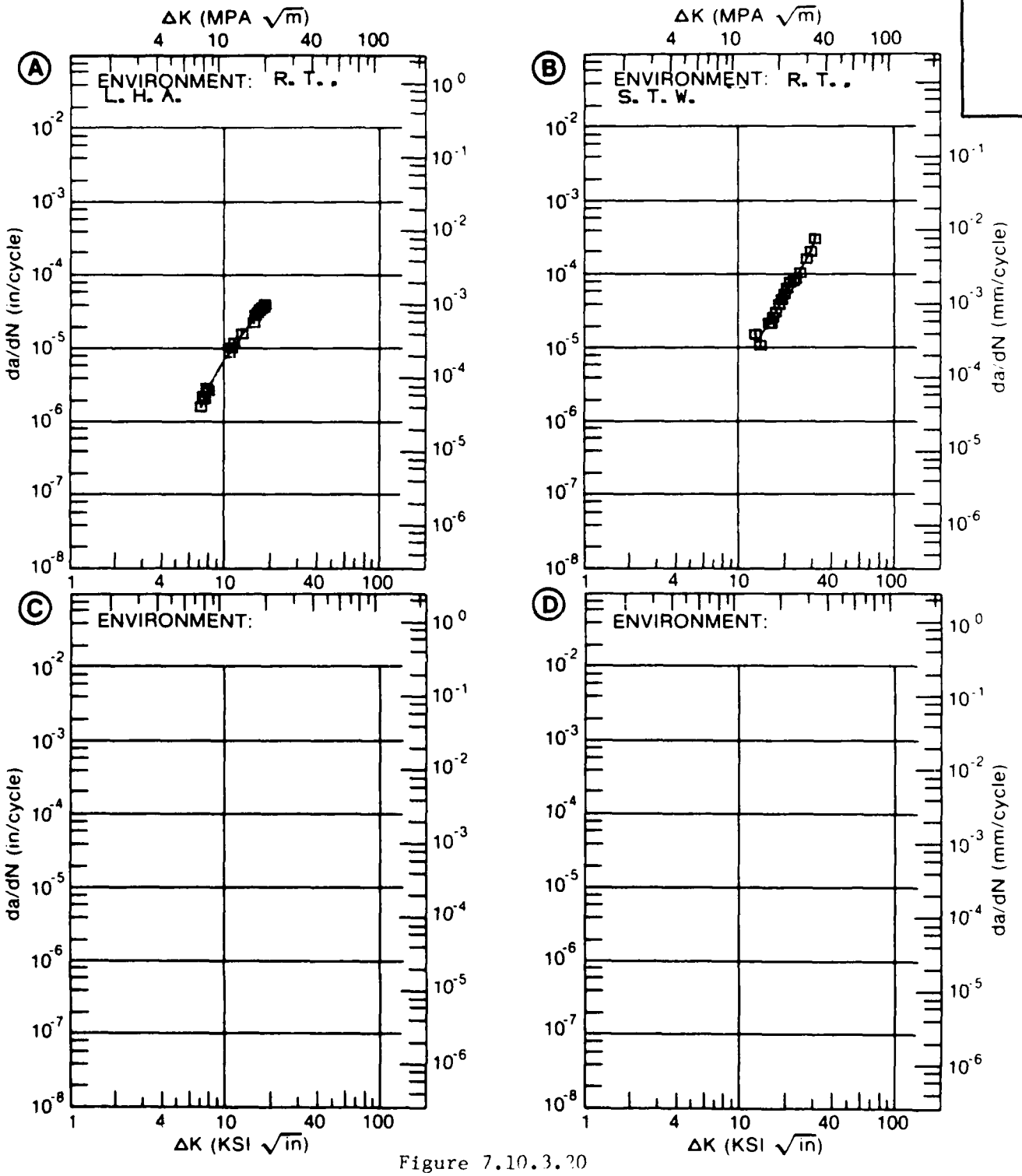


Figure 7.10.3.20

TABLE 7.10.3.21

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.21 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R. T. L. H. A.			
DELTA K MIN	A: 3.09	.223			
	B:				
	C:				
	D:				
	3.50	.256			
	4.00	.344			
	5.00	.723			
	6.00	1.49			
	7.00	2.76			
	8.00	4.49			
	9.00	6.41			
	10.00	8.15			
DELTA K MAX	A: 10.70	9.05			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 13.61

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.50
FREQUENCY: 6.00 HZ

YIELD STRENGTH: 49.6 KSI
ULT. STRENGTH: 66.2 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 6.000"
REFERENCES:85837

ALUM. ALLOY

2219

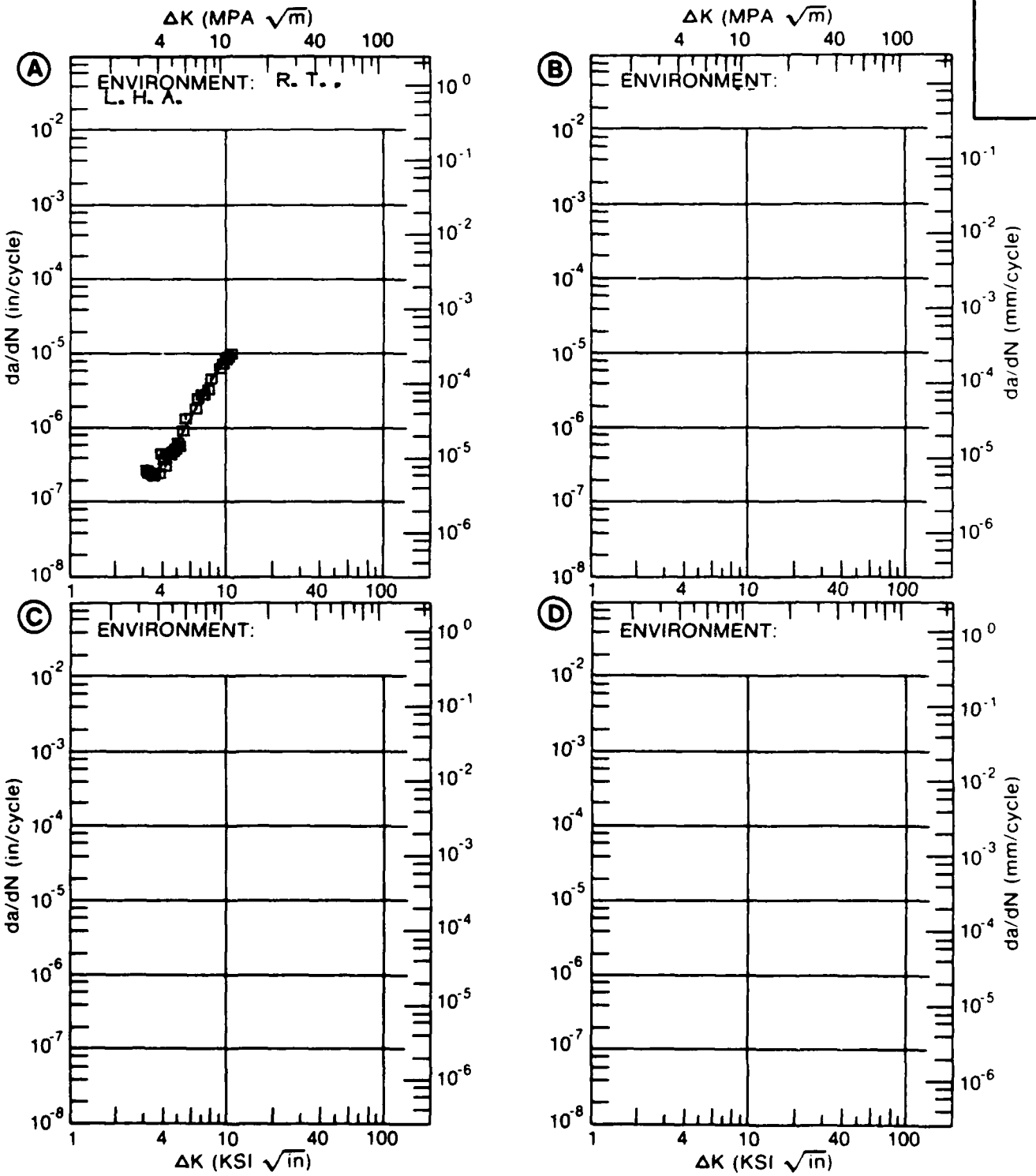


Figure 7.10-3.21
7.10-69

TABLE 7.10.3.22

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.22INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R. T. , L. H. A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		F(HZ)= 63.30			
DELTA K MIN	A: 3.34	.0853			
	B:				
	C:				
	D:				
	3.50	.0823			
	4.00	.119			
	5.00	.282			
	6.00	.600			
	7.00	1.17			
	8.00	2.08			
	9.00	3.30			
	10.00	4.67			
DELTA K MAX	A: 11.59	6.57			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 19.22

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH: 49.6 KSI
ULT. STRENGTH: 66.2 KSI
SPECIMEN THK: 0.993"
SPECIMEN WIDTH: 7.400"
REFERENCES: 85837

ALUM. ALLOY
2219

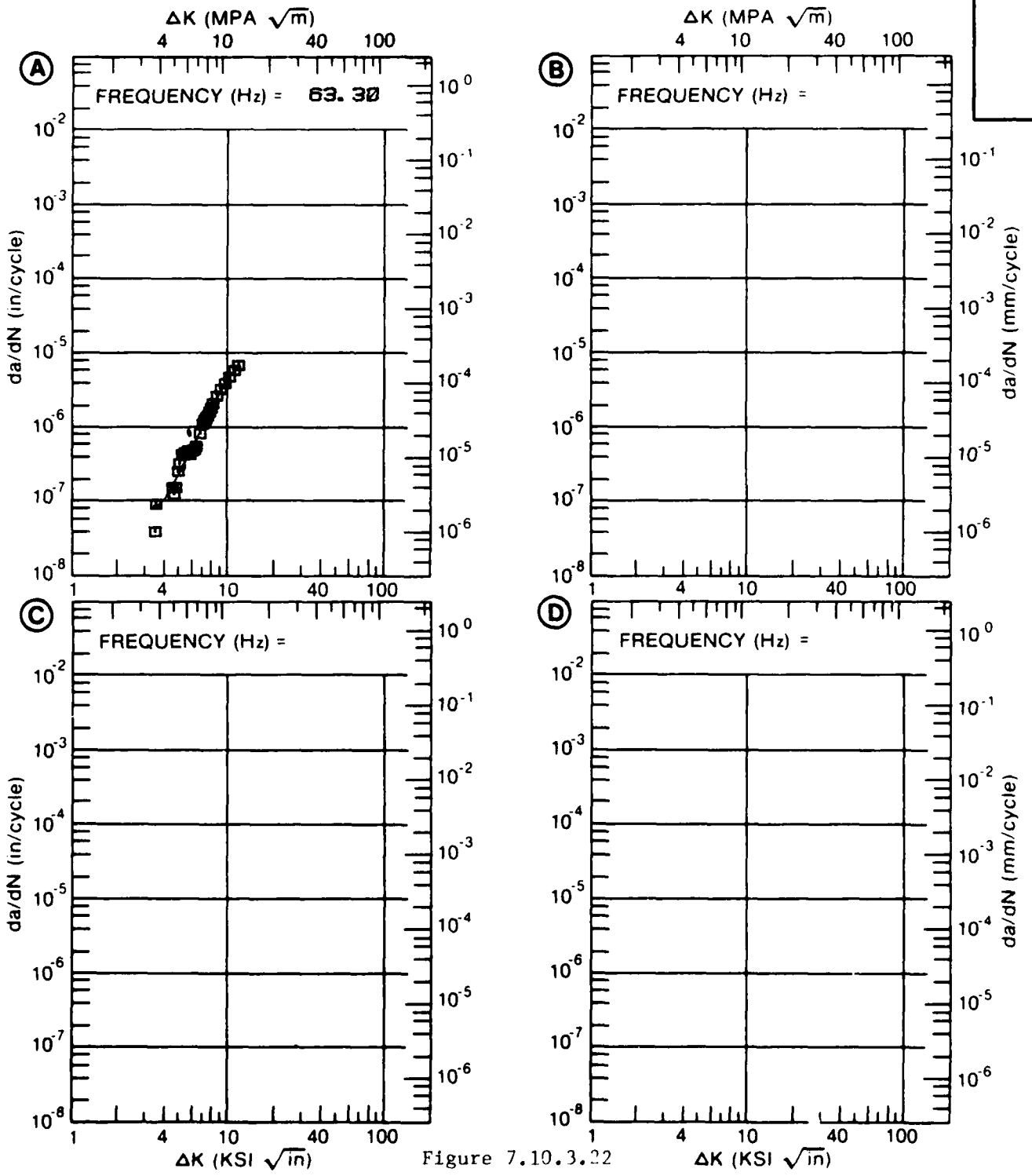


Figure 7.10.3.22

TABLE 7.10.3.23

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.23 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A., 6HZ	B E=+ 265F L.H.A., 6HZ	C E= R.T. S.T.W., 1HZ	D
DELTA K MIN	A: 7.12	1.40			
	B: 6.69		1.96		
	C: 4.01			.246	
	D:				
	5.00			1.02	
	6.00			2.42	
	7.00		2.36	4.24	
	8.00	2.52	3.90	6.28	
	9.00	3.97	5.88	8.46	
	10.00	5.43	8.32	10.8	
	13.00	9.66	19.2	19.8	
	16.00	15.4	38.2	35.2	
	20.00	33.3	88.6	81.5	
	25.00	121.	244.	268.	
	30.00	616.			
DELTA K MAX	A: 32.50	1536.			
	B: 25.72		282.		
	C: 29.24			815.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		11.01	9.22	23.95	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	1	1	
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: 1.75"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.08
FREQUENCY:

YIELD STRENGTH: 48.0 KSI
ULT. STRENGTH: 65.9- 66.0 KSI
SPECIMEN THK: 0.995- 1.000"
SPECIMEN WIDTH: 6.000- 6.010"
REFERENCES: 88579, 85837

ALUM. ALLOY

2219

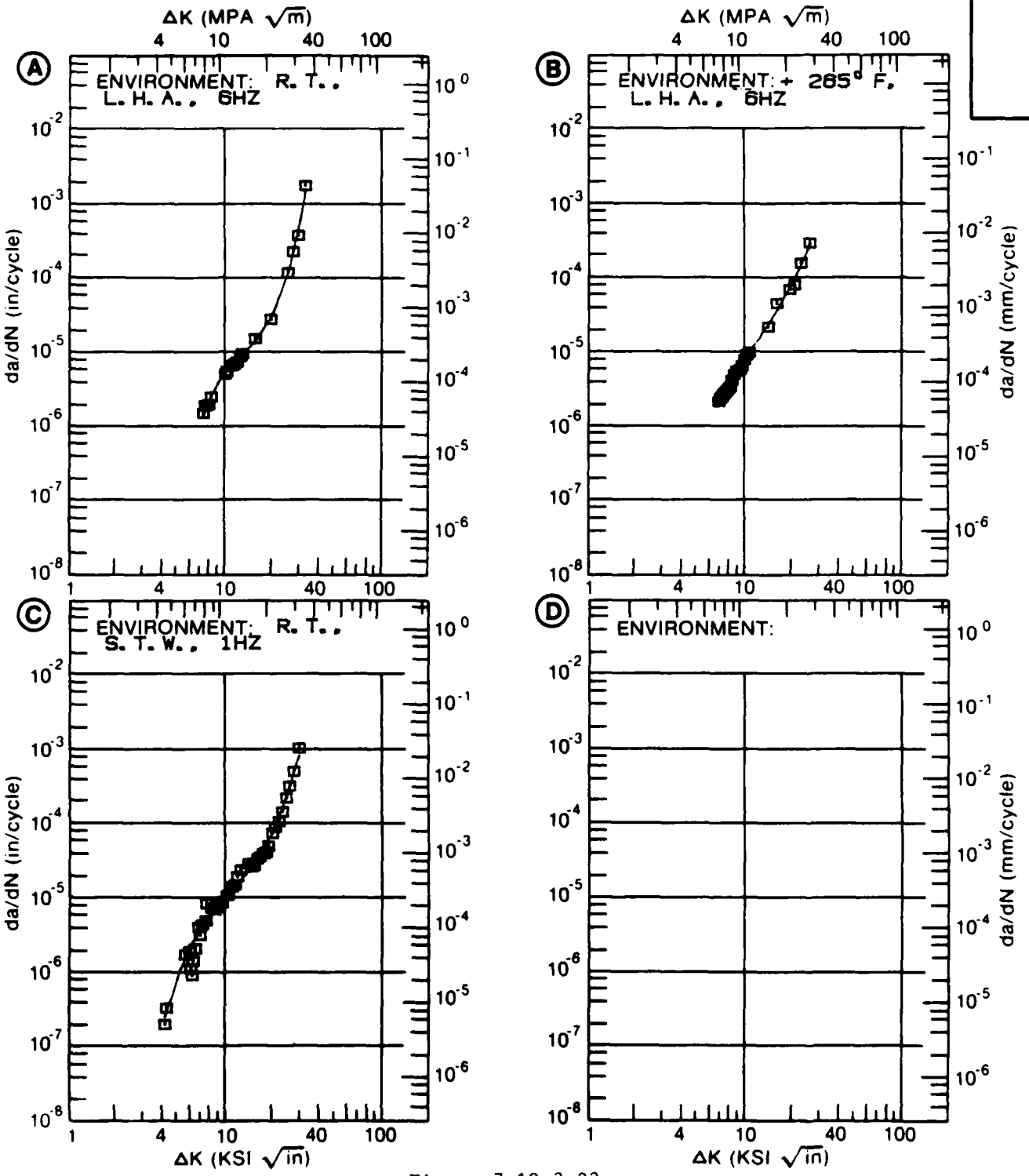


Figure 7.10.3.23

TABLE 7.10.3.24

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.24 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. L.H.A.	E= R.T. S.T.W.		
DELTA K MIN	A:	5.95	1.30			
	B:	6.48		1.21		
	C:					
	D:					
		6.00	1.35			
		7.00	2.51	2.02		
		8.00	3.98	4.25		
		9.00	5.72	7.20		
		10.00	7.74	10.6		
		13.00	15.8	22.1		
		16.00	28.5	35.1		
		20.00	60.3	59.5		
		25.00	155.	119.		
		30.00	411.			
DELTA K MAX	A:	32.68	700.			
	B:	27.75		183.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			32.94	13.81		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8	1			
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T851
FORM: 2.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 8.00 HZ

YIELD STRENGTH: 49.6- 50.0 KSI
ULT. STRENGTH: 66.2- 68.0 KSI
SPECIMEN THK: 0.993- 1.000"
SPECIMEN WIDTH: 6.000"
REFERENCES:88579, 85837

ALUM. ALLOY

2219

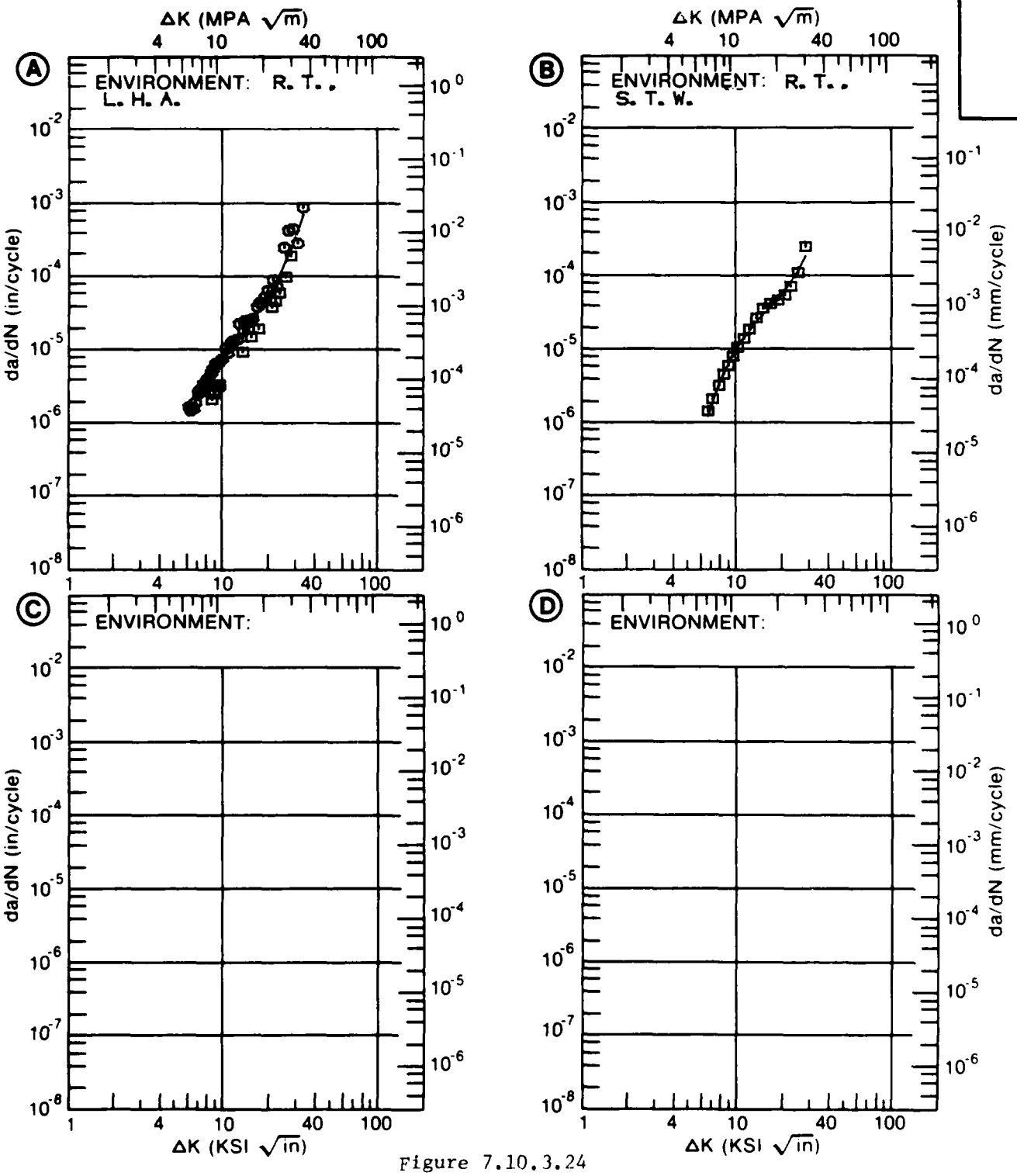


Figure 7.10.3.24

TABLE 7.10.3.25

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.2 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. DIST. H2O	C	D
DELTA K MIN	A: 5.66	.982			
	B: 6.07		1.39		
	C:				
	D:				
	6.00	1.19			
	7.00	2.05	2.51		
	8.00	3.35	4.06		
	9.00	5.18	5.93		
	10.00	7.60	8.09		
	13.00	18.0	16.4		
	16.00	30.8	28.6		
	20.00	54.0	55.7		
	25.00	125.	124.		
	30.00	347.	304.		
	35.00	1218.	1118.		
DELTA K MAX	A: 35.37	1401.			
	B: 36.90		2114.		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		16.22	10.10		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	2		
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: 2.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY: 1.00 HZ

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 68.0 KSI
SPECIMEN THK: 0.990"
SPECIMEN WIDTH: 6.000"
REFERENCES:88579

ALUM. ALLOY
2219

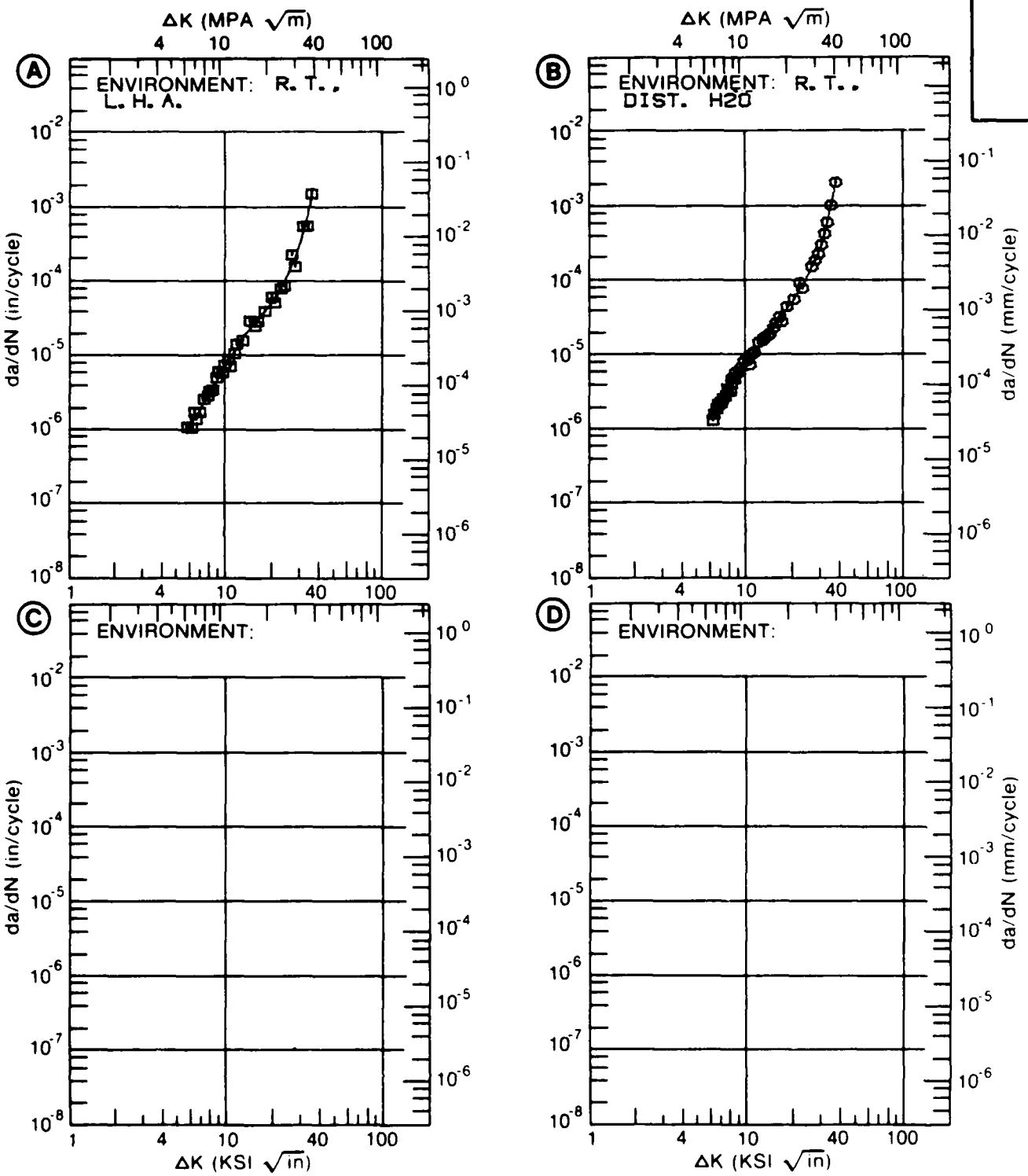


Figure 7.10.3.25

TABLE 7.10.3.26

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.26INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. L.H.A.			
DELTA K MIN	A: 5.67	1.43			
	B:				
	C:				
	D:				
	6.00	1.76			
	7.00	2.97			
	8.00	4.50			
	9.00	6.39			
	10.00	8.71			
	13.00	19.3			
	16.00	39.6			
	20.00	100.			
	25.00	317.			
DELTA K MAX	A: 29.91	989.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 32.37

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 2.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.08
FREQUENCY: 6.00 HZ

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 68.0 KSI
SPECIMEN THK: 0.990"
SPECIMEN WIDTH: 5.990"
REFERENCES:88579

ALUM. ALLOY

2219

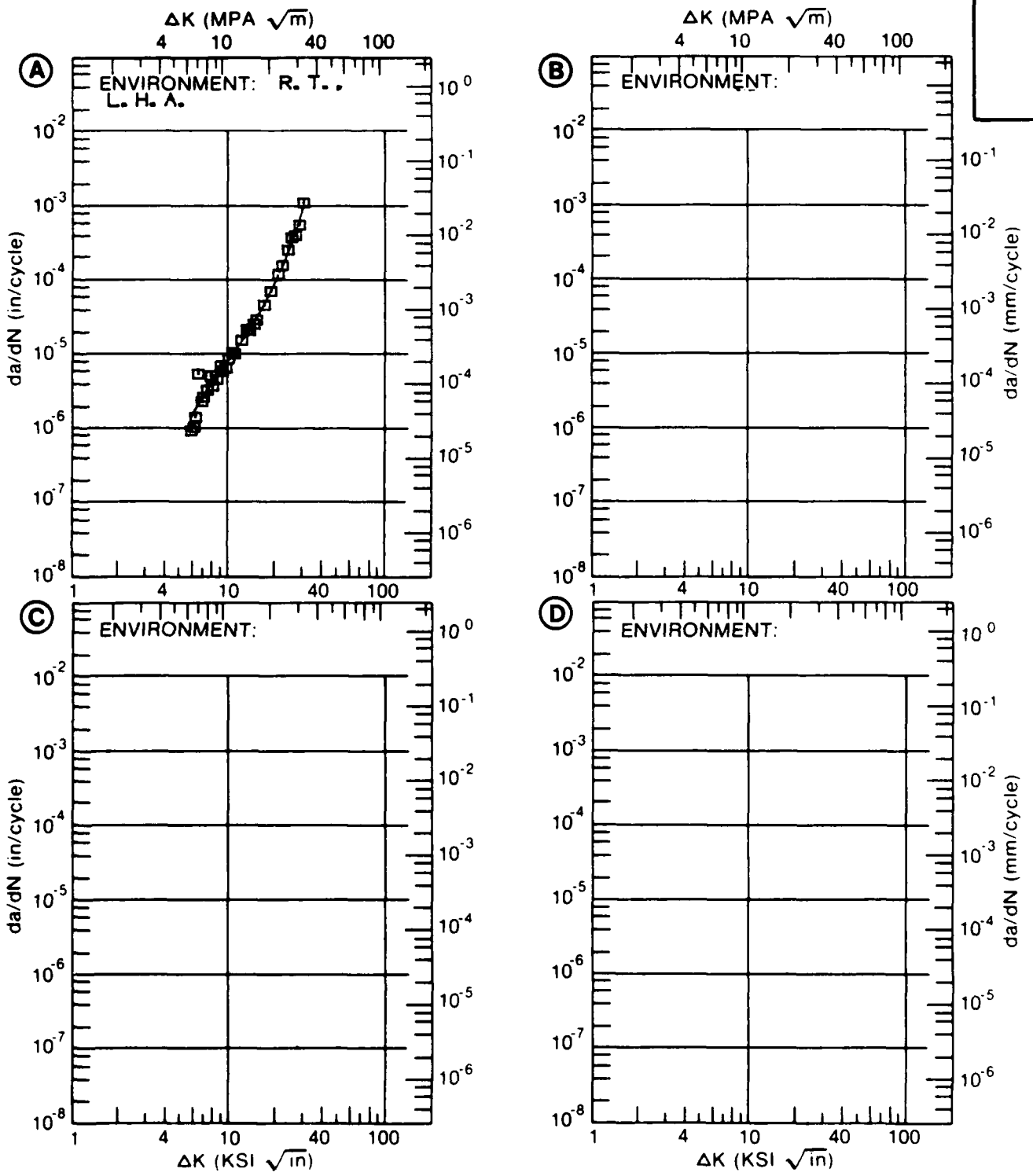


Figure 7.10.3.26

TABLE 7.10.3.27

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.27 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. L.H.A. 6HZ	E= R.T. S.T.W. 1HZ		
DELTA K MIN A:	6.28	1.31			
DELTA K MIN B:	8.43		3.46		
DELTA K MIN C:					
DELTA K MIN D:					
	7.00	1.65			
	8.00	2.25			
	9.00	3.01	4.60		
	10.00	3.95	7.14		
	13.00	7.96	17.6		
	16.00	13.8	30.1		
	20.00	24.4	64.0		
	25.00	67.4	206.		
DELTA K MAX A:	28.98	267.			
DELTA K MAX B:	28.46		386.		
DELTA K MAX C:					
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		32.80	14.62		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	2	1		
	1.25-2.0				
	>2.0				

CONDITION/HT: T851
FORM: 3.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY:

YIELD STRENGTH: 53.0- 54.0 KSI
ULT. STRENGTH: 67.0- 69.0 KSI
SPECIMEN THK: 0.990- 1.000"
SPECIMEN WIDTH: 7.400"
REFERENCES:88579

ALUM. ALLOY

2219

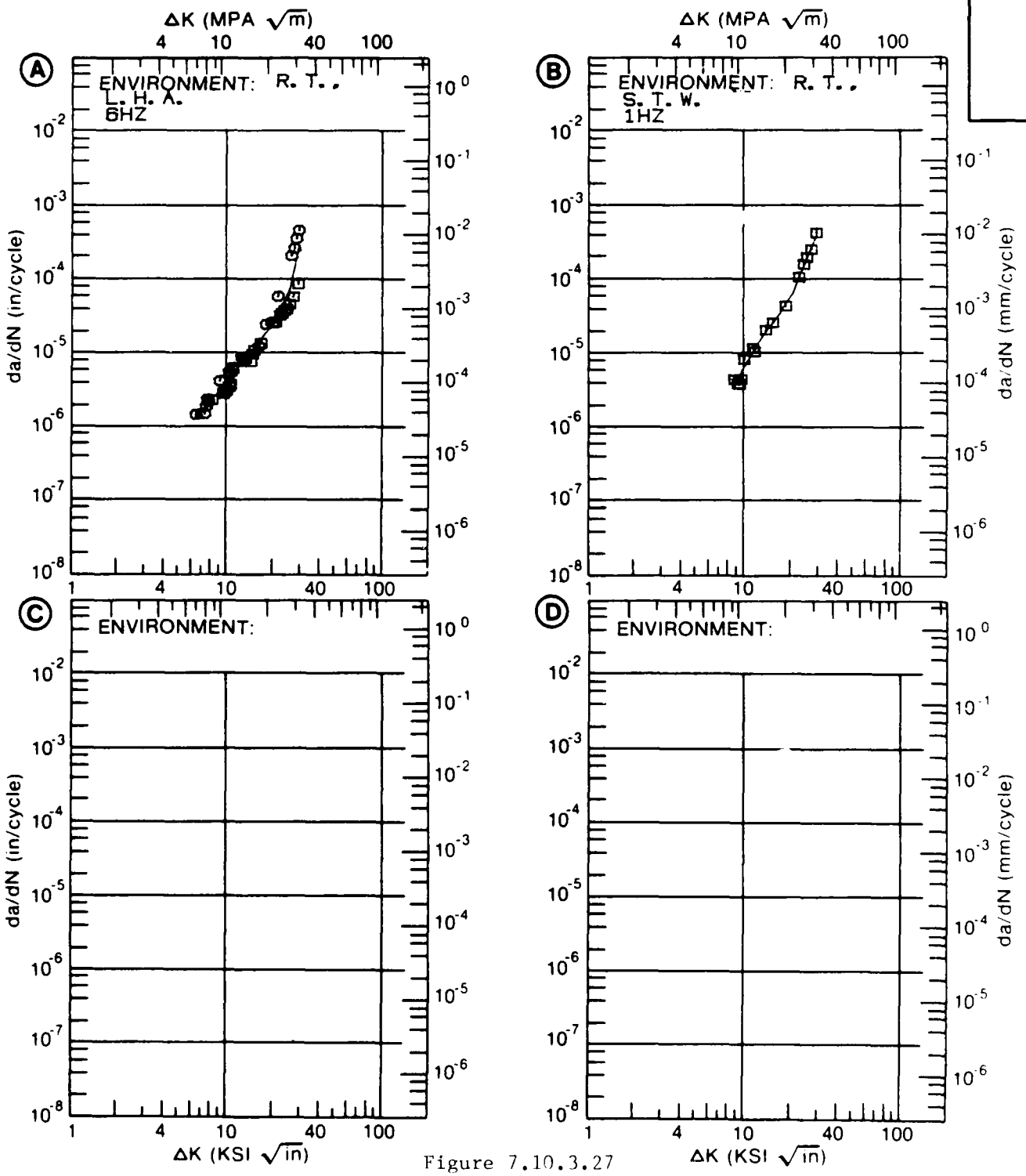


Figure 7.10.3.27

TABLE 7.10.3.28

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.28 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T851
ENVIRONMENT: R.T. , S.T.W.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.08			
DELTA K MIN A:	10.27	13.7			
DELTA K MIN B:					
DELTA K MIN C:					
DELTA K MIN D:					
	13.00	22.3			
DELTA K MAX A:	15.94	45.7			
DELTA K MAX B:					
DELTA K MAX C:					
DELTA K MAX D:					

ROOT MEAN SQUARE PERCENT ERROR		8.57
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T851
FORM: 3.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 1.00 HZ
ENVIRONMENT: R. T., S. T. W.

YIELD STRENGTH: 53.0 KSI
ULT. STRENGTH: 68.0 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 7.400"
REFERENCES: 88579

ALUM. ALLOY

2219

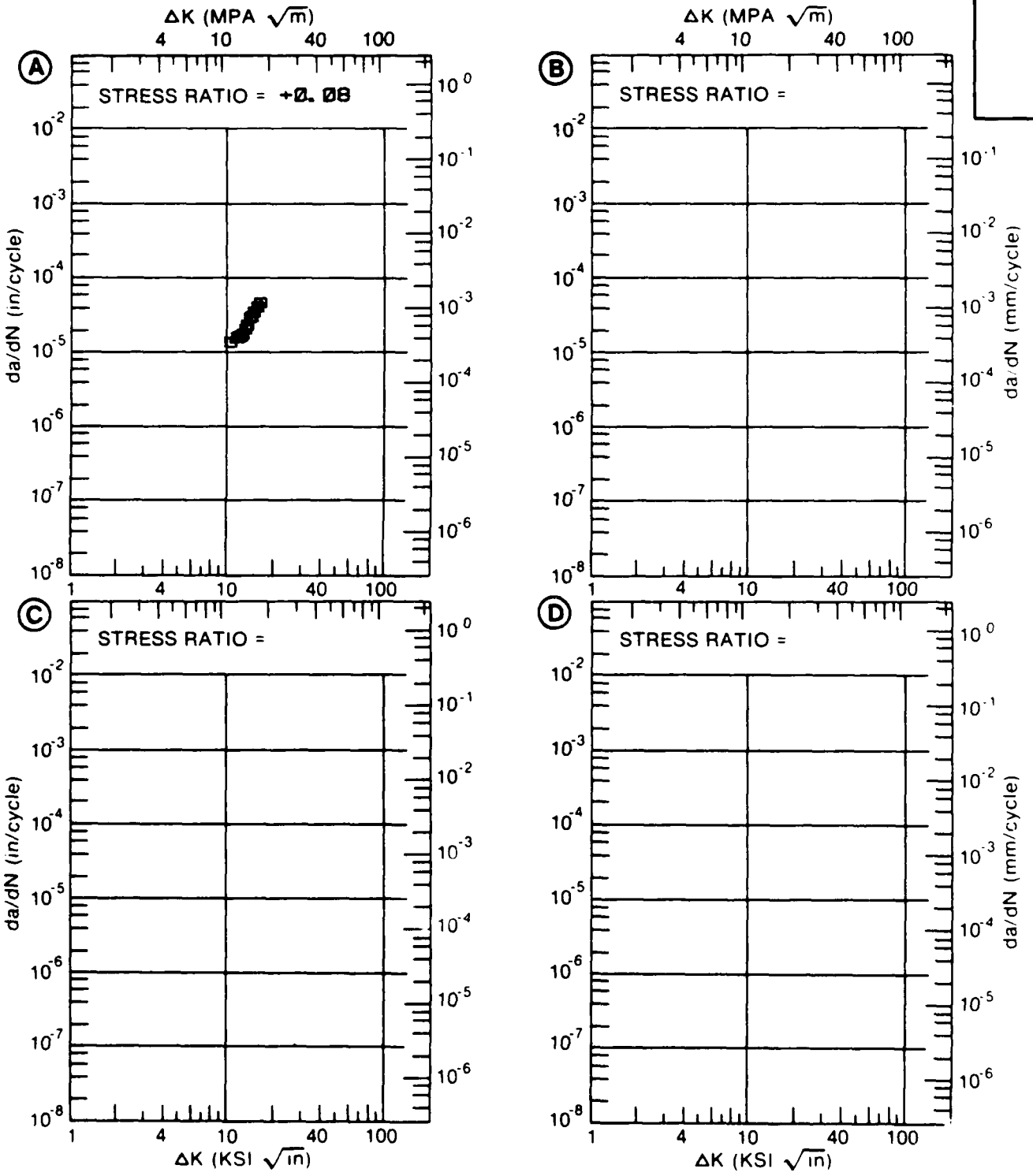


Figure 7.10.3.28

TABLE 7.10.3.29

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.29 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T8511
ENVIRONMENT: R.T. , L.H.A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A R=+0.08	B R=+0.30	C	D
DELTA K MIN	A: 4.70	.155			
	B: 5.64		.629		
	C:				
	D:				
	5.00	.234			
	6.00	.415	.747		
	7.00	.622	1.30		
	8.00	.908	2.32		
	9.00	1.36	3.99		
	10.00	2.12	6.44		
	13.00	9.11	17.6		
	16.00	22.1	26.5		
DELTA K MAX	A: 18.71	23.1			
	B: 17.17		27.2		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		15.28	9.31		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	1		
	1.25-2.0				
	>2.0				

CONDITION/HT: T8511
FORM: 1.75"TH EXTRUDED BAR
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R. T. . L. H. A.

YIELD STRENGTH: 51.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.992- 0.993"
SPECIMEN WIDTH: 6.000"
REFERENCES85837

ALUM. ALLOY

2219

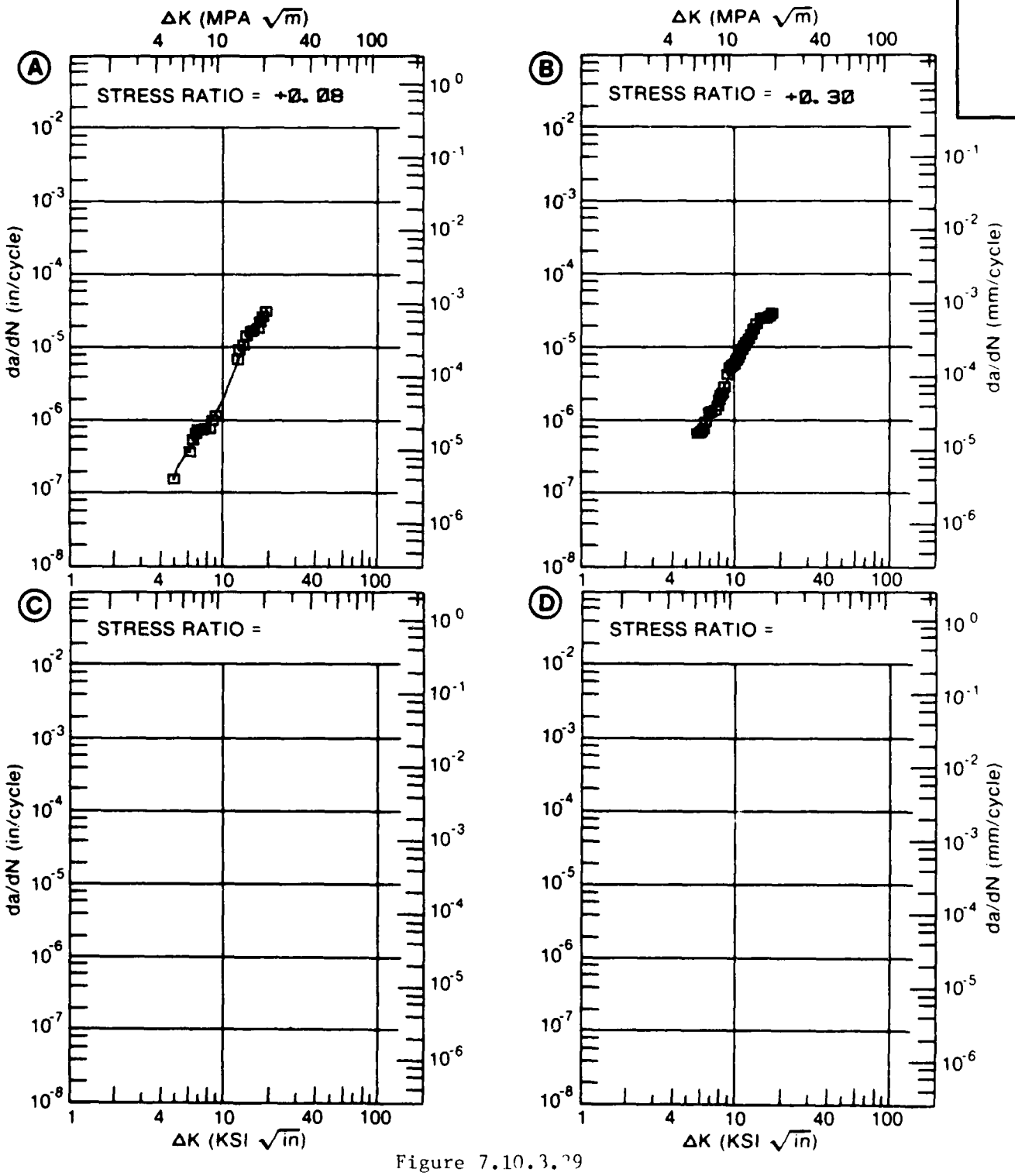


Figure 7.10.3.29

TABLE 7.10.3.30

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.30 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T8511
ENVIRONMENT: R. T. , S. T. W.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		R=+0.08			
DELTA K MIN	A: 7.84	2.76			
	B:				
	C:				
	D:				
	8.00	2.98			
	9.00	4.78			
	10.00	7.39			
	13.00	19.8			
DELTA K MAX	A: 14.17	25.4			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 12.05

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T8511
FORM: 1.75"TH EXTRUDED BAR
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 1.00 HZ
ENVIRONMENT: R. T., S. T. W.

YIELD STRENGTH: 51.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.992"
SPECIMEN WIDTH: 6.000"
REFERENCES85837

ALUM. ALLOY

2219

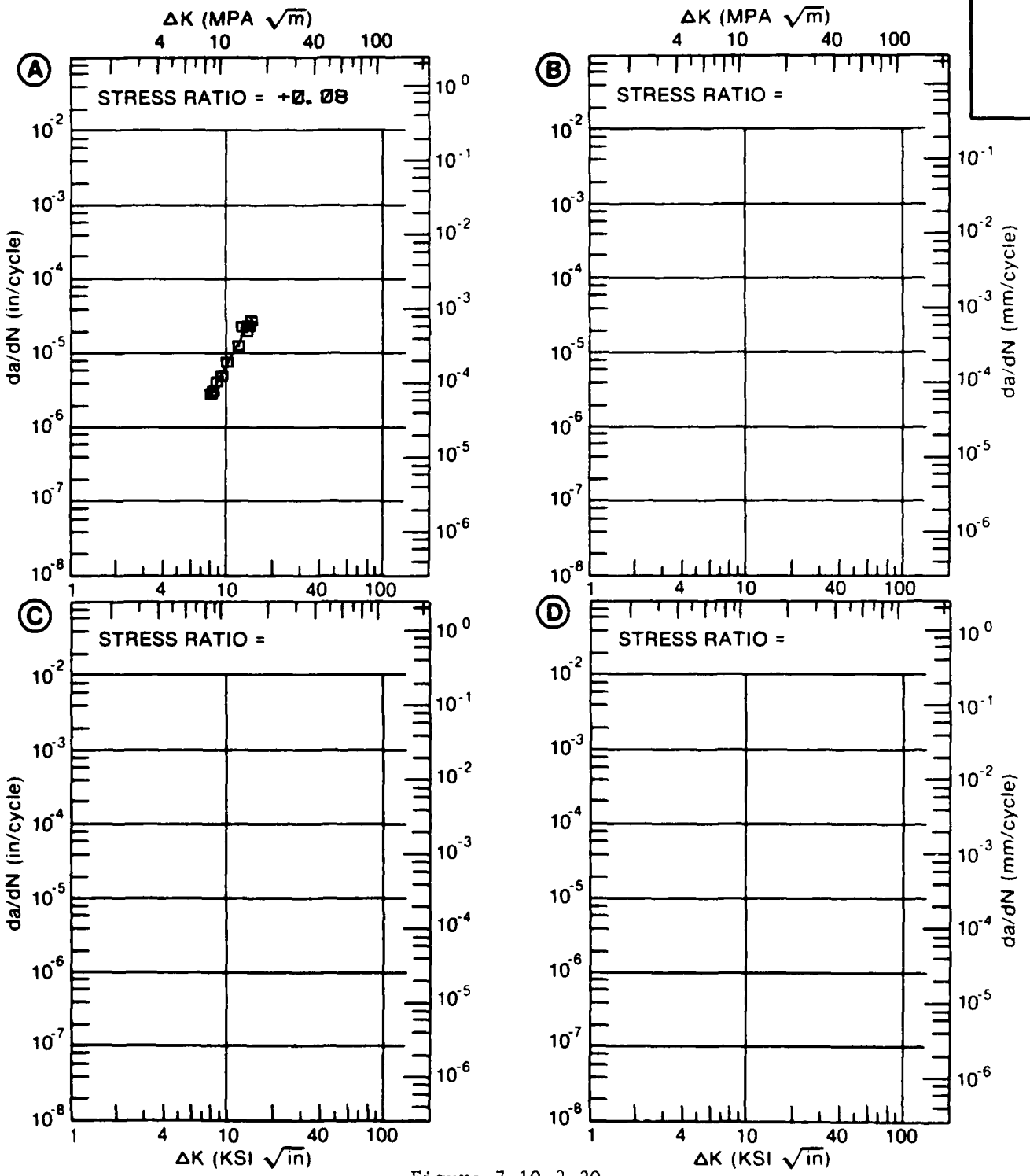


Figure 7.10.3.30

TABLE 7.10.3.31

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.3 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T8511

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. L.H.A. 6HZ	E= R.T. S.T.W. 1HZ		
DELTA K MIN	A:	5.85	.685			
	B:	4.86		.562		
	C:					
	D:					
		5.00		.645		
		6.00	.763	1.42		
		7.00	1.37	2.47		
		8.00	2.14	3.79		
		9.00	3.08	5.40		
		10.00	4.26	7.37		
		13.00	10.5	16.7		
		16.00	26.5			
DELTA K MAX	A:	16.35	29.6			
	B:	15.36		30.6		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			7.85	7.26		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T8511
FORM: 1.75"TH EXTRUDED BAR
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.08
FREQUENCY:

YIELD STRENGTH: 51.0 KSI
ULT. STRENGTH: 66.0 KSI
SPECIMEN THK: 0.990- 0.995"
SPECIMEN WIDTH: 6.000"
REFERENCES:85837

ALUM. ALLOY

2219

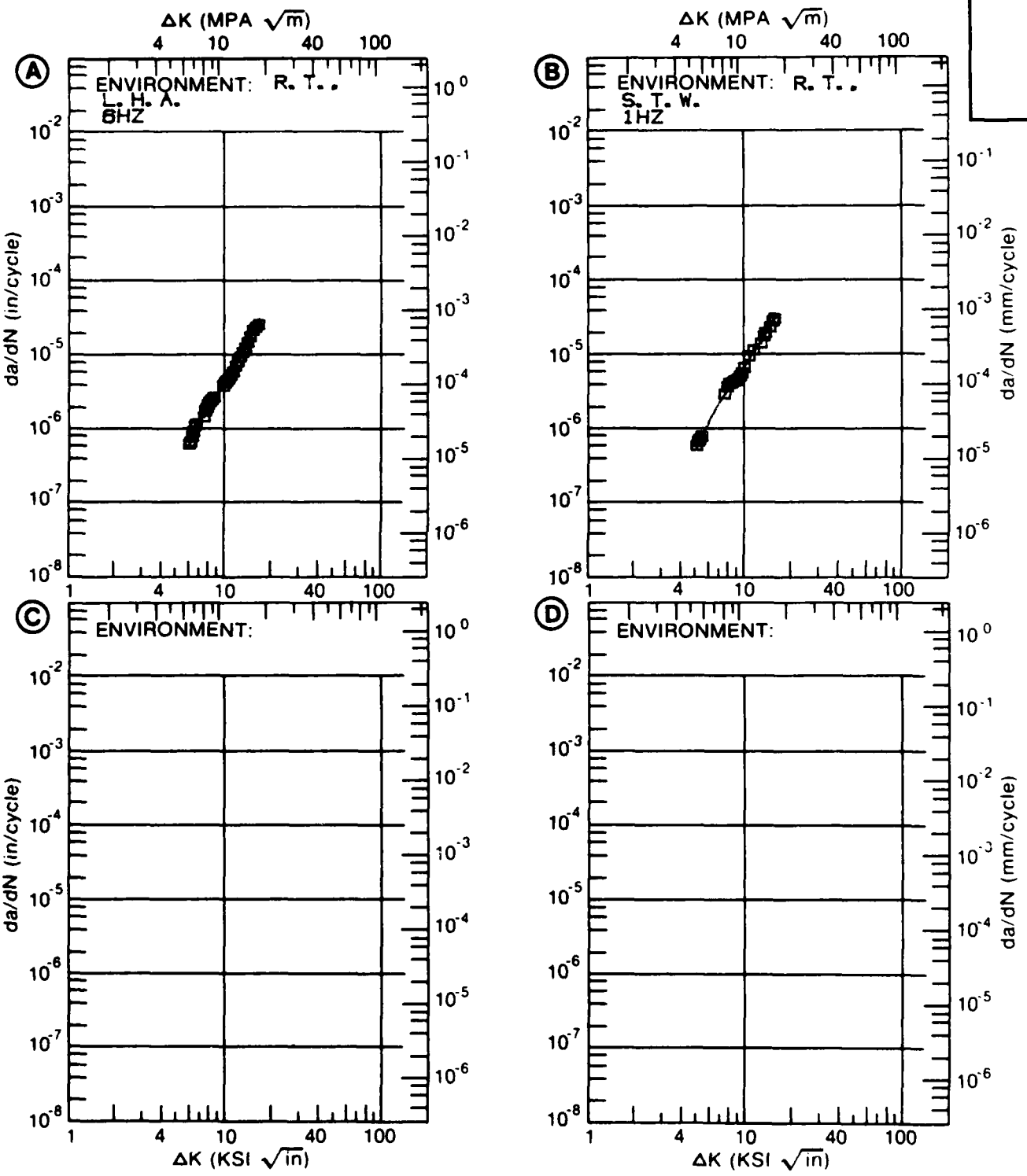


Figure 7.10.3.31

TABLE 7.10.3.32

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.32 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 2219
CONDITION: T852
ENVIRONMENT: R.T. , L.H.A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.08			
DELTA K MIN	A: 6.55	1.29			
	B:				
	C:				
	D:				
	7.00	1.36			
	8.00	1.58			
	9.00	1.90			
	10.00	2.35			
	13.00	5.00			
DELTA K MAX	A: 14.88	8.55			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 18.44

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T852
FORM: 6.00"TH BILLET
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH: 50.0 KSI
ULT. STRENGTH: 65.0 KSI
SPECIMEN THK: 0.997"
SPECIMEN WIDTH: 6.190"
REFERENCES:85837

ALUM. ALLOY

2219

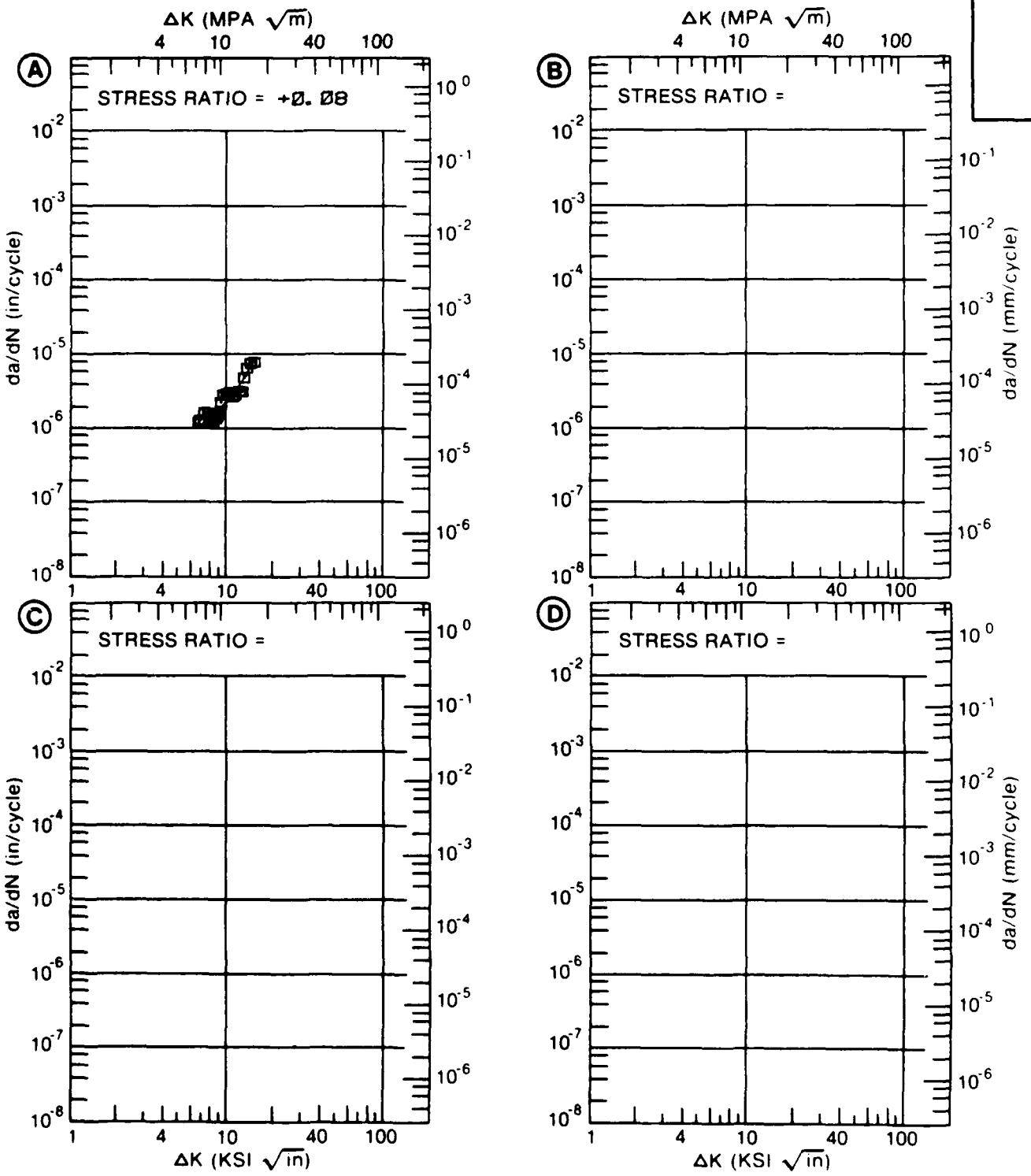


Figure 7.10.3.32

TABLE 7.10.3.33

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.33 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T852

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR, 2-20HZ	E= R.T. S.T.W., 20HZ		
DELTA K MIN	A:	5.73	.518			
	B:	5.20		1.60		
	C:					
	D:					
		6.00	.633	2.38		
		7.00	1.25	3.70		
		8.00	2.22	5.42		
		9.00	3.63	7.58		
		10.00	5.49	10.2		
		13.00	13.3	20.1		
		16.00	21.6	32.2		
		20.00	27.7			
DELTA K MAX	A:	20.09	27.7			
	B:	16.06		32.4		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			24.73	16.63		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T852
FORM: 2.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY:

YIELD STRENGTH: 50.7 KSI
ULT. STRENGTH: 65.0 KSI
SPECIMEN THK: 0.750- 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES:AL001

ALUM. ALLOY

2219

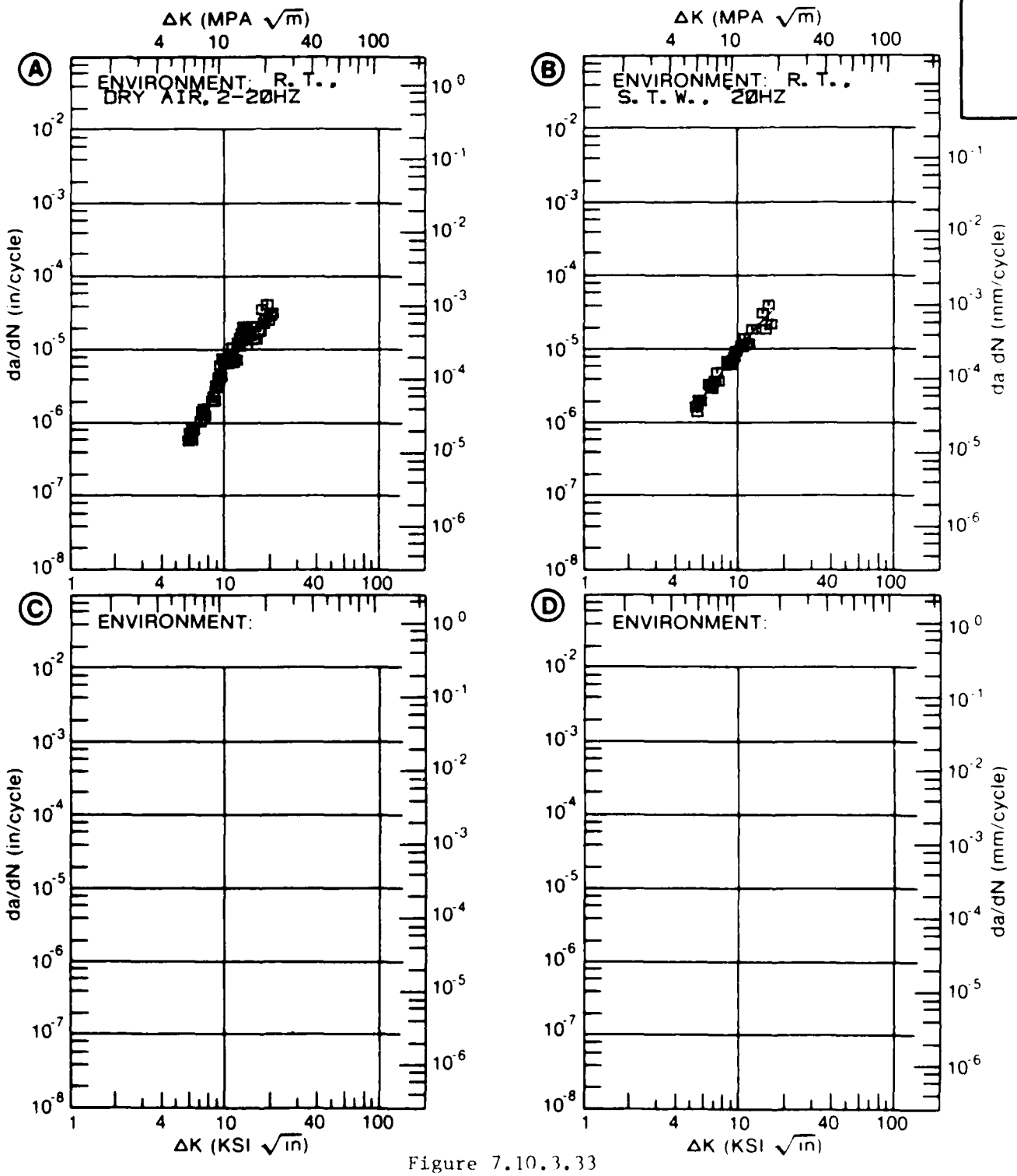


Figure 7.10.3.33

TABLE 7.10.3.34

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.34 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T852

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR	E= R.T. H.H.A.	E= R.T. S.T.W.	
DELTA K MIN	A:	5.72	.560			
	B:	5.75		.963		
	C:	5.70			1.96	
	D:					
		6.00	.762	1.17	2.28	
		7.00	1.75	2.20	3.54	
		8.00	3.10	3.63	5.13	
		9.00	4.84	5.58	7.17	
		10.00	7.08	8.32	9.83	
		13.00	20.8	26.8	24.3	
		16.00	69.7	92.8	59.8	
		20.00	480.		204.	
DELTA K MAX	A:	20.32	568.			
	B:	19.72		500.		
	C:	20.69			253.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			27.82	28.49	27.22	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T852
FORM: 2.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 2.00- 20.00 HZ

YIELD STRENGTH: 50.6 KSI
ULT. STRENGTH: 66.5 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES:AL001

ALUM. ALLOY

2219

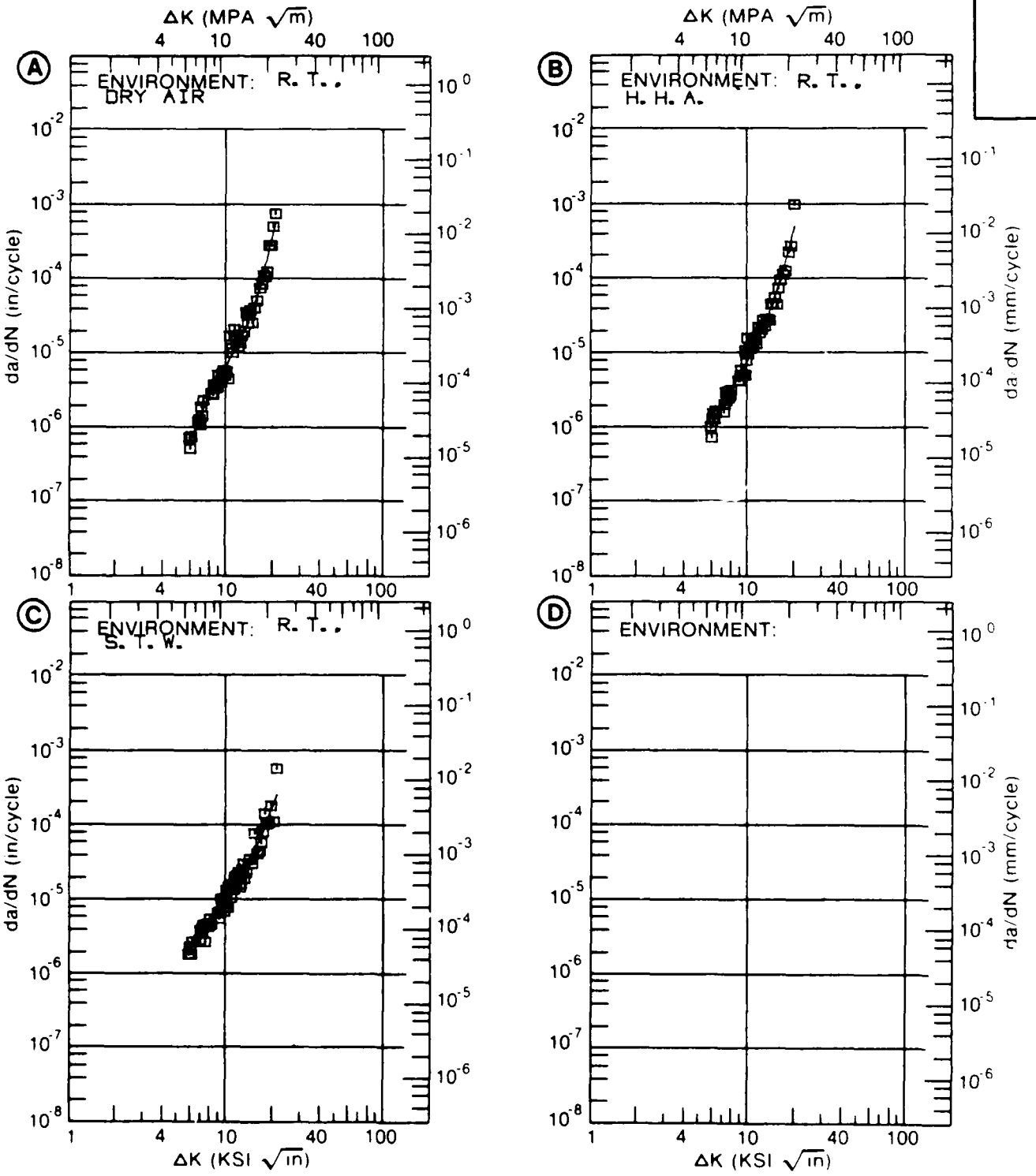


Figure 7.10.3.34

TABLE 7.10.3.35

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.35 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T852

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR	E= R.T. S.T.W.		
DELTA K MIN	A:	5.69	.482			
	B:	5.69		1.34		
	C:					
	D:					
		6.00	.615	1.64		
		7.00	1.08	2.71		
		8.00	1.53	3.89		
		9.00	1.96	5.09		
		10.00	2.38	6.28		
		13.00	4.01	9.87		
DELTA K MAX	A:	14.60	5.51			
	B:	16.00		13.9		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			12.80	16.11		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T852
FORM: 5.50"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 20.00 HZ

YIELD STRENGTH: 49.2 KSI
ULT. STRENGTH: 62.5 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES:AL001

ALUM. ALLOY

2219

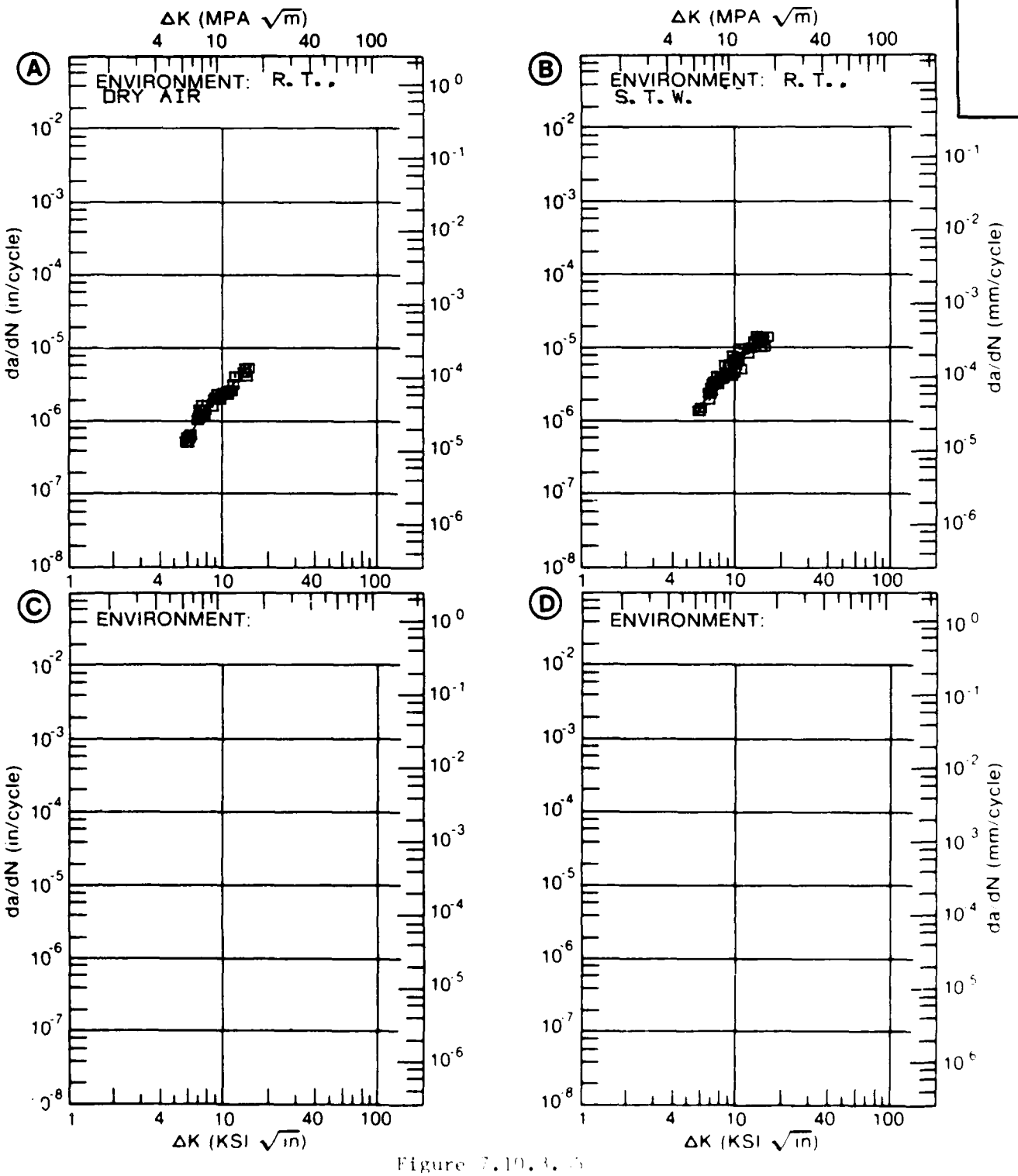


Figure 7.10.3.5

TABLE 7.10.3.36

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.36 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T852

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. DRY AIR, 40HZ	E= R.T. S.T.W., 20HZ		
DELTA K MIN	A: 3.22	.0513			
	B: 9.03		6.82		
	C:				
	D:				
	3.50	.0854			
	4.00	.165			
	5.00	.363			
	6.00	.599			
	7.00	.920			
	8.00	1.43			
	9.00	2.32			
	10.00	3.97	10.3		
	13.00	23.3	32.2		
	16.00	138.			
DELTA K MAX	A: 17.51	250.			
	B: 15.40		53.6		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		29.30	20.39		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T852
FORM: 5.50"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY:

YIELD STRENGTH: 46.4 KSI
ULT. STRENGTH: 61.6 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 2.550"
REFERENCES:AL001

ALUM. ALLOY

2219

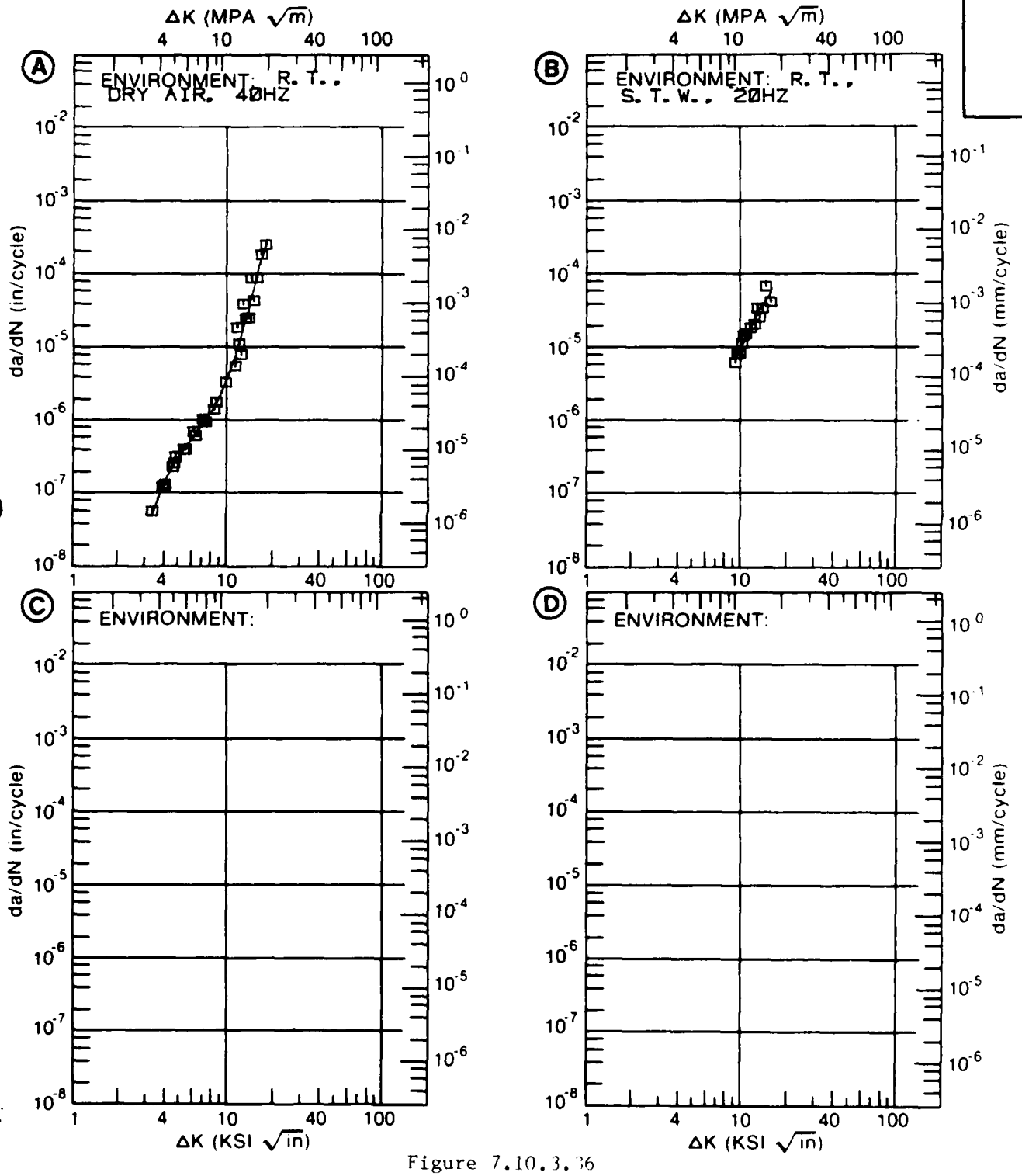


Figure 7.10.3.36

TABLE 7.10.3.37

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.37 INDICATING EFFECT
OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T852

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR	B E= R.T. H.H.A.	C E= R.T. S.T.W.	D
DELTA K MIN	A: 5.69	.708			
	B: 5.75		1.50		
	C: 5.61			2.40	
	D:				
	6.00	.956	1.84	3.15	
	7.00	1.89	3.44	5.25	
	8.00	3.00	5.55	7.74	
	9.00	4.48	8.51	11.1	
	10.00	6.78	13.0	16.5	
	13.00	34.2	56.2	74.1	
	16.00	340.		670.	
DELTA K MAX	A: 16.06	359.			
	B: 15.13		197.		
	C: 16.29			1021.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		30.43	23.20	18.36	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T852
FORM: 5.50"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 2.00- 20.00 HZ

YIELD STRENGTH: 46.4 KSI
ULT. STRENGTH: 61.6 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES:AL001

ALUM. ALLOY

2219

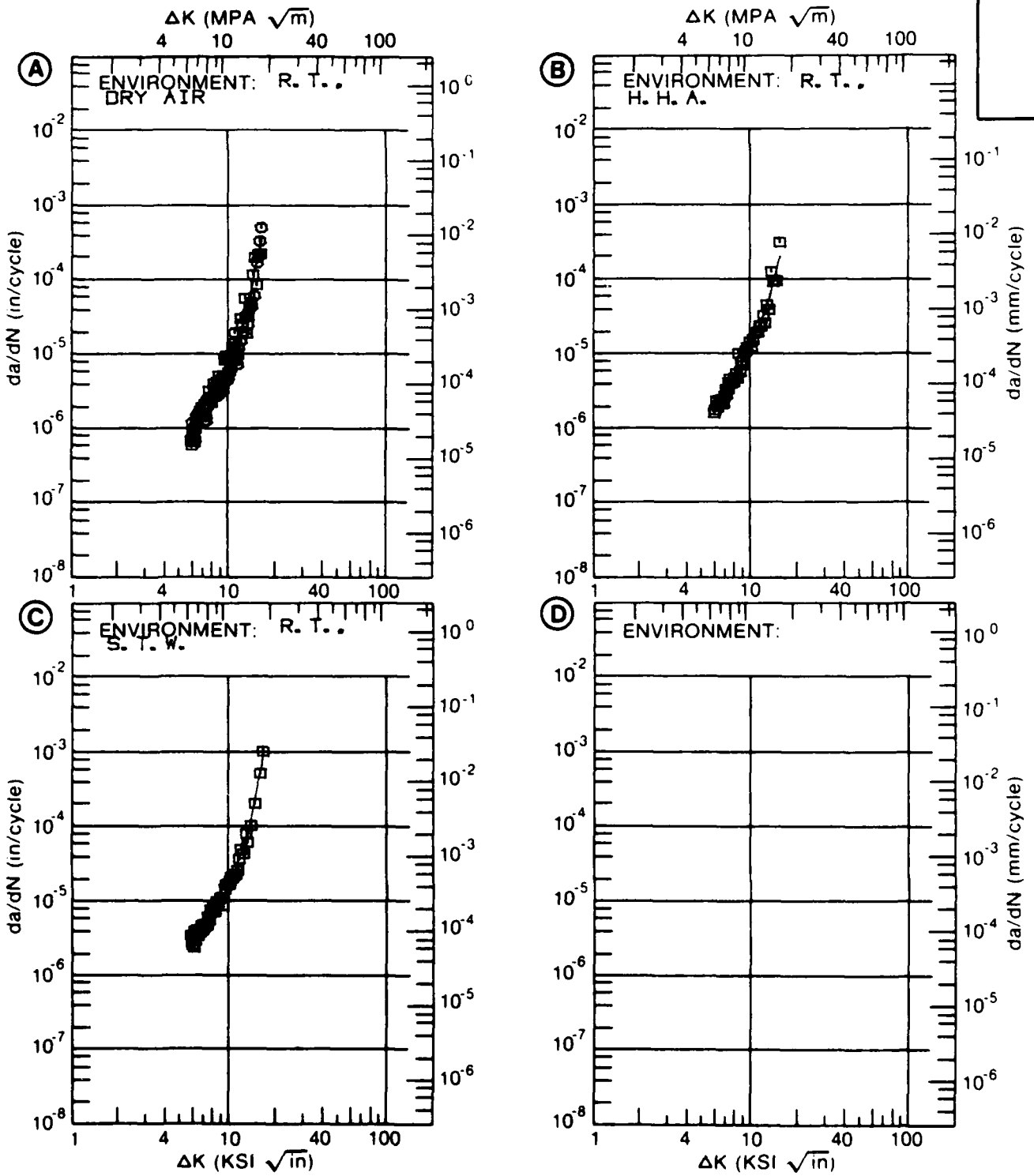


Figure 7.10.3.37

TABLE 7.10.3.38

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.38INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T852

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR	E= R.T. H.H.A.	E= R.T. S.T.W.	
DELTA K MIN	A:	5.73	.915			
	B:	5.75		1.40		
	C:	5.72			2.15	
	D:					
		6.00	1.19	1.88	2.91	
		7.00	2.29	4.19	5.89	
		8.00	3.46	6.71	8.78	
		9.00	4.93	9.56	12.0	
		10.00	7.32	13.5	16.6	
		13.00	41.9	54.7	74.6	
		16.00		477.		
DELTA K MAX	A:	15.83	517.			
	B:	16.06		502.		
	C:	15.97			835.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			30.74	25.21	27.85	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T852
FORM: 5.50"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: S-L
STRESS RATIO: +0.33
FREQUENCY: 2.00- 20.00 HZ

YIELD STRENGTH: 47.2 KSI
ULT. STRENGTH: 62.3 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH:
REFERENCES:AL001

ALUM. ALLOY

2219

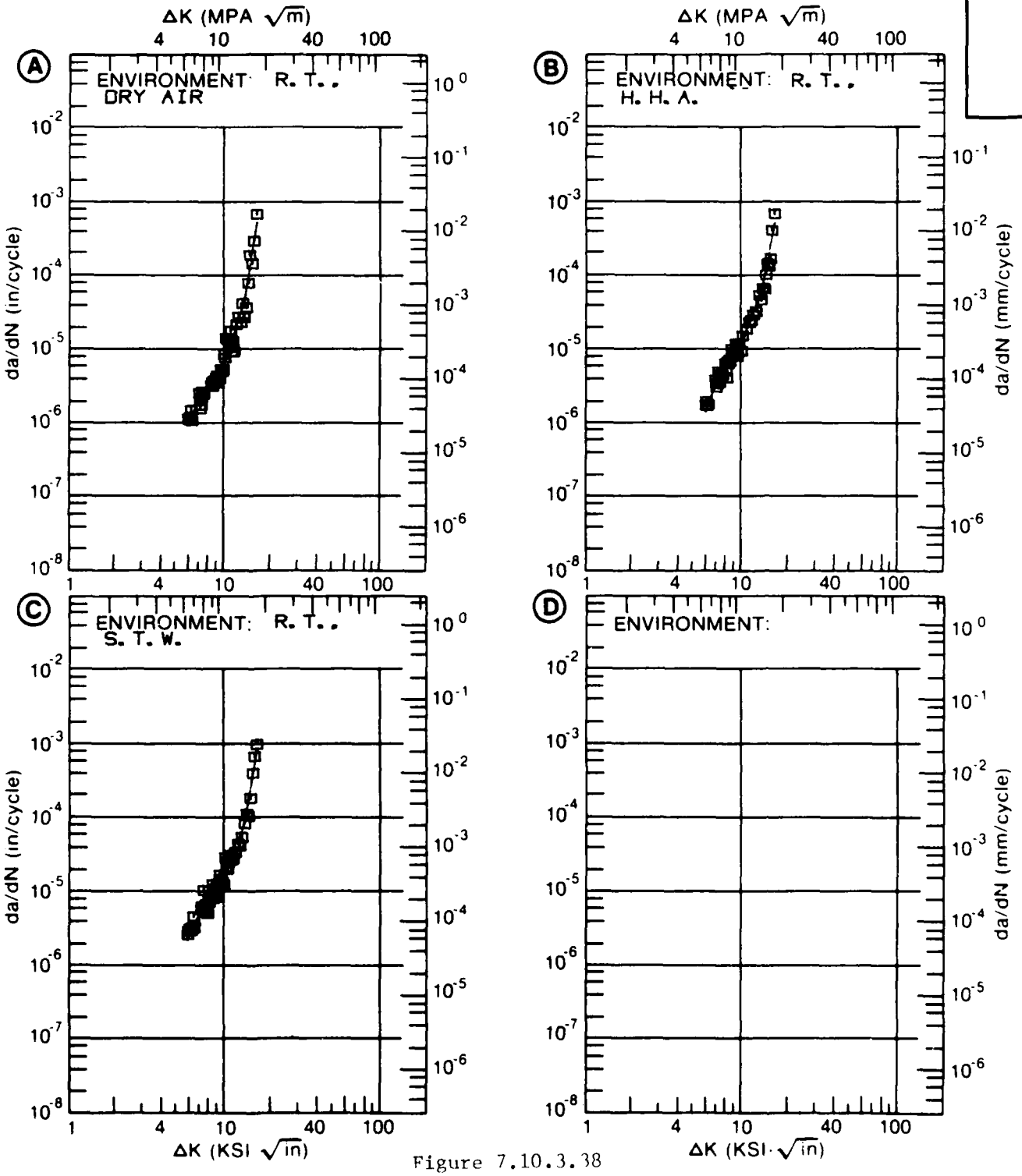


Figure 7.10.3.38

TABLE 7.10.3.39

SUSTAINED CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.10.3.39 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2219
CONDITION: T37

K MAX (KSI*IN**1/2)			DA/DT (10**-6 IN/HOUR)			
			A	B	C	D
			E- WET 3X/DAY WITH 3 5% NACL			
K MAX MIN	A:	20.00	411.			
	B:					
	C:					
	D:					
		25.00	661.			
		30.00	917.			
		35.00	1171.			
		40.00	1423.			
		50.00	1933.			
		60.00	2474.			
		70.00	3075.			
K MAX MAX	A:	80.00	3764.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 2.84

CONDITION/HT: T37
FORM: 1.5"TH PLATE
SPECIMEN TYPE: DCB
ORIENTATION: S-L
YIELD STRENGTH:
ULT. STRENGTH:

SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 5.000"
CRACK LENGTH (A_O):
K_{ISCC}:
REFERENCES: 78313

ALUM. ALLOY

2218

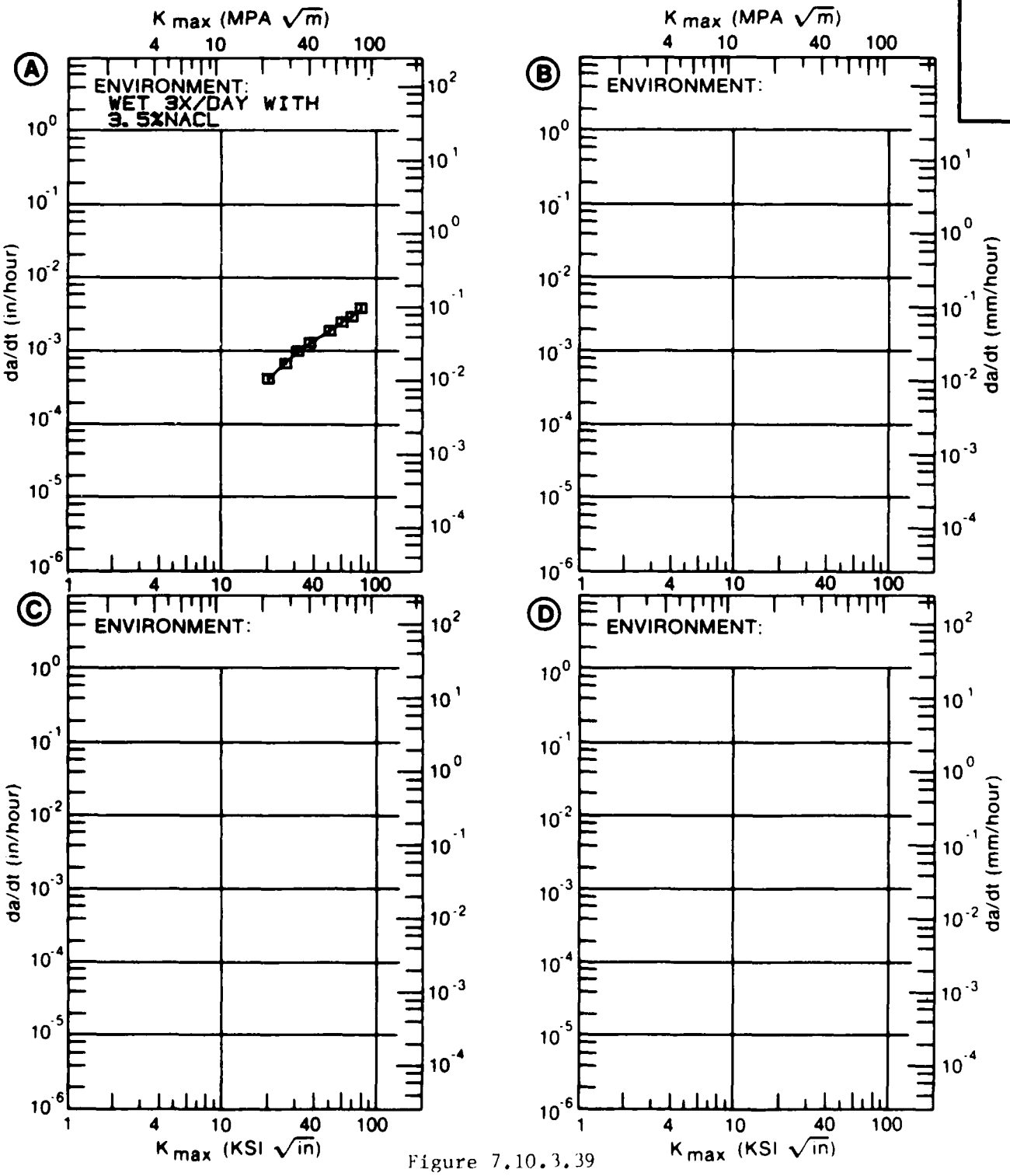


Figure 7.10.3.39

Table 7.10.3.40

ALUMINUM 2219 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	SPECIMEN WIDTH (IN) W	THICK (IN) B	DESIGN (*=SQ)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T37	P	2.00	R.T.	S-L	42.1	INDUSTRIAL ATM	2.000	1.000	CT	----	27.10	13.00			----	1973	86688
T37	P	2.00	R.T.	S-L	42.1	SALT-DICHRO-MATE-ACETATE	2.000	1.000	CT	----	27.10	9.00			----	1973	86688
T37	P	2.00	R.T.	S-L	42.1	SEACOAST ATM	2.000	1.000	CT	----	27.10	13.00			----	1973	86688
T851	P	1.75	R.T.	L-T	50.0	F.C.S.	5.500	1.000	DCB	----	32.00	30.50			75240	1976	RI006
		1.75			50.0		5.500	1.000	DCB	----	32.00	27.50			75240	1976	RI006
													29.0/	2.1			
T851	P	1.75	R.T.	L-T	50.0	S.C.S.	5.500	1.000	DCB	----	32.00	27.00			75240	1976	RI006
		1.75			50.0		5.500	1.000	DCB	----	32.00	37.00			59100	1976	RI006
		1.75			50.0		5.500	1.000	DCB	----	32.00	39.00			61680	1976	RI006
													34.3/	6.4			
T851	P	1.75	R.T.	L-T	50.0	S.T.W.	5.500	1.000	DCB	----	32.00	33.00			51720	1976	RI006
		1.75			50.0		5.500	1.000	DCB	----	32.00	36.00			83520	1976	RI006
													34.5/	2.1			
T851	P	1.75	R.T.	T-L	48.0	S.T.W.	5.500	1.000	DCB	----	30.00	27.00			51720	1976	RI006
T851	P	1.75	R.T.	S-L	----	S.T.W.	5.500	1.000	DCB	----	30.00	29.50			83520	1976	RI006
		1.75			----		5.500	1.000	DCB	----	30.00	29.50			51720	1976	RI006
													29.5/	0.0			
T851	P	1.00	R.T.	S-L	58.0	3.5 PCT NACL	4.000	1.000	DCB	----	27.00	18.00			----	1968	84331
T87	P	2.00	R.T.	S-L	57.7	INDUSTRIAL ATM	2.000	1.000	CT	----	19.60	19.00			----	1973	86688
T87	P	2.00	R.T.	S-L	57.7	SALT-DICHRO-MATE-ACETATE	2.000	1.000	CT	----	19.60	19.00			----	1973	86688
T87	P	2.00	R.T.	S-L	57.7	SEACOAST ATM	2.000	1.000	CT	----	19.60	19.00			----	1973	86688

TABLE 7.11.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.11.3.1 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 2324
CONDITION: T39
ENVIRONMENT: R.T., H.H.A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.33			
DELTA K MIN	A: 2.65	.0344			
	B:				
	C:				
	D:				
	3.00	.0994			
	3.50	.178			
	4.00	.222			
	5.00	.462			
	6.00	1.30			
	7.00	2.72			
	8.00	4.66			
	9.00	7.09			
	10.00	10.0			
	13.00	23.2			
DELTA K MAX	A: 14.47	33.7			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 15.79

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	1
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T39
FORM: 1.25"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: L-T
FREQUENCY: 25.00
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.249- 0.251"
SPECIMEN WIDTH: 2.500- 2.547"
REFERENCES:AL011

ALUM. ALLOY
2324

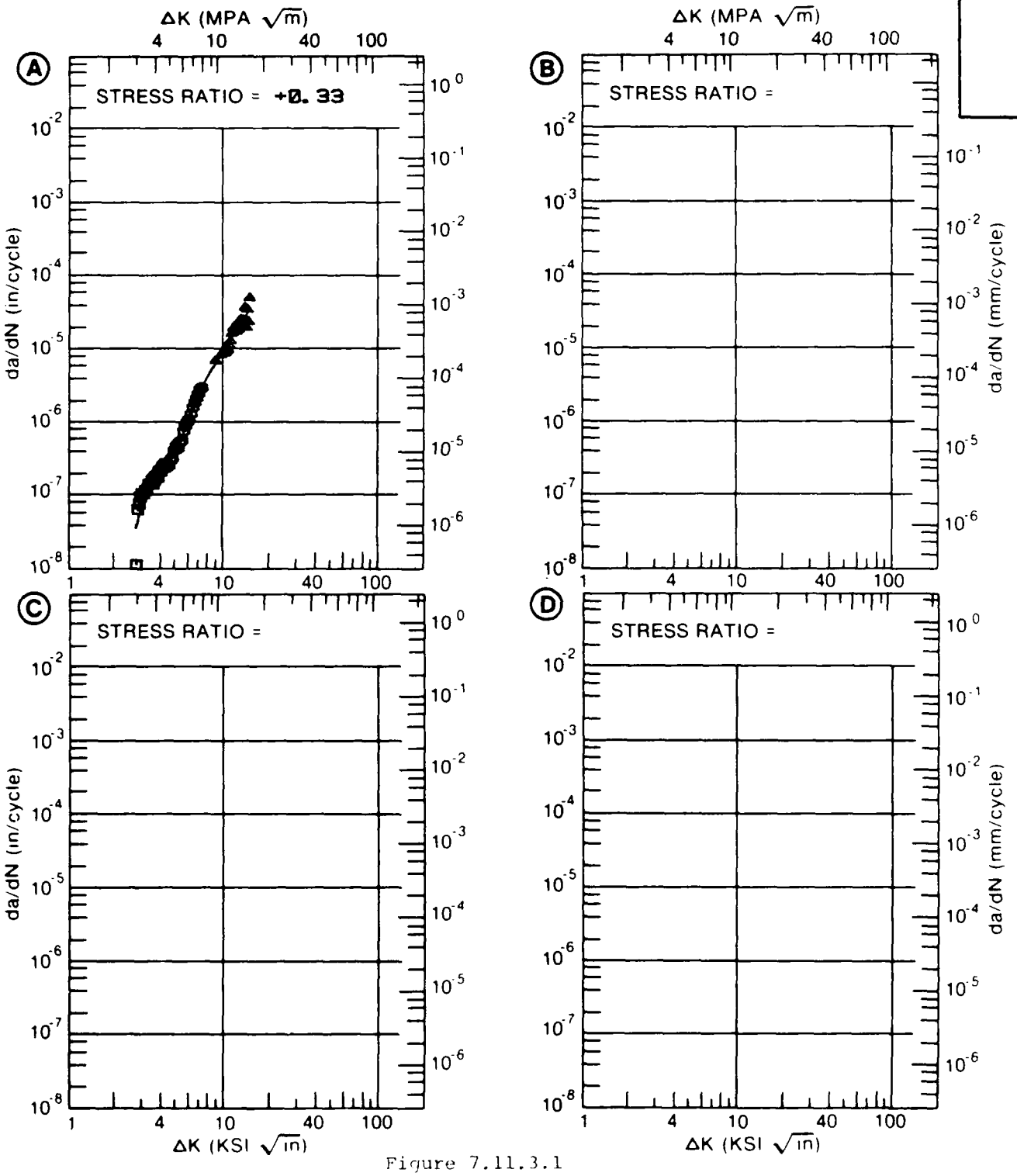


Figure 7.11.3.1

Table 7.12.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2419 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN)) (NUMBER OF SPECIMENS)		
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T851	42.6 ± 5.3 (23)	37.2 ± 4.2 (52)	24.8 ± 2.5 (3)

Table 7.12.2.1

ALUMINUM 2419 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.55	R.T.	L-T	50.1	6.017	2.506	CT	3.129	2.40	49.10			1978	MPC01
		2.55			50.1	5.959	2.583	CT	3.158	1.98	44.60			1978	MPC01
		2.90			50.5	6.057	2.945	CT	3.089	2.11	46.50			1978	MPC01
		2.90			50.7	6.053	2.900	CT	3.087	1.84	43.90			1978	MPC01
		2.90			50.8	6.041	2.897	CT	3.081	1.98	45.50			1978	MPC01
		2.90			51.1	6.052	2.905	CT	3.026	1.44	39.20			1978	MPC01
		2.90			51.4	6.020	2.947	CT	3.070	1.60	41.30			1978	MPC01
		2.00			51.7	4.000	2.000	CT	----	1.17	35.30			1975	UD004
		2.00			51.7	4.000	2.000	CT	----	1.09	34.20			1975	UD004
		2.00			51.7	4.000	2.000	CT	----	1.14	34.90			1975	UD004
		2.55			52.1	3.026	1.501	CT	1.513	1.29	38.00			1978	MPC01
		2.90			52.1	5.962	2.934	CT	3.100	2.30	50.20			1978	MPC01
		2.90			52.2	5.967	2.937	CT	3.103	2.16	48.90			1978	MPC01
		2.90			52.4	5.033	2.375	CT	2.567	1.68	43.00			1978	MPC01
		2.50			52.7	5.998	2.519	CT	3.059	1.64	43.00			1978	MPC01
		2.50			53.0	6.059	2.558	CT	3.090	2.50	53.00			1978	MPC01
		3.00			53.2	4.034	1.999	CT	2.017	1.36	39.70			1978	MPC01
		3.00			53.2	4.035	1.999	CT	2.058	1.44	40.70			1978	MPC01
		2.90			53.4	4.951	2.374	CT	2.624	1.84	46.40			1978	MPC01
		2.90			53.8	4.992	1.750	CT	2.596	1.15	36.90			1978	MPC01
		2.90			54.0	6.025	2.933	CT	3.193	1.98	48.50			1978	MPC01
		2.90			54.9	5.019	1.750	CT	2.610	1.26	39.00			1978	MPC01
		2.90			55.8	5.006	1.750	CT	2.603	1.19	38.60	42.6/	5.3	1978	MPC01
T851	P	2.00	200	L-T	47.6	4.000	2.000	CT	----	1.19	32.90			1975	UD004
		2.00			47.6	4.000	2.000	CT	----	1.11	31.70			1975	UD004
		2.00			47.6	4.000	2.000	CT	----	1.17	32.60	32.4/	0.6	1975	UD004
T851	P	2.00	300	L-T	43.8	4.000	2.000	CT	----	1.33	31.90			1975	UD004
		2.00			43.8	4.000	2.000	CT	----	1.35	32.20			1975	UD004
		2.00			43.8	4.000	2.000	CT	----	1.32	31.80	32.0/	0.2	1975	UD004
T851	P	1.75	R.T.	T-L	46.8	5.033	1.761	CT	2.567	1.48	36.30			1978	MPC01
		1.75			47.0	5.012	1.758	CT	2.556	1.40	35.70			1978	MPC01
		1.75			47.0	2.991	1.399	CT	1.585	1.19	32.80			1978	MPC01
		1.75			47.2	4.994	1.762	CT	2.597	1.52	37.10			1978	MPC01
		1.75			47.4	3.019	1.397	CT	1.570	1.29	34.20			1978	MPC01
		1.75			47.4	4.994	1.757	CT	2.597	1.52	37.10			1978	MPC01
		1.75			47.4	4.985	1.761	CT	2.592	1.52	37.00			1978	MPC01

Table 7.12.2.1 (Con't)

ALUMINUM 2419 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	1.75	R.T.	T-L	47.6	5.004	1.762	CT	2.602	1.60	38.10			1978	MPC01
		1.75			47.6	2.994	1.397	CT	1.587	1.29	34.70			1978	MPC01
		1.75			47.6	4.987	1.762	CT	2.593	1.60	38.20			1978	MPC01
		1.75			47.7	2.995	1.398	CT	1.587	1.12	32.10			1978	MPC01
		1.75			47.7	4.975	1.759	CT	2.587	1.36	35.70			1978	MPC01
		2.55			49.0	4.998	2.401	CT	2.649	2.11	45.30			1978	MPC01
		1.75			49.0	2.981	1.402	CT	1.550	1.29	35.30			1978	MPC01
		2.90			49.2	6.000	2.951	CT	3.180	1.84	42.40			1978	MPC01
		2.90			49.4	6.028	2.900	CT	3.195	1.48	38.20			1978	MPC01
		2.90			49.4	6.019	2.896	CT	3.130	2.20	46.50			1978	MPC01
		2.00			49.7	2.996	1.402	CT	1.558	0.99	31.80			1978	MPC01
		2.90			49.9	4.982	2.374	CT	2.690	1.60	40.40			1978	MPC01
		2.90			50.1	6.000	2.940	CT	3.180	1.84	43.30			1978	MPC01
		2.55			50.3	5.004	2.401	CT	2.652	1.68	41.50			1978	MPC01
		2.90			50.5	6.014	2.912	CT	3.067	1.08	33.70			1978	MPC01
		2.90			50.7	5.051	1.747	CT	2.576	1.56	40.30			1978	MPC01
		2.90			50.9	6.047	2.931	CT	3.205	1.56	40.40			1978	MPC01
		2.90			51.0	5.946	2.937	CT	3.092	1.22	36.10			1978	MPC01
		2.90			51.0	4.989	1.747	CT	2.594	1.72	42.40			1978	MPC01
		2.55			51.1	3.013	1.500	CT	1.568	1.15	34.80			1978	MPC01
		2.90			51.1	4.989	2.375	CT	2.644	1.36	38.00			1978	MPC01
		3.00			51.2	4.026	1.996	CT	2.053	0.78	29.10			1978	MPC01
		2.50			51.2	6.049	2.511	CT	3.085	1.68	42.30			1978	MPC01
		3.00			51.2	4.016	1.999	CT	2.048	0.78	29.10			1978	MPC01
		2.90			51.4	5.043	1.746	CT	2.572	1.48	40.00			1978	MPC01
		2.50			51.4	5.992	2.534	CT	3.166	1.44	39.40			1978	MPC01
		3.00			51.6	3.022	1.403	CT	1.541	1.22	36.50			1978	MPC01
		2.90			52.1	5.029	1.747	CT	2.565	1.72	43.40			1978	MPC01
		3.00			52.3	3.983	1.999	CT	2.071	1.08	34.90			1978	MPC01
		3.00			52.3	3.979	1.999	CT	2.069	1.19	36.50			1978	MPC01
		2.55			52.3	5.968	2.501	CT	3.163	1.12	35.10			1978	MPC01
		2.00			52.5	4.000	2.000	CT	----	0.85	30.60			1975	UD004
		2.00			52.5	4.000	2.000	CT	----	0.89	31.30			1975	UD004
		2.90			52.5	5.026	1.746	CT	2.563	1.68	43.10			1978	MPC01
		2.00			52.5	4.000	2.000	CT	----	0.95	32.30			1975	UD004
		2.90			52.6	5.051	1.748	CT	2.576	1.40	39.60			1978	MPC01
		2.90			52.8	4.983	1.749	CT	2.641	1.12	35.90			1978	MPC01
		2.90			52.8	5.048	1.750	CT	2.625	0.99	33.40			1978	MPC01
		2.55			52.9	5.973	2.461	CT	3.046	1.19	36.60			1978	MPC01

Table 7.12.2.1 (Con't)

ALUMINUM 2419 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T851	P	2.90	R.T.	T-L	53.5	4.998	1.750	CT	2.649	1.08	35.80			1978	MPC01
		2.90			53.6	5.985	2.937	CT	3.172	1.80	46.00			1978	MPC01
		2.90			53.6	5.053	1.750	CT	2.577	1.05	35.00			1978	MPC01
		2.90			53.7	4.977	2.374	CT	2.638	1.26	38.60			1978	MPC01
		2.55			53.9	3.020	1.498	CT	1.510	0.87	32.10			1978	MPC01
		2.90			54.6	5.029	1.747	CT	2.565	1.36	40.70	37.2/	4.2	1978	MPC01
T851	P	2.00	200	T-L	47.1	4.000	2.000	CT	----	0.97	29.30			1975	UD004
		2.00			47.1	4.000	2.000	CT	----	0.94	28.90			1975	UD004
		2.00			47.1	4.000	2.000	CT	----	0.90	28.30	28.8/	0.5	1975	UD004
T851	P	2.00	300	T-L	43.2	4.000	2.000	CT	----	1.12	28.90			1975	UD004
		2.00			43.2	4.000	2.000	CT	----	1.09	28.50	28.7/	0.3	1975	UD004
T851	P	2.00	R.T.	S-T	51.7	4.000	2.000	CT	----	0.50	23.20			1975	UD004
		2.00			51.7	4.000	2.000	CT	----	0.49	22.90			1975	UD004
		2.00			51.7	4.000	2.000	CT	----	0.49	22.90			1975	UD004
		2.90			52.4	2.006	1.001	CT	1.023	0.52	24.20			1978	MPC01
		2.90			53.2	1.981	1.001	CT	1.030	0.48	23.80			1978	MPC01
		2.90			54.4	1.994	1.001	CT	1.037	0.60	26.80	24.0/	1.5	1978	MPC01
T851	P	3.00	R.T.	S-L	50.4	1.989	1.000	CT	1.034	0.48	22.50			1978	MPC01
		3.00			50.4	2.018	0.999	CT	1.029	0.57	24.40			1978	MPC01
		3.00			51.6	1.994	1.000	CT	0.997	0.70	27.40	24.8/	2.5	1978	MPC01

TABLE 7.12.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.12.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2419
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A: 6.26	1.28			
	B:				
	C:				
	D:				
	7.00	2.07			
	8.00	3.01			
	9.00	4.35			
	10.00	6.30			
	13.00	14.7			
	16.00	24.9			
	20.00	53.9			
DELTA K MAX	A: 20.00	53.9			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 18.62

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 2.00"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 30.00 HZ

YIELD STRENGTH: 51.7 KSI
ULT. STRENGTH: 66.9 KSI
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 1.850"
REFERENCES:UD004

ALUM. ALLOY

2419

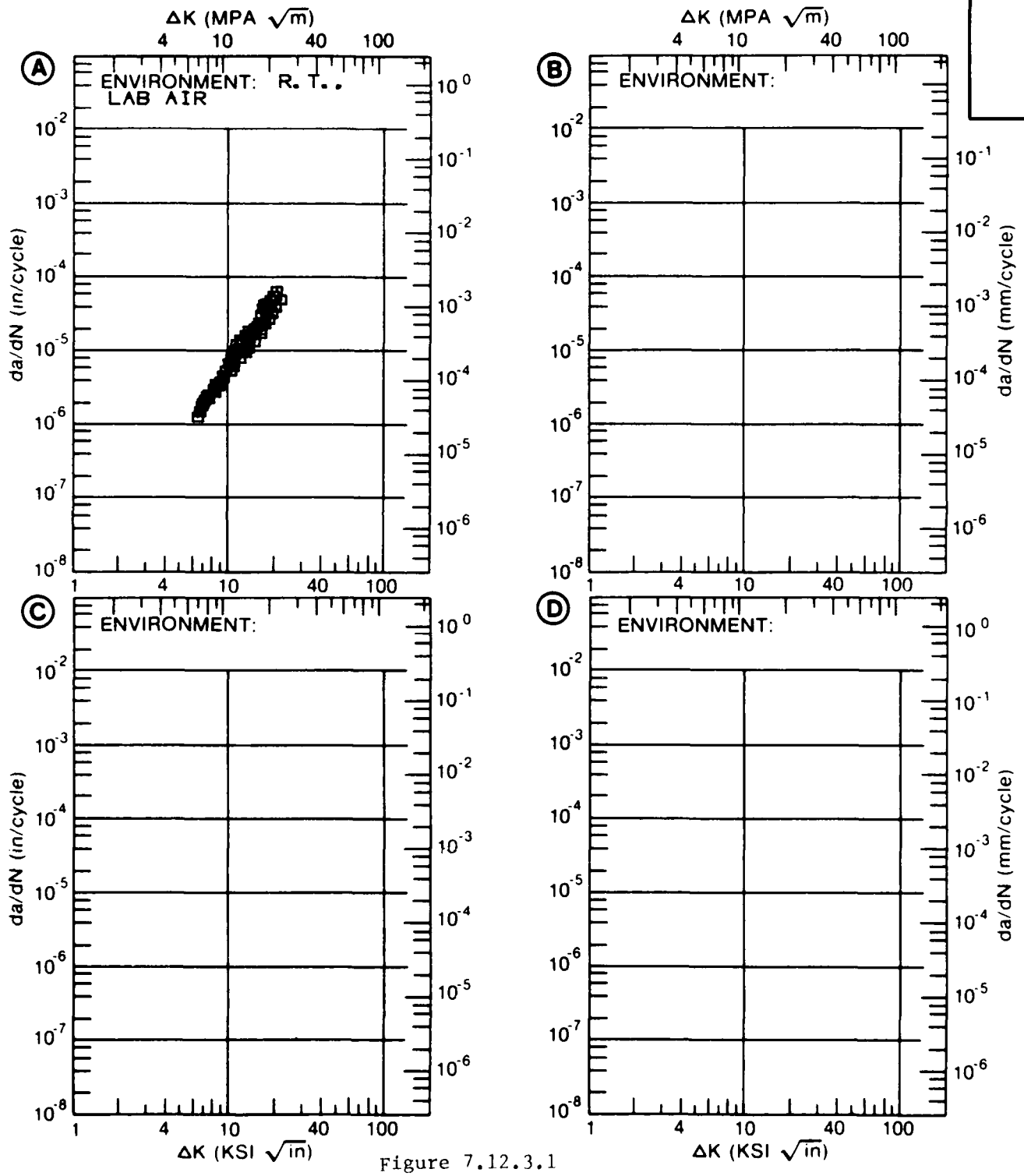


Figure 7.12.3.1

TABLE 7.12.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.12.3.2 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2419
CONDITION: T851

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A: 6.39	.906			
	B:				
	C:				
	D:				
	7.00	1.97			
	8.00	2.68			
	9.00	3.94			
	10.00	5.59			
	13.00	10.3			
	16.00	17.1			
DELTA K MAX	A: 17.33	26.1			
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		19.1%			

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T851
FORM: 2.00"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: T-L
STRESS RATIO: +0.10
FREQUENCY: 30.00 HZ

YIELD STRENGTH: 52.5 KSI
ULT. STRENGTH: 66.6 KSI
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 1.850"
REFERENCES:UD004

ALUM. ALLOY

2419

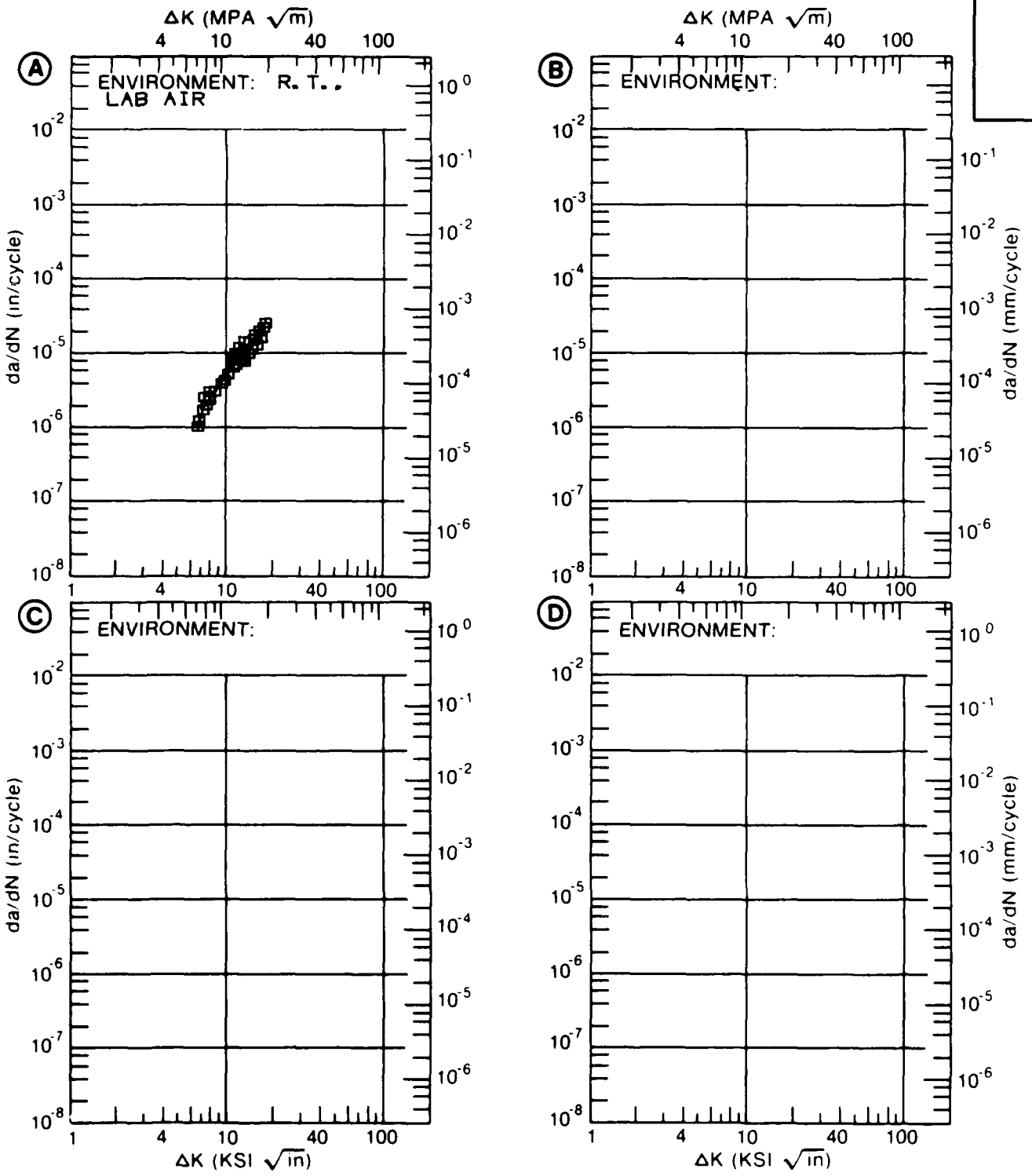


Figure 7.12.3.2

Table 7.13.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 2618 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD (KSI SQRT(IN)) DEVIATION	(NUMBER OF SPECIMENS)

PLATE

CONDITION/HT	L-T	T-L	S-L
T651	-----	-----	14.9 ± 1.2 (12)

Table 7.13.2.1

ALUMINUM 2618 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T651	P	3.34	R.T.	S-L	54.8	1.990	0.999	CT	1.014	0.21	15.90			1973	86213
		3.34			54.8	2.000	0.999	CT	1.015	0.21	15.80			1973	86213
		3.34			55.1	2.000	0.999	CT	1.011	0.23	16.80			1973	86213
		3.34			55.1	2.000	0.999	CT	1.024	0.22	16.50			1973	86213
		3.34			56.3	2.000	0.999	CT	1.034	0.16	14.10			1973	86213
		3.34			56.3	2.000	0.999	CT	1.033	0.16	14.20			1973	86213
		3.34			56.3	2.000	0.999	CT	1.028	0.15	13.60			1973	86213
		3.34			56.8	2.000	0.999	CT	1.011	0.15	13.90			1973	86213
		3.34			56.8	2.000	0.999	CT	1.018	0.14	13.20			1973	86213
		3.34			57.4	2.000	0.999	CT	1.011	0.19	15.70			1973	86213
		3.34			59.2	2.000	0.999	CT	1.008	0.15	14.60			1973	86213
		3.34			59.2	2.000	0.999	CT	1.011	0.15	14.30	14.9/	1.2	1973	86213
T651	P	1.37	88	S-L	51.8	1.000	0.500	CT	0.499	0.47	22.50			1973	86213
		1.37			51.8	1.000	0.500	CT	0.503	0.49	23.00			1973	86213
		1.37			51.8	1.000	0.500	CT	0.488	0.40	20.70	22.1/	1.2	1973	86213

Table 7.13.2.2

ALUMINUM 2618 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) MEAN (KSI*SQRT IN)	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T61	S	0.06	R.T.	L-T	56.2	2.000	0.064	0.623	0.900	---	36.00	37.87*		49.09*		1973	86213
		0.06			56.2	2.000	0.064	0.623	0.970	34.10	35.70	37.55*		51.80*		1973	86213
		0.06			56.2	2.000	0.064	0.622	0.890	32.70	35.70	37.55*		48.25*		1973	86213
T61	S	0.06	R.T.	T-L	54.2	2.000	0.064	0.621	1.070	32.80	34.10	35.80*		54.12*		1973	86213
		0.06			54.2	2.000	0.064	0.622	0.900	---	33.20	34.92*		45.27*		1973	86213
		0.06			54.2	2.000	0.064	0.623	0.960	32.70	33.90	35.66*		48.76*		1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.13.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.13.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2618
CONDITION: T81

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A: 9.66	7.21			
	B:				
	C:				
	D:				
	10.00	7.77			
	13.00	15.1			
	16.00	29.2			
DELTA K MAX	A: 16.24	30.8			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR		4.38
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T81
FORM: 0.06"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.40
FREQUENCY: 2.00

YIELD STRENGTH: 57.0 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.064"
SPECIMEN WIDTH: 4.000"
REFERENCES:86734

ALUM. ALLOY
2618

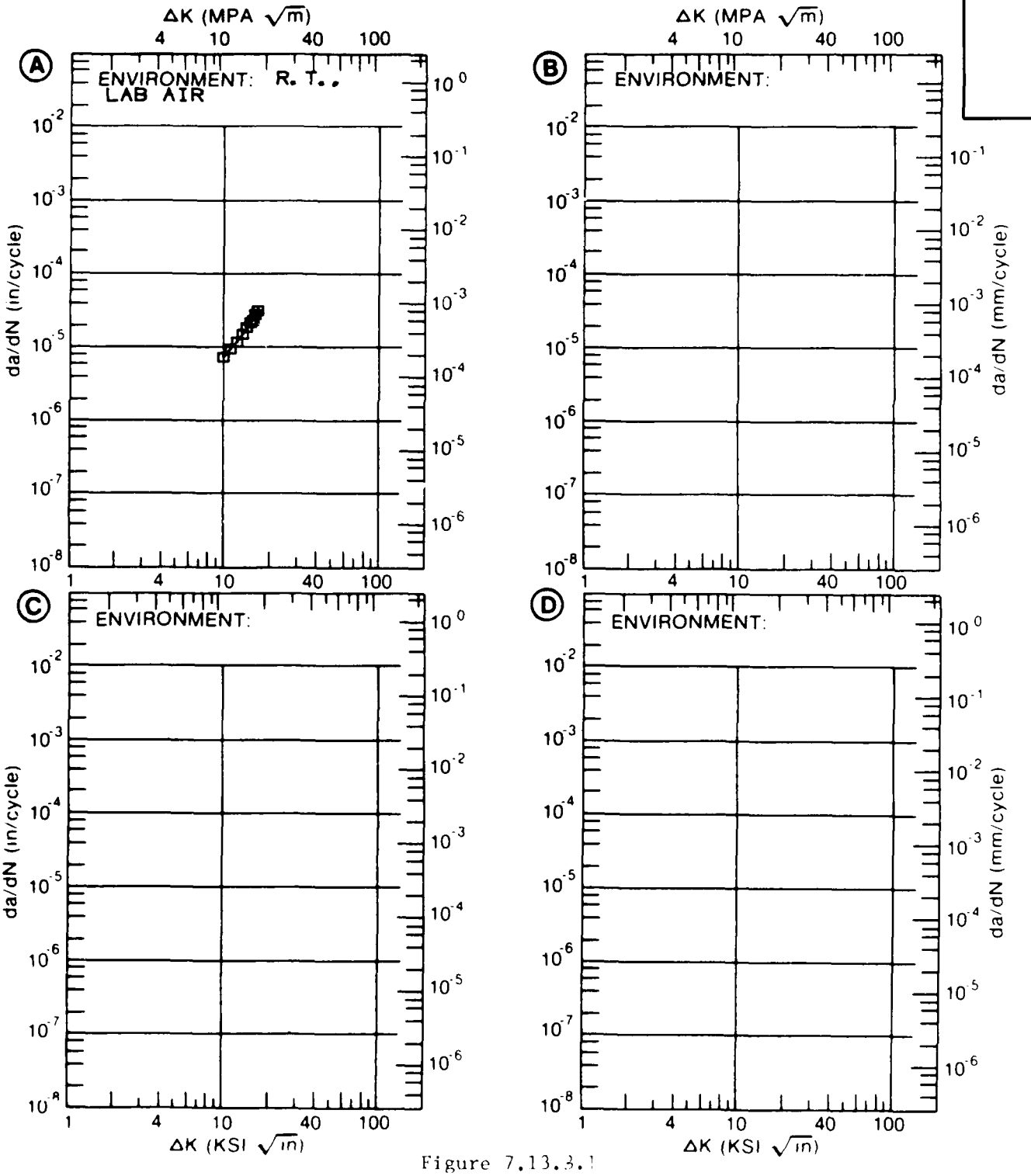


Figure 7.13.3.1

TABLE 7.13.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.13.3.2 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 2618
CONDITION: T81

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A:				
	B:				
	C:				
	D:				
	200.00				
DELTA K MAX	A:				
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 0.00

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T81
FORM: 0.06"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +0.40
FREQUENCY: 2.00 HZ

YIELD STRENGTH: 57.0 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.064"
SPECIMEN WIDTH: 4.000"
REFERENCES:86734

ALUM. ALLOY

2618

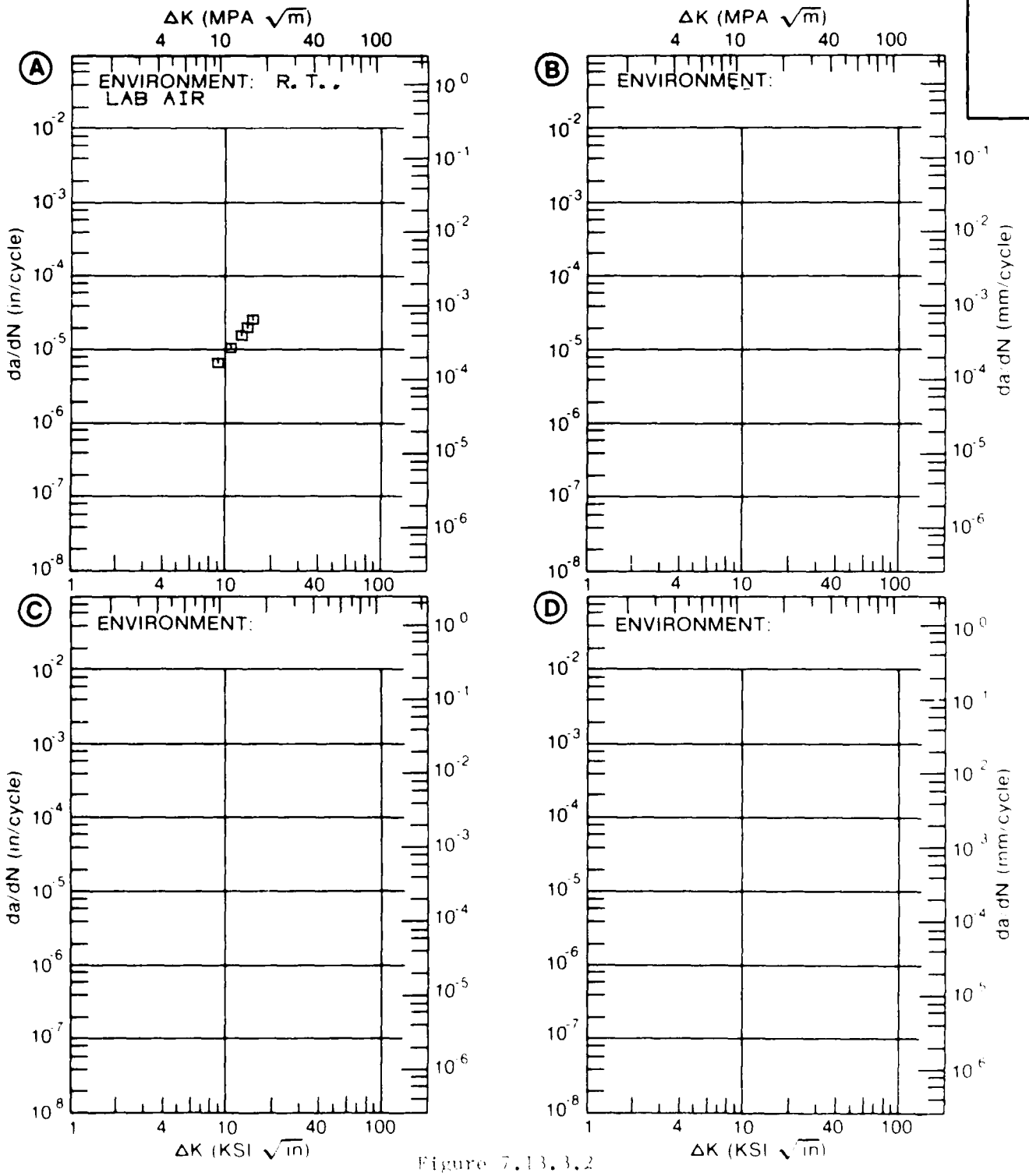


Figure 7.13.3.2

Table 7.14.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 6061 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD (KSI SQRT(IN)) DEVIATION (NUMBER OF SPECIMENS)		
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T651	---	26 6 ± 0 9 (5)	21 5 ± 0 4 (2)

Table 7.14.2.1

ALUMINUM 6061 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T651	P	1.50	- 112	T-L	45.5	3.000	1.480	NB	1.500	0.96	28.20			1971	84288
		1.50			45.5	3.000	1.480	NB	1.450	1.10	30.30			1971	84288
		1.50			45.5	3.000	1.480	NB	1.510	1.20	31.90	30.1/	1.9	1971	84288
T651	P	1.50	R.T.	T-L	43.4	2.000	1.000	NB	1.025	0.90	26.00			1972	82880
		1.50			43.4	2.000	1.000	NB	1.018	0.94	26.60			1972	82880
		1.50			43.4	3.000	1.480	NB	1.508	1.01	27.60			1971	84288
		1.50			43.4	3.000	1.480	NB	1.443	0.86	25.40			1972	82880
		1.50			43.4	2.000	1.000	NB	0.995	0.98	27.20	26.6/	0.9	1972	82880
T651	P	2.50	R.T.	S-L	41.5	2.000	1.000	CT	0.951	0.68	21.70			1973	86688
		2.50			41.5	2.000	1.000	CT	0.930	0.62	21.20	21.5/	0.4	1973	86688
T651	P	3.00	88	S-L	39.6	2.490	1.251	CT	1.183	0.71	21.10			1973	86213
		3.00			39.6	2.500	1.250	CT	1.181	0.74	21.60			1973	86213
		3.00			39.6	2.500	1.250	CT	1.171	0.72	21.30	21.3/	0.3	1973	86213
T651	FB	----	84	T-L	40.3	3.000	1.500	CT	1.547	1.29	28.90			1973	86213
T651	FB	----	84	S-L	40.3	2.000	1.000	CT	0.987	0.91	24.30			1973	86213
		----			40.3	2.000	1.001	CT	0.956	0.91	24.30	24.3/	0.0	1973	86213
T652	F	9.00	R.T.	S-T	38.1	2.000	1.000	NB	1.000	0.95	23.40			1972	82675

Table 7.14.2.2

ALUMINUM 6061 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																		
T6	S	0.06	R.T	L-T	41.9	2.000	0.062	0.622	1.240	---	28.50	29.98*		53.05*			1973	86213
		0.06			41.9	2.000	0.062	0.620	1.230	---	28.80	30.23*		53.09*			1973	86213
		0.06			41.9	2.000	0.062	0.619	1.360	---	28.40	29.75*		59.80*			1973	86213
		0.06			43.4	2.000	0.062	0.622	1.280	---	30.10	31.66*		58.31*			1973	86213
		0.06			43.4	2.000	0.062	0.622	1.300	---	30.00	31.56*		59.31*			1973	86213
		0.06			43.4	2.000	0.062	0.620	1.230	---	30.00	31.49*		55.30*			1973	86213
T6	S	0.06	R.T.	L-T	41.4	15.810	0.062	4.000	----	---	28.20	73.61*		----			1973	86213
		0.06			41.4	15.810	0.062	3.020	4.230	---	32.00	71.31*		86.33*			1973	86213
		0.06			41.4	15.820	0.063	1.000	1.230	---	39.10	49.13*		54.55*			1973	86213
		0.06			41.4	15.820	0.062	5.980	7.000	---	21.60	72.72*		81.73*			1973	86213
T6	S	0.12	R.T.	L-T	44.1	4.000	0.127	1.590	2.864	---	26.70	46.85*		86.22*			1973	86213
		0.12			44.5	4.000	0.127	1.592	3.111	---	26.90	47.24*		101.60*			1973	86213
T6	S	0.06	R.T.	T-L	40.7	2.000	0.063	0.619	0.980	---	28.30	29.65*		41.43*			1973	86213
		0.06			40.7	2.000	0.062	0.623	1.280	---	28.60	30.08*		55.40*			1973	86213
		0.06			40.7	2.000	0.063	0.620	1.110	---	28.20	29.60*		46.42*			1973	86213
		0.06			41.8	2.000	0.062	0.622	1.130	---	29.80	31.35*		49.97*			1973	86213
		0.06			41.8	2.000	0.062	0.617	1.320	---	29.60	30.95*		59.74*			1973	86213
		0.06			41.8	2.000	0.062	0.621	1.100	---	30.00	31.49*		48.93*			1973	86213
T6	S	0.06	R.T.	T-L	40.8	15.810	0.063	3.010	4.040	---	30.10	66.95*		79.03*			1973	86213
		0.06			40.8	15.810	0.062	6.010	7.000	---	20.50	69.26*		77.58*			1973	86213
		0.06			40.8	15.820	0.062	1.000	1.550	---	37.40	46.99*		58.71*			1973	86213
		0.06			40.8	15.820	0.063	4.000	----	---	27.00	70.48*		----			1973	86213
BUCKLING OF CRACK EDGES NOT RESTRAINED																		
T651	P	0.25	R.T.	L-T	45.9	4.000	0.250	1.730	3.171	---	25.80	48.22*		101.74*			1973	86213
		0.25			45.9	4.000	0.251	1.577	2.956	---	27.60	48.12*		94.20*			1973	86213
T651	P	0.50	R.T.	L-T	44.1	4.000	0.503	1.600	----	13.40	28.90	50.94*		----			1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

Table 7.14.2.2 (Con't)

ALUMINUM 6061 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV MEAN	K(C) (KSI*SQRT IN)	K(C) STAN DEV MEAN	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T651	P	0.50	R.T.	L-T	46.8	4.000	0.504	1.760	----	13.40	26.40	50.01*		----		1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 7.14.3.1

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 7.14.3.1 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 6061
CONDITION: T651
ENVIRONMENT: R.T., LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.00			
DELTA K MIN	A: 11.89	12.5			
	B:				
	C:				
	D:				
	13.00	15.8			
	16.00	29.6			
	20.00	57.4			
	25.00	124.			
	30.00	259.			
	35.00	340.			
DELTA K MAX	A: 37.44	752.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 10.47

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T651
FORM: 1.00"TH PLATE
SPECIMEN TYPE: NB
ORIENTATION: L-T
FREQUENCY: 0.10 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 38.0 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 2.500"
REFERENCES:81507

ALUM. ALLOY

6061

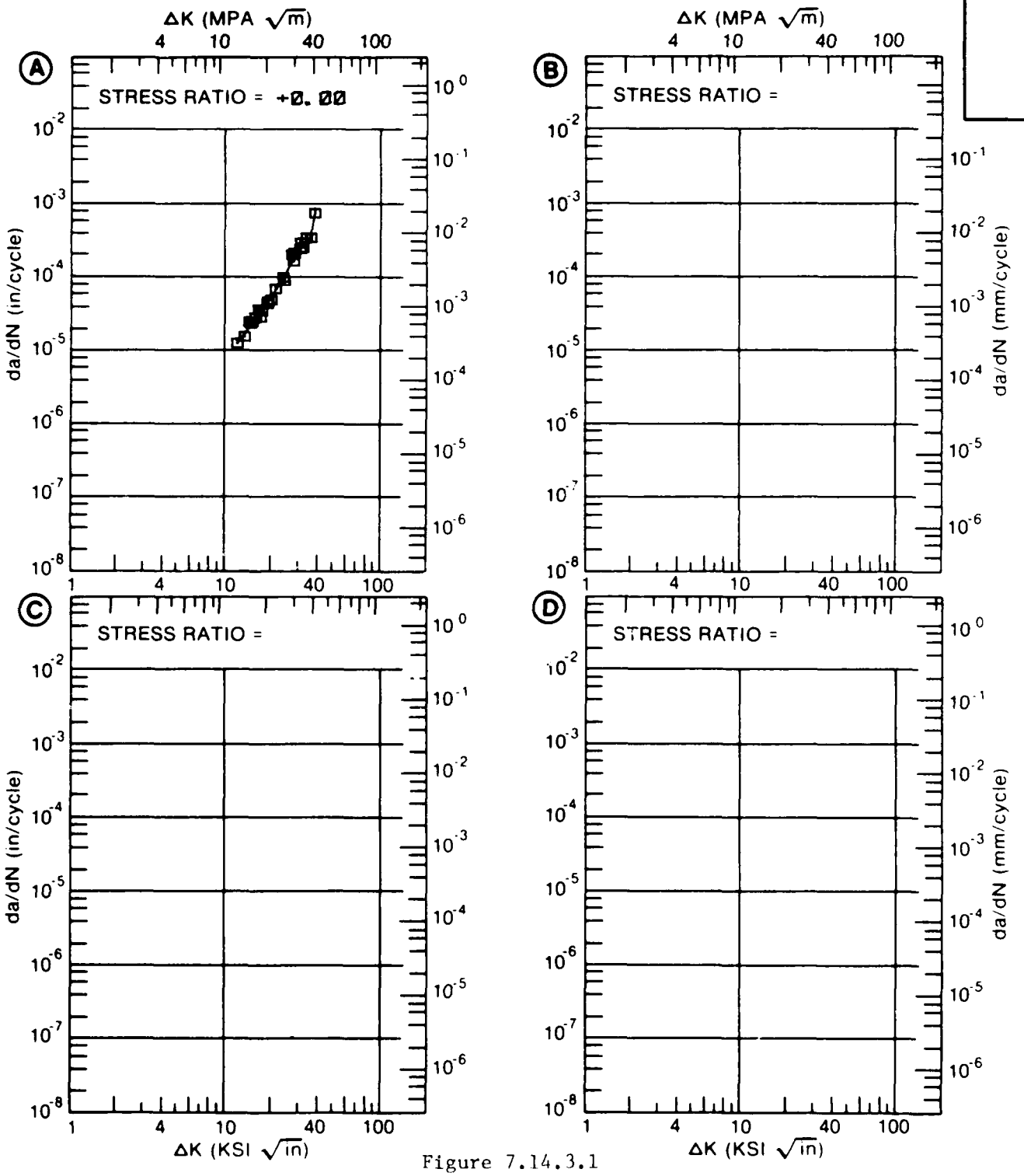


Figure 7.14.3.1

Table 7.14.3.2

ALUMINUM 6061 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	SPECIMEN DESIGN (*=SQ)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) MEAN (KSI*SQRT IN)	STAN DEV	TEST TIME (MIN)	DATE	REFER
T6	S	0.12	R.T.	S-L	----	AEROZINE 50	1.300	0.125	WOL	----	------	28.00*		----	1974	88700
T6	S	0.12	R.T.	S-L	----	AEROZINE 50/ 1PCT CO2	1.300	0.125	WOL	----	------	19.60*		----	1974	88700
T6	S	0.12	R.T.	S-L	----	MATHESON COLE-MAN BELL 97PCT HYDROZINE	1.300	0.125	WOL /3 PCT H20	----	------	16.40*		----	1974	88700
T6	S	0.12	R.T.	S-L	----	PROPELLANT GRADE HYDROZINE	1.300	0.125	WOL	----	------	25.00*		----	1974	88700
T6	S	0.12	R.T.	S-L	----	UNSYMMETRICAL DIMETHYL HYDROZINE	1.300	0.125	WOL	----	------	19.70*		----	1974	88700
T651	P	2.50	R.T.	S-L	41.6	INDUSTRIAL ATM	2.000	1.000	CT	----	21.40	20.00		----	1973	86688
T651	P	2.50	R.T.	S-L	41.6	SALT-DICHRO-MATE-ACETATE	2.000	1.000	CT	----	21.40	20.00		----	1973	86688
T651	P	2.50	R.T.	S-L	41.6	SEACOAST ATM	2.000	1.000	CT	----	21.40	20.00		----	1973	86688
T652	F	6.00	R.T.	S-L	35.3	SEAWATER	1.400	0.700	CANT	----	29.60	26.00*		----	1972	82675
		9.00			38.1		2.000	1.000	CANT	----	27.40	24.00		----	1972	82675

*NOTE-DATA WHICH DO NOT MEET MINIMUM SPECIMEN THICKNESS REQUIREMENTS OF 2.5(KISCC/TYS)SQUARED

TABLE 7.15

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7079-T651 da/dt, K_{Iscc}
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7075-T7351 da/dt
7079-T651 da/dt
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7005-T63 K_{Iscc}
7075-T6 K_{Iscc}
7075-T651 K_{Iscc}
7075-T7351 K_{Iscc}
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	7049-T73	K_{Ic}
	7175-T736	K_{Ic}
	7475-T61	K_c
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85543
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7079-T651(+50 HR at 320F) da/dt
7178-T651 da/dt
7178-T7651 da/dt

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85836
2024-T851 K_{Ic}
2024-T852 K_{Ic}
2219-T851 K_{Ic}
2219-T852 K_{Ic}
7049-T7352 K_{Ic}
7075-T73651 K_{Ic}
7075-T73511 K_{Ic}
7075-T73652 K_{Ic}
7075-T7651 K_{Ic}

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85837
2024-T851 da/dN
2024-T852 da/dN
2219-T851 da/dN
2219-T8511 da/dN
2219-T852 da/dN
7050-T7351 da/dN
7050-T7351 da/dN
7075-T7651 da/dN
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TABLE 7.15 (Cont)

86212

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7075-T76511	K_{Ic}, K_{Iscc}
7475-T61	da/dN
7475-T761	da/dN, da/dt
7475(ALCLAD)-T61	da/dN
7475(ALCLAD)-T761	da/dN

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86213

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2014-T61	K_{Ic}	7075-T6511	K_{Ic}
2014-T611	K_{Ic}	7075-T73	K_{Ic}, K_c
2014-T651	K_{Ic}, K_c	7075-T7351	K_{Ic}, K_c
2020-T6	K_{Ic}, K_c	7075-T73510	K_{Ic}
2020-T651	K_{Ic}, K_c, da/dN	7075-T73511	K_{Ic}
2020(ALCLAD)-T6	K_c	7075-T7352	K_{Ic}
2021-T8151	K_{Ic}	7075-T76	K_{Ic}, K_c
2024-T3	K_c, da/dN	7075-T7651	K_{Ic}, K_c
2024-T351	K_{Ic}, K_c	7075-T7651 (SP)	K_{Ic}
2024-T36	K_c	7075-T76511	K_{Ic}
2024-T6	K_c	7075(ALCLAD)-T6	da/dN
2024-T81	K_c	7075(ALCLAD)-T7651	K_{Ic}
2024-T851	K_{Ic}, K_c	7079-T6	K_{Ic}, K_c
2024-T852	K_{Ic}	7079-T651	K_{Ic}, K_c
2024-T86	K_c	7079-T652	K_{Ic}
2024(ALCLAD)-T3	K_c, da/dN	7079(ALCLAD)-T6	K_c
2024(ALCLAD)-T86	K_c	7080-T7	K_{Ic}
2124-T351(417)	K_{Ic}	7175-T66	K_{Ic}
2124-T851	K_c	7175-T73	K_{Ic}
2124-T851 (SP)	K_{Ic}	7175-T7352	K_{Ic}
2124-T851 (417)	K_{Ic}	7175-T736	K_{Ic}
2214-T651	K_{Ic}	7175-T73652	K_{Ic}
2214-T651 (417)	K_{Ic}	7178-T6	K_c
2219-T81	K_c	7178-T651	K_{Ic}, K_c
2219-T851	K_{Ic}, K_c	7178-T7651	K_{Ic}, K_c, da/
2219-T852	K_{Ic}	7178-T76510	K_{Ic}, da/dN
2219-T87	K_{Ic}, K_c	7178-T76511	K_{Ic}
2618-T61	K_c	7178(ALCLAD)-T6	K_c
2618-T651	K_{Ic}	7178(ALCLAD)-T76	K_c
6061-T6	K_c	7475-T6	K_{Ic}
6061-T651	K_{Ic}, K_c	7475-T61	K_c
7001-T75	K_{Ic}, K_c	7475-T651	K_{Ic}, da/dN
7005-T6	K_c	7475-T651 (SP)	K_{Ic}
7005-T6351	K_{Ic}, K_c	7475-T73	K_{Ic}
7049-T73	K_{Ic}	7475-T7351	K_{Ic}
7049-T7351	K_{Ic}	7475-T7351 (SP)	K_{Ic}
7049-T7352	K_{Ic}	7475-T736	K_{Ic}
7050-T6	da/dN	7475-T76	da/dN
7050-T7352	K_{Ic}	7475-T761	K_c
7050-T736	K_{Ic}	7475-T7651	K_{Ic}
7050-T73651	K_{Ic}	7475-T7651 (SP)	K_{Ic}
7050-T73652	K_{Ic}	7475(ALCLAD)-T73	K_c
7050-T76	da/dN	7475(ALCLAD)-T731	K_c
7050-T76511	K_{Ic}	7475(ALCLAD)-T761	K_c, da/dN
7075-T6	K_c, da/dN	7475(ALCLAD)-T761	K_c, da/dN
7075-T651	K_{Ic}, K_c		

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7050-T7651 K_{Ic}
7475-T7651 K_{Ic}

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86575 2024-T81 da/dN
7075-T76 da/dN

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86688

2014-T651	K_{Iscc}	2219-T87	K_{Ic}, K_{Iscc}
2021-T81	K_{Iscc}	6061-T651	K_{Ic}, K_{Iscc}
2024-T351	K_{Iscc}	7075-T651	K_{Iscc}
2024-T851	K_{Iscc}	7075-T7351	K_{Iscc}
2219-T37	K_{Iscc}	7079-T651	K_{Iscc}

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2014-T6	da/dN	2618-T81	da/dN
2024-T3	K_c	7075-T6	K_c
2024-T351	K_c	7075(ALCLAD)-T6	K_c
2024-T4	K_c	7079-T6	da/dN
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2024-T852	da/dN	7075-T7352	da/dN
2219-T851	da/dN	7075-T7651	da/dN
7050-T73	da/dN	7075-T76511	da/dN
7050-T73651	da/dN	7175-T73652	da/dN
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2024-T851	K_{Ic}
2024-T852	K_{Ic}
2219-T851	K_{Ic}
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AL015 7050-T73651 K_{Ic}
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7075-T7351 K_{Ic}, da/dN, K_{Iscc}
7175-T73652 K_{Ic}, da/dN, K_{Iscc}
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MPC01

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2024-T8510	K_{Ic}	7075(ALCLAD)-T7651	K_{Ic}
2124-T851	K_{Ic}	7079-T651	K_{Ic}
2219-T851	K_{Ic}	7079-T851	K_{Ic}
2419-T851	K_{Ic}	7175-T76511	K_{Ic}
7075-T651	K_{Ic}	7178-T7651	K_{Ic}
7075-T6510	K_{Ic}	7475-T651	K_{Ic}
7075-T6511	K_{Ic}	7475-T7351	K_{Ic}
7075-T7351	K_{Ic}		

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MR001
7075-T651 da/dN
7075-T7351 K_{Ic}, da/dN
X7090-T7E69 da/dN
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NC001
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7050-T73651 K_{Ic}
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NC002
7050-T736 da/dN
7050-T73651 da/dN
7075-T7351 da/dN
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NC003
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RA005 7475-T7351 K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 38-KFN-3M04-7475 Alloy, May 1980.

RA006 7475-T7351 K_{Ic}

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RA007 7475-T7651 K_{Ic}

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RA008 7050-T73651 K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 37-KFP-7050 Alloy-T73651, January 1978.

RA009 7050-T73651 K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Matallurgical Research Division, Richmond, VA, Project 37-KFN-7050 Alloy-T73651, 1977.

RA010 7050-T73651 K_{Ic}

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TABLE 7.15 (Cont)

RI002 7178-T651 da/dN

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RI006

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2124-T851	K_{Iscc}	7075-T7351	K_{Iscc}
2219-T851	K_{Iscc}	7075-T73511	K_{Iscc}
7049-T7352	K_{Iscc}	7075-T7651	K_{Iscc}
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CHAPTER 8

7000 SERIES ALUMINUM ALLOY SECTIONS

8.0 7000 Series Aluminum Material Summaries
8.1 7001
8.2 7005
8.3 7007
8.4 7010
8.5 7039
8.6 7049
8.7 7050
8.8 7050 (Alclad)

TABLE 8.0.1

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
7001	T75	PLATE	X	X				
		SHEET		X		X		
7005	T6	SHEET		X		X		
		PLATE		X				
	T63	PLATE						X
	T6351	PLATE	X	X				
7007	T6 OVERHEATED WELD CENTER LINE	PLATE						X
	T6 REPAIRED WELD FUSION LINE	PLATE						X
	T6 REPAIRED WELD HEAT AFF ZONE	PLATE						X
	T6 REPAIRED WELD CENTER LINE	PLATE						X
	T6 WELD CENTERLINE	PLATE						X
	T6 WELD FUSION LINE	PLATE						X
	T6 WELD HEAT AFF ZONE	PLATE						X
7010	T7651	PLATE	X			X		X
7039	T64	PLATE					X	
7049	T73	FORGING	X			X	X	X
		EXTRUSION	X					X
		EXTRUDED BAR	X					
	T73 INTEGRALLY STIFFENED	EXTRUSION						X
	T7351	PLATE	X			X		

TABLE 8.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
7049	T73511-HIGH PURITY	EXTRUSION				X		
		EXTRUDED BAR	X					
	T73511 LOW PURITY	EXTRUSION				X		
		EXTRUDED BAR	X					
	T73511 MEDIUM PURITY	EXTRUSION				X		
		EXTRUDED BAR	X					
	T7352	FORGING	X			X		X
	T76	EXTRUDED BAR	X					
7050	T6	SHEET				X		
		EXTRUSION				X		
	T7E56	FORGING	X					
	T73	FORGING				X		
	T7351	PLATE	X			X		
	T7351X	EXTRUSION				X		
	T73511	EXTRUSION				X		
	T73511-HIGH PURITY	EXTRUSION				X		
		EXTRUDED BAR	X					
	T7352	FORGING	X					
	T736	FORGING	X			X		X
	T73651	PLATE	X			X		X
		EXTRUSION				X		
	T73652	FORGING	X			X		

TABLE 8.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
7050	T76	SHEET				X		
	T7651	PLATE	X			X		X
	T7651X	EXTRUSION				X		
	T76511	EXTRUSION	X			X		
		PLATE				X		
7050 (ALCLAD)	T76	SHEET		X		X		
7075	---	PLATE					X	
	T6	FORGING	X	X				
		EXTRUSION	X	X				
		FORGED BAR	X					
		ROLLED BAR	X					
		SHEET		X		X		
		PLATE		X		X		X
	T651	PLATE	X	X		X	X	X
		EXTRUSION	X					X
		ROLLED BAR	X					
		SHEET		X				
		-----					X	
	T6510	EXTRUSION	X			X		
		FORGED BAR	X					
		EXTRUDED BAR				X		
	T6511	EXTRUSION	X			X		
	T73	FORGING	X					X
		FORGED BAR	X			X		
		SHEET		X				
		PLATE				X		
	T7351	PLATE	X	X		X	X	X
		EXTRUSION	X					
		SHEET		X				
	T73510	EXTRUSION	X			X		
		EXTRUDED BAR				X		

TABLE 8.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
7075	T73511	EXTRUSION	X			X		
		EXTRUDED BAR						X
	T73511-HIGH PURITY	EXTRUSION				X		
		EXTRUDED BAR	X					
	T73511 LOW PURITY	EXTRUSION				X		
		EXTRUDED BAR	X					
	T73511 MEDIUM PURITY	EXTRUSION				X		
		EXTRUDED BAR	X					
	T7352	FORGING	X			X		X
		EXTRUSION	X					
		BILLET	X			X		
		PLATE				X		
	T73652	FORGING	X					
	T76	SHEET		X		X		
	T7651	PLATE	X	X		X		X
	T7651 (SP)	PLATE	X					
	T76511	EXTRUSION	X			X		X
	UNDERAGED, 72HR 150F	PLATE					X	
7075 (ALCLAD)	T6	SHEET		X		X		
	T7651	PLATE	X					
7079	T6	PLATE	X				X	X
		FORGING	X			X		
		FORGED BAR	X					
		SHEET		X		X		
		BILLET				X		

TABLE 8.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
7079	T651	PLATE	X	X			X	X
		SHEET		X		X		
							X	
	T651+50HR AT 320F	PLATE					X	
	T651+500HR AT 320F	PLATE					X	
	T652	FORGING	X			X		
	T851	PLATE	X					
7079 (ALCLAD)	T6	SHEET		X				
2080	T7	FORGING	X					
		FORGED BAR	X					
X7020	T7E69	PLATE				X		
X7091	T7E70	PLATE				X		
7149	T73511	EXTRUSION	X			X		
7150	T651	PLATE				X		
7175	T66	FORGING	X				X	X
	T73	FORGING	X					
		EXTRUSION	X					
	T73511	EXTRUSION	X	X				X
	T7352	FORGING	X					
	T764	FORGING				X		

TABLE 8.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	K1C	KC	R CURVES	DA/DN	DA/DT	K1SCC
7175	T736	FORGING	X			X	X	X
	T73652	FORGING	X			X		X
	T76511	EXTRUSION	X					
7178	T6	SHEET		X		X		
	T651	PLATE	X	X		X	X	
		EXTRUSION	X					
		SHEET				X		
	T7510	EXTRUSION	X					
	T7651 + 10HR AT 120C	PLATE					X	
	T7651 + 12HR AT 350	PLATE					X	
	T7651 + 8HR AT 350	PLATE					X	
	T76	SHEET				X		
	T7651	PLATE	X	X		X	X	
	T76510	EXTRUSION	X			X		
		FORGED BAR	X					
		EXTRUDED BAR				X		
	T76511	EXTRUSION	X					
7178 ALCLAD	T6	SHEET		X				
	T76	SHEET		X				

TABLE 8.0.1 (con't)

AVAILABLE DATA FOR ALUMINUM ALLOYS

ALLOY	CONDITION/HT	PRODUCT FORM	KIC	KC	R CURVES	DA/DN	DA/DT	KISCC
7475	T6	PLATE	X					
	T61	SHEET		X		X		
		PLATE		X		X		
	T6151	SHEET				X		
	T651	PLATE	X			X		
	T651 (SP)	PLATE	X					
	T73	PLATE	X					
	T7351	PLATE	X	X	X	X		X
	T7351 (SP)	PLATE	X					
	T736	FORGING	X					
	T76	SHEET				X		
	T761	SHEET		X		X	X	
		PLATE		X				
	T7651	PLATE	X	X	X	X		X
		SHEET				X		
	T7651 (SP)	PLATE	X					
7475 (ALCLAD)	T61	SHEET		X		X		
		PLATE		X				
	T73	SHEET		X				
	T731	PLATE		X				
		SHEET		X				
	T761	SHEET		X		X		
		PLATE		X				

TABLE 8.0.2

PLANE STRAIN FRACTURE TOUGHNESS VALUES OF ALUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/ HT	PRODUCT FORM	RANGE OF PRODUCT THICKNESSES (IN)	KIC (KSI SQRT(IN))								
				L-T			T-L			S-L		
				SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD DEV
7001	T75	PLATE	1 37	1 36	24 1	1 7	1 36	20 7	1 8	----	----	----
7005	T6351	PLATE	3 00	2 95	46 7	1 0	2 96	39 7	0 9	----	----	----
7010	T73651	PLATE	2 00	0 75	33 5	4 6	0 75	27 9	2 8	0 75	23 1	0 5
7049	T73	FORGING	1 00-7 10	0 50	30 8	3 0	1 00	21 9	2 5	0 50	21 3	2 5
	T73	EXTRUSION	3 00	1 00	28 1	0 7	1 00	25 2	0 5	----	----	----
		EXTRUDED BAR	3 25-3 50	1 00	33 2	2 7	1 00	22 0	0 5	----	----	----
	T7351	PLATE	2 00-4 00	----	----	----	0 75	26 1	1 7	0 75	23 8	0 6
	T73511 HIGH/ PURITY	EXTRUDED BAR	1 50	1 25	33 9	0 1	1 25	26 0	0 1	----	----	----
	T73511-LOW/ PURITY	EXTRUDED BAR	1 50	1 25	23 8	0 3	1 25	18 1	0 1	----	----	----
	T73511 MEDIUM/ PURITY	EXTRUDED BAR	1 50	1 25	29 7	0 8	1 25	22 1	0 5	----	----	----
	T7352	FORGING	3 00-7 10	2 00	38 2	1 0	----	----	----	1 00	19 5	2 8
	T76	EXTRUDED BAR	3 25-3 50	1 00	32 7	1 7	1 00	20 0	0 3	----	----	----
7050	T7E56	FORGING	5 00	----	----	----	0 75	28 9	3 9	----	----	----
	T7351	PLATE	1 00-6 00	1 00	34 8	3 9	1 50	30 0	2 6	0 75	28 0	1 3
	T73511-HIGH/ PURITY	EXTRUDED BAR	1 50	1 25	36 2	3 2	1 25	24 1	0 2	----	----	----
	T736	FORGING	3 00-6 00	0 70	32 3	2 3	1 00	23 4	1 0	1 51	24 6	0 6
	T73651	PLATE	1 00-6 00	0 98	31 9	3 9	0 99	28 7	4 7	0 97	23 5	1 5

* MINIMUM SPECIMEN THICKNESS (IN)

TABLE 8.0.2 (con't)

PLANE STRAIN FRACTURE TOUGHNESS VALUES OF ALUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/ HT	PRODUCT FORM	RANGE OF PRODUCT THICKNESSES (IN)	K_{IC} (KSI SQRT(IN))								
				L-T			T-L			S-L		
				SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD DEV
7050	T7452	FORGING	3 50-7 50	1 50	31 1	2 5	1 50	20 7	1 4	0 75	19 2	1 4
	T7451	PLATE	1 00	1 00	30 8	0 3	----	----	----	----	----	----
7075	T6	FORGING	0 50-0 89	0 50	24 3	0 1	0 25	20 9	1 7	0 50	16 8	0 4
		EXTRUSION	2 00	----	----	----	0 75	19 9	0 2	0 75	18 5	0 2
	T-51	PLATE	0 37-5 00	0 51	26 5	2 0	0 30	22 5	2 0	0 50	17 6	2 7
		EXTRUSION	3 00 5 00	1 50	31 1	0 5	1 50	20 2	0 2	----	---	---
		ROLLED BAR	5 00	1 50	34 1	0 5	---	----	----	----	----	----
	T6510	EXTRUSION	0 68 3 50	0 50	27 5	2 1	0 50	23 3	1 6	0 25	20 0	1 3
		FORGED BAR	0 68-5 00	0 62	29 2	3 4	0 50	21 4	1 8	0 25	18 7	0 9
	T6511	EXTRUSION	1 25	1 22	27 9	1 4	1 17	26 9	1 8	----	---	---
	T73	FORGING	1 00	----	----	----	----	----	----	0 50	19 1	0 5
	T7351	PLATE	1 00 4 00	0 51	29 4	2 2	0 51	26 2	3 2	0 50	18 5	0 4
	T73510	EXTRUSION	0 68-3 50	----	----	----	0 50	24 6	2 3	1 00	20 3	0 8
	T73511	EXTRUSION	3 50	1 63	39 6	3 1	1 25	26 8	1 1	1 00	21 9	1 1
	T73511 HIGH PURITY	EXTRUDED BAR	1 50	1 25	43 0	1 7	1 25	30 0	0 1	----	----	----
	T73511 LOW PURITY	EXTRUDED BAR	1 50	1 25	27 3	0 2	1 25	21 7	1 7	----	---	---
	T73511 MEDIUM PURITY	EXTRUDED BAR	1 50	1 25	30 6	0 2	1 25	21 9	0 3	----	----	----
	T752	FORGING	2 00 6 00	0 75	33 6	3 1	0 75	26 6	2 8	0 50	21 7	3 2
	T7452	FORGING	6 00	2 00	35 0	1 8	1 75	26 6	2 7	----	----	----

* MINIMUM SPECIMEN THICKNESS (IN)

TABLE 8.0.2 (con't)

PLANE STRAIN FRACTURE TOUGHNESS VALUES OF ALUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/ HT	PRODUCT FORM	RANGE OF PRODUCT THICKNESSES (IN)	KIC (KSI SQRT(IN))								
				L-T			T-L			S-L		
				SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD DEV
7075	T7651	PLATE	0.56-2.60	0.75	28.5	1.5	0.50	23.1	2.0	0.38	17.8	1.5
	T76511	EXTRUSION	1.44-7.04	1.17	35.7	4.4	1.25	23.6	2.8	----	----	----
7075 (ALCLAD)	T7651	PLATE	0.50-0.62	0.62	28.6	2.2	0.50	25.2	1.9	----	----	----
7079	T6	PLATE	3.00	1.00	33.0	2.9	----	----	----	----	----	----
	T651	PLATE	1.00-5.00	0.97	27.6	1.8	0.50	23.3	2.0	0.50	18.6	3.2
7079	T652	FORGING	2.00-6.00	0.75	27.8	2.2	0.75	23.1	2.2	0.25	18.1	0.7
	T651	PLATE	1.37-1.50	1.00	28.6	1.6	1.00	21.3	3.4	----	----	----
7149	T76511	EXTRUSION	3.00	1.01	31.5	0.8	1.01	24.2	0.3	----	----	----
7175	T66	FORGING	1.00	---	----	----	0.50	23.2	3.1	0.50	20.8	1.1
	T73	FORGING	1.00-8.50	----	----	----	----	----	----	0.50	27.1	1.2
	T76511	EXTRUSION	1.30-1.80	0.50	32.8	6.5	0.50	27.0	4.9	----	----	----
	T73652	FORGING	0.75	----	----	----	0.62	24.5	0.5	----	----	----
	T736	FORGING	1.00-4.00	0.50	31.2	3.8	0.50	26.4	3.6	0.50	25.3	2.1
	T73652	FORGING	1.25-3.10	1.25	32.7	8.0	----	----	----	----	----	----
	T76511	EXTRUSION	1.40-3.75	0.60	32.9	3.5	0.60	22.6	2.5	0.75	20.9	1.3
7179	T651	PLATE	0.50-1.37	0.50	25.3	1.9	0.46	21.5	1.8	0.50	15.0	0.3
	T6510	EXTRUSION	0.68-3.50	----	----	----	0.50	18.5	1.3	1.00	14.5	0.1
	T7651	PLATE	0.50-2.00	0.45	27.8	1.8	0.45	23.1	2.4	0.50	17.3	0.4
	T76510	EXTRUSION	0.68-3.50	0.62	30.5	0.9	0.62	26.8	1.1	1.00	16.2	0.4
		FORGED BAR	3.50	----	----	----	0.50	19.2	1.2	----	----	----

TABLE 8.0.2 (con't)

PLANE STRAIN FRACTURE TOUGHNESS VALUES OF ALUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/ HT	PRODUCT FORM	RANGE OF PRODUCT THICKNESSES (IN)	KIC (KSI SQRT(IN))								
				L-T			T-L			S-L		
				SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD DEV	SPECIMEN THICK *	MEAN	STD DEV
7178	T76511	EXTRUSION	0 40-1 44	0 40	25 7	0 3	----	----	----	----	----	----
7475	T651	PLATE	0 62-2 62	0 86	40 1	2 4	0 65	34 6	3 5	1 00	32 9	2 5
	T651 (SP)	PLATE	1 30-2 00	1 28	35 3	1 9	1 28	34 4	2 1	0 50	27 3	1 6
	T7351	PLATE	1 25-4 00	1 27	47 1	4 9	1 00	37 1	4 0	0 50	30 6	2 6
	T7351 (SP)	PLATE	1 75-3 25	----	----	----	0 75	37 6	2 5	----	----	----
	T7451	PLATE	0 87-2 00	0 95	40 4	2 3	0 89	34 0	2 9	0 75	27 6	0 8
	T7651 (SP)	PLATE	1 75-2 00	1 79	42 4	2 9	1 00	35 7	0 4	0 75	27 3	2 1

* MINIMUM SPECIMEN THICKNESS (IN)

TABLE 8.0.3.1

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS OF
7000 SERIES ALUMINUM ALLOYS (WITH BUCKLING CONSTRAINTS)

ALLOY	CONDITION/HT	TEST TEMP. (°F)	SPECIMEN ORIENT	SPECIMEN WIDTH	YIELD STRENGTH (Ksi)	SPECIMEN THICKNESS (IN.) = 0.010	0.050-0.063	0.080	0.090-0.100	0.120	0.250
7050(Alclad)	T76	R. T.	L-T	20.0	67.2		114.1/7.6(2)				
7075	T6	R. T.	L-T	12.0	75.9				71.9/2.8(26)		
				24.0	75.9				71.5/0.2(2)		
				36.0	75.9				72.8/6.1(5)		
				15.0	76.2						76.6/0.3(2)
		R. T.	T-L	24.0	75.5		73.4/8.2(10)				
	T651	R. T.	L-T	8.0	78.3		63.4/5.5(6)				
	T7351	R. T.	L-T	36.0	60.5						119.9/24.0(2)
7075(Alclad)	T6	R. T.	L-T	15.0	67.4	8.8/4.1(2)					
				6.0	73.1			60.1/5.1(6)			
				12.0	73.1			70.1/7.2(17)			
				24.0	73.1			69.3/10.4(20)			
7475(Alclad)	T61	R. T.	L-T	20.0	69.4					129.8/3.0(2)	

Mean/Standard Deviation (Number of Specimens)

TABLE 8.0.3.2

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS
OF 7000 SERIES ALUMINUM ALLOYS (WITHOUT BUCKLING CONSTRAINTS)

ALLOY	CONDITION/ HT	TEST TEMP (°F)	SPECIMEN ORIENT	SPECIMEN WIDTH	FIELD STRENGTH (KSI)	SPECIMEN THICKNESS (IN)	K_C (Ksi$\sqrt{in}$) = 0.010	0.020	0.030	0.040	0.063	0.080-0.090	0.125	0.160	0.180	0.250	0.500	1.000
7001	T75	R.T.	L-T	20.0	~71													33.1/ 6.0(12)
			T-L	3.0	68.0								39.5/ 2.7(12)					
				20.0	70.6													28.7/3.3(12)
7075	T6	R.T.	L-T	15.8	~77						65.7/ 5.0(5)		60.2/ 1.4(3)			59.9/ 1.4(2)		
			T-L	4.5	75.5						58.3/ 4.0(2)							
				15.8	72.9						62.2/ 3.4(5)							
				24.0	~72						46.3/ 5.9(7)							
				3.0	~73								51.5/ 2.5(8)					
				4.0	74.1								54.3/ 4.9(2)					
				15.0	~75									37.8/ 1.6(2)		57.2/ 3.8(2)	41.5 0.6(2)	
	T651	R.T.	L-T	3.0	~78								52.6/ 2.9(3)			46.1 0.0(2)		
				4.0	~78											61.3/ 4.7(2)		
				20.0	~78													75.4 9.1(12)

Mean/Standard Deviation (Number of Specimens)

TABLE 8.0.3.2 (con't)

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS
OF 7000 SERIES ALUMINUM ALLOYS (WITHOUT BUCKLING CONSTRAINTS)

ALLOY	CONDITION/ HT	TEST TEMP (°F)	SPECIMEN ORIENT	SPECIMEN WIDTH	FIELD STRENGTH (KSI)	SPECIMEN THICKNESS (IN)	K_C (Ksi$\sqrt{in}$) = 0.010	0.020	0.030	0.040	0.063	0.080-0.090	0.125	0.160	0.180	0.250	0.500	1.000
7075	T651	R.T.	T-L	3.0	≥75								48.7/ 1.2(9)			43.9/ 3.3(16)		
				4.0	≥74											50.7/ 4.6(11)	35.0/ 1.5(2)	
				14.0	77.2												47.9/ 2.7(2)	
				20.0	≥75													35.2/ 3.2(12)
	T73	88	L-T	16.0	60.0						82.9/ 3.7(2)							
	T7351	R.T.	L-T	8.0	62.1												61.5/ 10.5(9)	42.9/ 1.4(2)
				16.0	61.1													56.0/ 3.5(2)
																		50.3/ 7.4(4)
				20.0	≥61													90.7/ 10.9(12)
				36.0	61.1													65.7/ 3.6(2)
			T-L	20.0	63.6													46.5/ 1.2(4)
7075 (Alclad)	T6	R.T.	L-T	15.0	≥70			82.4/ 3.9(2)	82.9/ 9.4(2)									
				9.0	63.0					55.0/ 7.3(12)		70.0/ 3.6(12)						
				20.0	63.0					51.9/ 3.1(14)		61.8/ 3.7(10)						
				30.0	71.8						90.0/ 6.2(2)	70.3/ 10.7(2)						

Mean/Standard Deviation (Number of Specimens)

TABLE 8.0.3.2 (con't)

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS
OF 7000 SERIES ALUMINUM ALLOYS (WITHOUT BUCKLING CONSTRAINTS)

ALLOY	CONDITION/ HT	TEST TEMP (°F)	SPECIMEN ORIENT	WIDTH	FIELD STRENGTH (KSI)	SPECIMEN THICKNESS (IN)	K_c (Ksi$\sqrt{in}$) = 0.010	0.020	0.030	0.040	0.063	0.080-0.090	0.125	0.160	0.180	0.250	0.500	1.000
7075 (Alclad)	T6	R.T.	T-L	15.0	≥66		65.1/ 0.4(2)	78.4/ 2.6(2)	90.5/ 0.0(2)									
				30.0	69.5						75.5/ 0.4(2)	52.0/ 1.0(2)						
		84	T-L	16.0	69.1							67.8/ 1.5(2)						
				3.0	69.8									49.7/ 0.6(2)				
7075	T651	R.T.	L-T	3.0	74.7											51.6/ 1.8(3)		
				20.0	≥75													64.9/7.6(12)
			T-L	3.0	≥72								51.7/ 0.6(3)			40.5/ 2.6(2)		
				20.0	≥72													38.1 1.2(12)
7178	T6	R.T.	L-T	2.0	≥82						46.3/ 3.3(11)							
				3.0	≥83								50.4/ 5.0(14)					
				15.0	≥82						47.8/ 2.2(5)							
			T-L	2.0	≥80						44.6/ 2.5(13)							
				3.0	≥78								38.8/ 3.8(13)					
				15.0	≥78						46.5/ 1.8(5)							

Mean/Standard Deviations (Number of Specimens)

TABLE 8.0.3.2 (con't)

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS
OF 7000 SERIES ALUMINUM ALLOYS (WITHOUT BUCKLING CONSTRAINTS)

ALLOY	CONDITION/ HT	TEST TEMP (°F)	SPECIMEN ORIENT	SPECIMEN WIDTH	FIELD STRENGTH (KSI)	SPECIMEN THICKNESS (IN)	K_C (Ksi$\sqrt{in}$) = 0.010	0.020	0.030	0.040	0.063	0.080-0.090	0.125	0.160	0.180	0.250	0.500	1.000
7178	T651	R.T.	L-T	4.0	84											50.0/ 2.1(2)		
			T-L	4.0	80											28.0/ 2.9(5)		
	T7651	R.T.	L-T	20.0	71.2													48.8/1.6(3)
			T-L	4.0	71.0											36.0/ 1.4(2)		
				20.0	70.5													33.1/1.6(3)
7475	T61	R.T.	L-T	16.0	~76					80.9/ 1.4(2)	89.4/ 5.1(6)	111.6/ 0.5(2)	109.3/ 3.8(2)		106.6/ 12.0(2)			
		88	L-T	16.0	75.6						78.6/ 6.9(3)							
		R.T.	T-L	16.0	72					86.0/ 1.4(2)	85.8/ 4.8(6)	95.1/ 10.9(6)	97.6/ 19.0(2)		86.8/ 7.7(3)			
		88	T-L	16.0	71.6						85.0/ 6.7(2)							
	T761	R.T.	L-T	16.0	74					85.4/ 4.6(2)	95.9/ 5.9(5)	114.2/ 2.9(2)						
		88	L-T	16.0	73						75.8/ 9.5(3)							
		R. T.	T-L	16.0	71					87.1/ 3.5(2)	94.5/ 3.1(5)	102.3/ 4.7(4)						
		88	T-L	16.0	71						90.2/ 6.0(3)							

TABLE 8.0.3.2 (con't)

PLANE STRESS AND TRANSITIONAL FRACTURE TOUGHNESS
OF 7000 SERIES ALUMINUM ALLOYS (WITHOUT BUCKLING CONSTRAINTS)

ALLOY	CONDITION/ HT	TEST TEMP (°F)	SPECIMEN ORIENT	SPECIMEN WIDTH	FIELD STRENGTH (KSI)	SPECIMEN THICKNESS (IN)	K_C (Ksi$\sqrt{in}$) ≈ 0.010	0.020	0.030	0.040	0.063	0.080-0.090	0.125	0.160	0.180	0.250	0.500	1.000
7175 (Alclad)	T61	R.T.	L-T	16.0	70						84.3/ 12.0(8)	94.7/ 3.1(2)						
		R.T.	T-L	16.0	68						86.9/ 7.5(8)	79.5/ 5.4(2)						
	T761	R.T.	L-T	16.0	64.5						92.3/ 8.0(6)							
		R.T.	T-L	16.0	63						90.1/ 6.9(6)	91.7/ 2.5(2)						

Mean/Standard Deviation (Number of Specimens)

TABLE 8.0.4.1

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT LAB AIR AT R T

STRESS RATIO 0 00-0 10

FREQUENCY 0 10-30 00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2 5	5 0	10 0	20 0	50 0	100 0
7001	T75	SHEET	0 05	2 00				60 7		
7005	T6	SHEET	0 05	2 00			6 74	28 5		
7010	T73651	PLATE	0 10	20 00 25 00		250	2 83	56 5		
7049	T73511-HIGH PURITY	EXTRUSION	0 10	30 00			7 84			
	T73511-LOW PURITY	EXTRUSION	0 10	30 00			7 32			
	T73511-MEDIUM PURITY	EXTRUSION	0 10	30 00			3 44			
7050	T73511 HIGH PURITY	EXTRUSION	0 10	30 00			5 93			
	T736	FORGING	0 10	3 00- 10 00				11 9	58 7	
	T73651	PLATE	0 10	5 00- 10 00			7 68	47 3		
	T76	SHEET	0 00	13 30			7 60	40 1		
	T7651	PLATE	0 02	1 00- 20 00		580	8 04	22 9		

TABLE 8.0.4.1 (con't)

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS

SPECIMEN ORIENTATION L-T — ENVIRONMENT LAB AIR AT R T

STRESS RATIO 0 00-0 10 — FREQUENCY 0 10-30 00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2 5	5 0	10 0	20 0	50 0	100 0
7075	T6	SHEET	0 02	1 00				103		
	T6	SHEET	0 02	3 00				92 8		
	T6	SHEET	0 02	10 00			14 0	60 0	5417	
	T6	SHEET	0 02	10- 30 00			11 [illegible]	54 5	20651	
	T651	PLATE	0 02	1 00- 30 00		1 64	1[illegible] 8	66 6		
	T651	PLATE	0 02	10- 30 00			8 [illegible]	58 5		
	T6511	EXTRUSION	0 01	30 00		976	13 [illegible]	72 1		
	T73	PLATE	0 05	20 00	0564	561	11 [illegible]			
	T7351	PLATE	0 02	10- 20 00		293	5 65	59 4		
	T7351	PLATE	0 02	10 00			3 95	41 4		
	T7351	PLATE	0 02	10 00			5 09	46 0	1568	
	T7351	PLATE	0 02	1 00			5 04	44 0		
	T73511-HIGH PURITY	EXTRUSION	0 10	30 00			6 39	31 3		
	T73511 LOW PURITY	EXTRUSION	0 10	30 00			8 [illegible]			
	T73511-MEDIUM PURITY	EXTRUSION	0 10	30 00			7 [illegible]			
	T7352	BILLET	0 02	1 00- 30 00				32 5		

TABLE 8.0.4.1 (con't)

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS:

SPECIMEN ORIENTATION: L-T
ENVIRONMENT: LAB AIR AT R.T
STRESS RATIO: 0.00-0.10
FREQUENCY: 0.10-30.00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2.5	5.0	10.0	20.0	50.0	100.0
7079	T6	SHEET	0.05	2.00				64.8		
	T6	BILLET	0.02	1.00- 30.00			10.7	110		
	T651	SHEET	0.05	2.00			14.0	92.6		

TABLE 8.0.4.1 (con't)

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS

SPECIMEN ORIENTATION: L-T
ENVIRONMENT: LAB AIR AT R.T
STRESS RATIO: 0.00-0.10
FREQUENCY: 0.10-30.00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2.5	5.0	10.0	20.0	50.0	100.0
7149	T73511	EXTRUSION	0.01	1.00- 20.00		1.64	8.32	57.9		
7175	T736	FORGING	0.02	10.00			9.87	56.8		
	T73652	FORGING	0.02	1.00- 20.00			7.92	33.3		
	T73652	FORGING	0.02	1.00- 18.00	.104	806	8.03			
7178	T6	SHEET	0.02	10.00- 14.00			11.9	89.9		
	T6	SHEET	0.02	1.00- 5.00			12.6	109.		
	T651	SHEET	0.02	.10- 12.00		923	15.4	99.6		
	T651	PLATE	0.00	.10- 20.00		799	13.1	56.8		
	T651	PLATE	0.02	10- 20.00		.980	15.4	107.		
	T76	SHEET	0.02	20.00		605	7.76	58.1	2653	

TABLE 8.0.4.1 (con't)

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT LAB AIR AT R T

STRESS RATIO 0 00-0 10

FREQUENCY 0 10-30 00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2 5	5 0	10 0	20 0	50 0	100 0
7475	T61	PLATE	0 10	20 00			6 87			
	T6151	SHEET	0 10	20 00			5 52	40 7		
	T7351	PLATE	0 02	10- 20 00		216	5 00	37 1	2520	
	T7351	PLATE	0 10	20 00			5 55			
	T761	SHEET	0 10	20 00			5 41	33 1		
	T7651	SHEET	0 00	2 00- 30 00		254	4 58	42 3		
	T7651	PLATE	0 00	3 00 30 00			3 93	47 6	508	
7475(ALCLAD)	T61	SHEET	0 00	13 30			5 71	32 7		

TABLE 8.0.4.2

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS

SPECIMEN ORIENTATION T-L ENVIRONMENT LAB AIR AT R T

STRESS RATIO 0 00-0 10 FREQUENCY 0 10-30 00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2 5	5 0	10 0	20 0	50 0	100 0
7010	T73651	PLATE	0 10	20 00- 25 00			6 15	85 4		
7049	T73511-HIGH PURITY	EXTRUSION	0 10	30 00			7 81			
	T73511-LOW PURITY	EXTRUSION	0 10	30 00			9 [illegible]3			
	T73511-MEDIUM PURITY	EXTRUSION	0 10	30 00			8 [illegible]6			
7050	T73511-HIGH PURITY	EXTRUSION	0 10	30 00			3 [illegible]7			
	T736	FORGING	0 10	10 00			6 [illegible]5	101		
	T73651	PLATE	0 10	1 00- 10 00			8 45	49 4		
7075	T6	SHEET	0 00	13 30			5 [illegible]5	42 6		
	T73511 HIGH PURITY	EXTRUSION	0 10	30 00			4 66	36 1		
	T73511-LOW PURITY	EXTRUSION	0 10	30 00			8 [illegible]4			
	T7352	PLATE	0 02	10 00		474	6 [illegible]8	66 2	4095	
	T7352	PLATE	0 02	10 00		1 08	1[illegible]7			
	T7352	FORGING	0 02	10 00		1 86	14 4	126		
	T7352	FORGING	0 02	10 00				27 5		

TABLE 8.0.4.2 (con't)

COMPARISON OF FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF THE STRESS INTENSITY FACTOR FOR ALUMINUM ALLOYS

TEST CONDITIONS

SPECIMEN ORIENTATION T-L — ENVIRONMENT LAB AIR AT R T

STRESS RATIO 0 00-0 10 — FREQUENCY 0 10-30 00HZ

ALLOY	CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQUENCY	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) FOR DELTA K LEVELS (KSI SQRT(IN)) = 2 5	5 0	10 0	20 0	50 0	100 0
7075(ALCLAD)	T6	SHEET	0 00	13 30			6 99	68 3		
	T6	SHEET	0 05	30 00		450				
7079	T6	FORGING	0 05	9 00		387	7 81	42 8		
7149	T73511	EXTRUSION	0 10	1 00- 20 00		1 97	10 8	152 0		
7175	T73652	FORGING	0 02	10- 20 00			10 7	45 4		
7178	T651	PLATE	0 00	20 00		478	11 5	85 2		
7475	T6151	SHEET	0 10	20 00			6 22	54 5		
	T761	SHEET	0 10	20 00			4 36	43 8		
7475(ALCLAD)	T61	SHEET	0 00	13 30			8 56	19 9		
	T761	SHEET	0 00	13 30			5 53	31 0		

TABLE 8.0.5

STRESS CORROSION CRACKING THRESHOLD DATA FOR 7000 SERIES ALUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/HT	PRODUCT FORM	SPECIMEN ORIENTATION	K_{Iscc} (Ksi $\sqrt{in.}$) ENVIRONMENTS: INDUSTRIAL ATMOSPHERE	SEACOAST ATMOSPHERE	SALT DICHROMATE ACETATE	SUMP TANK WATER	3.5% NaCl	SHOP CLEANING SOLVENT
7005	T63	P	S-L					28.0	
7007	T6-Repaired Weld-Fusion Line	P	S-L					8.7	
	T6-Repaired Weld-Heat Affected Zone	P	S-L					16.3	
	T6-Repaired Weld Center Line	P	S-L					10.6	
7010	173651	P	T-L					32.5(3)	
			S-L					17.0	
7049	173	F	S-L					19.0	
		E	L-S					20.4	
			S-L					20.3	
	173 Integrally Stiffened	E	L-S					26.7	
			S-L					19.4	
	17352	F	L-T				21.0		27.0
			T-L				19.3(2)		
			S-L				17.3(2)		
7050	173651	P	T-L				27.8	29.1	
7075	T6	P	S-L					19.0	
	T651	P	L-T					28.3	
			S-L	10.0	10.0	5.0		17.0	
	17351	P	L-T					23.9	
			S-L	20.0	20.0	19.0	35.0	21.0	
	17351	EB	L-T						35.0
	17352	F	S-L					18.0	
	17651	P	S-L				12.8(4)		

TABLE 8.0.5 (con't)

STRESS CORROSION CRACKING THRESHOLD DATA FOR 7000 SERIES
SLUMINUM ALLOYS AT ROOM TEMPERATURE

ALLOY	CONDITION/HT	PRODUCT FORM	SPECIMEN ORIENTATION	K_{Iscc} (Ksi $\sqrt{in.}$) ENVIRONMENTS: INDUSTRIAL ATMOSPHERE	SEACOAST ATMOSPHERE	SALT DICHROMATE ACETATE	SUMP TANK WATER	3.5% NaCl	SHOP CLEANING SOLVENT
7039	T6	P	S-L					6.6(4)	
	T651	P	S-L	9.0	9.0	6.0		3.0	
7075	T73511	E	S-L					24.5(9)	
	T736	E	L-T					30.6	
			S-L					18.7	
	T73652	E	L-T						27.6(2)
			T-L				22.0		
7475	T651	P	S-L				26.6		
	T7651	P	L-T				30.9		
			T-L				30.8		

TABLE 8.1.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 7501 AT ROOM TEMPERATURE

CONDITION/HT	MEAN K_{IC} ± STANDARD DEVIATION (KSI SQRT(IN))	(NUMBER OF SPECIMENS)
PLATE		
CONDITION/HT	L-T	T-L	S-L
T-6	24.1 ± 1.2 (4)	20.7 ± 1.8 (5)	-----

TABLE 8.1.2.1

ALUMINUM 7001 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T75	P	1.37	R.T.	L-T	70.6	3.000	1.381	NB	1.463	0.24	22.00			1973	86213
		1.37			70.6	3.000	1.382	NB	1.560	0.27	23.40			1973	86213
		1.37			72.2	3.000	1.360	NB	1.584	0.32	25.80			1973	86213
		1.37			72.2	3.000	1.364	NB	1.513	0.30	25.00	24.1/	1.7	1973	86213
T75	P	1.37	R.T.	T-L	69.6	3.000	1.376	NB	1.587	0.23	21.30			1973	86213
		1.37			69.6	3.000	1.377	NB	1.532	0.29	23.60			1973	86213
		1.37			70.6	3.000	1.360	NB	1.564	0.19	19.60			1973	86213
		1.37			71.6	3.000	1.364	NB	1.463	0.19	19.90			1973	86213
		1.37			71.6	3.000	1.381	NB	1.584	0.18	19.10	20.7/	1.8	1973	86213
T75	P	1.37	88	S-L	65.9	1.000	0.500	CT	0.494	0.14	15.80			1973	86213
		1.37			65.9	1.000	0.500	CT	0.478	0.14	15.60			1973	86213
		1.37			65.9	1.000	0.500	CT	0.510	0.15	15.90	15.8/	0.2	1973	86213

TABLE 8.1.2.2

ALUMINUM 7001 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T75	S	0.12	R.T.	L-T	66.1	3.000	0.119	1.070	1.480	---	32.90	46.34			59.35*			1973	86213
		0.12			67.7	3.000	0.119	1.090	1.360	---	32.00	45.64			53.76*			1973	86213
		0.12			66.1	3.000	0.125	1.060	1.290	---	34.40	48.15*			55.43*			1973	86213
		0.12			66.1	3.000	0.124	1.110	1.650	---	33.30	48.10			66.52*			1973	86213
		0.12			66.1	3.000	0.122	1.080	1.350	---	31.00	43.94			51.77*			1973	86213
		0.12			67.7	3.000	0.122	1.110	1.450	---	33.10	47.81			58.65*			1973	86213
		0.12			67.7	3.000	0.125	1.110	1.320	---	32.90	47.52			53.97*			1973	86213
		0.12			67.7	3.000	0.126	1.100	1.380	---	30.90	44.35			52.53*			1973	86213
		0.12			69.3	3.000	0.127	1.080	1.240	---	32.60	46.21			50.98*			1973	86213
		0.12			69.3	3.000	0.125	1.090	1.400	---	33.40	47.64			57.46*			1973	86213
		0.12			69.3	3.000	0.124	1.090	1.540	---	32.20	45.93			60.20*			1973	86213
		0.12			69.3	3.000	0.126	1.090	1.410	---	32.80	46.79	46.4/	1.4	56.76*	----/	---	1973	86213
T75	P	1.00	R.T.	L-T	70.6	20.000	1.000	7.000	8.420	---	9.10	32.68			37.25			1973	86213
		1.00			70.6	20.000	1.000	7.000	8.650	---	6.40	22.98			26.75			1973	86213
		1.00			70.6	20.000	1.000	7.000	8.590	---	9.40	33.76			39.07			1973	86213
		1.00			70.6	20.000	1.000	7.000	8.420	---	9.50	34.12			38.89			1973	86213
		1.00			70.6	20.000	1.000	7.000	8.420	---	9.00	32.32			36.84			1973	86213
		1.00			70.6	20.000	1.000	7.000	7.650	---	6.40	22.98			24.43			1973	86213
		1.00			70.6	20.000	1.000	7.000	8.050	---	6.10	21.91			24.15			1973	86213
		1.00			70.6	20.000	1.000	7.000	7.720	---	6.70	24.06			25.74			1973	86213
		1.00			72.2	20.000	1.000	7.000	8.500	---	8.60	30.88			35.46			1973	86213
		1.00			72.2	20.000	1.000	7.000	8.650	---	9.10	32.68			38.03			1973	86213
		1.00			72.2	20.000	1.000	7.000	8.420	---	9.00	32.32			36.84			1973	86213
		1.00			72.2	20.000	1.000	7.000	8.020	---	8.40	30.17	29.2/	4.8	33.17	33.1/	6.0	1973	86213
T75	S	0.12	R.T.	T-L	67.7	3.000	0.124	1.210	1.240	---	22.00	33.79			34.40			1973	86213
		0.12			67.7	3.000	0.124	1.130	1.250	---	24.60	35.97			38.70			1973	86213
		0.12			67.7	3.000	0.125	1.120	1.280	---	28.70	41.71			45.97			1973	86213
		0.12			67.7	3.000	0.125	1.130	1.240	---	24.60	35.97			38.47			1973	86213
		0.12			68.0	3.000	0.128	1.140	1.400	---	24.20	35.61			41.63			1973	86213
		0.12			68.0	3.000	0.128	1.110	1.320	---	24.00	34.66			39.37			1973	86213
		0.12			68.0	3.000	0.126	1.120	1.220	---	24.80	36.04			38.32			1973	86213
		0.12			68.0	3.000	0.126	1.160	1.270	---	25.20	37.54			40.12			1973	86213
		0.12			68.6	3.000	0.123	1.090	1.220	---	25.90	36.94			40.02			1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV

TABLE 8.1.2.2 (Con't)

ALUMINUM 7001 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) STAN DEV MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T75	S	0.12	R.T.	T-L	68.6	3.000	0.123	1.100	1.270	---	24.10	34.59			38.37			1973	86213
		0.12			68.6	3.000	0.124	1.110	1.300	---	24.80	35.82			40.20			1973	86213
		0.12			68.6	3.000	0.124	1.090	1.300	---	23.80	33.95	36.0/ 2.1		38.58	39.5/ 2.7		1973	86213
T75	P	1.00	R.T.	T-L	69.6	20.000	1.000	7.000	7.650	---	7.40	26.57			28.24			1973	86213
		1.00			69.6	20.000	1.000	7.000	7.900	---	7.20	25.86			28.12			1973	86213
		1.00			69.6	20.000	1.000	7.000	8.050	---	7.10	25.50			28.11			1973	86213
		1.00			69.6	20.000	1.000	7.000	8.050	---	7.00	25.14			27.71			1973	86213
		1.00			70.6	20.000	1.000	7.000	8.330	---	8.30	29.81			33.70			1973	86213
		1.00			70.6	20.000	1.000	7.000	7.950	---	7.90	28.37			30.99			1973	86213
		1.00			70.6	20.000	1.000	7.000	8.320	---	8.10	29.09			32.86			1973	86213
		1.00			70.6	20.000	1.000	7.000	8.460	---	8.00	28.73			32.87			1973	86213
		1.00			71.3	20.000	1.000	7.000	7.900	---	6.90	24.78			26.95			1973	86213
		1.00			71.3	20.000	1.000	7.000	7.000	---	6.50	23.34			23.34			1973	86213
		1.00			71.3	20.000	1.000	7.000	8.050	---	6.60	23.70			26.13			1973	86213
		1.00			71.3	20.000	1.000	7.000	7.900	---	6.40	22.98	26.2/ 2.4		24.99	28.7/ 3.3		1973	86213

TABLE 8.1.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.1.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7001
CONDITION: T75

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A: 10.34	8.13			
	B:				
	C:				
	D:				
	13.00	18.1			
	16.00	32.0			
	20.00	60.7			
DELTA K MAX	A: 20.63	67.3			
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		4.22			
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	2			
	1.25-2.0				
	>2.0				

CONDITION/HT: T75
FORM: 0.16"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.05
FREQUENCY: 2.00

YIELD STRENGTH: 72.2 KSI
ULT. STRENGTH: 79.6 KSI
SPECIMEN THK: 0.163"
SPECIMEN WIDTH: 9.010- 9.030"
REFERENCES:86734

ALUM. ALLOY

7001

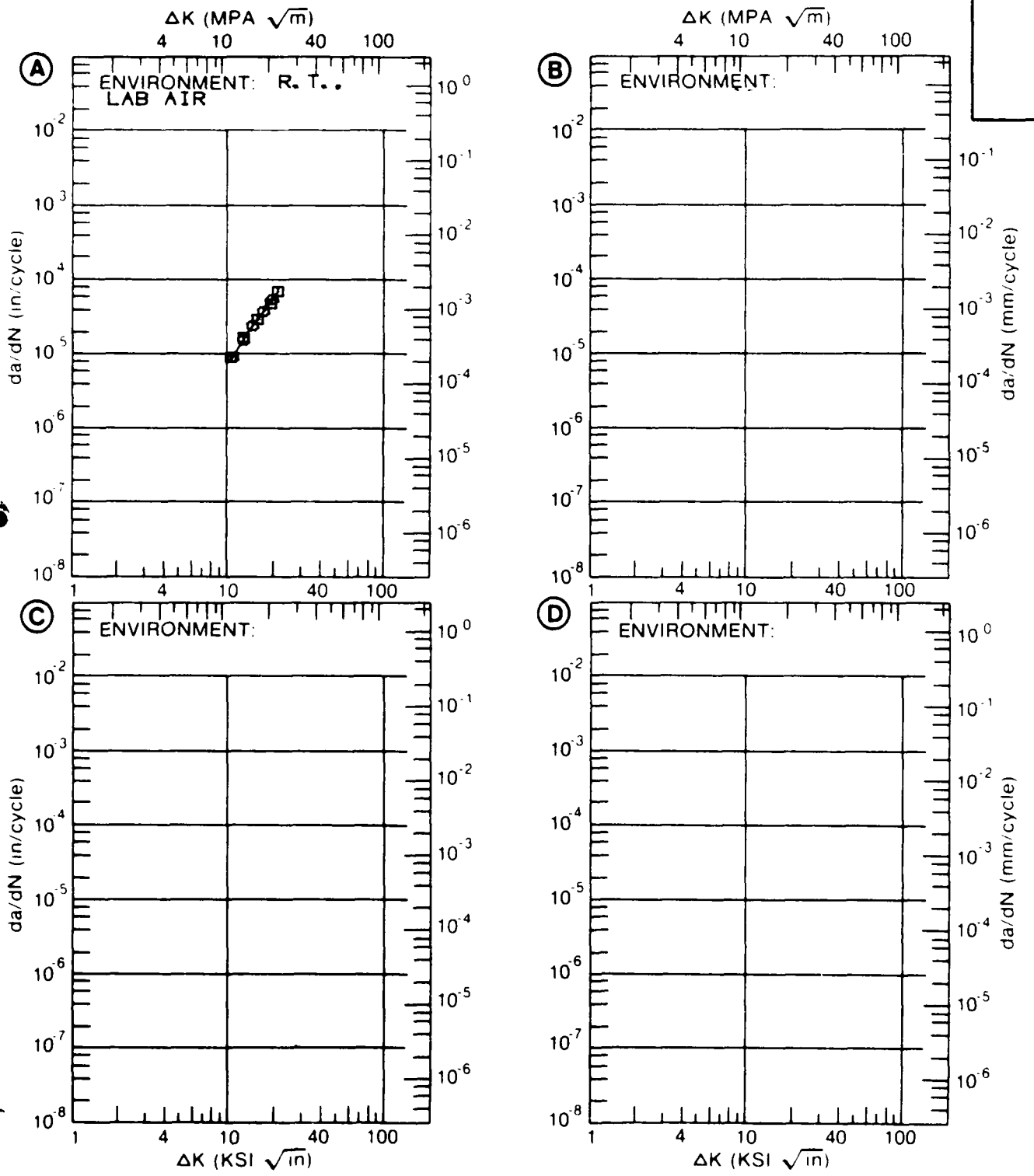

Figure 8.1.3.1

TABLE 8.2.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 7005 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN))	(NUMBER OF SPECIMENS)

PLATE

CONDITION/HT	L-T	T-L	S-L
T6351	46.7 ± 1.0 (2)	39.7 ± 0.9 (3)	-----

TABLE 8.2.2.1

ALUMINUM 7005 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T6351	P	3.00	R.T.	L-T	48.2	6.000	2.953	NB	2.922	2.42	47.40			1973	86213
		3.00			48.2	6.000	2.958	NB	2.927	2.28	46.00	46.7/	1.0	1973	86213
T6351	P	3.00	R.T.	T-L	49.0	6.000	2.958	NB	2.960	1.56	38.70			1973	86213
		3.00			49.0	6.000	2.964	NB	3.107	1.67	40.00			1973	86213
		3.00			49.0	6.000	2.962	NB	2.943	1.71	40.50	39.7/	0.9	1973	86213
T6351	P	3.00	82	T-L	49.0	4.500	2.250	NB	2.260	1.72	40.60			1973	86213
T6351	P	3.00	88	S-L	47.5	2.500	1.250	CT	1.209	0.84	27.60			1973	86213
		3.00			47.5	2.500	1.250	CT	1.196	0.84	27.50	27.6/	0.1	1973	86213

TABLE 8.2.2.2

ALUMINUM 7005 K(C)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	---SPECIMEN--- WIDTH (IN) W	THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) STAN DEV MEAN	K(C) (KSI*SQRT IN)	K(C) STAN DEV MEAN	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T6	S	0.06	R.T.	L-T	43.4	3.000	0.064	1.113	----	---	28.60	41.36*		----		1973	86213
		0.06			43.4	3.000	0.064	1.115	----	---	29.10	42.13*		----		1973	86213
T6	S	0.12	R.T.	L-T	45.1	3.000	0.125	1.123	----	---	29.80	43.36*		----		1973	86213
		0.12			45.1	3.000	0.125	1.120	----	---	29.60	43.02*		----		1973	86213
T6	P	0.25	R.T.	L-T	49.8	4.000	0.258	1.597	----	---	32.40	57.00*		----		1973	86213
		0.25			49.8	4.000	0.258	1.597	----	---	32.20	56.65*		----		1973	86213
T6	S	0.06	R.T.	T-L	44.0	3.000	0.064	1.183	----	---	28.60	43.18*		----		1973	86213
		0.06			44.0	3.000	0.064	1.147	----	---	28.80	42.53*		----		1973	86213
T6	S	0.12	R.T.	T-L	45.6	3.000	0.125	1.110	----	---	30.10	43.47*		----		1973	86213
		0.12			45.6	3.000	0.125	1.123	----	---	30.00	43.65*		----		1973	86213
T6	P	0.25	R.T.	T-L	50.6	4.000	0.258	1.598	----	---	32.40	57.05*		----		1973	86213
		0.25			50.6	4.000	0.258	1.603	----	---	32.10	56.63*		----		1973	86213
BUCKLING OF CRACK EDGES NOT RESTRAINED																	
T6351	P	1.00	R.T.	L-T	47.2	20.000	1.023	2.610	----	---	40.10	82.06*		----		1973	86213
		1.00			47.2	20.000	1.023	7.000	----	---	29.70	106.66*		----		1973	86213
		1.00			47.2	20.000	1.023	4.880	----	---	34.50	99.18*		----		1973	86213
T6351	P	1.00	R.T.	T-L	46.5	20.000	1.023	7.000	----	---	28.00	100.55*		----		1973	86213
		1.00			46.5	20.000	1.023	2.610	----	---	38.10	77.96*		----		1973	86213
		1.00			46.5	20.000	1.023	4.850	----	---	32.60	93.39*		----		1973	86213

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 8.2.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.2.3.1 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7005
CONDITION: T6
ENVIRONMENT: R.T., LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.05			
DELTA K MIN	A:	6.18	1.78			
	B:					
	C:					
	D:					
		7.00	2.69			
		8.00	3.95			
		9.00	5.31			
		10.00	6.74			
		13.00	11.5			
		16.00	17.4			
		20.00	28.5			
		25.00	52.4			
DELTA K MAX	A:	26.14	60.3			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 12.16

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	4
	1.25-2.0	
	>2.0	

CONDITION/HT: T6
FORM: 0.16"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 2.00
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 49.0 KSI
ULT. STRENGTH:
SPECIMEN THK: 0.100- 0.162"
SPECIMEN WIDTH: 3.000- 14.040"
REFERENCES:86734

ALUM. ALLOY

7005

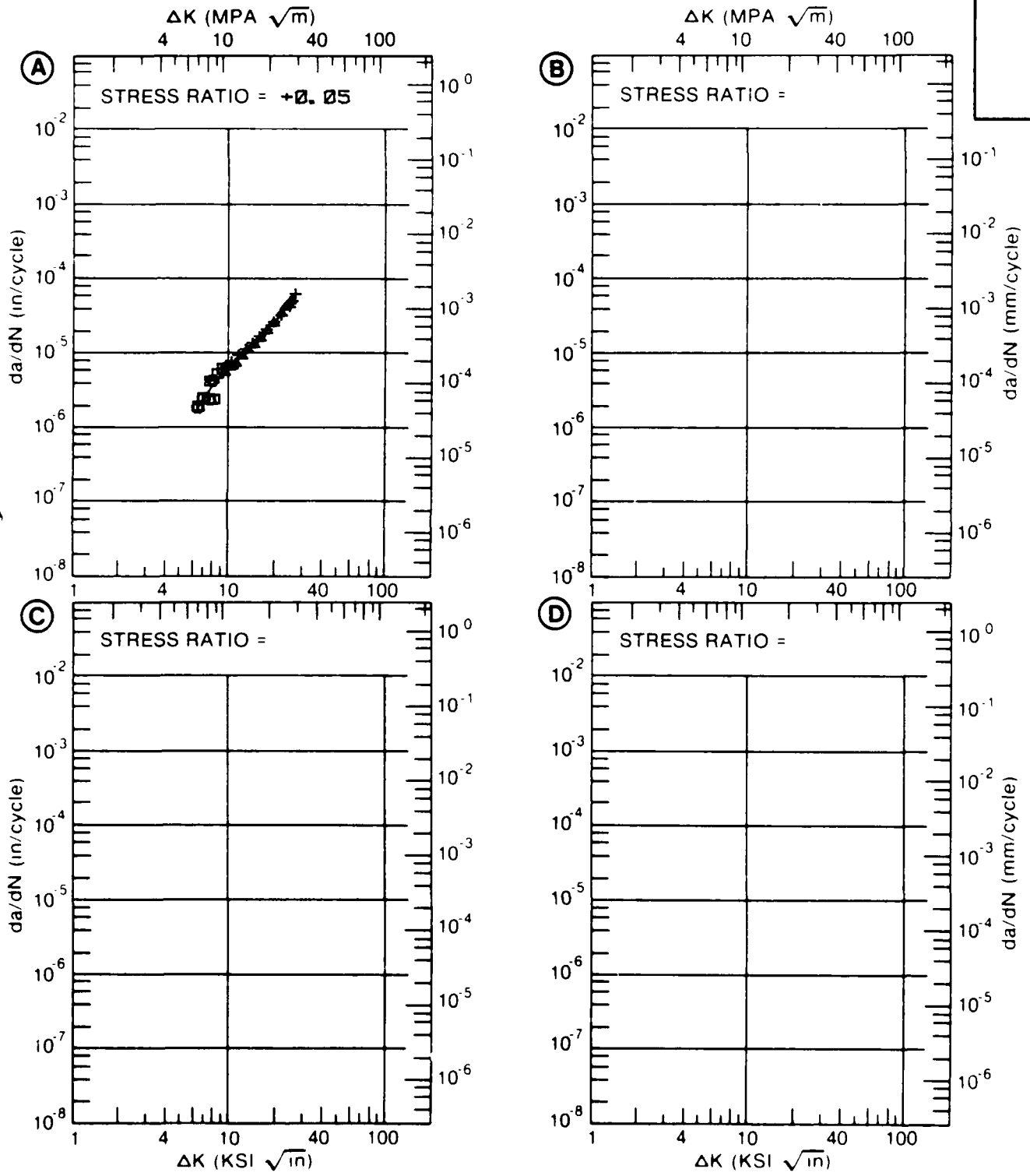

Figure 8.2.3.1

TABLE 8.2.3.2

ALUMINUM 7005 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SG)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T63	P	1.00	R T	S-L	46.0 3.5	PCT NACL	4.000	1.000	DCB	----	42.00	28.00			----	1968	84331

TABLE 8.3.3.1

ALUMINUM 7007 K(ISCC)

CONDITION	PRODUCT FORM	PRODUCT THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	SPECIMEN DESIGN (*=SG)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)		K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T6 OVERHEATED WELD CENTER LINE	P	1.00	R.T.	S-L	37.2	3.5 PCT NACL	2.500	1.000	WOL	----	35.00	>	11.00			4320	1970	80073
T6 REPAIRED WELD FUSION LINE	P	1.00	R.T.	S-L	----	3.5 PCT NACL	2.500	1.000	WOL	----	41.00		8.70			> 4320	1970	80073
T6 REPAIRED WELD HEAT AFF ZONE	P	1.00	R.T.	S-L	----	3.5 PCT NACL	2.500	1.000	WOL	----	42.00		16.30			> 4320	1970	80073
T6 REPAIRED WELD CENTER LINE	P	1.00	R.T.	S-L	----	3.5 PCT NACL	2.500	1.000	WOL	----	27.00		10.60			> 4320	1970	80073
T6 WELD CENTER LINE	P	1.00	R.T.	S-L	39.9	3.5 PCT NACL	2.500	1.000	WOL	----	42.00	<	12.00			> 4320	1970	80073
T6 WELD FUSION LINE	P	1.00	R.T.	S-L	39.9	3.5 PCT NACL	2.500	1.000	WOL	----	42.00	<	11.00			4320	1970	80073
T6 WELD HEAT AFF ZONE	P	1.00	R.T.	S-L	40.4	3.5 PCT NACL	2.500	1.000	WOL	----	40.00	>	15.00			> 4200	1970	80073

TABLE 8.4.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 7010 AT ROOM TEMPERATURE

CONDITION/HT	MEAN K_{IC} ± STANDARD DEVIATION (KSI SQRT(IN))	(NUMBER OF SPECIMENS)

PLATE

CONDITION/HT	L-T	T-L	S-L
T7651	33.5 ± 4.6 (4)	27.9 ± 2.8 (5)	23.1 ± 0.5 (2)

TABLE 8.4.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7010

TEST CONDITIONS

SPECIMEN ORIENTATION L T

ENVIRONMENT LAB AIR AT R T

CONDITION HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T73651	PLATE	0 10	20 00-25 00			0 25	2 83	56 5		
T73651	PLATE	0 30	10 00-20 00			0 46	8 19			
T73651	PLATE	0 50	10 00-20 00			1 03	11 7			
T73651	PLATE	0 65	10 00-20 00			2 01	17 8			
T73651	PLATE	0 80	10 00-20 00			3 25				

TABLE 8.4.2.1

ALUMINUM 7010 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73651	P	2.00	R.T.	L-T	63.2	1.500	0.750	CT	0.782	0.57	30.20			1980	BL001
		2.00			63.2	1.500	0.750	CT	0.777	0.52	28.90			1980	BL001
		2.00			64.4	3.000	1.500	CT	----	0.86	37.80			1980	UD003
		2.00			64.4	3.000	1.500	CT	----	0.83	37.10	33.5/	4.6	1980	UD003
T73651	P	2.00	250	L-T	64.4	3.000	1.500	CT	----	0.94	39.40			1980	UD003
		2.00			64.4	3.000	1.500	CT	----	0.87	38.00	38.7/	1.0	1980	UD003
T73651	P	2.00	R.T.	T-S	62.9	1.500	0.750	CT	----	0.58	30.30			1980	UD003
		2.00			62.9	1.500	0.750	CT	----	0.64	31.80	31.1/	1.1	1980	UD003
T73651	P	2.00	R.T	T-L	62.9	1.500	0.750	CT	----	0.56	29.90			198(	UD003
		2.00			62.9	1.500	0.750	CT	----	0.53	29.00			1980	UD003
		2.00			62.9	1.500	0.750	CT	----	0.60	30.80			1980	UD003
		2.00			63.6	1.500	0.750	CT	0.766	0.38	24.80			1980	BL001
		2.00			63.6	1.500	0.750	CT	0.786	0.38	24.90	27.9/	2.8	1980	BL001
T73651	P	2.00	250	T-L	62.9	1.500	0.750	CT	----	0.50	28.00			1980	UD003
T73651	P	2.00	R.T	S-L	65.0	1.500	0.750	CT	----	0.30	22.70			1980	UD003
		2.00			65.0	1.500	0.750	CT	----	0.32	23.40	23.1/	0.5	1980	UD003

TABLE 8.4.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.4.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7010
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR	E=+ 250 AIR		
DELTA K MIN	A:	5.00	.386			
	B:	3.73		.186		
	C:					
	D:					
		4.00		.253		
		5.00		.648		
		6.00	.886	1.60		
		7.00	2.11	3.70		
		8.00	3.98	7.80		
		9.00	6.40	13.9		
		10.00	9.21	20.4		
		13.00	18.6	32.4		
		16.00	27.5	42.5		
		20.00	38.0	84.5		
		25.00	50.0			
		30.00	74.7			
DELTA K MAX	A:	31.27	94.6			
	B:	20.31		91.0		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			12.77	7.88		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73651
FORM: 2.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-S
STRESS RATIO: +0.10
FREQUENCY: 20.00- 25.00 HZ

YIELD STRENGTH: 64.4 KSI
ULT. STRENGTH: 73.7 KSI
SPECIMEN THK: 0.300"
SPECIMEN WIDTH: 1.500"
REFERENCES:UD003

ALUM. ALLOY

7010

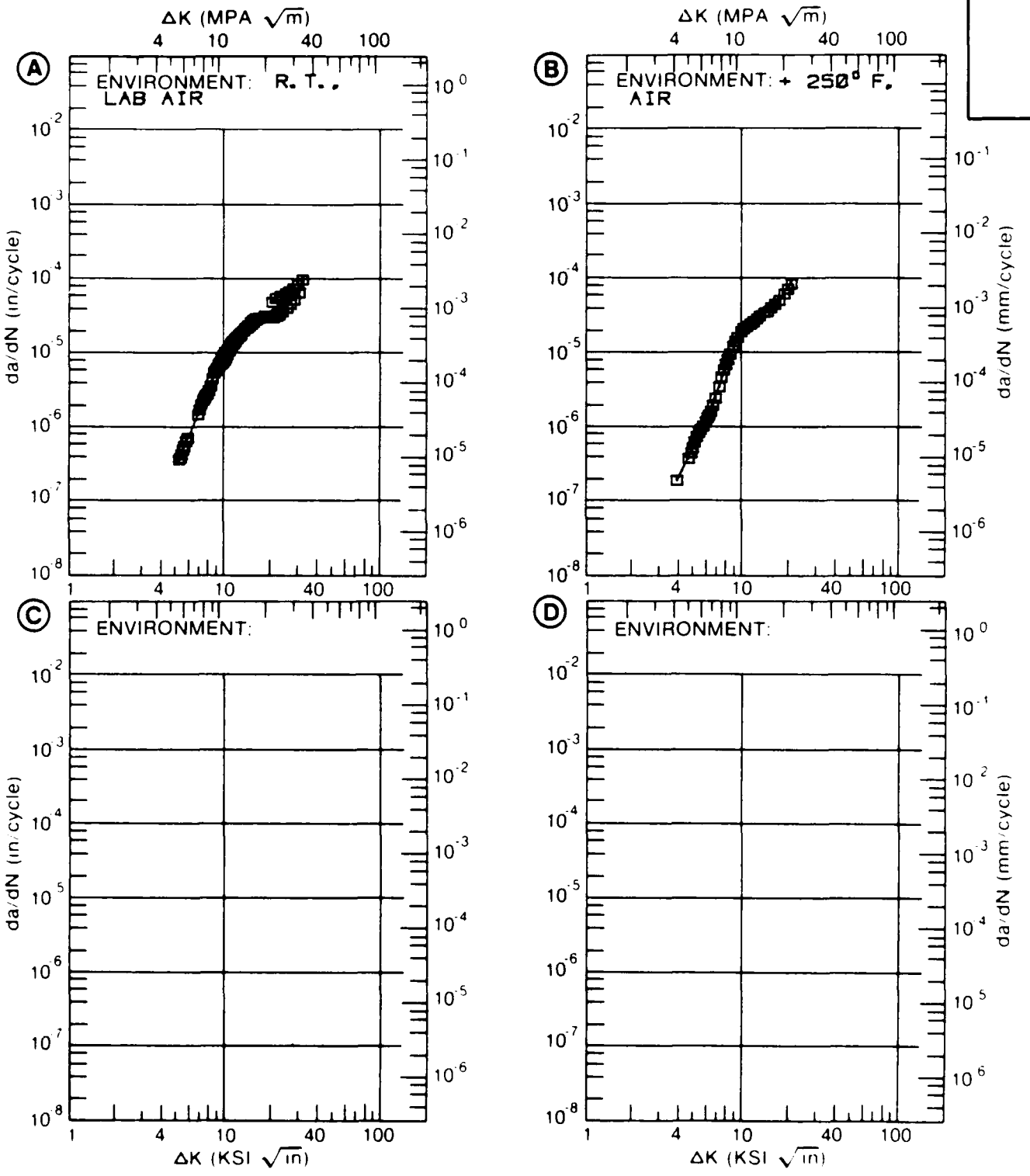

Figure 8.4.3.1

TABLE 8.4.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.4.3.2 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7010
CONDITION: T73651
ENVIRONMENT: R.T., LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.30	R=+0.50	R=+0.65	R=+0.80
DELTA K MIN	A:	3.39	185			
	B:	2.70		.141		
	C:	3.52			.430	
	D:	2.70				.167
		3.00		.202		.357
		3.50	.192	.259		.864
		4.00	.240	.338	.539	1.55
		5.00	.463	1.03	2.01	3.25
		6.00	1.08	2.76	4.29	5.69
		7.00	2.35	4.86	6.14	10.3
		8.00	4.16	6.95	8.53	13.8
		9.00	6.11	9.11	12.1	
		10.00	8.19	11.7	17.8	
		13.00	18.4	27.7		
		16.00	40.1			
DELTA K MAX	A:	16.00	40.1			
	B:	14.67		51.9		
	C:	12.66			58.5	
	D:	8.00				13.8
ROOT MEAN SQUARE PERCENT ERROR			13.51	20.48	18.00	21.76

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73651
FORM: 2.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 10.00- 20.00 HZ
ENVIRONMENT: R. T., LAB AIR

YIELD STRENGTH 64.4 KSI
ULT STRENGTH: 73.7 KSI
SPECIMEN THK 0.200"
SPECIMEN WIDTH 1.400"
REFERENCES:UD002

ALUM. ALLOY

7010

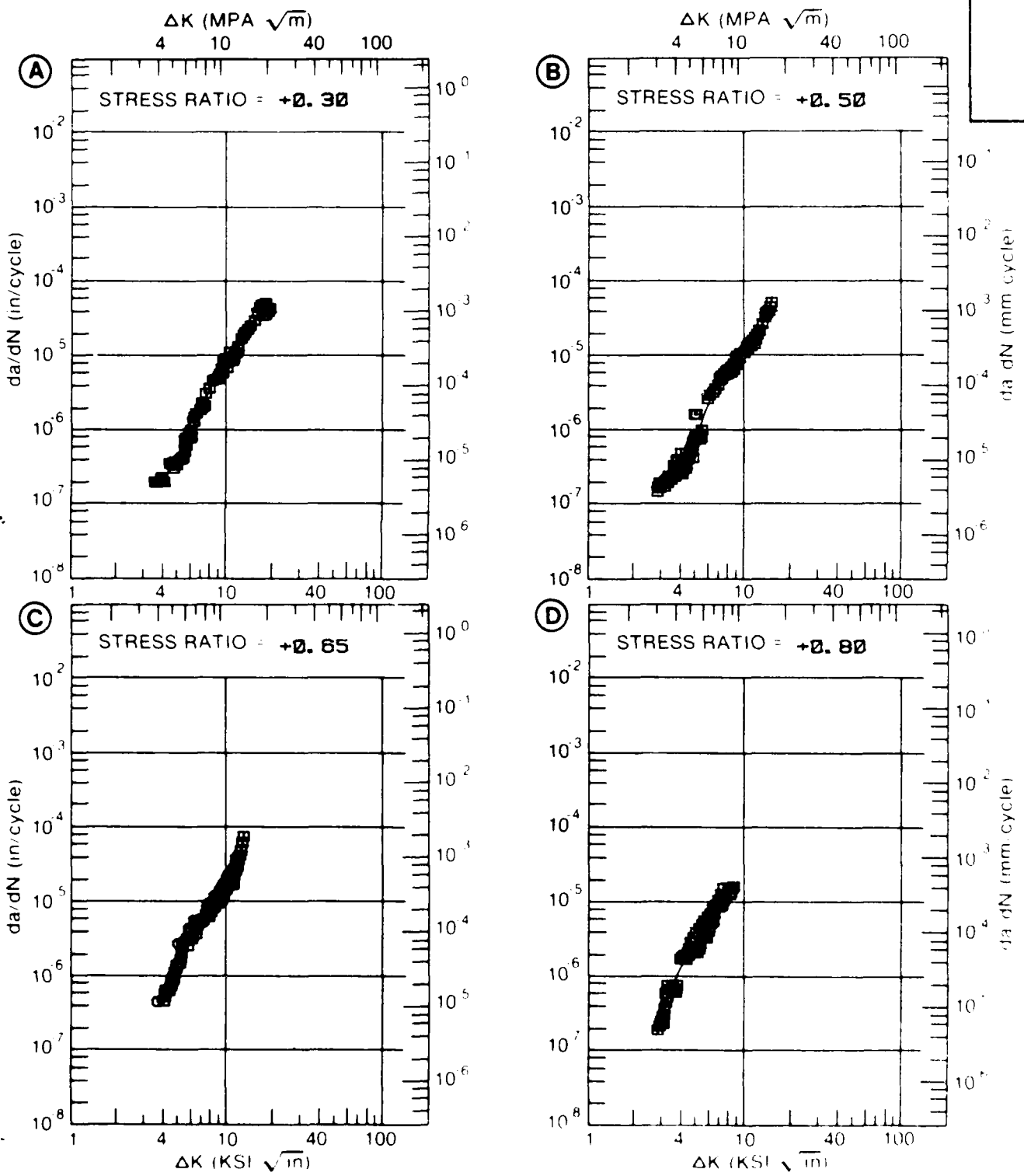

Figure 8.4.3.2

TABLE 8.4.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.4.3.3 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7010
CONDITION: T7365

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. LAB AIR	B E=+ 250F AIR	C E=+ 350F AIR	D
DELTA K MIN	A:	4.89	.243			
	B:	3.59		.184		
	C:	2.80			.162	
	D:					
		3.00			.301	
		3.50			.449	
		4.00		.531	.725	
		5.00	.250	.943	1.80	
		6.00	.668	2.13	3.60	
		7.00	.998	4.29	6.20	
		8.00	1.33	7.12	9.98	
		9.00	1.91	10.5	15.6	
		10.00	2.83	14.9	24.1	
		13.00	9.07	37.9		
		16.00	23.5			
		20.00	56.5			
DELTA K MAX	A:	23.58	88.6			
	B:	14.35		52.8		
	C:	10.67			32.2	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			19.41	16.45	2.53	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73651
FORM: 2.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 20.00- 25.00 HZ

YIELD STRENGTH: 64.4 KSI
ULT. STRENGTH: 73.7 KSI
SPECIMEN THK: 0.300"
SPECIMEN WIDTH: 1.500"
REFERENCES:UD002, UD003

ALUM. ALLOY

7010

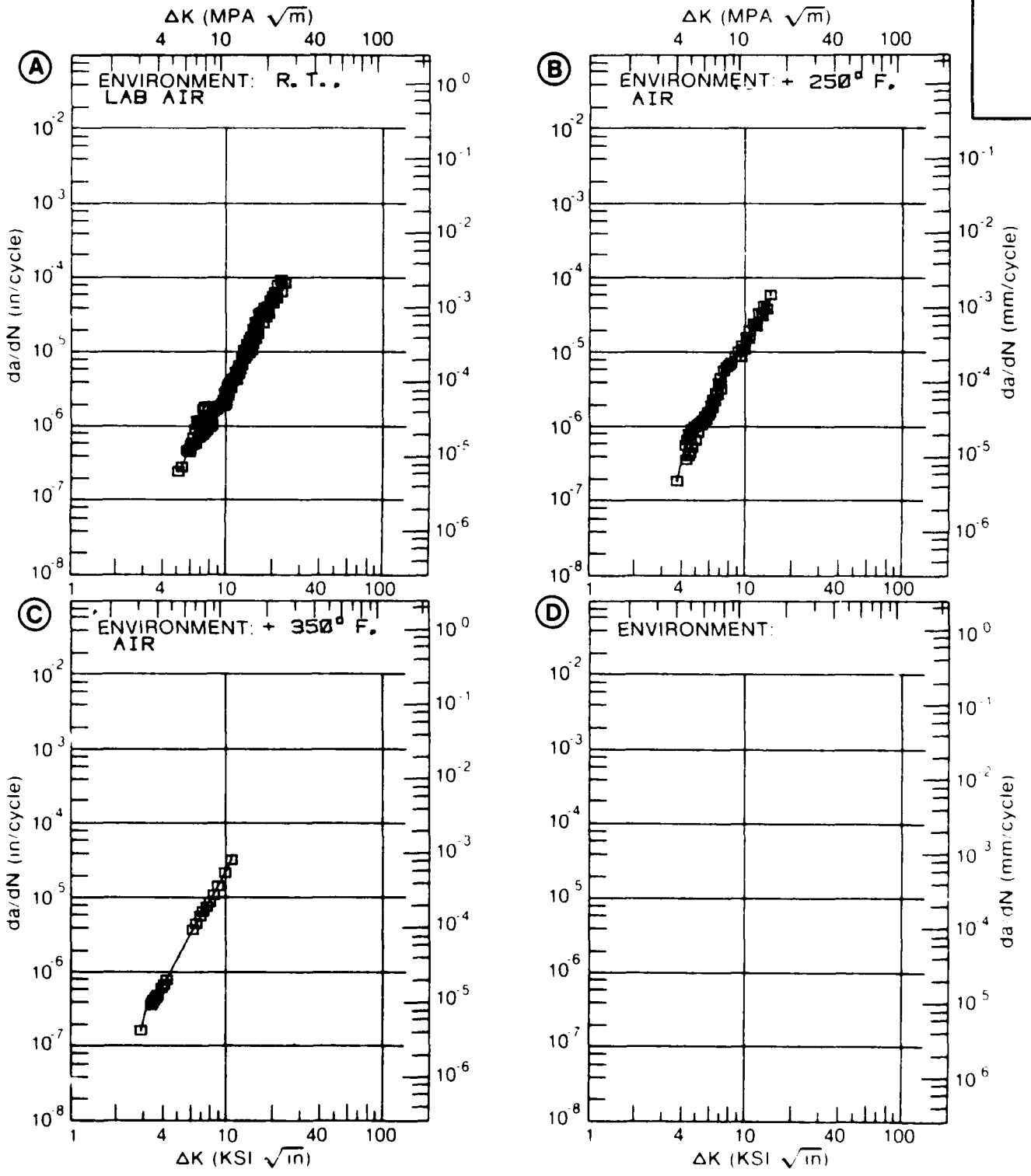

Figure 8.4.3.3

TABLE 8.4.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.4.3.4 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7010
CONDITION: T7351

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. LAB AIR	E=+ 250F AIR		
DELTA K MIN	A: 5.43	.588			
	B: 5.75		3.45		
	C:				
	D:				
	6.00	.760	3.99		
	7.00	1.69	6.39		
	8.00	3.28	9.10		
	9.00	4.80	12.2		
	10.00	6.03	15.7		
	13.00	9.10	31.1		
	16.00	13.0			
	20.00	22.5			
DELTA K MAX	A: 24.31	46.1			
	B: 15.48		54.5		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		9.39	4.95		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	2.0

CONDITION/HT: T73651
FORM: 2.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-S
STRESS RATIO: +0.10
FREQUENCY: 20.00- 25.00 HZ

YIELD STRENGTH: 62.9 KSI
ULT. STRENGTH: 73.7 KSI
SPECIMEN THK: 0.300"
SPECIMEN WIDTH: 1.500"
REFERENCES:UD003

ALUM. ALLOY

7010

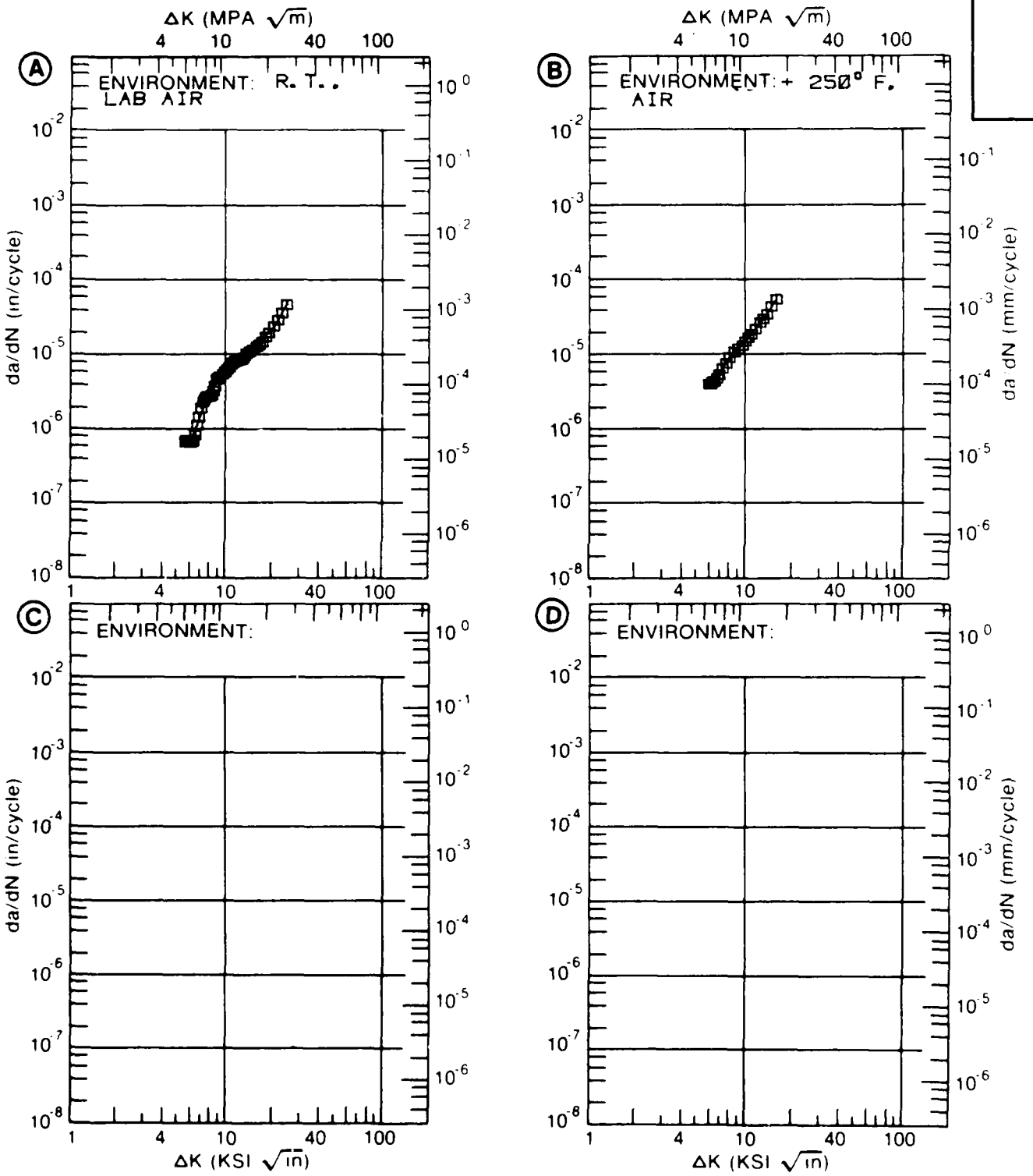

Figure 8.4.3.4

TABLE 8.4.3.5

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.4.3.5 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 7010
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR	E=+ 250 AIR		
DELTA K MIN	A:	5.31	.420			
	B:	3.83		.259		
	C:					
	D:					
		4.00		.330		
		5.00		1.01		
		6.00	.540	2.24		
		7.00	.831	4.13		
		8.00	1.49	6.81		
		9.00	3.13	10.4		
		10.00	6.15	15.3		
		13.00	15.8	40.7		
		16.00	34.3			
		20.00	85.4			
DELTA K MAX	A:	20.03	85.9			
	B:	14.89		70.6		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			15.05	22.86		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION HT T73651
FORM 2.00"TH PLATE
SPECIMEN TYPE CT
ORIENTATION T-L
STRESS RATIO +0.10
FREQUENCY 20.00- 25.00 HZ

YIELD STRENGTH: 62.9 KSI
ULT. STRENGTH: 73.7 KSI
SPECIMEN THK: 0.300"
SPECIMEN WIDTH: 1.500"
REFERENCES:UD003

ALUM. ALLOY

7010

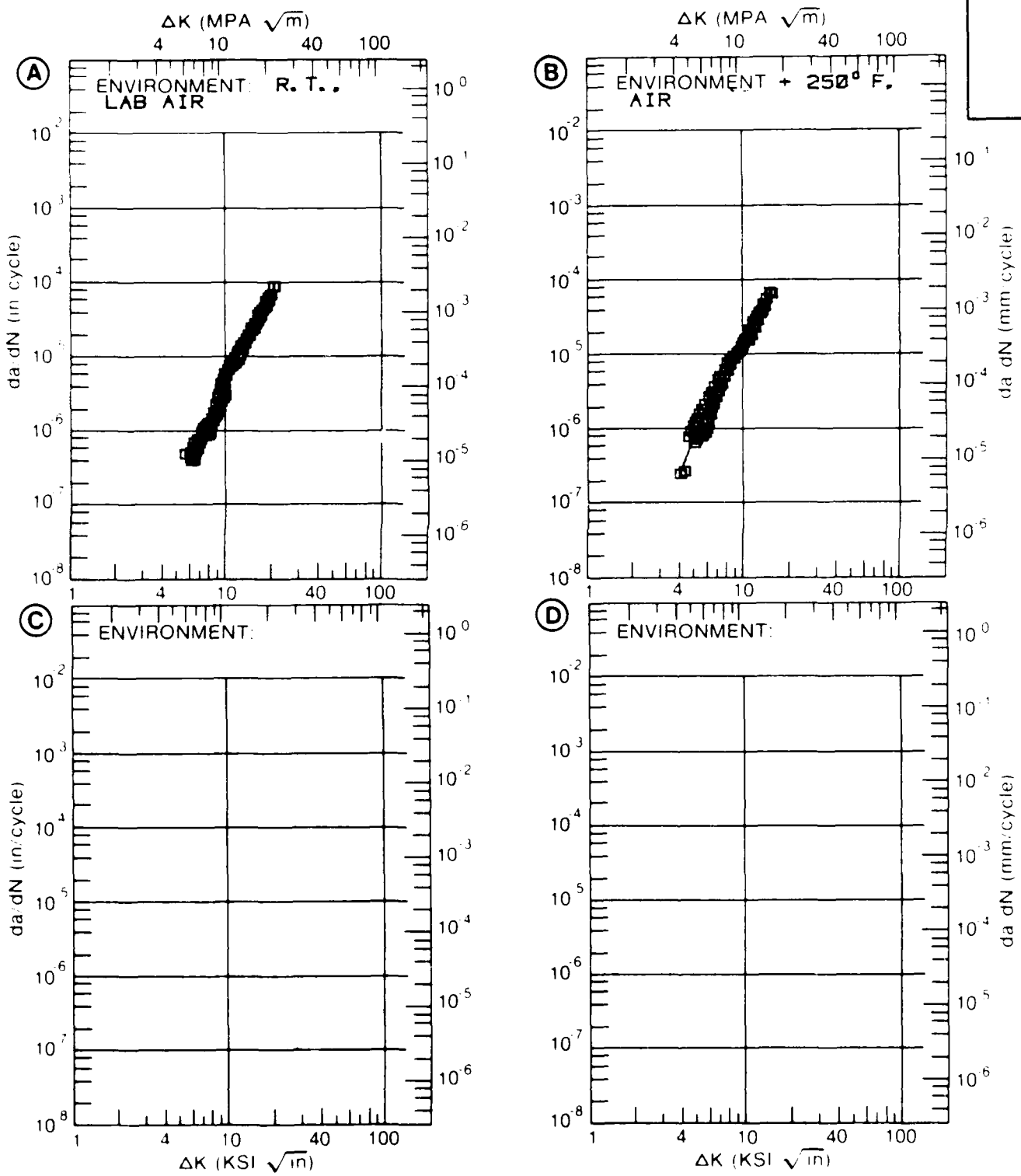

Figure 8.4.3.5

TABLE 8.4.3.6

ALUMINUM 7010 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SC)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T73651	P	2 00	R T	T-L	63 2	3 5% NACL	3 750	1 000	DCB	----	------	34 90			59700	1980	BL001
		2 00			63 2		3 750	1 000	DCB	----	------	30 10			59700	1980	BL001
													32 5/	3 4			
T73651	P	2 00	R T	S-L	65 0	3 5% NACL	1 500	0 750	CT	----	------	17 00			165720	1980	UD003

TABLE 8.5.3.1

SUSTAINED CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.5.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7039
CONDITION T64

K MAX (KSI*IN**1/2)			DA/DT (10**-6 IN/HOUR) A: WET 3X/DAY WITH 3.5% NACL	B	C	D
K MAX MIN	A:	8.00	857.			
	B:					
	C:					
	D:					
		9.00	1319.			
		10.00	1834.			
		13.00	3401.			
		16.00	4682.			
		20.00	5828.			
		25.00	6641.			
		30.00	7125.			
		35.00	7506.			
		40.00	7898.			
K MAX MAX	A:	43.00	8165.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 7.74

CONDITION/HT: T64
FORM: 1.0"TH PLATE
SPECIMEN TYPE: DCB
ORIENTATION: S-L
YIELD STRENGTH:
ULT. STRENGTH:

SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 5.000"
CRACK LENGTH (A_O):
K_{ISCC}:
REFERENCES: 84284

ALUM. ALLOY

7038

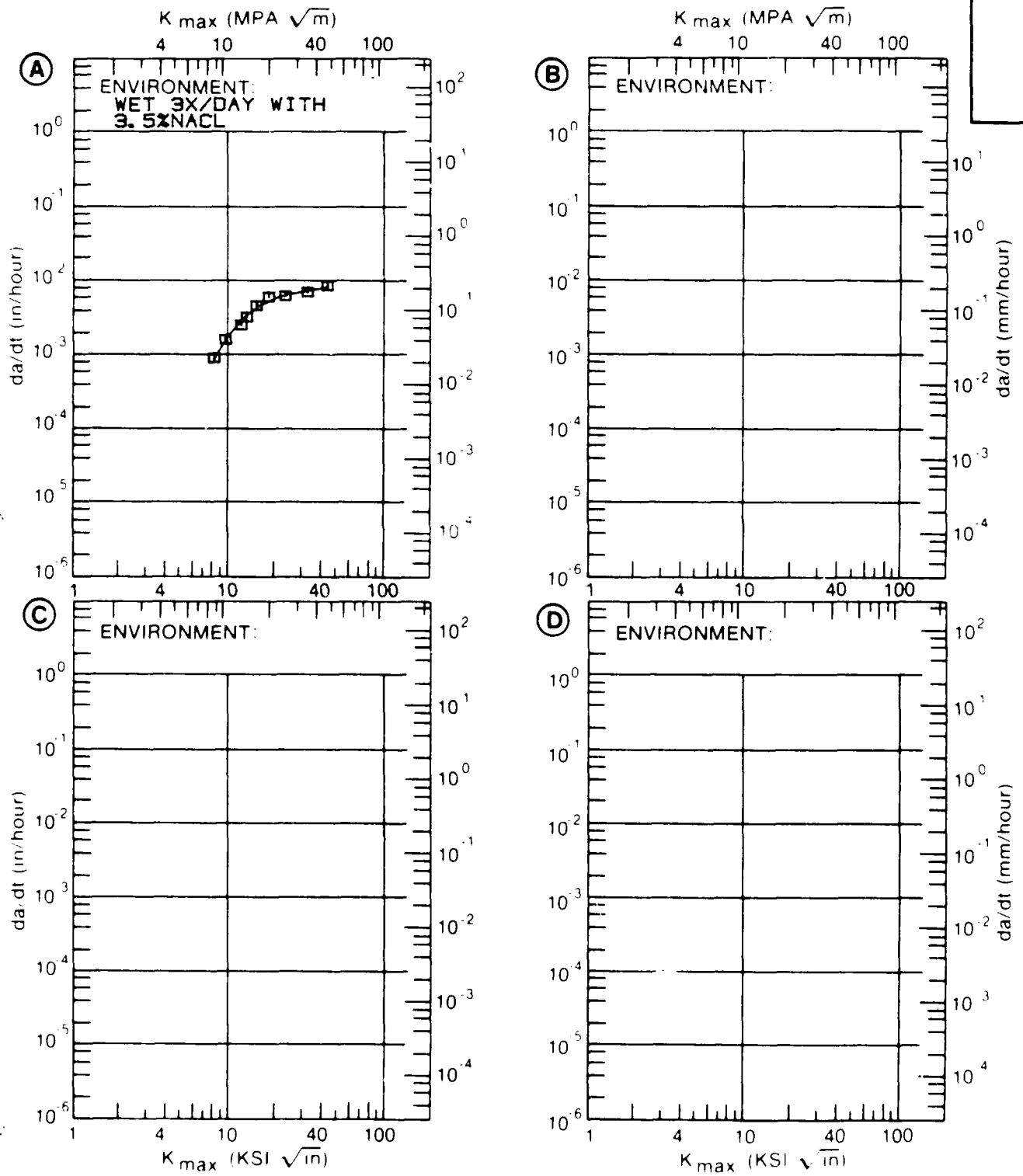

Figure 8.5.3.1

TABLE 8.6.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 7049 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD DEVIATION (KSI SQRT(IN))		(NUMBER OF SPECIMENS)
PLATE			
CONDITION/HT	L-T	T-L	S-L
T7351	-----	26.1 ± 1.7 (4)	23.8 ± 0.6 (4)
FORGING			
CONDITION/HT	L-T	T-L	S-L
T73	30.8 ± 3.0 (29)	21.9 ± 2.5 (20)	21.3 ± 2.5 (39)
T7352	38.2 ± 1.0 (2)	-----	19.5 ± 2.8 (6)
EXTRUSION			
CONDITION/HT	L-T	T-L	S-L
T73	28.1 ± 0.7 (3)	25.2 ± 0.5 (3)	-----
EXTRUDED BAR			
CONDITION/HT	L-T	T-L	S-L
T73	33.2 ± 2.7 (3)	22.0 ± 0.5 (3)	-----
T7351-HIGH PURITY	33.9 ± 0.1 (2)	26.0 ± 0.1 (2)	-----
T7351 LOW PURITY	23.8 ± 0.3 (2)	18.1 ± 0.1 (2)	-----
T7351 MEDIUM PURITY	29.7 ± 0.8 (2)	22.1 ± 0.5 (2)	-----
T76	32.7 ± 1.7 (3)	20.0 ± 0.3 (3)	-----

TABLE 8.6.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7049

TEST CONDITIONS

SPECIMEN ORIENTATION: L-T

ENVIRONMENT: LAB AIR RT

CONDITION(S)	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T7351	PLATE	-1.00	10.00				3.59	43.9		
T7351	PLATE	0.00	10.00				2.58	28.3		
T7351	PLATE	0.50	10.00			0.76	14.6	108		
T7351	FORGING	0.08	6.00				4.16	33.1		
T7351	FORGING	0.08	6.00			0.66	5.63			
T7351	FORGING	0.30	6.00		0.06	1.03	11.0			
T7351	FORGING	0.50	6.00		0.11	1.29				

TABLE 8.6.1.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7049

TEST CONDITIONS

SPECIMEN ORIENTATION: L T

ENVIRONMENT: LAB AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T73511-HIGH PURITY	EXTRUSION	0.10	30.00				7.84			
T73511 LOW PURITY	EXTRUSION	0.10	30.00				7.32			
T73511-MEDIUM PURITY	EXTRUSION	0.10	30.00				3.44			

TABLE 8.6.1.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7049

[CSI CONDITIONS]

SPECIMEN ORIENTATION L-T

ENVIRONMENT H H A AT R T

CONDITION/TD	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T73	FORGING	0 33	5 20				15 5			
T73511 HIGH PURITY	EXTRUSION	0 10	30 00				15 4			
T73511 LOW PURITY	EXTRUSION	0 10	30 00				11 5			
T73511 MEDIUM PURITY	EXTRUSION	0 10	30 00				14 2			

TABLE 8.6.1.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7049

TEST CONDITIONS

SPECIMEN ORIENTATION L T

ENVIRONMENT 3.5% NACL AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2.5	5	10	20	50	100
T7351	PLATE	0.00	1.00				56.1	224	2157	
T7351	PLATE	0.00	10.00				25.1	125.	928	
T7351	PLATE	1.00	0.10				20.7	96.5		
T7351	PLATE	0.50	0.10			4.30	48.8	228		

TABLE 8.6.1.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7049

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT LAB AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T73511-HIGH PURITY	EXTRUSION	0.10	30.00				7.81			
T73511-LOW PURITY	EXTRUSION	0.10	30.00				9.33			
T73511-MEDIUM PURITY	EXTRUSION	0.10	30.00				8.36			

TABLE 8.6.1.7

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7049

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT SALT FOG AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T73	FORGING	0.33	18.30				30.1			
T73	FORGING	0.33	5.20				34.2			

TABLE 8.6.2.1

ALUMINUM 7049 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73	F	2.00	R.T	L-S	73.1	1.500	0.750	CT	0.780	0.53	33.60			1972	84368
T73	F	1.00	86	L-S	74.9	2.000	0.998	CT	1.059	0.36	28.50			1973	86213
T73	F	6.00	R.T	L-T	55.3	2.000	0.998	CT	1.003	0.64	28.00			1973	86213
		6.00			55.3	2.000	0.998	CT	0.971	0.54	25.60			1973	86213
		6.00			58.4	2.000	1.002	CT	0.993	0.90	35.10			1973	86213
		6.00			58.4	2.000	1.001	CT	1.021	0.76	32.30			1973	86213
		5.00			60.1	2.000	1.000	CT	1.060	0.52	27.40			1972	84368
		5.00			60.1	2.000	1.000	CT	1.040	0.47	25.90			1972	84368
		3.00			65.0	2.000	1.000	CT	1.011	0.56	30.70			1973	86213
		3.00			65.0	2.000	1.000	CT	1.042	0.67	33.70			1973	86213
		3.00			65.4	2.000	1.000	CT	1.100	0.57	31.40			1972	84368
		3.00			65.4	2.000	0.998	CT	1.088	0.54	30.30			1973	86213
		3.00			65.4	2.000	1.000	CT	1.090	0.54	30.30			1972	84368
		3.00			65.4	2.000	0.998	CT	1.097	0.58	31.40			1973	86213
		3.00			65.5	1.500	0.750	CT	0.790	0.69	34.30			1972	84368
		2.00			65.5	1.500	0.750	CT	0.800	0.64	33.20			1972	84368
		2.00			67.0	1.000	0.500	CT	0.480	0.46	28.70			1972	84368
		1.00			67.0	1.000	0.500	CT	0.470	0.45	28.30			1972	84368
		1.75			67.0	1.000	0.498	CT	0.472	0.45	28.30			1973	86213
		1.75			67.0	1.000	0.498	CT	0.480	0.46	28.70			1973	86213
		----			68.0	3.500	0.996	CT	1.802	0.43	28.20			1972	84306
		2.00			68.8	2.000	1.000	CT	1.036	0.42	28.30			1973	86213
		7.10			70.6	2.000	0.998	CT	1.049	0.40	28.20			1973	86213
		4.00			72.8	2.000	1.000	CT	1.080	0.55	34.20			1972	84368
		4.00			72.8	1.990	0.998	CT	1.084	0.55	34.20			1973	86213
		4.00			72.8	1.990	0.998	CT	1.090	0.47	31.50			1973	86213
		4.00			72.8	2.000	1.000	CT	1.090	0.47	31.50			1972	84368
		7.00			73.4	2.000	1.000	CT	1.095	0.58	35.40			1973	86213
		2.00			74.4	1.000	0.500	CT	0.490	0.43	30.80			1972	84368
		1.00			74.4	1.000	0.500	CT	0.480	0.42	30.60			1972	84368
		2.00			75.9	1.500	0.750	CT	0.830	0.60	37.20	30.8/	3.0	1972	84368
T73	F	5.00	82	L-T	60.1	2.000	1.000	CT	1.039	0.46	25.90			1973	86213
		5.00			60.1	2.000	1.000	CT	1.062	0.52	27.40			1973	86213
		5.00			60.6	1.990	1.000	CT	0.995	0.80	34.30			1973	86213
		2.70			65.5	1.500	0.747	CT	0.795	0.69	34.30			1973	86213
		2.70			65.5	1.500	0.747	CT	0.802	0.64	33.20			1973	86213

TABLE 8.6.2.1 (Con't)

ALUMINUM 7049 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73	F	4 20	82	L-T	65.7	1.500	0.748	CT	0.785	0.49	29.20			1973	86213
		4 20			65.7	1.500	0.748	CT	0.793	0.49	29.10			1973	86213
		2 00			68.8	2.000	1.000	CT	1.081	0.29	23.50			1973	86213
		2 50			73.1	1.500	0.749	CT	0.782	0.53	33.60			1973	86213
		1 50			74.4	0.990	0.499	CT	0.491	0.43	30.80			1973	86213
		1 50			74.4	1.000	0.499	CT	0.481	0.42	30.60			1973	86213
		2 50			75.9	1.500	0.750	CT	0.832	0.60	37.20	30.8/	4.0	1973	86213
T73	F	6 00	84	L-T	59.5	2.000	1.000	CT	1.010	0.66	30.60			1973	86213
		6 00			59.5	2.000	1.000	CT	1.015	0.79	33.50	32.1/	2.1	1973	86213
T73	F	6 00	R.T.	T-L	55.5	2.000	1.000	CT	0.967	0.29	18.90			1973	86213
		6 00			55.5	2.000	1.000	CT	0.994	0.29	18.80			1973	86213
		6 00			57.8	2.000	1.001	CT	1.023	0.44	24.20			1973	86213
		6 00			57.8	2.000	1.002	CT	1.016	0.40	23.00			1973	86213
		5 00			58.1	2.000	1.000	CT	1.050	0.25	18.40			1972	84368
		3 00			62.2	2.000	1.000	CT	1.027	0.50	27.90			1973	86213
		3 00			62.2	2.000	1.000	CT	1.023	0.44	26.20			1973	86213
		3 00			63.9	2.000	1.000	CT	0.997	0.28	21.20			1973	86213
		3 00			63.9	2.000	0.999	CT	1.085	0.25	20.40			1973	86213
		3 00			66.2	2.000	1.000	CT	1.100	0.31	23.40			1972	84368
		3 00			66.2	1.990	0.998	CT	1.101	0.31	23.40			1973	86213
		3 00			66.2	2.000	0.998	CT	1.106	0.30	23.00			1973	86213
		3 00			66.2	2.000	1.000	CT	1.110	0.30	23.00			1972	84368
		2 00			67.0	2.000	0.999	CT	1.015	0.19	18.70			1973	86213
		4 00			68.5	2.000	0.998	CT	1.062	0.25	21.70			1973	86213
		4 00			68.5	2.000	1.000	CT	1.060	0.25	21.70			1972	84368
		4 00			68.5	2.000	0.998	CT	1.091	0.22	20.20			1973	86213
		4 00			68.5	2.000	1.000	CT	1.090	0.22	20.20			1972	84368
		7 10			70.6	2.000	0.999	CT	1.093	0.26	22.60			1973	86213
		7 00			73.4	2.000	0.998	CT	1.104	0.20	20.70	21.9/	2.5	1973	86213
T73	F	5 00	82	T-L	58.1	2.000	1.000	CT	1.047	0.25	18.40			1973	86213
		5 00			61.3	1.990	1.000	CT	0.950	0.52	28.00			1973	86213
		5 00			61.3	1.990	1.000	CT	0.945	0.49	27.10			1973	86213
		2 00			67.0	2.000	0.999	CT	1.075	0.27	21.90			1973	86213
		2 00			67.0	2.000	1.000	CT	1.082	0.27	22.00	23.5/	4.0	1973	86213
T73	F	6 00	84	T-L	57.6	2.000	1.000	CT	0.988	0.31	20.30			1973	86213

TABLE 8.6.2.1 (Con't)

ALUMINUM 7049 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73	F	6.00	84	T-L	57.6	2.000	1.000	CT	1.013	0.36	22.00	21.2/	1.2	1973	86213
T73	F	6.00	R T	S-L	55.1	2.000	0.999	CT	1.021	0.22	16.30			1973	86213
		6.00			55.1	2.000	1.000	CT	1.025	0.22	16.20			1973	86213
		6.00			56.9	2.000	1.000	CT	1.043	0.40	22.70			1973	86213
		6.00			56.9	2.000	1.000	CT	1.035	0.36	21.70			1973	86213
		5.00			59.1	2.000	1.000	CT	1.050	0.28	19.70			1972	84368
		5.00			59.1	2.000	1.000	CT	1.050	0.28	19.80			1972	84368
		3.00			59.8	2.000	1.001	CT	1.008	0.20	17.10			1973	86213
		1.00			61.8	1.000	0.500	CT	0.500	0.37	24.00			1972	84368
		1.00			61.8	1.000	0.500	CT	0.510	0.36	23.70			1972	84368
		3.00			62.3	2.000	1.000	CT	1.060	0.33	22.70			1972	84368
		3.00			62.3	2.000	1.000	CT	1.060	0.32	22.30			1972	84368
		3.00			62.3	2.000	0.996	CT	1.065	0.33	22.70			1973	86213
		3.00			62.3	2.000	0.998	CT	1.059	0.32	22.30			1973	86213
		3.00			64.5	2.000	1.000	CT	1.065	0.31	22.80			1973	86213
		3.00			64.5	2.000	0.999	CT	1.062	0.36	24.60			1973	86213
		3.00			64.7	1.500	0.750	CT	0.770	0.32	23.00			1972	84368
		3.00			64.7	1.500	0.750	CT	0.770	0.41	26.20			1972	84368
		3.00			64.9	1.500	0.750	CT	0.820	0.38	25.40			1972	84368
		3.00			64.9	1.500	0.750	CT	0.810	0.37	25.10			1972	84368
		2.00			65.4	2.000	0.999	CT	1.052	0.14	15.60			1973	86213
		2.00			65.4	2.000	0.998	CT	1.089	0.18	17.60			1973	86213
		1.75			66.1	1.000	0.498	CT	0.486	0.21	19.10			1973	86213
		2.00			66.1	1.000	0.500	CT	0.520	0.22	19.60			1972	84368
		2.00			66.1	1.000	0.500	CT	0.490	0.21	19.10			1972	84368
		1.75			66.1	1.000	0.498	CT	0.520	0.22	19.60			1973	86213
		3.00			66.3	1.500	0.750	CT	0.790	0.27	22.40			1972	84368
		3.00			66.3	1.500	0.750	CT	0.790	0.26	21.80			1972	84368
		2.00			67.1	1.000	0.500	CT	0.460	0.31	23.50			1972	84368
		2.00			67.1	1.000	0.500	CT	0.480	0.27	21.90			1972	84368
		4.00			67.5	2.000	1.000	CT	1.060	0.24	20.80			1972	84368
		4.00			67.5	2.000	1.000	CT	1.050	0.24	20.70			1972	84368
		4.00			67.5	2.000	0.998	CT	1.058	0.24	20.80			1973	86213
		4.00			67.5	2.000	0.998	CT	1.054	0.24	20.70			1973	86213
		1.00			67.6	1.500	0.750	CT	0.800	0.29	23.10			1972	84368
		2.00			67.6	1.500	0.750	CT	0.800	0.30	23.40			1972	84368
		----			68.9	1.000	0.500	CT	0.500	0.22	20.50			1972	83242
		----			68.9	1.000	0.500	CT	0.500	0.22	20.50			1972	83242

TABLE 8.6.2.1 (Con't)

ALUMINUM 7049 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73	F	-----	R T	S-L	68.9	1.000	0.500	CT	0.500	0.24	21.20			1972	83242
		-----			68.9	1.000	0.500	CT	0.500	0.24	21.20	21.3/	2.5	1972	83242
T73	F	5.00	82	S-L	59.1	2.000	1.000	CT	1.051	0.28	19.80			1973	86213
		5.00			59.1	2.000	1.000	CT	1.048	0.28	19.70			1973	86213
		5.00			60.1	1.990	1.000	CT	0.956	0.23	18.20			1973	86213
		5.00			60.1	1.990	1.000	CT	0.980	0.22	17.90			1973	86213
		1.00			62.6	1.000	0.501	CT	0.513	0.36	23.70			1973	86213
		1.00			62.6	1.000	0.499	CT	0.499	0.37	24.00			1973	86213
		2.70			64.7	1.500	0.748	CT	0.774	0.32	23.00			1973	86213
		2.70			64.7	1.500	0.748	CT	0.773	0.41	26.20			1973	86213
		2.50			64.9	1.500	0.748	CT	0.820	0.38	25.40			1973	86213
		2.50			64.9	1.500	0.748	CT	0.813	0.37	25.10			1973	86213
		2.00			65.4	1.620	0.751	CT	0.779	0.13	15.00			1973	86213
		1.50			67.1	0.990	0.499	CT	0.464	0.31	23.50			1973	86213
		1.50			67.1	0.990	0.498	CT	0.480	0.27	21.90			1973	86213
		1.50			67.6	1.500	0.750	CT	0.799	0.30	23.40			1973	86213
		1.50			67.6	1.500	0.750	CT	0.798	0.29	23.10			1973	86213
		2.50			67.8	1.500	0.749	CT	0.789	0.27	22.40			1973	86213
		2.50			67.8	1.500	0.751	CT	0.794	0.26	21.80			1973	86213
		4.20			69.7	1.500	0.747	CT	0.782	0.17	18.40			1973	86213
		4.20			69.7	1.500	0.748	CT	0.794	0.18	18.70	21.6/	3.0	1973	86213
T73	F	6.00	84	S-L	58.7	2.000	1.000	CT	1.028	0.28	19.60			1973	86213
		6.00			58.7	2.000	1.000	CT	1.024	0.28	19.70			1973	86213
		0.75			68.2	1.000	0.500	CT	0.515	0.29	23.20			1973	86213
		0.75			68.2	1.000	0.500	CT	0.516	0.30	23.60			1973	86213
		0.75			71.5	1.000	0.475	CT	0.535	0.22	21.30			1973	86213
		0.75			71.5	1.000	0.494	CT	0.539	0.25	22.60	21.7/	1.7	1973	86213
T73	E	3.00	- 65	L-T	78.9	2.000	1.000	CT	1.000	0.22	23.60			1972	83061
		3.00			78.9	2.000	1.000	CT	1.000	0.26	25.40			1972	83061
		3.00			78.9	2.000	1.000	CT	1.000	0.26	25.20	24.7/	1.0	1972	83061
T73	E	3.00	0	L-T	76.8	2.000	1.000	CT	1.000	0.25	24.50			1972	83061
		3.00			76.8	2.000	1.000	CT	1.000	0.30	26.80			1972	83061
		3.00			76.8	2.000	1.000	CT	1.000	0.29	26.30	25.9/	1.2	1972	83061
T73	E	3.00	R T	L-T	74.8	2.000	1.000	CT	1.000	0.33	27.30			1972	83061

TABLE 8.6.2.1 (Con't)

ALUMINUM 7049 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73	E	3.00	R T	L-T	74.8	2.000	1.000	CT	1.000	0.36	28.60			1972	83061
		3.00			74.8	2.000	1.000	CT	1.000	0.36	28.30	28.1/	0.7	1972	83061
T73	E	3.00	- 65	T-L	77.5	2.000	1.000	CT	1.000	0.22	22.80			1972	83061
		3.00			77.5	2.000	1.000	CT	1.000	0.23	23.70	23.3/	0.6	1972	83061
T73	E	3.00	0	T-L	76.3	2.000	1.000	CT	1.000	0.24	23.80			1972	83061
		3.00			76.3	2.000	1.000	CT	1.000	0.27	24.90			1972	83061
		3.00			76.3	2.000	1.000	CT	1.000	0.24	23.60	24.1/	0.7	1972	83061
T73	E	3.00	R T	T-L	75.0	2.000	1.000	CT	1.000	0.29	25.70			1972	83061
		3.00			75.0	2.000	1.000	CT	1.000	0.28	25.30			1972	83061
		3.00			75.0	2.000	1.000	CT	1.000	0.27	24.70	25.2/	0.5	1972	83061
T73	E	3.00	- 65	S-T	72.7	----	----	CT	----	0.21	21.10			1972	83061
		3.00			72.7	----	----	CT	----	0.26	23.30	22.2/	1.6	1972	83061
T73	E	3.00	0	S-T	71.2	----	----	CT	----	0.25	22.50			1972	83061
		3.00			71.2	----	----	CT	----	0.19	19.80	21.2/	1.9	1972	83061
T73	E	3.00	R T	S-T	68.6	----	----	CT	----	0.21	20.10			1972	83061
		3.00			68.6	----	----	CT	----	0.22	20.50			1972	83061
		3.00			68.6	----	----	CT	----	0.22	20.30	20.3/	0.2	1972	83061
T73	EB	3.50	- 65	L-T	71.7	2.000	1.000	CT	1.000	0.52	32.60			1972	83061
		3.50			71.7	2.000	1.000	CT	1.000	0.42	29.40			1972	83061
		3.50			71.7	2.000	1.000	CT	1.000	0.51	32.20	31.4/	1.7	1972	83061
T73	EB	3.50	0	L-T	77.3	2.000	1.000	CT	1.000	0.50	34.70			1972	83061
		3.50			77.3	2.000	1.000	CT	1.000	0.48	33.80			1972	83061
		3.50			77.3	2.000	1.000	CT	1.000	0.49	34.20	34.2/	0.5	1972	83061
T73	EB	3.25	R T	L-T	73.4	2.000	1.000	CT	1.000	0.55	34.40			1972	83061
		3.50			73.4	2.000	1.000	CT	1.000	0.42	30.10			1972	83061
		3.50			73.4	2.000	1.000	CT	1.000	0.57	35.10	33.2/	2.7	1972	83061
T73	EB	3.50	- 65	T-L	70.3	2.000	1.000	CT	1.000	0.18	18.90			1972	83061
		3.50			70.3	2.000	1.000	CT	1.000	0.22	20.80			1972	83061
		3.50			70.3	2.000	1.000	CT	1.000	0.21	20.20	20.0/	1.0	1972	83061

TABLE 8.6.2.1 (Con't)

ALUMINUM 7049 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73	EB	3.50	0	T-L	69.6	2.000	1.000	CT	1.000	0.22	20.60			1972	83061
		3.50			69.6	2.000	1.000	CT	1.000	0.22	20.40			1972	83061
		3.50			69.6	2.000	1.000	CT	1.000	0.23	20.90	20.6/	0.3	1972	83061
T73	EB	3.50	R.T	T-L	67.7	2.000	1.000	CT	1.000	0.25	21.50			1972	83061
		3.50			67.7	2.000	1.000	CT	1.000	0.27	22.40			1972	83061
		3.50			67.7	2.000	1.000	CT	1.000	0.27	22.10	22.0/	0.5	1972	83061
T73	EB	3.50	-65	S-T	67.2	2.000	1.000	CT	1.000	0.24	20.70			1972	83061
T73	EB	3.50	0	S-T	66.5	2.000	1.000	CT	1.000	0.27	21.80			1972	83061
		3.50			66.5	2.000	1.000	CT	1.000	0.25	21.00			1972	83061
		3.50			66.5	2.000	1.000	CT	1.000	0.26	21.60	21.5/	0.4	1972	83061
T73	EB	3.50	R.T	S-T	65.4	2.000	1.000	CT	1.000	0.30	22.50			1972	83061
		3.50			65.4	2.000	1.000	CT	1.000	0.30	22.60			1972	83061
		3.50			65.4	2.000	1.000	CT	1.000	0.33	23.80	23.0/	0.7	1972	83061
T7351	P	4.00	R.T	T-L	53.6	1.500	0.750	CT	0.722	0.51	24.10			1973	86213
		4.00			53.6	1.490	0.748	CT	0.725	0.56	25.40			1973	86213
		2.00			59.4	1.500	0.750	CT	0.750	0.52	27.20			1973	86213
		2.00			59.4	1.500	0.748	CT	0.751	0.55	27.80	26.1/	1.7	1973	86213
T7351	P	4.00	R.T	S-L	49.3	1.490	0.750	CT	0.700	0.55	23.20			1973	86213
		4.00			49.3	1.500	0.750	CT	0.730	0.59	24.00			1973	86213
		2.00			57.6	1.490	0.750	CT	0.715	0.42	23.50			1973	86213
		2.00			57.6	1.490	0.750	CT	0.704	0.45	24.50	23.8/	0.6	1973	86213
T73511-HIGH/ PURITY	EB	1.50	R.T	L-T	76.7	2.500	1.250	CT	----	0.49	34.00			1980	WA001
		1.50			76.7	2.500	1.250	CT	----	0.49	33.80	33.9/	0.1	1980	WA001
T73511-HIGH/ PURITY	EB	1.50	R.T	T-L	70.3	2.500	1.250	CT	----	0.34	26.00			1980	WA001
		1.50			70.3	2.500	1.250	CT	----	0.34	25.90	26.0/	0.1	1980	WA001

TABLE 8.6.2.1 (Con't)

ALUMINUM 7049 K(IC)

CONDITION	PRODUCT FORM	PRODUCT THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	SPECIMEN DESIGN	CRACK LENGTH (IN) A	2.5*(K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	K(IC) STAN DEV	DATE	REFER
T73511 LOW/	EB	1.50	R.T	L-T	73.1	2.500	1.250	CT	----	0.27	24.00			1980	WA001
PURITY		1.50			73.1	2.500	1.250	CT	----	0.26	23.60	23.8/	0.3	1980	WA001
T73511 LOW/	EB	1.50	R.T	T-L	68.6	2.500	1.250	CT	----	0.18	18.20			1980	WA001
PURITY		1.50			68.6	2.500	1.250	CT	----	0.17	18.00	18.1/	0.1	1980	WA001
T73511-MEDIUM/	EB	1.50	R.T	L-T	75.4	2.500	1.250	CT	----	0.40	30.30			1980	WA001
PURITY		1.50			75.4	2.500	1.250	CT	----	0.37	29.10	29.7/	0.8	1980	WA001
T73511-MEDIUM/	EB	1.50	R.T	T-L	69.2	2.500	1.250	CT	----	0.25	21.70			1980	WA001
PURITY		1.50			69.2	2.500	1.250	CT	----	0.26	22.40	22.1/	0.5	1980	WA001
T7352	F	7.10	R.T	L-T	65.0	3.990	1.998	CT	1.882	0.83	37.50			1973	85836
		7.10			65.0	3.990	1.997	CT	1.900	0.90	38.90	38.2/	1.0	1973	85836
T7352	F	6.00	R.T	S-L	50.5	2.000	0.999	CT	0.931	0.36	19.10			1973	86213
		6.00			50.5	2.000	0.999	CT	0.954	0.24	15.80			1973	86213
		3.00			58.6	2.000	0.999	CT	1.003	0.22	17.30			1973	86213
		7.10			62.0	2.500	1.252	CT	1.292	0.36	23.40			1973	85836
		3.00			63.8	2.000	1.000	CT	1.065	0.29	21.90			1973	86213
		3.00			63.8	2.000	1.000	CT	1.039	0.24	19.70	19.5/	2.8	1973	86213
T76	EB	3.50	-65	L-T	80.0	2.000	1.000	CT	1.000	0.36	30.30			1972	83061
		3.50			80.0	2.000	1.000	CT	1.000	0.36	30.30			1972	83061
		3.50			80.0	2.000	1.000	CT	1.000	0.36	30.50	30.4/	0.1	1972	83061
T76	EB	3.50	0	L-T	77.1	2.000	1.000	CT	1.000	0.49	34.10			1972	83061
		3.50			77.1	2.000	1.000	CT	1.000	0.44	32.30			1972	83061
		3.50			77.1	2.000	1.000	CT	1.000	0.45	32.90	33.1/	0.9	1972	83061
T76	EB	3.25	R.T	L-T	75.5	2.000	1.000	CT	1.000	0.51	34.20			1972	83061
		3.50			75.5	2.000	1.000	CT	1.000	0.42	30.80			1972	83061
		3.50			75.5	2.000	1.000	CT	1.000	0.48	33.10	32.7/	1.7	1972	83061

TABLE 8.6.2.1 (Con't)

ALUMINUM 7049 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5*(K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T76	EB	3.50	-65	T-L	72.9	2.000	1.000	CT	1.000	0.17	19.00			1972	83061
		3.50			72.9	2.000	1.000	CT	1.000	0.18	19.30	19.2/	0.2	1972	83061
T76	EB	3.50	0	T-L	70.6	2.000	1.000	CT	1.000	0.22	20.80			1972	83061
		3.50			70.6	2.000	1.000	CT	1.000	0.19	19.60	20.2/	0.8	1972	83061
T76	EB	3.50	R.T	T-L	68.6	2.000	1.000	CT	1.000	0.22	20.30			1972	83061
		3.50			68.6	2.000	1.000	CT	1.000	0.21	19.70			1972	83061
		3.50			68.6	2.000	1.000	CT	1.000	0.21	20.00	20.0/	0.3	1972	83061
T76	EB	3.50	-65	S-T	67.5	2.000	1.000	CT	1.000	0.22	19.90			1972	83061
		3.50			67.5	2.000	1.000	CT	1.000	0.21	19.10			1972	83061
		3.50			67.5	2.000	1.000	CT	1.000	0.21	19.30	19.4/	0.4	1972	83061
T76	EB	3.50	0	S-T	66.6	2.000	1.000	CT	1.000	0.25	21.20			1972	83061
		3.50			66.6	2.000	1.000	CT	1.000	0.24	20.70			1972	83061
		3.50			66.6	2.000	1.000	CT	1.000	0.24	20.50	20.8/	0.4	1972	83061
T76	EB	3.50	R.T	S-T	65.8	2.000	1.000	CT	1.000	0.25	20.90			1972	83061

TABLE 8.6.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T73

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	6.17	4 1/			
	B:	6.21		10 4		
	C:	6.07			9.11	
	D:					
		7.00	6.89	11 7	10.8	
		8.00	10.1	16.5	15.7	
		9.00	14.8	30.7	21.5	
		10.00	24.8	28.5	30.1	
DELTA K MAX	A:	11.88	112.			
	B:	10.89		100.		
	C:	11.44			76.4	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			16.76	9.08	7.82	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	2	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T73
FORM: 4.00- 5.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 18.30

YIELD STRENGTH: 58.1- 68.5 KSI
ULT. STRENGTH: 68.4- 76.4 KSI
SPECIMEN THK: 1.495- 1.502"
SPECIMEN WIDTH: 3.800"
REFERENCES:86842

ALUM. ALLOY

7049

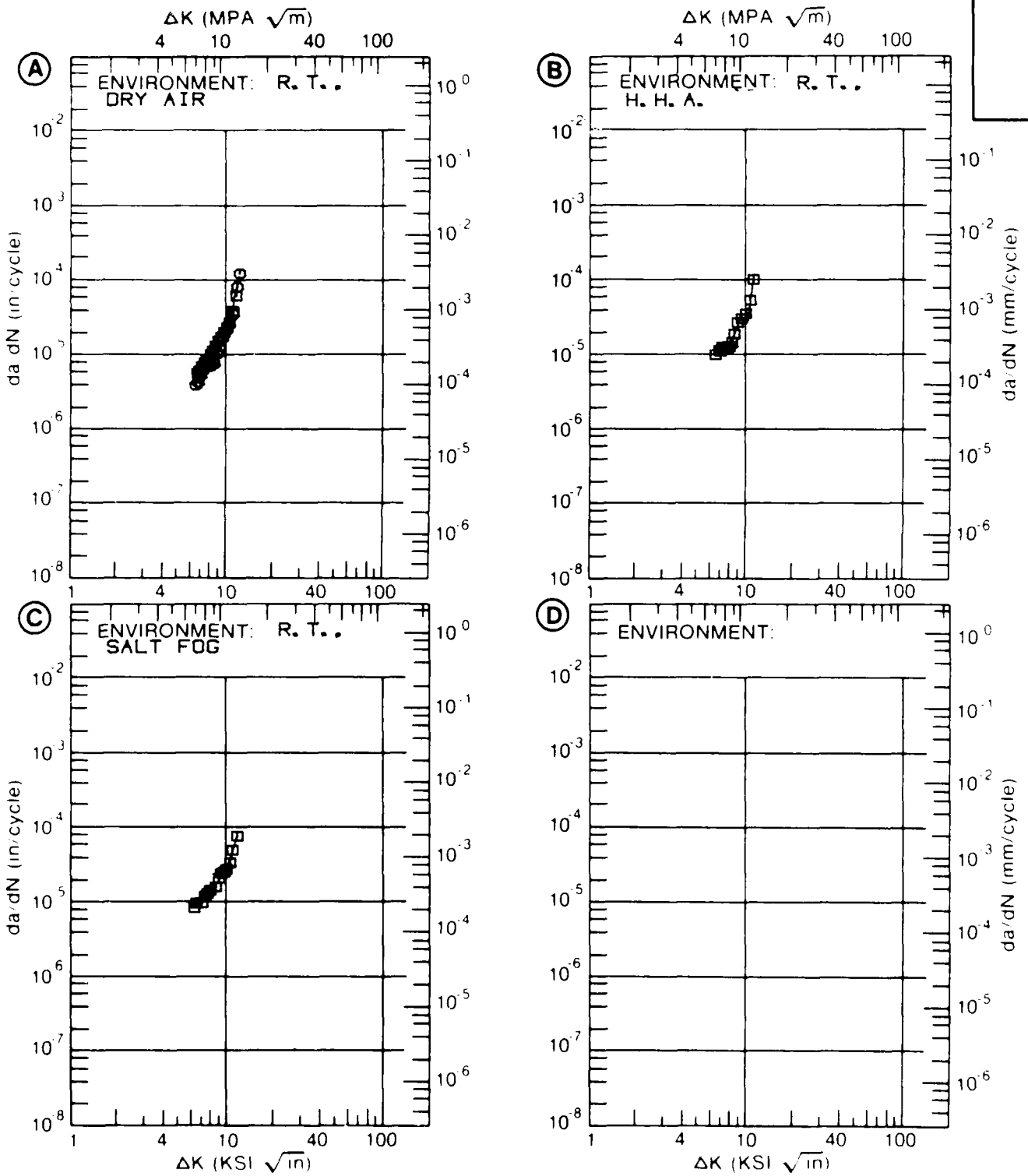

Figure 8.6.3.1

TABLE 8.6.3.2

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.2 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T73

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A: 5.96	2.16			
	B: 6.02		3.75		
	C: 5.30			3.18	
	D:				
	6.00	2.21		5.58	
	7.00	3.98	6.87	9.92	
	8.00	6.87	10.0	14.0	
	9.00	10.3	12.5	17.9	
	10.00	13.9	15.5	22.2	
	13.00	28.6	42.9	46.1	
	16.00	62.3		105.	
	20.00			130.	
DELTA K MAX	A: 17.34	82.1			
	B: 15.15		71.3		
	C: 20.25			126.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		5.13	6.07	6.24	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	1	1	
	1.25-2.0				
	>2.0				

CONDITION/HT: T73
FORM: 5.00"TH FORGING
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 5.20

YIELD STRENGTH: 60.1 KSI
ULT. STRENGTH: 70.3 KSI
SPECIMEN THK: 0.748- 0.750"
SPECIMEN WIDTH: 3.000"
REFERENCES:86842

ALUM. ALLOY

7049

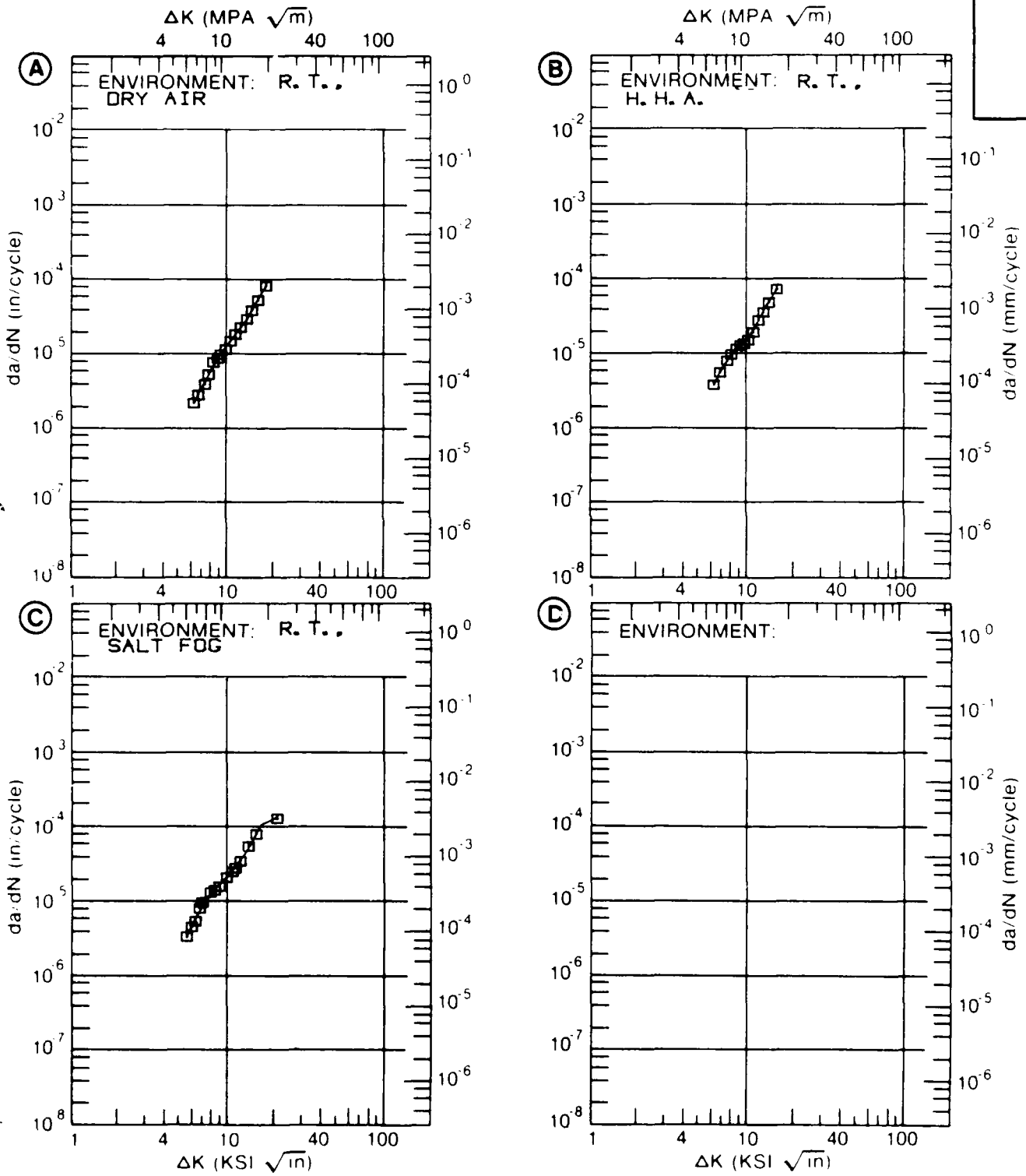

Figure 8.6.3.2

TABLE 8.6.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.3 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T73

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. SALT FOG			
DELTA K MIN	A:	5.98	6.46			
	B:					
	C:					
	D:					
		6.00	6.57			
		7.00	12.2			
		8.00	18.3			
		9.00	25.3			
		10.00	34.3			
DELTA K MAX	A:	12.94	99.5			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 14.86

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	1
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T73
FORM: 5.00"TH FORGING
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 5.20

YIELD STRENGTH: 58.1 KSI
ULT STRENGTH: 68.4 KSI
SPECIMEN THK: 0.745- 0.752"
SPECIMEN WIDTH: 3.000"
REFERENCES: 86842

7049

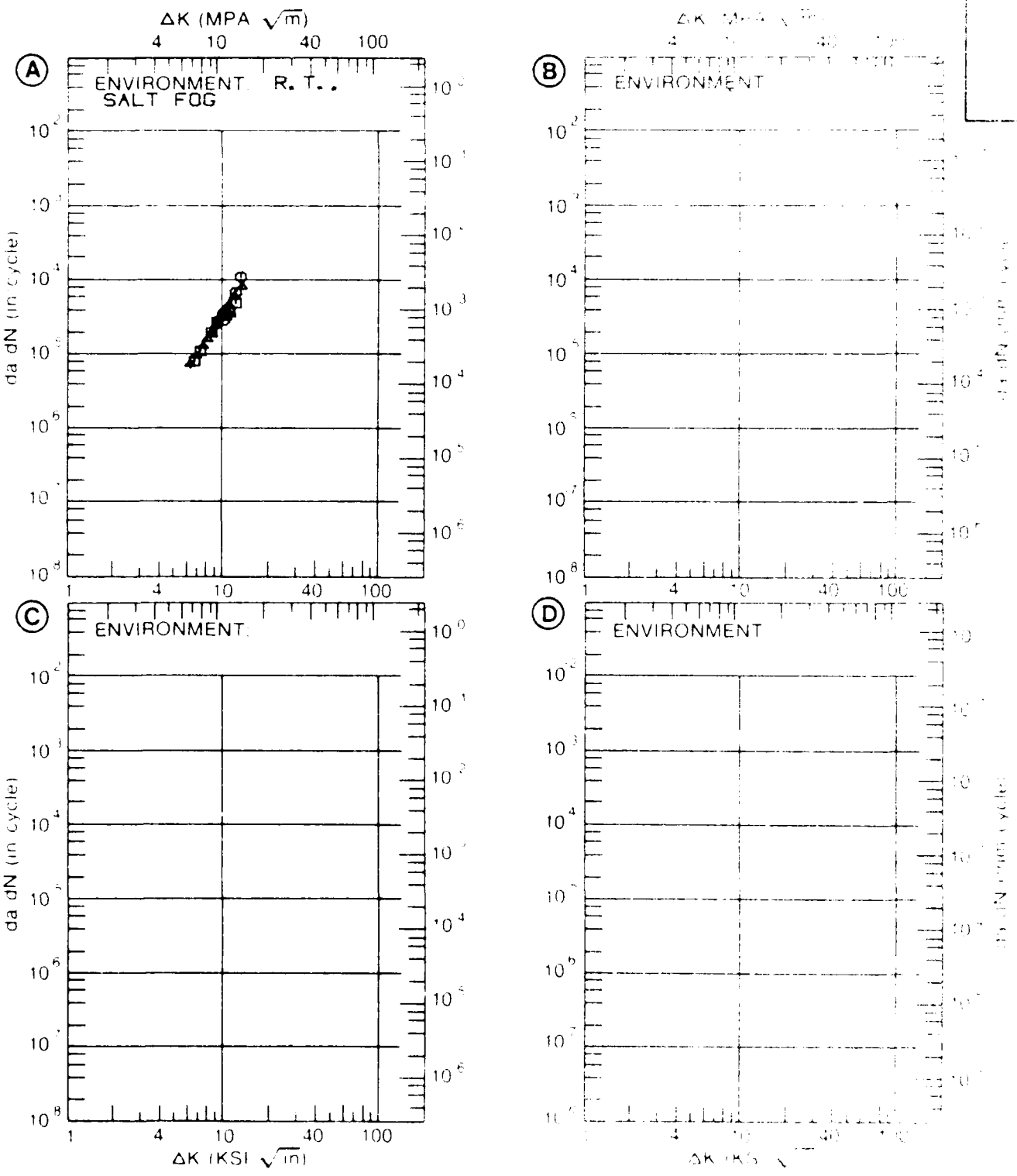

TABLE 8.6.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.4 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T/3

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR	E= R.T. H.H.A		
DELTA K MIN	A:	6.20	.211			
	B:	6.14		1.80		
	C:					
	D:					
		7.00	.883	4.42		
		8.00	1.66	10.0		
		9.00	2.60	14.7		
		10.00	6.08	18.7		
		13.00	18.0			
DELTA K MAX	A:	13.74	31.7			
	B:	11.75		41.3		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			16.39	16.49		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T73
FORM: 5.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: S-T
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 59.1 KSI
ULT. STRENGTH: 68.1 KSI
SPECIMEN THK: 1.500- 1.501"
SPECIMEN WIDTH: 3.800"
REFERENCES:86842

ALUM. ALLOY

7049

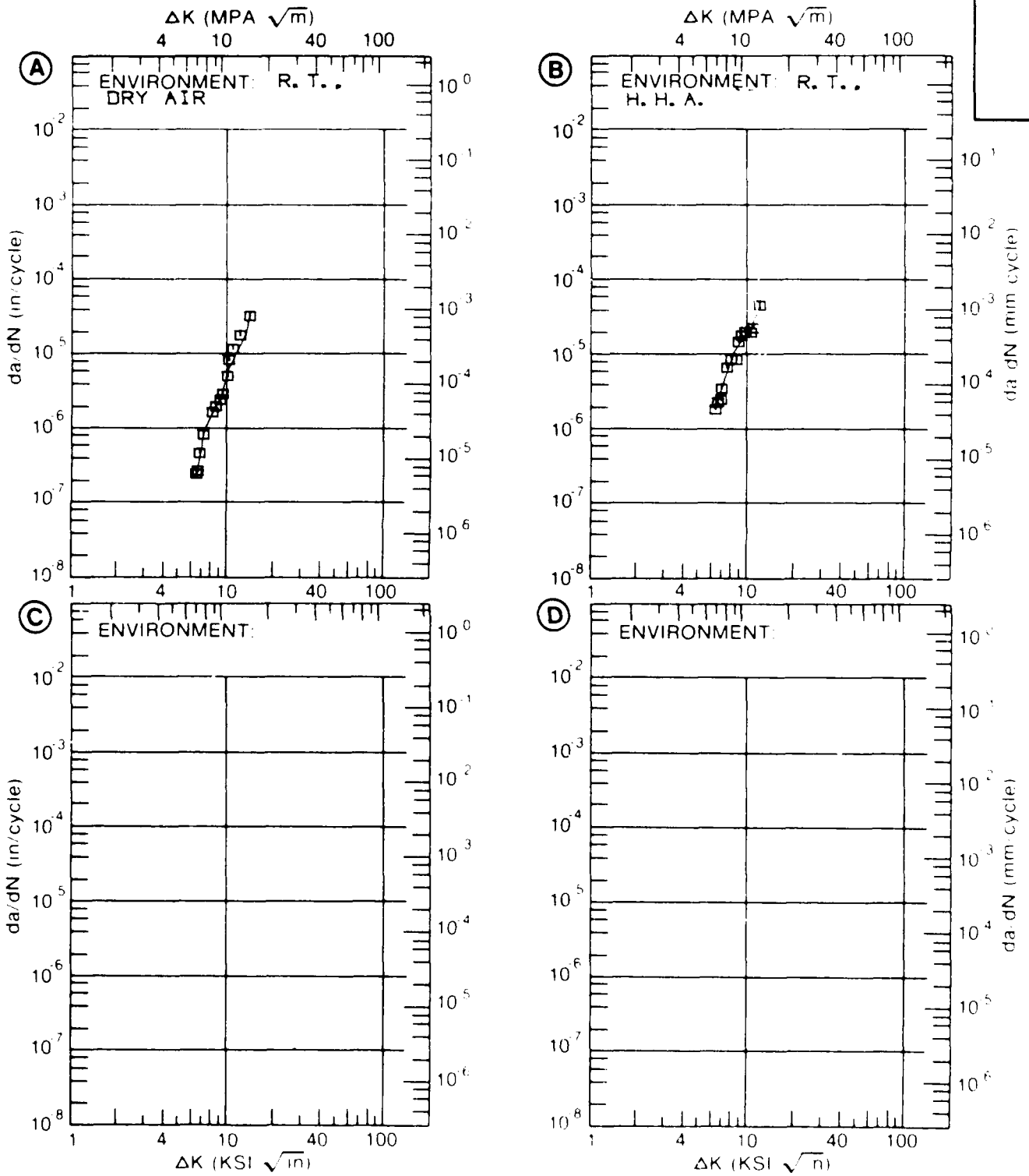

Figure 8.6.3.3

TABLE 8.6.3.5

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.5 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7049
CONDITION: T7351
ENVIRONMENT: R T / L H A

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN /CYCLE) A	B	C	D
			R=-1.00	R=+0.00	R=+0.50	
DELTA K MIN	A:	5.51	584			
	B:	5.71		.454		
	C:	4.10			.344	
	D:					
		5.00			.765	
		6.00	.635	.515	1.71	
		7.00	.894	.795	3.43	
		8.00	1.40	1.21	6.13	
		9.00	2.26	1.79	9.87	
		10.00	3.59	2.58	14.6	
		13.00	11.5	6.57	30.7	
		16.00	24.2	13.6	49.2	
		20.00	43.9	28.3	108.	
		25.00	85.6	56.9	336.	
		30.00	179.	101.	827.	
		35.00	330.	171.		
		40.00	507.	289.		
DELTA K MAX	A:	47.38	1288.			
	B:	49.15		587.		
	C:	34.04			833.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			9.31	15.85	12.92	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T7351
FORM: 1.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 10.00 HZ
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 72.0 KSI
ULT. STRENGTH: 80.5 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 4.000"
REFERENCES:MA007

ALUM. ALLOY
7049

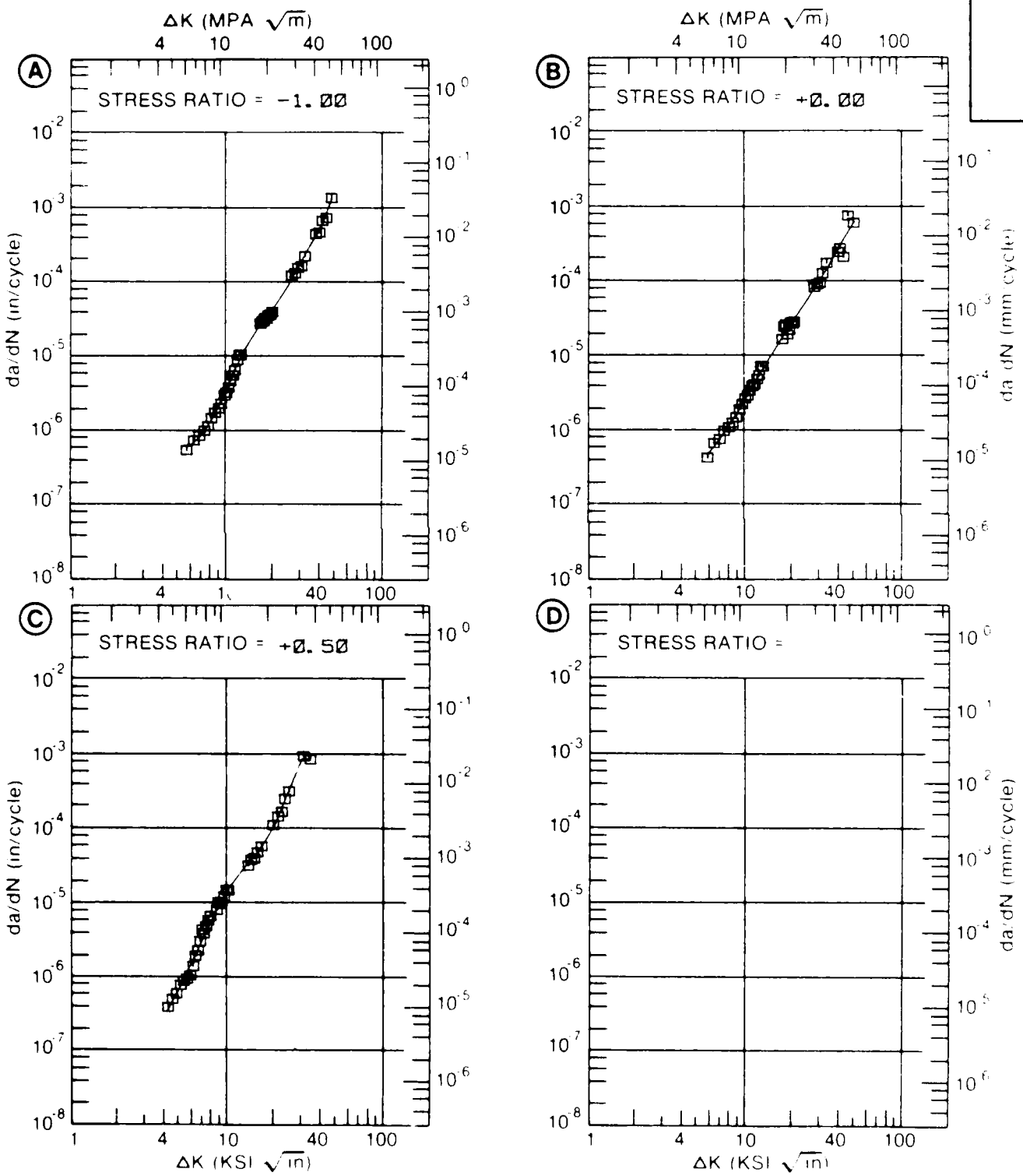

Figure 8.6.3.5

TABLE 8.6.3.6

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.6 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7049
CONDITION: T7351
ENVIRONMENT: R T ,3 5% NACL

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN /CYCLE) A	B	C	D
			R=-1.00	R=+0.50		
DELTA K MIN	A:	5.59	2.34			
	B:	4.09		1.19		
	C:					
	D:					
		5.00		4.30		
		6.00	3.27	10.4		
		7.00	.32	18.6		
		8.00	.0.4	28.0		
		9.00	15.2	38.1		
		10.00	20.7	48.8		
		13.00	40.1	86.6		
		16.00	62.3	137		
		20.00	96.5	228.		
		25.00	150.	383.		
		30.00	222.	588.		
		35.00	322.	705.		
		40.00	462.			
DELTA K MAX	A:	48.22	833.			
	B:	36.70		659.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			18.32	14.87		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5 0.5-0.8 0.8-1.25 1.25-2.0 2.0

CONDITION/HT: T7351
FORM: 1.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: Ø.1Ø HZ
ENVIRONMENT: R.T.,3.5% NACL

YIELD STRENGTH: 72.Ø KSI
ULT. STRENGTH: 8Ø.5 KSI
SPECIMEN THK: Ø.25Ø"
SPECIMEN WIDTH: 4.ØØØ"
REFERENCES:MAØØ7

ALUM. ALLOY

7049

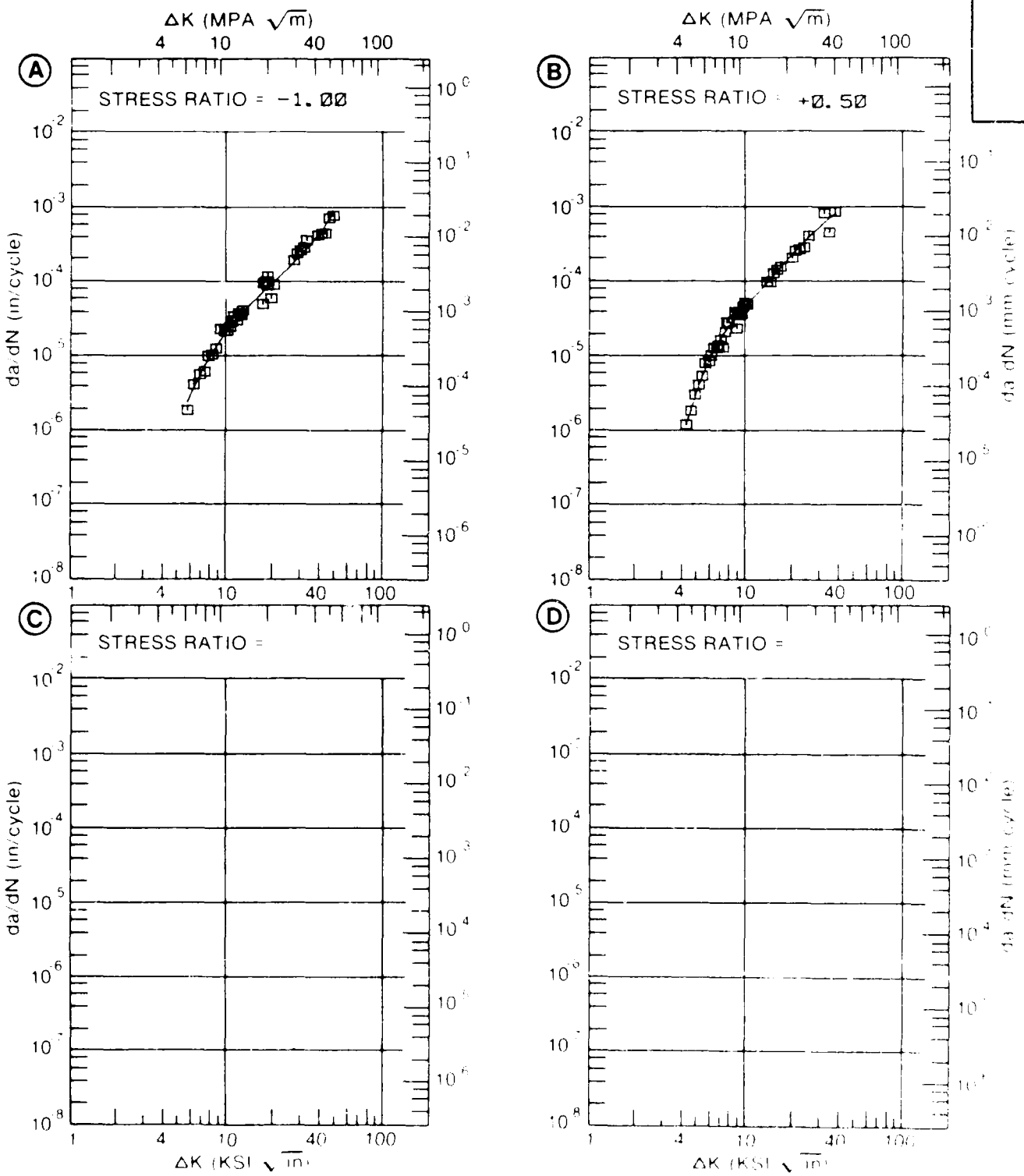

TABLE 8.6.3.7

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.7 INDICATING EFFECT OF FREQUENCY

MATERIAL: ALUMINUM 7049
CONDITION T7351
ENVIRONMENT: R T , 3 5% NACL

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			(HZ)= 1.00	F(HZ)= 10.00		
DELTA K MIN	A:	5.54	2.42			
	B:	5.44		1.54		
	C:					
	D:					
		6.00	4.64	3.08		
		7.00	13.0	7.31		
		8.00	25.5	12.8		
		9.00	40.5	18.9		
		10.00	56.1	25.1		
		13.00	100.	44.3		
		16.00	145.	70.5		
		20.00	224.	125.		
		25.00	381.	212.		
		30.00	631.	295.		
		35.00	946.	384.		
		40.00	1268.	498.		
		50.00	2158.	928.		
		60.00	4564.	2129.		
DELTA K MAX	A:	61.17	5082.			
	B:	67.01		4311.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			18.36	14.62		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T7351
FORM: 1.25"TH PLATE
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +0.00
ENVIRONMENT: R.T., 3.5% NACL

YIELD STRENGTH: 72.0 KSI
ULT. STRENGTH: 80.5 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 4.000"
REFERENCES: MA007

ALUM. ALLOY

7049

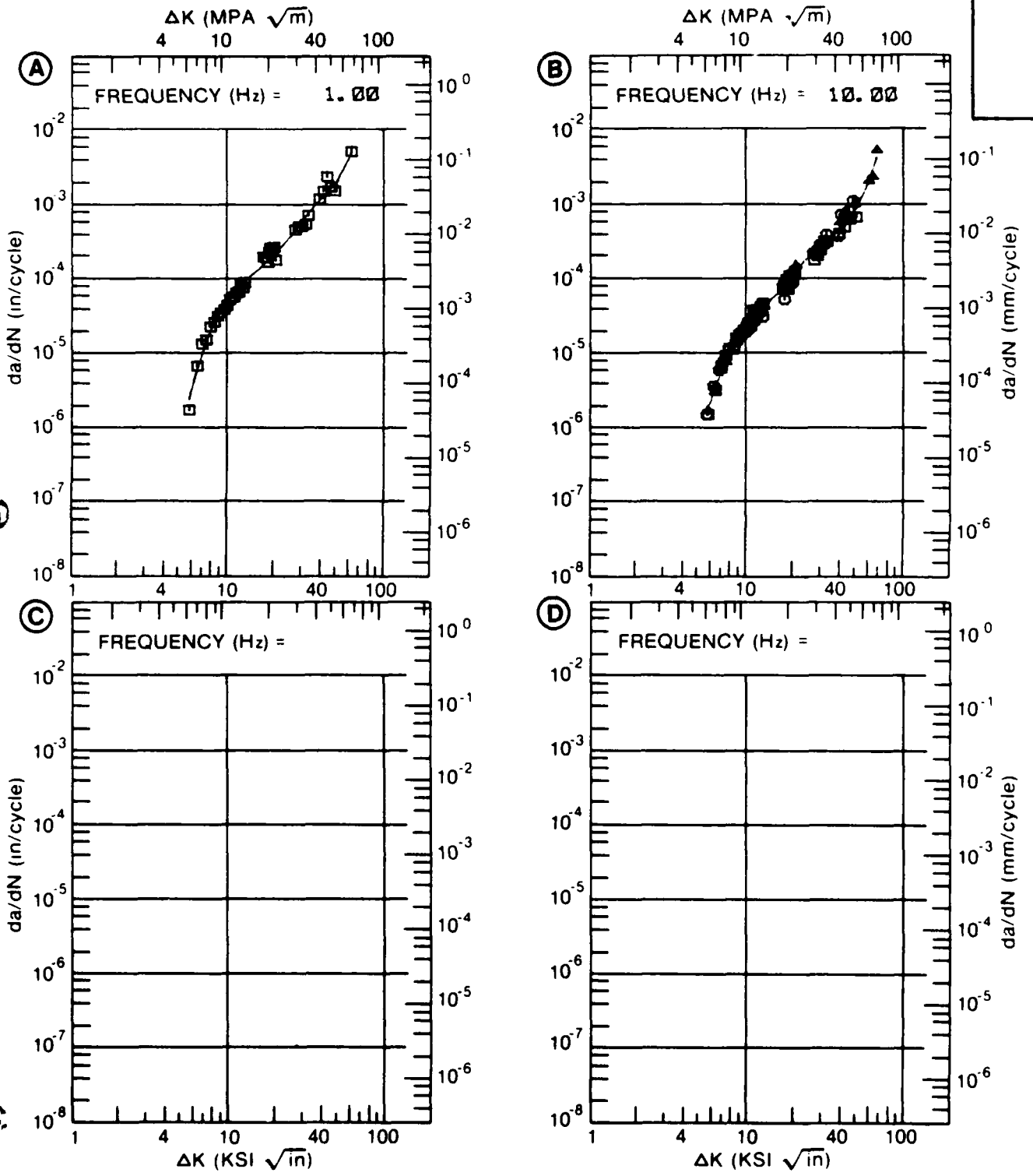

Figure 8.6.3.7

TABLE 8.6.3.8

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.8 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T73511-HIGH PURITY

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. LAB AIR	B E= R.T. H.H.A.	C	D
DELTA K MIN	A:	5.95	.726			
	B:	6.21		1.25		
	C:					
	D:					
		6.00	.792			
		7.00	2.72	3.06		
		8.00	5.00	6.55		
		9.00	6.72	10.8		
		10.00	7.84	15.4		
		13.00	11.5	29.0		
		16.00	19.0	46.3		
DELTA K MAX	A:	18.73	28.2			
	B:	18.07		65.8		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			5.91	5.87		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73511-HIGH PURITY
FORM: 1.50"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 30.00

YIELD STRENGTH: 76.7 KSI
ULT. STRENGTH: 83.8 KSI
SPECIMEN THK: 0.625"
SPECIMEN WIDTH: 2.550"
REFERENCES:WA001

ALUM. ALLOY

7049

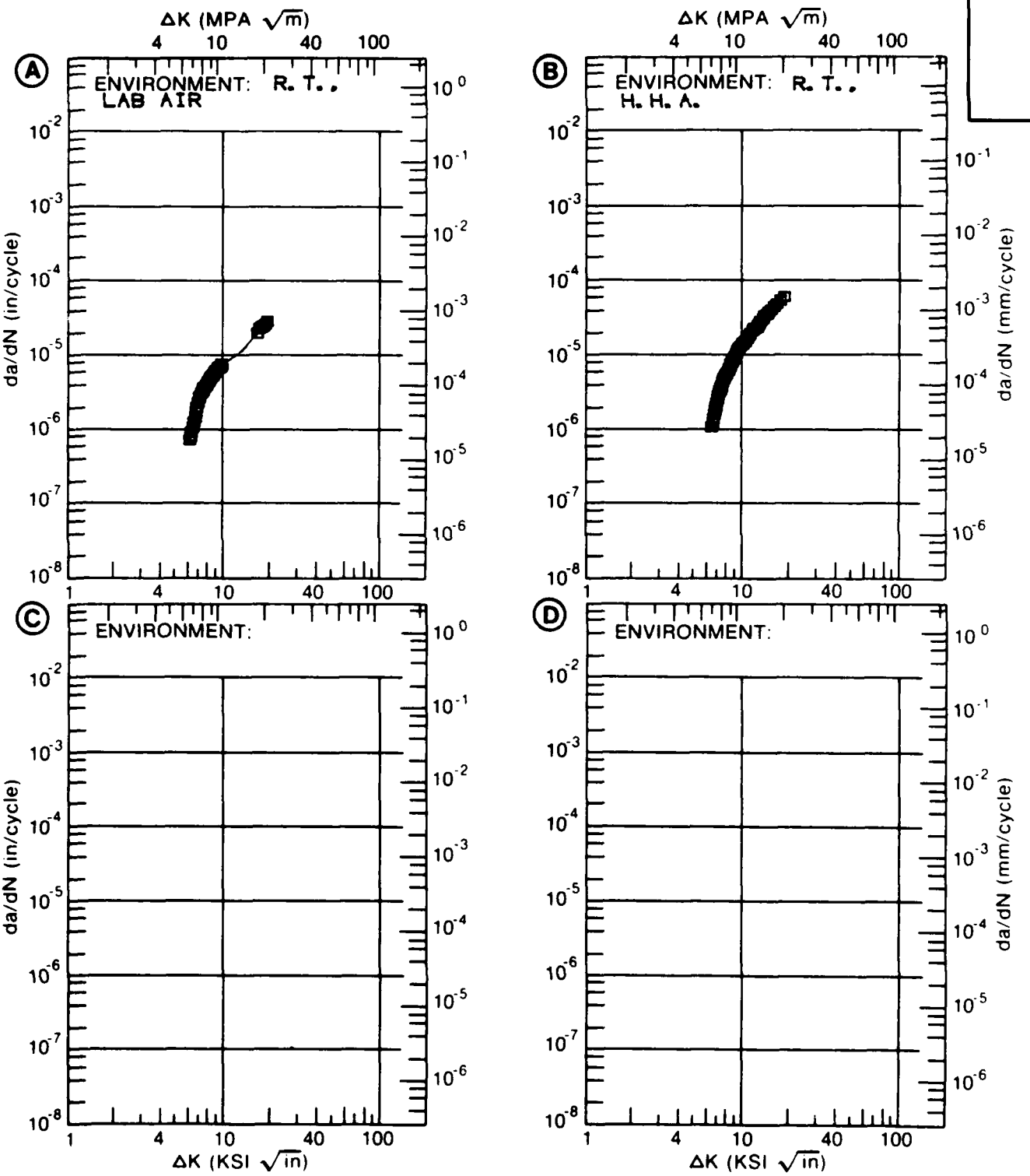

Figure 8.6.3.8

TABLE 8.6.3.9

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.9 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T73511-HIGH PURITY

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.. LAB AIR			
DELTA K MIN	A: 6.17	1.78			
	B:				
	C:				
	D:				
	7.00	2.91			
	8.00	4.44			
	9.00	6.06			
	10.00	7.81			
	13.00	15.0			
	16.00	29.7			
DELTA K MAX	A: 16.25	31.6			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 14.30

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73511-HIGH PURITY
FORM: 1.50"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.10
FREQUENCY: 30.00

YIELD STRENGTH: 70.3 KSI
ULT. STRENGTH: 78.5 KSI
SPECIMEN THK: 0.625"
SPECIMEN WIDTH: 2.550"
REFERENCES: WA001

ALUM. ALLOY
7049

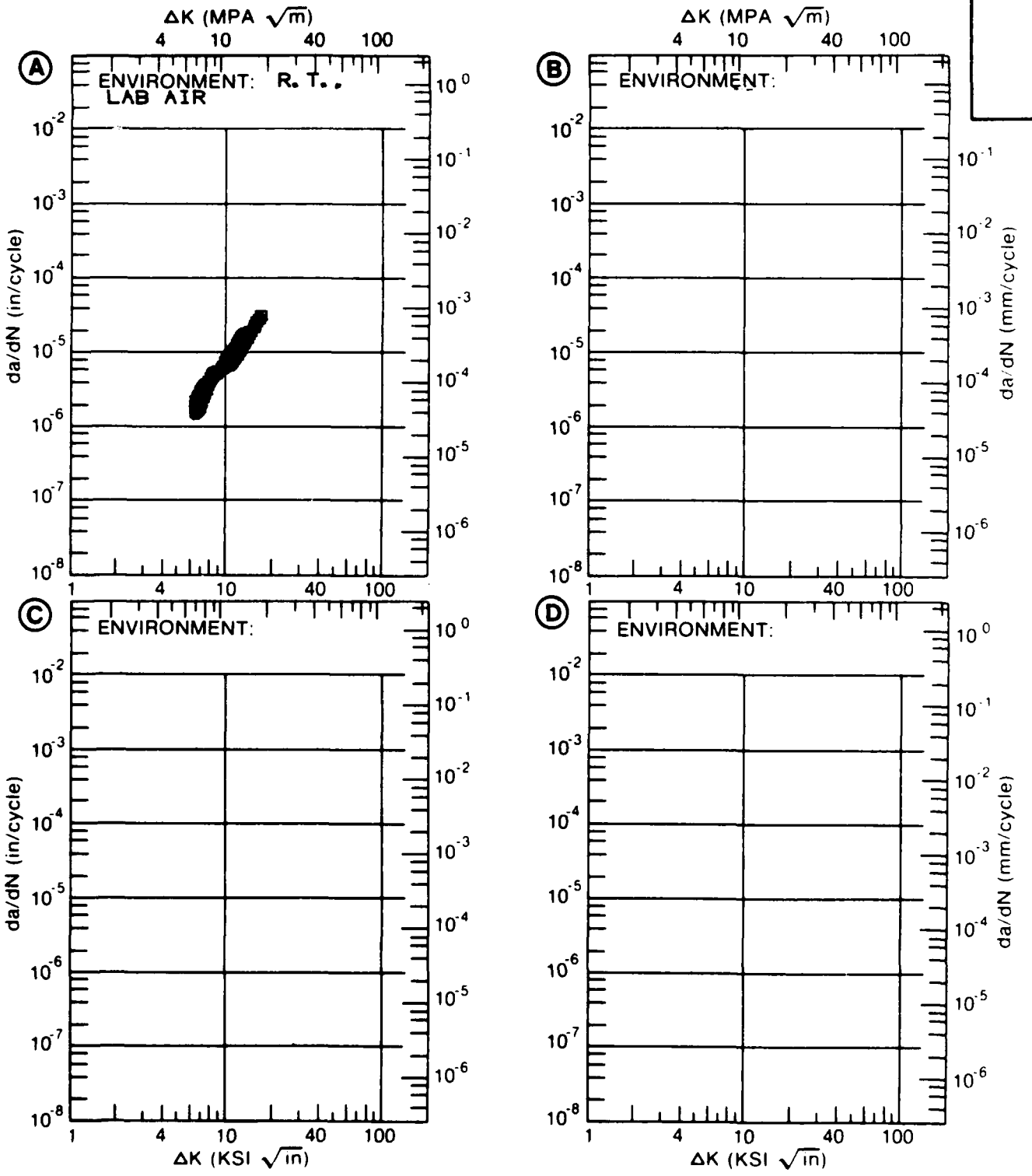

Figure 8.6.3.9

TABLE 8.6.3.10

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.10 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T73511-LOW PURITY

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. LAB AIR	B E= R.T. H.H.A.	C	D
DELTA K MIN	A:	6.10	.567			
	B:	5.94		.867		
	C:					
	D:					
		6.00		.944		
		7.00	1.80	2.83		
		8.00	3.78	5.55		
		9.00	5.76	8.56		
		10.00	7.32	11.5		
		13.00	10.2	19.9		
		16.00		32.3		
DELTA K MAX	A:	14.37	11.6			
	B:	16.99		38.8		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			11.79	8.70		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73511-LOW PURITY
FORM: 1.50"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 30.00

YIELD STRENGTH: 73.1 KSI
ULT. STRENGTH: 80.0 KSI
SPECIMEN THK: 0.625"
SPECIMEN WIDTH: 2.550"
REFERENCES:WA001

ALUM. ALLOY

7049

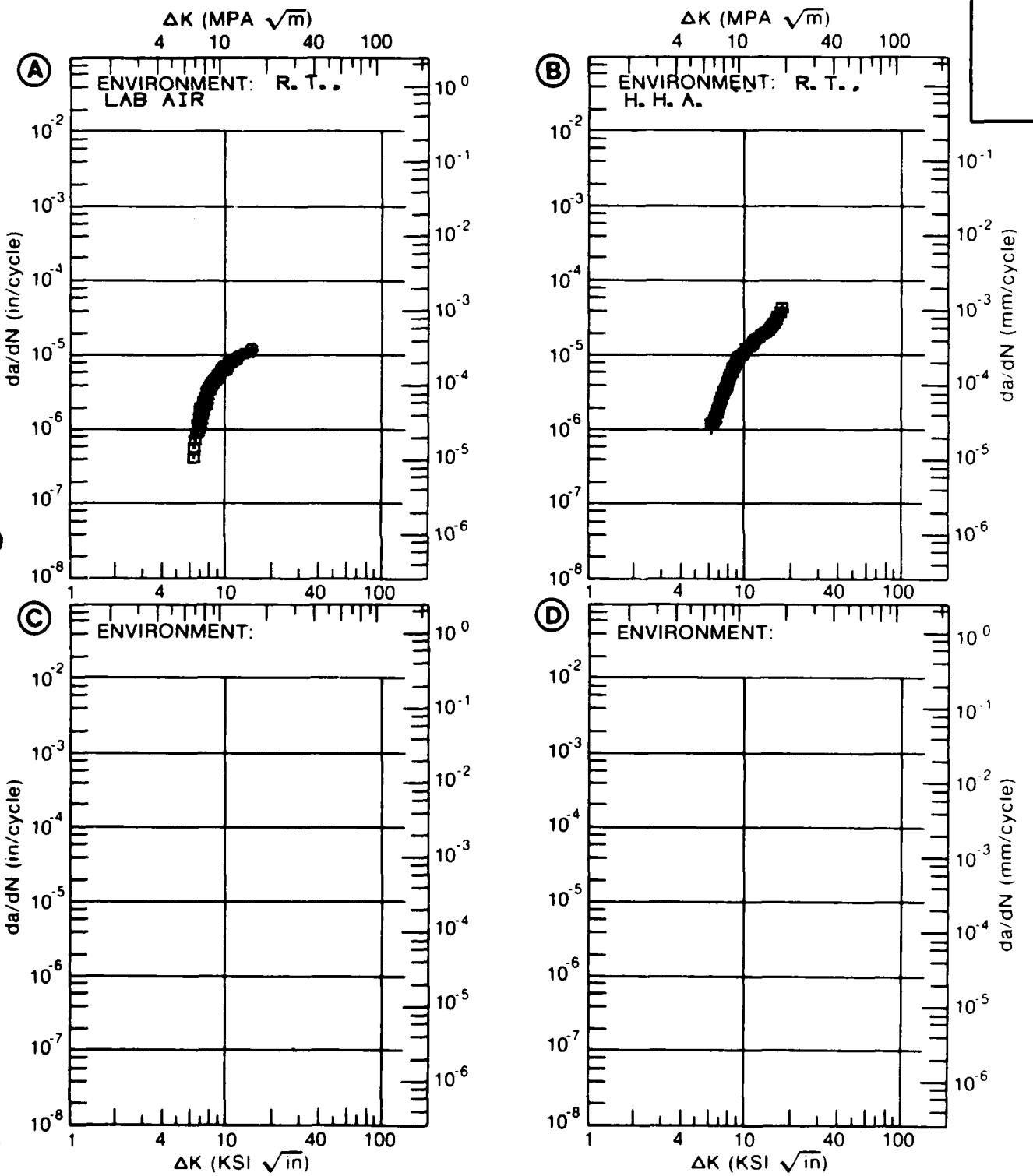

Figure 8.6.3.10

TABLE 8.6.3.11

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.11 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7049
CONDITION: T73511-LOW PURITY
ENVIRONMENT: R T , LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		R=+0.10			
DELTA K MIN	A: 6.07	1.39			
	B:				
	C:				
	D:				
	7.00	2.98			
	8.00	4.99			
	9.00	7.08			
	10.00	9.33			
	13.00	20.0			
DELTA K MAX	A: 14.70	33.5			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 7.33

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73511-LOW PURITY
FORM: 1.50"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 30.00
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 68.6 KSI
ULT. STRENGTH: 75.7 KSI
SPECIMEN THK: 0.625"
SPECIMEN WIDTH: 2.550"
REFERENCES:WA001

ALUM. ALLOY
7049

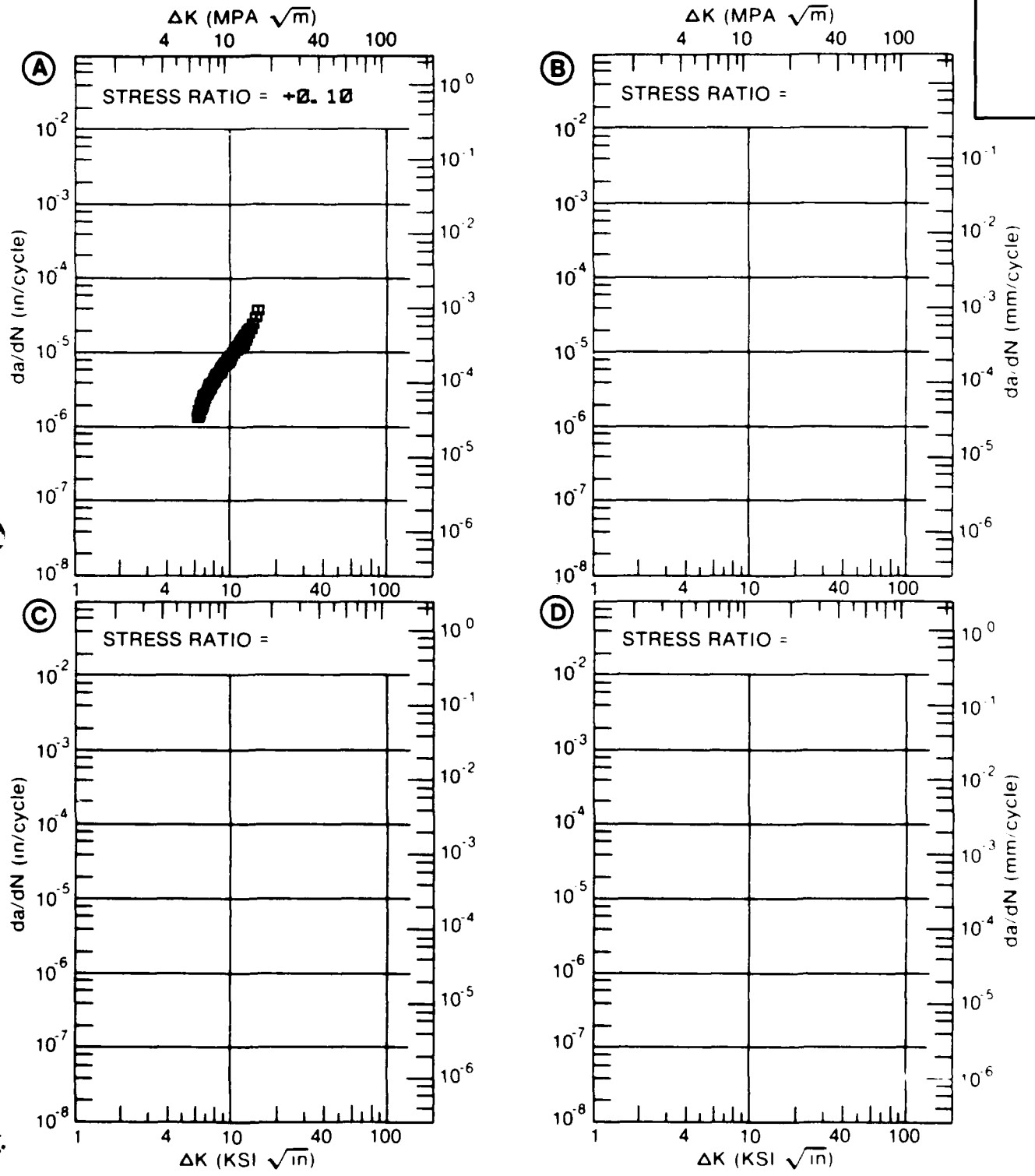

Figure 8.6.3.11

TABLE 8.6.3.12

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.12 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T73511-MEDIUM PURITY

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR	E= R.T. H.H.A.		
DELTA K MIN	A:	5.97	.423			
	B:	5.98		1.41		
	C:					
	D:					
		6.00	.435	1.44		
		7.00	.969	3.55		
		8.00	1.68	6.61		
		9.00	2.52	10.3		
		10.00	3.44	14.2		
		13.00	6.65	25.3		
		16.00	11.2	34.3		
DELTA K MAX	A:	18.90	18.2			
	B:	17.55		38.5		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			22.36	9.47		

LIFE PREDICTION RATIO SUMMARY (NP/NA)
0.0-0.5
0.5-0.8
0.8-1.25
1.25-2.0
>2.0

CONDITION/HT: T73511-MEDIUM PURITY
FORM: 1.50"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 30.00

YIELD STRENGTH: 75.4 KSI
ULT. STRENGTH: 82.5 KSI
SPECIMEN THK: 0.625"
SPECIMEN WIDTH: 2.550"
REFERENCES: WA001

ALUM. ALLOY

7049

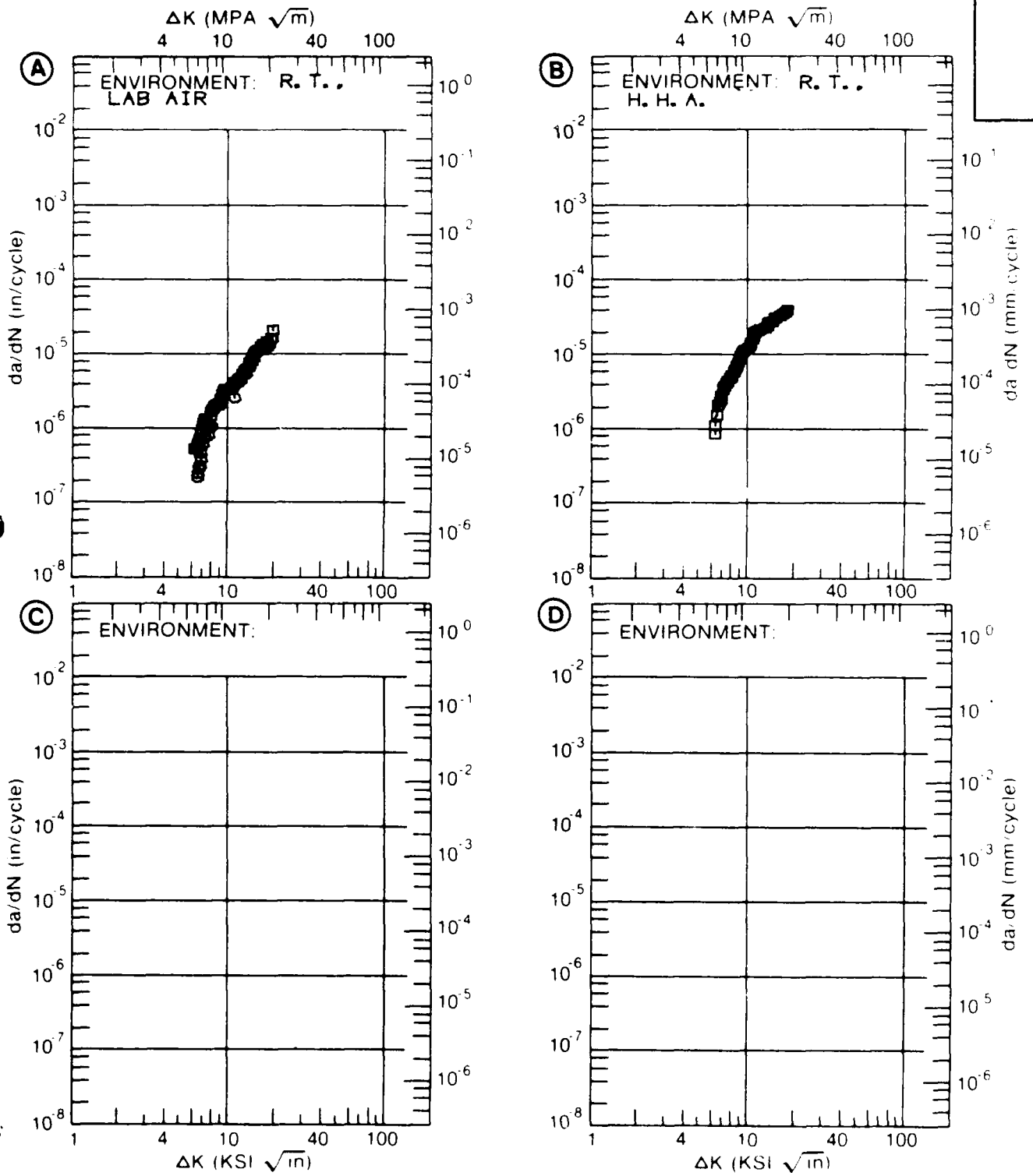

Figure 8.6.3.12

TABLE 8.6.3.13

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.13 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7049
CONDITION: T73511-MEDIUM PURITY
ENVIRONMENT: R T , LAB AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.10			
DELTA K MIN	A:	6.21	1.59			
	B:					
	C:					
	D:					
		7.00	2.94			
		8.00	4.80			
		9.00	6.59			
		10.00	8.36			
		13.00	15.9			
		16.00	37.8			
DELTA K MAX	A:	16.60	46.6			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 11.31

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73511-MEDIUM PURITY
FORM: 1.50"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 30.00
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 69.2 KSI
ULT. STRENGTH: 76.5 KSI
SPECIMEN THK: 0.625"
SPECIMEN WIDTH: 2.550"
REFERENCES:WA001

ALUM. ALLOY

7049

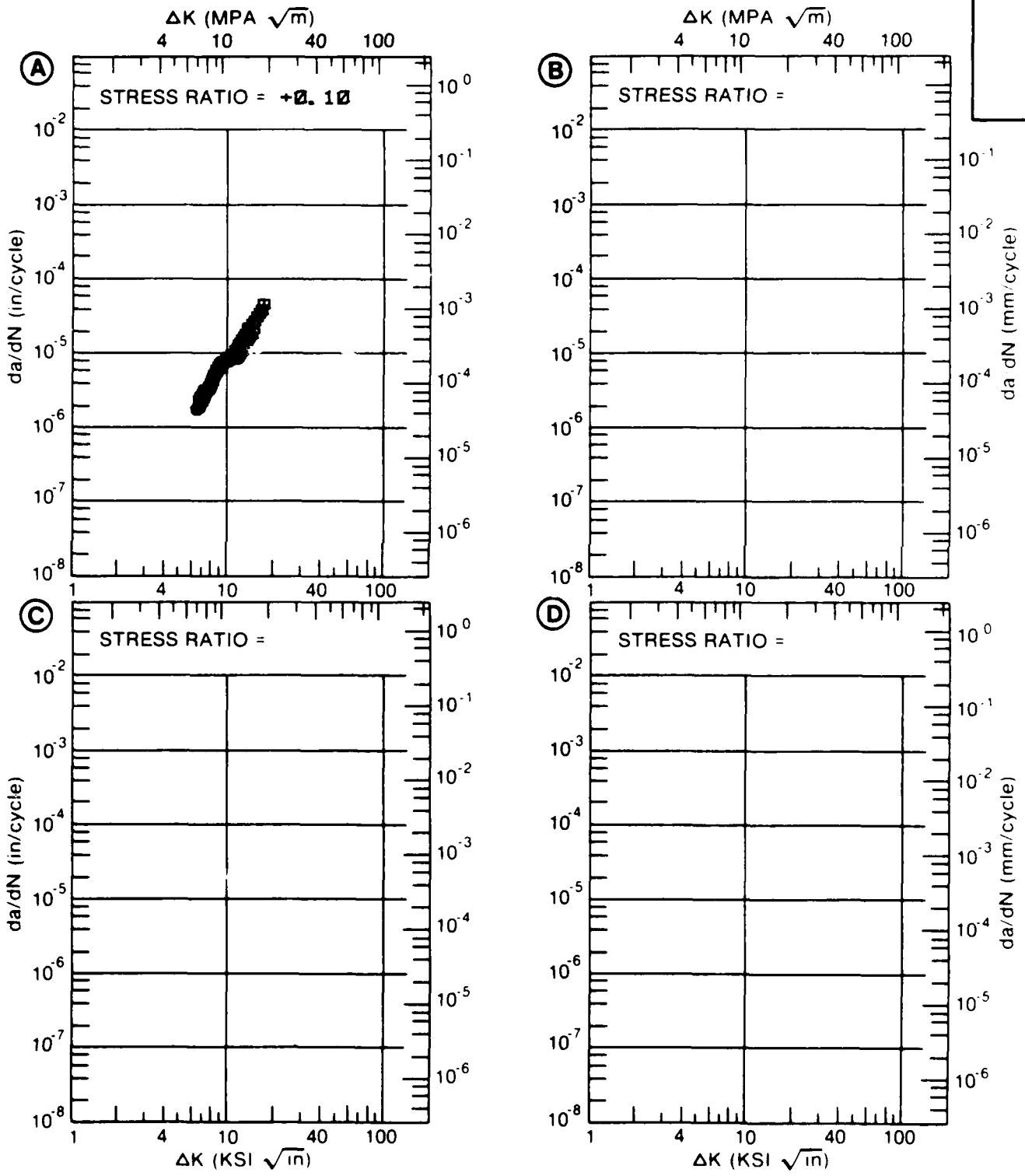

Figure 8.6.3.13

TABLE 8.6.3.14

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.14 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 7049
CONDITION: T7352
ENVIRONMENT: R T , L H A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.08	R=+0.30	R=+0.50	
DELTA K MIN	A:	3.03	.199			
	B:	2.87		.0632		
	C:	2.36			.131	
	D:					
		2.50		.0652	.117	
		3.00		.232	.200	
		3.50	.242	.331	.498	
		4.00	.333	.491	.912	
		5.00	.666	1.03	1.29	
		6.00	1.21	1.93	2.59	
		7.00	1.91	3.29	5.39	
		8.00	2.80	5.20	8.14	
		9.00	3.99	7.76	9.42	
		10.00	5.63	11.0		
		13.00	15.8	25.9		
		16.00	16.0			
DELTA K MAX	A:	16.00	16.0			
	B:	15.87		47.6		
	C:	9.67			9.24	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			14.91	17.33	24.51	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T7352
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH: 65.0 KSI
ULT. STRENGTH: 74.0 KSI
SPECIMEN THK: 0.998- 1.000"
SPECIMEN WIDTH: 7.400"
REFERENCES:85837

ALUM. ALLOY

7049

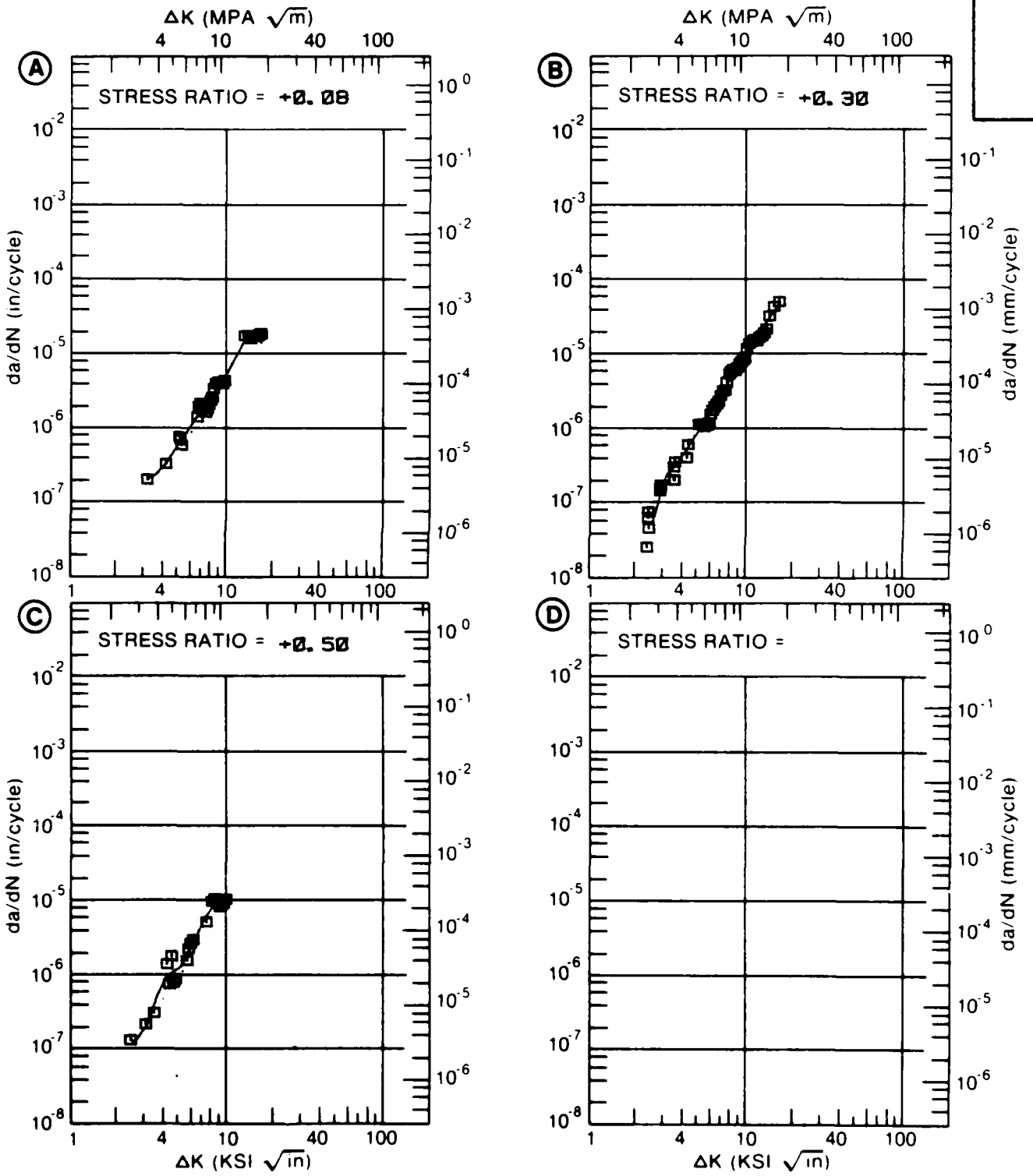

Figure 8.6.3.14

TABLE 8.6.3.15

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.15 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T7352

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. L.H.A. 6HZ	E= R.T. S.T.W. .1HZ		
DELTA K MIN	A:	8.12	1.61			
	B:	6.48		1.54		
	C:					
	D:					
		7.00		2.94		
		8.00		7.09		
		9.00	2.66	14.2		
		10.00	4.16	28.2		
		13.00	10.1			
		16.00	18.0			
		20.00	33.1			
DELTA K MAX	A:	24.30	60.7			
	B:	11.39		86.0		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			6.86	15.34		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	2			
		1.25-2.0		1		
		>2.0				

CONDITION/HT: T7352
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.08
FREQUENCY:

YIELD STRENGTH: 67.0 KSI
ULT. STRENGTH: 76.0 KSI
SPECIMEN THK: 0.250- 1.000"
SPECIMEN WIDTH: 7.400"
REFERENCES:88579

ALUM. ALLOY

7049

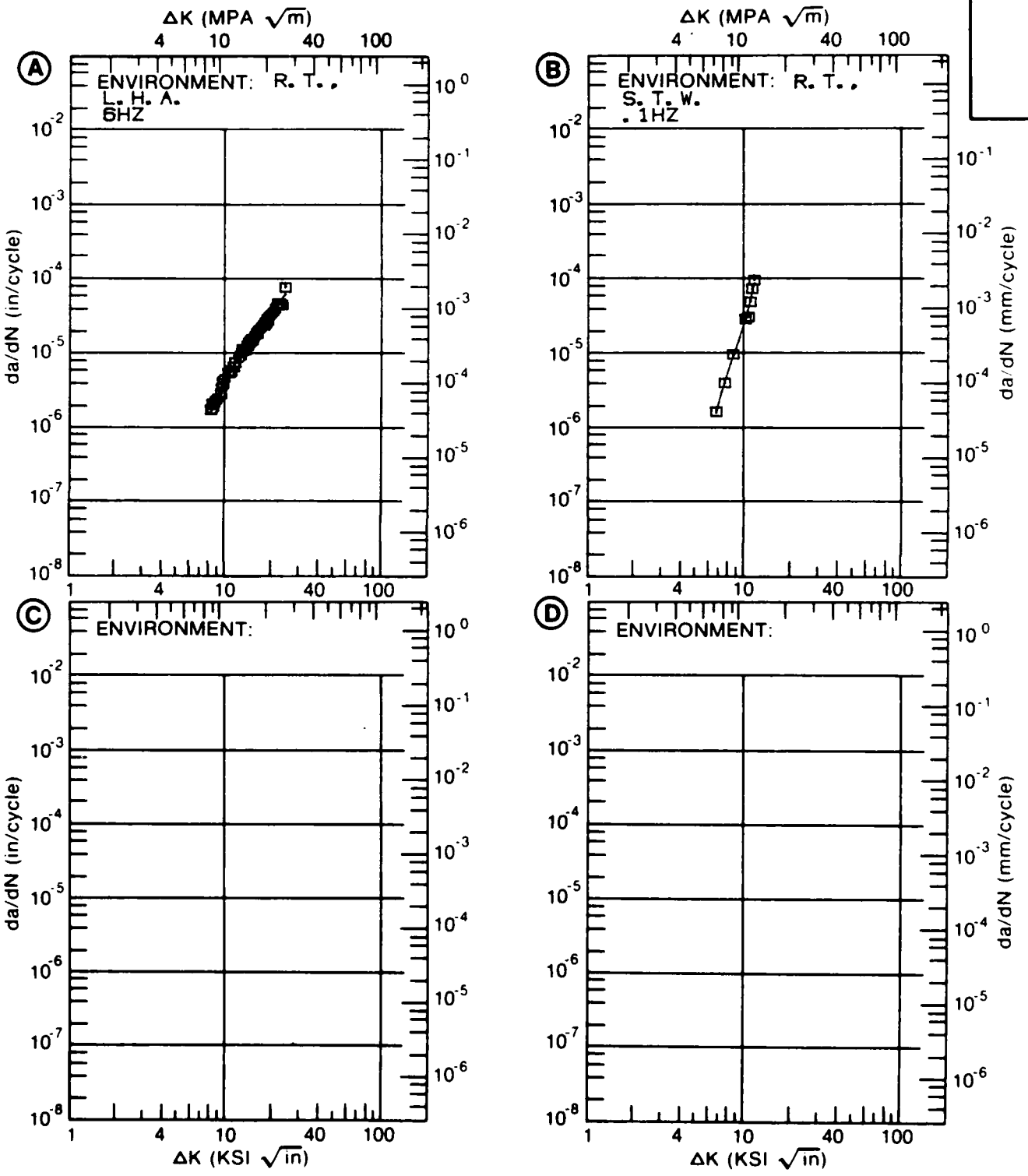

Figure 8.6.3.15

TABLE 8.6.3.16

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.16 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T7352

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. L.H.A.	E= R.T. S.T.W.		
DELTA K MIN	A:					
	B:	6.47		1.52		
	C:					
	D:					
		7.00		2.66		
		8.00		5.52		
		9.00		9.01		
		10.00		13.0		
		13.00		32.9		
		16.00		100.		
DELTA K MAX	A:					
	B:	17.21		172.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			0.00	7.48		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25		1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T7352
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.08
FREQUENCY:

YIELD STRENGTH: 64.0- 65.0 KSI
ULT. STRENGTH: 73.0- 74.0 KSI
SPECIMEN THK: 0.500- 0.990"
SPECIMEN WIDTH: 7.400"
REFERENCES: 85837, 88579

ALUM. ALLOY

7049

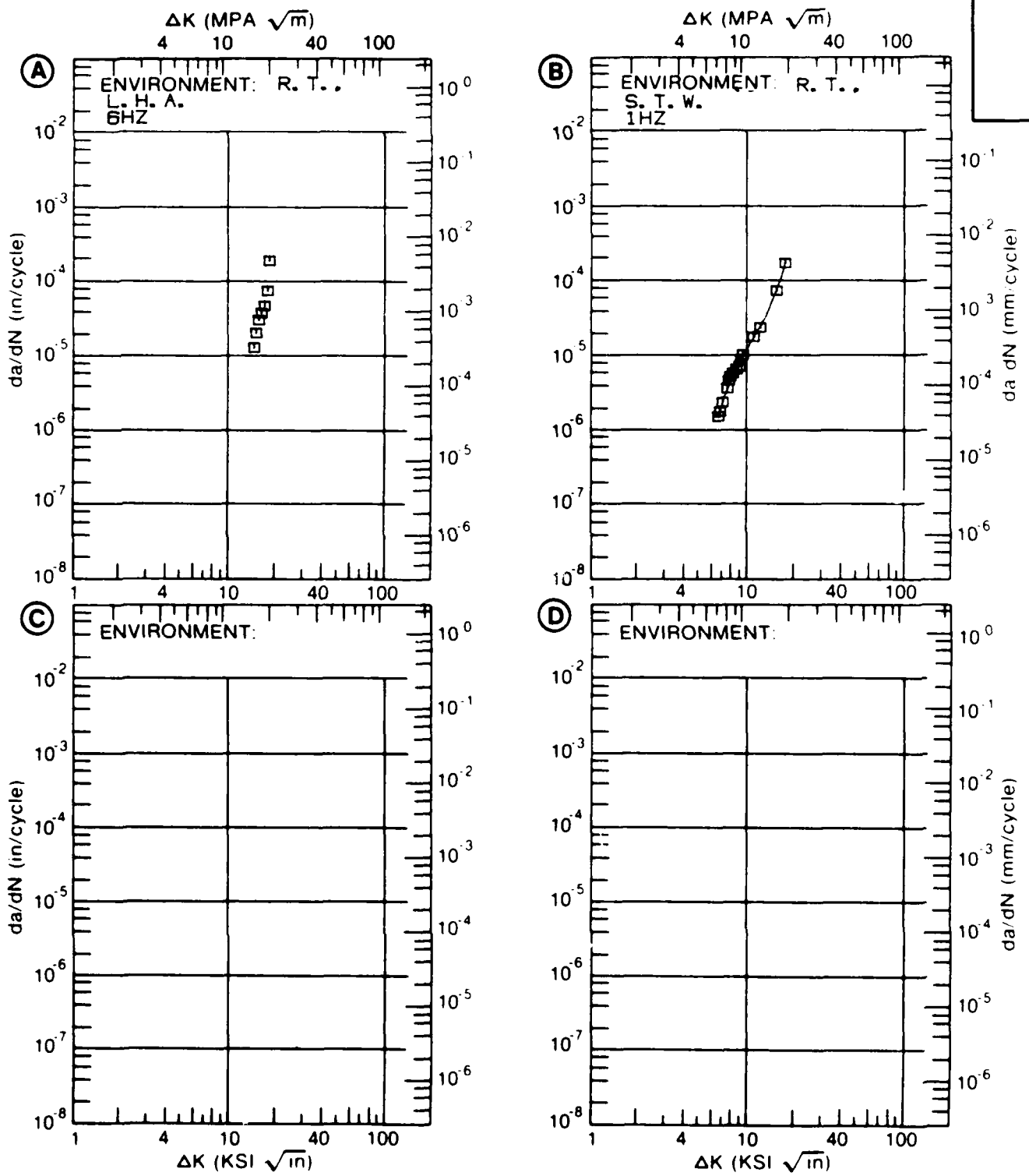

Figure 8.6.3.16

TABLE 8.6.3.17

SUSTAINED CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.6.3.17 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7049
CONDITION: T73

K MAX (KSI*IN**1/2)		DA/DT (10**-6 IN/HOUR) A	B	C	D
		E= WET 3X/DAY WITH 3.5% NACL			
K MAX MIN	A:				
	B:				
	C:				
	D:				
200.00					
K MAX MAX	A:				
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 0.00

CONDITION/HT: T73
FORM: FORGING
SPECIMEN TYPE: DCB
ORIENTATION: S-L
YIELD STRENGTH:
ULT. STRENGTH:

SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 5.000"
CRACK LENGTH (A_o):
K_{ISCC}:
REFERENCES: 84284

ALUM. ALLOY

7049

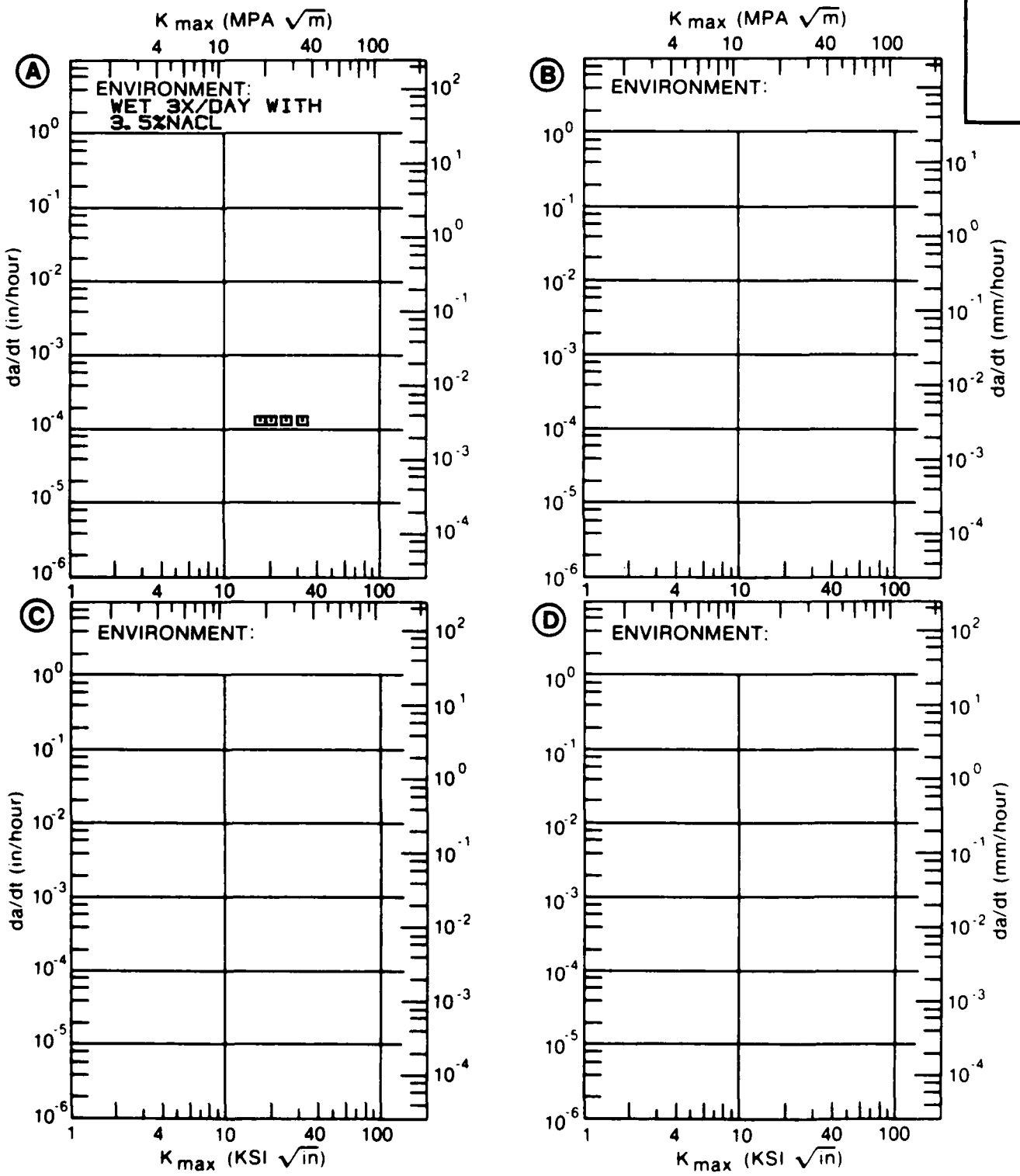

Figure 8.6.3.17

TABLE 8.6.3.18

ALUMINUM 7049 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SQ)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T73	F	----	R.T.	S-L	68.9	3.5 PCT NACL	1.000	0.500	CT	----	20.50	19.80			> 60660	1972	83242
T73	E	3.25	R.T	L-S	73.4	3.5 PCT NACL	2.000	1.000	CT	----	33.20	20.40			> 21280	1972	83061
T73	E	3.25	R.T	S-L	65.4	3.5 PCT NACL	2.000	1.000	CT	----	23.00	20.30			> 19800	1972	83061
T73 INTEGRALLY STIFFENED	E	3.00	R.T.	L-S	74.8	3.5 PCT NACL	2.000	1.000	CT	----	28.10	26.70			> 17130	1972	83061
T73 INTEGRALLY STIFFENED	E	3.00	R.T	S-L	68.6	3.5 PCT NACL	2.000	1.000	CT	----	20.30	19.40			> 40230	1972	83061
T7352	F	3.00	R.T.	L-T	67.0	F.C.S.	5.500	1.000	DCB	----	41.00	> 27.50			76200	1976	R1006
		3.00			67.0		5.500	1.000	DCB	----	41.00	> 28.50			76140	1976	R1006
T7352	F	3.00	R.T.	L-T	67.0	S.C.S.	5.500	1.000	DCB	----	41.00	> 25.50			76200	1976	R1006
		3.00			67.0		5.500	1.000	DCB	----	41.00	27.60			76200	1976	R1006
T7352	F	3.00	R.T.	L-T	67.0	S.T.W.	5.500	1.000	DCB	----	41.00	21.00			133680	1976	R1006
T7352	F	3.00	R.T.	T-L	64.0	S.T.W.	5.500	1.000	DCB	----	41.00	19.50			133680	1976	R1006
		3.00			64.0		5.500	1.000	DCB	----	41.00	> 21.50			133680	1976	R1006
		3.00			64.0		5.500	1.000	DCB	----	41.00	> 20.00			133680	1976	R1006
		3.00			64.0		5.500	1.000	DCB	----	41.00	19.00			133680	1976	R1006
													19.3/	0.4			
T7352	F	3.00	R.T	S-L	62.0	S.T.W.	5.500	1.000	DCB	----	39.00	17.50			133680	1976	R1006
		3.00			62.0		5.500	1.000	DCB	----	39.00	> 17.50			133680	1976	R1006
		3.00			62.0		5.500	1.000	DCB	----	39.00	> 22.50			61680	1976	R1006
		3.00			62.0		5.500	1.000	DCB	----	39.00	17.00			133680	1976	R1006
													17.3/	0.4			

TABLE 8.7.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS DATA OF
ALUMINUM ALLOY 7050 AT ROOM TEMPERATURE

CONDITION/HT	MEAN KIC ± STANDARD (KSI SQRT(IN)) DEVIATION (NUMBER OF SPECIMENS)		
	PLATE		
CONDITION/HT	L-T	T-L	S-L
T7351	34.8 ± 3.9 (31)	30.0 ± 2.6 (29)	28.0 ± 1.3 (30)
T73651	31.9 ± 3.9 (86)	28.7 ± 4.7 (83)	23.5 ± 1.5 (35)
T7651	30.8 ± 0.3 (3)	-----	-----
	FORGING		
CONDITION/HT	L-T	T-L	S-L
T/E56	-----	28.9 ± 3.9 (4)	-----
T736	32.3 ± 2.3 (4)	23.4 ± 1.0 (4)	24.6 ± 0.6 (6)
T/3652	31.1 ± 2.5 (11)	20.7 ± 1.4 (13)	19.2 ± 1.4 (17)
	EXTRUDED BAR		
CONDITION/HT	L-T	T-L	S-L
T/3511 HIGH/ PURITY	36.2 ± 3.2 (2)	24.1 ± 0.2 (2)	-----

TABLE 8.7.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION L T

ENVIRONMENT DRY AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T7351	PLATE	0 33	2 00-20 00				6 92	62 1		
T736	FORGING	0 10	20 00					29 1		
T73651	PLATE	0 10	20 00				9 52			
T76	SHEET	0 33	13 30				14 0			
T7651	PLATE	0 10	20 00				9 43	41 0		

TABLE 8.7.1.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: L T

ENVIRONMENT: L H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T73	FORGING	0.08	6.00					12.6		
T73651	EXTRUSION	0.33	20.00			0.49	3.48			
T73511	EXTRUSION	0.10	8.00-50.00			0.22	2.71	32.0		
T73511	EXTRUSION	0.33	7.50-15.00			0.33	2.08			
T73511	EXTRUSION	0.50	8.00-50.00		0.08	0.77	9.86			
T7351	PLATE	0.08	6.00				2.61	26.0		
T7351	PLATE	0.30	6.00			0.37	4.62			
T7351	PLATE	0.33	18.30				2.39			
T7351	PLATE	0.50	6.00				1.15			
T7651X	EXTRUSION	0.33	20.00			0.50	3.49			
T7511	EXTRUSION	0.33	18.30				3.45			
T7511	EXTRUSION	0.33	18.30			0.41	3.95			
T7511	EXTRUSION	0.46	18.30				4.90			

TABLE 8.7.1.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION L T

ENVIRONMENT LAB AIR AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T73511-HIGH PURITY	EXTRUSION	0 10	30 00				5 93			
T736	FORGING	0 10	3 00-10 00				11 9	58 7		
T73651	PLATE	0 10	3 00-25 00			0 82	4 09	48 7		
T73651	PLATE	0 10	5 00-10 00				7 68	47 3		
T76	SHEET	0 00	13 30				7 60	40 1		
T76	SHEET	0 33	13 30				10 4	70 3		
T7651	PLATE	0 02	1 00-20 00			0 58	8 04	22 9		

TABLE 8.7.1.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT H.H.A. AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) DELTA K LEVELS (KSI SQRT(IN)) 2.5	5	10	20	50	100
T7351	PLATE	0.10	2.00			6.79	42.1		
T7351X	EXTRUSION	0.33	20.00		1.21	15.9			
T73511	EXTRUSION	0.10	2.00			5.31	45.5	1663	
T73511	EXTRUSION	0.10	15.00		0.45	5.85			
T73511	EXTRUSION	0.10	10.00-20.00			5.16	45.5		
T73511	EXTRUSION	0.10	50.00		0.29				
T73511	EXTRUSION	0.33	15.00-20.00		0.63	8.94			
T73511	EXTRUSION	0.50	15.00-20.00	0.11	1.04	10.9			
T73511-HIGH PURITY	EXTRUSION	0.10	30.00			12.2			
T73651	PLATE	0.33	18.30			12.7			
T73651	PLATE	0.33	25.00	0.06	1.55	15.7	82.9		
T73651	PLATE	0.33	25.00		1.03	12.9	63.3		
T73651	EXTRUSION	0.10	2.00		0.33	5.81	49.0		

TABLE 8.7.1.5 (Con't)

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT H.H.A AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T76	SHEET	0.33	13.30				26.7			
T7651	PLATE	0.10	2.00				7.27	70.8		
T7651	PLATE	0.10	20.00			0.33	9.75	52.1		
T7651X	EXTRUSION	0.33	20.00			1.68	16.6			
T76511	EXTRUSION	0.10	2.00				4.71	46.3	1946	
T76511	EXTRUSION	0.10	20.00			0.15	4.47	46.8		
T76511	EXTRUSION	0.33	18.30				16.8			
T76511	EXTRUSION	0.33	18.30			0.79	15.4			

TABLE 8.7.1.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT S.T.W. AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T7351	PLATE	0.33	2.00-20.00				20.4			
T73651	PLATE	0.10	1.00-10.00			1.12	17.5	79.3		

TABLE 8.7.1.7

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT SIM SEA WATER AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T73651	PLATE	0.10	1.00-10.00			1.49	18.2	164		
T7651	PLATE	0.02	1.00-20.00				10.6	64.2		

TABLE 8.7.1.8

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: L-T

ENVIRONMENT: SALT FOG AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS: (KSI SQRT(IN))	FATIQUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T73651	PLATE	0.33	18.30				20.8			
T76	SHEET	0.33	13.30				33.3			
T76511	EXTRUSION	0.33	18.30				17.1			
T76511	EXTRUSION	0.33	18.30			2.56	23.5			

TABLE 8.7.1.9

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L ENVIRONMENT: DRY AIR AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T7351	PLATE	0.33	1.50-20.00				8.65			
T73652	FORGING	0.33	18.30				8.91			
T76	SHEET	0.33	13.30			0.99	7.26			

TABLE 8.7.1.10

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: T L

ENVIRONMENT: L H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T6	SHEET	0.33	13.30				11.9	114		
T7351X	EXTRUSION	0.33	20.00			1.06	7.69			
T7351X	EXTRUSION	0.33	20.00			0.86	9.90			
T73511	EXTRUSION	0.33	7.50-20.00			0.53	6.86			
T73511	EXTRUSION	0.50	10.00-40.00		0.06	0.32	6.54			
T73651	PLATE	0.08	6.00			0.24	2.87			
T73651	PLATE	0.33	18.30			0.52	6.75			
T73651	PLATE	0.33	18.30				12.0			
T7651X	EXTRUSION	0.33	20.00			0.88	5.65			
T76511	EXTRUSION	0.33	18.30			0.81	6.38			

TABLE 8.7.1.11

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: LAB AIR AT R.T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T73511-HIGH PURITY	EXTRUSION	0.10	30.00				3.97			
T736	FORGING	0.10	10.00				6.75	101		
T73651	PLATE	0.10	1.00-10.00				8.45	49.4		

TABLE 8.7.1.12

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: H.H.A. AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T6	SHEET	0.33	13.30				21.3	163		
T6	SHEET	0.33	13.30				20.8	220		
T7351	PLATE	0.33	1.50-20.00				11.2			
T7351X	EXTRUSION	0.33	20.00			2.25	18.4			
T7351X	EXTRUSION	0.33	20.00			1.41	16.6			
T73511	EXTRUSION	0.33	7.50-20.00			0.85	12.4			
T73511	EXTRUSION	0.50	10.00-40.00		0.06	0.76	17.9			
T73651	PLATE	0.33	18.30			0.94	15.5			
T73651	PLATE	0.33	18.30				15.3			
T73652	FORGING	0.33	18.30				16.3			

TABLE 8.7.1.12 (Con't)

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: T-L

ENVIRONMENT: H-H-A AT R-T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					.5	5	1	20	50	100
T76	SHEET	0.33	13.30				1.6			
T7651X	EXTRUSION	0.33	20.00			2.05	1.0			
T76511	PLATE	0.33	18.30				15.7			
T76511	EXTRUSION	0.33	18.30				20.5			

TABLE 8.7.1.13

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: T L

ENVIRONMENT: S T W AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T7351	PLATE	0 33	1 50-20 00			1 72	21 0			
T73651	PLATE	0 08	1 00				13 3			
T73651	PLATE	0 10	1 00-10 00			1 16	15 9	97 1		

TABLE 8.7.1.14

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: T L

ENVIRONMENT: SALT FOG AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T73651	PLATE	0 03	18 30				13 1			
T73651	PLATE	0 33	18 30				18 4			
T73651	PLATE	0 33	18 30				28 5			
T73652	FORGING	0 33	18 30				31 4			
T76	SHEET	0 33	13 30				23 2			
T76511	EXTRUSION	0 33	18 30				26 7			

TABLE 8.7.1.15

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: S L

ENVIRONMENT: L H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2 5	5	10	20	50	100
T73651	PLATE	0 33	18 30				5 27			
T76511	EXTRUSION	0 33	18 30				43 9			

TABLE 8.7.1.16

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: S-L

ENVIRONMENT: H H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2 5	5	10	20	50	100
T7351	PLATE	0 33	1 00-20 00				11 9			
T73651	PLATE	0 33	18 30				14 9			
T76511	EXTRUSION	0 33	18 30			1 71	121			

TABLE 8.7.1.17

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050

TEST CONDITIONS

SPECIMEN ORIENTATION: S-L

ENVIRONMENT: SALT FOG AT R.T.

CONDITION/HT	PRODUCT FORM	STRESS RATIO	KPSI (KSI)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T7451	PLATE	0.33	18.30				18.5			
T7451	EXTRUSION	0.33	18.30				73.8			

TABLE 8.7.2.1

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T7E56	F	5.00	R.T.	T-L	62.1	1.500	0.750	NB	0.837	0.39	24.60			1972	85291
		5.00			62.1	1.500	0.751	NB	0.863	0.57	29.80			1972	85291
		5.00			62.1	1.500	0.750	NB	0.875	0.74	33.80			1972	85291
		5.00			62.1	1.500	0.751	NB	0.837	0.48	27.20	28.9/	3.9	1972	85291
T7351	P	6.00	R.T.	L-T	60.4	4.000	2.000	CT	2.060	0.77	33.60			1977	AL001
		2.00			60.4	4.000	2.000	CT	2.010	1.27	43.00			1977	AL001
		6.00			60.4	4.000	2.000	CT	2.040	0.77	33.50			1977	AL001
		2.00			60.4	4.000	2.000	CT	2.010	1.18	41.50			1977	AL001
		2.00			60.4	4.000	2.000	CT	2.020	1.29	43.40			1977	AL001
		6.00			60.4	4.000	2.000	CT	2.050	0.77	33.60			1977	AL001
		2.00			61.1	4.000	2.000	CT	2.030	1.03	39.30			1977	AL001
		2.00			61.1	4.000	2.000	CT	2.020	1.04	39.50			1977	AL001
		2.00			61.1	4.000	2.000	CT	2.030	1.03	39.30			1977	AL001
		6.00			62.2	4.000	2.000	CT	2.020	0.53	28.60			1977	AL001
		6.00			62.2	4.000	2.000	CT	2.040	0.54	28.90			1977	AL001
		6.00			62.2	4.000	2.000	CT	2.010	0.55	29.10			1977	AL001
		5.12			63.2	4.000	2.000	CT	2.000	0.55	29.70			1977	AL001
		5.12			63.2	4.000	1.980	CT	2.000	0.54	29.30			1977	AL001
		5.12			63.2	4.000	2.000	CT	2.000	0.54	29.30			1977	AL001
		5.00			63.7	4.000	2.000	CT	2.060	0.72	34.30			1977	AL001
		3.00			63.7	3.000	1.500	CT	1.560	0.75	34.80			1977	AL001
		3.00			63.7	3.000	1.500	CT	1.560	0.72	34.30			1977	AL001
		4.00			63.7	4.000	2.000	CT	2.090	0.82	36.40			1977	AL001
		4.00			63.7	4.000	2.000	CT	2.050	0.71	34.00			1977	AL001
		4.00			63.7	4.000	2.000	CT	2.060	0.72	34.20			1977	AL001
		5.00			63.7	4.000	2.000	CT	2.030	0.69	33.40			1977	AL001
		5.00			63.7	4.000	2.000	CT	2.050	0.68	33.30			1977	AL001
		4.00			63.7	4.000	2.000	CT	2.050	0.78	35.50			1977	AL001
		4.00			63.7	4.000	2.000	CT	2.080	0.72	34.30			1977	AL001
		3.00			63.7	3.000	1.500	CT	1.560	0.75	35.00			1977	AL001
		4.00			63.7	4.000	2.000	CT	2.060	0.82	36.50			1977	AL001
		3.00			63.9	3.000	1.500	CT	1.570	0.75	35.10			1977	AL001
		3.00			63.9	3.000	1.500	CT	1.570	0.79	35.90			1977	AL001
		3.00			63.9	3.000	1.500	CT	1.570	0.73	34.50			1977	AL001
		1.00			69.8	2.000	1.004	CT	1.000	0.70	36.90	34.8/	3.9	1974	88186

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T7351	P	6.00	R.T.	T-L	59.1	4.000	2.000	CT	2.080	0.63	29.60			1977	AL001
		6.00			59.1	4.000	2.000	CT	2.090	0.66	30.30			1977	AL001
		6.00			59.1	4.000	2.000	CT	2.070	0.64	29.80			1977	AL001
		2.00			60.4	4.000	2.000	CT	2.060	0.82	34.50			1977	AL001
		2.00			60.4	4.000	2.000	CT	2.070	0.82	34.60			1977	AL001
		2.00			60.4	4.000	2.000	CT	2.060	0.87	35.60			1977	AL001
		6.00			60.9	4.000	2.000	CT	2.050	0.47	26.30			1977	AL001
		6.00			60.9	4.000	2.000	CT	2.080	0.48	26.60			1977	AL001
		2.00			60.9	4.000	2.000	CT	2.070	0.71	32.40			1977	AL001
		2.00			60.9	4.000	2.000	CT	2.070	0.72	32.60			1977	AL001
		2.00			60.9	4.000	2.000	CT	2.050	0.70	32.20			1977	AL001
		6.00			60.9	4.000	2.000	CT	2.050	0.48	26.70			1977	AL001
		5.12			61.4	4.000	2.000	CT	2.020	0.41	24.90			1977	AL001
		5.12			61.4	4.000	2.000	CT	2.050	0.41	25.00			1977	AL001
		4.00			63.4	4.000	2.000	CT	2.080	0.54	29.40			1977	AL001
		4.00			63.4	4.000	2.000	CT	2.090	0.59	30.80			1977	AL001
		4.00			63.4	4.000	2.000	CT	2.100	0.58	30.50			1977	AL001
		4.00			63.4	4.000	2.000	CT	2.040	0.54	29.40			1977	AL001
		4.00			63.4	4.000	2.000	CT	2.090	0.51	28.60			1977	AL001
		4.00			63.4	4.000	2.000	CT	2.100	0.58	30.60			1977	AL001
		5.00			63.7	4.000	2.000	CT	2.110	0.54	29.70			1977	AL001
		5.00			63.7	4.000	2.000	CT	2.120	0.53	29.40			1977	AL001
		3.00			63.7	3.000	1.500	CT	1.580	0.55	30.00			1977	AL001
		3.00			63.7	3.000	1.500	CT	1.580	0.55	29.90			1977	AL001
		3.00			63.7	3.000	1.500	CT	1.560	0.57	30.30			1977	AL001
		5.00			63.7	4.000	2.000	CT	2.100	0.53	29.40			1977	AL001
		3.00			64.2	3.000	1.500	CT	1.590	0.55	30.10			1977	AL001
		3.00			64.2	3.000	1.500	CT	1.590	0.56	30.40			1977	AL001
		3.00			64.2	3.000	1.500	CT	1.600	0.57	30.60	30.07	2.6	1977	AL001
T7351	P	2.00	R.T.	S-L	55.3	1.500	0.750	CT	0.770	0.73	29.90			1977	AL001
		2.00			55.3	1.500	0.750	CT	0.770	0.68	28.80			1977	AL001
		2.00			55.3	1.500	0.750	CT	0.770	0.73	29.90			1977	AL001
		2.00			55.6	1.500	0.750	CT	0.770	0.61	27.50			1977	AL001
		2.00			55.6	1.500	0.750	CT	0.770	0.55	26.00			1977	AL001
		2.00			55.6	1.500	0.750	CT	0.780	0.62	27.70			1977	AL001
		6.00			56.3	3.000	1.500	CT	1.510	0.69	29.50			1977	AL001
		6.00			56.3	3.000	1.500	CT	1.520	0.70	29.70			1977	AL001
		6.00			56.3	3.000	1.500	CT	1.520	0.66	28.90			1977	AL001

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T7351	P	6.00	R.T.	S-L	58.1	3.000	1.500	CT	1.550	0.53	26.80			1977	AL001
		6.00			58.1	3.000	1.500	CT	1.530	0.50	26.10			1977	AL001
		6.00			58.1	3.000	1.500	CT	1.540	0.53	26.70			1977	AL001
		5.12			58.6	3.000	1.500	CT	1.500	0.47	25.50			1977	AL001
		5.12			58.6	3.000	1.500	CT	1.520	0.50	26.20			1977	AL001
		5.12			58.6	3.000	1.500	CT	1.530	0.49	26.00			1977	AL001
		5.00			58.8	3.000	1.500	CT	1.540	0.60	28.90			1977	AL001
		5.00			58.8	3.000	1.500	CT	1.520	0.58	28.20			1977	AL001
		5.00			58.8	3.000	1.500	CT	1.530	0.56	27.90			1977	AL001
		4.00			59.0	3.000	1.500	CT	1.530	0.58	28.50			1977	AL001
		4.00			59.0	3.000	1.500	CT	1.530	0.55	27.70			1977	AL001
		4.00			59.0	3.000	1.500	CT	1.530	0.62	29.40			1977	AL001
		4.00			60.0	3.000	1.500	CT	1.540	0.59	29.20			1977	AL001
		4.00			60.0	3.000	1.500	CT	1.530	0.59	29.10			1977	AL001
		4.00			60.0	3.000	1.500	CT	1.540	0.58	28.90			1977	AL001
		3.00			60.1	2.500	1.250	CT	1.280	0.51	27.20			1977	AL001
		3.00			60.1	2.500	1.250	CT	1.280	0.50	27.00			1977	AL001
		3.00			60.1	2.500	1.250	CT	1.270	0.53	27.80			1977	AL001
		3.00			61.4	2.500	1.250	CT	1.270	0.53	28.30			1977	AL001
		3.00			61.4	2.500	1.250	CT	1.270	0.48	27.00			1977	AL001
		3.00			61.4	2.500	1.250	CT	1.280	0.53	28.40	28.0/	1.3	1977	AL001
T73511-HIGH/ PURITY	EB	1.50	R.T.	L-T	72.1	2.500	1.250	CT	----	0.71	38.40			1980	WA001
		1.50			72.1	2.500	1.250	CT	----	0.55	33.90	36.2/	3.2	1980	WA001
T73511-HIGH/ PURITY	EB	1.50	R.T.	T-L	66.6	2.500	1.250	CT	----	0.33	24.20			1980	WA001
		1.50			66.6	2.500	1.250	CT	----	0.32	23.90	24.1/	0.2	1980	WA001
T7352	F	5.00	82	L-T	64.0	3.000	1.502	CT	1.510	0.63	32.00			1973	86213
T7352	F	5.00	82	T-L	62.1	3.000	1.502	CT	1.580	0.22	18.50			1973	86213
		5.00			62.1	3.000	1.502	CT	1.588	0.21	18.00	18.3/	0.4	1973	86213
T7352	F	6.00	R.T	S-L	62.4	4.000	2.000	CT	2.148	0.25	19.80			1973	86213

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T7352	F	5.00	82	S-L	59.0	3.000	1.501	CT	1.574	0.34	21.90			1973	86213
		5.00			59.0	3.000	1.502	CT	1.578	0.34	21.90	21.9/	0.0	1973	86213
T736	F	3.00	R.T.	L-T	63.6	1.996	1.000	CT	1.047	0.58	30.79			1976	NC001
		3.00			63.6	1.998	1.001	CT	1.054	0.62	31.70			1976	NC001
		3.00			63.6	2.001	1.001	CT	1.049	0.59	31.11			1976	NC001
		----			69.0	1.400	0.696	CT	0.674	0.66	35.70	32.3/	2.3	1973	85880
T736	F	6.00	82	L-T	61.9	3.000	1.499	CT	1.608	1.27	44.10			1973	86213
		7.10			63.5	2.000	0.999	CT	0.982	0.47	27.60			1973	86213
		7.10			65.1	2.000	1.001	CT	1.015	0.79	36.60			1973	86213
		4.25			69.3	3.000	1.499	CT	1.617	0.78	38.70	36.8/	6.9	1973	86213
T736	F	6.00	R.T.	T-L	61.4	4.000	1.506	CT	----	0.35	22.90			1973	91123
		3.00			62.2	2.003	1.001	CT	1.082	0.39	24.82			1976	NC001
		3.00			62.2	2.001	0.999	CT	1.054	0.35	23.44			1976	NC001
		3.00			62.2	1.996	0.999	CT	1.042	0.32	22.40	23.4/	1.0	1976	NC001
T736	F	6.00	82	T-L	66.6	0.990	0.499	CT	0.512	0.22	19.70			1973	86213
T736	F	3.00	R.T.	S-T	61.2	2.000	1.000	CT	1.050	0.35	23.08			1976	NC001
		3.00			61.2	2.002	1.000	CT	1.060	0.41	24.84			1976	NC001
		3.00			61.2	1.999	1.000	CT	1.070	0.41	24.90	24.3/	1.0	1976	NC001
T736	F	6.00	R.T.	S-L	62.4	4.000	1.509	CT	----	0.39	24.60			1973	91123
		6.00			62.4	----	2.000	CT	1.930	0.41	25.30			1973	86212
		6.00			62.4	4.000	1.509	CT	----	0.37	24.00			1973	91123
		6.00			62.4	----	2.000	CT	1.980	0.39	24.60			1973	86212
		6.00			62.4	4.000	1.509	CT	----	0.41	25.30			1973	91123
		6.00			62.4	----	2.000	CT	1.950	0.37	24.00	24.6/	0.6	1973	86212
T736	F	7.10	82	S-L	63.4	2.000	0.999	CT	1.020	0.28	21.20			1973	86213
		7.10			63.4	2.000	0.999	CT	1.012	0.27	20.90			1973	86213
		7.10			64.2	2.000	0.999	CT	0.996	0.27	21.10			1973	86213
		6.00			64.2	2.000	0.999	CT	1.058	0.44	26.80			1973	86213
		6.00			64.2	2.000	1.000	CT	1.051	0.42	26.20			1973	86213
		0.60			64.5	1.500	0.635	CT	0.763	0.28	21.50	23.0/	2.8	1973	86213

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	ECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T736	F	----	R.T.	C-L	68.5	1.390	0.702	CT	0.687	0.47	29.80			1973	85880
		----			68.5	1.400	0.699	CT	0.693	0.49	30.50	30.2/	0.5	1973	85880
T73651	P	1.00	- 65	L-T	75.7	2.000	1.005	CT	1.030	0.53	34.90			1974	88174
		1.00			75.7	2.000	1.003	CT	1.039	0.54	35.20	35.1/	0.2	1974	88174
T73651	P	1.00	0	L-T	73.4	2.000	1.005	CT	1.028	0.61	36.40			1974	88174
		1.00			73.4	1.990	1.003	CT	1.040	0.67	38.00	37.2/	1.1	1974	88174
T73651	P	5.25	R.T.	L-T	58.9	1.998	1.001	CT	0.992	0.71	31.40			1977	RA010
		5.25			59.3	2.000	0.999	CT	0.963	0.67	30.90			1977	RA010
		5.00			60.3	4.000	2.010	CT	2.040	0.57	28.70			1975	AL015
		5.00			60.3	4.000	2.010	CT	2.050	0.57	28.90			1975	AL015
		6.00			61.0	2.000	1.001	CT	0.972	0.57	29.20			1977	RA009
		4.50			61.2	2.003	1.001	CT	0.962	0.57	29.29			1977	RA010
		5.25			61.3	1.999	1.000	CT	0.935	0.57	29.40			1977	RA010
		6.00			61.6	2.000	1.000	CT	0.966	0.76	34.00			1977	RA009
		6.00			61.7	1.997	0.999	CT	1.006	0.59	30.10			1977	RA009
		6.00			61.7	2.000	0.999	CT	0.962	0.59	30.10			1977	RA009
		5.25			62.0	1.999	0.997	CT	0.948	0.56	29.40			1977	RA010
		5.25			62.0	1.999	1.000	CT	0.950	0.60	30.40			1977	RA010
		6.00			62.2	1.998	0.998	CT	1.015	0.52	28.50			1977	RA009
		5.25			62.2	2.000	0.998	CT	0.993	0.55	29.29			1977	RA010
		5.25			62.3	2.000	0.999	CT	0.980	0.55	29.40			1977	RA010
		5.25			62.5	2.003	1.001	CT	0.989	0.51	28.29			1977	RA010
		6.00			62.7	1.997	1.000	CT	0.959	0.50	28.20			1977	RA009
		6.00			62.7	1.999	1.001	CT	0.981	0.51	28.40			1977	RA009
		4.50			62.9	2.999	1.502	CT	1.492	0.67	32.59			1978	RA008
		5.25			63.1	1.998	0.999	CT	0.973	0.54	29.40			1977	RA010
		6.00			63.3	2.001	1.000	CT	0.963	0.57	30.29			1977	RA009
		6.00			63.4	1.998	1.001	CT	0.964	0.48	28.00			1977	RA009
		5.25			63.5	1.999	0.997	CT	0.993	0.54	29.70			1977	RA010
		6.00			63.6	2.001	1.001	CT	0.979	0.50	28.60			1977	RA009
		4.50			63.6	3.002	1.499	CT	1.530	0.54	29.70			1978	RA008
		5.00			63.7	4.000	2.000	CT	2.090	0.41	25.70			1975	AL015
		5.00			63.7	4.000	2.000	CT	2.080	0.40	25.50			1975	AL015
		6.00			63.8	2.000	1.000	CT	0.975	0.76	35.30			1977	RA009

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) MEAN (KSI*SQRT IN)	K(IC) STAN DEV	DATE	REFER
T73651	P	5.25	R.T.	L-T	63.8	1.999	0.999	CT	0.972	0.53	29.40		1977	RA010
		6.00			63.8	1.999	1.001	CT	0.971	0.48	28.20		1977	RA009
		5.25			63.9	1.999	1.000	CT	0.956	0.48	28.10		1977	RA010
		4.50			63.9	2.999	1.498	CT	1.531	0.46	27.50		1978	RA008
		2.75			63.9	2.003	0.999	CT	1.000	0.53	29.60		1977	RA010
		5.25			64.0	2.003	1.000	CT	0.965	0.49	28.60		1977	RA010
		4.00			64.2	1.999	1.001	CT	1.008	0.46	27.79		1977	RA010
		4.00			64.4	1.998	0.997	CT	1.052	0.80	36.59		1977	RA009
		4.00			64.7	1.998	1.001	CT	1.010	0.57	31.10		1977	RA009
		4.00			65.0	3.000	1.502	CT	1.543	0.55	30.40		1973	B5836
		4.00			65.0	3.000	1.499	CT	1.569	0.41	26.30		1973	B5836
		4.00			65.4	1.998	0.997	CT	0.980	0.78	36.70		1977	RA009
		6.00			65.4	2.000	1.001	CT	1.040	0.60	32.30		1977	RA009
		4.00			65.9	1.998	0.998	CT	1.001	0.59	32.09		1977	RA009
		3.00			66.9	2.000	1.000	CT	1.018	0.42	27.30		1973	B6429
		3.00			66.9	1.990	1.000	CT	1.014	0.44	28.20		1973	B6429
		3.00			66.9	2.010	1.000	CT	1.010	0.38	26.10		1973	B6429
		4.00			67.2	1.998	0.997	CT	1.091	0.54	31.50		1977	RA009
		4.00			67.2	2.490	1.248	CT	1.234	0.64	34.20		1972	B4363
		4.00			67.2	2.490	1.255	CT	1.264	0.67	35.00		1972	B4363
		4.00			67.2	1.998	0.998	CT	1.003	0.73	36.50		1977	RA009
		4.00			67.2	2.490	1.250	CT	1.279	0.74	36.80		1972	B4363
		3.50			67.4	3.001	1.500	CT	1.455	0.59	33.00		1978	RA008
		3.50			67.8	3.000	1.496	CT	1.455	0.46	29.20		1978	RA008
		4.00			67.8	1.997	0.996	CT	1.009	0.51	30.79		1977	RA009
		2.00			67.8	1.998	0.994	CT	0.998	0.59	33.09		1977	RA009
		3.50			68.3	1.997	0.998	CT	1.091	0.63	34.50		1977	RA009
		3.50			68.5	1.998	0.997	CT	1.042	0.56	32.70		1977	RA009
		6.00			68.6	2.001	1.001	CT	0.941	0.58	33.09		1977	RA009
		3.15			69.0	2.001	1.007	CT	1.009	0.34	25.80		1976	NC001
		3.15			69.0	2.002	1.007	CT	0.993	0.34	25.72		1976	NC001
		3.15			69.0	2.002	1.007	CT	1.005	0.34	25.54		1976	NC001
		2.50			69.1	2.000	0.999	CT	1.027	0.45	29.60		1978	RA010
		3.00			69.6	2.003	1.001	CT	0.958	0.65	35.70		1977	RA010
		1.00			70.0	2.000	1.004	CT	1.034	0.69	36.80		1974	B8174
		1.00			70.0	2.000	0.976	CT	----	0.66	36.00		1982	NC003
		1.00			70.0	2.000	1.003	CT	1.027	0.71	37.40		1974	B8174
		1.00			70.0	2.000	1.003	CT	1.035	0.65	35.70		1974	B8174
		1.00			70.0	2.000	0.976	CT	----	0.66	36.00		1982	NC003

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73651	P	2.50	R T	L-T	70.2	2.000	0.999	CT	1.076	0.40	28.29			1978	RA010
		1.00			70.8	2.000	1.003	CT	1.009	0.64	35.70			1973	86213
		1.00			70.8	2.000	0.998	CT	1.028	0.60	34.70			1973	86213
		1.00			70.8	2.000	0.998	CT	1.034	0.64	35.70			1973	86213
		2.00			71.6	1.998	0.992	CT	1.034	0.48	31.50			1977	RA009
		1.00			73.8	2.000	1.000	NB	0.964	0.62	36.90			1973	86493
		1.00			73.8	2.000	1.000	NB	0.992	0.61	36.40			1973	86493
		1.00			73.8	2.000	1.000	NB	1.010	0.70	39.10			1973	86493
		1.00			73.8	2.000	1.000	NB	1.010	0.70	39.10			1973	86493
		1.00			73.8	2.000	1.000	NB	1.000	0.65	37.70			1973	86493
		1.00			73.8	2.000	1.000	NB	0.964	0.62	36.90			1973	86493
		1.00			73.8	2.000	1.000	NB	0.992	0.61	36.40			1973	86493
		1.00			73.8	2.000	1.000	NB	1.000	0.65	37.70			1973	86493
		1.00			73.8	2.000	1.000	NB	0.990	0.66	37.80			1973	86493
		1.00			73.8	2.000	1.000	NB	1.000	0.65	37.70			1973	86493
		1.00			73.8	2.000	1.000	NB	1.000	0.65	37.70			1973	86493
		1.00			73.8	2.000	1.000	NB	0.990	0.65	37.80			1973	86493
		1.00			75.0	2.490	1.003	CT	1.315	0.51	33.90			1973	86574
		1.00			75.0	2.500	1.003	CT	1.260	0.48	32.90	31.9/	3.9	1973	86574
T73651	P	4.00	82	L-T	63.7	4.000	1.998	CT	2.099	0.64	32.30			1973	86213
		4.00			63.7	4.000	1.998	CT	2.091	0.67	32.90			1973	86213
		4.00			65.2	4.000	1.996	CT	2.145	0.55	30.70			1973	86213
		4.00			65.2	3.990	1.999	CT	2.155	0.57	31.20			1973	86213
		2.00			65.9	4.000	1.997	CT	2.115	0.75	36.10			1973	86213
		2.00			65.9	4.000	1.997	CT	2.138	0.77	36.60			1973	86213
		2.00			67.0	4.000	1.996	CT	2.132	0.70	35.40			1973	86213
		2.00			67.0	4.000	1.997	CT	2.136	0.71	35.70	33.9/	2.4	1973	86213
T73651	P	1.00	84	L-T	65.4	2.000	0.999	CT	1.003	0.58	31.50			1973	86213
		1.00			65.4	2.000	0.998	CT	1.020	0.60	32.00	31.8/	0.4	1973	86213
T73651	P	1.00	250	L-T	64.4	1.990	1.002	CT	1.034	0.85	37.50			1974	88174
		1.00			64.4	2.000	1.004	CT	1.036	0.83	37.10	37.3/	0.3	1974	88174
T73651	P	1.00	- 65	T-L	75.0	2.000	1.006	CT	1.048	0.41	30.40			1974	88174
		1.00			75.0	2.000	1.005	CT	1.027	0.40	30.00	30.2/	0.3	1974	88174
T73651	P	1.00	0	T-L	72.7	2.000	1.005	CT	1.037	0.47	31.60			1974	88174

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73651	P	1.00	0	T-L	72.7	2.000	1.004	CT	1.024	0.46	31.30			1974	88174
		1.00			72.7	2.000	1.004	CT	1.028	0.46	31.20			1974	88174
		1.00			72.7	2.000	1.007	CT	1.030	0.46	31.20	31.3/	0.2	1974	88174
T73651	P	5.25	R.T.	T-L	59.0	1.999	1.001	CT	0.969	0.40	23.60			1977	RA010
		5.00			59.1	4.000	2.010	CT	2.130	0.47	25.70			1975	AL015
		5.00			59.1	4.000	2.000	CT	2.100	0.43	24.50			1975	AL015
		4.50			59.2	1.999	1.002	CT	0.983	0.59	28.90			1977	RA010
		5.25			59.9	2.000	0.998	CT	0.970	0.35	22.50			1977	RA010
		5.00			60.1	4.000	2.000	CT	2.130	0.41	24.40			1975	AL015
		6.00			60.1	2.002	1.002	CT	0.986	0.59	29.40			1977	RA009
		5.00			60.1	4.000	2.010	CT	2.080	0.43	24.50			1975	AL015
		5.25			60.2	2.003	1.000	CT	1.001	0.36	23.00			1977	RA010
		6.00			60.4	1.998	1.001	CT	1.018	0.56	28.60			1977	RA009
		5.25			60.5	1.999	0.999	CT	0.997	0.34	22.40			1977	RA010
		6.00			60.5	1.998	0.999	CT	1.030	0.55	28.50			1977	RA009
		6.00			60.6	1.997	0.999	CT	0.991	0.46	26.20			1977	RA009
		6.00			60.7	2.001	1.001	CT	0.979	0.54	28.40			1977	RA009
		5.25			61.1	1.999	0.998	CT	0.996	0.33	22.20			1977	RA010
		6.00			61.1	1.998	1.000	CT	1.027	0.53	28.10			1977	RA009
		6.00			61.4	1.999	1.000	CT	0.988	0.71	32.80			1977	RA009
		5.25			61.4	2.003	1.000	CT	1.015	0.43	25.70			1977	RA010
		5.25			61.6	2.000	1.000	CT	0.996	0.33	22.70			1977	RA010
		4.50			61.7	3.000	1.500	CT	1.483	0.77	34.30			1978	RA008
		6.00			61.8	2.000	1.000	CT	0.968	0.50	27.70			1977	RA009
		4.00			61.8	1.998	0.997	CT	1.006	0.60	30.29			1977	RA009
		6.00			61.8	2.000	1.001	CT	0.987	0.50	27.79			1977	RA009
		4.00			62.0	1.998	0.998	CT	0.994	0.57	29.70			1977	RA009
		5.25			62.1	2.000	1.000	CT	1.001	0.35	23.50			1977	RA010
		5.25			62.3	2.003	1.000	CT	0.997	0.39	24.70			1977	RA010
		5.25			62.4	2.001	0.999	CT	0.994	0.31	22.20			1977	RA010
		5.25			62.5	2.003	1.002	CT	1.006	0.30	22.00			1977	RA010
		4.00			62.6	1.998	0.998	CT	0.990	0.48	27.50			1977	RA009
		6.00			62.7	1.999	1.001	CT	0.968	0.50	28.20			1977	RA009
		6.00			62.7	2.001	1.001	CT	0.971	0.48	27.60			1977	RA009
		6.00			62.9	2.002	1.001	CT	0.955	0.49	27.90			1977	RA009
		4.00			62.9	1.999	1.000	CT	1.049	0.33	22.90			1977	RA010
		4.00			62.9	1.999	1.000	CT	1.049	0.33	22.90			1977	RA010
		4.00			63.2	1.997	1.000	CT	1.007	0.50	28.29			1977	RA009

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	K(IC) STAN DEV	DATE	REFER
T73651	P	5.25	R T	T-L	63.2	1.999	1.000	CT	0.989	0.30	22.10			1977	RA010
		2.75			63.4	2.003	0.999	CT	1.025	0.43	26.29			1977	RA010
		5.25			63.7	1.998	1.001	CT	0.993	0.28	21.40			1977	RA010
		6.00			63.9	1.999	1.000	CT	0.978	0.77	35.50			1977	RA009
		4.00			64.1	1.998	0.999	CT	0.964	0.65	32.90			1977	RA009
		5.25			64.1	1.999	0.999	CT	0.962	0.33	23.60			1977	RA010
		4.50			64.3	3.002	1.490	CT	1.480	0.62	32.20			1978	RA008
		6.00			64.6	2.000	1.001	CT	0.961	0.51	29.40			1977	RA009
		6.00			64.6	2.001	0.999	CT	0.958	0.46	28.00			1977	RA009
		6.00			64.6	2.000	1.000	CT	0.964	0.51	29.40			1977	RA009
		4.00			65.0	2.990	1.502	CT	1.555	0.40	26.10			1973	B5836
		4.00			65.0	3.000	1.499	CT	1.564	0.42	26.70			1973	B5836
		6.00			65.0	1.997	0.999	CT	1.032	0.42	26.90			1977	RA009
		4.00			65.0	3.000	1.500	CT	1.540	0.54	30.30			1973	B5836
		5.25			65.3	1.999	0.997	CT	0.969	0.27	21.50			1977	RA010
		4.00			65.5	1.997	0.999	CT	1.005	0.41	26.79			1977	RA009
		3.50			66.1	1.998	0.998	CT	1.050	0.44	28.00			1977	RA009
		3.50			66.2	3.000	1.499	CT	1.494	0.45	28.10			1978	RA008
		3.50			67.4	1.997	0.996	CT	1.032	0.44	28.40			1977	RA009
		3.50			67.6	3.000	1.501	CT	1.541	0.38	26.60			1978	RA008
		3.50			67.6	1.998	0.999	CT	1.073	0.35	25.40			1977	RA009
		2.00			68.2	1.998	0.994	CT	1.009	0.50	30.70			1977	RA009
		3.15			68.9	2.001	1.007	CT	1.019	0.35	25.91			1976	NC001
		3.15			68.9	2.001	1.007	CT	1.012	0.37	26.60			1976	NC001
		3.15			68.9	2.001	1.007	CT	1.031	0.31	24.55			1976	NC001
		3.00			68.9	2.003	1.000	CT	1.015	0.52	31.60			1977	RA010
		2.00			69.2	1.998	0.994	CT	1.030	0.41	28.29			1977	RA009
		2.50			69.7	2.001	0.999	CT	1.039	0.26	22.50			1978	RA010
		1.00			69.8	2.000	0.999	CT	1.035	0.54	32.40			1973	B6213
		1.00			69.8	2.000	0.998	CT	1.032	0.49	31.00			1973	B6213
		1.00			70.0	2.000	1.003	CT	1.032	0.49	31.00			1973	B6213
		1.00			70.0	2.000	1.003	CT	1.030	0.52	31.80			1973	B6213
		2.50			70.7	2.000	0.999	CT	1.094	0.35	26.79			1978	RA010
		1.00			72.2	2.000	1.004	CT	1.036	0.50	32.40			1974	B8174
		1.00			72.2	2.000	1.005	CT	1.038	0.49	32.10			1974	B8174
		1.00			72.2	2.000	1.005	CT	1.030	0.50	32.30			1974	B8174
		1.00			72.5	2.000	1.000	NB	0.963	0.65	36.90			1973	B6493
		1.00			72.5	2.000	1.000	NB	0.963	0.65	36.90			1973	B6493
		1.00			72.5	2.000	1.000	NB	0.997	0.64	36.70			1973	B6493

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5*(K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73651	P	1.00	R.T.	T-L	72.5	2.000	1.000	NB	0.997	0.64	36.80			1973	B6493
		1.00			72.5	2.000	1.000	NB	1.000	0.67	37.70			1973	B6493
		1.00			72.5	2.000	1.000	NB	1.000	0.68	37.70			1973	B6493
		1.00			72.5	2.000	1.000	NB	0.990	0.63	36.30			1973	B6493
		1.00			72.5	2.000	1.000	NB	0.978	0.68	37.80			1973	B6493
		1.00			72.5	2.000	1.000	NB	0.978	0.68	37.80			1973	B6493
		1.00			72.5	2.000	1.000	NB	0.990	0.63	36.30			1973	B6493
		1.00			72.5	2.000	1.000	NB	0.963	0.65	36.90			1973	B6493
		1.00			72.5	2.000	1.000	NB	0.963	0.65	36.90	28.7/	4.7	1973	B6493
T73651	P	4.00	82	T-L	63.2	4.000	1.998	CT	2.167	0.47	27.30			1973	B6213
		4.00			63.2	4.000	1.999	CT	2.126	0.46	27.10			1973	B6213
		4.00			64.4	3.990	2.000	CT	2.109	0.43	26.60			1973	B6213
		4.00			64.4	4.000	1.998	CT	2.124	0.41	26.20			1973	B6213
		2.00			65.7	4.000	1.997	CT	2.166	0.50	29.40			1973	B6213
		2.00			65.7	4.000	1.998	CT	2.156	0.49	29.20			1973	B6213
		2.00			67.4	4.000	1.997	CT	2.130	0.45	28.50			1973	B6213
		2.00			67.4	4.000	1.998	CT	2.123	0.46	28.80	27.9/	1.2	1973	B6213
T73651	P	1.00	84	T-L	65.4	2.000	0.998	CT	0.994	0.40	26.00			1973	B6213
		1.00			65.4	2.000	0.999	CT	0.974	0.39	25.90			1973	B6213
		0.50			67.2	1.000	0.501	CT	0.505	0.42	27.50			1973	B6213
		0.50			67.2	1.000	0.500	CT	0.511	0.40	26.80	26.6/	0.8	1973	B6213
T73651	P	6.00	R.T.	S-T	55.8	2.000	1.001	CT	1.023	0.52	25.60			1977	RA009
		6.00			56.2	1.998	1.000	CT	1.077	0.60	27.60			1977	RA009
		6.00			56.4	1.999	1.000	CT	1.029	0.49	25.10			1977	RA009
		6.00			56.6	2.000	1.002	CT	1.035	0.44	24.00			1977	RA009
		6.00			56.8	2.001	1.001	CT	1.001	0.42	23.40			1977	RA009
		6.00			57.1	2.000	1.000	CT	0.947	0.53	26.40			1977	RA009
		6.00			57.6	2.001	1.002	CT	1.033	0.44	24.40			1977	RA009
		6.00			57.6	1.997	0.999	CT	0.993	0.36	22.10			1977	RA009
		6.00			58.1	1.997	1.001	CT	0.994	0.49	25.80			1977	RA009
		6.00			58.1	1.996	1.002	CT	1.035	0.59	28.40			1977	RA009
		6.00			58.4	2.000	1.000	CT	1.017	0.51	26.50			1977	RA009
		6.00			58.6	1.998	1.000	CT	0.975	0.35	22.10			1977	RA009
		6.00			58.7	2.000	1.000	CT	1.034	0.42	24.20			1977	RA009
		6.00			58.8	2.001	1.000	CT	1.066	0.44	24.79			1977	RA009
		6.00			59.0	2.001	1.000	CT	1.028	0.37	23.00			1977	RA009

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	PRODUCT FORM	PRODUCT THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	SPECIMEN DESIGN	CRACK LENGTH (IN) A	2.5*(K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	K(IC) STAN DEV	DATE	REFER
T73651	P	6.00	R.T	S-T	59.5	1.997	0.997	CT	0.996	0.38	23.50			1977	RA009
		6.00			60.5	2.000	1.000	CT	1.020	0.36	23.10			1977	RA009
		6.00			60.7	2.000	1.000	CT	1.048	0.40	24.50			1977	RA009
		4.00			61.0	1.998	0.998	CT	0.976	0.38	23.90			1977	RA009
		4.00			61.2	1.998	0.999	CT	0.996	0.46	26.40			1977	RA009
		4.00			61.6	1.998	0.996	CT	0.976	0.45	26.20			1977	RA009
		4.00			62.9	1.998	0.996	CT	0.963	0.36	23.90			1977	RA009
		4.00			64.1	1.998	0.994	CT	1.026	0.31	22.79			1977	RA009
		3.50			64.2	1.998	0.999	CT	0.938	0.32	23.00			1978	RA008
		3.15			64.3	2.002	1.007	CT	1.020	0.24	20.33			1976	NC001
		3.15			64.3	2.002	1.007	CT	1.038	0.30	22.52			1976	NC001
		3.15			64.3	2.002	1.007	CT	1.066	0.25	20.73			1976	NC001
		2.50			64.8	2.001	0.999	CT	1.056	0.28	21.90			1978	RA010
		4.00			65.4	1.998	0.998	CT	0.979	0.27	21.79			1977	RA009
		3.50			65.9	2.000	0.998	CT	0.956	0.31	23.29			1978	RA008
		2.50			66.3	2.001	0.999	CT	1.028	0.30	23.00			1978	RA010
		3.50			66.3	1.997	0.997	CT	1.034	0.32	23.90			1977	RA009
		3.50			66.5	1.998	0.998	CT	1.050	0.31	23.60			1977	RA009
		3.50			67.1	1.997	0.995	CT	1.018	0.28	22.50	23.97	1.9	1977	RA009
T73651	P	5.25	R.T	S-L	55.2	1.999	0.999	CT	0.924	0.43	22.90			1977	RA010
		4.50			56.1	2.003	1.000	CT	1.033	0.46	24.29			1977	RA010
		2.75			56.6	2.003	0.999	CT	0.982	0.44	23.79			1977	RA010
		5.25			56.8	2.003	1.000	CT	0.950	0.39	22.60			1977	RA010
		5.00			56.8	4.000	2.010	CT	2.070	0.47	24.70			1975	AL015
		5.00			56.8	4.000	2.010	CT	2.070	0.47	24.70			1975	AL015
		5.25			56.9	2.000	0.998	CT	1.005	0.40	22.79			1977	RA010
		5.25			57.0	1.999	1.000	CT	0.933	0.42	23.40			1977	RA010
		5.25			57.0	1.999	0.998	CT	0.944	0.41	23.20			1977	RA010
		5.25			57.1	1.999	0.999	CT	0.941	0.36	21.90			1977	RA010
		5.25			57.6	2.003	1.001	CT	0.946	0.40	23.29			1977	RA010
		5.25			57.8	2.003	1.001	CT	0.990	0.42	23.70			1977	RA010
		5.25			58.0	2.003	1.000	CT	0.959	0.36	22.29			1977	RA010
		5.25			58.0	2.000	0.999	CT	0.938	0.42	23.90			1977	RA010
		5.25			58.1	2.003	0.970	CT	0.969	0.41	23.70			1977	RA010
		5.25			58.3	1.999	0.997	CT	0.968	0.43	24.40			1977	RA010
		5.25			58.6	2.000	1.000	CT	0.955	0.38	23.10			1977	RA010
		5.25			58.9	2.000	0.998	CT	0.966	0.37	22.79			1977	RA010
		5.00			59.3	4.000	2.000	CT	2.030	0.37	22.80			1975	AL015

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73651	P	5.00	R.T	S-L	59.3	4.000	2.000	CT	2.030	0.37	22.90			1975	AL015
		5.25			59.6	1.999	1.002	CT	0.952	0.32	21.50			1977	RA010
		4.50			60.3	3.002	1.497	CT	1.550	0.44	25.29			1978	RA008
		5.25			60.6	1.998	0.999	CT	0.952	0.33	22.29			1977	RA010
		5.25			61.7	1.997	0.999	CT	0.990	0.28	20.79			1977	RA010
		4.00			61.7	2.003	0.999	CT	0.974	0.31	21.90			1977	RA010
		5.25			62.0	1.999	0.998	CT	0.937	0.29	21.40			1977	RA010
		4.00			63.7	2.980	1.500	CT	1.469	0.37	24.50			1973	86213
		4.00			63.7	2.990	1.500	CT	1.507	0.43	26.40			1973	86213
		3.00			64.0	1.990	1.000	CT	1.029	0.34	23.50			1973	86429
		3.00			64.0	2.000	1.000	CT	1.025	0.31	22.70			1973	86429
		3.00			64.0	1.990	1.000	CT	1.034	0.31	22.60			1973	86429
		4.00			65.0	3.000	1.502	CT	1.519	0.37	25.10			1973	85836
		4.00			65.0	3.000	1.501	CT	1.550	0.36	24.80			1973	85836
		4.00			65.0	3.000	1.500	CT	1.531	0.39	25.80			1973	85836
		3.00			66.4	2.003	1.001	CT	0.970	0.45	28.20	23.5/	1.5	1977	RA010
T73651	P	2.00		B1 S-L	64.2	1.490	0.749	CT	0.760	0.40	25.60			1973	86213
		2.00			64.2	1.500	0.749	CT	0.743	0.40	25.60	25.6/	0.0	1973	86213
T73651	P	4.00		B4 S-L	59.7	3.000	1.498	CT	1.503	0.39	23.70			1973	86213
		2.00			61.5	1.490	0.748	CT	0.695	0.33	22.40	23.1/	0.9	1973	86213
T73652	F	3.50	R.T	L-T	61.1	3.000	1.500	CT	1.630	0.74	33.30			1975	AL015
		3.50			61.1	3.000	1.500	CT	1.540	0.79	34.40			1975	AL015
		5.50			63.0	3.000	1.500	CT	1.510	0.63	31.50			1975	AL015
		5.50			63.0	3.000	1.500	CT	1.500	0.59	30.60			1975	AL015
		4.50			63.2	3.000	1.510	CT	1.510	0.60	30.90			264	AL015
		5.50			68.8	3.000	1.500	CT	1.520	0.56	32.50			1975	AL015
		5.50			68.8	3.000	1.500	CT	1.530	0.61	34.00			1975	AL015
		3.50			70.0	3.000	1.500	CT	1.560	0.47	30.20			1975	AL015
		3.50			70.0	3.000	1.500	CT	1.530	0.46	30.10			1975	AL015
		----			72.0	3.000	1.500	CT	1.670	0.38	28.00			1975	AL015
		----			72.0	3.000	1.500	CT	1.640	0.33	26.20	31.1/	2.5	1975	AL015
T73652	F	7.50		B2 L-T	60.9	3.000	1.499	CT	1.458	0.77	33.70			1973	86213
		4.50			62.1	3.000	1.497	CT	1.531	0.92	37.70			1973	86213

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73652	F	4.50	82	L-T	62.1	3.000	1.498	CT	1.554	0.82	35.50			1973	86213
		2.50			67.3	3.000	1.499	CT	1.465	0.47	29.30	34.1/	3.6	1973	86213
T73652	F	4.50	R.T	T-L	59.3	3.000	1.510	CT	1.540	0.31	20.90			1975	AL015
		4.50			59.3	3.000	1.510	CT	1.560	0.32	21.20			1975	AL015
		7.50			60.7	3.000	1.500	CT	1.560	0.23	18.40			1975	AL015
		3.50			60.8	3.000	1.500	CT	1.530	0.32	21.90			1975	AL015
		4.50			60.8	3.000	1.500	CT	1.580	0.25	19.10			1975	AL015
		3.50			60.8	3.000	1.500	CT	1.560	0.32	21.70			1975	AL015
		4.50			60.8	3.000	1.500	CT	1.560	0.27	20.00			1975	AL015
		5.50			62.6	3.000	1.500	CT	1.520	0.29	21.30			1975	AL015
		5.50			62.6	3.000	1.500	CT	1.540	0.29	21.30			1975	AL015
		3.50			66.0	3.000	1.500	CT	1.580	0.30	22.70			1975	AL015
		3.50			66.0	3.000	1.500	CT	1.540	0.29	22.50			1975	AL015
		5.50			66.2	3.000	1.500	CT	1.560	0.21	19.00			1975	AL015
		5.50			66.2	3.000	1.500	CT	1.580	0.22	19.70	20.7/	1.4	1975	AL015
T73652	F	4.50	82	T-L	60.2	3.000	1.499	CT	1.556	0.33	21.90			1973	86213
		2.50			65.5	3.000	1.500	CT	1.580	0.40	26.20			1973	86213
		2.50			65.5	3.000	1.498	CT	1.604	0.43	27.20	25.1/	2.8	1973	86213
T73652	F	3.50	R.T	S-L	56.5	3.000	1.500	CT	1.540	0.29	19.40			1975	AL015
		3.50			56.5	3.000	1.500	CT	1.530	0.29	19.30			1975	AL015
		5.50			57.1	3.000	1.500	CT	1.540	0.29	19.30			1975	AL015
		5.50			57.1	3.000	1.500	CT	1.500	0.27	18.90			1975	AL015
		4.50			57.3	3.000	1.500	CT	1.560	0.25	18.10			1975	AL015
		4.50			57.3	3.000	1.500	CT	1.560	0.26	18.60			1975	AL015
		7.50			57.8	3.000	1.500	CT	1.500	0.24	18.00			1975	AL015
		7.50			57.8	3.000	1.500	CT	1.520	0.34	21.40			1975	AL015
		7.50			58.1	3.000	1.500	CT	1.540	0.20	16.50			1975	AL015
		4.50			61.1	3.000	1.500	CT	1.540	0.29	20.70			1975	AL015
		4.50			61.1	3.000	1.500	CT	1.530	0.19	16.80			1975	AL015
		5.50			62.1	3.000	1.500	CT	1.530	0.26	20.20			1975	AL015
		5.50			62.1	3.000	1.500	CT	1.560	0.23	19.00			1975	AL015
		3.50			64.4	3.000	1.500	CT	1.610	0.27	21.10			1975	AL015
		3.50			64.4	3.000	1.500	CT	1.570	0.28	21.40			1975	AL015
		----			67.6	1.500	0.750	CT	0.770	0.19	18.60			1975	AL015
		----			67.6	1.500	0.750	CT	0.760	0.19	18.70	19.2/	1.4	1975	AL015

TABLE 8.7.2.1 (Con't)

ALUMINUM 7050 K(IC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPECIMEN ORIENT	YIELD STRENGTH (KSI)	------SPECIMEN------ WIDTH (IN) W	THICK (IN) B	DESIGN	CRACK LENGTH (IN) A	2.5* (K(IC)/TYS)**2 (IN)	K(IC) (KSI*SQRT IN)	K(IC) MEAN	STAN DEV	DATE	REFER
T73652	F	2.50	82	S-L	61.3	2.000	0.999	CT	0.986	0.26	19.90			1973	86213
		2.50			61.3	2.000	0.999	CT	0.997	0.23	18.50	19.2/	1.0	1973	86213
T7651	P	1.00	R.T.	L-T	78.3	2.500	1.004	CT	1.280	0.38	30.70			1973	86574
		1.00			78.3	2.500	1.004	CT	1.279	0.39	31.10			1973	86574
		1.00			78.3	2.500	1.003	CT	1.274	0.38	30.60	30.8/	0.3	1973	86574
T76511	F	2.00	R.T.	S-T	71.4	1.500	0.749	CT	0.735	0.29	24.30			1973	86213

TABLE 8.7.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.1 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T6
ENVIRONMENT: R.T., L H A

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.33			
DELTA K MIN	A:	6.13	2.91			
	B:					
	C:					
	D:					
		7.00	4.01			
		8.00	6.16			
		9.00	8.98			
		10.00	11.9			
		13.00	21.8			
		16.00	41.8			
		20.00	114.			
		25.00	280.			
DELTA K MAX	A:	25.27	287.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 9.08

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	4
	1.25-2.0	
	>2.0	

CONDITION/HT: T6
FORM: Ø.18"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
FREQUENCY: 13.30 HZ
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 75.Ø KSI
ULT. STRENGTH: 83.2 KSI
SPECIMEN THK: Ø.177- Ø.179"
SPECIMEN WIDTH: 3.999- 4.ØØØ"
REFERENCES: 86213

ALUM. ALLOY

7050

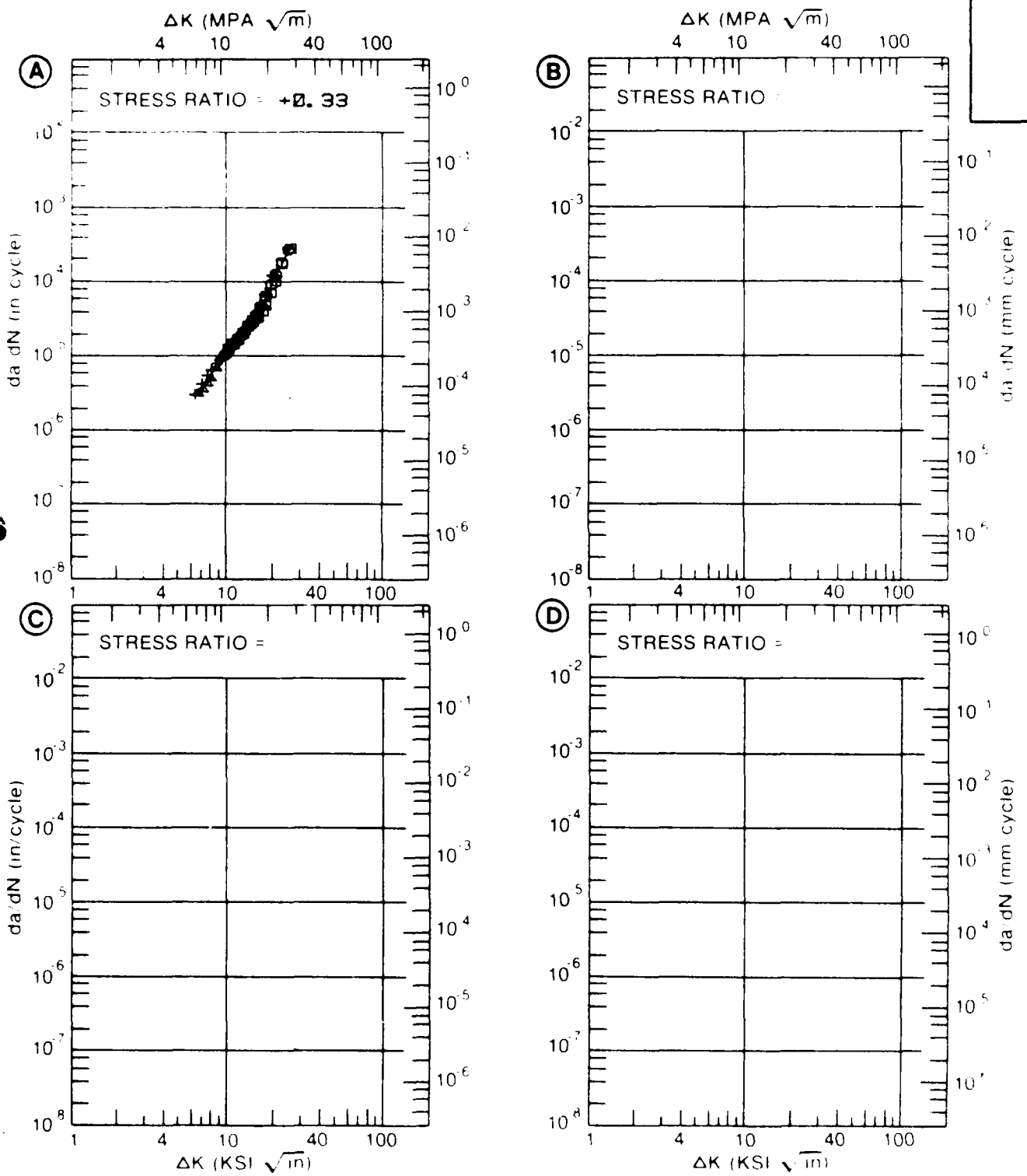

Figure 8.7.3.1

TABLE 8.7.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.2 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T6

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. H.H.A.			
DELTA K MIN	A: 6.00	4.98			
	B:				
	C:				
	D:				
	7.00	7.43			
	8.00	10.9			
	9.00	15.4			
	10.00	21.3			
	13.00	48.2			
	16.00	89.5			
	20.00	163.			
DELTA K MAX	A: 20.34	170.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 6.10

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T6
FORM: Ø.18"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +Ø.33
FREQUENCY: 13.3Ø HZ

YIELD STRENGTH: 75.Ø KSI
ULT. STRENGTH: 83.2 KSI
SPECIMEN THK: Ø.176- Ø.177"
SPECIMEN WIDTH: 4.ØØØ"
REFERENCES:86213

ALUM. ALLOY

7050

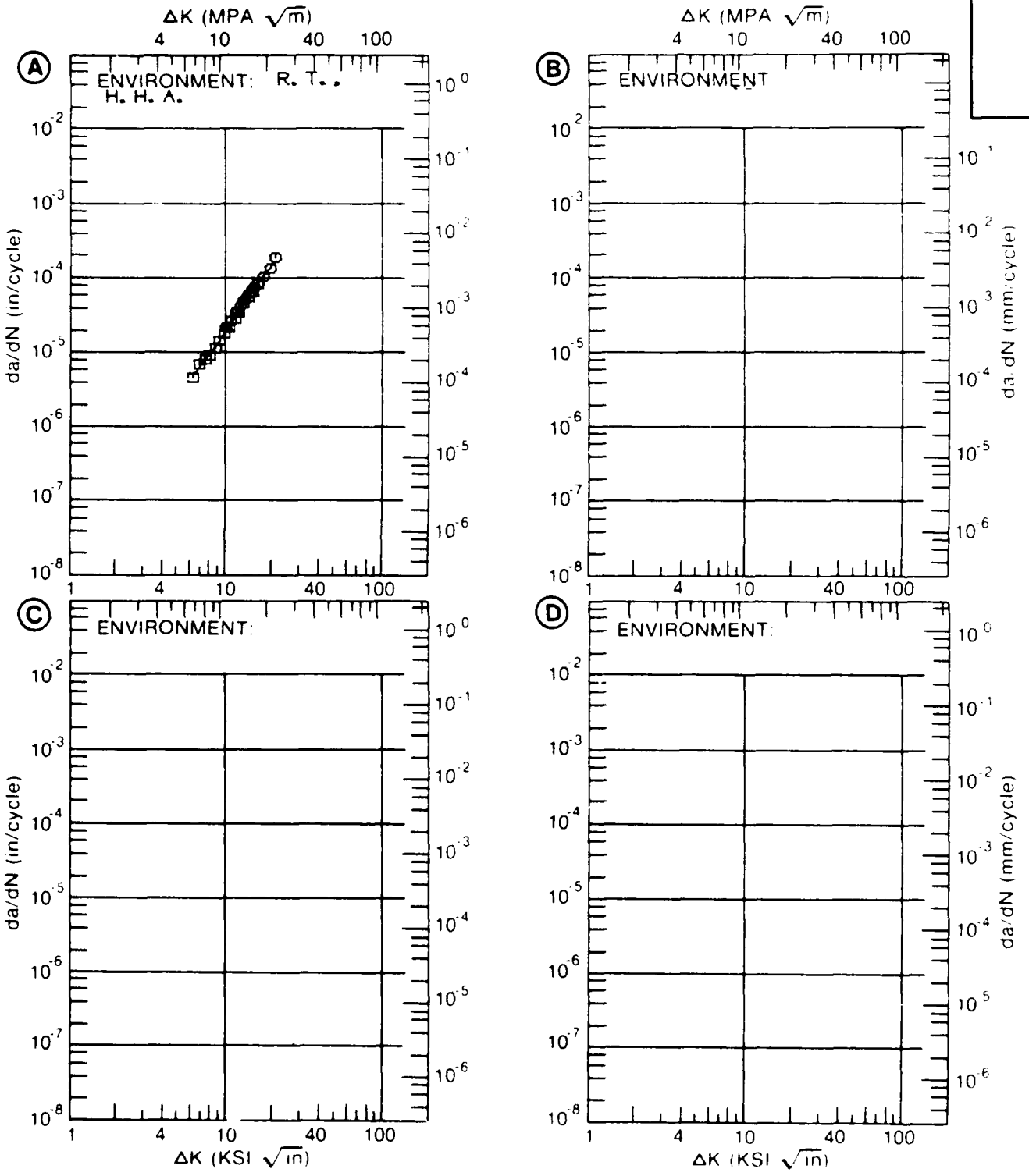

Figure 8.7.3.2

TABLE 8.7.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.3 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T6

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. H.H.A.			
DELTA K MIN	A: 6.88	6.37			
	B:				
	C:				
	D:				
	7.00	6.78			
	8.00	10.6			
	9.00	15.3			
	10.00	20.8			
	13.00	45.7			
	16.00	94.1			
	20.00	220.			
DELTA K MAX	A: 20.15	221.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 7.02

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T6
FORM: Ø.18"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +Ø.33
FREQUENCY: 13.3Ø HZ

YIELD STRENGTH: 74.5 KSI
ULT STRENGTH: 82.7 KSI
SPECIMEN THK: Ø.18Ø- Ø.181"
SPECIMEN WIDTH: 3.999- 4.ØØØ"
REFERENCES:86213

ALUM. ALLOY

7Ø5Ø

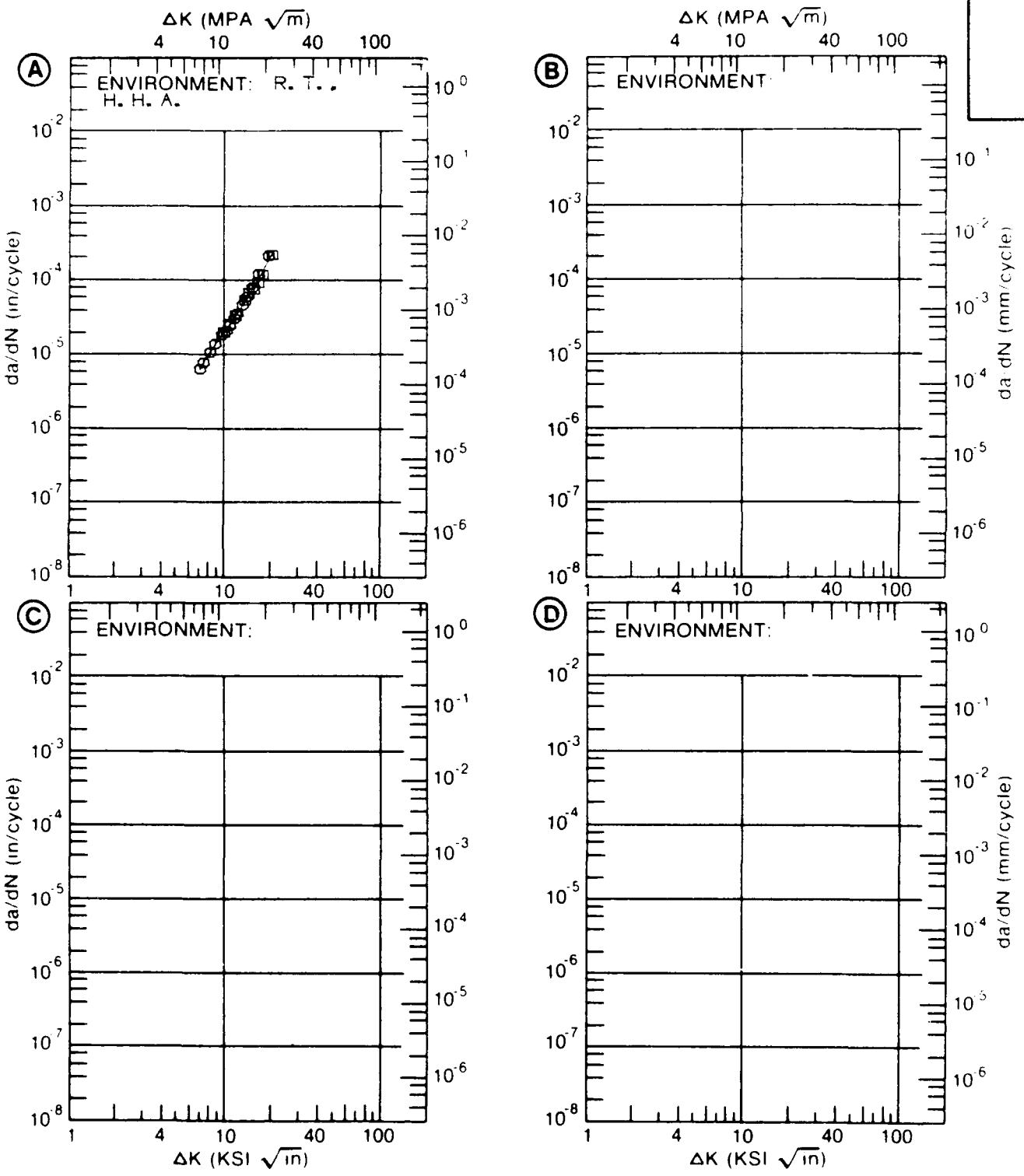

Figure 8.7.3.3

TABLE 8.7.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.4 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T73
ENVIRONMENT: R T , L H A

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			R=+0.08			
DELTA K MIN	A:	12.21	.227			
	B:					
	C:					
	D:					
		13.00	.427			
		16.00	1.27			
		20.00	12.6			
		25.00	29.2			
DELTA K MAX	A:	28.21	64.2			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 9.95

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T73
FORM: FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH: 71.0 KSI
ULT STRENGTH: 78.0 KSI
SPECIMEN THK: 0.500"
SPECIMEN WIDTH: 2.810"
REFERENCES: 88579

ALUM. ALLOY

7050

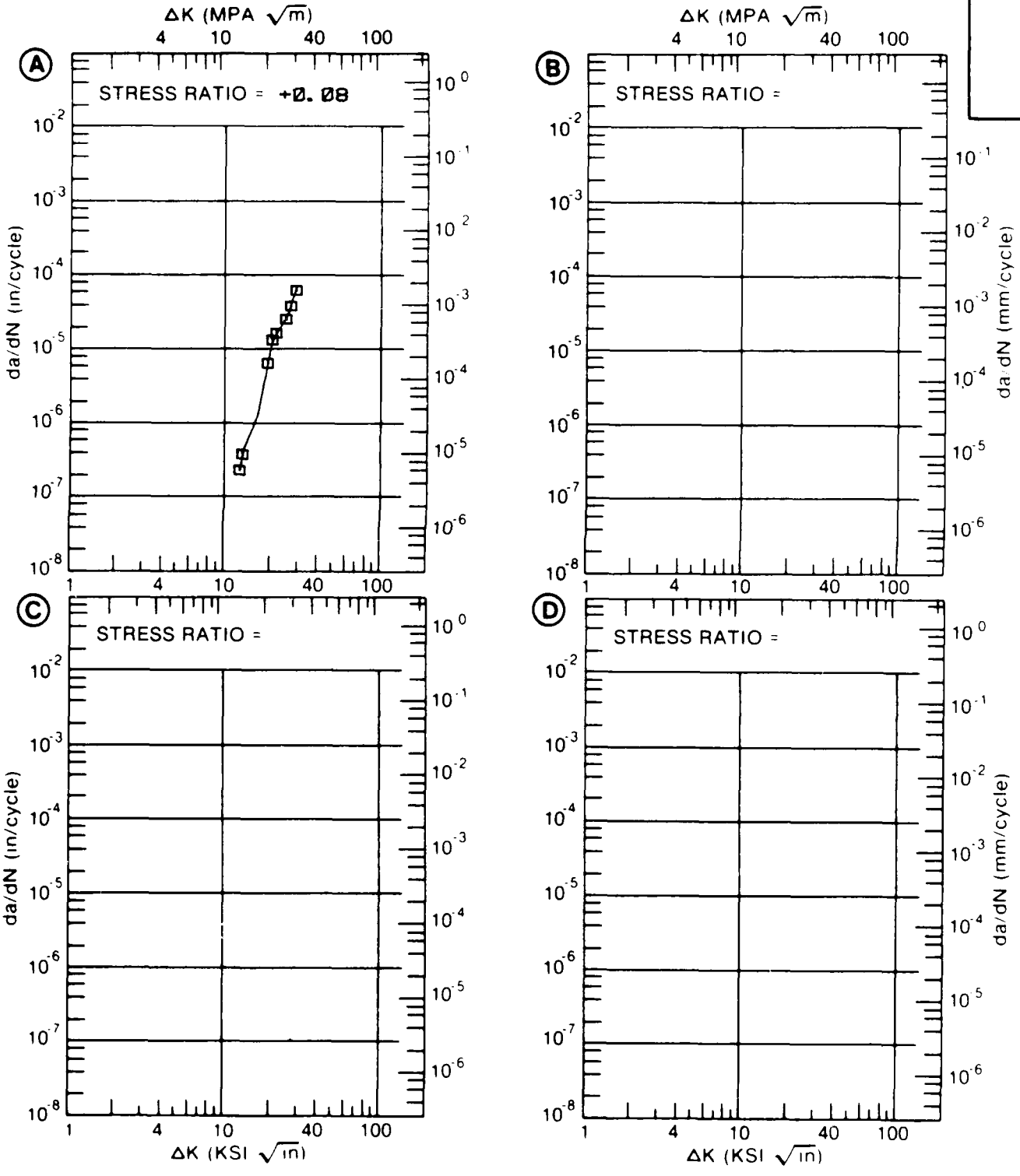

Figure 8.7.3.4

TABLE 8.7.3.5

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.5 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R. T. 3.5% NACL			
DELTA K MIN	A: 3.01	.017			
	B: 8				
	C:				
	D:				
	3.50	.102			
	4.00	.271			
	5.00	.765			
	6.00	1.67			
	7.00	3.27			
	8.00	5.76			
	9.00	9.22			
	10.00	13.5			
	13.00	29.9			
	16.00	49.3			
	20.00	78.5			
	25.00	121.			
DELTA K MAX	A: 27.97	152.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 10.75

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
0.0-0.5		
0.5-0.8		
0.8-1.25	1	
1.25-2.0		
2.0		

CONDITION/HT: T7351
FORM: 1.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 20.00 HZ

YIELD STRENGTH:
ULT STRENGTH:
SPECIMEN THK: 0.151"
SPECIMEN WIDTH: 3.000"
REFERENCES:86844

ALUM. ALLOY

7050

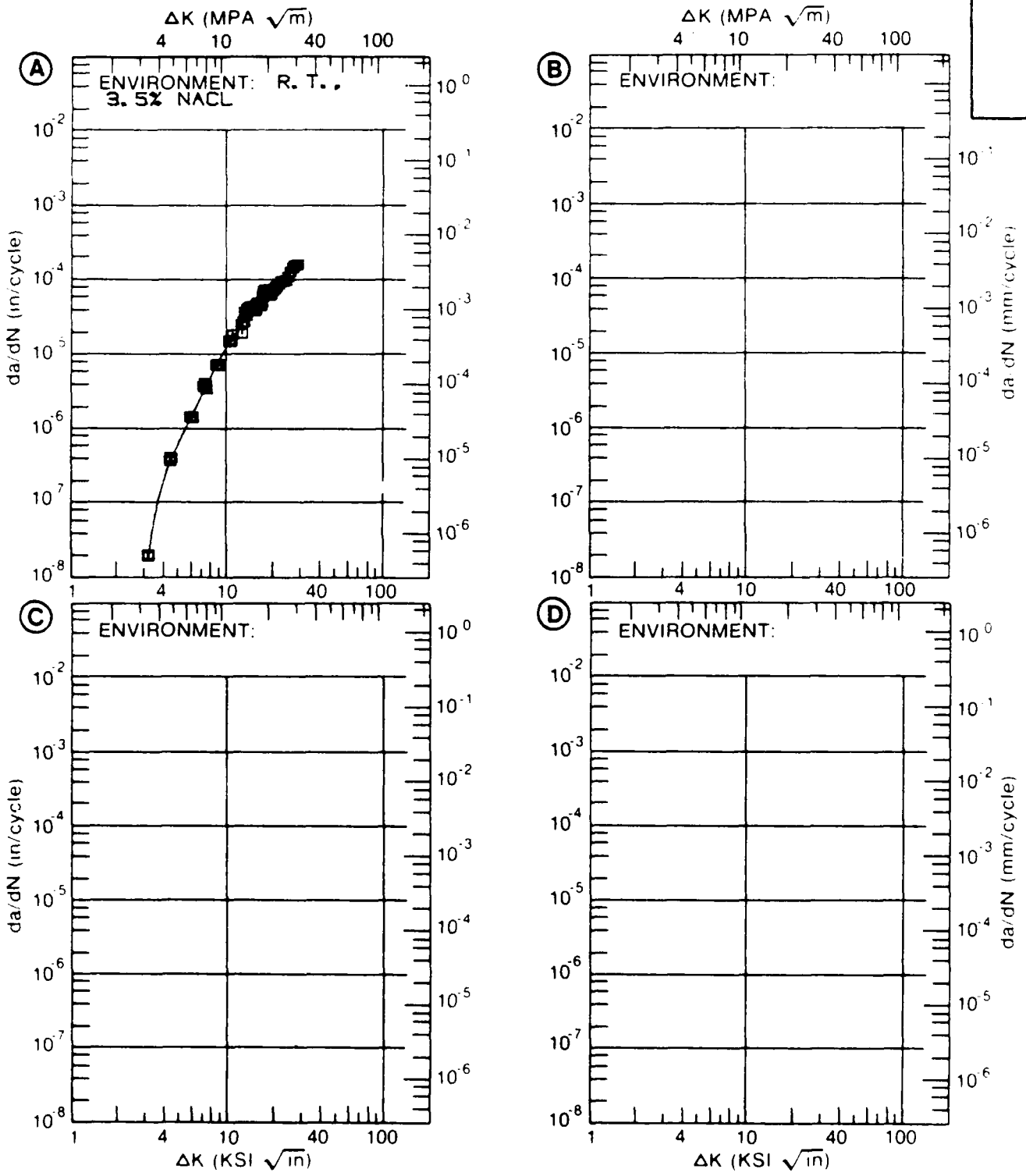

Figure 8.7.3.5

TABLE 8.7.3.6

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.6 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. H.H.A.	E= R.T. 3.5% NACL		
DELTA K MIN	A:	6.08	1.52			
	B:	5.19		.272		
	C:					
	D:					
		6.00		1.15		
		7.00	2.47	4.36		
		8.00	3.71	9.90		
		9.00	5.15	16.2		
		10.00	6.79	22.9		
		13.00	13.1	54.4		
		16.00	22.3	106.		
		20.00	42.1	171.		
		25.00	83.3	237.		
		30.00	141.	318.		
DELTA K MAX	A:	30.08	142.			
	B:	32.15		367.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			6.27	8.42		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1			
		1.25-2.0		1		
		>2.0				

CONDITION: HT. T7351
FORM: 1.00" TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 2.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.148- 0.152"
SPECIMEN WIDTH: 3.000"
REFERENCES: 86844

ALUM. ALLOY

7050

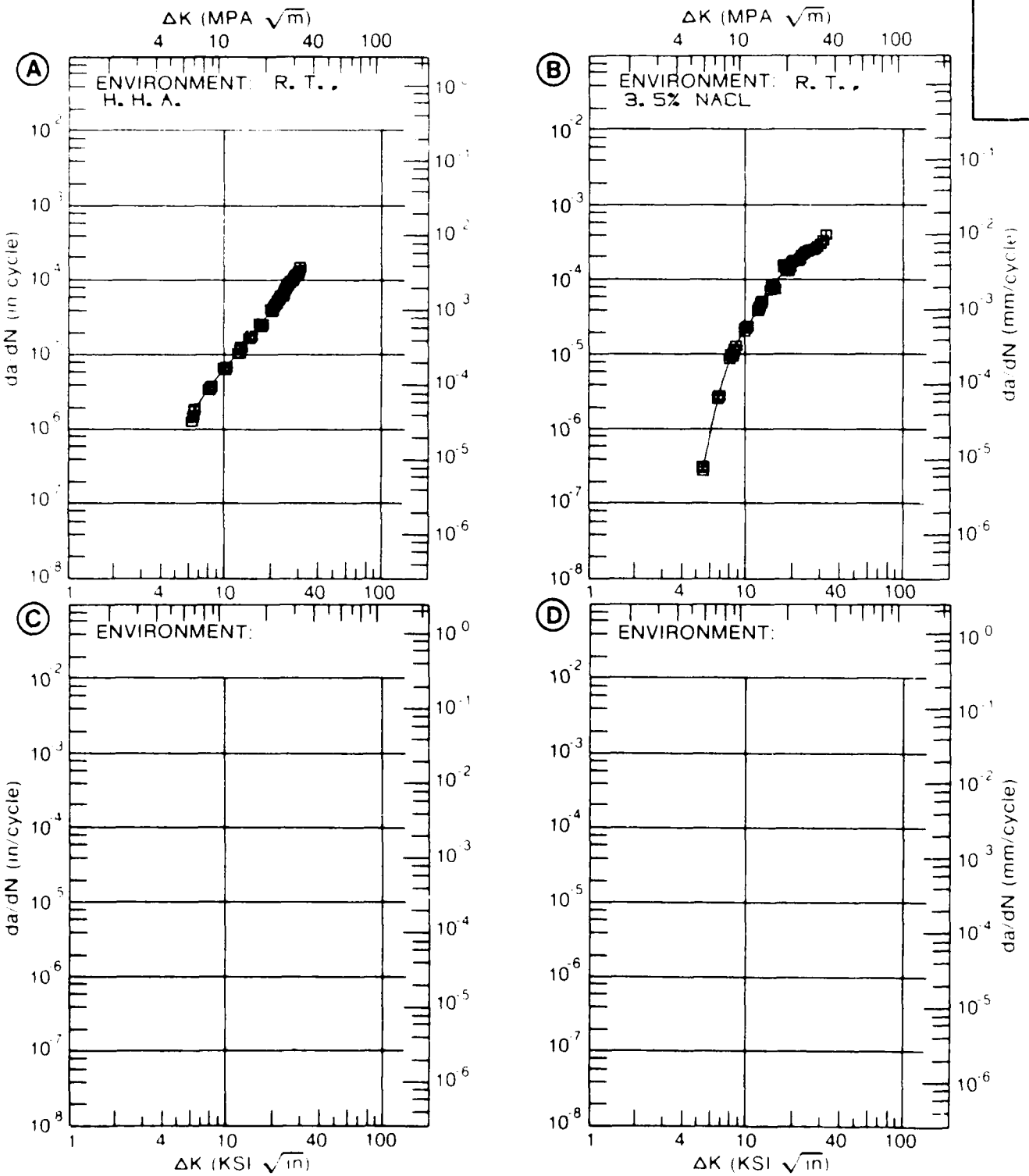

Figure 8.7.3.6

TABLE 8.7.3.7

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.7 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R I DRY AIR	E= R T S T W		
DELTA K MIN	A:	5.69	822			
	B:	5.16		1.94		
	C:					
	D:					
		6.00	942	4.30		
		7.00	1.64	8.88		
		8.00	3.01	13.2		
		9.00	4.93	16.6		
		10.00	6.92	20.4		
		13.00	13.0	42.8		
		16.00	22.8			
		20.00	62.1			
DELTA K MAX	A:	20.51	72.4			
	B:	15.33		45.1		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			10.72	14.34		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT T7351
FORM 2.00 - 4.00 [illegible] PLATE
SPECIMEN TYPE C[illegible]
ORIENTATION [illegible]
STRESS RATIO +0.33
FREQUENCY 2.00 - 20.00 [illegible]

YIELD STRENGTH [illegible]
ULT STRENGTH [illegible]
SPECIMEN THK [illegible]
SPECIMEN WIDTH [illegible]
REFERENCE [illegible]

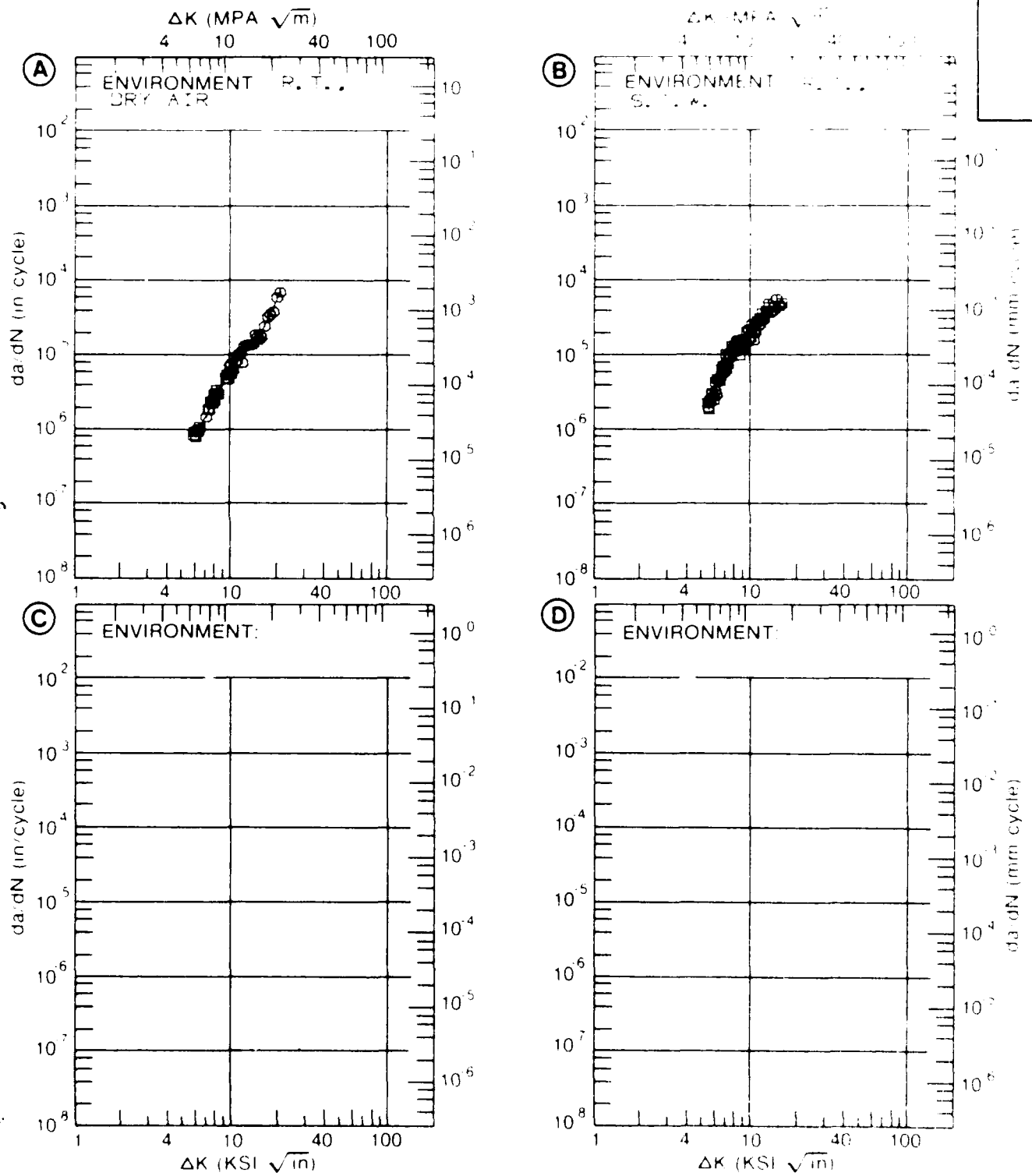

Figure 8.7.3.7

TABLE 8.7.3.8

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.8 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR	E= R.T. H.H.A.	E= R.T. S.T.W.	
DELTA K MIN	A:	5.69	8.56			
	B:	5.68		1.36		
	C:	4.52			1.58	
	D:					
		5.00			1.72	
		6.00	.981	1.87	3.69	
		7.00	1.86	4.08	7.26	
		8.00	3.63	6.44	12.0	
		9.00	6.11	8.73	16.7	
		10.00	8.65	11.2	21.0	
		13.00	19.1	25.8	35.9	
		16.00	49.0	62.3	56.2	
DELTA K MAX	A:	18.96	89.2			
	B:	18.14		134.		
	C:	17.01			61.7	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			24.19	13.88	18.31	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T7351
FORM: 2.00- 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 1.50- 20.00 HZ

YIELD STRENGTH: 60.9- 63.4 KSI
ULT. STRENGTH: 72.1- 74.4 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES:AL001

ALUM. ALLOY

7050

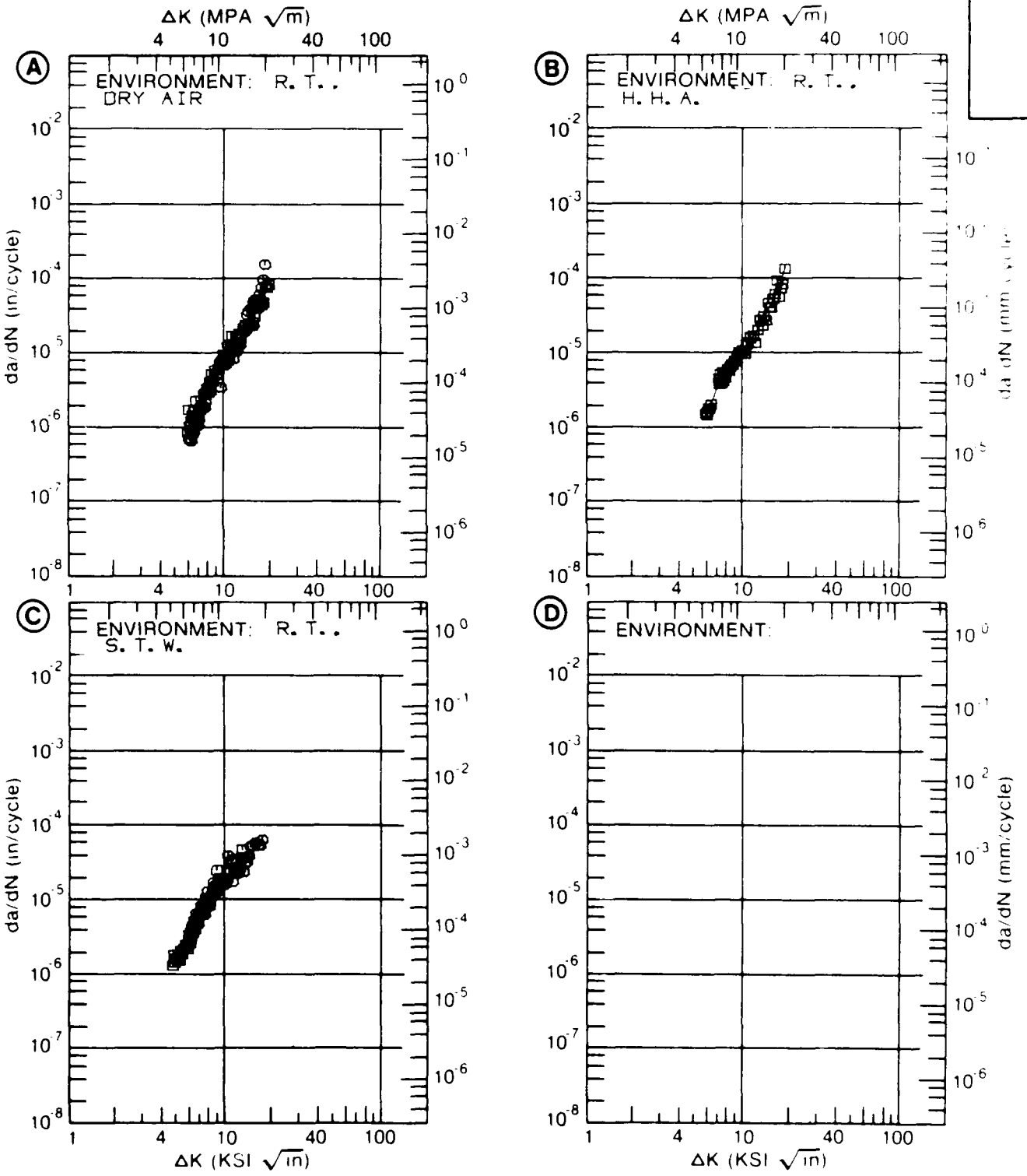

Figure 8.7.3.8

TABLE 8.7.3.9

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.9 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. DRY AIR	E= R.T. S.T.W.		
DELTA K MIN	A:	5.28	.839			
	B:					
	C:					
	D:					
		6.00	.937			
		7.00	1.77			
DELTA K MAX	A:	7.69	2.77			
	B:					
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			10.40	0.00		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T7351
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.67
FREQUENCY: 30.00 HZ

YIELD STRENGTH: 63.4 KSI
ULT. STRENGTH: 74.4 KSI
SPECIMEN THK: 0.250"
SPECIMEN WIDTH: 2.550"
REFERENCES: AL001

ALUM. ALLOY

7050

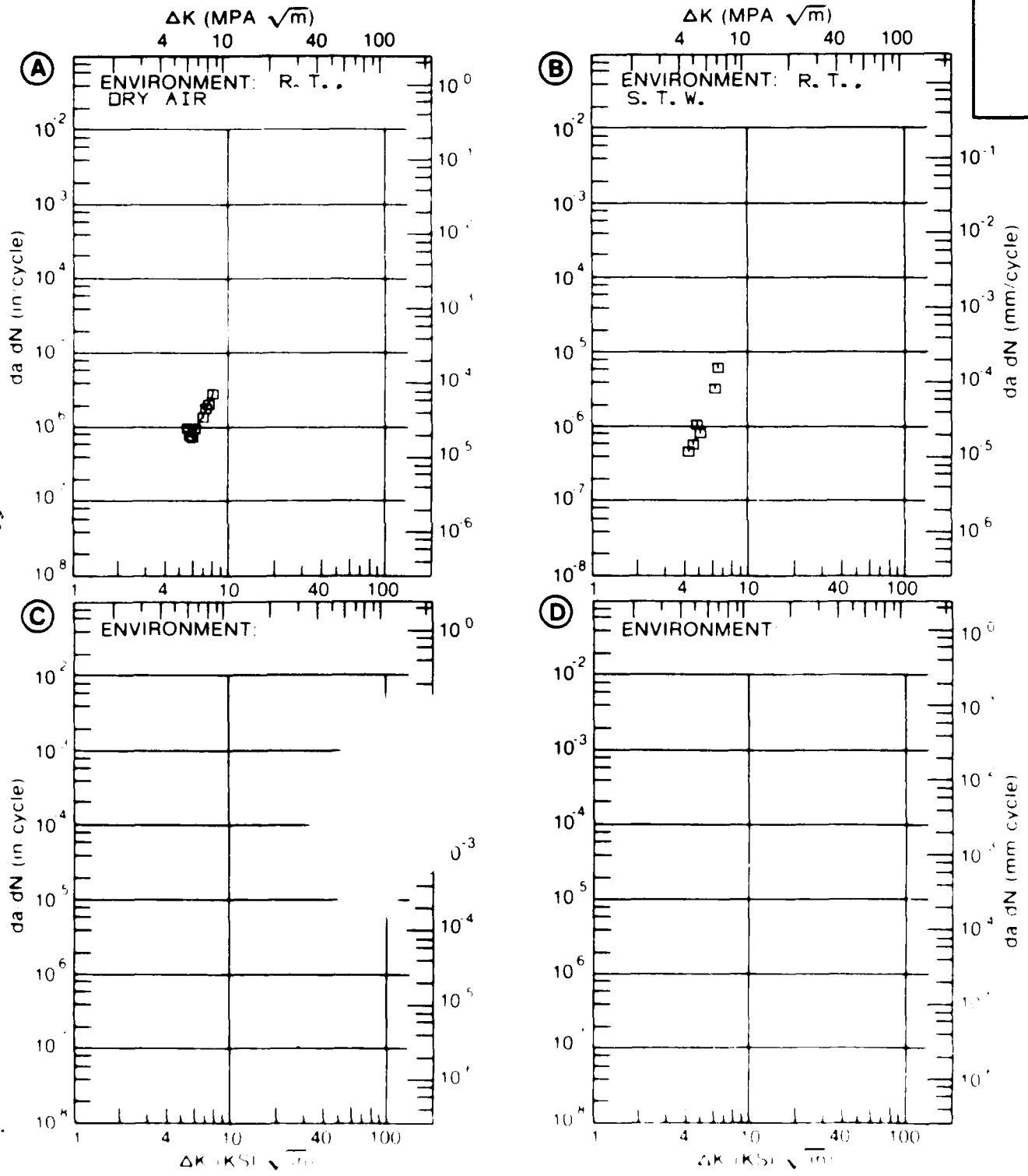

TABLE 8.7.3.10

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.10 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351

		DELTA K (KSI*IN**1/2)	DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR 1.5-15HZ	B E= R.T. H.H.A. 10-20HZ	C E= R.T. S.T.W., 20HZ	D
DELTA K MIN	A:	5.73	.995			
	B:	5.73		1.78		
	C:	5.72			4.28	
	D:					
		6.00	1.01	1.73	4.82	
		7.00	2.09	3.33	7.80	
		8.00	3.65	6.00	11.8	
		9.00	5.36	8.85	15.8	
		10.00	7.36	11.9	19.7	
		13.00	19.7	26.8		
		16.00	73.2	78.4		
DELTA K MAX	A:	18.78	193.			
	B:	17.68		192.		
	C:	11.73			27.5	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			16.80	15.19	13.74	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T7351
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: S-L
STRESS RATIO: 0.33
FREQUENCY:

YIELD STRENGTH: 60.0 KSI
ULT. STRENGTH: 72.4 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES: AL001

ALUM. ALLOY

7050

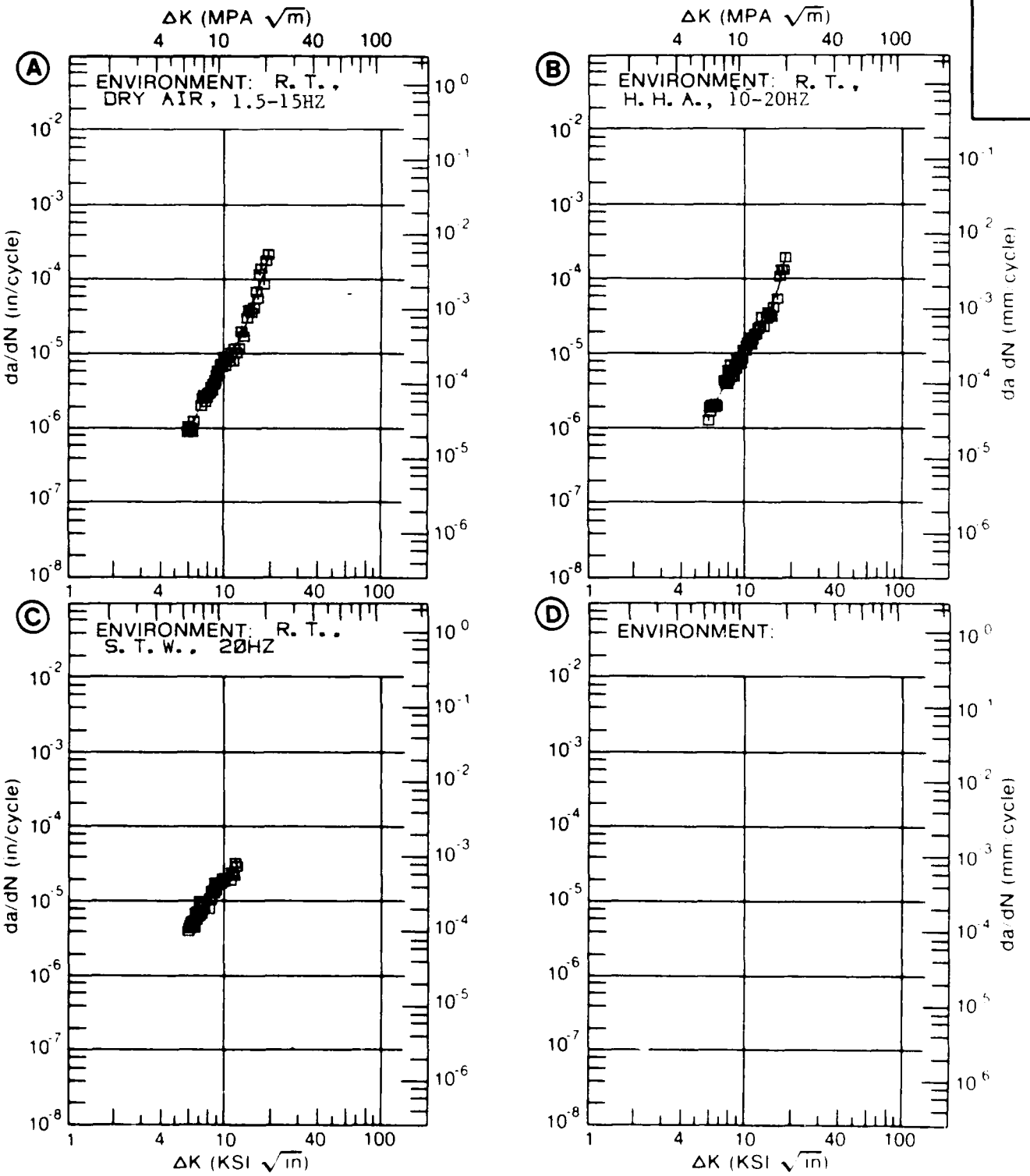

Figure 8.7.3.10

TABLE 8.7.3.11

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.11 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351X

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. L.H.A.	E= R.T. H.H.A.		
DELTA K MIN	A:	4.55	.397			
	B:	3.54		.262		
	C:					
	D:					
		4.00		.457		
		5.00	.495	1.21		
		6.00	.680	2.58		
		7.00	.974	4.70		
		8.00	1.50	7.65		
		9.00	2.32	11.4		
		10.00	3.48	15.9		
		13.00	9.55	32.7		
		16.00	20.1	50.6		
DELTA K MAX	A:	18.90	33.6			
	B:	17.49		58.7		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			7.12	9.78		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	2		
		1.25-2.0				
		>2.0				

CONDITION/HT: T7351X
FORM: Ø.91"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +Ø.33
FREQUENCY: 20.ØØ HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: Ø.899- Ø.9ØØ"
SPECIMEN WIDTH: 3.1ØØ"
REFERENCES: ALØØ7

ALUM. ALLOY

7050

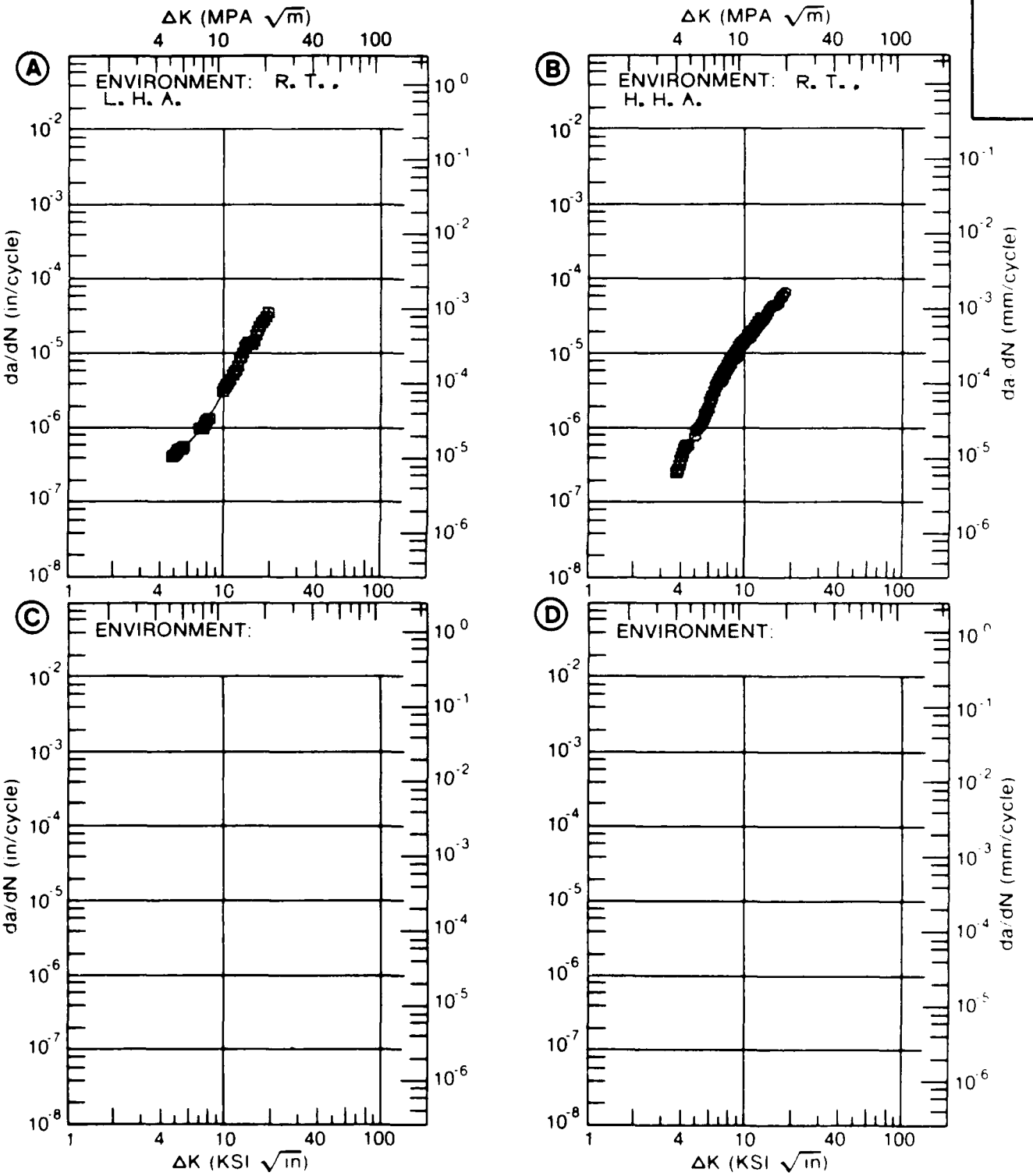

Figure 8.7.3.11

TABLE 8.7.3.12

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.12 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351X

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. L.H.A.	E= R.T. H.H.A.		
DELTA K MIN	A:	3.70	.201			
	B:	3.72		.376		
	C:					
	D:					
		4.00	.335	.454		
		5.00	1.06	2.25		
		6.00	2.08	4.21		
		7.00	3.25	6.74		
		8.00	4.53	9.95		
		9.00	5.97	13.9		
		10.00	7.69	18.4		
		13.00	16.3	35.7		
		16.00	37.7			
DELTA K MAX	A:	16.93	50.0			
	B:	14.95		49.4		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			22.77	7.56		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	2		
		1.25-2.0	1			
		>2.0	0			

CONDITION/HT: T7351X
FORM: 0.91"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 20.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.899- 0.900"
SPECIMEN WIDTH: 3.805"
REFERENCES: AL007

ALUM. ALLOY

7050

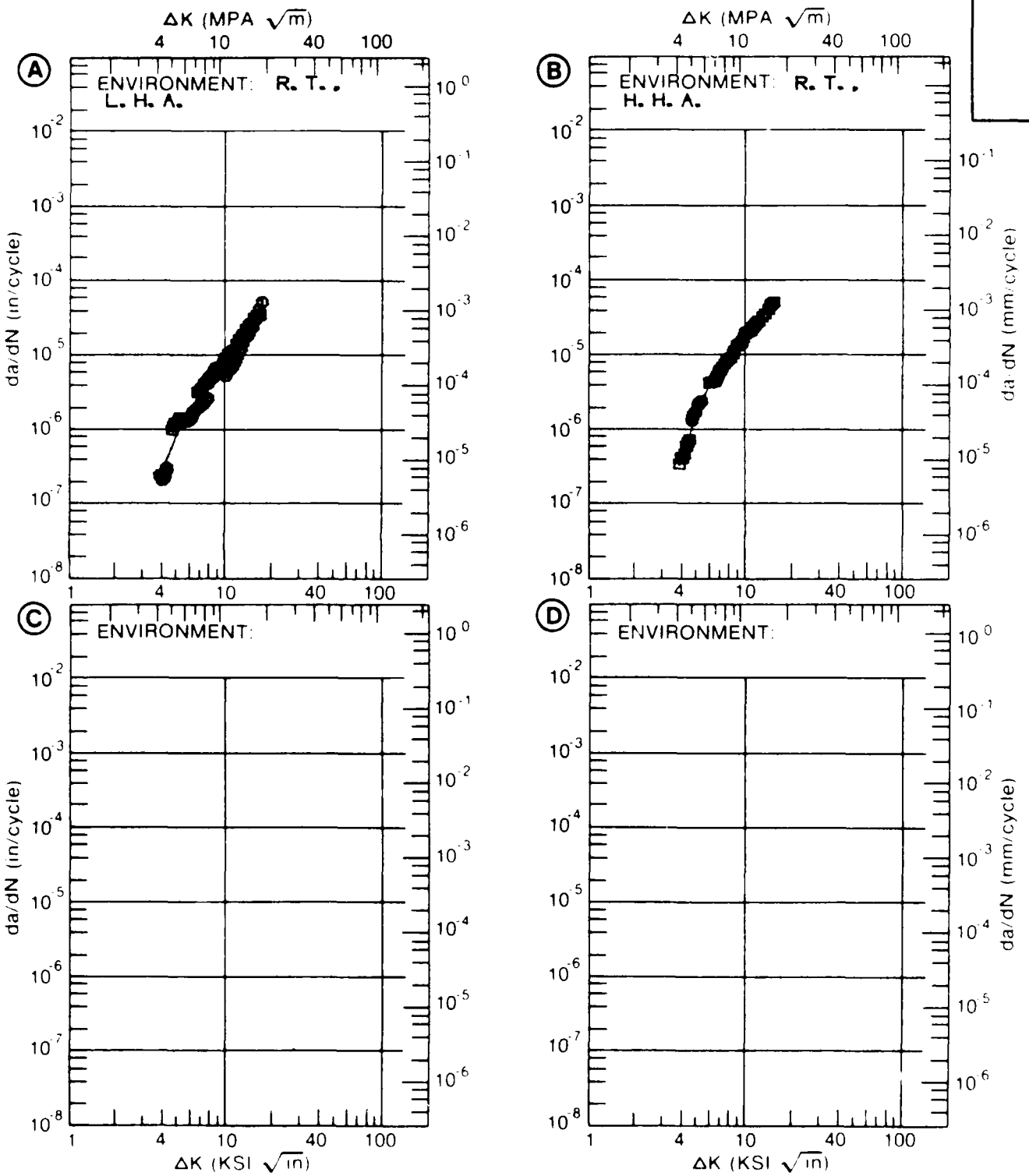

Figure 8.7.3.12

TABLE 8.7.3.13

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.13 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351X

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. L.H.A.	E= R.T. H.H.A.		
DELTA K MIN A:	3.95	.352			
DELTA K MIN B:	2.90		.174		
DELTA K MIN C:					
DELTA K MIN D:					
	3.00		.170		
	3.50		295		
	4.00	.372	.573		
	5.00	.862	1.41		
	6.00	1.69	2.62		
	7.00	2.97	4.33		
	8.00	4.69	6.83		
	9.00	6.78	10.7		
	10.00	9.90	16.6		
	13.00	64.8	68.2		
DELTA K MAX A:	13.94	157.			
DELTA K MAX B:	14.35		134.		
DELTA K MAX C:					
DELTA K MAX D:					
ROOT MEAN SQUARE PERCENT ERROR		19.29	12.88		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	1	2		
	1.25-2.0				
	>2.0				

CONDITION/HT: T7351X
FORM: 5.00"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 20.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.990- 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES: AL007

ALUM. ALLOY

7050

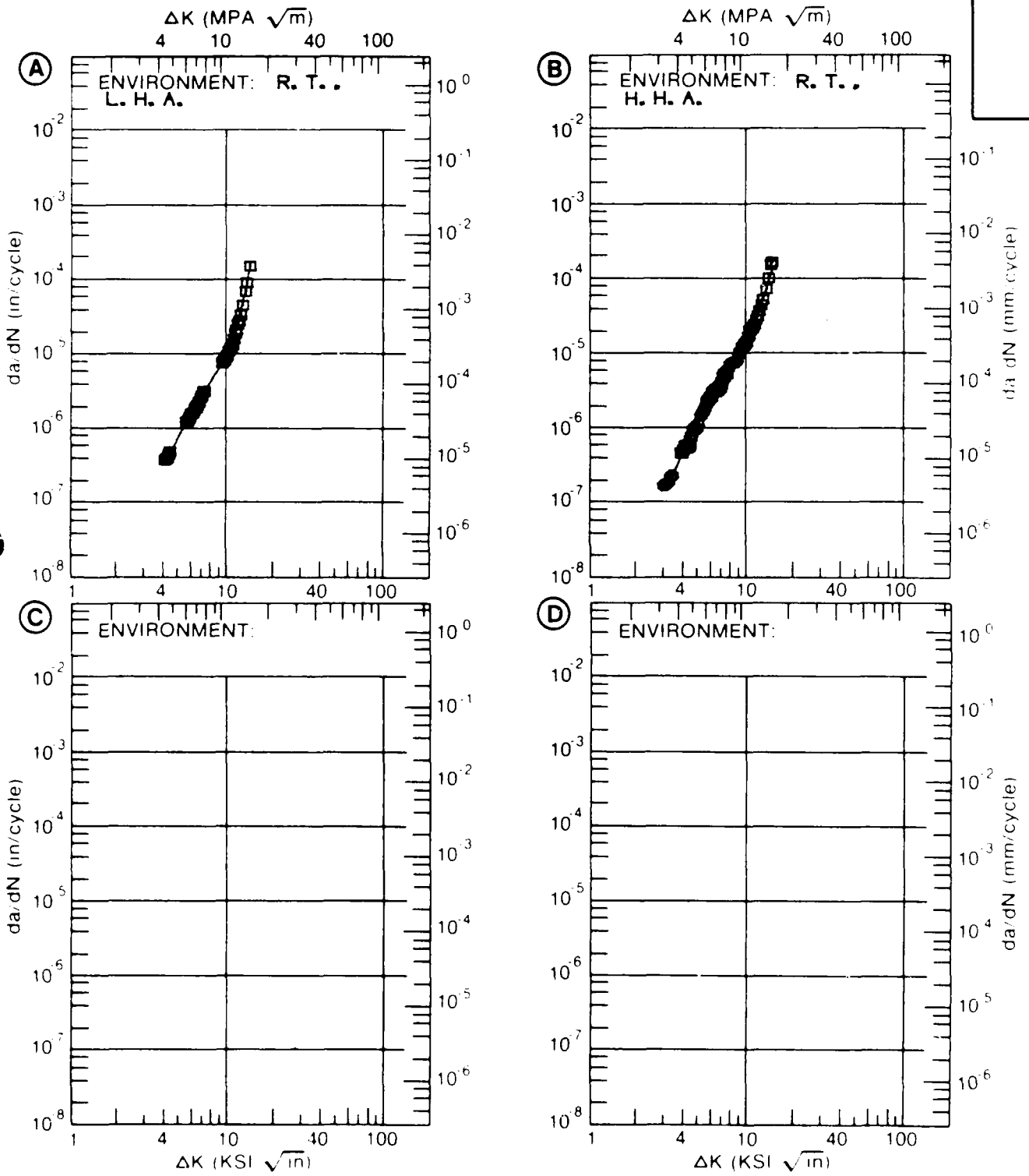

Figure 8.7.3.13

TABLE 8.7.3.14

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.14 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7351X

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	DA/DN (10**-6 IN./CYCLE) B E= R.T. H.H.A.	C	D
DELTA K MIN	A:	3.73	486			
	B:	3.76		.756		
	C:					
	D:					
		4.00	.568	.880		
		5.00	.810	1.38		
		6.00	1.08	2.47		
		7.00	1.45	4.45		
		8.00	1.96	7.05		
		9.00	2.67	9.43		
		10.00	3.67	11.2		
		13.00	9.91	19.4		
		16.00	55.1	61.0		
DELTA K MAX	A:	16.18	70.0			
	B:	16.55		81.4		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			16.45	10.26		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T7351X
FORM: 5.00"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: S-T
STRESS RATIO: +0.33
FREQUENCY: 20.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.998- 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES:AL007

ALUM. ALLOY

7050

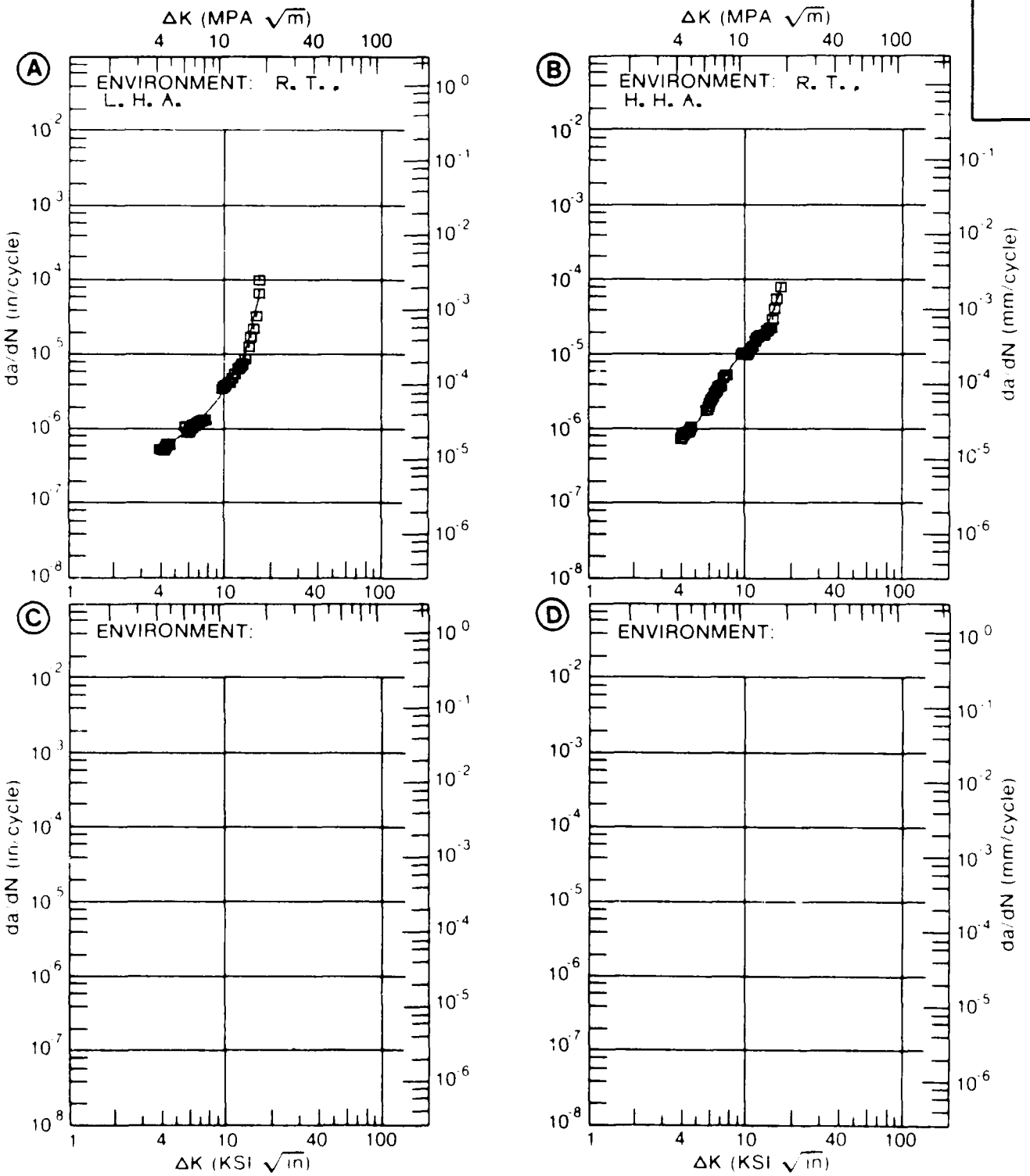

Figure 8.7.3.14

TABLE 8.7.3.15

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.15 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T73511
ENVIRONMENT: R T , L H A

		DELTA K (KSI*IN**1/2)	DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.10	R=+0.50		
DELTA K MIN	A:	3.16	.0649			
	B:	1.30		.0133		
	C:					
	D:					
		1.60		.0268		
		2.00		.0496		
		2.50		.0865		
		3.00		.138		
		3.50	.0815	.216		
		4.00	.115	.336		
		5.00	.225	.778		
		6.00	.416	1.61		
		7.00	.723	2.93		
		8.00	1.18	4.77		
		9.00	1.83	7.06		
		10.00	2.71	9.88		
		13.00	7.00	23.3		
		16.00	14.5	52.5		
		20.00	32.0			
		25.00	73.3			
		30.00	190.			
DELTA K MAX	A:	31.94	311.			
	B:	19.47		152.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			17.51	19.61		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T73511
FORM: 1.80"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 8.00- 50.00 HZ
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.249"
SPECIMEN WIDTH: 2.500"
REFERENCES:AL006

ALUM. ALLOY

7050

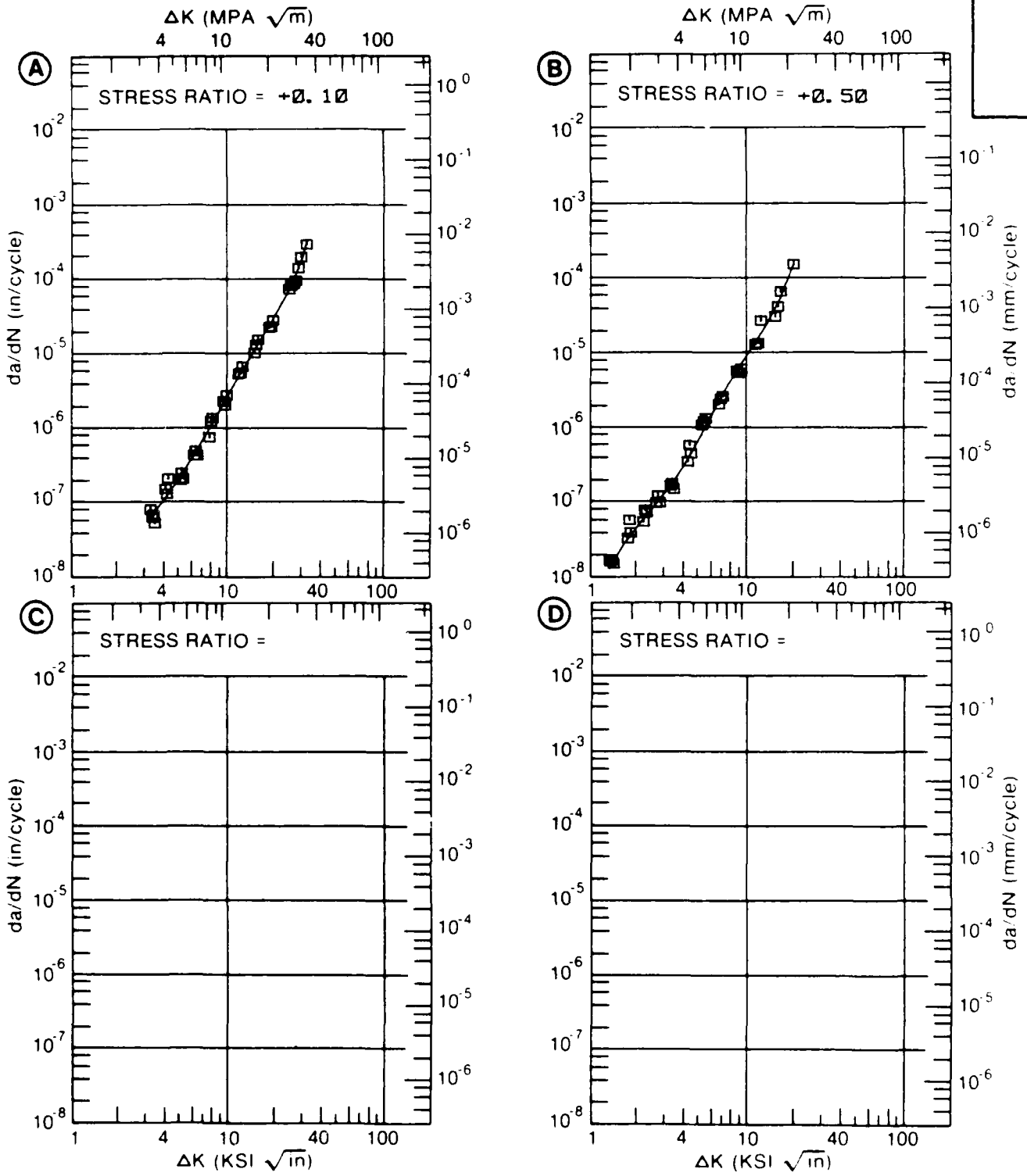

Figure 8.7.3.15

TABLE 8.7.3.16

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.16 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T73511
ENVIRONMENT: R.T. , L.H.A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.33			
DELTA K MIN	A: 4.51	.270			
	B:				
	C:				
	D:				
	5.00	.334			
	6.00	.433			
	7.00	.589			
	8.00	.871			
	9.00	1.34			
	10.00	2.08			
	13.00	7.44			
	16.00	22.8			
DELTA K MAX	A: 17.86	42.1			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 20.04

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5	
	0.5-0.8	
	0.8-1.25	3
	1.25-2.0	
	>2.0	

CONDITION/HT T73511
FORM 1.80"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 7.50- 15.00 HZ
ENVIRONMENT: R. T., L. H. A.

YIELD STRENGTH
ULT STRENGTH
SPECIMEN THK 1.002- 1.003"
SPECIMEN WIDTH 3.100"
REFERENCES AL006

ALUM. ALLOY

7050

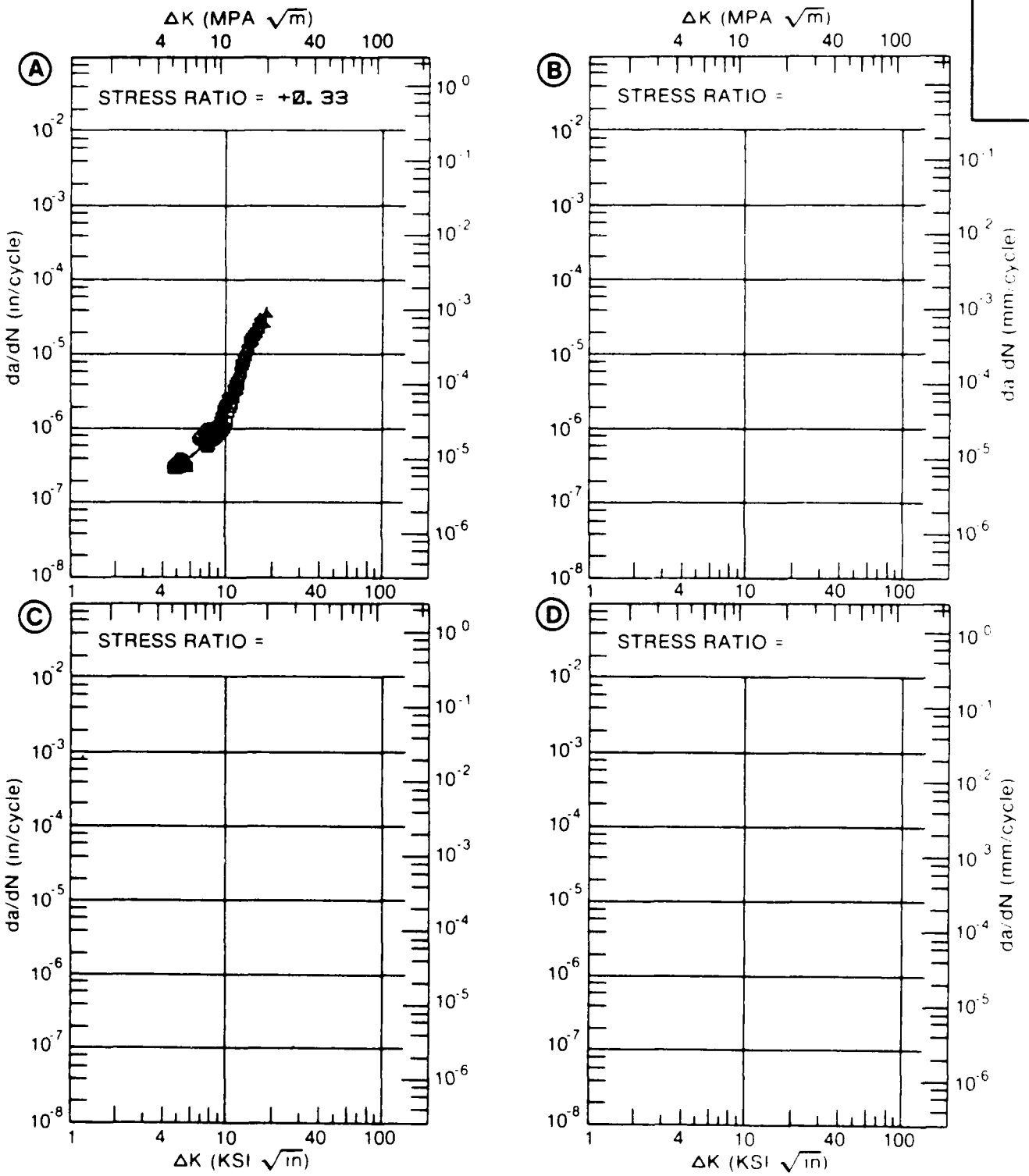

Figure 8.7.3.16

TABLE 8.7.3.17

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.17 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T73511
ENVIRONMENT: R.T., H.H.A.

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.33	R=+0.50		
DELTA K MIN	A: 2.72	.121			
	B: 1.33		.00801		
	C:				
	D:				
	1.60		.0307		
	2.00		.0707		
	2.50		.112		
	3.00	.140	.161		
	3.50	.200	.237		
	4.00	.295	.373		
	5.00	.637	1.04		
	6.00	1.28	2.34		
	7.00	2.34	4.00		
	8.00	3.95	5.92		
	9.00	6.15	8.16		
	10.00	8.94	10.9		
	13.00	19.9	25.7		
	16.00	31.0	67.4		
DELTA K MAX	A: 16.62	32.8			
	B: 16.39		77.2		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		14.29	21.97		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	3	3		
	1.25-2.0				
	>2.0				

CONDITION/HT: T73511
FORM: 1.80"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 15.00- 20.00 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.249- 1.000"
SPECIMEN WIDTH: 2.500- 3.100"
REFERENCES:AL006

ALUM. ALLOY
7050

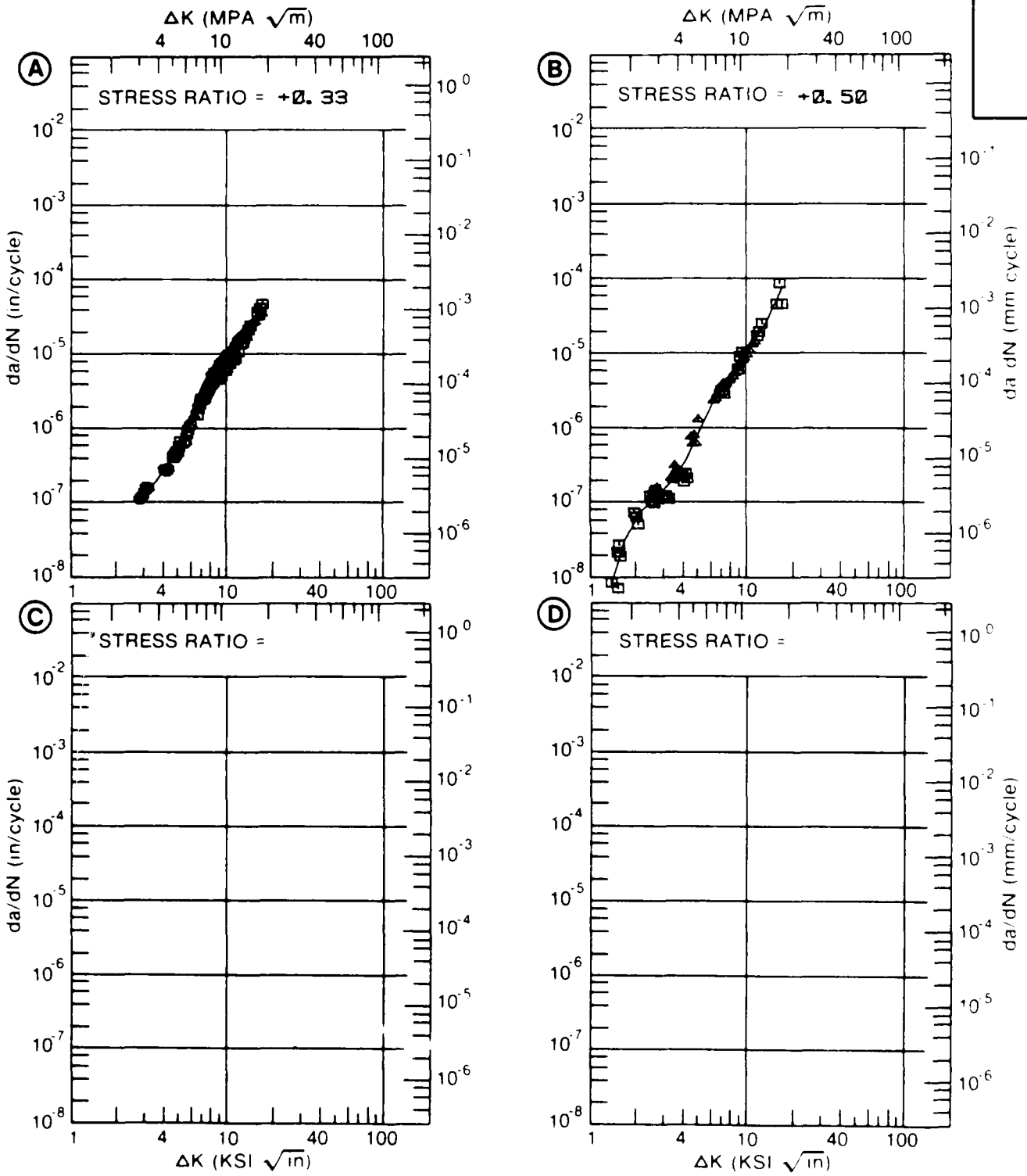

Figure 8.7.3.17

TABLE 8.7.3.18

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.18 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 7050
CONDITION: T73511
ENVIRONMENT: R T AIR

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			F(HZ)= 2.00	F(HZ)= 15.00	F(HZ)= 10.00-20.00	F(HZ)= 50.00
DELTA K MIN	A:	7.40	1.76			
	B:	3.31		.119		
	C:	6.68			.796	
	D:	2.62				.011
		3.00				.0268
		3.50		.139		.0528
		4.00		.210		.0783
		5.00		.454		.296
		6.00		.890		
		7.00		1.59	1.11	
		8.00	2.39	2.63	2.35	
		9.00	3.69	4.04	3.75	
		10.00	5.31	5.85	5.16	
		13.00	12.3	13.4	10.2	
		16.00	23.0	22.8	20.3	
		20.00	45.5		45.5	
		25.00	94.6			
		30.00	183.			
		35.00	341.			
		40.00	619.			
		50.00	1664.			
DELTA K MAX	A:	53.47	5381.			
	B:	16.26		23.6		
	C:	23.95			80.6	
	D:	5.55				.634
ROOT MEAN SQUARE PERCENT ERROR			14.59	6.94	10.17	21.61
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5					
	0.5-0.8					
	0.8-1.25		1	1	1	
	1.25-2.0					1
	>2.0					

CONDITION/HT: T73511
FORM: 1.80"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
ENVIRONMENT: R.T., H.H.A.

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.154- 0.249"
SPECIMEN WIDTH: 2.500- 3.000"
REFERENCES: 86844, AL004, AL006

ALUM. ALLOY

7050

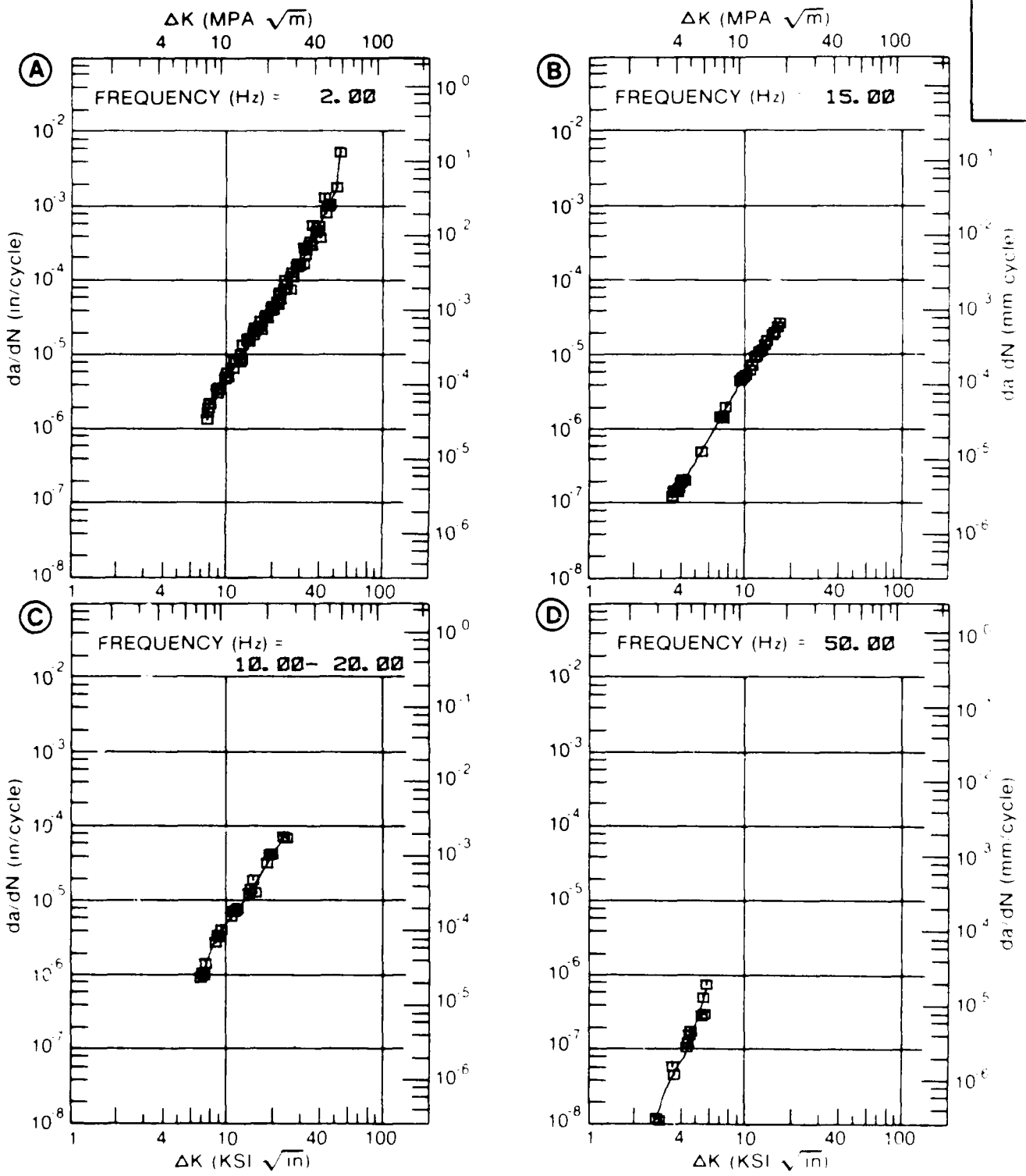

Figure 8.7.3.18

TABLE 8.7.3.19

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.19 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73511

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. L.H.A.	E= R.T. H.H.A.		
DELTA K MIN	A: 2.58	.094			
	B: 2.78		.038		
	C: 0				
	D:				
	3.00	.124	.0558		
	3.50	.180	.126		
	4.00	.262	.262		
	5.00	.538	.855		
	6.00	1.03	2.03		
	7.00	1.82	3.82		
	8.00	3.01	6.20		
	9.00	4.67	9.10		
	10.00	6.86	12.4		
	13.00	16.8	23.9		
	16.00	30.7			
DELTA K MAX	A: 17.22	37.0			
	B: 14.82		31.5		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		22.14	17.00		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	7	6		
	1.25-2.0		1		
	>2.0				

CONDITION/HT: T73511
FORM: 1.80"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 7.50- 20.00 HZ

YIELD STRENGTH:
ULT STRENGTH:
SPECIMEN THK: 0.998- 1.004"
SPECIMEN WIDTH: 3.805"
REFERENCES: AL006, AL004, AL007

ALUM. ALLOY

7050

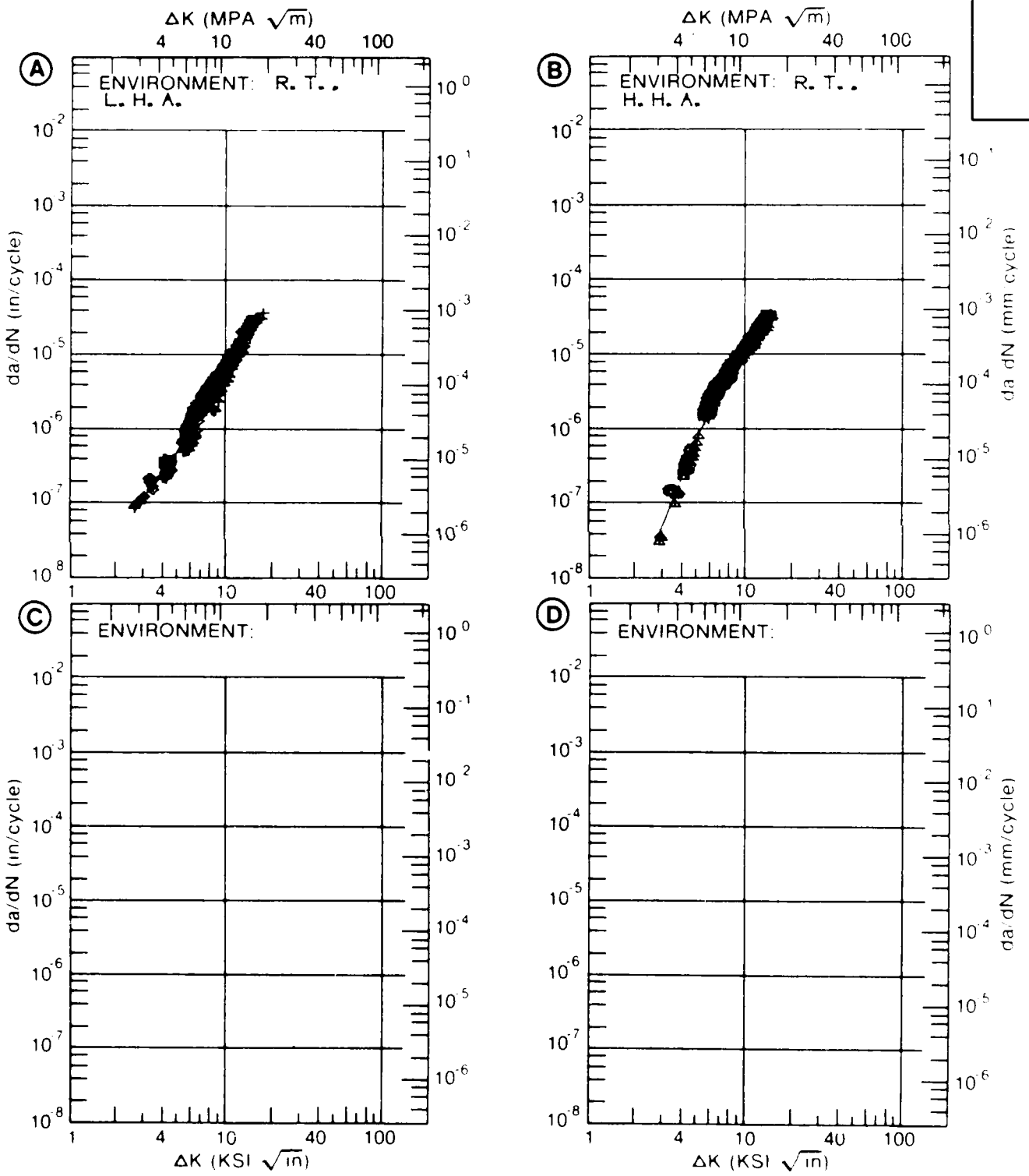

Figure 8.7.3.19

TABLE 8.7.3.20

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.20 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73511

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A	DA/DN (10**-6 IN./CYCLE) B E= R.T. H.H.A	C	D
DELTA K MIN	A:	1.89	.023			
	B:	1.78		.006		
	C:	.64				
	D:					
		2.00	.0319	.0194		
		2.50	.0613	.0650		
		3.00	.0957	.116		
		3.50	.136	.183		
		4.00	.185	.296		
		5.00	[illegible]	.769		
		6.00	.86	1.82		
		7.00	1.07	3.79		
		8.00	1.99	7.05		
		9.00	3.71	11.8		
		10.00	6.54	17.9		
		13.00	21.0	40.8		
		16.00	46.8			
DELTA K MAX	A:	18.10	172.			
	B:	15.39		61.2		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			18.08	24.27		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	2		
		1.25-2.0		1		
		2.0				

CONDITION/HT T73511
FORM 1.80"TH EXTRUSION
SPECIMEN TYPE CT
ORIENTATION T-L
STRESS RATIO +0.50
FREQUENCY 10.00- 40.00 HZ

YIELD STRENGTH
ULT STRENGTH
SPECIMEN THK 0.243- 0.999"
SPECIMEN WIDTH 2.500- 3.805"
REFERENCES AL006, AL004

ALUM. ALLOY

7050

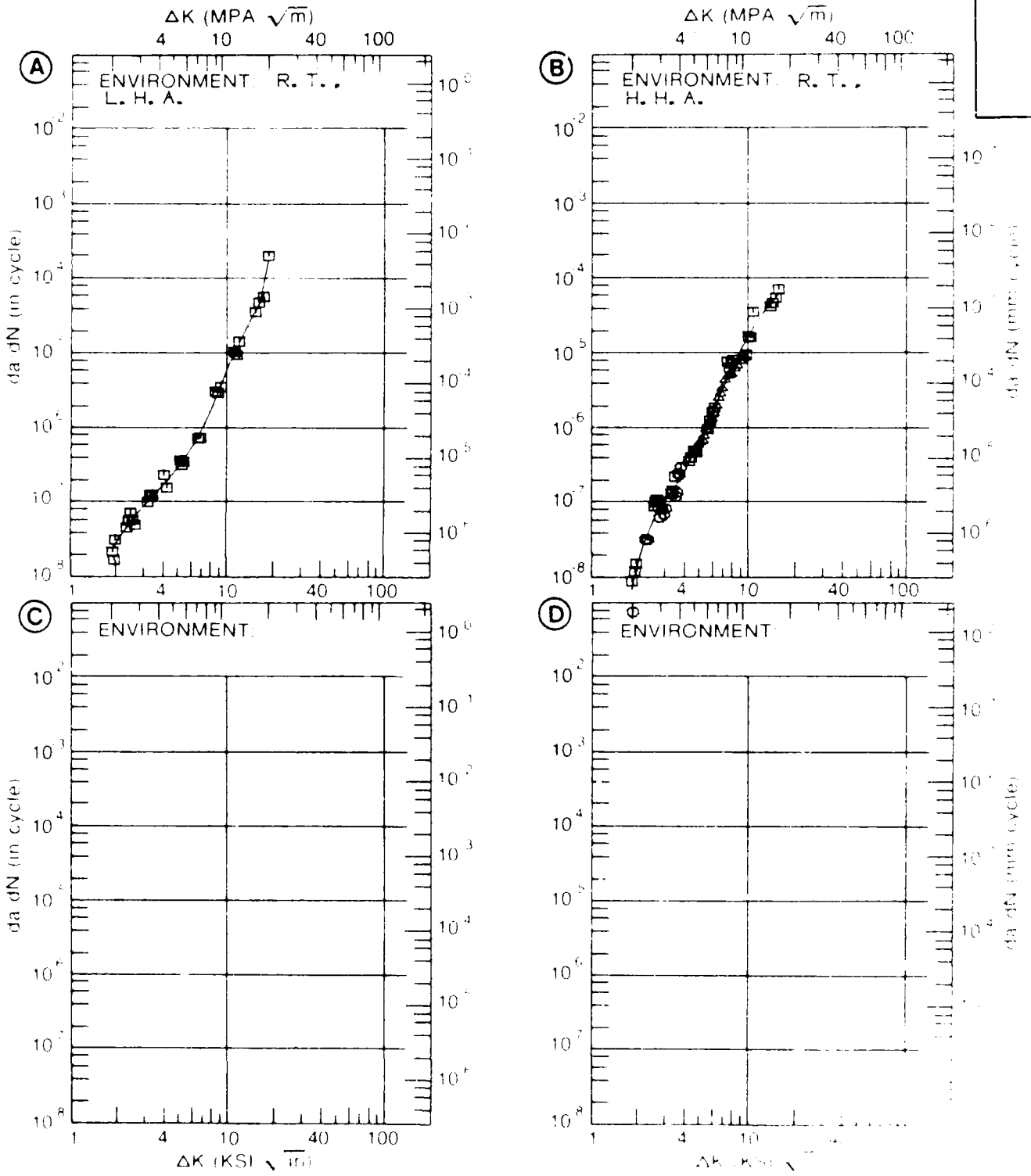

TABLE 8.7.3.21

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.21 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73511-HIGH PURITY

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR	E= R.T. H.H.A.		
DELTA K MIN	A:	5.87	.505			
	B:	5.85		.524		
	C:					
	D:					
		6.00	.505	.730		
		7.00	.855	2.85		
		8.00	2.24	5.41		
		9.00	4.18	8.53		
		10.00	5.93	12.2		
		13.00	9.22	26.0		
		16.00	26.7	41.8		
DELTA K MAX	A:	16.48	36.0			
	B:	19.25		51.7		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			22.13	9.79		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73511-HIGH PURITY
FORM: 1.50"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 30.00 HZ

YIELD STRENGTH: 72.1 KSI
ULT. STRENGTH: 80.3 KSI
SPECIMEN THK: 0.625"
SPECIMEN WIDTH: 2.550"
REFERENCES: WA001

ALUM. ALLOY
7050

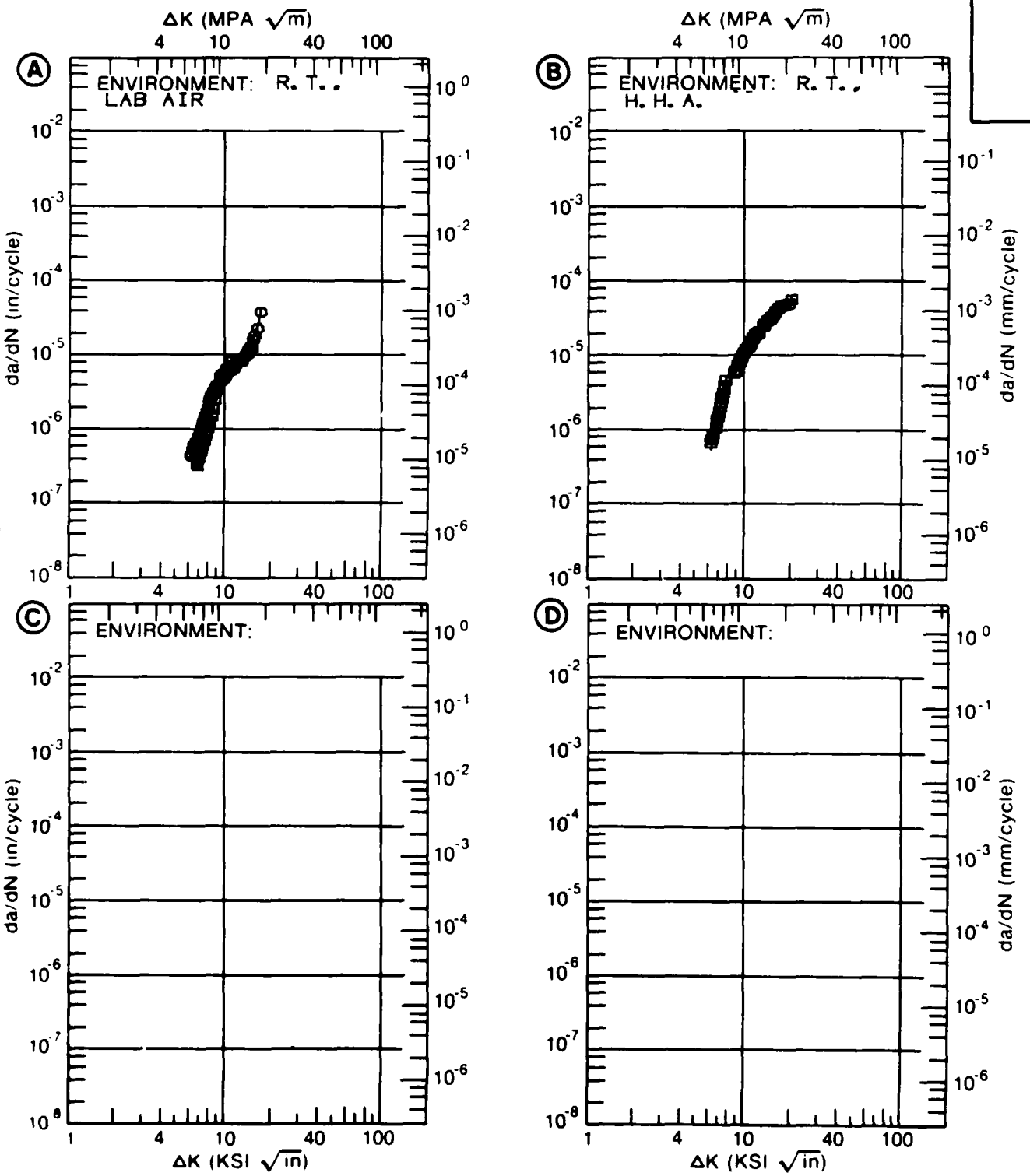

Figure 8.7.3.21

TABLE 8.7.3.22

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.22 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73511-HIGH PURITY

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. LAB AIR			
DELTA K MIN	A: 6.09	.684			
	B:				
	C:				
	D:				
	7.00	1.26			
	8.00	2.03			
	9.00	2.92			
	10.00	3.97			
	13.00	9.19			
	16.00	23.0			
DELTA K MAX	A: 19.26	73.0			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 11.73

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73511-HIGH PURITY
FORM: 1.50"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.10
FREQUENCY: 30.00 HZ

YIELD STRENGTH: 66.6 KSI
ULT. STRENGTH: 75.5 KSI
SPECIMEN THK: 0.625"
SPECIMEN WIDTH: 2.550"
REFERENCES:WA001

ALUM. ALLOY

7050

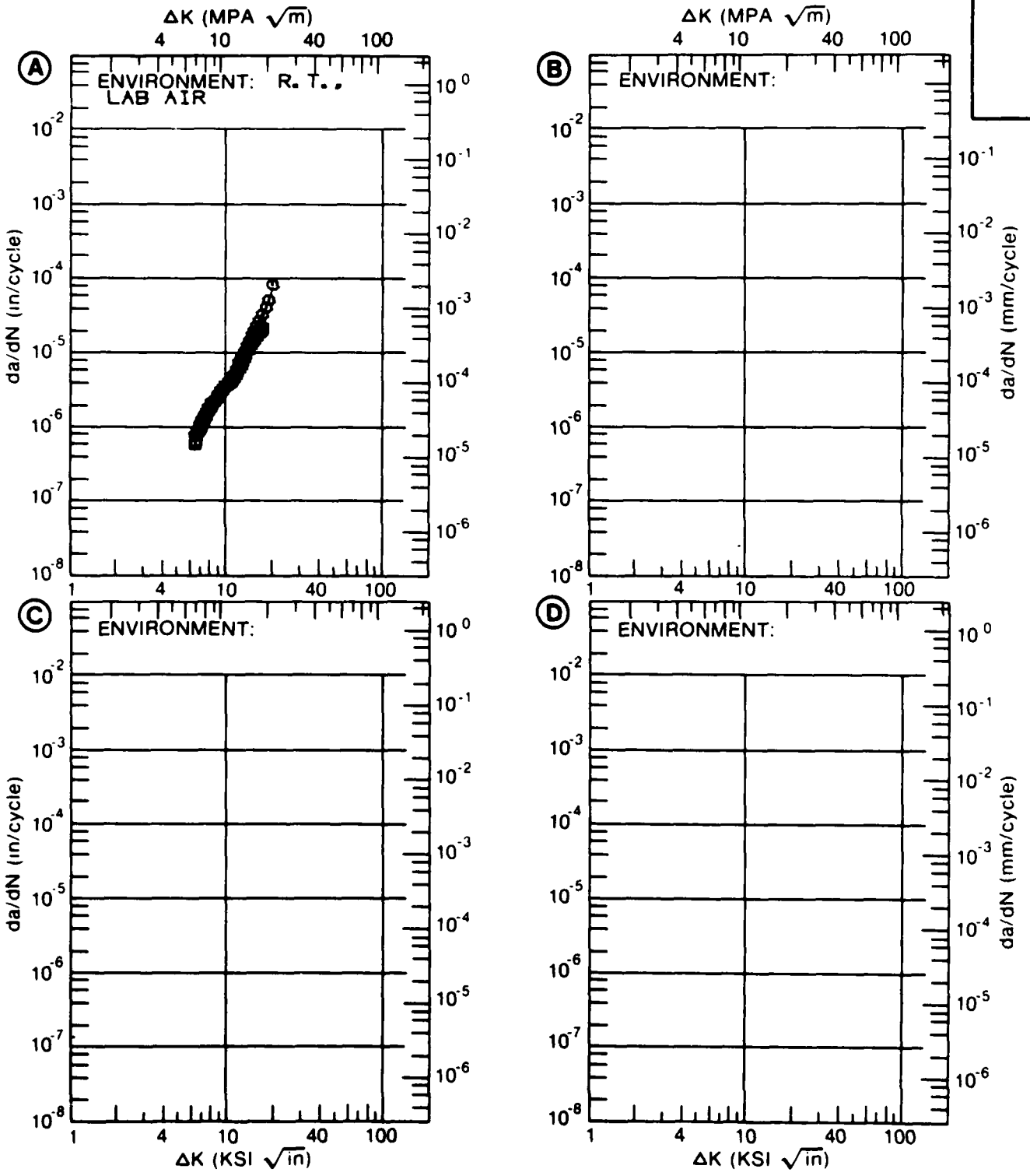

Figure 8.7.3.22

TABLE 8.7.3.23

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.23 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T736

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R.T. 3.5% NACL			
DELTA K MIN	A: 8.11	9.29			
	B:				
	C:				
	D:				
	9.00	12.4			
	10.00	18.0			
	13.00	38.4			
	16.00	63.4			
DELTA K MAX	A: 19.11	99.6			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 4.77

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T736
FORM: 1.50"TH FORGING
SPECIMEN TYPE:
ORIENTATION:
STRESS RATIO: +0.10
FREQUENCY: 1.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK:
SPECIMEN WIDTH:
REFERENCES:91332

ALUM. ALLOY

7050

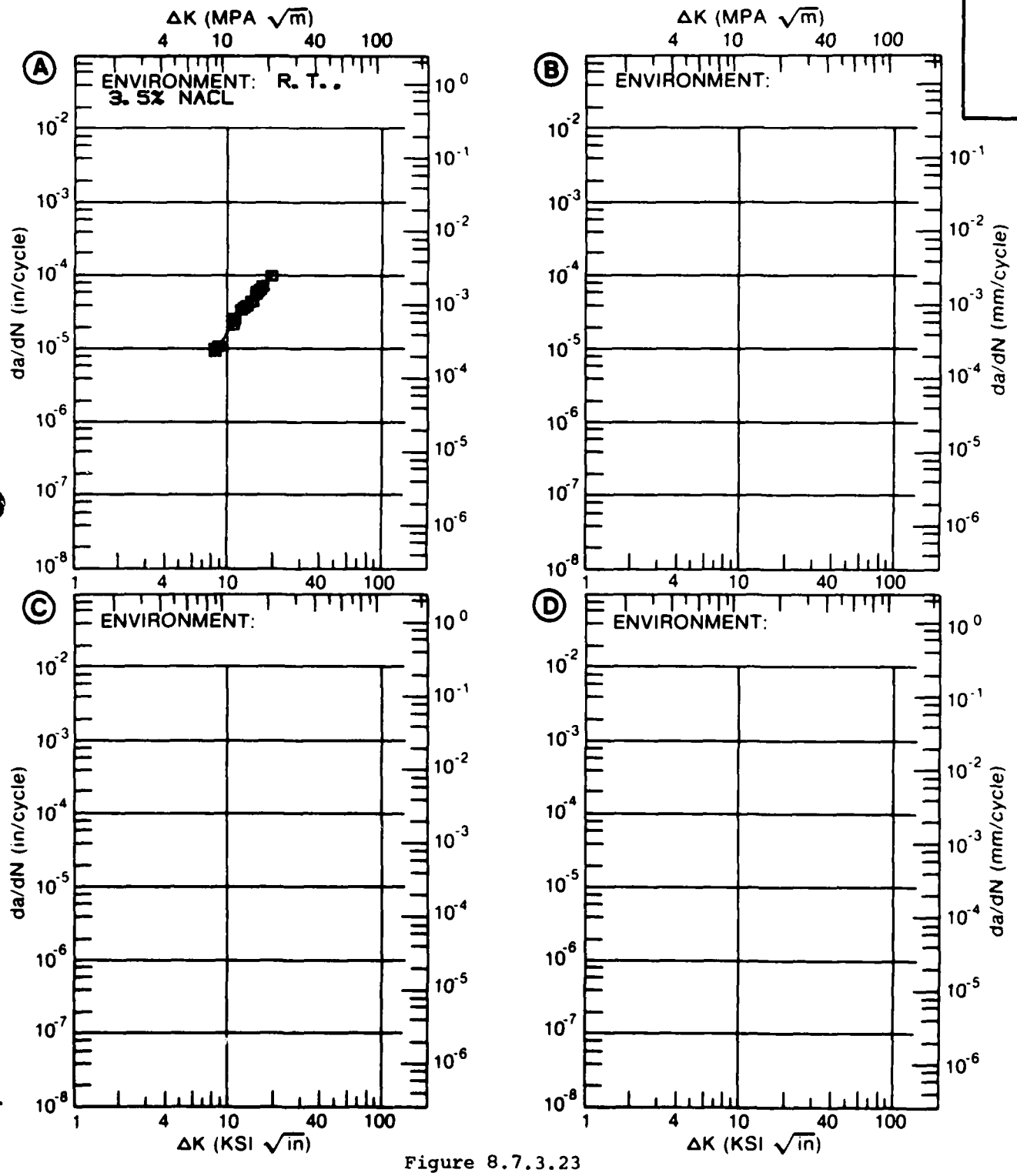

Figure 8.7.3.23

TABLE 8.7.3.24

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.24 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T736

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. DRY AIR 20HZ	E= R.T. LAB AIR 3-10HZ		
DELTA K MIN	A:	10.73	1.02			
	B:	6.44		1.90		
	C:					
	D:					
		7.00		2.94		
		8.00		5.40		
		9.00		8.45		
		10.00		11.9		
		13.00	3.69	23.5		
		16.00	11.1	36.6		
		20.00	29.1	58.7		
		25.00	70.7	102.		
		30.00		183.		
		35.00		340.		
DELTA K MAX	A:	25.91	81.7			
	B:	37.11		447.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			7.50	17.53		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25		2		
		1.25-2.0				
		>2.0				

CONDITION/HT: T736
FORM: 1.50- 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY:

YIELD STRENGTH: 83.6 KSI
ULT. STRENGTH: 72.2 KSI
SPECIMEN THK: 1.002"
SPECIMEN WIDTH: 7.400"
REFERENCES: 91332, NC002

ALUM. ALLOY

7050

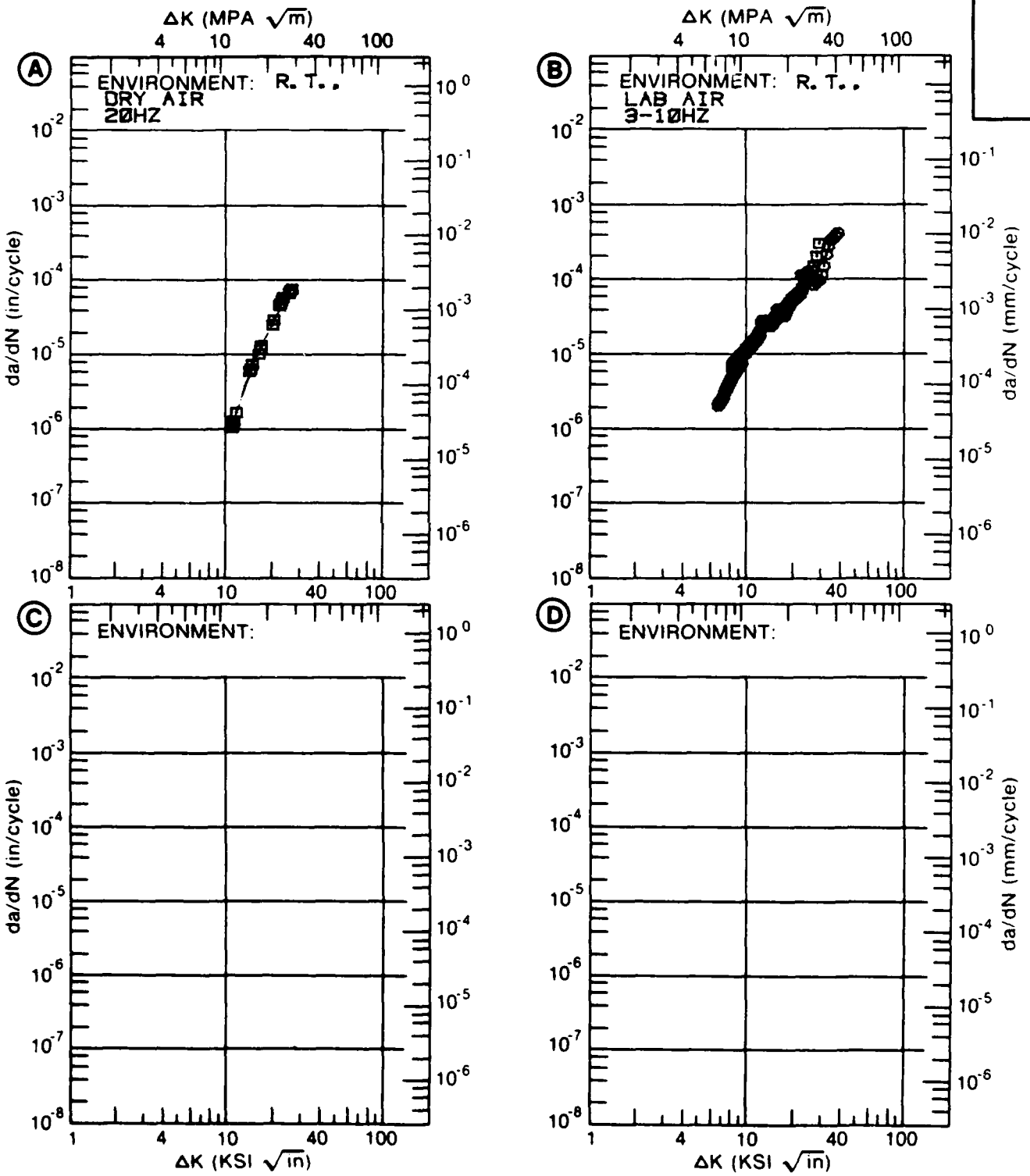

Figure 8.7.3.24

TABLE 8.7.3.25

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.25 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T736

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		E= R. T. LAB AIR			
DELTA K MIN	A: 7.83	1.59			
	B:				
	C:				
	D:				
	8.00	1.88			
	9.00	4.00			
	10.00	6.75			
	13.00	17.2			
	16.00	34.3			
	20.00	101.			
DELTA K MAX	A: 23.63	355.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 11.08

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	2
	1.25-2.0	
	>2.0	

CONDITION/HT: T736
FORM: 3.00"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.10
FREQUENCY: 10.00 HZ

YIELD STRENGTH: 62.2 KSI
ULT. STRENGTH: 71.5 KSI
SPECIMEN THK: 1.002"
SPECIMEN WIDTH: 7.400"
REFERENCES:NC002

ALUM. ALLOY
7050

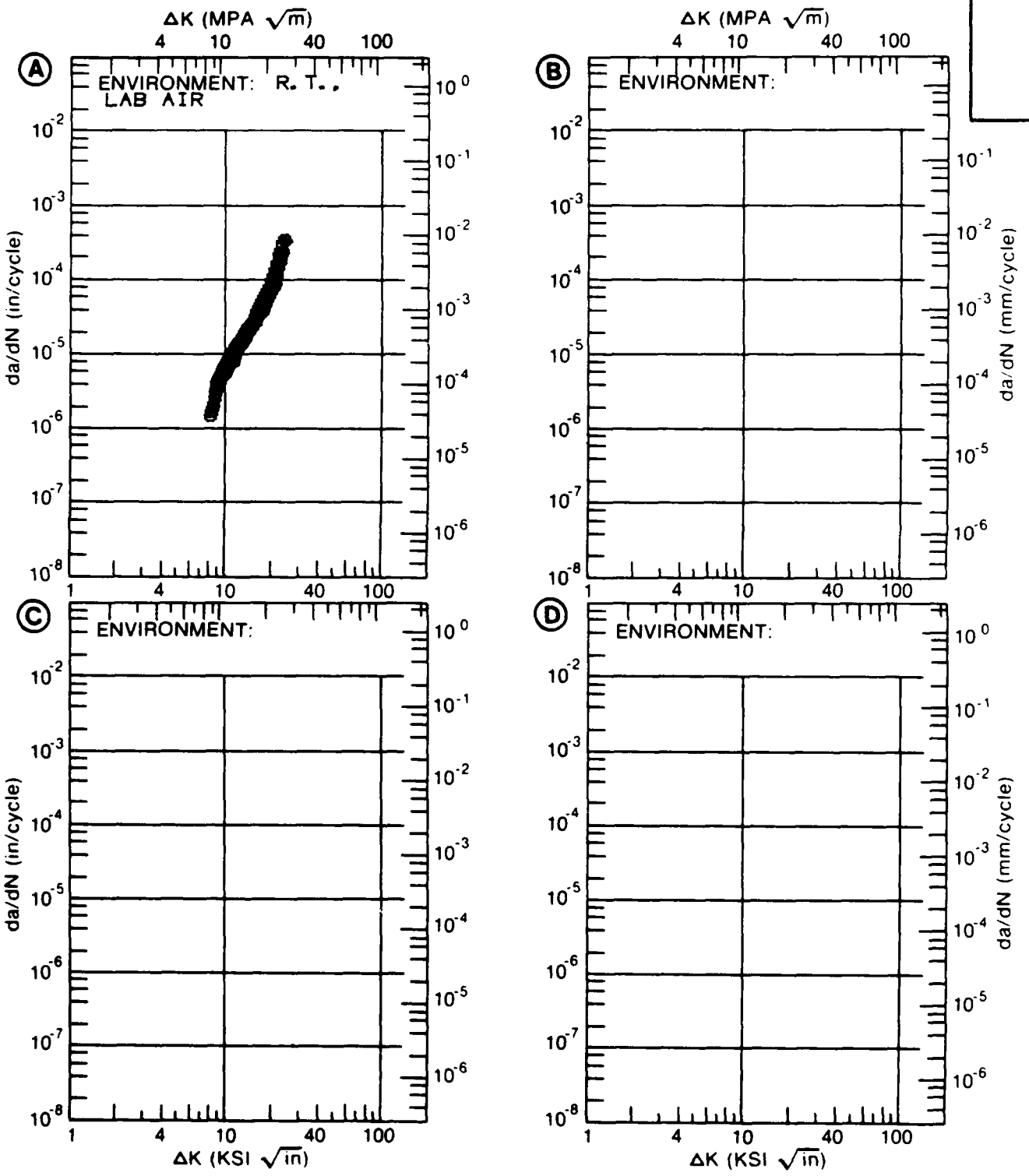

Figure 8.7.3.25

TABLE 8.7.3.26

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.26 INDICATING EFFECT

OF FREQUENCY

MATERIAL: ALUMINUM 7050
CONDITION: T73651
ENVIRONMENT: R.T., 3.5% NACL

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		F(HZ)= 5.00	F(HZ)= 25.00		
DELTA K MIN	A:				
	B:				
	C:				
	D:				
200.00					
DELTA K MAX	A:				
	B:				
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		0.00	0.00		

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73651
FORM: 1.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
ENVIRONMENT: R.T.. 3.5% NACL

YIELD STRENGTH: 70.0 KSI
ULT. STRENGTH: 80.5 KSI
SPECIMEN THK: 0.750"
SPECIMEN WIDTH: 1.500"
REFERENCES: 88174

ALUM. ALLOY

7050

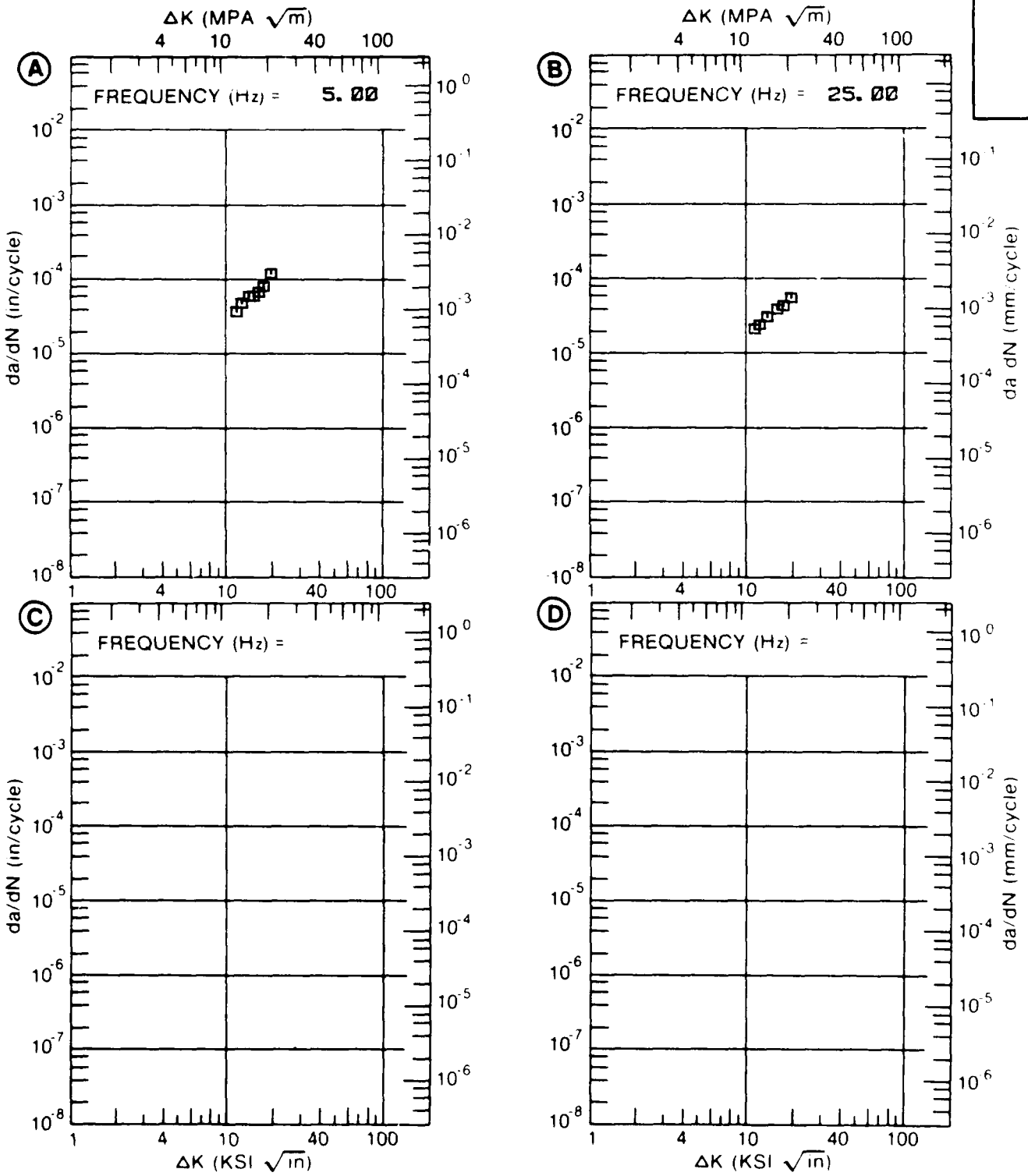

Figure 8.7.3.26

TABLE 8.7.3.27

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.27 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	5.85	1.99			
	B:	5.81		3.47		
	C:	6.03			8.22	
	D:					
		6.00	2.24	3.88		
		7.00	4.16	6.23	9.63	
		8.00	6.42	8.86	14.6	
		9.00	9.00	11.8	21.6	
		10.00	12.0	15.3	28.5	
		13.00	27.4	31.1	49.3	
		16.00	68.1	65.3		
DELTA K MAX	A:	18.68	173.			
	B:	16.05		66.2		
	C:	15.69			89.1	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			6.72	6.70	9.42	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T73851
FORM: 1.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 65.4 KSI
ULT. STRENGTH: 75.1 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.801- 3.805"
REFERENCES:AL013

ALUM. ALLOY

7050

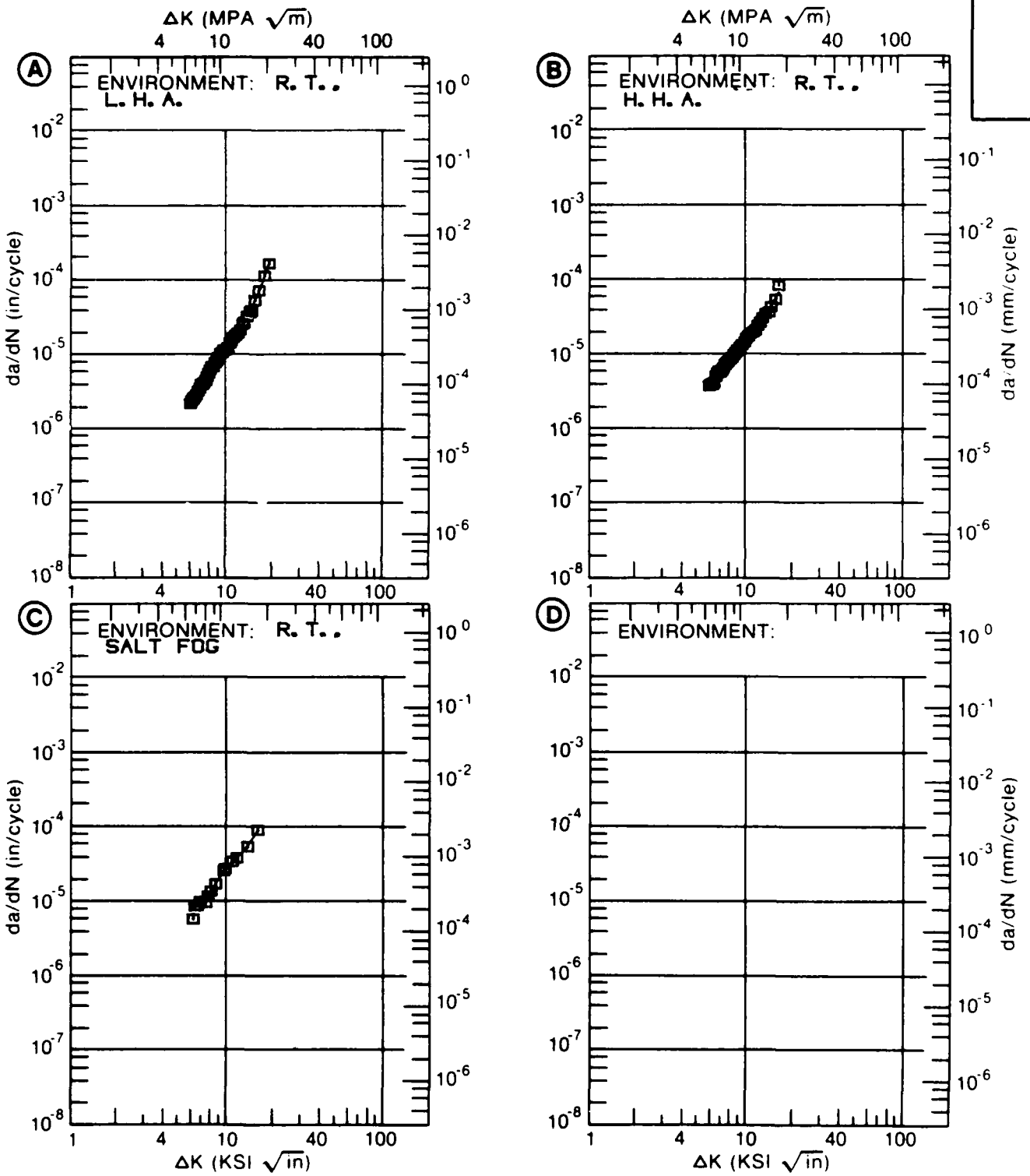

Figure 8.7.3.27

TABLE

FATIGUE CRACK GROWTH RA[illegible]
OF STRESS INTENSITY [illegible]

DATA ASSOCIATED WITH FIGURE [illegible]

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7365

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN /CYCLE) A E= R T LAB AIR 3-25HZ	B E= R T S.T W 1-10HZ	C E= R T SIM SEA WATER 1-10HZ	D
DELTA K MIN	A:	4.07	.560			
	B:	4.63		.735		
	C:	4.93			1.38	
	D:					
		5.00	.824	1.12	1.49	
		6.00	1.10	3.75	3.57	
		7.00	1.45	8.19	6.36	
		8.00	1.97	12.0	9.69	
		9.00	2.79	14.8	13.6	
		10.00	4.09	17.5	18.2	
		13.00	11.8	29.9	40.4	
		16.00	24.4	47.7	83.0	
		20.00	48.7	79.3	164.	
		25.00	206.	243.	312.	
DELTA K MAX	A:	29.97	2303.			
	B:	25.70		306.		
	C:	28.53			1334.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			30.13	13.69	10.61	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	5	2	2	
		1.25-2.0				
		>2.0				

CONDITION/HT T73651
FORM 1.00- 3.15"TH PLATE
SPECIMEN TYPE CT
ORIENTATION L-T
STRESS RATIO +0.10
FREQUENCY

YIELD STRENGTH: 65.6- 70.0 KSI
ULT. STRENGTH: 76.6- 80.5 KSI
SPECIMEN THK: 0.750- 1.007"
SPECIMEN WIDTH: 1.500- 7.400"
REFERENCES:88174, NC002

ALUM. ALLOY

7050

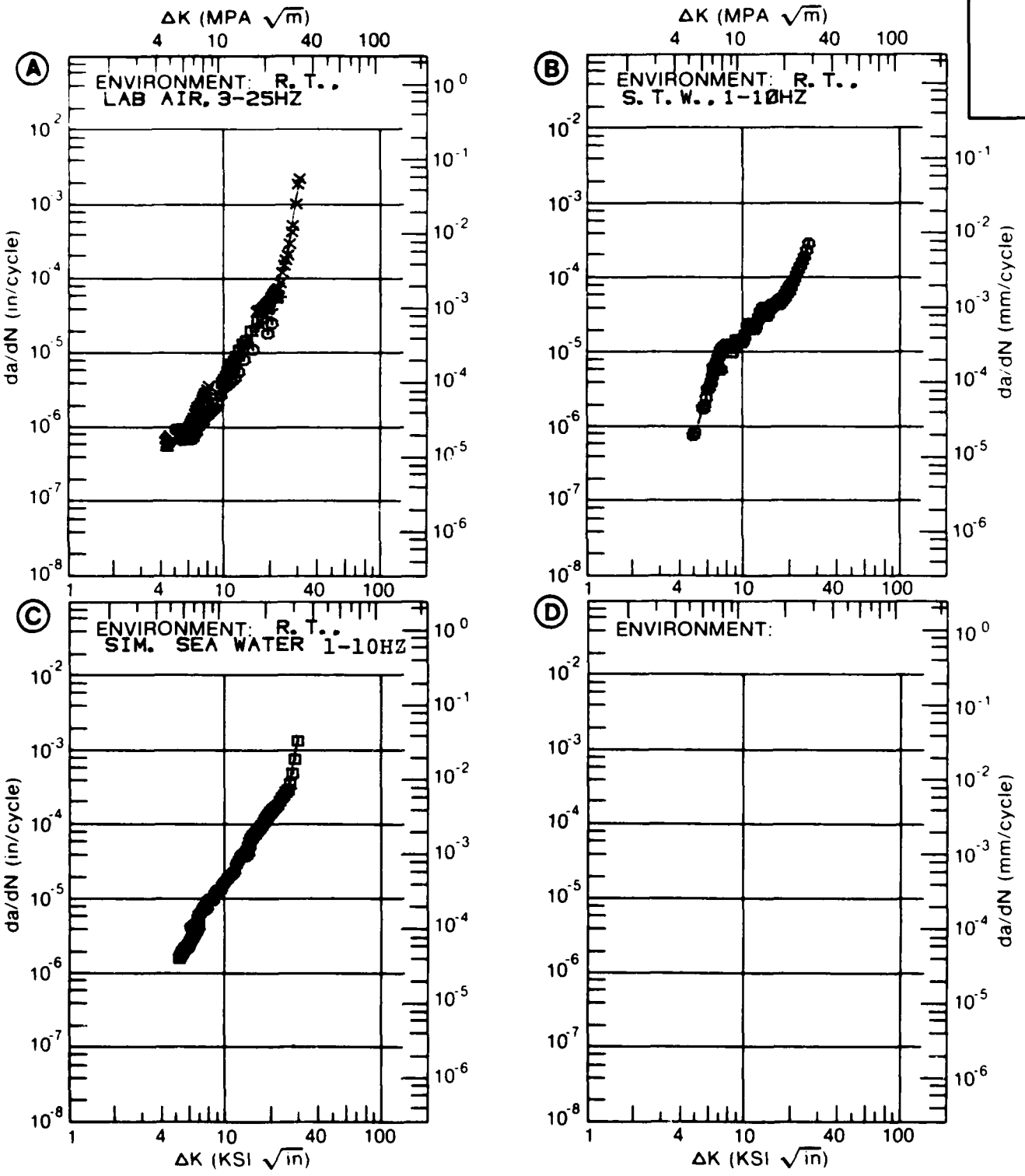

Figure 8.7.3.28

TABLE 8.7.3.29

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.29 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. H.H.A.	B E= R.T. HHA	C	D
DELTA K MIN	A: 1.96	.014			
	B: 2.72		.100		
	C:				
	D:				
	2.00	.0164			
	2.50	.0600			
	3.00	.157	.144		
	3.50	.334	.257		
	4.00	.613	.431		
	5.00	1.55	1.03		
	6.00	3.09	2.10		
	7.00	5.27	3.76		
	8.00	8.11	6.11		
	9.00	11.6	9.18		
	10.00	15.7	12.9		
	13.00	31.3	27.6		
	16.00	51.1	44.3		
	20.00	82.9	63.3		
	25.00	130.			
	30.00	183.			
DELTA K MAX	A: 30.30	186.			
	B: 20.39		64.8		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		21.84	27.63		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8	1	1		
	0.8-1.25	2	1		
	1.25-2.0		1		
	>2.0				

CONDITION/HT: T73651
FORM: 1.00- 5.68"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 25.00 HZ

YIELD STRENGTH: 69.0 KSI
ULT. STRENGTH: 77.0 KSI
SPECIMEN THK: 0.243- 0.252"
SPECIMEN WIDTH: 2.496- 2.550"
REFERENCES:AL013

ALUM. ALLOY

7050

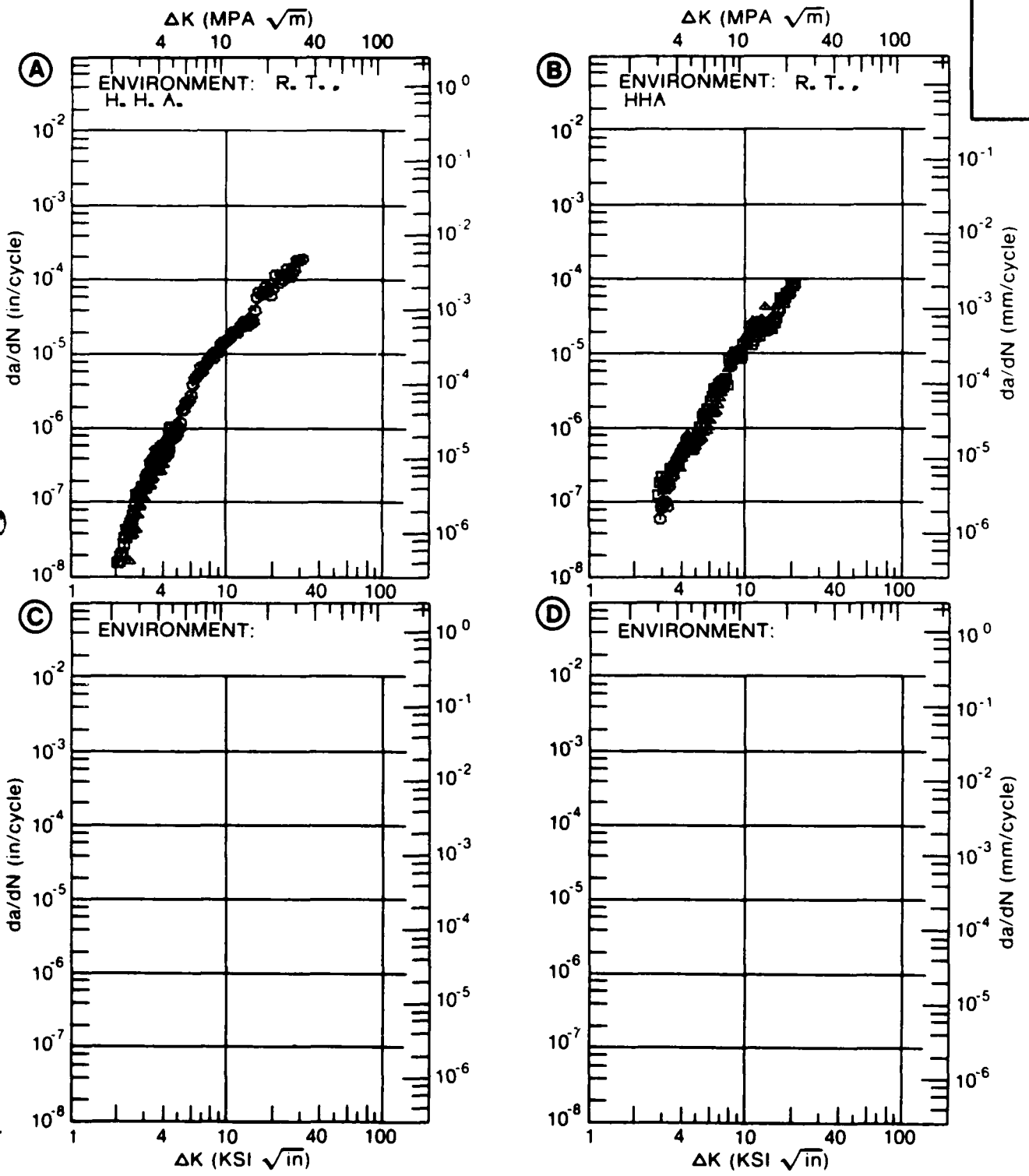

Figure 8.7.3.29

TABLE 8.7.3.30

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.30 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. 3.5% NACL			
DELTA K MIN	A:	5.14	1.21			
	B:					
	C:					
	D:					
		6.00	2.74			
		7.00	7.22			
		8.00	12.2			
		9.00	16.7			
		10.00	21.6			
		13.00	50.0			
		16.00	87.0			
DELTA K MAX	A:	17.87	95.7			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 16.83

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73651
FORM: 1.13"TH PLATE
SPECIMEN TYPE:
ORIENTATION:
STRESS RATIO: +0.10
FREQUENCY: 1.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK:
SPECIMEN WIDTH:
REFERENCES:91332

ALUM. ALLOY

7050

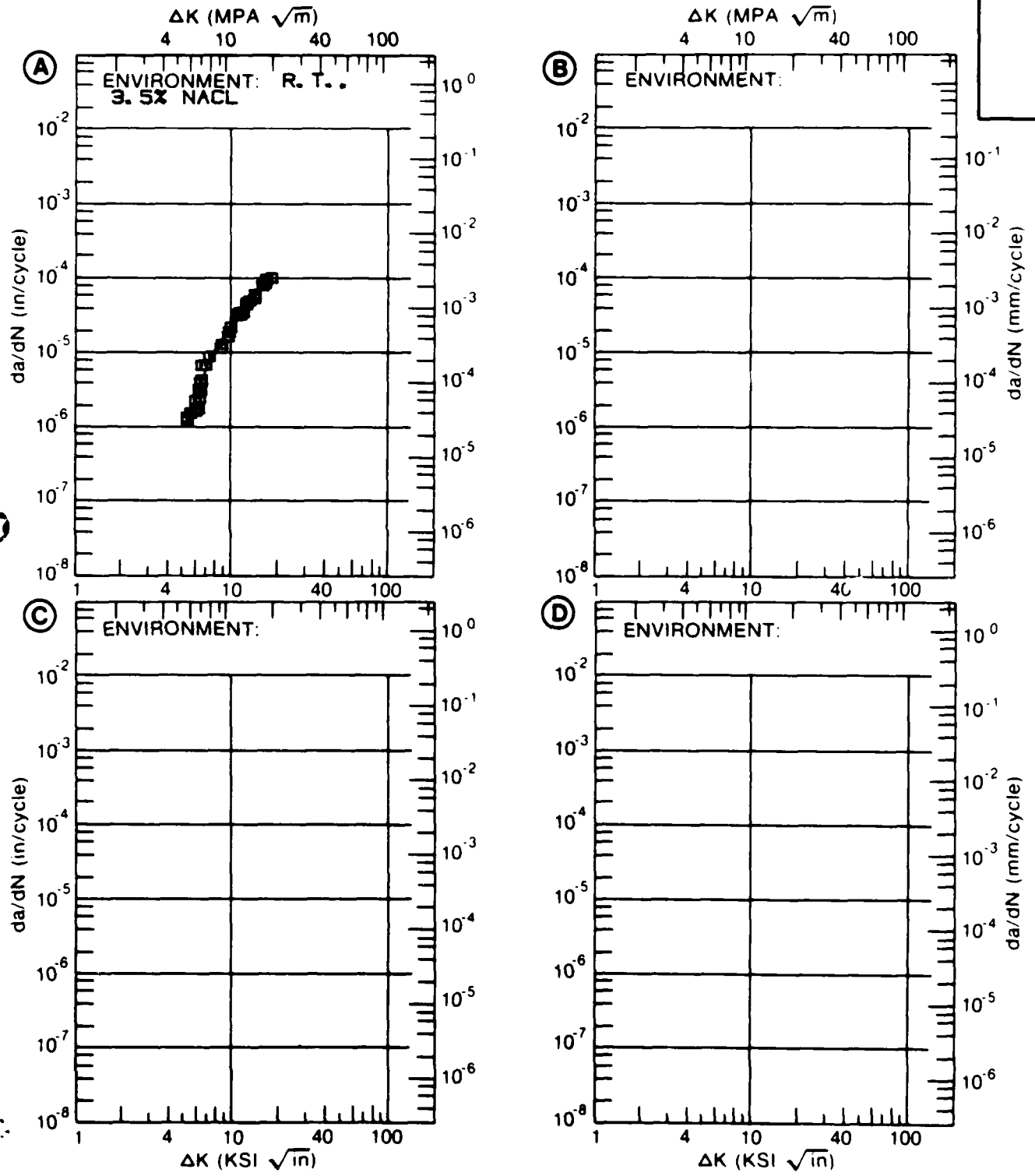

Figure 8.7.3.30

TABLE 8.7.3.31

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.31 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E-I R.T. DRY AIR			
DELTA K MIN	A: 8.61	5.97			
	B:				
	C:				
	D:				
	9.00	6.99			
	10.00	9.52			
	13.00	16.6			
	16.00	26.3			
DELTA K MAX	A: 18.51	36.0			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 6.14

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73651
FORM: 1.13"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 20.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK:
SPECIMEN WIDTH:
REFERENCES:91332

ALUM. ALLOY

7050

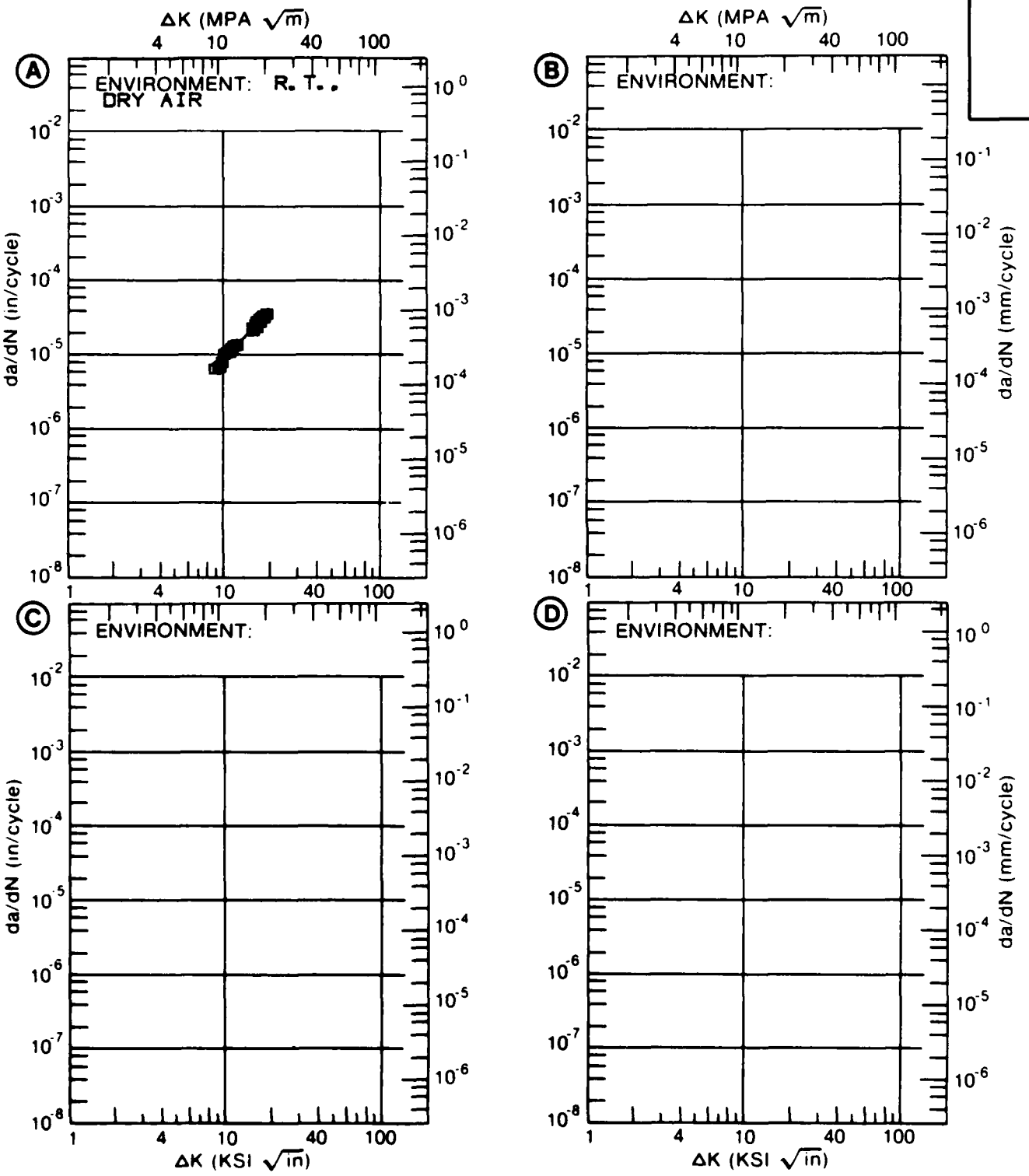

Figure 8.7.3.31

TABLE 8.7.3.32

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.32 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T73651
ENVIRONMENT: R.T. ,LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A	B	C	D
		R=+0.10			
DELTA K MIN	A: 7.48	3.25			
	B:				
	C:				
	D:				
	8.00	4.07			
	9.00	5.80			
	10.00	7.68			
	13.00	14.3			
	16.00	24.0			
	20.00	47.3			
	25.00	119.			
DELTA K MAX	A: 26.80	169.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 13.13

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T73651
FORM: 3.15"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 5.00- 10.00 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 65.6 KSI
ULT. STRENGTH: 76.6 KSI
SPECIMEN THK: 1.005"
SPECIMEN WIDTH: 7.400"
REFERENCES:NC002

ALUM. ALLOY

7050

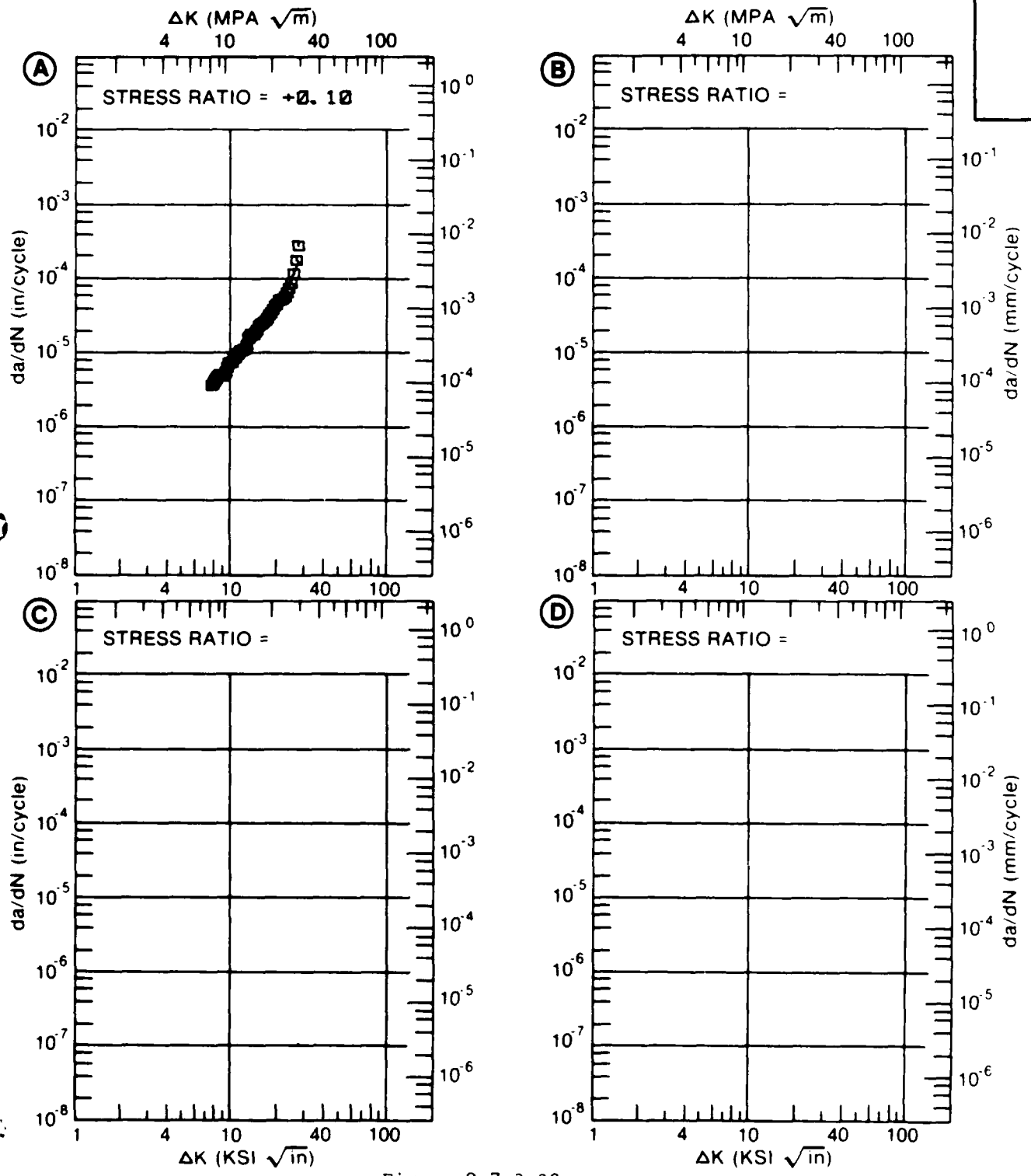

Figure 8.7.3.32

TABLE 8.7.3.33

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.33 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		E= R.T. LAB AIR	E= R.T. SIM. SEA WATER	E= R.T. S.T.W.	
DELTA K MIN	A: 5.86	1.01			
	B: 4.80		1.70		
	C: 4.87			.993	
	D:				
	5.00		1.98	1.16	
	6.00	1.10	3.75	3.45	
	7.00	2.36	6.18	6.90	
	8.00	4.17	9.29	10.1	
	9.00	6.24	13.2	12.9	
	10.00	8.45	17.8	15.9	
	13.00	15.7	37.8	30.5	
	16.00	25.5	69.5	55.0	
	20.00	49.4	140.	97.1	
	25.00	129.	304.	195.	
	30.00	1504.			
DELTA K MAX	A: 30.00	1504.			
	B: 27.76		452.		
	C: 29.35			821.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		16.60	7.81	24.18	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	2	2	3	
	1.25-2.0				
	>2.0				

CONDITION/HT: T73651
FORM: 3.15"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.10
FREQUENCY: 1.00- 10.00 HZ

YIELD STRENGTH: 69.0 KSI
ULT. STRENGTH: 77.2 KSI
SPECIMEN THK: 1.002- 1.005"
SPECIMEN WIDTH: 7.400"
REFERENCES:NC002

ALUM. ALLOY

7050

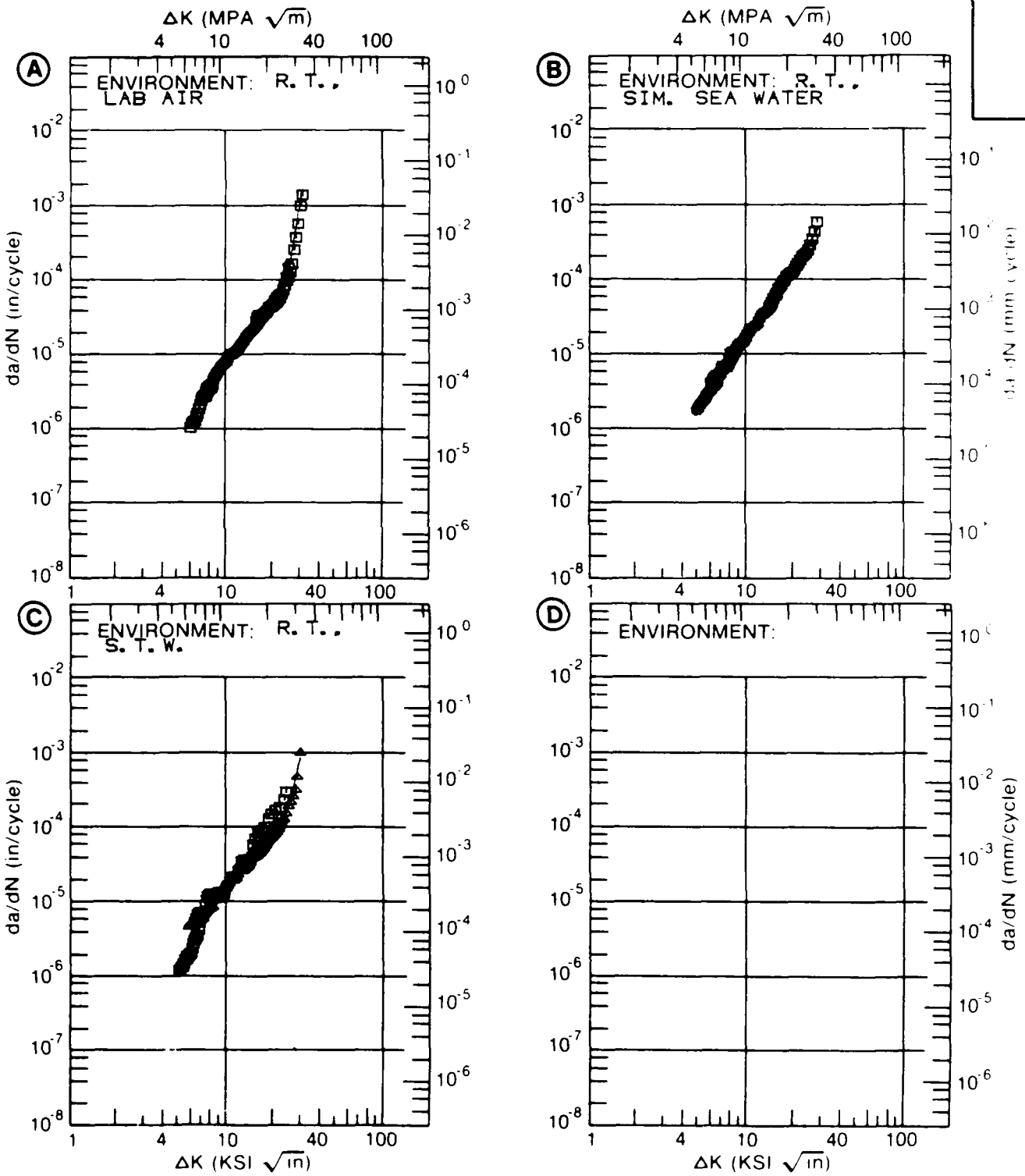

Figure 8.7.3.33

TABLE 8.7.3.34

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.34 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. LAB AIR	E= R.T. SIM. SEA WATER		
DELTA K MIN	A:	5.68	1.22			
	B:	4.47		.967		
	C:					
	D:					
		5.00		1.55		
		6.00	1.29	3.25		
		7.00	1.83	5.87		
		8.00	2.87	9.50		
		9.00	4.49	14.2		
		10.00	6.70	20.0		
		13.00	16.3	46.2		
		16.00	28.3	90.2		
		20.00	102.	191.		
DELTA K MAX	A:	23.60	453.			
	B:	21.33		238.		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			15.05	25.79		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	2	2		
		1.25-2.0		1		
		>2.0				

CONDITION/HT: T73651
FORM: 3.15"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: S-T
STRESS RATIO: +0.10
FREQUENCY: 1.00- 10.00 HZ

YIELD STRENGTH: 64.3 KSI
ULT. STRENGTH: 74.5 KSI
SPECIMEN THK: 0.499- 0.500"
SPECIMEN WIDTH: 3.000"
REFERENCES:NC002

ALUM. ALLOY

7050

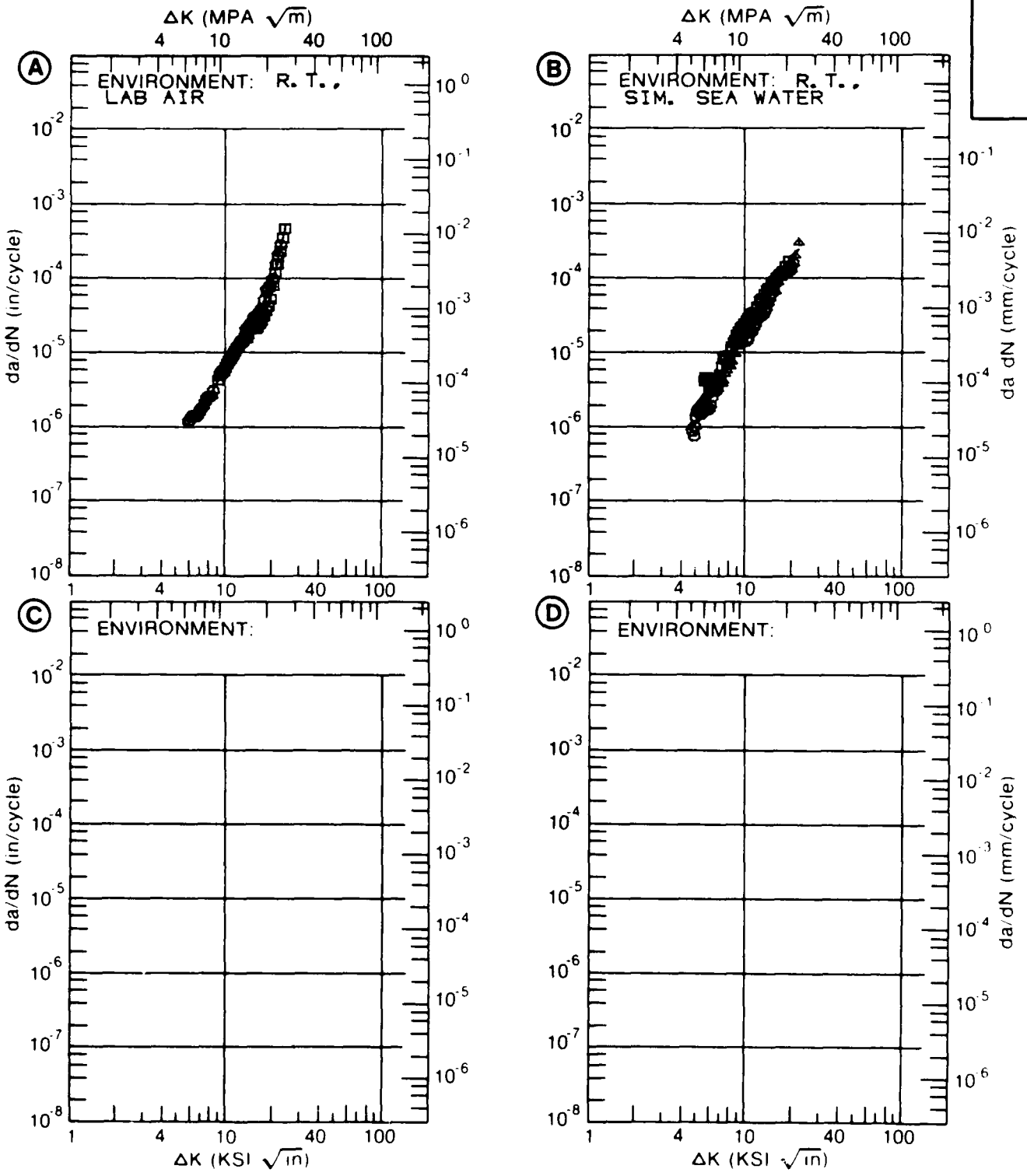

Figure 8.7.3.34

TABLE 8.7.3.35

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.35 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T73651
ENVIRONMENT: R.T. ,L.H.A.

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A R=+0.08	B R=+0.30	C R=+0.50	D
DELTA K MIN	A:	6.89	.879			
	B:	4.39		291		
	C:	5.01			.613	
	D:					
		5.00		.376		
		6.00		.628	1.34	
		7.00	.909	1.08	2.82	
		8.00	1.27	1.82	5.38	
		9.00	1.83	2.96	9.08	
		10.00	2.61	4.62	13.5	
		13.00	6.62	13.6	23.4	
		16.00	13.0	28.9		
		20.00	26.0			
DELTA K MAX	A:	23.68	45.8			
	B:	18.76		46.0		
	C:	13.34			23.6	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			11.09	18.90	11.72	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1		1	
		1.25-2.0		1		
		>2.0				

CONDITION/HT: T73651
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 6.00 HZ
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 65.0 KSI
ULT. STRENGTH: 80.0 KSI
SPECIMEN THK: 0.992- 0.993"
SPECIMEN WIDTH: 6.000"
REFERENCES:85837

ALUM. ALLOY

7050

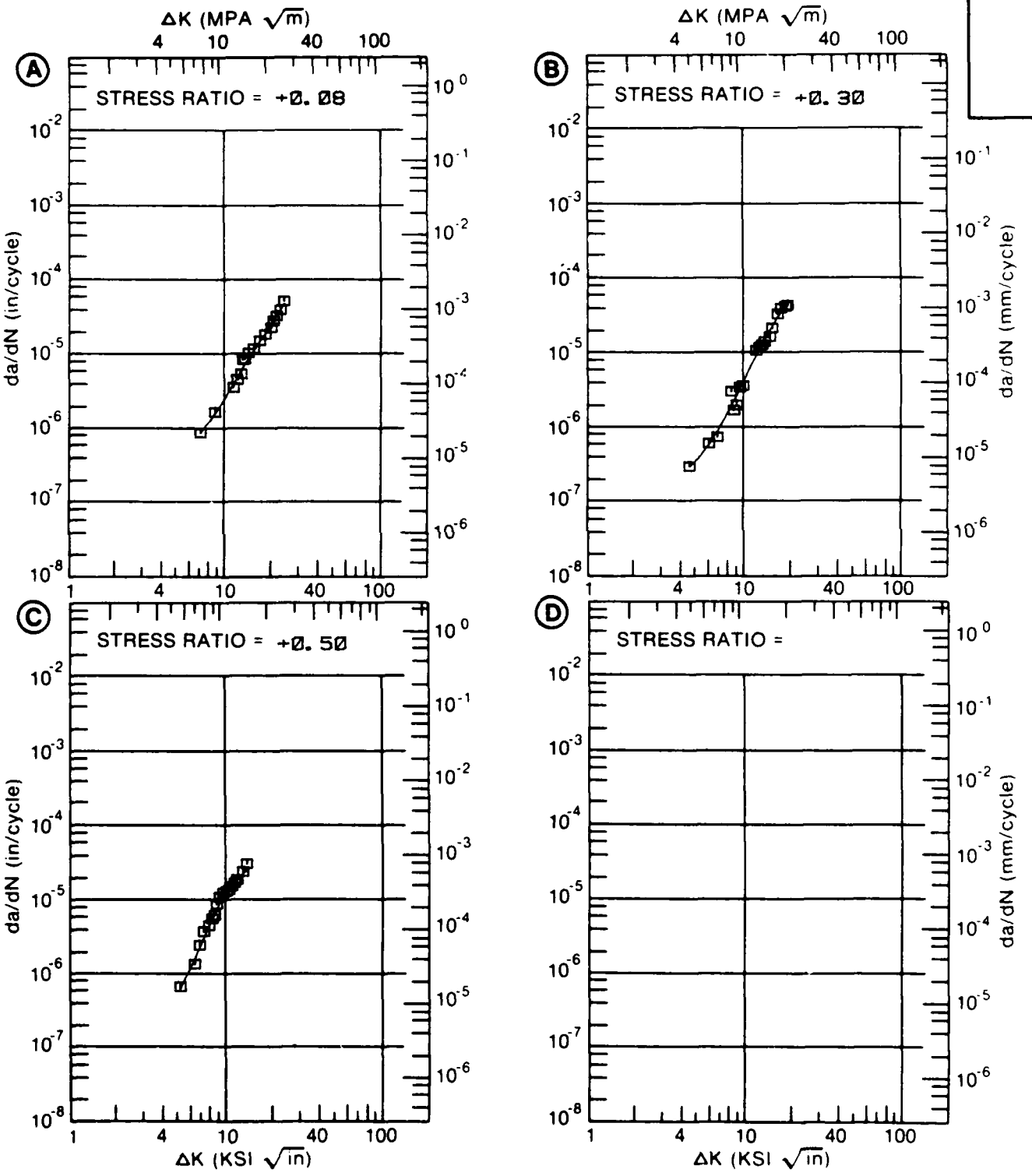

Figure 8.7.3.35

TABLE 8.7.3.36

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.36 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	DA/DN (10**-6 IN./CYCLE) B	DA/DN (10**-6 IN./CYCLE) C	DA/DN (10**-6 IN./CYCLE) D
			E= R.T. L.H.A. 6HZ	E= R.T. S.T.W. 1HZ		
DELTA K MIN	A:	4.75	.20			
	B:	7.08		1.92		
	C:					
	D:					
		5.00	.242			
		6.00	.446			
		7.00	.766			
		8.00	1.24	5.07		
		9.00	1.92	9.34		
		10.00	2.87	13.3		
		13.00	8.02	23.9		
		16.00	18.6	49.6		
DELTA K MAX	A:	18.39	33.2			
	B:	16.70		62.9		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			11.45	15.46		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1			
		1.25-2.0		1		
		2.0				

CONDITION/HT: T73651
FORM: 4.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.08
FREQUENCY:

YIELD STRENGTH: 65.0- 66.0 KSI
ULT. STRENGTH: 76.0- 80.0 KSI
SPECIMEN THK: 0.990- 0.993"
SPECIMEN WIDTH: 6.000"
REFERENCES: 85837, 88579

ALUM. ALLOY

7050

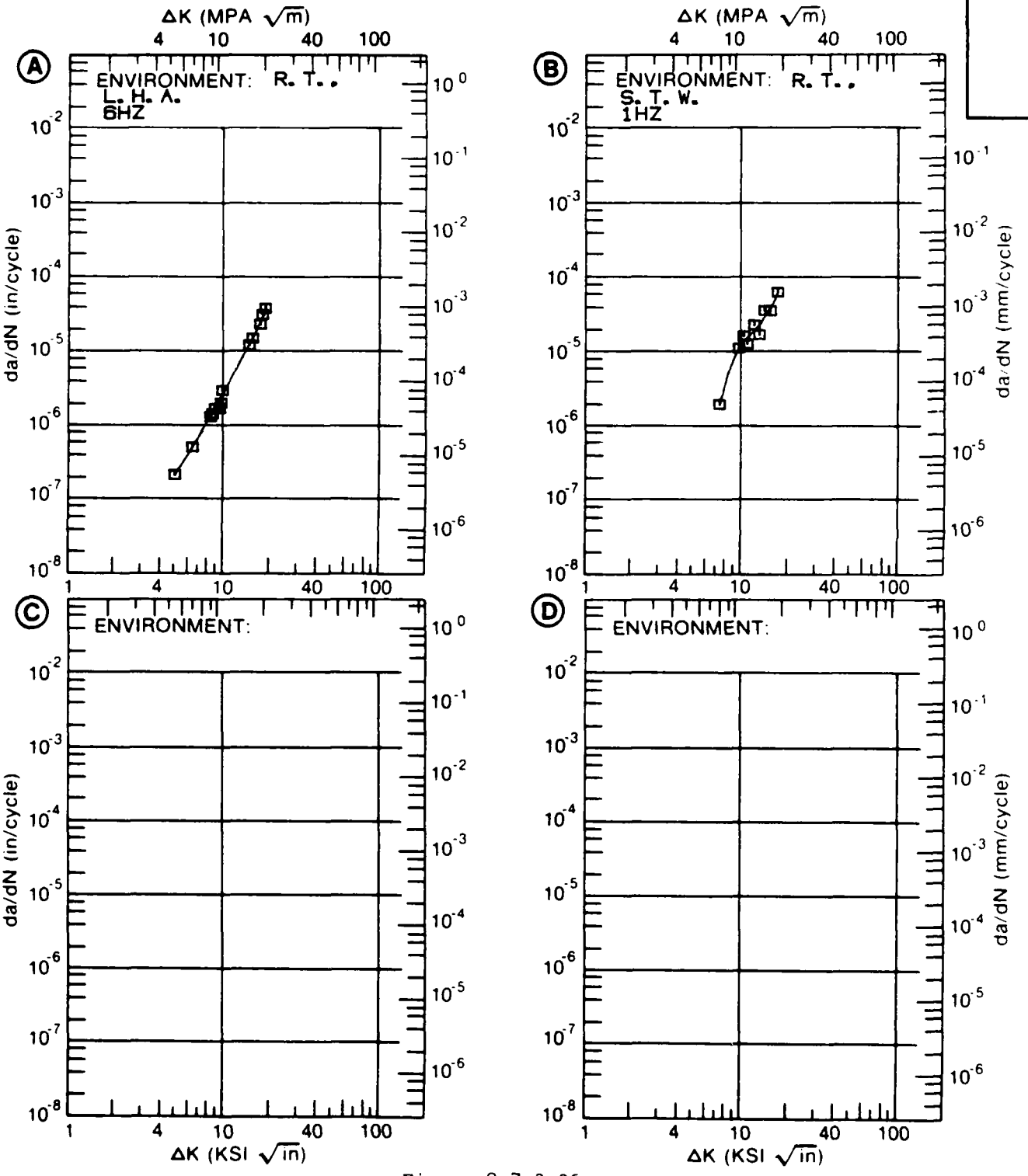

Figure 8.7.3.36

TABLE 8.7.3.37

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.37 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	5.79	1.05			
	B:	5.80		1.79		
	C:	8.11			13.9	
	D:					
		6.00	1.14	2.17		
		7.00	2.23	4.43		
		8.00	4.15	7.03		
		9.00	6.67	9.76	14.9	
		10.00	9.39	12.7	20.8	
		13.00	16.2	24.7	31.0	
		16.00	28.5	52.2	54.0	
DELTA K MAX	A:	18.46	59.6			
	B:	17.57		82.1		
	C:	17.24			74.3	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			7.17	5.54	9.79	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T73651
FORM: 6.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 60.9 KSI
ULT. STRENGTH: 69.7 KSI
SPECIMEN THK: 0.998- 1.000"
SPECIMEN WIDTH: 3.801- 3.805"
REFERENCES:AL013

ALUM. ALLOY

7050

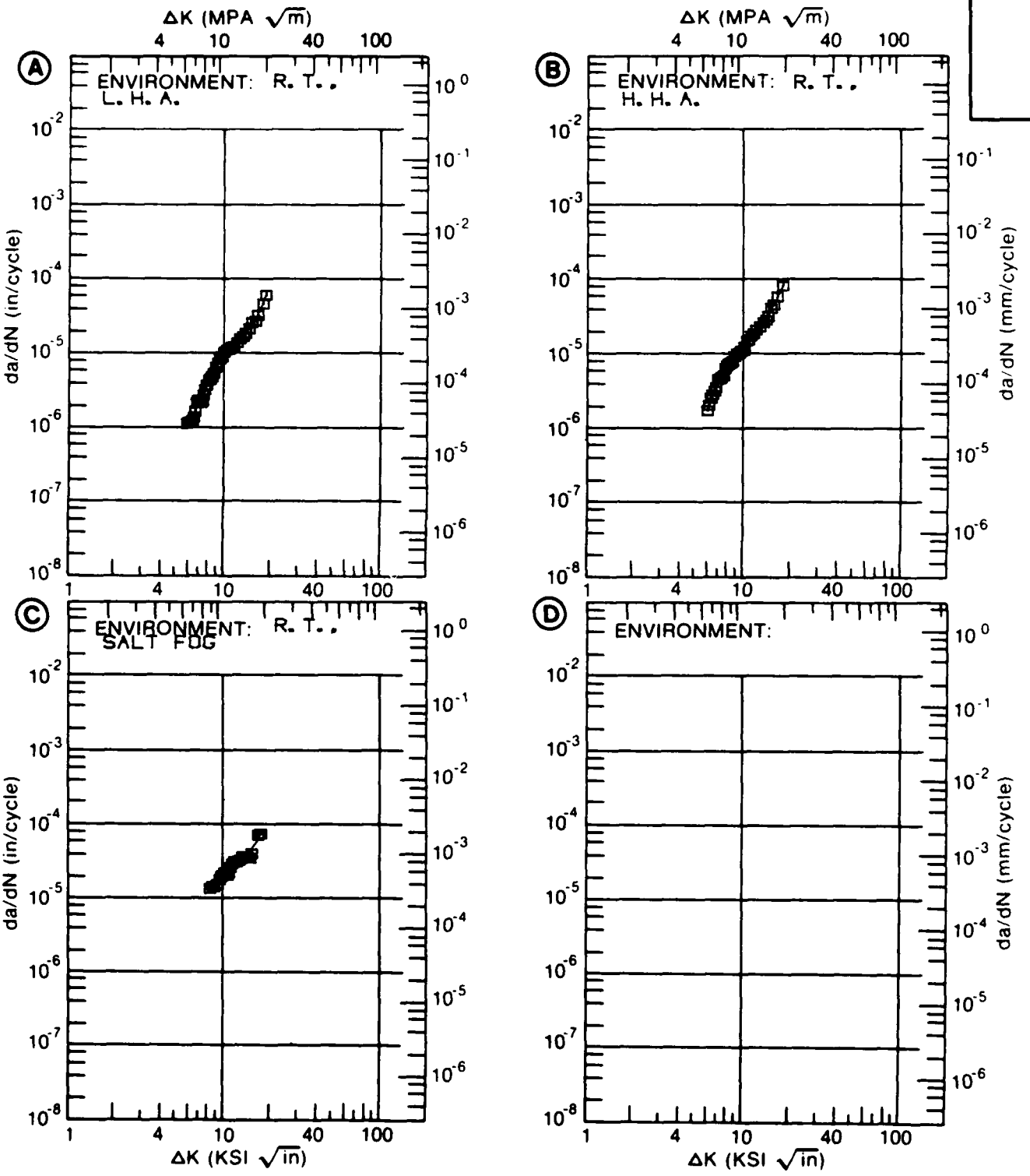

Figure 8.7.3.37

TABLE 8.7.3.38

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.38 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T73651
ENVIRONMENT: R.T. , SALT FOG

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.03			
DELTA K MIN	A:	8.45	6.11			
	B:					
	C:					
	D:					
		9.00	8.55			
		10.00	13.1			
		13.00	25.3			
		16.00	43.0			
DELTA K MAX	A:	19.57	112.			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 7.13

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T73651
FORM: 6.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 18.30 HZ
ENVIRONMENT: R.T., SALT FOG

YIELD STRENGTH: 59.1 KSI
ULT. STRENGTH: 70.5 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.801"
REFERENCES:AL013

ALUM. ALLOY

7050

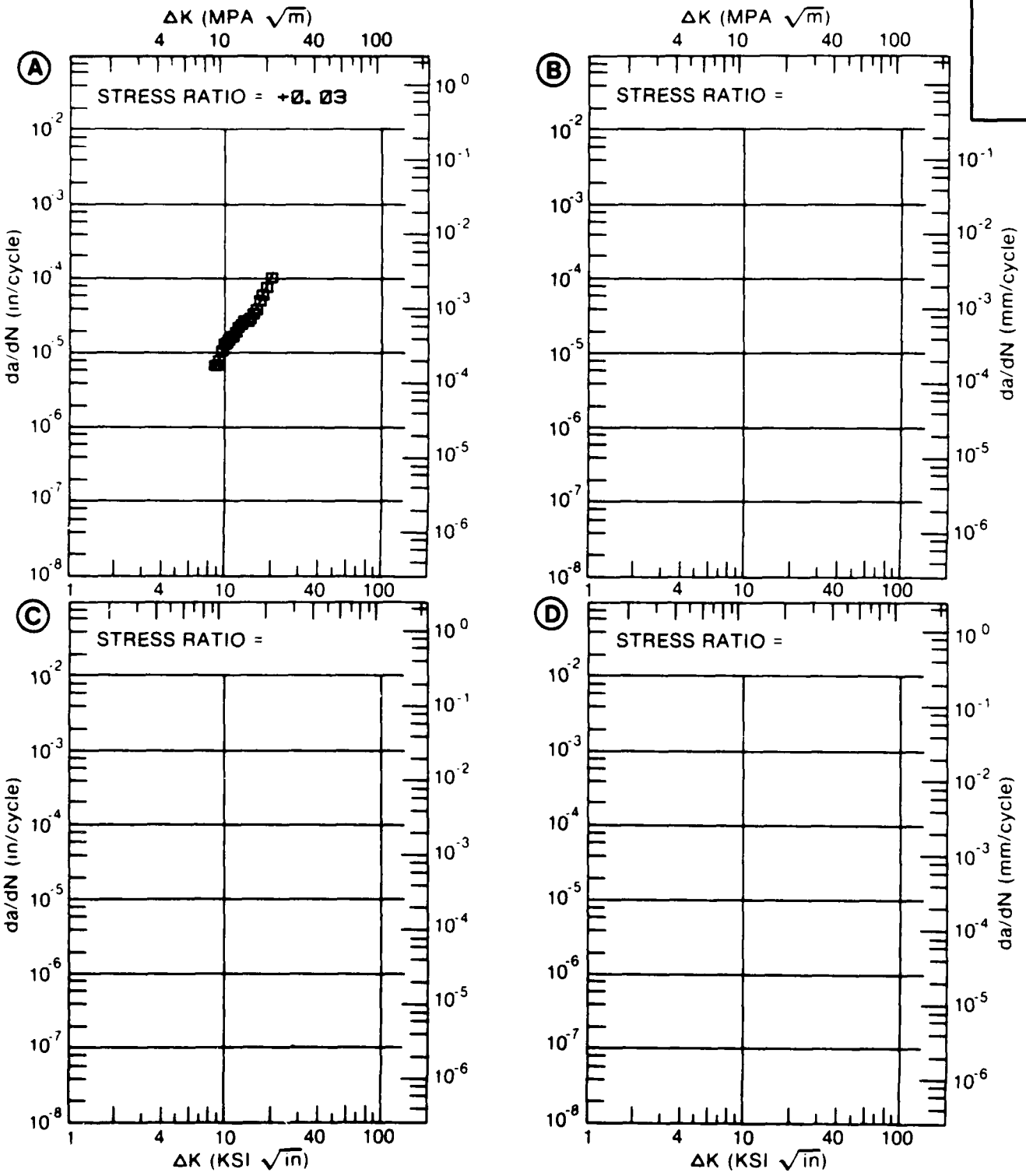

Figure 8.7.3.38

TABLE 8.7.3.39

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.39 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	3.91	.288			
	B:	3.88		.510		
	C:	5.91			3.88	
	D:					
		4.00	.296	.495		
		5.00	.520	.944		
		6.00	1.06	2.39	4.25	
		7.00	2.04	4.58	8.45	
		8.00	3.38	7.39	12.0	
		9.00	4.87	10.9	15.0	
		10.00	6.75	15.5	18.4	
		13.00	26.8	41.1	44.4	
DELTA K MAX	A:	15.34	106.			
	B:	14.54		112.		
	C:	13.62			57.8	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			19.68	12.17	10.16	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	3	2	2	
		1.25-2.0				
		>2.0				

CONDITION/HT: T73651
FORM: 6.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 59.1- 62.1 KSI
ULT. STRENGTH: 70.5- 73.2 KSI
SPECIMEN THK: 0.999- 1.000"
SPECIMEN WIDTH: 3.801- 3.805"
REFERENCES:AL013

ALUM. ALLOY

7050

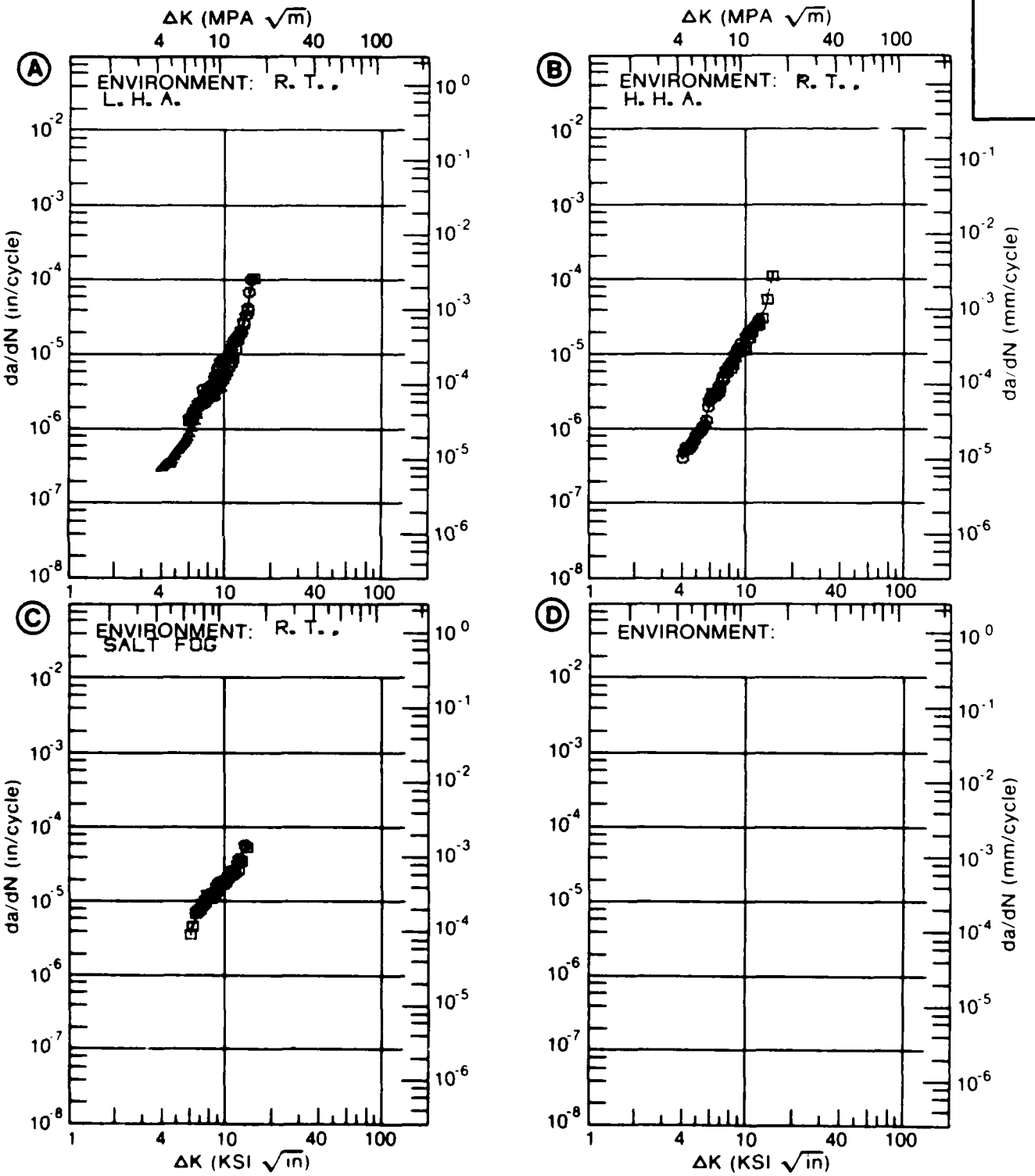

Figure 8.7.3.39

TABLE 8.7.3.40

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.40 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	5.82	1.46			
	B:	5.86		2.69		
	C:	5.89			6.56	
	D:					
		6.00	1.57	2.60	6.65	
		7.00	2.15	4.43	8.01	
		8.00	2.79	7.59	10.3	
		9.00	3.72	11.0	13.7	
		10.00	5.27	14.9	18.5	
		13.00	23.6	38.3	46.0	
DELTA K MAX	A:	15.19	105.			
	B:	14.64		74.1		
	C:	13.28			49.9	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			13.56	9.03	9.23	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T73651
FORM: 6.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: S-L
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 56.8 KSI
ULT. STRENGTH: 67.7 KSI
SPECIMEN THK: 0.998- 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES:AL013

ALUM. ALLOY

7050

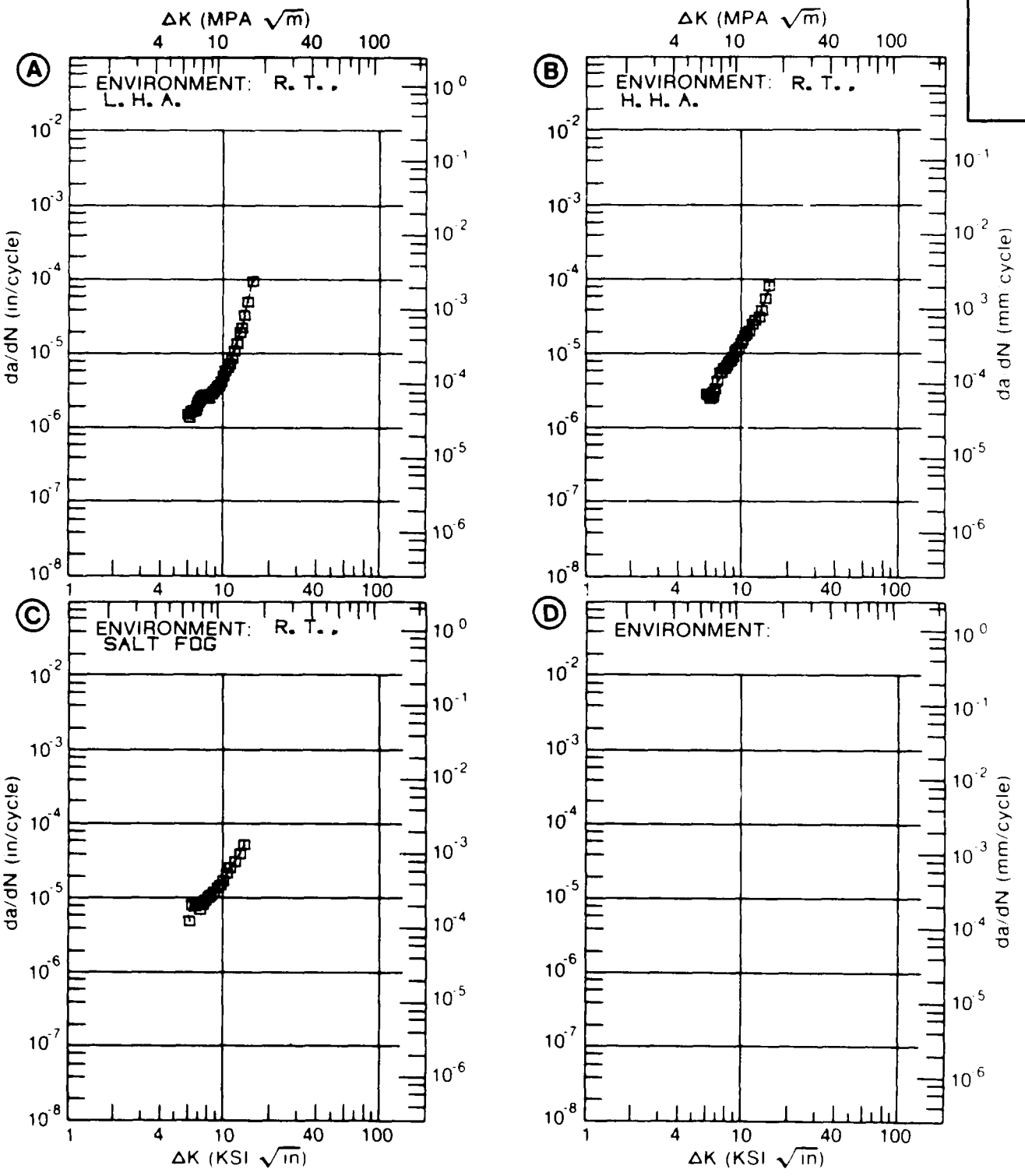

Figure 8.7.3.40

TABLE 8.7.3.41

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.41 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. H.H.A. 2HZ	DA/DN (10**-6 IN./CYCLE) B E= R.T. 3.5% NACL 20HZ	C	D
DELTA K MIN	A:	2.88	.053			
	B:	7.42		2.36		
	C:					
	D:					
		3.00	.0607			
		3.50	.0983			
		4.00	.152			
		5.00	.330			
		6.00	.662			
		7.00	1.25			
		8.00	2.23	3.17		
		9.00	3.72	4.90		
		10.00	5.81	7.01		
		13.00	15.6	15.5		
		16.00	28.6	26.9		
		20.00	49.0	46.4		
		25.00	82.6			
		30.00	135.			
		35.00	223.			
		40.00	380.			
DELTA K MAX	A:	45.76	726.			
	B:	20.84		51.1		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			22.51	8.95		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25		1		
		1.25-2.0	1			
		>2.0				

CONDITION/HT: T73651
FORM: Ø.44- 1.ØØ"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +Ø.1Ø
FREQUENCY:

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: Ø.151"
SPECIMEN WIDTH: 3.ØØØ"
REFERENCES:86844

ALUM. ALLOY

7050

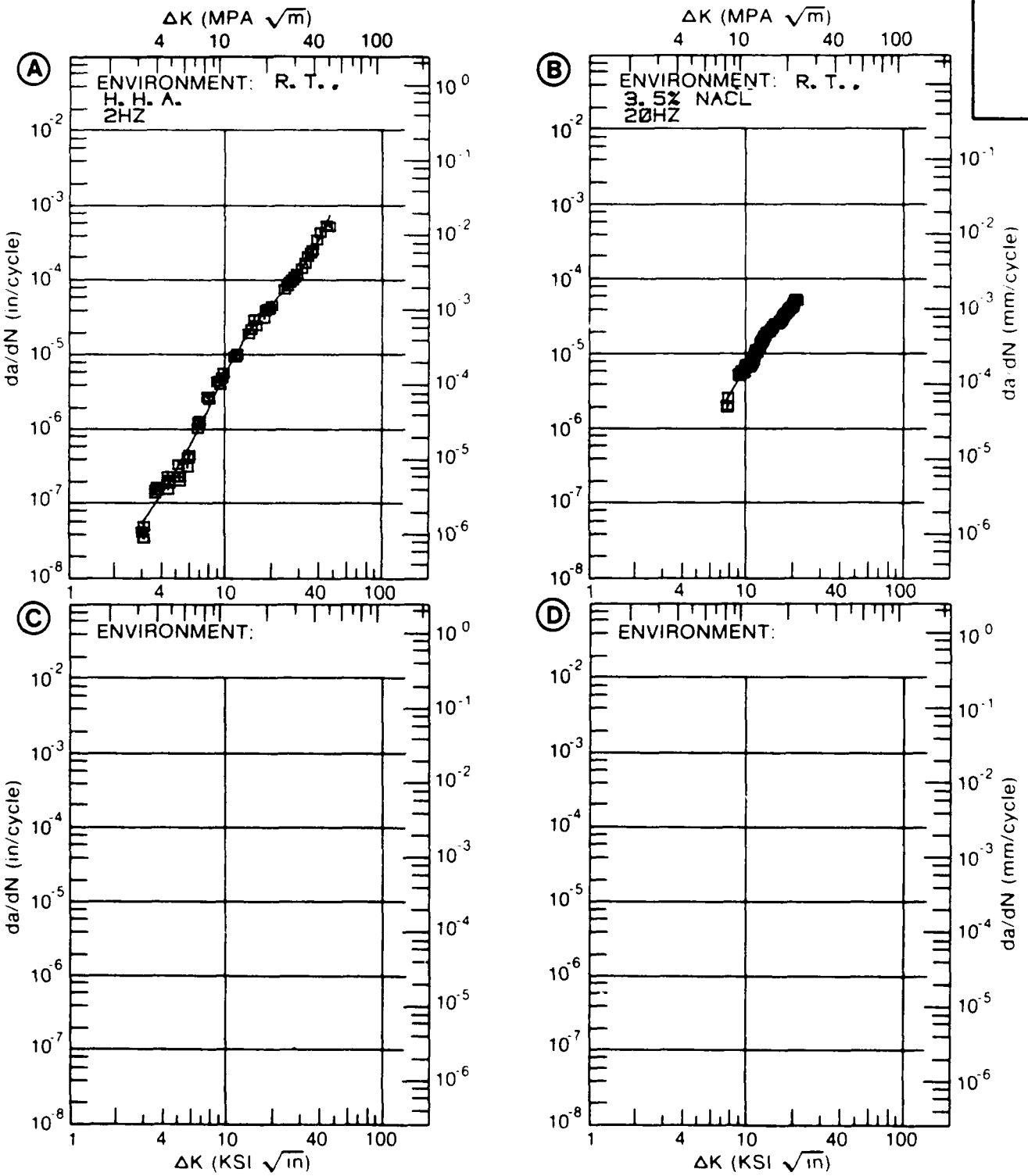

Figure 8.7.3.41

TABLE 8.7.3.42

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.42 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73652

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. DRY AIR	E= R.T. H.H.A	E= R.T. SALT FOG	
DELTA K MIN	A:	6.37	.740			
	B:	6.31		.843		
	C:	6.17			10.1	
	D:					
		7.00	1.10	2.50	11.1	
		8.00	2.24	6.54	18.0	
		9.00	4.57	11.4	26.4	
		10.00	8.91	16.3	31.4	
		13.00	40.5	36.7	49.5	
		16.00	85.7	88.8	107.	
DELTA K MAX	A:	17.47	96.6			
	B:	16.93		117.		
	C:	16.36			122.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			15.98	10.58	21.77	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73652
FORM: 2.50"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 63.5 KSI
ULT. STRENGTH: 75.5 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES: AL015

ALUM. ALLOY

7050

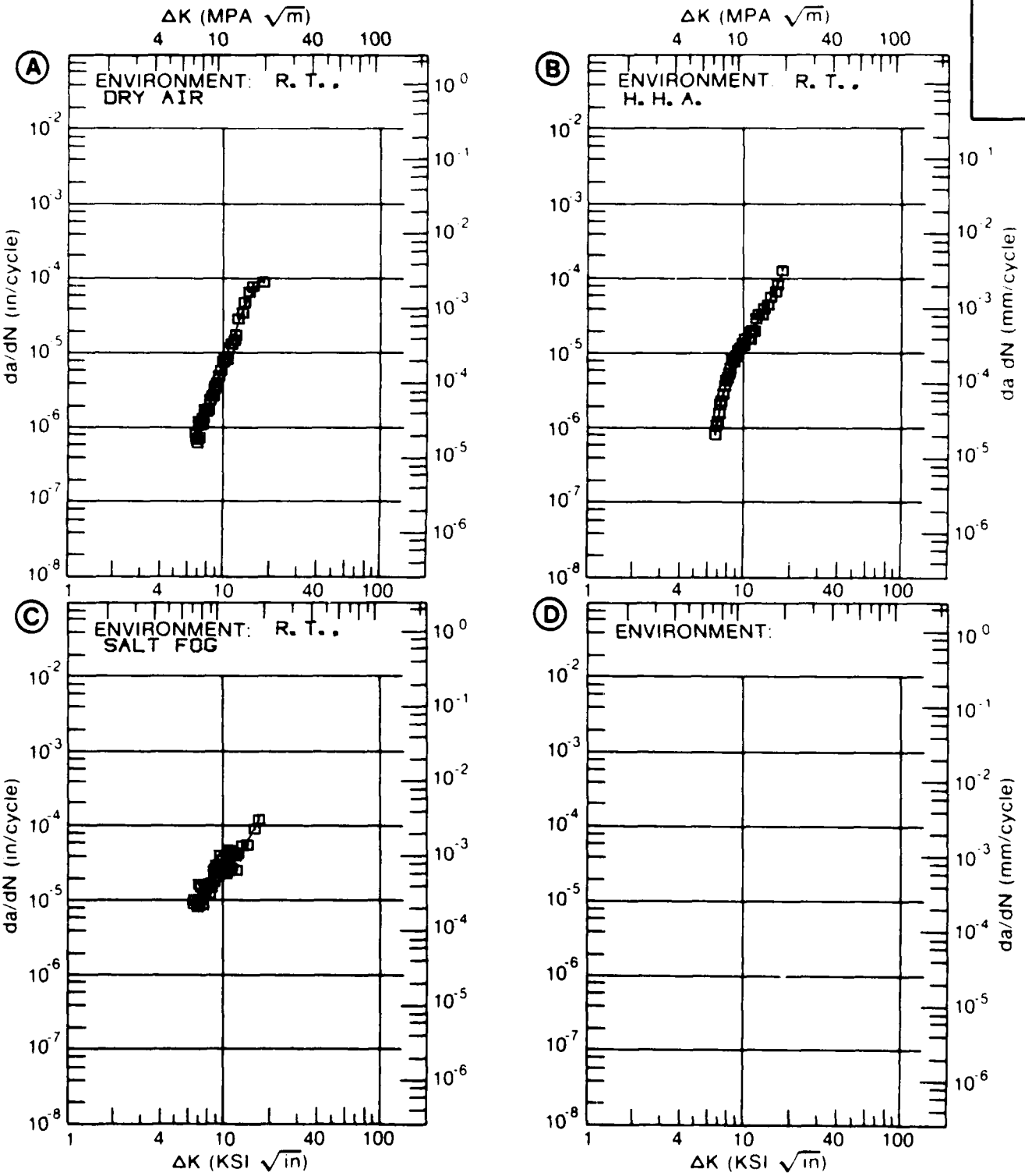

Figure 8.7.3.42

TABLE 8.7.3.43

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.43 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T73652

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A: 6.44	1.29			
	B: 6.96		5.74		
	C: 6.41			2.88	
	D:				
	7.00	2.38	5.99	7.40	
	8.00	3.96	18.7	16.2	
	9.00	11.2	36.7	42.6	
DELTA K MAX	A: 9.85	71.6			
	B: 9.64		133.		
	C: 9.89			211.	
	D:				
ROOT MEAN SQUARE PERCENT ERROR		18.75	17.95	27.84	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T73652
FORM: 7.50"TH FORGING
SPECIMEN TYPE: CT
ORIENTATION: S-L
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 58.1 KSI
ULT. STRENGTH: 71.0 KSI
SPECIMEN THK: 1.000"
SPECIMEN WIDTH: 3.805"
REFERENCES: AL015

ALUM. ALLOY

7050

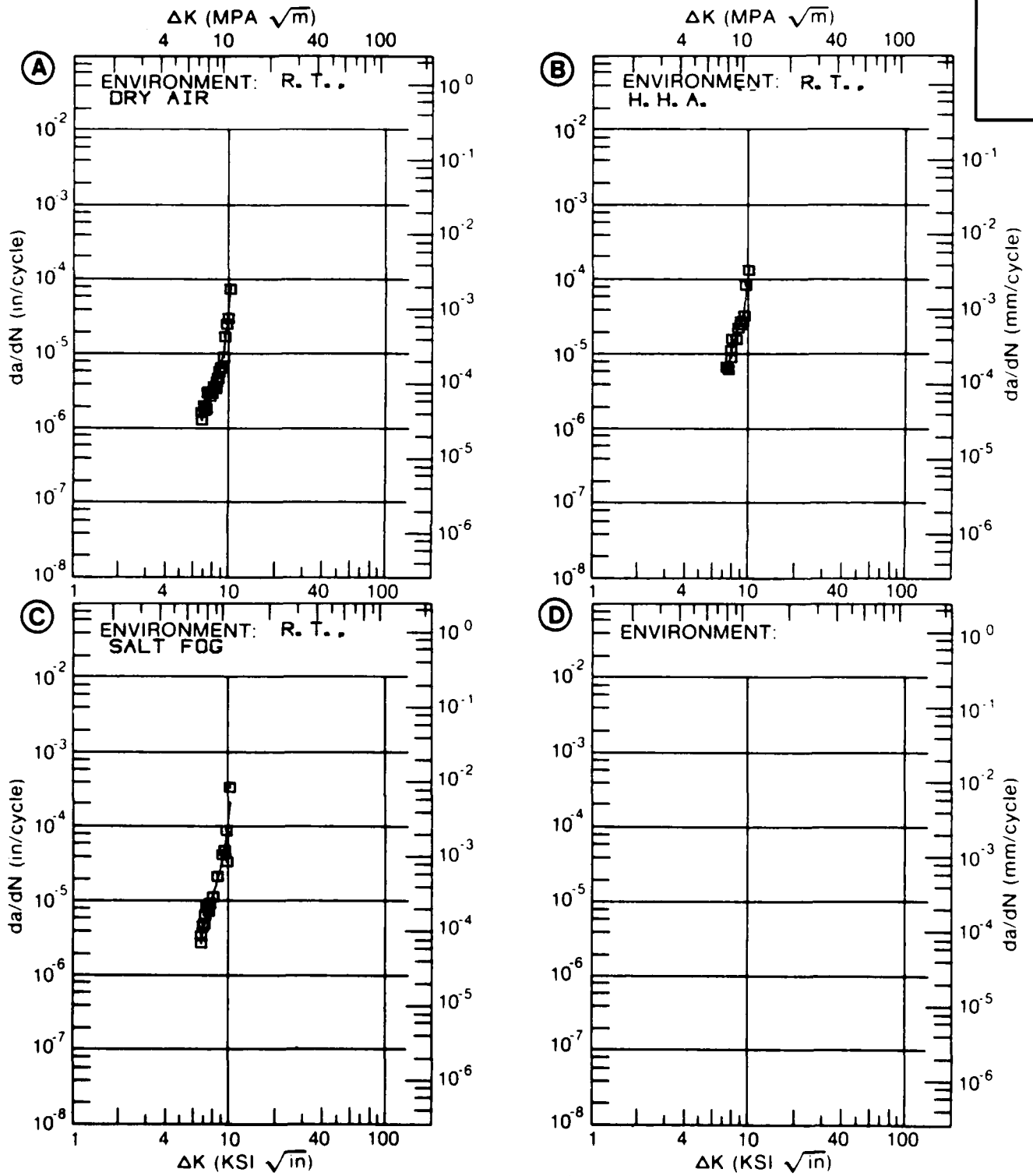

Figure 8.7.3.43

TABLE 8.7.3.44

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.44 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T76

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	4.84	.857			
	B:	5.01		2.69		
	C:	5.03			3.85	
	D:					
		5.00	.995			
		6.00	2.03	4.50	6.84	
		7.00	3.24	6.62	10.0	
		8.00	4.52	9.35	13.3	
		9.00	5.82	13.0	17.4	
		10.00	7.26	17.6	23.2	
		13.00	18.8	37.4	71.7	
		16.00	86.5	81.2	205.	
DELTA K MAX	A:	16.03	88.0			
	B:	16.84		122.		
	C:	16.00			205.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			12.34	10.94	17.45	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T76
FORM: 0.04"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 13.30 HZ

YIELD STRENGTH: 73.1 KSI
ULT. STRENGTH: 81.0 KSI
SPECIMEN THK: 0.040"
SPECIMEN WIDTH: 4.000"
REFERENCES: AL015

ALUM. ALLOY

7050

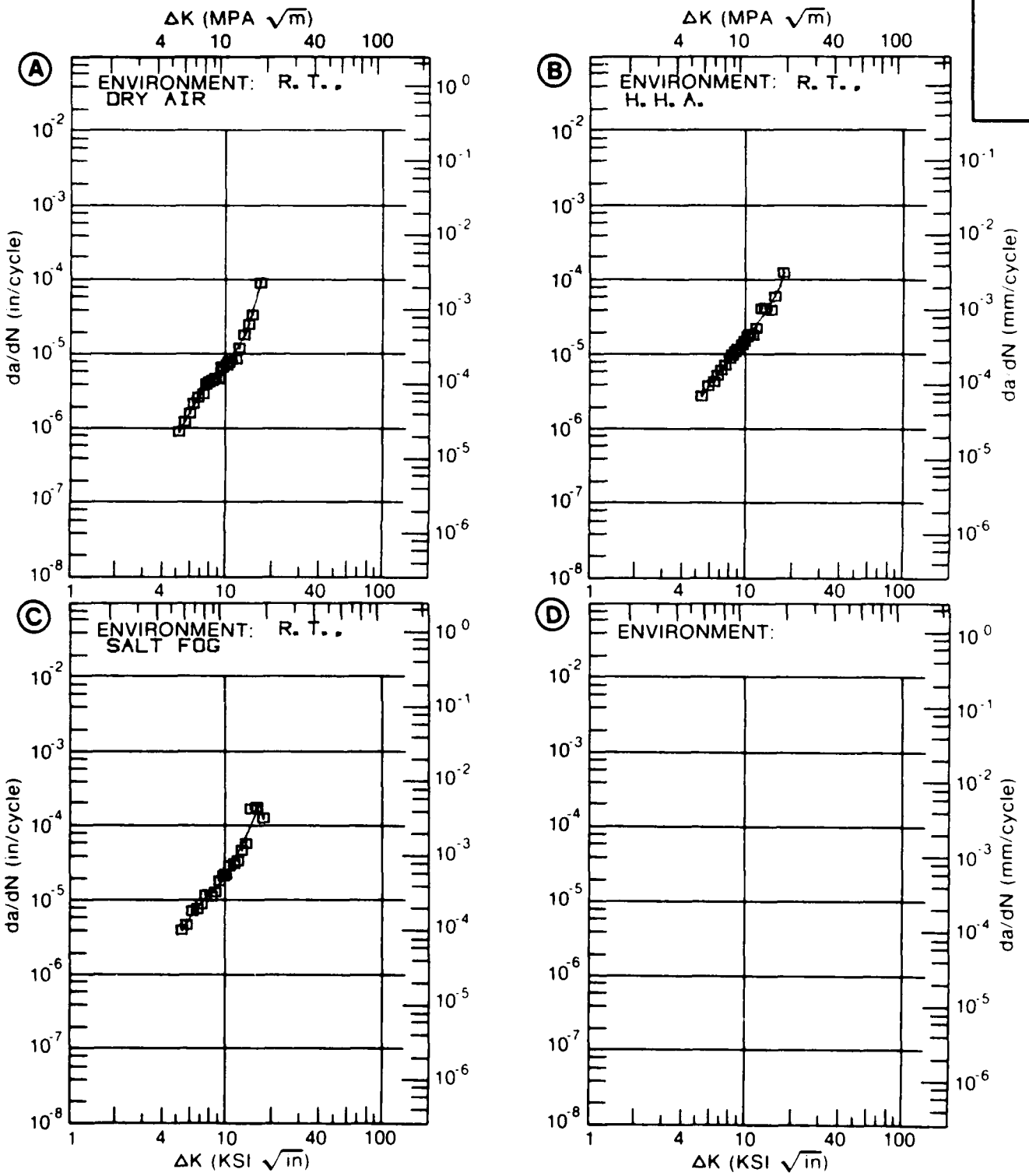

Figure 8.7.3.44

TABLE 8.7.3.45

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.45 INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T76
ENVIRONMENT: R T , LAB AIR

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE)			
		A	B	C	D
		R=+0.00	R=+0.33		
DELTA K MIN	A: 8.71	5.35			
	B: 5.75		2.58		
	C:				
	D:				
	6.00		2.88		
	7.00		4.27		
	8.00		5.96		
	9.00	5.82	7.99		
	10.00	7.60	10.4		
	13.00	14.4	20.4		
	16.00	23.5	36.1		
	20.00	40.1	70.3		
	25.00	69.8	148.		
	30.00	113.	290.		
	35.00	174.			
	40.00	260.			
DELTA K MAX	A: 40.58	272.			
	B: 30.93		327.		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		5.60	9.29		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	2	4		
	1.25-2.0				
	>2.0				

CONDITION/HT: T76
FORM: 0.09"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
FREQUENCY: 13.30 HZ
ENVIRONMENT: R.T., LAB AIR

YIELD STRENGTH: 79.0 KSI
ULT. STRENGTH: 85.8 KSI
SPECIMEN THK: 0.090- 0.091"
SPECIMEN WIDTH: 4.000- 4.004"
REFERENCES:86213

ALUM. ALLOY
7050

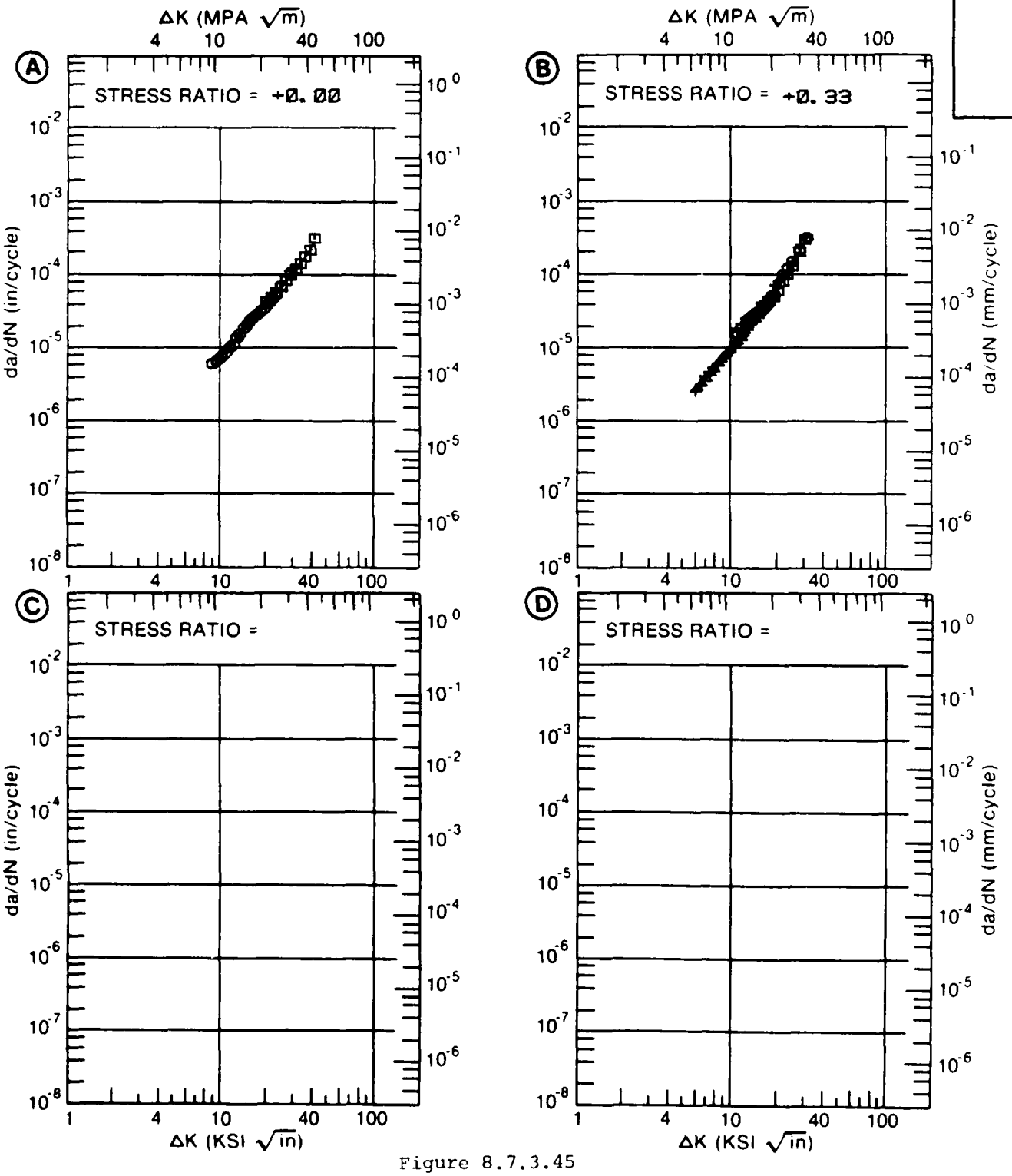

Figure 8.7.3.45

TABLE 8.7.3.46

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.46 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T76

		DELTA K (KSI*IN**1/2)	DA/DN (10**-6 IN./CYCLE) A E= R.T. DRY AIR	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	5.13	1.36			
	B:	5.17		3.52		
	C:	5.14			3.98	
	D:					
		6.00	2.91	5.56	7.49	
		7.00	4.97	8.84	12.6	
		8.00	7.72	13.2	18.7	
		9.00	10.9	19.0	25.5	
		10.00	14.0	26.7	33.3	
		13.00	24.6	66.2	65.3	
		16.00		151.	121.	
DELTA K MAX	A:	15.70	88.1			
	B:	17.18		206.		
	C:	17.27			158.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			13.89	12.44	8.81	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T76
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +Ø.33
FREQUENCY: 13.3Ø HZ

YIELD STRENGTH: 79.6 KSI
ULT. STRENGTH: 83.6 KSI
SPECIMEN THK: Ø.125"
SPECIMEN WIDTH: 4.ØØØ"
REFERENCES:ALØ15

ALUM. ALLOY

7050

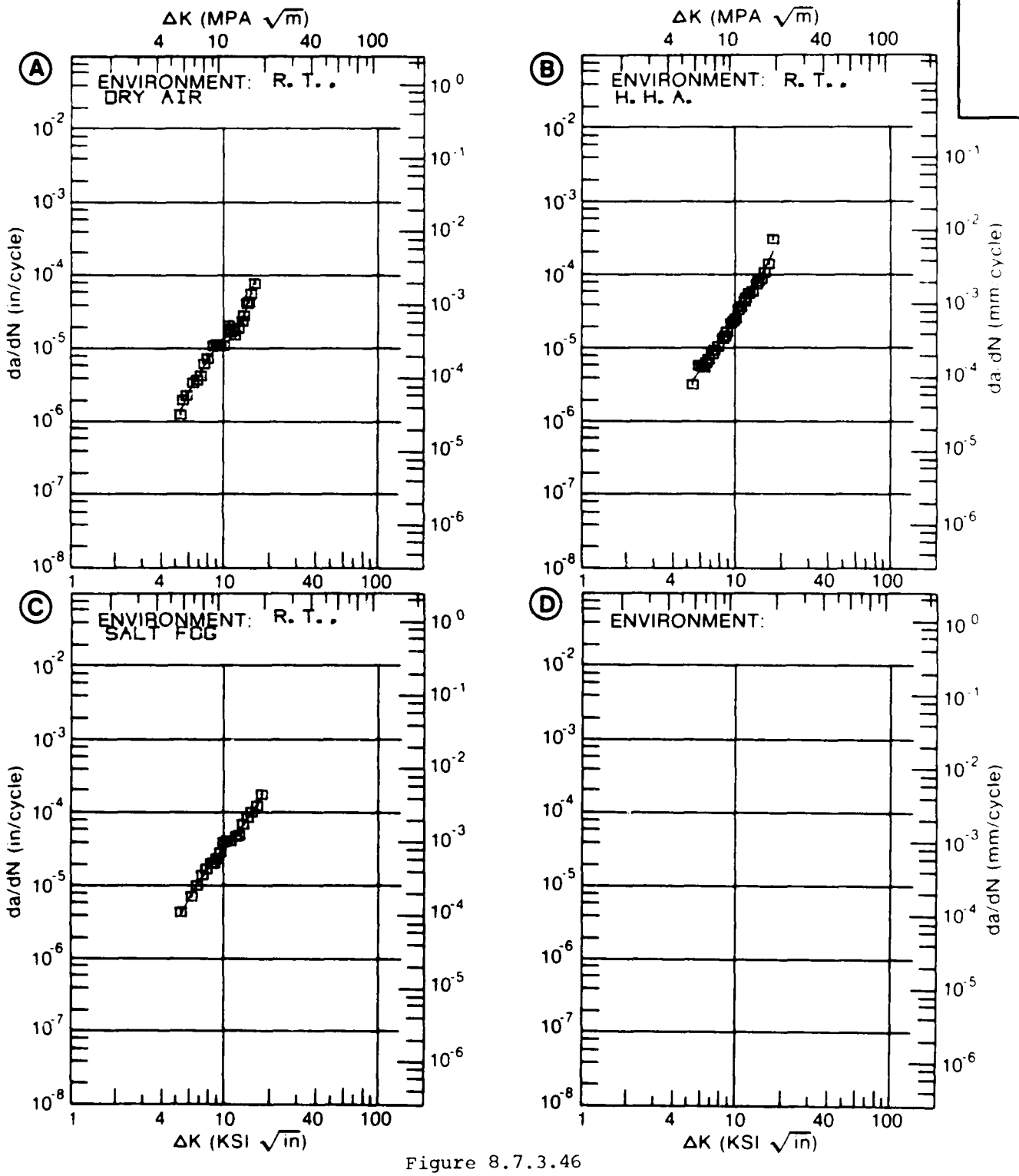

Figure 8.7.3.46

TABLE 8.7.3.47

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.47 INDICATING EFFECT OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. H.H.A., 2HZ	E= R.T. H.H.A., 20HZ	E= R.T. 3.5% NACL, 2HZ	E= R.T. 3.5% NACL, 20HZ
DELTA K MIN	A:	5.39	.674			
	B:	3.50		.131		
	C:	8.21			13.8	
	D:	3.50				.0943
		4.00		.183		.279
		5.00		.330		1.26
		6.00	1.39	.700		3.35
		7.00	2.75	1.73		6.64
		8.00	4.05	3.74		11.0
		9.00	5.43	6.50	17.4	16.1
		10.00	7.27	9.75	23.0	21.8
		13.00	17.0	21.3	46.5	41.2
		16.00	35.0	35.5	80.4	63.8
		20.00	70.8	52.1	141.	102.
		25.00	146.		247.	172.
		30.00	292.		399.	288.
		35.00	603.		628.	
		40.00	1297.		1018.	
		50.00			4127.	
DELTA K MAX	A:	47.21	4197.			
	B:	21.86		55.9		
	C:	53.64			11027.	
	D:	31.41				334.
ROOT MEAN SQUARE PERCENT ERROR			8.88	10.99	10.29	12.41
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				1
		>2.0				

CONDITION/HT: T7651
FORM: 0.52"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY:

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.147- 0.148"
SPECIMEN WIDTH: 3.000"
REFERENCES:86844

ALUM. ALLOY

7050

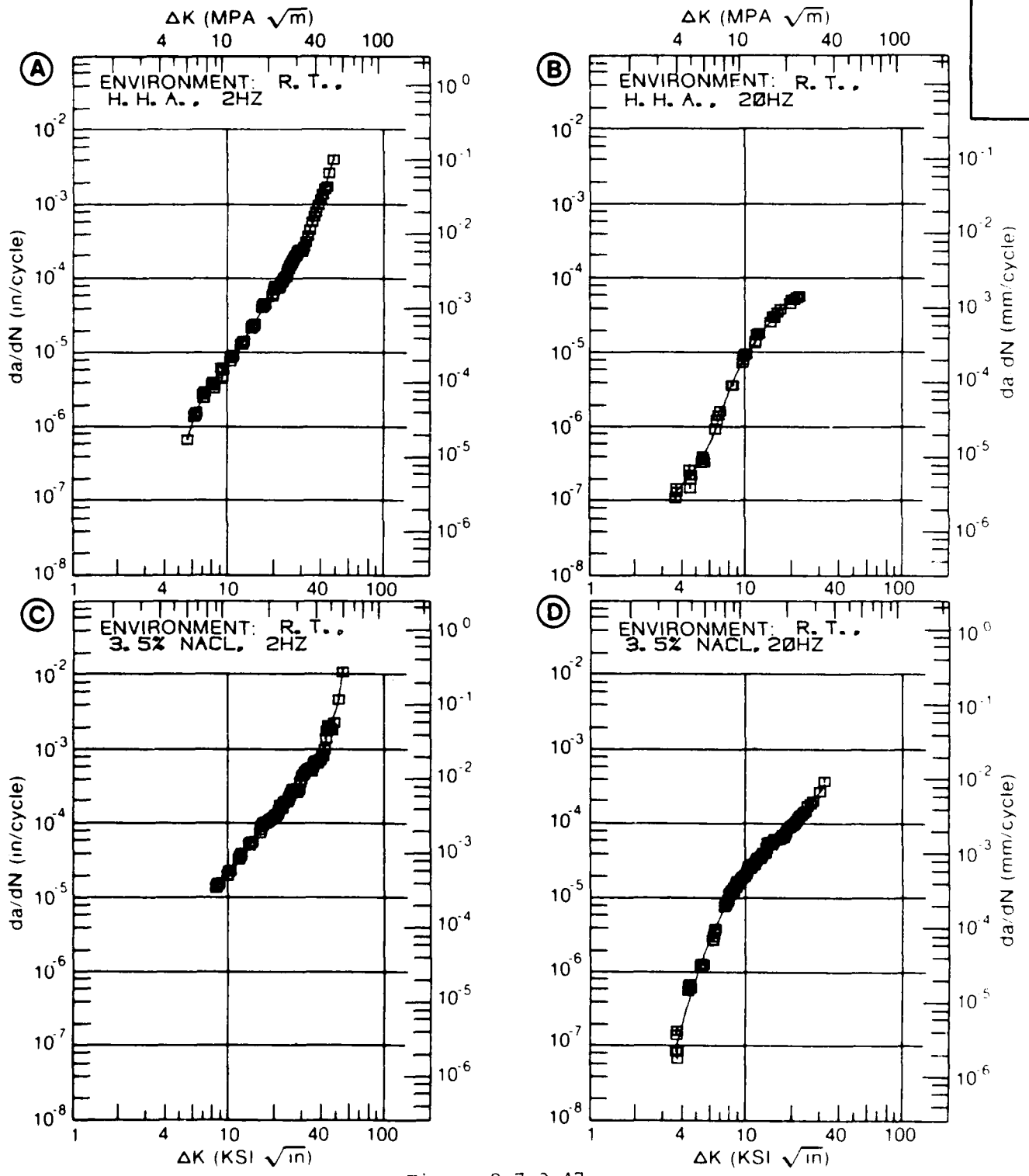

Figure 8.7.3.47

TABLE 8.7.3.48

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.48 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7651

DELTA K (KSI*IN**1/2)		DA/DN (10**-6 IN./CYCLE) A E= R.T. 3.5% NACL	B	C	D
DELTA K MIN	A: 5.35	.977			
	B:				
	C:				
	D:				
	6.00	2.51			
	7.00	6.46			
	8.00	11.6			
	9.00	17.2			
	10.00	22.9			
	13.00	44.1			
	16.00	88.5			
DELTA K MAX	A: 16.69	106.			
	B:				
	C:				
	D:				

ROOT MEAN SQUARE PERCENT ERROR 11.47

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T7651
FORM: 1.13"TH PLATE
SPECIMEN TYPE:
ORIENTATION:
STRESS RATIO: +0.10
FREQUENCY: 1.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK:
SPECIMEN WIDTH:
REFERENCES:91332

ALUM. ALLOY

7050

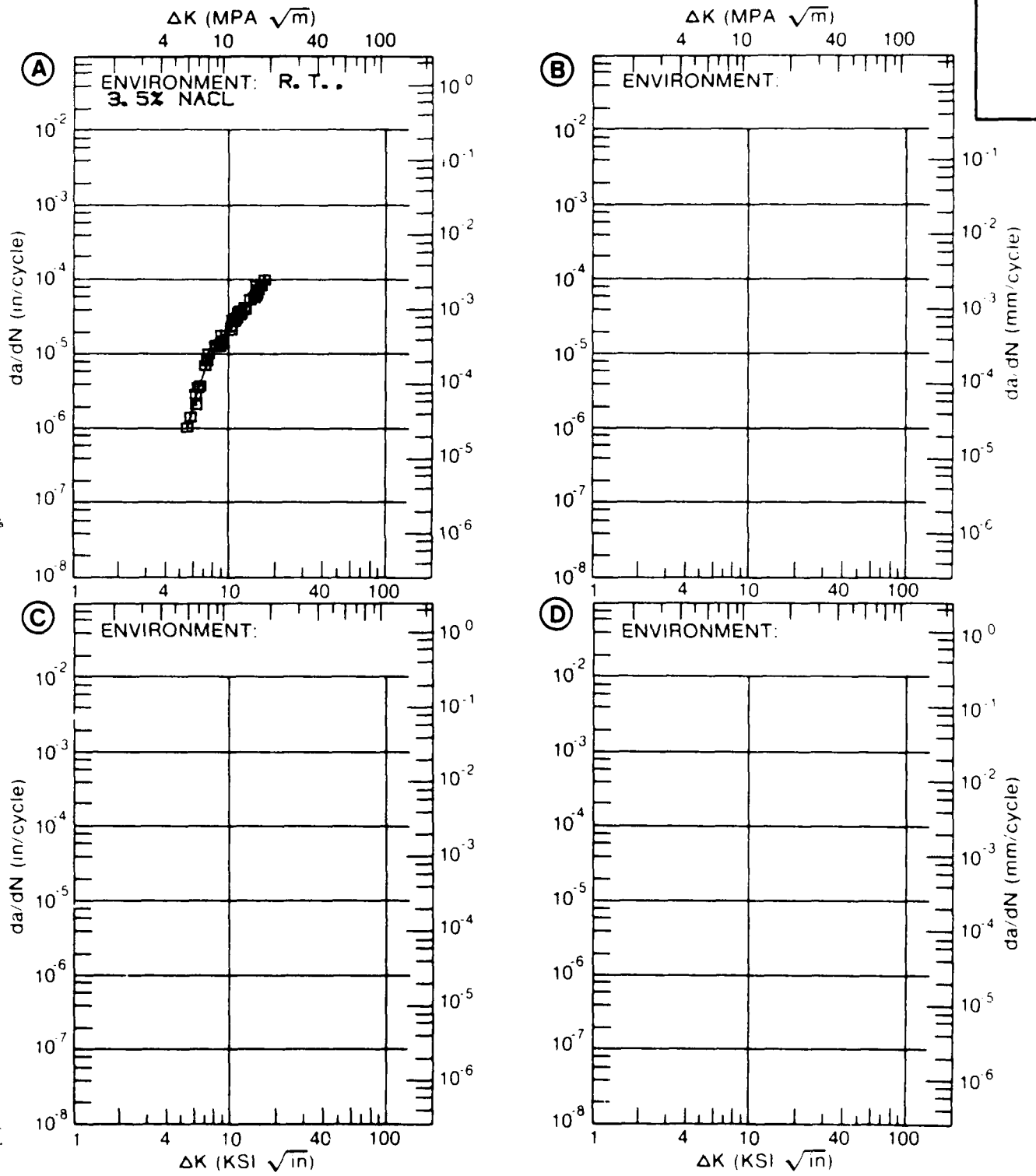

Figure 8.7.3.48

TABLE 8.7.3.49

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN /CYCLE) A	B	C	D
			E= R. T. DRY AIR			
DELTA K MIN	A:	6.45	2.45			
	B:					
	C:					
	D:					
		7.00	3.63			
		8.00	5.78			
		9.00	7.70			
		10.00	9.43			
		13.00	15.6			
		16.00	23.9			
		20.00	41.0			
DELTA K MAX	A:	24.59	98.5			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 6.62

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T7651
FORM: 1.13"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.10
FREQUENCY: 20.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK:
SPECIMEN WIDTH:
REFERENCES:91332

ALUM. ALLOY

7050

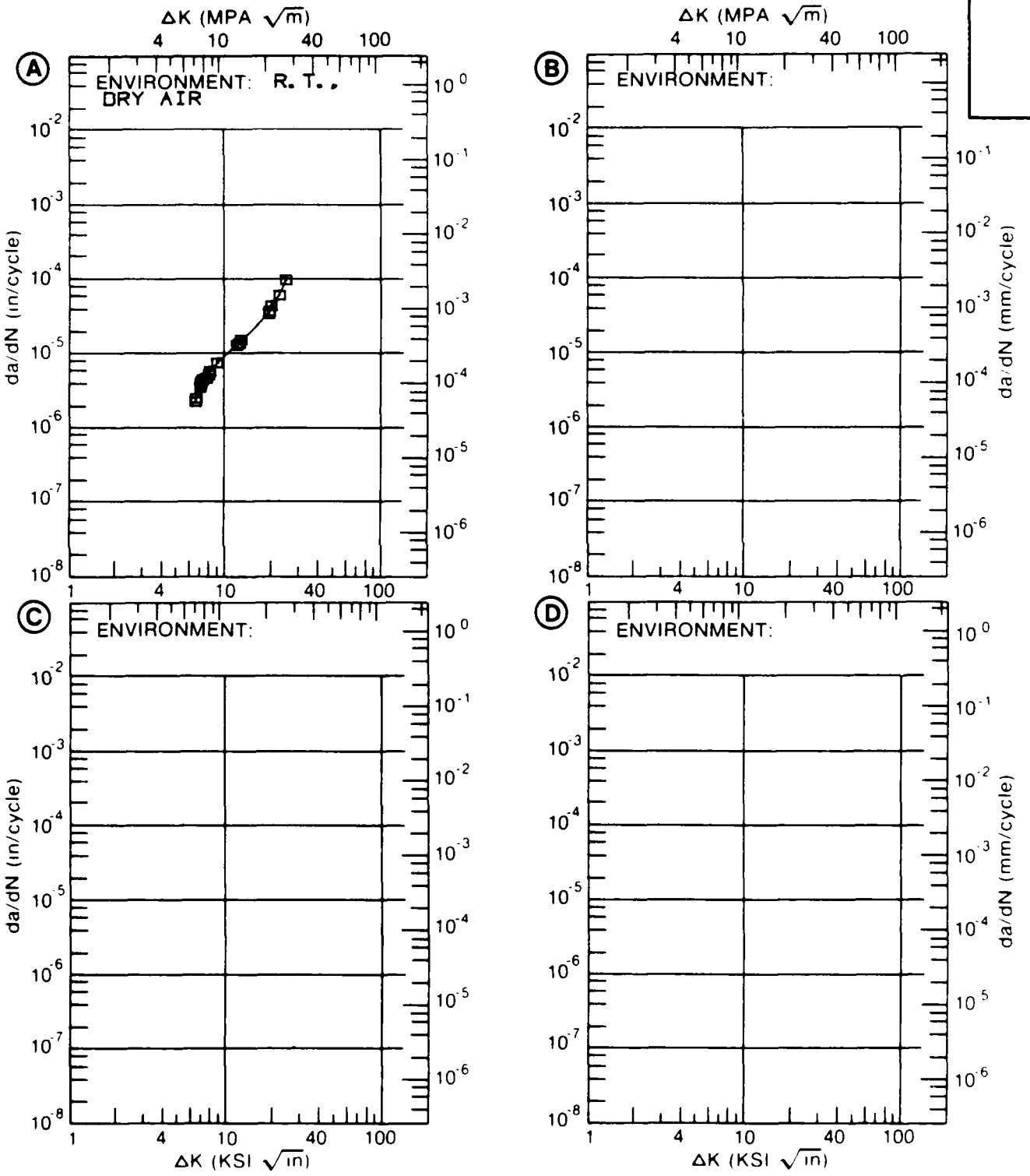

Figure 8.7.3.4

TABLE 8.7.3.50

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.50 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7651

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. LAB AIR	E= R.T. SIM SEA WATER	E= R.T. JP-4 FUEL	
DELTA K MIN	A:	4.08	.107			
	B:	5.62		.807		
	C:	5.00			.514	
	D:					
		5.00	.580			
		6.00	1.55	.980	.920	
		7.00	2.92	1.77	1.08	
		8.00	4.57	3.31	1.41	
		9.00	6.33	6.06	2.23	
		10.00	8.04	10.6	3.61	
		13.00	12.0	27.6	9.18	
		16.00	14.6	35.8	16.4	
		20.00	22.9	64.2	34.1	
		25.00	74.6	446.	105.	
DELTA K MAX	A:	26.13	107.			
	B:	26.23		906.		
	C:	25.28			112.	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			21.58	24.09	13.59	

LIFE PREDICTION RATIO SUMMARY (NP/NA)	
	0.0-0.5
	0.5-0.8
	0.8-1.25
	1.25-2.0
	>2.0

CONDITION/HT: T7651
FORM: 1.25"TH PLATE
SPECIMEN TYPE: WOL
ORIENTATION: L-T
STRESS RATIO: +0.02
FREQUENCY: 1.00- 20.00 HZ

YIELD STRENGTH: 73.8 KSI
ULT. STRENGTH: 81.0 KSI
SPECIMEN THK: 1.250"
SPECIMEN WIDTH: 5.000"
REFERENCES:MA005

ALUM. ALLOY

7050

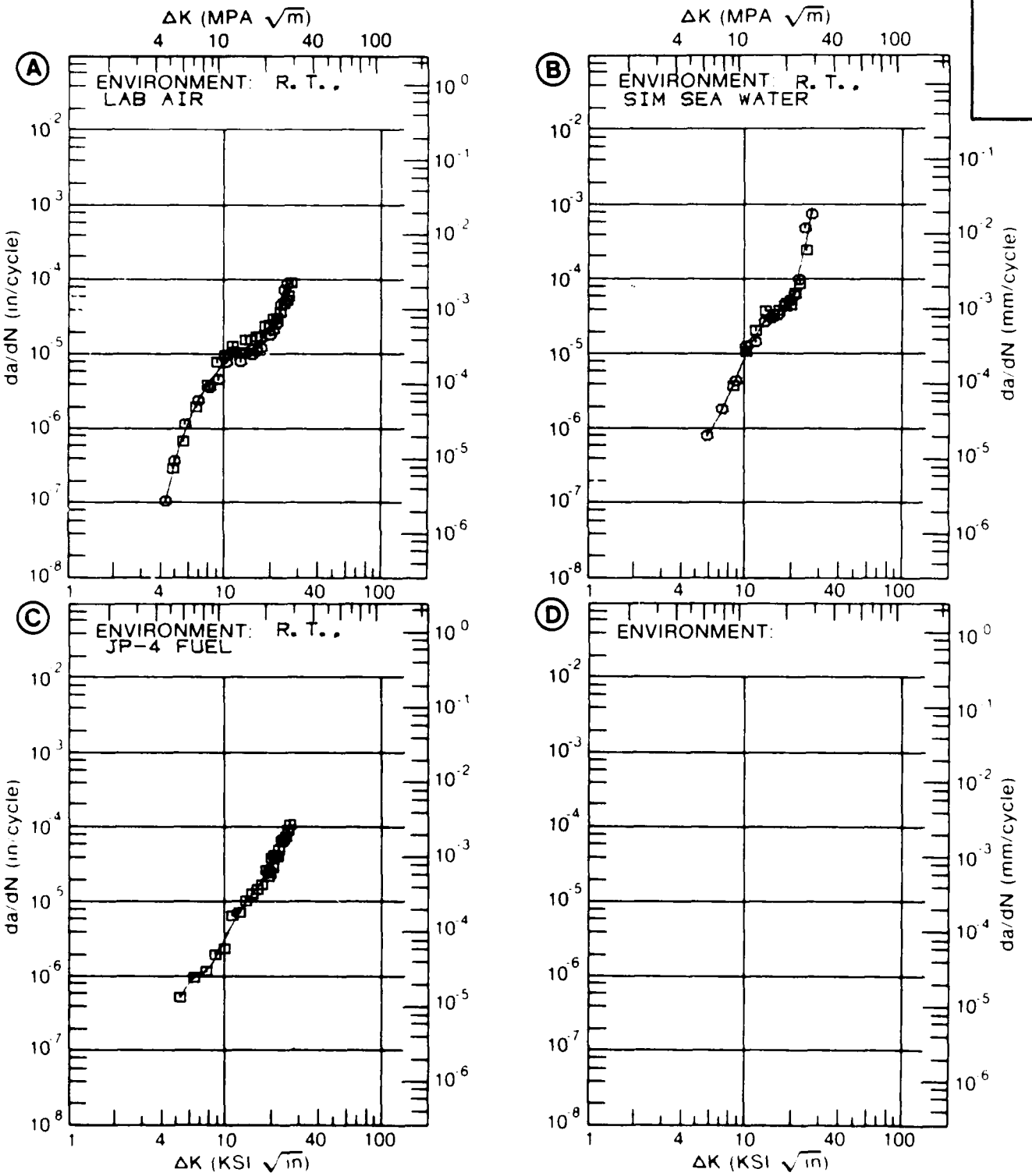

Figure 8.7.3.5a

TABLE 8.7.3.51

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.51 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7651X

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C	D
DELTA K MIN	A:	4.11	.389			
	B:	4.21		.827		
	C:					
	D:					
		5.00	.505	1.68		
		6.00	.701	3.32		
		7.00	.986	5.65		
		8.00	1.44	8.66		
		9.00	2.22	12.3		
		10.00	3.49	16.6		
		13.00	10.2	32.3		
		16.00	20.9			
DELTA K MAX	A:	18.19	33.7			
	B:	15.62		49.0		
	C:					
	D:					
ROOT MEAN SQUARE PERCENT ERROR			12.45	4.55		
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	2	1		
		1.25-2.0				
		>2.0				

CONDITION/HT: T7651X
FORM: 0.91"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 20.00 HZ

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: 0.900"
SPECIMEN WIDTH: 3.100- 3.805"
REFERENCES: AL008

ALUM. ALLOY

7050

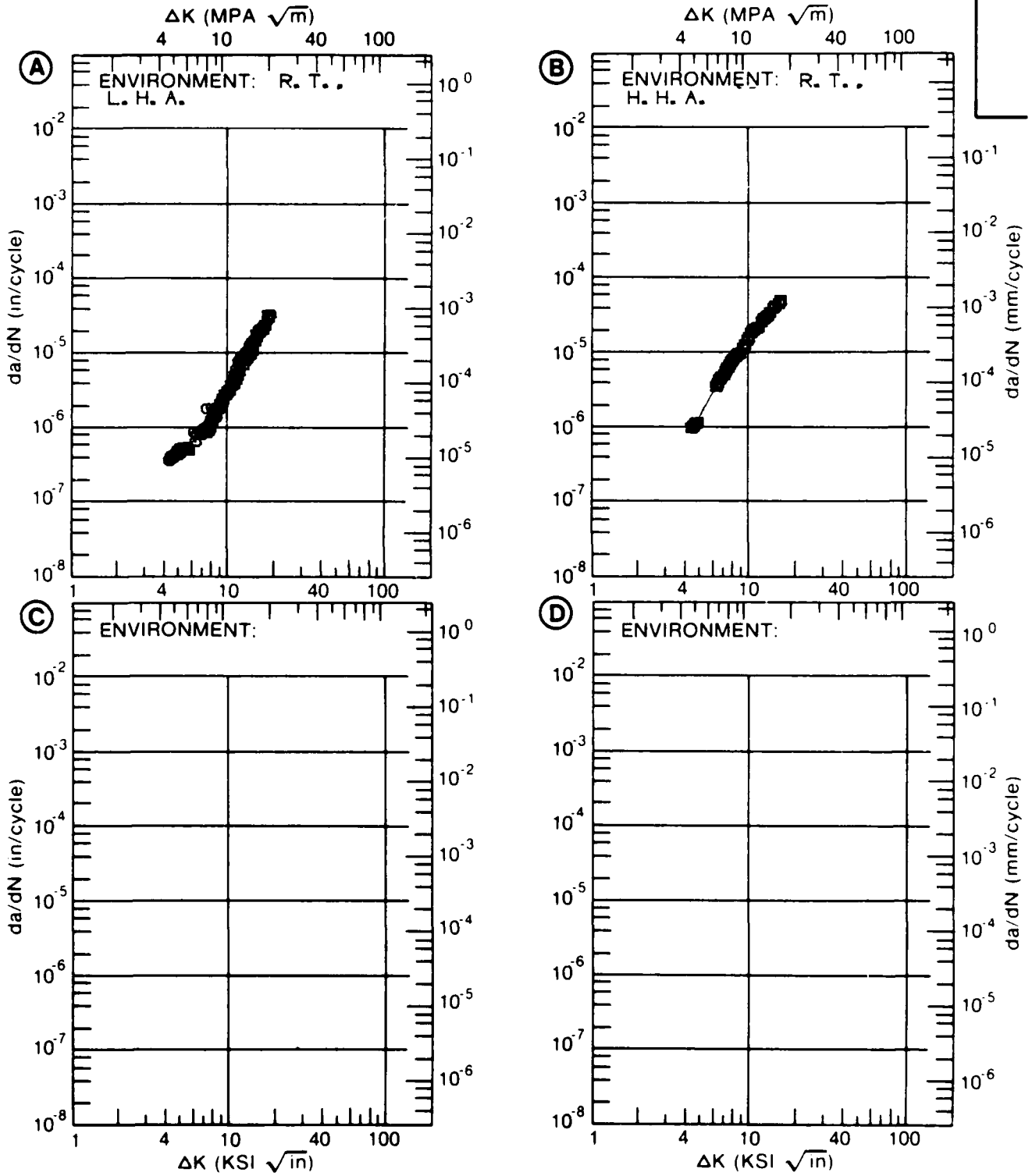

Figure 8.7.3.51

TABLE 8.7.3.52

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.52 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T7651X

DELTA K (KSI*IN**1/2)		A	B	C	D
		E= R.T. L.H.A.	E= R.T. H.H.A.		
DELTA K MIN	A: 4.41	417			
	B: 3.25		.140		
	C:				
	D:				
	3.50		.168		
	4.00		.436		
	5.00	.880	2.05		
	6.00	1.62	4.44		
	7.00	2.39	6.91		
	8.00	3.26	9.47		
	9.00	4.31	12.6		
	10.00	5.65	17.0		
	13.00	13.3			
	16.00	35.6			
DELTA K MAX	A: 16.78	46.8			
	B: 10.01		17.0		
	C:				
	D:				
ROOT MEAN SQUARE PERCENT ERROR		9.49	13.76		
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5				
	0.5-0.8				
	0.8-1.25	2	2		
	1.25-2.0				
	>2.0				

CONDITION/HT: T7651X
FORM: Ø.91"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +Ø.33
FREQUENCY: 2Ø.ØØ HZ

YIELD STRENGTH:
ULT STRENGTH:
SPECIMEN THK: Ø.9ØØ"
SPECIMEN WIDTH: 3.8Ø5"
REFERENCES:ALØØ8

ALUM. ALLOY

7Ø5Ø

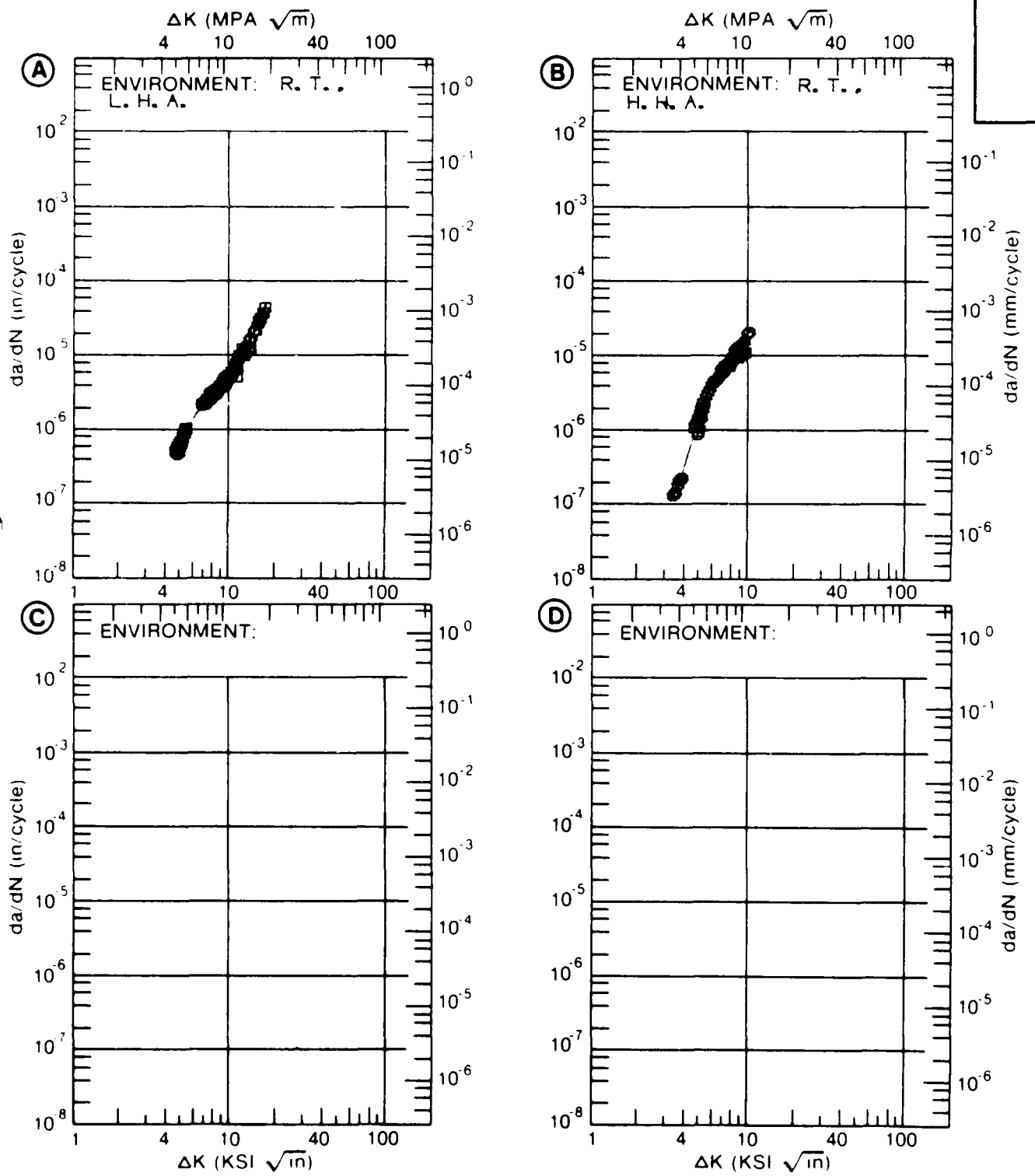

Figure 8.7.3.52

TABLE 8.7.3.[illegible]3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.53INDICATING EFFECT

OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T76511
ENVIRONMENT: R T H H A

		DELTA K (KSI*IN**1/2)	DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.33			
DELTA K MIN	A:	7.24	6.34			
	B:					
	C:					
	D:					
		8.00	9.91			
		9.00	13.0			
		10.00	15.7			
		13.00	44.4			
DELTA K MAX	A:	14.85	73.1			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 14.39

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T76511
FORM: 6.00"TH PLATE
SPECIMEN TYPE: CT
ORIENTATION: T-L
FREQUENCY: 18.30 HZ
ENVIRONMENT: R. T., H. H. A.

YIELD STRENGTH: 59.1 KSI
ULT. STRENGTH: 70.5 KSI
SPECIMEN THK: 0.998"
SPECIMEN WIDTH: 3.801"
REFERENCES:AL004

ALUM. ALLOY

7050

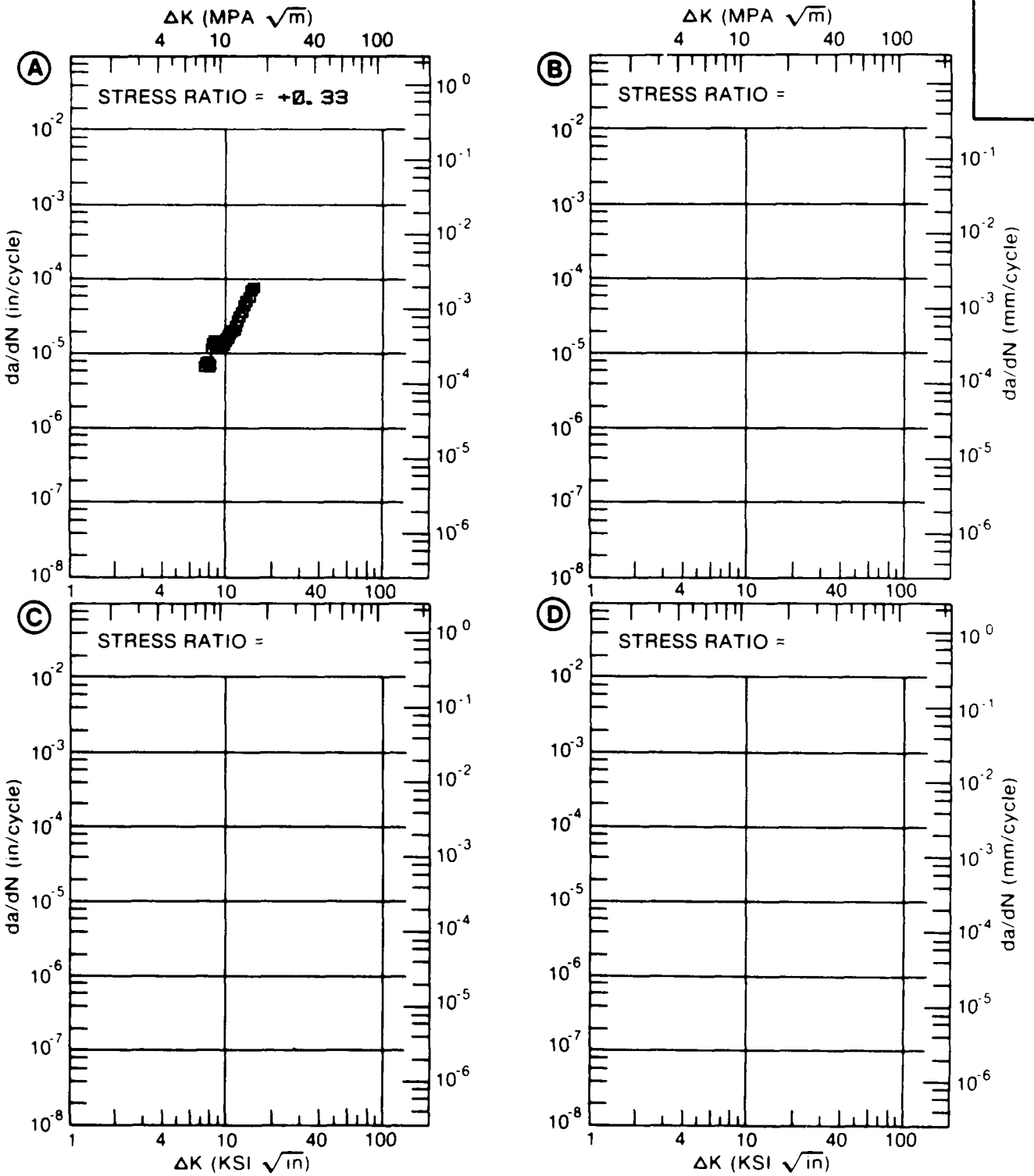

Figure 8.7.3.53

TABLE 8.7.3.54

FATIQUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.54INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T76511

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. H.H.A. 2HZ	E= R.T. H.H.A. 20HZ	E= R.T. 3.5% NACL 2HZ	E= R.T. 3.5% NACL 20HZ
DELTA K MIN	A:	6.23	.778			
	B:	4.28		.146		
	C:	6.83			1.29	
	D:	3.12				.005
		3.50				.0279
		4.00				.123
		5.00		.152		.467
		6.00		.310		.772
		7.00	1.26	.735	1.25	1.41
		8.00	2.11	1.53	2.06	3.38
		9.00	3.25	2.76	5.26	7.86
		10.00	4.71	4.47	11.6	15.0
		13.00	11.3	12.6	42.9	44.1
		16.00	22.2	24.9	93.6	71.3
		20.00	46.3	46.8	181.	99.5
		25.00	100.	81.3	304.	138.
		30.00	198.	123.	436.	205.
		35.00	369.	175.	576.	338.
		40.00	660.		732.	
		50.00	1946.		1117.	
DELTA K MAX	A:	56.19	3645.			
	B:	37.08		212.		
	C:	59.30			1619.	
	D:	35.92				375.
ROOT MEAN SQUARE PERCENT ERROR			19.51	14.25	11.29	20.13
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5					
	0.5-0.8					
	0.8-1.25		1	1	1	
	1.25-2.0					1
	>2.0					

CONDITION/HT: T76511
FORM: Ø.44"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +Ø.1Ø
FREQUENCY:

YIELD STRENGTH:
ULT. STRENGTH:
SPECIMEN THK: Ø.151- Ø.152"
SPECIMEN WIDTH: 3.ØØØ"
REFERENCES: 86844

ALUM. ALLOY

7050

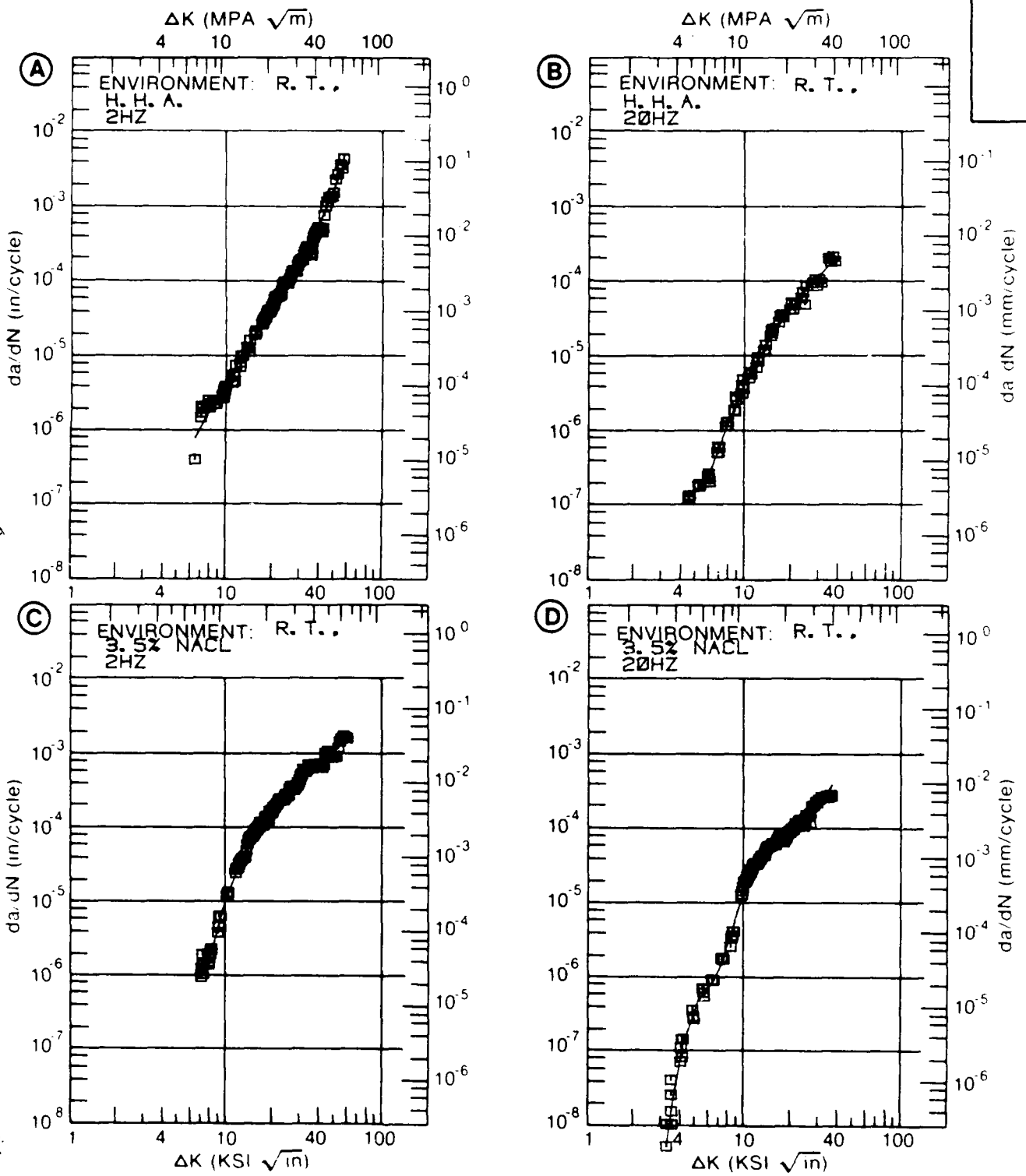

Figure 8.7.3.54

TABLE 8.7.3.55

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.55 INDICATING EFFECT OF STRESS RATIO

MATERIAL: ALUMINUM 7050
CONDITION: T76511
ENVIRONMENT: R T , L H A

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			R=+0.46			
DELTA K MIN	A:	6.63	2.12			
	B:					
	C:					
	D:					
		7.00	2.71			
		8.00	4.63			
		9.00	6.98			
		10.00	9.90			
		13.00	26.1			
DELTA K MAX	A:	15.21	56.7			
	B:					
	C:					
	D:					

ROOT MEAN SQUARE PERCENT ERROR 5.30

LIFE PREDICTION RATIO SUMMARY (NP/NA)		
	0.0-0.5	
	0.5-0.8	
	0.8-1.25	1
	1.25-2.0	
	>2.0	

CONDITION/HT: T76511
FORM: 1.16"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
FREQUENCY: 18.30 HZ
ENVIRONMENT: R.T., L.H.A.

YIELD STRENGTH: 76.4 KSI
ULT. STRENGTH: 83.6 KSI
SPECIMEN THK: 1.007"
SPECIMEN WIDTH: 3.100"
REFERENCES:AL004

ALUM. ALLOY

7050

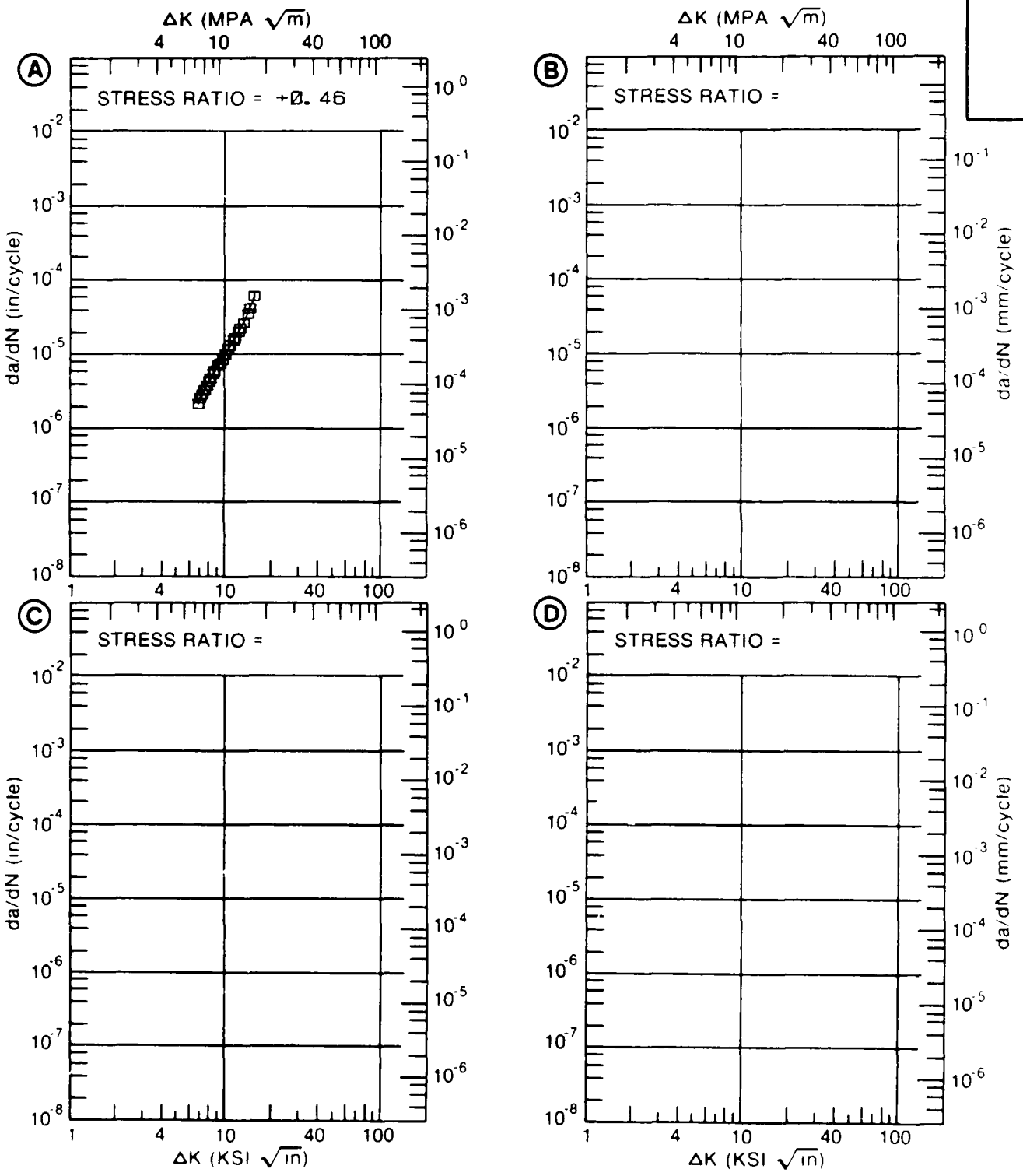

Figure 8.7.3.55

TABLE 8.7.3.56

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.56 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T76511

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	4.53	.361			
	B:	4.95		.720		
	C:	4.52			1.55	
	D:					
		5.00	.419	.794	2.56	
		6.00	.626	2.83	7.06	
		7.00	.988	5.29	11.7	
		8.00	1.58	8.10	15.7	
		9.00	2.52	11.4	19.3	
		10.00	3.95	15.4	23.5	
		13.00		38.4	47.5	
		16.00		81.1		
DELTA K MAX	A:	11.55	7.62			
	B:	17.46		83.7		
	C:	15.13			70.2	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			9.30	15.98	12.58	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	3	2	
		1.25-2.0				
		>2.0				

CONDITION/HT: T76511
FORM: 1.16"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 76.4 KSI
ULT. STRENGTH: 83.6 KSI
SPECIMEN THK: 1.000- 1.007"
SPECIMEN WIDTH: 3.100- 3.801"
REFERENCES: AL004

ALUM. ALLOY

7050

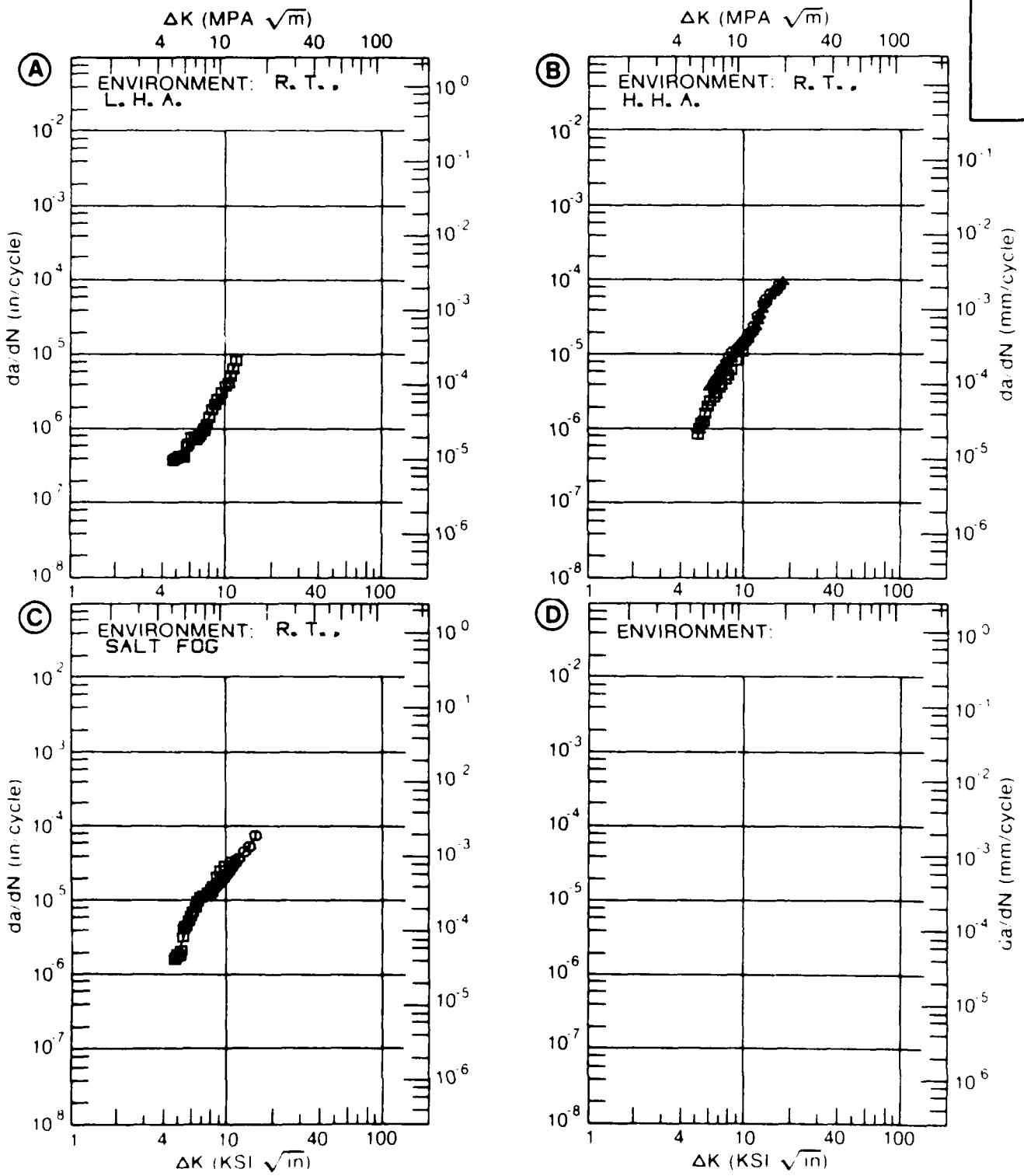

Figure 8.7.3.56

TABLE 8.7.3.57

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.57 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T76511

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	3.86	.323			
	B:	6.00		5.43		
	C:	5.91			7.43	
	D:					
		4.00	.323			
		5.00	.810			
		6.00	1.76		7.66	
		7.00	2.71	8.50	10.7	
		8.00	3.68	12.0	14.8	
		9.00	4.87	16.0	20.0	
		10.00	6.38	20.5	26.7	
		13.00	14.4	39.2	50.8	
		16.00	35.5	71.5		
DELTA K MAX	A:	18.47	93.4			
	B:	17.14		89.7		
	C:	14.15			53.6	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			17.60	6.16	7.68	
LIFE PREDICTION RATIO SUMMARY (NP/NA)	0.0-0.5					
	0.5-0.8					
	0.8-1.25		2	1	1	
	1.25-2.0					
	>2.0					

CONDITION/HT: T76511
FORM: 1.16"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: T-L
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 74.4 KSI
ULT. STRENGTH: 82.5 KSI
SPECIMEN THK: 0.999- 1.000"
SPECIMEN WIDTH: 3.801"
REFERENCES: AL004

ALUM. ALLOY

7050

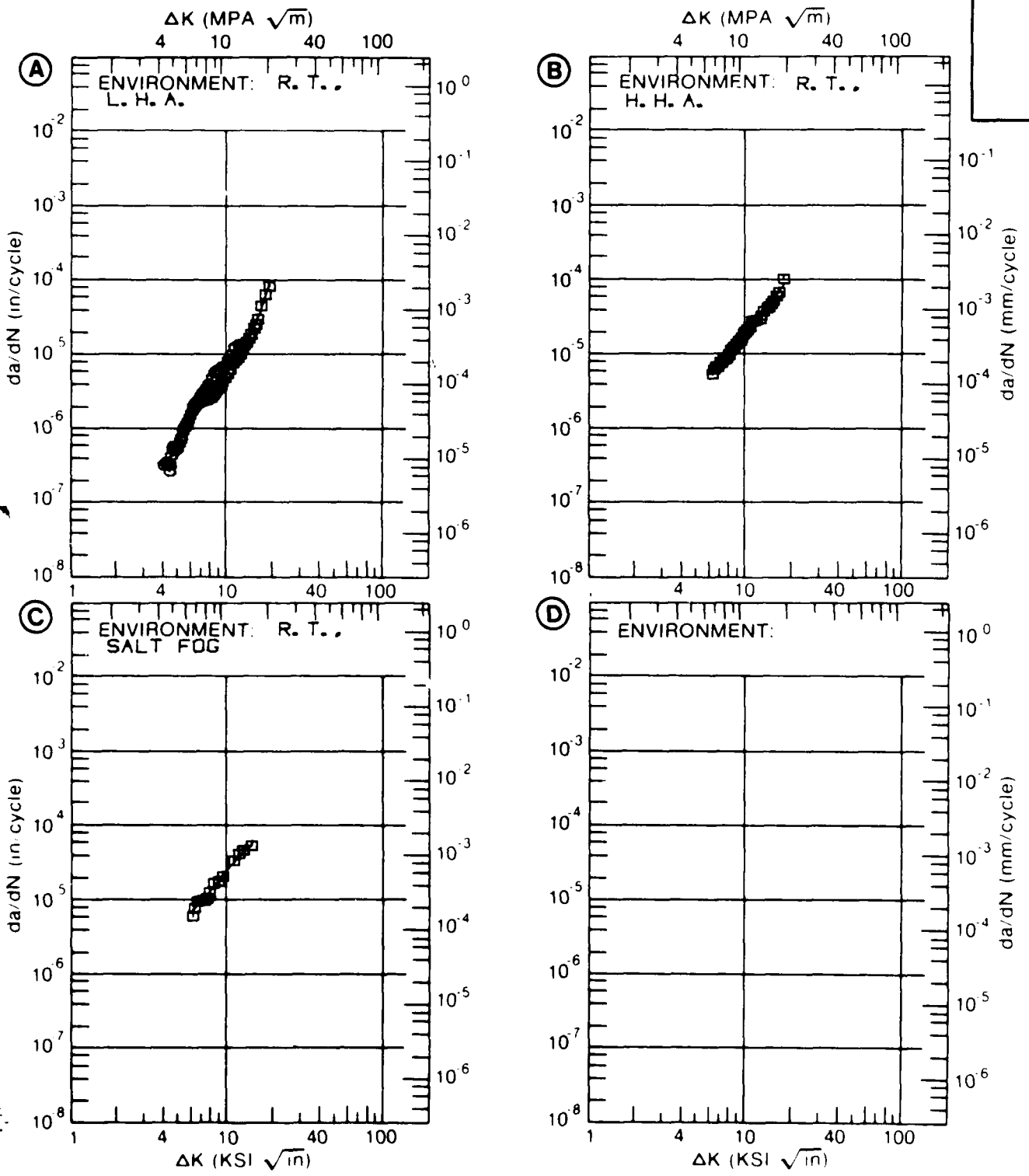

Figure 8.7.3.57

TABLE 8.7.3.58

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.58 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T76511

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. L.H.A.	E= R.T. H.H.A.	E= R.T. SALT FOG	
DELTA K MIN	A:	5.78	1.06			
	B:	5.91		4.95		
	C:	7.98			8.09	
	D:					
		6.00	1.17	5.23		
		7.00	1.73	8.19		
		8.00	2.31	10.7	8.17	
		9.00	2.89	13.4	12.6	
		10.00	3.45	16.8	17.1	
		13.00	4.90			
		16.00	5.97			
DELTA K MAX	A:	18.83	6.69			
	B:	10.86		21.2		
	C:	12.68			26.1	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			10.06	5.74	2.40	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	2	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T76511
FORM: 5.00"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: L-T
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 82.3- 82.6 KSI
ULT. STRENGTH: 87.6 KSI
SPECIMEN THK: 0.999- 1.003"
SPECIMEN WIDTH: 3.100- 3.801"
REFERENCES:AL004

ALUM. ALLOY

7050

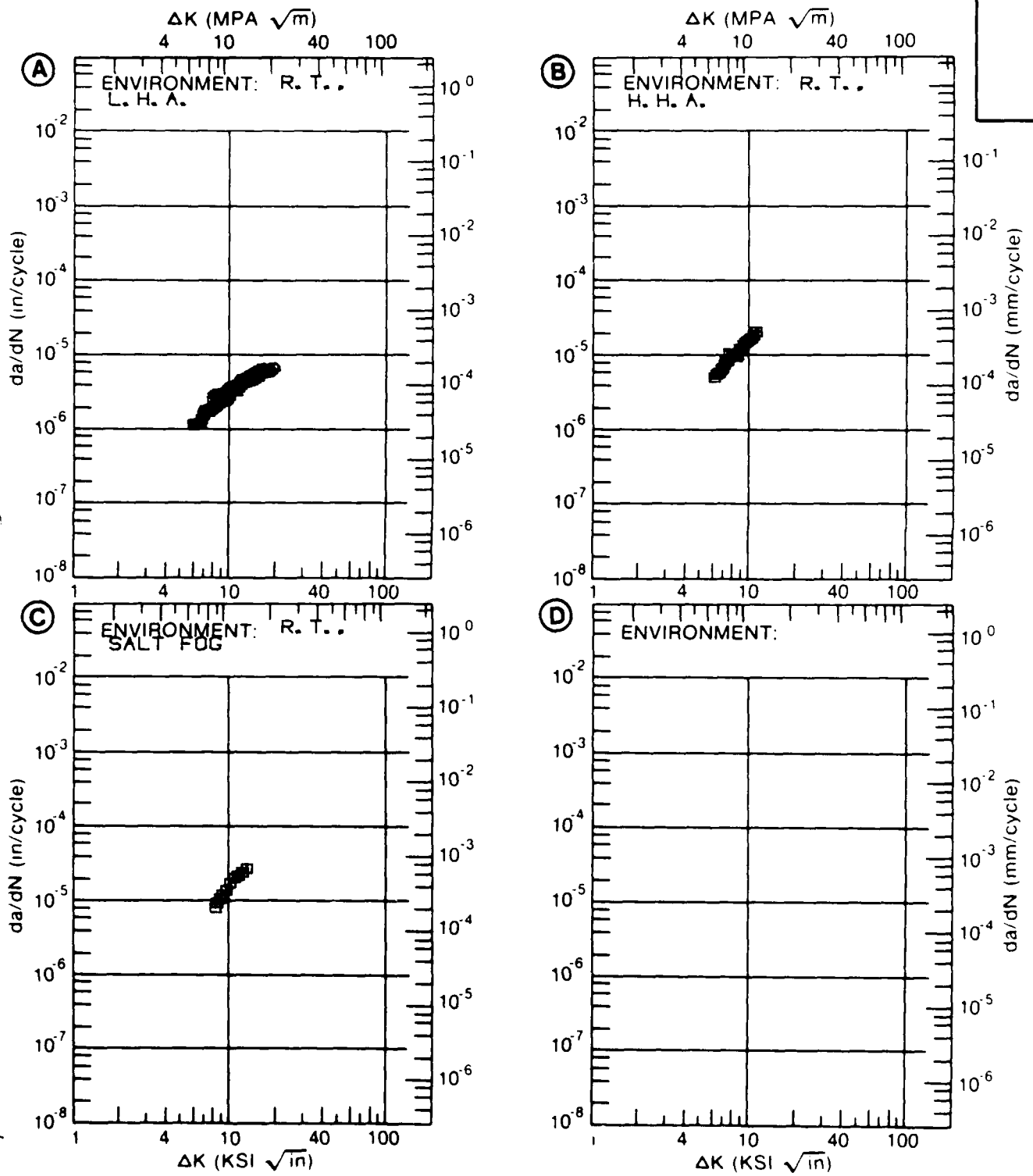

Figure 8.7.3.58

TABLE 8.7.3.59

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.7.3.59 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050
CONDITION: T76511

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	5.82	1.43			
	B:	3.89		1.05		
	C:	5.89			5.92	
	D:					
		4.00		1.01		
		5.00		1.71		
		6.00	1.53	4.91	6.82	
		7.00	2.38	11.9	14.9	
		8.00	4.68	23.4	22.4	
		9.00	12.4	41.0	35.8	
		10.00	43.9	121.	73.8	
DELTA K MAX	A:	10.02	45.2			
	B:	10.01		124.		
	C:	10.31			98.8	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			9.65	19.59	12.07	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	2	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T76511
FORM: 5.00"TH EXTRUSION
SPECIMEN TYPE: CT
ORIENTATION: S-L
STRESS RATIO: +0.33
FREQUENCY: 18.30 HZ

YIELD STRENGTH: 70.3- 82.3 KSI
ULT. STRENGTH: 76.5- 87.6 KSI
SPECIMEN THK: 0.958- 1.006"
SPECIMEN WIDTH: 3.800- 3.801"
REFERENCES:AL004

ALUM. ALLOY

7050

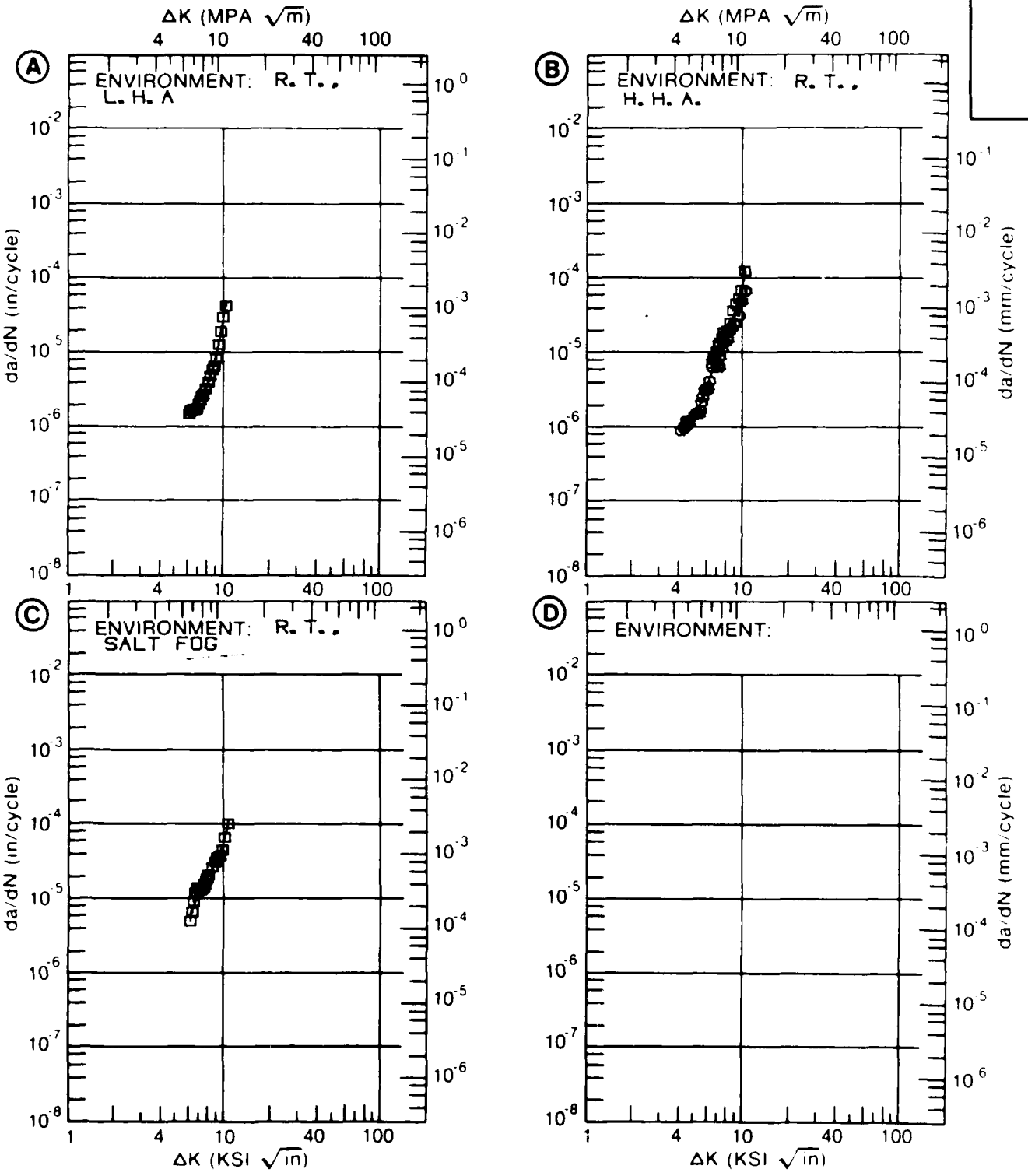

Figure 8.7.3.50

TABLE 8.7.3.60

ALUMINUM 7050 K(ISCC)

CONDITION	--PRODUCT-- FORM	THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	ENVIRONMENT	------SPECIMEN-------- WIDTH (IN) W	THICK (IN) B	DESIGN (*=SG)	CRACK LENGTH (IN) A	K(Q) (KSI*SQRT IN)	K(ISCC) (KSI*SQRT IN)	MEAN	STAN DEV	TEST TIME (MIN)	DATE	REFER
T736	F	0.25	R.T.	L-T	61.4	3.5 PCT NACL	----	----	DCB	----	31.10	28.20*			----	1973	86212
T736	F	0.25	R.T.	T-L	62.4	3.5 PCT NACL	----	----	DCB	----	28.10	24.50*			----	1973	86212
T73651	P	4.00	R.T.	T-L	67.2	DIST WATER	5.000	1.250	TDCB	----	30.00	29.10			----	1972	84362
T73651	P	4.00	R.T.	T-L	66.0	S.T.W.	5.500	1.000	DCB	----	43.00	27.50			133680	1976	RI006
		4.00			66.0		5.500	1.000	DCB	----	43.00	28.00	27.8/	0.4	133680	1976	RI006
T73651	P	4.00	R.T.	T-L	67.2	3.5 PCT NACL	5.000	1.250	TDCB	----	30.00	29.10			----	1972	84362
T7651	P	1.25	R.T.	L-T	73.8	JP-4 FUEL	3.085	1.248	WOL *	1.086	------	> 22.40			>95040	1977	MA005
		1.25			73.8		3.078	1.253	WOL *	1.092	------	> 22.60			>95040	1977	MA005
T7651	P	1.25	R.T.	L-T	73.8	SIM. SEA WATER	3.082	1.249	WOL *	1.131	------	> 22.00			>95040	1977	MA005
		1.25			73.8		3.079	1.251	WOL *	1.151	------	> 21.90			>95040	1977	MA005
T7651	P	1.25	R.T.	T-L	77.0	JP-4 FUEL	3.087	1.252	WOL *	1.156	------	> 22.50			>95040	1977	MA005
T7651	P	1.25	R.T.	T-L	77.0	SIM. SEA WATER	3.087	1.251	WOL *	1.101	------	> 22.30			>95040	1977	MA005
		1.25			77.0		3.086	1.252	WOL *	1.091	------	> 22.30			>95040	1977	MA005

*NOTE-DATA WHICH DO NOT MEET MINIMUM SPECIMEN THICKNESS REQUIREMENTS OF 2.5(KISCC/TYS)SQUARED

TABLE 8.8.1.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050 (ALCLAD)

TEST CONDITIONS

SPECIMEN ORIENTATION T-L

ENVIRONMENT L H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T76	SHEET	0.00	13.30				4.66			
T76	SHEET	0.33	13.30				6.90			
T76	SHEET	0.67	13.30			1.70	2.35			

TABLE 8.8.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050 (ALCLAD)

TEST CONDITIONS

SPECIMEN ORIENTATION L-T

ENVIRONMENT H H A AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE) 2.5	5	10	20	50	100
T76	SHEET	0.00	13.30				8.03			
T76	SHEET	0.33	13.30			1.51	13.7			
T76	SHEET	0.67	13.30			2.47	27.7			

TABLE 8.8.1.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF THE STRESS-INTENSITY FACTOR

ALUMINUM 7050 (ALCLAD)

TEST CONDITIONS

SPECIMEN ORIENTATION: T L

ENVIRONMENT: SALT FOG AT R T

CONDITION/HT	PRODUCT FORM	STRESS RATIO	FREQ (HZ)	DELTA K LEVELS (KSI SQRT(IN))	FATIGUE CRACK GROWTH RATES (MICRO IN/CYCLE)					
					2 5	5	10	20	50	100
T76	SHEET	0 00	13 30				11 6			
T76	SHEET	0 33	13 30				21 4			
T76	SHEET	0 67	13 30			4 82	39 0			

TABLE 8.8.2.1

ALUMINUM 7050 (ALCLAD) K(C)

CONDITION	PRODUCT FORM	PRODUCT THICK (IN)	TEST TEMP (F)	SPEC OR	YIELD STR (KSI)	SPECIMEN WIDTH (IN) W	SPECIMEN THICK (IN) B	CRACK LENGTH INIT (IN) 2A(O)	CRACK LENGTH FINAL (IN) 2A(F)	GROSS STRESS ONSET (KSI) S(O)	GROSS STRESS MAX (KSI) S(MAX)	K(APP) (KSI*SQRT IN)	K(APP) MEAN	K(APP) STAN DEV	K(C) (KSI*SQRT IN)	K(C) MEAN	K(C) STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T76	S	0.06	R T	L-T	67.2	8.130	0.062	2.670	4.090	---	37.50	82.50*			113.50*			1982	LG002
		0.06			67.2	8.130	0.062	2.670	3.920	---	37.40	82.20*			108.70*			1982	LG002
		0.06			67.2	8.130	0.063	2.670	3.960	---	37.90	83.40*			101.90*			1982	LG002
T76	S	0.06	R T	L-T	67.2	12.030	0.062	3.990	5.410	---	33.70	90.70			112.70*			1982	LG002
		0.06			67.2	12.050	0.062	4.030	5.640	---	35.30	95.70	93.2/	3.5	122.10*	----/	---	1982	LG002
T76	S	0.06	R T	L-T	67.2	20.020	0.062	6.650	8.070	---	27.40	95.00			108.70			1982	LG002
		0.06			67.2	20.070	0.063	6.560	8.730	---	28.40	97.60	96.3/	1.8	119.40	114.1/	7.6	1982	LG002
T76	S	0.09	R T	L-T	66.9	8.120	0.087	2.700	3.860	---	35.10	77.60			100.80*			1982	LG002
		0.09			66.9	8.120	0.088	2.680	3.860	---	34.30	75.40			98.50*			1982	LG002
		0.09			66.9	8.120	0.088	2.660	4.020	---	34.80	76.30	76.4/	1.1	103.70*	----/	---	1982	LG002
T76	S	0.09	R T	L-T	66.9	12.100	0.087	3.990	5.590	---	31.70	85.30			108.80*			1982	LG002
		0.09			66.9	12.110	0.088	4.030	6.090	---	31.60	85.60			116.80*			1982	LG002
		0.09			66.9	12.120	0.088	3.980	5.850	---	31.30	83.90	84.9/	0.9	111.50*	----/	---	1982	LG002
T76	S	0.09	R T	L-T	66.9	20.140	0.088	6.600	10.030	---	28.80	99.50			136.00*			1982	LG002
		0.09			66.9	20.170	0.088	6.650	9.760	---	30.50	105.70	102.6/	4.4	140.40*	----/	---	1982	LG002

*NOTE- NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STD. DEV.

TABLE 8.8.3.1

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.8.3.1 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL ALUMINUM 7050 (ALCLAD)
CONDITION T76

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A	B	C	D
			E= R.T. L.H.A.	E= R.T. H.H.A.	E= R.T. SALT FOG	
DELTA K MIN	A:	5.02	.763			
	B:	4.99		1.50		
	C:	5.11			2.27	
	D:					
		5.00		1.51		
		6.00	1.77	2.76	4.74	
		7.00	2.91	4.55	8.28	
		8.00	4.05	6.93	12.3	
		9.00	5.31	9.97	16.7	
		10.00	6.90	13.7	21.4	
		13.00	17.6	29.4	39.3	
DELTA K MAX	A:	14.99	39.6			
	B:	14.43		39.2		
	C:	14.62			53.3	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			12.44	8.41	10.79	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	2	2	2	
		1.25-2.0				
		>2.0				

CONDITION/HT: T76
FORM: Ø.Ø3- Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +Ø.33
FREQUENCY: 13.3Ø HZ

YIELD STRENGTH: 65.1- 67.7 KSI
ULT. STRENGTH: 74.2- 76.2 KSI
SPECIMEN THK: Ø.Ø24- Ø.122"
SPECIMEN WIDTH: 3.999- 4.ØØ1"
REFERENCES:ALØ12

ALUM. ALLOY

7Ø5Ø (ALCLAD)

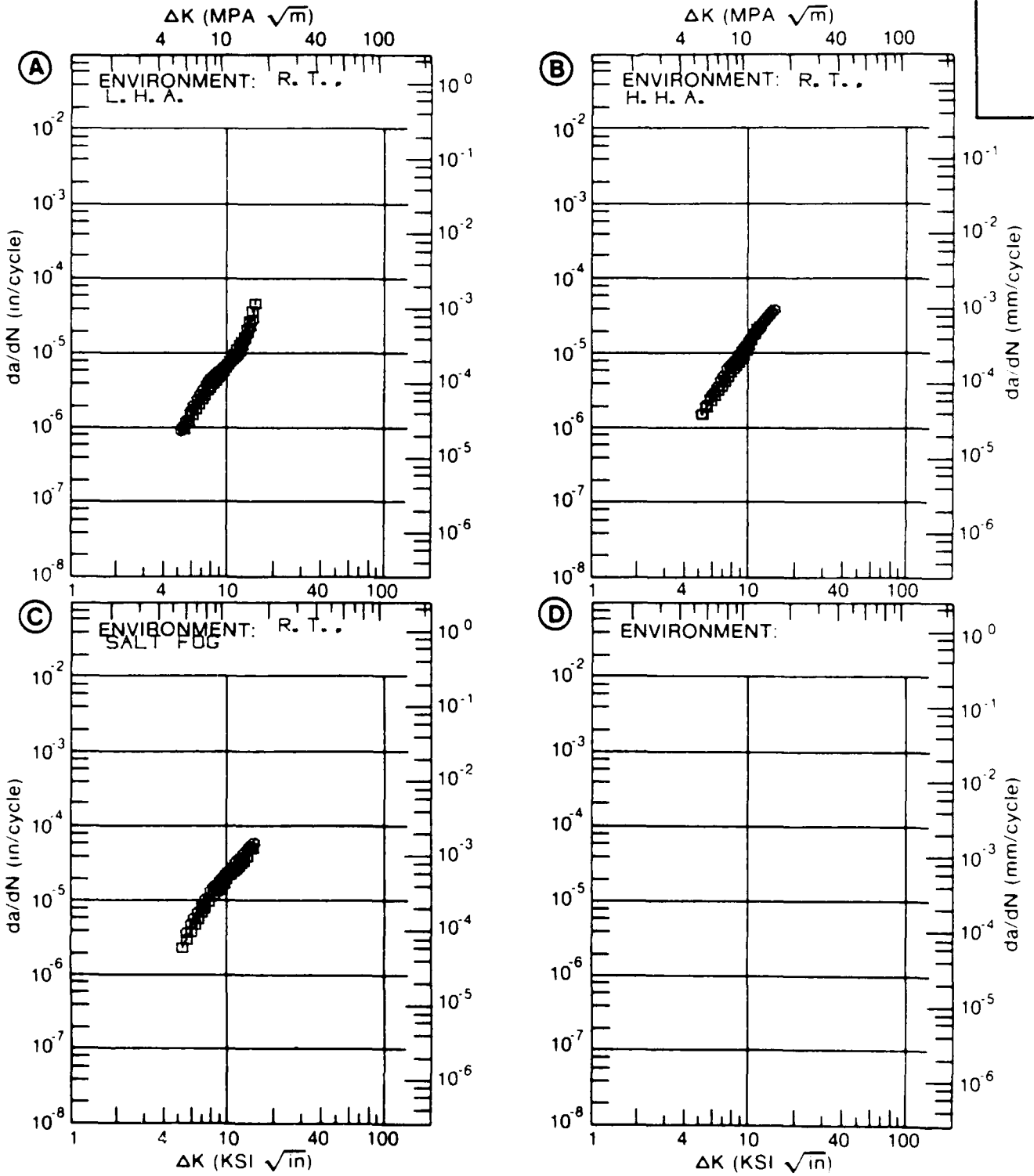

Figure 8.8.3.1

TABLE 8.8.3.2

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.8.3.2 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050(ALCLAD)
CONDITION: T76

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE)			
			A	B	C	D
			E= R.T. L.H.A.	E= R.T. H.H.A.	E= R.T. SALT FOG	
DELTA K MIN	A:	5.07	.729			
	B:	5.08		1.51		
	C:	5.70			4.90	
	D:					
		6.00	1.69	2.85	5.92	
		7.00	3.06	4.82	10.0	
		8.00	4.63	7.33	15.2	
		9.00	6.35	10.4	21.3	
		10.00	8.19	14.0	28.1	
		13.00	15.3	29.4	51.6	
		16.00	27.4			
DELTA K MAX	A:	16.45	30.0			
	B:	14.28		38.5		
	C:	14.10			60.8	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			4.79	2.06	2.81	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T76
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: L-T
STRESS RATIO: +Ø.33
FREQUENCY: 13.ØØ HZ

YIELD STRENGTH: 67.3 KSI
ULT. STRENGTH: 75.2 KSI
SPECIMEN THK: Ø.121"
SPECIMEN WIDTH: 4.ØØ1"
REFERENCES:ALØ12

ALUM. ALLOY

7Ø5Ø (ALCLAD)

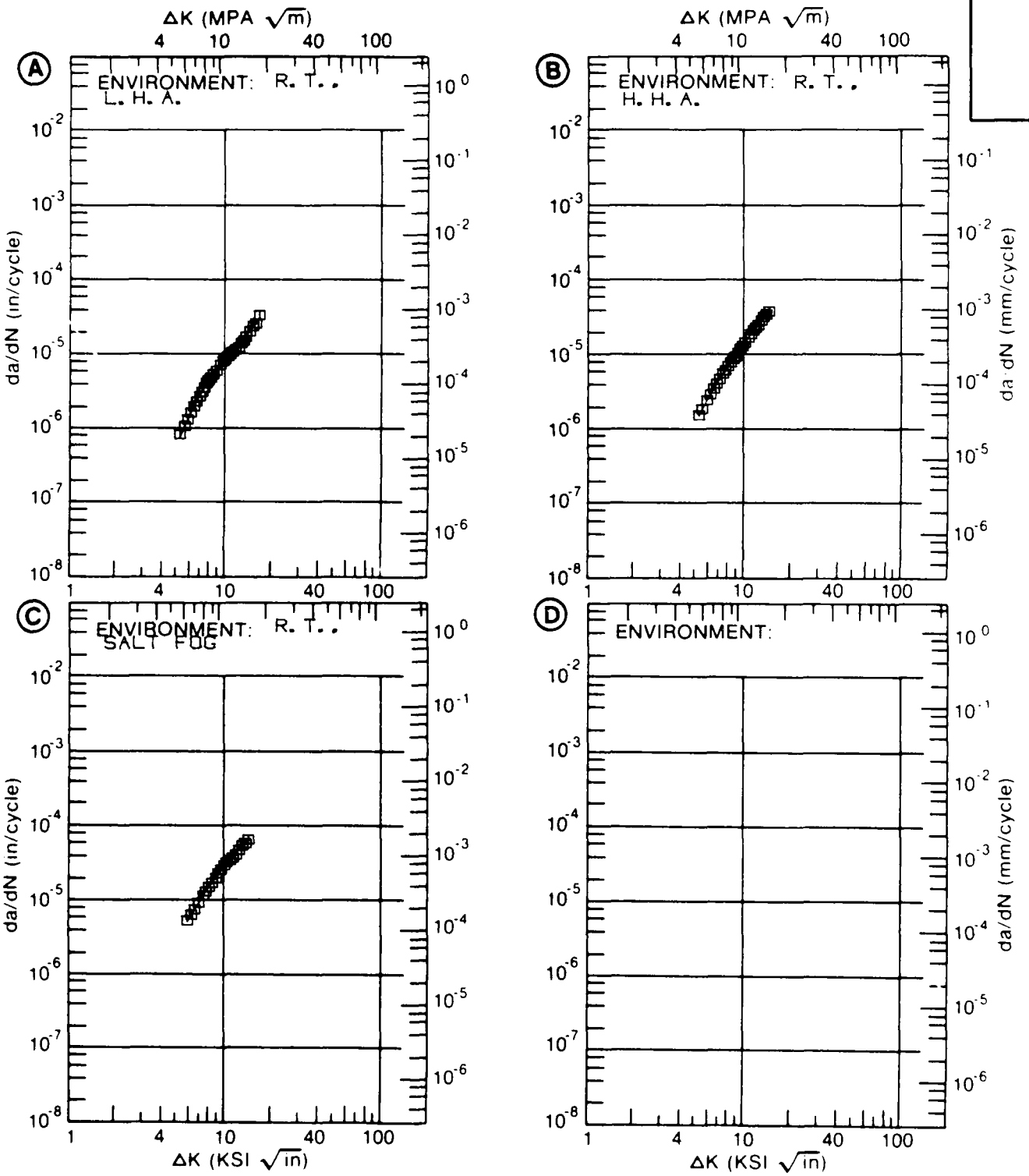

Figure 8.8.3.2

TABLE 8.8.3.3

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.8.3.3 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050 (ALCLAD)
CONDITION: T76

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	5.75	.541			
	B:	5.77		.944		
	C:	5.81			1.99	
	D:					
		6.00	.695	1.19	2.27	
		7.00	1.49	2.43	4.07	
		8.00	2.49	3.95	6.27	
		9.00	3.56	5.81	8.79	
		10.00	4.66	8.03	11.6	
		13.00	8.01	16.5	22.0	
		16.00	12.3	27.0	36.8	
DELTA K MAX	A:	16.45	13.1			
	B:	16.53		29.1		
	C:	16.50			39.9	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			5.27	3.32	4.58	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T76
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +Ø.ØØ
FREQUENCY: 13.3Ø HZ

YIELD STRENGTH: 67.7 KSI
ULT. STRENGTH: 76.2 KSI
SPECIMEN THK: Ø.121"
SPECIMEN WIDTH: 4.ØØ1- 4.ØØ2"
REFERENCES:ALØ12

ALUM. ALLOY

7Ø5Ø (ALCLAD)

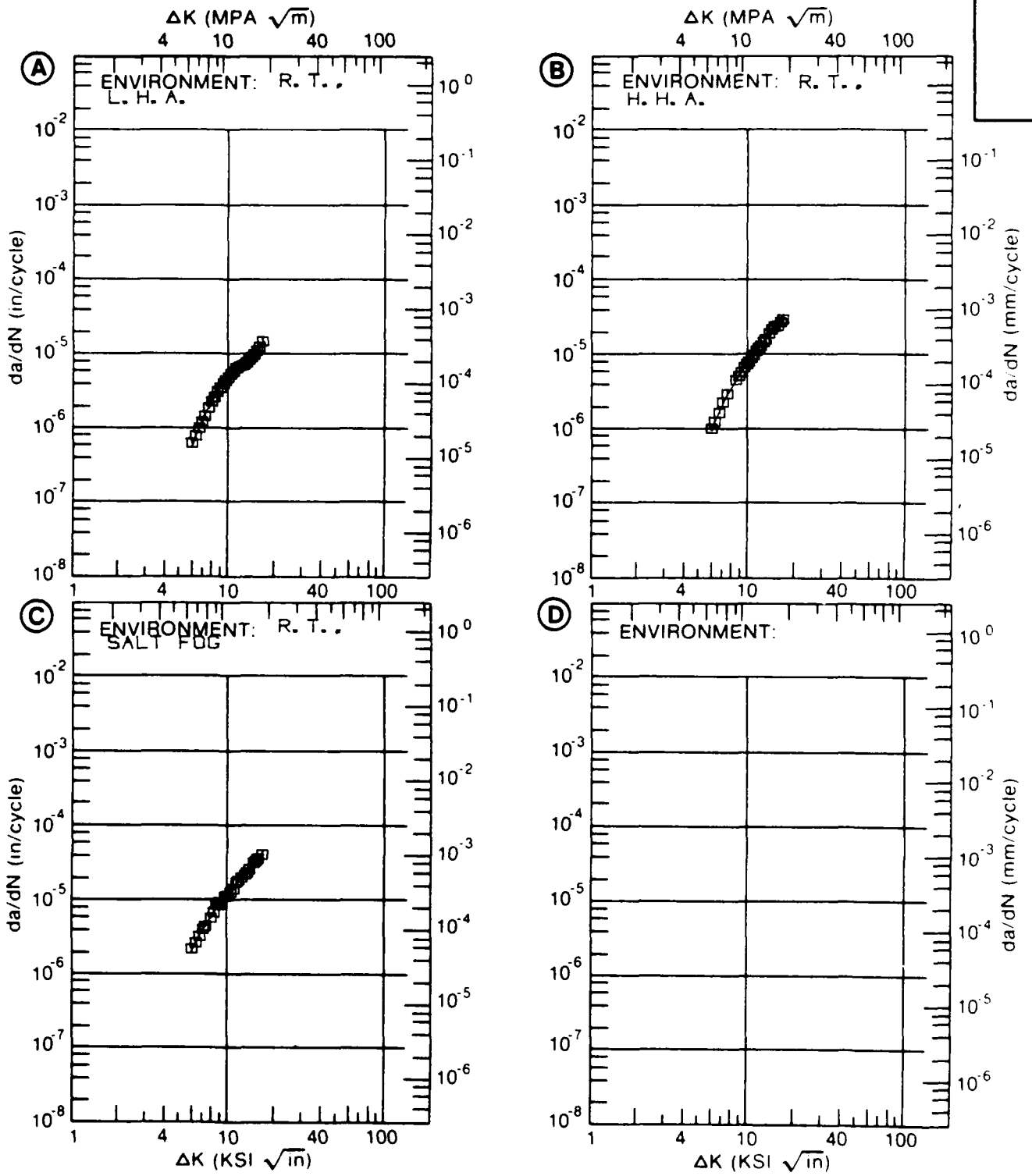

Figure 8.8.3.3

TABLE 8.8.3.4

FATIGUE CRACK GROWTH RATES AT DEFINED LEVELS
OF STRESS INTENSITY FACTOR

DATA ASSOCIATED WITH FIGURE 8.8.3.4 INDICATING EFFECT

OF ENVIRONMENT

MATERIAL: ALUMINUM 7050(ALCLAD)
CONDITION: T76

DELTA K (KSI*IN**1/2)			DA/DN (10**-6 IN./CYCLE) A E= R.T. L.H.A.	B E= R.T. H.H.A.	C E= R.T. SALT FOG	D
DELTA K MIN	A:	3.41	.410			
	B:	3.56		.714		
	C:	3.51			1.06	
	D:					
		3.50	.453			
		4.00	.750	1.10	1.81	
		5.00	1.70	2.47	4.82	
		6.00	3.31	4.69	9.39	
		7.00	5.85	8.01	14.8	
		8.00	9.70	12.7	21.2	
		9.00	15.4	19.1	29.0	
		10.00	23.5	27.7	39.0	
DELTA K MAX	A:	10.22	25.7			
	B:	10.18		29.5		
	C:	10.50			45.2	
	D:					
ROOT MEAN SQUARE PERCENT ERROR			4.32	2.80	4.27	
LIFE PREDICTION RATIO SUMMARY (NP/NA)		0.0-0.5				
		0.5-0.8				
		0.8-1.25	1	1	1	
		1.25-2.0				
		>2.0				

CONDITION/HT: T76
FORM: Ø.13"TH SHEET
SPECIMEN TYPE: CCP
ORIENTATION: T-L
STRESS RATIO: +Ø.67
FREQUENCY: 13.3Ø HZ

YIELD STRENGTH: 67.7 KSI
ULT. STRENGTH: 76.2 KSI
SPECIMEN THK: Ø.121- Ø.122"
SPECIMEN WIDTH: 4.ØØ1"
REFERENCES:ALØ12

ALUM. ALLOY

7Ø5Ø (ALCLAD)

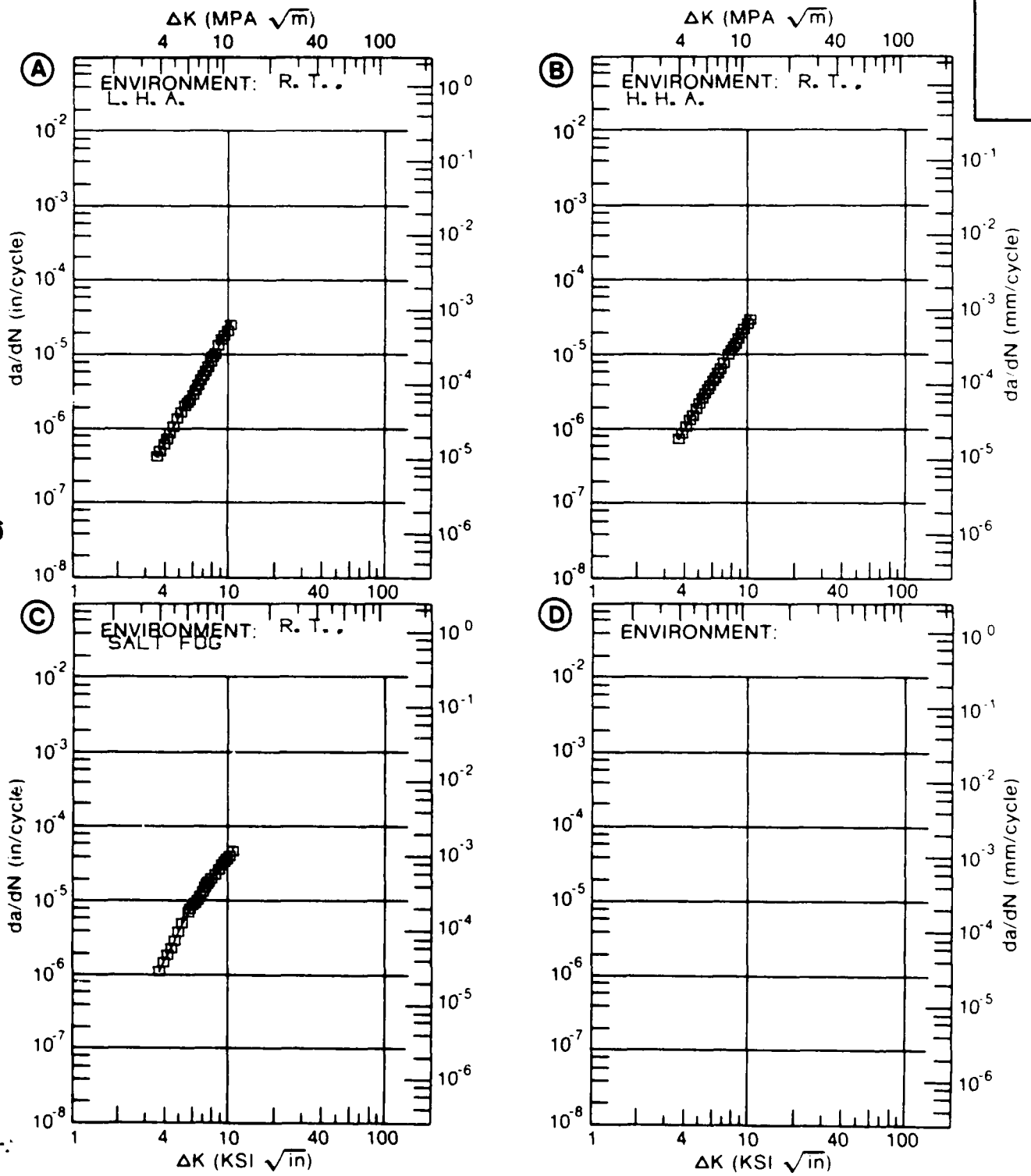

Figure 8.8.3.4