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ASTIA 297803

DETERMINATION OF DESIGN DATA FOR HEAT TREATED TITANIUM ALLOY SHEET

Volume 3. Tables of Data Collected

TECHNICAL DOCUMENTARY REPORT NO. ASD-TDR-62-335
VOLUME 3

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Directorate of Materials and Processes
Aeronautical Systems Division
Air Force Systems Command
Wright-Patterson Air Force Base, Ohio

Project No. 7381, Task No. 738103

(Prepared under Contract No. AF 33(616)-6346
by the Lockheed-Georgia Company, Marietta, Georgia)

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FOREWORD

The final Technical Engineering Report covering all work performed under Contract No. AF 33(616)-6346 from 31 March 1959 to 31 March 1962 is divided into four volumes, as follows:

Volume 1 - Summary of mechanical and physical property data collected, including creep and fatigue.

Volume 2a - Details of data collection program. Test techniques and results for tension, compression, bearing, shear, crippling, joints, and physical properties.

Volume 2b - Test techniques and results for creep and fatigue.

Volume 3 - Tables of data collected.

This work was primarily conducted by the Structural Research Department, Engineering Research Laboratory of Lockheed-Georgia Company, a Division of Lockheed Aircraft Corporation. The contract was initiated under Project No. 7381, "Materials Application," Task No. 738103, "Data Collection and Correlation." It was monitored by the Metals and Ceramics Laboratory, Directorate of Materials and Processes, Deputy for Technology, Aeronautical Systems Division, Wright-Patterson Air Force Base, Ohio. Captain R. G. Henning and Mr. A. W. Brisbane were the project engineers.

Lockheed-Georgia Company supervision was provided by Mr. D. C. Cumro, Structural Research Department Engineer.

ABSTRACT

Mechanical and physical property data, necessary to fulfill the requirements of Phase II of the Department of Defense Titanium Alloy Sheet Rolling Program, were obtained for selected solution treated and aged titanium alloys in sheet form.

Four alloys were investigated: B120VCA (Ti-13V-11Cr-3Al), Ti-6Al-4V, Ti-2.5Al-16V and Ti-4Al-3Mo-1V. They were supplied by the producers in the heat treated condition from three or more heats and three thicknesses of each alloy. Static mechanical property data for tension, compression, bearing, shear and crippling; creep and rupture data for tension, compression, bearing and shear; and axial-load fatigue data were obtained at room and elevated temperatures. Fastener and weld joint data from -320°F to 80°F and physical properties from -420°F to 1200°F were obtained.

Volume I summarizes mechanical and physical properties in a form consistent with those given in MIL-HDBK-5. Experimental procedures and test results for static mechanical properties and physical properties are reported in Volume 2a. Volume 2b contains procedures and results for creep and fatigue tests and Volume 3 is a tabular compilation of all data obtained in the program.

This technical documentary report has been reviewed and is approved.

W. J. TRAPP
Chief, Strength and Dynamics Branch
Metals and Ceramics Laboratory
Directorate of Materials and Processes

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I - INTRODUCTION

In the mid 1950's, the Department of Defense organized an integrated program to accelerate the development of high strength titanium alloy sheet for use in the design of advanced aircraft and missile systems. This program, the Titanium Alloy Sheet Rolling Program, was coordinated and administered by the Bureau of Aeronautics, Department of the Navy. The Materials Advisory Board of the National Academy of Sciences was requested to establish a panel to act in an advisory capacity to the Bureau of Aeronautics, and did so with individuals selected from research organizations and academic institutions, from the titanium producing industry and from various aircraft companies. Liaison representatives were provided to the Panel by the various governmental agencies concerned with titanium alloy development. The first meeting of the Materials Advisory Board Titanium Alloy Sheet Rolling Panel was held on June 5 and 6, 1956 in Washington, D. C. At this meeting a three phase program was outlined. Phases I and III were concerned with manufacturing development and material evaluation, respectively. Phase II, with which the present work is concerned, was defined as Design Data Accumulation and was directed toward the development of mechanical property data applicable to design uses for the heat-treated titanium alloys. The initiation of work on Phase II was delayed in order for manufacturing development to progress sufficiently to establish consistent processing techniques which would make sheet material, having uniform properties, available for testing. Work commenced on Phase II of the DOD TASRP on 31 March 1959.

General

The program for collection of design data summarized in this report was divided into four basic phases as follows:

1. Phase I, "Static Properties" - room and elevated temperature data for short-time tension, compression, bearing, shear and crippling; effect of long-time temperature exposure on tensile properties.

2. Phase II, "Creep-Rupture Properties" - creep and rupture properties for tension and bearing; creep properties for compression; and rupture properties for shear.

3. Phase III, "Fatigue Properties" - axial-load tension-tension and tension-compression fatigue data at room and elevated temperatures for various stress ratios and stress concentration factors.

4. Phase IV, "Physical and Joint Properties" - measurement of specific heat, thermal coefficient of expansion and thermal conductivity from -420°F to 1200°F; strength data for mechanical and welded joints from -320°F to 80°F.

Manuscript released on May 30, 1962 for publication as an ASD Technical Documentary Report.

Four titanium alloys, B120VCA(Ti-13V-11Cr-3Al), Ti-6Al-4V, Ti-2.5Al-16V and Ti-4Al-3Mo-1V, supplied by the producers in solution-treated and aged condition from DOD stock were evaluated. The material was from three nominal thicknesses and several heats of each alloy and was specified to meet the requirements of quality, interstitial limits and strength established by the Materials Advisory Board. However, some of the required material was unavailable from producer's current supplies and it was necessary to substitute early DOD sheet, commercial sheet and reheat-treated sheet. For certain test conditions requiring forming and welding the material was received in the solution-treated condition and was subsequently aged by Lockheed. The testing procedures employed in this program followed the recommendations of the MAB Subpanel on Uniform Procedures for Structural Design Data Collection. Members of this subpanel acted in a consulting capacity during the course of data collection.

Volume 3

The final engineering report is presented in four volumes. This volume presents a tabular compilation of the data acquired as a result of the program for collection of design data for the four titanium alloys.

II - SUMMARY

Mechanical and physical property data are tabulated for three thicknesses and several heats of solution treated and aged B120VCA, Ti-6Al-4V, Ti-2.5Al-16V and Ti-4Al-3Mo-1V. Ten room-temperature tests and three tests at each of the specified elevated temperatures were conducted to obtain the tensile, compressive, bearing, single shear and double shear data presented for each material variable. Tensile, compressive, bearing, single shear and double shear creep-rupture properties were determined for all alloys except B120VCA and times to reach various deformations and rupture at numerous stress levels are tabulated. The included fatigue data are the results of room and elevated temperature evaluations at two stress concentrations and three stress ratios. Fastener joint, weld joint and tensile properties are presented for one thickness of each alloy for a -320°F to 80°F temperature range. Also included are the results of thermal expansion measurements over a temperature range of -453°F to 1200°F and thermal conductivity measurements from 300°F to 1200°F.

These data are segregated herein according to type, thickness, grain direction and temperature for each alloy and average values are presented where practicable.

The following table summarizes the program as to test types, test conditions, properties determined, and the report volume or volumes in which specific information may be found.

SUMMARY OF TESTS CONDUCTED AND DATA REPORTED

(a) PHASE I

Alloys: B1900+Hf, 6A1-4V, 8.5A1-1Mo, 6A1-2Sn-4Zr Sheets/Alloy - 3(1) Grain Direction - Longitudinal and Transverse	Thickness, In.			Temperature, °F							Reported in Volume
	0.020	0.063	0.125	RT	600	700	800	900	1000	1200	
TENSILE											
1. Ultimate and yield strengths	X	X	X	X	X	X	X	X	X	X	1, IIa and 3
2. Elastic moduli	X	X	X	X	X	X	X	X	X	X	1, IIa and 3
3. Elongations	X	X	X	X	X	X	X	X	X	X	1, IIa and 3
4. Poisson's Ratio		X		X	X	X	X	X	X	X	IIa
5. Tangent moduli	X	X	X	X	X	X	X	X	X	X	1
6. Stress-strain curves	X	X	X	X	X	X	X	X	X	X	1
COMPRESSION											
1. Yield strengths		X	X	X	X	X	X	X	X	X	1, IIa and 3
2. Elastic moduli		X	X	X	X	X	X	X	X	X	1, IIa and 3
3. Creep and tangent moduli		X	X	X	X	X	X	X	X	X	1
4. Stress-strain curves		X	X	X	X	X	X	X	X	X	1
5. Ramberg-Osgood parameters		X	X	X	X	X	X	X	X	X	1
BEARING (e/D = 1.5 and e/D = 2.0, D = 1/8 inch)											
1. Ultimate and yield strengths	X			X	X	X	X	X	X	X	IIa and 3
BEARING (e/D = 1.5 and e/D = 2.0, D = 5/16 inch)											
1. Ultimate and yield strengths	X			X	X	X	X	X	X	X	IIa and 3
BEARING (e/D = 1.5 and e/D = 2.0, D = 5/16 inch)											
1. Ultimate and yield strengths	X	X	X	X	X	X	X	X	X	X	1, IIa and 3
SHEAR CREEP											
1. Ultimate strengths	X	X	X	X	X	X	X	X	X	X	1, IIa and 3
DOUBLE SHEAR											
1. Ultimate strengths			X	X	X	X	X	X	X	X	IIa and 3
BEARING											
1. Critical crippling stresses		X		X	X	X	X	X	X	X	IIa
2. Compressive yield stresses		X		X	X	X	X	X	X	X	IIa
3. Compressive elastic moduli		X		X	X	X	X	X	X	X	IIa
4. Ramberg-Osgood parameters		X		X	X	X	X	X	X	X	IIa

(b) PHASE II

Alloys: 6A1-4V, 8.5A1-1Mo, 6A1-2Sn-4Zr Grain Direction - Longitudinal (T)	Sheets per Alloy	Thickness, In.	Temperature, °F					Reported in Volume
			500	600	700	800	900	
TENSILE CREEP-RUPTURE								
1. Strain-time curves	3	0.063	X	X	X	X	X	IIa
2. Stress and time to rupture and to various strains	3	0.063	X	X	X	X	X	1, IIa and 3
3. Larson-Miller plots	3	0.063		X	X	X		IIa
CONPRESSIVE CREEP								
1. Strain-time curves	1	0.063		X	X	X		IIa
2. Stress and time to various strains	1	0.063		X	X	X		IIa and 3
SHEARING CREEP-RUPTURE								
1. Strain-time curves	1	0.063		X	X	X		IIa
2. Stress and time to rupture and to various strains	1	0.063		X	X	X		IIa and 3
BEARING CREEP-RUPTURE								
1. Stress and time to rupture	3	0.063 0.125		X	X	X		IIa and 3

(c) PHASE III

Alloys: 6A1-4V, 8.5A1-1Mo, 6A1-2Sn-4Zr Sheets/Alloy - 3 to 5 Grain Direction - Longitudinal Thickness, In. - 0.020, 0.063, 0.125	Stress Concentration		Temperature, °F					Reported in Volume
	1.0	2.0	RT	400	600	800	900	
AXIAL-LOAD FATIGUE								
1. Cycles to failure at								
a. Stress Ratio = -1.0	X	X	X	X	X	X	X	3
b. Stress Ratio = 0.0	X	X	X	X	X	X	X	3
c. Stress Ratio = 0.5	X	X	X	X	X	X	X	3
d. Stress Ratio = 0.9	X	X				X	X	IIa
2. S-N Curves	X	X	X	X	X	X	X	IIa
3. Alternating vs mean stress diagrams	X	X	X	X	X	X	X	1

(d) PHASE IV

Alloys: B1900+Hf, 6A1-4V, 8.5A1-1Mo, 6A1-2Sn-4Zr Sheets per Alloy: 4 Grain Direction-Longitudinal and Transverse(3)	Thickness, In.		Temperature, °F					Reported in Volume
	0.063	0.125	-300	-200	-100	-65	RT	
PREVIOUS ALLOYS IN PHASE IV								
1. Ultimate and yield strengths	X		X	X	X	X	X	IIa and 3
NEW ALLOYS IN PHASE IV								
1. Ultimate and yield strengths	X		X	X	X	X	X	IIa and 3
2. Elastic moduli	X		X	X	X	X	X	IIa and 3
3. Elongations	X		X	X	X	X	X	IIa and 3
4. Joint efficiencies	X		X	X	X	X	X	3
PHASE V								
1. Ultimate and yield strengths	X		X	X	X	X	X	IIa and 3
2. Elastic moduli	X		X	X	X	X	X	IIa and 3
3. Elongations	X		X	X	X	X	X	IIa and 3
4. Stress-strain curves	X		X	X	X	X	X	IIa
THERMAL EXPANSION		X	-450°F to 1200°F					IIa and 3
THERMAL CONDUCTIVITY		X	-450°F to 1000°F					IIa and 3
SPECIFIC HEAT		X	-450°F to 1200°F					IIa

(1) Only one heat was tested for 0.020 inch Ti-6A1-4V.
(2) Tensile creep-rupture was conducted on one heat of each alloy in the transverse direction at 600, 700 and 800°F.
(3) Thermal expansion and thermal conductivity specimens were in the longitudinal direction only.

III - TABLES FOR B120VCA

TABLE I

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.020 INCH
HEAT NUMBER— B6392

TEST TEMP °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.
RT	A11A1-1	189,000	179,000	16.3×10^6	2.0	10	-	A1TA1-1	192,000	179,000	16.7×10^6	2.0	8	12
	-4	178,000	168,000	15.9	2.5	12	20	-4	182,000	165,000	16.2	2.2	8	12
	-7	175,000	172,000	15.9	0.8	8	12	-7	190,000	175,000	16.2	2.2	10	12
	-10	162,000	158,000	15.6	1.0	4	8	-10	184,000	169,000	16.4	2.5	8	12
	-13	178,000	178,000	15.3	1.0	4	8	-13	181,000	181,000	16.1	1.0	4	8
	-16	171,000	-	16.3	0.8	6	12(1)	-16	187,000	180,000	16.0	1.0	6	8
	-19	177,000	167,000	15.9	1.0	4	12	-19	178,000	171,000	16.1	1.0	8	12
	-22	178,000	178,000	16.0	1.0	6	12	-22	188,000	173,000	15.7	2.0	4	8
	-25	173,000	162,000	13.8	2.5	6	-	-25	197,000	182,000	15.8	3.0	6	-
	-28	174,000	164,000	15.4	1.5	4	8	-28	183,000	171,000	15.3	3.0	10	-
	Average	176,000	168,000	15.6	1.4	6	12	Average	186,000	175,000	16.0	2.0	7	10
500	A11A2-6	176,000	152,000	15.2×10^6	7.0	16	16	A1TA2-6	171,000	151,000	15.3×10^6	7.0	16	20
	-13	187,000	165,000	15.7	5.0	8	12	-13	185,000	160,000	16.0	6.0	10	16
	-15	183,000	160,000	15.4	6.0	8	12	-15	178,000	159,000	15.3	5.5	8	12
	Average	182,000	159,000	15.4	6.0	11	13	Average	178,000	157,000	15.5	6.2	11	16
400	A11A3-8	178,000	151,000	14.8×10^6	3.0	8	16	A1TA3-8	167,000	143,000	15.4×10^6	7.0	16	20
	-16	175,000	151,000	15.0	6.0	10	24	-16	172,000	153,000	15.5	5.5	26	40
	-18	175,000	150,000	15.4	7.5	22	40	-18	175,000	150,000	15.5	6.5	16	28
	Average	176,000	151,000	15.1	5.5	13	27	Average	171,000	149,000	15.5	6.3	19	29
RT	A11A4-1	168,000	151,000	13.9×10^6	3.5	12	12	A1TA4-1	164,000	137,000	14.4×10^6	5.5	12	28
	-9	169,000	150,000	14.4	5.0	12	28	-9	161,000	134,000	14.5	6.5	20	28
	-12	175,000	154,000	14.3	5.0	12	20	-12	174,000	145,000	15.0	5.0	14	-
	Average	171,000	151,000	14.2	4.5	12	20	Average	166,000	139,000	14.6	5.7	15	28
600	A11A6-10	155,000	131,000	12.9×10^6	6.0	10	12	A1TA6-10	162,000	135,000	13.5×10^6	7.0	12	20
	-14	148,000	130,000	12.9	4.5	8	12	-14	164,000	135,000	14.0	5.0	8	20
	-17	163,000	136,000	12.8	8.5	-	-	-17	161,000	135,000	13.7	7.0	16	28
	Average	155,000	132,000	12.9	6.3	9	12	Average	162,000	135,000	13.7	6.3	12	23
800	A11A7-2	148,000	131,000	12.7×10^6	10.0	20	32	A1TA7-2	144,000	126,000	13.4×10^6	12.0	28	40
	-3	151,000	124,000	12.5	13.0	28	36	-3	142,000	124,000	13.4	11.0	28	44
	-5	142,000	120,000	12.0	14.0	18	32	-5	146,000	126,000	13.4	13.5	32	50
	Average	147,000	125,000	12.4	12.3	22	33	Average	143,000	125,000	13.4	12.2	29	41
1000	A11A8-4	108,000	93,000	11.6×10^6	25.0	60	76	A1TA8-4	106,000	98,100	11.9×10^6	38.0	80	92
	-7	97,200	85,700	11.6	12.0	28	52	-7	107,000	96,800	12.3	28.0	66	80
	-11	97,400	90,000	11.3	26.0	64	68	-11	107,000	96,100	13.2	24.0	56	76
	Average	97,300	89,200	11.5	21.0	51	72	Average	107,000	97,000	12.5	30.0	67	83

(1) Failed prior to reaching yield deformation

TABLE II

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.020 INCH
HEAT NUMBER— R0701

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.
80	Al1A1-1	182,000	171,000	15.9×10^6	2.2	6	12	Al1A1-1	184,000	167,000	16.1×10^6	4.5	10	-(2)
	-4	181,000	172,000	15.6	1.0	4	4	-4	180,000	166,000	16.0	2.0	6	12
	-7	177,000	171,000	15.4	1.0	8	12	-7	177,000	164,000	16.2	2.0	8	12
	-13	182,000	179,000	15.8	0.5	4	8	-10	173,000	165,000	16.0	1.5	6	8
	-16	172,000	170,000	15.5	1.0	6	8	-12	187,000	183,000	16.5	1.0	4	8
	-19	184,000	178,000	15.8	-	-	-(1)	-16	182,000	180,000	16.2	1.0	8	12
	-25	198,000	184,000	15.6	2.0	6	12	-19	197,000	184,000	16.4	2.5	8	12
	-28	188,000	182,000	15.9	3.0	-	-	-22	189,000	180,000	16.0	1.5	8	12
	-30	188,000	176,000	15.4	5.0	10	12	-25	196,000	189,000	16.3	1.0	4	-
	-31	187,000	169,000	15.1	5.0	12	16	-28	200,000	181,000	16.0	3.0	8	12(2)
	Average	184,000	175,000	15.6	2.3	7	10	Average	186,000	176,000	16.2	2.0	7	11
200	Al1A2-6	170,000	148,000	15.3×10^6	8.0	12	24	Al1A2-6	165,000	147,000	15.6×10^6	6.0	18	24
	-13	180,000	157,000	15.7	6.0	10	20	-13	181,000	161,000	16.6	6.0	10	20
	-15	179,000	157,000	15.7	7.0	18	24	-15	179,000	160,000	16.4	6.5	8	12
	Average	176,000	154,000	15.6	7.0	13	23	Average	175,000	156,000	16.2	6.2	12	19
400	Al1A3-4	174,000	148,000	14.7×10^6	5.0	12	20	Al1A3-8	164,000	140,000	15.6×10^6	8.5	24	28
	-8	174,000	147,000	14.9	8.0	14	24	-18	174,000	151,000	15.0	6.5	14	16
	-18	173,000	153,000	14.7	4.5	18	28	-19	166,000	143,000	15.2	8.0	16	24
	Average	174,000	149,000	14.8	5.8	15	24	Average	168,000	145,000	15.3	7.7	18	23
600	Al1A4-1	170,000	142,000	14.9×10^6	4.5	14	20	Al1A4-1	162,000	134,000	15.3×10^6	8.0	18	-(3)
	-12	169,000	140,000	14.8	6.5	12	-	-9	155,000	130,000	14.4	7.5	18	-
	-16	160,000	133,000	14.2	6.5	-	-	-16	169,000	144,000	14.8	5.0	-	-
	Average	166,000	138,000	14.6	5.8	13		Average	162,000	136,000	14.8	6.8	18	
800	Al1A6-10	160,000	135,000	12.6×10^6	4.5	16	-	Al1A6-10	160,000	134,000	13.7×10^6	6.0	16	20
	-14	161,000	136,000	12.3	-	-	-	-14	160,000	136,000	14.0	7.0	20	36
	-17	162,000	135,000	13.0	6.0	-	-	-20	154,000	128,000	13.8	9.0	22	32
	Average	161,000	135,000	12.6	5.3			Average	158,000	133,000	13.8	7.3	19	29
900	Al1A7-2	146,000	127,000	12.7×10^6	11.5	24	28	Al1A7-2	143,000	122,000	13.2×10^6	12.5	30	52
	-3	136,000	118,000	12.9	12.0	28	40	-3	142,000	120,000	13.1	13.5	28	32
	-5	146,000	121,000	12.4	10.0	18	28	-5	139,000	121,000	13.3	13.0	38	48
	Average	143,000	122,000	12.7	11.2	23	32	Average	141,000	121,000	13.2	13.0	32	44
1000	Al1A8-7	115,000	90,900	11.9×10^6	-	-	-(1)	Al1A8-4	103,000	92,900	12.0×10^6	42.0	88	92
	-9	92,400	76,000	11.4	-	-	-(1)	-7	109,000	105,000	12.2	38.0	88	92
	-11	131,000	102,000	12.8	16.0	40	-	-11	113,000	101,000	12.1	33.0	92	116
	Average	112,800	89,600	12.0				Average	108,000	99,600	12.1	37.7	89	110

(1) Failed outside gage marks.
(2) Failed within 1/4 inch of fillet.
(3) Failed at knife edge.

TABLE III

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.020 INCH
HEAT NUMBER— B6788

TEST TEMP °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN			SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN		
					2 IN.	¼ IN.	½ IN.					2 IN.	¼ IN.	½ IN.
80	A7LA1-1	198,000	186,000	16.0×10^6	2.5	12	18	A7TA1-1	200,000	-	-	2.5	4.0	8(4)
	-4	183,000	174,000	15.6	3.0	10	-	-4	198,000	187,000	16.6×10^6	3.0	6.0	16
	-7	200,000	187,000	15.9	4.0	12	28(1)	-7	203,000	190,000	16.6	3.5	7.0	12
	-10	178,000	164,000	15.3	6.0	-	-	-10	194,000	185,000	16.7	4.0	8.0	12
	-13	188,000	179,000	15.9	2.0	6	-	-13	195,000	186,000	16.2	3.0	6.0	16
	-16	196,000	181,000	16.5	6.0	12	20	-16	197,000	-	-	3.5	6.0	16(4)
	-19	187,000	175,000	15.8	5.0	8	-	-19	187,000	179,000	16.1	3.0	-	-
	-22	191,000	179,000	16.2	3.5	-	-	-22	196,000	184,000	16.8	2.5	4.0	12
	-25	194,000	182,000	15.6	4.5	16	20	-25	196,000	185,000	17.0	4.0	-	-
	-28	194,000	177,000	15.5	5.0	10	-	-28	202,000	190,000	17.0	2.5	4.0	8
	Average	191,000	176,000	15.8	4.2	11	22	Average	197,000	186,000	16.6	3.2	5.6	12
800	A7LA2-6	183,000	161,000	14.7×10^6	5.5	14	28	A7TA2-6	172,000	154,000	14.9×10^6	5.0	10	16
	-13	177,000	156,000	14.1	5.0	14	24(2)	-13	179,000	162,000	15.9	5.0	12	20
	-15	181,000	159,000	15.6	6.5	12	16	-15	180,000	164,000	16.0	6.0	10	16
	Average	180,000	159,000	14.8	5.7	13	23	Average	177,000	160,000	15.6	5.3	11	17
400	A7LA3-8	174,000	148,000	15.1×10^6	5.5	14	-	A7TA3-8	169,000	146,000	15.3×10^6	5.5	16	20
	-16	176,000	151,000	15.1	6.5	-	-	-14	176,000	153,000	15.5	6.0	-	-
	-18	168,000	139,000	14.9	8.5	22	-	-18	174,000	154,000	15.-	6.0	14	16
	Average	171,000	146,000	15.0	6.8	18		Average	173,000	151,000	15.4	5.8	15	18
600	A7LA4-1	170,000	141,000	14.5×10^6	5.5	-	-	A7TA4-1	163,000	133,000	14.4×10^6	6.5	18	-
	-9	162,000	135,000	14.4	4.5	-	-(2)	-9	164,000	134,000	13.5	5.5	18	-
	-12	168,000	138,000	14.0	6.5	-	-	-12	170,000	140,000	14.4	5.5	-	-
	Average	167,000	138,000	14.3	5.5			Average	166,000	136,000	14.1	5.8	18	
800	A7LA6-10	155,000	130,000	12.9×10^6	7.0	20	24	A7TA6-10	163,000	135,000	13.4×10^6	8.0	20	28
	-14	156,000	130,000	12.6	5.5	12	18	-14	163,000	135,000	13.3	7.5	20	-
	-17	151,000	127,000	12.0	8.0	20	24	-17	161,000	133,000	13.1	8.0	10	20
	Average	154,000	130,000	12.5	6.8	17	22	Average	162,000	134,000	13.3	7.8	17	24
900	A7LA7-2	142,000	123,000	12.8×10^6	6.0	20	-	A7TA7-3	143,000	124,000	12.7×10^6	11.0	20	44
	-5	141,000	122,000	12.4	15.0	28	44	-5	143,000	124,000	12.7	12.0	36	52
	-11	146,000	127,000	12.4	-	-	-(3)	-11	146,000	130,000	13.2	9.0	20	24
	Average	143,000	124,000	12.5	10.5	24		Average	144,000	126,000	12.9	10.7	25	40
1000	A7LA8-3	99,500	81,000	10.6×10^6	9.0	20	24	A7TA8-2	106,000	85,500	12.2×10^6	19.0	52	56
	-4	105,000	84,400	11.1	13.0	36	52	-4	107,000	76,500	11.9	21.0	50	76
	-7	97,600	76,000	10.4	25.0	60	64	-7	106,000	85,300	11.1	21.0	50	56
	Average	101,000	80,500	10.7	15.7	39	47	Average	106,000	82,600	11.7	20.3	51	63

(1) Failed within 1/4 inch of fillet.
(2) Failed at knife edge.
(3) Failed outside gage marks.
(4) Unusable load-deformation curve.

TABLE IV

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.063 INCH
HEAT NUMBER— B6398

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/32 IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/32 IN.
80	A2LA1-1	216,000	202,000	16.4×10^6	5.0	10	18	A2TA1-1	219,000	204,000	16.4×10^6	3.5	12	-
	-4	207,000	192,000	16.2	5.0	10	-	-4	215,000	199,000	16.7	5.5	10	-
	-7	206,000	187,000	16.3	7.0	14	24	-7	208,000	188,000	16.6	5.5	10	-
	-10	195,000	179,000	16.6	4.5	10	16	-10	200,000	185,000	16.8	5.5	12	20
	-13	188,000	172,000	16.5	5.0	12	20	-13	178,000	169,000	16.5	2.5	8	12
	-16	177,000	162,000	15.9	5.0	10	20	-16	173,000	160,000	16.4	3.0	8	12
	-19	175,000	161,000	15.8	5.5	10	20	-19	186,000	172,000	16.9	4.0	8	12
	-22	198,000	175,000	16.2	7.5	12	24	-22	188,000	170,000	16.6	7.0	16	20
	-25	192,000	177,000	16.2	7.0	10	20	-25	172,000	162,000	16.3	5.0	16	20
	-28	196,000	180,000	16.3	8.5	18	24	-28	198,000	-	-	7.5	12	20(3)
	Average	194,000	179,000	16.2	6.0	12	21	Average	191,000	179,000	16.6	4.8	11	17
800	A2LA2-6	185,000	158,000	14.8×10^6	6.5	20	24	A2TA2-6	190,000	168,000	15.4×10^6	7.0	14	24
	-13	181,000	154,000	14.8	7.5	12	16	-13	182,000	156,000	14.7	6.0	14	-
	-15	180,000	156,000	14.7	10.0	28	28	-15	180,000	156,000	15.5	7.5	14	20
	Average	182,000	156,000	14.8	8.0	18	23	Average	184,000	160,000	15.2	6.8	14	22
400	A2LA3-8	178,000	149,000	13.2×10^6	7.5	20	28	A2TA3-8	166,000	137,000	14.8×10^6	7.0	14	24(1)
	-16	183,000	156,000	13.4	7.0	22	28	-16	182,000	152,000	14.9	8.0	24	36
	-18	182,000	152,000	13.9	7.5	24	28	-18	180,000	156,000	15.0	6.5	20	32
	Average	181,000	152,000	13.5	7.3	22	28	Average	176,000	148,000	14.9	7.2	19	31
600	A2LA4-9	158,000	126,000	14.3×10^6	9.0	22	28(1)	A2TA4-1	188,000	161,000	14.5×10^6	5.0	16	28
	-12	172,000	136,000	14.3	9.0	24	28	-9	163,000	132,000	14.5	8.0	14	24
	-20	173,000	135,000	14.0	6.0	-	-	-12	172,000	138,000	14.4	8.5	24	32
	Average	168,000	132,000	14.2	8.0	23	28	Average	174,000	144,000	14.5	7.2	18	28
800	A2LA6-4	173,000	147,000	13.0×10^6	10.0	26	44	A2TA6-3	178,000	153,000	14.1×10^6	6.0	26	40
	-10	164,000	137,000	13.2	13.0	28	36	-4	181,000	156,000	13.4	7.0	22	32
	-17	162,000	137,000	12.7	10.0	40	60	-17	164,000	138,000	13.2	10.0	36	60
	Average	166,000	140,000	13.0	11.0	31	47	Average	174,000	149,000	13.7	7.7	28	44
900	A2LA7-3	159,000	144,000	11.9×10^6	-	-	-(2)	A2TA7-2	161,000	142,000	13.2×10^6	22.0	60	80
	-5	157,000	139,000	12.7	12.5	42	48	-5	157,000	138,000	13.2	12.0	52	60(1)
	-11	141,000	122,000	12.1	-	-	-	-10	147,000	129,000	12.7	11.5	44	48(1)
	Average	152,000	135,000	12.2				Average	155,000	136,000	13.0	15.2	52	63
1000	A2LA8-2	104,000	96,500	11.8×10^6	16.5	80	124(1)	A2TA8-7	115,000	108,000	11.3×10^6	20.0	60	84(1)
	-7	111,000	101,000	12.8	28.0	112	220(1)	-11	111,000	104,000	11.0	16.0	88	112(1)
	-14	109,000	100,000	11.0	15.0	60	64(1)	-14	118,000	110,000	11.4	19.0	116	148(1)
	Average	108,000	99,200	11.9	19.8	94	143	Average	115,000	107,000	11.2	18.3	88	135

(1) Failed within 1/4 inch of fillet.
(2) Failed outside gage marks.
(3) Unusable load-deformation curve.

TABLE V

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.063 INCH
HEAT NUMBER— R6761

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.
80	A51A1-1	195,000	189,000	14.9×10^6	5.0	16	28	A5TA1-1	196,000	189,000	15.2×10^6	5.0	14	20
	-4	189,000	182,000	15.0	5.0	18	24	-4	196,000	189,000	15.2	5.0	18	26
	-7	201,000	194,000	15.3	5.5	16	24	-7	196,000	189,000	15.3	5.0	16	24
	-10	196,000	188,000	14.8	3.5	16	24	-10	204,000	198,000	15.8	-	-	-(1)
	-13	192,000	184,000	15.0	5.0	18	28	-13	196,000	190,000	15.8	5.0	16	20
	-16	180,000	176,000	14.6	6.5	18	24	-16	199,000	190,000	15.5	6.0	16	24
	-19	194,000	186,000	15.1	5.5	16	24	-19	200,000	194,000	15.4	6.5	16	22
	-22	193,000	183,000	14.6	5.5	16	32	-22	197,000	191,000	15.6	5.0	14	20
	-25	195,000	185,000	15.5	5.0	14	20	-25	194,000	188,000	15.6	5.0	12	20
	-28	195,000	188,000	15.4	3.5	12	20	-28	202,000	193,000	15.7	5.0	8	16
	Average	193,000	186,000	15.0	5.0	16	25	Average	198,000	191,000	15.5	5.3	14	21
200	A51A2-3	180,000	164,000	14.0×10^6	7.5	24	36	A5TA2-13	189,000	174,000	15.3×10^6	6.0	16	-
	-15	190,000	-	-	5.0	20	24(2)	-15	190,000	177,000	15.5	7.0	18	28
	-16	189,000	173,000	14.3	6.0	16	20	-20	185,000	175,000	15.4	5.0	20	24
	Average	186,000	168,000	14.2	6.2	20	27	Average	188,000	175,000	15.4	6.0	18	26
400	A51A3-6	176,000	-	-	6.0	24	-(2)	A5TA3-8	176,000	160,000	13.2×10^6	6.0	-	-
	-13	180,000	158,000	13.6×10^6	6.0	22	28	-9	180,000	164,000	14.0	7.5	20	36
	-22	176,000	157,000	14.4	5.5	22	40	-14	175,000	147,000	14.1	6.0	24	-
	Average	177,000	158,000	14.0	5.8	23	34	Average	177,000	157,000	13.8	6.5	22	
600	A51A4-1	165,000	146,000	12.9×10^6	5.0	20	-	A5TA4-10	167,000	148,000	14.2×10^6	7.0	28	52
	-9	171,000	152,000	14.2	5.5	22	-	-12	168,000	152,000	14.4	6.0	28	60
	-12	167,000	152,000	14.0	5.0	20	24	-16	166,000	146,000	14.1	7.5	24	-
	Average	168,000	150,000	13.7	5.2	21		Average	167,000	149,000	14.2	6.8	27	56
800	A51A6-4	169,000	148,000	13.2×10^6	10.0	32	60	A5TA6-17	164,000	145,000	13.2×10^6	6.0	20	24
	-10	169,000	145,000	12.0	7.5	28	-	-21	163,000	142,000	13.1	6.0	20	26
	-19	166,000	145,000	12.5	6.5	22	36	-22	168,000	150,000	13.2	6.0	24	-
	Average	168,000	146,000	12.6	8.0	27	48		165,000	146,000	13.2	6.0	23	25
900	A51A7-5	147,000	137,000	13.8×10^6	20.0	56	84	A5TA7-3	146,000	138,000	12.8×10^6	2.5	14	28(3)
	-8	152,000	134,000	11.9	18.0	44	52	-11	147,000	134,000	13.1	15.0	24	36
	-17	149,000	136,000	11.9	18.0	52	68	-14	151,000	134,000	12.0	2.5	14	28
	Average	149,000	136,000	12.5	18.7	51	68		148,000	135,000	12.6	7.0	17	31
1000	A51A8-2	93,800	87,400	11.3×10^6	40.6	128	180	A5TA8-2	100,000	96,600	12.5×10^6	-	-	-(1)
	-7	102,000	98,000	11.0	-	-	-(1)	-4	100,000	92,200	12.1	7.0	24	48
	-14	88,000	86,000	10.7	2.0	12	28	5	101,000	92,800	11.6	35.0	124	220
	Average	94,300	90,500	11.0	21.0	70	104	Average	100,000	93,900	12.1	21.0	74	134

(1) Failed outside gage marks.
(2) Unusable load-deformation curve.
(3) Failed within 1/4 inch of fillet.

TABLE VI

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.063 INCH
HEAT NUMBER— R6788

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.
80	A8LA1-1	201,000	176,000	15.2×10^6	5.0	14	-	A8TA1-7	184,000	169,000	15.4×10^6	5.0	12	20
	-4	178,000	163,000	15.4	6.0	12	-	-10	205,000	181,000	16.2	3.0	10	20
	-7	180,000	169,000	15.3	4.0	-	-	-13	205,000	182,000	15.7	-	-	-(1)
	-16	189,000	172,000	15.3	7.0	14	20(1)	-16	205,000	178,000	16.8	4.5	8	12(1)
	-19	183,000	167,000	15.5	7.5	20	28	-19	194,000	172,000	15.9	5.5	-	-
	-25	186,000	174,000	15.4	5.0	10	-	-22	208,000	176,000	16.1	3.5	12	-
	-28	185,000	168,000	15.2	7.0	18	-	-25	198,000	183,000	16.9	5.0	20	20
	-29	191,000	175,000	15.6	6.0	14	20	-28	196,000	181,000	16.2	5.0	14	-
	-30	197,000	181,000	15.9	5.5	12	28	-29	198,000	185,000	15.8	3.5	10	16
	-31	187,000	-	-	7.0	12	28(2)	-30	200,000	186,000	-	3.0	8	12
	Average	185,000	172,000	15.4	6.0	15	25	Average	200,000	179,000	16.1	4.2	10	17
200	A8LA2-6	201,000	181,000	15.8×10^6	5.0	12	16	A8TA2-6	191,000	170,000	15.8×10^6	5.0	12	20
	-13	193,000	168,000	15.3	7.5	16	20	-13	189,000	167,000	16.6	5.5	14	20
	-15	179,000	160,000	16.0	3.5	16	-	-15	189,000	167,000	16.0	5.5	12	20
	Average	191,000	172,000	15.7	5.3	15	18	Average	190,000	168,000	16.1	5.3	13	20
400	A8LA3-8	177,000	155,000	15.6×10^6	6.5	22	32	A8TA3-6	188,000	160,000	15.8×10^6	5.0	16	20
	-18	197,000	173,000	15.0	4.5	18	20	-16	182,000	155,000	15.6	6.5	16	24
	-36	192,000	165,000	15.6	6.0	24	28	-18	182,000	155,000	15.9	8.0	22	24
	Average	189,000	164,000	15.6	5.5	21	27	Average	184,000	157,000	15.8	6.5	18	23
600	A8LA4-1	198,000	171,000	14.6×10^6	4.5	16	28	A8TA4-1	162,000	141,000	14.8×10^6	6.5	24	36
	-9	196,000	166,000	14.7	4.0	10	16	-9	184,000	154,000	15.4	4.5	12	24
	-12	185,000	154,000	14.7	5.5	12	-	-12	179,000	147,000	14.9	5.5	16	28
	Average	193,000	163,000	14.7	4.7	13	22	Average	175,000	147,000	15.0	5.5	17	29
800	A8LA5-10	170,000	149,000	13.4×10^6	7.0	30	36	A8TA6-5	171,000	148,000	13.5×10^6	6.0	24	36
	-14	172,000	145,000	13.4	6.5	24	36	-14	170,000	143,000	13.6	6.5	24	-
	-17	163,000	146,000	13.6	8.0	20	30	-17	168,000	142,000	14.1	6.5	22	-
	Average	168,000	147,000	13.5	6.8	23	34	Average	170,000	144,000	13.7	6.3	23	
900	A8LA7-3	167,000	143,000	12.9×10^6	12.5	44	-	A8TA7-3	152,000	129,000	13.4×10^6	10.5	44	52
	-5	168,000	145,000	13.5	15.0	36	48	-10	158,000	131,000	13.5	10.0	28	40
	-12	150,000	125,000	13.0	12.0	44	-	-11	159,000	133,000	13.5	13.0	44	-
	Average	162,000	138,000	13.1	13.2	42		Average	156,000	131,000	13.5	11.2	39	46
1000	A8LA8-2	111,000	91,200	12.2×10^6	42.5	112	150	A8TA8-2	120,000	101,000	12.4×10^6	-	-	-(3)
	-4	123,000	85,000	12.3	37.5	-	-	-4	125,000	91,000	12.1	37.0	103	150
	-7	140,000	102,000	12.7	35.0	92	-	-7	136,000	96,400	11.9	23.0	92	136
	Average	125,000	92,800	12.4	35.0	102		Average	127,000	96,500	12.1	30.0	98	143

(1) Failed within 1/4 inch of fillet.
(2) Unusable load-deformation curves.
(3) Failed outside gage marks.

TABLE VII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.125 INCH
HEAT NUMBER— 86759

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN ¼ IN.	ELONGATION, % IN ½ IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN ¼ IN.	ELONGATION, % IN ½ IN.
80	A3LA1-1	203,000	185,000	16.1×10^6	2.0	10	-	A3TA1-1	204,000	187,000	16.2×10^6	3.0	8	-
	-4	-	186,000	15.8	-	-	-(1)	-4	210,000	193,000	16.4	3.0	6	16
	-7	208,000	194,000	16.1	4.0	12	20	-7	-	192,000	16.3	-	-	-(1)
	-10	214,000	198,000	16.5	5.5	14	20	-10	215,000	195,000	16.0	3.0	6	-
	-16	206,000	185,000	16.7	5.0	14	16	-13	222,000	205,000	16.4	3.0	10	-
	-17	205,000	187,000	15.9	4.5	8	-	-16	208,000	193,000	15.8	3.5	6	-
	-22	211,000	190,000	16.4	4.5	10	16	-19	212,000	196,000	16.0	-	-	-(2)
	-25	216,000	195,000	16.2	6.5	16	20	-22	213,000	197,000	16.4	3.5	8	20
	-28	214,000	195,000	16.1	5.0	16	20	-25	215,000	197,000	16.0	5.0	16	24
	-31	205,000	187,000	16.5	3.5	6	16	-28	219,000	204,000	16.4	3.0	10	12
	Average	208,000	190,000	16.2	4.5	12	18	Average	213,000	196,000	16.2	3.4	8	19
800	A3LA2-13	203,000	179,000	15.4×10^6	6.0	10	20	A3TA2-2	193,000	173,000	16.3×10^6	4.5	16	24
	-15	202,000	176,000	15.6	6.0	12	-	-13	202,000	182,000	16.2	5.5	14	24
	-19	196,000	176,000	15.9	6.0	16	-	-15	205,000	184,000	16.2	6.5	14	24
	Average	200,000	177,000	15.6	6.0	13		Average	200,000	180,000	16.2	5.5	15	24
400	A3LA3-8	195,000	161,000	14.0×10^6	5.5	16	20	A3TA3-8	195,000	169,000	15.1	5.5	24	28
	-16	199,000	169,000	15.2	6.0	16	20	-16	198,000	172,000	15.4	5.5	20	24
	-18	202,000	171,000	14.4	6.0	16	20	-18	200,000	173,000	15.4	6.0	24	32
	Average	199,000	168,000	14.5	5.8	16	20	Average	198,000	171,000	15.3	5.7	23	28
600	A3LA4-1	187,000	158,000	14.2×10^6	7.0	20	24	A3TA4-1	183,000	150,000	13.8×10^6	6.5	20	32
	-7	199,000	168,000	13.9	4.0	18	20	-11	188,000	159,000	14.7	6.5	20	36
	-12	184,000	151,000	14.1	7.0	22	32	-13	191,000	160,000	14.3	6.0	24	40
	Average	190,000	159,000	14.1	6.0	20	25	Average	187,000	156,000	14.3	6.3	21	36
800	A3LA6-10	176,000	150,000	12.3×10^6	10.0	36	48	A3TA6-10	173,000	149,000	14.2×10^6	8.0	36	48
	-14	179,000	152,000	12.5	10.5	34	-	-14	180,000	158,000	14.2	9.0	44	60
	-20	173,000	148,000	13.0	9.0	48	-	-17	181,000	152,000	14.2	10.0	24	52
	Average	176,000	150,000	12.6	9.8	39		Average	178,000	153,000	14.2	9.0	38	53
900	A3LA7-3	155,000	134,000	11.6×10^6	20.5	56	84	A3TA7-3	156,000	142,000	13.6×10^6	12.0	44	56
	-5	161,000	146,000	12.9	17.0	54	88	-5	164,000	142,000	13.0	-	-	-(2)
	-11	157,000	142,000	11.6	10.5	56	88	-9	161,000	140,000	12.7	14.0	56	76
	Average	158,000	141,000	12.0	16.0	55	87	Average	159,000	141,000	13.1	13.0	50	66
1000	A3LA8-2	119,000	102,000	11.1×10^6	11.0	124	212	A3TA8-4	119,000	106,000	12.4×10^6	35.0	140	208
	-4	118,000	105,000	10.6	43.0	160	252	-6	128,000	92,000	11.0	41.0	124	168
	-9	113,000	95,700	12.0	27.0	100	156	-7	123,000	86,500	10.4	39.0	136	200
	Average	117,000	101,000	11.3	33.7	128	207	Average	123,000	94,800	11.3	38.3	133	191

(1) Failed in grip.
(2) Failed outside gage marks.

TABLE VIII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.125 INCH
HEAT NUMBER— Ro761

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	¼ IN	⅛ IN	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	¼ IN	⅛ IN
80	AcLA1-1	179,000	161,000	15.2×10^6	10.0	24	32	AcTA1-1	184,000	167,000	16.5×10^6	7.0	16	24
	-4	181,000	159,000	15.5	8.5	20	28	-4	190,000	172,000	16.0	6.5	-	-
	-7	190,000	172,000	15.2	8.5	22	-	-7	194,000	176,000	15.6	7.5	18	-
	-10	185,000	168,000	15.6	8.0	20	-	-10	190,000	173,000	16.4	7.0	16	-
	-13	187,000	167,000	15.2	7.5	20	28	-13	191,000	174,000	15.6	7.0	20	30
	-16	177,000	162,000	15.0	10.5	24	32	-16	183,000	167,000	16.4	7.5	22	-
	-19	184,000	167,000	15.4	8.5	18	28	-19	190,000	172,000	15.6	7.5	18	-
	-22	183,000	166,000	15.1	8.5	20	28	-22	188,000	172,000	15.4	5.5	12	20
	-25	185,000	168,000	15.2	7.5	20	-	-25	185,000	170,000	15.5	7.5	22	-
	-28	189,000	171,000	15.8	8.5	20	-	-28	190,000	174,000	15.3	6.5	20	-
	Average	184,000	166,000	15.3	8.6	21	29	Average	188,000	172,000	15.8	7.0	18	25
200	AcLA2-12	176,000	152,000	15.0×10^6	9.0	24	36	AcTA2-6	180,000	156,000	15.0×10^6	7.0	20	26
	-15	179,000	155,000	15.1	9.5	20	28	-13	177,000	157,000	15.9	8.5	22	26
	-18	174,000	-	-	10.0	20	32(2)	-15	174,000	156,000	16.1	7.0	22	28
	Average	176,000	154,000	15.0	9.5	21	32	Average	177,000	157,000	15.7	7.5	21	28
400	AcLA3-8	174,000	148,000	14.9×10^6	10.0	24	32	AcTA3-8	181,000	152,000	15.6×10^6	9.0	20	24
	-16	174,000	149,000	14.1	9.0	26	46	-16	172,000	145,000	15.1	10.0	30	58
	-18	176,000	147,000	14.5	9.0	24	44	-18	171,000	142,000	14.7	9.0	30	150
	Average	175,000	148,000	14.5	9.7	25	41	Average	175,000	147,000	15.5	9.3	27	44
600	AcLA4-1	166,000	138,000	14.2×10^6	10.0	26	48	AcTA4-1	171,000	144,000	14.8×10^6	7.0	26	...
	-6	169,000	142,000	14.9	8.2	24	52	-9	171,000	144,000	14.4	7.5	22	32
	-9	170,000	140,000	14.5	9.0	26	40	-12	169,000	141,000	15.0	8.5	32	44
	Average	168,000	139,000	14.5	9.1	27	40	Average	171,000	143,000	14.7	7.8	27	41
800	AcLA5-10	159,000	126,000	12.4×10^6	13.5	32	76	AcTA5-10	158,000	129,000	12.6×10^6	11.0	36	64
	-14	157,000	132,000	12.5	17.0	34	-	-14	157,000	134,000	14.3	12.0	42	80
	-17	150,000	130,000	12.5	8.0	32	-(1)	-17	150,000	130,000	12.6	13.5	28	100
	Average	155,000	129,000	12.5	12.8	46		Average	155,000	130,000	13.2	12.5	39	81
900	AcLA7-3	142,000	121,000	1.4×10^6	21.5	60	92	AcTA7-3	147,000	125,000	13.6×10^6	10.0	44	52
	-5	147,000	124,000	12.-	16.0	56	84	-5	149,000	130,000	14.0	16.0	56	76
	-11	138,000	115,000	12.1	16.0	64	-	-21	145,000	127,000	14.1	7.0	52	76
	Average	142,000	120,000	12.-	17.8	60	88	Average	147,000	127,000	13.9	8.5	51	68
1000	AcLA8-2	125,000	4,000	11.5×10^6	36.0	10.8	-	AcTA8-2	102,000	1.1,000	11.7×10^6	52.0	-	-
	-4	103,000	87,000	11.2	38.5	124	200	-4	108,000	100,000	12.6	50.0	150	220
	-7	104,000	97,000	11.1	40.0	116	254	-7	111,000	101,000	12.0	46.0	126	190
	Average	112,000	97,000	11.4	38.8	116	152	Average	107,000	100,000	12.3	49.3	142	210

(1) Failed at knife edge.
(2) Unusable load-deformation curve.

TABLE IX

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.125 INCH
HEAT NUMBER— R6753

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	¼ IN.	½ IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	¼ IN.	½ IN.
80	A91A1-1	208,000	190,000	15.7×10^6	6.5	16	20	A9TA1-1	201,000	185,000	16.1×10^6	5.0	12	20
	-4	198,000	178,000	15.6	6.0	14	20	-4	202,000	188,000	15.8	4.5	16	20
	-7	196,000	175,000	15.8	7.0	12	20	-7	191,000	177,000	16.0	4.5	14	20
	-10	210,000	194,000	15.4	6.0	12	-	-10	202,000	186,000	15.7	3.8	12	16
	-13	183,000	167,000	15.2	7.0	16	20	-13	192,000	178,000	15.5	5.5	10	20
	-16	210,000	195,000	15.5	5.5	12	-	-16	203,000	188,000	16.4	4.0	10	16
	-19	194,000	180,000	15.3	6.0	12	12	-19	201,000	190,000	15.8	4.2	14	20
	-22	177,000	162,000	15.0	5.5	12	20	-22	185,000	171,000	15.6	4.5	12	16
	-25	209,000	194,000	15.7	6.5	16	28	-25	194,000	186,000	15.4	2.5	10	20
	-28	185,000	169,000	15.4	6.5	16	-	-28	196,000	184,000	16.0	-	-	-(2)
	Average	196,000	180,000	15.5	6.2	14	20	Average	197,000	183,000	15.8	4.2	12	19
200	A91A2-6	189,000	170,000	15.4×10^6	8.5	18	24	A9TA2-6	182,000	161,000	15.9×10^6	8.0	18	28
	-13	203,000	187,000	15.7	6.0	16	24	-13	173,000	157,000	15.5	6.5	14	16
	-15	192,000	173,000	14.6	6.0	16	28	-15	174,000	158,000	15.5	5.5	14	28
	Average	195,000	177,000	15.2	6.8	17	25	Average	176,000	159,000	15.6	6.7	15	24
400	A91A3-8	200,000	177,000	15.5×10^6	5.5	20	36	A9TA3-8	175,000	156,000	15.0×10^6	7.0	16	20
	-16	182,000	160,000	15.2	8.0	24	36	-12	169,000	145,000	14.9	10.5	32	44
	-18	197,000	174,000	15.0	11.0	20	32	-18	166,000	-	-	8.0	20	28(1)
	Average	193,000	170,000	15.2	8.4	21	35	Average	171,000	150,000	15.0	8.5	23	31
600	A91A4-1	186,000	161,000	14.3×10^6	4.8	12	20	A9TA4-1	168,000	142,000	14.3×10^6	7.0	28	32
	-9	179,000	154,000	13.4	8.2	28	40	-9	166,000	146,000	14.5	8.5	32	48
	-12	168,000	149,000	15.2	8.8	28	52	-16	169,000	146,000	14.8	7.5	28	36
	Average	176,000	152,000	14.3	7.1	23	37	Average	168,000	145,000	14.6	7.7	29	39
800	A91A6-10	179,000	157,000	13.7×10^6	8.2	36	60	A9TA6-10	154,000	130,000	13.5×10^6	12.5	52	68
	-14	181,000	155,000	12.9	9.5	32	52	-14	166,000	135,000	12.9	11.0	44	80
	-17	174,000	151,000	12.2	10.5	36	60	-17	154,000	131,000	12.3	12.0	44	-
	Average	178,000	154,000	13.9	9.4	34	57	Average	158,000	132,000	12.9	11.8	47	74
900	A91A7-3	143,000	124,000	11.7×10^6	30.5	66	-	A9TA7-3	148,000	130,000	12.7×10^6	12.0	40	60
	-5	158,000	138,000	12.3	9.0	44	60	-5	148,000	130,000	13.2	16.5	54	88
	-11	151,000	132,000	12.0	14.0	44	-	-11	141,000	122,000	11.7	16.0	66	92
	Average	151,000	131,000	11.9	17.8	58		Average	146,000	127,000	12.5	15.5	53	80
1000	A91A8-2	119,000	89,800	11.2×10^6	41.0	116	216	A9TA8-2	94,300	83,400	12.2	43.0	140	236
	-4	103,000	72,500	11.4	33.0	108	148	-4	98,900	74,600	12.9	-	-	-(2)
	-7	105,000	-	-	37.0	116	176(1)	-7	97,800	81,800	12.0	-	-	-(2)
	Average	109,000	81,200	11.3	37.0	123	180	Average	97,000	79,900	12.4			

(1) Unusable load-deformation curve.
(2) Failed outside gage marks.

TABLE X

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED BIBOVCA TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. 86398)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
A2LB1-2	80	198,000	16.8	198,000	205,000	26.8
-5	80	181,000	16.7	182,000	191,000	19.5
-8	80	181,000	17.0	180,000	189,000	19.2
-11	80	177,000	16.7	172,000	179,000	23.1
-14	80	166,000	16.6	163,000	171,000	19.5
-17	80	168,000	16.7	167,000	173,000	26.1
-20	80	151,000	15.9	162,000	167,000	30.1
-23	80	179,000	16.4	178,000	184,000	27.5
-26	80	178,000	15.4	174,000	184,000	17.5
-29	80	181,000	16.6	180,000	187,000	24.2
Average		177,000	16.6			
A2LB2-7	200	171,000	16.5	175,000	182,000	23.6
-13	200	157,000	16.0	155,000	159,000	35.6
-24	200	166,000	16.3	162,000	168,000	25.4
Average		164,000	16.3			
A2LB3-19	400	137,000	15.2	135,000	-	-
-22	400	151,000	15.2	-	-	-
-27	400	154,000	15.2	152,000	-	-
Average		147,000	15.2			
A2LB4-15	600	140,000	15.2	138,000	148,000	13.8
-18	600	134,000	15.4	-	-	-
-25	600	145,000	15.2	144,000	-	-
Average		140,000	15.3			
A2LB6-4	800	150,000	13.8	151,000	-	-
-10	800	144,000	14.3	142,000	-	-
-12	800	138,000	13.6	136,000	147,000	12.4
Average		144,000	13.9			
A2LB7-3	900	154,000	14.0	153,000	-	-
-16	900	136,000	13.6	122,000	-	-
-28	900	133,000	13.5	134,000	142,000	16.2
Average		141,000	13.7			
A2LB9-1	1000	99,300	12.7	96,100	101,000	13.6
-9	1000	135,000	12.6	133,000	140,000	9.3
-21	1000	111,000	12.9	107,000	117,000	11.0
Average		115,000	12.7			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED BIBOVCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, (CRUCIBLE HEAT NO. 86398)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
A2TB1-2	80	214,000	17.1	214,000	225,000	18.8
-5	80	201,000	17.0	201,000	209,000	23.6
-8	80	193,000	17.2	193,000	201,000	23.1
-11	80	189,000	16.9	189,000	197,000	22.5
-14	80	168,000	16.6	167,000	175,000	19.9
-17	80	166,000	16.6	166,000	171,000	31.0
-20	80	172,000	17.1	171,000	177,000	26.8
-23	80	169,000	16.5	168,000	175,000	22.6
-26	80	161,000	16.6	161,000	165,000	36.9
-29	80	183,000	16.9	183,000	190,000	24.8
Average		182,000	16.8			
A2TB2-7	200	177,000	17.1	176,000	-	-
-15	200	146,000	16.7	143,000	151,000	17.3
-22	200	153,000	16.5	151,000	159,000	18.2
Average		159,000	16.8			
A2TB3-13	400	151,000	15.3	149,000	160,000	13.4
-24	400	150,000	15.7	148,000	158,000	14.5
-27	400	147,000	16.2	136,000	144,000	16.5
Average		146,000	15.7			
A2TB4-6	600	170,000	15.9	167,000	-	-
-18	600	131,000	15.6	128,000	137,000	14.1
-30	600	153,000	16.6	151,000	161,000	14.9
Average		151,000	16.0			
A2TB6-4	800	160,000	15.2	158,000	170,000	13.1
-19	800	134,000	15.6	131,000	142,000	12.0
-25	800	129,000	15.1	126,000	135,000	12.7
Average		141,000	15.3			
A2TB7-10	900	136,000	14.8	132,000	145,000	10.5
-14	900	124,000	14.4	121,000	132,000	11.2
-28	900	143,000	14.2	142,000	153,000	13.0
Average		134,000	14.5			
A2TB8-1	1000	103,000	13.7	101,000	107,000	16.5
-9	1000	111,000	13.1	119,000	132,000	9.6
-21	1000	111,000	13.3	109,000	115,000	17.6
Average		108,000	13.4			

TABLE XI

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. A6761)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
A5B1-2	[illegible]	193,000	15.8	195,000	190,000	35.6
-4		187,000	15.3	189,000	185,000	25.4
-7		198,000	15.4	198,000	199,000	26.1
-10		198,000	15.6	191,000	200,000	20.3
-13		189,000	15.0	189,000	199,000	18.2
-16		187,000	15.6	189,000	189,000	26.8
-18		187,000	15.2	187,000	188,000	23.4
-20		193,000	15.5	195,000	189,000	28.3
-22		187,000	15.0	187,000	198,000	25.4
-24		189,000	15.2	188,000	193,000	28.0
Average		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A5B2-19	[illegible]	178,000	14.9	178,000	179,000	23.1
-22		178,000	15.6	178,000	185,000	34.2
-25		[illegible]	[illegible]	178,000	175,000	22.6
Average		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A5B3-13	[illegible]	187,000	14.3	187,000	-	-
-16		178,000	15.6	178,000	-	-
-19		189,000	[illegible]	188,000	-	-
Average		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A5B4-13	[illegible]	168,000	14.8	168,000	-	-
-16		178,000	15.7	178,000	180,000	18.2
-19		178,000	15.8	179,000	184,000	16.7
Average		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A5B6-6	[illegible]	136,000	14.2	138,000	-	-
-32		139,000	15.0	140,000	-	-
-31		[illegible]	[illegible]	139,000	151,000	11.8
Average		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A5B7-5	[illegible]	148,000	14.8	149,000	-	-
-16		146,000	15.4	146,000	-	-
-18		145,000	15.1	146,000	-	-
Average		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A5B8-1	[illegible]	88,300	11.8	90,300	95,000	13.7
-9		99,000	12.0	98,300	99,000	30.1
-21		[illegible]	[illegible]	[illegible]	96,000	20.3
Average		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. A6761)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
A5TB1-2	80	177,000	15.9	177,000	-	-
-5	80	182,000	16.1	182,000	188,000	28.3
-8	80	193,000	16.2	194,000	204,000	18.5
-11	80	205,000	16.0	206,000	213,000	27.5
-14	80	197,000	16.0	197,000	-	-
-17	80	201,000	16.0	201,000	-	-
-20	80	197,000	16.0	197,000	208,000	17.3
-23	80	196,000	16.7	196,000	203,000	26.1
-26	80	198,000	16.2	198,000	200,000	22.6
-29	80	153,000	16.6	198,000	206,000	23.6
Average		194,000	16.2			
A5TB2-7	200	180,000	15.6	180,000	188,000	21.6
-19	200	181,000	15.6	181,000	188,000	24.2
-22	200	183,000	15.8	183,000	-	-
Average		181,000	15.7			
A5TB3-6	400	170,000	15.0	170,000	179,000	18.2
-24	400	169,000	15.4	168,000	177,000	17.9
-35	400	173,000	16.5	172,000	180,000	20.3
Average		171,000	15.6			
A5TB4-13	600	163,000	15.4	162,000	-	-
-25	600	159,000	16.3	156,000	-	-
-40	600	[illegible]	[illegible]	154,000	164,000	15.1
Average		[illegible]	[illegible]			
A5TB6-4	800	157,000	14.0	157,000	165,000	16.8
-18	800	161,000	13.3	160,000	-	-
-36	800	150,000	14.6	149,000	-	-
Average		156,000	14.0			
A5TB7-16	900	150,000	14.1	150,000	160,000	14.7
-28	900	148,000	14.7	146,000	154,000	17.6
-31	900	[illegible]	[illegible]	111,000	-	-
Average		[illegible]	[illegible]			
A5TB8-1	1000	88,810	11.9	89,400	91,900	13.1
-9	1000	91,610	12.5	89,800	98,100	34.3
-21	1000	100,000	12.0	96,890	103,000	15.3
Average		93,500	12.1			

TABLE XII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED RLTOVCA TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. 86788)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_a at 0.85 E, PSI	F_a at 0.70 E, PSI	Shape Parameter n
A8LB1-32	80	202,000	16.2	202,000	208,000	31.6
-36	80	207,000	16.4	207,000	211,000	50.5
-37	80	204,000	16.3	205,000	215,000	-
-39	80	179,000	15.8	179,000	184,000	34.2
-42	80	176,000	15.7	176,000	179,000	43.6
-45	80	195,000	16.6	196,000	-	-
-48	80	177,000	15.8	177,000	181,000	38.2
-51	80	177,000	16.1	177,000	181,000	36.9
-54	80	179,000	16.0	179,000	184,000	32.8
-57	80	176,000	16.1	176,000	184,000	29.3
Average		187,000	16.1			
A8LB2-30	200	167,000	15.6	167,000	173,000	26.2
-53	200	166,000	15.9	165,000	171,000	27.9
-58	200	168,000	15.8	168,000	172,000	36.2
Average		167,000	15.8			
A8LB3-22	400	156,000	15.1	156,000	164,000	18.8
-55	400	158,000	15.8	157,000	166,000	17.0
-63	400	158,000	15.1	158,000	168,000	15.5
Average		157,000	15.3			
A8LB4-49	600	145,000	15.0	140,000	155,000	15.7
-61	600	165,000	15.2	165,000	176,000	14.7
-62	600	164,000	13.7	164,000	-	-
Average		159,000	14.6			
A8LB6-35	800	159,000	14.2	159,000	-	-
-41	800	139,000	14.3	137,000	148,000	12.2
-46	800	163,000	15.6	162,000	-	-
Average		154,000	14.7			
A8LB7-47	900	130,000	13.6	129,000	139,000	12.8
-52	900	132,000	11.6	132,000	141,000	14.5
-55	900	134,000	13.3	133,000	-	-
Average		132,000	12.8			
A8LB8-38	1000	98,600	12.6	93,000	104,000	8.6
-43	1000	95,100	12.6	88,800	101,000	7.7
-60	1000	104,000	11.3	103,000	-	-
Average		99,200	12.2			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED RLTOVCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, (CRUCIBLE HEAT NO. 86788)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_a at 0.85 E, PSI	F_a at 0.70 E, PSI	Shape Parameter n
A8TB1-33	80	190,000	16.1	180,000	186,000	28.3
-36	80	194,000	16.7	194,000	200,000	32.2
-37	80	192,000	16.0	192,000	200,000	24.3
-39	80	185,000	16.4	185,000	192,000	25.3
-42	80	183,000	15.9	183,000	189,000	28.2
-45	80	194,000	16.4	194,000	201,000	27.8
-48	80	186,000	16.5	186,000	198,000	27.4
-51	80	186,000	16.3	186,000	191,000	34.5
-54	80	184,000	15.7	185,000	191,000	26.1
-57	80	181,000	16.2	181,000	185,000	36.5
Average		186,000	16.3			
A8TB2-34	200	164,000	15.8	163,000	170,000	22.1
-50	200	170,000	16.3	170,000	177,000	23.1
-53	200	171,000	17.0	169,000	177,000	20.3
Average		168,000	16.4			
A8TB3-44	400	170,000	14.5	170,000	180,000	16.5
-55	400	162,000	14.0	162,000	174,000	13.4
-58	400	162,000	14.0	162,000	172,000	15.8
Average		165,000	14.2			
A8TB4-46	600	163,000	16.7	164,000	172,000	16.0
-49	600	154,000	15.6	152,000	163,000	13.8
-56	600	150,000	16.0	148,000	160,000	12.4
Average		156,000	16.1			
A8TB6-35	800	142,000	15.6	134,000	158,000	8.4
-41	800	140,000	15.2	138,000	151,000	10.9
-47	800	150,000	15.7	147,000	161,000	10.8
Average		144,000	15.2			
A8TB7-31	900	133,000	14.2	130,000	140,000	13.0
-47	900	126,000	14.2	120,000	143,000	6.1
-59	900	134,000	12.5	134,000	147,000	10.6
Average		130,000	13.3			
A8TB8-40	1000	105,000	13.9	96,000	116,000	5.7
-56	1000	108,000	12.3	105,000	122,000	11.7
-61	1000	104,000	12.0	101,000	109,000	12.7
Average		106,000	12.7			

TABLE XIII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, (CRUCIBLE HEAT NO. R6759)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
AJMB1-17	80	192,000	17.1	198,000	198,000	30.1
-19	80	196,000	17.1	196,000	208,000	26.1
-23	80	202,000	16.6	202,000	210,000	25.8
-26	80	198,000	16.5	198,000	203,000	33.5
-29	80	187,000	16.8	186,000	191,000	37.2
-31	80	186,000	16.6	184,000	188,000	41.2
-34	80	187,000	17.2	187,000	190,000	51.7
-36	80	189,000	16.6	188,000	193,000	35.4
-38	80	198,000	17.1	199,000	208,000	32.7
-45	80	200,000	16.9	200,000	-	-
Average		193,000	16.8			
AJMB2-19	200	173,000	16.8	172,000	179,000	21.9
-20	200	180,000	14.7	179,000	185,000	26.5
-42	200	178,000	16.1	178,000	182,000	39.0
Average		177,000	15.9			
AJMB3-18	400	168,000	15.4	168,000	176,000	19.2
-27	400	176,000	16.4	177,000	190,000	13.6
-35	400	173,000	15.6	176,000	187,000	11.8
Average		172,000	15.8			
AJMB4-16	600	158,000	14.9	157,000	166,000	16.0
-24	600	178,000	15.4	178,000	184,000	14.4
-45	600	161,000	15.6	159,000	161,000	18.7
Average		166,000	15.3			
AJMB5-29	800	169,000	14.3	168,000	163,000	10.3
-37	800	150,000	13.8	149,000	141,000	13.0
-44	800	155,000	14.4	155,000	-	-
Average		158,000	14.2			
AJMB7-16	900	166,000	13.8	166,000	-	-
-28	900	152,000	13.3	152,000	163,000	13.6
-33	900	147,000	13.2	147,000	-	-
Average		155,000	13.4			
AJMB8-26	1000	115,000	12.6	118,000	123,000	9.1
-41	1000	114,000	13.0	112,000	126,000	8.1
-135	1000	103,000	11.8	93,400	114,000	5.6
Average		111,000	12.5			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, (CRUCIBLE HEAT NO. R6759)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
AJTB1-17	80	196,000	17.2	196,000	203,000	24.6
-19	80	200,000	17.1	200,000	207,000	26.5
-23	80	200,000	17.1	200,000	207,000	27.8
-26	80	203,000	17.3	203,000	-	-
-29	80	208,000	17.3	209,000	-	-
-31	80	193,000	17.2	193,000	203,000	19.1
-34	80	191,000	17.1	191,000	197,000	31.7
-36	80	191,000	17.5	191,000	198,000	24.6
-38	80	188,000	17.0	188,000	-	-
-45	80	205,000	17.4	206,000	218,000	16.5
Average		198,000	17.2			
AJTB2-3	200	196,000	15.2	196,000	205,000	22.9
-22	200	186,000	16.8	186,000	193,000	23.3
-33	200	181,000	15.4	182,000	191,000	20.1
Average		188,000	15.8			
AJTB3-24	400	176,000	15.4	176,000	189,000	13.6
-27	400	178,000	16.7	178,000	183,000	11.7
-43	400	171,000	15.5	171,000	181,000	16.7
Average		175,000	15.9			
AJTB4-15	600	162,000	15.2	162,000	173,000	13.8
-30	600	176,000	15.2	176,000	194,000	10.5
-50	600	150,000	14.8	153,000	162,000	16.2
Average		163,000	15.1			
AJTB6-35	800	157,000	14.8	156,000	168,000	12.5
-42	800	161,000	15.2	160,000	173,000	12.2
-44	800	164,000	15.0	164,000	180,000	10.6
Average		161,000	15.0			
AJTB7-16	900	150,000	13.8	150,000	161,000	12.8
-28	900	156,000	14.0	156,000	166,000	15.4
-39	900	147,000	14.1	146,000	-	-
Average		151,000	14.0			
AJTB8-21	1000	119,000	13.3	115,000	127,000	9.6
-37	1000	114,000	13.6	108,000	123,000	8.0
-41	1000	114,000	13.7	106,000	126,000	6.4
Average		116,000	13.5			

TABLE XIV

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. 86761)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E PSI	F_c at 0.70 E PSI	Shape Parameter, n
A6LB1-2	80	165,000	16.2	164,000	169,000	31.4
-5	80	172,000	16.3	172,000	178,000	26.9
-8	80	174,000	16.1	174,000	179,000	32.4
-11	80	172,000	16.0	172,000	178,000	28.9
-14	80	174,000	16.1	173,000	180,000	23.4
-17	80	166,000	16.0	165,000	170,000	30.7
-20	80	169,000	15.8	168 000	174,000	26.3
-23	80	166,000	15.4	165,000	171,000	25.9
-26	80	171,000	15.7	171,000	176,000	34.8
-29	80	170,000	15.2	170,000	175,000	35.8
Average		170,000	15.9			
A6LB2-7	200	151,000	15.3	160,000	166,000	25.1
-19	200	153,000	15.7	152,000	158,000	23.0
-22	200	154,000	15.1	153,000	160,000	22.9
Average		152,000	15.5			
A6LB3-24	400	144,000	15.7	143,000	151,000	17.3
-27	400	149,000	15.	148,000	157,000	16.1
-30	400	149,000	15.1	147,000	156,000	16.5
Average		147,000	15.6			
A6LB4-15	600	144,000	15.4	142,000	150,000	15.5
-18	600	134,000	14.7	132,000	141,000	14.7
-25	600	139,000	15.2	136,000	146,000	13 9
Average		139,000	15.1			
A6LB6-4	800	129,000	13.7	126,000	138,000	12.4
-10	800	134,000	13.8	132,000	143,000	12.2
-12	800	136,000	13.9	135,000	148,000	10.7
Average		133,000	13.8			
A6LB7-3	900	125,000	14.1	122,300	132,000	12.3
-6	900	127,000	13.9	125,200	139,000	9.1
-28	900	133,000	13.0	132,000	143,000	12.1
Average		128,000	13.7			
A6LB8-1	1000	101,000	13.2	95,400	105,000	10.2
-9	1000	94,500	12.7	89,000	98,200	10.0
-21	1000	102,000	13.2	100,000	105,000	19.2
Average		99,200	13.0			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. 86761)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
A6TB1-2	80	174,000	16.2	174,000	180,000	27.2
-5	80	177,000	16.4	176,000	184,000	28.6
-8	80	182,000	16.4	182,000	188,000	26.0
-11	80	176,000	16.4	176,000	181,000	35.4
-14	80	181,000	16.0	181,000	188,000	25.7
-17	80	178,000	15.7	178,000	179,000	24.7
-20	80	177,000	16.4	177,000	183,000	26.3
-23	80	173,000	15.8	173,000	181,000	20.7
-26	80	176,000	16.2	175,000	181,000	28.1
-29	80	181,000	17.5	181,000	186,000	31.8
Average		177,000	16.2			
A6TB2-19	200	166,000	16.0	165,000	172,000	23.3
-22	200	162,000	16.3	159,000	168,000	17.1
-31	200	160,000	16.2	158,000	167,000	17.0
Average		163,000	16.2			
A6TB3-13	400	158,000	16.4	156,000	167,000	14.0
-24	400	157,000	15.4	156,000	169,000	12.3
-27	400	151,000	15.6	150,000	160,000	14.9
Average		153,000	15.8			
A6TB4-15	600	146,000	15.5	143,000	154,000	13.2
18	600	149,000	14.9	140,000	150,000	14.2
-25	600	146,000	15.1	144,000	159,000	10.0
Average		145,000	15.2			
A6TB6-4	800	140,000	14.8	138,000	151,000	10.4
-10	800	140,000	15.0	138,000	151,000	10.4
-12	800	142,000	14.6	140,000	153,000	11.0
Average		141,000	14.8			
A6TB7-3	900	131,000	15.1	128,000	138,000	12.8
-16	900	130,000	15.1	127,000	138,000	11.5
-28	900	136,000	15.5	133,000	147,000	9.9
Average		132,000	15.2			
A6TB8-1	1000	105,000	13.2	103,000	107,000	24.4
-9	1000	110,000	13.4	107,000	113,000	17.3
-21	1000	109,000	13.1	106,000	112,000	17.1
Average		108,000	13.6			

TABLE XV

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R6753)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
A9LB1-2	80	202,000	16.3	203,000	-	-
-5	80	184,000	15.2	185,000	190,000	35.4
-8	80	169,000	15.9	168,000	174,000	27.5
-11	80	206,000	16.6	206,000	212,000	34.3
-14	80	172,000	15.7	171,000	178,000	44.0
-17	80	203,000	16.4	204,000	210,000	29.7
-20	80	188,000	16.2	188,000	188,000	27.0
-23	80	178,000	16.3	171,000	177,000	25.7
-26	80	204,000	16.4	204,000	209,000	35.6
-29	80	176,400	16.0	173,000	182,000	25.1
-30	80	187,000	15.5			
Average						
A9LB8-7	800	171,000	16.5	170,000	177,000	20.8
-19	800	173,000	15.9	172,000	178,000	30.9
-22	800	156,000	13.6	155,000	163,000	19.0
Average		167,000	15.3			
A9LB3-13	400	168,000	15.5	161,000	170,000	16.2
-24	400	179,000	16.0	175,000	181,000	13.4
-27	400	164,000	15.9	168,000	177,000	11.0
-31	400	167,000	15.8			
Average						
A9LB4-15	600	143,000	14.3	141,000	154,000	12.8
-10	600	176,000	15.8	176,000	-	-
-25	600	173,000	14.8	173,000	-	-
Average		164,000	15.1			
A9LB6-4	800	147,000	13.9	146,000	158,000	8.6
-10	800	150,000	14.0	140,000	-	-
-12	800	145,000	13.9	136,000	151,000	9.6
Average		147,000	13.9			
A9LB7-3	900	150,000	14.5	150,000	168,000	11.7
-16	900	151,000	14.5	150,000	160,000	14.8
-28	900	134,000	14.6	131,000	144,000	10.4
Average		145,000	14.5			
A9LB8-1	1000	97,300	12.9	98,400	-	-
-6	1000	103,000	12.8	99,100	104,000	10.9
-9	1000	100,000	13.4	97,000	109,000	15.7
Average		100,000	13.1			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R6753)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
A9TB1-2	80	191,000	16.4	191,000	200,000	20.3
-5	80	195,000	17.3	195,000	204,000	20.7
-8	80	184,000	16.8	183,000	192,000	19.5
-11	80	199,000	16.8	199,000	210,000	17.6
-14	80	184,000	16.2	184,000	192,000	22.1
-20	80	195,000	16.3	194,000	203,000	20.7
-23	80	174,000	16.6	174,000	182,000	20.7
-26	80	192,000	16.7	192,000	201,000	20.3
-29	80	187,000	16.9	187,000	195,000	22.1
-30	80	198,000	16.7	199,000	207,000	23.6
Average		190,000	16.7			
A9TB2-7	200	174,000	16.5	173,000	181,000	20.7
-9	200	173,000	16.6	172,000	180,000	20.3
-22	200	162,000	16.3	160,000	169,000	17.3
Average		170,000	16.5			
A9TB3-13	400	156,000	16.7	154,000	165,000	13.6
-24	400	155,000	16.0	153,000	164,000	13.8
-27	400	161,000	16.0	158,000	170,000	13.1
Average		157,000	16.2			
A9TB4-15	600	160,000	15.0	160,000	172,000	13.3
-10	600	162,000	15.9	166,000	173,000	14.5
-25	600	170,000	15.8	170,000	183,000	13.1
Average		164,000	15.6			
A9TB6-4	800	157,000	14.4	157,000	170,000	12.1
-6	800	158,000	14.3	158,000	176,000	9.2
-12	800	153,000	14.1	153,000	171,000	9.0
Average		156,000	14.3			
A9TB7-3	900	144,000	15.0	142,000	151,000	11.1
-16	900	149,000	14.8	140,000	161,000	11.5
-28	900	135,000	14.6	132,000	146,000	9.8
Average		143,000	14.8			
A9TB8-1	1000	95,800	12.9	94,600	-	-
-21	1000	97,100	12.2	94,600	-	-
-31	1000	102,000	10.2	102,000	-	-
Average		98,600	11.8			

TABLE XVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. 86392)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A1LD1-4	80	288,000	239,000
-12	80	291,000	247,000
-24	80	285,000	246,000
-27	80	299,000	255,000
-56	80	296,000	251,000
-65	80	293,000	251,000
-94	80	298,000	263,000
-104	80	292,000	248,000
-115	80	304,000	258,000
-168	80	291,000	229,000
Average		294,000	249,000
A1LD2-87	200	287,000	226,000
-98	200	286,000	244,000
-122	200	291,000	237,000
Average		288,000	236,000
A1LD3-5	400	289,000	244,000
-13	400	285,000	259,000
-147	400	266,000	221,000
Average		280,000	242,000
A1LD4-55	600	253,000	227,000
-93	600	273,000	253,000
-130	600	288,000	256,000
Average		271,000	245,000
A1LD6-10	800	254,000	211,000
-68	800	261,000	215,000
-125	800	256,000	223,000
Average		257,000	216,000
A1LD7-154	900	232,000	199,000
-157	900	236,000	203,000
-160	900	238,000	193,000
Average		235,000	198,000
A1LD8-17	1000	158,000	153,000
-82	1000	176,000	133,000
-102	1000	189,000	147,000
		188,000	144,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. 86392)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
A1TD1-27	80	295,000	254,000	
-30	80	291,000	248,000	
-96	80	296,000	274,000	
-103	80	300,000	263,000	
-109	80	292,000	252,000	
-142	80	297,000	257,000	
-168	80	289,000	244,000	
-169	80	281,000	232,000	
-170	80	300,000	265,000	
-171	80	296,000	251,000	
Average		294,000	254,000	
A1TD2-12	200	256,000	226,000	
-94	200	276,000	238,000	
-98	200	289,000	251,000	
Average		274,000	238,000	
A1TD3-35	400	303,000	276,000	
-116	400	264,000	221,000	
-147	400	270,000	242,000	
Average		279,000	246,000	
A1TD4-10	600	258,000	225,000	
-68	600	255,000	221,000	
-102	600	263,000	235,000	
Average		259,000	227,000	
A1TD6-39	800	252,000	213,000	229,000
-85	800	264,000	225,000	
-112	800	258,000	221,000	
Average		258,000	220,000	
A1TD7-154	900	233,000	201,000	
-157	900	240,000	206,000	
-160	900	234,000	201,000	
Average		236,000	203,000	
A1TD8-5	1000	194,000	158,000	156,000
-107	1000	193,000	148,000	
-122	1000	193,000	152,000	
Average		193,000	153,000	

(1) Initial failure.

TABLE XVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6761)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
AHLD1-9	80	272,000	233,000
-27	80	296,000	245,000
-34	80	279,000	244,000
-35	80	278,000	249,000
-90	80	297,000	254,000
-103	80	305,000	252,000
-109	80	303,000	257,000
-168	80	283,000	242,000
-201	80	286,000	245,000
-202	80	286,000	249,000
Average		289,000	246,000
AHLD2-2	200	269,000	222,000
-12	200	265,000	221,000
-98	200	288,000	253,000
Average		273,000	232,000
AHLD3-94	400	279,000	236,000
-115	400	277,000	229,000
-147	400	273,000	236,000
Average		276,000	234,000
AHLD4-39	600	273,000	234,000
-102	600	276,000	241,000
-128	600	271,000	226,000
Average		273,000	234,000
AHLD6-10	800	249,000	214,000
-85	800	256,000	216,000
-602	800	256,000	230,000
Average		254,000	220,000
AHLD7-154	900	237,000	202,000
-157	900	243,000	203,000
-160	900	247,000	215,000
Average		242,000	207,000
AHLD8-5	1000	192,000	151,000
-107	1000	205,000	146,000
-122	1000	206,000	159,000
Average		201,000	152,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6761)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br_j}(1), PSI
AHTD1-6	80	289,000	234,000	
-15	80	297,000	244,000	
-43	80	285,000	245,000	
-57	80	286,000	248,000	
-89	80	298,000	227,000	
-113	80	290,000	236,000	
-121	80	297,000	249,000	
-135	80	291,000	243,000	
-140	80	294,000	235,000	
-201	80	283,000	234,000	
Average		291,000	240,000	
AHTD2-34	200	269,000	220,000	
-77	200	260,000	212,000	
-168	200	274,000	235,000	
Average		268,000	222,000	
AHTD3-27	400	261,000	222,000	
-99	400	272,000	231,000	
-147	400	261,000	223,000	
Average		265,000	225,000	
AHTD4-95	600	268,000	217,000	
-110	600	260,000	215,000	
-154	600	268,000	226,000	
Average		265,000	220,000	
AHTD6-44	800	252,000	205,000	
-129	800	240,000	197,000	
-157	800	258,000	220,000	
Average		250,000	207,000	
AHTD7-3	900	237,000	214,000	
-81	900	225,000	187,000	
-82	900	227,000	193,000	
Average		230,000	198,000	
AHTD8-3	1000	186,000	135,000	152,000
-74	1000	193,000	- (1)	157,000
-160	1000	192,000	158,000	158,000
Average		190,000	146,000	

(1) Initial failure.
(2) Load drop prior to attaining yield deformation.

TABLE XVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/d = 1.5, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6788)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A7LD1-4	80	282,000	237,000
-24	80	262,000	237,000
-27	80	267,000	232,000
-56	80	277,000	256,000
-65	80	296,000	256,000
-75	80	289,000	247,000
-91	80	287,000	254,000
-104	80	284,000	247,000
-115	80	276,000 (1)	242,000
-168	80	277,000	242,000
Average		280,000	245,000
A7LD2-31	200	262,000	220,000
-53	200	278,000	252,000
-67	200	275,000	238,000
Average		272,000	237,000
A7LD3-13	400	264,000	230,000
-49	400	272,000	236,000
-147	400	272,000	233,000
Average		269,000	233,000
A7LD4-55	600	275,000	247,000
-93	600	248,000	228,000
-120	600	258,000	221,000
Average		260,000	232,000
A7LD6-40	800	263,000	231,000
-46	800	262,000	226,000
-125	800	255,000	216,000
Average		260,000	224,000
A7LD7-154	900	231,000	184,000
-157	900	228,000	201,000
-160	900	236,000	192,000
Average		232,000	192,000
A7LD8-17	1000	186,000	134,000
-52	1000	189,000	145,000
-62	1000	196,000	147,000
Average		190,000	142,000

(1) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6788)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A7TD1-4	80	286,000	242,000
-24	80	281,000	247,000
-27	80	283,000	236,000
-56	80	260,000	230,000
-65	80	275,000	228,000
-75	80	270,000	232,000
-91	80	287,000	242,000
-104	80	267,000	235,000
-115	80	283,000	234,000
-168	80	272,000	226,000
Average		276,000	235,000
A7TD2-31	200	261,000	218,000
-53	200	271,000	229,000
-67	200	277,000	227,000
Average		270,000	225,000
A7TD3-13	400	269,000	229,000
-49	400	274,000	236,000
-55	400	260,000	219,000
Average		268,000	228,000
A7TD4-93	600	265,000	225,000
-120	600	252,000	219,000
-147	600	254,000	213,000
Average		257,000	219,000
A7TD6-40	800	256,000	208,000
-46	800	257,000	224,000
-125	800	259,000	212,000
Average		254,000	215,000
A7TD7-154	900	227,000	192,000
-157	900	240,000	208,000
-160	900	268,000	231,000
Average		245,000	210,000
A7TD8-17	1000	191,000	143,000
-52	1000	168,000	128,000
-62	1000	189,000	140,000
Average		183,000	137,000

TABLE XIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. 86398)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A1LD1-38	80	296,000	229,000
-58	80	320,000	263,000
-66	80	309,000	251,000
-71	80	307,000	250,000
-87	80	304,000	223,000
-92	80	288,000	253,000
-118	80	294,000	242,000
-132	80	273,000	226,000
-134	80	266,000	228,000
-141	80	299,000	241,000
Average		296,000	240,000
A1LD2-51	200	287,000	255,000
-105	200	294,000(1)	245,000
-124	200	246,000	233,000
Average		209,000	244,000
A1LD3-36	400	259,000	213,000
-80	400	272,000	224,000
-156	400	267,000	217,000
Average		266,000	218,000
A1LD4-73	600	270,000	225,000
-83	600	265,000	229,000
-139	600	273,000	225,000
Average		269,000	226,000
A1LD6-117	800	266,000	220,000
-146	800	263,000	211,000
-159	800	261,000	215,000
Average		263,000	216,000
A1LD7-21	900	237,000	204,000
-30	900	241,000	209,000
-133	900	245,000	214,000
Average		241,000	209,000
A1LD8-41	1000	195,000	169,000
-59	1000	191,000	161,000
-61	1000	187,000	170,000
Average		192,000	167,000

(1) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. 86398)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A1TD1-38	80	296,000	238,000
-58	80	298,000	246,000
-66	80	297,000	24[illegible],000
-87	80	280,000	232,000
-92	80	301,000	254,000
-118	80	268,000	230,000
-132	80	300,000	247,000
-134	80	296,000	248,000
-141	80	305,000	250,000
-156	80	296,000	250,000
Average		294,000	244,000
A1TD2-51	200	278,000	220,000
-105	200	278,000	246,000
-124	200	267,000	245,000
Average		274,000	237,000
A1TD3-1	400	246,000	215,000
-36	400	239,000	188,000
-80	400	256,000	217,000
Average		247,000	207,000
A1TD4-88	600	254,000	217,000
-117	600	254,000	196,000
-139	600	258,000	216,000
Average		255,000	210,000
A1TD6-73	800	241,000	210,000
-146	800	249,000	209,000
-159	800	250,000	209,000
Average		249,000	209,000
A1TD7-21	900	231,000	201,000
-30	900	229,000	197,000
-133	900	223,000	195,000
Average		228,000	198,000
A1TD8-41	1000	177,000	147,000
-61	1000	187,000	160,000
-119	1000	199,000	142,000
Average		188,000	150,000

TABLE XX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6761)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
AkLD1-38	80	269,000	213,000
-66	80	262,000	213,000
-71	80	270,000	213,000
-87	80	278,000	227,000
-98	80	266,000	212,000
-118	80	290,000	215,000
-132	80	289,000	215,000
-134	80	290,000	215,000
-141	80	297,000	249,000
-401	80	283,000	231,000
Average		281,000	220,000
AkLF2-51	200	266,000	219,000
-105	200	282,000	233,000
-124	200	271,000	226,000
Average		276,000	227,000
AkLD3-36	400	256,000	211,000
-80	400	257,000	200,000
-156	400	271,000	228,000
Average		268,000	213,000
AkLD4-73	600	254,000	200,000
-88	600	255,000	203,000
-139	600	266,000	222,000
Average		258,000	211,000
AkLD5-117	800	264,000	222,000
-146	800	266,000	231,000
-159	800	269,000	232,000
Average		267,000	228,000
AkLD7-21	900	248,000	207,000
-30	900	252,000	211,000
-133	900	252,000	195,000
Average		251,000	204,000
AkLD8-41	1000	192,000	150,000
-59	1000	191,000	159,000
-61	1000	190,000	- (1)
Average		191,000	154,000

(1) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
AkTD1-38	80	276,000	203,000
-58	80	269,000	230,000
-66	80	282,000	196,000(1)
-71	80	273,000	210,000
-87	80	303,000	243,000
-98	80	286,000	231,000
-118	80	287,000	240,000
-132	80	296,000	249,000
-134	80	298,000	245,000
-141	80	286,000	250,000
Average		288,000	230,000
AkTD2-51	200	265,000	216,000
-105	200	288,000	237,000
-124	200	287,000	230,000
Average		280,000	228,000
AkTD3-36	400	262,000	213,000
-80	400	266,000	229,000
-156	400	278,000	216,000
Average		269,000	219,000
AkTD4-73	600	268,000	210,000
-88	600	263,000	208,000
-139	600	269,000	221,000
Average		267,000	213,000
AkTD6-117	800	267,000	210,000
-146	800	263,000	207,000
-159	800	271,000	218,000
Average		268,000	212,000
AkTD7-30	900	238,000	202,000
-35	900	248,000	196,000
-133	900	249,000	214,000
Average		245,000	204,000
AkTD8-41	1000	205,000	158,000
-59	1000	187,000	151,000
-61	1000	193,000	- (2)
Average		195,000	154,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TABLE XXI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6788)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A7TD1-38	80	271,000	256,000
-58	80	290,000(1)	255,000
-66	80	295,000	240,000
-71	80	274,000	238,000
-87	80	284,000	248,000
-92	80	279,000	246,000
-116	80	275,000	242,000
-132	80	282,000(1)	251,000
-134	80	277,000	245,000
-141	80	274,000(1)	241,000
Average		282,000	247,000
A7TD2-51	200	280,000	238,000
-105	200	283,000	219,000
-124	200	285,000	236,000
Average		283,000	230,000
A7TD3-36	400	270,000	189,000
-80	400	272,000	221,000
-156	400	263,000	- (2)
Average		268,000	205,000
A7TD4-73	600	284,000	221,000
-88	600	269,000	225,000
-139	600	272,000	226,000
Average		275,000	225,000
A7TD6-117	800	256,000	203,000
-146	800	267,000	212,000
-159	800	263,000	223,000
Average		255,000	213,000
A7TD7-21	900	234,000	189,000
-33	900	241,000	210,000
-133	900	241,000	- (2)
Average		239,000	200,000
A7TD8-41	1000	197,000	167,000
-51	1000	209,000	193,000
-61	1000	243,000	165,000
Average		216,000	175,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6788)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A7TD1-38	80	274,000(1)	241,000
-66	80	262,000	236,000
-71	80	276,000	239,000
-87	80	267,000	242,000
-92	80	267,000	249,000
-116	80	265,000(1)	245,000
-132	80	287,000(1)	247,000
-134	80	269,000	244,000
-141	80	267,000	251,000
-169	80	269,000(1)	252,000
Average		269,000	245,000
A7TD2-51	200	261,000	211,000
-105	200	271,000	222,000
-124	200	273,000	231,000
Average		268,000	223,000
A7TD3-36	400	254,000	226,000
-80	400	270,000	229,000
-156	400	256,000	218,000
Average		261,000	222,000
A7TD4-73	600	270,000	229,000
-88	600	253,000	219,000
-139	600	267,000	230,000
Average		263,000	226,000
A7TD6-117	800	259,000	195,000
-146	800	249,000	- (2)
-159	800	254,000	212,000
Average		254,000	204,000
A7TD7-21	900	235,000	207,000
-133	900	233,000	213,000
-171	900	234,000	183,000
Average		234,000	201,000
A7TD8-41	1000	200,000	186,000
-51	1000	207,000	185,000
-166	1000	210,000	156,000
Average		206,000	176,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TABLE XVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6398)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
A1LD1-45	80	265,000	241,000	
-47	80	281,000	245,000	
-48	80	273,000	228,000	
-64	80	275,000	236,000	
-72	80	267,000	241,000	
-106	80	266,000	233,000	
-108	80	271,000(2)	237,000	
-114	80	261,000(2)	238,000	
-150	80	270,000(2)	240,000	
-702	80	277,000	250,000	
Average		271,000	239,000	
A1LD8-1	200	263,000	230,000	
-69	200	264,000(2)	222,000	
-165	200	286,000	247,000	
Average		271,000	233,000	
A1LD3-33	400	261,000	219,000	
-168	400	268,000	231,000	
-163	400	277,000	246,000	
Average		269,000	232,000	
A1LD4-50	600	267,000(2)	227,000	
-97	600	268,000	214,000	
-111	600	265,000	228,000	
Average		265,000	223,000	
A1LD6-18	800	265,000	224,000	
-37	800	249,000	207,000	237,000
-145	800	257,000	215,000	
Average		257,000	215,000	
A1LD7-42	900	244,000	221,000	
-138	900	236,000	204,000	
-152	900	232,000	199,000	
Average		237,000	208,000	
A1LD8-28	1000	193,000	- (3)	
-155	1000	199,000	153,000	
-167	1000	188,000	141,000	
Average		190,000	147,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Unusable load-deformation curve.

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TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6398)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A1TD1-45	80	267,000(1)	236,000
-47	80	272,000(1)	241,000
-48	80	273,000(1)	242,000
-64	80	256,000(1)	224,000
-72	80	248,000(1)	222,000
-106	80	267,000(1)	242,000
-108	80	259,000(1)	237,000
-114	80	265,000	236,000
-150	80	282,000(1)	249,000
-162	80	272,000(1)	240,000
Average		266,000	237,000
A1TD8-1	200	270,000	237,000
-33	200	271,000	236,000
-166	200	273,000	241,000
Average		271,000	238,000
A1TD3-19	400	257,000	230,000
-69	400	257,000	212,000
-163	400	255,000	213,000
Average		256,000	218,000
A1TD4-50	600	270,000	231,000
-97	600	268,000	233,000
-111	600	266,000	238,000
Average		268,000	234,000
A1TD6-18	800	257,000	221,000
-37	800	249,000	208,000
-145	800	244,000	209,000
Average		250,000	213,000
A1TD7-42	900	227,000	202,000
-138	900	236,000	207,000
-152	900	231,000	198,000
Average		231,000	202,000
A1TD8-28	1000	194,000	170,000
-155	1000	189,000	152,000
-167	1000	201,000	- (2)
Average		195,000	161,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TABLE XXIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
ALLD1-26	80	2[illegible],000(2)	262,000	
-45	80	267,000	229,000	
-47	80	264,000(2)	234,000	
-48	80	257,000	224,000	
-64	80	272,000(2)	232,000	
-72	80	264,000(2)	224,000	
-106	80	282,000(2)	239,000	
-108	80	275,000(2)	244,000	
-114	80	280,000(2)	246,000	
-150	80	265,000(2)	236,000	
Average		270,000	237,000	
ALLD2-1	200	272,000(2)	225,000	
-33	200	258,000(2)	223,000	
-165	200	265,000(2)	238,000	
Average		265,000	229,000	
ALLD3-50	400	263,000	213,000	
-69	400	260,000	216,000	
-113	400	265,000(2)	227,000	
Average		263,000	219,000	
ALLD4-19	600	274,000(2)	228,000	
-97	600	267,000	223,000	
-111	600	268,000	224,000	
Average		270,000	225,000	
ALLD6-18	800	260,000	226,000	
-42	800	259,000	217,000	
-145	800	257,000	220,000	
Average		259,000	221,000	
ALLD7-37	900	233,000	185,000	
-138	900	233,000	203,000	
-152	900	237,000	189,000	
Average		234,000	192,000	
ALLD8-28	1000	187,000	166,000	185,000
-155	1000	186,000	154,000	182,000
-164	1000	193,000	163,000	163,000
Average		189,000	161,000	

(1) Initial failure.
(2) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
ALTD1-45	80	266,000(2)	239,000	
-47	80	271,000(2)	241,000	
-48	80	265,000(2)	238,000	
-64	80	255,000	223,000	
-106	80	269,000(2)	237,000	
-108	80	276,000(2)	246,000	
-150	80	282,000(2)	251,000	
-166	80	277,000(2)	242,000	
-164	80	281,000(2)	248,000	
-166	80	264,000(2)	243,000	
Average		273,000	241,000	
ALTD2-1	200	242,000(2)	211,000	
-33	200	243,000(2)	210,000	
-165	200	269,000	252,000	
Average		257,000	225,000	
ALTD3-69	400	236,000	205,000	
-163	400	238,000	215,000	
-175	400	252,000	228,000	
Average		242,000	216,000	
ALTD4-50	600	242,000	205,000	
-97	600	250,000	219,000	
-111	600	249,000	203,000	
Average		247,000	209,000	
ALTD6-18	800	251,000	204,000	218,000
-37	800	246,000	208,000	
-145	800	259,000	221,000	
Average		252,000	211,000	
ALTD7-42	900	223,000	194,000	213,000
-138	900	229,000	197,000	
-173	900	247,000	202,000	
Average		233,000	198,000	
ALTD8-28	1000	190,000	130,000	176,000
-158	1000	189,000	146,000	185,000
-167	1000	213,000	179,000	
Average		197,000	152,000	

(1) Initial failure.
(2) Tensile failure at net section.

TABLE XXIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED RIGIDIZED TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B6706)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1)
A7LD1-45	80	284,000(2)	249,000	
-47	80	299,000(2)	254,000	
-48	80	269,000(2)	248,000	
-64	80	284,000(2)	244,000	
-72	80	270,000(2)	237,000	
-106	80	275,000(2)	238,000	
-108	80	269,000(2)	229,000	
-114	80	265,000	232,000	
-150	80	276,000(2)	240,000	
-162	80	266,000(2)	231,000	
Average		276,000	240,000	
A7LD2-1	200	282,000	243,000	
-33	200	262,000	225,000	
-165	200	269,000	237,000	
Average		271,000	235,000	
A7LD3-19	400	263,000	214,000	
-69	400	260,000	224,000	
-163	400	273,000	234,000	
Average		265,000	231,000	
A7LD4-50	600	257,000	215,000	
-97	600	260,000	206,000	
-111	600	252,000(2)	206,000	
Average		250,000	209,000	
A7LD6-18	800	258,000	217,000	
-37	800	247,000	205,000	
-145	800	260,000	217,000	
Average		255,000	213,000	
A7LD7-42	900	241,000	206,000	
-138	900	238,000	201,000	
-152	900	238,000	205,000	
Average		239,000	204,000	
A7LD8-28	1000	184,000	152,000	157,000
-155	1000	180,000	136,000	141,000
-167	1000	192,000	168,000	164,000
Average		185,000	150,000	

(1) Initial failure.
(2) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED RIGIDIZED TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B6706)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
A7TD1-45	80	286,000(2)	253,000	
-47	80	280,000(2)	253,000	
-48	80	290,000(2)	258,000	
-64	80	272,000(2)	238,000	
-72	80	272,000(2)	255,000	
-106	80	249,000(2)	246,000	
-108	80	274,000(2)	251,000	
-114	80	- (3)	235,000	
-150	80	268,000(2)	230,000	
-162	80	270,000	242,000	
Average		276,000	245,000	
A7TD2-1	200	251,000	224,000	
-33	200	270,000	244,000	
-165	200	269,000	238,000	
Average		263,000	235,000	
A7TD3-19	400	257,000	217,000	255,000
-69	400	255,000	224,000	238,000
-163	400	261,000	223,000	
Average		258,000	221,000	
A7TD4-50	600	255,000	229,000	
-97	600	267,000	220,000	
-111	600	280,000	241,000	
Average		267,000	230,000	
A7TD6-18	800	232,000(2)	207,000	
-37	800	254,000	216,000	
-145	800	262,000	203,000	
Average		249,000	209,000	
A7TD7-42	900	242,000	203,000	
-138	900	236,000	197,000	197,000
-152	900	230,000	192,000	
Average		236,000	197,000	
A7TD8-28	1000	186,000	159,000	
-155	1000	182,000	139,000	139,000
-167	1000	205,000	174,000	201,000
Average		191,000	154,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Specimen failed at loading hole.

TABLE XIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6392)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A2LD1-9	80	279,000	240,000
-13	80	272,000(1)	244,000
-16	80	249,000(1)	220,000
-21	80	277,000(1)	236,000
-26	80	275,000(1)	235,000
-29	80	292,000	240,000
-31	80	298,000	266,000
-33	80	296,000	254,000
-47	80	265,000(1)	232,000
-51	80	268,000	249,000
Average		277,000	240,000
A2LD2-1	200	290,000	266,000
-17	200	259,000(1)	219,000
-48	200	254,000(1)	218,000
Average		268,000	234,000
A2LD3-14	400	252,000(1)	212,000
-23	400	271,000	225,000
-55	400	269,000(1)	231,000
Average		264,000	223,000
A2LD4-3	600	275,000	238,000
-30	600	265,000	215,000
-43	600	227,000(1)	185,000
Average		256,000	213,000
A2LD6-2	800	270,000	242,000
-40	800	242,000	203,000
-42	800	216,000	194,000
Average		249,000	213,000
A2LD7-10	900	240,000	205,000
-24	900	236,000	204,000
-25	900	239,000	200,000
Average		239,000	203,000
A2LD8-7	1000	168,000	162,000
-18	1000	165,000	174,000
-35	1000	162,000	- (2)
Average		165,000	168,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6392)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A2TD1-9	80	268,000(1)	237,000
-13	80	237,000(1)	230,000
-16	80	237,000(1)	226,000
-21	80	281,000(1)	239,000
-26	80	284,000(1)	255,000
-29	80	284,000(1)	247,000
-31	80	300,000	260,000
-33	80	297,000	274,000
-47	80	264,000(1)	228,000
-51	80	273,000	231,000
Average		272,000	243,000
A2TD2-1	200	281,000	256,000
-17	200	253,000(1)	207,000
-48	200	262,000(1)	215,000
Average		265,000	226,000
A2TD3-14	400	247,000(1)	206,000
-23	400	261,000(1)	219,000
-55	400	272,000	241,000
Average		260,000	222,000
A2TD4-3	600	269,000	244,000
-30	600	262,000	219,000
-43	600	255,000	218,000
Average		262,000	227,000
A2TD6-2	800	271,000	241,000
-40	800	242,000	203,000
-42	800	253,000	214,000
Average		255,000	220,000
A2TD7-10	900	240,000	199,000
-24	900	234,000	205,000
-25	900	242,000	212,000
Average		239,000	205,000
A2TD8-7	1000	187,000	169,000
-18	1000	178,000	156,000
-35	1000	177,000	157,000
Average		181,000	161,000

(1) Tensile failure at net section.

TABLE XXVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A5LD1- 9	80	276,000	226,000
13	80	297,000	240,000
16	80	281,000	238,000
21	80	294,000	253,000
26	80	285,000	253,000
29	80	280,000	242,000
31	80	287,000	253,000
33	80	298,000	260,000
47	80	293,000	257,000
51	80	296,000	248,000
Average		287,000	247,000
A5LD2- 1	200	278,000	248,000
17	200	271,000	233,000
48	200	284,000	252,000
Average		278,000	244,000
A5LD3-14	400	278,000	238,000
23	400	275,000	242,000
55	400	262,000	223,000
Average		272,000	234,000
A5LD4- 3	600	274,000	233,000
30	600	269,000	225,000
43	600	268,000	223,000
Average		270,000	227,000
A5LD6- 2	800	265,000	237,000
40	800	258,000	226,000
42	800	264,000	229,000
Average		262,000	231,000
A5LD7-10	900	240,000	201,000
24	900	228,000	191,000
25	900	231,000	198,000
Average		233,000	197,000
A5LD8- 7	1000	170,000	118,000
18	1000	166,000	122,000
35	1000	186,000	136,000
Average		174,000	125,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature °F	F_{bru}, PSI	F_{bry}, PSI
A5TD1- 9	80	284,000 (1)	238,000
13	80	287,000 (1)	249,000
16	80	288,000	261,000
21	80	283,000	243,000
26	80	273,000	239,000
29	80	285,000 (1)	257,000
31	80	296,000	260,000
33	80	289,000	251,000
47	80	261,000 (1)	229,000
51	80	282,000	248,000
Average		283,000	248,000
A5TD2- 1	200	277,000 (1)	247,000
17	200	282,000	252,000
48	200	270,000	250,000
Average		276,000	250,000
A5TD3-14	400	275,000	240,000
23	400	266,000	233,000
55	400	270,000	236,000
Average		270,000	236,000
A5TD4-30	600	263,000	227,000
40	600	263,000	224,000
59	600	259,000	219,000
Average		262,000	223,000
A5TD6- 2	800	261,000	229,000
42	800	256,000	222,000
43	800	258,000	222,000
Average		258,000	224,000
A5TD7-10	900	237,000	204,000
24	900	229,000	194,000
25	900	231,000	195,000
Average		232,000	198,000
A5TD8- 7	1000	177,000	127,000
18	1000	183,000	133,000
35	1000	182,000	133,000
Average		180,000	131,000

(1) Tensile failure at net section

TABLE XXVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6788)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
ARLD1-9	80	267,000(1)	246,000
-13	80	262,000	245,000
-16	80	272,000(1)	248,000
-21	80	274,000	240,000
-26	80	276,000	245,000
-29	80	271,000	238,000
-31	80	276,000(1)	254,000
-33	80	262,000	240,000
-47	80	269,000(1)	249,000
-51		273,000	242,000
Average		270,000	245,000
A8LD2-1	200	276,000(1)	249,000
-8	200	269,000	237,000
-48	200	271,000	240,000
Average		273,000	242,000
A8LD3-14	400	271,000	239,000
-20	400	255,000	213,000
-30	400	261,000	236,000
Average		262,500	229,000
A8LD4-3	600	259,000	217,000
-23	600	275,000	231,000
-43	600	258,000	225,000
Average		264,000	224,000
A8LD6-2	800	256,000	226,000
-40	800	274,000	242,000
-42	800	262,000	233,000
Average		264,000	234,000
A8LD7-10	900	248,000	232,000
-24	900	243,000	216,000
-25	900	237,000	215,000
Average		243,000	221,000
A8LD8-7	1000	176,000	167,000
-18	1000	194,000	186,000
-35	1000	175,000	156,000
Average		182,000	170,000

(1) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6788)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A8TD1-9	80	279,000(1)	261,000
-13	80	299,000	286,000
-16	80	284,000(1)	246,000
-21	80	280,000(1)	248,000
-26	80	276,000	241,000
-29	80	272,000	235,000
-33	80	268,000(1)	251,000
-47	80	277,000(1)	(2)
-51	80	275,000(1)	242,000
-59	80	267,000(1)	233,000
Average		278,000	249,000
A8TD2-1	200	262,000	231,000
-17	200	271,000	235,000
-48	200	280,000	246,000
Average		271,000	237,000
A8TD3-14	400	284,000	254,000
-23	400	273,000	236,000
-35	400	270,000	239,000
Average		276,000	243,000
A8TD4-3	600	255,000	217,000
-30	600	264,000	221,000
-43	600	268,000	236,000
Average		262,000	225,000
A8TD6-2	800	250,000	215,000
-40	800	262,000	231,000
-42	800	264,000	235,000
Average		259,000	227,000
A8TD7-10	900	248,000	222,000
-24	900	239,000	211,000
-25	900	235,000	211,000
Average		241,000	215,000
A8TD8-7	1000	174,000	154,000
-18	1000	189,000	163,000
-35	1000	160,000	143,000
Average		174,000	153,000

(1) Tensile failure at net section
(2) Unusable load-deformation curve

TABLE XXVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6759)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A3LD1-9	80	284,000(1)	265,000
-13	80	299,000(1)	279,000
-16	80	286,000(1)	265,000
-21	80	288,000(1)	266,000
-26	80	296,000	273,000
-29	80	294,000(1)	271,000
-31	80	274,000(1)	252,000
-47	80	275,000(1)	266,000
-51	80	287,000	257,000
-56	80	302,000(1)	279,000
Average		289,000	267,000
A3LD2-1	200	281,000(1)	255,000
-17	200	288,000	266,000
-48	200	278,000(1)	263,000
Average		282,000	261,000
A3LD3-14	400	271,000	- (2)
-23	400	271,000	259,000
-55	400	268,000	244,000
Average		270,000	252,000
A3LD4-3	600	262,000	251,000
-30	600	282,000	251,000
-43	600	269,000	250,000
Average		271,000	244,000
A3LD6-24	800	276,000	248,000
-40	800	265,000	236,000
-42	800	272,000	238,000
Average		271,000	241,000
A3LD7-2	900	238,000	215,000
-10	900	249,000	223,000
-25	900	253,000	228,000
Average		247,000	222,000
A3LD8-7	1000	217,000	181,000
-18	1000	217,000	178,000
-35	1000	182,000	157,000
Average		205,000	172,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6759)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A3TD1-9	80	284,000(1)	268,000
-13	80	275,000	269,000
-16	80	261,000(1)	256,000
-21	80	291,000(1)	277,000
-26	80	295,000(1)	272,000
-29	80	287,000	270,000
-31	80	271,000(1)	267,000
-33	80	284,000(1)	262,000
-51	80	284,000(1)	266,000
-57	80	291,000	271,000
Average		286,000	268,000
A3TD2-17	200	279,000(1)	251,000
-48	200	278,000	245,000
-58	200	287,000	243,000
Average		281,000	246,000
A3TD3-14	400	276,000	266,000
-23	400	277,000	258,000
-55	400	275,000	257,000
Average		276,000	260,000
A3TD4-3	600	262,000	241,000
-30	600	272,000	249,000
-43	600	261,000	240,000
Average		265,000	243,000
A3TD6-2	800	260,000	230,000
-40	800	270,000	245,000
-42	800	265,000	227,000
Average		265,000	234,000
A3TD7-10	900	246,000	218,000
-24	900	258,000	224,000
-25	900	255,000	226,000
Average		250,000	223,000
A3TD8-7	1000	184,000	170,000
-18	1000	185,000	160,000
-35	1000	182,000	156,000
Average		184,000	162,000

(1) Tensile failure at net section.

TABLE XXIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A6LD1- 9	80	280,000 (1)	246,000
13	80	268,000	249,000
16	80	278,000	233,000
21	80	279,000	245,000
26	80	275,000	236,000
29	80	278,000	242,000
31	80	276,000	238,000
33	80	274,000	242,000
47	80	277,000 (1)	240,000
51	80	272,000 (1)	235,000
Average		275,000	241,000
A6LD2- 1	200	256,000	218,000
17	200	263,000	218,000
48	200	270,000	232,000
Average		263,000	223,000
A6LD3-14	400	270,000	230,000
23	400	262,000	222,000
55	400	270,000	234,000
Average		267,000	229,000
A6LD4- 1	600	249,000	202,000
30	600	263,000	225,000
43	600	262,000	227,000
Average		258,000	217,000
A6LD5- 2	800	250,000	214,000
40	800	250,000	217,000
42	800	234,000	218,000
Average		251,000	216,000
A6LD7-10	900	237,000	199,000
24	900	239,000	209,000
35	900	233,000	201,000
Average		236,000	203,000
A6LD8- 7	1000	196,000	158,000
18	1000	198,000	144,000
25	1000	185,000	150,000
Average		193,000	151,000

(1) Tensile failure at net section

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A6TD1-9	80	283,000	251,000
-13	80	282,000	250,000
-16	80	280,000 (1)	236,000
-21	80	286,000 (1)	248,000
-26	80	270,000	237,000
-29	80	282,000 (1)	244,000
-31	80	276,000	241,000
-33	80	276,000 (1)	247,000
-47	80	288,000	249,000
-51	80	268,000 (1)	238,000
Average		279,000	244,000
A6TD2-1	200	260,000	223,000
-17	200	259,000	223,000
-48	200	269,000	237,000
Average		263,000	228,000
A6TD3-14	400	258,000	224,000
-23	400	264,000	225,000
-55	400	265,000	230,000
Average		262,000	226,000
A6TD4-3	600	247,000	214,000
-30	600	256,000	209,000
-43	600	264,000	226,000
Average		256,000	216,000
A6TD6-2	800	245,000	212,000
-40	800	248,000	211,000
-42	800	252,000	217,000
Average		248,000	213,000
A6TD7-10	900	241,000	207,000
-25	900	232,000	200,000
-18	900	230,000	194,000
Average		234,000	200,000
A6TD8-7	1000	189,000	168,000
-24	1000	183,000	156,000
-35	1000	190,000	161,000
Average		187,000	162,000

(1) Tensile failure at net section

TABLE XXX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6753)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A9LD1-9	80	276,000(1)	232,000
-13	80	269,000(1)	(2)
-16	80	295,000	245,000
-21	80	272,000(1)	244,000
-26	80	286,000	(2)
-29	80	274,000	(2)
-31	80	275,000(1)	249,000
-33	80	275,000(1)	243,000
-47	80	264,000(1)	243,000
-51	80	272,000(1)	241,000
Average		276,000	242,000
A9LD2-1	200	284,000(1)	258,000
-17	200	288,000	257,000
-48	200	274,000(1)	244,000
Average		282,000	253,000
A9LD3-14	400	263,000	228,000
-23	400	263,000	229,000
-55	400	257,000	221,000
Average		261,000	226,000
A9LD4-3	600	272,000	235,000
-30	600	273,000	227,000
-43	600	261,000	219,000
Average		269,000	227,000
A9LD6-2	800	264,000	229,000
-40	800	252,000	216,000
-42	800	252,000	214,000
Average		256,000	220,000
A9LD7-10	900	247,000	219,000
-24	900	231,000	205,000
-25	900	242,000	217,000
Average		240,000	214,000
A9LD8-7	1000	173,000	143,000
-18	1000	171,000	151,000
-35	1000	177,000	(2)
Average		174,000	147,000

(1) Tensile failure at net section
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6753)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A9TD1-9	80	275,000(1)	240,000
-13	80	300,000	269,000
-16	80	270,000	253,000
-21	80	297,000(1)	250,000
-26	80	271,000	234,000
-29	80	297,000	262,000
-31	80	296,000	268,000
-33	80	282,000(1)	253,000
-47	80	282,000(1)	256,000
-51	80	300,000(1)	260,000
Average		287,000	254,000
A9TD2-1	200	263,000(1)	247,000
-17	200	259,000	226,000
-48	200	271,000	247,000
Average		264,000	240,000
A9TD3-14	400	279,000	241,000
-23	400	258,000	235,000
-55	400	247,000	213,000
Average		261,000	230,000
A9TD4-3	600	265,000	235,000
-30	600	266,000	240,000
-43	600	262,000	226,000
Average		264,000	234,000
A9TD6-2	800	261,000	226,000
-40	800	248,000	209,000
-42	800	258,000	223,000
Average		256,000	219,000
A9TD7-10	900	236,000	201,000
-24	900	241,000	208,000
-25	900	235,000	214,000
Average		237,000	208,000
A9TD8-7	1000	162,000	134,000
-18	1000	178,000	127,000
-35	1000	186,000	142,000
Average		175.000	134,000

(1) Tensile failure at net section

TABLE XXXI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6392)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A1LD1-6	80	364,000	266,000
-15	80	359,000	270,000
-43	80	358,000	274,000
-57	80	369,000	273,000
-89	80	357,000	279,000
-113	80	357,000	260,000
-121	80	362,000	266,000
-135	80	361,000	281,000
-140	80	361,000	263,000
-144	80	361,000	275,000
Average		361,000	271,000
A1LD2-34	200	344,000	241,000
-77	200	346,000	252,000
-158	200	342,000	251,000
Average		344,000	248,000
A1LD3-20	400	357,000	274,000
-99	400	354,000	258,000
-143	400	346,000	260,000
Average		352,000	264,000
A1LD4-26	600	339,000	255,000
-103	600	366,000	277,000
-110	600	343,000	241,000
Average		349,000	258,000
A1LD6-3	800	353,000	289,000
-44	800	342,000	254,000
-164	800	341,000	242,000
Average		345,000	262,000
A1LD7-81	900	307,000	225,000
-82	900	318,000	234,000
-129	900	307,000	228,000
Average		311,000	229,000
A1LD8-32	1000	232,000	- (1)
-74	1000	256,000	188,000
-86	1000	251,000	174,000
Average		247,000	181,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6392)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A1TD1-4	80	363,000	289,000
-24	80	375,000	290,000
-43	80	387,000	257,000
-56	80	372,000	284,000
-65	80	365,000	279,000
-75	80	366,000	290,000
-104	80	373,000	287,000
-115	80	362,000 (1)	286,000
-144	80	366,000	281,000
-164	80	393,000	292,000
Average		372,000	284,000
A1TD2-31	200	368,000	278,000
-53	200	365,000	301,000
-158	200	348,000	253,000
Average		360,000	277,000
A1TD3-13	400	352,000	267,000
-49	400	358,000	283,000
-143	400	327,000	243,000
Average		346,000	264,000
A1TD4-26	600	350,000	267,000
-93	600	362,000	297,000
-120	600	346,000	262,000
Average		353,000	275,000
A1TD6-40	800	341,000	271,000
-125	800	349,000	273,000
-164	800	332,000	254,000
Average		341,000	266,000
A1TD7-46	900	320,000	236,000
-55	900	314,000	253,000
-67	900	316,000	240,000
Average		317,000	243,000
A1TD8-17	1000	247,000	173,000
-52	1000	233,000	162,000
-62	1000	249,000	177,000
Average		243,000	171,000

(1) Tensile failure at net section.

TABLE XXXII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER=0.125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A4LD1-4	80	353,000	260,000
-24	80	387,000	293,000
-56	80	371,000	271,000
-65	80	358,000	263,000
-75	80	362,000	276,000
-104	80	364,000	278,000
-115	80	356,000	278,000
-135	80	370,000	299,000
-140	80	351,000	278,000
-144	80	373,000	283,000
Average		364,000	278,000
A4LD2-31	200	330,000	243,000
-53	200	331,000	240,000
-158	200	352,000	266,000
Average		338,000	250,000
A4LD3-13	400	338,000	262,000
-49	400	312,000	236,000
-143	400	342,000	249,000
Average		331,000	249,000
A4LD4-55	600	317,000	262,000
-93	600	340,000	252,000
-120	600	352,000	269,000
Average		337,000	261,000
A4LD6-40	800	320,000	247,000
-125	800	331,000	247,000
-164	800	330,000	270,000
Average		330,000	255,000
A4LD7-46	900	288,000	226,000
-67	900	288,000	223,000
-91	900	316,000	243,000
Average		297,000	231,000
A4LD8-17	1000	252,000	170,000
-52	1000	248,000	176,000
-62	1000	254,000	184,000
Average		251,000	177,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A4TD1-4	80	366,000	247,000
-24	80	390,000	272,000
-56	80	362,000	247,000
-65	80	355,000	260,000
-75	80	364,000	248,000
-91	80	390,000(1)	290,000
-104	80	380,000	253,000
-115	80	377,000	273,000
-164	80	385,000	252,000
-166	80	384,000	309,000
Average		375,000	265,000
A4TD2-31	200	345,000	253,000
-53	200	345,000	254,000
-67	200	340,000	237,000
Average		343,000	248,000
A4TD3-13	400	344,000	245,000
-49	400	345,000	242,000
-144	400	342,000	252,000
Average		344,000	246,000
A4TD4-55	600	319,000	237,000
-93	600	350,000	257,000
-120	600	340,000	225,000
Average		336,000	240,000
A4TD6-40	800	324,000	243,000
-46	800	331,000	245,000
-125	800	340,000	232,000
Average		332,000	240,000
A4TD7-26	900	316,000	249,000
-52	900	300,000	200,000
-143	900	307,000	231,000
Average		308,000	227,000
A4TD8-17	1000	241,000	153,000
-62	1000	239,000	166,000
-114	1000	244,000	161,000
Average		241,000	160,000

(1) Tensile failure at net section.

TABLE XXXIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6788)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
ATLD1-6	80	348,000	288,000
-15	80	368,000	281,000
-43	80	368,000	282,000
-57	80	367,000	284,000
-89	80	366,000	276,000
-113	80	360,000	272,000
-121	80	347,000	275,000
-135	80	371,000	285,000
-140	80	371,000	287,000
-144	80	369,000 (1)	290,000
Average		364,000	282,000
ATLD2-34	200	342,000	250,000
-77	200	343,000	241,000
-158	200	358,000	267,000
Average		348,000	253,000
ATLD3-20	400	328,000	243,000
-99	400	328,000	233,000
-143	400	349,000	263,000
Average		335,000	246,000
ATLD4-26	600	323,000	253,000
-95	600	325,000	237,000
-110	600	346,000	[illegible]
Average		331,000	[illegible]
ATLD6-44	800	344,000	272,000
-129	800	332,000	245,000
-164	800	317,000	226,000
Average		331,000	248,000
ATLD7-3	900	311,000	236,000
-81	900	303,000	234,000
-82	900	303,000	236,000
Average		306,000	235,000
ATLD8-32	1000	249,000	177,000
-74	1000	233,000	158,000
-86	1000	229,000	181,000
Average		237,000	172,000

(1) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.125 INCH (CRUCIBLE HEAT NO. R6788)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
ATTD1-6	80	387,000	304,000
-15	80	367,000	294,000
-43	80	365,000	301,000
-57	80	380,000	290,000
-89	80	374,000	296,000
-113	80	360,000	293,000
-121	80	354,000	279,000
-135	80	364,000	271,000
-140	80	363,000	276,000
-144	80	368,000	276,000
Average		368,000	288,000
ATTD2-34	200	348,000	262,000
-77	200	358,000	254,000
-158	200	359,000	281,000
Average		355,000	269,000
ATTD3-20	400	346,000	257,000
-99	400	324,000	259,000
-143	400	329,000	262,000
Average		333,000	259,000
ATTD4-26	600	339,000	252,000
-95	600	336,000	255,000
-110	600	346,000	271,000
Average		340,000	259,000
ATTD6-44	800	337,000	265,000
-129	800	330,000	251,000
-164	800	341,000	275,000
Average		336,000	264,000
ATTD7-3	900	305,000	234,000
-81	900	307,000	224,000
-82	900	319,000	252,000
Average		310,000	237,000
ATTD8-32	1000	221,000	179,000
-74	1000	236,000	183,000
-86	1000	230,000	175,000
Average		229,000	179,000

TABLE XXXIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6392)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A1LD1-1	80	369,000	257,000
-2	80	376,000	267,000
-4	80	353,000	246,000
-29	80	361,000	282,000
-107	80	369,000	277,000
-137	80	365,000	274,000
-142	80	377,000(1)	283,000
-148	80	373,000(1)	300,000
-153	80	364,000	273,000
-166	80	365,000	277,000
Average		367,000	274,000
A1LD2-9	200	358,000	268,000
-22	200	325,000	238,000
-35	200	347,000	257,000
Average		343,000	254,000
A1LD3-39	400	349,000	256,000
-70	400	356,000	237,000
-85	400	337,000	230,000
Average		347,000	241,000
A1LD4-96	600	315,000	215,000
-104	600	349,000	272,000
-107	600	339,000	275,000
Average		334,000	254,000
A1LD6-112	800	337,000	230,000
-116	800	344,000	241,000
-128	800	313,000	236,000
Average		331,000	236,000
A1LD7-179	900	309,000	246,000
-180	900	289,000	242,000
-181	900	317,000	260,000
Average		305,000	249,000
A1LD8-182	1000	251,000	185,000
-601	1000	255,000	180,000
-602	1000	236,000	- (2)
Average		247,000	182,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6392)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A1TD1-6	80	345,000	268,000
-15	80	366,000	312,000
-57	80	356,000	287,000
-89	80	356,000	308,000
-113	80	363,000	297,000
-121	80	348,000	286,000
-135	80	362,000	297,000
-140	80	341,000(1)	290,000
-144	80	367,000	292,000
-153	80	364,000	274,000
Average		357,000	293,000
A1TD2-34	200	333,000	250,000
-77	200	353,000	262,000
-155	200	341,000	269,000
Average		342,000	260,000
A1TD3-20	400	316,000	240,000
-99	400	336,000	255,000
-148	400	329,000	244,000
Average		327,000	246,000
A1TD4-95	600	346,000	274,000
-103	600	336,000	253,000
-110	600	346,000	262,000
Average		343,000	263,000
A1TD6-44	800	327,000	266,000
-129	800	318,000	265,000
-166	800	344,000	254,000
Average		330,000	262,000
A1TD7-3	900	289,000	239,000
-81	900	310,000	246,000
-82	900	315,000	247,000
Average		305,000	244,000
A1TD8-32	1000	255,000	199,000
-74	1000	243,000	199,000
-86	1000	272,000	215,000
Average		257,000	204,000

(1) Tensile failure at net section.

TABLE XXXV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R0761)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
AHLD1-6	80	342,000	262,000
-15	80	338,000	265,000
-43	80	322,000	246,000
-57	80	325,000	261,000
-89	80	344,000(1)	264,000
-113	80	341,000	265,000
-121	80	353,000	269,000
-153	80	360,000(1)	271,000
-166	80	377,000	281,000
-601	80	344,000	247,000
Average		343,000	263,000
AHLD2-29	200	350,000	257,000
-99	200	374,000	289,000
-137	200	345,000	244,000
Average		356,000	263,000
AHLD3-20	400	350,000	265,000
-77	400	318,000	221,000
-142	400	331,000	237,000
Average		333,000	241,000
AHLD4-95	600	343,000	245,000
-110	600	310,000	234,000
-148	600	336,000	262,000
Average		330,000	247,000
AHLD5-44	800	265,000	208,000
-129	800	340,000	221,000
-603	800	284,000	230,000
Average		297,000	220,000
AHLD7-3	900	299,000	211,000
-62	900	306,000	233,000
-82	900	291,000	205,000
Average		296,000	216,000
AHLD8-32	1000	250,000	175,000
-74	1000	223,000	178,000
-86	1000	260,000	193,000
Average		244,000	182,000

(1) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
AHTD1-2	80	314,000	265,000
-22	80	338,000	276,000
-68	80	314,000	260,000
-96	80	301,000	279,000
-102	80	346,000	276,000
-103	80	340,000	275,000
-112	80	330,000	253,000
-137	80	- (1)	247,000
-148	80	370,000(2)	280,000
-166	80	372,000(2)	279,000
Average		339,000	269,000
AHTD2-5	200	343,000	252,000
-6	200	356,000	255,000
-153	200	333,000	279,000
Average		343,000	259,000
AHTD3-10	400	341,000	226,000
-109	400	349,000	276,000
-116	400	313,000	261,000
Average		334,000	254,000
AHTD4-12	600	327,000	223,000
-101	600	346,000	254,000
-122	600	277,000	243,000
Average		317,000	240,000
AHTD6-29	800	329,000	252,000
-128	800	308,000	268,000
-142	800	336,000	265,000
Average		328,000	255,000
AHTD7-9	900	301,000	230,000
-39	900	265,000	219,000
-85	900	294,000	226,000
Average		287,000	225,000
AHTD8-70	1000	238,000	169,000
-94	1000	258,000	199,000
-152	1000	268,000	- (3)
Average		255,000	184,000

(1) Specimen failed at loading hole.
(2) Tensile failure at net section.
(3) Unusable load-deformation curve.

TABLE XXXVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6788)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A7LD1-2	80	373,000	303,000
-22	80	361,000	294,000
-95	80	354,000	277,000(1)
-96	80	341,000	265,000
-102	80	348,000	268,000
-103	80	338,000	269,000
-109	80	346,000	271,000
-112	80	359,000	301,000(1)
-137	80	348,000	260,000
-148	80	340,000	292,000
Average		351,000	280,000
A7LD2-5	200	346,000	291,000
-98	200	346,000	- (2)
-153	200	335,000	279,000
Average		342,000	285,000
A7LD3-10	400	345,000	245,000
-116	400	349,000	251,000
-160	400	346,000	251,000
Average		347,000	249,000
A7LD4-12	600	335,000	261,000
-29	600	351,000	263,000
-122	600	340,000	262,000
Average		342,000	262,000
A7LD6-107	800	327,000	226,000
-128	800	329,000	242,000
-142	800	336,000	- (2)
Average		331,000	234,000
A7LD7-9	900	316,000	212,000
-39	900	314,000	227,000
-85	900	292,000	- (2)
Average		307,000	234,000
A7LD8-35	1000	228,000	200,000
-70	1000	237,000	218,000
-94	1000	231,000	- (2)
Average		235,000	209,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R6788)

SPECIMEN NUMBER	TEST TEMPERATURE, °F	F_{bru}, PSI	F_{bry}, PSI
A7TD1-2	80	357,000	280,000
-22	80	337,000	292,000(1)
-68	80	364,000	298,000
-96	80	380,000	294,000(1)
-102	80	367,000	300,000
-103	80	375,000	303,000
-112	80	357,000	302,000
-137	80	350,000	266,000
-148	80	358,000	293,000
-166	80	338,000	277,000
Average		358,000	290,000
A7TD2-5	200	355,000	256,000
-98	200	342,000	270,000
-153	200	363,000	275,000
Average		353,000	277,000
A7TD3-10	400	338,000	269,000
-109	400	341,000	268,000
-116	400	345,000	265,000
Average		341,000	267,000
A7TD4-12	600	335,000	248,000
-107	600	343,000	253,000
-122	600	308,000	251,000
Average		329,000	251,000
A7TD6-29	800	335,000	- (2)
-128	800	310,000	- (2)
-142	800	330,000	230,000
Average		325,000	
A7TD7-5	900	304,000	231,000
-39	900	295,000	219,000
-85	900	299,000	225,000
Average		299,000	225,000
A7TD8-35	1000	231,000	- (2)
-70	1000	226,000	- (2)
-94	1000	235,000	177,000
Average		231,000	

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TABLE XXXVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 86398)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
A1LD1-8	80	345,000(2)	265,000	
-11	80	335,000(2)	256,000	
-16	80	347,000(2)	263,000	
-60	80	329,000(2)	252,000	
-79	80	342,000	262,000	
-84	80	337,000	261,000	
-127	80	321,000(2)	249,000	
-136	80	339,000(2)	261,000	
-151	80	350,000(2)	256,000	
-161	80	326,000(2)	270,000	
Average		337,000	261,000	
A1LD2-23	200	327,000(2)	270,300	
-100	200	337,000(2)	267,300	
-131	200	337,000(2)	270,300	
Average		334,000	269,300	
A1LD3-54	400	344,000(2)	255,300	
-101	400	346,000(2)	261,300	
-126	400	(3)	259,300	
Average		345,000	258,300	
A1LD4-83	600	328,000	240,300	
-123	600	336,000	249,300	
-130	600	328,000	247,000	310,000
Average		331,000	247,300	
A1LD6-7	800	338,000	254,300	
-14	800	336,000	254,300	
-25	800	304,000(2)	241,300	
Average		326,000	250,000	
A1LD7-76	900	296,000	230,300	
-78	900	291,000	233,300	
-119	900	303,000	242,300	
Average		297,000	235,300	
A1LD8-63	1000	244,000	(4)	178,000
-90	1000	234,000	181,000	220,000
-149	1000	242,000	189,000	239,000
Average		240,000	185,300	

(1) Initial failure
(2) Tensile failure at net section
(3) Specimen failed at loading hole
(4) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 86392)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
A1TD1-8	80	340,000(2)	267,000	
-11	80	304,000(2)	260,000	294,000
-16	80	329,000(2)	272,000	298,000
-60	80	326,000	255,000	
-79	80	324,000(2)	258,000	
-84	80	333,000(2)	256,000	
-127	80	339,000(2)	258,000	
-136	80	331,000(2)	279,000	314,000
-157	80	365,000(2)	268,000	
-161	80	350,000(2)	268,000	
Average		334,000	263,000	
A1TD2-93	200	321,000(2)	252,000	318,000
-100	200	334,000	270,000	
-131	200	333,000(2)	- (3)	
Average		329,000	261,000	
A1TD3-54	400	318,000	255,000	
-101	400	338,000	271,000	
-126	400	333,000	250,000	
Average		330,000	259,000	
A1TD4-83	600	318,000	236,000	
-123	600	330,000	242,000	
-130	600	317,000	240,000	
Average		322,000	239,000	
A1TD6-7	800	342,000	251,000	265,000
-14	800	330,000	253,000	
-25	800	305,000	248,000	
Average		325,000	251,000	
A1TD7-76	900	286,000	230,000	
-78	900	284,000	234,000	
-119	900	295,000	234,000	
Average		288,000	233,000	
A1TD8-63	1000	226,000	178,000	
-90	1000	228,000	173,000	
-149	1000	240,000	172,000	
Average		231,000	181,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Unusable load-deformation curve.

TABLE XXXVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 26761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
ALLD1-8	80	346,000(2)	271,000	
-11	80	344,000(2)	255,000	
-16	80	- (3)	273,000	
-60	80	308,000	250,000	
-79	80	297,000(2)	251,000	
-84	80	344,000	268,000	
-127	80	359,000	279,000	
-136	80	356,000(2)	268,000	
-151	80	340,000(2)	260,000	
-161	80	330,000(2)	253,000	
Average		336,000	263,000	
ALLD2-23	200	350,000	252,000	
-100	200	358,000	264,000	
-131	200	354,000	271,000	336,000
Average		354,000	269,000	
ALLD3-54	400	323,000	236,000	284,000
-101	400	342,000	278,000	
-126	400	346,000	265,000	
Average		338,000	260,000	
ALLD4-83	600	336,000	241,000	296,000
-123	600	351,000(2)	252,000	
-130	600	343,000	264,000	295,000
Average		343,000	251,000	
ALLD6-7	800	332,000	246,000	308,000
-14	800	333,000	249,000	
-25	800	- (3)	243,000	
Average		332,000	246,000	
ALLD7-76	900	269,000	220,000	
-78	900	298,000	224,000	
-119	900	309,000	239,000	
Average		292,000	228,000	
ALLD8-63	1000	196,000	178,000	
-90	1000	217,000	189,000	
-149	1000	251,000	187,000	
Average		221,000	185,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Specimen failed at loading hole.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 26761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
ALTD1-8	80	334,000(2)	248,000	
-11	80	322,000(2)	251,000	
-16	80	334,000(2)	270,000	
-60	80	324,000(2)	249,000	
-79	80	316,000(2)	240,000	
-84	80	317,000(2)	242,000	
-127	80	325,000	266,000	
-136	80	334,000(2)	262,000	
-151	80	347,000(2)	282,000	
-161	80	346,000(2)	277,000	
Average		330,000	259,000	
ALTD2-23	200	320,000(2)	265,000	
-100	200	353,000	281,000	
-131	200	335,000(2)	273,000	
Average		336,000	273,000	
ALTD3-54	400	321,000	238,000	
-101	400	331,000	265,000	
-126	400	325,000	247,000	
Average		326,000	250,000	
ALTD4-83	600	307,000	221,000	288,000
-123	600	317,000	241,000	262,000
-130	600	325,000	254,000	265,000
Average		317,000	239,000	
ALTD6-7	800	316,000	216,000	
-14	800	323,000	218,000	
-25	800	309,000	218,000	
Average		316,000	217,000	
ALTD7-76	900	280,000	225,000	
-78	900	291,000	225,000	
-119	900	300,000	231,000	
Average		290,000	227,000	
ALTD8-49	1000	246,000	192,000	
-63	1000	214,000	184,000	
-90	1000	222,000	- (3)	
Average		227,000	186,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Unusable load-deformation curve.

TABLE XXXIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 86788)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
A7LD1-8	80	346,000(2)	278,000	
-12	80	333,000(2)	249,000	302,000
-16	80	345,000(2)	264,000	
-60	80	336,000(2)	261,000	
-79	80	337,000(2)	256,000	
-84	80	331,000(2)	255,000	324,000
-127	80	353,000(2)	267,000	
-136	80	342,000(2)	257,000	
-151	80	316,000(2)	258,000	
-161	80	334,000(2)	252,000	
Average		335,000	260,000	
A7LD2-23	200	342,000	249,000	
-100	200	286,000(2)	234,000	
-131	200	336,000(2)	259,000	
Average		321,000	247,000	
A7LD3-54	400	320,000	261,000	310,000
-101	400	331,000(2)	244,000	
-126	400	333,000	257,000	
Average		328,000	254,000	
A7LD4-83	600	339,000	251,000	
-123	600	329,000	242,000	
-130	600	336,000	256,000	
Average		335,000	250,000	
A7LD6-7	800	318,000	239,000	
-14	800	318,000	240,000	
-25	800	304,000	243,000	
Average		313,000	241,000	
A7LD7-76	900	294,000	221,000	
-78	900	299,000	215,000	
-119	900	302,000	231,000	
Average		298,000	222,000	
A7LD8-63	1000	232,000	179,000	220,000
-90	1000	245,000	- (3)	208,000
-149	1000	229,000	155,000	221,000
Average		232,000	167,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 86788)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
A7TD1-8	80	356,000(2)	273,000	
-12	80	328,000(2)	255,000	
-16	80	353,000(2)	273,000	
-60	80	346,000(2)	269,000	326,000
-79	80	343,000(2)	259,000	
-84	80	346,000(2)	270,000	
-127	80	334,000(2)	274,000	
-136	80	320,000(2)	273,000	
-151	80	333,000(2)	260,000	327,000
-161	80	326,000(2)	272,000	315,000
Average		338,000	268,000	
A7TD2-23	200	321,000	268,000	
-100	200	320,000(2)	276,000	
-131	200	312,000(2)	260,000	
Average		318,000	268,000	
A7TD3-54	400	303,000	246,000	
-101	400	299,000(2)	248,000	292,000
-126	400	329,000	277,000	316,000
Average		310,000	257,000	
A7TD4-83	600	314,000	236,000	
-123	600	321,000	237,000	
-130	600	314,000	239,000	
Average		317,000	237,000	
A7TD6-7	800	295,000	251,000	286,000
-14	800	318,000	253,000	
-25	800	304,000	240,000	
Average		305,000	248,000	
A7TD7-76	900	290,000	227,000	
-78	900	292,000	226,000	
-119	900	291,000	231,000	
Average		291,000	228,000	
A7TD8-63	1000	235,000	186,000	234,000
-90	1000	210,000	- (3)	
-149	1000	222,000	172,000	215,000
Average		222,000	179,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Unusable load-deformation curve.

TABLE XL

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 86392)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A2LD1-4	80	375,000(1)	290,000
-5	80	372,000(1)	293,000
-11	80	362,000(1)	272,000
-15	80	330,000(1)	259,000
-19	80	355,000(1)	264,000
-39	80	356,000(1)	279,000
-41	80	321,000(1)	240,000
-44	80	324,000(1)	249,000
-45	80	361,000(1)	257,000
-56	80	352,000(1)	261,000
Average		351,000	266,000
A2LD7-38	200	347,000	287,000
-46	200	320,000(1)	238,000
-52	200	344,000(1)	252,000
Average		337,000	258,000
A2LD3-20	400	335,000	263,000
-22	400	344,000	279,000
-37	400	338,000	265,000
Average		339,000	281,000
A2LD4-27	600	305,000	221,000
-34	600	333,000	266,000
-54	600	326,000	232,000
Average		318,000	273,000
A2LD6-6	800	335,000	262,000
-12	800	318,000	246,000
-36	800	347,000	277,000
Average		331,000	262,000
A2LD7-28	900	304,000	242,000
-32	900	320,000	- (2)
-50	900	299,000	233,000
Average		309,000	238,000
A2LD8-8	1000	265,000	215,000
-49	1000	256,000	196,000
-53	1000	260,000	203,000
Average		260,000	205,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 86392)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A2TD1-4	80	330,000	293,000
-5	80	338,000(1)	295,000
-11	80	361,000(1)	285,000
-15	80	331,000(1)	264,000
-19	80	333,000(1)	257,000
-39	80	359,000(1)	280,000
-41	80	354,000(1)	269,000
-44	80	316,000(1)	251,000
-45	80	344,000(1)	260,000
-56	80	339,000(1)	253,000
Average		346,000	266,000
A2TD2-38	200	346,000	281,000
-46	200	319,000(1)	214,000
-52	200	353,000	280,000
Average		339,000	258,000
A2TD3-20	400	317,000	253,000
-22	400	330,000	254,000
-60	400	337,000	276,000
Average		328,000	261,000
A2TD4-34	600	324,000	271,000
-37	600	333,000	271,000
-54	600	311,000	- (2)
Average		323,000	271,000
A2TD6-6	800	337,000	249,000
-12	800	314,000	268,000
-36	800	326,000	269,000
Average		326,000	262,000
A2TD7-28	900	309,000	227,000
-32	900	331,000	246,000
-50	900	302,000	243,000
Average		307,000	239,000
A2TD8-8	1000	244,000	193,000
-49	1000	253,000	186,000
-53	1000	264,000	207,000
Average		254,000	195,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TABLE XLI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A5LD1-4	80	389,000 (2)	288,000
-5	80	(1)	276,000
-11	80	387,000 (2)	285,000
-15	80	390,000 (2)	292,000
-19	80	(1)	279,000
-39	80	(1)	286,000
-41	80	393,000 (2)	286,000
-44	80	383,000 (2)	288,000
-45	80	(1)	277,000
-56	80	361,000 (2)	274,000
Average		384,000	283,000
A5LD2-38	200	(1)	270,000
-46	200	354,000 (2)	272,000
-52	200	356,000 (2)	274,000
Average		355,000	272,000
A5LD3-20	400	358,000	270,000
-22	400	333,000	247,000
-37	400	350,000	273,000
Average		347,000	263,000
A5LD-27	600	343,000	262,000
-34	600	350,000	260,000
-54	600	343,000	264,000
Average		345,000	262,000
A5LD-6	800	321,000	254,000
-12	800	331,000	256,000
-36	800	339,000	253,000
Average		333,000	254,000
A5LD-28	900	283,000	228,000
-32	900	282,000	233,000
-50	900	286,000	230,000
Average		284,000	230,000
A5LD-8	1000	176,000	136,000
-49	1000	182,000	142,000
-53	1000	178,000	139,000
Average		179,000	139,000

(1) Specimen failed at loading hole.
(2) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A5TD1-4	80	381,000 (2)	280,000
-5	80	386,000 (2)	273,000
-11	80	(1)	296,000
-15	80	392,000 (2)	297,000
-19	80	(1)	295,000
-39	80	389,000 (2)	285,000
-41	80	386,000 (2)	283,000
-44	80	381,000 (2)	303,000
-45	80	392,000 (2)	289,000
-56	80	367,000 (2)	263,000
Average		384,000	287,000
A5TD2-38	200	356,000 (2)	287,000
-46	200	356,000 (2)	287,000
-52	200	352,000 (2)	279,000
Average		355,000	281,000
A5TD3-20	400	346,000	290,000
-22	400	342,000	260,000
-37	400	357,000	264,000
Average		348,000	270,000
A5TD4-27	600	329,000	249,000
-34	600	348,000	262,000
-54	600	343,000	254,000
Average		340,000	255,000
A5TD6-6	800	328,000	257,000
-12	800	336,000	257,000
-28	800	330,000	262,000
Average		331,000	259,000
A5TD7-32	900	285,000	235,000
-36	900	302,000	234,000
-50	900	287,000	247,000
Average		291,000	239,000
A5TD8-8	1000	181,000	136,000
-49	1000	197,000	158,000
-53	1000	209,000	151,000
Average		196,000	148,000

(1) Specimen failed at loading hole.
(2) Tensile failure at net section.

TABLE XLII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B6788)

Specimen Number	Test Temperature, $^{o}_{F}$	F_{bru}, PSI	F_{bry}, PSI
A8L01-4	80	360,000(1)	278,000
-21	80	353,000(1)	301,000
-15	80	373,000(1)	281,000
-19	80	362,000(1)	263,000
-39	80	350,000(1)	283,000
-41	80	365,000(1)	285,000
-44	80	365,000(1)	290,000
-45	80	371,000(1)	275,000
-56	80	366,000	276,000
-57	80	[illegible](1)	[illegible]
Average		361,000	277,000
A8L02-38	200	332,000	254,000
-46	200	357,000	303,000
-52	200	[illegible]	[illegible]
Average		[illegible]	[illegible]
A8L03-20	400	[illegible]	[illegible]
-22	400	344,000	283,000
-54	400	[illegible]	[illegible]
Average		[illegible]	[illegible]
A8LD4-27	600	343,000	- (2)
-34	600	[illegible]	[illegible]
-37	600	[illegible]	[illegible]
Average		[illegible]	[illegible]
A8LD6-6	800	322,000	237,000
-12	800	324,000	256,000
-36	800	336,000	240,000
Average		373,000	218,000
A8LD7-28	900	306,000	236,000
-32	900	311,000	236,000
-50	900	308,000	225,000
Average		308,000	233,000
A8L08-8	1000	242,000	185,000
-49	1000	206,000	- (2)
-58	1000	246,000	[illegible]
Average		265,000	184,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B6788)

Specimen Number	Test Temperature, $^{o}_{F}$	F_{bru}, PSI	F_{bry}, PSI
A8TD1-4	80	367,000(1)	282,000
-5	80	374,000(1)	292,000
-11	80	369,000(1)	277,000
-15	80	374,000(1)	297,000
-19	80	373,000	285,000
-39	80	351,000(1)	271,000
-41	80	378,000(1)	302,000
-44	80	370,000(1)	272,000
-45	80	366,000(1)	274,000
-56	80	368,000(1)	292,000
Average		368,000	285,000
A8TD2-38	200	338,000	279,000
-46	200	352,000	287,000
-52	200	341,000(1)	271,000
Average		344,000	280,000
A8TD3-20	400	335,000	286,000
-22	400	327,000	274,000
-54	400	344,000	286,000
Average		335,000	282,000
A8TD4-27	600	334,000	245,000
-37	600	331,000	261,000
-54	600	341,000	245,000
Average		335,000	250,000
A8TD6-6	800	323,000	259,000
-12	800	325,000	257,000
-36	800	313,000	(2)
Average		320,000	258,000
A8TD7-32	900	313,000	242,000
-50	900	319,000	236,000
-201	900	306,000	246,000
Average		313,000	241,000
A8TD8-8	1000	212,000	187,000
-49	1000	230,000	198,000
-53	1000	215,000	174,000
Average		219,000	186,000

(1) Tensile failure at net section
(2) Unusable load-deformation curve

TABLE XLIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6759)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
A3LD1- 4	80	356,000 (2)	305,000	345,000
5	80	342,000 (2)	310,000	313,000
11	80	362,000	308,000	328,000
15	80	369,000 (2)	319,000	339,000
19	80	340,000 (2)	305,000	
39	80	360,000 (2)	314,000	320,000
41	80	360,000 (2)	310,000	
44	80	354,000 (2)	316,000	339,000
45	80	351,000 (2)	305,000	326,000
56	80	356,000 (2)	309,000	332,000
Average		355,000	310,000	
A3LD2-38	200	351,000 (2)	293,000	
46	200	351,000 (2)	310,000	
52	200	337,000 (2)	309,000	
Average		346,000	304,000	
A3LD3-20	400	343,000	306,000	
22	400	338,000	313,000	
37	400	341,000	298,000	
Average		341,000	306,000	
A3LD4-27	600	348,000	293,000	
34	600	342,000	290,000	
54	600	343,000	299,000	
Average		344,000	294,000	
A3LD6- 6	800	329,000	280,000	
12	800	343,000	286,000	
36	800	327,000	272,000	
Average		333,000	279,000	
A3LD7-32	900	295,000	231,000	
38	900	298,000	226,000	
201	900	319,000	254,000	
Average		304,000	237,000	
A3LD8- 8	1000	214,000	195,000	
49	1000	226,000	188,000	
53	1000	219,000	187,000	
Average		220,000	190,000	

(1) Initial failure.
(2) Tensile failure at net section

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6759)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
A3TD1- 4	80	360,000 (2)	305,000	308,000
5	80	355,000 (2)	305,000	324,000
11	80	369,000	305,000	298,000
15	80	371,000	323,000	356,000
39	80	360,000 (2)	316,000	328,000
41	80	365,000 (2)	312,000	
44	80	366,000 (2)	301,000	323,000
45	80	366,000 (2)	299,000	
56	80	365,000 (2)	-(3)	322,000
202	80	364,000 (2)	313,000	
Average		364,000	309,000	
A3TD2-38	200	346,000 (2)	299,000	
46	200	345,000 (2)	301,000	
52	200	348,000 (2)	304,000	
Average		346,000	301,000	
A3TD3-20	400	340,000	294,000	
22	400	339,000	290,000	
37	400	342,000	283,000	
Average		340,000	289,000	
A3TD4-27	600	334,000	295,000	
34	600	332,000	307,000	
54	600	342,000	306,000	
Average		336,000	303,000	
A3TD6- 6	800	330,000	291,000	
12	800	338,000	-(3)	
28	800	317,000	317,000	
Average		328,000	304,000	
A3TD7-32	900	319,000	264,000	
36	900	313,000	250,000	
50	900	303,000	253,000	
Average		312,000	256,000	
A3TD8- 8	1000	226,000	201,000	
49	1000	227,000	205,000	
53	1000	225,000	202,000	
Average		226,000	203,000	

(1) Initial failure.
(2) Tensile failure at net section
(3) Unusable load-deformation curve

TABLE XLIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A6LD1-2	80	345,000(1)	256,000
-3	80	359,000	285,000
-4	80	365,000(1)	285,000
-5	80	363,000(1)	281,000
-11	80	356,000	281,000
-15	80	353,000(1)	289,000
-19	80	347,000(1)	278,000
-21	80	357,000(1)	290,000
-39	80	355,000(1)	275,000
-60	80	352,000	297,000
Average		355,000	282,000
A6LD2-9	200	334,000	246,000
-23	200	313,000	234,000
-61	200	336,000	267,000
Average		328,000	256,000
A6LD3-20	400	322,000	230,000
-22	400	332,000	- (2)
-37	400	328,000	256,000
Average		327,000	243,000
A6LD4-7	600	327,000	261,000
-54	600	329,000	248,000
-62	600	330,000	252,000
Average		329,000	254,000
A6LD6-6	800	324,000	267,000
-12	800	324,000	250,000
-36	800	321,000	233,000
Average		324,000	252,000
A6LD7-28	900	306,000	244,000
-32	900	300,000	209,000
-50	900	299,000	224,000
Average		302,000	226,000
A1LD8-1	1000	233,000	188,000
-24	1000	229,000	183,000
-26	1000	229,000	193,000
Average		230,000	188,000

(1) Tensile failure at net sectio .
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6761)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A6TD1-5	80	340,000	286,000
-11	80	348,000(1)	274,000
-15	80	338,000(1)	276,000
-19	80	348,000	294,000
-39	80	343,000(1)	290,000
-41	80	356,000(1)	290,000
-44	80	342,000	264,000
-45	80	352,000	297,000
-56	80	341,000(1)	280,000
-57	80	346,000	278,000
Average		345,000	283,000
A6TD2-38	200	336,000	279,000
-46	200	333,000	279,000
-52	200	318,000	248,000
Average		329,000	269,000
A6TD3-20	400	324,000	270,000
-22	400	335,000	292,000
-37	400	324,000	271,000
Average		328,000	278,000
A6TD4-27	600	326,000	264,000
-34		326,000	275,000
-54	600	322,000	260,000
Average		325,000	266,000
A6TD6-6	800	326,000	261,000
-12	800	324,000	269,000
-36	800	320,000	256,000
Average		323,000	262,000
A6TD7-28	900	300,000	230,000
-32	900	301,000	237,000
-50	900	296,000	238,000
Average		299,000	235,000
A6TD8-8	1000	254,000	183,000
-49	1000	245,000	199,000
-53	1000	233,000	173,000
Average		244,000	185,000

(1) Tensile failure at net section.

TABLE XLV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6753)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A9LD1-4	80	344,000(1)	279,000
-5	80	347,000(1)	283,000
-11	80	353,000(1)	283,000
-15	80	351,000(1)	(2)
-19	80	363,000(1)	282,000
-39	80	342,000(1)	272,000
-41	80	336,000(1)	(2)
-44	80	334,000(1)	264,000
-45	80	355,000(1)	287,000
-56	80	348,000(1)	270,000
Average		347,000	278,000
A9LD2-37	200	356,000(1)	288,000
-38	200	348,000	283,000
-46	200	346,000(1)	270,000
Average		350,000	280,000
A9LD3-20	400	348,000	279,000
-22	400	339,000(1)	283,000
-52	400	334,000	270,000
Average		339,000	277,000
A9LD4-27	600	342,000	257,000
-34	600	334,000	(2)
-54	600	326,000	263,000
Average		334,000	260,000
A9LD6-6	800	340,000	276,000
-28	800	328,000	267,000
-36	800	334,000	267,000
Average		334,000	270,000
A9LD7-32	900	301,000	244,000
-50	900	292,000	241,000
-57	900	290,000	247,000
Average		294,000	244,000
A9LD8-8	1000	211,000	162,000
-49	1000	200,000	179,000
-53	1000	197,000	165,000
Average		203,000	175,000

(1) Tensile failure at net section
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6753)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
A9TD1-4	80	352,000(1)	300,000
-5	80	356,000(1)	288,000
-11	80	340,000(1)	284,000
-15	80	(2)	293,000
-19	80	361,000(1)	308,000
-39	80	340,000(1)	269,000
-41	80	339,000	283,000
-44	80	341,000(1)	272,000
-45	80	357,000	300,000
-56	80	337,000(1)	275,000
Average		347,000	287,000
A9TD2-36	200	336,000	287,000
-46	200	344,000	288,000
-37	200	339,000	281,000
Average		340,000	285,000
A9TD3-20	400	344,000	295,000
-22	400	330,000	262,000
-52	400	(2)	294,000
Average		337,000	294,000
A9TD4-27	600	334,000	275,000
-34	600	336,000	273,000
-54	600	319,000	274,000
Average		330,000	207,000
A9TD6-6	800	336,000	283,000
-12	800	320,000	257,000
-32	800	342,000	279,000
Average		333,000	273,000
A9TD7-28	900	300,000	241,000
-36	900	317,000	259,000
-50	900	302,000	253,000
Average		306,000	253,000
A9TD8-8	1000	238,000	172,000
-49	1000	240,000	179,000
-53	1000	224,000	172,000
Average		234,000	174,000

(1) Tensile failure at net section
(2) Specimen failed at loading hole

TABL. XLVI

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.020 INCH

TEST TEMP °F	HEAT NUMBER R6392				HEAT NUMBER R6761				HEAT NUMBER R6788			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI
80	A1LE1M-1	115,000	A1TE1M-1	115,000	AlLE1M-1	112,000	AlTE1M-1	112,000(1)	A7LE1M-1	107,000(3)	A7TE1M-1	84,400(3)
	-7	119,000(1)	-7	116,000	-7	115,000	-7	109,000(1)	-7	121,000(3)	-7	91,200(3)
	-9	116,000(1)	-9	118,000(1)	-9	111,000	-9	111,000(1)	-20	111,000(1)	-9	113,000(1)
	-11	114,000	-11	119,000(1)	-11	110,000(1)	-11	111,000(1)	-21	96,800(3)	-11	102,000(3)
	-12	114,000	-12	118,000(1)	-12	112,000	-12	115,000(1)	-24	91,500(3)	-12	114,000(1)
	-20	118,000(1)	-20	115,000(1)	-20	118,000	-20	116,000(1)	-29	86,400(3)	-20	102,000(3)
	-22	109,000(1,2)	-21	112,000(1)	-21	120,000(1)	-21	116,000(1)	-30	87,000(3)	-21	111,000(3)
	-23	112,000(2)	-23	116,000(1)	-23	115,000(1)	-23	111,000(1)	-36	93,900(3)	-23	102,000(3)
	-24	117,000(2)	-24	115,000(1)	-24	120,000	-24	118,000(1)	-38	117,000(1)	-24	103,000(3)
	-26	111,000(1,2)	-29	108,000(3)	-32	102,000(3)	-29	101,200(3)	-39	136,000(3)	-31	117,000(1)
	Average	115,000	Average	115,200	Average	115,000	Average	114,000	Average	114,000	Average	115,000
200	A1LE2M-14	114,000	A1TE2M-14	110,000	AlLE2M-14	113,000	AlTE2M-14	107,000	A7LE2M-14	102,000	A7TE2M-14	108,000(1)
	-15	108,000	-15	111,000	-15	112,000	-15	111,000	-15	103,000	-15	104,000
	-34	107,000	-17	96,500	-17	109,000	-17	111,000	-31	108,000	-17	84,700(3)
	Average	110,000	Average	106,000	Average	111,000	Average	110,000	Average	104,000	Average	106,000
400	A1LE3M-2	111,000	A1TE3M-2	107,000	AlLE3M-2	105,000	AlTE3M-2	99,900	A7LE3M-2	98,800	A7TE3M-2	105,000
	-10	105,000	-10	108,000	-10	106,000	-10	106,000	-10	100,000	-19	104,000
	-31	104,000	-30	101,000	-29	101,000	-25	110,000	-32	105,000	-25	107,000
	Average	107,000	Average	105,000	Average	104,000	Average	105,000	Average	101,000	Average	105,000
600	A1LE4M-5	106,000	A1TE4M-5	104,000	AlLE4M-5	105,000	AlTE4M-5	99,100	A7LE4M-5	101,000	A7TE4M-5	103,000
	-8	109,000	-8	105,000	-8	105,000	-8	101,000	-16	104,000	-8	105,000
	-16	108,000	-16	104,000	-10	109,000	-16	106,000	-33	108,000	-16	101,000
	Average	108,000	Average	106,000	Average	106,000	Average	102,000	Average	104,000	Average	103,000
800	A1LE6M-13	103,000	A1TE6M-13	101,000	AlLE6M-13	106,000	AlTE6M-13	101,000	A7LE6M-13	104,000	A7TE6M-13	102,000
	-18	104,000	-18	103,000	-18	106,000	-18	105,000	-18	106,000	-18	99,300
	-19	100,000	-19	101,000	-19	106,000	-19	102,000	-19	96,600	-19	98,700
	Average	102,000	Average	102,000	Average	106,000	Average	103,000	Average	102,000	Average	100,000
900	A1LE7M-22	90,800	A1TE7M-4	90,200	AlLE7M-4	87,600	A1TE7M-14	88,800	A7LE7M-22	91,700	A7TE7M-4	89,800
	-32	95,200	-22	88,300	-22	99,200	-22	91,000	-34	90,900	-22	90,000
	-33	90,200	-31	88,800	-30	91,200	-30	90,100	-35	91,300	-32	90,400
	Average	94,700	Average	89,300	Average	92,700	Average	90,000	Average	91,300	Average	90,100
1000	A1LE8M-3	77,200	A1TE8M-3	75,600	AlLE8M-3	71,100	AlTE8M-3	68,300	A7LE8M-3	74,600	A7TE8M-3	77,500
	-6	70,500	-6	70,500	-6	72,900	-6	70,200	-6	74,700	-6	77,200
	-35	75,400	-32	73,500	-31	73,600	-31	74,000	-37	86,400	-34	74,900
	Average	74,400	Average	72,900	Average	72,500	Average	70,800	Average	78,600	Average	76,500

(1) Tensile fracture after plastically deforming in shear.
(2) Specimen widened to prevent tensile failure.
(3) Tensile type failure. Not included in average.
All specimens laterally supported from buckling.

TABLE XLVII

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.063 INCH

TEST TEMP °F	HEAT NUMBER R6192 LONGITUDINAL SPECIMEN NUMBER	F_{su}, PSI	HEAT NUMBER R6192 TRANSVERSE SPECIMEN NUMBER	F_{su}, PSI	HEAT NUMBER R6761 LONGITUDINAL SPECIMEN NUMBER	F_{su}, PSI	HEAT NUMBER R6761 TRANSVERSE SPECIMEN NUMBER	F_{su}, PSI	HEAT NUMBER R6798 LONGITUDINAL SPECIMEN NUMBER	F_{su}, PSI	HEAT NUMBER R6798 TRANSVERSE SPECIMEN NUMBER	F_{su}, PSI
RT	A2LE1M-1	129,000(2)	A2TE1M-1	100,000(1)	A5LE1M-1	133,000(2)	A5TE1M-1	88,500(1)	A8LE1M-1	120,000(2)	A8TE1M-1	114,000(2)
	-7	89,900(1)	-7	79,000(1)	-9	126,000(2)	-7	85,800(1)	-7	111,000(2)	-7	117,000
	-9	120,000(2)	-11	88,200(1)	-12	105,000(1)	-9	101,000(1)	-11	122,000(2)	-9	120,000(2)
	-11	124,000(2)	-12	121,000(2)	-21	98,600(1)	-11	104,000(1)	-12	119,000(2)	-11	119,000(2)
	-12	127,000(2)	-20	112,000(2)	-29	122,000(2)	-12	99,800(1)	-20	120,000	-12	118,000(2)
	-20	106,000(1)	-21	102,000(1)	-30	123,000(2)	-30	118,000	-21	112,000(2)	-20	120,000(2)
	-21	109,000(2)	-23	97,700(1)	-31*	123,000	-31*	121,000	-23	121,000(2)	-23	123,000(2)
	-23	81,100(1)	-24	99,800(1)	-32*	121,000	-32*	120,000	-24	117,000(2)	-24	120,000(2)
	-29	106,000(2)	-25	113,000(2)	-33*	124,000	-33*	117,000	-26	118,000(2)	-26	120,000(2)
	-30	107,000(2)	-29	121,000(2)	-34*	120,000(2)	-34*	119,000	-29	81,600(1)	-29	117,000(1)
	Average	117,000	Average	111,000	Average	123,000	Average	119,000	Average	118,000	Average	119,000
300	A2LE2M-14	121,000	A2TE2M-14	99,400(2)	A5LE2M-14	115,000	A5TE2M-14	117,000	A8LE2M-14	118,000	A8TE2M-14	114,000(2)
	-15	118,000	-15	102,000(2)	-15	117,000	-15	116,000	-15	118,000(2)	-15	115,000(2)
	-17	119,000	-17	99,100(2)	-17	110,000	-17	110,000	-17	102,000	-17	106,000(2)
	Average	119,000	Average	100,000	Average	114,000	Average	111,000	Average	115,000	Average	112,000
400	A2LE3M-2	115,000	A2TE3M-2	113,000	A5LE3M-2	114,000	A5TE3M-5	116,000	A8LE3M-2	110,000	A8TE3M-2	106,000
	-10	114,000	-10	111,000	-10	115,000	-8	108,000	-10	115,000	-10	111,000
	-25	111,000	-25	116,000	-25	111,000	-25	109,000	-25	110,000	-11	113,000
	Average	113,000	Average	113,000	Average	113,000	Average	111,000	Average	112,000	Average	110,000
600	A2LE4M-5	111,000	A2TE4M-8	108,000	A5LE4M-5	111,000	A5TE4M-2	109,000	A8LE4M-5	104,000	A8TE4M-5	108,000
	-8	112,000	-16	96,600	-8	113,000	-10	110,000	-8	106,000	-8	106,000
	-16	109,000	-30	107,000	-16	116,000	-16	106,000	-16	110,000	-16	105,000
	Average	111,000	Average	104,000	Average	114,000	Average	108,000	Average	107,000	Average	106,000
800	A2LE6M-13	110,000	A2TE6M-13	97,700	A5LE6M-13	109,000	A5TE6M-13	109,000	A8LE6M-13	106,000	A8TE6M-13	103,000
	-18	105,000	-18	94,600	-18	103,000	-18	100,000	-18	104,000	-19	104,000
	-19	121,000	-19	99,500	-19	108,000	-19	108,000	-19	106,000	-22	105,000
	Average	108,000	Average	97,300	Average	107,000	Average	108,000	Average	105,000	Average	104,000
900	A2LE7M-4	99,700	A2TE7M-4	96,400	A5LE7M-4	95,400	A5TE7M-4	98,700	A8LE7M-4	93,500	A8TE7M-4	97,200
	-22	88,800	-22	91,600	-22	100,000	-27	91,600	-22	94,500	-13	98,900
	-27	95,100	-27	93,600	-27	93,700	-29	94,200	-27	97,000	-27	93,900
	Average	94,500	Average	93,900	Average	96,605	Average	94,800	Average	94,500	Average	96,700
1000	A2LE8M-3	74,200	A2TE8M-3	77,600	A5LE8M-3	73,700	A5TE8M-3	72,200	A8LE8M-3	73,500	A8TE8M-3	74,500
	-6	74,500	-6	78,700	-6	71,300	-6	72,400	-6	74,800	-6	69,200
	-28	74,600	-28	81,600	-28	73,802	-28	69,600	-30	75,600	-25	81,800
	Average	74,400	Average	79,300	Average	72,303	Average	71,400	Average	74,600	Average	75,200

All room temperature specimens were supported with doublers.
*Distance between shear terminal holes decreased by 0.05 inch.

(1) Tensile type failure. Not included in average.
(2) Tensile fracture after plastically deforming in shear.

TABLE XLVIII

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.125 INCH

TEST TEMP °F	HEAT NUMBER B6759				HEAT NUMBER B6761				HEAT NUMBER B6753			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI
80	A3LE1M-1	84,000(1)	A3TE1M-1	90,700(1)	A6LE1M-4	118,000(2)	A6TE1M-1	82,500(1)	A9LE1M-1	90,200(1)	A9TE1M-1	117,000
	-7	68,500(1)	-7	77,300(1)	-8	130,000(2)	-4	112,000(2)	-7	91,100(1)	-7	120,000(2)
	-11	79,300(1)	-9	87,000(1)	-15	119,000(2)	-5	118,000(2)	-9	106,000(1)	-9	102,000(1)
	-12	80,700(1)	-12	91,200(1)	-32	130,000(2)	-11	117,000(2)	-20	101,000(1)	-11	94,600(1)
	-24	84,600(1)	-20	123,000(1)	-44	120,000(2)	-12	109,000(1)	-21	120,000(2)	-12	109,000(1)
	-30	123,000(2)	-26	97,000(1)	-45	114,000	-15	116,000(2)	-23	96,900(1)	-20	83,700(1)
	-31*	125,000(2)	-31	125,000(1)	-49	112,000(2)	-19	115,000(2)	-26	75,800(1)	-21	93,500(1)
	-32*	121,000	-32*	120,000(1)	-50	117,000(2)	-29	113,000(2)	-29	117,000(2)	-23	113,000
	-33*	123,000(2)	-34*	108,000(1)	-53	116,000(2)	-31	109,000(2)	-30	120,000(2)	-26	106,000(1)
	-36*	126,000	-35*	122,000(1)	-56	116,000(2)	-32	109,000(2)	Average	119,000	-33	126,000(2)
	Average	124,000			Average	119,000	Average	111,000			Average	119,000
200	A3LE2M-14	121,000(2)	A3TE2M-14	122,000	A6LE2M-14	113,000	A6TE2M-14	109,000	A9LE2M-14	113,000	A9TE2M-14	115,000(2)
	-15	117,000(2)	-15	125,000	-17	108,000	-15	110,000	-15	110,000	-15	118,000
	-17	116,000(2)	-30	126,000	-29	113,000	-17	108,000	-17	119,000	-17	109,000(2)
	Average	118,000	Average	124,000	Average	111,000	Average	109,000	Average	114,000	Average	114,000
400	A3LE3M-2	110,000	A3TE3M-2	112,000	A6LE3M-2	106,000	A6TE3M-2	105,000	A9LE3M-2	111,000	A9TE3M-2	111,000
	-10	117,000	-10	114,000	-10	110,000	-10	108,000	-10	116,000	-10	109,000
	-25	117,000	-25	114,000	-25	108,000	-25	105,000	-25	113,000	-25	104,000
	Average	115,000	Average	113,000	Average	108,000	Average	106,000	Average	113,000	Average	108,000
600	A3LE4M-5	110,000	A3TE4M-8	107,000	A6LE4M-5	107,000	A6TE4M-5	104,000	A9LE4M-5	109,000	A9TE4M-5	111,000
	-8	110,000	-16	109,000	-8	106,000	-16	109,000	-8	107,000	-8	102,000
	-16	110,000	-29	113,000	-16	105,000	-30	102,000	-16	112,000	-16	106,000
	Average	110,000	Average	110,000	Average	106,000	Average	105,000	Average	109,000	Average	107,000
800	A3LE6M-13	110,000	A3TE6M-13	109,000	A6LE6M-13	103,000	A6TE6M-13	99,700	A9LE6M-13	107,000	A9TE6M-18	106,000
	-18	104,000	-18	105,000	-18	101,000	-18	101,000	-18	110,000	-19	110,000
	-19	103,000	-19	107,000	-19	104,000	-19	100,000	-19	104,000	-29	108,000
	Average	107,000		107,000	Average	103,000	Average	100,000	Average	107,000	Average	108,000
900	A3LE7M-4	98,000	A3TE7M-4	99,100	A6LE7M-4	93,200	A6TE7M-4	89,900	A9LE7M-4	97,100	A9TE7M-4	96,900
	-22	97,000	-22	99,600	-22	93,800	-22	89,900	-22	91,200	-22	89,900
	-27	101,000	-27	98,700	-27	92,200	-27	89,900	-27	97,200	-27	90,500
	Average	99,000	Average	99,100	Average	93,100	Average	89,900	Average	95,200	Average	92,600
1000	A3LE8M-3	84,200	A3TE8M-3	84,500	A6LE8M-3	76,100	A6TE8M-3	74,100	A9LE8M-3	75,900	A9TE8M-3	72,600
	-6	82,300	-6	74,200	-6	79,000	-6	75,600	-6	75,700	-6	70,800
	-28	77,900	-28	81,400	-28	79,600	-28	71,800	-28	75,600	-28	72,200
	Average	81,500	Average	80,000	Average	78,200	Average	73,800	Average	75,700	Average	71,700

All room temperature specimens were supported with doublers.
*Distance between shear terminal holes decreased by 0.05 inch.

(1) Tensile type failure. Not included in average.
(2) Tensile fracture after plastically deforming in shear.

TABLE XLIX

DOUBLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.125 INCH

TEST TEMP. °F	HEAT NUMBER R6759				HEAT NUMBER R6761				HEAT NUMBER R6753			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI
80	A3LE1N-1	128,000	A3TE1N-1	132,000	A6LE1N-1	121,000	A6TE1N-1	115,000	A9LE1N-1	115,000	A9TE1N-1	121,000
	-7	126,000	-7	131,000	-7	125,000	-7	111,000	-7	120,000	-7	120,000
	-9	131,000	-9	133,000	-9	120,000	-9	126,000	-9	123,000	-9	113,000
	-11	126,000	-11	132,000	-11	121,000	-11	124,000	-11	123,000	-11	119,000
	-12	131,000	-12	127,000	-12	123,000	-12	121,000	-12	119,000	-12	119,000
	-20	128,000	-20	131,000	-20	121,000	-20	120,000	-20	130,000	-20	114,000
	-21	131,000	-21	124,000	-21	117,000	-21	119,000	-21	122,000	-21	115,000
	-23	132,000	-23	136,000	-23	118,000	-23	117,000	-23	132,000	-23	115,000
	-24	132,000	-24	127,000	-24	124,000	-24	120,000	-24	131,000	-24	107,000
	-26	131,000	-26	127,000	-26	123,000	-26	119,000	-26	135,000	-26	116,000
	Average	130,000	Average	131,000	Average	122,000	Average	120,000	Average	125,000	Average	116,000
200	A3LE2N-14	123,000	A3TE2N-14	123,000	A6LE2N-14	114,000	A6TE2N-14	111,000	A9LE2N-14	107,000	A9TE2N-5	106,000
	-15	122,000	-15	121,000	-15	115,000	-15	110,000	-15	114,000	-8	111,000
	-17	119,000	-17	121,000	-17	119,000	-17	112,000	-17	115,000	-16	109,000
	Average	120,000	Average	122,000	Average	116,000	Average	111,000	Average	112,000	Average	109,000
400	A3LE3N-2	112,000	A3TE3N-2	116,000	A6LE3N-2	105,000	A6TE3N-2	101,000	A9LE3N-2	106,000	A9TE3N-14	96,900
	-10	104,000	-10	117,000	-10	104,000	-10	107,000	-10	108,000	-15	96,600
	-25	112,000	-25	118,000	-25	105,000	-25	107,000	-25	111,000	-17	93,600
	Average	109,000	Average	117,000	Average	104,000	Average	105,000	Average	108,000	Average	95,700
600	A3LE4N-5	108,000	A3TE4N-5	113,000	A6LE4N-5	112,000	A6TE4N-5	99,700	A9LE4N-5	104,000	A9TE4N-2	101,000
	-8	115,000	-8	115,000	-8	106,000	-8	105,000	-8	107,000	-10	100,000
	-16	111,000	-16	111,000	-16	107,000	-16	107,000	-16	104,000	-25	97,600
	Average	112,000	Average	113,000	Average	108,000	Average	104,000	Average	105,000	Average	99,000
800	A3LE6N-13	104,000	A3TE6N-13	107,000	A6LE6N-13	100,000	A6TE6N-13	99,000	A9LE6N-13	102,000	A9TE6N-13	99,700
	-18	96,600	-18	101,000	-18	99,000	-18	103,000	-18	107,000	-18	98,400
	-19	105,000	-19	106,000	-19	103,000	-19	100,000	-19	109,000	-19	98,300
	Average	102,000	Average	105,000	Average	101,000	Average	101,000	Average	106,000	Average	98,800
900	A3LE7N-4	99,900	A3TE7N-4	99,800	A6LE7N-4	99,000	A6TE7N-4	95,100	A9LE7N-4	97,300	A9TE7N-4	91,700
	-22	105,000	-22	103,000	-29	98,800	-22	93,000	-22	99,800	-22	86,200
	-27	105,000	-27	101,000	-30	98,200	-27	96,400	-27	99,000	-27	89,700
	Average	103,000	Average	102,000	Average	98,700	Average	94,800	Average	98,700	Average	89,900
1000	A3LE8N-3	86,100	A3TE8N-3	87,800	A6LE8N-3	83,300	A6TE8N-3	82,000	A9LE8N-3	81,400	A9TE8N-3	77,400
	-6	86,000	-6	88,600	-6	80,700	-6	83,500	-6	82,200	-6	78,400
	-28	87,800	-28	85,200	-28	79,900	-28	85,500	-28	81,000	-28	73,800
	Average	86,600	Average	87,100	Average	81,300	Average	83,700	Average	82,200	Average	76,500

TABLE L

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— B120VCA **HEAT** — CRUCIBLE R6392

FASTENER— NAS 675-V2 **NOMINAL DIA.**— 5/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	A2LL1G-1	0.0650	0.0655	7040	5950	(1	A2TL1G-1	0.0647	0.0647	6410	5450	(1)
	-6	0.0648	0.0648	7220	6420	(1)	-6	0.0652	0.0659	6500	5680	(1)
	-11	0.0625	0.0623	6800	5900	(1)	-11	0.0626	0.0635	6960	5960	(1)
	Average	0.0641	0.0642	7020	6090		Average	0.0642	0.0647	6620	5700	
-65	A2LL9G-2	0.0646	0.0634	7400	(5)0	(1)	A2TL9G-2	0.0675	0.0680	7400	6320	(1)
	-7	0.0640	0.0640	7400	6400	(1)	-7	0.0656	0.0619	7400	7300	(1)
	-12	0.0648	0.0646	7460	6250	(2)	-12	0.0634	0.0622	7010	6201	(1)
	Average	0.0645	0.0640	7420	6360		Average	0.0655	0.0640	7270	6510	
-100	A2LL10G-3	0.0653	0.0641	7420	6530	(1)	A2TL10G-3	0.0617	0.0660	7390	6550	(1)
	-8	0.0622	0.0622	7400	6430	(1)	-8	0.0661	0.0612	7660	6600	(1)
	-13	0.0639	0.0635	7380	6580	(2)	-13	0.0656	0.0657	7430	6590	(1)
	Average	0.0638	0.0633	7400	6573		Average	0.0645	0.0643	7460	6650	
-200	A2LL11G-4	0.0646	0.0645	7660	- (3)	(1)	A2TL11G-4	0.0657	0.0650	7930	7590	(1)
	-9	0.0623	0.0621	7720	7320	(1)	-9	0.0648	0.0646	7940	- (4)	(1)
	-14	0.0623	0.0626	7540	7110	(1)	-14	0.0651	0.0646	7950	- (3)	(1)
	Average	0.0630	0.0631	7640	7220		Average	0.0653	0.0647	7930		
-320	A2LL12G-5	0.0651	0.0650	6570	- (3)	(1)	A2TL12G-5	0.0645	0.0643	6500	- (3)	(1)
	-10	0.0593	0.0592	7030	- (3)	(1)	-10	0.0631	0.0637	6480	- (3)	(1)
	-15	0.0619	0.0629	4920	- (3)	(1)	-15	0.0655	0.0660	6650	- (3)	(1)
	Average	0.0621	0.0624	6170			Average	0.0644	0.0647	6500		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Failed prior to attaining yield deformation.
(4) Unusable load-deformation curve.

TABLE LI

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6AI-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— B120VCA HEAT — CRUCIBLE 86393

FASTENER — NAS 8010-V8 NOMINAL DIA.— 5/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	A2LL1H-1	0.0624	0.0632	6620	5660	(1)	A2TL1H-1	0.0650	0.0648	6600	5690	(1)
	-6	0.0652	0.0651	6760	5660	(1)	-6	0.0655	0.0660	6710	5680	(2)
	-11	0.0660	0.0628	6740	5690	(1)	-11	0.0636	0.0626	6660	5800	(2)
	Average	0.0634	0.0637	6710	5680		Average	0.0647	0.0645	6660	5720	
-65	A2LL9H-2	0.0652	0.0647	7040	6120	(1)	A2TL9H-2	0.0662	0.0677	7260	6300	(1)
	-7	0.0642	0.0644	7120	6300	(1)	-7	0.0661	0.0656	7160	6110	(1)
	-12	0.0678	0.0656	7040	6290	(1)	-12	0.0636	0.0625	6920	6000	(1)
	Average	0.0657	0.0649	7070	6240		Average	0.0620	0.0653	7110	6110	
-100	A2LL10H-3	0.0661	0.0653	7020	6350	(1)	A2TL10H-3	0.0668	0.0671	7300	6820	(1)
	-8	0.0638	0.0638	7260	6460	(1)	-8	0.0646	0.0642	7340	6520	(1)
	-13	0.0644	0.0644	7340	6300	(1)	-13	0.0636	0.0625	7140	6930	(1)
	Average	0.0648	0.0645	7200	6370		Average	0.0651	0.0646	7260	6760	
-200	A2LL11H-4	0.0650	0.0645	7200	7160	(1)	A2TL11H-4	0.0670	0.0663	7770	- (4)	(1)
	-9	0.0606	0.0604	7480	7290	(1)	-9	0.0654	0.0616	7830	7260	(1)
	-14	0.0631	0.0636	7900	7230	(1)	-14	0.0652	0.0623	8130	7500	(1)
	Average	0.0629	0.0628	7530	7230		Average	0.0659	0.0634	8010	7390	
-320	A2LL12H-5	0.0646	0.0650	5130	- (3)	(1)	A2TL12H-5	0.0657	0.0654	7060	- (3)	(1)
	-10	0.0611	0.0614	5840	- (3)	(1)	-10	0.0636	0.0647	7350	- (3)	(1)
	-15	0.0622	0.0622	5200	- (3)	(1)	-15	0.0661	0.0651	5920	- (3)	(1)
	Average	0.0627	0.0629	5390			Average	0.0651	0.0652	6780		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Failed prior to attaining yield deformation.
(4) Unusable load-deformation curve.

TABLE LII

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— B120VCA HEAT — CRUCIBLE R6392

FASTENER — HL11V-C-3 NOMINAL DIA.— 3/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
-60	A2LL11J-1	0.0666	0.0664	2490	2280	(2)	A2TL11J-1	0.0628	0.0670	2360	2320	(2)
	-6	0.0624	0.0639	2570	2340	(2)	-6	0.0630	0.0635	2580	2330	(2)
	-11	0.0636	0.0626	2590	2360	(2)	-11	0.0614	0.0624	2310	2140	(2)
	Average	0.0639	0.0644	2550	2330		Average	0.0624	0.0643	2416	2266	
-88	A2LL9J-2	0.0675	0.0672	2930	2520	(2)	A2TL9J-2	0.0671	0.0673	2600	2330	(2)
	-7	0.0633	0.0645	2570	2380	(2)	-7	0.0635	0.0638	2380	2360	(2)
	-12	0.0647	0.0639	2440	2240	(2)	-12	0.0614	0.0628	2490	2400	(2)
	Average	0.0652	0.0652	2646	2410		Average	0.0640	0.0646	2490	2360	
-100	A2LL10J-3	0.0646	0.0640	2680	2510	(2)	A2TL10J-3	0.0669	0.0672	2460	2300	(2)
	-8	0.0620	0.0635	2650	2500	(2)	-8	0.0636	0.0660	2570	2500	(1)
	-13	0.0630	0.0629	2710	2440	(2)	-13	0.0618	0.0630	2610	2460	(2)
	Average	0.0632	0.0635	2680	2480		Average	0.0641	0.0647	2550	2420	
-800	A2LL11J-4	0.0650	0.0651	2700	2690	(1)	A2TL11J-4	0.0652	0.0651	2850	2830	(1)
	-9	0.0640	0.0613	3110	2910	(3)	-9	0.0638	0.0646	3360	3210	(2)
	-14	0.0634	0.0612	3079	2760	(2)	-14	0.0623	0.0636	2780	2720	(3)
	Average	0.0641	0.0632	2960	2780		Average	0.0638	0.0644	2990	2920	
-880	A2LL12J-5	0.0658	0.0664	2690	- (4)	(1)	A2TL12J-5	0.0654	0.0654	2440	- (4)	(1)
	-10	0.0585	0.0587	2740	- (4)	(1)	-10	0.0645	0.0643	2370	- (4)	(1)
	-15	0.0638	0.0642	2850	- (4)	(1)	-15	0.0628	0.0639	2630	- (4)	(1)
	Average	0.0627	0.0631	2760			Average	0.0642	0.0645	2480		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Fastener head failed.
(4) Failed prior to attaining yield deformation.

TABLE LIII

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— B120VCA HEAT — CRUCIBLE R6392

FASTENER — NAS 2506-3 NOMINAL DIA.— 3/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	A2LL1K-1	0.0673	0.0666	2480	2200	(2)	A2TL1K-1	0.0631	0.0672	2320	2220	(2)
	-6	0.0633	0.0636	2430	2120	(2)	-6	0.0593	0.0634	2440	2400	(3)
	-11	0.0609	0.0611	2510	2180	(2)	-11	0.0614	0.0627	2380	2140	(3)
	Average	0.0638	0.0639	2470	2190		Average	0.0612	0.0644	2380	2250	
-65	A2LL9K-2	0.0673	0.0670	2601	2230	(3)	A2TL9K-2	0.0671	0.0671	2640	2370	(3)
	-7	0.0636	0.0639	2510	2290	(2)	-7	0.0635	0.0638	2470	2290	(3)
	-12	0.0633	0.0635	2460	2300	(3)	-12	0.0616	0.0631	2540	2360	(3)
	Average	0.0647	0.0648	2520	2270		Average	0.0641	0.0647	2550	2340	
-100	A2LL10K-3	0.0673	0.0670	2690	2400	(3)	A2TL10K-3	0.0652	0.0650	2530	2380	(3)
	-8	0.0640	0.0646	2580	2280	(3)	-8	0.0644	0.0657	2520	2330	(3)
	-13	0.0641	0.0643	2720	2580	(2)	-13	0.0626	0.0636	2460	2410	(3)
	Average	0.0651	0.0653	2660	2420		Average	0.0641	0.0648	2490	2370	
-200	A2LL11K-4	0.0644	0.0646	2750	- (4)	(1)	A2TL11K-4	0.0654	0.0652	2760	2660	(3)
	-9	0.0629	0.0620	3190	3150	(3)	-9	0.0644	0.0644	2870	2780	(3)
	-14	0.0632	0.0631	2860	2800	(3)	-14	0.0625	0.0615	3280	3130	(3)
	Average	0.0635	0.0632	2930	2930		Average	0.0641	0.0636	2970	2860	
-320	A2LL12K-5	0.0650	0.0640	2800	- (4)	(1)	A2TL12K-5	0.0649	0.0650	3020	- (4)	(1)
	-10	0.0605	0.0634	2930	- (4)	(1)	-10	0.0646	0.0648	2020	- (4)	(1)
	-15	0.0617	0.0638	2870	- (4)	(1)	-15	0.0633	0.0644	2320	- (4)	(1)
	Average	0.0633	0.0634	2800			Average	0.0643	0.0647	2480		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Fastener head failed.
(4) Failed prior to attaining yield deformation.

TABLE LIV

TENSILE PROPERTIES FOR 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET CONTAINING FUSION WELDS

CONDITION— ANNEAL IN SOLUTION TREATED AND AGED CONDITION

ALLOY— B120VCA

HEAT NUMBER— CRUCIBLE 84148

TEST TEMP °F	LONGITUDINAL										TRANSVERSE									
	SPECIMEN NUMBER	F_{tu}, psi	F_{ty}, psi	E_c, psi	ELONGATION, % IN			EFFICIENCY FOR		FAILURE LOCATION	SPECIMEN NUMBER	F_{tu}, psi	F_{ty}, psi	E_c, psi	ELONGATION, % IN			EFFICIENCY FOR		FAILURE LOCATION
					2 in.	1 in.	D_{gage} in.	R_u	R_y						2 in.	1 in.	D_{gage} in.	R_u	R_y	
RT	A21W1-1	147,000	136,000	10.2×10^6	3.0	24	12	77.3	80.7	(1)	A21W1-1	147,000	141,000	10.3×10^6	3.5	26	-	77.3	81.7	(1)
	-5	135,000	126,000	10.0	4.5	30	16	71.1	74.5	(2)	-6	142,000	139,000	10.3	2.5	20	-	74.7	79.4	(2)
	-11	144,000	135,000	10.4	3.0	28	14	75.8	79.4	(1)	-11	150,000	145,000	10.4	3.0	24	16	78.5	82.8	(1)
	Average	142,000	133,000	10.2	3.5	27	14	74.7	78.2		Average	146,000	142,000	10.3	3.0	23		76.8	81.3	
-38	A21W2-2	181,000	179,000	10.3×10^6	1.5	-	-	95.3	95.6	(1)	A21W2-2	179,000	-	10.5×10^6	-	-	(4,5)	82.1	-	(2)
	-7	175,000	-	10.0	-	-	(4,5)	92.1	-	(2)	-7	176,000	175,000	10.1	1.0	10	28	81.6	87.1	(2)
	-12	180,000	-	10.3	-	-	(4,5)	94.7	-	(2)	-12	196,000	196,000	10.4	3.5	18	16	91.2	99.5	(3)
	Average	179,000		10.2	1.5			94.1			Average	183,000	191,000	10.3	2.3	14	15	85.0	93.3	
-100	A21W3-3	192,000	191,000	10.4×10^6	0.5	6	8	87.3	91.0	(1)	A21W3-3	187,000	-	10.2×10^6	-	-	(4,5)	99.0	-	(2)
	-8	187,000	185,000	10.3	-	-	(4,5)	85.0	89.2	(2)	-8	190,000	-	10.3	-	-	(4,5)	101.0	-	(2)
	-13	195,000	193,000	10.4	-	-	(4,5)	88.6	92.7	(1)	-13	192,000	-	10.4	-	-	(4,5)	97.0	-	(2)
	Average	191,000	190,000	10.4	0.5	6	8	86.8	91.0		Average	190,000		10.3				99.0		
-200	A21W4-4	141,500	-	10.3×10^6	-	-	(4,5)	93.4	-	(2)	A21W4-4	120,000	-	10.6×10^6	-	-	(4,5)	67.8	-	(2)
	-9	89,500	-	10.1	-	-	(4,5)	59.0	-	(2)	-9	102,000	-	10.2	-	-	(4,5)	60.2	-	(2)
	-14	144,000	-	10.3	-	-	(4,5)	95.0	-	(2)	-14	109,000	-	10.4	-	-	(4,5)	64.2	-	(2)
	Average	125,000		10.2				82.5			Average	110,000		10.4				64.1		
-300	A21W5-5	51,000	-	10.4×10^6	-	-	(4,5)	33.8	-	(2)	A21W5-5	70,000	-	10.2×10^6	-	-	(4,5)	41.3	-	(2)
	-10	54,000	-	10.3	-	-	(4,5)	35.6	-	(2)	-10	50,000	-	10.0	-	-	(4,5)	29.5	-	(2)
	-15	52,000	-	10.4	-	-	(4,5)	34.4	-	(2)	-15	52,000	-	10.4	-	-	(4,5)	30.7	-	(2)
	Average	52,000		10.4				34.6			Average	57,000		10.2				33.8		

(1) Heat affected zone adjacent to weld.
(2) Fusion zone.
(3) Parent material.
(4) Failed prior to attaining yield deformation.
(5) Elongation less than 0.1 percent.

TABLE IV

TENSILE PROPERTIES FOR 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET CONTAINING FUSION WELDS

CONDITION— AGED AFTER WELDING IN SOLUTION TREATED CONDITION

ALLOY— B120VCA

HEAT NUMBER— CRUCIBLE 64759

TEST TEMP °F	LONGITUDINAL									TRANSVERSE								
	SPECIMEN NUMBER	F_{TU}, psi	F_{TY}, psi	E, psi	ELONGATION, % in 1 in.	in 2 in.	in 4D	EFFICIENCY FOR F_{TU}	EFFICIENCY FOR F_{TY}	FAILURE LOCATION	SPECIMEN NUMBER	F_{TU}, psi	F_{TY}, psi	E, psi	ELONGATION, % in 1 in.	in 2 in.	in 4D	EFFICIENCY FOR F_{TU}	EFFICIENCY FOR F_{TY}	FAILURE LOCATION
RT	A1LTM1L-1	197,000	177,000	16.3×10^6	3.5	10	12(4)	96.7	96.7	(3)	A1LTM1L-1	216,000	190,000	16.9×10^6	1.0	4	8	103	97.4	(3)
	-6	199,000	177,000	16.8	1.0	8	6	106	105	(1)	-6	191,000	191,000	16.9	0.5	8	16	96.8	97.9	(1)
	-11	198,000	182,000	16.8	2.5	6	8	97.1	101	(1)	-11	206,000	186,000	16.5	0.5	6	8	99.2	95.4	(7)
	Average	197,000	180,000	16.8	2.7	8	9	97.5	100		Average	198,000	189,000	16.9	0.7	6	11	97.8	96.9	
-80	A1LLT9L-2	205,000	202,000	16.4×10^6	-	-	-(5)	93.7	96.7	(1)	A1LTT9L-2	211,000	-	17.0×10^6	-	-	(5,6)	97.5	-	(1)
	-7	191,000	-	16.5	-	-	(5,6)	88.8	-	(1)	-7	-	-	16.6	-	-	-(6)	-	-	(7)
	-12	203,000	216,000	16.4	-	-	-(5)	92.5	101	(1)	-12	208,000	-	17.0	-	-	(5,6)	96.7	-	(3)
	Average	200,000		16.4				91.7	97.9		Average	209,000		16.8				97.1		
-100	A1LLM13L-3	219,000	213,000	16.4×10^6	-	-	-(5)	99.6	99.9	(1)	A1LTM10L-3	237,000	235,000	17.1×10^6	-	-	(5,6)	99.2	100	(1)
	-8	211,000	-	16.9	-	-	(5,6)	89.6	-	(1)	-8	-	-	17.2	-	-	-(6)	-	-	(7)
	-13	196,000	554,000	17.0	-	-	-(5)	85.6	97.4	(1)	-13	225,000	226,000	16.9	-	-	(5,6)	94.6	97.0	(1)
	Average	209,000		17.0				91.5	98.8		Average	231,000	230,000	17.0				96.9	99.5	
-200	A1LLM11L-4	112,000	-	16.4×10^6	-	-	(5,6)	49.1	-	(2)	A1LTM11L-4	212,000	-	17.0×10^6	-	-	(5,6)	95.1	-	(3)
	-9	151,000	-	17.1	-	-	(5,6)	66.6	-	(1)	-9	213,000	-	16.9	-	-	(5,6)	89.5	-	(1)
	-14	113,000	-	16.9	-	-	(5,6)	49.6	-	(1)	-14	221,000	-	16.8	-	-	(5,6)	92.7	-	(1)
	Average	125,000		16.9				55.1			Average	215,000		16.9				92.4		
-300	A1LLM12L-5	155,000	-	16.2×10^6	-	-	(5,6)	71.8	-	(3)	A1LTM12L-5	172,000	-	17.1×10^6	-	-	(5,6)	79.3	-	(3)
	-10	166,000	-	16.8	-	-	(5,6)	67.5	-	(1)	-10	-	-	17.3	-	-	-(6)	-	-	(7)
	-15	179,000	-	16.8	-	-	(5,6)	76.9	-	(1)	-15	130,000	-	17.4	-	-	(5,6)	59.2	-	(1)
	Average	170,000		16.8				72.1			Average	151,000		17.3				69.25		

(1) Heat affected zone adjacent to weld.
(2) Fusion zone.
(3) Parent material.
(4) Failed at knife edge.
(5) Elongation less than 0.5 percent.
(6) Failed prior to attaining yield deformation.
(7) Failed outside weld section.

TABLE LVI

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— B120VCA
THICKNESS— 0.063 INCH
HEAT NUMBER— CRUCIBLE R6392

TEST TEMP °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E_c, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E_c, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN
80	A2TA1-41	181,000	166,000	16.1×10^6	6.0	12	16	A2TA1-41	183,000	168,000	16.4×10^6	3.5	12	20
	-46	185,000	173,000	16.7	2.0	6	12	-46	193,000	175,000	16.1	6.5	16	20
	-51	193,000	175,000	15.7	8.0	22	36	-51	197,000	181,000	16.6	7.0	16	24
	Average	186,000	171,000	16.5	5.3	13	21	Average	191,000	175,000	16.4	5.7	15	21
-65	A2TA9-42	206,000	191,000	15.6×10^6	3.5	4	20	A2TA9-42	213,000	197,000	16.5×10^6	2.5	4	4(5)
	-47	215,000	202,000	16.4	3.0	12	-	-47	220,000	204,000	16.7	3.0	4	4
	-52	216,000	200,000	16.4	5.5	8	16	-52	221,000	203,000	16.4	5.0	12	20
	Average	212,000	198,000	16.0	4.0	8	18	Average	216,000	201,000	16.5	3.5	7	9
-100	A2TA10-43	215,000	201,000	15.8×10^6	-	-	-(1)	A2TA10-43	220,000	205,000	16.1×10^6	3.0	4	8
	-48	221,000	203,000	15.7	3.0	12	24	-48	229,000	211,000	16.2	4.0	8	20
	-53	223,000	207,000	15.4	5.0	16	28	-53	226,000	210,000	15.7	5.0	-	-(1)
	Average	220,000	204,000	15.5	4.0	14	26	Average	225,000	209,000	16.0	4.0	6	14
-200	A2TA11-44	248,000	230,000	16.8×10^6	-	-	-(2)	A2TA11-44	245,000	239,000	17.0×10^6	-	-	-(1)
	-49	251,000	238,000	16.7	-	-	-(2)	-49	257,000	245,000	16.8	1.0	8	8
	-54	250,000	237,000	16.4	2.5	10	-	-54	261,000	246,000	16.7	1.5	6	-
	Average	250,000	237,000	16.6	0.8	3		Average	254,000	243,000	16.8	1.2	7	
-320	A2TA12-45	244,000	-	16.7×10^6	-	-	(2,4,5)	A2TA12-45	-	-	15.9×10^6	-	-	(2,3,4)
	-50	279,000	-	15.9	-	-	(2,4)	-50	285,000	-	16.6	-	-	(2,4)
	-55	282,000	-	15.8	-	-	(2,4)	-55	229,000	-	16.6	-	-	(2,4)
	Average	268,000		16.1	0.3	4	4	Average	257,000		16.4			

(1) Failed within 1/4 inch of fillet.
(2) Elongation less than 0.3 percent.
(3) Failed outside test section.
(4) Failed prior to attaining yield deformation.
(5) Failed at knife edge.

TABLE LVII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 5120VCA
THICKNESS— 0.063 INCH
HEAT NUMBER— CRUCIBLE R6799

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN	1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN
80	A11LA11L-1	215,000	196,000	10.7×10^6	3.0	8	12	A11TA11L-1	211,000	192,000	10.8×10^6	3.0	8	-
	-6	210,000	190,000	10.7	3.0	8	12	-6	221,000	203,000	17.1	2.0	4	12
	-11	199,000	178,000	10.5	3.5	12	12	-11	206,000	191,000	17.3	1.0	4	6
	Average	208,000	187,000	10.6	3.2	9	12	Average	212,000	195,000	17.1	2.0	5	12
-85	A11LA9L-2	227,000	223,000	10.8×10^6	-	-	-(1)	A11TA9L-2	226,000	219,000	17.3×10^6	-	-	-(1)
	-7	230,000	216,000	17.0	0.5	4	4(1)	-7	239,000	227,000	16.9	0.5	4	8(1)
	-12	204,200	201,000	16.5	0.5	4	-(1)	-12	218,000	213,000	16.6	0.5	6	8
	Average	220,000	213,000	16.8	0.5	4		Average	228,000	220,000	16.9	0.3	3	5
-100	A11LA10L-3	236,000	231,000	10.9×10^6	0.5	4	4(1)	A11TA10L-3	231,000	224,000	17.2×10^6	-	-	(1,4)
	-8	237,000	228,000	16.8	1.0	4	8(1)	-8	245,000	237,000	17.0	-	-	(1,4)
	-13	-	-	16.5	-	-	(2,3)	-13	241,000	228,000	16.3	1.0	6	12
	Average	236,000	230,000	15.7	0.8	4	6	Average	239,000	230,000	16.8	0.5	2	4
-200	A11LA11L-4	252,000	-	17.0×10^6	-	-	(1,3,4)	A11TA11L-4	236,000	-	10.9×10^6	-	-	(3,5)
	-9	260,000	254,000	16.9	-	-	(4)	-9	254,000	-	17.1	-	-	(3,4)
	-14	250,000	-	16.8	-	-	(1,3,4)	-14	257,000	-	17.0	-	-	(3,4)
	Average	254,000		16.9				Average	249,000		17.0			
-320	A11LA12L-5	216,000	-	17.1×10^6	-	-	(3,4)	A11TA12L-5	212,000	-	17.6×10^6	-	-	(3,4)
	-10	-	-	17.4	-	-	(2,3)	-10	203,000	-	17.5	-	-	(3,4)
	-15	-	-	16.9	-	-	(2,3)	-15	236,000	-	17.1	-	-	(3,4)
	Average			17.1				Average	217,000		17.4			

(1) Failed at knife edge.
(2) Failed outside test section.
(3) Failed prior to attaining yield deformation.
(4) Elongation less than 0.3 percent.
(5) Failed outside gage marks.

TABLE LVIII

ELEVATED TEMPERATURE THERMAL EXPANSION PROPERTIES FOR B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK, (CRUCIBLE HEAT NO. RC759, SHEET NO. 9MB3)

Temp. Range, °F	Expansion, Inch Per Inch				Mean Linear Thermal Expansion Coefficient, Inch Per Inch Per °F	
	Specimen No. A3EE-2	Specimen No. A3EE-3	Average of A3EE-2 & -3	Specimen No. A3EE-1	A3EE-2 & -3	A3EE-1
100-200	0.00052	0.00054	0.000530	0.00058	5.30×10^{-6}	5.80×10^{-6}
100-300	0.00106	0.00110	0.001080	0.00117	5.40	5.85
100-400	0.00164	0.00167	0.001655	0.00175	5.52	5.83
100-500	0.00219	0.00225	0.002220	0.00229	5.55	5.72
100-600	0.00278	0.00282	0.002800	0.00286	5.60	5.72
100-700	0.00339	0.00341	0.003400	0.00339	5.67	5.65
100-800	0.00402	0.00401	0.004015	0.00393	5.74	5.61
100-900	0.00466	0.00461	0.004635	0.00444	5.79	5.55
100-1000	0.00532	0.00523	0.005275	0.00498	5.86	5.53
100-1100	0.00599	0.00585	0.005920	0.00547	5.92	5.47
100-1200	0.00670	0.00648	0.006590	0.00596	5.99	5.42
1200-100				-0.00045 (1)		

(1) Specimen had a change in length after cooling from 1200°F to 100°F.

TABLE LIX

LOW TEMPERATURE THERMAL EXPANSION PROPERTIES FOR B120VCA TITANIUM ALLOY SHEET, 0.125 INCH THICK (CROOKIBLE HEAT NO. R6759, SHEET NO. 9MB3)

Temp. Range, °F	Expansion, Inch per Inch				Mean Linear Thermal Expansion Coefficient, Inch Per Inch Per °F
	Specimen No. A3EL-4	Specimen No. A3EL-5	Specimen No. A3EL-6	Average	
-10 to 35	0.00024	0.00023	0.00023	0.000233	5.18×10^{-6}
-55 to 35	0.00046	0.00047	0.00045	0.000460	5.11
-100 to 35	0.00069	0.00069	0.00067	0.000683	5.06
-145 to 35	0.00090	0.00091	0.00088	0.000897	4.98
-190 to 35	0.00110	0.00111	0.00108	0.001100	4.89
-235 to 35	0.00129	0.00130	0.00128	0.001290	4.78
-280 to 35	0.00147	0.00148	0.00146	0.001470	4.67
-325 to 35	0.00162	0.00163	0.00162	0.001623	4.51
-370 to 35	0.00173	0.00175	0.00176	0.001747	4.31
-415 to 35	0.00179	0.00182	0.00186	0.001823	4.05
-453 to 35	0.00183	0.00186	0.00182	0.001837	3.76

TABLE IX

ELEVATED TEMPERATURE THERMAL CONDUCTIVITY OF 8Al-2Cb-1Ta TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R6759, SHEET NO. 9MB3)

Mean Temp., °F	Thermal Conductivity, BTU/ft hr °F			
	Specimen No. A3KE-1	Specimen No. A3KE-2	Specimen No. A3KE-3	Average
300	5.8	7.0	6.2	6.3
400	6.5	7.7	6.8	7.0
500	7.2	8.5	7.7	7.8
600	7.8	9.3	8.4	8.5
700	8.5	10.0	9.2	9.2
800	9.1	10.8	9.9	9.9
900	9.8	11.5	10.7	10.7
1000	10.4	12.3	11.4	11.4
1100	11.1	13.1	12.1	12.1
1200	11.8	13.8	12.9	12.8

IV - TABLES FOR Ti-6Al-4V

TABLE IXI

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.020 INCH
HEAT NUMBER— 24791

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.
80	B11A1-1	173,000	155,000	15.3×10^6	5.0	14	-	B1TA1-1	174,000	161,000	16.2×10^6	5.5	-	-
	-4	172,000	155,000	15.4	7.0	20	-	-4	176,000	161,000	16.5	4.5	16	-
	-7	183,000	167,000	15.7	5.0	-	-	-7	183,000	169,000	16.5	4.5	-	-
	-10	182,000	167,000	15.4	5.0	18	28(1)	-10	182,000	172,000	16.5	5.0	22	-
	-13	179,000	161,000	15.5	5.0	18	-	-13	181,000	171,000	16.5	6.5	18	-
	-16	181,000	166,000	15.7	3.0	-	-	-16	182,000	169,000	16.3	4.5	18	-
	-19	175,000	162,000	15.4	4.0	20	28	-19	181,000	167,000	16.4	5.5	22	32
	-22	174,000	158,000	15.2	4.5	20	32	-22	180,000	166,000	16.4	4.0	16	16
	-25	174,000	160,000	15.6	-	-	-(2)	-25	176,000	165,000	16.5	6.5	-	-(1)
	-28	173,000	159,000	15.3	5.0	20	-	-28	165,000	162,000	16.5	3.5	18	-(1)
	Average	177,000	161,000	15.4	4.8	19	29	Average	178,000	166,000	16.4	5.0	19	24
200	B11A2-6	167,000	148,000	16.4×10^6	5.8	-	-	B1TA2-6	169,000	157,000	15.5×10^6	5.4	19	-
	-13	160,000	144,000	15.0	5.8	-	-	-13	161,000	148,000	15.5	5.4	17	-
	-15	162,000	147,000	13.8	6.5	-	-	-15	167,000	153,000	15.8	4.5	18	-
	Average	163,000	146,000	15.1	6.0			Average	166,000	153,000	15.6	5.1	18	
400	B11A3-16	145,000	122,000	13.3×10^6	5.2	18	-(1)	B1TA3-8	152,000	133,000	15.1×10^6	5.2	-	-
	-18	150,000	126,000	14.8	6.0	-	-	-16	149,000	130,000	15.0	4.1	-	-(1)
	-19	145,000	121,000	14.0	5.5	16	28	-18	146,000	129,000	14.5	4.1	-	-
	Average	147,000	123,000	14.0	5.6	17		Average	149,000	131,000	14.9	4.5		
600	B11A4-1	132,000	106,000	13.2×10^6	4.5	12	-	B1TA4-1	142,000	119,000	13.9×10^6	4.7	-	-
	-12	136,000	110,000	13.4	5.4	-	-	-9	143,000	123,000	15.0	4.2	-	-
	-14	134,000	109,000	12.8	3.0	-	-	-12	136,000	115,000	13.1	3.4	-	-
	Average	134,000	108,000	13.1	4.3			Average	140,000	119,000	14.0	4.1		
800	B11A6-9	130,000	104,000	12.4×10^6	4.0	11	-	B1TA6-10	130,000	105,000	14.6×10^6	3.9	12	-
	-10	133,000	107,000	13.8	4.2	12	-	-14	127,000	104,000	12.5	3.7	12	-
	-17	122,000	95,800	11.2	4.2	15	-	-17	130,000	106,000	13.7	3.8	12	-
	Average	128,000	102,000	12.5	4.1	13		Average	129,000	105,000	13.6	3.8	12	
900	B11A7-5	113,000	90,200	12.3×10^6	9.8	20	-(1)	B1TA7-3	122,000	95,800	13.6×10^6	9.3	25	-
	-20	116,000	89,700	10.8	9.0	16	28	-5	121,000	94,000	13.5	9.6	20	-
	-21	110,000	87,300	11.7	3.0	8	16	-11	115,000	92,000	12.5	8.1	20	-(1)
	Average	113,000	89,100	11.6	7.3	15	22	Average	119,000	93,900	13.2	9.0	22	
1000	B11A8-2	89,900	68,800	10.0×10^6	19.0	39	48	B1TA8-2	90,600	70,300	11.6×10^6	10.6	40	45(1)
	-7	91,300	70,200	9.10	22.0	40	-	-4	91,400	70,200	11.4	9.5	33	54(1)
	-22	87,000	65,000	8.86	18.0	28	40	-7	93,000	74,500	10.8	10.0	36	43(1)
	Average	89,400	68,000	9.32	20.0	36	44	Average	91,700	71,700	11.3	10.0	36	47

(1) Failed within 1/4 inch of fillet.
(2) Failed outside gage marks.

TABLE LXII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.063 INCH
HEAT NUMBER— 27039

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.
80	B2LA1-1	171,000	-	-	7.0	20	-(1)	B2TA1-1	182,000	173,000	18.1×10^6	8.8	19	28
	-2	162,000	148,000	15.7×10^6	5.8	18	32	-2	184,000	174,000	18.0	2.0	9	-
	-3	172,000	154,000	15.5	6.0	17	32	-3	187,000	174,000	18.6	7.0	18	-
	-4	175,000	155,000	15.4	5.5	12	-	-4	186,000	176,000	18.5	2.2	16	24
	-5	177,000	156,000	15.8	4.2	18	28	-5	196,000	179,000	17.1	5.8	15	28
	-6	175,000	153,000	15.7	4.5	12	22	-6	194,000	176,000	17.6	6.0	22	-
	-7	177,000	154,000	15.6	4.5	16	24	-7	197,000	177,000	17.2	7.0	22	-
	-8	180,000	154,000	16.0	-	-	-	-8	195,000	177,000	16.8	5.5	20	30
	-9	176,000	151,000	15.3	3.5	14	26(2)	-9	198,000	175,000	17.5	6.0	17	-
	-10	168,000	148,000	15.3	3.0	10	-	-10	193,000	177,000	17.2	8.0	22	-
	Average	173,000	153,000	15.6	4.9	15	27	Average	191,000	176,000	17.7	5.8	18	28
200	B2LA2-6	153,000	138,000	15.3×10^6	5.0	12	26(2)	B2TA2-8	182,000	165,000	16.5×10^6	6.0	24	40
	-15	158,000	136,000	14.3	5.0	12	26	-13	182,000	164,000	17.1	6.0	22	36
	-20	160,000	137,000	14.2	4.5	14	28	-15	187,000	-	-	7.0	22	36(1)
	Average	157,000	137,000	14.5	4.8	13	24	Average	184,000	164,000	16.8	6.3	23	37
400	B2LA3-8	145,000	-	-	4.5	22	28(2,3)	B2TA3-1	156,000	139,000	16.7×10^6	7.0	24	50
	-13	139,000	109,000	14.5×10^6	5.0	20	24(2)	-9	169,000	144,000	16.7	5.0	24	52
	-21	144,000	120,000	14.2	5.0	20	40	-14	168,000	145,000	15.9	5.0	24	52
	Average	143,000	114,000	14.4	4.8	21	31	Average	164,000	144,000	16.4	5.7	24	51
600	B2LA4-9	135,000	-	13.4×10^6	-	-	-(3)	B2TA4-6	152,000	128,000	14.9×10^6	6.5	20	-
	-12	137,000	110,000	12.4	4.5	22	-(2)	-12	156,000	129,000	14.1	4.5	20	32
	-18	123,000	95,500	13.8	3.5	18	32	-16	161,000	138,000	14.3	6.0	20	36
	Average	132,000	103,000	13.2	4.0	20		Average	157,000	132,000	14.4	5.7	20	34
800	B2LA6-4	120,000	93,600	12.4×10^6	5.0	18	-(2)	B2TA6-10	150,000	124,000	14.2×10^6	5.0	20	-
	-20	130,000	104,000	12.2	4.0	14	-(2)	-20	149,000	125,000	14.4	5.0	24	40
	-16	124,000	-	11.6	3.0	12	20(3)	-21	147,000	124,000	15.3	5.0	22	40
	Average	125,000	98,800	12.1	4.0	15		Average	149,000	124,000	14.3	5.0	22	40
900	B2LA7-3	116,000	92,300	12.6×10^6	7.0	20	-	B2TA7-3	124,000	105,000	15.0×10^6	9.0	22	-
	-5	113,000	88,600	11.3	8.0	24	36(2)	-5	132,000	108,000	12.2	8.0	22	-
	-21	117,000	94,300	10.9	7.5	22	44	-11	136,000	-	11.0	7.5	24	-(3)
	Average	115,000	91,700	11.6	7.5	22	40	Average	132,000	106,000	12.7	8.2	23	
1000	B2LA8-2	92,900	71,200	11.1×10^6	13.0	24	28	B2TA8-2	102,000	72,400	11.1×10^6	15.0	36	60
	-14	82,700	64,200	10.0	-	-	-	-4	105,000	86,500	12.4	-	-	-(4)
	-22	87,400	60,500	9.41	15.0	-	-	-7	105,000	73,500	10.0	24.0	60	64(2)
	Average	87,700	65,300	10.2	14.0			Average	104,000	77,500	11.2	19.5	48	62

(1) Unusable load-deformation curve.
(2) Failed within 1/4 inch of fillet.
(3) Unusable load-deformation curve beyond elastic portion.
(4) Failed outside gage marks.

TABLE LXIII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.063 INCH
HEAT NUMBER—25671

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	¼ IN	⅛ IN	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	¼ IN.	⅛ IN.
80	B5LA1-1	169,000	151,000	15.5x10⁶	4.0	19	-(1)	B5TA1-1	185,000	172,000	16.9x10⁶	6.8	30	45
	-2	175,000	153,000	16.4	4.8	24	39	-2	187,000	168,000	16.9	6.8	26	44
	-3	170,000	154,000	16.3	5.0	29	43	-3	179,000	160,000	16.3	6.5	24	40
	-4	169,000	149,000	16.3	4.5	19	-(1)	-4	177,000	156,000	16.7	5.5	23	-
	-5	171,000	150,000	16.1	5.2	26	28	-5	181,000	163,000	16.8	5.5	24	-
	-6	171,000	151,000	15.7	6.2	25	-	-6	177,000	-	-	6.2	27	44(2)
	-7	168,000	148,000	16.1	5.0	25	-	-7	176,000	152,000	16.5	6.0	17	26
	-8	171,000	148,000	16.3	5.0	10	24	-8	176,000	153,000	16.4	5.2	20	-
	-9	168,000	150,000	15.8	5.2	20	-	-9	177,000	156,000	15.8	5.2	18	-
	-10	172,000	153,000	16.3	4.0	21	37	-10	175,000	154,000	16.3	5.8	18	-
	Average	170,000	151,000	16.2	4.9	22	34	Average	179,000	159,000	16.5	6.0	23	40
200	B5LA2-15	154,000	131,000	16.0x10⁶	7.0	22	-	B5TA2-13	152,000	137,000	17.0x10⁶	7.0	26	-
	-19	153,000	133,000	16.0	6.0	16	28	-15	159,000	137,000	15.0	6.5	32	40
	-20	153,000	131,000	15.9	6.5	20	28	-19	163,000	146,000	16.6	6.6	24	40
	Average	153,000	132,000	16.0	6.5	19	28	Average	158,000	140,000	16.2	6.5	27	40
400	B5LA3-8	136,000	113,000	15.4x10⁶	6.0	-	-(1)	B5TA3-8	145,000	123,000	13.4x10⁶	6.5	32	-(4)
	-14	139,000	116,000	14.2	7.5	32	-	-16	145,000	121,000	14.9	7.0	32	-
	-16	137,000	114,000	15.4	6.5	-	-	-18	147,000	121,000	14.0	7.0	30	-
	Average	137,000	114,000	15.0	6.7			Average	146,000	122,000	14.1	6.8	31	
600	B5LA4-9	130,000	101,000	13.0x10⁶	5.5	-	-	B5TA4-1	146,000	123,000	14.2x10⁶	5.0	-	-
	-12	131,000	104,000	12.9	5.5	26	-	-9	141,000	116,000	14.7	5.0	28	-
	-22	133,000	111,000	13.7	10.0	-	-	-14	136,000	109,000	13.5	5.5	-	-
	Average	131,000	105,000	12.5	7.3			Average	141,000	116,000	14.1	5.2		
800	B5LA6-3	124,000	98,100	12.9x10⁶	4.5	28	-	B5TA6-10	132,000	104,000	13.8x10⁶	7.0	28	-(3)
	-13	123,000	94,900	12.6	5.5	-	-	-11	133,000	106,000	13.2	5.0	-	-
	-17	127,000	103,000	12.6	6.0	-	-	-12	135,000	110,000	13.2	7.0	-	-
	Average	125,000	99,500	12.7	5.3			Average	133,000	107,000	13.2	6.3		
900	B5LA7-5	117,000	84,900	11.9x10⁶	7.0	24	32(1)	B5TA7-3	128,000	104,000	11.6x10⁶	8.0	-	-
	-19	120,000	99,100	12.2	7.5	30	-	-5	121,000	93,200	12.0	9.5	38	-
	-21	117,000	94,600	12.2	7.0	26	48	-17	121,000	97,000	12.2	9.0	-	-
	Average	118,000	92,900	12.1	7.2	27	40	Average	123,000	98,100	11.9	8.8		
1000	B5LA8-2	89,100	58,500	10.7x10⁶	23.0	52	76	B5TA8-2	102,000	67,600	11.7x10⁶	20.0	56	-
	-7	97,600	69,700	11.7	15.0	72	-	-4	100,000	74,300	10.7	26.0	70	-
	-11	90,500	59,500	11.2	18.0	50	-	-7	101,000	75,200	10.3	20.0	46	-
	Average	92,500	62,600	11.6	19.0	58		Average	101,000	72,600	10.9	22.0	57	

(1) Failed within 1/4 inch of fillet.
(2) Unusable load-deformation curve.
(3) Failed at knife edge.
(4) Soaked at temperature 1-1/4 hours.

TABLE LXIV

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.063 INCH
HEAT NUMBER— 31372

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.
80	B8LA1-1	176,000	164,000	16.4×10^6	9.0	36	-	B8TA1-1	176,000	156,000	15.9×10^6	8.5	44	-
	-4	178,000	169,000	17.0	8.5	-	-	-4	173,000	154,000	15.9	9.5	40	52(1)
	-7	177,000	166,000	16.7	8.0	40	-	-7	173,000	158,000	16.2	8.5	40	60
	-10	176,000	167,000	16.4	8.5	-	-	-10	175,000	162,000	16.4	10.0	-	-
	-13	178,000	167,000	16.9	10.0	-	-	-13	174,000	162,000	16.4	8.5	40	-
	-16	177,000	166,000	16.3	8.5	-	-	-16	175,000	162,000	16.3	8.0	32	-
	-19	176,000	169,000	16.5	8.0	-	-	-19	174,000	158,000	15.9	7.5	36	-
	-22	177,000	170,000	16.5	10.0	36	-	-22	176,000	158,000	16.1	7.0	-	-
	-25	172,000	162,000	16.1	8.0	36	-	-25	174,000	165,000	16.2	7.5	36	-
	-28	178,000	166,000	16.5	7.5	-	-	-28	171,000	162,000	16.0	8.0	36	-
	Average	177,000	167,000	16.5	8.6	37	-	Average	174,000	160,000	16.1	8.3	38	56
200	B8LA2-1	161,000	143,000	15.7×10^6	10.0	32	-	B8TA2-1	161,000	139,000	15.7×10^6	9.0	36	40
	-13	160,000	146,000	16.7	10.0	34	-	-9	159,000	138,000	15.5	8.5	32	-
	-15	164,000	146,000	15.2	8.5	32	-	-15	161,000	140,000	14.9	9.0	42	-
	Average	162,000	145,000	15.9	9.5	33		Average	160,000	139,000	15.4	8.8	33	
400	B8LA3-6	142,000	118,000	14.5×10^6	9.0	-	-	B8TA3-8	143,000	117,000	13.8×10^6	6.5	35	-
	-8	146,000	121,000	13.8	9.0	32	56	-16	141,000	118,000	14.6	9.5	40	-
	-16	140,000	120,000	14.2	10.0	33	60	-18	142,000	119,000	14.4	-	-	-(2)
	Average	143,000	120,000	14.2	9.3	32	58	Average	142,000	118,000	14.3	8.0	38	
600	B8LA4-9	132,000	107,000	12.5×10^6	6.5	24	-	B8TA4-6	131,000	-	-	7.5	24	44(3)
	-12	133,000	104,000	12.7	7.5	-	-	-12	132,000	107,000	12.9×10^6	7.5	32	44(1)
	-18	130,000	99,200	13.3	7.0	32	-	-13	131,000	100,000	14.0	7.5	32	-
	Average	132,000	103,000	12.8	7.0	29		Average	131,000	104,000	13.4	7.5	29	44
800	B8LA6-5	124,000	94,900	12.1×10^6	7.0	24	-	B8TA6-10	124,000	95,600	12.7×10^6	7.5	28	-(1)
	-10	125,000	96,500	11.7	7.5	24	-	-14	120,000	92,300	12.2	10.0	32	52
	-17	120,000	92,600	12.1	8.0	28	-	-17	122,000	89,200	12.8	8.5	36	60(1)
	Average	123,000	94,700	12.0	7.5	25		Average	122,000	92,100	12.6	8.7	32	56
900	B8LA7-3	110,000	87,600	11.7×10^6	15.0	52		B8TA7-2	107,000	-	11.2×10^6	10.0	36	48(4)
	-4	111,000	87,100	11.5	12.5	36	-(1	-3	111,000	87,600	10.2	12.5	40	60
	-11	113,000	90,800	11.0	12.5	52		-11	109,000	85,000	11.5	10.5	44	76(1)
	Average	111,000	88,500	11.4	13.3	47		Average	109,000	86,300	11.0	11.0	40	61
1000	B8LA8-2	91,100	75,300	9.39×10^6	18.0	64	84(1	B8TA8-4	85,200	60,500	10.0×10^6	-	-	-(2)
	-7	89,600	77,000	9.27	21.0	76	100(1	-5	81,800	68,900	9.06	16.0	60	100
	-14	84,200	72,000	9.45	30.0	92	108(1	-7	86,100	70,400	10.0	15.0	52	92(1)
	Average	88,300	74,800	9.37	23.0	77	97		84,400	66,600	9.99	15.5	56	96

(1) Failed within 1/4 inch of fillet.
(2) Failed outside gage marks.
(3) Unusable load-deformation curve.
(4) Unusable load-deformation curve beyond elastic portion.

TABLE LXV

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.125 INCH
HEAT NUMBER— 22207 AND 23407

TEST TEMP °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/32 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/32 IN.
RT	B3LA1-1	173,000	155,000	10.0×10^6	5.0	-	-	B3TA1-1	187,000	172,000	16.5×10^6	5.0	20	28
	-4	179,000	167,000	15.8	4.0	20	-	-4	195,000	178,000	16.9	4.5	20	-
	-7	173,000	156,000	16.6	5.0	20	-	-7	190,000	177,000	16.8	5.0	22	-
	-10	172,000	157,000	16.4	5.0	24	-	-10	190,000	180,000	16.9	7.0	-	-
	-13	187,000	174,000	16.4	4.5	24	-	-13	190,000	178,000	16.2	8.0	-	-
	-16 •	173,000	157,000	16.0	-	-	-(1)	-16•	186,000	172,000	17.1	7.5	36	-
	-19 •	174,000	159,000	15.9	4.5	20	-	-19•	187,000	172,000	17.6	8.5	28	-
	-22 •	163,000	146,000	15.6	3.5	20	-	-22•	188,000	177,000	16.5	7.5	28	-
	-25 •	168,000	152,000	15.7	4.0	20	-	-25•	187,000	177,000	17.1	7.0	24	-
	-28 •	172,000	-	-	10.0	20	-(2)	-28•	190,000	178,000	17.0	6.0	20	-
	Average	173,000	158,000	16.0	5.1	22	-	Average	189,000	176,000	16.8	6.5	27	-
200	B3LA2-6	160,000	149,000	15.4×10^6	5.0	26	32	B3TA2-6	172,000	160,000	16.1×10^6	10.0	36	60
	-13 •	157,000	142,000	15.7	4.0	20	28	-13 •	176,000	163,000	16.0	7.0	28	-
	-15 •	159,000	144,000	15.2	6.0	24	36	-15 •	175,000	162,000	16.0	7.0	28	-
	Average	159,000	145,000	15.1	5.0	23	32	Average	174,000	162,000	15.7	8.0	31	60
400	B3LA3-6	145,000	125,000	15.2×10^6	6.5	26	44	B3TA3-6	153,000	137,000	15.7×10^6	7.5	40	68
	-16 •	135,000	118,000	13.4	4.5	20	36	-16 •	160,000	142,000	16.0	8.0	28	-
	-19 •	128,000	111,000	14.8	5.0	20	34	-19 •	164,000	146,000	16.0	6.0	36	-
	Average	136,000	118,000	14.4	5.2	22	38	Average	159,000	142,000	15.9	7.2	35	68
600	B3LA4-1	134,000	111,000	13.6×10^6	7.0	32	60	B3TA4-1	148,000	129,000	13.6×10^6	6.0	34	52
	-9	127,000	100,000	14.2	8.0	40	-	-9	149,000	129,000	14.3	5.5	36	56
	-12 •	138,000	111,000	14.4	5.0	26	36	-12 •	155,000	136,000	14.2	6.0	28	52
	Average	133,000	107,000	14.1	6.7	33	48	Average	151,000	131,000	14.0	5.8	33	54
800	B3LA6-10 •	130,000	103,000	12.4×10^6	7.0	28	44	B3TA6-10 •	143,000	120,000	14.3×10^6	6.0	34	60
	-14 •	127,000	102,000	12.4	5.0	26	44	-14 •	145,000	124,000	14.3	6.5	-	-
	-17 •	118,000	91,400	12.7	4.5	24	-	-17 •	149,000	122,000	14.0	6.0	32	-
	Average	125,000	99,000	12.5	5.4	26	44	Average	146,000	122,000	14.2	6.2	33	-
900	B3LA7-3	125,000	87,100	11.1×10^6	7.0	28	-	B3TA7-3	128,000	100,000	10.9×10^6	7.5	38	-
	-5	117,000	86,400	10.5	10.5	40	60	-5	131,000	101,000	12.0	9.0	36	-
	-11 •	116,000	87,400	10.8	11.0	40	56	-11 •	131,000	102,000	11.4	10.5	36	-
	Average	119,000	87,300	10.8	11.2	33	58	Average	131,000	101,000	12.1	9.0	37	-
1000	B3LA8-2	97,600	54,100	10.2×10^6	24.0	50	110	B3TA8-2	105,000	63,700	9.60×10^6	22.5	52	130
	-4	94,500	56,700	10.5	26.0	66	120	-4	103,000	65,500	10.1	19.0	72	-
	-7	102,000	59,000	10.4	21.0	66	116	-7	98,100	72,100	9.50	22.5	64	-
	Average	98,100	56,600	10.4	23.7	61	115	Average	102,000	67,100	9.73	21.3	63	-

• Heat 23407

(1) Failed outside gage marks.

(2) Unusable load deformation curve.

TABLE LXVI

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.125 INCH
HEAT NUMBER— 32163

TEST TEMP °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/8 IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONG 2 IN.	ELONG 1/8 IN.	4 % RT
RT	B6LA1-1	172,000	153,000	16.2×10^6	7.5	32	44	B6TA1-1	175,000	159,000	16.7×10^6	8.0	28	-
	-4	175,000	154,000	16.5	7.5	26	36	-4	179,000	164,000	16.3	6.6	36	56
	-7	174,000	156,000	16.5	8.5	28	44	-7	172,000	157,000	16.8	7.5	30	-
	-10	174,000	156,000	16.8	7.5	28	40	-10	175,000	161,000	16.6	6.0	28	48
	-13	177,000	158,000	17.0	8.5	20	-	-13	179,000	166,000	16.2	5.5	26	60
	-16	171,000	150,000	15.7	7.5	24	20	-16	177,000	157,000	16.7	9.0	32	60
	-19	168,000	148,000	16.7	9.0	24	48	-19	169,000	156,000	16.7	8.5	36	-
	-22	168,000	154,000	16.0	8.0	24	36	-22	171,000	157,000	17.2	6.5	32	-
	-25	170,000	154,000	16.4	7.5	24	36	-25	174,000	157,000	16.8	6.0	-	-
	-28	170,000	153,000	15.2	3.0	16	-	-28	168,000	152,000	17.0	2.0	24	-
	Average	172,000	153,000	16.4	7.4	25	38	Average	174,000	159,000	16.7	7.3	32	56
200	B6LA2-1	159,000	140,000	16.5×10^6	8.5	32	52	B6TA2-6	157,000	130,000	16.0×10^6	8.0	40	-
	-3	158,000	139,000	15.7	8.5	34	40	-13	161,000	142,000	16.1	9.0	48	-
	-5	158,000	139,000	15.6	9.0	32	60	-15	151,000	-	-	8.5	44	-(1)
	Average	158,000	139,000	15.9	8.7	33	51	Average	156,000	140,000	16.0	8.5	44	
400	B6LA3-2	145,000	119,000	16.3×10^6	9.0	44	68	B6TA3-8	140,000	119,000	15.9×10^6	10.0	52	-
	-4	138,000	117,000	14.9	10.0	52	52	-16	138,000	116,000	15.9	9.0	50	80
	-6	142,000	116,000	14.8	9.5	40	60	-18	139,000	116,000	16.8	10.0	50	60
	Average	142,000	117,000	15.3	9.5	45	60	Average	139,000	117,000	16.2	9.7	51	70
600	B6LA4-8	134,000	110,000	14.2×10^6	7.5	46	72	B6TA4-1	128,000	106,000	13.5×10^6	8.0	46	60
	-14	127,000	101,000	14.1	8.0	36	52	-9	128,000	108,000	14.9	7.0	42	72
	-18	125,000	102,000	13.6	8.0	44	80	-12	125,000	105,000	14.8	7.5	44	68
	Average	129,000	104,000	14.0	7.8	42	68	Average	127,000	106,000	14.4	7.5	44	67
800	B6LA6-7	123,000	95,600	12.5×10^6	9.5	50	72	B6TA5-10	117,000	95,600	13.1×10^6	9.0	52	80
	-16	118,000	90,700	12.8	10.0	44	72	-14	115,000	94,000	13.4	8.5	46	76
	-17	119,000	93,000	13.0	9.0	44	76	-17	119,000	98,000	13.5	7.0	46	72
	Average	120,000	93,100	12.8	9.5	46	73	Average	117,000	95,800	13.3	8.2	48	76
900	B6LA7-9	113,000	86,000	11.3×10^6	13.0	46	76	B6TA7-3	110,000	87,100	11.6×10^6	12.0	54	88
	-12	109,000	83,600	10.6	15.5	56	84	-5	111,000	87,500	11.6	10.5	56	76
	-15	109,000	83,000	11.4	17.0	60	-	-11	110,000	86,300	10.6	13.0	-	-
	Average	110,000	84,200	11.1	15.2	54	80	Average	110,000	87,000	11.3	11.8	55	82
1000	B6LA8-10	86,200	59,400	10.3×10^6	32.0	76	128	B6TA8-2	93,400	75,900	9.82×10^6	23.0	84	-
	-11	90,500	61,300	11.0	23.0	80	128	-4	95,000	44,500	10.3	20.0	76	128
	-13	91,900	58,500	10.2	23.0	80	-	-7	90,400	62,000	9.82	25.0	-	-
	Average	89,500	59,700	10.5	26.0	79	128	Average	92,900	94,100	9.98	22.7	80	

(1) Unusable load-deformation curve.

TABLE LXVII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.125 INCH
HEAT NUMBER— 32167

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/8 IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/8 IN.
80	B9LA1-1	175,000	162,000	16.8×10^6	8.0	24	-	B9TA1-1	175,000	161,000	17.0×10^6	-	-	-(1)
	-4	176,000	162,000	16.7	-	-	-(1)	-4	178,000	162,000	16.9	8.0	30	-
	-7	180,000	163,000	17.4	7.5	28	48	-7	176,000	164,000	17.0	7.0	28	-
	-10	177,000	164,000	16.5	7.5	28	-	-10	179,000	166,000	16.5	8.0	28	48
	-13	171,000	159,000	16.5	8.0	32	48	-13	177,000	164,000	16.9	6.0	20	36
	-16	179,000	165,000	16.8	8.0	32	44	-16	176,000	161,000	16.5	7.5	32	-
	-19	176,000	162,000	16.9	6.0	30	48	-19	178,000	162,000	16.0	8.0	-	-
	-22	179,000	168,000	16.9	6.0	20	32	-22	179,000	152,000	16.6	7.0	20	36
	-25	171,000	158,000	16.6	9.0	34	56	-25	178,000	161,000	16.8	8.0	34	-
	-28	175,000	161,000	16.4	8.0	26	36	-28	171,000	163,000	16.7	8.0	24	36
	Average	176,000	162,000	16.9	7.6	30	45	Average	177,000	161,000	16.7	7.5	27	39
200	B9LA2-6	156,000	143,000	15.1×10^6	7.5	30	48	B9TA2-6	156,000	140,000	15.2×10^6	9.5	28	40
	-13	160,000	146,000	15.0	-	-	-(1)	-13	162,000	143,000	-	7.0	30	-
	-15	163,000	148,000	15.5	11.5	34	48	-15	160,000	-	16.2	7.0	36	38(3)
	Average	160,000	146,000	15.2	9.5	32	48	Average	156,000	142,000	15.7	7.8	31	39
400	B9LA3-8	140,000	118,000	14.6×10^6	10.0	46	60	B9TA3-8	143,000	124,000	15.4×10^6	10.5	50	-
	-16	148,000	126,000	13.3	10.5	40	60	-16	143,000	121,000	14.3	8.5	44	60
	-18	142,000	119,000	13.9	12.0	44	68	-18	144,000	124,000	15.9	7.5	40	60
	Average	143,000	121,000	14.0	10.8	43	63	Average	143,000	123,000	15.2	8.8	45	60
600	B9LA4-1	134,000	105,000	14.8×10^6	8.0	36	64	B9TA4-1	132,000	108,000	13.7×10^6	7.0	-	-
	-9	126,000	100,000	13.7	9.0	44	68	-9	131,000	107,000	14.8	8.5	50	76
	-12	139,000	109,000	14.8	8.0	40	60	-12	135,000	110,000	13.6	8.0	40	60
	Average	133,000	105,000	14.4	8.3	43	64	Average	133,000	108,000	14.0	7.8	45	68
800	B9LA5-10	126,000	98,000	12.2×10^6	10.0	46	92	B9TA5-10	129,000	99,800	13.4×10^6	8.5	44	60
	-14	125,000	95,500	12.9	11.5	50	84	-14	124,000	100,000	13.7	8.0	44	80
	-17	122,000	96,000	11.8	11.0	44	76	-17	125,000	99,300	13.1	8.5	44	100
	Average	125,000	96,700	12.3	10.8	47	84	Average	126,000	99,800	13.4	8.3	44	80
900	B9LA7-3	109,000	83,000	12.0×10^6	19.0	60	92	B9TA7-3	112,000	87,400	12.4×10^6	16.0	56	84
	-5	111,000	87,700	12.1	19.0	68	-	-5	110,000	86,800	11.8	14.0	48	68
	-11	110,000	89,200	12.3	16.0	68	88	-11	116,000	89,400	12.7	17.0	54	-
	Average	110,000	86,600	12.1	18.7	65	90	Average	113,000	87,900	12.3	15.7	53	76
1000	B9LA8-2	86,500	68,300	11.0×10^6	25.5	76	124	B9TA8-2	87,200	64,700	10.6×10^6	21.0	72	108
	-4	84,900	-	-	20.0	76	100(2)	-4	88,900	68,800	9.09	25.0	80	-
	-7	84,400	64,600	11.5	29.5	76	124	-7	86,900	68,700	11.1	21.0	76	120
	Average	85,300	66,500	11.2	25.0	76	116	Average	87,700	67,400	10.2	22.3	76	114

(1) Failed outside gage marks.
(2) Unusable load-deformation curve.
(3) Unusable load-deformation curve beyond elastic portion.

TABLE LXVIII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, (REACTIVE METALS HEAT NO. 27039)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_o at 0.85 E, PSI	F_o at 0.70 E, PSI	Shape Parameter, n
B2LB1-2	80	155,000	15.6	154,000	160,000	23.6
-8	80	160,000	16.1	159,000	165,000	25.7
-11	80	160,000	17.2	158,000	165,000	24.2
-14	80	168,000	15.8	167,000	176,000	19.3
-17	80	167,000	15.5	166,000	175,000	18.1
-20	80	171,000	15.8	171,000	178,000	21.4
-23	80	168,000	15.2	167,000	176,000	18.8
-26	80	168,000	16.1	161,000	167,000	23.1
-29	80	166,000	15.7	166,000	172,000	23.3
-37	80	168,000	16.1	165,000	176,000	17.9
Average		166,300	15.9			
B2LB2-5	200	138,000	15.5	139,000	143,000	32.0
-7	200	143,000	14.5	142,000	146,000	31.1
-30	200	147,000	15.4	143,000	153,000	14.1
Average		143,000	15.1			
B2LB3-13	400	126,000	15.2	122,000	131,000	12.6
-24	400	131,000	14.4	130,000	135,000	24.8
-31	400	125,000	14.6	113,000	117,000	26.8
Average		126,000	14.7			
B2LB4-15	600	119,000	14.3	116,000	124,000	14.0
-25	600	115,000	13.4	111,000	120,000	17.4
-32	600	109,000	13.4	103,000	108,000	19.9
Average		113,000	13.8			
B2LB6-4	800	93,400	11.7	91,100	97,800	13.4
-18	800	122,000	13.2	120,000	129,000	13.7
-33	800	119,000	12.4	107,000	118,000	10.0
Average		120,200	12.4			
B2LB7-3	900	86,900	12.8	88,300	89,600	11.4
-16	900	91,600	12.8	86,700	97,600	7.3
-28	900	87,400	12.2	83,500	93,300	9.0
Average		88,600	12.5			
B2LB8-1	1000	69,100	11.0	61,000	72,700	6.7
-9	1000	70,800	10.1	68,700	74,900	8.6
-21	1000	92,200	10.2	48,800	68,000	3.7
Average		87,200	10.1			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, (REACTIVE METALS HEAT NO. 27039)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_o at 0.85 E, PSI	F_o at 0.70 E, PSI	Shape Parameter, n
B2TB1-2	80	208,000	18.2	208,000	221,000	10.9
-7	80	216,000	17.4	218,000	-	-
-8	80	213,000	17.1	213,000	-	-
-11	80	209,000	17.9	210,000	226,000	12.7
-14	80	204,000	17.5	204,000	222,000	11.5
-29	80	208,000	17.2	207,000	-	-
-30	80	202,000	17.5	208,000	220,000	13.4
-31	80	201,000	17.9	201,000	220,000	10.9
-32	80	195,000	17.5	195,000	212,000	11.6
-33	80	201,000	18.4	203,000	-	-
Average		205,000	17.7			
B2TB2-7	200	189,000	17.5	188,000	206,000	10.7
-15	200	191,000	15.5	192,000	215,000	8.6
-22	200	198,000	16.5	198,000	210,000	10.9
Average		193,000	16.5			
B2TB3-13	400	165,000	15.6	163,000	181,000	9.5
-24	400	172,000	16.4	170,000	190,000	9.0
-27	400	175,000	16.4	174,000	190,000	10.6
Average		171,000	16.1			
B2TB4-16	600	151,000	15.5	151,000	173,000	7.4
-25	600	148,000	15.5	145,000	167,000	7.4
-34	600	148,000	14.4	145,000	-	-
Average		150,000	15.1			
B2TB6-4	800	134,000	15.3	129,000	148,000	7.5
-10	800	145,000	15.5	141,000	-	-
-12	800	141,000	14.8	138,000	156,000	8.2
Average		140,000	15.0			
B2TB7-3	900	117,000	14.0	110,000	129,000	6.6
-9	900	126,000	13.8	121,000	139,000	7.4
-28	900	124,000	13.7	122,000	139,000	7.8
Average		122,000	13.8			
B2TB8-1	1000	84,900	14.2	75,400	98,100	5.4
-16	1000	97,500	13.4	78,500	94,800	4.3
-21	1000	108,000	13.5	91,300	113,000	5.2
Average		96,800	13.7			

TABLE LXIX

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 25671)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
B5LB1-2	80	160,000	16.4	159,000	170,000	14.3
-5	80	168,000	16.0	167,000	178,000	14.9
-8	80	161,000	16.0	159,000	173,000	11.5
-11	80	161,000	16.8	158,000	175,000	9.6
-14	80	161,000	16.6	159,000	170,000	14.3
-17	80	168,000	16.1	168,000	178,000	16.2
-20	80	164,000	16.4	162,000	177,000	11.1
-23	80	169,000	16.5	168,000	184,000	10.8
-26	80	165,000	16.2	164,000	174,000	16.0
-29	80	168,000	16.7	166,000	-	-
Average		164,000	16.4			
B5LB2-7	200	147,000	14.5	145,000	158,000	11.3
-19	200	148,000	16.6	144,000	158,000	10.6
-22	200	151,000	15.4	151,000	165,000	11.0
Average		149,000	15.5			
B5LB3-13	400	128,000	13.9	125,000	135,000	12.5
-24	400	127,000	14.3	123,000	138,000	8.7
-27	400	127,000	13.9	125,000	136,000	11.5
Average		127,000	14.0			
B5LB4-15	600	117,000	13.5	114,000	125,000	10.7
-18	600	118,000	13.5	117,000	128,000	11.0
-25	600	122,000	13.9	129,000	131,000	10.2
Average		119,000	13.6			
B5LB6-4	800	109,000	13.6	104,000	119,000	7.6
-10	800	113,000	13.4	107,000	123,000	7.2
-12	800	112,000	13.9	106,000	120,000	8.2
Average		111,000	13.6			
B5LB7-33	900	89,000	11.7	85,100	94,700	9.3
-16	900	99,400	12.4	95,600	106,000	9.6
-28	900	95,200	12.4	90,700	104,000	7.5
Average		94,500	12.2			
B5LB8-1	1000	70,300	11.7	61,000	73,700	5.7
-9	1000	74,300	10.7	66,400	79,700	5.9
-21	1000	79,900	12.0	71,400	85,600	5.9
Average		74,500	11.5			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 25671)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_n at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
B5TB1-2	80	198,000	16.7	198,000	208,000	11.8
-5	80	190,000	16.3	190,000	206,000	12.2
-8	80	173,000	16.8	171,000	188,000	10.5
-11	80	171,000	16.6	169,000	185,000	10.8
-14	80	197,000	17.3	185,000	208,000	11.1
-17	80	204,000	17.0	205,000	221,000	12.8
-20	80	202,000	16.5	204,000	224,000	10.3
-23	80	193,000	15.9	194,000	207,000	14.3
-26	80	204,000	17.1	206,000	-	-
-29	80	170,000	17.0	167,000	183,000	10.7
Average		189,000	16.7			
B5TB2-7	200	159,000	15.5	157,000	172,000	10.8
-19	200	155,000	16.2	152,000	165,000	11.7
-22	200	153,000	15.4	151,000	163,000	12.4
Average		156,000	15.7			
B5TB5-13	400	149,000	15.0	147,000	160,000	11.4
-24	400	134,000	15.0	129,000	146,000	8.3
-27	400	136,000	15.3	133,000	147,000	9.9
Average		140,000	15.1			
B5TB4-15	600	132,000	14.1	129,000	143,000	9.3
-18	600	129,000	14.7	125,000	141,000	8.4
-25	600	129,000	14.4	126,000	139,000	10.2
Average		130,000	14.4			
B5TB6-4	800	126,000	14.5	122,000	140,000	7.4
-10	800	118,000	13.8	113,000	128,000	8.0
-12	800	124,000	13.5	120,000	135,000	8.3
Average		123,000	13.9			
B5TB7-6	900	114,000	13.6	109,000	124,000	7.6
-16	900	110,000	13.7	105,000	118,000	8.6
-28	900	111,000	12.6	107,000	122,000	7.8
Average		112,000	13.3			
B5TB8-1	1000	80,300	13.7	62,900	86,200	3.8
-9	1000	74,700	14.0	53,800	78,500	3.3
-21	1000	89,800	11.7	79,500	95,700	5.8
Average		81,600	13.8			

TABLE LXX

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET 0.063 INCH THICK (REACTIVE METALS HEAT NO. 31372)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
B*LB1-2	80	172,000	17.5	171,000	181,000	18.2
-5	80	177,000	17.7	176,000	188,000	14.5
-8	80	174,000	16.6	173,000	184,000	15.3
-11	80	170,000	17.3	170,000	178,000	20.3
-14	80	174,000	17 3	173,000	187,000	12.4
-17	80	174,000	17.9	173,000	182,000	18.5
-20	80	175,000	18.4	173,000	185,000	14.3
-23	80	176,000	18.0	173,000	186,000	13.3
-26	80	169,000	16.9	168,000	174,000	26.1
-28	80	171,000	16.9	172,000	182,000	16.7
Average		173,000	17.4			
B*LB2-7	200	153,000	16.5	154,000	162,000	18.5
-19	200	159,000	17.8	154,000	164,000	15.1
-22	200	173,000	16.4	152,000	161,000	16.5
Average		155,000	16.9			
B*LB3-13	400	128,000	15.6	125,000	134,000	15.5
-24	400	128,000	15.3	126,000	134,000	17.6
-27	400	122,000	15.1	121,000	-	-
Average		126,000	15.6			
B*LB4-15	600	108,000	14.5	105,000	112,000	14.7
-25	600	107,000	14.8	106,000	111,000	20.3
-30	600	107,000	15.1	107,000	109,000	48.2
Average		107,000	14.8			
B*LB5-4	800	99,900	11.9	96,400	108,000	8.8
-10	800	92,500	13.7	88,900	97,300	10.9
-12	800	96,400	14.0	93,700	101,000	12.8
Average		96,400	13.2			
B*LB7-3	900	89,300	11.9	84,900	94,600	9.2
-16	900	90,400	12.5	86,700	95,200	10.5
-28	900	90,400	13.1	35,100	94,500	9.5
Average		90,000	12.5			
B*LB8-1	1000	75,100	11.8	68,700	78,900	7.4
-9	1000	77,400	11.7	71,800	81,700	7.9
-21	1000	74,400	11.3	68,500	77,700	8.1
Average		75,550	11.6			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 31378)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
B*TB1-2	80	164,000	16.2	163,000	171,000	19.5
-5	80	163,000	16.5	168,000	169,000	22.1
-8	80	166,000	16.3	166,000	175,000	17.9
-11	80	167,000	16.5	167,000	177,000	16.2
-14	80	167,000	16.3	166,000	174,000	19.9
-17	80	169,000	16.8	167,000	180,000	12.8
-20	80	167,000	17.2	167,000	176,000	17.9
-23	80	167,000	16.7	167,000	175,000	19.9
-26	80	167,000	17.1	166,000	176,000	16.2
-29	80	167,000	16.7	166,000	175,000	17.9
Average		166,000	16.6			
B*TB2-7	200	142,000	16.5	141,000	149,000	17.0
-19	200	145,000	16.6	144,000	151,000	19.5
-22	200	148,000	16.4	147,000	154,000	19.9
Average		145,000	16.5			
B*TB3-13	400	121,000	16.0	119,000	125,000	19.2
-24	400	124,000	15.7	122,000	128,000	19.5
-27	400	125,000	15.7	123,000	128,000	23.1
Average		123,000	15.8			
B*TB4-15	600	104,000	14.4	102,000	108,000	16.5
-25	600	106,000	13.9	105,000	108,000	33.1
-30	600	106,000	16.8	103,000	108,000	19.9
Average		105,000	15.0			
B*TB6-4	800	95,100	13.6	92,200	99,600	12.5
-10	800	97,900	14.0	94,600	103,000	11.4
-12	800	97,800	14.5	93,600	102,000	11.3
Average		96,900	14.0			
B*TB7-3	900	87,000	12.8	83,000	90,400	11.4
-16	900	88,800	12.7	85,000	94,100	9.7
-28	900	88,600	12.9	83,700	93,600	9.0
Average		88,100	12.8			
B*TB8-1	1000	64 800	12.0	50,000	66,800	4.1
-9	1000	68,500	11.9	58,800	70,800	5.8
-21	1000	70,800	11.2	64,500	73,700	[illegible]
Average		68,000	11..			

TABLE LXXI

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 22207)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_a at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
BJLM1-26	80	155,000	16.6	153,000	161,000	16.4
-29	80	164,000	16.8	162,000	172,000	15.8
-32	80	161,000	16.1	159,000	168,000	17.0
-33	80	163,000	16.5	160,000	171,000	17.3
-34	80	160,000	16.3	160,000	168,000	19.2
-35	80	164,000	16.5	163,000	-	-
-36	80	161,000	16.2	159,000	166,000	17.0
-37	80	160,000	16.0	159,000	-	-
-38	80	160,000	16.0	158,000	166,000	18.8
-40	80	167,000	16.8	166,000	176,000	16.2
Average		162,000	16.4			
BJLM2-7	200	159,000	16.1	157,000	168,000	13.4
-19	200	152,000	16.1	157,000	157,000	11.9
-22	200	152,000	15.1	148,000	156,000	21.1
Average		154,000	15.8			
BJLM3-13	400	128,000	15.4	126,000	133,000	17.3
-24	400	126,000	14.7	121,000	128,000	16.4
-27	400	131,000	15.0	122,000	129,000	17.0
Average		128,000	15.1			
BJLM4-15	600	122,000	14.8	117,000	129,000	1 .0
-18	600	123,000	14.7	120,000	-	-
-25	600	132,000	14.5	127,000	134,000	15.1
Average		126,000	14.7			
BJLM5-4	800	111,000	13.6	107,000	121,000	8.2
-10	800	141,000	14.5	96,000	135,000	11.3
-12	800	133,000	14.2	130,000	138,000	12.5
Average		128,000	14.1			
BJLM7-1	900	95,600	12.8	89,900	-	-
-10	900	99,500	14.8	83,200	97,000	5.8
-31	900	96,000	13.9	94,200	-	-
Average		97,000	13.2			
BJLM8-1	1000	72,700	11.1	53,500	75,600	5.2
-9	1000	77,000	11.1	70,000	83,700	5.9
-21	1000	76,400	10.2	71,200	81,800	7.4
Average		75,500	10.8			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, (REACTIVE METALS HEAT NO. 22207)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_a at 0.70 E, PSI	Shape Parameter n
BJTB1-2	80	191,000	18.0	191,000	-	-
-5	80	204,000	18.0	204,000	-	-
-11	80	198,000	18.4	197,000	213,000	12.3
-14	80	201,000	18.1	201,000	-	-
-17	80	196,000	18.5	196,000	212,000	12.5
-20	80	205,000	18.2	205,000	224,000	11.1
-23	80	207,000	18.7	206,000	221,000	13.6
-26	80	206,000	18.8	205,000	222,000	12.1
-29	80	207,000	18.3	208,000	223,000	13.8
-34	80	205,000	18.3	205,000	-	-
Average		202,000	18.3			
BJTB2-7	200	179,000	17.3	178,000	193,000	12.0
-19	200	181,000	17.9	179,000	196,000	10.8
-22	200	185,000	18.3	183,000	203,000	9.6
Average		182,000	17.8			
BJTB3-13	400	150,000	16.1	153,000	170,000	9.4
-24	400	156,000	16.2	154,000	181,000	10.0
-27	400	161,000	16.4	160,000	178,000	9.3
Average		169,000	16.2			
BJTB4-15	600	141,000	15.0	138,000	156,000	8.3
-18	600	137,000	15.4	134,000	154,000	7.4
-25	600	142,000	14.8	139,000	159,000	-
Average		140,000	15.1			
BJTB6-4	800	129,000	14.3	125,000	-	-
-10	800	124,000	14.7	120,000	136,000	8.1
-12	800	126,000	14.3	124,000	143,000	7.2
Average		127,000	14.4			
BJTB7-1	900	111,000	13.4	103,000	125,000	5.6
-6	900	116,000	13.4	110,000	-	-
-16	900	115,000	13.6	110,000	127,000	7.2
Average		114,000	13.5			
BJTB8-3	1000	78,700	12.6	65,200	84,200	4.5
-9	1000	82,500	12.4	76,800	86,100	8.8
-21	1000	85,100	12.5	73,500	93,000	4.8
Average		82,100	12.5			

TABLE LXXII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, (REACTIVE METALS HEAT NO. 3R163)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
3R163-2	80	173,000	16.8	149,000	179,000	16.5
-5	80	168,000	16.9	168,000	175,000	22.6
-8	80	175,000	17.4	178,000	183,000	18.5
-11	80	181,000	17.4	179,000	190,000	16.0
-14	80	174,000	17.1	173,000	181,000	20.7
-17	80	166,000	16.8	168,000	169,000	16.7
-20	80	166,000	16.9	166,000	172,000	22.6
-23	80	165,000	17.3	166,000	170,000	27.1
-26	80	171,000	17.3	170,000	175,000	30.8
-29	80	167,000	17.5	168,000	174,000	19.9
Average		170,000	17.1			
3R163-3	200	156,000	16.5	155,000	161,000	24.2
-6	200	149,000	16.1	158,000	154,000	23.1
-12	200	156,000	16.2	165,000	152,000	19.9
Average		153,000	16.1			
3R163-13	400	131,000	14.9	129,000	134,000	24.4
-24	400	129,000	15.5	118,000	123,000	25.1
-27	400	132,000	15.4	127,000	129,000	17.3
Average		131,000	15.3			
3R163-15	600	123,000	14.4	110,000	119,000	12.3
-18	600	125,000	14.6	101,000	108,000	13.8
-25	600	128,000	14.8	125,000	122,000	14.5
Average		125,000	14.6			
3R163-4	800	131,000	13.6	96,000	105,000	11.4
-10	800	127,000	13.9	103,000	115,000	9.1
-19	800	131,000	13.7	96,000	105,000	10.6
Average		130,000	13.7			
3R163-1	900	89,000	13.0	84,500	96,130	9.2
-9	900	96,000	12.8	91,600	102,000	7.1
-29	900	91,000	12.5	73,000	103,000	7.6
Average		92,000	12.8			
3R163-7	1000	67,000	11.4	57,300	73,000	5.4
-16	1000	74,000	11.9	67,500	78,600	6.9
-21	1000	76,000	12.0	60,000	71,000	5.4
Average		72,000	11.8			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 3R163)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
3R163-2	80	178,000	17.6	177,000	187,000	17.3
-5	80	183,000	17.8	182,000	196,000	13.0
-8	80	177,000	17.7	176,000	187,000	15.5
-11	80	180,000	17.5	179,000	191,000	14.7
-14	80	185,000	17.6	184,000	197,000	13.9
-17	80	177,000	17.8	176,000	189,000	13.4
-20	80	176,000	17.8	175,000	184,000	15.5
-23	80	173,000	17.5	171,000	182,000	15.3
-26	80	176,000	17.9	175,000	188,000	13.4
-30	80	171,000	18.1	171,000	183,000	14.1
Average		176,000	17.7			
3R163-6	200	153,000	16.7	152,000	163,000	13.8
-7	200	158,000	16.9	157,000	166,000	17.0
-13	200	156,000	16.8	157,000	168,000	14.1
Average		156,000	16.8			
3R163-13	400	135,000	16.2	132,000	142,000	13.1
-24	400	129,000	16.4	127,000	145,000	15.5
-31	400	132,000	15.1	128,000	137,000	14.1
Average		132,000	16.0			
3R163-15	600	117,000	14.2	115,000	125,000	11.6
-18	600	114,000	14.6	113,000	121,000	10.3
-25	600	112,000	14.9	109,000	118,000	12.1
Average		114,000	14.6			
3R163-4	800	106,000	14.1	100,000	111,000	8.3
-10	800	104,000	14.3	99,200	109,000	10.4
-19	800	107,000	14.2	103,000	115,000	9.1
Average		106,000	14.2			
3R163-1	900	96,000	13.2	88,900	101,000	8.3
-9	900	90,000	13.3	87,600	99,000	8.2
-29	900	97,000	13.4	93,130	106,000	7.8
Average		94,000	13.3			
3R163-7	1000	75,000	10.9	68,200	78,000	7.1
-16	1000	77,000	10.1	71,800	81,600	7.6
-21	1000	76,000	10.8	68,130	78,600	7.1
Average		75,000	10.6			

TABLE LXXIII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, (REACTIVE METALS HEAT NO. 32167)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
B4181-2	80	173,300	18.0	172,000	182,300	16.7
-5	80	172,300	17.5	171,000	180,300	18.2
-8	80	170,300	17.6	168,000	178,000	16.2
-11	80	173,300	17.5	172,000	180,300	20.3
-14	80	168,300	17.5	168,300	174,300	26.1
-17	80	179,300	17.5	178,300	189,300	15.8
-20	80	172,300	17.7	172,300	180,300	20.3
-23	80	175,300	17.6	174,300	185,300	15.5
-26	80	175,300	17.8	174,300	182,300	20.7
-29	80	171,300	17.8	171,000	181,300	16.7
Average		173,300	17.8			
B4182-7	200	153,300	16.9	150,300	157,300	20.3
-19	200	162,300	16.9	162,000	171,300	17.3
-22	200	156,300	16.1	153,300	161,300	18.5
Average		157,300	16.6			
B4183-13	600	122,300	15.8	120,300	125,300	22.6
-24	600	127,300	15.6	125,300	133,300	15.3
-27	600	125,300	16.2	124,300	130,300	19.9
Average		125,300	15.9			
B4184-15	800	134,300	15.2	132,300	137,300	19.5
-18	800	111,300	14.9	108,300	115,300	11.3
-25	800	130,300	15.3	127,300	133,300	17.3
Average		125,300	15.1			
B4186-4	800	98,800	14.1	93,800	105,300	8.9
-10	800	95,300	13.8	94,300	101,300	10.7
-12	800	96,300	14.2	94,300	-	-
Average		96,800	13.9			
B4187-6	900	87,800	12.4	83,300	91,800	10.1
-20	900	88,300	12.7	82,100	91,300	9.6
-24	900	96,300	13.2	85,300	97,300	7.9
Average		97,300	12.8			
B4188-1	1000	62,300	11.4	52,700	65,300	5.1
-9	1000	64,300	11.3	53,300	72,300	6.3
-21	1000	65,300	11.2	57,900	69,300	5.7
Average		65,300	11.3			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, (REACTIVE METALS HEAT NO. 32167)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
B9781-2	80	171,000	17.6	170,000	180,000	17.3
-5	80	170,000	17.8	169,000	178,000	15.8
-8	80	179,000	17.6	177,000	190,000	13.6
-11	80	181,000	17.7	180,000	190,000	14.7
-14	80	179,000	17.9	178,000	189,000	15.8
-17	80	174,000	17.8	173,000	183,000	16.7
-20	80	172,000	17.8	170,000	180,000	17.3
-23	80	177,000	17.8	175,000	187,000	14.3
-26	80	178,000	17.9	176,000	190,000	12.5
-29	80	175,000	17.9	174,000	184,000	17.0
Average		176,000	17.8			
B9782-7	200	162,000	16.9	160,000	172,000	13.3
-19	200	154,000	16.7	152,000	161,000	16.5
-22	200	155,000	16.2	154,000	162,000	18.5
Average		157,000	16.6			
B9783-13	600	131,000	16.5	128,000	137,000	14.1
-24	600	129,000	16.3	126,000	136,000	15.8
-27	600	128,000	16.3	126,000	134,000	15.5
Average		129,000	16.4			
B9784-15	600	114,000	15.8	111,000	121,000	11.3
-18	600	110,000	15.4	108,000	115,000	15.1
-25	600	111,000	15.6	111,000	120,000	12.4
Average		112,000	15.6			
B9786-4	800	96,600	14.3	93,800	104,000	9.1
-10	800	105,000	15.3	99,600	112,000	8.6
-12	800	103,000	14.2	98,900	111,000	8.8
Average		101,000	14.6			
B9787-6	900	88,800	12.4	84,130	94,800	8.4
-20	900	90,000	12.9	85,800	95,800	9.1
-23	900	91,300	13.7	90,000	110,000	4.5
Average		90,000	13.0			
B9788-1	1000	68,900	11.3	58,600	71,700	6.4
-9	1000	65,300	11.7	52,700	66,500	4.4
-21	1000	66,500	10.6	56,900	69,800	5.5
Average		66,500	11.2			

TABLE LXXIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.040 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B1LD1-4	80	270,000	235,000
-56	80	275,000	236,000
-65	80	284,000	241,000
-91	80	278,000	239,000
-104	80	287,000	246,000
-115	80	274,000	231,000
-169	80	273,000	242,000
-170	80	273,000	239,000
-171	80	279,000	248,000
-172	80	275,000	238,000
Average		277,000	239,000
B1LD2-31	200	244,000	212,000
-173	200	246,000	215,000
-174	200	247,000	208,000
Average		246,000	212,000
B1LD3-177	400	232,000	192,000
-178	400	223,000	195,000
-180	400	221,000	194,000
Average		222,000	193,000
B1LD4-55	600	210,000	181,000
-93	600	224,000	- (1)
-120	600	202,000	173,000
Average		212,000	177,000
B1LD6-125	800	192,000	170,000
-175	800	172,000	170,000
-176	800	188,000	159,000
Average		191,000	169,000
B1LD7-154	900	171,000	150,000
-179	900	134,000	161,000
-181	900	185,000	162,000
Average		180,000	158,000
B1LD8-52	1000	169,000	140,000
-62	1000	162,000	129,000
-182	1000	160,000	121,000
Average		164,000	130,000

(1) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.040 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br_o} (1) PSI
B1TD1-4	80	279,000	237,000	
-25	80	265,000	239,000	
-27	80	277,000	236,000	
-56	80	274,000	243,000	
-68	80	285,000	224,000	284,000
-75	80	276,000	247,000	
-92	80	288,000	247,000	
-104	80	298,000	253,000	
-115	80	274,000	249,000	
-168	80	268,000	247,000	
Average		278,000	243,000	
B1TD2-33	200	260,000	231,000	
-53	200	268,000	237,000	
-67	200	264,000	240,000	
Average		264,000	236,000	
B1TD3-43	400	248,000	228,000	
-49	400	243,000	218,000	
-55	400	233,000	217,000	
Average		241,000	221,000	
B1TD4-30	600	195,000	171,000	
-93	600	229,000	200,000	
-120	600	214,000	192,000	
Average		213,000	188,000	
B1TD6-40	800	190,000	173,000	
-46	800	188,000	165,000	
-125	800	193,000	169,000	
Average		193,000	169,000	
B1TD7-154	900	188,000	166,000	
-157	900	192,000	154,000	
-160	900	176,000	150,000	
Average		185,000	157,000	
B1TD8-17	1000	147,000	119,000	
-52	1000	175,000	140,000	
-62	1000	167,000	125,000	
Average		163,000	128,000	

(1) Initial failure.

TABLE LXXV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING BOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B1LD1-38	80	259,000	229,000
-58	80	270,000	238,000
-66	80	265,000	236,000
-71	80	270,000	232,000
-87	80	266,000	239,000
-92	80	274,000	238,000
-118	80	263,000	232,000
-132	80	260,000	219,000
-134	80	264,000	233,000
-141	80	258,000	225,000
Average		267,000	232,000
B1LD2-36	200	244,000	214,000
-124	200	229,000	201,000
-135	200	238,000	211,000
Average		234,000	209,000
B1LD3-36	400	197,000	172,000
-51	400	215,000	194,000
-80	400	221,000	195,000
Average		211,000	187,000
B1LD4-88	600	221,000	197,000
-139	600	174,000	142,000
-146	600	198,000	170,000
Average		198,000	169,000
B1LD6-73	800	177,000	161,000
-117	800	193,000	166,000
-159	800	191,000	166,000
Average		187,000	172,667
B1LD7-21	900	175,000	156,000
-30	900	171,000	149,000
-133	900	170,000	155,000
Average		172,000	153,000
B1LD8-41	1000	149,000	131,000
-59	1000	149,000	131,000
-61	1000	148,000	127,000
Average		149,000	130,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
B1TD1-38	80	265,000	238,000	
-58	80	258,000	237,000	
-66	80	271,000	242,000	
-71	80	270,000	244,000	
-87	80	246,000	235,000	
-92	80	270,000	240,000	
-118	80	268,000	243,000	
-132	80	261,000	238,000	
-134	80	282,000	249,000	
-141	80	273,000	237,000	
Average		266,000	240,000	
B1TD2-36	200	241,000	207,000	
-51	200	260,000	237,000	
-124	200	232,000	193,000	210,000
Average		246,000	212,000	
B1TD3-80	400	230,000	209,000	
-105	400	226,000	190,000	
-156	400	218,000	192,000	
Average		225,000	197,000	
B1TD4-29	600	202,000	175,000	
-88	600	215,000	183,000	
-135	600	209,000	194,000	
Average		209,000	184,000	
B1TD6-117	800	193,000	176,000	
-146	800	193,000	173,000	
-159	800	190,000	172,000	
Average		192,000	174,000	
B1TD7-21	900	176,000	157,000	
-30	900	175,000	157,000	
-133	900	181,000	162,000	
Average		177,000	159,000	
B1TD8-41	1000	144,000	126,000	
-59	1000	158,000	123,000	
-61	1000	152,000	120,000	
Average		151,000	123,000	

(1) Initial failure.

TABLE LXXVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B1LD1-45	80	268,000	251,000
-47	80	266,000	244,000
-48	80	266,000	249,000
-64	80	261,000	245,000
-72	80	266,000	252,000
-106	80	266,000	247,000
-108	80	277,000	236,000
-114	80	263,000	247,000
-150	80	263,000	226,000
-168	80	270,000	244,000
Average		267,000	244,000
B1LD2-33	200	236,000	215,000
-97	200	248,000	222,000
-165	200	246,000	210,000
Average		243,000	216,000
B1LD3-1	400	214,000	181,000
-49	400	205,000	188,000
-163	400	228,000	204,000
Average		219,000	191,000
B1LD4-18	600	207,000	180,000
-19	600	195,000	179,000
-50	600	208,000	178,000
Average		203,000	179,000
B1LD6-37	800	187,000	179,000
-111	800	187,000	165,000
-165	800	192,000	171,000
Average		189,000	172,000
B1LD7-42	900	185,000	155,000
-136	900	176,000	168,000
-152	900	170,000	151,000
Average		177,000	159,000
B1LD8-28	1000	145,000	- (1)
-155	1000	150,000	123,000
-167	1000	151,000	124,000
Average		149,000	124,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F^{1}_{bry}, (1) PSI
B1TD1-45	80	258,000	236,000	
-47	80	249,000	229,000	
-48	80	267,000	246,000	
-64	80	258,000	243,000	
-72	80	262,000	250,000	
-106	80	246,000	243,000	
-108	80	244,000	- (2)	
-114	80	267,000	256,000	
-150	80	266,000	241,000	
-168	80	257,000	228,000	
Average		259,000	241,000	
B1TD2-1	200	237,000	208,000	218,000
-33	200	243,000	218,000	
-183	200	247,000	230,000	
Average		242,000	219,000	
B1TD3-18	400	214,000	186,000	
-19	400	222,000	190,000	
-163	400	215,000	184,000	
Average		217,000	187,000	
B1TD4-50	400	190,000	179,000	190,000
-97	400	217,000	- (2)	
-111	600	214,000	184,000	
Average		207,000	182,000	
B1TD6-37	800	194,000	161,000	
-69	800	201,000	174,000	
-165	800	184,000	158,000	
Average		190,000	164,000	
B1TD7-42	900	180,000	152,000	
-138	900	179,000	153,000	
-152	900	170,000	150,000	
Average		176,000	152,000	
B1TD8-28	1000	150,000	123,000	
-155	1000	149,000	127,000	
-167	1000	149,000	120,000	
Average		149,000	123,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TABLE LXXVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 27039)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B2LD1-9	80	247,000	227,000
-13	80	246,000	220,000
-16	80	245,000	235,000
-21	80	231,000	220,000
-26	80	255,000	235,000
-29	80	253,000	229,000
-31	80	263,000	243,000
-33	80	259,000	218,000
-47	80	265,000	245,000
-51	80	249,000	241,000
Average		251,000	232,000
B2LD2-1	200	219,000	203,000
-48	200	232,000	220,000
-57	200	215,000	196,000
Average		222,000	206,000
B2LD3-14	400	195,000	181,000
-23	400	186,000	179,000
-55	400	190,000	182,000
Average		190,000	181,000
B2LD4-3	600	178,000	165,000
-30	600	205,000	191,000
-43	600	198,000	166,000
Average		194,000	181,000
B2LD6-2	800	170,000	156,000
-46	800	191,000	182,000
-42	800	187,000	182,000
Average		187,000	173,000
B2LD7-10	900	168,000	157,000
-17	900	165,000	148,000
-24	900	166,000	153,000
Average		167,000	153,000
B2LD8-7	1000	147,000	125,000
-18	1000	143,000	124,000
-35	1000	137,000	132,000
Average		142,000	127,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 27039)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B2TD1-3	80	261,000	230,000
-13	80	267,000	230,000
-16	80	260,000	226,000
-26	80	261,000	224,000
-31	80	280,000	244,000
-33	80	281,000	248,000
-47	80	277,000	247,000
-51	80	282,000	244,000
-57	80	251,000(1)	221,000
-62	80	253,000	216,000
Average		267,000	233,000
B2TD2-1	200	246,000	210,000
-23	200	250,000	206,000
-48	200	252,000	221,000
Average		249,000	212,000
B2TD3-14	400	214,000	178,000
-17	400	198,000	170,000
-55	400	228,000	189,000
Average		213,000	179,000
B2TD4-9	600	194,000	166,000
-30	600	208,000	182,000
-43	600	213,000	190,000
Average		205,000	179,000
B2TD6-2	800	185,000	163,000
-46	800	204,000	181,000
-42	800	197,000	176,000
Average		195,000	173,000
B2TD7-10	900	180,000	154,000
-24	900	176,000	- (2)
-25	900	175,000	149,000
Average		177,000	152,000
B2TD8-7	1000	151,000	134,000
-18	1000	152,000	125,000
-35	1000	166,000	142,000
Average		158,000	134,000

(1) Tensile failure at net section.
(2) Unusable load-deformation curve.

TABLE LXXVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.06 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 25671)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
B5LD1-9	80	254,000	233,000	
-13	80	249,000	231,000	
-16	80	251,000	231,000	
-21	80	250,000	226,000	
-26	80	253,000	235,000	
-29	80	256,000	237,000	
-31	80	257,000	236,000	
-33	80	253,000	226,000	
-47	80	252,000	240,000	
-51	80	254,000	232,000	
Average		253,000	233,000	
B5LD2-1	200	229,000	212,000	
-17	200	232,000	220,000	
-48	200	235,000	211,000	
Average		232,000	214,000	
B5LD3-14	400	204,000	186,000	
-23	400	212,000	191,000	
-55	400	210,000	186,000	
Average		209,000	189,000	
B5LD4-3	600	186,000	180,000	
-30	600	192,000	- (2)	
-43	600	192,000	181,000	
Average		197,000	180,000	
B5LD6-2	800	167,000	- (2)	
-40	800	180,000	177,000	
-42	800	186,000	179,000	
Average		178,000	178,000	
B5LD7-10	900	190,000	176,000	
-28	900	183,000	172,000	
-29	900	187,000	173,000	
Average		187,000	174,000	
B5LD8-7	1000	161,000	142,000	145,000
-18	1000	164,000	149,000	
-35	1000	165,000	140,000	
Average		163,000	144,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 25671)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B5TD1-13	80	255,000	233,000
-16	80	257,000	233,000
-21	80	261,000	233,000
-26	80	262,000	244,000
-29	80	262,000	240,000
-31	80	257,000	234,000
-33	80	262,000	234,000
-47	80	264,000	240,000
-57	80	252,000	228,000
-58	80	258,000	234,000
Average		259,000	237,000
B5TD2-1	200	241,000	214,000
-17	200	252,000	-(1)
-59	200	237,000	220,000
Average		243,000	217,000
B5TD3-14	400	217,000	190,000
-23	400	212,000	194,000
-55	400	207,000	184,000
Average		212,000	189,000
B5TD4-3	600	202,000	179,000
-30	600	201,000	179,000
-43	600	190,000	176,000
Average		198,000	178,000
B5TD6-2	800	196,000	183,000
-40	800	189,000	175,000
-42	800	185,000	173,000
Average		190,000	177,000
B5TD7-7	900	193,000	177,000
-25	900	187,000	172,000
-60	900	181,000	169,000
Average		187,000	173,000
B5TD8-16	1000	164,000	147,000
-35	1000	163,000	141,000
-61	1000	159,000	143,000
Average		162,000	144,000

(1) Unusable load-deformation curve

TABLE LXXIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 31372)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
BSLD1- 9	80	259,000	231,000
13	80	259,000	230,000
16	80	253,000	228,000
21	80	257,000	226,000
26	80	250,000	222,000
29	80	255,000	225,000
31	80	249,000	223,000
33	80	256,000	229,000
47	80	254,000	230,000
51	80	246,000	227,000
Average		253,000	227,000
BSLD2- 1	200	236,000	203,000
17	200	237,000	207,000
48	200	235,000	203,000
Average		236,000	204,000
BSLD3-14	400	212,000	177,000
23	400	216,000	177,000
55	400	206,000	173,000
Average		211,000	176,000
BSLD4- 3	600	200,000	164,000
30	600	194,000	157,000
43	600	200,000	161,000
Average		198,000	161,000
BSLD6- 3	800	179,000	149,000
40	800	180,000	151,000
42	800	180,000	149,000
Average		180,000	150,000
BSLD7-10	900	159,000	133,000
24	900	162,000	135,000
25	900	160,000	134,000
Average		160,000	134,000
BSLD8- 7	1000	150,000	110,000
18	1000	143,000	110,000
35	1000	140,000	114,000
Average		144,000	111,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 31372)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
BSTD1- 9	80	254,000	228,000
13	80	257,000	230,000
16	80	258,000	233,000
21	80	255,000	233,000
26	80	258,000	233,000
29	80	258,000	232,000
31	80	257,000	229,000
33	80	258,000	232,000
47	80	253,000	228,000
51	80	251,000	227,000
Average		256,000	230,000
BSTD2- 1	200	233,000	207,000
17	200	237,000	212,000
48	200	237,000	206,000
Average		236,000	208,000
BSTD3-14	400	210,000	177,000
23	400	212,000	175,000
55	400	209,000	174,000
Average		210,000	175,000
BSTD4- 3	600	197,000	169,000
30	600	191,000	158,000
43	600	194,000	154,000
Average		194,000	159,000
BSTD6-24	800	179,000	153,000
40	800	182,000	154,000
42	800	179,000	153,000
Average		180,000	154,000
BSTD7- 2	900	160,000	131,000
10	900	165,000	141,000
25	900	166,000	137,000
Average		164,000	136,000
BSTD8- 7	1000	146,000	116,000
18	1000	140,000	116,000
35	1000	138,000	106,000
Average		141,000	113,000

TABLE LXXX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NOS. 22807 AND 23407)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B3L01- 9	80	272,000	254,000
11	80	267,000	251,000
(1)16	80	264,000	246,000
(1)21	80	268,000	247,000
(1)26	80	258,000	241,000
(1)29	80	260,000	244,000
31	80	268,000	243,000
33	80	263,000	252,000
(1)47	80	261,000	247,000
(1)51	80	267,000	255,000
Average		265,000	249,000
B3L02- 1	800	257,000	245,000
(1)17	800	253,000	240,000
(1)48	800	252,000	241,000
Average		254,000	242,000
B3L03- 14	400	230,000	221,000
(1)23	400	228,000	207,000
(1)55	400	233,000	224,000
Average		230,000	217,000
B3L04- 3	600	213,000	198,000
(1)30	600	203,000	197,000
43	600	218,000	199,000
Average		211,000	198,000
B3L06- 2	800	197,000	180,000
40	800	200,000	186,000
42	800	208,000	188,000
Average		202,000	185,000
B3L07- 10	900	185,000	178,000
(1)24	900	188,000	168,000
57	900	200,000	173,000
Average		191,000	171,000
B3L08- 7	1000	172,000	155,000
(1)18	1000	166,000	149,000
35	1000	167,000	153,000
Average		168,000	156,000

(1) Heat 23407

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NOS. 22807 AND 23407)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
B3T01- 9	80	272,000	247,000	
11	80	272,000	247,000	
(2)16	80	276,000	248,000	
(2)21	80	283,000	255,000	
(2)26	80	275,000	250,000	
(2)29	80	271,000	249,000	
31	80	273,000	251,000	
33	80	276,000	251,000	865,000
(2)47	80	278,000	250,000	
(2)51	80	280,000	253,000	
Average		276,000	250,000	
B3T02- 1	800	267,000	242,000	
(2)17	800	266,000	252,000	
(2)48	800	267,000	252,000	
Average		267,000	242,000	
B3T03- 14	400	243,000	215,000	
(2)23	400	244,000	217,000	
(2)55	400	243,000	221,000	
Average		243,000	218,000	
B3T04- 3	600	218,000	207,000	
(2)30	600	217,000	206,000	
43	600	225,000	208,000	
Average		220,000	209,000	
B3T06- 2	800	210,000	188,000	
40	800	206,000	190,000	
42	800	210,000	192,000	
Average		209,000	190,000	
B3T07- 10	900	193,000	170,000	
(2)24	900	193,000	180,000	
(2)25	900	199,000	173,000	
Average		195,000	174,000	
B3T08- 7	1000	169,000	159,000	
(2)18	1000	171,000	145,000	
35	1000	170,000	143,000	
Average		170,000	149,000	

(1) Initial failure.
(2) Heat 23407

TABLE LXXXI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6A1-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 32163)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B6LD1- 9	80	273,000	247,000
13	80	274,000	248,000
16	80	262,000	234,000
21	80	256,000	224,000
26	80	268,000	241,000
29	80	260,000	234,000
31	80	268,000	243,000
33	80	271,000	243,000
47	80	263,000	235,000
51	80	268,000	236,000
Average		266,000	238,000
B6LD2- 1	200	248,000	213,000
17	200	246,000	218,000
48	200	241,000	213,000
Average		245,000	215,000
B6LD3-14	400	227,000	193,000
23	400	212,000	173,000
55	400	215,000	183,000
Average		218,000	183,000
B6LD4- 3	600	205,000	182,000
30	600	197,000	169,000
43	600	200,000	165,000
Average		201,000	172,000
B6LD6- 2	800	189,000	169,000
40	800	192,000	166,000
42	800	193,000	169,000
Average		191,000	168,000
B6LD7-10	900	170,000	148,000
24	900	175,000	- (1)
25	900	168,000	137,000
Average		171,000	142,000
B6LD8- 7	1000	152,000	- (1)
18	1000	151,000	124,000
35	1000	147,000	123,000
Average		150,000	124,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6A1-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 32163)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B6TD1- 9	80	269,000	241,000
13	80	258,000	236,000
16	80	267,000	231,000
21	80	266,000	230,000
26	80	260,000	232,000
29	80	249,000	226,000
31	80	276,000	240,000
33	80	268,000	239,000
47	80	263,000	231,000
51	80	268,000	231,000
Average		266,000	234,000
B6TD2- 1	200	255,000	217,000
17	200	252,000	215,000
48	200	247,000	205,000
Average		251,000	212,000
B6TD3-14	400	230,000	191,000
23	400	224,000	184,000
55	400	213,000	-(1)
Average		222,000	188,000
B6TD4- 3	600	212,000	175,000
30	600	203,000	169,000
43	600	208,000	171,000
Average		208,000	172,000
B6TD6- 2	800	196,000	170,000
40	800	193,000	167,000
42	800	193,000	164,000
Average		194,000	167,000
B6TD7-10	900	180,000	157,000
24	900	177,000	147,000
25	900	178,000	156,000
Average		178,000	153,000
B6TD8- 7	1000	163,000	127,000
18	1000	159,000	-(1)
35	1000	161,000	125,000
Average		161,000	126,000

(1) Unusable load-deformation curve

TABLE LXXXII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 38167)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B9LD1- 9	80	265,000	235,000
13	80	259,000	228,000
16	80	261,000	232,000
21	80	261,000	233,000
26	80	268,000	240,000
29	80	268,000	236,000
31	80	257,000	233,000
33	80	266,000	236,000
47	80	271,000	240,000
51	80	269,000	240,000
Average		264,000	236,000
B9LD8- 1	200	241,000	213,000
17	200	245,000	225,000
48	200	243,000	225,000
Average		243,000	221,000
B9LD3-14	400	225,000	195,000
23	400	220,000	197,000
55	400	225,000	196,000
Average		223,000	196,000
B9LD4- 3	600	207,000	176,000
30	600	200,000	178,000
43	600	208,000	- (1)
Average		205,000	176,000
B9LD6- 2	800	189,000	159,000
24	800	188,000	171,000
42	800	186,000	168,000
Average		188,000	166,000
B9LD7-10	900	176,000	153,000
25	900	174,000	148,000
40	900	173,000	148,000
Average		175,000	150,000
B9LD8- 7	1000	159,000	136,000
18	1000	156,000	131,000
35	1000	148,000	121,000
Average		154,000	129,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 38167)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B9ED1- 9	80	264,000	233,000
13	80	270,000	239,000
16	80	265,000	239,000
21	80	277,000	247,000
26	80	272,000	241,000
29	80	266,000	234,000
31	80	261,000	232,000
33	80	266,000	239,000
47	80	262,000	231,000
51	80	271,000	242,000
Average		267,000	237,000
B9ED8- 1	200	250,000	216,000
17	200	248,000	218,000
48	200	252,000	216,000
Average		250,000	217,000
B9ED3-14	400	223,000	183,000
23	400	226,000	194,000
55	400	228,000	186,000
Average		226,000	188,000
B9ED4- 3	600	209,000	175,000
30	600	203,000	170,000
43	600	202,000	166,000
Average		205,000	170,000
B9ED6- 2	800	190,000	165,000
40	800	189,000	163,000
42	800	190,000	158,000
Average		190,000	162,000
B9ED7-10	900	170,000	146,000
28	900	176,000	149,000
45	900	172,000	141,000
Average		174,000	145,000
B9ED8- 7	1000	155,000	120,000
18	1000	150,000	114,000
35	1000	153,000	116,000
Average		153,000	117,000

TABLE LXXXIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
B1LD1-6	80	316,000	244,000	
-15	80	313,000	257,000	
-43	80	341,000	265,000	
-57	80	331,000	249,000	
-89	80	312,000	270,000	
-113	80	329,000	256,000	
-135	80	315,000	256,000	
-140	80	321,000	263,000	
-144	80	317,000	248,000	
-301	80	- (2)	255,000	
Average		322,000	256,000	
B1LD2-77	200	295,000	250,000	283,000
-99	200	327,000	276,000	
-158	200	290,000	242,000	
Average		304,000	256,000	
B1LD3-20	400	284,000	228,000	
-34	400	269,000	212,000	
-143	400	259,000	196,000	
Average		271,000	212,000	
B1LD4-26	600	245,000	187,000	
-95	600	241,000	195,000	
-110	600	242,000	191,000	
Average		243,000	191,000	
B1LD6-44	800	237,000	206,000	
-129	800	239,000	192,000	222,000
-164	800	262,000	210,000	236,000
Average		246,000	203,000	
B1LD7-3	900	218,000	176,000	
-81	900	230,000	189,000	
-82	900	216,000	187,000	197,000
Average		228,000	184,000	
B1LD8-32	1000	181,000	143,000	
-74	1000	194,000	160,000	
-86	1000	137,000	153,000	
Average		187,000	152,000	

(1) Initial failure.
(2) Specimen failed at loading hole.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
B1TD1-6	80	354,000	276,000	311,000
-15	80	356,000	278,000	298,000
-43	80	335,000	277,000	293,000
-57	80	332,000	281,000	293,000
-89	80	323,000	268,000	295,000
-113	80	329,000	277,000	293,000
-121	80	324,000	283,000	286,000
-135	80	322,000	274,000	304,000
-140	80	339,000	279,000	296,000
-144	80	332,000	272,000	298,000
Average		336,000	276,000	
B1TD2-34	200	328,000	263,000	
-77	200	312,000	260,000	
-158	200	332,000	257,000	
Average		324,000	257,000	
B1TD3-20	400	289,000	218,000	
-110	400	272,000	243,000	253,000
-143	400	279,000	239,000	
Average		280,000	233,000	
B1TD4-26	600	238,000	188,000	203,000
-95	600	276,000	232,000	
-99	600	268,000	198,000	
Average		261,000	206,000	
B1TD6-44	800	226,000	195,000	205,000
-129	800	255,000	201,000	
-164	800	240,000	191,000	
Average		240,000	196,000	
B1TD7-3	900	237,000	189,000	
-74	900	241,000	197,000	
-82	900	245,000	- (2)	
Average		241,000	193,000	
B1TD8-32	1000	187,000	163,000	
-81	1000	193,000	165,000	
-86	1000	189,000	158,000	158,000
Average		190,000	162,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TABLE LXXXIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.050 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B1LD1-2	80	325,000	247,000
-22	80	323,000	255,000
-68	80	292,000	259,000
-96	80	303,000	263,000
-102	80	301,000	255,000
-103	80	337,000	272,000
-112	80	331,000	263,000
-137	80	304,000	254,000
-140	80	287,000	251,000
-166	80	283,000	259,000
Average		309,000	256,000
B1LD2-5	200	284,000	250,000
-98	200	296,000	256,000
-153	200	304,000	251,000
Average		295,000	253,000
B1LD3-10	400	290,000	223,000
-109	400	242,000	213,000
-116	400	287,000	220,000
Average		273,000	219,000
B1LD4-12	600	269,000	229,000
-107	600	266,000	225,000
-122	600	247,000	196,000
Average		261,000	217,000
B1LD6-9	800	238,000	193,000
	800	250,000	201,000
-141	800	245,000	193,000
Average		239,000	196,000
B1LD7-29	900	275,000	172,000
-85	900	276,000	183,000
-142	900	205,000	164,000
Average		219,000	173,000
B1LD8-35	1000	189,000	148,000
-70	1000	209,000	152,000
-94	1000	196,000	138,000
Average		198,000	146,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.050 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br}, (1) PSI
B1TD1-2	80	305,000	280,000	
-22	80	279,000	276,000	
-68	80	296,000	261,000	
-102	80	332,000	271,000	287,000
-112	80	299,000	274,000	
-137	80	319,000	256,000	
-166	80	282,000	263,000	
-186	80	318,000	289,000	297,000
-187	80	341,000	289,000	296,000
-188	80	326,000	281,000	297,000
Average		309,000	277,000	
B1TD2-5	200	285,000	266,000	
-107	200	281,000	254,000	
-128	200	264,000	250,000	258,000
Average		277,000	257,000	
B1TD3-34	400	247,000	226,000	235,000
-109	400	254,000	238,000	
-116	400	253,000	225,000	232,000
Average		251,000	230,000	
B1TD4-12	600	251,000	201,000	223,000
-98	600	255,000	210,000	
-122	600	225,000	205,000	216,000
Average		244,000	205,000	
B1TD6-29	800	206,000	191,000	
-142	800	208,000	202,000	
-153	800	213,000	200,000	209,000
Average		209,000	198,000	
B1TD7-9	900	235,000	195,000	206,000
-39	900	210,000	181,000	195,000
-85	900	224,000	193,000	206,000
Average		223,000	190,000	
B1TD8-10	1000	192,000	165,000	
-35	1000	206,000	161,000	
-70	1000	203,000	158,000	
Average		200,000	161,000	

(1) Initial failure.

TABLE LXXXV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
B1LD1-8	80	309,000	249,000	
-11	80	304,000	248,000	298,000
-15	80	306,000	241,000	
-60	80	301,000	253,000	
-79	80	301,000	250,000	
-84	80	296,000	234,000	252,000
-127	80	294,000	- (2)	260,000
-136	80	302,000	239,000	275,000
-151	80	283,000	226,000	254,000
-161	80	294,000	241,000	
Average		299,000	242,000	
B1LD2-23	200	285,000	222,000	
-100	200	288,000	245,000	277,000
-131	200	280,000	223,000	
Average		284,000	230,000	
B1LD3-54	400	259,000	212,000	248,000
-101	400	250,000	211,000	246,000
-126	400	217,000	190,000	
Average		242,000	204,000	
B1LD4-83	600	239,000	202,000	229,000
-123	600	220,000	176,000	
-130	600	231,000	167,000	
Average		231,000	182,000	
B1LD6-7	800	224,000	192,000	212,000
-14	800	215,000	190,000	208,000
-25	800	224,000	181,000	206,000
Average		221,000	188,000	
B1LD7-76	900	231,000	170,000	
-78	900	226,000	174,000	
-119	900	222,000	179,000	
Average		226,000	175,000	
B1LD8-63	1000	206,000	139,000	
-90	1000	208,000	134,000	
-149	1000	193,000	111,000	
Average		202,000	135,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24791)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br},(1) PSI
B1TD1-60	80	281,000	-(3)	240,000
-79	80	261,000	-(3)	219,000
-84	80	281,000	-(3)	264,000
-127	80	271,000	257,000	
-136	80	281,000	244,000	261,000
-151	80	263,000	249,000	264,000
-161	80	267,000	245,000	247,000
-8	80	285,000	266,000	
-11	80	291,000	288,000	301,000
-16	80	271,000	-(3)	
Average		280,000	258,000	
B1TD2-100	200	291,000	262,000	275,000
-126	200	299,000	235,000	256,000
-131	200	282,000(2)	241,000	265,000
Average		291,000	246,000	
B1TD3-23	400	260,000	210,000	232,000
-54	400	265,000	234,000	246,000
-101	400	264,000	233,000	249,000
Average		263,000	226,000	
B1TD4-83	600	244,000	208,000	208,000
-123	600	223,000	180,000	180,000
-130	600	236,000	200,000	204,000
Average		234,000	196,000	
B1TD6-7	800	233,000	202,000	211,000
-14	800	234,000	-(3)	206,000
-25	800	228,000	192,000	204,000
Average		232,000	197,000	
B1TD7-76	900	221,000	190,000	194,000
-78	900	216,000	187,000	211,000
-119	900	213,000	175,000	204,000
Average		217,000	184,000	
B1TD8-63	1000	202,000	-(3)	
-90	1000	194,000	147,000	
-149	1000	191,000	149,000	176,000
Average		196,000	153,000	

(1) Initial failure.
(2) Tensile failure at net section
(3) Unusable load-deformation curve

TABLE LXXXVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 27039)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br}'[1], PSI
B2LD1-4	80	318,000	249,000	
-5	80	297,000	245,000	
-11	80	310,000	247,000	
-15	80	300,000	246,000	
-19	80	300,000	240,000	
-39	80	316,000	262,000	
-41	80	312,000	262,000	
-44	80	319,000	273,000	
-45	80	306,000	277,000	
-56	80	292,000	257,000	
Average		306,000	256,000	
B2LD2-38	200	266,000	230,000	
-46	200	283,000	236,000	
-52	200	278,000	236,000	
Average		276,000	234,000	
B2LD3-20	400	213,000	192,000	
-22	400	230,000	199,000	
-37	400	232,000	211,000	
Average		225,000	201,000	
B2LD4-34	600	229,000	209,000	
-58	600	200,000	175,000	200,000
-57	600	208,000	189,000	
Average		212,000	191,000	
B2LD6-6	800	199,000	- (3)	
-36	800	219,000	198,000	
-61	800	211,000	- (3)	
Average		210,000		
B2LD7-50	900	217,000	179,000	
-51	900	215,000	173,000	
-55	900	217,000	173,000	
Average		216,000	175,000	
B2LD8-8	1000	190,000	138,000	
-49	1000	206,000	144,000	
-53	1000	191,000(2)	154,000	
Average		196,000	145,000	

(1) Initial failure.
(2) Tensile failure at net section
(3) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 27039)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br}'[1], PSI
B2TD1-4	80	313,000	276,000	285,000
-11	80	329,000	278,000	325,000
-15	80	296,000	278,000	286,000
-19	80	329,000	261,000	-
-39	80	336,000	292,000	287,000
-41	80	329,000	273,000	278,000
-45	80	309,000	287,000	302,000
-46	80	316,000	284,000	304,000
-57	80	335,000	285,000	278,000
-58	80	318,000	277,000	262,000
Average		324,000	278,000	
B2TD2-38	200	305,000	-(2)	255,000
-46	200	284,000	-(2)	255,000
-52	200	312,000	-(2)	258,000
Average		300,000		
B2TD3-20	400	270,000	224,000	237,000
-22	400	253,000	-(2)	
-37	400	265,000	225,000	240,000
Average		263,000	224,000	
B2TD4-27	600	264,000	-(2)	123,000
-34	600	264,000	-(3)	222,000
-59	600	245,000	221,000	
Average		258,000		
B2TD6-6	800	242,000	-(3)	206,000
-12	800	244,000	210,000	212,000
-36	800	250,000	235,000	235,000
Average		245,000	222,000	
B2TD7-8	900	230,000	198,000	202,000
-26	900	241,000	200,000	213,000
-32	900	240,000	201,000	219,000
Average		237,000	196,000	
B2TD8-50	1000	207,000	160,000	-
-59	1000	214,000	170,000	-
-60	1000	209,000	159,000	201,000
Average		210,000	163,000	

(1) Initial failure.
(2) Initial failure occurred prior to attaining yield deformation
(3) Unusable load-deformation curve

TABLE IXXXVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 25671)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
B5LD1-5	80	319,000	267,000	
-11	80	324,000	260,000	
-19	80	329,000	259,000	
-39	80	308,000	253,000	
-41	80	310,000	264,000	308,000
-44	80	310,000	250,000	310,000
-45	80	313,000	259,000	308,000
-57	80	310,000	259,000	288,000
-58	80	311,000	250,000	290,000
-59	80	310,000	258,000	299,000
Average		314,000	257,000	
B5LD2-38	200	283,000	223,000	278,000
-46	200	300,000	228,000	
-52	200	289,000	226,000	
Average		291,000	226,000	
B5LD3-27	400	260,000	207,000	
-32	400	269,000	198,000	
-37	400	266,000	204,000	
Average		265,000	203,000	
B5LD4-20	600	249,000	206,000	
-34	600	243,000	198,000	230,000
-40	600	265,000	-(2)	239,000
Average		252,000	202,000	
B5LD6-6	800	230,000	201,000	
-12	800	241,000	203,000	218,000
-36	800	234,000	196,000	211,000
Average		235,000	200,000	
B5LD7-28	900	231,000	193,000	203,000
-32	900	227,000	187,000	
-50	900	229,000	190,000	207,000
Average		229,000	190,000	
B5LD8-8	1000	210,000	163,000	
-49	1000	204,000	160,000	
-53	1000	206,000	168,000	
Average		207,000	162,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 25671)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
B5TD1-4	80	327,000	267,000	277,000
-5	80	320,000	- (2)	277,000
-11	80	321,000	273,000	281,000
-15	80	314,000	258,000	290,000
-19	80	314,000	259,000	
-39	80	315,000	255,000	288,000
-41	80	314,000	252,000	
-44	80	313,000	252,000	291,000
-45	80	316,000	251,000	
-57	80	324,000	239,000	290,000
Average		318,000	256,000	
B5TD2-38	200	293,000	233,000	
-46	200	288,000	239,000	
-52	200	294,000	265,000	267,000
Average		292,000	239,000	
B5TD3-20	400	270,000	202,000	
-22	400	269,000	218,000	236,000
-37	400	265,000	201,000	
Average		268,000	207,000	
B5TD4-27	600	253,000	- (2)	216,000
-34	600	255,000	- (2)	215,000
-54	600	252,000	204,000	225,000
Average		253,000		
B5TD5-6	800	241,000	- (2)	205,000
-12	800	243,000	- (2)	211,000
-36	800	230,000	- (2)	199,000
Average		238,000		
B5TD6-28	900	235,000	- (2)	194,000
-32	900	232,000	192,000	201,000
-50	900	229,000	- (2)	193,000
Average		232,000		
B5TD7-8	1000	205,000	169,000	
-49	1000	219,000	168,000	
-53	1000	210,000	175,000	
Average		211,000	171,000	

(1) Initial failure.
(2) Initial failure occurred prior to attaining yield deformation

TABLE LXXXVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3185 INCH (REACTIVE METALS HEAT NO. 31378)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
B8LD1- 4	80	340,000	265,000	
5	80	341,000	263,000	
11	80	338,000	256,000	
15	80	341,000	268,000	
19	80	342,000	266,000	
39	80	333,000	265,000	
41	80	329,000	258,000	
44	80	338,000	270,000	
45	80	334,000	266,000	
56	80	325,000	251,000	
Average		336,000	262,000	
B8LD2-38	200	290,000	236,000	272,000
46	200	296,000	233,000	
52	200	297,000	243,000	296,000
Average		294,000	237,000	
B8LD3-30	400	268,000	206,000	254,000
32	400	258,000	210,000	250,000
37	400	261,000	205,000	258,000
Average		262,000	207,000	
B8LD4-27	600	248,000	190,000	
34	600	248,000	193,000	227,000
54	600	248,000	191,000	230,000
Average		248,000	191,000	
B8LD6- 6	800	226,000	181,000	224,000
12	800	229,000	181,000	222,000
36	800	232,000	179,000	223,000
Average		229,000	180,000	
B8LD7- 8	900	211,000	160,000	
28	900	210,000	165,000	
32	900	209,000	161,000	
Average		210,000	163,000	
B8LD8-49	1000	180,000	131,000	
50	1000	188,000	131,000	
53	1000	161,000	131,000	
Average		176,000	131,000	

(1) Initial failure.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3185 INCH (REACTIVE METALS HEAT NO. 31378)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
B8TD1- 4	80	333,000	261,000	
5	80	338,000	266,000	
11	80	340,000	266,000	
15	80	341,000	268,000	
19	80	336,000	260,000	
39	80	335,000	265,000	
41	80	331,000	265,000	
44	80	328,000	259,000	
45	80	328,000	254,000	
56	80	331,000	258,000	
Average		334,000	262,000	
B8TD2-38	200	297,000	239,000	287,000
46	200	292,000	235,000	280,000
52	200	294,000	244,000	287,000
Average		291,000	239,000	
B8TD3-20	400	262,000	211,000	253,000
22	400	258,000	210,000	
37	400	267,000	216,000	258,000
Average		262,000	212,000	
B8TD4-27	600	237,000	188,000	231,000
34	600	236,000	187,000	210,000
54	600	231,000	192,000	224,000
Average		235,000	189,000	
B8TD6- 6	800	218,000	180,000	215,000
12	800	223,000	179,000	212,000
36	800	217,000	180,000	
Average		219,000	180,000	
B8TD7-28	900	207,000	159,000	204,000
38	900	208,000	162,000	
50	900	206,000	160,000	
Average		207,000	160,000	
B8TD8- 8	1000	162,000	130,000	
49	1000	158,000	132,000	
53	1000	163,000	134,000	
Average		161,000	132,000	

(1) Initial failure.

TABLE LXXXIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, REAMED HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NOS. 28MK, AND 23407)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
B3LD1- 4	80	318,000	261,000
5	80	318,000	-
11	80	321,000	268,000
15	80	321,000	273,000
(1)19	80	286,000	254,000
39	80	309,000	290,000
42	80	295,000	-
44	80	326,000	265,000
45	80	323,000	258,000
(1)56	80	294,000	261,000
Average		311,000	261,000
B3LD2- 38	200	288,000	244,000
(1)46	200	298,000	255,000
(1)52	200	299,000	248,000
Average		295,000	249,000
B3LD3-(1)20	400	250,000	224,000
(1)22	400	240,000	217,000
37	400	264,000	235,000
Average		251,000	225,000
B3LD4-(1)27	600	233,000	217,000
34	600	238,000	215,000
(1)54	600	229,000	224,000
Average		233,000	219,000
B3LD6- 6	800	225,000	221,000
12	800	239,000	219,000
36	800	230,000	215,000
Average		235,000	218,000
B3LD7-(1)28	900	231,000	-
32	900	271,000	193,000
(1)50	900	247,000	191,000
Average		250,000	192,000
B3LD8- 8	1000	212,000	161,000
(1)49	1000	208,000	161,000
(1)53	1000	208,000	150,000
Average		209,000	157,000

(1) Heat 23407

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, REAMED HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NOS. 28SMK AND 23407)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (*), PSI
B3TD1- 4	80	328,000	290,000	315,000
5	80	346,000	298,000	321,000
11	80	323,000	283,000	317,000
15	80	333,000	297,000	323,000
(2)19	80	338,000	294,000	308,000
39	80	328,000	291,000	308,000
42	80	312,000	277,000	306,000
44	80	321,000	278,000	317,000
(2)45	80	324,000	287,000	301,000
(2)56	80	317,000	299,000	318,000
Average		325,000	288,000	
B3TD2- 38	200	308,000	281,000	281,000
(2)46	200	317,000	279,000	293,000
(2)52	200	318,000	275,000	288,000
Average		314,000	278,000	
B3TD3-(2)20	400	280,000	250,000	257,000
(2)22	400	275,000	255,000	271,000
37	400	283,000	261,000	271,000
Average		280,000	255,000	
B3TD4-(2)27	600	270,000(3)	241,000	240,000
34	600	256,000	234,000	254,000
(2)54	600	243,000	227,000	
Average		256,000	234,000	
B3TD6- 6	800	263,000	- (4)	218,000
12	800	251,000	226,000	227,000
36	800	237,000	206,000	228,000
Average		250,000	216,000	
B3TD7-(2)28	900	229,000	209,000	222,000
32	900	240,000	206,000	227,000
(2)50	900	235,000	199,000	230,000
Average		235,000	205,000	
B3TD8- 8	1000	188,000	164,000	
(2)49	1000	190,000	160,000	
(2)53	1000	194,000	160,000	
Average		191,000	161,000	

(1) Initial failure.
(2) Heat 23407
(3) Tensile failure at net section
(4) Initial failure prior to attaining yield deformation

TABLE XC

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED Ga1-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS [SMF NO. 32163)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
B6LD1- 4	80	343,000	863,000	
5	80	340,000	853,000	
11	80	340,000	860,000	313,000
15	80	348,000	870,000	
19	80	330,000	899,000	
39	80	347,000	869,000	869,000
41	80	344,000	868,000	340,000
44	80	334,000	876,000	
45	80	343,000	875,000	318,000
56	80	333,000	850,000	313,000
Average		340,000	866,000	
B6LD2-38	800	870,000	895,000	
46	800	895,000	849,000	
58	800	900,000	- (2)	
Average		895,000	862,000	
B6LD3-40	400	861,000	909,000	
48	400	864,000	907,000	
57	400	878,000	930,000	
Average		868,000	915,000	
B6LD4-37	600	841,000	908,000	
54	600	836,000	909,000	
54	600	838,000	905,000	
Average		837,000	907,000	
B6LD6- 6	800	838,000	902,000	
12	800	838,000	198,000	
36	800	838,000	900,000	
Average		838,000	900,000	
B6LD7-28	900	826,000	185,000	
32	900	835,000	194,000	
50	900	827,000	191,000	
Average		829,000	197,000	
B6LD8- 8	1000	801,000	198,000	
49	1000	193,000	146,000	
53	1000	195,000	146,000	
Average		196,000	148,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED Ga1-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS [SMF NO. 32163)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
B6TD1- 4	80	328,000	871,000	
5	80	321,000	878,000	
11	80	338,000(3)	876,000	
15	80	333,000	863,000	323,000
19	80	320,000	868,000	
39	80	321,000	857,000	
41	80	318,000	878,000	313,000
44	80	318,000	884,000	305,000
45	80	333,000	897,000	
56	80	321,000	- (2)	
Average		324,000	880,000	
B6TD2-38	800	881,000	242,000	
46	800	838,000	872,000	279,000
58	800	321,000	885,000	895,000
Average		894,000	853,000	
B6TD3-40	400	860,000	238,000	313,000
48	400	866,000	218,000	
57	400	873,000	242,000	870,000
Average		865,000	238,000	
B6TD4-27	600	847,000	210,000	246,000
34	600	838,000	213,000	251,000
54	600	835,000	218,000	
Average		851,000	213,000	
B6TD6- 6	800	836,000	210,000	233,000
12	800	846,000	214,000	240,000
36	800	836,000	206,000	238,000
Average		841,000	210,000	
B6TD7-28	900	821,000	178,000	
32	900	826,000	187,000	
53	900	828,000	175,000	
Average		824,000	176,000	
B6TD8- 8	1000	800,000	151,000	
49	1000	798,000	150,000	
50	1000	802,000	- (2)	
Average		800,000	150,000	

(1) Initial failure.
(2) Unusable load deformation curve
(3) Tensile failure at net section

TABLE XCI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING PIN DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 32167)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
B9LD1- 4	80	333,000	274,000	
5	80	331,000	276,000	
11	80	325,000	276,000	
15	80	328,000	269,000	
19	80	311,000	270,000	302,000
39	80	340,000	279,000	
41	80	338,000	278,000	301,000
44	80	336,000	287,000	310,000
45	80	353,000	274,000	332,000
56	80	343,000	269,000	
Average		336,000	275,000	
B9LD8-38	800	308,000	249,000	
46	800	307,000	264,000	
52	800	304,000	253,000	
Average		306,000	255,000	
B9LD3-20	400	271,000	233,000	
22	400	271,000	232,000	
37	400	274,000	228,000	
Average		272,000	231,000	
B9LD4-27	600	246,000	226,000	
34	600	252,000	217,000	
54	600	253,000	214,000	
Average		250,000	216,000	
B9LD6- 6	800	236,000	199,000	
12	800	232,000	201,000	
36	800	237,000	199,000	
Average		236,000	200,000	
B9LD7-26	900	213,000	177,000	
32	900	217,000	179,000	
50	900	214,000	170,000	
Average		215,000	175,000	
B9LD8- 8	1000	181,000	171,000	
49	1000	184,000	146,000	
53	1000	186,000	136,000	
Average		184,000	134,000	

(1) Initial failure.

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TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING PIN DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 32167)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
B9TD1- 4	80	336,000	270,000	
5	80	329,000	280,000	
11	80	345,000	271,000	
15	80	344,000	275,000	336,000
19	80	344,000	273,000	
39	80	345,000	278,000	
41	80	345,000	278,000	
44	80	338,000	276,000	
45	80	334,000	272,000	
56	80	348,000	276,000	336,000
Average		343,000	276,000	
B9TD8-38	800	287,000	254,000	
46	800	296,000	260,000	
52	800	304,000	257,000	
Average		296,000	257,000	
B9TD3-20	400	267,000	230,000	
22	400	272,000	230,000	
37	400	272,000	232,000	
Average		272,000	231,000	
B9TD4-27	600	249,000	229,000	246,000
34	600	252,000	214,000	
54	600	256,000	209,000	
Average		252,000	217,000	
B9TD6- 6	800	231,000	205,000	225,000
12	800	238,000	205,000	224,000
36	800	236,000	186,000	229,000
Average		233,000	199,000	
B9TD7-26	900	207,000	176,000	
32	900	217,000	184,000	
50	900	215,000	176,000	
Average		213,000	179,000	
B9TD8- 8	1000	169,000	146,000	
49	1000	182,000	143,000	
53	1000	182,000	142,000	
Average		176,000	144,000	

(1) Initial failure.

TABLE XCII

SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET (SINGLE)

ALLOY— 6Al-4V
THICKNESS— 0.080 INCH

TEST TEMP °F	HEAT NUMBER 24791			
	LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi
80	B1LE1M-1	108,000	B1TE1M-1	116,000
	-7	110,000	-7	114,000
	-9	112,000	-9	108,000
	-11	109,000	-11	110,000
	-12	111,000	-12	115,000
	-20	109,000	-20	114,000
	-21	108,000	-21	116,000
	-23	112,000	-23	118,000
	-24	109,000	-24	116,000
	-26	108,000	-26	116,000
	Average	110,000	Average	114,000
500	B1LE2M-14	108,000	B1TE2M-14	111,000
	-15	110,000	-15	109,000
	-17	110,000	-17	107,000
	Average	109,000	Average	109,000
600	B1LE3M-2	108,000	B1TE3M-2	90,800
	-10	86,100	-10	90,800
	-25	89,800	-25	93,400
	Average	95,000	Average	91,700
800	B1LE4M-3	80,300	B1TE4M-3	84,300
	-5	81,100	-8	83,400
	-8	83,700	-16	88,500
	Average	81,700	Average	85,400
900	B1LE5M-13	76,100	B1TE5M-13	77,600
	-18	76,600	-18	82,200
	-19	74,300	-19	81,200
	Average	75,700	Average	80,600
800	B1LE7M-4	82,200	B1TE7M-4	71,400
	-22	78,900	-22	77,100
	-27	68,900	-27	73,500
	Average	73,600	Average	73,700
RT	B1LE8M-6	61,200	B1TE8M-5	62,600
	-16	66,700	-6	60,500
	-28	68,300	-28	59,100
	Average	65,400	Average	60,700

All specimens laterally supported from buckling.

TABLE XCIII

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.063

TEST TEMP °F	HEAT NUMBER 27039				HEAT NUMBER 2571				HEAT NUMBER 31372			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI
80	B2LE1M-1	104,000	B2TA1M-1	117,000	B5LE1M-9	110,000	B5TE1M-7	110,000	B8LA1M-1	105,000	B8TE1M-1	107,000
	-9	100,000	-7	119,000	-12	109,000	-11	111,000	-7	109,000	-7	107,000
	-11	101,000	-9	119,000	-20	110,000	-12	111,000	-9	110,000	-9	108,000
	-12	101,000	-11	117,000(1)	-21	110,000	-20	109,000	-11	106,000	-11	109,000
	-20	112,000	-12	116,000(1)	-23	108,000	-21	107,000	-12	110,000	-12	108,000
	-21	111,000	-20	117,000	-24	107,000	-23	109,000	-20	112,000	-20	106,000
	-23	111,000	-21	118,000(1)	-26	109,000	-24	110,000	-21	107,000	-21	106,000
	-24	112,000	-23	120,000	-29	110,000	-26	111,000	-23	109,000	-23	112,000
	-26	111,000	-24	114,000(1)	-31	109,000	-29	109,000	-24	112,000	-24	107,000
	-30	114,000	-26	118,000(1)	-32	110,000	-30	111,000	-26	105,000	-26	107,000
	Average	108,000	Average	117,000	Average	109,000	Average	110,000	Average	108,000	Average	106,000
800	B2LE2M-14	112,000	B2TA2M-14	107,000	B5LE2M-17	102,000	B5TE2M-14	105,000	B8LE2M-14	85,000	B8TE2M-14	97,200
	-15	105,000	-15	109,000	-33	101,000	-15	104,000	-15	90,600	-15	97,400
	-17	101,000	-17	102,000	-34	106,000	-31	104,000	-17	99,200	-17	96,200
	Average	106,000	Average	106,000	Average	103,000	Average	104,300	Average	91,600	Average	96,900
400	B2LE3M-2	88,300	B2TE3M-2	97,800	B5LE3M-2	96,800	B5TE3M-2	94,100	B8LE3M-2	87,600	B8TE3M-2	86,600
	-10	84,100	-10	102,000	-25	93,500	-10	92,200	-10	87,100	-10	86,100
	-25	94,800	-25	101,000	-39	94,400	-25	94,000	-25	84,800	-25	89,600
	Average	89,100	Average	101,000	Average	94,900	Average	93,400	Average	86,500	Average	87,100
600	B2LE4M-5	82,800	B2TE4M-5	91,600	B5LE4M-30	87,000	B5TE4M-5	90,500	B8LE4M-5	81,400	B8TE4M-8	80,700
	-8	78,000	-8	91,000	-35	84,100	-16	89,500	-8	83,200	-16	81,100
	-16	80,200	-16	89,800	-36	86,700	-36	89,500	-16	80,400	-29	82,300
	Average	80,500	Average	90,800	Average	85,900	Average	89,500	Average	81,700	Average	81,400
800	B2LE6M-13	78,900	B2TE6M-13	87,400	B5LE6M-13	81,000	B5TE6M-13	79,000	B8LE6M-13	74,400	B8TE6M-13	71,600
	-18	76,700	-18	87,700	-18	78,900	-19	79,900	-18	74,500	-18	72,400
	-19	74,700	-19	88,200	-19	74,200	-32	79,300	-19	77,300	-19	70,900
	Average	76,800	Average	87,700	Average	78,000	Average	79,400	Average	75,400	Average	71,000
900	B2LE7M-4	68,500	B2TE7M-4	80,800	B5LE7M-4	75,200	B5TE7M-4	72,900	B8LE7M-4	69,200	B8TE7M-4	67,200
	-22	72,600	-22	82,800	-22	72,000	-22	72,100	-22	67,800	-22	67,600
	-27	74,300	-27	79,400	-27	75,600	-27	75,100	-27	67,500	-27	66,400
	Average	71,800	Average	81,000	Average	74,300	Average	73,500	Average	68,200	Average	67,100
1000	B2LE8M-3	60,100	B2TE8M-3	68,500	B5LE8M-3	64,700	B5TE8M-3	69,400	B8LE8M-3	61,300	B8TE8M-3	53,900
	-6	60,400	-6	70,000	-6	70,500	-6	69,100	-6	58,600	-6	55,500
	-26	65,800	-26	67,100	-26	70,600	-26	69,500	-26	54,800	-26	55,300
	Average	62,100	Average	68,500	Average	68,700	Average	69,300	Average	57,600	Average	54,900

(1) Tensile fracture after plastically deforming in shear.

TABLE XCII

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.125 INCH

TEST TEMP °F	HEAT NUMBER 22207 & 23407				HEAT NUMBER 22163				HEAT NUMBER 22167			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI
80	B3LE1M-1	115,000	B3TE1M-1	119,000	B6LE1M-1	114,000(3)	B6TE1M-1	113,000(3)	B9LE1M-1	111,000	B9TE1M-1	116,000
	-7	114,000	-7	117,000	-7	109,000(1)	-7	113,000(1)	-7	111,000	-7	117,000
	-9	117,000	-9	114,000	-9	110,000(1)	-9	118,000	-9	117,000	-9	111,000
	-11	113,000	-11	118,000	-11	112,000	-11	117,000(1)	-11	110,000(1)	-11	112,000
	-12	113,000	-12	119,000	-12	111,000(1)	-12	116,000(1)	-12	109,000	-12	109,000
	-20*	113,000	-21*	114,000	-20	110,000	-20	112,000(1)	-20	112,000	-20	114,000(1)
	-21*	112,000	-23*	114,000	-23	110,000	-21	108,000(1)	-21	112,000	-21	115,000
	-23*	111,000	-24*	115,000	-24	110,000	-23	113,000(1)	-23	112,000	-23	115,000(1)
	-24*	113,000(1)	-26*	116,000	-26	111,000	-24	108,000(1)	-24	115,000	-24	115,000
	-26*	113,000	-29*	111,000	-31	106,000	-26	111,000(1)	-26	112,000	-26	119,000
	Average	113,000	Average	116,000(2)	Average	110,000	Average	111,000	Average	112,000	Average	114,000
800	B3LE2M-14	104,000	B3TE2M-14	106,000	B6LE2M-14	105,000	B6TE2M-14	101,000	B9LE2M-14	101,000	B9TE2M-14	108,000
	-15	104,000	-15	108,000	-15	108,000	-17	102,000	-15	104,000	-15	106,000
	-17*	104,000	-17*	107,000	-17	100,000	-29	102,000	-17	103,000	-17	105,000
	Average	104,000	Average	107,000	Average	104,000	Average	102,000	Average	103,000	Average	106,000
400	B3LE3M-2	94,600	B3TE3M-2	100,000	B6LE3M-10	92,700	B6TE3M-2	96,700	B9LE3M-2	91,400	B9TE3M-2	96,800
	-10	92,900	-10	99,600	-25	87,600	-25	94,900	-10	94,500	-10	94,600
	-25*	94,000	-25*	98,600	-32	91,200	-32	96,000	-25	93,800	-25	95,000
	Average	93,800	Average	99,400	Average	90,700	Average	96,500	Average	93,200	Average	95,800
600	B3LE4M-5	87,000	B3TE4M-5	89,900	B6LE4M-5	86,700	B6TE4M-5	88,900	B9LE4M-5	86,500	B9TE4M-5	88,200
	-8	85,400	-8	90,800	-8	84,200	-8	90,000	-8	86,600	-8	87,900
	-16*	86,700	-16*	91,000	-16	79,800	-16	85,800	-16	87,300	-16	86,800
	Average	86,600	Average	90,600	Average	83,600	Average	88,200	Average	86,800	Average	87,600
800	B3LE6M-13	77,400	B3TE6M-13	82,400	B6LE6M-13	80,500	B6TE6M-19	78,200	B9LE6M-13	75,600	B9TE6M-13	80,400
	-18*	80,900	-18*	85,000	-18	76,100	-30	77,800	-18	79,200	-18	79,200
	-19*	77,700	-19*	82,800	-19	77,000	-31	80,700	-19	78,400	-19	78,300
	Average	78,700	Average	83,400	Average	77,900	Average	78,900	Average	77,700	Average	79,300
900	B3LE7M-4	76,100	B3TE7M 9	76,300	B6LE7M-27	68,800	B6TE7M-4	75,100	B9LE7M-4	69,900	B9TE7M-4	73,700
	-22*	72,700	-22*	76,000	-29	68,800	-22	73,800	-22	72,000	-22	76,700
	-27*	74,200	-27*	77,900	-30	68,100	-27	72,200	-27	70,600	-27	73,200
	Average	74,300	Average	76,700	Average	68,600	Average	73,700	Average	70,800	Average	74,500
1000	B3LE8M-3	65,900	B3TE8M-3	66,700	B6LE8M-3	62,500	B6TE8M-3	63,300	B9LE8M-3	60,800	B9TE8M-3	62,100
	-6	64,600	-6	67,400	-6	63,600	-6	64,200	-6	59,700	-6	60,700
	-28*	65,800	-28*	65,800	-28	60,600	-28	61,800	-28	60,100	-28	61,600
	Average	65,400	Average	66,600	Average	62,200	Average	63,100	Average	60,000	Average	61,500

*Heat 23407

(1) Tensile fracture after plastically deforming in shear.

(2) All room temperature specimens had a tensile fracture after plastically deforming in shear.

(3) All room temperature specimens were supported with doublers.

TABLE XCV

DOUBLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-4V
THICKNESS— 0.125 INCH

TEST TEMP °F	HEAT NUMBER 23207 & 23407				HEAT NUMBER 32163				HEAT NUMBER 32167			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI
RT	B3LR7A-1	98,400	B3TR7A-1	115,000	B6LR7N-1	107,000	B6TR7N-1	112,000	B9LR7N-1	110,000	B9TR7N-1	114,000
	-7	114,000	-7	95,700	-7	121,000	-7	113,000	-7	108,000	-7	114,000
	-9	105,000	-9	102,000	-11	113,000	-9	110,000	-9	112,000	-9	105,000
	-11	111,000	-11	114,000	-12	113,000	-11	112,000	-11	109,000	-11	110,000
	-12	113,000	-12	104,000	-20	108,000	-12	116,000	-12	109,000	-11	104,000
	-23*	103,000	-20*	111,000	-21	104,000	-20	110,000	-20	109,000	-20	112,000
	-23A*	104,000	-21*	117,000	-23	105,000	-21	109,000	-21	111,000	-21	114,000
	-24*	89,800	-23*	96,400	-24	106,000	-23	111,000	-23	109,000	-23	107,000
	-25A*	104,000	-24*	110,000	-26	105,000	-24	108,000	-24	106,000	-24	109,000
	-26*	107,000	-26*	115,000	Average	109,000	-26	111,000	-26	111,000	-26	111,000
	Average	105,000	Average	106,000			Average	111,000	Average	109,000	Average	110,000
200	B3LR7N-14	103,000	B3TR7N-14	104,000	B6LR7N-14	99,000	B6TR7N-14	107,000	B9LR7N-2	98,700	B9TR7N-14	97,200
	-15*	100,000	-15*	104,000	-15	98,700	-15	102,000	-10	99,400	-15	98,600
	-17*	102,000	-17*	107,000	-17	106,000	-17	101,000	-25	98,600	-17	101,000
	Average	101,500	Average	105,000	Average	101,500	Average	103,000	Average	98,900	Average	99,000
400	B3LR3N-2	92,200	B3TR3N-5	93,500	B6LR3N-2	92,300	B6TR3N-2	97,200	B9LR3N-14	87,500	B9TR3N-2	92,300
	-10	94,300	-8	94,600	-10	93,600	-10	95,900	-15	93,200	-10	92,700
	-25*	91,700	-15*	101,400	-25	88,600	-25	95,600	-17	88,100	-25	93,800
	Average	92,700	Average	97,800	Average	91,500	Average	96,200	Average	89,700	Average	92,900
600	B3LR3N-5	85,100	B3TR3N-2	87,500	B6LR3N-5	86,300	B6TR3N-5	80,900	B9LR3N-5	82,500	B9TR3N-5	81,000
	-8	88,000	-10	90,200	-8	83,800	-8	85,300	-8	83,500	-8	84,900
	-19*	84,000	-25*	93,500	-16	78,600	-16	85,900	-16	79,900	-16	83,300
	Average	85,700	Average	90,400	Average	82,900	Average	84,000	Average	82,000	Average	83,100
800	B3LR3N-13	79,200	B3TR3N-13	78,100	B6LR3N-13	72,800	B6TR3N-4	77,400	B9LR3N-13	76,000	B9TR3N-13	76,000
	-18*	73,400	-18*	83,300	-18	72,800	-22	77,900	-18	77,100	-18	79,700
	-19*	77,400	-19*	81,500	-19	77,300	-27	83,200	-19	73,400	-19	79,600
	Average	76,700	Average	77,300	Average	74,300	Average	79,500	Average	75,200	Average	76,400
900	B3LR7N-4	78,200	B3TR7N-4	77,400	B6LR7N-4	76,900	B6TR7N-13	76,900	B9LR7N-4	72,600	B9TR7N-4	75,600
	-22*	72,500	-22*	76,500	-22	72,500	-18	75,100	-22	73,200	-22	75,800
	-27*	72,400	-27*	80,400	-27	71,700	-19	73,800	-27	74,500	-27	72,900
	Average	74,400	Average	78,100	Average	73,700	Average	75,300	Average	73,400	Average	74,800
1000	B3LR3N-3	66,800	B3TR3N-3	70,800	B6LR3N-3	66,100	B6TR3N-3	69,200	B9LR3N-3	64,100	B9TR3N-3	65,300
	-6	69,900	-6	70,300	-6	62,500	-6	64,600	-6	63,500	-6	66,600
	-28*	67,200	-28*	77,100	-28	61,300	-28	66,700	-28	62,600	-28	65,600
	Average	68,300	Average	72,700	Average	63,300	Average	66,800	Average	63,400	Average	65,800

* Heat No. 23407.

TABLE XCVI

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 27039)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
B2L0-2	500	136,000	-	-	-	-	-	-	(1)
-45	500	135,000	-	-	-	-	-	-	(1)
-46	500	134,000	-	-	-	-	-	-	(1)
-41	500	132,000	2.60	-	-	0.05	(3)	-	-
-43	500	130,000	1.91	2.46	125	(3)	-	-	-
B2L04-4	600	126,000	-	-	-	-	-	-	(1)
-29	600	125,000	2.14	0.13	0.70	5.83	82.0	521	-
-8	600	124,000	-	-	-	-	-	-	(1)
-28	600	123,000	1.88	-	0.50	3.15	(3)	-	(2)
-9	600	122,000	3.48	-	-	-	0.30	36.5	(2)
-10	600	121,000	2.12	-	-	0.16	60.8	438	-
-11	600	120,000	2.44	-	-	0.21	69.0	500	-
-42	600	115,000	1.45	-	0.70	20.0	460	-	-
-45	600	98,900	(4)	3.30	45.5	290	-	-	-
-23	600	85,000	(4)	6.30	125	-	-	-	-
-20	600	70,100	0.68	47.5	(2)	-	-	-	-
-46	600	65,100	0.15	250	-	-	-	-	-
-43	600	52,200	0.40	(2)	-	-	-	-	-
B2L05-1	700	126,000	-	-	-	-	-	-	(1)
-3	700	125,000	-	-	-	-	-	-	(1)
-7	700	122,000	-	-	-	-	-	-	(1)
-17	700	120,000	4.54	-	-	-	-	0.06	4.51
-22	700	122,000	3.31	-	-	-	-	0.24	4.70
-27	700	117,000	1.35	-	-	0.24	2.84	11.2	165
-24	700	111,000	1.11	-	0.10	0.68	6.30	24.8	402
-32	700	97,800	(4)	-	-	0.24	55.0	250	-
-37	700	82,100	0.57	1.35	4.35	15.5	91.0	430	-
-42	700	77,000	0.54	0.54	5.00	35.0	250	-	-
-39	700	67,600	0.50	0.50	2.21	10.6	-	-	-
-49	700	52,000	0.42	18.8	80.0	309	-	-	-
-33	700	33,000	0.31	100	400	-	-	-	-
-36	700	19,100	0.20	400	-	-	-	-	-
B2L06-5	800	119,000	-	-	-	-	-	-	(1)
-10	800	117,000	-	-	-	-	-	-	(1)
-14	800	114,000	(4)	-	-	-	-	-	0.62
-15	800	110,000	1.51	-	-	-	0.04	0.14	2.60
-20	800	100,000	1.02	-	-	0.04	0.26	0.95	13.0
-35	800	87,200	0.69	0.03	0.08	0.25	1.38	4.80	102
-16	800	72,700	0.88	-	0.05	0.14	3.89	13.9	307
-41	800	67,600	0.54	0.47	1.20	3.20	12.2	32.9	688
-48	800	44,100	0.25	0.45	1.34	6.50	58.5	303	-
-47	800	27,700	0.22	4.25	13.0	112	(2)	-	-
-51	800	16,100	0.11	66.0	180	(2)	-	-	-
-44	800	10,100	0.09	85.0	370	-	-	-	-
-50	800	6,080	(4)	400	-	-	-	-	-
B2L07-22	900	120,000	1.31	-	-	-	-	0.05	0.62
-31	900	97,400	0.96	-	-	-	0.05	0.11	1.50
-26	900	67,600	0.64	0.04	0.08	0.21	0.74	1.98	11.9
-34	900	57,000	0.45	0.08	0.06	0.18	0.57	2.57	57.3
-18	900	50,200	0.41	0.03	0.14	0.45	2.28	6.60	121

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Unusable strain curve beyond 0.3% strain.
(4) Initial loading strain was indeterminate.

TABLE XCVII

TRANSVERSE TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 27039)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
RT06-18	600	161,000	-	-	-	-	-	-	(1)
-23	600	161,000	-	-	-	-	-	-	(1)
-16	600	156,000	3.10	-	-	-	0.[illegible]	8.30	377
-6	600	155,000	-	-	-	-	-	-	(1)
-7	600	153,000	(2)	-	-	-	0.13	3.65	[illegible].8
-12	600	152,000	2.15	-	-	0.73	36.5	2[illegible]	(3)
RT05-11	700	156,000	(2)	-	-	-	-	0.06	2.82
-17	700	154,000	2.19	-	-	-	0.13	0.78	9.2[illegible]
-20	700	152,000	2.10	-	-	0.03	0.25	1.79	15.2
-5	700	150,000	-	-	-	-	-	-	(1)
-10	700	148,000	1.86	-	-	0.03	0.57	3.35	27.5
-9	700	140,000	1.37	-	-	0.15	2.53	11.0	122
-1	700	122,000	0.98	-	0.12	0.51	8[illegible].0	337	5[illegible]4
RT06-2	800	145,000	-	-	-	-	-	-	(1)
-3	800	140,000	2.31	-	-	-	-	0.03	0.27
-4	800	135,000	1.65	-	-	-	0.03	0.11	1.00
-8	800	125,000	1.11	-	-	0.04	0.18	0.52	5.89
-19	800	120,000	0.92	-	0.08	0.11	0.46	2.10	17.3
-15	800	112,000	1.01	-	0.03	0.09	0.46	1.50	18.3
-21	800	105,000	0.76	0.02	0.09	0.42	1.50	5.60	54.6
-22	800	92,000	0.82	0.18	0.40	1.05	4.50	20.5	228

(1) Specimen failed during application of load.
(2) Initial loading strain was indeterminate.
(3) Indicated strain or rupture did not occur within 500 hours - test discontinued.

TABLE XCVIII

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, [illegible] THICK (REACTIVE METALS HEAT NO. 25671)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
95L66-6	600	130,000	-	-	-	-	-	-	(1)
	600	130,000	-	-	-	-	-	-	(1)
	600	129,000	-	-	-	-	-	-	(1)
	600	129,000	-	-	-	-	-	-	(1)
	600	128,000	2.32	-	-	0.08	57.0	(2)	(2)
	600	126,000	-	-	-	-	-	-	(1)
	600	126,000	2.05	-	0.27	10.5	320	(2)	(2)
	600	125,000	2.55	-	-	1.60	70.0	160	(2)
	600	125,000	(3)	0.16	1.40	24.5	452	(2)	(2)
	600	120,000	1.54	0.16	1.50	23.0	310	(2)	(2)
	600	117,000	-	-	-	-	-	-	(1)
	600	100,000	0.69	8.50	73.0	160	-	-	-
	600	89,900	(3)	3.85	27.0	202	-	-	-
	600	75,000	(3)	36.0	218	-	-	-	-
	600	67,400	0.39	120	630	-	-	-	-
	600	55,000	0.23	400	-	-	-	-	-
95L65-4	700	130,000	-	-	-	-	-	-	(1)
	700	130,000	-	-	-	-	-	-	(1)
	700	127,000	-	-	-	-	-	-	(1)
	700	126,000	-	-	-	-	-	-	(1)
	700	126,000	(3)	-	-	-	0.28	0.72	3.78
	700	125,000	(3)	-	-	-	0.44	1.40	12.0
	700	120,000	(3)	-	-	0.15	1.30	5.00	30.2
	700	110,000	1.16	-	0.07	0.43	12.8	48.0	455
	700	98,100	0.88	0.20	1.10	6.80	65.0	190	-
	700	98,000	0.53	0.32	1.80	15.5	118	500	-
	700	75,000	0.67	5.00	34.5	175	(2)	-	-
	700	70,000	0.62	1.10	7.60	60.0	-	-	-
	700	55,100	0.30	1.30	13.7	-	-	-	-
	700	35,000	0.15	83.0	360	-	-	-	-
	700	26,900	0.16	115	-	-	-	-	-
	700	25,500	(3)	160	-	-	-	-	-
	700	18,100	0.16	(2)	-	-	-	-	-
95L66-4	800	140,000	-	-	-	-	-	-	(1)
	800	130,000	-	-	-	-	-	-	(1)
	800	125,000	-	-	-	-	-	-	(1)
	800	123,000	-	-	-	-	-	-	(1)
	800	120,000	2.04	-	-	-	-	0.09	0.25
	800	112,000	1.53	-	-	-	0.69	0.25	1.80
	800	105,000	0.98	-	-	0.05	0.28	1.00	9.58
	800	90,000	0.80	-	0.06	0.25	1.65	5.00	68.7
	800	75,000	0.58	0.10	0.28	0.77	3.75	12.6	252
	800	69,500	0.58	0.19	0.78	2.70	14.5	65.5	689
	800	67,500	0.53	0.52	1.40	4.25	18.3	64..	-
	800	55,000	0.41	1.25	3.20	9.00	50.0	150	-
	800	46,000	0.34	0.50	1.80	7.80	49.0	167	-
	800	41,000	0.28	2.10	5.65	15.9	142	879	-
	800	27,500	0.18	2.10	13.2	78.0	450	-	-
	800	13,000	(3)	38.0	165	(2)	-	-	-
	800	9,400	(3)	109	-	-	-	-	-
	800	9,000	0.03	170	715	-	-	-	-
	800	6,910	(3)	300	-	-	-	-	-

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Initial loading strain was indeterminate.

Table XCIX

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 31372)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
B8LG4-27	600	134,000	-	-	-	-	-	-	(1)
-30	600	133,000	-	-	-	-	-	-	(1)
-20	600	130,000	3.75	-	-	-	0.60	11.3	(2)
-6	600	125,000	3.19	-	-	0.04	5.66	46.7	(2)
-19	600	125,000	(3)	-	-	0.03	2.35	34.5	-
-31	600	120,000	2.69	-	0.12	1.90	36.5	232	-
-18	600	117,000	1.52	-	0.20	12.3	185	-	-
-33	600	115,000	1.78	-	-	0.28	49.5	-	-
-45	600	115,000	1.65	-	0.25	11.1	153	-	-
-42	600	110,000	1.20	-	0.71	16.3	285	-	-
-35	600	102,000	0.90	-	0.71	53.0	-	-	-
-41	600	94,000	0.72	3.00	34.0	(2)	-	-	-
-38	600	93,900	-	-	-	-	-	-	(1)
-11	600	85,000	0.58	12.0	232	-	-	-	-
-24	600	72,100	0.48	570	-	-	-	-	-
B8LG5-8	700	131,000	-	-	-	-	-	-	(1)
-4	700	128,000	3.21	-	-	-	-	0.04	4.30
-2	700	125,000	3.06	-	-	-	-	0.28	4.80
-1	700	120,000	2.30	-	-	-	0.27	1.08	25.6
-10	700	117,000	2.42	-	-	0.06	0.44	2.02	58.4
-13	700	110,000	2.05	-	0.04	0.19	1.72	7.40	172
-15	700	108,000	1.38	-	0.07	0.74	5.95	24.3	445
-16	700	92,500	0.69	-	0.13	1.58	24.1	119	-
-34	700	97,300	0.75	-	0.74	4.80	49.0	249	-
-23	700	90,100	0.65	0.67	3.65	44.0	280	-	-
-21	700	97,300	0.45	8.30	44.0	190	-	-	-
-37	700	95,000	0.49	8.00	45.5	205	-	-	-
-26	700	52,100	0.19	200	(2)	-	-	-	-
-29	700	20,900	0.12	(2)	-	-	-	-	-
-28	700	17,000	0.10	300	-	-	-	-	-
B8LG6-5	800	117,000	(3)	-	-	-	-	-	0.24
-3	800	115,000	1.88	-	-	-	-	0.06	1.00
-7	800	105,000	1.55	-	-	-	0.09	0.26	4.10
-12	800	86,900	0.75	-	0.04	0.17	0.89	2.86	83.9
-14	800	73,000	0.71	0.04	0.13	0.86	6.60	21.6	(4)
-17	800	70,000	0.62	-	-	0.40	7.50	36.8	(2)
-40	800	50,000	(3)	0.14	0.67	5.90	110	(4)	-
-25	800	44,200	0.22	0.23	1.00	20.0	210	-	-
-46	800	42,800	0.23	1.30	13.0	65.5	520	(2)	-
-9	800	30,000	0.19	1.90	8.30	56.0	(2)	-	-
-44	800	19,000	0.12	14.0	105	620	-	-	-
-36	800	18,000	0.12	20.5	140	-	-	-	-
-43	800	12,000	(3)	200	(2)	-	-	-	-
-39	800	10,600	(3)	300	-	-	-	-	-
-32	800	6,630	0.07	(2)	-	-	-	-	-

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Initial loading strain was indeterminate.
(4) Temperature varied beyond the prescribed limit before indicated strain or rupture occurred.

TABLE C

Ti–6 Al–4 V ALLOY SHEET (Heat No. 27039)[1]—Compressive Creep Properties[2] at 600° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.05%	0.1%	0.2%	0.5%	1.0%
B2LH4 -7	190.0	2.45	–[4]				
-8	170.0	1.88	2.0	51.2	262.1	>500.0	
-20	180.0	0.94	6.2	160.0	–[5]	–	–
-22	200.0	–[6]					
-25	180.0	–[6]					
-27	160.0	–[6]					
-41	140.0	2.24	2.3	22.8	>90.0	–[5]	
-64	160.0	1.37	4.5	65.1	–[5]		
Spare	70.0	0.42	77.0	>500.0			
Spare	100.0	0.64	6.8	21.8	332.4	–[5]	

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Equipment failure.
[5] Evaluation was discontinued because desired datum points could not be reached within reasonable times.
[6] Specimen buckled.

TABLE CI

Ti—6 Al—4 V ALLOY SHEET (Heat No. 27039)[1]—Compressive Creep Properties[2] at 700° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.05%	0.1%	0.2%	0.5%	1.0%
BELH -1	120.0	1.1	0.02	0.52	3.2	25.0	80.7
-3	150.0	2.41	0.01	0.02	0.13	1.7	9.8
-6	140.0	1.84	0.53	1.6	41.4	-[6]	-
-10	140.0	1.76	-[4]			-	-
-12	160.0	1.43	-[4]			-	-
-16	100.0	0.61	4.2	23.0	74.0	-[6]	-
-17	80.0	0.46	32.0	98.8	312.8	[5]	-
-23	60.0	0.35	1.5	12.5	-[6]	-	-
-28	100.0	1.06	0.14	1.2	6.0	46.9	238.9
-29	60.0	0.36	80.0	174.0	-[6]	-	-
-32	110.0	1.12	0.12	0.55	2.4	27.6	-
-34	130.0	1.71	0.65	4.3	54.2	-[6]	-
-42	120.0	0.84	0.97	2.3	9.1	150.4	-[6]
-60	90.0	0.55	0.6	3.9	20.2	140.3	-[6]
-63	110.0	0.90	0.18	1.44	8.1	28.6	146.2
-67	90.0	0.60	1.55	4.5	20.1	143.9	-[6]
Spare	130.0	1.29	0.04	0.24	1.08	8.9	37.2
-45	150.0	1.58	-[6]				
-43	30.0	0.15	38.2	109.2	303.7	-[6]	
Spare	45.0	0.27	16.1	36.1	-[6]		
Spare	180.0	-[6]					
Spare	110.0	1.1	0.01	0.1	0.94	10.9	59.1
Spare	70.0	0.40	0.88	19.3	79.0	-[6]	-

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Equipment failure.
[5] Evaluation was discontinued because datum points could not be reached within reasonable times.
[6] Specimen buckled.

TABLE CII

Ti–6 Al–4 V ALLOY SHEET (Heat No. 2.039)[1]—Compressive Creep Properties[2] at 800° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.05%	0.1%	0.2%	0.5%	1.0%
B3LH6 -4	80.0	0.60	0.16	0.45	1.7	7.2	27.4
-5	60.0	0.46	0.25	0.96	3.7	24.5	–[4]
-9	110.0	0.83	0.02	0.07	0.3	1.5	9.8
-18	120.0	1.25	–	–	–	0.4	1.2
-19	60.0	0.42	0.9	2.7	6.4	29.8	109.3
-24	80.0	0.36	2.1	5.7	24.7	156.0	–[4]
-26	30.0	0.24	8.0	19.0	161.0	–[4]	–
-30	100.0	0.65	0.2	0.7	3.3	34.0	–[4]
-35	70.0	0.46	0.44	1.1	2.6	11.3	36.5
-36	60.0	0.30	3.1	8.7	56.2	–[4]	
-40	90.0	0.66	0.06	0.2	0.8	4.2	22.4
-56	100.0	0.74	0.01	0.03	0.3	1.7	8.1
-59	40.0	0.26	0.5	2.2	15.2	–[4]	–
-61	20.0	0.11	23.6	47.0	124.1	–[4]	
-62	10.0	0.06	–[5]				
Spare	45.0	0.37	0.23	3.2	11.9	91.0	–[4]
-46	10.0	0.05	6.55	94.6	–[4]		
Spare	50.0	0.2	1.22	3.6	11.7	67.7	211.3
-50	120.0	1.33	0.01	0.02	0.07	0.36	38.5
Spare	15.0	0.015	11.0	36.1	–[4]		
Spare	10.0	0.06	6.2	140.5	–[4]		
-65	55.0	0.36	0.6	1.6	6.0	35.1	–[4]

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Evaluation was discontinued because desired datum points could not be reached within reasonable times.
[5] Equipment failure.

TABLE CIII

Ti–6 Al–4 V ALLOY SHEET (Heat No. 27039)[1]—Compressive Creep Properties[2] at 900° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.05%	0.1%	0.2%	0.5%	1.0%
B2LH7 -2	40.0	0.25	0.60	2.5	6.0	15.0	37.0
-11	30.0	0.18	0 14	0.5	1.7	14.6	61.1
-21	10.0	0.02	25.5	90.0	–[4]	–	–
-31	20.0	0.09	1.57	9.1	63.0	–[4]	–
-39	50.0	0 40	0.04	0 18	0.7	3.5	12.1
-54	5.0	0 02	9.7	86.1	–[4]		
Spare	15.0	0 35	0.2	0.4	1.0	5.5	10.3
Spare	15.0	0.11	0.6	2.1	–[5]		
Spare	25.0	0.11	0.5	1.4	4.5	24.4	136.7
Spare	7.0	0.05	4.5	31.1	89.5	–[4]	–[4]

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Evaluation was discontinued because desired datum points could not be reached within reasonable times.
[5] Equipment failure.

TABLE CIV

Ti—6 Al—4 V ALLOY SHEET (Heat No. 27039)[1]—Bearing Creep Properties[2] at 600° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet and have e/d = 2

Specimen No.	Bearing Stress[3] 1000 psi	Loading Deformation %	Time to Deformation[4], hr 0.5%	1.0%	2.0%	4.0%	Time to Rupture hr
B2LJ4 -2	187 5	6.3	41.8	258.0	>500 0	>500.0	>500.0
-6		–					00.0
-8	195.0	3.9	5.7	93.7	>500.0	>500.0	>500.0
-10	195.0	7.3	25.8	157.8	>500.0	>500.0	>500.0
-11	200.0	–					00.01
-13	197.5	–					00.0
-18	170.0	2.8	>500.0	>500.0	>500.0	>500.0	>500.0
-20	180.0	2.7	57.5	>500.0	>500.0	>500.0	>500.0
-21	190.0	5.7	2.7	–	72.4	148.7	>500.0
-25	196.0		1.0	2.1	–	–	2.1
-26	202.9	–					00.0
-28	184.8	3.8	>500.0	>500.0	>500.0	>500.0	>500.0
-32	197.5						00.0

[1] Solution treated and aged

[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.

[3] Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter.

[4] Percent of bearing-hole diameter.

[5] Evaluation discontinued because desired datum points could not be reached within reasonable times.

TABLE CV

Ti-6 Al-4 V ALLOY SHEET (Heat No 27039)[1]—Bearing Creep Properties[2] at 700° F

All specimens were taken in the longitudinal direction from a 0 063 in sheet and have e/d = 2

Specimen No	Bearing Stress[3] 1000 psi	Loading Deformation[4] %	Time to Deformation[4], hr 0 5%	1.0%	2 0%	4.0%	Time to Rupture hr
B2LJ5 -1	184 8	5.8	0.48	2.72	23.4	–[5]	–
-3	100 0	1 6	>500 0	>500.0	>500 0	>500 0	>500 0
-12	150.0	2.7	9 3	43.9	176.9	–[5]	>500.0
-16	202.9						00.0
-17	200.0						00.0
-23	195.0						00.0
-27	190.0	4.5	0.76	1.80	17.0	66.0	>500.0
-29	135.0	2.2	54.4	130.0	466.0	>500.0	>500.0
-31	192.5	4.8	0.30	1.3	6.4	30.3	>500.0
-33	200 0	4.8	0.32	1.87	9.67	39.8	>500.0
-37	202.5	6.3	0.15	0.77	4.2	25.3	>500.0
-39	205.0	3.7	1.1	3.5	13.3	54.1	>500.0
-42	210.0	6.5	<0.01	<0.01	<0.01	<0.01	0.1
-45	189.8	5.0	1.33	25.5	158.7	>500 0	>500.0
-49	170.0	2.2	2.97	24.8	125.4	454.4	>500.0
-54	207.5						00.0
-56	120.2	1.5	33.3	450.8	>500.0	>500.0	>500.0
-59	206.0						00.0
-71	130.0	2.24	>500.0				
-75	197.5	6.7	0.15	0.87	6.2	50.5	
-68	180.0	5.88	0.52	2.00	16.5	–[6]	
-67	150.0	2.48	80.8	–[6]			
-35	206.0	7.8	0.1	0.5	2.1	18.2	

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter
[4] Percent of bearing-hole diameter
[5] Equipment failure.
[6] Evaluation discontinued because desired datum points could not be reached within reasonable time.

TABLE CVI

Ti—6 Al—4 V ALLOY SHEET (Heat No. 37030)[1]—Bearing Creep Properties[2] at 800°F

All specimens were taken in the longitudinal direction from 0.063 in. sheet and have e/d = 2

Specimen No.	Bearing Stress[3] 1000 psi	Loading Deformation[4] %	Time to Deformation[4], hr				Time to Rupture hr
			0.5%	1.0%	2.0%	4.0%	
B2LJ6 -7	130.0	2.3	1.26	5.05	19.1	60.7	—[5]
-9	100.0	0.8	9.8	52.0	121.0	500.0	>500.0
-15	160.0	4.5	0.11	0.32	1.00	2.24	—[6]
-19	185.0						60.6
-24	40.0	0.3	224.3	>500.0	>500.0	>500.0	>500.0
-36	80.0	1.6	0.84	9.2	74.7	497.5	>500.0
-40	90.0	1.4	2.22	5.97	53.3	436.5	>500.0
-46	120.0	2.5	0.34	1.30	5.56	13.9	—[6]
-47	180.0	3.2	0 08	0.23	0.75	2.48	124.2
-50	90.0	1.2	5.78	51.1	201.0	>500.0	>500.0
-53	80.0	0.4	75.5	126.5	320.0	>500.0	>500.0
-56	162.5	4.2	0.06	0.15	0.45	1.56	—[6]
-58	110.0	1.5	2.61	19.4	46.5	121.3	>500.0
-57	100.0	2.7	0.24	0.66	1.97	7.20	206.6
-60	152.5	3.3	0.01	0.06	0.23	0.85	118.6
-70	124.0						50.6
-41	140.0	3.9	0.4	1.97	10.0	46.6	—[6]
-48	170.0	3.7½	0.10	0.50	1.4	4.8	—[6]
-52	100.0	3.56	0.06	0.23	0.76	2.4	—[6]
-43	160.0	3.78	0.08	0.25	0.91	3.2	—[6]
-60	140.0	2.76	0.26	1.52	10.4	43.9	—[6]
-74	70.0	1.20	24.7	126.3	—[6]		
-72	150.0	3.96	0.07	0.31	0.95	6.4	—[6]
-76	104.0						30.1
-73	110.0	1.92	0.43	4.3	34.4	—[6]	—

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter.
[4] Percent of bearing-hole diameter.
[5] Rupture data were not obtained.
[6] Evaluation discontinued because desired datum points could not be reached within reasonable times.

TABLE CVII

Ti–6 Al–4 V ALLOY SHEET (Heat No. 27039)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
B2LK4M-24	79.0	00.0	600
-27	78.0	00.0	600
-33	76.9	>500.0	600
-36	77.5	>500.0	600
-37	77.8	>500.0	600
B2LK5M-23	78.3	00.0	700
-26	76.0	00.0	700
-31	61.4	>500.0	700
-32	71.0	204.5	700
-34	74.0	35.6	700
-38	77.9	47.6	700
B2LK6M-21	77.5	00.0	800
-22	65.1	0.1	800
-26	64.0	0.1	800
-29	50.5	37.8	800
-30	54.0	112.5	800
-36	62.0	0.7	800
-19	50.0	180.2	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits.

Ti–6 Al–4 V ALLOY SHEET (Heat No. 25671)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
B5LK4M-24	84.0	00.0	600
-27	84.3	134.6	600
-28	88.4	00.0	600
-33	84.4	>500.0	600
-35	84.3	>500.0	600
-37	80.9	>500.0	600
B5LK5M-23	81.0	00.0	700
-25	80.0	18.7	700
-31	81.0	35.0	700
-32	79.0	51.0	700
-34	78.0	287.1	700
-38	77.0	395.2	700
-10	74.0	435.6	700
B5LK6M-22	66.6	7.6	800
-26	62.1	43.5	800
-29	61.1	55.0	800
-30	57.2	114.0	800
-36	71.9	16.6	800
Spare	77.5	00.0	800
Spare	53.5	>500.0	800

[1] Solution treated and aged
[2] Specimens were heated to test temperatures in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits.

TABLE CVIII

Ti–6 Al–4 V ALLOY SHEET (Heat No. 31372)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature ° F
B6LK4M -4	75.0	>500.0	600
-7	80.0	>500.0	600
-8	87.5	00.0	600
-13	85.0	00.0	600
-15	82.5	26.3	600
-17	81.0	00.0	600
B6LK5M -3	66.0	209.8	700
-5	70.0	55.3	700
-11	75.0	0.7	700
-12	77.5	0.1	700
-14	72.5	1.6	700
-16	67.5	419.3	700
B6LK6M-1	60.0	6.4	800
-2	45.5	>500.0	800
-6	50.0	167.2	800
-9	55.5	0.1	800
-10	50.5	9.7	800
-16	50.2	22.1	800
-18	47.5	400.0	800
-20	54.0	16.2	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits.

Ti–6 Al–4 V ALLOY SHEET (Heat No. 31372)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature ° F
B12LK5M -2	87.0	00.0	700
-7	75.0	178.9	700
-8	80.0	81.2	700
B12LK6M -3	65.0	27.2	800
-5	60.0	116.6	800
-6	72.0	2.7	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits.

TABLE CIX

Ti–6 Al–4 V ALLOY SHEET (Heat No. 22207)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
B3LK4N -4	90.0	00.0	600
-7	80.0	>500.0	600
-8	85.0	>500.0	600
-13	87.5	>500.0	600
-15	88.8	2[illegible].1	600
-17	90.0	[illegible]0.0	600
B3LK5N -3	80.0	19.1	700
-5	70.0	>500.0	700
-11	75.0	27.3	700
-12	77.5	0.1	700
-14	72.5	390.0	700
-18	85.0	00.0	700
B3LK6N- 1	70.0	6.7	800
-2	65.0	33.6	800
-6	55.0	128.2	800
-9	40.0	>500.0	800
-10	50.0	275.0	800
-16	72.5	2.7	800
Spare	75.0	[illegible].3	800

[1] Solution treated and aged
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by two times the cross-sectional area

Ti–6 Al–4 V ALLOY SHEET (Heat No. 33163)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in longitudinal direction from 0.125 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
B6LK4N -4	85.0	00.0	600
-7	80.0	>500.0	600
-8	82.5	213.3	600
-13	80.0	00.0	600
-15	83.5	00.0	600
-17	81.0	382.3	600
B6LK5N -3	75.0	187.2	700
-5	80.0	1.7	700
-11	77.5	7.3	700
-12	76.2	7.4	700
-14	72.5	24.7	700
-18	75.0	00.0	700
Spare	70.0	393.0	700
B6LK6N- 1	65.0	11.1	800
-2	55.0	104.4	800
-6	50.0	434.8	800
-9	70.0	5.0	800
-10	72.5	0.3	800
-16	60.0	15.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by two times the cross-sectional area.

TABLE CX

Ti-6 Al-4 V ALLOY SHEET (Heat No. 32167)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
B9LK6N -4	93.0	00.0	600
-7	85.2	0.1	600
-8	80.0	>500.0	600
-13	85.8	00.0	600
-15	82.5	>230.0	600
-17	83.9	>500.0	600
B9LK6N -3	82.0	00.0	700
-5	75.0	00.0	700
-11	70.0	0.1	700
-12	64.9	397.3	700
14	62.4	>500.0	700
-16	67.6	12.1	700
-20	69.7	435.3	700
B9LK6N -1	72.5	21.3	800
-2	50.0	140.9	800
-9	65.0	8.4	800
-10	45.1	>500.0	800
-18	60.0	22.7	800
-21	70.9	0.5	800

[1] Solution treated and aged.
[2] Specimens were heated to temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded in 2 min.
[3] Shear stress is equal to the load divided by two times the cross-sectional area.

TABLE CXI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.063 INCH THICK
STRESS CONCENTRATION = 1.0, STRESS RATIO = +∞ (REACTIVE METALS HEAT NOS. 31372 AND 32163)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
821-4	167,500	573	821-25	150,000	30	820-40	140,000	34	824-20	125,000	8	824-19	113,000	105
823-44	160,000	1,254	823-41	140,000	143	824-47	115,000	163	823-4	120,000	91	824-46	110,000	45
824-47	152,000	1,396	824-5	130,000	768	820-38	110,000	553	824-37	112,500	395	821-4	105,000	311
824-35	145,000	2,268	820-9	120,000	285	824-18	105,000	2,642	820-31	110,000	251	824-48	100,000	543
821-24	140,000	4,393	821-05	110,000	2,099	824-44	100,000	3,810	824-41	100,000	1,059	824-52	90,000	1,755
824-24	135,000	5,924	820-60	100,000	6,738	824-42	85,000	13,193	823-6	80,000	10,361	827-24	75,000	6,280
821-42	130,000	8,358	824-26	70,000	61,000	827-55	60,000	19,000	820-27	50,000	20,000	824-35	60,000	29,000
			823-36	73,000	118,000	827-5	60,000	45,000	827-27	50,000	48,000	821-15	50,000	33,000
825-4	80,000	117,000	820-14	70,000	819,000	824-9	60,000	68,000	820-7	50,000	112,000	820-1	50,000	40,000
823-59	80,000	134,000	Average		333,000	Average		43,000	Average		72,000	Average		30,000
827-62	80,000	538,000												
Average		280,000												
			821-46	60,000	179,000	824-22	50,000	192,000	824-47	46,000	48,000	821-14	40,000	62,000
821-53	70,000	77,000	821-52	60,000	366,000	823-40	50,000	761,000				820-12	40,000	372,000
824-29	70,000	133,000	820-33	60,000	2,241,000	820-55	50,000	2,136,000	820-3	40,000	1,121,000	824-33	40,000	500,000
824-60	70,000	137,000	Average		897,000	Average		1,097,000	824-45	40,000	10,000,000 (1)	Average		311,000
Average		116,000												
			820-25	50,000	34,000	821-49	40,000	107,000	820-15	35,000	170,000	824-6	35,000	342,000
824-12	65,000	167,000	823-39	50,000	356,000	824-11	40,000	1,031,000	824-31	35,000	1,401,000	823-50	35,000	1,020,000
827-14	65,000	433,000	823-50	50,000	1,573,000	824-44	40,000	1,151,000	824-45	35,000	5,345,000	827-21	35,000	1,180,000
820-4	65,000	1,231,000	Average		1,320,000	Average		761,000	Average		2,695,000	824-37	35,000	10,000,000 (1)
Average		1,371,000												
			827-51	40,000	179,000	821-60	35,000	3,568,000	824-31	30,000	2,479,000	820-37	30,000	6,236,000
824-19	60,000	2,815,000	824-38	40,000	188,000	823-10	35,000	7,763,000	823-22	30,000	3,565,000	820-13	30,000	10,000,000 (1)
821-48	60,000	3,647,000	823-4	40,000	339,002	823-42	35,000	10,000,000 (1)	820-32	30,000	5,034,000	823-55	30,000	10,000,000 (1)
820-52	60,000	3,990,000	823-34	40,000	10,000,000 (1)	824-19	35,000	10,000,000 (1)	Average		3,194,000			
Average		6,397,000										824-8	25,000	10,000,000 (1)
			824-10	35,000	10,000,000 (1)	820-35	30,000	10,000,000 (1)	824-57	25,000	10,000,000 (1)	827-34	25,000	10,000,000 (1)
821-54	50,000	3,735,000	823-42	35,000	10,000,000 (1)	827-10	30,000	10,000,000 (1)	824-29	25,000	10,000,000 (1)	823-54	25,000	10,000,000 (1)
824-48	50,000	9,392,000							821-33	25,000	10,000,000 (1)			
823-35	50,000	10,000,000 (1)	826-23	30,000	10,000,000 (1)	824-1	25,000	10,000,000 (1)						
820-18	50,000	10,000,000 (1)	827-43	30,000	10,000,000 (1)									

(1) Test discontinued. No failure.
(2) In specimen numbers, third digit 4 through 7, and 8 denotes Heat No. 31372, 0 through 3 denotes Heat No. 32163.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CXII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.063 INCH THICK. STRESS CONCENTRATION = 1.0, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NOS. 31372 AND 32161)(2).

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
[illegible]	195,000	7	82K-51	100,000	10	12L-53	150,000	3	820-50	130,000	2	82D-53	125,000	14
72A-19	190,000	[illegible]	12F-28	157,500	5	82K-41	147,500	1	82A-36	128,500	12	82D-43	122,500	318
82K-32	185,000	1,121	82J-55	155,000	4,693	82K-38	146,000	5	82J-4	127,500	4,081	82B-20	120,000	581
82K-52	175,000	2,[illegible]	82L-19	150,000	5,974	82L-55	145,000	3,589	82F-4 Average	127,500	4,081	82B-38	115,000	2,994
82D-37	160,000	4,[illegible]09	82J-63	145,000	6,961	82K-55	140,000	5,379	82J-32	125,000	3,178	82C-61	110,000	560
82A-56	155,000	13,186	82C-43	130,000	17,349	82C-25	125,000	8,576	82E-41	120,000	5,783	82F-6	105,000	3,939
72K-38	150,000	53,000	12G-29	100,000	57,000	82A-30	80,000	62,000	82A-51	105,000	12,579	82B-3	90,000	11,304
82C-39	150,000	[illegible]				82K-4	80,000	82,000						
82K-44 Average	150,000	[illegible]	82A-29	90,000	60,000	82K-19 Average	80,000	116,000 57,000	82B-39	90,000	20,000	82A-21	80,000	31,070
			82K-10	90,000	120,001							82C-47	80,000	42,000
			Average		93,000				82D-48	85,000	32,000	82K-56 Average	80,000	146,000 72,000
82K-30	140,000	17[illegible]				82A-36	75,000	289,000	82C-42	85,000	342,000			
82K-50	130,000	[illegible]	82C-34	80,000	56,300	82K-25	75,000	1,510,000	82K-53	85,000	378,000			
82C-30	100,000	[illegible]	82K-13	80,000	79,300	82K-56	75,000	10,300,000(1)	Average		451,000	82B-33	75,000	65,000
Average		[illegible]	82A-44	80,000	[illegible]	82L-71	75,000	10,300,000(1)				82C-55	75,000	278,000
			Average		[illegible]				82K-31	60,000	1,234,000	82K-38	75,000	1,557,000
82C-34	90,000	[illegible]				82J-16	70,000	183,000	82J-15	80,000	2,655,000	82A-11	75,000	3,132,000
82B-54	90,000	[illegible]	82C-2	70,000	736,000	82J-53	70,000	531,000	82F-50	80,000	[illegible]	Average		1,258,000
82K-47 Average	90,000	[illegible]	82C-58	70,000	1,101,000	82F-14	70,000	10,300,000(1)	Average		2,367,000			
		[illegible]	82F-38	70,000	[illegible]							82K-17	70,000	987,000
			Average		1,337,000	82L-37	60,000	550,000	82E-16	70,000	65,000	82J-36	70,000	3,527,000
82C-21	60,000	[illegible]				82K-59	60,000	678,000	82G-46	70,000	1,528,000	82K-11	70,000	3,785,000
82K-22	60,000	12,[illegible]	82F-52	60,000	303,000	82K-45	60,000	[illegible]	82C-7	70,000	10,300,000(1)	Average		2,766,000
82J-57	60,000	10,300,000(1)	82C-24	60,000	1,027,000	Average		3,121,000	82E-42	70,000	10,000,000(1)			
			82G-58	60,000	10,000,000(1)							82F-56	60,000	664,000
82A-40	70,000	10,000,000(1)				82J-4	55,000	10,000,000(1)	82D-1	60,000	2,274,000	82K-10	60,000	7,501,000
82K-53	70,000	10,300,000(1)	82K-16	50,000	7,197,000	82G-36	55,000	10,000,000(1)	82K-14	60,000	10,000,000(1)	82J-6	60,000	10,000,000(1)
82F-17	70,000	10,300,000(1)	82K-26	50,000	[illegible],189,000				82F-51	60,000	10,000,000(1)	82K-60	60,000	10,300,000(1)
			82K-42	50,000	10,000,000(1)	82K-53	50,000	5,160,000						
			82K-37	50,000	10,300,000(1)	82A-45	50,000	10,000,000(1)	82L-70	50,000	1,985,000	82A-37	50,000	10,000,000(1)
						82K-16	50,000	10,000,000(1)	82F-57	50,000	10,000,000(1)	82J-18	50,000	10,000,000(1)
									82L-63	50,000	10,000,000(1)	82L-69	50,000	10,000,000(1)

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through F, and H denotes Heat No. 31372; J and L denotes Heat No. 32161).

Stress Ratio = Min. Alternating Stress / Mean Stress

Boeing Aircraft Company

TABLE CXIII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = 0.) (REACTIVE METALS HEAT NOS. J1372 AND J2161)(7)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
B2A-2	190,000	36	B2A-59	180,000	10	B2B-18	155,000	2	B2B-47	160,000	7	B2C-35	130,000	2
B2A-[illegible]	[illegible]	[illegible]	B2A-[illegible]	155,000	6	B2A-15	145,000	7	B2B-19	135,000	6,897	B2B-18	125,000	50
B2A-[illegible]	[illegible]	[illegible]	B2A-[illegible]	150,000	31,674	B2A-60	145,000	8	B2B-36	132,500	1,633	B2B-26	120,000	667
Average		7,818				B2A-7	145,000	[illegible]						
B2A-31	180,000	17,775	B2A-24	145,000	33	Average			B2B-39	130,000	2,000	B2B-35	115,000	6,245
B2A-[illegible]	[illegible]	[illegible]	B2A-37	140,000	[illegible]	B2A-28	142,500	25,352	B2B-17	125,000	2,660	B2A-72	110,000	5,907
B2A-[illegible]	175,000	[illegible]	B2A-1	135,000	[illegible]	B2A-13	135,000	[illegible]	B2A-52	120,000	26,959	B2A-19	105,000	803
B2A-[illegible]	[illegible]	[illegible]	B2A-17	130,000	[illegible]	B2A-5	130,000	[illegible]	B2B-9	110,000	32,000	B2B-12	90,000	73,000
B2A-[illegible]	[illegible]	[illegible]	B2A-[illegible]	130,000	[illegible]	B2A-27	130,000	[illegible]	B2B-[illegible]	110,000	65,000	B2B-10	90,000	160,000
B2A-[illegible]	[illegible]	[illegible]	B2A-60	130,000	[illegible]	B2A-25	130,000	[illegible]	B2A-46	110,000	[illegible]	B2B-59	90,000	[illegible]
Average		[illegible]	Average		[illegible]	Average		[illegible]	Average		[illegible]	Average		[illegible]
B2A-[illegible]	[illegible]	[illegible]	B2A-56	[illegible]	[illegible]	B2A-43	[illegible]	[illegible]	B2B-38	100,000	34,000	B2C-6	87,500	165,000
B2A-[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2A-33	[illegible]	1,[illegible]						
B2A-[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2B-59	[illegible]	10,000,000(1)	B2B-45	[illegible]	93,000	B2A-1	[illegible]	[illegible]
Average		[illegible]	Average		[illegible]				B2B-3	[illegible]	[illegible]	B2A-1	[illegible]	[illegible]
						B2A-47	[illegible]	[illegible]	B2B-27	[illegible]	[illegible]	B2C-58	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2B-[illegible]	[illegible]	5,[illegible]	Average		[illegible]	Average		[illegible]
[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	10,000,000(1)						
[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]				B2A-9	[illegible]	[illegible]	B2A-3	85,000	[illegible]
[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	5,[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]
Average		[illegible]	Average		[illegible]	B2A-[illegible]	[illegible]	10,000,000(1)	Average		[illegible]	Average		[illegible]
B2A-31	[illegible]	[illegible]	B2A-22	[illegible]	[illegible]									
B2A-[illegible]	[illegible]	[illegible]	B2A-19	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2A-46	[illegible]	[illegible]			
B2A-[illegible]	[illegible]	[illegible]	B2A-21	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2B-33	[illegible]	[illegible]	B2B-[illegible]	[illegible]	[illegible]
B2A-[illegible]	[illegible]	[illegible]	Average		[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2B-15	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]
B2A-[illegible]	[illegible]	[illegible]				B2A-[illegible]	[illegible]	[illegible]	Average		[illegible]	B2A-[illegible]	[illegible]	[illegible]
			B2C-10	[illegible]	[illegible]									
B2A-[illegible]	[illegible]	[illegible]	B2C-[illegible]	[illegible]	[illegible]	B2A-[illegible]	[illegible]	[illegible]	B2B-7	[illegible]	[illegible]	B2B-[illegible]	[illegible]	[illegible]
B2A-[illegible]	[illegible]	[illegible]	B2C-22	[illegible]	[illegible]				B2B-2	[illegible]	[illegible]	B2B-[illegible]	[illegible]	[illegible]
B2A-[illegible]	[illegible]	[illegible]							B2B-21	[illegible]	[illegible]	B2B-2	[illegible]	[illegible]
									B2B-37	[illegible]	[illegible]			
									B2B-16	[illegible]	[illegible]			

(1) Test discontinued, no failure.
(2) In specimen numbers, third digit A through F, and H denotes Heat No. J1372; G through L denotes Heat No. J216).

Stress Ratio = Min. Alternating Stress / Mean Stress

TABLE CXIV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = ∞ (REACTIVE METALS HEAT NO. 32167)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
BJK-14	165,000	33	BJE-6	130,000	50	BJF-11	125,000	13	BJA-47	120,000	3	BJL-18	112,500	3
BJE-54	155,000	183	BJA-38	125,000	54	BJE-44	120,000	63	BJM-11	110,000	66	BJE-59	110,000	21
BJD-38	150,000	372	BJA-13	120,000	155	BJG-39	110,000	291	BJG-15	100,000	1,050	BJE-50	100,000	95
BJG-18	140,000	3,941	BJA-36	110,000	1,001	BJA-9	100,000	1,107	BJD-27	90,000	1,919	BJL-14	90,000	456
BJF-24	135,000	3,244	BJG-11	100,000	6,840	BJC-34	90,000	2,645	BJE-45	85,000	3,384	BJF-21	80,000	2,897
BJE-44	120,000	7,862	BJD-18	90,000	3,700	BJE-47	80,000	10,400	BJC-33	70,000	24,000	BJA-37	77,000	2,497
BJJ-44	70,000	37,000	BJJ-39	80,000	37,000	BJL-49	60,000	14,000	BJG-7	50,000	20,000	BJB-47	60,000	13,000
BJF-53	70,000	42,000	BJD-12	80,000	68,000	BJC-43	60,000	33,000	BJA-57	50,000	151,000			
BJM-47	70,000	183,000	BJA-9	80,000	24,300	BJA-18	60,000	16,300	BJL-22	50,000	218,000	BJE-55	50,000	23,000
Average		150,000	Average		64,000	Average		29,000	BJF-18	50,000	142,000	BJA-33	50,000	50,000
									Average		295,000	BJL-15	50,000	75,000
BJE-12	65,000	220,000	BJE-15	55,000	55,000	BJM-4	55,000	57,000				Average		49,000
BJC-40	65,000	228,000				BJE-26	55,000	137,000	BJM-26	65,000	119,000			
BJK-27	65,000	440,000	BJM-25	50,000	112,000	BJD-28	55,000	234,300	BJE-43	65,000	305,000	BJD-37	60,000	24,000
Average		295,000	BJC-42	50,000	341,000	Average		142,000	BJC-29	65,000	1,015,000	BJM-16	60,000	695,000
			BJA-53	50,000	1,527,000				Average		753,000	BJF-16	60,000	1,776,000
BJE-12	60,000	119,000	Average		750,300	BJL-41	50,000	119,000				Average		889,000
BJB-31	60,000	458,000				BJM-54	50,000	1,116,000	BJM-45	60,000	441,000			
BJL-32	60,000	881,000	BJC-4	45,000	10,000,000(1)	BJF-55	50,000	1,035,000	BJJ-41	60,000	503,000	BJE-39	36,000	778,000
Average		819,000	BJE-10	45,000	10,000,000(1)	Average		1,290,000	BJB-6	60,000	10,000,000(1)			
			BJM-57	45,000	10,000,000(1)							BJC-60	35,000	1,309,000
BJE-24	55,000	323,000				BJF-49	45,000	466,000	BJB-41	37,000	6,850,000	BJA-12	35,000	10,000,000(1)
BJA-48	55,000	2,316,000	BJF-51	40,000	5,474,000	BJG-26	45,000	1,110,000						
BJD-35	55,000	10,000,000(1)	BJL-46	40,000	10,000,000(1)	BJG-14	45,000	6,514,000	BJF-27	35,000	836,000	BJM-33	30,000	2,294,000
						Average		2,700,000	BJL-48	35,000	10,000,000(1)	BJA-2	30,000	5,308,000
BJE-48	50,000	10,000,000(1)	BJK-5	38,000	3,335,000							BJC-56	30,000	8,321,000
BJM-19	50,000	10,000,000(1)				BJL-10	40,000	6,480,000	BJD-26	30,000	10,000,000(1)	Average		5,841,000
BJM-31	50,000	10,000,000(1)	BJD-25	35,000	12,442,000	BJD-3	40,000	10,000,000(1)	BJE-29	30,000	10,000,000(1)			
			BJA-1	35,000	14,112,000	BJE-19	40,000	10,000,000(1)	BJE-15	30,000	10,000,000(1)	BJE-50	26,000	10,000,000(1)
			Average		13,277,000				BJE-37	30,000	10,000,000(1)	BJL-4	26,000	10,000,000(1)
						BJM-44	30,000	6,300,000						
			BJC-9	30,000	10,000,000(1)	BJB-40	30,000	9,551,000				BJB-10	25,000	10,000,000(1)
			BJL-50	30,000	10,000,000(1)	BJM-59	30,000	10,000,000(1)						

(1) Test discontinued, no failure.

Stress Ratio = Min. Alternating Stress / Mean Stress

TABLE CXV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NO. 32167)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
B3E-23	190,000	3	B3F-36	155,000	118	B3F-14	137,500	6,303	B3L-22	122,500	24	B3F-6	127,500	105
B3A-40	180,000	158	B3D-24	147,500	5,651	B3B-4	135,000	40	B3M-50	122,500	28	B3D-56	125,000	612
B3B-32	175,000	657	B3E-43	145,000	87	B3B-59	132,500	12	Average		26	B3J-15	122,500	40
B3C-21	160,000	4,864	B3E-51	142,500	149	B3D-45	130,000	7,134	B3D-55	121,000	4,189	B3J-43	120,000	192
B3L-47	155,000	5,590	B3A-44	140,000	8,383	B3E-55	125,000	6,132	B3F-50	105,000	8,277	B3B-50	115,000	1,235
B3D-34	140,000	19,137	B3F-10	135,000	6,794	B3D-37	115,000	15,033	B3B-4	100,000	14,954	B3B-58	100,000	6,636
B3K-60	130,000	24,000	B3M-19	120,000	41,000	B3C-3	90,000	22,000	B3C-25	85,000	48,000	B3C-47	80,000	33,000
B3F-42	130,000	100,000	B3D-6	120,000	67,000	B3J-58	90,000	55,000	B3B-39	85,000	81,000	B3D-53	80,000	36,000
Average		62,000	B3E-14	120,000	76,000	B3M-38	90,000	56,000	B3A-51	85,000	100,000	B3A-21	80,000	110,000
			Average		61,000	Average		44,000	Average		82,000	Average		82,000
B3L-12	120,000	107,000												
B3J-57	120,000	114,000	B3B-39	90,000	46,000	B3A-45	80,000	55,000	B3J-32	80,000	198,000	B3E-60	75,000	79,000
B3E-38	120,000	500,000	B3C-54	90,000	182,000	B3J-53	80,000	180,000	B3B-36	80,000	516,000	B3E-56	75,000	93,000
Average		162,000	B3F-28	90,000	242,000	B3M-43	80,000	6,188,000	B3E-16	80,000	1,473,000	B3C-55	75,000	110,000
			B3M-20	90,000	942,000	Average		2,111,000	B3E-41	80,000	1,000,000	Average		96,000
B3M-56	110,000	89,000	B3F-56	90,000	10,000,000(1)				Average		1,000,000			
B3M-30	110,000	155,000				B3H-8	77,500	106,000				B3L-43	70,000	99,000
B3A-19	110,000	110,000	B3E-10	90,000	58,000	B3L-55	77,500	2,624,000	B3E-42	70,000	2,676,000	B3E-17	70,000	1,512,000
Average		187,000	B3D-8	90,000	771,000	B3L-58	77,500	3,363,000	B3M-31	70,000	3,677,000	B3D-28	70,000	2,754,000
			B3J-25	90,000	1,845,000	B3D-58	77,500	6,814,000	B3D-1	70,000	7,000,000	Average		1,359,000
B3E-30	100,000	204,000	Average		875,000	Average		3,727,000	Average		4,617,000			
B3J-12	100,000	418,000										B3J-8	65,000	1,970,000
B3L-16	100,000	(1)3,000,000	B3C-43	75,000	452,000	B3L-53	75,000	1,555,000	B3E-52	65,000	1,300,000	B3E-11	65,000	2,350,000
Average		1,367,000	B3M-18	75,000	508,000	B3D-31	75,000	1,596,000	B3F-19	65,000	4,123,000	Average		2,160,000
			B3J-40	75,000	9,372,000	B3E-41	75,000	1,387,000	B3C-18	65,000	10,000,000(1)			
B3L-30	90,000	836,000	B3D-52	75,000	10,000,000(1)	Average		2,173,000	B3D-48	65,000	10,000,000(1)	B3C-41	60,000	1,307,000
B3J-30	90,000	1,877,000										B3E-26	60,000	2,879,000
B3M-33	90,000	12,168,000	B3M-13	70,000	7,555,000(1)	B3L-37	70,000	2,121,000	B3D-5	60,000	10,000,000(1)	Average		4,318,000
Average		4,227,000	B3C-58	70,000	10,000,000(1)	B3D-59	70,000	10,000,000(1)	B3E-15	60,000	10,000,000(1)			
			B3F-22	70,000	10,000,000(1)	B3F-54	70,000	10,000,000(1)				B3B-3	55,000	7,701,000
B3B-54	80,000	10,000,000(1)	B3J-55	70,000	10,000,000(1)	B3J-16	70,000	10,000,000(1)	B3J-2	57,000	10,000,000(1)			
B3D-32	80,000	10,000,000(1)	B3L-21	70,000	10,000,000(1)							B3D-16	50,000	10,000,000(1)
B3M-29	80,000	10,000,000(1)										B3J-38	50,000	10,000,000(1)

(1) Test discontinued, no failure.

Stress Ratio = Max Alternating Stress / Mean Stress

TABLE CXVI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = 0.) (REACTIVE METALS HEAT NO. 32167)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
BJE-42	182,500	21	BJD-44	160,000	8	BJE-52	140,000	77	BJF-3	135,000	79	BJD-24	120,000	2
BJE-59	180,000	46	BJD-41	155,000	34	BJB-48	135,000	9	BJD-16	137,500	4	BJE-11	117,500	15
BJD-36	170,000	56	BJH-45	150,000	349	BJJ-36	135,000	8	BJF-2	137,500	256	BJH-17	115,000	2,382
BJJ-56	175,000	13,580	BJF-1	150,000	10,153	Average		8	Average		130			
BJD-41	175,000	19,170	Average		10,251	BJE-5	132,500	34,214	BJH-46	130,000	3,748	BJD-48	112,500	113
Average		16,375	BJF-4	147,500	20,804	BJH-43	130,500	32,180	BJB-19	127,500	462	BJB-56	108,000	59
BJH-14	165,000	35,727	BJD-40	145,000	29,937	BJJ-40	130,000	38,508	BJD-27	125,000	18,086	BJB-35	108,000	10,082
BJJ-22	150,000	34,000	BJB-42	130,000	58,000	BJH-23	120,000	28,000	BJH-39	110,000	30,000	Average		5,035
BJL-13	150,000	34,000	BJE-5	130,000	80,000	BJE-6	120,000	44,000	BJH-21	110,000	53,000	BJH-6	100,000	19,000
Average		34,000	Average		69,000	BJB-51	120,000	40,000	Average		40,000	BJH-53	100,000	22,000
BJH-30	140,000	138,000	BJB-22	130,000	130,000	Average		44,000	BJH-52	100,000	40,000	BJJ-34	100,000	16,000
BJE-29	140,000	177,000	BJB-60	130,000	157,000	BJD-29	110,000	40,000	BJH-39	100,000	44,000	BJB-18	100,000	35,000
Average		158,000	BJJ-59	130,000	144,000	BJB-27	110,000	89,000	Average		42,000	Average		35,000
BJC-5	130,000	96,000	Average		177,000	BJH-13	110,000	152,000				BJC-38	90,000	41,000
BJH-31	130,000	152,000	BJH-37	110,000	77,000	Average		103,000	BJH-36	95,000	124,000	BJE-8	90,000	95,000
BJE-30	130,000	178,000	BJB-50	110,000	134,000	BJH-10	105,000	135,000	BJB-37	95,000	522,000	BJH-54	90,000	141,000
Average		151,000	BJJ-21	110,000	138,000	BJH-33	105,000	646,000	BJD-7	95,000	2,778,000	Average		93,000
BJD-30	120,000	111,000	Average		116,000	Average		390,500	Average		1,150,000	BJL-51	80,000	551,000
BJF-30	120,000	265,000	BJH-35	107,000	643,000	BJD-14	100,000	133,000	BJD-5	90,000	463,000	BJB-14	80,000	714,000
BJH-13	120,000	10,000,000(1)				BJJ-11	100,000	358,000	BJJ-46	90,000	1,165,000	BJE-48	80,000	1,158,000
BJD-32	115,000	1,153,000	BJB-39	105,000	308,000	BJB-40	100,000	1,428,000	BJF-15	90,000	5,379,000	Average		808,000
BJB-30	115,000	1,230,000	BJB-28	105,000	520,000	Average		1,307,000	Average		3,369,000	BJD-50	70,000	2,042,000
BJE-57	115,000	10,000,000(1)	BJB-32	105,000	1,875,000				BJD-9	80,000	5,594,000	BJJ-30	70,000	2,497,000
BJD-38	110,000	1,681,000	Average		1,366,000	BJH-24	97,500	1,762,000	BJE-7	80,000	8,408,000	BJH-1	70,000	1,715,000
BJC-30	110,000	10,000,000(1)	BJJ-58	100,000	1,910,000	BJD-47	97,500	2,271,000	BJB-17	80,000	10,000,000(1)	Average		1,903,000
BJH-15	110,000	10,000,000(1)	BJH-44	100,000	3,894,000	Average		2,017,000						
BJJ-13	110,000	10,000,000(1)	BJH-11	100,000	10,000,000(1)				BJB-33	75,000	10,000,000(1)	BJB-57	60,000	10,000,000(1)
BJL-12	110,000	10,000,000(1)	BJH-26	100,000	10,000,000(1)	BJB-7	95,000	10,000,200(1)	BJD-19	75,000	10,000,000(1)	BJB-1	60,000	10,000,000(1)
						BJC-15	95,000	10,000,230(1)	BJB-29	75,000	10,000,000(1)	BJB-30	60,000	10,001,000(1)
			BJB-4	90,000	10,000,000(1)									
			BJF-45	90,000	10,000,000(1)	BJB-46	90,000	10,000,000(1)						
						BJF-59	90,000	10,000,000(1)						

(1) Test discontinued, no failure.

Stress Ratio = [illegible]

TABLE CXVII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.063 INCH THICK
STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.0 (REACTIVE METALS HEAT NOS. 31372 AND 32163)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
B2H-23	150,000	2	B2B-3	140,000	14	B2H-47	130,000	12	B2A-41	120,000	2	B2C-19	117,500	11
B2C-19	140,000	184	B2B-8	130,000	53	B2K-17	115,000	106	B2B-24	110,000	35	B2J-22	112,500	63
B2H-37	130,000	227	B2J-50	120,000	208	B2J-24	100,000	95	B2C-1	100,000	137	B2B-50	100,000	85
B2H-22	120,000	478	B2B-43	100,000	1,352	B2E-3 Average	100,000	132 207	B2B-32	80,000	766	B2A-34	80,000	465
B2K-32	90,000	1,206	B2C-39	75,000	4,156	B2L-23	90,000	120	B2K-8	70,000	2,082	B2C-46	60,000	3,116
B2K-21	60,000	8,309	B2C-6	50,000	19,339	B2B-60	80,000	1,662	B2A-54	50,000	10,088	B2H-15	50,000	6,184
B2J-47 Average	60,000	12,875 7,588	B2H-34	60,000	49,000	B2K-7	55,000	8,771	B2K-9	30,000	55,000	B2D-60	30,000	65,000
			B2A-23	60,000	57,000				B2B-32	30,000	70,000	B2L-27	30,000	70,000
B2L-51	50,000	34,000	B2H-57	60,000	68,000	B2G-55	35,000	50,000	Average		69,000	B2B-46	30,000	83,000
B2C-17	50,000	41,000	Average		59,000	B2K-40	35,000	57,000				Average		74,000
B2B-56	50,000	46,000				B2C-16	35,000	73,000	B2C-44	28,500	57,030			
Average		42,000	B2E-13	35,000	98,000	Average		60,000				B2C-50	25,000	225,000
			B2B-12	35,000	113,000				B2D-21	25,000	168,000	B2A-10	25,000	653,000
B2B-24	40,000	84,000	B2K-37	35,000	130,000	B2E-47	30,000	220,000	B2B-14	25,000	155,000	B2B-58	25,000	7,052,000
B2K-9	40,000	88,000	Average		117,000	B2L-2	30,000	224,000	B2L-38	25,000	187,000	Average		2,697,000
B2C-57	40,000	142,000				B2B-43	30,000	342,000	Average		183,000			
Average		106,000	B2K-46	30,000	129,000	Average		262,000				B2C-32	22,500	645,000
			B2B-22	30,000	181,000				B2D-2	24,000	165,000	B2D-56	22,500	1,371,000
B2K-55	35,000	181,000	B2C-39	30,000	272,000	B2G-19	27,500	134,000	B2L-44	24,000	303,000	B2L-53	22,500	10,000,000(1)
B2B-35	35,000	314,000	Average		194,000	B2K-26	27,500	569,000	B2E-1	24,000	724,000			
B2K-60	35,000	353,000				B2A-40	27,500	538,000	Average		435,000	B2B-48	20,000	795,000
Average		283,000	B2A-5	27,500	955,000	Average		436,000				B2E-13	20,000	1,426,000
			B2C-59	27,500	968,000				B2L-54	22,500	1,063,000	B2F-13	20,000	10,000,000(1)
B2K-54	30,000	144,000	B2C-30	27,500	10,000,000(1)	B2K-8	25,000	3,877,000	B2B-2	22,500	2,443,000			
B2B-45	30,000	1,362,000				B2D-60	25,000	4,571,000	B2F-46	22,500	8,395,000	B2A-8	17,500	10,000,000(1)
B2G-33	30,000	1,779,000	B2L-53	25,000	8,200,000	B1C-2	25,000	10,000,000(1)	B2C-48	22,500	10,000,000(1)	B2B-15	17,500	10,000,000(1)
Average		1,095,000	B2F-47	25,000	10,000,000(1)	B2K-49	25,000	10,000,000(1)				B2K-8	17,500	10,000,000(1)
B2C-31	25,000	2,339,000	B2L-1	25,000	10,000,000(1)				B2K-24	20,000	12,656,000			
B2C-34	25,000	4,751,000				B2B-49	20,000	7,871,000(1)	B2B-38	20,000	10,000,000(1)			
B2C-56	25,000	10,000,000(1)				B2D-8	20,000	10,000,000(1)	B2E-14	20,000	10,000,000(1)			
B2G-28	25,000	10,000,000(1)				B2L-59	20,000	10,000,000(1)						
B2K-13	25,000	10,000,000(1)							B2C-25	17,500	8,763,000			
									B2E-45	17,500	10,000,000(1)			
									B2E-15	17,500	10,000,000(1)			

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through F, and H denotes Heat No. 31372; G through L denotes Heat No. 32163.

Stress Ratio = $\frac{\text{Min. Alternating Stress}}{\text{Max Stress}}$

TABLE CXVIII

AXIAL LOAD FATIQUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.063 INCH THICK
STRESS CONCENTRATION = 2.82, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NOS. 31372 AND 32163)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
B2A-6	190,000	30	B2L-43	175,000	2	B2M-2	160,000	28	B2L-3	130,000	47	B2C-42	130,000	5
B2B-5	185,000	170	B2E-8	155,000	181	B2J-43	145,000	135	B2L-45	125,000	545	B2B-49	125,000	49
B2B-11	180,000	111	B2F-17	145,000	472	B2M-60	137,000	256	B2J-5	110,000	1,135	B2J-7	117,000	760
B2F-43	170,000	473	B2C-27	135,000	575	B2E-11	130,000	593	B2F-7	90,000	4,520	B2L-8	100,000	2,140
B2E-6	160,000	687	B2J-52	125,000	978	B2L-44	100,000	4,099	B2G-49	80,000	5,619	B2B-42	85,000	3,368
B2C-20	150,000	1,136	B2D-10	110,000	2,458	B2M-42	90,000	6,388	B2D-5	70,000	10,800	B2K-10	70,000	11,404
B2B-20	130,000	4,600	B2C-28	100,000	4,575	B2D-8	50,000	38,370	B2E-1	45,000	43,000	B2B-27	45,000	38,000
B2B-31	70,000	33,300	B2C-26	90,000	7,800	B2K-26	50,000	38,000	B2G-23	45,000	91,000	B2B-57	45,000	80,000
B2L-29	70,000	37,400				B2E-14	50,000	47,300	B2D-21	45,000	238,000	B2L-59	45,000	440,000
B2G-29	70,000	44,000				Average		44,000			119,000	Average		359,000
Average		37,500	B2J-27	50,000	66,000									
			B2G-12	50,000	80,000	B2C-52	42,500	75,000	B2B-26	42,500	38,000	B2A-20	40,000	176,000
B2J-29	50,000	56,000	B2L-57	50,000	107,000	B2D-11	42,500	1,990,000	B2L-34	42,500	41,000	B2B-51	40,000	660,000
B2A-31	50,000	79,000	Average		83,000	B2J-13	42,500	2,534,000	B2L-52	42,500	202,000	B2A-17	40,000	1,087,000
B2C-29	50,000	111,000				Average		1,539,000	Average		116,000	Average		1,308,000
Average		98,300	B2C-46	45,000	94,000									
			B2L-45	45,000	119,000	B2F-35	40,000	121,000	B2E-49	40,000	75,000	B2L-24	37,500	5,040,000
B2L-35	45,000	141,000	B2M-42	45,000	150,000	B2J-3	40,000	135,000	B2L-46	40,000	68,000	B2M-17	37,500	5,137,020
B2C-22	45,000	170,000	Average		121,000	B2M-23	40,000	157,000	B2L-36	40,000	169,000	B2C-13	37,500	5,879,000
B2A-55	45,000	2,916,000				B2K-3	40,000	7,450,000	B2F-33	40,000	366,000	Average		5,349,000
Average		1,087,000	B2J-25	42,500	108,000	Average		1,954,000	B2B-25	40,000	438,000			
			B2M-44	42,500	111,000				B2C-8	40,000	10,000,000(1)			
B2F-32	40,000	1,515,000	B2K-51	42,500	124,000	B2A-15	37,500	142,000	B2J-23	40,000	10,000,000(1)	B2J-17	35,000	1,171,000
B2C-47	40,000	2,480,000	Average		114,000	B2M-11	37,500	740,000				B2D-24	35,000	10,000,000(1)
B2A-29	40,000	10,000,000(1)				B2M-57	37,500	1,500,000	B2F-20	37,500	1,513,000	B2L-35	35,000	10,000,000(1)
			B2A-28	40,000	916,000	B2K-6	37,500	10,000,000(1)	B2B-13	37,500	10,000,000(1)			
B2E-40	35,000	10,000,000(1)	B2L-42	40,000	5,487,000				B2E-2	37,500	10,000,000(1)	B2A-16	30,000	10,000,000(1)
B2J-48	35,000	10,000,000(1)	B2K-46	40,000	9,840,000	B2M-41	35,000	4,395,000				B2B-3	30,000	10,000,000(1)
B2E-25	35,000	10,000,000(1)	Average		5,748,000	B2J-26	35,000	10,000,000(1)	B2C-24	35,000	10,000,000(1)	B2D-51	30,000	10,000,000(1)
			B2J-9	35,000	2,348,000	B2L-6	35,000	10,000,000(1)	B2D-23	35,000	10,000,000(1)			
			B2F-12	35,000	10,000,000(1)				B2L-40	35,000	10,000,000(1)			
			B2F-39	35,000	10,000,000(1)									

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through F, and M denotes Heat No. 31372; G through L denotes Heat No. 32163.

Stress Ratio = Min. Alternating Stress / Mean Stress

TABLE CXIX

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.) (REACTIVE METALS HEAT NOS. 31372 AND 32163)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
B2A-22	190,000	3	B2L-20	157,000	1,334	B2N-28	150,000	2	B2D-47	132,000	10	B2C-18	127,500	5
B2E-33	185,000	97	B2N-2	155,000	5	B2E-41	147,500	8	B2E-58	130,000	1,493	B2N-10	125,000	216
B2J-42	175,000	3,322	B2E-36	152,000	2,103	B2G-36	145,000	11	B2J-6	130,000	[illegible]	B2A-24	120,000	199
B2C-17	172,500	2,669	B2K-40	150,000	4,308	B2J-37	140,000	3,531	Average		[illegible]	B2E-23	115,000	553
B2E-20	160,000	4,662	B2M-48	147,000	4,004	B2K-12	120,000	8,736	B2K-6	125,000	4,801	B2E-16	100,000	6,350
B2K-9	145,000	8,541	B2K-24	135,000	8,389	B2E-20	100,000	22,355	B2K-39	120,000	6,880	B2K-20	90,000	15,013
B2E-31	80,000	73,000	B2D-49	80,000	49,000	B2E-7	80,000	37,000	B2F-36	100,000	14,301	B2E-21	70,000	55,000
B2M-29	80,000	81,000	B2C-37	80,000	62,000	B2F-7	80,000	57,000	B2C-4	70,000	42,000	B2E-7	70,000	56,000
B2M-29	80,000	129,000	B2E-3	80,000	80,000	B2L-14	50,000	58,000	B2D-50	70,000	110,000	B2E-1	70,000	68,000
Average		93,000	Average		64,000	Average		51,000	B2E-23	70,000	238,000	Average		60,000
									Average		150,000			
B2E-39	75,000	72,000	B2L-5	73,000	93,000	B2F-44	70,000	66,000	B2E-24	65,000	78,000	B2E-7	65,000	58,000
B2A-7	75,000	148,000	B2E-57	70,000	116,000	B2M-26	70,000	91,000	B2C-23	65,000	455,000			
B2M-27	75,000	125,000	B2A-58	70,000	625,000	B2J-35	70,000	240,000	B2J-45	65,000	1,618,000	B2F-23	60,000	497,000
Average		115,000	Average		275,000	Average		110,500	Average		730,000	B2D-58	60,000	620,000
												B2C-9	60,000	666,000
B2F-58	70,000	187,000	B2L-64	67,500	99,000	B2L-18	67,500	526,000	B2E-16	60,000	414,000	Average		594,000
B2E-50	70,000	268,000	B2F-5	67,500	187,000	B2C-57	67,500	611,000	B2F-8	60,000	1,252,000			
B2E-3	70,000	2,668,000	B2E-9	67,500	970,000	B2A-25	67,500	850,000	B2A-4	60,000	1,360,000	B2E-44	55,000	1,237,000
Average		1,041,000	Average		419,000	B2L-9	67,500	10,000,000(1)	Average		1,015,000	B2E-13	55,000	2,401,000
												Average		1,819,000
B2A-32	65,000	2,760,000	B2M-5	65,000	10,000,000(1)	B2L-54	65,000	159,000	B2J-33	50,000	222,000			
B2M-12	65,000	7,105,000	B2M-34	65,000	10,000,000(1)	B2J-49	65,000	10,000,000(1)	B2C-35	50,000	972,000	B2C-47	50,000	1,210,000
B2C-31	65,000	10,000,000(1)	B2E-34	65,000	10,000,000(1)	B2K-22	65,000	10,000,000(1)	B2A-27	50,000	2,576,000	B2C-11	50,000	2,387,000
									B2E-52	50,000	10,000,000(1)	B2J-4	50,000	2,706,000
B2L-28	60,000	3,971,000	B2E-45	60,000	4,760,000	B2M-43	60,000	6,581,000				Average		2,127,000
B2E-35	60,000	9,600,000	B2C-24	60,000	10,000,000(1)	B2A-50	60,000	10,000,000(1)	B2E-51	45,000	2,104,000			
B2L-21	60,000	10,520,000	B2L-68	60,000	10,000,000(1)	B2C-53	60,000	10,000,000(1)	B2M-58	45,000	6,595,000	B2C-12	45,000	1,810,000
B2A-27	60,000	10,000,000(1)							B2D-22	45,000	10,000,000(1)	B2L-33	45,000	10,000,000(1)
B2L-67	50,000	10,000,000(1)							B2J-51	40,000	10,000,000(1)	B2M-1	40,000	6,950,000(1)
									B2M-18	40,000	10,000,000(1)	B2M-7	40,000	10,000,000(1)
												B2E-27	40,000	10,000,000(1)

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through F, and M denotes Heat No. 31372; G through L denotes Heat No. 32163.

Stress Ratio = Max. Alternating Stress / Mean Stress

TABLE CXX

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 2.82, STRESS RATIO = ∞ (REACTIVE METALS HEAT NO. 32167)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
BJE-30	140,000	21	BJL-39	130,000	27	BJB-60	125,000	9	BJH-3	120,000	8	BJK-53	110,000	10
BJA-29	130,000	110	BJC-39	125,000	40	BJF-40	110,000	139	BJH-24	100,000	27	BJL-27	100,000	75
BJE-1	110,000	626	BJB-8	119,500	87	BJH-22	90,500	432	BJB-38	90,000	168	BJL-26	90,000	149
BJG-28	90,000	825	BJH-54	110,000	180	BJC-39	86,500	789	BJA-1	80,000	753	BJA-25	80,000	508
BJF-57	80,000	789	BJJ-50	90,000	1,093	BJH-47	80,000	1,068	BJE-59	70,000	1,781	BJH-58	60,000	1,388
BJL-56	70,000	3,045	BJA-5	60,000	9,137	BJD-8	55,000	4,791	BJE-46	55,000	5,728	BJC-53	47,500	2,803
BJA-21	45,000	108,000	BJH-43	45,000	47,000	BJL-2	40,000	51,000	BJA-41	35,000	46,000	BJA-33	35,000	45,000
BJA-37	45,000	108,000	BJA-28	45,000	51,000	BJB-49	40,000	64,000	BJE-9	35,000	77,000	BJH-12	35,000	56,000
BJA-35	45,000	110,000	BJA-23	45,000	67,000	BJA-40	40,000	67,000	BJJ-46	35,000	119,000	Average		50,000
Average		108,000	Average		55,000	Average		67,500	Average		97,000	BJE-15	33,000	79,000
BJA-55	40,000	124,000	BJJ-47	40,000	81,000	BJF-23	35,000	72,000	BJJ-22	30,000	100,000	BJC-46	30,000	105,000
BJA-60	40,000	129,000	BJA-45	40,000	100,000	BJC-2	35,000	210,000	BJL-38	30,000	105,000	BJH-15	30,000	159,000
BJG-17	40,000	164,000	BJB-32	40,000	112,000	BJA-4	35,000	117,000	BJC-44	30,000	132,000	BJB-58	30,000	178,000
Average		139,000	Average		131,000	Average		133,000	Average		179,000	Average		142,000
BJH-33	37,500	220,000	BJD-57	35,000	156,000	BJH-23	30,000	336,000	BJD-13	25,000	210,000			
BJC-10	37,500	192,000	BJE-13	35,000	191,000	BJA-16	30,000	2,970,000	BJA-59	25,000	112,000	BJA-11	24,000	415,000
BJC-57	37,500	216,000	BJH-34	35,000	171,000	BJE-7	30,000	1,442,000	BJA-54	25,000	156,000			
Average		216,000	Average		206,000	Average		2,249,000	Average		193,000	BJB-46	25,000	185,000
BJE-32	35,000	5,539,000	BJC-59	30,000	552,000	BJH-28	25,000	1,383,000	BJA-16	22,500	476,000	BJC-32	25,000	2,826,000
BJF-17	35,000	6,624,000	BJC-4	30,000	1,640,000	BJB-43	25,000	1,440,000	BJL-36	22,500	2,410,000	Average		1,506,000
BJC-19	35,000	10,000,000(1)	BJH-3	30,000	2,550,000	BJB-47	25,000	2,719,000	BJE-9	22,500	10,000,000(1)			
			Average		1,581,000	Average		1,181,000				BJJ-42	20,000	411,000
BJA-55	30,000	10,000,000(1)										BJB-2	20,000	1,050,000
BJF-7	30,000	10,000,000(1)	BJE-53	25,000	7,384,000	BJE-17	22,000	7,272,000	BJB-14	20,000	10,000,000(1)	BJA-10	20,000	10,000,000(1)
BJH-22	30,000	10,000,000(1)	BJD-15	25,000	10,000,000(1)	BJE-58	20,000	10,000,000(1)	BJC-21	20,000	10,000,000(1)	BJC-50	20,000	10,000,000(1)
			BJJ-25	25,000	10,000,000(1)	BJL-59	20,000	10,000,000(1)	BJE-56	20,000	10,000,000(1)			
												BJE-8	17,500	12,713,000
												BJA-8	17,500	10,000,000(1)
												BJA-36	17,500	10,000,000(1)

(1) Test discontinued, no failure.

Stress Ratio = $\frac{\text{Alternating Stress}}{\text{Mean Stress}}$

TABLE CXXI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 2.82, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NO. 32167)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
BJC-6	180,000	55	BJE-46	150,000	4	BJK-2	130,000	11	BJD-21	125,000	4	BJE-17	120,000	7
BJC-2	165,000	289	BJJ-9	140,000	233	BJJ-24	127,500	15	BJE-13	120,000	418	BJE-51	115,000	396
BJC-49	150,000	697	BJD-17	120,000	607	BJJ-26	125,000	459	BJF-37	117,500	871	BJE-27	110,000	662
BJF-43	130,000	2,784	BJE-50	110,000	1,661	BJE-35	120,000	757	BJC-8	110,000	739	BJF-48	100,000	1,476
BJD-20	115,000	3,287	BJC-12	100,000	3,184	BJF-35	110,000	1,721	BJE-31	90,000	3,187	BJJ-7	90,000	2,107
BJJ-25	100,000	7,085	BJL-42	80,000	15,119	BJK-49	90,000	3,951	BJE-25	75,000	7,099	BJD-51	60,000	13,612
BJE-34	65,000	34,000	BJF-39	55,000	48,000	BJD-44	80,000	8,286	BJL-3	50,000	86,000	BJE-17	45,000	51,000
BJJ-55	65,000	48,000	BJE-28	55,000	65,000				BJE-2	50,000	191,000	BJL-34	45,000	48,000
BJE-6	65,000	63,000	BJE-12	55,000	104,000	BJF-34	60,000	68,000	BJF-7	50,000	201,000	BJL-24	45,000	67,000
Average		49,000	Average		72,000				Average		159,000	Average		60,000
BJL-1	55,000	75,000	BJE-29	45,000	66,000	BJE-11	55,000	60,000						
BJC-28	55,000	126,000	BJC-45	45,000	125,000	BJK-41	55,000	69,000	BJE-27	45,000	113,000	BJE-49	40,000	261,000
Average		100,000	Average		86,000	Average		64,000	BJC-24	45,000	133,000	BJC-29	40,000	281,000
									BJJ-23	45,000	211,000	BJE-18	40,000	2,281,000
BJC-31	51,000	10,000,000(1)	BJE-51	43,000	878,000	BJJ-43	45,000	112,000	Average		186,000	Average		1,041,000
						BJJ-3	45,000	118,000						
BJE-40	45,000	233,000	BJJ-27	40,000	148,000	BJK-21	45,000	124,000	BJC-31	40,000	212,000	BJE-10	35,000	1,113,000
BJE-39	45,000	681,000	BJL-57	40,000	195,000	Average		118,000	BJC-13	40,000	451,000	BJC-13	35,000	1,262,000
BJF-29	45,000	2,121,000	BJE-42	40,000	10,000,000(1)				BJF-33	40,000	1,049,000	BJE-26	35,000	10,000,000(1)
Average		1,345,000				BJL-25	40,000	543,000	Average		577,000			
			BJJ-42	37,500	228,000	BJK-42	40,000	813,000				BJE-35	30,000	1,785,000
BJE-5	40,000	385,000	BJL-35	37,500	280,000	BJE-11	40,000	10,000,000(1)	BJB-12	35,000	846,000	BJD-5	30,000	10,000,000(1)
BJC-20	40,000	6,311,000	BJF-12	37,500	1,478,000	BJE-45	40,000	10,000,000(1)	BJE-1	35,000	6,861,000	BJE-49	30,000	10,000,000(1)
BJE-31	40,000	10,000,000(1)	Average		799,000				BJJ-5	35,000	10,000,000(1)			
						BJJ-13	35,000	1,870,000				BJF-25	25,000	10,000,000(1)
BJB-24	35,000	10,000,000(1)	BJC-17	35,000	10,000,000(1)	BJF-47	35,000	2,820,000	BJK-19	30,000	5,168,000	BJC-23	25,000	10,000,000(1)
BJL-28	35,000	10,000,000(1)	BJJ-25	35,000	10,000,000(1)	BJL-44	35,000	5,158,000	BJE-41	30,000	5,425,000(1)	BJE-59	25,000	10,000,000(1)
BJK-45	35,000	10,000,000(1)	BJK-46	35,000	10,000,000(1)	Average		3,949,000						
						BJB-51	30,000	2,600,000	BJB-53	25,000	10,000,000(1)			
						BJK-15	30,000	10,000,000(1)	BJC-13	25,000	10,000,000(1)			
						BJK-6	30,000	10,000,000(1)						
						BJE-2	30,000	10,000,000(1)						

(1) Test discontinued, no failure.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CXXII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.) (REACTIVE METALS HEAT NO. J2167)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
B3L-7	160,000	24	B3D-45	152,500	4	B3L-54	130,000	6	B3D-48	135,000	3	B3B-21	125,000	4
B3D-34	175,000	114	B3F-5	150,000	200	B3J-18	130,000	1,178	B3F-26	140,500	1,385	B3B-42	120,000	4
B3B-2	170,000	783	B3E-51	145,000	742	Average		1,089	B3E-17	130,000	389	B3B-44	117,500	936
B3J-52	165,000	1,686	B3K-57	140,000	3,181	B3A-37	127,500	5,640	B3B-57	125,000	484	B3C-52	110,000	78
B3F-56	160,000	6,776	B3B-48	130,000	9,960	B3D-36	125,000	7,376	B3E-41	120,000	6,385	B3F-13	115,000	3,237
B3A-9	170,000	18,236	B3C-35	110,000	17,170	B3A-25	120,000	5,457	B3B-23	110,000	9,240	B3B-1	100,000	8,845
						B3B-35	110,000	9,864						
B3C-22	90,000	30,000	B3F-20	80,000	75,000	B3E-21	90,000	49,000	B3C-24	75,000	59,000	B3L-40	75,000	10,000
B3L-29	90,000	87,000	B3B-7	80,000	88,000	B3B-35	80,000	76,000	B3C-14	75,000	140,000	B3E-19	75,000	50,000
B3E-32	90,000	88,000	B3K-60	80,000	117,000	B3D-6	80,000	136,000	B3L-8	75,000	184,000	B3A-36	75,000	52,000
Average		72,000	Average		96,000	Average		87,000	Average		128,000	Average		37,000
B3B-32	80,000	84,000	B3B-34	70,000	70,000	B3F-44	70,000	209,000	B3B-39	70,000	66,000	B3A-4	70,000	67,000
B3E-27	80,000	84,000	B3A-58	70,000	81,000	B3A-50	70,000	540,000	B3D-4	70,000	97,000	B3E-18	70,000	175,000
B3C-29	80,000	162,000	B3L-20	70,000	179,000	B3B-26	70,000	560,000	B3J-51	70,000	415,000	B3B-10	70,000	276,000
Average		110,000	Average		110,000	Average		439,000	Average		193,000	B3A-38	70,000	427,000
												Average		237,000
B3C-36	70,000	142,000	B3E-42	65,000	121,000	B3J-35	60,000	124,000	B3F-8	65,000	2,000,000	B3E-1	65,000	984,000
B3E-33	70,000	334,000	B3B-24	65,000	152,000	B3E-25	60,000	710,000	B3J-6	65,000	2,000,000			
B3A-27	70,000	441,000	B3E-3	65,000	1,710,000	B3D-43	60,000	1,188,000	B3L-45	65,000	1,744,000	B3B-16	60,000	436,000
Average		317,000	Average		661,000	Average		1,676,000	Average		2,581,000	B3C-11	60,000	792,000
												B3E-40	60,000	1,113,000
B3J-34	60,000	580,000	B3C-17	60,000	1,137,000	B3K-40	55,000	198,000	B3B-6	60,000	117,000	Average		1,389,000
B3C-27	60,000	1,669,000	B3B-5	60,000	1,449,000	B3K-13	55,000	3,440,000	B3D-19	60,000	389,000			
B3H-52	60,000	1,340,000	B3B-9	60,000	6,817,000	B3E-24	55,000	7,738,000	B3E-16	60,000	2,445,000	B3B-23	55,000	1,488,000
Average		1,865,000	Average		3,121,000	Average		3,792,000	Average		1,010,000	B3A-33	55,000	1,586,000
												B3C-12	55,000	6,513,000
B3A-22	50,000	10,000,000(1)	B3B-34	50,000	10,000,000(1)	B3A-56	50,000	10,000,000(1)	B3B-52	55,000	3,356,000	Average		3,176,000
B3A-58	50,000	10,000,000(1)	B3D-3	50,000	10,000,000(1)	B3E-20	50,000	10,000,000(1)	B3A-3	55,000	10,000,000(1)			
B3E-20	50,000	10,000,000(1)	B3B-2	50,000	10,000,000(1)	B3B-23	50,000	10,000,000(1)	B3E-22	55,000	10,000,000(1)	B3B-13	50,000	8,708,000
												B3E-7	50,000	10,000,000(1)
									B3A-46	50,000	10,000,000(1)			
									B3E-7	50,000	10,000,000(1)	B3C-30	45,000	10,000,000(1)

(1) Test discontinued, no failure.

Stress Ratio = Min Alternating Stress / Max Stress

TABLE CXXIII

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6AI-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-6Al-4V HEAT — REACTIVE METALS 31372

FASTENER— NAS 675-V2 NOMINAL DIA.— 5/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	B8LL10G-1	0.0619	0.0617	6260	5710	(1)	B8TL10G-1	0.0689	0.0686	6700	5750	(2)
	-6	0.0688	0.0690	6640	5660	(2)	-6	0.0654	0.0662	6390	5670	(1)
	-11	0.0702	0.0700	6820	5890	(1)	-11	0.0682	0.0672	6600	5780	(1)
	Average	0.0670	0.0669	6570	5820		Average	0.0675	0.0673	6560	5730	
-65	B8LL10G-2	0.0670	0.0670	7020	6120	(2)	B8TL90-2	0.0641	0.0647	6980	6580	(2)
	-7	0.0682	0.0681	7360	6440	(2)	-7	0.0650	0.0660	6950	6120	(2)
	-12	0.0688	0.0694	7020	6590	(2)	-12	0.0681	0.0674	7040	5950	(2)
	Average	0.0680	0.0682	7130	6320		Average	0.0657	0.0660	6990	6220	
-100	B8LL10G-3	0.0678	0.0676	7260	6460	(2)	B8TL10G-3	0.0643	0.0654	7180	6250	(2)
	-8	0.0670	0.0661	7430	6910	(2)	-8	0.0654	0.0666	7300	6890	(2)
	-13	0.0688	0.0689	7560	6470	(2)	-13	0.0661	0.0668	7430	6520	(2)
	Average	0.0679	0.0675	7420	6600		Average	0.0651	0.0663	7300	6557	
-200	B8LL11G-4	0.0682	0.0681	8200	7240	(2)	B8TL11G-4	0.0641	0.0653	7800	6890	(2)
	-9	0.0721	0.0713	8440	7750	(2)	-9	0.0638	0.0655	8090	7180	(2)
	-14	0.0680	0.0682	8430	7170	(2)	-14	0.0657	0.0670	8100	7000	(2)
	Average	0.0694	0.0659	8360	7390		Average	0.0645	0.0659	8000	7020	
-320	B8LL12G-5	0.0691	0.0691	8440	7240	(2)	B8TL12G-5	0.0646	0.0657	8140	7520	(2)
	-10	0.0647	0.0646	8360	7660	(2)	-10	0.0658	0.0654	8540	7700	(2)
	-15	0.0714	0.0713	8740	7780	(2)	-15	0.0660	0.0671	8650	7850	(2)
	Average	0.0684	0.0683	8510	7560		Average	0.0655	0.0661	8440	7690	

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.

TABLE CXXIV

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-6Al-4V HEAT — REACTIVE METALS 31372

FASTENER — NAS 2010-V2 NOMINAL DIA.— 5/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	B8LL1H-2	0.0621	0.0620	6500	5250	(1)	B8TL1H-1	0.0685	0.0679	6910	5515	(2)
	-6	0.0688	0.0688	6690	5350	(2)	-6	0.0649	0.0656	6460	5370	(1)
	-11	0.0714	0.0713	7320	6640	(2)	-11	0.0678	0.0668	6580	5310	(2)
	Average	0.0670	0.0674	6840	5910		Average	0.0671	0.0668	7650	5610	
-65	B8LL9H-2	0.0686	0.0665	7030	6110	(1)	B8TL9H-2	0.0660	0.0648	6830	5660	(2)
	-7	0.0717	0.0713	7200	6240	(2)	-7	0.0652	0.0662	7020	5950	(1)
	-12	0.0712	0.0714	7460	6020	(2)	-12	0.0679	0.0672	7190	6090	(2)
	Average	0.0705	0.0697	7250	6120		Average	0.0557	0.0661	7010	5970	
-100	B8LL10H-3	0.0674	0.0672	7600	6290	(1)	B8TL10H-3	0.0642	0.0650	7310	6260	(1)
	-8	0.0680	0.0678	7580	6120	(2)	-8	0.0652	0.0668	7250	6210	(1)
	-13	0.0692	0.0684	7392	6180	(1)	-13	0.0680	0.0670	7360	5950	(2)
	Average	0.0682	0.0681	7520	6200		Average	0.0658	0.0663	7310	6110	
-200	B8LL11H-4	0.0680	0.0678	8110	7240	(1)	B8TL11H-4	0.0642	0.0653	8110	7520	(1)
	-9	0.0674	0.0670	7920	6760	(1)	-9	0.0648	0.0643	7970	7630	(2)
	-14	0.0686	0.0684	8150	7170	(1)	-14	0.0659	0.0669	8100	7220	(1)
	Average	0.0680	0.0677	8130	7060		Average	0.0650	0.0655	8060	7460	
-320	B8LL12H-5	0.0684	0.0685	9190	8120	(1)	B8TL12H-5	0.0644	0.0654	8560	7540	(1)
	-10	0.0652	0.0649	8550	7460	(1)	-10	0.0660	0.0665	8860	7590	(1)
	-15	0.0674	0.0676	8600	7220	(1)	-15	0.0655	0.0670	8660	7470	(1)
	Average	0.0670	0.0670	8780	7610		Average	0.0653	0.0660	8700	7540	

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.

TABLE CXXV

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-6Al-4V HEAT — REACTIVE METALS 31372

FASTENER — HL11V-6-3 NOMINAL DIA.— 3/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	B8LL1J-1	0.0639	0.0639	2640	2330	(1)	B8TL1J-1	0.0646	0.0662	2560	2330	(2)
	-6	0.0683	0.0682	2520	2370	(2)	-6	0.0657	0.0653	2440	2010	(2)
	-11	0.0648	0.0647	2450	2050	(2)	-11	0.0667	0.0666	2640	2470	(2)
	Average	0.0657	0.0656	2540	2260		Average	0.0657	0.0657	2550	2270	
-65	B8LL9J-2	0.0645	0.0649	2710	2080	(2)	B8TL9J-2	0.0648	0.0654	2700	- (1)	(2)
	-7	0.0689	0.0687	2710	2670	(2)	-7	0.0657	0.0649	2650	2570	(2)
	-12	0.0658	0.0658	2650	2510	(2)	-12	0.0674	0.0667	2810	2330	(2)
	Average	0.0664	0.0665	2690	2420		Average	0.0660	0.0657	2720	2450	
-100	B8LL10J-3	0.0680	0.0678	2910	2650	(2)	B8TL10J-3	0.0646	0.0652	2690	2550	(3)
	-8	0.0654	0.0654	2770	2490	(2)	-8	0.0657	0.0652	2620	2600	(2)
	-13	0.0701	0.0700	2740	2650	(3)	-13	0.0678	0.0670	2850	2570	(3)
	Average	0.0678	0.0677	2810	2600		Average	0.0660	0.0658	2720	2570	
-200	B8LL11J-4	0.0684	0.0684	3090	2930	(3)	B8TL11J-4	0.0687	0.0684	3010	2610	(3)
	-9	0.0634	0.0635	3160	2960	(2)	-9	0.0662	0.0668	2990	2710	(3)
	-14	0.0703	0.0703	2960	2840	(3)	-14	0.0676	0.0669	3130	2730	(3)
	Average	0.0674	0.0674	3070	2913		Average	0.0675	0.0674	3040	2750	
-320	B8LL12J-5	0.0690	0.0687	3680	3200	(2)	B8TL12J-5	0.0685	0.0682	3100	3020	(3)
	-10	0.0627	0.0627	3400	3020	(2)	-10	0.0663	0.0664	3200	3060	(3)
	-15	0.0710	0.0710	3400	3120	(3)	-15	0.0669	0.0666	3340	3230	(2)
	Average	0.0676	0.0675	3510	3110		Average	0.0672	0.0671	3280	3100	

(1) Unusable load-deformation curve.
(2) Fastener sheared.
(3) Fastener head failed.

TABLE CXXVI

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-6Al-4V HEAT — REACTIVE METALS 31372

FASTENER — NAS 250[illegible]-3 NOMINAL DIA.— 3/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	B6LL1K-1	0.[illegible]632	0.0630	2590	2150	(2)	B6TL1K-1	0.0645	0.0651	2470	2230	(3)
	-6	0.0[illegible]80	0.0679	2360	2130	(3)	-6	0.0658	0.0653	2600	2130	(2)
	-11	0.0649	0.0642	2550	2180	(2)	-11	0.0674	0.0668	2550	2300	(3)
	Average	0.0656	0.0652	2500	2160		Average	0.0659	0.0657	2540	2220	
-65	B8LL9K-2	0.0644	0.0643	2640	2370	(2)	B6TL9K-2	0.0647	0.0650	2660	2460	(3)
	-7	0.0687	0.0686	2550	2460	(3)	-7	0.0658	0.0652	2590	2430	(3)
	-12	0.0651	0.0650	2660	[illegible]	(1) (2)	-12	0.0678	0.0670	2710	2380	(3)
	Average	0.0661	0.0660	2620	[illegible]		Average	0.0661	0.0657	2650	2430	
-100	B8LL10K-3	0.0718	0.0701	2790	2590	(3)	B6TL10K-3	0.0689	0.0684	2720	2560	(3)
	-8	0.0690	0.0687	2740	2590	(3)	-8	0.0662	0.0666	2840	2610	(3)
	-13	0.0664	0.0664	2780	2590	(2)	-13	0.0676	0.0670	2860	2500	(2)
	Average	0.0691	0.0684	2770	2590		Average	0.0676	0.0674	2810	2560	
-200	B8LL11K-4	0.0683	0.0682	2910	2850	(2)	B6TL11K-4	0.0687	0.0682	3000	2860	(3)
	-9	0.0649	0.0648	2950	2810	(3)	-9	0.0645	0.0648	3350	3050	(2)
	-14	0.0702	0.0702	2880	2810	(3)	-14	0.0672	0.0667	2880	2640	(3)
	Average	0.0678	0.0677	2920	2830		Average	0.0668	0.0666	3080	2850	
-320	B8LL12K-5	0.0667	0.0666	3240	2940	(3)	B6TL12K-5	0.0664	0.0656	3310	3080	(3)
	-10	0.0624	0.0624	3220	2790	(3)	-10	0.0659	0.0666	3230	3110	(3)
	-15	0.0708	0.0707	3220	3080	(3)	-15	0.0668	0.0662	3110	3040	(3)
	Average	0.0673	0.0672	3230	2940		Average	0.0664	0.0661	3220	3080	

(1) Unusable load-deformation curve.
(2) Fastener sheared.
(3) Fastener head failed.

TABLE CXXVII

TENSILE PROPERTIES FOR 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET CONTAINING FUSION WELDS

CONDITION — WELDED IN SOLUTION TREATED AND AGED CONDITION

ALLOY — Ti-6Al-4V

HEAT NUMBER — REACTIVE METALS 34372

TEST TEMP °F	LONGITUDINAL									TRANSVERSE								
	SPECIMEN NUMBER	F_{tu}, psi	F_{ty}, psi	E, psi	ELONGATION, % in 2 in	ELONGATION, % in 1/2 in	ELONGATION, % in 1/4 in	EFFICIENCY FOR F_{tu}	EFFICIENCY FOR F_{ty}	FAILURE LOCATION	SPECIMEN NUMBER	F_{tu}, psi	F_{ty}, psi	E_y, psi	ELONGATION, % in 2 in	ELONGATION, % in 1/2 in	ELONGATION, % in 1/4 in	EFFICIENCY FOR F_{tu}	EFFICIENCY FOR F_{ty}	FAILURE LOCATION
RT	B5LW21-1	166,000	155,000	16.4x10⁶	1.0	4	-	93.8	94.5	(1)	B2TW21-1	171,000	154,300	15.7x10⁶	2.0	4	-	96.1	95.6	(1)
	-6	166,200	158,300	16.9	1.0	4	4	93.9	96.3	(1)	-6	171,300	155,300	16.4	1.5	5	8	96.1	96.3	(1)
	-12	166,200	152,000	16.7	1.0	4	4	93.9	92.6	(1)	-11	170,000	154,000	16.3	2.0	4	8	96.1	95.4	(1)
	Average	167,500	157,000	16.8	1.0	4	4	93.9	95.4		Average	171,000	155,000	16.1	1.8	4	8	96.1	95.7	
-65	B5LW9-4	167,000	160,300	16.9x10⁶	1.0	8	20	93.1	95.7	(1)	B5TW9-2	192,000	178,000	16.7x10⁶	1.5	12	16	96.5	98.3	(1)
	-7	164,300	159,300	16.7	1.0	8	8	92.1	95.2	(1)	-7	186,300	176,300	16.6	1.0	8	16	93.5	98.3	(2)
	-12	166,200	161,000	16.8	1.0	8	8	93.1	96.2	(1)	-12	188,300	179,000	16.3	1.5	4	16	94.5	100	(2)
	Average	165,500	160,200	16.8	1.0	8	12	92.8	95.7		Average	190,500	177,500	16.5	1.3	8	16	95.5	98.6	
-100	B5LW13-3	164,300	158,000	17.7x10⁶	1.0	0	12	92.1	94.4	(1)	B5TW1 -3	200,300	188,000	17.0x10⁶	1.0	6	8	97.1	101	(1)
	-8	164,000	157,300	17.2	1.0	10	-	92.1	95.9	(1)	-8	202,000	186,000	17.0	1.0	8	8	98.0	99.5	(2)
	-13	165,200	156,000	17.0	-	-	-	92.6	93.1	(1)	-13	200,300	183,000	17.1	1.0	14	24	97.0	102	(1)
	Average	164,500	157,100	17.1	1.0	5	12	92.3	94.5		Average	200,800	186,000	17.0	1.0	9	13	97.4	101	
-100	B5LW21-4	214,000	208,000	18.1x10⁶	0.5	2	4	93.7	95.0	(1)	B2TW21-4	210,000	205,000	17.0x10⁶	1.5	4	12	96.0	97.6	(1)
	-7	213,000	198,000	17.1	-	-	-(2)	93.6	93.6	(1)	-7	217,000	205,000	17.5	1.0	10	12	96.4	97.6	(1)
	-14	215,000	204,000	17.6	-	-	-(2)	94.5	96.4	(1)	-14	221,000	207,000	16.8	1.0	8	8	97.4	98.6	(1)
	Average	214,000	206,000	17.7	0.5	2	4	93.9	97.3		Average	216,000	206,000	17.1	1.2	8	8	97.0	97.9	
-320	B5LW12-5	245,000	241,000	17.9x10⁶	0.5	8	-	92.6	90.0	(1)	B5TW12-5	250,000	242,000	17.7x10⁶	1.0	10	12	100	98.4	(1)
	-10	253,000	245,000	18.2	-	-	-(4)	95.5	97.2	(3)	-10	251,000	241,000	17.4	1.0	6	20	96.5	98.0	(1)
	-15	251,000	242,000	18.0	-	-	-(4)	94.8	96.0	(3)	-15	249,000	240,000	17.6	1.0	6	16	100	100	(1)
	Average	250,000	243,000	18.1	0.5	8	-	94.5	96.4		Average	250,000	241,000	17.6	1.0	7	16	98.8	98.8	

(1) Heat affected zone adjacent to weld.
(2) Elongation less than 0.5 percent.
(3) Parent material.
(4) Failed within 1/4 inch of fillet.

TABLE CXXVIII

TENSILE PROPERTIES FOR 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET CONTAINING FUSION WELDS

CONDITION— SIZED AFTER WELDING IN SOLUTION TREATED CONDITION

ALLOY— Ti-6Al-4V

HEAT NUMBER— REACTIVE METALS 31372

TEST TEMP °F	LONGITUDINAL										TRANSVERSE									
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN ½ IN.	ELONGATION, % IN ½ IN.	EFFICIENCY FOR f_{tu}	EFFICIENCY FOR f_{ty}	FAILURE LOCATION	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN ½ IN.	ELONGATION, % IN ½ IN.	EFFICIENCY FOR f_{tu}	EFFICIENCY FOR f_{ty}	FAILURE LOCATION
20	B6LA1L-1	168,000	159,000	16.8×10^6	1.0	14	20	96.0	97.5	(1)	B6TW1L-1	169,300	157,000	16.3×10^6	2.5	14	24	97.1	98.1	(1)
	-6	169,300	156,300	16.7	1.0	10	12	96.6	96.9	(1)	-6	166,300	157,300	16.6	2.0	4	12	96.6	98.1	(1)
	-11	171,300	161,000	16.9	1.5	8	12	98.3	99.4	(1)	-11	166,200	157,000	16.9	1.5	12	16	96.6	98.1	(1)
	Average	169,500	158,800	16.8	1.2	11	15	97.1	97.9		Average	166,600	157,100	16.6	2.0	10	17	96.8	98.1	
-65	B6LM9L-2	191,000	184,000	17.4×10^6	0.5	4	12	96.0	97.9	(1)	B6TW9L-2	223,000	180,000	16.6×10^6	1.0	10	-	113	98.4	(1)
	-7	190,000	184,000	17.1	0.5	8	12	95.9	97.7	(1)	-7	198,300	180,300	16.7	1.0	8	12	100	98.4	(1)
	-12	191,000	185,000	17.1	1.0	6	12	96.5	98.4	(1)	-12	197,000	181,000	16.7	1.5	14	-	99.5	98.9	(1)
	Average	190,500	184,300	17.3	0.7	7	12	96.5	98.1		Average	206,650	180,000	16.7	1.2	11		104	98.6	
-100	B6LN1L-3	187,000	181,000	17.4×10^6	-	-	-(2)	94.6	96.5	(1)	B6TW10L-3	199,000	187,000	16.9×10^6	1.5	8	12	99.0	98.9	(1)
	-8	190,000	184,000	17.0	0.5	8	12	96.0	98.4	(1)	-8	197,000	184,000	16.5	1.0	-	-	98.0	97.4	(1)
	-13	191,000	180,000	17.0	0.5	10	20	96.6	95.8	(1)	-13	199,000	188,000	17.2	1.0	6	12	99.0	99.5	(1)
	Average	189,000	182,000	17.1	0.3	6	11	95.7	96.9		Average	198,300	186,500	16.9	1.2	7	12	98.7	98.6	
-200	B6LM11L-4	218,000	210,000	17.6×10^6	0.5	6	12	92.0	92.1	(1)	B6TW11L-4	216,000	205,000	17.2×10^6	1.0	10	12	92.7	92.2	(1)
	-9	217,000	208,000	17.3	1.0	10	16	91.6	91.2	(1)	-9	217,300	207,300	17.2	1.0	4	20	93.1	94.1	(1)
	-14	218,000	213,000	17.7	0.5	6	12	92.1	93.4	(1)	-14	216,000	207,000	17.1	0.5	4	12	92.7	93.1	(1)
	Average	217,500	209,300	17.5	0.7	7	13	91.9	92.2		Average	216,500	206,500	17.2	0.8	6	15	92.8	93.2	
-320	B6LM12L-5	256,000	244,000	18.1×10^6	0.5	4	12	97.3	97.2	(1)	B6TW12L-5	252,000	242,000	18.0×10^6	0.5	6	12	97.-	99.6	(1)
	-10	255,000	245,000	17.8	0.5	8	12	97.0	97.6	(1)	-10	253,000	241,000	17.6	0.5	4	8	98.1	99.2	(1)
	-15	256,000	247,000	18.3	0.5	6	12	97.3	98.4	(1)	-15	250,000	244,000	17.9	1.0	6	-	99.2	99.2	(1)
	Average	255,300	245,300	18.1	0.5	6	12	97.2	97.7		Average	252,000	242,000	17.8	0.7	5	10	97.8	99.3	

(1) Heat affected zone adjacent to weld.
(2) Elongation less than 0.5 percent.

TABLE CXXIX

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— Ti-6Al-4V
THICKNESS— 0.063 INCH
HEAT NUMBER— REACTIVE METALS 31372

TEST TEMP °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN
80	B8LA1-41	178,000	163,000	16.1×10^6	10	40	-	B8TA1-41	178,000	157,000	15.9×10^6	8.0	32	52
	-46	179,000	166,000	17.3	9.5	40	60	-46	179,000	160,000	16.0	6.0	28	48
	-51	179,000	164,000	16.5	7.0	34	52	-51	178,000	167,000	17.3	9.0	36	52
	Average	179,000	164,000	16.6	8.8	38	56	Average	178,000	161,000	16.4	7.7	32	51
-65	B8LA9-42	204,000	186,000	16.6×10^6	7.0	34	44	B8TA9-42	201,000	179,000	16.0×10^6	6.0	32	52
	-47	204,000	190,000	16.7	6.0	20	44	-47	197,000	179,000	15.9	6.5	28	48
	-52	202,000	187,000	16.7	5.0	18	20	-52	198,000	180,000	15.7	5.0	26	52(1)
	Average	203,000	188,000	16.7	6.0	21	36	Average	199,000	179,000	15.9	5.8	29	51
-100	B8LA10-43	210,000	191,000	16.6×10^6	6.0	32	56	B8TA10-43	206,000	185,000	16.4×10^6	5.5	8	36(1)
	-48	210,000	197,000	16.6	6.0	26	44	-48	206,000	187,000	16.6	5.5	30	44
	-53	209,000	197,000	17.1	7.0	26	44	-53	205,000	189,000	16.7	5.0	28	-(1)
	Average	210,000	195,000	16.8	6.3	28	48	Average	200,000	187,000	16.6	5.3	22	40
-200	B8LA11-44	232,000	218,000	17.3×10^6	5.0	26	48	B8TA11-44	228,000	209,000	16.9×10^6	5.0	26	44
	-49	232,000	220,000	16.4	5.0	28	56	-49	223,000	210,000	16.8	5.0	20	44
	-54	225,000	218,000	17.4	5.0	28	40	-54	223,000	210,000	17.3	-	-	-(2)
	Average	230,000	219,000	17.0	5.0	27	48	Average	225,000	210,000	17.0	5.0	23	44
-320	B8LA12-45	266,000	250,000	17.8×10^6	4.5	20	36	B8TA12-45	263,000	244,000	16.9×10^6	4.0	14	28
	-50	265,000	254,000	17.6	4.5	16	36	-50	259,000	246,000	17.6	-	-	-(2)
	-55	264,000	252,000	17.9	4.0	12	-	-55	259,000	247,000	17.4	-	-	-(3)
	Average	265,000	252,000	17.8	4.3	16	36	Average	260,000	246,000	17.3			

(1) Failed at knife edge.
(2) Failed within 1/4 inch of fillet.
(3) Failed outside gage marks.

TABLE CXXX

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— Ti-6Al-4V
THICKNESS— 0.063 INCH
HEAT NUMBER— REACTIVE METALS 31372

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN
80	B8LA11L-1	174,000	161,000	16.6x10⁶	5.5	28	44	B8TA11L-1	172,000	156,000	16.1x10⁶	5.5	24	48
	-6	177,000	165,000	17.0	5.0	34	56	-6	173,500	160,000	16.5	5.5	26	44
	-11	175,000	164,000	16.6	8.0	36	60	-11	176,000	161,000	16.9	6.5	30	52
	Average	175,000	163,500	16.7	6.5	33	53	Average	174,000	160,000	16.5	5.8	27	48
-65	B8LA9L-2	197,000	187,000	17.2x10⁶	5.0	28	48	B8TA9L-2	196,000	181,000	16.7x10⁶	4.0	22	36
	-7	199,000	188,000	16.8	6.0	36	48	-7	197,000	183,000	16.7	4.0	24	36
	-12	200,000	188,000	17.2	5.5	26	48	-12	198,000	185,000	16.7	4.5	24	44
	Average	199,000	188,000	17.1	5.5	30	48	Average	197,000	183,000	16.7	4.2	23	39
-100	B8LA10L-3	203,000	191,000	17.3x10⁶	6.0	24	52	B8TA10L-3	199,000	187,000	16.5x10⁶	4.5	24	-
	-8	206,000	194,000	17.2	5.0	26	48	-8	203,000	190,000	16.9	5.0	26	44
	-13	204,000	192,000	17.0	5.0	18	46	-13	202,000	189,000	16.8	5.0	26	46
	Average	204,000	192,000	17.1	5.3	23	49	Average	201,000	189,000	16.7	4.8	25	46
-200	B8LA11L-4	231,000	225,000	18.3x10⁶	2.5	20	36	B8TA11L-4	233,000	221,000	17.5x10⁶	3.0	16	28
	-9	240,000	229,000	?	3.0	20	28	-9	229,000	220,000	17.3	4.0	22	40
	-14	240,000	230,000		2.5	16	28	-14	228,000	220,000	17.4	3.0	24	44
	Average	237,000	228,000	?	2.5	19	31	Average	230,000	220,000	17.4	3.3	21	37
-320	B8LA12L-5	259,000	246,000	18.0x10⁶	-	-	-(1)	B8TA12L-5	255,000	242,000	17.3x10⁶	3.0	24	36
	-10	263,000	250,000	17.9	3.0	20	28	-10	258,000	244,000	17.5	4.0	28	36(2)
	-15	267,000	258,000	18.2	3.5	24	-	-15	261,000	242,000	17.6	4.0	16	24
	Average	263,000	251,000	18.0	3.2	22		Average	258,000	243,000	17.5	3.3	23	32

(1) Failed within 1/4 inch of fillet.
(2) Failed at knife edge.

TABLE CXXXI

ELEVATED TEMPERATURE THERMAL EXPANSION PROPERTIES FOR 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NUMBER 32167 SHEET NO. 1777A-1)

Temp. Range, °F	Expansion, Inch Per Inch				Mean Linear Thermal Expansion Coefficient, Inch Per Inch Per °F
	Specimen No. B9RE-1	Specimen No. B9RE-2	Specimen No. B9RE-3	Average	
100 - 200	0.00054	0.00052	0.00052	0.000527	5.27×10^{-6}
100 - 300	0.00110	0.00106	0.00104	0.001067	5.34
100 - 400	0.00168	0.00162	0.00158	0.001627	5.42
100 - 500	0.00224	0.00216	0.00211	0.002170	5.42
100 - 600	0.00285	0.00272	0.00265	0.002740	5.48
100 - 700	0.00343	0.00329	0.00320	0.003307	5.51
100 - 800	0.00403	0.00388	0.00375	0.003887	5.55
100 - 900	0.00463	0.00446	0.00430	0.004463	5.58
100 - 1000	0.00526	0.00507	0.00488	0.005070	5.63
100 - 1100	0.00588	0.00566	0.00542	0.005653	5.65
100 - 1200	0.00653	0.00629	0.00601	0.006277	5.71
1200 - 100	0.00025 (1)	0.00011 (1)		0.000180(1)	

(1) Specimen had an increase in length after cooling from 1200°F to 100°F

TABLE CLXII

LOW TEMPERATURE THERMAL EXPANSION PROPERTIES FOR 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 32167, SHEET NO. 1777A-1)

Temp. Range, °F	Expansion, Inch per Inch				Mean Linear Thermal Expansion Coefficient, Inch Per Inch Per °F
	Specimen No. B9EL-4	Specimen No. B9EL-5	Specimen No. B9EL-6	Average	
-10 to 35	0.00023	0.00022	0.00023	0.000226	5.02×10^{-6}
-55 to 35	0.00048	0.00045	0.00046	0.000463	5.14
-100 to 35	0.00071	0.00067	0.00069	0.000690	5.11
-145 to 35	0.00093	0.00089	0.00091	0.000910	5.06
-190 to 35	0.00114	0.00109	0.00112	0.001117	4.96
-235 to 35	0.00134	0.00128	0.00134	0.001320	4.89
-280 to 35	0.00152	0.00146	0.00150	0.001493	4.74
-325 to 35	0.00166	0.00163	0.00167	0.001653	4.59
-370 to 35	0.00182	0.00177	0.00185	0.001813	4.48
-415 to 35	0.00191	0.00188	0.00191	0.001900	4.22
-453 to 35	0.00195	0.00194	0.00196	0.001950	4.00

Table CXXXIII

ELEVATED TEMPERATURE THERMAL CONDUCTIVITY OF 6Al-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 32167, SHEET NO. 1777A-1)

Mean Temp., °F	Thermal Conductivity, BTU/ft hr °F			
	Specimen No. B9RE-1	Specimen No. B9RE-2	Specimen No. B9RE-3	Average
300	4.6	5.8	6.0	5.5
400	5.2	6.5	6.7	6.1
500	5.8	7.2	7.4	6.8
600	6.4	7.9	8.0	7.4
700	7.0	8.5	8.7	8.1
800	7.6	9.2	9.4	8.7
900	8.2	9.9	10.1	9.4
1000	8.8	10.6	10.7	10.0
1100	9.4	11.2	11.4	10.7
1200	10.0	11.9	12.1	11.3

V - TABLES FOR Ti-2.5Al-16V

TABLE CXXXIV

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.020 INCH
HEAT NUMBER— 22093

TEST TEMP °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/2 IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/2 IN.
80	C1LA1-1	182,000	167,000	15.2×10^6	3.5	8	-	C1TA1-1	179,000	166,000	14.6×10^6	3.5	8	12
	-4	179,000	168,000	15.1	3.5	8	16	-4	175,000	163,000	14.7	4.0	10	20
	-7	187,000	170,000	15.4	3.5	10	16	-7	181,000	168,000	14.8	3.0	4	4
	-10	178,000	164,000	14.8	4.5	12	20	-10	181,000	172,000	14.6	3.5	10	16
	-13	181,000	171,000	15.0	4.0	12	24	-13	180,000	167,000	14.4	4.0	10	20
	-16	179,000	168,000	14.8	4.0	12	-	-16	175,000	164,000	14.5	3.0	10	16(3)
	-19	180,000	171,000	15.1	-	-	-(1)	-19	179,000	167,000	14.5	3.5	12	20
	-22	182,000	169,000	15.0	4.5	12	16	-22	179,000	170,000	14.6	2.5	10	12
	-25	174,000	159,000	15.0	4.5	12	16	-25	167,000	156,000	14.4	3.5	8	12(3)
	-28	175,000	161,000	14.7	5.0	14	16	-28	172,000	161,000	14.5	3.5	8	12
	Average	180,000	167,000	15.0	4.1	11	18	Average	177,000	166,000	14.6	3.4	9	14
200	C1LA2-13	168,000	147,000	15.8×10^6	4.8	11	18(2)	C1TA2-6	174,000	159,000	14.5×10^6	2.0	14	16
	-15	168,000	149,000	14.3	5.0	8	16	-13	171,000	156,000	14.1	4.0	10	16
	-45	169,000	152,000	15.7	2.5	16	20(2)	-15	173,000	159,000	13.4	4.5	16	16
	Average	166,000	149,000	15.3	4.1	12	18	Average	173,000	158,000	14.0	3.5	11	16
400	C1LA3-8	151,000	133,000	14.0×10^6	3.8	8	-	C1TA3-16	162,000	145,000	14.4×10^6	3.5	12	-
	-18	150,000	133,000	12.9	3.8	11	-(2)	-18	160,000	142,000	13.8	3.5	8	-
	-19	155,000	134,000	13.4	3.0	10	16	-29	161,000	146,000	14.0	2.5	10	28
	Average	152,000	133,000	13.4	3.5	10		Average	161,000	144,000	14.1	3.2	10	
600	C1LA4-9	143,000	123,000	12.8×10^6	4.7	14	-	C1TA4-1	148,000	127,000	13.6×10^6	3.5	6	12
	-12	150,000	129,000	12.9	3.9	8	20	-12	151,000	132,000	13.8	3.0	12	-
	-44	155,000	132,000	12.9	3.5	12	-	-10	152,000	135,000	12.4	3.0	14	28
	Average	149,000	128,000	12.9	4.0	11		Average	150,000	131,000	13.3	3.2	11	20
800	C1LA6-14	131,000	113,000	11.8×10^6	5.2	14	28(2)	C1TA6-10	135,000	-	11.6×10^6	3.0	14	16(4)
	-20	136,000	113,000	11.7	2.0	8	12(2)	-14	137,000	116,000	11.3	-	-	-(1)
	-46	136,000	113,000	11.7	6.0	16	-	-17	138,000	116,000	12.5	4.5	10	-
	Average	134,000	113,000	11.7	4.4	13	20	Average	137,000	116,000	11.8	3.8	12	
900	C1LA7-3	109,000	80,500	10.8×10^6	12.5	-	-(3)	C1TA7-2	112,000	78,500	9.12×10^6	6.0	20	32(2)
	-5	107,000	76,500	12.0	6.8	20	23(3)	-?	115,000	80,300	10.3	9.5	18	28(2)
	-11	109,000	85,500	12.9	10.0	19	-	-5	111,000	78,700	10.1	11.0	24	32
	Average	108,000	80,800	11.6	9.8	20		Average	113,000	79,200	9.84	8.8	21	31
1000	C1LA8-2	63,100	41,800	6.43×10^6	28.0	44	57	C1TA8-4	70,000	42,300	7.35×10^6	18.0	34	48(2)
	-4	64,200	49,900	6.10	30.0	48	66	-?	69,000	43,800	9.12	15.0	30	40(2)
	-24	66,000	38,800	7.70	13.0	24	-(2)	-11	71,000	43,000	7.41	25.0	52	68(3)
	Average	64,500	43,400	6.74	24.0	39	62	Average	70,000	43,000	7.96	19.3	39	52

(1) Failed outside gage marks
(2) Failed at knife edge
(3) Failed within 1/4 inch of fillet
(4) Unusable load-deformation curve beyond elastic portion

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.020 INCH
HEAT NUMBER— 24990

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E_t, PSI	ELONGATION, % IN 2 IN.	¼ IN.	½ IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E_t, PSI	ELONGATION, % IN 2 IN.	¼ IN.	½ IN.
80	ChLA1-1	185,000	172,000	15.1×10^6	3.5	6	8	ChTA1-1	190,000	176,000	14.6×10^6	4.5	6	8
	-4	183,000	171,000	14.8	2.0	6	-(1)	-4	188,000	173,000	16.0	3.0	10	-(1)
	-7	170,000	159,000	14.5	3.0	8	20	-7	174,000	158,000	14.9	3.8	8	12
	-10	177,000	159,000	14.7	4.5	12	20	-10	175,000	162,000	13.5	5.0	12	-
	-13	181,000	169,000	15.0	3.0	6	12	-13	182,000	169,000	14.5	2.8	8	-(1)
	-16	181,000	166,000	15.0	3.5	6	12	-16	180,000	169,000	15.1	4.0	8	12
	-19	174,000	164,000	15.3	3.5	10	20(1)	-19	173,000	160,000	11.6	3.5	10	16
	-22	169,000	157,000	14.6	2.5	6	16	-22	173,000	160,000	14.8	4.2	10	-(1)
	-25	179,000	165,000	14.9	5.0	10	20	-25	188,000	168,000	14.8	5.0	12	16
	-28	182,000	168,000	14.5	1.5	8	16	-28	186,000	172,000	14.9	3.5	10	-(1)
	Average	178,000	165,000	14.9	3.4	7.8	16	Average	181,500	167,000	14.8	3.8	9	13
200	ChLA2-6	168,000	153,000	14.5×10^6	4.2	11	-	ChTA2-6	167,000	151,000	14.4×10^6	5.5	14	27(3)
	-13	167,000	155,000	15.8	4.2	10	18(2)	-13	158,000	145,000	14.4	4.8	14	26(3)
	-15	162,000	149,000	14.0	4.8	10	20	-15	159,000	147,000	14.4	3.8	10	-(1,3)
	Average	166,000	152,000	14.8	4.4	10	19	Average	161,000	148,000	14.4	4.7	13	26
400	ChLA3-8	156,000	140,000	14.1×10^6	3.8	13	-(1)	ChTA3-8	153,000	132,000	13.5×10^6	3.5	16	-(3)
	-16	151,000	137,000	14.2	3.5	11	-	-16	145,000	130,000	14.5	3.2	13	-(2)
	-31	151,000	135,000	14.5	3.5	12	20	-18	140,000	130,000	13.5	4.0	11	14(2)
	Average	153,000	137,000	14.3	3.6	12		Average	146,000	131,000	13.8	3.6	13	
600	ChLA4-1	156,000	138,000	13.5×10^6	3.0	-	-(1)	ChTA4-1	149,000	130,000	13.0×10^6	2.8	7	10(1)
	-9	145,000	127,000	12.8	3.5	-	-	-12	145,000	126,000	13.1	-	-	-(4)
	-12	153,000	134,000	13.4	3.5	13	-(1)	-20	151,000	136,000	13.7	-	-	-(4)
	Average	151,000	133,000	13.2	3.3			Average	148,000	131,000	13.3			
800	ChLA5-1	141,000	115,000	12.6×10^6	5.5	13	-(3)	ChTA5-4	137,000	109,000	11.6×10^6	4.8	18	-(1)
	-14	133,000	113,000	12.3	5.2	12	16	-10	132,000	111,000	11.6	2.5	-	-(2)
	-17	133,000	112,000	11.2	5.5	11	19	-17	127,000	107,000	10.6	4.5	14	-
	Average	136,000	113,000	12.0	5.4	12	18	Average	130,000	109,000	11.3	3.9	16	
900	ChLA7-3	115,000	77,800	11.5×10^6	7.8	20	24	ChTA7-3	112,000	91,600	8.95×10^6	18.0	30	42(1)
	-5	114,000	85,600	10.0	11.2	22	32	-5	112,000	84,700	10.3	19.0	30	32
	-11	114,000	83,600	10.5	6.2	21	32(1)	-7	108,000	83,600	10.6	-	-	-(4)
	Average	114,000	82,700	10.7	8.4	21	32	Average	111,000	86,600	9.95	18.5	30	37
1000	ChLA8-2	66,500	49,300	9.42	-	-	-(4)	ChTA8-2	64,700	37,800	9.83	-	-	-(4)
	-7	64,500	44,200	8.63	15.0	52	73	-11	64,200	37,600	9.83	-	-	-(4)
	-20	60,000	42,500	8.49	-	-	-(4)	-14	63,800	38,800	8.05	-	-	-(4)
	Average	63,700	45,300	8.85				Average	64,200	38,100	9.24			

(1) Failed within 1/4 inch of fillet.
(2) Failed at knife edge.
(3) Failed at loading hole, retested to obtain F_{tu} and elongation.
(4) Failed outside gage marks.

TABLE CXXXVI

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.020 INCH
HEAT NUMBER— 2814

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/8 IN.
80	C7LA1-1	178,000	170,000	14.9×10^6	3.0	12	16	C7TA1-1	190,000	171,000	15.3×10^6	4.0	12	18
	-4	179,000	166,000	14.6	4.0	14	20	-4	175,000	164,000	14.9	-	-	-(1)
	-7	179,000	164,000	14.7	-	-	-(1)	-7	176,000	164,000	15.3	4.5	12	-
	-10	181,000	167,000	14.7	3.0	14	16	-10	177,000	167,000	15.4	3.0	12	16
	-13	180,600	165,000	14.6	3.0	12	16	-13	182,000	168,000	15.3	5.0	14	-
	-16	177,000	162,000	14.6	4.0	10	12	-16	175,000	163,000	15.3	4.5	16	20
	-19	170,000	159,000	14.6	5.0	12	16	-19	177,000	164,000	15.3	4.5	14	24
	-22	176,000	164,000	14.4	4.0	14	20	-22	175,000	163,000	15.0	5.0	14	-
	-25	166,700	162,000	14.4	3.0	12	16	-25	172,000	160,000	15.2	3.2	14	20
	-28	182,000	167,000	14.7	3.5	12	16	-28	178,000	166,000	14.8	4.5	14	-
	Average	177,000	165,000	14.6	3.6	12	16	Average	178,000	165,000	15.2	4.2	14	20
200	C7LA2-6	159,000	146,000	15.2×10^6	5.2	13	21	C7TA2-6	165,000	149,000	13.9×10^6	4.5	13	18
	-13	151,700	140,000	13.1	3.8	10	-(2)	-13	152,000	142,000	14.2	5.2	13	20
	-15	155,000	144,000	14.2	4.3	10	16	-15	157,000	142,000	13.6	4.5	15	22
	Average	155,000	143,000	14.2	4.3	11	18	Average	158,000	144,000	13.9	4.7	15	22
400	C7LA3-16	148,000	136,000	13.2×10^6	3.2	12	17	C7TA3-8	151,000	136,000	13.4×10^6	3.8	12	-
	-18	147,000	134,000	14.0	4.0	12	-	-18	150,000	138,000	13.3	3.2	17	-
	-27	159,000	142,000	14.3	2.5	8	12	-24	154,000	136,000	13.2	4.0	12	-
	Average	151,000	137,000	13.9	3.2	11	14	Average	152,000	137,000	13.3	4.0	14	
600	C7LA4-1	146,000	129,000	13.1×10^6	2.8	11	-	C7TA4-1	150,000	131,000	13.2×10^6	3.8	12	-
	-12	151,000	134,000	13.7	3.2	10	-	-9	148,000	132,000	12.9	3.5	13	-
	-28	152,000	132,000	13.5	4.5	12	20	-20	152,000	132,000	13.3	1.5	10	16
	Average	150,000	132,000	13.4	3.5	11		Average	150,000	132,000	13.2	2.9	12	
800	C7LA5-10	131,000	112,000	11.0×10^6	6.2	12	-(3)	C7TA5-10	129,000	106,000	10.3×10^6	7.0	19	32
	-14	123,000	103,000	11.4	5.5	17	-(3)	-14	130,000	109,000	12.9	6.0	14	-
	-17	124,000	105,000	11.2	6.0	16	28	-22	133,000	113,000	12.3	3.0	8	12
	Average	127,000	107,000	11.2	5.9	15		Average	131,000	110,000	11.8	5.3	14	22
900	C7LA7-3	110,600	71,600	10.2×10^6	8.8	-	-(2)	C7TA7-3	104,000	71,900	10.6×10^6	10.5	30	44(2)
	-5	103,000	81,200	9.12	10.5	28	-(2)	-5	107,000	78,300	9.87	6.8	31	-
	-11	107,000	83,000	10.1	-	-	-(1)	-11	107,000	76,900	11.3	8.0	23	38
	Average	108,000	78,700	9.81	9.6			Average	106,000	75,700	10.6	9.1	28	43
1000	C7LA8-2	64,600	43,500	8.12×10^6	12.5	50	-(2)	C7TA8-2	61,800	40,500	7.21×10^6	19.5	60	-(2)
	-7	65,400	39,600	8.35	32.8	65	-(2)	-4	59,800	38,500	8.17	-	-	-(1)
	-23	63,000	36,800	8.74	21.0	40	52	-23	67,000	42,800	8.91	25.0	52	60
	Average	64,300	40,000	8.40	22.1	52		Average	62,900	40,600	8.11	22.2	56	

(1) Failed outside gage marks
(2) Failed within 1/4 inch of fillet
(3) Failed at knife edge

TABLE CXXV711

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.063 INCH
HEAT NUMBER— 22154

TEST TEMP °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.
80	C2LA2-3	179,000	162,000	15.1×10^6	5.5	22	31	C2TA2-1	186,000	172,000	15.5×10^6	5.2	16	26
	-4	175,000	159,000	14.9	7.8	20	-	-2	185,000	169,000	14.7	5.8	18	27
	-5	167,000	152,000	14.6	8.5	25	29	-3	169,000	156,000	14.7	6.5	19	31
	-6	174,000	156,000	14.9	7.5	25	40	-4	175,000	161,000	14.6	7.5	20	25
	-8	175,000	161,000	14.8	7.2	23	38	-5	171,000	158,000	15.3	7.2	23	31
	-9	176,000	159,000	14.6	8.0	22	31	-6	176,000	164,000	14.6	5.0	18	27
	-12	173,000	153,000	14.6	-	-	-	-7	182,000	167,000	14.7	6.0	17	28
	-13	172,000	160,000	15.0	7.0	24	36	-8	177,000	164,000	15.4	5.5	24	37
	-14	177,000	165,000	14.7	7.0	24	-	-9	178,000	164,000	14.8	6.0	20	-
	-33	176,000	161,000	15.4	5.5	-	-	-10	177,000	163,000	15.2	5.5	22	32
	Average	175,000	159,000	14.9	7.1	23	24	Average	178,000	164,000	15.0	6.0	20	29
200	C2LA2-6	157,000	139,000	13.6×10^6	8.5	28	-	C2TA2-6	160,000	146,000	14.1×10^6	6.0	26	36
	-15	161,000	145,000	13.6	7.0	24	-	-13	170,000	146,000	14.4	7.5	22	36
	-16	166,000	148,000	13.4	7.5	24	-	-15	168,000	153,000	14.2	6.0	20	26
	Average	161,000	144,000	13.5	7.7	25		Average	166,000	148,000	14.2	6.5	21	33
400	C2LA3-8	146,000	126,000	12.9×10^6	8.0	28	-	C2TA3-8	146,000	133,000	13.0×10^6	7.0	28	-
	-13	157,000	138,000	13.1	5.0	20	44(1)	-10	157,000	139,000	13.5	5.0	22	-
	-18	155,000	141,000	13.5	7.0	28	-	-16	156,000	139,000	13.8	7.0	22	-
	Average	153,000	132,000	13.2	6.7	25		Average	153,000	137,000	13.4	6.3	24	
600	C2LA4-9	137,000	118,000	12.8×10^6	6.0	26	-	C2TA4-1	155,000	137,000	13.0×10^6	5.0	20	32
	-14	132,000	115,000	11.2	3.5	20	42	-7	143,000	120,000	13.3	6.0	24	-
	-31	143,000	121,000	12.2	7.0	-	-	-12	150,000	126,000	12.5	-	-	-(2)
	Average	138,000	118,000	11.7	6.2	23		Average	149,000	128,000	12.9	5.5	22	
800	C2LA6-10	136,000	109,000	11.2×10^6	9.5	32	-	C2TA6-9	130,000	111,000	12.0×10^6	7.0	28	44
	-12	135,000	115,000	12.0	10.0	32	-	-10	132,000	111,000	11.3	7.0	28	36
	-17	131,000	109,000	10.4	10.0	30	44	-17	135,000	120,000	11.3	6.0	24	36
	Average	134,000	111,000	11.2	9.8	31		Average	132,000	114,000	11.5	6.7	27	39
900	C2LA7-3	105,000	79,700	8.65×10^6	20.0	70	-	C2TA7-3	111,000	91,500	9.97×10^6	10.5	48	72
	-5	103,000	85,300	9.69	16.0	60	-	-4	110,000	95,700	10.0	10.5	-	-(1)
	-11	108,000	84,500	9.70	11.0	60	88	-11	117,000	98,600	10.0	12.0	46	68
	Average	105,000	86,500	9.35	15.7	63		Average	113,000	95,300	10.0	11.0	47	70
1000	C2LA8-2	65,000	47,100	7.80×10^6	-	76	-	C2TA8-2	57,600	45,300	8.28×10^6	-	-	-(2)
	-21	58,100	34,200	9.50	-	-	-	-5	68,300	57,300	8.25	25.0	100	164
	-32	64,700	38,600	7.23	33.0	-	-	-14	64,500	49,300	7.25	30.0	124	188
	Average	62,600	40,000	8.18				Average	64,100	50,600	8.59	27.5	112	176

(1) Failed within 1/4 inch of fillet
(2) Failed outside gage marks

TABLE CXXXVIII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.063 INCH
HEAT NUMBER— 24806

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/2 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/2 IN.
80	C5LA1-1	194,000	182,000	15.1×10^6	5.5	20	-	C5TA1-1	198,000	185,000	15.3×10^6	3.5	-	-
	-2	199,000	187,000	15.0	4.5	14	-	-2	206,000	194,000	15.3	4.0	12	20
	-3	194,000	183,000	14.9	4.5	12	-	-3	197,000	187,000	14.9	3.5	-	-
	-4	199,000	185,000	15.2	4.5	12	20	-5	180,000	170,000	15.0	-	-	-(2)
	-5	167,000	156,000	14.6	5.5	22	36	-6	182,000	169,000	15.4	4.0	-	-
	-6	177,000	165,000	14.4	6.5	24	-	-7	168,000	156,000	15.0	4.3	20	-
	-7	169,000	157,000	15.3	5.0	-	-	-8	177,000	165,000	15.1	5.0	20	-
	-9	177,000	164,000	14.7	-	-	-	-10	182,000	169,000	15.2	6.5	-	-
	-10	177,000	164,000	15.2	6.0	-	-	-11	195,000	183,000	14.8	5.0	12	20
	-11	203,000	188,000	15.4	5.0	-	-	-12	195,000	181,000	14.8	5.0	12	20
	Average	186,000	173,000	15.0	5.2	17	28	Average	185,000	176,000	15.1	4.6	16	20
200	C5LA2-13	164,000	147,000	14.3×10^6	6.5	26	-	C5TA2-6	187,000	177,000	13.8×10^6	5.9	16	24
	-15	164,000	144,000	13.8	8.5	30	-	-13	185,000	168,000	13.8	6.3	24	-
	-21	161,000	146,000	14.1	5.5	28	52	-15	160,000	142,000	14.0	6.5	20	28
	Average	163,000	146,000	14.1	6.8	28		Average	171,000	156,000	13.9	5.8	20	26
400	C5LA3-7	173,000	158,000	14.1×10^6	4.0	16	28	C5TA3-6	179,000	166,000	14.4×10^6	4.5	20	-
	-8	179,000	157,000	13.5	4.0	18	32	-16	148,000	131,000	14.0	6.0	-	-
	-22	152,000	135,000	12.9	6.0	32	52	-18	162,000	145,000	14.0	5.5	-	-
	Average	168,000	155,000	13.5	4.7	22	37	Average	163,000	147,000	14.1	5.3		
600	C5LA4-9	145,000	126,000	11.9×10^6	5.5	-	-(1)	C5TA4-1	163,000	145,000	13.3×10^6	6.0	-	-
	-10	146,000	129,000	11.6	4.5	24	-(1)	-9	155,000	134,000	13.0	5.0	22	-
	-20	150,000	129,000	12.1	5.5	28	44	-12	147,000	130,000	12.7	5.0	-	-(1)
	Average	147,000	125,000	11.9	5.2	26		Average	155,000	136,000	13.0	5.3		
800	C5LA6-11	133,000	109,000	11.1×10^6	12.0	-	-(1)	C5TA6-10	137,000	115,000	12.2×10^6	11.0	34	52
	-12	132,000	116,000	11.3	12.0	-	-	-14	129,000	107,000	12.1	12.0	36	-
	-17	134,000	107,000	10.9	12.0	26	-(1)	-17	136,000	113,000	11.8	13.5	36	-
	Average	133,000	111,000	11.1	12.0			Average	134,000	112,000	12.0	12.2	35	52
900	C5LA7-3	116,000	74,900	10.9×10^6	24.0	70	92	C5TA7-3	108,000	70,200	11.5×10^6	24.5	66	92
	-5	112,000	79,000	8.52	26.0	58	76	-5	117,000	-	-	12.0	34	40(3)
	-14	104,000	80,000	10.9	-	-	-	-11	106,000	76,000	10.6	26.0	76	-
	Average	111,000	78,000	10.1	25.0	64	84	Average	110,300	73,100	11.0	20.8	59	66
1000	C5LA8-4	58,500	35,900	9.60×10^6	38.0	110	156	C5TA8-2	62,700	42,100	7.78×10^6	25.0	44	88(1)
	-18	56,600	34,300	7.82	52.0	126	180	-4	60,900	36,100	8.51	42.0	120	172
	-19	56,600	32,000	7.38	44.0	-	-	-7	63,600	35,000	6.84	39.0	186	-
	Average	57,200	34,100	8.27	44.0	118	168	Average	62,400	37,700	7.71	42.0	117	130

(1) Failed within 1/4 inch of fillet
(2) Failed outside gage marks
(3) Unusable load-deformation curve

TABLE CXXXIX

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.063 INCH
HEAT NUMBER— 24814

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.
80	C8LA1-1	166,000	150,000	14.4×10^6	6.0	20	32	C8TA1-1	178,000	164,000	14.9×10^6	6.8	28	32
	-2	172,000	160,000	13.8	5.0	24	-	-2	164,000	148,000	14.7	7.5	26	40
	-3	175,000	160,000	14.5	5.5	20	24	-3	176,000	162,000	14.9	5.0	20	-
	-4	176,000	159,000	13.7	6.0	20	-	-4	177,000	161,000	14.6	6.0	24	36
	-5	179,000	163,000	14.4	6.0	24	36	-5	169,000	177,000	14.5	3.5	18	-
	-6	180,000	162,000	14.1	5.5	20	36	-6	180,000	166,000	14.3	5.0	20	24
	-7	170,000	154,000	14.5	7.0	26	40	-7	179,000	165,000	14.7	5.0	22	-
	-8	181,000	166,000	14.0	6.0	20	-	-8	176,000	161,000	14.8	6.5	20	32
	-9	170,000	155,000	14.5	8.0	28	40	-9	178,000	163,000	14.0	5.0	20	24
	-10	172,000	157,000	13.9	6.5	24	32	-10	177,000	163,000	14.5	5.5	24	-
	Average	174,000	159,000	14.2	6.2	23	34	Average	177,000	163,000	14.6	5.6	22	31
200	C8LA2-6	160,000	-	-	7.6	30	48(2)	C8TA2-6	168,000	152,000	14.5×10^6	6.0	24	36
	-13	164,000	146,000	14.2×10^6	7.0	24	28	-13	162,000	146,000	14.1	6.0	20	28
	-15	162,000	145,000	14.2	7.0	24	44	-15	168,000	152,000	14.8	6.0	16	28
	Average	164,000	146,000	14.2	7.3	26	40	Average	166,000	150,000	14.5	6.0	20	31
400	C8LA3-8	158,000	138,000	13.8×10^6	6.5	24	36	C8TA3-6	156,000	136,000	14.1×10^6	5.5	24	40
	-16	156,000	136,000	13.4	8.0	24	44	-16	157,000	138,000	14.0	6.5	24	36
	-18	154,000	136,000	13.9	6.5	24	36	-18	154,000	137,000	14.0	5.5	28	44
	Average	156,000	137,000	13.7	6.3	24	39	Average	156,000	137,000	14.1	5.8	25	40
600	C8LA4-1	147,000	125,000	12.7×10^6	6.0	30	-	C8TA4-1	152,000	134,000	13.7×10^6	4.2	22	36
	-9	148,000	126,000	13.0	5.8	24	-	-9	151,000	132,000	13.1	5.5	24	-
	-12	152,000	132,000	13.2	6.0	28	-	-12	148,000	129,000	12.5	5.5	26	-
	Average	149,000	128,000	13.0	5.9	27		Average	150,000	132,000	12.9	5.1	24	
800	C8LA6-10	141,000	112,000	12.6×10^6	8.0	32	52	C8TA6-10	140,000	114,000	12.3×10^6	7.0	30	46
	-14	134,000	111,000	12.5	7.0	32	-	-14	141,000	111,000	11.8	8.0	32	-
	-17	135,000	107,000	12.4	7.5	30	-	-17	127,000	112,000	12.4	7.0	30	-
	Average	137,000	110,000	12.5	7.5	31		Average	137,000	112,000	12.2	7.3	31	
900	C8LA7-3	119,000	75,600	11.0×10^6	19.0	60	-	C8TA7-3	118,000	81,600	10.6×10^6	14.0	42	76
	-5	119,000	76,700	10.8	18.0	60	44	-5	122,000	82,300	10.2	19.0	56	-
	-11	123,000	75,400	10.6	18.0	56	60	-11	111,000	67,400	10.5	-	-	-(1)
	Average	120,000	75,900	10.6	18.3	59	52	Average	117,000	77,100	10.4	16.5	49	
1000	C8LA8-2	60,200	41,300	9.08×10^6	38.0	104	104(3)	C8TA8-2	84,000	34,800	10.1×10^6	44.0	140	200
	-4	60,000	32,400	9.35	40.0	106	- (4)	-4	80,000	36,000	9.31	32.0	80	132
	-7	84,500	36,100	9.93	37.0	112	-	-7	81,400	35,500	9.55	25.0	84	132
	Average	81,600	36,700	9.45	38.3	108		Average	81,800	35,400	9.77	33.7	101	155

(1) Failed outside gage marks.
(2) Unusable load-deformation curve.
(3) Failed within 1/4 inch of fillet.
(4) Failed at knife edge.

TABLE CXI.

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.125 INCH
HEAT NUMBER— 23354

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/8 IN.	ELONGATION, % IN 1/8 IN.
80	C3LA1-1	176,000	169,000	14.3×10^6	7.0	21	-	C3TA1-1	181,000	173,000	14.6×10^6	5.5	26	-
	-4	177,000	167,000	13.9	7.5	25	-	-4	177,000	167,000	14.2	5.8	20	36
	-7	180,000	170,000	13.9	7.2	27	42	-7	183,000	173,000	14.3	5.8	-	-
	-13	181,000	171,000	14.0	7.0	25	27	-10	187,000	176,000	14.2	5.8	19	-
	-16	173,000	163,000	13.9	9.0	25	-	-13	188,000	178,000	14.2	5.8	20	-
	-19	173,000	163,000	13.9	7.5	24	-	-16	172,000	167,000	14.4	7.0	22	-
	-22	172,000	159,000	13.9	8.2	25	-	-19	178,000	169,000	14.5	5.8	22	-
	-25	175,000	165,000	14.4	7.5	24	-	-22	177,000	166,000	14.4	6.5	25	-
	-28	176,000	166,000	14.5	6.5	20	32	-25	182,000	170,000	15.2	6.0	20	36
	-10	180,000	167,000	14.3	5.5	18	-	-28	181,000	171,000	14.8	7.0	20	-
	Average	176,000	166,000	14.1	7.3	23	34	Average	181,000	171,000	14.5	6.1	22	36
200	C3LA2-13	164,000	153,000	13.8×10^6	7.0	28	-	C3TA2-8	-	166,000	13.0×10^6	-	-	-(2)
	-15	164,000	154,000	13.8	7.5	27	50	-13	170,000	156,000	13.7	7.0	26	40
	-20	170,000	157,000	13.2	7.8	23	-	-15	170,000	160,000	13.8	6.5	20	-
	Average	166,000	155,000	13.6	7.4	26		Average	170,000	161,000	13.5	6.8	23	
400	C3LA3-22	160,000	145,000	14.2×10^6	6.0	27	-	C3TA3-6	166,000	149,000	13.8×10^6	6.0	20	32
	-25	156,000	140,000	13.6	7.2	25	-	-16	160,000	143,000	13.2	7.0	28	48
	-26	153,000	139,000	14.1	7.8	35	-	-18	160,000	144,000	13.3	7.0	32	-
	Average	156,000	141,000	14.0	7.0	29		Average	162,000	145,000	13.4	6.7	27	40
600	C3LA4-1	151,000	133,000	12.6×10^6	6.0	27	-	C3TA4-1	159,000	139,000	13.1×10^6	5.5	26	-
	-23	156,000	136,000	13.0	5.5	22	-	-9	160,000	142,000	12.8	6.0	24	36
	-24	152,000	131,000	12.5	7.5	34	-	-10	151,000	133,000	12.4	7.0	26	44
	Average	152,000	133,000	12.7	6.3	28		Average	157,000	138,000	12.8	6.2	25	40
800	C3LA6-10	128,000	109,000	11.6×10^6	15.0	50	-	C3TA6-12	138,000	116,000	11.9×10^6	12.5	40	68
	-14	132,000	111,000	11.2	13.0	45	-	-14	136,000	119,000	11.1	15.0	44	-
	-17	132,000	108,000	11.5	6.5	40	-	-17	136,000	115,000	12.2	11.5	32	-
	Average	131,000	109,000	11.4	11.5	45		Average	137,000	117,000	11.7	13.0	39	
900	C3LA7-5	102,000	74,900	10.1×10^6	29.0	91	129	C3TA7-3	109,000	79,000	10.3×10^6	-	-	-(3)
	-11	101,000	72,900	9.92	18.0	70	106	-5	107,000	81,600	10.2	21.5	68	100
	-19	106,000	72,400	9.72	28.0	76	104	-11	104,000	77,000	9.50	22.0	60	100
	Average	103,000	73,400	10.0	25.0	79	113	Average	107,000	82,500	9.97	21.8	64	100
1000	C3LA8-4	70,300	40,000	9.91	47.0	187	-	C3TA8-19	60,000	36,900	8.91	43.0	153	172
	-21	64,000	43,700	7.84	73.0	226	316	-7	60,600	40,800	8.33	-	-	-(3)
	-27	61,300	47,300	7.43	20.0	200	295(1)	-20	56,900	38,400	8.35	46.0	160	200
	Average	65,200	43,700	8.39	46.7	204	306	Average	59,200	38,700	8.53	44.5	156	186

(1) Failed within 1/4 inch of fillet.
(2) Failed at loading hole.
(3) Failed outside gage marks.

TABLE CXLJ

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY—2.5Al-16V
THICKNESS— 0.125 INCH
HEAT NUMBER— 23372

TEST TEMP. °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.
80	C6LA1-1	173,000	162,000	14.0x10^6	6.0	24	36	C6TA1-1	176,000	166,000	15.0x10^6	6.0	22	32
	-4	173,000	159,000	14.8	6.0	-	-	-4	175,000	164,000	14.8	7.0	22	36
	-7	174,000	162,000	14.3	5.0	22	32	-7	174,000	164,000	14.6	6.0	24	32
	-10	176,000	164,000	14.4	5.5	22	40	-10	178,000	165,000	14.6	5.3	20	32
	-13	178,000	165,000	14.5	6.5	20	-	-13	179,000	170,000	14.8	7.0	20	20
	-16	174,000	162,000	14.2	6.8	20	-	-16	175,000	166,000	14.5	6.3	22	32
	-19	176,000	166,000	14.4	5.8	22	28	-19	178,000	-	-	7.5	22	28(1,2)
	-22	177,000	161,000	14.7	4.8	24	-	-22	177,000	166,000	15.1	6.0	20	28
	-25	178,000	166,000	14.5	6.2	22	-	-25	180,000	170,000	15.1	4.0	20	32
	-28	181,000	166,000	14.9	7.0	22	-	-28	181,000	170,000	15.0	4.5	18	-
	Average	176,000	163,000	14.5	6.0	22	34	Average	177,000	167,000	14.8	6.0	21	30
200	C6LA2-13	166,000	154,000	14.2x10^6	7.0	28	-	C6TA2-6	166,000	154,000	14.5x10^6	7.5	30	40
	-19	167,000	154,000	15.2	6.5	28	-	-13	166,000	158,000	15.1	7.0	28	32
	-24	170,000	158,000	14.8	7.0	28	40	-15	173,000	158,000	14.2	6.5	24	-
	Average	168,000	155,000	14.7	6.8	28		Average	168,000	157,000	14.6	7.0	27	36
400	C6LA3-8	157,000	144,000	13.6 x10^6	8.0	28	-	C6TA3-5	158,000	142,000	13.7x10^6	7.0	24	40
	-20	151,000	145,000	14.0	6.5	28	-	-16	159,000	144,000	14.3	7.0	28	32
	-23	155,000	144,000	13.8	7.0	28	-	-18	159,000	147,000	14.1	6.0	22	-
	Average	154,000	142,000	13.8	7.2	28		Average	159,000	144,000	14.0	7.0	25	36
600	C6LA4-1	146,000	129,000	12.7x10^6	7.0	32	-	C6TA4-1	144,000	128,000	12.4x10^6	7.0	32	-
	-10	148,000	131,000	13.1	14.0	32	-	-9	151,000	-	-	7.5	26	52(2)
	-12	151,000	132,000	12.1	8.0	32	-	-12	149,000	134,000	12.7	6.5	32	-
	Average	148,000	131,000	12.5	9.7	32		Average	148,000	131,000	12.5	7.0	30	
800	C6LA5-14	133,000	115,000	11.4x10^6	14.0	44	-	C6TA6-4	130,000	114,000	11.1x10^6	14.5	50	80
	-17	138,000	116,000	12.1	14.0	44	-	-10	135,000	118,000	12.1	13.0	42	-
	-21	124,000	111,000	11.0	12.5	52	-	-17	136,000	118,000	10.8	14.0	44	68
	Average	132,000	115,000	11.5	13.5	47		Average	134,000	116,000	11.3	13.8	45	74
900	C6LA7-3	104,000	81,400	10.2x10^6	20.0	88	140	C6TA7-2	106,000	75,000	11.1x10^6	32.0	68	92
	-5	108,000	87,400	10.4	20.0	56	-	-3	105,000	76,600	12.0	24.5	76	-
	-11	100,000	85,600	10.1	23.0	80	108	-5	103,000	77,400	10.8	30.5	102	-
	Average	100,000	86,600	10.2	21.0	75	124	Average	105,000	76,300	11.3	29.0	82	
1000	C6LA8-2	63,000	39,600	8.20x10^6	-	-	-(1)	C6TA8-7	59,400	40,500	8.86x10^6	58.2	172	210
	-4	62,600	43,200	8.47	-	-	-(1)	-14	59,100	39,800	8.68	-	-	-(3)
	-22	63,800	38,000	8.70	52.5	96	-	-40	60,200	36,200	8.90	68.5	228	264
	Average	63,100	40,300	8.46				Average	59,600	38,600	8.81	63.4	200	302

(1) Failed within 1/4 inch of fillet.
(2) Unusable load-deformation curve.
(3) Failed outside gage marks.

TABLE CXLII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.125
HEAT NUMBER— 23345

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.
RT	C9LA1-1	167,000	152,000	14.5×10^6	7.5	18	28	C9TA1-1	171,000	159,000	14.6×10^6	6.8	-	-
	-7	170,000	163,000	15.3	8.0	28	36	-7	179,000	168,000	14.6	6.8	21	32
	-10	180,000	165,000	14.9	7.5	24	-	-10	185,300	171,000	14.7	8.8	18	-
	-13	177,000	163,000	14.8	8.0	24	32	-13	173,000	161,000	14.4	6.8	22	34
	-16	170,000	155,000	14.9	9.0	34	48	-16	176,000	164,000	15.3	8.5	26	-
	-19	173,000	157,000	15.2	7.0	24	36	-19	172,000	157,000	14.8	6.0	20	28
	-25	176,000	162,000	14.5	8.0	22	36	-22	167,000	174,000	15.4	5.5	20	-
	-28	177,000	162,000	15.1	8.0	22	36	-25	183,000	172,000	15.6	6.5	20	-
	-22	180,000	166,000	15.0	6.5	20	-	-28	174,000	160,000	15.7	6.0	20	28
	-4	166,000	-	14.1	5.5	28	44	-4	161,000	148,000	14.2	7.8	25	-
	Average	174,000	161,000	14.8	7.5	24	36	Average	176,000	163,000	14.9	7.0	21	30
200	C9LA2-6	162,000	145,000	15.1×10^6	8.5	32	28	C9TA2-8	174,000	159,000	15.3×10^6	5.8	14	28
	-13	159,000	141,000	14.3	9.0	30	36	-13	175,000	160,000	14.4	6.0	20	-
	-35	165,000	148,000	14.6	9.0	28	44	-15	175,000	162,000	14.8	5.5	16	24
	Average	162,000	145,000	14.7	8.8	30	36	Average	175,000	160,000	14.8	5.8	17	26
400	C9LA3-8	154,000	138,000	13.6×10^6	8.0	28	-	C9TA3-6	170,000	154,000	15.3×10^6	5.5	24	28
	-16	152,000	133,000	14.1	7.5	28	-	-16	162,000	145,000	14.9	5.8	22	36
	-18	147,000	128,000	14.1	7.5	28	52	-18	164,000	149,000	14.1	4.5	20	28
	Average	151,000	133,000	13.9	7.7	28		Average	165,000	149,000	14.8	5.3	22	31
600	C9LA4-1	137,000	115,000	13.0×10^6	8.0	36	48	C9TA4-1	145,000	128,000	13.5×10^6	6.5	32	-
	-9	142,000	120,000	12.8	7.0	32	-	-9	156,000	136,000	13.7	5.2	18	36
	-12	145,000	125,000	13.0	8.0	36	-	-12	152,000	133,000	13.4	6.0	22	36
	Average	142,000	120,000	12.9	7.7	35		Average	151,000	132,000	13.5	5.9	24	36
800	C9LA6-3	124,000	104,000	11.6×10^6	12.5	44	-	C9TA6-3	135,000	117,000	12.5×10^6	10.0	40	44
	-14	122,000	102,000	11.9	13.5	52	76	-10	135,000	117,000	12.3	8.0	28	40
	-17	132,000	116,000	12.0	13.5	48	-	-17	142,000	118,000	12.5	10.5	34	52
	Average	126,000	107,000	11.8	13.2	48		Average	137,000	117,000	12.4	9.5	34	45
900	C9LA7-5	103,000	80,900	10.2×10^6	24.0	72	-	C9TA7-5	115,000	86,700	11.7×10^6	24.5	72	-
	-10	108,000	86,700	10.5	29.0	88	-	-11	115,000	81,700	12.5	17.5	68	-
	-11	110,000	87,700	9.91	22.0	68	-	-14	116,000	83,300	12.2	22.5	68	-
	Average	107,000	85,100	10.2	25.0	76		Average	115,000	83,900	12.1	21.5	69	
1000	C9LA8-2	68,300	45,500	8.83×10^6	-	-	-(1)	C9TA8-2	72,100	46,000	10.8×10^6	-	-	-(1)
	-4	68,300	48,700	8.98	-	-	-(1)	-4	73,900	50,900	8.70	62.0	220	-
	-7	66,800	41,500	8.53	58.0	190	-	-7	73,400	45,900	10,0	-	-	-(1)
	Average	67,800	45,200	8.78				Average	73,100	47,600	9,83			

(1) Failed outside gage marks.

TABLE CXLIII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, (REACTIVE METALS HEAT NO. 22154)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
C2181-2	80	177,000	14.9	177,000	165,000	21.2
-5	80	171,000	14.7	172,000	161,000	17.5
-8	80	161,000	14.6	160,000	169,000	17.3
-11	80	159,000	14.4	159,000	161,000	36.9
-14	80	154,000	14.4	154,000	-	-
-17	80	167,000	14.1	167,000	174,000	24.6
-20	80	169,000	14.5	169,000	176,000	23.1
-23	80	168,000	14.5	168,000	174,000	23.6
-26	80	167,000	14.1	167,000	174,000	22.6
-29	80	170,000	14.5	170,000	177,000	23.1
Average		[illegible]	[illegible]			
C2182-7	200	147,000	14.0	147,000	154,000	19.9
-19	200	158,000	14.0	158,000	167,000	17.3
-32	200	[illegible]	[illegible]	158,000	-	-
Average		[illegible]	[illegible]			
C2183-13	400	136,000	13.2	135,000	141,000	23.3
-25	400	142,000	13.4	142,000	148,000	22.4
-37	400	[illegible]	[illegible]	140,000	147,000	19.2
Average		[illegible]	[illegible]			
C2184-15	800	122,000	13.2	119,000	-	-
-19	800	129,000	13.1	121,000	-	-
-26	800	[illegible]	[illegible]	123,000	130,000	17.3
Average		[illegible]	[illegible]			
C2186-4	800	121,000	12.1	119,000	129,000	22.4
-10	800	116,000	12.2	116,000	125,000	12.8
-12	800	[illegible]	[illegible]	121,000	130,000	13.4
Average		[illegible]	[illegible]			
C2187-3	900	[illegible]	13.9	[illegible]	99,500	11.2
-16	900	87,200	13.8	82,200	94,100	7.5
-28	900	[illegible]	[illegible]	80,800	122,000	7.9
Average		[illegible]	[illegible]			
C2188-1	1000	47,000	8.84	38,400	49,500	4.6
-9	1000	54,100	8.88	46,100	57,700	4.3
-21	1000	[illegible]	[illegible]	35,600	47,900	5.6
Average		[illegible]	[illegible]			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 22154)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
C2181-8	80	169,000	14.6	169,000	176,000	21.8
-11	80	168,000	14.8	168,000	175,000	22.8
-17	80	172,000	15.4	172,000	181,000	18.1
-20	80	166,000	15.0	166,000	173,000	21.0
-22	80	173,000	15.4	173,000	184,000	15.3
-23	80	170,000	15.4	-	-	-
-32	80	174,000	14.8	174,000	184,000	21.5
-35	80	177,000	15.1	177,000	184,000	23.8
-38	80	170,000	15.4	170,000	177,000	22.5
-44	80	172,000	15.2	172,000	183,000	15.3
Average		171,000	15.1			
C2182-10	200	151,000	14.5	155,000	166,000	13.9
-31	200	160,000	14.6	160,000	169,000	17.7
-40	200	151,000	14.1	151,000	162,000	14.9
Average		[illegible]	[illegible]			
C2183-23	400	[illegible]	13.6	136,000	149,000	15.5
-42	400	147,000	13.7	146,000	157,000	17.3
-43	400	[illegible]	[illegible]	146,000	-	-
Average		[illegible]	[illegible]			
C2184-46	800	135,000	13.0	136,000	-	-
-47	800	136,000	13.1	136,000	-	-
-48	800	[illegible]	[illegible]	127,000	140,000	10.8
Average		[illegible]	[illegible]			
C2186-[illegible]	800	127,000	12.0	126,000	138,000	10.8
-33	800	116,000	11.4	115,000	126,000	10.5
-49	800	[illegible]	[illegible]	118,000	-	-
Average		[illegible]	[illegible]			
C2187-16	900	89,900	10.5	85,300	130,000	5.8
-45	900	91,000	10.5	86,900	108,000	12.3
-50	900	[illegible]	[illegible]	80,600	-	-
Average		[illegible]	[illegible]			
C2188-32	1000	45,100	8.23	39,800	51,200	4.5
-33	1000	48,100	8.81	35,800	49,800	3.7
-41	1000	[illegible]	[illegible]	41,900	49,200	8.8
Average		[illegible]	[illegible]			

TABLE CXLIV

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 24606)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 PSI		Shape Parameter, n
C5LB1-2	80	186,000	14.7	187,000	194,000	25.4
-5	80	196,000	15.0	195,000	-	-
-8	80	194,000	15.0	196,000	199,000	35.6
-11	80	196,000	15.0	195,000	-	-
-14	80	173,000	14.6	172,000	180,000	20.3
-17	80	164,000	14.8	164,000	172,000	19.5
-20	80	196,000	14.3	194,000	160,000	24.2
-23	80	161,000	14.7	161,000	167,000	25.4
-26	80	172,000	15.2	172,000	179,000	23.1
-30	80	170,000	14.7	170,000	176,000	26.8
Average		177,000	14.9			
C5LB2-7	200	179,000	15.1	177,000	184,000	23.6
-19	200	140,000	13.8	136,000	144,000	16.5
-22	200	154,000	14.1	151,000	159,000	13.7
Average		158,000	14.3			
C5LB3-13	400	146,000	12.9	145,000	155,000	17.6
-24	400	137,000	12.1	134,000	143,000	14.7
-27	400	150,000	12.6	147,000	154,000	19.9
Average		144,000	12.5			
C5LB4-15	600	130,000	13.2	130,000	141,000	10.8
-18	600	129,000	13.2	125,000	135,000	11.8
-25	600	135,000	12.9	135,000	144,000	14.7
Average		131,300	13.1			
C5LB6-4	800	129,000	13.1	125,000	143,000	7.6
-10	800	136,000	13.2	133,000	146,000	9.4
-12	800	126,000	13.1	122,000	141,000	7.1
Average		130,000	13.1			
C5LB7-3	900	91,500	10.2	84,700	102,000	5.8
-16	900	91,200	9.40	89,700	125,000	3.7
-28	900	86,600	10.2	77,500	97,000	4.9
Average		89,800	9.93			
C5LB8-1	1000	44,100	7.29	36,900	47,600	4.5
-9	1000	42,400	7.57	31,200	44,000	3.6
-21	1000	43,000	8.30	34,100	44,400	4.4
Average		43,200	7.72			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 24606)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
C5TB1-2	80	196,000	15.6	196,000	206,000	16.6
-5	80	207,000	15.8	207,000	-	-
-8	80	202,000	15.8	202,000	-	-
-11	80	203,000	15.7	204,000	-	-
-14	80	184,000	15.4	184,000	191,000	24.8
-17	80	170,000	15.8	169,000	178,000	18.2
-20	80	158,000	14.5	157,000	170,000	12.4
-23	80	170,000	14.7	170,000	181,000	14.9
-26	80	180,000	15.3	180,000	188,000	21.6
-29	80	176,000	14.9	176,000	184,000	21.2
Average		185,000	15.4			
C5TB2-7	200	189,000	14.8	189,000	-	-
-19	200	153,000	14.5	152,000	161,000	16.5
-22	200	155,000	13.9	154,000	164,000	15.1
Average		166,000	14.4			
C5TB3-13	400	155,000	13.2	155,000	165,000	15.1
-24	400	142,000	13.4	140,000	152,000	11.8
-27	400	149,000	13.5	146,000	158,000	13.3
Average		149,000	13.4			
C5TB4-15	600	145,000	13.0	144,000	155,000	13.1
-18	600	133,000	13.6	131,000	141,000	13.1
-25	600	140,000	12.5	138,000	152,000	10.2
Average		139,000	13.0			
C5TB6-10	800	144,000	12.8	143,000	155,000	12.0
-12	800	143,000	13.7	140,000	155,000	9.9
-6	800	139,000	12.3	139,000	-	-
Average		142,000	12.9			
C5TB7-3	900	98,500	10.4	96,000	106,000	10.0
-16	900	91,300	11.1	86,200	98,200	7.8
-28	900	93,600	9.53	91,300	102,000	9.0
Average		94,700	10.3			
C5TB8-1	1000	47,200	9.06	36,600	49,300	4.0
-9	1000	42,900	8.91	28,600	42,800	3.2
-21	1000	46,200	7.56	38,600	49,300	4.0
Average		45,400	8.51			

TABLE CXLV

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
C8LB1-2	80	158,000	14.1	159,000	165,000	24.8
-5	80	169,000	14.3	170,300	177,000	23.1
-8	80	167,000	14.2	167,000	175,000	19.9
-11	80	173,000	14.3	174,000	181,000	24.6
-14	80	172,000	14.6	172,000	179,000	23.1
-17	80	169,000	14.4	169,000	176,000	23.1
-20	80	177,000	15.9	177,000	-	-
-23	80	164,000	14.5	164,000	171,000	22.1
-26	80	174,000	14.7	173,000	-	-
-29	80	160,000	14.6	159,000	-	-
Average		168,000	14.5			
C8LB2-7	200	155,000	14.1	158,000	165,000	21.6
-22	200	159,000	13.0	159,000	167,000	19.2
-30	200	146,000	13.4	146,000	152,000	23.1
Average		153,000	13.5			
C8LB3-13	400	145,000	12.9	147,000	155,000	17.9
-24	400	134,000	13.0	133,000	141,000	16.2
-27	400	141,000	12.2	141,000	150,000	15.3
Average		140,000	12.9			
C8LB4-15	600	131,000	13.4	128,000	138,000	12.8
-18	600	138,000	13.3	138,000	150,000	11.6
-25	600	132,000	11.0	134,000	145,000	12.3
Average		135,000	13.2			
C8LB5-4	800	113,000	12.9	113,000	125,000	9.8
-10	800	118,000	12.2	115,000	125,000	11.6
-12	800	121,000	12.5	122,000	-	-
Average		118,000	12.5			
C8LB7-3	900	87,400	10.3	83,500	98,400	5.4
-16	900	99,900	9.68	86,700	107,000	5.2
-28	900	80,000	10.8	75,000	90,500	5.9
Average		95,800	10.3			
C8LB8-1	1000	45,200	9.08	36,100	46,000	4.7
-9	1000	41,100	9.21	26,200	41,200	3.0
-21	1000	42,300	9.25	28,200	42,000	3.2
Average		42,900	9.18			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
C8TB1-2	80	162,000	14.2	163,000	172,000	17.6
-5	80	178,000	14.8	178,000	187,000	18.8
-8	80	176,000	14.3	175,000	184,000	18.8
-11	80	182,000	14.4	181,000	190,000	19.2
-14	80	185,000	14.6	184,000	-	-
-17	80	176,000	14.1	174,000	-	-
-20	80	185,000	14.7	184,000	-	-
-23	80	167,000	14.9	165,000	173,000	19.9
-26	80	184,000	14.6	183,000	-	-
-29	80	168,000	14.7	167,000	174,000	22.6
Average		176,000	14.5			
C8TB2-7	200	161,000	13.8	161,000	171,000	15.8
-19	200	171,000	14.2	170,000	181,000	15.1
-22	200	168,000	13.3	171,000	178,000	23.1
Average		167,000	13.8			
C8TB3-13	400	150,000	12.8	153,000	163,000	15.1
-24	400	141,000	12.5	140,000	150,000	13.9
-27	400	152,000	12.7	152,000	163,000	13.8
Average		141,000	12.7			
C8TB4-15	600	132,000	13.8	130,000	142,000	11.1
-18	600	144,000	13.5	145,000	157,000	12.1
-25	600	146,000	13.6	141,000	155,000	10.4
Average		141,000	13.6			
C8TB5-4	800	124,000	12.2	124,000	134,000	12.4
-10	800	119,000	12.6	117,000	130,000	9.4
-12	800	123,000	12.0	122,000	134,000	10.5
Average		122,000	12.3			
C8TB7-3	900	91,200	9.82	86,100	103,000	6.0
-16	900	97,700	10.7	94,200	110,000	6.7
-21	900	92,700	10.9	88,300	-	-
Average		93,900	10.5			
C8TB8-1	1000	54,700	7.13	52,200	58,700	8.5
-9	1000	50,400	7.92	51,100	58,300	7.7
-28	1000	50,900	6.85	47,400	55,800	6.4
Average		52,000	7.30			

TABLE CXLVI

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED A-SAL-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, (REACTIVE METALS HEAT NO. 23354)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_e at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
C3LB1-2	80	170,000	15.1	170,000	177,000	23.1
-5	80	169,000	14.8	169,000	176,000	23.1
-8	80	171,000	14.8	171,000	178,000	23.1
-11	80	171,000	15.1	171,000	-	-
-14	80	175,000	15.3	175,000	-	-
-17	80	165,000	14.9	165,000	171,000	26.4
-20	80	166,000	14.7	166,000	171,000	31.0
-23	80	161,000	15.0	161,000	169,000	18.7
-26	80	168,000	14.2	167,000	174,000	25.9
-29	80	170,000	15.4	169,000	176,000	23.0
Average		169,000	15.0			
C3LB2-7	200	159,000	14.5	159,000	166,000	21.6
-19	200	154,000	14.2	154,000	160,000	24.2
-22	200	153,000	14.1	151,000	159,000	18.2
Average		155,000	14.3			
C3LB3-13	600	150,000	13.8	149,000	156,000	20.0
-24	600	140,000	13.0	140,000	148,000	17.0
-27	600	145,000	14.1	145,000	151,000	20.9
Average		145,000	13.6			
C3LB4-15	600	142,000	12.9	141,000	148,000	15.0
-18	600	132,000	12.5	131,000	137,000	11.6
-25	600	132,000	13.0	130,000	137,000	11.9
Average		135,000	12.8			
C3LB6-4	800	122,000	11.8	121,000	-	-
-10	800	122,000	11.6	121,000	131,000	12.1
-12	800	122,000	11.9	120,000	131,000	11.6
Average		122,000	11.8			
C3LB7-3	900	77,500	11.1	81,300	85,900	3.6
-16	900	77,300	10.8	80,000	87,600	4.1
-28	900	77,200	10.6	80,000	89,500	3.9
Average		76,900	10.8			
C3LB8-1	1000	39,800	8.54	46,000	-	-
-9	1000	39,100	9.30	23,300	37,200	2.9
-21	1000	42,500	8.29	31,600	44,500	3.6
Average		44,200	8.74			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED A-SAL-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 23354)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_e at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
C3TB1-2	80	172,000	15.1	172,000	-	-
-5	80	176,000	14.8	177,000	185,000	20.9
-8	80	182,000	15.8	182,000	188,000	24.5
-11	80	180,000	15.4	180,000	188,000	21.0
-14	80	186,000	15.2	186,000	195,000	19.9
-17	80	173,000	15.8	173,000	180,000	22.5
-20	80	174,000	15.4	174,000	180,000	24.2
-23	80	172,000	14.9	172,000	179,000	24.7
-26	80	173,000	15.3	173,000	183,000	16.8
-29	80	171,000	14.9	173,000	181,000	21.8
Average		176,000	15.3			
C3TB2-7	200	168,000	15.5	167,000	177,000	16.7
-22	200	161,000	14.4	161,000	170,000	16.8
-31	200	165,000	14.2	165,000	-	-
Average		165,000	14.			
C3TB3-6	400	151,000	14.2	151,000	159,000	17.3
-24	400	146,000	13.4	146,000	153,000	18.7
-27	400	150,000	14.5	149,000	158,000	16.3
Average		149,000	14.0			
C3TB4-18	600	137,000	13.2	136,000	146,000	11.6
-25	600	138,000	13.4	137,000	150,000	10.8
-30	600	140,000	13.1	140,000	149,000	15.3
Average		138,000	13.2			
C3TB6-4	800	121,000	12.1	118,000	137,000	6.9
-10	800	127,000	12.2	126,000	-	-
-12	800	124,000	11.9	121,000	139,000	7.5
Average		124,000	12.1			
C3TB7-3	900	90,700	10.8	85,500	101,000	6.4
-16	900	85,600	11.3	76,400	94,600	5.2
-32	900	86,900	10.4	79,100	-	-
Average		87,700	10.9			
C3TB8-1	1000	46,200	9.41	35,800	46,900	4.3
-9	1000	43,400	8.68	32,400	44,600	3.8
-21	1000	41,700	9.23	30,200	41,200	3.9
Average		43,800	9.11			

TABLE CXLVII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR β-SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 23372)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
C6LB1-2	RT	171,000	15.4	171,000	175,000	38.9
-5	RT	172,000	15.3	172,000	-	-
-8	RT	174,000	15.8	174,000	178,000	35.1
-11	RT	175,000	15.6	175,000	180,000	32.0
-14	RT	174,000	15.6	174,000	180,000	31.7
-17	RT	169,000	15.6	169,000	175,000	24.1
-20	RT	170,000	15.5	170,000	181,000	27.6
-23	RT	169,000	15.5	169,000	176,000	23.1
-26	RT	174,000	15.3	174,000	181,000	26.6
-29	RT	173,000	15.6	178,000	185,000	24.2
Average	RT	173,000	15.5			
C6LB2-7	200	159,000	15.0	159,000	-	-
-19	200	159,000	14.7	159,000	165,000	44.1
-22	200	156,000	14.6	158,000	164,000	32.6
Average	200	158,000	14.8			
C6LB3-13	400	150,000	14.4	150,000	155,000	22.3
-24	400	142,000	14.3	142,000	149,000	18.9
-27	400	148,000	14.2	149,000	156,000	20.5
Average	400	147,000	14.3			
C6LB4-15	600	138,000	13.7	137,000	145,000	15.2
-18	600	139,000	13.7	139,000	147,000	16.7
-25	600	136,000	13.6	135,000	145,000	13.9
Average	600	138,000	13.7			
C6LB5-4	800	119,000	11.7	116,000	126,000	10.3
-13	800	119,000	11.9	118,000	128,000	11.9
-12	800	122,000	11.9	120,000	129,000	13.3
Average	800	120,000	11.8			
C6LB7-3	900	85,300	10.3	78,800	86,700	5.3
-16	900	84,300	10.7	75,700	86,300	4.7
-25	900	89,200	10.5	79,800	90,200	5.6
Average	900	86,300	10.5			
C6LB6-1	1000	50,100	9.53	22,100	33,100	3.2
-9	1000	42,200	8.69	20,300	32,700	3.0
-21	1000	45,000	9.42	25,700	39,200	3.1
Average	1000	39,100	9.11			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 23372)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
C6TB1-5	RT	175,000	15.8	175,000	180,000	29.3
-8	RT	172,000	15.9	172,000	178,000	23.9
-11	RT	177,000	15.4	177,000	183,000	28.9
-14	RT	179,000	15.8	179,000	185,000	28.5
-17	RT	175,000	15.5	175,000	182,000	23.6
-20	RT	178,000	15.9	178,000	184,000	28.3
-23	RT	178,000	15.8	178,000	184,000	28.9
-26	RT	178,000	16.0	178,000	187,000	28.8
-29	RT	181,000	16.0	181,000	187,000	29.3
-30	RT	181,000	15.8	181,000	188,000	25.7
Average	RT	177,000	15.8			
C6TB2-13	200	163,000	15.2	162,000	169,000	23.4
-19	200	164,000	15.0	164,000	170,000	26.0
-22	200	165,000	15.0	165,000	172,000	23.2
Average	200	164,000	15.1			
C6TB3-7	400	145,000	14.0	144,000	152,000	19.3
-24	400	149,000	14.3	148,000	161,000	11.4
-27	400	151,000	14.1	150,000	-	-
Average	400	148,000	14.2			
C6TB4-1	600	136,000	13.4	134,000	144,000	11.6
-15	600	141,000	13.7	140,000	148,000	17.4
-25	600	145,000	13.8	144,000	155,000	13.1
Average	600	141,000	13.6			
C6TB5-4	800	122,000	12.1	120,000	130,000	12.6
-13	800	120,000	12.1	119,000	128,000	12.8
-12	800	118,000	12.0	116,000	127,000	10.8
Average	800	120,000	12.1			
C6TB7-3	900	86,600	10.5	85,100	90,800	7.9
-16	900	82,000	10.7	78,300	88,000	6.8
-25	900	87,300	10.5	79,800	90,800	5.2
Average	900	85,300	10.6			
C6TB6-7	1000	50,500	7.47	44,300	51,100	7.2
-21	1000	45,500	7.94	37,900	47,800	6.8
-11	1000	46,500	7.48	33,200	41,200	6.2
Average	1000	47,500	7.63			

TABLE CXLVIII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 23345)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
C9LB1-2	80	161,000	15.8	162,000	170,000	20.6
-5	80	160,000	15.4	160,000	165,000	30.2
-8	80	170,000	15.8	170,000	175,000	32.3
-11	80	174,000	15.8	173,000	179,000	27.0
-14	80	172,000	15.7	172,000	177,000	28.4
-17	80	165,000	15.5	164,000	169,000	34.8
-20	80	168,000	15.5	167,000	172,000	33.6
-23	80	173,000	15.8	173,000	178,000	35.2
-26	80	177,000	15.8	177,000	184,000	26.2
-29	80	173,000	15.8	170,000	176,000	20.6
Average		169,000	15.7			
C9LB2-7	200	155,000	14.8	155,000	160,000	27.2
-22	200	159,000	15.2	159,000	164,000	16.5
-2[illegible]	200	157,000	14.[illegible]	156,000	161,000	21.2
Average		157,000	14.[illegible]			
C9LB[illegible]-13	400	139,000	13.7	138,000	144,000	18.3
-26	400	142,000	13.9	142,000	146,000	15.0
-27	400	145,000	14.2	144,000	149,000	17.8
Average		142,000	13.9			
C9LB4-15	600	129,000	13.4	127,000	130,000	15.1
-18	600	124,000	12.9	123,000	131,000	15.7
-35	600	125,000	13.2	125,000	134,000	14.7
Average		126,000	13.1			
C9LB5-4	800	120,000	12.8	120,000	123,000	10.5
-20	800	121,000	11.2	121,000	125,000	11.3
-32	800	122,000	11.6	118,000	127,000	13.1
Average		121,000	11.9			
C9LB7-3	900	80,000	11.0	86,000	98,000	7.7
-16	900	85,000	11.3	78,000	95,000	5.0
-28	900	82,000	10.9	77,000	95,000	5.3
Average		82,000	11.1			
C9LB6-1	1000	66,000	9.73	33,000	63,000	4.3
-9	1000	66,000	8.76	38,000	63,000	4.8
-21	1000	67,000	9.61	34,000	61,000	3.9
Average		66,000	9.03			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS SHEET NO. 23345)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
C9TB1-2	80	170,000	15.7	170,000	179,000	18.2
-5	80	164,000	15.6	163,000	169,000	23.9
-8	80	179,000	16.3	178,000	188,000	16.5
-11	80	184,000	15.9	184,000	194,000	18.1
-14	80	179,000	15.9	178,000	185,000	23.7
-17	80	176,000	15.8	173,000	181,000	21.6
-20	80	171,000	15.6	171,000	179,000	20.1
-23	80	184,000	15.8	184,000	192,000	27.3
-26	80	187,000	15.9	187,000	197,000	18.2
-29	80	179,000	15.7	176,000	181,000	22.9
Average		177,000	15.8			
C9TB2-7	200	162,000	15.3	161,000	170,000	17.4
-19	200	158,000	14.8	157,000	167,000	16.0
-22	200	168,000	15.3	168,000	178,000	16.7
Average		163,000	15.1			
C9TB3-13	400	157,000	14.5	156,000	156,000	14.4
-24	400	158,000	14.7	157,000	159,000	12.2
-27	400	155,000	14.3	155,000	165,000	14.3
Average		156,000	14.5			
C9TB4-15	600	138,000	13.6	139,000	-	-
-18	600	133,000	13.7	131,000	142,000	11.4
-25	600	135,000	13.7	134,000	157,000	11.9
Average		135,000	13.7			
C9TB5-10	800	124,000	13.0	127,000	135,000	9.7
-12	800	125,000	13.2	123,000	135,000	10.5
-30	800	116,000	12.8	114,000	127,000	9.2
Average		122,000	13.0			
C9TB7-3	900	80,000	12.3	80,000	100,000	5.0
-16	900	88,000	11.6	78,000	95,000	4.4
-28	900	88,000	11.8	82,000	104,000	4.8
Average		85,000	11.9			
C9TB6-1	1000	45,000	10.4	32,000	44,000	3.7
-9	1000	47,000	10.7	30,000	39,000	3.2
-21	1000	47,000	9.78	30,000	43,000	3.6
Average		46,000	10.3			

TABLE CXLIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br},(1) PSI
C1LD1-4	80	247,000	240,000	
-24	80	251,000	244,000	
-27	80	243,000	231,000	
-56	80	225,000	220,000	
-65	80	252,000	237,000	
-75	80	256,000	237,000	
-91	80	264,000	254,000	262,000
-104	80	256,000	241,000	
-115	80	241,000	223,000	
-168	80	246,000	236,000	240,000
Average		251,000	238,000	
C1LD2-31	200	244,000	-(2)	
-53	200	235,000	231,000	
-67	200	246,000	229,000	
Average		242,000	230,000	
C1LD3-13	400	241,000	221,000	
-247	400	234,000	208,000	
-169	400	209,000	187,000	
Average		228,000	205,000	
C1LD4-55	600	221,000	198,000	
-93	600	231,000	203,000	
-120	600	232,000	211,000	
Average		228,000	204,000	
C1LD6-46	800	211,000	198,000	206,000
-48	800	212,000	187,000	
-125	800	205,000	187,000	
Average		209,000	189,000	
C1LD7-52	900	180,000	161,000	
-62	900	176,000	153,000	
-110	900	171,000	154,000	
Average		176,000	156,000	
C1LD8-17	1000	122,000	101,000	
-154	1000	118,000	108,000	
-157	1000	118,000	90,000	103,000
Average		119,000	97,700	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature °F	F_{bru}, PSI	F_{bry}, PSI
C1TD1-4	80	258,000	234,000
-24	80	247,000	222,000
-27	80	243,000	226,000
-56	80	256,000	241,000
-65	80	253,000	245,000
-75	80	259,000	242,000
-91	80	250,000	228,000
-104	80	244,000	226,000
-115	80	253,000	239,000
-168	80	262,000	236,000
Average		252,000	234,000
C1TD2-31	200	255,000	229,000
-53	200	250,000	- (1)
-67	200	262,000	245,000
Average		256,000	237,000
C1TD3-13	400	236,000	221,000
-49	400	239,000	215,000
-147	400	241,000	224,000
Average		239,000	220,000
C1TD4-55	600	229,000	206,000
-93	600	232,000	216,000
-120	600	226,000	206,000
Average		230,000	209,000
C1TD6-40	800	210,000	181,000
-46	800	205,000	167,000
-125	800	211,000	171,000
Average		209,000	166,000
C1TD7-154	900	181,000	162,000
-157	900	180,000	160,000
-160	900	170,000	159,000
Average		185,000	161,000
C1TD8-17	1000	125,000	106,000
-52	1000	149,000	112,000
-62	1000	141,000	114,000
Average		138,000	111,000

(1) Unusable load-deformation curve.

TABLE CL

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature °F	F_{bru}, PSI	F_{bry}, PSI
CLTD1-4	80	258,000	249,000
-24	80	249,000	229,000
-27	80	253,000	247,000
-56	80	252,000	237,000
-65	80	259,000	227,000
-75	80	253,000	227,000
-91	80	255,000	248,000
-104	80	247,000	230,000
-168	80	250,000	227,000
-201	80	257,000	249,000
Average		253,000	237,000
CLTD2-31	200	241,000	233,000
-53	200	251,000	226,000
-67	200	243,000	215,000
Average		245,000	225,000
CLTD3-13	400	252,000	232,000
-49	400	242,000	214,000
-147	400	239,000	228,000
Average		244,000	225,000
CLTD4-46	600	222,000	213,000
-93	600	225,000	198,000
-120	600	234,000	216,000
Average		227,000	209,000
CLTD6-40	800	223,000	194,000
-55	800	198,000	171,000
-125	800	226,000	186,000
Average		216,000	184,000
CLTD7-154	900	205,000	172,000
-157	900	186,000	145,000
-202	900	181,000	172,000
Average		191,000	163,000
CLTD8-17	1000	132,000	- (1)
-62	1000	131,000	84,300
-203	1000	137,000	92,000
Average		133,000	88,200

(1) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
CTTD1-4	80	263,000	243,000
-24	80	257,000	235,000
-27	80	285,000	261,000
-56	80	260,000	234,000
-65	80	255,000	239,000
-75	80	255,000	228,000
-91	80	251,000	230,000
-104	80	253,000	234,000
-168	80	251,000	235,000
-169	80	262,000	247,000
Average		259,000	239,000
CTTD2-31	200	259,000	244,000
-53	200	242,000	233,000
-67	200	259,000	234,000
Average		253,000	237,000
CTTD3-13	400	245,000	227,000
-49	400	242,000	212,000
-147	400	245,000	236,000
Average		244,000	225,000
CTTD4-55	600	224,000	203,000
-93	600	226,000	210,000
-120	600	230,000	204,000
Average		227,000	206,000
CTTD6-40	800	210,000	193,000
-46	800	214,000	194,000
-125	800	212,000	194,000
Average		212,000	194,000
CTTD7-154	900	195,000	157,000
-157	900	192,000	163,000
-160	900	193,000	164,000
Average		193,000	161,000
CTTD8-17	1000	148,000	93,500
-52	1000	148,000	87,500
-62	1000	154,000	102,000
Average		150,000	94,300

TABLE CLI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.050 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C7LD1- 4	80	250,000	248,000
24	80	257,000	241,000
27	80	252,000	232,000
56	80	253,000	236,000
65	80	251,000	238,000
75	80	256,000	240,000
91	80	253,000	237,000
104	80	253,000	241,000
115	80	240,000	227,000
168	80	261,000	244,000
Average		253,000	238,000
C7LD2- 13	200	251,000	234,000
31	200	247,000	229,000
53	200	250,000	237,000
Average		249,000	233,000
C7LD3- 49	400	253,000	224,000
67	400	240,000	227,000
147	400	238,000	220,000
Average		246,000	224,000
C7LD4- 55	600	222,000	198,000
93	600	220,000	201,000
120	600	221,000	200,000
Average		222,000	200,000
C7LD6- 40	800	220,000	202,000
46	800	191,000	184,000
125	800	174,000	156,000
Average		195,000	181,000
C7LD7- 52	900	18 ,000	173,000
62	900	182,000	155,000
154	900	167,000	145,000
Average		179,000	158,000
C7LD8- 17	1000	130,000	106,000
157	1000	124,000	103,000
160	1000	126,000	-(1)
Average		127,000	104,000

(1) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.050 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C7TD1- 4	80	246,000	222,000
24	80	248,000	226,000
27	80	248,000	230,000
56	80	259,000	240,000
65	80	249,000	241,000
75	80	252,000	239,000
91	80	245,000	234,000
104	80	247,000	235,000
115	80	248,000	239,000
168	80	260,000	241,000
Average		250,000	234,000
C7TD2- 31	200	259,000	232,000
53	200	261,000	238,000
67	200	247,000	230,000
Average		256,000	233,000
C7TD3- 13	400	229,000	209,000
49	400	235,000	216,000
147	400	232,000	211,000
Average		232,000	212,000
C7TD4- 40	600	233,000	211,000
93	600	207,000	188,000
120	600	222,000	194,000
Average		221,000	198,000
C7TD6- 46	800	218,000	203,000
55	800	231,000	215,000
125	800	208,000	183,000
Average		219,000	200,000
C7TD7-154	900	186,000	165,000
157	900	185,000	156,000
160	900	184,000	164,000
Average		185,000	162,000
C7TD8- 17	1000	124,000	98,500
52	1000	125,000	106,000
62	1000	121,000	98,000
Average		123,000	101,000

TABLE CIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C1LD1-38	80	250,000	232,000
-58	80	246,000	241,000
-66	80	249,000	238,000
-71	80	241,000	223,000
-87	80	244,000	240,000
-92	80	244,000	230,000
-118	80	254,000	233,000
-132	80	238,000	229,000
-134	80	238,000	227,000
-141	80	244,000	231,000
Average		244,000	232,000
C1LL2-51	200	250,000	235,000
-105	200	236,000	220,000
-124	200	249,000	244,000
Average		245,000	226,000
C1LD3-36	400	241,000	223,000
-80	400	225,000	210,000
-156	400	233,000	195,000
Average		233,000	209,000
C1LD4-73	600	223,000	209,000
-117	600	219,000	198,000
-139	600	221,000	198,000
Average		221,000	202,000
C1LD6-88	800	202,000	188,000
-116	800	200,000	184,000
-159	800	218,000	194,000
Average		207,000	189,000
C1LD7-21	900	183,000	162,000
-30	900	170,000	145,000
-133	900	174,000	144,000
Average		176,000	150,000
C1LD8-41	1000	108,000	82,500
-59	1000	123,000	94,500
-61	1000	118,000	97,500
Average		116,000	91,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
C1TD1-38	80	229,000	226,000	
-58	80	245,000	238,000	
-66	80	239,000	231,000	
-71	80	247,000	233,000	
-87	80	231,000	231,000	
-92	80	245,000	231,000	
-118	80	251,000	241,000	
-132	80	242,000	- (2)	
-134	80	231,000	225,000	
-141	80	220,000	219,000	
Average		238,000	230,000	
C1TL2-36	200	231,000	224,000	
-105	200	224,000	197,000	
-129	200	227,000	222,000	
Average		227,000	214,000	
C1TD3-51	400	222,000	214,000	227,000
-80	400	214,000	183,000	
-126	400	231,000	245,000	
Average		222,000	214,000	
C1TD4-73	600	218,000	197,000	
-116	600	209,000	200,000	
-156	600	224,000	212,000	
Average		217,000	203,000	
C1TD6-88	800	195,000	164,000	
-117	800	207,000	186,000	
-159	800	195,000	161,000	
Average		199,000	184,000	
C1TD7-21	900	169,000	148,000	
-30	900	164,000	140,000	
-133	900	173,000	154,000	
Average		169,000	147,000	
C1TD8-41	1000	112,000	91,000	
-59	1000	112,000	83,500	
-61	1000	115,000	82,400	
Average		113,000	86,000	

(1) Initial failure.
(2 Unusable load-deformation curve.

TABLE CLIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
CLLD1-38	80	236,000	224,000	
-58	80	21[illegible],000	207,000	
-66	80	249,000	224,000	
-71	80	222,000	207,000	
-87	80	238,000	229,000	
-92	80	254,000	227,000	
-118	80	232,000	226,000	
-132	80	236,000	236,000	
-134	80	239,000	236,000	
-141	80	240,000	226,000	
Average		237,000	224,000	
CLLD2-51	200	243,000	234,000	
-105	200	236,000	218,000	
-124	200	231,000	200,000	
Average		237,000	217,000	
CLLD3-36	400	235,000	221,000	
-80	400	229,000	211,000	
-156	400	237,000	220,000	
Average		234,000	217,000	
CLLD4-73	600	218,000	201,000	
-88	600	224,000	216,000	
-117	600	210,000	196,000	
Average		217,000	204,000	
CLLD6-139	800	212,000	197,000	
-146	800	210,000	194,000	
-159	800	203,000	187,000	
Average		208,000	193,000	
CLLD7-21	900	163,000	147,000	148,000
-30	900	187,000	157,000	
-133	900	178,000	169,000	
Average		176,000	158,000	
CLLD8-41	1000	140,000	94,200	
-59	1000	136,000	- (2)	
-61	1000	136,000	93,400	
Average		138,000	93,800	

(1) Initial failure.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
CLTD1-38	80	236,000	234,000
-58	80	233,000	220,000
-66	80	234,000	225,000
-71	80	239,000	233,000
-87	80	243,000	228,000
-92	80	237,000	231,000
-118	80	232,000	222,000
-132	80	233,000	226,000
-134	80	240,000	233,000
-141	80	233,000	230,000
Average		236,000	228,000
CLTD2-51	200	233,000	216,000
-105	200	248,000	231,000
-124	200	230,000	222,000
Average		237,000	223,000
CLTD3-36	400	228,000	210,000
-80	400	208,000	191,000
-156	400	240,000	218,000
Average		225,000	206,000
CLTD4-73	600	194,000	171,000
-88	600	176,000	168,000
-139	600	203,000	192,000
Average		191,000	177,000
CLTD6-117	800	184,000	170,000
-146	800	202,000	187,000
-159	800	200,000	182,000
Average		195,000	180,000
CLTD7-21	900	170,000	154,000
-30	900	183,000	153,000
-133	900	157,000	139,000
Average		170,000	149,000
CLTD8-59	1000	116,000	90,200
-42	1000	109,000	83,500
-61	1000	113,000	90,200
Average		113,000	88,000

TABLE CLIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5AL-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER =0.1875 INCH (REACTIVE METALS HEAT NO. C4014)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
C7LD1- 38	80	237,000	233,000	
58	80	235,000	232,000	
66	80	232,000	230,000	
71	80	230,000	225,000	
87	80	240,000	232,000	
92	80	236,000	225,000	
118	80	239,000	231,000	
132	80	236,000	230,000	
134	80	217,000	209,000	
141	80	228,000	211,000	
Average		234,000	225,000	
C7LD2- 51	200	246,000	238,000	
105	200	249,000	226,000	
124	200	242,000	229,000	
Average		246,000	231,000	
C7LD3- 36	400	232,000	219,000	
80	400	233,000	219,000	
156	400	224,000	208,000	
Average		230,000	213,000	
C7LD4- 73	600	199,000	188,000	
88	600	208,000	187,000	
139	600	221,000	196,000	
Average		209,000	190,000	
C7LD6- 30	800	204,000	186,000	
117	800	197,000	182,000	
133	800	198,000	181,000	
Average		200,000	183,000	
C7LD7- 21	900	164,000	139,000	
146	900	166,000	149,000	150,000
159	900	168,000	148,000	
Average		166,000	145,000	
C7LD8- 41	1000	116,000	93,400	
59	1000	111,000	88,800	
61	1000	130,000	78,700	84,200
Average		119,000	87,000	

(1) Initial failure.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C7TD1- 38	80	258,000	244,000
58	80	246,000	237,000
66	80	252,000	229,000
71	80	240,000	240,000
87	80	227,000	216,000
92	80	231,000	225,000
118	80	243,000	230,000
132	80	235,000	223,000
134	80	232,000	221,000
141	80	243,000	226,000
Average		238,000	229,000
C7TD2- 51	200	242,000	236,000
73	200	238,000	229,000
124	200	228,000	218,000
Average		236,000	228,000
C7TD3- 36	400	239,000	213,000
80	400	227,000	211,000
146	400	220,000	204,000
Average		229,000	209,000
C7TD4- 88	600	203,000	186,000
105	600	214,000	203,000
156	600	214,000	193,000
Average		210,000	194,000
C7TD6-117	800	201,000	185,000
139	800	196,000	166,000
159	800	204,000	189,000
Average		200,000	181,000
C7TD7- 21	900	166,000	144,000
30	900	165,000	148,000
133	900	162,000	142,000
Average		164,000	145,000
C7TD8- 41	1000	109,000	87,600
59	1000	118,000	82,700
61	1000	113,000	- (1)
Average		113,000	85,200

(1) Unusable load-deformation curve

TABLE CLV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C1LD1-45	80	237,000	233,000
-47	80	235,000	222,000
-49	80	236,000	236,000
-64	80	232,000	215,000
-72	80	240,000	224,000
-106	80	232,000	225,000
-108	80	232,000	223,000
-114	80	236,000	213,000
-150	80	213,000	- (1)
-162	80	218,000	- (2)
Average		232,000	224,000
C1LD2-1	200	224,000	222,000
-33	200	226,000	223,000
-165	200	231,000	218,000
Average		227,000	221,000
C1LD3-19	400	219,000	196,000
-69	400	222,000	205,000
-163	400	214,000	201,000
Average		218,000	201,000
C1LD4-50	600	199,000	194,000
-97	600	191,000	182,000
-111	600	201,000	169,000
Average		197,000	186,000
C1LD6-18	800	204,000	180,000
-37	800	192,000	178,000
-145	800	206,000	180,000
Average		201,000	179,000
C1LD7-28	900	177,000	149,000
-136	900	172,000	151,000
-152	900	175,000	143,000
Average		175,000	148,000
C1LD8-42	1000	150,000	100,000
-155	1000	128,000	- (1)
-167	1000	133,000	89,500
Average		137,000	94,800

(1) Unusable load-deformation curve.
(2) Failure occurred prior to attaining yield deformation.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
C1TD1-45	80	231,000	-(3)	
-47	80	229,000	-(2)	
-48	80	234,000	-(2)	
-64	80	244,000	236,000	
-72	80	238,000	233,000	
-106	80	237,000	235,000	
-108	80	245,000	239,000	
-114	80	236,000	-(2)	
-150	80	224,000	-(2)	
-162	80	224,000	223,000	
Average		232,000	233,000	
C1TD2-1	200	231,000	229,000	
-33	200	240,000	186,000	180,000
-165	200	223,000	219,000	
Average		231,000	211,000	
C1TD3-19	400	217,000	207,000	
-69	400	230,000	210,000	
-163	400	220,000	197,000	
Average		222,000	205,000	
C1TD4-50	600	202,000	194,000	
-97	600	208,000	-(3)	
-111	600	207,000	202,000	
Average		206,000	198,000	
C1TD6-18	800	189,000	169,000	
-37	800	202,000	168,000	
-145	800	200,000	162,000	
Average		200,000	166,000	
C1TD7-28	900	175,000	143,000	
-136	900	174,000	139,000	
-152	900	167,000	147,000	
Average		172,000	143,000	
C1TD8-42	1000	133,000	94,000	84,700
-155	1000	130,000	83,000	
-167	1000	142,000	87,000	
Average		135,000	88,000	

(1) Interpolated value.
(2) Failure occurred prior to attaining yield deformation
(3) Unusable load-deformation curve

TABLE CLVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C4LB1-45	80	252,000	226,000
-47	80	234,000	207,000
-48	80	248,000	221,000
-64	80	238,000	218,000
-72	80	254,000	230,000
-106	80	241,000	221,000
-108	80	234,000	228,000
-114	80	236,000	220,000
-150	80	258,000	238,000
-162	80	260,000	234,000
Average		243,000	226,000
C4LB2-1	200	241,000	233,000
-33	200	237,000	225,000
-165	200	234,000	227,000
Average		237,000	228,000
C4LB3-50	400	236,000	213,000
-69	400	228,000	199,000
-163	400	250,000	208,000
Average		238,000	207,000
C4LB4-18	600	275,000	188,000
-19	600	208,000	189,000
-111	600	208,000	190,000
Average		203,000	189,000
C4LB6-37	800	212,000	190,000
-145	800	214,000	190,000
-183	800	208,000	181,000
Average		209,000	187,000
C4LB7-42	900	179,000	141,000
-138	900	191,000	(1)
-152	900	181,000	155,000
Average		184,000	148,000
C4LB8-26	1000	118,000	103,000
-155	1000	119,000	86,700
-167	1000	120,000	90,800
Average		119,000	93,500

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH, (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
C4TD1-45	80	237,000	234,000	204,000
-47	80	208,000	(4)	
-48	80	233,000	227,000	
-64	80	225,000	222,000	
-72	80	230,000	226,000	
-106	80	221,000	-(2)	
-108	80	230,000	229,000	
-114	80	234,000	231,000	
-150	80	250,000	242,000	
-162	80	238,000	231,000	
Average		231,000	230,000	
C4TD2-1	200	228,000	226,000	
-33	200	234,000	-(2)	
-165	200	239,000	232,000	
Average		234,000	229,000	
C4TD3-19	400	216,000	201,000	
-69	400	219,000	170,000	
-163	400	231,000	209,000	
Average		222,000	193,000	
C4TD4-50	600	207,000	203,000	
-97	600	212,000	190,000	
-111	600	197,000	193,000	
Average		205,000	197,000	
TD6-18	800	186,000	167,000	
-37	800	205,000	178,000	
-145	800	211,000	191,000	
Average		201,000	179,000	
-42	900	193,000	152,000	
-138	900	180,000	139,000	
-152	900	176,000	162,000	
Average		183,000	151,000	
C4TD8-29	1000	-(3)	88,900	90,500
-155	1000	124,000	89,300	
-167	1000	147,000	95,600	
Average		136,000	91,300	

(1) Initial failure,
(2) Specimen failed prior to reaching yield deformation
(3) Removed for inspection after load drop
(4) Unusable load-deformation curve

TABLE CLVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C7LD1-45	80	247,000	232,000
-47	80	240,000	213,000
-48	80	243,000	233,000
-64	80	242,000	- (1)
-72	80	234,000	218,000
-106	80	241,000	231,000
-108	80	233,000	186,000
-114	80	244,000	215,000
-150	80	241,000	235,000
-162	80	236,000	213,000
Average		240,000	222,000
C7LD2-1	200	226,000	219,000
-33	200	226,000	219,000
-165	200	233,000	214,000
Average		228,000	217,000
C7LD2-29	400	210,000	193,000
-163	400	209,000	194,000
-183	400	236,000	214,000
Average		218,000	200,000
C7LD4-18	600	200,000	186,000
-50	600	200,000	195,000
-97	600	191,000	181,000
Average		197,000	187,000
C7LD6-37	800	195,000	176,000
-111	800	189,000	168,000
-145	800	206,000	182,000
Average		197,000	175,000
C7LD7-42	900	174,000	154,000
-138	900	177,000	149,000
-152	900	181,000	150,000
Average		180,000	151,000
C7LD8-26	1000	126,000	95,000
-155	1000	126,000	85,800
-167	1000	132,000	86,700
Average		128,000	89,200

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C7TD1-45	80	227,000	- (1)
-47	80	225,000	217,000
-48	80	225,000	217,000
-64	80	237,000	220,000
-72	80	235,000	218,000
-106	80	234,000	214,000
-108	80	220,000	216,000
-114	80	232,000	217,000
-150	80	236,000	218,000
-162	80	225,000	218,000
Average		230,000	217,000
C7TD2-1	200	217,000	- (1)
-33	200	218,000	210,000
-165	200	230,000	222,000
Average		222,000	216,000
C7TD3-16	400	208,000	199,000
-69	400	209,000	199,000
-183	400	228,000	196,000
Average		215,000	198,000
C7TD4-50	600	196,000	192,000
-111	600	209,000	205,000
-163	600	201,000	191,000
Average		202,000	196,000
C7TD6-37	800	206,000	184,000
-97	800	200,000	186,000
-145	800	201,000	181,000
Average		202,000	184,000
C7TD7-42	900	185,000	155,000
-138	900	183,000	145,000
-152	900	179,000	146,000
Average		182,000	149,000
C7TD8-28	1000	130,000	79,800
-155	1000	131,000	91,800
-167	1000	127,000	84,400
Average		129,000	85,300

(1) Unusable load-deformation curve

TABLE CIWIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 22154)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C2LD1-9	80	244,000	230,000
-13	80	241,000	209,000
-16	80	234,000	217,000
-21	80	247,000	219,000
-26	80	242,000	217,000
-29	80	239,000	219,000
-31	80	247,000	227,000
-33	80	242,000	219,000
-47	80	243,000	220,000
-51	80	243,000	221,000
Average		242,000	220,000
C2LD2-1	200	230,000	210,000
-17	200	235,000	205,000
-20	200	234,000	214,000
Average		233,000	211,000
C2LD3-14	400	210,000	184,000
-23	400	225,000	195,000
-35	400	213,000	181,000
Average		216,000	187,000
C2LD4-3	600	219,000	190,000
-30	600	211,000	177,000
-43	600	203,000	184,000
Average		211,000	157,000
C2LD6-2	800	211,000	185,000
-40	800	203,000	187,000
-42	800	197,000	175,000
Average		204,000	182,000
C2LD7-10	900	178,000	157,000
-24	900	176,000	155,000
-25	900	171,000	151,000
Average		175,000	154,000
C2LD8-7	1000	126,000	93,300
-18	1000	122,000	92,900
-35	1000	118,000	97,500
Average		122,000	94,600

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 22154)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C2TD1-9	80	247,000	230,000
-13	80	246,000	230,000
-16	80	235,000	212,000
-21	80	244,000	221,000
-26	80	247,000	225,000
-29	80	242,000	215,000
-31	80	228,000	213,000
-33	80	244,000	220,000
-47	80	237,000	217,000
-51	80	244,000	221,000
Average		242,000	220,000
C2TD2-1	200	241,000	214,000
-17	200	229,000	193,000
-48	200	230,000	207,000
Average		233,000	205,000
C2TD3-14	400	217,000	185,000
-23	400	223,000	194,000
-55	400	216,000	186,000
Average		219,000	183,000
C2TD4-3	600	212,000	197,000
-30	600	207,000	189,000
-42	600	216,000	193,000
Average		212,000	193,000
C2TD6-2	800	204,000	185,000
-40	800	201,000	184,000
-43	800	199,000	175,000
Average		201,000	181,000
C2TD7-10	900	180,000	153,000
-24	900	176,000	161,000
-25	900	174,000	154,000
Average		177,000	156,000
C2TD8-7	1000	118,000	98,000
-28	1000	114,000	92,600
-35	1000	136,000	110,000
Average		123,000	100,000

TABLE CLIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24806)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
C5LD1-9	80	268,000	244,000	
-13	80	257,000	244,000	
-16	80	262,000	250,000	
-21	80	255,000	246,000	
-29	80	244,000	221,000	
-31	80	248,000	226,000	
-33	80	242,000	223,000	
-47	80	244,000	222,000	
-51	80	245,000	- (2)	
-57	80	260,000	260,000	
Average		255,000	238,000	
C5LD2-1	200	249,000	230,000	
-17	200	238,000	228,000	
-48	200	237,000	214,000	
Average		241,000	224,000	
C5LD3-14	400	235,000	213,000	
-23	400	218,000	- (3)	
-58	400	245,000	235,000	
Average		233,000	224,000	
C5LD4-3	600	222,000	209,000	
-43	600	217,000	198,000	
-59	600	219,000	-(3)	
Average		219,000	204,000	
C5LD6-2	800	211,000	197,000	
-10	800	218,000	201,000	
-42	800	189,000	172,000	
Average		206,000	190,000	
C5LD7-25	900	176,000	155,000	
-62	900	199,000	168,000	
-40	900	176,000	146,000	
Average		184,000	156,000	
C5LD8-7	1000	118,000	96,500	
-18	1000	123,000	99,400	
-35	1000	123,000	99,800	102,000
Average		121,000	98,600	

(1) Initial failure,
(2) Unusable load-deformation curve.
(3) Specimen failed prior to obtaining yield deformation.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24806)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
C5TD1-9	80	258,000	236,000	
-13	80	255,000	248,000	
-16	80	258,000	252,000	
-21	80	248,000	- (2)	
-26	80	249,000	227,000	
-29	80	245,000	224,000	
-31	80	245,000	224,000	
-33	80	241,000	221,000	
-47	80	239,000	228,000	
-51	80	237,000	223,000	
Average		248,000	233,000	
C5TD2-1	200	237,000	226,000	219,000
-17	200	239,000	237,000	
-48	200	219,000	189,000	
Average		232,000	218,000	
C5TD3-14	400	226,000	212,000	224,000
-23	400	218,000	- (2)	
-55	400	215,000	194,000	
Average		220,000	203,000	
C5TD4-3	600	218,000	210,000	
-30	600	218,000	207,000	
-43	600	204,000	190,000	
Average		213,000	202,000	
C5TD6-2	800	210,000	197,000	
-40	800	194,000	176,000	
-42	800	192,000	174,000	
Average		199,000	182,000	
C5TD7-24	900	196,000	165,000	
-25	900	179,000	160,000	
-57	900	178,000	157,000	
Average		184,000	161,000	
C5TL3-7	1000	123,000	92,800	
-18	1000	127,000	99,200	
-35	1000	126,000	102,000	
Average		125,000	98,000	

(1) Initial failure,
(2) Specimen failed prior to reaching yield deformation

TABLE CLX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C8LD1- 9	80	256,000	244,000
13	80	245,000	245,000
16	80	262,000	245,000
21	80	246,000	235,000
26	80	250,000	234,000
29	80	257,000	248,000
31	80	250,000	243,000
33	80	260,000	252,000
47	80	257,000	256,000
51	80	247,000	233,000
Average		253,000	244,000
C8LD2- 1	200	247,000	226,000
17	200	244,000	232,000
48	200	243,000	243,000
Average		245,000	234,000
C8LD3-14	400	237,000	213,000
55	400	224,000	199,000
58	400	219,000	186,000
Average		227,000	200,000
C8LD4- 3	600	220,000	201,000
30	600	218,000	211,000
43	600	224,000	215,000
Average		221,000	209,000
C8LD6- 2	800	203,000	178,000
40	800	207,000	193,000
42	800	211,000	194,000
Average		207,000	188,000
C8LD7-10	900	172,000	144,000
25	900	171,000	139,000
57	900	176,000	147,000
Average		173,000	143,000
C8LD8- 7	1000	115,000	82,000
18	1000	118,000	83,800
35	1000	11_,000	81,600
Average		115,000	82,500

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C8TD1- 9	80	244,000	232,000
13	80	258,000	244,000
16	80	261,000	248,000
21	80	248,000	235,000
26	80	252,000	240,000
29	80	250,000	246,000
31	80	257,000	246,000
33	80	260,000	245,000
47	80	258,000	254,000
51	80	254,000	241,000
Average		254,000	243,000
C8TD2- 1	200	248,000	234,000
17	200	246,000	235,000
48	200	249,000	238,000
Average		248,000	236,000
C8TD3-14	400	236,000	217,000
23	400	227,000	203,000
55	400	230,000	213,000
Average		231,000	211,000
C8TD4- 3	600	220,000	204,000
30	600	220,000	207,000
43	600	233,000	223,000
Average		224,000	211,000
C8TD6- 2	800	199,000	180,000
40	800	212,000	197,000
42	800	217,000	196,000
Average		209,000	191,000
C8TD7-10	900	183,000	142,000
24	900	182,000	150,000
25	900	184,000	141,000
Average		183,000	144,000
C8TD8- 7	1000	115,000	79,200
18	1000	116,000	85,200
35	1000	117,000	79,700
Average		116,000	81,400

TABLE CLXI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23354)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C3LD1-9	80	250,000	235,000
-13	80	249,000	238,000
-16	80	239,000	224,000
-21	80	244,000	-(1)
-26	80	251,000	226,000
-29	80	253,000	211,000
-31	80	248,000	230,000
-33	80	253,000	234,000
-47	80	249,000	226,000
-51	80	250,000	229,000
Average		249,000	230,000
C3LD2-1	200	234,000	214,000
-17	200	238,000	218,000
-48	200	242,000	222,000
Average		238,000	218,000
C3LD3-14	400	224,000	211,000
-43	400	233,000	222,000
-55	400	230,000	198,000
Average		235,000	210,000
C3LD4-3	600	207,000	157,000
-23	600	218,000	196,000
-40	600	222,000	209,000
Average		216,000	187,000
C3LD6-2	800	200,000	176,000
-30	800	208,000	187,000
-42	800	203,000	195,000
Average		204,000	186,000
C3LD7-10	900	172,000	151,000
-24	900	176,000	147,000
-25	900	179,000	147,000
Average		176,000	148,000
C3LD8-7	1000	124,000	88,000
-18	1000	126,000	91,100
-35	1000	129,000	91,800
Average		126,000	90,300

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23354)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C3TD1-13	80	252,000	236,000
-16	80	246,000	226,000
-26	80	246,000	226,000
-29	80	249,000	225,000
-31	80	239,000	227,000
-33	80	246,000	230,000
-47	80	246,000	227,000
-51	80	245,000	225,000
-54	80	259,000	240,000
-60	80	253,000	237,000
Average		248,000	230,000
C3TD2-1	200	232,000	218,000
-17	200	234,000	210,000
-48	200	231,000	216,000
Average		232,000	215,000
C3TD3-14	400	219,000	207,000
-55	400	223,000	198,000
-59	400	238,000	216,000
Average		227,000	207,000
C3TD4-23	600	215,000	196,000
-30	600	221,000	195,000
-43	600	219,000	207,000
Average		218,000	199,000
C3TD6-2	800	207,000	186,000
-42	800	216,000	201,000
-58	800	207,000	189,000
Average		210,000	192,000
C3TD7-10	900	181,000	145,000
-24	900	176,000	- (1)
-25	900	187,000	157,000
Average		181,000	151,000
C3TD8-7	1000	124,000	92,600
-18	1000	139,000	87,700
-35	1000	122,000	80,500
Average		128,000	86,900

(1) Unusable load-deformation curve

TABLE CLXII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23372)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C6LD1-9	80	249,000	231,000
-13	80	253,000	223,000
-16	80	251,000	211,000
-21	80	257,000	239,000
-26	80	258,000	239,000
-29	80	261,000	244,000
-31	80	254,000	235,000
-33	80	253,000	231,000
-47	80	254,000	238,000
-61	80	255,000	227,000
Average		255,000	232,000
C6LD2-1	200	243,000	230,000
-17	200	241,000	224,000
-48	200	240,000	224,000
Average		241,000	226,000
C6LD3-3	400	236,000	211,000
-14	400	235,000	215,000
-23	400	236,000	215,000
Average		236,000	214,000
C6LD4-30	600	224,000	213,000
-43	600	226,000	211,000
-55	600	224,000	208,000
Average		225,000	211,000
C6LD6-2	800	201,000	185,000
-40	800	203,000	191,000
-42	800	202,000	188,000
Average		202,000	188,000
C6LD7-10	900	172,000	149,000
-24	900	170,000	154,000
-701	900	187,000	144,000
Average		176,000	149,000
C6LD8-7	1000	116,000	92,000
-18	1000	120,000	91,400
-67	1000	141,000	88,600
Average		126,000	90,600

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23372)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C6TD1-9	80	246,000	227,000
-13	80	255,000	232,000
-16	80	256,000	245,000
-21	80	246,000	228,000
-26	80	256,000	234,000
-29	80	260,000	238,000
-31	80	254,000	235,000
-33	80	252,000	227,000
-47	80	249,000	227,000
-51	80	246,000	233,000
Average		252,000	233,000
C6TD2-1	200	236,000	221,000
-17	200	239,000	223,000
-48	200	245,000	229,000
Average		240,000	224,000
C6TD3-14	400	221,000	197,000
-23	400	218,000	193,000
-55	400	220,000	199,000
Average		220,000	196,000
C6TD4-3	600	216,000	185,000
-701	600	219,000	206,000
-702	600	216,000	203,000
Average		218,000	198,000
C6TD6-2	800	206,000	178,000
-42	800	195,000	182,000
-703	800	205,000	189,000
Average		202,000	183,000
C6TD7-10	900	182,000	140,000
-24	900	180,000	155,000
-25	900	182,000	155,000
Average		181,000	150,000
C6TD8-7	1000	126,000	84,400
-18	1000	130,000	84,600
-704	1000	127,000	81,500
Average		128,000	83,500

TABLE CLXIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23345)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C9LD1-9	80	241,000	225,000
-13	80	238,000	220,000
-16	80	236,000	214,000
-21	80	242,000	218,000
-29	80	230,000	212,000
-31	80	237,000	215,000
-33	80	232,000	218,000
-47	80	240,000	214,000
-51	80	249,000	234,000
-57	80	251,000	240,000
Average		241,000	221,000
C9LD2-1	200	220,000	196,000
-48	200	232,000	216,000
-701	200	235,000	211,000
Average		229,000	215,000
C9LD3-1	400	205,000	186,000
-55	400	233,000	213,000
-702	400	229,000	206,000
Average		222,000	202,000
C9LD4-3	600	201,000	171,000
-30	600	220,000	207,000
-43	600	210,000	203,000
Average		210,000	194,000
C9LD5-41	800	204,000	187,000
-704	800	211,000	194,000
-705	800	209,000	183,000
Average		208,000	188,000
C9LD7-10	900	185,000	151,000
-24	900	184,000	153,000
-25	900	186,000	160,000
Average		185,000	155,000
C9LD8-7	1000	135,000	101,000
-18	1000	131,000	92,100
-35	1000	137,000	96,600
Average		134,000	96,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23345)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C9TD1-9	80	241,000	241,000
-13	80	232,000	224,000
-16	80	252,000	236,000
-21	80	253,000	234,000
-26	80	254,000	234,000
-29	80	242,000	220,000
-31	80	234,000	213,000
-33	80	226,000	208,000
-47	80	240,000	221,000
-51	80	241,000	215,000
Average		242,000	224,000
C9TD2-1	200	237,000	219,000
-14	200	235,000	219,000
-48	200	220,000	201,000
Average		231,000	213,000
C9TD3-17	400	234,000	217,000
-23	400	216,000	191,000
-55	400	213,000	191,000
Average		221,000	198,000
C9TD4-3	600	216,000	187,000
-30	600	-(2)	190,000
-43	600	197,000	183,000
Average		206,000	187,000
C9TD6-40	800	173,000(1)	151,000
-42	800	204,000	192,000
-57	800	208,000	188,000
Average		195,000	177,000
C9TD7-2	900	142,000(1)	131,000
-10	900	186,000	149,000
-24	900	176,000	147,000
Average		168,000	142,000
C9TD8-7	1000	120,000	90,900
-15	1000	134,000	89,700
-25	1000	134,000	83,700
Average		129,000	88,100

(1) Tensile failure at net section
(2) Specimen failed at loading hole

TABLE CLXIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br} (1), PSI
C1LD1-6	80	294,000	250,000	
-15	80	295,000	256,000	
-43	80	311,000	265,000	273,000
-57	80	283,000	239,000	
-89	80	301,000	268,000	
-113	80	294,000	261,000	
-121	80	293,000	265,000	
-135	80	289,000	247,000	
-140	80	281,000	259,000	
-144	80	286,000	262,000	
-171	80	298,000	259,000	
Average				
C1LD2-34	200	298,000	259,000	242,000
-77	200	285,000	259,000	
-158	200	281,000	262,000	260,000
Average		288,000	260,000	
C1LD3-20	400	273,000	237,000	
-99	400	298,000	243,000	
-143	400	277,000	-(2)	193,000
Average		283,000	240,000	
C1LD4-26	600	268,000	238,000	
-95	600	248,000	210,000	
-110	600	260,000	221,000	
Average		258,000	223,000	
C1LD6-81	800	259,000	212,000	
-129	800	266,000	217,000	
-164	800	270,000	218,000	
Average		255,000	216,000	
C1LD7-3	900	220,000	182,000	
-44	900	225,000	198,000	
-82	900	225,000	185,000	
Average		223,000	189,000	
C1LD8-32	1000	144,000	105,000	
-74	1000	150,000	112,000	
-86	1000	143,000	110,000	
Average		146,000	109,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br} (1), PSI
C1TD1-6	80	341,000	302,000	
-15	80	290,000	258,000	
-43	80	285,000	252,000	
-57	80	293,000	259,000	283,000
-89	80	308,000	257,000	
-113	80	301,000	273,000	
-121	80	302,000	263,000	298,000
-135	80	306,000	256,000	288,000
-140	80	304,000	256,000	300,000
-144	80	285,000	252,000	
Average		301,000	263,000	
C1TD2-34	200	285,000	258,000	241,000
-77	200	285,000	277,000	
-158	200	287,000	262,000	
Average		286,000	266,000	
C1TD3-20	400	280,000	234,000	
-99	400	281,000	237,000	
-143	400	269,000	236,000	
Average		277,000	235,000	
C1TD4-26	600	266,000	230,000	
-95	600	278,000	227,000	266,000
-110	600	268,000	227,000	
Average		271,000	231,000	
C1TD6-44	800	263,000	216,000	
-81	800	264,000	212,000	249,000
-164	800	259,000	198,000	
Average		262,000	213,000	
C1TD7-3	900	211,000	172,000	
-74	900	240,000	174,000	
-129	900	216,000	204,000	
Average		222,000	183,000	
C1TD8-32	1000	170,000	-(2)	
-81	1000	158,000	129,000	
-66	1000	166,000	106,000	
Average		165,000	118,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TABLE CLXV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{by}$, PSI
CALD1-6	80	337,000	263,000	
-15	80	298,000	256,000	
-43	80	293,000	266,000	
-57	80	300,000	275,000	
-89	80	315,000	286,000	
-113	80	272,000	244,000	
-121	80	288,000	252,000	
-135	80	322,000	267,000	
-140	80	317,000	286,000	
-144	80	311,000	279,000	
Average		305,000	267,000	
CALD2-34	200	325,000	284,000	
-47	200	268,000	256,000	262,000
-65	200	322,000	260,000	313,000
Average		305,000	267,000	
CALD3-20	400	297,000	243,000	313,000
-57	400	289,000	217,000	287,000
-143	400	307,000	247,000	
Average		298,000	242,000	
CALD4-26	600	297,000	241,000	
-95	600	297,000	228,000	
-110	600	270,000	231,000	204,000
Average		288,000	233,000	
CALD6-44	800	265,000	211,000	
-129	800	251,000	202,000	
-164	800	262,000	211,000	
Average		259,000	208,000	
CALD7-3	900	245,000	187,000	
-81	900	231,000	168,000	
-82	900	241,000	173,000	
Average		239,000	176,000	
CALD8-32	1000	173,000	108,000	
-74	1000	172,000	105,000	
-86	1000	168,000	120,000	
Average		171,000	104,000	

(1) Initial failure, see page 29 Reference 4

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{by}$, PSI
CATD1-6	80	318,000	277,000	300,000
-25	80	311,000	273,000	
-43	80	307,000	256,000	287,000
-77	80	296,000	248,000	
-89	80	291,000	250,000	
-113	80	305,000	259,000	
-121	80	299,000	246,000	
-135	80	295,000	249,000	
-140	80	289,000	250,000	
-201	80	316,000	292,000	
Average		302,000	260,000	
CATD2-20	200	287,000	246,000	
-99	200	297,000	251,000	
-138	200	292,000	259,000	
Average		292,000	252,000	
CATD3-34	400	272,000	245,000	
-143	400	291,000	- (2)	
-202		315,000	264,000	
Average		293,000	254,000	
CATD4-26	600	268,000	232,000	227,000
-95	600	259,000	226,000	
-110	600	244,000	205,000	
Average		257,000	221,000	
CATD6-44	800	239,000	192,000	
-129	800	261,000	204,000	
-164	800	250,000	193,000	
Average		250,000	196,000	
CATD7-3	900	226,000	178,000	
-81	900	238,000	174,000	
-82	900	213,000	149,000	
Average		226,000	167,000	
CATD8-32	1000	174,000	107,000	
-74	1000	162,000	126,000	
-86	1000	146,000	102,000	
Average		161,000	112,000	

(1) Initial failure,
(2) Unusable load-deformation curve

TABLE CLXVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
C7LD1-6	80	293,000	247,000	
-15	80	300,000	268,000	
-43	80	291,000	258,000	
-57	80	296,000	249,000	
-89	80	296,000	248,000	
-113	80	290,000	258,000	
-121	80	310,000	252,000	
-135	80	307,000	255,000	
-140	80	296,000	253,000	
-144	80	308,000	258,000	
Average		298,000	253,000	
C7LD2-34	200	300,000	253,000	288,000
-77	200	294,000	250,000	
-158	200	304,000	266,000	
Average		299,000	256,000	
C7LD3-20	400	298,000	255,000	
-99	400	301,000	230,000	
-143	400	292,000	240,000	
Average		296,000	242,000	
C7LD4-26	600	295,000	228,000	
-95	600	284,000	231,000	269,000
-110	600	277,000	229,000	
Average		285,000	229,000	
C7LD6-44	800	259,000	210,000	
-129	800	269,000	215,000	
-164	800	267,000	- (2)	
Average		265,000	212,000	
C7LD7-1	900	321,000	183,000	
-61	900	323,000	183,000	
-82	900	334,000	191,000	
Average		326,000	186,000	
C7LD8-32	1000	146,000	112,000	
-74	1000	175,000	134,000	
-86	1000	207,000	145,000	
Average		176,000	130,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1) PSI
C7TD1-6	80	290,000	245,000	
-15	80	295,000	255,000	
-43	80	297,000	255,000	
-57	80	307,000	268,000	
-89	80	295,000	250,000	
-113	80	295,000	250,000	
-121	80	308,000	253,000	
-135	80	294,000	268,000	
-140	80	293,000	260,000	
-144	80	298,000	261,000	
Average		297,000	255,000	
C7TD2-34	200	294,000	251,000	
-77	200	296,000	274,000	
-158	200	290,000	254,000	
Average		293,000	260,000	
C7TD3-20	400	286,000	220,000	267,000
-99	400	284,000	226,000	281,000
-143	400	283,000	249,000	
Average		284,000	232,000	
C7TD4-36	600	273,000	216,000	254,000
-95	600	271,000	220,000	
-110	600	252,000	214,000	
Average		265,000	213,000	
C7TD6-44	800	268,000	219,000	
-129	800	263,000	215,000	
-164	800	268,000	209,000	
Average		266,000	211,000	
C7TD7-3	900	220,000	- (2)	
-61	900	226,000	181,000	
-82	900	230,000	185,000	200,000
Average		225,000	183,000	
C7TD8-32	1000	156,000	112,000	
-74	1000	135,000	106,000	
-86	1000	152,000	115,000	
Average		148,000	111,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TABLE CLXVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1375 INCH (Reactive Metals Heat No. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C1LD1-2	80	272,000	245,000
-72	80	276,000	271,000
-68	80	287,000	252,000
-95	80	312,000	260,000
-102	80	292,000	269,000
-103	80	287,000	266,000
-112	80	269,000	256,000
-117	80	273,000	235,000
-140	80	294,000	245,000
-166	80	274,000	231,000
Average		288,000	254,000
C1LD2-5	200	298,000	275,000
-98	200	292,000	258,000
-153	200	299,000	273,000
Average		296,000	269,000
C1LD3-94	600	296,000	244,000
-109	600	300,000	244,000
-116	600	303,000	224,000
Average		300,000	237,000
C1LD4-12	600	289,000	231,000
-107	600	266,000	214,000
-122	600	272,000	230,000
Average		276,000	225,000
C1LD6-9	800	251,000	198,000
-128	800	262,000	221,000
-142	800	276,000	202,000
Average		263,000	207,000
C1LD7-29	900	224,000	162,000
-39	900	227,000	160,000
-142	900	232,000	162,000
Average		228,000	161,000
C1LD8-35	1000	171,000	- (1)
-70	1000	169,000	- (1)
-85	1000	175,000	122,000
Average		172,000	

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 inch THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1375 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
C1TD1-2	80	272,000	233,000	
-72	80	299,000	258,000	
-68	80	296,000	262,000	266,000
-95	80	292,000	271,000	
-102	80	288,000	271,000	253,000
-103	80	286,000	251,000	
-112	80	323,000	280,000	
-117	80	301,000	258,000	
-140	80	284,000	257,000	
-166	80	295,000	272,000	
Average		294,000	262,000	
C1TD2-5	200	312,000	287,000	
-98	200	282,000	260,000	
-153	200	299,000	278,000	
Average		298,000	275,000	
C1TD3-94	600	298,000	248,000	
-109	600	276,000	257,000	263,000
-116	600	294,000	248,000	
Average		289,000	250,000	
C1TD4-12	600	268,000	242,000	
-107	600	272,000	222,000	
-122	600	255,000	227,000	
Average		265,000	227,000	
C1TD6-29	800	259,000	218,000	
-128	800	263,000	214,000	
-142	800	256,000	206,000	
Average		259,000	213,000	
C1TD7-9	900	229,000	168,000	
-39	900	228,000	179,000	
-85	900	232,000	187,000	
Average		230,000	178,000	
C1TD8-10	1000	175,000	- (2)	
-35	1000	179,000	- (2)	
-70	1000	134,000	103,000	
Average		161,000	103,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TABLE CLXVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
CLTD1-2	80	298,000	256,000	
-22	80	281,000	240,000	
-68	80	298,000	244,000	271,000
-96	80	268,000	241,000	
-102	80	277,000	245,000	
-103	80	285,000	239,000	
-112	80	279,000	238,000	
-137	80	275,000	254,000	
-148	80	292,000	263,000	
-166	80	284,000	259,000	
Average		286,000	249,000	
CLTD2-5	500	264,000	- (2)	
-98	500	289,000	251,000	
-109	500	304,000	241,000	
Average		286,000	247,000	
CLTD3-107	600	280,000	227,000	
-116	600	255,000	214,000	
-153	600	261,000	223,000	
Average		260,000	221,000	
CLTD4-12	600	263,000	240,000	
-94	600	229,000	198,000	
-122	600	235,000	201,000	
Average		242,000	213,000	
CLTD5-89	800	244,000	212,000	
-126	800	298,000	208,000	
-142	800	248,000	220,000	
Average		263,000	213,000	
CLTD7-9	900	197,000	107,000	
-39	900	230,000	- (2)	
-85	900	230,000	181,000	
Average		219,000	144,000	
CLTD8-10	1000	159,000	104,000	
-35	1000	149,000	124,000	
-70	1000	170,000	119,000	
Average		159,000	116,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
CLTT1-2	80	274,000	267,000	
-22	80	283,000	249,000	
-68	80	275,000	256,000	
-96	80	270,000	245,000	
-102	80	272,000	254,000	
-103	80	275,000	258,000	
-112	80	272,000	248,000	
-137	80	267,000	265,000	
-148	80	289,000	264,000	
-166	80	293,000	256,000	
Average		277,000	254,000	
CLTT2-5	500	262,000	245,000	
-98	500	287,000	257,000	
-153	500	275,000	276,000	
Average		275,000	259,000	
CLTT3-94	600	266,000	227,000	
-109	600	266,000	219,000	
-116	600	260,000	220,000	
Average		264,000	222,000	
CLTT4-10	600	252,000	221,000	233,000
-12	600	264,000	211,000	242,000
-107	600	228,000	207,000	
Average		248,000	213,000	
CLTT5-89	800	255,000	208,000	
-128	800	249,000	203,000	
-142	800	252,000	206,000	
Average		252,000	206,000	
CLTT7-39	900	237,000	181,000	
-70	900	228,000	170,000	
-85	900	233,000	177,000	
Average		231,000	176,000	
CLTT8-9	1000	180,000	122,000	
-35	1000	208,000	- (2)	
-183	1000	185,000	126,000	
Average		191,000	124,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TABLE CLXIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.050 INCH THICK, e/D = 2.0, BEARING PIN DIAMETER = 0.1875 INCH (REACTIVE METALS HEAT NO. 26814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{bry}^{(1)}$, PSI
C7LD1-2	80	266,000	259,000	
-22	80	280,000	254,000	
-68	80	300,000	260,000	
-96	80	283,000	252,000	
-102	80	281,000	253,000	
-103	80	277,000	248,000	
-112	80	265,000	245,000	
-137	80	272,000	235,000	
-148	80	288,000	257,000	
-166	80	265,000	241,000	
Average		278,000	250,000	
C7LD2-5	200	275,000	258,000	
-98	200	291,000	245,000	
-153	200	281,000	251,000	
Average		282,000	253,000	
C7LD3-107	400	280,000	221,000	270,000
-109	400	279,000	220,000	274,000
-116	400	271,000	217,000	
Average		277,000	219,000	
C7LD4-12	600	232,000	202,000	
-94	600	246,000	222,000	
-122	600	292,000	239,000	
Average		257,000	221,000	
C7LD6-29	800	252,000	204,000	
-128	800	262,000	232,000	
-142	800	247,000	201,000	
Average		254,000	212,000	
C7LD7-9	900	207,000	169,000	
-39	900	232,000	191,000	
-85	900	222,000	179,000	
Average		220,000	180,000	
C7LD8-10	1000	178,000	132,000	135,000
-35	1000	175,000	130,000	
-70	1000	167,000	105,000	
Average		172,000	119,000	

(1) Initial failure.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.050 INCH THICK, e/D = 2.0, BEARING PIN DIAMETER = 0.1875 (REACTIVE METALS HEAT NO. 26814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{bry}^{(1)}$, PSI
C7TD1-2	80	279,000	258,000	
-22	80	293,000	260,000	269,000
-68	80	298,000	253,000	286,000
-96	80	281,000	245,000	
-102	80	277,000	248,000	
-103	80	282,000	248,000	
-118	80	303,000	248,000	280,000
-137	80	296,000	255,000	
-148	80	281,000	253,000	
-166	80	292,000	255,000	
Average		288,000	250,000	
C7TD2-5	200	291,000	243,000	
-10	200	304,000	280,000	
-153	200	281,000	242,000	269,000
Average		292,000	255,000	
C7TD3-98	400	271,000	239,000	
-109	400	293,000	244,000	
-116	400	263,000	230,000	
Average		272,000	238,000	
C7TD4-12	600	264,000	228,000	
-107	600	249,000	205,000	
-122	600	247,000	224,000	
Average		253,000	219,000	
C7TD6-29	800	273,000	217,000	
-128	800	255,000	206,000	238,000
-142	800	266,000	218,000	
Average		265,000	214,000	
C7TD7-9	900	230,000	167,000	
-70	900	216,000	172,000	
-85	900	249,000	185,000	202,000
Average		232,000	175,000	
C7TD8-35	1000	172,000	106,000	
-39	1000	188,000	98,800	104,000
-94	1000	184,000	104,000	
Average		181,000	101,000	

(1) Initial failure.

TABLE CLXX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 THRU THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature °F	F_{bru}, PSI	F_{bry}, PSI	$F^{(1)}_{bry}$, PSI
C1LD1-8	80	270,000	248,000	
-11	80	293,000	247,000	261,000
-16	80	276,000	263,000	
-60	80	280,000	254,000	
-79	80	268,000	215,000	
-84	80	264,000	237,000	
-127	80	268,000	231,000	
-136	80	260,000	224,000	
-151	80	260,000	239,000	258,000
-161	80	263,000	224,000	
Average		270,000	241,000	
C1LD2-23	200	274,000	-(2)	
-100	200	263,000	239,000	
-131	200	249,000	241,000	
Average		262,000	240,000	
C1LD3-7	400	243,000	219,000	
-25	400	255,000	206,000	
-101	400	270,000	-(2)	
Average		256,000	212,000	
C1LD4-54	600	228,000	214,000	
-123	600	210,000	190,000	
-126	600	218,000	199,000	
Average		219,000	201,000	
C1LD6-14	800	240,000	195,000	
-83	800	224,000	190,000	
-130	800	240,000	184,000	
Average		235,000	190,000	
C1LD7-76	900	218,000	179,000	
-78	900	220,000	175,000	
-119	900	224,000	159,000	166,000
Average		221,000	171,000	
C1LD8-63	1000	154,000	117,000	
-90	1000	150,000	115,000	
-149	1000	145,000	112,000	
Average		150,000	115,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 22093)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F^{(1)}_{bry}$, PSI
C1TD1-8	80	263,000	(2)	243,000
-11	80	278,000	(2)	235,000
-16	80	280,000	240,000	269,000
-60	80	270,000	(2)	228,000
-79	80	269,000	255,000	260,000
-84	80	264,000	(2)	
-127	80	289,000	248,000	277,000
-136	80	268,000	247,000	258,000
-151	80	269,000(3)	238,000	
-161	80	277,000	234,000	238,000
Average		273,000	244,000	
C1TD2-100	200	257,000(3)	224,000	
-123	200	267,000	256,000	262,000
-131	200	246,000	236,000	
Average		257,000	239,000	
C1TD3-23	400	258,000	224,000	232,000
-54	400	239,000	191,000	202,000
-101	400	237,000	204,000	
Average		245,000	206,000	
C1TD4-83	600	231,000	(4)	199,000
-126	600	220,000	192,000	214,000
-130	600	229,000	207,000	
Average		227,000	200,000	
C1TD6-7	800	246,000	200,000	205,000
-14	800	233,000	187,000	
-25	800	236,000	190,000	
Average		238,000	192,000	
C1TD7-76	900	225,000	186,000	
-119	900	231,000	169,000	
-149	900	245,000	184,000	
Average		234,000	180,000	
C1TD8-63	1000	182,000	130,000	
-76	1000	190,000	109,000	
-90	1000	161,000	(5)	
Average		178,000	120,000	

(1) Initial failure.
(2) Initial failure occurred prior to obtaining yield deformation
(3) Tensile failure at net section
(4) Failure occurred prior to reaching yield deformation
(5) Unusable load-deformation curve

TABLE CLXXI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.02[illegible] INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F^{(1)}_{br}$, PSI
2xLD1-[illegible]	[illegible]	272,000	234,000	259,000
-11	[illegible]	274,000	236,000	
-16	[illegible]	270,000	240,000	
-6	[illegible]	275,000	234,000	253,000
-79	[illegible]	274,000	235,000	
-84	[illegible]	274,000	240,000	261,000
-127	[illegible]	257,000	252,000	255,000
-136	[illegible]	290,000	244,000	
-151	[illegible]	284,000	252,000	
-161	[illegible]	277,000	255,000	264,000
Average		276,000	244,000	
2xLD2-[illegible]	200	254,000	217,000	
-100	200	254,000	213,000	
-131	200	249,000	220,000	
Average		251,000	214,000	
2xLD3-[illegible]	400	260,000	201,000	253,000
-102	400	247,000	201,000	
-131	400	235,000	205,000	
Average		247,000	202,000	
2xLD4-[illegible]	600	222,000	214,000	
-123	600	217,000	204,000	-(2)
-130	600	216,000	197,000	
Average		218,000	205,000	
2xLD5-[illegible]	800	251,000	187,000	
-25	800	250,000	199,000	
-60	800	252,000	202,000	
Average		251,000	196,000	
2xLD7-[illegible]	900	219,000	182,000	
-78	900	219,000	160,000	
-119	900	223,000	170,000	
Average		220,000	171,000	
2xLD8-[illegible]	1000	150,000	115,000	
-90	1000	143,000	-(3)	
-149	1000	137,000	-(3)	
Average		135,000		

(1) Initial failure.
(2) These specimens exhibited the initial failure discussed but did not exceed the load before final failure.
(3) Unusual load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.[illegible]80 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24990)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F^{(1)}_{br}$, PSI
C4TD1-7	80	257,000	228,000	
-8	80	256,000	233,000	254,000
-11	80	280,000	234,000	265,000
-16	80	268,000	245,000	
-79	80	254,000	235,000	257,000
-84	80	268,000	224,000	
-127	80	260,000	234,000	257,000
-136	80	268,000	238,000	265,000
-151	80	297,000	252,000	266,000
-161	80	283,000	238,000	265,000
Average		269,000	236,000	
C4TD2-54	200	262,000	233,000	
-100	200	261,000	246,000	
-126	200	267,000	234,000	
Average		263,000	238,000	
C4TD3-23	400	258,000	216,000	
-102	400	232,000	214,000	
-131	400	217,000	209,000	
Average		236,000	213,000	
C4TD4-83	600	211,000	199,000	
-123	600	211,000	195,000	
-130	600	214,000	197,000	
Average		212,000	196,000	
C4TD6-14	800	234,000	198,000	
-25	800	261,000	194,000	214,000
-60	800	277,000	208,000	
Average		258,000	200,000	
C4TD7-76	900	219,000	168,000	
-78	900	219,000	173,000	
-119	900	220,000	173,000	
Average		219,000	171,000	
C4TD8-53	1000	148,000	110,000	
-90	1000	136,000	86,500	
-119	1000	140,000	102,000	103,000
Average		141,000	99,500	

(1) Initial failure.

TABLE CLXXII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D =2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C7LD1-11	80	256,000	-(1)
-16	80	272,000	248,000
-60	80	264,000	249,000
-79	80	277,000	248,000
-84	80	272,000	-(1)
-127	80	265,000	241,000
-136	80	272,000	233,000
-151	80	274,000	252,000
-161	80	272,000	-(1)
-29	80	268,000	246,000
Average		271,000	243,000
C7LD2-83	200	258,000	244,000
-100	200	273,000	238,000
-131	200	281,000	230,000
Average		271,000	238,000
C7LD3-54	400	236,000	224,000
-101	400	238,000	219,000
-126	400	247,000	208,000
Average		233,000	217,000
C7LD4-184	600	234,000	209,000
-185	600	231,000	210,000
-186	600	226,000	206,000
Average		230,000	208,000
C7LD6-14	800	240,000	196,000
-76	800	248,000	198,000
-78	800	244,000	200,000
Average		244,000	197,000
C7LD7-25	900	218,000	164,000
-119	900	220,000	175,000
-173	900	216,000	169,000
Average		217,000	169,000
C7LD8-63	1000	190,000	104,000
-90	1000	149,000	102,000
-149	1000	148,000	97,000
Average		159,000	101,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
C7TD1-8	80	276,000	246,000	
-11	80	289,000	249,000	269,000
-16	80	311,000	238,000	286,000
-60	80	297,000	238,000	277,000
-79	80	272,000	248,000	
-84	80	274,000	247,000	
-127	80	269,000	238,000	261,000
-136	80	273,000	244,000	
-151	80	274,000	244,000	268,000
-161	80	278,000	251,000	
Average		283,000	244,000	
C7TD2-83	200	272,000	242,000	
-100	200	273,000	249,000	
-131	200	266,000	231,000	250,000
Average		271,000	241,000	
C7TD3-54	400	252,000	224,000	
-101	400	248,000	223,000	
-126	400	246,000	225,000	
Average		252,000	225,000	
C7TD4-63	600	236,000	210,000	
-123	600	233,000	210,000	
-130	600	224,000	204,000	
Average		231,000	208,000	
C7TD6-7	800	234,000	196,000	226,000
-14	800	234,000	209,000	226,000
-25	800	236,000	196,000	
Average		235,000	200,000	
C7TD7-76	900	232,000	157,000	
-78	900	236,000	176,000	
-119	900	240,000	-(2)	208,000
Average		236,000	164,000	
C7TD8-63	1000	169,000	91,000	
-90	1000	175,000	112,000	
-149	1000	183,000	112,000	
Average		175,000	105,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TABLE CLXXIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 22154)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C2LD1-4	80	309,000	257,000
-5	80	307,000	248,000
-11	80	303,000	263,000
-15	80	309,000	243,000
-19	80	319,000	255,000
-39	80	-(1)	249,000
-41	80	302,000	237,000
-44	80	314,000	241,000
-45	80	306,000	246,000
-56	80	308,000	248,000
Average		308,000	248,000
C2LD2-38	200	284,000	230,000
-46	200	282,000	227,000
-52	200	282,000	228,000
Average		283,000	228,000
C2LD3-20	400	283,000	216,000
-37	400	279,000	221,000
-54	400	284,000	212,000
Average		282,000	216,000
C2LD4-22	600	252,000	210,000
-27	600	258,000	193,000
-34	600	269,000	216,000
Average		260,000	206,000
C2LD6-6	800	265,000	207,000
-12	800	261,000	194,000
-36	800	258,000	197,000
Average		261,000	199,000
C2LD7-28	900	220,000	176,000
-32	900	223,000	169,000
-50	900	219,000	174,000
Average		219,000	173,000
C2LD8-8	1000	124,000(2)	90,900
-49	1000	145,000(2)	113,000
-53	1000	143,000	111,000
Average		139,000	108,000

(1) Bearing pin sheared
(2) Tensile failure at net section

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 22154)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}(1), PSI
C2TD1-4	80	307,000	258,000	268,000
-5	80	312,000	261,000	
-11	80	296,000	253,000	
-15	80	311,000	264,000	
-19	80	308,000	247,000	
-39	80	310,000	249,000	
-41	80	311,000	276,000	270,000
-44	80	298,000	251,000	
-45	80	294,000	250,000	
-56	80	298,000	234,000	
Average		306,000	252,000	
C2TD2-38	200	292,000	235,000	258,000
-46	200	289,000	234,000	260,000
-52	200	293,000	231,000	262,000
Average		291,000	233,000	
C2TD3-20	400	285,000	216,000	
-22	400	284,000	209,000	245,000
-27	400	276,000	227,000	240,000
Average		282,000	217,000	
C2TD4-27	600	266,000	203,000	226,000
-34	600	256,000	219,000	219,000
-54	600	265,000	208,000	221,000
Average		262,000	210,000	
C2TD6-6	800	260,000	213,000	217,000
-12	800	266,000	212,000	
-36	800	256,000	209,000	222,000
Average		261,000	211,000	
C2TD7-28	900	220,000	174,000	
-32	900	222,000	177,000	
-50	900	219,000	-(2)	
Average		220,000	176,000	
C2TD8-8	1000	142,000	106,000	
-49	1000	142,000	104,000	
-53	1000	160,000	121,000	
Average		148,000	110,000	

(1) Initial failure.
(2) Unusable load - deformation curve

TABLE CLXXIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24806)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
C5LD1-4	80	311,000	273,000	290,000
-5	80	272,000	- (2)	
-11	80	278,000	- (3)	
-15	80	324,000	283,000	278,000
-19	80	293,000	265,000	
-39	80	284,000	230,000	
-41	80	300,000	233,000	
-44	80	301,000	254,000	
-45	80	294,000	233,000	266,000
-56	80	310,000	268,000	
Average		297,000	254,000	
C5LD2-38	200	279,000	227,000	271,000
-46	200	289,000	248,000	278,000
-52	200	292,000	243,000	274,000
Average		293,000	239,000	
C5LD3-20	400	273,000	268,000	
-22	400	275,000	270,000	
-37	400	269,000	223,000	259,000
Average		272,000	254,000	
C5LD4-21	600	257,000	215,000	241,000
-34	600	266,000	228,000	248,000
-51	600	258,000	219,000	246,000
Average		260,000	221,000	
C5LD5-6	800	266,000	217,000	236,000
-17	800	262,000	227,000	239,000
-36	800	242,000	208,000	
Average		259,000	218,000	
C5LD7-18	900	168,000	153,000	
-32	900	196,000	162,000	
-50	900	183,000	164,000	
Average		182,000	159,000	
C5LD8-8	1000	131,000	98,100	
-49	1000	141,000	93,700	
-53	1000	123,000	87,400	
Average		132,000	93,100	

(1) Initial failure.
(2) Initial failure prior to attaining yield deformation.
(3) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24806)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
C5TD1-22	80	298,000	- (2)	276,000
-32	80	307,000	262,000	277,000
-44	80	284,000	258,000	264,000
-52	80	301,000	259,000	270,000
-58	80	298,000	264,000	272,000
-59	80	287,000	238,000	253,000
-60	80	288,000	227,000	251,000
-61	80	290,000	250,000	261,000
-62	80	286,000	250,000	262,000
-201	80	296,000	265,000	265,000
Average		296,000	254,000	
C5TD2-41	200	277,000	253,000	256,000
-45	200	268,000	240,000	255,000
-50	200	281,000	- (2)	248,000
Average		276,000	247,000	
C5TD3-15	400	281,000	- (2)	246,000
-39	400	253,000	231,000	235,000
-28	400	272,000	225,000	229,000
Average		269,000	228,000	
C5TD4-12	600	236,000	- (2)	
-34	600	262,000	229,000	
-53	600	254,000	225,000	
Average		251,000	227,000	
C5TD6-19	800	258,000	- (2)	232,000
-36	800	242,000	187,000	
-56	800	248,000	210,000	215,000
Average		249,000	198,000	
C5TD7-27	900	229,000	190,000	215,000
-38	900	220,000	167,000	
-49	900	230,000	174,000	
Average		226,000	177,000	
C5TD8-37	1000	170,000	102,000	
-46	1000	157,000	88,600	
-54	1000	160,000	83,200	
Average		169,000	91,300	

(1) Initial failure.
(2) Initial failure prior to attaining yield deformation.

TABLE CLXXV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
C8LD1-4	80	305,000	252,000	262,000
-5	80	314,000	260,000	291,000
-11	80	299,000	257,000	298,000
-15	80	302,000	265,000	
-19	80	295,000	270,000	
-39	80	304,000	266,000	
-41	80	293,000	279,000	
-44	80	309,000	268,000	
-45	80	305,000	274,000	
-56	80	295,000	256,000	
Average		302,000	264,000	
C8LD2-38	200	289,000	262,000	
-46	200	288,000	278,000	
-52	200	293,000	245,000	282,000
Average		289,000	262,000	
C8LD3-20	400	285,000	243,000	279,000
-22	400	281,000	236,000	268,000
-37	400	285,000	244,000	266,000
Average		284,000	241,000	
C8LD4-27	600	277,000	232,000	257,000
-34	600	262,000	224,000	254,000
-54	600	255,000	220,000	251,000
Average		265,000	225,000	
C8LD6-6	800	262,000	217,000	238,000
-28	800	262,000	213,000	
-36	800	259,000	213,000	235,000
Average		261,000	214,000	
C8LD7-25	900	243,000	188,000	
-32	900	210,000	173,000	
-50	900	204,000	62,000	
Average		219,000	176,000	
C8LD8-8	1000	146,000	121,000	
-49	1000	144,000	103,000	
-53	1000	134,000	90,600	
Average		141,000	106,000	

(1) Initial failure.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 24814)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
C8TD1-4	80	295,000	263,000	268,000
-5	80	307,000	248,000	282,000
-11	80	304,000	270,000	282,000
-15	80	317,000	262,000	283,000
-19	80	315,000	268,000	271,000
-39	80	304,000	278,000	278,000
-41	80	280,000	(2)	286,000
-44	80	288,000	(3)	277,000
-45	80	303,000	(3)	292,000
-56	80	298,000	279,000	286,000
Average		302,000	268,000	
C8TD2-38	200	275,000	275,000	
-46	200	299,000	(3)	290,000
-52	200	286,000	277,000	249,000
Average		287,000	276,000	
C8TD3-20	400	275,000	249,000	260,000
-22	400	287,000	242,000	259,000
-37	400	269,000	(2)	263,000
Average		277,000	246,000	
C8TD4-27	600	273,000	236,000	242,000
-34	600	272,000	234,000	249,000
-54	600	253,000	238,000	247,000
Average		266,000	236,000	
C8TD6-6	800	247,000	209,000	222,000
-28	800	259,000	216,000	239,000
-36	800	264,000	221,000	241,000
Average		257,000	215,000	
C8TD7-12	900	244,000	183,000	
-32	900	207,000	169,000	
-50	900	206,000	175,000	
Average		219,000	176,000	
C8TD8-8	1000	144,000	112,000	
-49	1000	134,000	(4)	
-53	1000	143,000	100,000	
Average		140,000	106,000	

(1) Initial failure,
(2) Initial failure occurred prior to attaining yield deformation.
(3) Specimen failed prior to attaining yield deformation.
(4) Unusable load-deformation curve.

TABLE CIXXVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23354)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
C3LD2-4	80	302,000	279,000
-5	80	303,000	280,000
-11	80	305,000	280,000
-15	80	308,000	282,000
-19	80	314,000	290,000
-30	80	300,000	278,000
-39	80	310,000	278,000
-41	80	306,000	278,000
-46	80	308,000	266,000
-56	80	311,000	275,000
Average		306,000	277,000
C3LD2-38	200	294,000	258,000
-42	200	292,000	246,000
-46	200	294,000	246,000
Average		293,000	247,000
C3LD3-20	400	281,000	243,000
-22	400	292,000	231,000
-37	400	275,000	231,000
Average		283,000	235,000
C3LD4-27	600	273,000	239,000
-34	600	265,000	236,000
-54	600	273,000	222,000
Average		270,000	226,000
C3LD6-6	800	257,000	230,000
-12	800	274,000	221,000
-36	800	271,000	219,000
Average		267,000	223,000
C3LD7-38	900	220,000	170,000
-32	900	221,000	179,000
-50	900	216,000	171,000
Average		219,000	173,000
C3LD8-8	1000	135,000	108,000
-49	1000	134,000	86,800
-53	1000	- (1)	85,200
Average		134,000	93,300

(1) Specimen failed in loading hole

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23354)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
C3TD1-4	80	303,000	276,000	286,000
-5	80	298,000	276,000	
-11	80	314,000	286,000	289,000
-15	80	286,000	280,000	290,000
-19	80	309,000	278,000	290,000
-30	80	311,000	284,000	287,000
-39	80	299,000	281,000	283,000
-41	80	287,000	281,000	282,000
-46	80	297,000	273,000	287,000
-56	80	294,000	266,000	
Average		300,000	278,000	
C3TD2-38	200	282,000	257,000	281,000
-46	200	295,000	269,000	279,000
-52	200	288,000	258,000	280,000
Average		290,000	261,000	
C3TD3-20	400	284,000	259,000	274,000
-22	400	281,000	242,000	276,000
-37	400	279,000	260,000	265,000
Average		281,000	254,000	
C3TD4-27	600	259,000	236,000	254,000
-34	600	263,000	239,000	242,000
-57	600	267,000	- (2)	248,000
Average		263,000	238,000	
C3TD6-6	800	261,000	224,000	244,000
-28	800	254,000	224,000	
-36	800	259,000	- (2)	
Average		258,000	224,000	
C3TD7-12	900	236,000	193,000	
-32	900	215,000	181,000	
-50	900	216,000	177,000	
Average		222,000	184,000	
C3TD8-8	1000	136,000	92,600	
-49	1000	138,000	96,100	
-53	1000	137,000	89,000	
Average		137,000	92,600	

(1) Initial failure.
(2) Unusable load-deformation curve.

TABLE CLXXVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23172)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br},(1) PSI
C6L01-4	80	318,000	263,000	301,000
-5	80	318,000	278,000	296,000
-11	80	329,000	274,000	307,000
-15	80	318,000	274,000	313,000
-19	80	329,000	276,000	305,000
-39	80	323,000	278,000	301,000
-41	80	307,000	280,000	298,000
-44	80	313,000	290,000	
-45	80	318,000	284,500	
-56	80	[illegible]	[illegible]	307,000
Average		[illegible]	[illegible]	
C6L02-4	200	298,000	-(2)	
-40	200	290,000	281,000	
-42	200	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C6L03-38	400	288,000	280,000	
-46	400	[illegible]	256,000	
Average		[illegible]	[illegible]	
C6L04-4	600	299,000	270,000	
-47	600	305,000	256,000	260,000
Average		[illegible]	[illegible]	
C6L05-12	800	257,000	280,000	
-36	800	262,000	211,000	
-58	800	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C6L07-28	900	251,000	246,000	
-31	900	256,000	177,000	
-50	900	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C6L08-6	1000	241,000	196,000	
-29	1000	241,000	114,000	
-30	1000	[illegible]	[illegible]	
Average		[illegible]	155,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23172)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
C6T01-4	80	318,000	268,000	298,000
-5	80	307,000	278,000	
-11	80	315,000	278,000	
-15	80	315,000	278,000	
-19	80	317,000	269,000	
-39	80	316,000	281,000	306,000
-41	80	316,000	280,000	311,000
-44	80	300,000	278,000	
-45	80	318,000	267,000	301,000
-56	80	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C6T02-6	200	303,000	257,000	259,000
-38	200	308,000	266,000	260,000
-46	200	[illegible]	- (2)	250,000
Average		[illegible]	[illegible]	
C6T03-22	400	275,000	221,000	
-52	400	280,000	246,000	269,000
-57	400	[illegible]	[illegible]	264,000
Average		[illegible]	[illegible]	
C6T04-27	600	273,000	238,000	255,000
-34	600	270,000	221,000	269,000
-54	600	[illegible]	[illegible]	264,000
Average		[illegible]	[illegible]	
C6T06-36	800	266,000	227,000	
-37	800	259,000	217,000	243,000
-58	800	[illegible]	[illegible]	251,000
Average		[illegible]	[illegible]	
C6T07-28	900	224,000	176,000	
-31	900	227,000	178,000	
-50	900	[illegible]	- (2)	
Average		[illegible]	177,000	
C6T08-8	1000	151,000	- (2)	
-29	1000	137,000	123,000	[illegible]
-30	1000	[illegible]	[illegible]	[illegible]
Average		147,000	123,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TABLE CLXXVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.103 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23345)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br},(1) PSI
C9LD1-4	80	284,000	246,000	
-5	80	272,000	238,000	
-11	80	286,000	243,000	
-15	80	281,000	238,000	
-19	80	288,000	251,000	
-39	80	287,000	270,000	
-41	80	295,000	248,000	
-44	80	303,000	262,000	
-45	80	[illegible]	[illegible]	
-56	80	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C9LD2-37	200	287,000	230,000	
-38	200	299,000	237,000	
-52	200	[illegible]	[illegible]	
Average		291,000	233,000	
C9LD3-20	400	276,000	236,000	
-22	400	278,000	244,000	
-57	400	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C9LD4-27	600	258,000	237,000	
-34	600	266,000	216,000	
-54	600	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C9LD6-6	800	240,000	199,000	
-12	800	237,000	227,000	
-36	800	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C9LD7-28	900	240,000	178,000	
-32	900	216,000	165,000	
-50	900	[illegible]	[illegible]	
Average		[illegible]	[illegible]	
C9LD8-8	1000	154,000	93,800	
-49	1000	140,000	116,000	
-53	1000	[illegible]	-(2)	150,000
Average		[illegible]	[illegible]	

(1) Initial failure,
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.145 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (REACTIVE METALS HEAT NO. 23345)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{br},(1) PSI
C9TD1-4	80	285,000	240,000	
-5	80	275,000	237,000	
-11	80	295,000	-(2)	
-15	80	281,000	248,000	
-19	80	286,000	242,000	
-39	80	285,000	-(2)	
-41	80	288,000	270,000	
-44	80	276,000	264,000	
-45	80	251,000	256,000	
-56	80	238,000	203,000	
Average		285,000	252,000	
C9TD2-37	200	294,000	255,000	256,000
-38	200	291,000	249,000	206,000
-52	200	280,000	250,000	
Average		288,000	251,000	
C9TD3-20	400	287,000	226,000	
-22	400	270,000	239,000	
-46	400	271,000	225,000	
Average		276,000	230,000	
C9TD4-27	600	265,000	221,000	258,000
-34	600	270,000	226,000	
-54	600	255,000	227,000	
Average		263,000	225,000	
C9TD6-6	800	245,000	204,000	
-12	800	255,000	210,000	
-50	800	258,000	213,000	
Average		253,000	209,000	
C9TD7-28	900	214,000	172,000	
-32	900	220,000	-(2)	
-36	900	220,000	170,000	
Average		218,000	171,000	
C9TD8-8	1000	147,000	98,500	
-49	1000	148,000	103,000	
-53	1000	149,000	92,700	
Average		148,000	98,100	

(1) Initial failure,
(2) Unusable load-deformation curve

TABLE CLXXIX

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.080 INCH

TEST TEMP °F	HEAT NUMBER 22093				HEAT NUMBER 24990				HEAT NUMBER 21814			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI
80	C1LE1M-1	109,000	C1TE1M-1	111,000	C4LE1M-1	110,000	C4TE1M-1	116,000	C7LE1M-1	112,000	C7TE1M-1	112,000
	-7	105,000	-7	106,000	-7	114,000	-7	106,000	-7	108,000	-7	108,000
	-9	106,000	-9	108,000	-9	107,000	-9	105,000	-9	109,000	-9	109,000
	-11	106,000	-11	106,000	-11	108,000	-31	107,000	-11	109,000	-11	107,000
	-12	105,000	-12	110,000	-12	111,000	-32	105,000	-12	111,000	-12	108,000
	-20	108,000	-20	111,000	-20	109,000	-34	104,000	-20	107,000	-20	107,000
	-21	109,000	-21	110,000	-21	110,000	-35	104,000	-21	105,000	-21	106,000
	-23	107,000	-23	108,000	-23	111,000	-36	106,000	-23	105,000	-23	103,000
	-24	108,000	-24	109,000	-24	110,000	-41	104,000	-24	107,000	-24	109,000
	-26	105,000	-26	107,000	-26	112,000	-43	106,000	-26	110,000	-26	107,000
	Average	107,000	Average	109,000	Average	111,000	Average	106,000	Average	109,000	Average	106,500
800	C1LE2M-14	105,000	C1TE2M-14	106,000	C4LE2M-14	108,000	C4TE2M-29	96,900	C7LE2M-14	106,000	C7TE2M-14	105,000
	-15	100,000	-15	105,000	-15	107,000	-42	100,000	-15	102,000	-15	104,000
	-17	102,000	-17	106,000	-17	105,000	-44	96,000	-17	106,000	-17	101,000
	Average	102,000	Average	106,000	Average	107,000	Average	98,000	Average	105,000	Average	103,000
400	C1LE3M-2	96,000	C1TE3M-2	99,800	C4LE3M-2	101,000	C4TE3M-37	92,100	C7LE3M-2	96,500	C7TE3M-2	97,900
	-10	91,900	-10	92,600	-10	99,500	-38	95,800	-10	94,800	-10	97,900
	-25	91,700	-25	94,600	-25	98,800	-40	95,400	-25	92,200	-25	95,400
	Average	93,200	Average	95,700	Average	99,800	Average	94,400	Average	94,500	Average	97,100
600	C1LE4M-5	88,700	C1TE4M-5	88,900	C4LE4M-5	92,900	C4TE4M-5	96,200	C7LE4M-5	93,000	C7TE4M-5	86,600
	-8	85,900	-8	85,300	-8	86,300	-8	82,200	-8	87,100	-8	89,400
	-16	87,400	-16	87,200	-16	91,400	-30	87,000	-16	87,800	-16	89,000
	Average	87,350	Average	87,100	Average	90,200	Average	88,500	Average	89,300	Average	88,900
800	C1LE6M-13	79,600	C1TE6M-13	79,600	C4LE6M-13	82,600	C4TE6M-4	83,700	C7LE6M-13	77,400	C7TE6M-13	73,900
	-18	77,100	-13	77,600	-18	86,200	-33	76,600	-18	77,500	-13	70,700
	-19	74,100	-19	80,700	-19	79,400	-171	78,600	-19	76,200	-19	79,000
	Average	77,350	Average	79,300	Average	82,600	Average	79,300	Average	77,000	Average	76,500
900	C1LE7M-4	67,500	C1TE7M-4	68,700	C4LE7M-4	73,000	C4TE7M-173	69,000	C7LE7M-4	66,400	C7TE7M-4	70,600
	-22	69,900	-4	67	-22	69,100	-175	67,100	-22	66,200	-22	70,600
	-27	64,600	-27	66,100	-27	68,200	-176	68,200	-27	66,200	-27	73,200
	Average	67,300	Average	67,500	Average	70,100	Average	68,100	Average	66,300	Average	71,500
1000	C1LE8M-3	51,500	C1TE8M-3	51,600	C4LE8M-3	54,100	C4TE8M-3	60,000	C7LE8M-3	48,400	C7TE8M-3	52,600
	-6	52,900	-6	48,400	-6	55,400	-6	60,800	-6	50,600	-6	53,300
	-28	51,200	-28	51,100	-28	53,400	-28	67,700	-28	51,500	-28	51,200
	Average	51,900	Average	50,600	Average	54,300	Average	62,800	Average	50,200	Average	55,700

All specimens were laterally supported from buckling.

TABLE CLXXX

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY- 2 5Al-16V
THICKNESS - 0.063 INCH

TEST TEMP. °F	HEAT NUMBER 23154				HEAT NUMBER 24006				HEAT NUMBER 24014			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi
80	C2L61M-1	111,000	C2T61M-1	104,000	C5L61M-1	113,000	C5T61M-1	114,000	C8L61M-1	106,000	C8T61M-1	110,000
	-7	104,000	-7	103,000	-7	117,000	-7	114,000	-7	109,000	-7	109,000
	-9	105,000	-9	103,000	-9	117,000	-9	117,000	-9	111,000	-9	107,000
	-11	108,000	-11	105,000	-11	117,000	-11	116,000	-11	111,000	-11	111,000
	-12	107,000	-12	105,000	-12	117,000	-12	116,000	-12	110,000	-12	114,000
	-20	107,000	-20	106,000	-20	104,000	-20	104,000	-20	112,000	-20	112,000
	-21	108,000	-21	105,000	-21	102,000	-21	102,000	-21	108,000	-21	108,000
	-23	106,000	-23	106,000	-23	109,000	-23	104,000	-23	111,000	-23	108,000
	-24	108,000	-24	107,000	-24	108,000	-24	105,000	-24	110,000	-24	108,000
	-26	109,000	-26	105,000	-26	106,000	-26	102,000	-26	109,000	-26	109,000
	Average	107,000	Average	104,000	Average	111,000	Average	109,000	Average	110,000	Average	110,000
200	C2L62M-14	98,400	C2T62M-14	98,600	C5L62M-14	102,000	C5T62M-14	99,600	C8L62M-2	102,000	C8T62M-14	104,000
	-15	98,800	-15	98,000	-15	97,300	-15	101,000	-10	102,000	-15	103,000
	-17	99,200	-17	96,800	-17	95,100	-17	101,000	-17	104,000	-17	104,000
	Average	98,800	Average	97,800	Average	97,500	Average	102,000	Average	103,000	Average	104,000
400	C2L63M-2	96,600	C2T63M-2	96,300	C5L63M-2	101,000	C5T63M-2	101,000	C8L63M-14	96,400	C8T63M-2	94,300
	-5	96,100	-10	91,300	-10	102,000	-10	98,100	-15	98,100	-10	92,500
	-10	96,600	-25	91,300	-25	95,600	-25	98,500	-25	95,800	-25	94,600
	Average	96,600	Average	92,900	Average	99,500	Average	97,200	Average	96,800	Average	93,500
600	C2L64M-8	86,700	C2T64M-5	89,700	C5L64M-5	98,500	C5T64M-5	97,000	C8L64M-5	91,600	C8T64M-5	88,100
	-16	91,600	-8	86,800	-8	95,900	-8	95,600	-8	90,900	-8	89,100
	-25	90,800	-16	87,400	-16	92,700	-16	92,500	-16	90,600	-16	91,200
	Average	89,900	Average	88,300	Average	95,400	Average	94,000	Average	91,000	Average	89,500
800	C2L65M-13	77,200	C2T65M-13	75,000	C5L65M-13	80,700	C5T65M-13	83,200	C8L65M-13	86,100	C8T65M-13	86,600
	-18	79,800	-18	76,300	-18	81,800	-18	80,100	-18	83,700	-18	83,800
	-19	64,000	-19	81,600	-19	80,200	-19	77,400	-19	83,800	-19	84,200
	Average	73,900	Average	78,300	Average	80,900	Average	80,200	Average	84,600	Average	84,900
900	C2L67M-4	72,000	C2T67M-4	80,400	C5L67M-4	78,200	C5T67M-4	81,200	C8L67M-4	75,900	C8T67M-4	72,700
	-22	72,000	-22	70,900	-22	74,200	-27	74,800	-22	72,500	-22	75,300
	-29	77,800	-27	71,500	-27	77,400	-29	76,800	-27	73,800	-27	74,700
	Average	73,900	Average	74,300	Average	75,900	Average	77,600	Average	74,100	Average	74,200
1000	C2L68M-6	57,200	C2T68M-3	54,700	C5L68M-3	68,000	C5T68M-3	57,100	C8L68M-3	55,300	C8T68M-3	53,000
	-30	54,300	-6	55,100	-6	59,000	-6	57,600	-6	55,800	-6	54,600
	-31	56,700	-28	57,100	-28	57,300	-28	57,100	-28	55,900	-28	54,400
	Average	56,100	Average	55,600	Average	61,400	Average	57,300	Average	55,700	Average	54,000

TABLE CLXXXI

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.125 INCH

TEST TEMP °F	HEAT NUMBER 23354				HEAT NUMBER 23372				HEAT NUMBER 23365			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI
80	C3LE1M-1	110,000	C3TE1M-1	110,000	C6LK1M-1	112,000	C6TE1M-1	112,000	C9LE1M-1	106,000	C9TE1M-1	107,000
	-7	111,000	-7	112,000	-7	110,000	-7	111,000	-7	110,000	-7	109,000
	-9	109,000	-9	111,000	-9	110,000	-9	112,000	-9	110,000	-9	109,000
	-11	112,000	-11	112,000	-11	113,000	-11	113,000	-11	112,000	-11	111,000
	-12	108,000	-12	112,000	-12	113,000	-12	114,000	-12	111,000	-12	111,000
	-20	107,000	-20	111,000(1)	-20	113,000(1)	-20	113,000(1)	-20	105,000(1)	-20	100,000
	-21	107,000	-23	110,000(1)	-21	112,000(1)	-23	110,000(1)	-21	106,000(1)	-21	102,000
	-23	110,000	-24	111,000(1)	-23	112,000(1)	-24	111,000(1)	-23	111,000(1)	-23	109,000
	-24	109,000	-26	111,000(1)	-24	113,000(1)	-26	113,000(1)	-24	112,000(1)	-24	109,000
	-26	111,000	-29	110,000	-25	114,000(1)			-26	113,000(1)	-26	112,000
	Average	109,300	Average	111,000	Average	112,800	Average	112,000	Average	110,000	Average	108,000
800	C3LE2M-14	102,000	C3TE2M-14	107,000	C6LE2M-14	107,000	C6TE2M-14	105,000	C9LE2M-14	103,000	C9TE2M-14	100,000
	-15	107,000	-15	107,000	-15	108,000	-15	110,000	-15	100,000	-15	98,000
	-17	103,000	-17	104,000	-17	105,000	-17	105,000	-17	100,000	-17	100,000
	Average	104,000	Average	106,000	Average	106,600	Average	107,000	Average	101,000	Average	99,300
400	C3LE3M-2	97,600	C3TE3M-2	96,600	C6LE3M-2	96,400	C6TE3M-2	98,600	C9LE3M-2	93,200	C9TE3M-2	99,400
	-10	96,600	-10	97,000	-10	96,900	-10	97,800	-10	96,400	-10	99,800
	-25	98,100	-25	102,000	-25	100,000	-25	100,000	-25	97,700	-25	99,800
	Average	97,400	Average	98,500	Average	97,830	Average	98,800	Average	95,800	Average	99,600
600	C3LE4M-8	92,600	C3TE4M-5	91,400	C6LE4M-8	91,500	C6TE4M-8	92,300	C9LE4M-5	85,400	C9TE4M-5	85,800
	-13	92,700	-8	92,700	-13	93,200	-13	93,600	-8	86,600	-8	91,200
	-16	90,400	-16	92,000	-16	92,100	-16	90,500	-16	89,400	-16	89,400
	Average	91,900	Average	92,000	Average	92,130	Average	92,130	Average	87,100	Average	88,800
800	C3LE6M-5	81,800	C3TE6M-13	84,700	C6LE6M-5	84,700	C6TE6M-5	81,600	C9LE6M-13	81,700	C9TE6M-13	79,900
	-18	82,200	-18	85,400	-18	84,100	-18	83,900	-18	80,200	-18	79,600
	-19	81,800	-19	81,600	-19	83,800	-19	88,500	-19	79,800	-19	77,400
	Average	82,600	Average	84,500	Average	84,700	Average	84,600	Average	80,600	Average	79,000
900	C3LE7M-4	76,200	C3TE7M-4	76,700	C6LE7M-4	78,200	C6TE7M-4	76,900	C9LE7M-4	69,100	C9TE7M-4	77,600
	-22	77,200	-22	75,300	-22	74,900	-22	76,600	-22	67,300	-22	73,200
	-27	76,300	-27	75,600	-27	77,000	-27	77,800	-27	66,200	-28	77,700
	Average	77,200	Average	75,900	Average	76,500	Average	77,100	Average	67,200	Average	74,100
1000	C3LE8M-3	59,300	C3TE8M-3	59,300	C6LE8M-3	63,300	C6TE8M-3	60,000	C9LE8M-3	60,000	C9TE8M-3	55,000
	-6	61,800	-6	55,900	-6	57,600	-6	63,600	-6	57,300	-6	56,500
	-28	60,300	-28	59,600	-28	60,200	-28	64,600	-28	62,000	-27	62,800
	Average	60,500	Average	58,100	Average	70,400	Average	62,700	Average	60,000	Average	58,100

(1) Laterally supported control specimens.

TABLE CIXXXII

DOUBLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 2.5Al-16V
THICKNESS— 0.125 INCH

TEST TEMP °F	HEAT NUMBER 23354				HEAT NUMBER 23372				HEAT NUMBER 23345			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI	SPECIMEN NUMBER	F_{su}, PSI
80	C3LA1N-1	103,000	C3TA1N-1	99,200	C6LA1N-1	113,000	C6TA1N-1	109,000	C9LA1N-1	102,000	C9TA1N-1	108,000
	-7	107,000	-7	107,000	-7	110,000	-7	111,000	-7	112,000	-7	108,000
	-9	104,000	-9	107,000	-9	110,000	-9	109,000	-9	112,000	-9	109,000
	-11	102,000	-11	101,000	-11	108,000	-11	116,000	-11	111,000	-11	109,000
	-12	106,000	-12	106,000	-12	114,000	-12	116,000	-12	104,000	-12	108,000
	-20	102,000	-20	104,000	-20	105,000	-20	110,000	-20	98,800	-20	106,000
	-21	104,000	-21	104,000	-21	112,000	-21	110,000	-21	108,000	-21	107,000
	-23	108,000	-23	107,000	-23	107,000	-23	111,000	-23	112,000	-23	106,000
	-24	102,000	-24	110,000	-24	104,000	-24	110,000	-24	108,000	-24	106,000
	-29	106,000	-26	99,600	-26	106,000	-26	111,000	-26	106,000	-26	110,000
	Average	104,000	Average	104,300	Average	109,000	Average	111,000	Average	107,000	Average	108,000
800	C3LA2N-14	103,000	C3TA2N-14	97,400	C6LA2N-14	103,000	C6TA2N-14	104,000	C9LA2N-14	96,800	C9TA2N-14	101,000
	-15	102,000	-15	96,800	-15	103,000	-15	104,000	-15	102,000	-15	98,600
	-17	98,600	-17	98,200	-17	102,000	-17	102,000	-17	98,600	-17	97,300
	Average	101,000	Average	97,500	Average	103,000	Average	103,000	Average	99,100	Average	99,000
400	C3LA3N-2	93,400	C3TA3N-2	96,200	C6LA3N-2	96,300	C6TA3N-2	92,800	C9LA3N-2	89,600	C9TA3N-2	93,400
	-10	94,800	-10	97,000	-10	98,600	-10	94,500	-10	91,630	-10	95,100
	-25	95,200	-25	94,800	-25	99,100	-25	93,400	-25	91,100	-25	95,500
	Average	94,500	Average	96,000	Average	98,000	Average	93,600	Average	90,800	Average	94,700
600	C3LA4N-5	90,000	C3TA4N-5	91,300	C6LA4N-5	87,400	C6TA4N-5	88,400	C9LA4N-5	87,900	C9TA4N-5	85,000
	-8	87,900	-8	91,500	-8	89,800	-8	92,400	-8	89,800	-8	85,000
	-16	87,200	-16	89,400	-16	85,500	-16	89,900	-16	87,000	-16	84,500
	Average	88,400	Average	90,700	Average	87,600	Average	90,900	Average	88,200	Average	84,800
800	C3LA5N-13	86,700	C3TA5N-13	79,500	C6LA5N-13	82,400	C6TA5N-19	76,700	C9LA5N-13	75,200	C9TA5N-13	76,500
	-19	81,800	-19	79,300	-18	76,900	-19	78,300	-18	72,700	-18	76,700
	-30	82,400	-19	75,000	-19	81,100	-30	81,500	-19	72,200	-19	76,300
	Average	83,600	Average	77,900	Average	80,100	Average	79,500	Average	73,400	Average	76,500
900	C3LA7N-4	70,800	C3TA7N-4	77,400	C6LA7N-4	75,500	C6TA7N-3	73,200	C9LA7N-4	70,500	C9TA7N-4	74,200
	-22	69,400	-22	75,600	-22	74,400	-6	75,300	-22	74,000	-22	71,700
	-27	73,500	-27	77,500	-27	78,800	-28	75,800	-27	73,900	-27	75,700
	Average	70,900	Average	76,800	Average	76,200	Average	74,800	Average	72,800	Average	73,900
1000	C3LA8N-3	59,100	C3TA8N-3	61,600	C6LA8N-3	61,400	C6TA8N-4	63,400	C9LA8N-3	62,500	C9TA8N-3	61,400
	-6	62,100	-6	60,000	-6	61,400	-22	64,900	-6	62,500	-6	61,700
	-28	62,500	-28	61,700	-28	60,700	-27	64,000	-28	60,000	-28	61,000
	Average	61,300	Average	61,100	Average	61,200	Average	64,100	Average	61,700	Average	61,400

TABLE CLXXXIII

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 22154)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
C2L0-21	500	150,000	-	-	-	-	-	-	(1)
-25	500	149,000	-	-	-	-	-	-	(1)
-4	500	148,000	1.62	-	-	0.65	235	(2)	-
-78	500	147,000	-	-	-	-	-	-	(1)
-79	500	146,000	(3)	-	-	-	5.40	(2)	-
C2L04-20	600	162,000	-	-	-	-	-	-	(1)
-9	600	155,000	-	-	-	-	-	-	(1)
-8	600	153,000	(3)	-	-	-	-	-	113
-23	600	152,000	-	-	-	-	-	-	(1)
-4	600	150,000	(3)	-	-	-	0.24	2.10	874
-22	600	146,000	-	-	-	-	-	-	(1)
-21	600	136,000	(3)	-	-	0.08	1.65	20.0	(2)
-13	600	133,000	(3)	-	-	-	1.18	18.0	-
-29	600	125,000	1.32	-	0.15	1.30	25.0	112	-
-46	600	118,000	0.93	-	0.41	5.20	53.0	246	-
-57	600	115,000	0.85	0.10	0.27	1.70	40.0	270	-
-42	600	100,000	0.69	1.15	4.90	27.5	175	-	-
-34	600	110,000	0.70	1.00	3.60	17.0	88.0	325	-
-53	600	109,000	0.88	2.70	9.50	25.5	100	375	-
-65	600	95,000	0.68	0.42	2.00	16.5	250	-	-
-66	600	89,000	0.51	4.80	15.5	61.0	425	-	-
-16	600	55,000	0.39	25.0	110	500	-	-	-
-73	600	45,000	0.32	26.0	120	460	-	-	-
-77	600	24,900	(3)	100	340	-	-	-	-
-80	600	13,000	0.11	291	-	-	-	-	-
C2L05-28	700	145,000	1.06	-	-	-	-	0.07	0.30
-37	700	138,000	2.33	-	-	-	-	-	0.19
-3	700	135,000	1.49	-	-	-	0.18	0.61	4.20
-33	700	132,000	1.75	-	-	-	-	0.15	2.40
-38	700	110,000	1.01	-	-	0.19	1.13	4.30	-
-51	700	103,000	0.74	-	0.06	0.26	1.16	5.60	257
-72	700	99,120	0.78	-	0.26	1.03	4.65	15.0	571
-24	700	90,000	0.72	0.18	0.61	2.10	10.1	35.0	-
-49	700	90,000	0.77	0.20	0.75	2.60	13.2	47.0	-
-32	700	80,000	0.64	0.21	1.10	3.10	15.5	58.0	-
-17	700	59,800	0.50	0.66	1.50	3.60	17.7	85.0	-
-27	700	50,000	0.38	0.55	2.10	7.10	43.0	257	-
-1	700	40,000	(3)	0.78	2.60	10.5	150	1020	-
-39	700	35,100	0.34	2.40	6.00	19.0	110	-	-
-62	700	30,000	0.25	3.60	14.0	92.0	280	-	-
-63	700	27,500	0.58	2.60	12.5	43.5	520	-	-
-61	700	11,600	0.11	45.0	-	-	-	-	-
-58	700	11,500	0.04	86.0	130	660	-	-	-
-43	700	7,500	0.06	74.0	270	-	-	-	-
-75	700	6,000	(3)	190	(2)	-	-	-	-
-67	700	4,800	0.02	125	-	-	-	-	-
-71	700	2,800	0.03	470	-	-	-	-	-
C2L06-6	800	130,000	1.48	-	-	-	-	-	0.19
-36	800	120,000	1.14	-	-	-	0.06	0.18	1.66
-35	800	110,000	0.91	-	-	-	0.15	0.41	4.40
-10	800	69,900	0.77	-	-	0.11	0.58	1.95	96.5
-35	800	57,000	0.47	0.13	0.39	1.34	5.50	16.1	571
-19	800	50,000	0.50	-	0.24	0.66	2.85	10.2	-
-56	800	48,100	(3)	0.12	0.33	1.00	5.60	-	-
-60	800	33,000	0.27	0.17	0.49	2.10	9.10	37.5	-
-5	800	20,000	0.25	0.58	1.42	4.60	26.2	162	-
-11	800	15,000	0.15	0.72	3.20	15.0	136	880	-
-63	800	10,000	0.04	4.40	26.0	160	1365	-	-
-64	800	9,510	(3)	0.10	9.80	32.5	-	-	-
-48	800	4,760	(3)	9.70	42.0	-	-	-	-
-55	800	4,750	0.04	16.0	85.0	550	-	-	-
-40	800	4,680	0.04	36.0	110	-	-	-	-
-47	800	2,380	(3)	125	460	-	-	-	-
-72	800	1,799	0.02	230	-	-	-	-	-
-74	800	1,400	(3)	52.0	-	-	-	-	-
-76	800	1,040	(3)	(2)	-	-	-	-	-
C2L07-36	900	100,000	(3)	-	-	-	-	-	0.08
-26	900	80,000	0.76	-	-	-	-	0.06	0.60
-18	900	49,900	0.58	-	-	0.05	0.11	0.41	5.30
-59	900	39,900	0.32	-	0.05	0.14	0.51	1.41	-
-22	900	30,100	0.26	-	-	0.15	0.74	2.40	60.0
-31	900	25,000	0.25	0.05	0.10	0.24	1.06	3.00	130

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Initial loading strain was indeterminate.

TABLE CLXXXIV

TRANSVERSE TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK (REACTIVE METALS HEAT NO. 22152)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.01 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
C2T2A-6	600	150,000	-	-	-	-	-	-	(1)
-11	600	148,000	-	-	-	-	-	-	(1)
-12	600	146,000	-	-	-	-	-	-	(1)
-18	600	145,000	1.81	-	-	0.08	2.70	25.0	(2)
-7	600	145,000	1.44	-	0.06	0.53	13.0	93.0	-
-16	600	144,000	2.25	-	-	0.06	1.06	12.1	(2)
C2T6S-5	700	147,000	-	-	-	-	-	-	(1)
-10	700	144,000	-	-	-	-	-	-	(1)
-1	700	141,000	1.69	-	-	-	-	0.15	2.06
-17	700	138,000	1.80	-	-	-	-	0.12	1.13
-9	700	132,000	2.03	-	-	-	-	-	1.27
-19	700	115,000	0.94	-	0.09	0.31	1.94	8.00	237
-14	700	100,000	0.52	0.11	0.28	1.10	5.60	19.0	(2)
C2T8S-4	800	126,000	(3)	-	-	-	-	-	0.17
-8	800	117,000	1.42	-	-	-	0.10	0.27	2.74
-3	800	110,000	1.20	-	-	-	0.05	0.11	2.12
-15	800	89,900	0.81	-	-	0.06	0.18	0.47	14.3
-2	800	72,800	0.68	-	0.06	0.17	0.73	2.30	77.7
-13	800	70,000	0.51	0.06	0.22	0.59	2.30	5.10	336

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Initial loading strain was indeterminate.

TABLE CLXXXV

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.0[illegible] INCH THICK (REACTIVE METALS HEAT NO. 24606)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
CSL04-20	600	150,000	-	-	-	-	-	-	(1)
-26	600	150,000	-	-	-	-	-	-	(1)
-18	600	146,000	-	-	-	-	-	-	(1)
-21	600	145,000	-	-	-	-	-	-	(1)
-16	600	145,000	1.16	-	-	0.25	1.10	31.0	(2)
-35	600	144,000	1.94	-	-	-	0.41	4.10	(2)
-8	600	140,000	1.40	-	0.10	0.66	9.50	56.0	-
-12	600	140,000	1.57	-	0.08	0.57	7.00	41.5	-
-25	600	125,000	0.74	-	0.14	0.80	9.90	68.0	-
-11	600	112,000	0.73	0.25	7.00	9.80	88.0	140	-
-32	600	98,700	0.79	0.68	1.00	14.5	65.0	-	-
-5	600	85,000	(3)	4.00	16.5	78.0	590	-	-
-16	600	73,300	0.65	1.42	11.5	69.0	-	-	-
-52	600	60,000	(3)	60.0	230	(2)	-	-	-
-51	600	27,500	(3)	94.0	-	-	-	-	-
-49	600	19,800	0.11	265	450	-	-	-	-
-54	600	10,100	0.06	?	-	-	-	-	-
CSL05-1	700	158,000	(3)	-	-	-	-	-	0.10
-9	700	152,000	1.81	-	-	-	-	-	0.49
-8	700	148,000	1.45	-	-	-	0.10	0.35	3.69
-13	700	133,000	1.05	-	-	0.07	0.16	1.43	22.1
-14	700	128,000	1.04	-	0.05	0.10	0.90	3.05	47.4
-18	700	115,000	(3)	-	-	0.15	0.84	3.18	103
-19	700	101,000	1.02	-	0.10	0.35	1.69	5.60	397
-29	700	84,900	0.47	0.18	0.70	2.08	8.10	30.0	-
-46	700	63,000	0.41	0.15	1.60	8.10	64.6	230	-
-22	700	46,900	0.34	0.10	2.50	8.60	66.0	140	-
-39	700	32,100	0.35	12.0	28.0	64.0	470	-	-
-33	700	18,200	0.13	11.0	35.0	150	-	-	-
-36	700	12,000	0.08	13.0	64.0	320	-	-	-
-41	700	11,700	0.08	9.00	67.0	460	-	-	-
-42	700	6,650	0.08	300	1351	-	-	-	-
-47	700	5,940	0.02	550	-	-	-	-	-
CSL06-7	800	147,000	(3)	-	-	-	-	-	0.05
-2	800	131,000	(3)	-	-	-	-	-	0.22
-3	800	114,000	0.86	-	-	-	0.12	0.33	1.33
-6	800	95,900	0.95	-	-	-	0.12	0.40	7.20
-15	800	78,900	0.71	-	-	0.09	0.42	1.30	40.6
-10	800	60,000	0.43	-	0.04	0.18	0.80	2.80	155
-37	800	55,200	(4)	(4)	(4)	(4)	(4)	(4)	283
-28	800	46,000	(3)	0.09	0.25	0.69	3.60	14.8	168
-17	800	42,000	0.17	0.08	0.25	0.80	3.90	17.9	-
-23	800	25,000	(3)	0.42	1.03	3.30	22.5	130	-
-27	800	16,500	0.10	1.20	5.10	32.5	210	950	-
-34	800	9,690	(3)	6.30	14.5	66.0	850	-	-
-31	800	6,700	0.04	5.40	22.0	140	-	-	-
-48	800	2,330	(3)	150	650	-	-	-	-
-44	800	1,400	(3)	130	-	-	-	-	-
-50	800	1,250	(3)	270	-	-	-	-	-
-55	600	1,010	0.01	680	-	-	-	-	-

(1) Specimen failed during application of load.
(2) Indicated stress or rupture will not occur within 500 hours - test discontinued.
(3) Initial loading strain was indeterminate.
(4) No autographic time vs strain curve was recorded.

TABLE CLXXXVI

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY SHEET, 0.063 INCH THICK (PRODUCTION HEATS NOS. [illegible])

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
C8L05-19	600	148,000	-	-	-	-	-	-	(1)
-9	600	148,000	3.14	-	-	-	0.08	0.59	362
-6	600	147,000	2.24	-	-	-	0.14	2.82	296
-24	600	146,000	1.98	-	-	0.03	0.64	14.7	(2)
-11	600	146,000	(3)	-	-	-	-	-	0.1
-18	600	143,000	2.86	-	-	-	0.05	0.52	476
-38	600	125,000	1.31	-	-	0.60	17.3	119	-
-35	600	112,000	0.90	0.27	2.20	12.0	130	(2)	-
-34	600	87,500	1.04	3.35	15.0	84.0	(2)	-	-
-32	600	64,900	0.44	10.5	50.0	200	-	-	-
-33	600	55,200	0.42	4.20	47.0	380	-	-	-
-31	600	34,900	0.23	64.0	300	-	-	-	-
-27	600	15,200	0.16	(2)	-	-	-	-	-
C8L05-1	700	139,000	(3)	-	-	-	-	-	0.02
-42	700	137,000	2.11	-	-	-	0.03	0.16	3.16
-2	700	135,000	2.40	-	-	-	0.03	0.10	0.84
-4	700	131,000	1.65	-	-	-	0.08	0.31	4.90
-8	700	122,000	0.48	-	0.06	0.13	0.78	3.60	122
-10	700	100,000	0.90	0.24	0.55	2.60	15.0	42.7	823
-37	700	75,000	0.73	0.39	0.92	2.95	13.0	86.0	-
-40	700	52,100	0.59	-	0.24	5.60	72.0	600	-
-36	700	51,800	(3)	-	1.39	6.60	75.5	(4)	-
-43	700	46,000	0.35	2.80	8.80	41.0	360	-	-
-46	700	27,900	0.21	8.30	24.5	184	-	-	-
-26	700	11,700	0.10	34.5	160	575	-	-	-
-21	700	6,590	(3)	235	(2)	-	-	-	-
-49	700	3,600	0.09	510	-	-	-	-	-
C8L06-14	800	128,000	(3)	-	-	-	-	-	0.32
-7	800	113,000	1.32	-	-	-	0.05	0.12	1.29
-5	800	95,100	0.80	-	0.04	0.11	0.36	0.98	10.6
-3	800	70,100	0.62	0.04	0.14	0.34	1.36	3.70	73.2
-45	800	50,300	0.52	0.20	0.76	2.70	15.1	39.4	821
-39	800	22,200	0.36	0.18	0.87	4.45	44.9	175	-
-47	800	17,500	(3)	2.75	20.0	120	(2)	-	-
-20	800	14,900	0.69	5.50	17.4	65.0	570	-	-
-42	800	12,500	0.09	13.0	43.0	181	-	-	-
-48	800	8,500	0.11	0.64	3.25	23.7	225	-	-
-44	800	6,080	(3)	8.00	27.8	290	-	-	-
-45	800	4,730	0.03	34.0	205	-	-	-	-
-28	800	2,480	0.03	76.0	(2)	-	-	-	-
-43	800	1,210	0.05	(2)	-	-	-	-	-

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Initial loading strain was indeterminate.
(4) Temperature varied beyond the prescribed limits before 1.0 percent strain was reached.

TABLE CLXXXVII

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 22154)[1]--Compressive Creep Properties[2] at 600° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.05%	0.1%	0.2%	0.5%	1.0%
C2LH4 -8	155.2	0.9	0.23	2.26	6.54	-[4]	
-10	170.3	-[4]					
-12	120.0	0.84	3.0	15.5	55.0	>500.0	>500.0
-20	154.7	-[5]					
-22		-[4]					
-25	160.0	1.74	0.31	18.7	318.3	>500.0	>500.0
-26	155.0	1.44	0.16	1.88	7.73	-[4]	
-28	130.1	0.82	29.8	71.8	155.8	424.2	>500.0
-30	50.0	0.38	32.2	122.3	>500.0	>500.0	>500.0
-32	170.0	1.74	22.8	128.2	>500.0	>500.0	>500.0
-35	155.0	0.10	0.48	6.45	13.2	-[6]	
-41	170.0	1.90	1.30	>100.0	-[4]		
-48	180.0	-[5]					
-57	160.4	-[5]					
-60	150.2	-[4]					
Spare	100.0	0.62	4.86	14.4	187.2	-[6]	

[1] Solution treated and aged.

[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.

[3] Compressive stress is equal to the load divided by the cross sectional area

[4] Equipment failure.

[5] Specimen buckled.

[6] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CLXXXVII[1]

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 22154)[1]—Compressive Creep Properties[2] at 700° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.05%	0.1%	0.2%	0.5%	1.0%
C2LH5 -1	116.0	–[4]					
-3	100.0	–[4]					
-12	60.0	0.39	0.35	1.0	5.3	59.5	–[4]
-14	50.0	0.32	2.3	7.0	28.5	–[4]	
-16	30.0	0.18	4.8	32.2	–[4]		
-17	120.9	–[5]					
-23	30.0	0.34	4.7	31.7	152.7	>500.0	>500.0
-27	105.0	0.49	0.14	0.73	3.22	11.4	60.0
-29	20.0	0.14	5.0	21.0	160.0	>500.0	>500.0
-31	120.0	1.08	0.02	0.04	0.2	1.5	11.7
-33	70.0	0.46	0.7	2.9	10.1	55.1	273.6
-34	70.0	0.3	2.2	7.0	9.7	59.0	329.0
-37	90.0	0.50	0.19	0.38	1.23	6.33	31.0
-39	40.1	0.24	17.2	39.4	160.1	>500.0	>500.0
-42	90.0	0.51	0.17	0.88	2.72	12.0	48.4
-45	60.1	0.21	2.11	9.27	31.0	–[4]	
-49	80.0	0.55	0.20	0.90	3.47	27.9	101.0
-54	10.0	0.06	56.0	185.0	>500.0	>500.0	>500.0
-56	110.3	0.92	0.09	0.17	0.57	2.44	9.82
-63	100.0	0.77	0.15	0.59	2.03	10.5	43.6
-73	90.0	0.63	0.19	0.85	3.1	16.8	90.7
-67	50.0	0.32	4.3	8.1	62.0	246.0	–[6]
-76	130.0	1.45	0.018	0.04	0.16	1.7	–[6]
-71	15.0	0.0	27.1	100.4	–[6]		
Spare	15.0	0.10	7.5	37.0	–[6]		

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/3 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Equipment failure.
[5] Specimen buckled.
[6] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CLXXXIX

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 23154)[1]—Compressive Creep Properties[2] at 800° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.05%	0.1%	0.2%	0.5%	1.0%
C3LH6 -4	75.0	0.32	0.03	0.13	0.32	1.29	3.78
-5	65.1	0.35	0.10	0.17	0.61	3.22	12.5
-7	54.9	0.32	0.03	0.17	0.80	3.12	13.4
-8	35.0	0.30	0.19	0.47	1.74	13.5	113.0
-15	70.0	-[4]					
-19	15.0	0.10	5.97	14.2	66.8	-[4]	
-24	4.99	0.01	6.9	54.5	-[4]		
-36	5.01	0.02	4.12	17.5	66.8	348.8	>500.0
-38	25.0	0.17	1.86	4.19	11.6	34.9	-[4]
-40	8.0	0.16	32.2	122.3	>500.0	>500.0	>500.0
-44	10.0	0.06	4.26	11.3	45.0	427.4	>500.0
-46	120.3	0.89	0.01	0.02	0.03	0.11	0.30
-47	5.01	0.03	56.0	552.0	>500.0	>500.0	>500.0
-50	4.5	0.04	32.3	62.6	>500.0	>500.0	>500.0
-51	90.0	-[4]					
-53	100.0	0.48	0.03	0.06	0.2	0.6	3.1
-58	45.0	0.35	0.2	0.7	3.4	11.9	45.9
-31	29.8	-[5]					
-62	89.7	-[4]					
-65	45.0	0.33	0.12	0.37	1.33	6.0	29.4
-72	30.9	0.21	0.24	1.9	3.4	47.2	289.0
-67	119.0	0.82	0.015	0.035	0.09	0.79	3.2
-55	20.0	0.11	0.43	2.68	7.36	82.6	-[6]

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Equipment failure.
[5] Specimens buckled.
[6] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CXC

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 22154)[1]—Compressive Creep Properties[2] at 900° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.5%	0.1%	0.2%	0.5%	1.0%
C2LH7 -2	20.0	0.12	00.01	0.61	2.6	13.4	>500.0
-6	40.0	0.11	11.8	144.0	>500.0	>500.0	>500 0
-21	10.0	0.05	0.6	2.6	31.0	>500.0	>500.0
-59	5.0	0.02	0.7	11.0	78.9	-[4]	
-66	40.0	0.30	0.025	0.07	0.2	0.8	1.7
Spare	30.0	0.25	0.02	0.07	0.2	0.9	4.0

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CXCI

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 22154)[1]—Bearing Creep Properties[2] at 900° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet and have e/d = 2

Specimen No.	Bearing Stress[3] 1000 psi	Loading Deformation[4] %	Time to Deformation[4], hr 0.5%	1.0%	2.0%	4.0%	Time to Rupture hr
C2LJ4 -36	200.0	5.1[5]					
Spare	180.0	3.6	25.0	–[7]			
-44	204.5	2.4	0.73	19.0	109.7	>500.0	>500.0
-46	204.9	5.7	0.40	5.30	82.2	–[6]	–[6]
-47	206.7	6.1	16.8	34.4	77.0	–[6]	–[6]
-50	200.0	5.3	0.06	4.51	50.0	391.9	–[6]
-60	220.0	8.1	0.91	5.97	41.6	266.5	–[6]
-63	230.4	7.9	0.64	2.69	77.8	374.4	–[6]
-64	235.3	12.3	0.04	0.53	5.37	88.9	–[6]
-66	250.0	15.3	0.01	0.07	0.50	4.60	–[6]
-73	260.1	16.8	<0.01	<0.01	<0.01	0.04	–[6]
-84	175.2	3.3	44.0	154.7	>500.0	>500.0	>500.0
-93	181.2	3.8	9.44	99.8	>500.0	>500.0	>500.0
-96	224.7	9.6	0.19	0.73	8.62	96.2	–[6]
-98	233.6	10.0	0.33	1.64	17.5	145.0	–[6]
-101	240.1	–					00.0
-102	240.2	11.2	0.05	0.31	4.04	93.9	–[6]
-79	250.0						>500.0
Spare	270.0						00.0
Spare	265.0						>500.0
Spare	267.5						60.9

[1] Solution treated and aged
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min
[3] Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter.
[4] Percent of bearing-hole diameter.
[5] Equipment failure.
[6] Rupture data not obtained.
[7] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CXCII

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 22154)[1]—Bearing Creep Properties[2] at 700° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet and have e/d = 2

Specimen No.	Bearing Stress[3] 1000 psi	Loading Deformation[4] %	Time to Deformation[5], hr 0.5%	1.0%	2.0%	4.0%	Time to Rupture hr
C2LJ8 -40	185.3	0.8	3.50	12.9	23.1	67.3	–[6]
-45	175.1[7]	3.1	1.38	1.48	–[8]		–[6]
-48	174.8[7]	1.1	4.00	18.1	48.3	–[8]	–[6]
-49	175.0	1.3	1.34	2.66	9.66	45.3	–[6]
-53	174.5	2.6	0.16	0.64	–[8]		–[6]
-54	180.3	2.3	0.22	0.88	4.55	–[8]	–[6]
-55	175.0	1.7	0.52	1.76	11 5	66.4	–[6]
-57	170.2	2.9	0.13	1.14	7 00	41.0	–[6]
-61	160.0	1.8	1.94	6.45	24.5	–[8]	–[6]
-60	159.0	2.8	1.33	4.99	18.8	–[8]	–[6]
-75	130.0	1.9	1.80	7.80	27.6	171.6	–[6]
-80	120.0	1.2	2.77	13 7	44.0	267.4	–[6]
-81	319.7	3.8	0.01	0.02	0.12	0.76	–[6]
-82	79.9	0.9	10.5	28.3	247.3	>500.0	>500.0
-83	349.7	16.0	0.02	0.03	0.06	0.11	–[6]
-87	99.9	1.3	5.41	37.0	120.7	>500.0	>500.0
-91	140.8	2.2	0.84	6.50	38.1	160.7	–[6]
-94	144.9	2.6	1.39	5.36	23.3	122.0	–[6]
-100	150.0	3.9	0.45	1.73	20.8	80.4	–[6]
-65	250.0						8.6
-77[7]	100.9	3.2	0.09	1.61	4.09	16.4	–[6]
Spare	245.0						23.8
Spare	255.0						62.0
Spare	235.0						156.3
Spare	40.0	0.57	331.0	–[8]			
Spare	60.0	1.3	13.4	63.8	–[8]		
Spare	140.0	3.1	0.33	2.16	12.2	69.2	–[6]
Spare	30.0	0.74	8.9	60.0	–[8]		
Spare	225.0						248.0

[1] Solution treated and aged.
[2] Specimens were heated to temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter.
[4] Percent of bearing-hole diameter.
[5] Temperature was not continuously within ± 3° F at 700° F, but was within ± 10° F of control temperature.
[6] Rupture data not obtained.
[7] Specimen run at 700° F by mistake.
[8] Equipment failure.
[9] Evaluation discontinued because desired datum points could not be reached within reasonable times

TABLE CXCIII

Ti—2.5 Al—16 V ALLOY SHEET (Heat No. 22154)[1]—Bearing Creep Properties[2] at 800° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet and have e/d = 2

Specimen No.	Bearing Stress[3] 1000 psi	Loading Deformation %	Time to Deformation[4], hr				Time-to Rupture hr
			0.5%	1.0%	2.0%	4.0%	
C3LJ6 -37	163.1[5]	0.9	0.04	0.10	0.30	0.44	-[6]
-38	166.5	0.7	-[6]				
-42	172.3	1.3	0.06	0.16	0.36	0.69	-[6]
-43	161.6	0.9	0.11	0.25	0.61	1.49	-[6]
-51	150.0	2.6	0.11	0.23	0.63	1.92	-[6]
-52	130.0	2.2	0.16	0.48	1.39	3.96	-[6]
-56	109.9	1.0	1.68	5.94	22.5	69.5	-[6]
-58	89.9[5]						
-62	120.4	1.4	0.35	0.64	1.80	6.80	-[6]
-67	90.0	0.7	2.15	6.53	114.7	>502.0	>560.0
-70	110.0	1.4	0.94	3.34	11.7	-[6]	
-71	60.0	0.5	12.7	40.5	311.3	>502.0	>560.0
-74	100.0	1.0	0.57	1.79	6.66	26.0	-[6]
-76	70.0	0.5	2.06	6.96	36.7	211.8	-[6]
-78	90.0	1.2	1.80	-[6]			
-86	80.0	0.3	1.96	10.7	42.9	256.4	-[6]
-88	90.0	0.8	0.96	13.8	67.8	467.9	-[6]
-89	86.0	-[4]					
-95	88.5	1.3	0.56	2.09	7.36	32.8	-[6]
-90	230.9						0.1
Spare	240.0						0.1
-66	220.9						0.8
Spare	30.0	0.6	11.2	143.4	-[7]		
Spare	30.0	0.74	8.9	60.0	-[7]		
Spare	200.0						8.6
Spare	180.0						25.9
Spare	170.0						33.0

1 Solution treated and aged.
2 Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 minutes.
3 Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter.
4 Equipment failure.
5 Temperature was not continuously within ± 3° F of 800° F, but was within ± 6° F of control temperature.
6 Rupture data were not obtained.
7 Evaluation discontinued because desired datum points could not be reached within reasonable times.

TABLE CXCIV

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 22154)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
C2LK4M-24	80.3	> 500.0	600
-27	76.9	> 500.0	600
-28	86.0	> 500.0	600
-33	88.1	3.1	600
-35	88.7	> 500.0	600
-37	86.5	244.2	600
Spare	87.9	> 500.0	600
Spare	87.1	> 500.0	600
Spare	86.8	116.4	600
Spare	95.0	00.0	600
C2LK8M-25	66.3	264.3	700
-31	76.8	14.3	700
-32	74.9	58.6	700
-34	72.2	122.4	700
-38	68.8	348.7	700
Spare	66.6	161.6	700
Spare	73.7	71.7	700
-39	79.0	79.2	700
-40	82.5	00.0	700
C2LK6M-21	46.2	96.9	800
-22	57.5	2.8	800
-26	60.0	0.0	800
-29	52.5	10.6	800
-30	50.2	0.0	800
-36	47.5	55.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits.

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 24806)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
C5LK4M-4	97.9	> 500.0	600
-7	93.8	> 500.0	600
-8	94.0	> 500.0	600
-13	94.5	00.0	600
-15	94.3	00.0	600
-17	94.1	00.0	600
C5LK3M-3	82.0	39.2	700
-5	87.8	2.8	700
-11	81.2	11.4	700
-12	86.2	00.0	700
-14	80.0	9.3	700
-19	78.0	62.3	700
-20	70.0	> 500.0	700
C5LK6M-1	61.1	13.4	800
-2	52.0	31.4	800
-6	48.5	67.1	800
-9	70.2	0.6	800
-10	45.0	112.3	800
-16	36.4	462.5	800
-29	75.0	00.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded in about 2 min, before rupture-time measurements were started.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between roots of the slits.

TABLE CXCV

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 24814)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
C8LK4M-7	100.0	00.0	600
-8	94.8	00.0	600
-11	95.0	>500.0	600
-12	92.7	62.0	600
-14	90.0	>500.0	600
-15	80.2	>500.0	600
C8LK5M-2	80.0	31.3	700
-3	82.0	13.3	700
-5	85.0	00.0	700
-10	87.0	00.0	700
-13	70.2	464.8	700
-17	80.8	>500.0	700
-18	Specimen broken when put in grips		
Spare	83.5	00.0	700
C8LK3M-1	91.1	00.0	800
-4	75.0	1.2	800
-6	45.0	298.8	800
-9	55.0	42.3	800
-16	64.9	3.9	800
Spare	42.5	471.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits.

TABLE CXCVI

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 23354)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125-in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
C3LK4N -24	90.1	>300.0	600
-27	90.4	>500.0	600
-28	90.2	>500.0	600
-33	90.3	90.7	600
-35	90.6	115.0	600
-37	90.6	000.0	600
C3LK5N -23	83.2	0.2	700
-25	80.9	16.6	700
-31	79.0	25.7	700
-32	81.0	11.7	700
-34	76.9	37.4	700
-36	74.1	51.1	700
C3LK6N -21	70.0	1.3	800
-22	66.9	4.2	800
-26	49.9	50.5	800
-29	77.1	0.2	800
-30	56.0	27.2	800
-36	59.7	8.1	800
Spare	37.5	258.6	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by two times the cross-sectional area

Ti–2.5 Al–16 V ALLOY SHEET (Heat No. 23372)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125-in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
C6LK4N -24	90.0	284.7	600
-27	90.1	180.1	600
-28	90.2	453.2	600
-33	90.3	>500.0	600
-35	90.6	00.0	600
-37	90.3	00.0	600
C6LK5N -23	83.6	9.8	700
-25	84.7	1.6	700
-31	80.0	18.7	700
-32	75.0	113.2	700
-34	77.9	44.8	700
-36	80.0	29.0	700
Spare	70.0	528.4	700
Spare	87.5	00.0	700
C6LK6N -21	79.0	0.2	800
-22	60.1	11.1	800
-26	70.1	1.2	800
-29	49.4	65.0	800
-30	55.1	25.1	800
-36	55.3	25.1	800
Spare	42.5	126.6	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min
[3] Shear stress is equal to the load divided by two times the cross-sectional area

TABLE CXCVII

Ti–3.5 Al–16 V ALLOY SHEET (Heat No. 23345)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
C9LK4N -24	84.7	>500.0	600
-27	84.6	>500.0	600
-28	85.0	>500.0	600
-33	85.1	>500.0	600
-35	86.6	280.3	600
-37	88.5	156.8	600
Spare	92.0	00.0	600
Spare	92.5	>212.0	600
C9LK5N -23	80.1	0.7	700
-25	74.9	135.7	700
-31	77.1	35.9	700
-32	81.6	3.3	700
-34	78.4	37.9	700
-38	72.0	69.2	700
	67.5	>500.0	700
C9LK6N -21	55.1	33.3	800
-22	60.9	0.9	800
-26	60.0	4.7	800
-29	49.0	83.5	800
-30	75.0	0.1	800
-36	51.8	48.1	800
	42.5	>500.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by two times the cross-sectional area.

TABLE CXCVIII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.020 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = ∞ (REACTIVE METALS HEAT NO. 2209J)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C1A-2	185,000	9	C1A-31	160,000	2	C1B-21	157,500	2	C1A-57	127,000	2	C1B-66	120,500	10
C1B-19	180,000	40	C1B-66	155,000	14	C1C-41	147,500	4	C1B-39	120,000	22	C1B-60	117,500	95
C1C-4	160,000	767	C1B-25	150,000	138	C1B-38	140,000	44	C1D-14	115,000	85	C1C-15	100,000	697
C1F-24	140,000	1,549	C1B-8	125,000	1,054	C1B-8	120,000	278	C1C-33	100,000	433	C1B-55	75,000	7,428
C1B-35	120,000	2,548	C1A-26	100,000	2,968	C1B-22	100,000	2,250	C1B-2	90,000	2,418	C1B-10	60,000	8,970
C1C-38	95,000	8,000	C1C-14	85,000	8,038	C1B-52	80,000	6,694	C1B-45	75,000	4,558	C1D-37	50,000	24,571
C1F-42	85,000	12,000	C1B-4	70,000	15,000	C1B-44	51,000	18,000	C1B-6	65,000	12,000	C1A-37	45,000	25,000
			C1C-42	70,000	25,000				C1B-11	65,000	51,000	C1B-39	65,000	68,000
			Average		20,000				C1B-32	65,000	115,000	C1B-37	65,000	401,000
C1B-12	75,000	20,000				C1B-19	50,000	32,000	Average		85,000	Average		169,500
C1B-44	75,000	39,000				C1J-11	50,000	47,000						
C1D-15	75,000	51,000	C1B-50	60,000	27,000	C1F-55	50,000	51,000						
Average		43,000	C1B-46	60,000	51,000	Average		43,000	C1B-14	40,000	178,000	C1B-17	40,000	402,000
			Average		34,000				C1D-39	40,000	1,683,000	C1F-11	40,000	527,000
C1B-48	70,000	71,000				C1F-25	45,000	78,000	C1B-41	40,000	10,000,000(1)	C1B-43	40,000	1,742,000
			C1B-36	55,000	157,000	C1B-44	45,000	118,000	C1B-11	40,000	10,000,000(1)	Average		1,222,000
C1C-18	65,000	31,000				C1B-28	45,000	526,000						
C1B-4	65,000	48,000	C1D-29	50,000	48,000	Average		431,000	C1B-48	37,500	950,000	C1C-30	37,500	520,000
C1D-14	65,000	1,111,000							C1F-3	37,500	1,778,000	C1B-31	37,500	2,107,000
Average		697,000	C1A-38	60,000	59,000	C1B-47	40,000	172,000	Average		2,364,000	Average		1,964,000
			C1F-51	40,000	116,000	C1C-5	40,000	211,000						
C1J-24	60,000	45,000	Average		88,000	C1B-27	40,000	1,178,000	C1B-11	35,000	710,000	C1B-4	35,000	5,699,000
C1F-9	60,000	68,000				C1B-60	40,000	8,677,000	C1B-15	35,000	1,970,000	C1B-3	35,000	9,219,000
C1B-40	60,000	88,000	C1J-39	37,500	504,000	C1F-60	40,000	8,677,000	C1B-16	35,000	2,171,000	C1B-47	35,000	3,121,000(1)
Average		80,000	C1A-53	37,500	1,576,000	Average		3,088,000	Average		1,617,000			
			C1D-40	37,500	1,618,000						1,466,000			
C1F-33	50,000	147,000	Average		1,233,000	C1D-43	35,000	4,956,000				C1F-41	30,000	7,379,000(1)
C1J-22	50,000	1,677,000				C1B-59	35,000	10,000,000(1)	C1A-47	30,000	500,000	C1B-4	30,000	10,000,000(1)
C1B-50	50,000	6,389,000(1)	C1C-5	35,000	5,567,000	C1F-4	35,000	10,000,000(1)	C1D-15	30,000	8,087,000(1)			
			C1A-39	35,000	10,000,000(1)				C1D-31	30,000	10,000,000(1)	C1C-1	25,000	6,617,000(1)
C1A-48	40,000	8,218,000				C1C-10	30,000	10,000,000(1)	C1B-1	30,000	10,000,000(1)	C1B-29	25,000	10,000,000(1)
C1D-35	40,000	10,000,000(1)	C1A-18	30,000	10,000,000(1)	C1B-25	30,000	10,000,000(1)						
C1B-52	40,000	10,000,000(1)	C1E-9	30,000	10,000,000(1)				C1J-41	20,000	6,758,000(1)			
			C1B-47	30,000	10,000,000(1)				C1B-30	20,000	10,000,000(1)			
									C1A-5	20,000	10,000,000(1)			

(1) Test discontinued, no failure.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CXCIX

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.020 INCH THICK.
STRESS CONCENTRATION = 1.0, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NO. 22093)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C1[illegible]-42	185,000	25	C1B-18	176,000	136	C1M-9	160,000	4	C1D-52	140,000	30	C1B-57	130,000	16
C1D-[illegible]	185,000	10												
Average		28	C1F-38	170,000	425	C10-18	150,000	2	C1N-6	136,000	77	C1L-36	125,000	395
C1D-4	180,000	184	C1B-31	167,000	16	C10-47	145,000	2,240	C1B-37	132,000	12	C1B-24	108,000	2,680
C1[illegible]-31	176,000	71	C1A-42	155,000	23	C1D-53	142,000	3,470	C1M-7	132,000	126			
C1C-52	176,000	1,750							Average		126	C1A-38	106,000	2,430
Average		1,013	C1C-37	125,000	7,000	C1D-55	140,000	2,755	C1M-27	128,000	1,500	C1B-47	105,000	6,651
C1[illegible]-53	170,000	15,500	C1B-43	120,000	16,000	C1B-41	130,000	3,305	C1M-8	125,000	2,210	C10-85	90,000	9,178
			C10-24	120,000	35,000									
C1A-49	113,000	28,000	Average		26,000	C1L-37	100,000	7,717,000	C1D-1	85,000	30,000	C1B-11	75,000	209,000
C1[illegible]-37	110,000	38,000							C1B-42	85,000	117,000			
C1[illegible]-33	110,000	19,000	C1F-26	110,000	18,000	C1D-31	85,000	19,000	Average		84,000	C1A-21	70,000	13,000
Average		35,000				C10-45	85,000	27,000				C1B-56	70,000	47,000
			C1B-16	90,000	80,000	C1J-16	85,000	32,000	C1J-15	80,000	16,000	Average		30,000
C1[illegible]-[illegible]	100,000	28,000	C1D-19	90,000	25,000	C1B-55	85,000	10,000,000(1)	C1C-50	80,000	77,000			
C1A-15	100,000	36,000	C1B-39	90,000	15,000				C1B-16	60,000	140,000	C1B-3	65,000	26,000
C1[illegible]-12	100,000	2,802,000	Average		27,000	C1A-45	80,000	23,000	Average		580,000	C1B-28	65,000	83,000
Average		991,000				C1B-4	80,000	11,000				C1C-55	65,000	119,000
			C1C-34	80,000	30,000	Average		27,000				Average		76,000
C1C-21	80,000	40,000	C10-58	80,000	132,000				C1F-50	75,000	31,000			
C1D-3	80,000	95,000	C1F-56	80,000	1,417,000	C10-54	75,000	21,000	C1F-54	75,000	50,000			
C1D-34	80,000	695,000	Average		591,000	C1C-3	75,000	10,000,000(1)	.1A-31	75,000	4,094,000(1)	C1J-8	60,000	118,000
C1A-19	80,000	800,000				C1L-59	75,000	10,000,000(1)				C1L-60	60,000	2,604,000
Average		408,000	C1B-10	75,000	47,000				C1B-36	70,000	22,000	Average		1,371,000
C1[illegible]-47	70,000	171,000	C1J-29	75,000	10,000,000(1)	C10-53	65,000	391,000	1J-32	70,000	240,000	C1F-6	50,000	1,838,000
C1J-57	70,000	1,449,000(1)	C1M-20	75,000	10,000,000(1)	C1L-53	65,000	10,000,000(1)	Average		136,000	C10-43	50,000	6,191,000(1)
C1[illegible]-[illegible]	70,000	10,000,000(1)										C1B-20	50,000	10,000,000(1)
			C1B-51	65,000	60,000	C1M-16	55,000	9,011,000(1)	C1B-29	60,000	3,653,000(1)			
C1[illegible]-38	60,000	10,000,000(1)	C1A-44	65,000	923,000(1)	C1L-54	55,000	10,000,000(1)				C1C-41	60,000	10,000,000(1)
C1[illegible]-56	60,000	10,000,000(1)	C1L-32	65,000	10,000,000(1)	C1L-55	55,000	10,000,000(1)	C1B-41	50,000	7,926,000	C1L-43	60,000	10,000,000(1)
C1[illegible]-[illegible]	60,000	10,000,000(1)										C1B-28	60,000	10,000,000(1)
			C1L-13	55,000	5,450,000	C1J-5	45,000	10,000,000(1)	C1M-41	45,000	10,000,000(1)			
			C1C-58	55,000	10,000,000(1)				C1B-52	45,000	10,000,000(1)			
			C1D-2	55,000	10,000,000(1)									

(1) Test discontinued, no failure

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CC

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.020 INCH THICK.
STRESS CONCENTRATION = 1.0, STRESS RATIO = 0.3 (REACTIVE METALS: HEAT NO. 22093)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C1J-42	172,000	2	C1J-43	150,000	48	C1J-40	145,000	19	C1E-5	130,000	9,098	C1B-1	110,000	510
C1B-26	170,000	5	C1d-35	150,000	21,007	C1D-6	144,000	43	C1D-6	120,000	3,760	C1A-5	110,000	17,000
			Average		11,528							C1A-6	110,000	18,000
C1A-9	168,000	9,530	C1L-21	145,000	25,076	C1B-43	142,000	5,660	C1H-39	115,000	5,070	Average		11,800
									C1E-56	115,000	13,000			
C1D-43	165,000	2,097	C1B-13	140,000	1,270	C1E-36	140,000	25	C1H-29	115,000	16,000	C1D-40	108,000	1,080
									Average		11,600			
C1L-11	164,000	15,630	C1E-23	138,000	18,900	C1B-16	130,000	12,800				C1C-6	106,000	2,270
									C1J-4	110,000	7,500			
C1L-18	162,000	22,690	C1L-22	135,000	17,043	C1E-42	125,000	17,000	C1J-21	110,000	34,000	C1H-50	100,000	41,000
									C1J-46	110,000	151,000			
C1J-3	110,000	55,000	C1L-26	133,000	25,082	C1A-43	115,000	25,000	C1D-9	110,000	171,000	C1F-36	95,000	56,000
C1C-60	110,000	61,000				C1D-33	115,000	25,000	Average		116,000	C1E-46	95,000	107,000
C1A-13	110,000	72,000	C1H-45	115,000	10,000	C1H-60	115,000	32,000				C1E-8	95,000	110,000
Average		62,000	C1H-53	115,000	137,000	Average		27,000				Average		91,000
			Average		74,000				C1B-37	105,000	21,000			
C1D-41	100,000	106,000							C1C-47	105,000	27,000	C1D-50	85,000	41,000
C1D-55	100,000	180,000	C1L-17	110,000	10,000,000(1)	C1E-52	112,000	24,000	C1B-17	105,000	52,000	C1D-58	85,000	55,000
C1A-43	100,000	220,000				C1B-7	112,000	111,000	Average		36,000	C1L-51	85,000	126,000
Average		127,000	C1C-27	105,000	67,000	Average		76,000				Average		75,000
			C1B-33	105,000	10,000,000(1)				C1F-18	95,000	46,000			
C1J-2	95,000	1,370,000				C1D-46	110,000	32,000	C1D-3	95,000	53,000	C1E-3	65,000	191,000
			C1E-26	100,000	27,000	C1J-60	110,000	81,000	C1H-19	95,000	156,000	C1C-38	65,000	1,193,000
C1J-56	90,000	169,000	C1B-44	100,000	57,000	C1H-13	110,000	542,000	Average		85,000	C1H-1	65,000	1,585,000
C1E-4	90,000	10,000,000(1)	C1C-33	100,000	2,210,000	C1A-28	110,000	10,000,000(1)				Average		990,000
C1H-13	90,000	10,000,000(1)	Average		775,000				C1D-54	80,000	180,000			
						C1D-29	107,000	38,000	C1A-46	80,000	6,717,000	C1J-17	55,000	1,129,000
C1G-16	60,000	263,000	C1E-60	90,000	37,000	C1B-48	107,000	74,000	Average		3,448,000	C1H-14	55,000	2,902,000
C1A-12	80,000	10,000,000(1)	C1A-14	90,000	61,000	C1E-27	107,000	86,000				Average		2,016,000
C1A-26	80,000	10,000,000(1)	C1B-22	90,000	10,000,000(1)	Average		67,000	C1F-3	70,000	7,965,000(1)			
			C1D-22	90,000	10,000,000(1)				C1E-38	70,000	8,207,000(1)	C1E-6	40,000	1,859,000
C1H-15	73,000	10,000,000(1)				C1B-25	105,000	27,000	C1F-15	70,000	10,000,000(1)	C1L-56	40,000	4,200,000
C1H-11	73,000	10,000,000(1)	C1D-39	80,000	10,000,000(1)	C1D-14	105,000	33,000	C1H-14	70,000	10,000,000(1)	C1H-43	40,000	10,000,000(1)
			C1J-59	80,000	10,000,000(1)	C1C-15	105,000	10,000,000(1)						
						C1J-11	105,000	10,000,000(1)				C1H-36	30,000	10,000,000(1,2)
			C1F-45	70,000	95,000	C1D-18	100,000	10,000,000(1)				C1H-38	30,000	10,000,000(1)
			C1J-58	50,000	10,000,000(1)	C1F-59	95,000	10,000,000(1)						

(1) Test Discontinued, no failure
(2) Temperature decreased 20°F below nominal during test

Stress Ratio = $\frac{\text{Min. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = ∞ (REACTIVE METALS HEAT NOS. 24806 AND 24814)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C2[illegible]-48	180,000	10	C2F-27	150,000	2	C2H-10	135,000	2	C2E-37	130,000	40	C2E-50	120,000	31
C2A-47	170,000	12)	C2B-8	140,000	380	C2H-31	127,500	620	C2J-38	120,000	265	C2H-18	110,000	266
C2L-30	160,000	161	C2E-45	135,000	857	C2H-19	120,000	952	C2B-44	119,000	400	C2E-37	100,000	1,218
C2L-71	150,000	1,095	C2H-25	120,000	1,569	C2E-26	100,000	1,488	C2L-43	110,000	681	C2B-42	90,000	1,466
C2[illegible]-58	120,000	3,187	C2B-61	100,000	2,899	C2L-41	90,000	2,617	C2B-6	100,000	2,220	C2A-63	80,000	2,753
C2B-73	100,000	7,519	C2B-9	90,000	13,681	C2H-58	87,500	2,675	C2B-23	90,000	3,430	C2B-70	70,000	5,121
C2P-32	90,000	33,[illegible]28	C2J-39	80,000	42,000	C2F-15	80,000	15,670	C2F-35	80,000	8,222	C2F-26	65,000	10,5[illegible]4
			C2H-28	80,000	48,000									
C2C-9	70,000	45,000	C2H-47	80,000	51,000	C2H-29	70,000	17,000	C2A-57	70,000	15,000	C2J-5[illegible]	60,000	21,200
C2A-13	70,000	57,000	Average		47,000	C2F-24	70,000	32,000						
C2L-5	70,000	110,000				C2J-44	70,000	38,000	C2C-14	60,000	16,000	C2C-1	50,000	10,000
Average		73,000	C2H-3	50,000	94,000	Average		29,000	C2C-3	60,000	23,000	C2B-68	50,000	47,000
			C2H-19	50,000	97,000				C2L-27	60,000	27,000	C2L-14	50,000	57,000
C2A-26	65,000	78,000	C2F-41	50,000	111,000	C2L-49	67,000	37,000	Average		22,000	Average		38,000
C2A-53	65,000	811,000	Average		107,000									
Average		444,000				C2E-19	60,000	36,000	C2A-47	50,000	27,000	C2F-16	45,000	12,000
		328,000	C2C-40	40,000	86,000	C2H-44	60,000	60,000	C2C-33	50,000	98,000	C2H-55	45,000	38,000
C2A-18	60,000	53,000				Average		57,000	C2H-45	50,000	247,000	C2C-13	45,000	56,000
C2E-54	60,000	851,000	C2L-50	45,000	1,258,000				Average		124,000	Average		35,000
C2L-35	60,000	8,454,000	C2L-37	45,000	1,510,000	C2F-42	50,000	70,000						
Average		3,119,000	Average		2,384,000	C2H-56	50,000	374,000	C2E-29	47,500	139,000	C2B-31	40,000	46,000
						C2H-9	50,000	1,111,000	C2A-61	47,500	467,000	C2A-37	40,000	90,000
C2A-38	58,000	49,000	C2L-68	40,000	540,000	Average		1,256,000	C2B-46	47,500	421,000	C2A-33	40,000	1,081,000
C2A-9	58,000	54,000	C2E-12	40,000	2,417,000				Average		383,000	Average		1,072,000
C2L-75	58,000	100,000	C2J-24	40,000	8,350,000	C2H-74	40,000	1,158,000						
C2F-36	58,000	2,032,000	Average		3,436,000	C2L-10	40,000	6,869,000	C2H-11	45,000	499,000	C2B-24	35,000	99,000
Average		1,559,000				C2F-11	40,000	10,000,000(1)	C2C-15	45,000	739,000	C2A-2	35,000	140,000
			C2E-44	35,000	3,605,000				C2B-6	45,000	2,257,000	C2F-21	35,000	1,610,000
C2A-47	55,000	649,000	C2C-11	35,000	10,000,000(1)	C2C-31	35,000	8,952,000	Average		1,645,000	Average		1,616,000
C2H-3	55,000	10,000,000(1)	C2J-31	35,000	10,000,000(1)	C2B-32	35,000	10,000,000(1)						
C2A-44	55,000	10,000,000(1)							C2F-18	40,000	2,722,000	C2H-29	30,000	1,475,0[illegible]
C2F-21	55,000	10,000,000(1)				C2L-33	30,000	10,000,000(1)	C2B-41	40,000	10,000,000(1)	C2B-12	30,000	9,376,000
									C2E-22	40,000	10,000,000(1)	C2L-31	30,000	12,819,000
C2H-20	50,000	8,955,000(1)										C2B-39	30,000	10,000,000(1)
									C2C-7	30,000	10,000,000(1)	C2B-66	30,000	15,000,000(1)
C2J-42	40,000	10,000,000(1)												
C2B-63	40,000	10,000,000(1)												

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through H denotes Heat No. 24806; P denotes Heat No. 24814.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.063 INCH THICK.
STRESS CONCENTRATION = 1.0, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NO. 24806)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C2C-36	165,000	3	C2J-24	158,000	8	C2J-36	152,000	2,302	C2J-32	136,000	234	C2B-68	125,000	19
			C2N-54	158,000	1,616									
C2A-32	160,000	2,138	C2J-40	158,000	2,687	C2J-19	151,000	1,478	C2J-25	131,000	112	C2N-43	120,000	336
C2D-2	160,000	4,387			3,617									
Average		3,760				C2N-53	148,000	35	C2B-36	130,000	32	C2B-26	115,000	529
			C2N-23	156,000	2,960									
C2C-43	155,000	131				C2N-22	145,000	2,210	C2C-46	125,000	3,111	C2N-39	110,000	795
			C2J-55	155,000	4,957									
C2A-31	155,000	9	C2J-29	155,000	5,047	C2N-14	140,000	3,010	C2N-31	120,000	5,932	C2N-38	102,000	4,900
					5,002	C2N-34	140,000	3,100						
C2C-56	154,000	3,467	Average			Average		3,055	C2L-16	115,000	4,984	C2N-17	95,000	7,240
			C2N-39	154,000	1,233									
C2C-7	150,000	4,036				C2C-55	85,000	41,000	C2E-52	85,000	8,000	C2N-3	85,000	10,000
			C2N-47	110,000	27,000	C2J-16	85,000	68,000	C2E-23	85,000	15,000	C2E-37	85,000	14,000
C2E-43	136,000	9,352	C2B-60	110,000	29,000	C2N-32	85,000	9,659,000	C2E-41	85,000	41,000	C2B-20	85,000	21,000
			C2D-3	110,000	50,000						21,000	C2E-56	85,000	17,000
C2A-19	110,000	61,000	Average		35,000			3,736,000	Average			Average		20,000
C2B-54	110,000	80,000				C2N-75	80,000	33,000	C2J-42	82,000	14,000			
C2A-40	110,000	91,000	C2N-28	100,000	61,000	C2N-70	80,000	41,000	C2L-47	82,000	218,000	C2A-21	75,000	45,000
Average		77,000	C2C-47	100,000	118,000	C2A-72	80,000	1,917,000	C2C-50	82,000	1,552,000	C2C-47	75,000	77,000
			C2A-62	100,000	111,000	Average		1,930,000	Average		1,797,000	Average		61,000
C2D-44	100,000	168,000	Average		103,000									
C2D-34	100,000	1,323,000				C2N-41	70,000	30,000	C2N-4	75,000	26,000	C2D-53	73,000	100,000
C2D-31	100,000	4,715,000	C2A-46	90,000	21,000	C2L-55	70,000	35,000	C2C-42	75,000	7,378,000			
Average		2,357,000	C2N-51	90,000	23,000	C2C-13	70,000	164,000	C2E-16	75,000	11,147,000	C2B-28	72,000	51,000
			C2F-2	90,000	10,000,000 (1)	C2N-22	70,000	1,968,000	Average		6,184,000			
C2D-59	90,000	68,000	C2N-5	90,000	10,000,000 (1)	C2D-45	70,000	5,336,000				C2C-41	70,000	122,000
C2B-53	90,000	79,000				C2F-14	70,000	10,000,000 (1)	C2F-45	60,000	545,000	C2D-56	70,000	142,000
C2A-15	90,000	3,822,000	C2B-39	80,000	140,000				C2E-42	60,000	1,657,000	C2E-11	70,000	145,000
C2A-4	90,000	10,000,000 (1)	C2A-44	80,000	183,000	C2N-38	65,000	115,000	C2N-34	60,000	2,438,000	Average		203,000
			Average		154,000	C2N-44	65,000	169,000	Average		1,930,000			
C2A-21	88,000	41,000				C2N-33	65,000	2,799,000				C2J-8	55,000	673,000
C2L-2	88,000	250,000	C2C-34	75,000	694,000	C2N-69	65,000	10,000,000 (1)	C2N-25	50,000	10,000,000 (1)	C2D-4	55,000	3,664,000
C2A-2	88,000	760,000	C2N-20	75,000	10,000,000 (1)	C2N-73	65,000	10,000,000 (1)	C2N-33	50,000	10,000,000 (1)	C2F-6	55,000	9,424,000
C2A-3	88,000	1,405,000							C2B-48	50,000	10,000,000 (1)	Average		4,587,000
Average		556,000	C2C-17	70,000	10,000,000 (1)	C2N-36	55,000	10,000,000 (1)						
			C2E-10	70,000	10,000,000 (1)	C2N-71	55,000	10,000,000 (1)				C2E-36	45,000	10,000,000 (1)
C2A-45	80,000	10,000,000 (1)										C2E-2	45,000	10,000,000 (1)
C2E-55	80,000	10,000,000 (1)				C2C-25	40,000	10,000,000 (1)				C2B-38	45,000	10,000,000 (1)
C2B-4	80,000	10,000,000 (1)												

(1) Test discontinued, no failure.

TABLE CCIII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = 0.) (REACTIVE METALS HEAT NOS. 24806 AND 24814)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C2A-8	185,000	12	C2A-10	188,000	4,497	C2L-12	161,000	51	C2A-11	143,000	10	C2A-33	133,000	10
C2J-57	182,000	2,484	C2A-48	185,000	660	C2L-26	155,000	6,560	C2L-25	140,000	36	C2A-40	130,000	63
C2D-1	182,000	10,442							C2L-1	140,000	212			
Average		6,456	C2A-56	170,000	8	C2F-19	150,000	2,410	Average		124	C2F-28	125,000	128
			C2A-45	170,000	45							C2F-29	125,000	1,190
C2A-36	175,000	478	Average		26	C2U-57	145,000	494	C2F-20	136,000	1,050	Average		659
						C2L-53	145,000	11,800						
C2A-28	174,000	372	C2F-6	160,000	12,454	C2A-28	145,000	14,763	C2F-9	136,000	5,220	C2B-58	110,000	9,497
						Average		9,019						
C2A-46	173,000	883	C2L-13	159,000	2				C2F-48	130,000	9,005	C2F-22	106,000	6,090
						C2U-56	131,000	24,000						
C2U-52	172,000	1,045	C2D-40	155,000	2,832				C2L-38	100,000	91,000	C2U-38	102,000	7,630
C2D-11	172,000	8,285				C2A-60	125,000	42,000	C2B-37	130,000	260,000			
Average		4,670	C2B-63	150,000	19,143	C2A-26	125,000	52,000	C2D-54	100,000	771,000	C2F-36	130,000	6,271
						Average		47,000	Average		377,000	C2B-56	100,000	7,000
C2U-62	170,000	3	C2A-13	140,000	26,026							Average		6,610
C2C-6	170,000	20,275				C2L-5	115,000	30,000	C24-21	90,000	232,000			
Average		10,039				C2J-56	115,000	68,000	C2D-7	90,000	474,000	C2D-58	90,000	11,000
			C2L-4	120,000	30,000	Average		49,000	C2D-9	90,000	868,000	C2A-20	90,000	26,000
C2C-13	159,000	7,757	C2C-44	120,000	38,000				Average		531,000	C2A-6	90,000	217,000
C2A-34	159,000	24,000	C2J-2	120,000	121,000							Average		85,000
Average		16,260	Average		73,000	C2A-13	110,000	42,000	C2A-16	85,000	927,000			
									C2L-2	85,000	10,000,000(1)	C2E-3	80,000	704,000
C2A-12	117,000	99,000	C2A-37	110,000	79,000	C2E-52	105,000	64,000	C2F-15	85,000	10,000,000(1)	C2D-24	80,000	836,000
C2E-42	117,000	123,000	C2A-43	110,000	10,000,000(1)	C2D-29	105,000	12,015,300				C2A-44	80,000	994,000
C2A-58	117,000	140,000				C2E-22	105,000	12,112,910				Average		845,000
Average		121,000	C2D-60	100,000	77,000	Average		8,130,000	C2A-46	60,000	668,000			
			C2J-58	100,000	98,000				C2D-16	80,000	950,000			
C2C-41	110,000	115,000	C2F-31	100,000	10,000,000(1)	C2--46	90,000	5,731,000	C24-27	80,000	10,000,000(1)	C2B-57	70,000	64,000
C2C-39	110,000	224,000				C2E-57	90,000	10,000,000(1)	C2A-33	80,000	10,000,000(1)	C2A-17	70,000	475,000
C2A-14	110,000	10,000,000(1)	C2A-17	90,000	99,000	C2J-60	90,000	10,000,000(1)				C2A-1	70,000	525,000
			C2A-15	90,000	129,000							Average		355,000
C2--36	104,000	504,000	C2J-59	90,000	10,000,000(1)	C2B-48	70,000	5,865,000	C2A-39	70,000	13,000,000(1)			
C2C-50	104,000	1,107,000				C2E-7	90,000	10,000,000(1)	C2H-17	70,000	10,000,000(1)	C2D-52	50,000	5,528,000
C2C-10	104,000	17,000,000(1)	C2B-19	85,000	111,000	C2D-47	90,000	10,000,000(1)	C2L-5	70,000	10,000,000(1)	C2D-51	50,000	6,148,000(1)
			C2B-64	85,000	879,000							C2E-2	50,000	8,561,000
C2C-15	100,000	10,000,000(1)	C2B-60	85,000	10,000,000(1)							Average		6,800,000
C2E-28	100,000	10,000,000(1)												
C--A-25	100,000	10,000,000(1)	C2B-45	80,000	10,000,000(1)							C2A-57	40,000	10,000,000(1)
			C2B-47	80,000	10,000,000(1)							C2A-3	40,000	10,000,000(1)
C2C-42	97,000	100,000	C2C-54	80,000	10,000,000(1)							C2D-26	40,000	10,000,000(1)
C2E-26	97,000	119,000												
C2B-22	97,000	10,000,000(1)												
C2B-50	97,000	10,000,000(1)												
C2D-14	97,000	10,000,000(1)												
C2A-4	91,000	10,000,000(1)												
C2E-10	91,000	10,000,000(1)												

(1) Test discontinued, no failure.
(2) In specimen numbers, third digit A through H denotes Heat No. 24806; P denotes Heat No. 24814.

Stress Ratio = Max. Alternating Stress / Mean Stress

TABLE CCIV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = -1 (REACTIVE METALS HEAT NOS. 23345 AND 23372)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C3L-65	190,000	53	C3L-8	162,500	4	C3L-70	155,000	3	C3L-15	130,000	11	C3P-11	130,000	7
C3M-65	185,000	57	C3L-7	155,000	6	C3P-24	150,000	5	C3P-33	125,000	582	C3L-47	125,000	237
C3P-27	170,000	135	C3L-66	150,000	334	C3P-16	150,000	4	C3L-6	120,000	446	C3P-35	120,000	112
C3J-62	160,000	485	C3L-69	140,000	674	Average		6	C3P-62	110,000	1,449	C3L-50	100,000	2,293
C3K-9	150,000	1,258	C3J-63	130,000	4,304	C3L-60	130,000	371	C3J-72	100,000	3,594	C3L-35	90,000	3,614
C3L-22	110,000	9,394	C3L-19	100,000	8,600	C3L-24	100,000	2,365	C3P-12	70,000	10,882	C3L-59	70,000	6,896
C3K-12	75,000	25,000	C3L-25	65,000	38,000	C3P-10	80,000	13,067	C3L-22	55,000	53,000	C3L-29	45,000	16,000
C3L-44	70,000	67,000	C3L-46	65,000	123,000	C3D-3	60,000	27,000	C3D-7	55,000	111,000	C3L-14	45,000	78,000
C3L-48	70,000	81,000	C3C-9	65,000	179,000	C3L-44	60,000	39,000	Average		82,000	Average		47,000
C3L-29	70,000	134,000	Average		150,000	C3L-49	60,000	81,000	C3L-31	50,000	44,000	C3L-46	40,000	26,000
Average		91,000	C3J-31	60,000	276,000	Average		49,000	C3D-13	50,000	78,000			
C3K-15	65,000	75,000	C3J-39	60,000	481,000				C3P-27	50,000	260,000	C3L-37	35,000	55,000
			C3C-42	60,000	1,537,000	C3F-60	50,000	302,000	Average		143,000	C3J-51	35,000	60,000
C3L-47	80,000	116,000	Average		765,000	C3F-11	50,000	504,000				C3T-16	35,000	179,000
C3M-60	80,000	197,000	C3C-11	50,000	1,033,000	Average		403,000	C3L-45	60,000	80,000	Average		96,000
C3J-14	60,000	482,000	C3F-51	50,000	2,487,000				C3L-29	60,000	157,000			
Average		334,000	Average		1,753,000	C3L-59	45,000	410,000	C3L-27	60,000	135,000	C3L-3	30,000	32,000
						C3L-41	45,000	623,000	Average		117,000	C3L-61	30,000	174,000
C3L-24	55,000	276,000	C3F-5	45,000	1,296,000	Average		516,000				C3F-21	30,000	191,000
C3L-42	55,000	367,000	C3L-8	45,000	3,150,000				C3L-14	35,000	6,433,000	C3L-15	30,000	266,000
C3L-54	55,000	462,000	C3L-36	45,000	9,134,000	C3D-9	40,000	718,000	C3J-61	35,000	10,000,000(1)	Average		153,000
Average		372,000	Average		6,527,000	C3C-5	40,000	931,000						
						C3C-38	40,000	10,000,000(1)	C3D-3	30,000	1,727,000	C3L-45	27,500	4,826,000
C3K-18	50,000	1,440,000	C3F-3	40,000	2,860,000				C3L-51	30,000	6,081,000	C3P-6	27,500	10,000,000(1)
C3C-35	50,000	1,765,000	C3L-29	40,000	6,390,000(1)	C3L-57	37,500	1,022,000	Average		3,890,000			
C3K-4	50,000	2,116,000	C3J-1	40,000	10,000,000(1)	C3P-17	37,500	8,338,000				C3L-37	25,000	10,000,000(1)
Average		1,440,000				C3P-1	37,500	2,456,000	C3L-37	25,000	10,000,000(1)	C3P-4	25,000	10,000,000(1)
			C3L-2	35,000	10,000,000(1)	Average		6,270,000	C3L-48	25,000	10,000,000(1)			
C3D-38	47,500	7,558,000	C3L-21	35,000	10,000,000(1)				C3P-49	25,000	10,000,000(1)	C3L-72	20,000	10,000,000(1)
C3M-70	47,000	10,000,000(1)	C3P-2	35,000	10,000,000(1)	C3L-53	35,000	10,000,000(1)				C3L-56	20,000	10,000,000(1)
						C3P-29	35,000	10,000,000(1)						
C3P-53	50,000	1,290,000				C3P-48	35,000	10,000,000(1)						
C3P-24	46,000	2,474,000												
Average		1,885,000												
C3L-22	45,000	4,529,000												
C3J-44	45,000	10,000,000(1)												

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through H denotes Heat No. 23345; P denotes Heat No. 23372.

Stress Ratio = Max. Alternating Stress / Mean Stress

TABLE CCV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.125 INCH THICK. STRESS CONCENTRATION = 1.0, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NOS. 23365 AND 25372)[2]

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C3L-55	192,000	61	C3K-45	163,000	60	C3K-47	160,000	20	C3C-32	157,000	35	C3E-4	165,000	5
C3A-8	177,000	852	C3E-6	160,000	3,171	C3L-32	145,000	52	C3E-19	155,000	60	C3E-10	160,000	47
C3K-31	177,000	1,177				C3A-20	155,000	500	C3E-36	150,000	8	C3E-36	135,000	35
Average		1,014	C3K-5	157,000	497				C3C-42	150,000	1,098			
			C3K-7	155,000	300	C3A-6	145,000	60	Average		1,953	C3E-32	130,000	395
C3J-34	175,000	1,553												
C3H-41	175,000	2,438	C3K-5	145,000	3,703	C3C-56	143,000	7,050	C3C-26	145,000	104	C3C-69	140,000	4,696
Average		1,995												
C3F-38	150,000	4,301	C3G-30	135,000	8,920	C3L-10	142,000	3,180	C3P-9	130,000	3,268	C3E-16	110,000	1,580
C3F-3	150,000	5,797										C3E-59	110,000	1,132
C3B-38	150,000	8,543	C3G-24	80,000	37,000	C3K-20	96,000	20,518	C3A-13	115,000	5,760	Average		1,356
Average		6,547	C3K-39	80,000	41,300									
			C3G-56	80,000	14,700	C3K-43	70,000	68,000	C3A-35	110,000	6,715	C3A-2	100,000	1,278
C3C-21	110,000	75,000	Average		43,000	C3F-14	70,000	72,000						
C3J-12	110,000	89,000				C3A-53	70,000	80,000	C3K-51	100,000	11,435	C3E-18	80,000	13,594
C3K-51	110,000	98,000	C3K-30	77,500	483,000	Average		77,000						
Average		87,000	C3F-52	77,500	519,000				C3L-70	90,000	130,000	C3E-38	60,000	35,000
			C3G-2	77,500	386,000	C3E-4	65,000	205,000	C3E-72	90,000	211,000	C3E-11	60,000	489,000
C3E-15	100,000	134,000	Average		379,000	C3K-38	65,000	1,600,000	Average		358,000	C3E-3	60,000	1,298,000
C3L-16	100,000	153,000				C3K-16	65,000	2,000,000				C3E-1	60,000	1,875,000
C3C-34	100,000	156,000	C3L-13	75,000	1,054,000	Average		1,733,000	C3L-56	75,000	2,378,000	Average		1,676,000
Average		129,000	C3E-10	75,000	10,000,000(1)									
			C3G-50	75,000	10,000,000(1)	C3C-3	60,000	386,000	C3D-1	65,000	1,008,000	C3L-30	55,000	4,776,000
C3L-71	90,000	139,000				C3J-16	60,000	2,932,000	C3J-32	65,000	3,306,000	C3A-34	55,000	7,454,000
C3B-54	90,000	186,000	C3D-19	70,000	1,177,000	C3L-37	60,000	10,000,000(1)	C3E-42	65,000	4,366,000	Average		6,015,000
C3C-57	90,000	242,000	C3E-43	70,000	4,352,000				Average		2,893,000			
Average		256,000	C3F-54	70,000	4,811,000	C3A-45	57,000	1,820,000				C3F-4	50,000	94,000
			Average		3,113,000	C3E-55	57,000	8,671,000	C3E-4	60,000	119,000	C3D-53	50,000	218,000
C3L-65	80,000	134,000				C3C-25	57,000	10,000,000(1)	C3F-50	60,000	255,000	C3A-38	50,000	286,000
C3J-69	80,000	4,180,000	C3J-9	67,500	4,814,700				C3D-46	60,000	2,271,000	Average		197,000
C3J-75	80,000	10,000,000(1)	C3E-25	67,500	6,685,000	C3D-31	55,000	10,000,000(1)	Average		890,000			
C3A-44	80,000	10,000,000(1)	C3C-43	67,500	10,000,000(1)	C3L-2	55,000	10,000,000(1)				C3F-34	45,000	10,000,000(1)
			C3C-34	67,500	10,000,000(1)	C3C-36	55,000	10,000,000(1)	C3L-52	50,000	73,000	C3E-22	45,000	10,000,000(1)
C3E-23	70,000	190,000							C3C-7	50,000	191,000	C3A-40	45,000	10,000,000(1)
C3L-29	70,000	10,000,000(1)	C3E-71	55,000	10,000,000(1)				C3E-26	50,000	439,000			
			C3K-39	55,000	10,000,000(1)				C3J-5	50,000	10,000,000(1)	C3E-28	40,000	55,000
C3K-56	60,000	10,000,000(1)										C3L-43	40,000	10,000,000(1)
C3A-19	60,000	10,000,000(1)							C3D-24	40,000	1,503,000(1)	C3C-47	40,000	10,000,000(1)
C3K-29	60,000	10,000,000(1)							C3E-18	40,000	10,000,000(1)	C3E-33	40,000	10,000,000(1)
									C3E-16	40,000	10,000,000(1)			
									C3E-43	40,000	10,000,000(1)	C3L-8	30,000	1,861,000
												C3C-41	30,000	10,000,000(1)

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through J denotes Heat No. 23365; F denotes Heat No. 25372.

Stress Ratio = Max. Alternating Stress / Mean Stress

TABLE CCVI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 5.5Al-16V TITANIUM ALLOY, 0.125 INCH THICK. STRESS CONCENTRATION = 1.0, STRESS RATIO = 0.1 (REACTIVE METALS HEAT NOS. 23345 AND 25372)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, psi	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, psi	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, psi	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, psi	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, psi	LIFE CYCLES
C3E-4	195,000	68	C3E-31	160,000	3	C3E-9	170,000	4	C3F-9	168,000	2	C3F-1	150,000	5
C3E-58	195,000	2	C3E-69	175,000	19,804	C3E-56	165,000	24	C3D-49	165,000	9	C3D-10	140,000	9
C3E-31	180,000	130	C3E-35	170,000	5	C3F-9	165,000	7,495	C3F-57	150,000	10,257	C3D-87	130,000	77
C3E-65	180,000	1,416	C3E-48	170,000	12,000	C3E-46	150,000	15,983	C3E-41	140,000	471	C3F-21	120,000	2,825
Average		849	Average		6,096							C3E-44	120,000	5,180
C3E-53	185,000	5,169	C3E-12	165,000	11,017	C3E-30	145,000	70	C3F-43	120,000	24,586	Average		4,002
C3E-70	185,000	15,498												
Average		10,334	C3E-41	160,000	371	C3E-69	140,000	114,000	C3E-40	105,000	66,000	C3E-48	100,000	37,000
C3E-2	181,000	52,000	C3F-45	175,000	111,000	C3D-16	120,000	40,000	C3E-53	105,000	78,000			
C3E-13	182,000	79,000	C3E-55	165,000	169,000	C3E-79	120,000	46,000	C3E-66	105,000	221,000			
C3E-15	187,000	10,000	C3D-39	165,000	145,000	C3E-77	110,000	122,000	Average		118,000	C3E-1	92,000	82,000
Average		47,000	Average		141,000	Average		71,000				C3E-30	90,000	77,000
C3E-53	180,000	139,000	C3E-52	150,000	194,000	C3E-15	105,000	236,000	C3E-52	100,000	38,000	Average		80,000
C3C-66	180,000	466,000	C3E-58	100,000	214,000	C3E-43	105,000	1,211,000	C3F-15	100,000	144,000			
C3E-47	180,000	339,000	C3E-20	100,000	448,000	Average		1,005,000	C3F-3	100,000	267,000	C76-8	95,000	103,000
Average		314,000	Average		139,000				Average		206,000	C3E-3	85,000	307,000
C3C-16	117,000	169,000	C3D-10	95,000	470,000	C3E-46	120,000	316,000	C3E-39	95,000	1,300	C3E-59	85,000	526,000
C3E-15	117,000	197,000	C3E-17	95,000	744,000	C3E-67	120,000	1,211,000	C3D-7	95,000	1,129,000	Average		705,000
C3C-56	117,000	1,000,000	C3E-45	95,000	650,000	C3C-15	100,000	10,000,000(1)	C3E-70	95,000	1,129,000	C3F-16	75,000	378,000
Average		1,055,000	Average		621,000	C3E-16	90,000	147,000	Average		870,000	C3E-57	75,000	752,000
C3E-50	115,000	116,000	C3D-37	90,000	0,000,000	C3E-68	90,000	1,695,000	C3E-37	90,000	301,000	C3E-56	75,000	687,000
C3E-28	115,000	2,565,000	C3E-54	90,000	0,000,000	C3E-52	90,000	10,000,000(1)	C3E-19	90,000	760,000	Average		605,000
C3E-57	115,000	5,906,000			0,000,000				C3E-36	90,000	2,830,000			
C3F-37	115,000	10,000,000(1)	C3E-59	85,000	10,000,000(1)	C3E-50	87,500	1,573,000	C3E-58	85,000	5,811,000	C3E-50	70,000	158,000
			C3F-1	85,000	10,000,000(1)	C3E-93	80,000	2,000,000	Average		3,180,000	C3D-51	70,000	617,000
C3E-13	110,000	10,000,000(1)	C3E-21	85,000	10,000,000(1)	Average		6,250,000	C3F-2	87,500	661,000	C3E-14	70,000	1,496,000
C3F-49	110,000	10,000,000(1)				C3E-35	80,000	10,000,000(1)	C3E-16	87,500	2,334,000	C3E-58	70,000	1,681,000
C3A-12	110,000	10,000,000(1)	C3E-83	80,000	10,000,000(1)	C3A-11	80,000	10,000,000(1)	C3E-17	82,500	5,000,000	Average		980,000
						C3E-63	80,000	10,000,000(1)	Average		3,332,000			
			C3E-60	75,000	10,000,000(1)				C3C-21	85,000	5,610,000	C3A-1	60,000	850,000
									C3E-10	63,000	1,805,000	C3F-10	55,000	3,312,000
									C3D-35	61,000	5,863,000			
									C3E-54	83,000	8,000,000	C3E-48	40,000	10,000,000(1)
									Average		7,000,000	C3D-1	40,000	10,000,000(1)
									C3E-18	70,000	5,312,000	C3E-21	40,000	10,000,000(1)
									C3C-30	70,000	10,000,000(1)			
									C3E-22	70,000	10,000,000(1)			
									C3E-21	70,000	10,000,000(1)			

1) Test discontinued, no failure.
2) In specimen numbers, third digit A through H denotes Heat No. 23345; 9 denotes Heat No. 25372.

Stress Ratio = Min. Alternating Stress / Max. Stress

TABLE CCVII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.020 INCH THICK, STRESS CONCENTRATION = 1.82, STRESS RATIO = ∞ (REACTIVE METALS HEAT NO. 22093)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C1A-25	162,500	47	C1A-11	135,000	24	C1B-14	130,000	3	C1B-15	125,000	3	C1B-15	120,000	8
C1A-7	150,000	10	C1C-32	130,000	50	C1B-13	120,000	44	C1A-36	115,000	37	C1A-35	110,000	18
C1B-40	120,000	185	C1E-50	100,000	303	C1E-53	100,000	637	C1B-6	100,000	141	C1E-13	100,000	84
C1B-15	100,000	412	C1B-15	80,000	771	C1B-22	90,000	300	C1B-12	85,000	973	C1B-19	70,000	721
C1E-20	70,000	5,000	C1D-21	70,000	2,167	C1D-27	70,000	1,565	C1F-16	71,500	1,389	C1B-34	60,000	1,749
C1A-3	60,000	8,000	C1B-29	60,000	3,798	C1F-21	55,000	3,952	C1A-8	50,000	4,908	C1B-36	45,000	4,097
C1C-10	50,000	15,000	C1A-43	45,000	17,000	C1A-47	40,000	25,000	C1B-38	40,000	15,000	C1B-52	35,000	27,000
C1F-31	50,000	21,000	C1A-5	45,000	23,000	C1E-7	40,000	37,300	C1E-8	40,000	21,000			
C1C-48	50,000	25,000	C1C-39	45,000	24,000	C1D-39	40,000	17,000	C1D-26	40,000	25,000	C1B-58	30,000	74,000
Average		30,000	Average		21,000	Average		33,000	Average		30,000	C1E-30	30,000	37,000
C1G-31	45,000	15,000	C1B-8	30,000	68,000	C1B-43	35,000	58,000	C1B-9	30,000	73,000	C1B-26	30,000	69,000
C1F-17	45,000	25,000	C1A-50	30,000	139,000				C1A-54	30,000	79,000	Average		63,000
C1F-18	45,000	117,000	C1A-47	30,000	1,000,000	C1C-16	30,000	71,000	C1B-32	30,000	81,000	C1B-8	25,000	41,000
Average		53,000	Average		438,000	C1A-57	30,000	77,000	Average		130,000	C1A-22	25,000	130,000
						C1B-17	30,000	248,000				C1B-14	25,000	428,000
C1A-22	40,000	25,000	C1A-23	27,500	160,000	Average		139,000				Average		273,000
C1A-24	40,000	75,000	C1B-53	27,500	550,000				C1D-48	25,000	72,000			
C1F-4	40,000	1,271,000	C1B-54	27,500	1,000,000				C1A-41	25,000	100,000			
Average		641,000	Average		1,075,000	C1D-36	27,500	176,000	C1C-50	25,000	751,000	C1E-27	20,000	114,000
						C1F-6	27,500	670,000	Average		607,000	C1F-13	20,000	614,000
C1A-21	30,000	484,000	C1F-12	25,000	1,186,000	C1B-2	27,500	870,000				C1A-10	20,000	1,453,000
C1M-55	30,000	1,000,000	C1B-57	25,000	10,000,000(1)	Average		572,000	C1C-42	20,000	70,000	Average		1,060,000
Average		742,000	C1E-13	25,000	10,000,000(1)				C1B-46	20,000	148,000			
						C1B-58	25,000	192,000	C1E-38	20,000	437,000	C1A-33	18,500	855,000
C1G-29	25,000	1,280,000	C1F-48	20,000	10,000,000(1)	C1E-2	25,000	5,743,000	C1B-5	20,000	1,000,000	C1D-19	18,500	1,810,000
			C1E-39	20,000	10,000,000(1)	C1C-2	25,000	10,000,000(1)	Average		958,000	C1F-40	18,500	2,423,000
C1B-35	20,000	10,000,000(1)	C1A-8	20,000	10,000,000(1)							Average		1,696,000
C1G-37	20,000	10,000,000(1)				C1E-23	20,000	10,000,000(1)	C1A-59	17,500	10,000,000(1)			
C1G-33	20,000	10,000,000(1)				C1M-47	20,000	10,000,000(1)				C1B-4	17,500	10,000,000(1)
						C1F-7	20,000	10,000,000(1)	C1F-46	15,000	10,000,000(1)			
									C1B-1	15,000	10,000,000(1)	C1C-44	15,000	10,000,000(1)
												C1B-50	15,000	10,000,000(1)

(1) Test discontinued, no failure.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCVIII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED R.S.A.I.-16V TITANIUM ALLOY, 0.020 INCH THICK.
STRESS CONCENTRATION = 2.82, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NO. 22093)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C1L-35	150,000	570	C1K-54	115,000	984	C1A-25	115,000	75	C1K-25	120,000	14	C1K-32	110,000	121
C1L-28	150,000	790	C1L-57	140,000	549	C1J-26	130,000	1,010	C1D-24	120,000	150	C1B-1	100,000	450(2)
C1K-25	145,000	527	C1L-26	135,000	1,220	C1J-35	125,000	780	Average		82	C1B-17	95,000	1,470
C1K-34	140,000	1,090	C1J-19	130,000	665	C1H-59	120,000	1,080	C1K-27	123,000	659	C1A-36	90,000	2,100
C1L-1	135,000	1,770	C1C-57	125,000	1,507	C1A-3	115,000	2,900	C1L-45	120,000	660	C1J-1	85,000	4,520
C1L-52	130,000	1,597	C1K-19	120,000	1,355	C1A-41	110,000	1,150	C1H-10	115,000	590	C1J-52	80,000	2,300
C1J-1	95,000	20,000	C1J-27	70,000	16,000	C1K-21	95,000	12,000	C1K-59	110,000	1,150	C1A-16	60,000	34,000
C1A-33	85,000	20,000	C1C-26	70,000	19,000	C1L-6	90,000	14,000	C1C-21	65,000	32,000			
C1J-2	65,000	816,000	C1C-12	70,000	177,000	C1A-15	85,000	26,060	C1C-49	65,000	76,000			
Average		289,000	Average		59,000	Average		17,000	C1D-21	65,000	288,000	C1J-7	60,000	153,000
									Average		299,000			
C1B-43	60,000	29,000	C1A-46	60,000	16,000	C1J-3	50,000	18,000	C1K-60	60,000	29,000	C1L-36	37,500	37,000
C1A-29	60,000	40,000	C1M-42	60,000	16,000	C1B-42	50,000	23,000	C1K-31	60,000	31,000	C1A-17	35,000	58,000
C1A-39	60,000	126,000	C1A-27	60,000	170,000	C1K-7	47,500	22,000	C1J-23	60,000	46,000	C1A-10	35,000	100,000
Average		55,000	Average		69,000	Average		20,000	Average		35,000	C1A-47	35,000	611,000
												Average		326,000
C1L-10	55,000	3,845,000	C1J-9	55,000	29,000	C1A-1	45,000	6,710,000(1)(2)	C1K-1	37,500	119,000			
C1J-29	55,000	4,269,000	C1A-45	55,000	54,000				C1C-2	37,500	918,000	C1L-24	33,500	43,000
C1A-35	55,000	5,866,000	C1D-17	55,000	141,000	C1A-49	45,000	31,000	C1K-4	37,500	10,000,000(1)	C1K-35	33,500	121,000
Average		4,993,000	Average		107,000	C1B-45	45,000	10,000,000(1)				C1K-49	33,500	1,111,000
									C1C-39	35,000	104,000	Average		575,000
C1B-5	50,000	51,000	C1C-29	50,000	33,000	C1A-4	40,000	78,000	C1E-31	35,000	2,619,000			
C1A-40	50,000	10,000,000(1)	C1A-28	50,000	10,000,000(1)				C1J-5	35,000	8,744,000(1)	C1L-8	30,000	4,610,000
C1J-20	50,000	10,000,000(1)	C1F-39	50,000	10,000,000(1)	C1A-20	35,000	9,237,000(1)(2)				C1E-51	30,000	1,290,000
									C1F-7	30,000	10,000,000(1)	Average		2,950,000
C1A-6	45,000	10,000,000(1)	C1F-22	40,000	6,068,000	C1B-2	40,000	10,000,000(1)	C1D-6	30,000	10,000,000(1)			
C1C-28	45,000	10,000,000(1)	C1J-12	40,000	10,000,000(1)				C1L-39	30,000	10,000,000(1)	C1A-51	28,000	4,142,000
			C1M-58	40,000	10,000,000(1)	C1E-40	37,500	10,000,000(1)						
C1D-10	35,000	10,000,000(1)				C1A-44	37,500	13,178,000				C1C-55	20,000	10,000,000(1)
												C1E-59	20,000	10,000,000(1)
						C1F-47	32,500	10,000,000(1)				C1M-18	20,000	10,000,000(1)

(1) Test discontinued, no failure
(2) Temperature fluctuation of ±15° during test

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCIX

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 8-1-1 TITANIUM ALLOY, 0.020 INCH THICK.
STRESS CONCENTRATION = 2.0X, STRESS RATIO = 0.0 (REACTIVE METALS HEAT NO. 2309)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C1K-29	172,000	11	C1L-20	150,000	15	C1M-35	145,000	40	C1N-39	135,000	137	C1L-33	130,000	16
C1M-40			C1M-40	150,000	52	C1M-36	145,000	71	C1E-7	135,000	720	C1E-40	120,000	50
C1K-30	170,000	218	Average		52	Average		54	Average		428	Average		33
C1L-29	170,000	345												
Average		198	C1M-34	145,000	1,990	C1E-11	140,000	1,860	C1N-6	130,000	1,080	C1G-9	110,000	870
C1K-33	165,000	1,550	C1M-24	140,000	1,270	C1N-42	135,000	172	C1E-24	130,000	1,150	C1G-11	61,000	4,800
C1N-52	160,000	2,530	C1M-7	135,000	1,420	C1K-40	130,000	4,610	C1N-57	125,000	2,970	C1J-4	80,000	12,000
C1A-7	150,000	5,060	C1K-48	130,000	4,190	C1K-19	125,000	6,270	C1J-46	85,000	15,000	C1A-24	80,000	13,000
C1L-56	90,000	28,000	C1A-25	85,000	17,000	C1K-43	85,000	20,000	C1J-6	85,000	22,000	C1C-35	80,000	68,000
C1C-22	90,000	33,000	C1D-49	85,000	14,600	C1M-28	45,000	20,000	C1J-33	85,000	293,000	Average		38,000
C1A-1	90,000	36,000	Average		15,800	C1M-24	85,000	34,500	Average		110,000	C1E-23	75,000	18,000
Average		33,000				C1E-23	85,000	25,600						
C1A-22	80,000	178,000	C1A-51	80,000	61,000	Average		29,000	C1B-42	80,000	65,000	C1C-20	71,000	49,000
C1A-49	80,000	2,559,000	C1B-36	80,000	8,000,000				C1F-2	80,000	250,000	C1C-12	71,000	100,000
Average		1,300,000			4,030,500	C1B-45	83,000	17,000	1A-4	80,000	4,000,000	Average		76,000
						C1A-36	83,000	25,000	Average		1,708,000			
1-50	75,000	47,000	C1M-6	77,500	22,000	Average		21,000				C1B-16	70,000	26,000
1C-27	75,000	70,000	C1B-2	77,500	30,000				C1B-25	70,000	242,000	C1J-10	70,000	44,000
Average		58,000	C1F-5	77,500	10,000,000(1)	C1A-21	80,000	27,000	C1C-23	70,000	367,000	Average		35,000
						C1F-44	80,000	10,070,000(1)	C1F-23	70,000	2,119,000			
C1F-31	70,000	55,000	C1C-37	75,000	25,000				Average		943,000	C1B-18	65,000	58,000
C1M-14	70,000	74,000	C1F-5	75,000	44,000	C1B-29	77,500	18,000				C1A-18	65,000	96,000
Average		64,000	C1B-30	75,000	10,000,000(1)	C1D-6	77,500	31,000	C1A-52	65,000	1,780,000(1)	Average		308,000
			C1D-45	75,000	10,000,000(1)	C1B-49	77,500	24,000	C1B-16	65,000	6,252,000			
C1K-27	65,000	123,000	C1B-57	70,000	10,070,000(1)	Average		6,775,000	C1B-53	65,000	10,000,000(1)	C1D-13	60,000	31,000
C1A-29	65,000	10,000,000(1)							C1B-43	50,000	6,660,000	C1C-25	60,000	229,000
C1J-42	65,000	10,000,000(1)	C1B-3	65,000	10,000,000(1)	C1D-50	75,000	10,000	C1J-34	50,000	7,290,000(1)	Average		130,000
			C1B-9	65,000	10,000,000(1)	C1M-32	75,000	10,000,000(1)	C1B-10	50,000	10,000,000(1)	C1B-11	40,000	2,590,000(2)
C1F-58	60,000	10,000,000(1)	C1M-2	65,000	10,000,000(1)	C1F-37	75,000	10,000,000(1)				C1B-26	40,000	2,721,000
									C1B-32	40,000	10,000,000(1)	C1A-42	40,000	10,000,000(1)
C1B-22	50,000	10,000,000(1)				C1A-56	65,000	10,000,000(1)	C1A-27	40,000	10,000,000(1)			
C1C-17	50,000	10,000,000(1)				C1C-30	65,000	10,000,000(1)	C1E-51	40,000	10,000,000(1)	C1F-22	30,000	4,389,000
												C1D-5	29,000	10,000,000(1)
												C1B-33	27,600	10,000,000(1)

(1) Test discontinued, no failure
(2) Temperature overshoot 700°F three minutes during test

Stress Ratio = Max. Alternating Stress / Mean Stress

TABLE CCX

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 7-4Al-4V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 2.82, STRESS RATIO = $\frac{\sigma_{min}}{\sigma_{max}}$ (REACTIVE METALS HEAT NOS. 24806 AND 24814)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C2H-1	117,500	22	C2A-48	110,000	8	C2H-49	130,000	6	C2J-22	120,000	20	C3C-19	110,000	17
C2F-10	140,000	79	C2C-44	130,000	33	C2H-16	117,500	71	C2A-10	110,000	63	C2E-13	100,000	68
C2H-18	130,000	102	C2H-29	120,000	40	C2F-13	100,000	278	C2H-7	100,000	177	C2A-71	90,000	232
C2H-34	120,000	128	C2F-37	100,000	393	C2H-15	90,000	579	C2E-31	80,000	678	C2H-13	80,000	401
C2A-8	100,000	665	C2H-7	80,000	890	C2H-15	80,000	1,359	C2D-40	70,000	1,697	C2H-57	70,000	1,300
C2H-40	80,000	1,324	C2H-46	65,500	3,640	C2A-11	75,000	2,047	C2H-50	65,000	2,025	C2H-35	65,000	1,768
C2F-5	60,000	8,000	C2F-10	60,000	7,988	C2F-8	57,500	6,878	C2F-28	50,500	4,549	C2F-12	45,000	9,000
C2D-57	45,000	33,000	C2H-3	56,000	15,000	C2E-49	55,000	10,C20	C2A-59	50,000	13,000	C2H-32	30,000	31,000
C2C-19	45,000	39,000				C2E-13	55,000	18,000	C2C-30	50,000	15,000	C2H-45	30,000	45,000
C2H-12	45,000	55,000	C2J-47	51,000	12,000	C2C-8	55,000	23,000	C2D-36	50,000	17,000	C2H-46	30,000	29,000
Average		55,000				Average		18,000	Average		15,000	Average		43,000
			C2J-50	50,000	24,000									
C2A-23	45,000	67,000	C2H-34	50,000	17,000	C2F-27	52,000	28,000	C2E-15	35,000	20,000	C2A-34	25,000	77,000
C2H-45	45,000	74,000	Average		36,000				C2H-8	35,000	17,000	C2H-12	25,000	109,000
C2H-22	45,000	80,000				C2L-32	50,000	21,000	Average		36,000	C2H-8	25,000	2,111,000
Average		76,000	C2E-18	40,000	37,000	C2C-39	50,000	27,000				Average		883,000
						Average		24,000	C2A-58	30,000	52,000			
C2E-8	40,000	190,000	C2C-33	35,000	89,000							C2F-11	22,500	115,000
C2C-48	40,000	308,000	C2C-71	35,000	298,000	C2H-37	40,000	23,000	C2F-7	29,000	138,000	C2H-4	22,500	293,000
C2C-39	40,000	1,683,000	C2E-12	35,000	4,108,000	C2L-59	40,000	33,000	C2E-32	29,000	140,000	C2D-46	22,500	820,000
Average		1,396,000	C2E-59	35,000	6,446,000	C2C-10	40,000	38,000	Average		139,000	Average		409,000
			Average		2,710,000	Average		31,000						
C2E-53	35,000	114,000				C2E-58	30,000	615,000	C2D-33	25,000	107,000	C2H-5	20,000	160,000
C2A-5	35,000	4,133,000	C2C-64	30,000	6,108,000	C2H-60	30,000	722,000	C2H-14	25,000	254,000	C2E-15	20,000	428,000
C2E-17	35,000	8,998,000	C2L-23	30,000	8,775,000	C2F-40	30,000	1,116,000	C2C-44	25,000	2,000,000	C2F-2	20,000	1,880,000
C2C-6	35,000	10,000,000(1)	C2J-10	30,000	9,637,000(1)	C2C-26	30,000	1,116,000	Average		2,773,000	C2E-53	20,000	2,411,000
						Average		817,000				Average		1,570,000
C2D-8	30,000	440,000	C2H-41	26,000	10,000,000(1)				C2F-26	20,000	3,548,000			
C2L-7	30,000	4,090,000				C2C-55	29,000	6,820,000	C2H-38	20,000	9,000,000	C2B-42	15,000	10,000,000(1)
C2A-60	30,000	12,083,000	C2H-8	25,000	3,036,200				C2F-46	20,000	10,000,000(1)	C2B-49	15,000	10,000,000(1)
Average		8,738,000	C2C-42	25,000	5,837,000	C2E-55	21,000	3,833,000				C2C-32	15,000	10,000,000(1)
			Average		4,437,000				C2A-41	15,000	10,000,000(1)			
C2L-6	25,000	10,000,000(1)				C2C-17	20,000	10,000,000(1)	C2C-1	15,000	10,000,000(1)			
C2L-19	25,000	10,000,000(1)	C2H-27	22,500	9,615,000	C2C-29	20,000	10,000,000(1)	C2E-24	15,000	10,000,000(1)			
C2L-26	25,000	10,000,000(1)												
			C2F-9	20,000	10,000,000(1)									
			C2F-16	20,000	10,000,000(1)									
			C2H-39	20,000	10,000,000(1)									

(1) Test discontinued, no failure.
(2) In specimen numbers, third digit A through M denotes Heat No. 24806; P denotes Heat No. 24814.

Stress Ratio = $\frac{\text{Min. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCXI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.06) INCH THICK.
STRESS CONCENTRATION = 2.82, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NO. 26606)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C2F-7	175,000	70	C2A-1	155,000	195	C2A-51	137,000	434	C2B-67	128,000	364	C2C-21	117,000	301
C2G-49	160,000	36	C2B-42	154,000	240	C2B-37	135,000	538	C2B-42	125,000	648	C2B-72	112,000	667
C2C-59	152,000	6	C2J-25	150,000	570	C2C-61	132,000	791	C2L-40	120,000	575	C2E-59	109,000	1,575
C2C-53	129,000	156	C2L-42	138,000	860	C2C-37	125,000	1,188	C2L-45	111,000	1,385	C2H-69	103,000	1,675
C2C-14	115,000	876	C2F-12	110,000	2,901	C2J-26	120,000	1,450	C2A-50	96,000	2,159	C2C-1	100,000	1,951
C2E-35	104,000	1,367	C2B-54	100,000	7,000	C2E-42	110,000	6,680	C2G-23	90,000	3,844	C2E-35	84,000	2,830
C2E-11	100,000	2,887	C2E-47	75,000	19,000	C2L-6	94,000	18,000	C2L-57	55,000	19,000	C2G-9	53,000	30,000
C2E-12	75,000	21,000	C2B-49	75,000	26,000	C2H-21	94,000	18,000	C2L-56	55,000	35,000	C2A-16	50,000	57,000
C2D-10	60,000	34,000	C2G-20 Average	75,000	30,000 25,000	C2H-6 Average	94,000	22,000 19,000	C2J-59 Average	55,000	47,000 41,000	C2B-1 Average	50,000	81,000 69,000
C2A-40	55,000	38,000	C2E-51	70,000	45,000	C2E-17	85,000	8,000	C2C-24	50,000	39,000			
C2A-39	55,000	39,000	C2J-27	70,000	99,000	C2A-49	85,000	17,000	C2F-8	50,000	43,000	C2B-10	47,000	77,000
C2C-15	55,000	67,000	C2H-16	70,000	137,000	C2J-3	85,000	21,000	C2B-13	50,000	114,000			
C2A-8	55,000	127,000	Average		96,000	Average		15,000	C2L-21	50,000	1,022,000	C2J-7	42,000	43,000
Average		88,000	C2E-36	65,000	39,000	C2H-2	75,000	1,535,000	Average		386,000	C2L-34	40,000	139,000
C2C-26	50,000	54,000	C2F-39	45,000	286,000				C2J-5	45,000	4,788,000	Average		91,000
C2H-59	50,000	282,000	Average		154,000	C2C-35	70,000	120,000	C2F-33	45,000	10,000,000 (1)	C2H-46	35,000	1,581,000
C2D-20	50,000	403,000	C2E-35	43,000	76,000	C2J-29	70,000	10,000,000 (1)				C2C-65	35,000	2,021,000
C2B-5	50,000	1,077,000				C2B-72	60,000	180,000	C2B-1	40,000	168,000	C2B-76	35,000	5,960,000
Average		1,157,000	C2G-53	40,000	272,000	C2L-24	60,000	370,000	C2E-45	40,000	344,000	Average		3,187,000
C2C-49	45,000	58,000	C2G-8	40,000	1,435,000	C2J-13	60,000	10,000,000 (1)	C2B-5	40,000	478,000			
C2E-31	45,000	47,000	C2J-18	40,000	10,000,000 (1)				C2C-31	40,000	898,000	C2H-17	32,000	1,698,000
C2F-11	45,000	220,000				C2H-2	50,000	1,112,700	C2J-63	40,000	1,137,000			
Average		115,000	C2H-58	53,000	10,000,000 (1)				Average		675,000	C2H-18	31,500	5,585,000
C2A-66	40,000	4,240,000	C2J-9	53,000	10,000,000 (1)	C2C-48	40,000	7,160,000	C2B-8	30,000	7,276,000	C2A-17	30,000	5,924,000
C2A-70	40,000	10,330,000	C2F-43	40,000	10,000,000 (1)	C2B-58	40,000	10,000,000 (1)	C2B-21	30,000	10,000,000 (1)			
C2E-7	40,000	10,000,000 (1)				C2H-77	40,000	10,000,000 (1)	C2B-63	30,000	10,000,000 (1)	C2B-47	25,000	7,812,000
C2D-4	35,000	2,376,000				C2C-70	35,000	10,000,000 (1)	C2E-31	30,000	10,000,000 (1)	C2C-72	25,000	10,000,000 (1)
C2C-28	33,000	10,000,000 (1)										C2E-51	25,000	10,000,000 (1)
C2E-46	33,000	10,000,000 (1)												
C2B-59	30,000	10,000,000 (1)												
C2E-33	30,000	10,000,000 (1)												
C2A-15	25,000	10,000,000 (1)												
C2B-25	25,000	10,000,000 (1)												
C2D-17	25,000	10,000,000 (1)												

(1) Test discontinued, no failure.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCXII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 2.81, STRESS RATIO = 0.) (REACTIVE METALS HEAT NO. 24806)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C2J-43	178,000	2	C2E-9	140,000	1,897	C2M-47	115,000	32	C2E-59	140,000	15	C2A-25	125,000	22
C2B-58	174,000	2	C2E-4	135,000	4,685	C2C-48	143,000	6	C2E-46	137,000	6	C2F-58	120,000	17
C2B-18	172,000	2	C2M-27	130,000	2,760	C2C-13	140,000	159	C2L-34	135,000	1,934	C2E-21	116,000	55
C2D-55	170,000	2	C2M-53	125,000	310	C2L-38	135,000	3,919	C2C-31	138,000	1,798	C2M-52	110,000	3,750
C2E-21	169,000	28	C2E-42	125,000	2,200	C2C-47	115,000	11,200	C2B-13	130,000	3,168	C2E-40	105,000	2,310
			Average		1,605									
C2A-29	150,000	1,166	C2L-39	115,000	9,650	C2E-60	110,000	8,500	C2E-24	80,000	38,400	C2L-7	103,000	2,330
C2A-32	150,000	2,081												
C2A-36	150,000	4,272	C2L-3	90,000	27,000	C2F-38	80,000	33,000	C2J-51	77,000	136,000	C2C-11	100,000	3,270
Average		2,762	C2E-56	80,000	44,000	C2M-58	80,000	58,000	C2E-27	77,000	153,000			
			C2C-6	80,000	48,000	C2J-37	80,000	176,000	C2E-7	77,000	2,161,000	C2C-47	95,000	4,320
C2D-43	110,000	10,576	Average		60,000	Average		89,000	Average		1,017,000			
												C2C-12	85,000	26,000
C2C-17	95,000	71,000	C2A-58	70,000	68,000	C2L-9	77,500	35,000	C2L-29	70,000	110,000	C2C-25	85,000	47,000
C2C-27	95,000	100,000	C2B-34	70,000	49,000	C2M-7	77,500	34,000	C2M-33	70,000	135,000	C2E-1	85,000	50,000
C2B-2	96,000	146,000	C2E-57	70,000	960,000	C2J-49	77,500	1,934,000	C2J-33	70,000	1,508,000	Average		41,000
Average		106,000	C2L-3	70,000	2,450,000	Average		1,332,000	C2J-6	70,000	2,796,000			
			Average		989,000				C2M-6	70,000	4,074,000	C2D-13	80,000	15,000
C2L-42	80,000	93,000				C2J-52	75,000	30,000	Average		1,743,000	C2C-51	80,000	53,000
C2A-7	80,000	152,000	C2M-7	65,000	70,000	C2M-36	75,000	46,000				C2B-22	80,000	174,000
C2B-51	80,000	167,000	C2M-54	65,000	5,506,000	C2M-9	75,000	83,000	C2E-12	68,000	60,000	Average		81,000
Average		137,000	C2M-24	65,000	10,000,000(1)	C2J-35	75,000	567,000	C2B-52	68,000	84,000			
						C2E-14	75,000	10,000,000(1)	C2M-25	68,000	121,000	C2C-35	50,000	145,000
C2A-50	52,000	194,000	C2M-45	60,000	44,000				C2E-20	68,000	605,000	C2E-47	50,000	498,000
C2A-27	52,000	224,000	C2B-9	60,000	66,000	C2E-33	73,000	16,000	Average		213,000	C2C-20	50,000	449,000
C2C-56	52,000	1,074,000	C2E-34	60,000	5,196,000	C2M-35	73,000	35,000				Average		431,000
C2C-22	52,000	2,408,000	C2C-49	60,000	10,000,000(1)	C2L-24	73,000	10,000,000(1)	C2M-39	65,000	208,000			
Average		1,235,000	C2M-48	60,000	10,300,000(1)				C2E-27	65,000	1,980,000	C27-4	60,000	2,080,000
						C2M-26	70,000	10,000,000(1)	C27-8	65,000	3,325,000	C2B-23	60,000	4,713,000
C2A-49	45,000	1,463,000	C2M-46	50,000	10,000,000(1)	C2F-44	70,000	10,000,000(1)	C2J-45	65,000	11,738,000	C2A-24	60,000	5,736,000
C2A-22	45,000	10,000,000(1)	C2C-20	50,000	10,000,000(1)	C2C-8	70,000	10,000,000(1)	Average		4,697,000	C21-28	60,000	10,000,000(1)
C2A-56	45,000	10,000,000(1)	2B-43	50,000	10,000,000(1)									
									C2E-59	55,000	10,000,000(1)	C2J-4	35,000	8,552,000
C2D-23	42,000	9,445,000							C2A-35	55,000	10,000,000(1)	C2E-18	35,000	10,000,000(1)
C2A-4	42,000	10,000,000(1)							C2B-59	55,000	10,000,000(1)			
C2C-23	42,000	10,000,000(1)										C2B-44	30,000	10,000,000(1)
												C21-29	30,000	10,000,000(1)

(1) Test discontinued, no failure.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCXIII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.0 (REACTIVE METALS HEAT NOS. 23345 AND 23372)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C3K-66	170,000	5	C3E-45	150,000	11	C3E-55	150,000	2	C3E-44	135,000	3	C3F-38	120,000	12
C3J-61	150,000	1,032	C3J-71	140,000	66	C3J-61	140,000	151	C3E-56	120,000	81	C3E-21	100,000	120
C3F-41	140,000	37	C3E-47	120,000	252	C3E-58	100,000	588	C[illegible]	100,000	309	Average		121
C3K-11	120,000	291	C3K-54	100,000	814	C3F-23	80,000	1,508	C3F-3	80,000	1,067	C3F-48	100,000	125
C3F-42	100,000	262	C3F-27	80,000	1,790	C3K-72	70,000	1,605	C3F-39	70,000	1,057	C3F-40	85,000	485
C3K-38	100,000	581										C3F-24	70,000	1,157
Average		434	C3K-28	60,000	7,558	C3E-43	50,000	17,190	C3F-32	50,000	6,868	C3F-37	55,000	4,891
C3J-67	65,000	8,822	C3C-59	60,000	43,000	C3C-2	32,500	78,000	C3L-38	37,500	33,000	C3K-58	60,000	21,000
C3K-10	60,300	41,000	C3D-57	60,000	76,000	C3E-49	32,500	85,000	C3E-24	37,500	123,000			
C3J-17	60,000	84,000	C3L-39	60,000	85,000	C3J-21	32,500	148,000	C3E-9	37,500	215,000	C3J-22	30,000	59,000
C3J-35	60,300	146,000	Average		76,000	Average		104,000	C3E-44	37,500	237,000	C3K-34	30,000	66,000
Average		91,000	C3J-52	35,000	93,000	C3E-40	30,000	108,000	Average		150,000	C3K-11	30,000	83,000
			C3C-8	35,000	108,000	C3E-49	30,000	117,000	C3D-48	32,500	367,000	Average		89,000
C3E-21	50,000	127,000	C3K-23	35,000	142,000	C3K-78	30,000	138,000	C3E-38	32,500	351,000	C3E-46	25,000	101,000
C3K-37	50,000	163,000	Average		127,000	Average		119,000	C3J-41	32,500	669,000	C3K-12	25,000	104,000
C3K-55	50,000	161,000							Average		596,000	C3C-46	25,000	2,421,000
Average		151,000	C3E-53	30,000	309,000	C3D-8	27,500	112,000				Average		875,000
			C3E-11	30,000	251,000	C3E-7	27,500	510,000	C3E-15	30,000	120,000			
C3J-29	35,000	76,000	C3E-45	30,000	344,000	C3L-23	27,500	1,211,000	C3K-59	30,000	571,000	C3K-15	20,000	507,000
C3C-19	35,000	119,000	Average		235,000	Average		618,000	Average		345,000	C3E-13	20,000	789,000
C3F-17	35,000	304,000										C3L-27	20,000	993,000
Average		193,000	C3C-39	27,500	1,058,000	C3K-47	25,000	1,701,000	C3D-1	27,500	117,000	C3E-53	20,000	2,411,000
			C3J-47	27,500	1,308,000	C3C-16	25,000	1,871,000	C3E-8	27,500	164,000	Average		1,176,000
C3K-22	30,000	2,127,000	C3E-22	27,500	1,827,000	C3F-40	25,000	2,401,000	Average		132,000			
C3F-9	30,000	2,714,000	Average		1,397,000	Average		2,006,000				C3K-40	15,000	3,770,000
C3E-60	30,000	10,000,000(1)							C3E-77	25,000	1,516,000	C3E-39	15,000	4,361,000
			C3K-5	25,000	10,000,000(1)	C3E-47	22,500	2,438,000				Average		4,066,000
C3E-55	27,500	1,442,000	C3F-37	25,000	10,000,000(1)	C3E-43	22,500	10,000,000(1)	C3E-46	20,000	2,617,000			
C3K-24	27,500	10,000,000(1)	C3K-13	25,000	10,000,000(1)	C3E-58	22,500	10,000,000(1)	C3F-36	20,000	5,855,000	C3F-13	15,000	4,236,000
C3E-37	27,500	10,000,000(1)							Average		4,236,000	C3F-43	15,000	10,000,000(1)
C3K-49	27,500	10,000,000(1)				C3L-21	20,000	10,000,000(1)						
									C3K-5	15,000	10,000,000(1)	C3E-15	10,000	10,000,000(1)
									C3F-18	15,000	10,000,000(1)			
									C3F-34	15,000	10,000,000(1)			

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through H denotes Heat No. 23345; P denotes Heat No. 23372.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCXIV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.125 INCH THICK.
STRESS CONCENTRATION = 2.82, STRESS RATIO = 1.0 (REACTIVE METALS HEAT NOS. 23345 AND 23372)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C3C-52	165,000	65	C3B-51	165,000	97	C3H-32	160,000	9	C3D-20	155,000	28	C3E-34	165,000	19
C3B-19	165,000	170												
C3D-35	165,000	[illegible]	C3A-8	160,000	351	C3G-6	155,000	369	C3B-2	160,000	676	C3E-3	160,000	32
Average		[illegible]							C3D-34	160,000	[illegible]			
		198	C3E-18	160,000	835	C3F-20	150,000	770	Average		679	C3F-29	130,000	559
C3L-35	140,000	1,137												
C3B-18	140,000	1,309	C3H-23	135,000	1,631	C3H-43	135,000	998	C3D-26	112,000	1,680	C3L-29	120,000	703
C3B-45	140,000	[illegible]												
Average		1,652	C3G-33	110,000	3,462	C3A-54	124,000	1,380	C3D-40	110,000	1,760	C3E-25	100,000	1,606
C3A-55	100,000	8,000	C3F-15	90,000	8,602	C3H-8	122,000	3,250	C3L-10	80,000	5,504	C3E-14	70,000	4,972
C3E-39	80,000	37,000	C3L-42	50,000	47,000	C3F-44	80,000	6,514	C3C-31	46,500	40,000	C3E-57	60,000	28,000
C3E-4	80,000	42,000												
C3D-2	80,000	[illegible]	C3D-12	65,000	60,000	C3L-25	60,000	59,000	C3A-25	45,000	51,000	C3D-9	37,500	60,000
Average		[illegible]	C3F-19	65,000	61,000	C3F-47	60,000	78,000	C3L-40	45,000	77,000	C3E-59	37,500	3,700,000
		43,000	C3L-25	65,000	[illegible]	C3L-9	60,000	[illegible]	C3C-8	45,000	154,000	C3E-16	37,500	[illegible]
			Average		78,000	Average		80,000	C3E-31	45,000	[illegible]	Average		2,553,000
C3C-49	64,000	58,000							Average		155,000			
C3D-10	64,000	61,000										C3E-35	35,000	57,000
C3L-52	64,000	[illegible]	C3A-29	60,000	68,000	C3H-41	37,500	19,000				C3L-8	35,000	174,000
Average		[illegible]	C3F-12	60,000	77,000	C3H-42	37,500	95,000	C3B-13	60,000	86,000	C3L-24	35,000	[illegible]
		53,000	C3C-26	60,000	[illegible]	C3L-44	37,500	168,000	C3F-13	60,000	133,000	Average		827,000
			Average		86,000	C3E-11	37,500	6,513,000	C3L-18	60,000	[illegible]			
C3B-5	39,000	145,000				C3F-10	37,500	10,000,000(1)	Average		175,000			
C3F-43	39,000	156,000	C3D-17	35,000	47,000							C3H-18	33,750	657,000
C3L-28	39,000	[illegible]	C3A-9	35,000	184,000	C3J-28	35,000	160,000	C3B-36	35,000	220,000	C3B-42	33,750	863,000
Average		[illegible]	C3C-45	35,000	194,000	C3J-43	35,000	354,000	C3J-1	35,000	383,000	C3B-27	33,750	[illegible]
		150,000	C3E-54	35,000	3,870,000	C3H-40	35,000	446,000	C3H-27	35,000	10,000,000(1)	Average		3,117,000
C3C-28	34,400	475,000	C3A-28	35,000	10,000,000(1)	C3H-21	35,000	10,000,000(1)						
C3B-11	34,400	2,219,000							C3D-36	33,500	4,220,000	C3E-49	32,500	9,329,000
C3L-34	34,400	10,000,000(1)	C3E-46	32,000	111,000	C3E-9	34,000	10,000,000(1)				C3B-26	32,500	[illegible]
C3F-29	34,400	10,000,000(1)	C3B-12	32,000	1,566,000	C3J-10	34,000	10,000,000(1)	C3D-21	32,500	10,000,000(1)	Average		9,664,000
			C3C-29	32,000	10,000,000(1)	C3H-19	34,000	10,000,000(1)	C3D-23	32,500	10,000,000(1)			
C3D-20	25,000	10,000,000(1)										C3H-17	30,000	6,238,000
C3E-25	25,000	10,000,000(1)	C3E-31	30,000	700,000	C3J-26	32,500	5,119,000	C3D-49	30,000	3,571,000	C3J-7	30,000	6,272,000
C3F-20	25,000	10,000,000(1)	C3E-58	30,000	[illegible]	C3J-13	32,500	10,000,000(1)	C3J-23	30,000	10,000,000(1)	C3D-13	30,000	[illegible]
			Average		[illegible]	C3L-6	32,500	10,000,000(1)	C3D-5	30,000	10,000,000(1)	Average		6,051,000
C3L-1	30,000	10,000,000(1)												
			C3E-46	27,500	10,000,000(1)	C3B-35	30,000	10,000,000(1)	C3F-7	27,500	3,685,000	C3E-48	25,000	5,799,000
			C3A-27	27,500	10,000,000(1)	C3H-2	30,000	10,000,000(1)	C3C-24	27,500	10,000,000(1)			
			C3E-57	27,500	10,000,000(1)	C3H-23	30,000	10,000,000(1)	C3E-2	27,500	10,000,000(1)	C3D-53	25,000	4,943,000
												C3C-[illegible]	25,000	10,000,000(1)
												C3D-12	25,000	10,000,000(1)

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through H denotes Heat No. 23345; P denotes Heat No. 23372.

Stress Ratio = Min. Alternating Stress / Mean Stress

TABLE CCXV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 2.5Al-16V TITANIUM ALLOY, 0.125 INCH THICK. STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.) (REACTIVE METALS HEAT NOS. 23345 AND 23372)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
C3M-42	170,000	16	C3A-7	172,000	5	C3M-34	152,000	32	C3M-54	147,000	140	C3B-68	140,000	65
C3A-3	175,000	2	C3A-22	160,000	3	C3L-34	170,000	314	C3D-52	145,000	51	C3B-69	138,000	43
C3M-57	172,000	2	C3C-16	150,000	3,561	C3D-31	150,000	429	C3C-24	142,000	24	C3A-42	133,000	144
C3L-6	172,000	37				Average		357						
C3M-6	172,000	251	C3E-71	148,000	90	C3A-61	140,000	844	C3E-66	130,000	3,654	C3B-52	120,000	1,036
Average		97												
			C3M-52	142,000	4,100	C3A-15	140,000	1,770	C3M-49	110,000	2,257	C3C-13	100,000	7,000
C3A-56	160,000	3,295							C3P-45	110,000	1,568			
C3L-20	160,000	3,794	C3B-31	140,000	658	C3M-55	120,000	8,185	Average		2,012	C3E-17	90,000	20,000
C1L-45	160,000	4,000												
Average		3,696	C3P-8	100,000	19,583	C3L-57	100,000	13,000	C3C-1	100,000	12,000	C3M-67	70,000	57,000
C3A-49	70,000	70,000	C3M-5	65,000	61,000	C3B-20	65,000	51,000	C3L-51	90,000	12,000	C3C-11	60,000	95,000
C3C-56	70,000	71,000	C3M-34	65,000	77,000	C3J-37	65,000	58,000				C3B-16	60,000	217,000
C3M-52	70,000	111,000	C3B-3	65,000	81,000	C3K-8	65,000	60,000	C3M-33	75,000	95,000	C3J-4	60,000	670,000
C3L-20	70,000	1,442,000			76,000	Average		58,000	C3J-8	75,000	257,000	Average		377,000
Average		367,000							C3B-23	75,000	181,000			
			C3M-48	60,000	123,000	C3A-22	60,000	78,000	Average		215,000	C3B-44	55,000	93,000
C3J-52	60,000	90,000	C3B-29	60,000	171,000	C3L-43	60,000	97,000				C3E-1	55,000	151,000
C3A-27	60,000	183,000	C3M-7	60,000	234,000	C3J-35	60,000	149,000	C3K-7	95,000	89,000	C3C-35	55,000	266,000
C3M-27	60,000	191,000			240,000	C3F-32	60,000	540,000	C3M-6	65,000	708,000	Average		170,000
C3M-50	60,000	10,000,000(1)	Average			Average		288,000	C3M-25	65,000	987,000			
									C3B-42	65,000	1,479,000	C3M-10	50,000	354,000
C3F-58	55,000	89,000	C3M-24	57,500	401,000				Average		1,391,000	C3A-24	50,000	843,000
C3C-17	55,000	481,000	C3M-45	57,500	599,000	C3J-49	57,500	153,000				C3C-25	50,000	921,000
C3A-27	55,000	10,000,000(1)	C3M-34	57,500	1,425,000	C3E-21	57,500	1,205,000				Average		699,000
C3C-22	55,000	10,000,000(1)	Average		1,708,000	C3F-44	57,500	1,466,000	C3M-57	60,000	44,000			
C3M-11	55,000	10,000,000(1)				Average		1,119,000	C3L-16	60,000	131,000			
			C3E-51	55,000	697,000				C3L-42	60,000	112,000	C3E-40	45,000	1,562,000
C3M-33	50,000	285,000	C3M-40	55,000	1,377,000	C3M-47	55,000	982,000	Average		196,000	C3B-21	45,000	2,828,000
C3J-44	50,000	404,000	C3L-20	55,000	1,826,000	C3E-17	55,000	1,507,000				C3C-29	45,000	4,091,000
C3L-29	50,000	10,000,000(1)	C3M-9	55,000	10,000,000(1)	C3M-35	55,000	1,119,000	C3M-4	50,000	92,000	C3C-12	45,000	4,154,000
C3C-37	50,000	10,000,000(1)				Average		1,869,000	C3M-39	50,000	694,000	Average		3,039,000
			C3L-57	52,000	10,000,000(1)				C3J-51	50,000	1,402,000			
C3K-9	47,500	8,147,000	C3L-5	52,000	10,000,000(1)	C3M-26	52,000	10,000,000(1)	Average		729,000	C3C-51	42,000	4,305,000
C3L-36	47,500	10,000,000(1)	C3M-2	52,000	10,000,000(1)	C3A-50	52,000	10,000,000(1)				C3A-23	42,000	5,569,000
C3A-2	47,500	10,000,000(1)				C3E-24	52,000	10,000,000(1)	C3J-6	45,000	1,893,000	C3D-22	42,000	10,000,000(1)
									C3B-51	45,000	3,491,000			
									C3B-24	45,000	10,000,000(1)	C3A-18	38,000	1,073,000
									C3C-23	45,000	10,000,000(1)			
									C3M-55	37,000	1,586,000(1)	C3L-7	30,000	10,000,000(1)
									C3L-40	37,000	10,000,000(1)	C3B-8	30,000	10,000,000(1)
									C3J-33	37,000	10,000,000(1)	C3D-52	30,000	10,000,000(1)
									C3L-45	37,000	10,000,000(1)			

1) Test discontinued, no failure.
2) In specimen numbers, third cipher A through H denotes heat No. 23345; P denotes Heat No. 23372.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCXVI

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-2.5Al-16V HEAT — REACTIVE METALS 22154

FASTENER — NAS 675-V2 NOMINAL DIA.— 5/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	C2LL10-1	0.0664	0.0660	6730	58[illegible]	(1)	C2TL10-1	0.0668	0.066[illegible]	6650	5290	(1)
	-6	0.0707	0.0705	6880	5[illegible]70	(1)	-6	0.0699	0.069[illegible]	7310	6380	(2)
	-11	0.0703	0.0696	6890	6[illegible]0	(2)	-11	0.0680	0.067[illegible]	6600	5790	(1)
	Average	0.0691	0.0687	6830	[illegible]950		Average	0.0682	0.067[illegible]	6850	5920	
-65	C2LL9G-2	0.0673	0.0674	7210	6620	(2)	C2TL9G-2	0.0697	0.[illegible]691	7520	6860	(2)
	-7	0.0702	0.0702	7500	6610	(2)	-7	0.0686	0.0[illegible]1	7390	6750	(2)
	-12	0.0708	0.0708	7260	6130	(2)	-12	0.0681	0.[illegible]676	7560	6610	(1)
	Average	0.0694	0.0695	7320	6450		Average	0.0688	0.068[illegible]	7490	6740	
-100	C2LL10G-3	0.0672	0.0673	7170	6460	(2)	C2TL10G-3	0.0680	0.0677	7510	6580	(2)
	-8	0.0692	0.0692	7060	5550	(2)	-8	0.0680	0.0686	7500	6660	(2)
	-13	0.0699	0.0701	7140	6950	(2)	-13	0.0699	0.0695	7420	6560	(2)
	Average	0.0688	0.0689	7220	6325		Average	0.0686	0.0686	7480	6600	
-200	C2LL11G-4	0.0688	0.0690	7920	7100	(2)	C2TL11G-4	0.0685	0.0681	8100	7140	(2)
	-9	0.0678	0.0679	8000	7130	(2)	-9	0.0686	0.0692	8010	7150	(2)
	-14	0.0697	0.0696	8000	6830	(2)	-14	0.0689	0.0695	8110	7240	(2)
	Average	0.0688	0.0688	7970	7020		Average	0.0687	0.0689	8070	7180	
-320	C2LL12G-5	0.0700	0.0695	6130	- (3)	(2)	C2TL12G-5	0.0690	0.0683	8780	- (4)	(2)
	-10	0.0702	0.0705	7090	- (3)	(1)	-10	0.0679	0.0664	8630	8550	(1)
	-15	0.0684	0.0704	8910	8010	(2)	-15	0.0692	0.0699	6220	- (3)	(1)
	Average	0.0695	0.0701	7380			Average	0.0687	0.0682	7880		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Failed prior to attaining yield deformation.
(4) Unusable load-deformation curve.

TABLE CCXVII

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6AI-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-2.5Al-16V HEAT — REACTIVE METALS 22154

FASTENER — NAS 2010-V2 NOMINAL DIA.— 5/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	C2LL1H-1	0.0674	0.0651	6590	5650	(1)	C2TL1H-1	0.0671	0.0671	7000	5850	(1)
	-6	0.0707	0.0705	7100	5760	(1)	-6	0.0690	0.0691	6780	5770	(1)
	-11	0.0672	0.0670	6810	5710	(1)	-11	0.0685	0.0677	6900	5900	(1)
	Average	0.0674	0.0675	6830	5720		Average	0.0682	0.0680	6890	5840	
-65	C2LL9H-2	0.0674	0.0670	7100	6140	(1)	C2TL9H-2	0.0673	0.0670	7450	6460	(1)
	-7	0.0702	0.0701	7600	6330	(1)	-7	0.0660	0.0686	7450	- (2)	(1)
	-12	0.0714	0.0709	7730	6280	(1)	-12	0.0676	0.0680	7490	6490	(1)
	Average	0.0697	0.0693	7470	6250		Average	0.0676	0.0679	7460	6480	
-100	C2LL10H-3	0.0672	0.0671	7660	- (2)	(1)	C2TL10H-3	0.0673	0.0676	7500	6520	(1)
	-8	0.0609	0.0601	6360	5930	(1)	-8	0.0689	0.0690	7590	6510	(1)
	-13	0.0720	0.0702	6800	5050	(1)	-13	0.0675	0.0681	7500	- (2)	(1)
	Average	0.0660	0.0658	7110	5490		Average	0.0679	0.0682	7530	6520	
-200	C2LL11H-4	0.0671	0.0670	8180	7220	(1)	C2TL11H-4	0.0678	0.0681	8220	7280	(1)
	-9	0.0685	0.0682	8340	7290	(1)	-9	0.0669	0.0637	8220	7350	(1)
	-14	0.0698	0.0696	8200	6920	(1)	-14	0.0698	0.0689	8580	7600	(1)
	Average	0.0685	0.0683	8240	7140		Average	0.0682	0.0669	8340	7410	
-320	C2LL12H-5	0.0671	0.0663	8670	7480	(1)	C2TL12H-5	0.0688	0.0686	8740	7700	(1)
	-10	0.0691	0.0690	3670	7820	(1)	-10	0.0682	0.0660	8770	7950	(1)
	-15	0.0689	0.0689	8670	7850	(1)	-15	0.0694	0.0693	8170	7950	(1)
	Average	0.0684	0.0681	8670	7720		Average	0.0688	0.0680	8560	7870	

(1) Sheet failed in tension across fastener hole.
(2) Unusable load-deformation curve.

TABLE CCXVIII

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-2.5Al-16V MEAT — REACTIVE METALS 22154

FASTENER — MIL1V-6-3 NOMINAL DIA.— 3/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	C2TL11J-1	0.0672	0.0670	2660	2340	(2)	C2TL11J-1	0.0678	0.0681	2560	2320	(2)
	-6	0.0703	0.0702	2680	- (3)	(2)	-6	0.0685	0.0679	2620	2470	(2)
	-11	0.0646	0.0646	2620	2200	(2)	-11	0.0682	0.0688	2580	2380	(2)
	Average	0.0674	0.0673	2650	2280		Average	0.0682	0.0683	2590	2390	
-65	C2TL9J-2	0.0674	0.0672	2930	2260	(2)	C2TL9J-2	0.0680	0.0683	2900	2390	(2)
	-7	0.0676	0.0704	2930	2320	(2)	-7	0.0686	0.0687	2820	2190	(2)
	-12	0.0673	0.0671	2740	2430	(2)	-12	0.0688	0.0685	2740	2280	(2)
	Average	0.0674	0.0683	2870	2340		Average	0.0685	0.0683	2820	2290	
-100	C2TL10J-3	0.0682	0.0686	2940	2400	(2)	C2TL10J-3	0.0683	0.0683	2830	2100	(2)
	-8	0.0671	0.0672	2820	2380	(2)	-8	0.0685	0.0679	2770	2360	(2)
	-13	0.0696	0.0696	2660	2400	(2)	-13	0.0689	0.0684	2900	2260	(2)
	Average	0.0683	0.0683	2810	2390		Average	0.0685	0.0682	2830	2240	
-200	C2TL11J-4	0.0682	0.0682	3050	2510	(2)	C2TL11J-4	0.0685	0.0683	3120	2600	(2)
	-9	0.0658	0.0660	3190	2600	(2)	-9	0.0690	0.0701	3100	2640	(2)
	-14	0.0708	0.0710	3400	- (4)	(2)	-14	0.0681	0.0678	3230	2670	(2)
	Average	0.0683	0.0684	3210	2560		Average	0.0685	0.0687	3150	2700	
-320	C2TL12J-5	0.0683	0.0681	3490	- (4)	(2)	C2TL12J-5	0.0686	0.0685	3560	- (4)	(2)
	-10	0.0611	0.0614	2680	- (4)	(1)	-10	0.0691	0.0696	3000	- (4)	(1)
	-15	0.0671	0.0704	3330	- (4)	(2)	-15	0.0680	0.0677	3100	- (4)	(1)
	Average	0.0655	0.0666	3170			Average	0.0686	0.0686	3220		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Unusable load-deformation curve.
(4) Failed prior to attaining yield deformation.

TABLE CCXIX

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY-- Ti-2.5Al-16V HEAT — REACTIVE METALS 22154

FASTENER — NAS 2506-3 NOMINAL DIA.— 3/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
RT	C2LL1K-1	0.0670	0.0666	2380	2090	(2)	C2TL1K-1	0.0680	0.0683	2350	2140	(2)
	-6	0.0701	0.0700	2520	2260	(2)	-6	0.0683	0.0678	2520	2160	(2)
	-11	0.0611	0.0615	2520	2100	(2)	-11	0.0688	0.0683	2490	2300	(2)
	Average	0.0662	0.0660	2470	2150		Average	0.0684	0.0681	2450	2200	
-65	C2LL9K-2	0.0673	0.0671	2680	2350	(2)	C2TL9K-2	0.0680	0.0681	2680	- (5)	(2)
	-7	0.0704	0.0704	2560	2280	(2)	-7	0.0685	0.0680	2530	2240	(2)
	-12	0.0662	0.0662	2740	2250	(2)	-12	0.0688	0.0685	2460	2260	(2)
	Average	0.0680	0.0679	2660	2290		Average	0.0684	0.0682	2560	2250	
-100	C2LL10K-3	0.0673	0.0671	2740	2360	(2)	C2TL10K-3	0.0683	0.0682	2640	2410	(2)
	-8	0.0706	0.0706	2720	2400	(2)	-8	0.0690	0.0694	2640	2310	(2)
	-13	0.0679	0.0678	2680	2360	(2)	-13	0.0680	0.0676	2670	2400	(3)
	Average	0.0687	0.0685	2715	2370		Average	0.0684	0.0684	2650	2570	
-200	C2LL11K-4	0.0683	0.0680	2920	2620	(3)	C2TL11K-4	0.0692	0.0696	3400	3320	(3)
	-9	0.0666	0.0668	3190	2660	(2)	-9	0.0690	0.0695	2950	2650	(3)
	-14	0.0696	0.0698	2950	2830	(3)	-14	0.0680	0.0678	2840	2750	(3)
	Average	0.0682	0.0682	3020	2700		Average	0.0687	0.0690	3060	2910	
-320	C2LL12K-5	0.0683	0.0682	2940	- (4)	(3)	C2TL12K-5	0.0692	0.0695	3130	- (4)	(3)
	-10	0.0642	0.0642	3270	- (4)	(2)	-10	0.0692	0.0697	2890	- (4)	(1)
	-15	0.0700	0.0700	3260	3190	(3)	-15	0.0678	0.0675	2960	- (4)	(1)
	Average	0.0675	0.0675	3160			Average	0.0687	0.0689	2990		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Fastener head failed.
(4) Failed prior to attaining yield deformation.
(5) Unusable load-deformation curve.

TABLE CCXX

TENSILE PROPERTIES FOR 0.063 INCH [illegible]K SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET CONTAINING FUSION WELDS

CONDITION— AGED AFTER WELDING IN SOLUTION TREATED CONDITION

ALLOY— Ti-2.5Al-16V

HEAT NUMBER— REACTIVE METALS P2154

TEST TEMP °F	LONGITUDINAL										TRANSVERSE									
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/2 IN.	ELONGATION, % IN 1/4 IN.	EFFICIENCY FOR η_u	EFFICIENCY FOR η_y	FAILURE LOCATION	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/2 IN.	ELONGATION, % IN 1/4 IN.	EFFICIENCY FOR η_u	EFFICIENCY FOR η_y	FAILURE LOCATION
80	C21M01L-1	183,000	179,000	16.9x10⁶	1.5	12	10	96.7	96.4	(3)	C21M01L-1	196,000	187,000	14.4x10⁶	3.0	8	12	98.0	98.9	(1)
	-6	184,000	180,000	15.3	1.5	10	-	96.4	96.9	(3)	-6	192,000	185,000	15.2	1.0	6	12	97.0	97.9	(1)
	-11	191,000	-	15.4	1.5	8	12(5A)	100.4	-	(1)	-11	191,000	188,000	15.1	1.0	6	8	97.0	99.5	(2)
	Average	186,000	180,000	15.9	1.5	13	11	97.8	96.6		Average	193,000	187,000	14.9	1.7	7	11	97.5	98.8	
-98	C21M09L-1	189,000	-	16.9x10⁶	-	-	(6,7)	91.7	-	(1)	C21M09L-2	-	207,000	15.6x10⁶	-	-	-	-	94.1	(4)
	-7	189,000	191,000	15.9	0.5	6	12	96.9	98.6	(1)	-7	205,000	208,000	15.8	0.5	4	4	93.2	95.7	(1)
	-12	192,000	188,000	16.1	1.0	8	10	97.0	96.1	(1)	-12	-	-	15.6	-	-	(6,7)	-	-	(5)
	Average	190,000	190,000	16.3	0.8	7	11	97.2	97.4		Average	205,000	208,000	15.7					96.9	
-162	C21M03L-3	208,000	201,000	15.7x10⁶	0.5	6	12	93.7	95.7	(1)	C21M03L-3	200,000	-	15.9x10⁶	-	-	(6,7)	89.7	-	(1)
	-8	207,000	-	15.6	-	-	(6,7)	93.2	-	(1)	-8	195,000	-	15.9	-	-	(6,7)	87.4	-	(1)
	-13	205,000	-	15.6	-	-	(6,7)	92.3	-	(1)	-13	220,000	-	15.6	-	-	(6,7)	89.7	-	(1)
	Average	207,000		15.7	0.5	6	12	93.1			Average	138,000		15.7				88.9		
-198	C21M11L-4	200,000	-	16.0x10⁶	-	-	(6,7)	89.6	-	(2)	C21M11L-4	203,000	-	16.3x10⁶	-	-	(6,7)	96.5	-	(1)
	-9	203,000	-	15.8	-	-	(6,7)	91.4	-	(1)	-9	-	-	16.9	-	-	(6,7)	-	-	(5)
	-14	211,000	-	15.8	-	-	(6,7)	94.7	-	(1)	-14	222,000	-	15.8	-	-	(6,7)	99.6	-	(1)
	Average	205,000		15.8				91.9			Average	216,000		16.2				97.9		
-320	C21M12L-5	212,000	-	17.0x10⁶	-	-	(6,7)	92.4	-	(1)	C21M12L-5	-	-	17.4x10⁶	-	-	(6,7)	-	-	(4)
	-10	-	-	16.0	-	-	(6,7)	-	-	(4)	-10	224,000	-	16.8	-	-	(6,7)	97.8	-	(1)
	-15	209,000	-	16.7	-	-	(6,7)	91.1	-	(1)	-15	-	-	16.4	-	-	(6,7)	-	-	(5)
	Average	210,000		16.9				91.8			Average			16.8						

(1) Heat affected zone adjacent to weld.
(2) Fusion zone.
(3) Parent material.
(4) Outside test section.
(5) Unusable load-deformation curve.
(6) Failed prior to attaining yield deformation.
(7) Elongation less than 0.3 percent.

TABLE CCXXI

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— Ti-2.5Al-16V
THICKNESS— 0.063 INCH
HEAT NUMBER— REACTIVE METALS 22154

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN
80	C2LA1-41	176,000	165,000	14.8×10^6	6.0	16	28	C2TA1-41	175,000	160,000	15.2×10^6	4.5	16	28(3)
	-46	175,000	166,000	14.7	6.5	24	36	-46	182,000	169,000	15.0	5.0	16	28
	-51	174,000	158,000	14.1	6.5	24	-	-51	181,000	168,000	15.0	4.5	20	-
	Average	176,000	161,000	14.5	6.3	21	32	Average	179,000	166,000	15.1	4.7	17	28
-65	C2LA9-42	186,000	177,000	14.5×10^6	1.0	6	8(1)	C2TA9-42	196,000	184,000	15.1×10^6	1.0	6	20(1)
	-47	197,000	181,000	14.7	4.0	16	20	-47	203,000	189,000	14.5	3.0	14	24
	-52	199,000	183,000	14.8	2.5	4	4(1)	-52	205,000	189,000	14.6	3.5	12	16
	Average	194,000	180,000	14.7	2.5	9	11	Average	201,000	187,000	14.8	2.5	11	20
-100	C2LA10-43	201,000	187,000	15.1×10^6	4.0	14	16	C2TA10-43	202,000	194,000	15.5×10^6	-	-	-(2)
	-48	204,000	188,000	14.9	3.5	3	16	-48	210,000	195,000	15.2	2.5	12	16
	-53	201,000	189,000	15.2	-	-	-(2)	-53	211,000	197,000	15.3	3.0	16	32
	Average	202,000	188,000	15.1	3.8	11	16	Average	208,000	195,000	15.3	2.8	14	24
-200	C2LA11-44	227,000	213,000	15.4×10^6	2.5	14	28	C2TA11-44	234,000	220,000	15.7×10^6	2.5	14	32
	-49	232,000	216,000	15.4	3.0	14	32	-49	234,000	218,000	15.4	2.0	12	20
	-54	229,000	214,000	15.3	4.0	16	44	-54	234,000	219,000	15.4	2.0	14	24
	Average	229,000	214,000	15.4	3.2	15	35	Average	234,000	219,000	15.5	2.2	13	25
-320	C2LA12-45	265,000	251,000	15.4×10^6	-	-	-(3)	C2TA12-45	278,000	263,000	15.9×10^6	2.0	4	12
	-50	271,000	254,000	15.5	2.5	-	-	-50	277,000	259,000	15.4	1.5	8	12
	-55	271,000	254,000	15.2	2.0	12	12	-55	276,000	260,000	15.6	2.5	8	20
	Average	269,000	253,000	15.4	2.2			Average	277,000	261,000	15.6	2.0	7	15

(1) Failed at knife edge.
(2) Failed outside gage marks.
(3) Failed within 1/4 inch of fillet.

TABLE CCXXII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— Ti-7.5Al-1Cr
THICKNESS— 0.063 INCH
HEAT NUMBER— REACTIVE METALS 22154

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, psi	F_{TY}, psi	E, psi	ELONGATION, % IN 2 IN	1/8 IN	1/2 IN	SPECIMEN NUMBER	F_{TU}, psi	F_{TY}, psi	E, psi	ELONGATION, % IN 2 IN.	1/8 IN.	1/2 IN.
80	C2LA1L-1	195,000	178,000	15.4×10^6	2.0	10	16	C2TA1L-1	197,000	187,000	15.3×10^6	3.0	8	16
	-6	195,000	185,000	14.5	4.0	8	12	-6	197,000	189,000	15.5	2.0	8	12
	-11	195,000	182,000	15.1	3.5	14	23	-11	201,000	191,000	15.5	2.0	12	20
	Average	195,000	182,000	14.9	3.2	11	17	Average	198,000	189,000	15.4	2.3	9	16
-65	C2LA9L-2	207,000	205,000	15.4×10^6	0.5	6	20(1)	C2TA9L-2	219,000	211,000	15.8×10^6	-	-	(1,2)
	-7	197,000	-	15.5	-	-	(3,2,3)	-7	220,000	213,000	15.4	0.5	4	-
	-12	215,000	208,000	15.2	2.0	6	12	-12	-	212,000	15.6	-	-	(4)
	Average	206,000	207,000	15.4	0.8	6	11	Average	220,000	211,000	15.6	0.3	2	
-100	C2LA10L-3	218,000	207,000	15.0×10^6	2.0	0	12	C2TA10L-3	230,000	217,000	16.0×10^6	4.0	6	8
	-8	223,000	210,000	15.5	2.5	6	16	-8	-	-	15.8	-	-	(3,4)
	-13	223,000	214,000	15.5	2.0	8	12	-13	216,000	-	15.6	-	-	(2,3)
	Average	222,000	210,000	15.3	2.2	8	13	Average	223,000		15.8	2.0	3	4
-200	C2LA11L-4	242,000	236,000	16.2×10^6	0.5	4	8(1)	C2TA11L-4	243,000	237,000	15.7×10^6	0.5	4	8(1)
	-9	248,000	238,000	15.6	2.0	8	12	-9	-	238,000	16.0	-	-	(4)
	-14	237,000	231,000	15.6	0.5	4	-(1)	-14	219,000	-	16.0	-	-	(4,3)
	Average	242,000	234,000	15.8	1.0	5	-7	Average		238,000	15.9	0.3	2	4
-320	C2LA12L-5	246,000	-	15.8×10^6	-	-	(2,3)	C2TA12L-5	219,000	-	16.0×10^6	-	-	(2,3)
	-10	246,000	-	15.6	-	-	(1,2,3)	-10	-	-	16.3	-	-	(3,4)
	-15	173,000	-	15.6	-	-	(1,2,3)	-15	-	-	17.6	-	-	(3,4)
	Average	262,000		15.7				Average			16.6			

(1) Failed at knife edge.
(2) Elongation less than 3.3 percent.
(3) Failed prior to attaining yield deformation.
(4) Failed outside test section.

TABLE CCXXIII

VATED TEMPERATURE THERMAL EXPANSION PROPERTIES FOR 2.5A'-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK, (REACTIVE METALS HEAT NUMBER 23345, SHEET NO. 1149-3)

Temp. Range, °F	Expansion, Inch per Inch				Mean Linear Thermal Expansion Coefficient, Inch Per Inch Per °F
	Specimen No. C9EE-1	Specimen No. C9EE-2	Specimen No. C9EE-3	Average	
100 - 200	0.00049	0.00052	0.00050	0.000503	5.03×10^{-6}
100 - 300	0.00099	0.00106	0.00101	0.001020	5.10
100 - 400	0.00153	0.00158	0.00155	0.001552	5.18
100 - 500	0.00205	0.00213	0.00207	0.002083	5.21
100 - 600	0.00261	0.00267	0.00261	0.002630	5.26
100 - 700	0.00316	0.00321	0.00314	0.003170	5.28
100 - 800	0.00385	0.00377	0.00372	0.003780	5.40
100 - 900	0.00434	0.00432	0.00428	0.004313	5.39
100 - 1000	0.00493	0.00488	0.00485	0.004887	5.43
100 - 1100	0.00557	0.00544	0.00542	0.005477	5.48
100 - 1200	0.00680	0.00608	0.00601	0.006077	5.52
1200 - 100	-0.00016 (1)	0.00045 (1)	0.00084 (1)	0.000508(1)	

(1) Specimen had a change in length after cooling from 1200°F to 100°F

Table CCAXIV

LOW TEMPERATURE THERMAL EXPANSION PROPERTIES FOR 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 23345, SHEET NO. 1149-3)

Temp. Range, °F	Expansion, Inch per Inch				Mean Linear Thermal Expansion Coefficient, Inch Per Inch Per °F
	Specimen No. C9EL-4	Specimen No. C9EL-5	Specimen No. C9EL-6	Average	
-10 to 35	0.00022	0.00020	0.00020	0.000207	4.60×10^{-6}
-55 to 35	0.00043	0.00041	0.00041	0.000417	4.63
-100 to 35	0.00063	0.00060	0.00060	0.000610	4.52
-145 to 35	0.00082	0.00080	0.00078	0.000800	4.44
-190 to 35	0.00103	0.00097	0.00095	0.000985	4.38
-235 to 35	0.00117	0.00114	0.00106	0.001123	4.16
-280 to 35	0.00132	0.00130	0.00128	0.001300	4.13
-325 to 35	0.00145	0.00144	0.00143	0.001440	4.00
-370 to 35	0.00153	0.00155	0.00151	0.001530	3.77
-415 to 35	0.00159	0.00162	0.00168	0.001630	3.62
-453 to 35	0.00163	0.00166	0.00162	0.001637	3.35

TABLE CCXXV

ELEVATED TEMPERATURE THERMAL CONDUCTIVITY OF 2.5Al-16V TITANIUM ALLOY SHEET, 0.125 INCH THICK (REACTIVE METALS HEAT NO. 23345, SHEET NO. 1149-3)

Mean Temp., °F	Thermal Conductivity, BTU/ft hr °F			
	Specimen No. C9KE-1	Specimen No. C9KE-2	Specimen No. C9KE-3	Average
300	6.1	5.6	6.1	5.9
400	6.8	6.1	6.8	6.6
500	7.5	6.7	7.5	7.2
600	8.1	7.4	8.2	7.9
700	8.8	8..	9.0	8.6
800	9.5	8.7	9.7	9.3
900	10.1	9.3	10.4	9.9
1000	10.7	10.0	11.0	10.6
1100	11.2	10.3	11.5	11.0
1200	11.5	10.5	11.6	11.2

VI - TABLES FOR Ti-4Al-3Mo-1V

TABLE CCXXVI

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 4Al-3Mo-1V
THICKNESS— 0.020 INCH
HEAT NUMBER— RL815

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E_c, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E_c PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.
80	D1LA1-1	197,000	177,000	16.2×10^6	3.5	10	-(1)	D1TA1-1	198,000	180,000	16.6×10^6	4.0	18	-
	-4	196,000	175,000	16.2	4.5	20	28	-4	204,000	182,000	17.0	4.5	16	24
	-7	208,000	186,000	16.8	-	-	-(2)	-7	204,000	184,000	17.1	4.5	-	-
	-10	197,000	184,000	16.4	4.0	14	-	-10	212,000	189,000	17.1	3.5	12	20
	-13	188,000	179,000	16.3	5.0	14	-	-13	205,000	178,000	16.8	4.5	14	20
	-16	205,000	179,000	16.4	5.0	14	-	-16	203,000	176,000	16.7	5.0	20	-
	-19	209,000	184,000	16.9	4.0	12	-	-19	211,000	189,000	17.2	4.0	12	20
	-22	210,000	185,000	16.4	5.0	-	-	-22	208,000	185,000	18.1	4.5	16	-
	-25	206,000	179,000	16.4	5.0	20	-	-25	208,000	180,000	17.3	6.5	20	-
	-28	195,000	175,000	16.2	4.0	-	-	-28	194,000	177,000	16.9	3.5	16	20
	Average	201,000	180,000	16.4	4.4	15		Average	205,000	182,000	17.1	4.4	16	21
200	D1LA2-6	176,000	160,000	15.7×10^6	3.8	-	-(1,3)	D1TA2-6	184,000	158,000	14.9×10^6	4.8	16	-
	-13	187,000	153,000	14.9	5.8	18	-	-13	183,000	152,000	15.9	4.8	-	-(1,3)
	-15	178,000	157,000	15.4	6.5	-	-(3)	-15	184,000	157,000	16.3	5.5	18	-
	Average	180,000	157,000	15.3	5.4			Average	184,000	156,000	15.7	5.0	17	
400	D1LA3-8	-	139,000	15.1×10^6	-	-	-(4)	D1TA3-8	168,000	137,000	15.4×10^6	4.5	14	-(5)
	-16	170,000	135,000	14.4	5.5	16	-	-16	167,000	133,000	14.7	6.0	15	-
	-18	170,000	133,000	15.4	5.8	14	-	-18	169,000	135,000	16.5	5.5	14	-
	Average	170,000	136,000	15.0	5.7	15		Average	168,000	135,000	15.5	5.3	14	
600	D1LA4-9	157,000	123,000	14.2×10^6	4.8	-	-(3)	D1TA4-1	150,000	117,000	14.1×10^6	3.8	10	-(5)
	-20	156,000	120,000	14.9	5.0	10	20	-9	156,000	123,000	14.6	3.5	14	-
	-21	159,000	122,000	14.8	5.0	12	28	-17	156,000	119,000	13.4	4.2	15	23
	Average	157,000	122,000	14.6	4.9	11	24	Average	154,000	120,000	14.0	3.8	13	
800	D1LA6-10	145,000	102,000	12.0×10^6	6.8	19	-	D1TA6-10	144,000	101,000	13.0×10^6	5.2	16	-(5)
	-14	145,000	104,000	[illegible]	7.6	18	-(5)	-14	147,000	110,000	11.9	4.5	14	-(5)
	-22	147,000	108,000		5.5	8	12	-17	144,000	109,000	12.1	4.5	13	-
	Average	146,000	105,000	[illegible]	6.7	15		Average	145,000	107,000	12.3	4.7	14	
900	D1LA7-3	123,000	91,800	11.5×10^6	8.5	22	-	D1TA7-3	127,000	95,900	12.9×10^6	8.0	15	-(5)
	-5	128,000	96,800	11.9	9.0	30	34(5)	-5	129,000	95,000	11.7	5.0	12	-(5)
	-11	126,000	88,700	12.6	8.5	-	-(5)	-11	130,000	96,000	12.1	7.2	18	-(5)
	Average	126,000	92,400	12.0	8.7	26		Average	129,000	95,600	12.2	6.8	15	
1000	D1LA8-2	96,600	69,500	9.15×10^6	14.0	33	41(1)	D1TA8-2	97,800	69,700	9.55×10^6	7.2	12	20
	-4	101,000	72,700	9.87	-	-	-(2)	-4	98,700	71,400	9.78	14.0	24	40(1)
	-23	99,000	71,500	10.8	-	32	52	-7	101,000	73,000	9.79	9.8	16	-
	Average	98,900	71,200	9.94		32	46	Average	99,200	71,400	9.71	10.3	17	30

(1) Failed within 1/4 inch of fillet
(2) Failed outside gage marks
(3) Failed at loading hole, retested to obtain F_{tu} and elongation
(4) Failed at loading hole
(5) Failed at knife edge

TABLE CCXXVII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— Ti-13V-11Cr-3Al
THICKNESS— 0.020 INCH
HEAT NUMBER— 84765

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN
80	Ti13V11Cr3Al-1	203,000	177,000	10.7×10^6	3.5	10	-	Ti13V11Cr3Al-1	210,000	181,000	10.6×10^6	3.0	12	[illegible]
	-4	202,000	176,000	10.4	4.0	10	28	-4	203,000	182,000	10.8	3.[illegible]	12	[illegible]
	-7	199,000	184,000	10.1	3.0	14	26	-7	199,000	178,000	17.0	[illegible]	16	20
	-10	186,000	167,000	15.8	5.0	10	-	-10	194,000	172,000	[illegible]	[illegible]	[illegible]	[illegible]
	-13	195,000	169,000	10.4	4.5	10	-	-13	197,000	176,000	17.1	[illegible]	[illegible]	[illegible]
	-16	197,000	168,000	10.9	5.0	16	-	-16	201,000	177,000	16.[illegible]	5.[illegible]	20	25
	-19	205,000	176,000	10.7	4.0	10	28	-19	203,000	180,000	17.0	[illegible]	25	28
	-22	205,000	174,000	10.4	3.0	8	12	-22	206,000	182,000	17.8	-	-	-(2)
	-25	197,000	172,000	17.0	5.0	10	36	-25	194,000	175,000	10.8	3.[illegible]	8	-
	-28	[illegible],000	170,000	10.8	-	-	-(2)	-28	200,000	161,000	[illegible]	-	-	-(2)
	Average	[illegible],000	171,000	[illegible]	[illegible]	[illegible]	[illegible]	Average	[illegible],000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
200	Ti13V11Cr3Al-15	181,000	150,000	10.5×10^6	5.0	10	-	Ti13V11Cr3Al-6	169,000	140,000	[illegible]	[illegible]	-	-
	-18	164,000	154,000	10.3	5.0	-	-	-13	176,000	151,000	10.3	3.5	16	-
	-19	166,000	139,000	15.9	8.0	10	28	-15	178,000	152,000	15.5	[illegible]	-	-
	Average	178,000	148,000	16.2	6.0	16		Average	175,000	150,000	16.1	5.6		
400	Ti13V11Cr3Al-6	163,000	135,000	15.8×10^6	3.0	-	-	Ti13V11Cr3Al-8	158,000	126,000	15.6×10^6	[illegible]	15	-
	-13	159,000	129,000	15.4	4.0	-	-(1)	-16	163,000	131,000	14.7	[illegible]	-	-
	-16	164,000	125,000	14.7	2.0	-	-(1)	-18	165,000	130,000	[illegible]	[illegible]	[illegible]	-
	Average	162,000	131,000	15.3	[illegible]			Average	162,000	129,000	[illegible]	[illegible]	[illegible]	
600	Ti13V11Cr3Al-1	156,000	118,000	14.0×10^6	[illegible]	-	-	Ti13V11Cr3Al-1	152,000	116,000	14.6×10^6	3.8	-	-
	-9	150,000	113,000	14.0	[illegible]	-	-	-9	150,000	115,000	14.8	4.5	-	-
	-12	146,000	111,000	14.1	4.5	-	-(1)	-12	155,000	[illegible]	[illegible]	[illegible]	-	-
	Average	150,000	114,000	14.0	[illegible]			Average	152,000	117,000	[illegible]	[illegible]	[illegible]	
800	Ti13V11Cr3Al-20	137,000	104,000	13.2×10^6	3.0	-	-	Ti13V11Cr3Al-10	142,000	107,000	[illegible]	[illegible]	[illegible]	-
	-14	144,000	105,000	12.6	-	-	-(2)	-17	14[illegible],000	105,000	[illegible]	[illegible]	[illegible]	-
	-17	[illegible],000	109,000	13.2	3.0	12		-19	[illegible],000	107,000	[illegible]	[illegible]	[illegible]	[illegible]
	Average	[illegible],000	[illegible],000	12.7	3.0			Average	[illegible],000	106,000	[illegible]	[illegible]	[illegible]	
900	Ti13V11Cr3Al-3	121,000	95,400	11.8×10^6	-	-	-(2)	Ti13V11Cr3Al-3	126,000	89,600	[illegible]	7.2	21	[illegible]
	-5	129,000	98,500	11.0	5.5	16	-(1)	-5	123,000	91,600	[illegible]	[illegible]	[illegible]	[illegible]
	-11	127,000	89,700	11.8	6.0	15	-(1)	-11	127,000	83,300	[illegible]	7.[illegible]	[illegible]	-
	Average	126,000	94,500	11.5	[illegible]	[illegible]		Average	126,000	88,200	[illegible]	[illegible]		
1000	Ti13V11Cr3Al-2	106,000	79,400	10.6×10^6	4.0	10	20	Ti13V11Cr3Al-2	98,500	70,000	[illegible]	-	-	[illegible]
	-4	96,700	72,100	10.4	5.5	18	28(1)	-4	96,900	69,500	[illegible]	[illegible]	[illegible]	[illegible]
	-7	[illegible],200	-	11.0	5.0	16	-(1-3)	-7	94,600	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Average	100,000	75,800	10.7	[illegible]	[illegible]	[illegible]	Average	96,500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) Failed within 1/4 inch of fillet
(2) Failed outside gage marks
(3) Unusable load-deformation curve beyond elastic portion

TABLE CCXXVIII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 4Al-3Mo-1V
THICKNESS— 0.020 INCH
HEAT NUMBER— R1805

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/4 IN.	ELONGATION, % IN 1/8 IN.
80	D7LA1-1	204,000	178,000	16.0×10^6	4.0	8	-	D7TA1-1	203,000	179,000	16.1×10^6	4.0	14	-
	-4	204,000	177,000	16.0	5.0	14	20	-4	201,000	178,000	15.9	3.0	10	16
	-7	205,000	180,000	16.3	5.0	18	-	-7	206,000	181,000	16.5	3.5	14	20
	-10	207,000	183,000	16.7	2.5	8	-	-10	200,000	177,000	16.1	4.5	14	24
	-13	192,000	172,000	16.1	5.0	16	-	-13	192,000	172,000	16.2	5.0	22	-
	-16	193,000	172,000	16.6	6.0	-	-	-16	198,000	174,000	16.2	5.0	-	-
	-19	201,000	175,000	16.4	5.0	12	20	-19	206,000	183,000	16.9	4.0	16	24
	-22	194,000	171,000	15.9	5.0	18	24	-22	201,000	176,000	16.5	3.5	10	16
	-25	205,000	182,000	16.4	-	-	-	-25	204,000	182,000	16.3	5.0	10	-
	-28	209,000	181,000	16.5	3.5	12	-	-28	204,000	185,000	16.6	-	-	-
	Average	201,000	177,000	16.3	4.6	13	21	Average	201,000	179,000	16.3	4.2	14	20
200	D7LA2-11	174,000	160,000	16.2×10^6	-	-	-(1)	D7TA2-2	184,000	147,000	15.3×10^6	4.0	18	28
	-13	188,000	159,000	15.8	3.0	10	20	-6	185,000	159,000	16.0	4.0	18	-
	-15	184,000	157,000	15.6	5.5	16	24	-13	179,000	156,000	15.3	5.0	16	24
	Average	182,000	159,000	16.0	4.2	13	22	Average	183,000	154,000	15.5	4.3	17	26
400	D7LA3-8	161,000	130,000	14.8×10^6	1.0	4	8	D7TA3-8	164,000	-	15.2×10^6	3.5	12	16(2)
	-16	161,000	124,000	14.9	5.0	20	28	-16	161,000	128,000	14.4	5.0	16	28
	-18	165,000	125,000	15.2	6.0	14	24	-18	161,000	131,000	15.5	4.0	14	28
	Average	162,000	126,000	15.0	4.0	13	20	Average	162,000	130,000	15.0	4.2	14	24
600	D7LA4-1	155,000	115,000	14.5×10^6	3.0	12	20	D7TA4-4	153,000	117,000	13.8×10^6	4.5	15	24
	-9	156,000	112,000	14.3	4.0	12	20	-9	151,000	115,000	13.3	4.0	14	24
	-12	141,000	110,000	14.5	4.0	12	21	-12	146,000	116,000	14.7	2.0	12	-
	Average	151,000	112,000	14.4	3.7	12	21	Average	150,000	116,000	13.9	3.5	14	24
800	D7LA6-10	131,000	103,000	13.3×10^6	-	-	-(1)	D7TA6-7	138,000	103,000	12.6×10^6	3.5	12	24
	-14	136,000	98,400	12.8	3.5	12	16	-10	130,000	104,000	12.1	5.0	16	24
	-17	137,000	98,900	12.6	5.0	12	20	-14	132,000	103,000	12.1	4.2	13	24
	Average	135,000	101,000	12.9	4.2	12	18	Average	133,000	103,000	12.2	4.2	13	24
900	D7LA7-3	129,000	93,400	12.7×10^6	2.0	8	16	D7TA7-3	129,000	91,400	13.3×10^6	6.0	14	20
	-5	130,000	95,300	12.8	2.0	4	-	-5	134,000	97,300	12.4	3.5	10	16
	-6	127,000	93,200	12.9	2.5	8	16	-11	124,000	89,000	13.1	6.0	16	24
	Average	129,000	94,000	12.8	2.2	6.7	16	Average	129,000	92,600	12.9	5.2	13	20
1000	D7LA8-2	98,900	76,900	10.0×10^6	4.5	10	16	D7TA8-1	109,000	74,900	8.85×10^6	4.0	10	20
	-4	94,800	80,600	10.8	-	-	-(2)	-15	106,000	74,500	10.1	12.2	28	44
	-7	103,000	83,600	9.8	11.5	28	-	-17	105,000	72,500	8.64	11.0	26	-
	Average	98,900	81,000	10.2	8.0	19	-	Average	107,000	74,000	9.20	9.1	22	32

(1) Failed outside gage marks
(2) Unusable load-deformation curve beyond elastic portion

TABLE CCXXIX

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-3Mo-1V
THICKNESS— 0.063 INCH
HEAT NUMBER— P7c53

TEST TEMP °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN
80	D2LA1-1	188,000	154,000	10.9×10^6	7.0	28	44	D2TA1-1	186,000	[illegible]	10.6×10^6	7.0	28	40
	-4	200,000	170,000	10.8	6.5	22	36	-4	199,000	[illegible]	11.7	5.0	22	40
	-7	200,000	167,000	10.5	5.5	24	-	-7	201,000	[illegible]	11.0	7.0	28	-
	-10	200,000	166,000	10.6	5.0	20	32	-10	200,000	[illegible]	11.1	5.5	32	-
	-13	184,000	160,000	10.9	7.5	32	44	-13	176,000	[illegible]	11.0	7.0	34	42
	-16	196,000	163,000	11.0	5.5	24	36	-16	191,000	[illegible]	11.7	7.0	30	44
	-19	199,000	163,000	10.9	6.5	22	36	-19	197,000	[illegible]	11.7	6.5	32	28
	-22	183,000	151,000	10.7	6.5	26	44	-22	179,000	[illegible]	11.6	6.5	33	40
	-25	194,000	162,000	10.4	4.5	20	32	-25	193,000	[illegible]	11.8	6.0	26	44
	-28	189,000	155,000	10.5	6.5	26	36	-28	178,000	[illegible]	[illegible]	-	-	-(3)
	Average	194,000	161,000	10.7	6.1	25	38	Average	192,000	[illegible]	[illegible]	6.3	28	[illegible]
200	D2LA2-13	169,000	131,000	15.2×10^6	9.0	32	-	D2TA2-8	168,000	-	-	7.5	26	-(4)
	-18	177,000	138,000	14.8	7.0	24	-	-16	180,000	[illegible]	15.8×10^6	7.0	24	-
	-19	176,000	138,000	14.4	8.0	24	-	-19	176,000	[illegible]	15.7	5.5	20	-
	Average	173,000	136,000	15.5	8.0	27		Average	175,000	[illegible]	15.8	6.7	23	
400	D2LA3-6	162,000	126,000	15.3×10^6	6.5	20	-	D2TA3-6	166,000	[illegible]	15.5×10^6	6.0	24	-
	-15	156,000	118,000	15.5	7.5	26	40	-13	156,000	[illegible]	15.4	6.0	24	-
	-16	164,000	125,000	15.4	7.5	24	36	-25	157,000	[illegible]	15.4	5.5	26	44(1)
	Average	161,000	123,000	15.4	7.2	23	38	Average	160,000	[illegible]	15.1	5.8	25	
600	D2LA4-1	146,000	104,000	13.8×10^6	5.5	20	-	D2TA4-1	147,000	[illegible]	13.2×10^6	5.0	20	-
	-9	149,000	105,000	13.7	6.0	22	-	-9	142,000	[illegible]	14.6	5.0	22	-
	-12	151,000	106,000	13.5	6.5	20	-	-12	153,000	[illegible]	13.9	4.0	20	-
	Average	149,000	105,000	13.7	6.0	21		Average	147,000	[illegible]	14.1	4.7	21	
800	D2LA6-3	142,000	103,000	12.6×10^6	7.0	22	-(1)	D2TA6-10	141,000	108,000	13.3×10^6	5.5	24	-
	-14	137,000	96,600	13.1	-	22	-(1)	-14	137,000	103,000	13.1	5.0	-	-(1)
	-17	138,000	98,800	12.6	6.5	24	-	-17	141,000	107,000	14.1	5.0	24	-
	Average	139,000	99,500	12.8	6.8	23		Average	140,000	106,000	13.5	5.2	23	
900	D2LA7-5	130,000	94,300	11.9×10^6	7.0	28	40(1)	D2TA7-2	127,000	95,200	11.4×10^6	10.0	24	-
	-11	123,000	91,400	11.4	8.5	38	48	-5	129,000	99,800	11.8	8.0	24	40
	-20	125,000	91,000	12.0	11.0	36	-	-11	127,000	94,200	12.2	8.5	24	-
	Average	126,000	92,200	11.8	8.8	34	44	Average	128,000	96,400	11.8	8.8	24	
1000	D2LA8-2	100,000	74,500	9.99×10^6	12.0	34	52	D2TA8-3	105,000	78,100	11.3×10^6	18.0	44	-
	-4	98,700	77,000	8.72	17.0	60	76	-4	110,000	74,500	10.9	10.0	40	60
	-7	84,600	67,000	9.74	-	-	-(2)	-7	96,900	72,300	12.7	16.0	48	-
	Average	94,400	70,800	9.48	14.5	47	64	Average	104,000	75,000	11.8	15.3	45	

(1) Failed within 1/4 inch of fillet
(2) Failed outside gage marks
(3) Test specimen shattered into several pieces
(4) Unusable load-deformation curve

TABLE CCXXX

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 4Al-3Mo-1V
THICKNESS— 0.063 INCH
HEAT NUMBER— R4765

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/4 IN.	1/8 IN.
80	D5LA1-1	200,000	171,000	16.6×10^6	7.0	28	-	D5TA1-1	202,000	176,000	16.7×10^6	6.5	26	-
	-4	202,000	172,000	16.3	6.5	24	-	-4	200,000	174,000	16.6	6.0	24	-
	-7	195,000	169,000	15.6	6.5	24	-	-7	208,000	179,000	16.5	6.0	20	36
	-10	191,000	167,000	15.1	5.0	24	-	-10	209,000	180,000	16.7	-	-	-(3)
	-13	187,000	164,000	14.8	5.5	24	-	-13	210,000	181,000	16.6	6.0	22	40
	-16	188,000	163,000	15.1	6.5	24	-	-16	200,000	177,000	16.8	6.5	-	-
	-19	189,000	161,000	14.9	5.5	-	-	-19	199,000	176,000	16.7	7.5	32	-
	-22	206,000	179,000	16.0	5.5	28	-	-22	208,000	181,000	16.5	6.5	-	-
	-25	205,000	176,000	15.9	6.5	24	-	-25	207,000	180,000	16.4	6.5	26	-
	-28	207,000	178,000	16.5	6.0	28	44	-28	208,000	182,000	16.6	6.0	24	-
	Average	197,000	170,000	15.7	6.0	25		Average	205,000	179,000	16.6	6.1	25	38
200	D5LA2-6	184,000	152,000	15.6×10^6	8.0	32	-	D5TA2-6	192,000	162,000	15.8×10^6	5.5	24	-(2)
	-13	183,000	155,000	16.1	9.0	-	-	-10	178,000	151,000	15.5	6.5	26	-
	-15	184,000	155,000	15.5	6.0	24	-	-15	182,000	155,000	15.8	8.0	26	-
	Average	184,000	154,000	15.7	7.7	28		Average	184,000	156,000	15.7	6.7	25	
400	D5LA3-1	141,000	123,000	14.5×10^6	8.0	34	-	D5TA3-8	169,000	135,000	15.0×10^6	5.5	-	-(2)
	-8	147,000	129,000	15.2	8.0	-	-	-16	166,000	131,000	14.9	6.5	-	-
	-16	166,000	132,000	15.0	8.5	28	-	-18	165,000	133,000	15.5	7.0	32	-
	Average	166,000	128,000	14.9	8.2	31		Average	167,000	133,000	15.1	6.3		
600	D5LA4-9	158,000	116,000	14.3×10^6	6.0	26	-(1)	D5TA4-1	156,000	122,000	14.6×10^6	4.5	-	-(2)
	-12	155,000	115,000	13.5	7.0	-	-(1)	-9	159,000	121,000	14.5	6.0	-	-
	-18	157,000	112,000	13.9	8.0	24	-	-12	154,000	115,000	14.2	5.8	-	-
	Average	157,000	111,000	13.9	7.0	25		Average	156,000	119,000	14.4	5.4		
800	D5LA6-10	142,000	101,000	13.2×10^6	9.0	-	-	D5TA6-13	143,000	103,000	13.9×10^6	7.0	22	-(2)
	-14	142,000	102,000	13.0	7.5	34	-	-14	146,000	106,000	13.3	7.0	-	-
	-17	142,000	102,000	12.5	7.0	28	-(1)	-17	143,000	101,000	12.9	7.8	-	-
	Average	142,000	102,000	12.9	7.8	31		Average	144,000	104,000	13.4	7.3		
900	D5LA7-3	128,000	88,300	12.7×10^6	16.0	34	-	D5TA7-3	136,000	97,400	12.7×10^6	9.0	-	-
	-5	131,000	90,800	12.0	8.5	26	-(2)	-5	131,000	98,600	12.2	-	-	-(4)
	-11	125,000	87,700	12.4	12.0	30	-	-7	134,000	95,700	12.0	14.0	38	-
	Average	128,000	88,900	12.4	12.0	30		Average	135,000	97,200	12.3	12.0		
1000	D5LA8-2	97,000	74,100	9.48×10^6	24.0	68	-(1)	D5TA8-2	100,000	69,600	10.7×10^6	22.0	74	112
	-4	97,800	70,900	10.1	13.0	-	-(2)	-4	103,000	69,000	10.4	25.0	86	-
	-7	99,300	60,400	10.1	16.0	48	-(2)	-11	99,400	67,400	10.2	23.0	80	-
	Average	98,000	85,100	9.89	18.0	58		Average	101,000	68,700	10.4	23.0	80	

(1) Failed within 1/4 inch of fillet
(2) Failed at knife edge
(3) Test section shattered into several pieces
(4) Failed outside gage marks

TABLE XXXXI

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— Ual-3Mo-1V
THICKNESS— 0.063 INCH
HEAT NUMBER— RL815

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/4 IN	1/8 IN
80	D6LA1-1	205,000	177,000	15.9x10^6	5.0	16	20	D6TA1-1	201,000	160,000	[illegible]	-	-	- (3)
	-7	206,000	181,000	15.9	6.0	24	44	-4	202,000	162,000	[illegible]	[illegible]	[illegible]	-
	-10	206,000	179,000	16.6	6.0	22	36	-7	207,000	180,000	[illegible]	-	-	-(3)
	-13	204,000	181,000	15.7	7.5	28	-	-10	207,000	185,000	[illegible]	[illegible]	[illegible]	-
	-16	204,000	175,000	16.3	7.0	26	-	-15	207,000	165,000	[illegible]	[illegible]	-	-
	-19	206,000	177,000	16.6	7.5	28	32	-18	200,000	176,000	[illegible]	[illegible]	[illegible]	[illegible]
	-22	205,000	180,000	16.1	7.0	24	44	-19	202,000	177,000	[illegible]	[illegible]	[illegible]	-
	-25	207,000	180,000	15.9	6.5	28	-	-22	210,000	185,000	[illegible]	[illegible]	[illegible]	-
	-28	203,000	178,000	16.3	6.5	26	-	-25	206,000	183,000	[illegible]	-	-	-(3)
	-29	202,000	175,000	16.2	5.0	26	36	-28	205,000	184,000	[illegible]	[illegible]	[illegible]	-
	Average	205,000	178,000	16.7	6.6	25	37	Average	205,000	182,000	[illegible]	[illegible]	[illegible]	[illegible]
200	D6LA2-6	186,000	159,000	15.3x10^6	7.0	-	-	D6TA2-6	194,000	159,000	16.2x10^6	-	-	-(2)
	-13	197,000	157,000	15.7	7.5	-	-	-13	190,000	-	15.6	7.5	32	-(5)
	-15	193,000	158,000	15.5	6.5	30	-	-15	191,000	156,000	15.6	6.0	-	-(4)
	Average	192,000	158,000	15.5	7.0			Average	192,000	158,000	15.9	7.0		
400	D6LA3-1	173,000	135,000	15.1x10^6	7.5	30	-	D6TA3-16	164,000	134,000	15.5x10^6	5.0	-	-
	-8	164,000	131,000	15.0	6.5	30	-	-17	163,000	132,000	15.2	6.5	28	-
	-16	167,000	131,000	14.4	7.0	32	-	-18	163,000	134,000	15.5	10.0	-	-
	Average	168,000	132,000	14.8	7.0	31		Average	163,000	133,000	15.4	9.2		
600	D6LA4-9	159,000	119,000	13.0x10^6	6.8	26	-	D6TA4-3	158,000	124,000	14.4x10^6	5.5	-	-
	-12	152,000	109,000	13.0	8.0	28	-	-8	159,000	123,000	14.3	7.0	-	-
	-18	154,000	116,000	12.7	6.0	24	-	-10	153,000	114,000	14.1	7.0		
	Average	156,000	115,000	13.1	6.9	26		Average	157,000	120,000	14.3	6.5		
800	D6LA6-10	144,000	100,000	12.7x10^6	9.0	32	-	D6TA6-1	146,000	110,000	12.8x10^6	6.5	-	-
	-14	144,000	101,000	12.8	8.5	-	-(1)	-9	148,000	111,000	12.8	-	-	-
	-17	139,000	99,500	12.6	8.0	30	-(1)	-14	147,000	107,000	13.4	8.0	24	-
	Average	142,000	100,000	12.7	8.5	31		Average	147,000	109,000	13.0	7.2		
900	D6LA7-2	126,000	89,700	12.4x10^6	23.0	-	-	D6TA7-5	131,000	99,000	11.8x10^6	12.0	40	-
	-5	128,000	94,000	12.3	21.0	54	-	-11	125,000	93,300	12.1	11.0	-	-
	-11	123,000	90,500	11.5	-	-	-(2)	-12	126,000	-	12.1	12.0	38	-(5)
	Average	126,000	91,400	12.1	22.0			Average	128,000	96,200	12.0	12.0	39	
1000	D6LA8-3	98,000	69,500	9.5x10^6	25.0	68	100(1)	D6TA8-2	98,000	75,100	10.4x10^6	22.0	62	-
	-4	96,000	68,000	10.0	-	-	-(2)	-4	100,000	76,000	10.6	25.0	100	-
	-7	99,000	70,700	10.6	31.0	80	132	-7	100,000	73,000	10.0	-	-	-(2)
	Average	97,000	69,400	10.5	28.0	74	116	Average	99,300	74,700	10.3	23.0	93	

(1) Failed within 1/4 inch of fillet
(2) Failed outside gage mark
(3) Test section scattered into several pieces
(4) Failed at knife edge
(5) Unusable in d-deformation curve beyond elastic portion

TABLE CCXXXII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 4Al-3Mo-1V
THICKNESS— 0.125 INCH
HEAT NUMBER— R6736

TEST TEMP °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/6 IN.	1/8 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/6 IN.	1/8 IN.
80	D3LA1-1	187,000	151,000	10.1×10^6	6.2	20	28	D3TA1-1	191,000	168,000	17.5×10^6	9.0	34	-
	-4	184,000	149,000	16.2	6.2	20	28	-4	191,000	168,000	17.6	9.3	32	-
	-7	189,000	154,000	16.1	6.5	20	24	-7	194,000	173,000	18.1	8.8	24	-
	-10	194,000	157,000	16.6	-	-	-(1)	-10	200,000	176,000	17.6	-	-	-
	-13	190,000	155,000	16.3	5.5	16	20	-13	198,000	176,000	17.2	7.2	24	-
	-16	192,000	157,000	16.2	5.5	12	-	-16	197,000	174,000	17.3	6.0	24	-
	-19	190,000	157,000	16.1	5.5	12	16	-19	197,000	175,000	17.7	8.5	34	-
	-22	187,000	154,000	16.3	-	-	-(1)	-22	192,000	170,000	17.2	7.0	24	-
	-25	191,000	156,000	16.2	5.2	14	20	-25	198,000	176,000	17.5	4.5	20	-
	-28	188,000	154,000	16.4	4.8	14	24	-28	198,000	175,000	17.6	7.2	26	-
	Average	189,000	154,000	16.2	5.7	16	22	Average	196,000	173,000	17.5	7.2	27	-
200	D3LA2-6	175,000	137,000	14.7×10^6	5.8	16	24	D3TA2-6	183,000	158,000	16.6×10^6	9.2	36	-
	-13	175,000	144,000	15.5	5.5	18	-	-13	180,000	156,000	17.4	9.5	44	-
	-15	172,000	142,000	15.1	5.0	22	-	-15	183,000	158,000	16.7	8.0	36	-
	Average	174,000	141,000	15.1	5.4	19		Average	182,000	157,000	16.9	8.9	39	
400	D3LA3-8	159,000	121,000	13.9×10^6	6.5	37	40	D3TA3-8	169,000	136,000	15.8×10^6	9.0	40	-
	-16	157,000	122,000	14.6	7.5	26	-	-16	165,000	136,000	16.0	9.0	42	-
	-18	157,000	119,000	13.6	12.5	-	-	-18	164,000	134,000	16.6	8.0	36	-
	Average	150,000	121,000	14.0	8.8	29		Average	167,000	135,000	16.1	8.7	39	
600	D3LA4-1	144,000	101,000	13.4×10^6	6.5	22	-	D3TA4-1	153,000	119,000	15.4×10^6	8.0	40	-
	-9	147,000	107,000	13.3	6.2	20	-	-10	151,000	124,000	15.2	7.5	40	-
	-10	146,000	107,000	13.0	5.8	-	-	-12	153,000	122,000	15.3	7.2	38	-
	Average	145,000	105,000	13.2	6.2	21		Average	152,000	122,000	15.5	7.6	39	
800	D3LA6-3	128,000	92,400	12.5×10^6	9.5	36	-	D3TA7-9	146,000	112,000	14.0×10^6	7.5	32	-
	-11	135,000	92,000	11.9	6.0	-	-	-14	144,000	112,000	14.5	6.5	34	-
	-12	136,000	98,000	13.5	-	-	-(1)	-17	142,000	109,000	14.3	7.8	40	-
	Average	133,000	94,800	12.6	7.7			Average	145,000	111,000	14.5	7.3	35	
900	D3LA7-2	116,000	81,700	11.1×10^6	14.0	36	-	D3TA7-3	128,000	96,900	13.7×10^6	15.0	-	-
	-17	121,000	85,300	12.3	13.0	36	-	-11	130,000	99,600	13.5	13.0	-	-
	-34	120,000	84,100	11.2	14.0	32	60	-33	127,000	92,400	14.5	-	-	-(1)
	Average	119,000	83,700	11.5	14.0	35		Average	128,000	96,300	13.9	14.0		
1000	D3LA8-4	91,800	66,600	10.7×10^6	20.0	56	-	D3TA8-2	101,000	76,400	12.0×10^6	19.0	56	-
	-7	95,600	66,900	10.4	22.0	60	-	-4	102,000	76,000	11.9	-	-	-(1)
	-14	106,000	66,600	10.2	11.0	26	-	-7	105,000	75,700	11.2	18.0	-	-
	Average	97,800	66,700	10.4	17.0	47		Average	103,000	76,000	11.7	18.5		

(1) Failed outside gage marks.

TABLE CXXXIII

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY-- 6Al-4V
THICKNESS— 0.125 INCH
HEAT NUMBER— R0741

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN ¼ IN	ELONGATION, % IN ½ IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN ¼ IN	ELONGATION, % IN ½ IN
80	D6LA1-2	187,000	152,000	16.1×10^6	6.0	20	20	D6TA1-2	195,000	172,000	17.3×10^6	8.0	[illegible]	-
	-4	186,000	152,000	15.6	7.2	20	-	-4	199,000	174,000	17.6	8.0	[illegible]	-
	-7	191,000	159,000	15.7	6.5	23	-	-7	196,000	172,000	17.0	6.5	[illegible]	-
	-10	192,000	161,000	15.8	7.5	20	-	-10	196,000	175,000	17.6	6.5	[illegible]	-
	-13	184,000	153,000	15.1	7.0	25	29	-13	200,000	176,000	17.0	6.5	[illegible]	-
	-16	193,000	162,000	15.3	6.0	19	-	-16	196,000	177,000	17.7	9.5	[illegible]	-
	-19	188,000	158,000	16.3	5.8	20	[illegible]	-19	196,000	174,000	17.7	9.0	[illegible]	-
	-22	190,000	161,000	15.5	6.5	18	[illegible]	-22	199,000	177,000	17.1	7.5	[illegible]	-
	-25	190,000	156,000	15.6	6.8	16	-	-25	196,000	173,000	17.3	7.5	[illegible]	-
	-28	189,000	156,000	15.9	7.0	21	-	-28	196,000	175,000	17.7	8.0	[illegible]	-
	Average	189,000	157,000	15.8	6.6	20	24	Average	197,000	174,000	17.5	7.7	[illegible]	-
800	D6LA2-6	175,000	141,000	15.6×10^6	6.2	30	-	D6TA2-6	181,000	156,000	16.2×10^6	9.0	[illegible]	-
	-13	180,000	148,000	16.6	6.5	24	-	-13	181,000	157,000	16.6	9.2	-	-
	-15	178,000	146,000	15.6	6.0	28	36	-15	181,000	156,000	16.7	9.2	-	-
	Average	178,000	145,000	16.0	6.2	27		Average	181,000	156,000	16.5	9.1		
400	D6LA3-8	160,000	124,000	14.3×10^6	7.0	24	36	D6TA3-8	165,000	133,000	14.8×10^6	10.0	-	-
	-16	159,000	121,000	14.3	6.2	24	36	-16	165,000	135,000	14.6	10.2	-	-
	-18	155,000	118,000	14.3	8.0	28	48	-18	164,000	131,000	15.2	10.5	45	-
	Average	158,000	121,000	14.3	7.1	25	45	Average	164,000	133,000	14.9	10.2		
600	D6LA4-1	143,000	104,000	13.1×10^6	7.5	24	28	D6TA4-1	168,000	114,000	14.5×10^6	9.0	-	-
	-9	149,000	108,000	13.9	7.0	24	36	-10	152,000	121,000	15.9	8.5	-	-
	-12	145,000	106,000	14.3	7.0	30	44	-12	152,000	121,000	15.9	8.0	-	-
	Average	146,000	106,000	14.1	7.2	26	36	Average	151,000	119,000	15.4	8.5		
800	D6LA6-10	138,000	96,600	12.1×10^6	8.2	26	-	D6TA6-4	111,000	107,000	14.7×10^6	10.5	40	-
	-14	138,000	96,900	12.7	8.0	30	-	-9	143,000	108,000	13.0	8.0	-	-
	-17	136,000	97,100	12.4	8.1	26	-	-17	140,000	105,000	15.0	8.8	-	-
	Average	137,000	97,000	12.4	8.2	27		Average	111,000	107,000	14.2	9.1		
900	D6LA7-5	118,000	81,500	12.2×10^6	13.0	36	52	D6TA7-3	127,000	91,500	13.6×10^6	12.0	-	-
	-11	125,000	87,600	11.8	13.0	44	68	-5	127,000	94,200	11.6	13.8	42	-
	-32	120,000	82,200	12.2	15.0	40	68	-7	129,000	96,100	13.5	12.5	-	-
	Average	121,000	83,700	12.1	14.0	40	63	Average	128,000	93,900	12.9	12.8		
1000	D6LA8-2	94,200	68,500	10.0×10^6	-	-	-(1)	D6TA8-2	97,500	71,000	11.6×10^6	18.0	-	-(1)
	-4	94,600	66,200	10.4	19.0	56	72	-11	101,000	71,800	10.6	19.5	-	-
	-7	97,600	68,000	11.2	19.0	56	-	-14	99,800	70,700	10.8	16.0	-	-(1)
	Average	95,500	67,600	10.5	19.0	56		Average	99,000	71,200	10.9	17.8		

(1) Failed within 1/4 inch of fillet

TABLE CCXXXIV

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 4Al-3Mo-1V
THICKNESS— 0.125 INCH
HEAT NUMBER— P7547

TEST TEMP. °F	LONGITUDINAL SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	¼ IN	½ IN.	TRANSVERSE SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	¼ IN.	½ IN.
80	D9LA1-1	184,000	143,000	16.2×10^6	5.0	10	24	D9TA1-1	185,000	160,000	17.2×10^6	7.5	32	-
	-4	183,000	147,000	15.8	7.5	-	-	-4	186,000	160,000	17.3	8.0	32	-
	-7	192,000	153,000	16.7	5.5	20	28	-7	195,000	169,000	16.8	9.0	-	-
	-10	190,000	155,000	15.6	4.0	14	-	-10	194,000	-	16.8	7.5	28	-(2)
	-13	187,000	151,000	15.8	5.5	14	24	-13	192,000	168,000	17.3	10.0	36	-
	-16	192,000	149,000	15.5	6.0	20	24	-16	189,000	163,000	17.3	7.0	28	-
	-19	184,000	148,000	15.9	6.0	20	-	-19	188,000	162,000	16.9	8.0	30	-
	-22	192,000	155,000	16.5	4.5	14	-	-22	-	173,000	16.7	-	-	-(3)
	-25	189,000	153,000	16.4	4.5	14	20	-25	194,000	170,000	16.7	6.5	30	48
	-28	195,000	152,000	15.8	6.0	16	24	-28	192,000	168,000	17.0	7.5	28	-
	Average	189,000	151,000	16.0	5.4	17	24	Average	191,000	166,000	17.0	7.9	30	
800	D9LA2-6	175,000	137,000	15.6×10^6	10.0	24	32	D9TA2-6	178,000	146,000	16.1×10^6	8.5	40	60
	-13	170,000	132,000	14.2	9.0	26	-	-13	178,000	148,000	16.7	9.0	38	56
	-15	176,000	-	-	8.0	22	32(1)	-15	181,000	152,000	16.3	4.0	32	60
	Average	173,000	134,000	14.9	9.0	25	32	Average	179,000	149,000	16.4	7.2	37	59
400	D9LA3-8	155,000	123,000	13.7×10^6	9.5	24	36	D9TA3-8	161,000	125,000	16.1×10^6	9.0	40	-
	-16	155,000	115,000	14.3	9.0	26	36	-16	163,000	129,000	15.2	9.0	38	-
	-18	153,000	112,000	13.2	9.5	30	44	-18	161,000	126,000	15.2	9.0	40	60
	Average	154,000	113,000	.8	9.3	27	39	Average	162,000	127,000	15.5	9.0	39	
600	D9LA4-1	138,000	94,600	13.2×10^6	6.5	24	36	D9TA4-1	145,000	107,000	14.6×10^6	8.0	30	-
	-9	142,000	95,900	13.5	15.0	34	-	-9	144,000	109,000	14.7	7.0	34	-
	-12	144,000	-	-	6.5	24	40(1)	-12	146,000	112,000	13.3	7.0	36	-
	Average	141,000	95,200	13.4	9.3	27	35	Average	145,000	109,000	14.2	7.3	35	
800	D9LA6-3	125,000	85,700	12.4×10^6	11.0	30	44	D9TA6-10	136,000	103,000	14.7×10^6	7.5	34	-
	-10	126,000	84,400	12.0	8.8	32	48	-14	140,000	102,000	14.4	8.5	44	-
	-14	127,000	82,300	12.5	8.0	24	-	-17	137,000	104,000	14.3	9.5	46	84
	Average	126,000	84,100	12.5	9.3	29	46	Average	138,000	103,000	14.5	8.5	41	
900	D9LA7-5	114,000	77,100	11.2×10^6	12.0	40	-	D9TA7-3	126,000	90,300	12.9×10^6	12.5	44	-
	-11	113,000	74,200	11.0	11.0	32	52	-5	125,000	88,500	12.3	14.0	56	-
	-17	115,000	77,000	11.6	14.0	40	60	-11	123,000	87,400	11.9	13.0	44	-
	Average	114,000	76,100	11.3	12.3	37	52	Average	125,000	88,700	12.4	13.2	48	
1000	D9LA8-2	88,000	62,400	9.07×10^6	20.0	60	76	D9TA8-2	96,800	66,000	10.2×10^6	17.5	60	92
	-4	88,800	59,800	9.78	19.0	60	92	-4	98,000	67,500	10.9	18.0	68	92
	-7	93,700	60,900	10.4	20.5	60	100	-7	97,100	66,500	9.35	16.0	50	76
	Average	90,200	61,000	9.95	19.8	60	89	Average	97,500	67,400	10.2	17.2	59	87

(1) Unusable load-deformation curve
(2) Unusable load-deformation curve beyond elastic portion
(3) Failed in grip

TABLE CCXXXV

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.06) INCH THICK (CRUCIBLE HEAT NO. P7653)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E_c, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
D2181-2	80	158,000	16.7	155,000	168,000	12.3
-6	80	174,000	16.4	173,000	-	-
-8	80	172,000	16.6	170,000	-	-
-11	80	172,000	16.5	171,000	188,000	10.4
-14	80	154,000	16.3	154,000	167,000	12.2
-17	80	166,000	16.7	163,000	182,000	9.0
-20	80	168,000	16.8	166,000	183,000	10.3
-23	80	158,000	16.7	157,000	168,000	12.0
-26	80	166,000	17.3	164,000	182,000	9.5
-29	80	164,000	16.9	163,000	180,000	10.4
Average		168,000	16.7			
D2182-7	200	152,000	15.0	151,000	-	-
-19	200	150,000	16.1	149,000	166,000	9.2
-22	200	145,000	15.4	132,000	163,000	12.1
Average		149,000	15.6			
D2183-13	600	116,000	15.2	115,000	127,000	11.0
-24	600	118,000	14.2	116,000	125,000	12.8
-27	600	132,000	14.4	130,000	-	-
Average		122,000	14.6			
D2184-15	800	105,000	14.1	102,000	110,000	12.8
-18	800	113,000	14.0	109,000	123,000	8.6
-30	800	110,000	14.1	108,000	120,000	9.4
Average		109,000	14.1			
D2185-4	800	108,000	13.8	102,000	114,000	6.7
-10	800	107,000	13.6	101,000	118,000	6.7
-12	800	105,000	13.5	99,100	116,000	6.7
Average		107,000	13.6			
D2187-3	900	86,700	13.0	82,300	95,900	6.8
-5	900	93,200	12.1	87,200	103,000	6.3
-16	900	89,000	13.0	81,800	90,600	6.3
Average		89,300	12.7			
D2188-1	1000	68,700	11.3	58,600	72,800	5.1
-9	1000	70,800	10.4	63,700	76,500	5.9
-21	1000	63,300	11.3	50,600	66,700	6.2
Average		67,600	11.0			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.06) INCH THICK (CRUCIBLE HEAT NO. P7653)

Specimen Number	Test Temp., °F	F_{cy} PSI	E_c, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
D2181-2	80	174,000	17.3	171,000	193,000	8.3
-5	80	196,000	17.6	196,000	233,000	6.1
-8	80	197,000	18.1	196,000	250,000	4.6
-11	80	159,000	18.0	155,000	172,000	9.5
-14	80	187,000	18.0	185,000	213,000	7.3
-17	80	179,000	18.1	175,000	197,000	8.7
-24	80	174,000	17.8	171,000	190,000	9.4
-29	80	193,000	18.0	188,000	212,000	8.5
-30	80	191,000	17.5	190,000	216,000	8.1
-31	80	167,000	18.0	163,000	185,000	6.0
Average		181,000	17.8			
D2182-7	200	177,000	17.9	175,000	-	-
-19	200	164,000	16.0	164,000	192,000	5.6
-22	200	157,000	17.8	152,000	170,000	9.2
Average		166,000	17.2			
D2183-27	600	142,000	16.9	139,000	157,000	7.0
-32	600	141,000	16.3	137,000	154,000	5.9
-33	600	141,000	15.9	136,000	154,000	5.2
Average		141,000	16.4			
D2184-15	600	101,000	14.7	99,700	113,000	8.0
-18	600	121,000	14.8	116,000	133,000	7.3
-25	600	127,000	15.1	121,000	145,000	5.9
Average		116,000	14.9			
D2185-4	800	124,000	14.5	119,000	138,000	5.4
-10	800	118,000	14.9	110,000	134,000	5.5
-12	800	121,000	14.2	115,000	144,000	5.0
Average		120,000	14.5			
D2187-3	900	96,000	14.2	86,300	101,000	6.6
-26	900	102,000	14.3	93,300	-	-
-28	900	95,300	11.6	95,100	106,000	5.0
Average		97,100	13.4			
D2188-1	1000	74,800	12.3	67,300	77,500	7.3
-9	1000	93,900	11.0	88,400	126,000	5.5
-21	1000	77,100	10.8	71,100	83,100	6.6
Average		81,900	11.4			

TABLE CCXXXVI

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. 84765)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E PSI E 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
DSLA1-2	80	178,000	16.4	178,000	197,000	9.7
-5	80	175,000	15.7	173,000	192,000	9.5
-8	80	186,000	16.3	186,000	206,000	10.8
-11	80	186,000	16.6	184,000	-	-
-14	80	188,000	16.9	188,000	208,000	10.7
-17	80	181,000	16.8	180,000	197,000	11.1
-20	80	179,000	16.1	179,000	198,000	12.0
-23	80	186,000	16.6	185,000	203,000	10.6
-26	80	186,000	16.8	186,000	206,000	10.6
-29	80	184,000	16.6	184,000	202,000	10.5
-30	80	184,000	16.6			
Average		183,000	16.5			
DSLA7-7	200	166,000	16.0	164,000	187,000	7.8
-19	200	161,000	15.4	159,000	-	-
-22	200	162,000	15.4	162,000	181,000	9.8
Average		163,000	15.5			
DSLB3-13	600	140,000	15.7	133,000	157,000	6.4
-24	600	140,000	15.7	137,000	153,000	9.0
-27	600	137,000	16.1	132,000	155,000	6.5
Average		139,000	15.9			
DSLB6-15	600	123,000	16.0	121,000	142,000	5.7
-18	600	120,000	16.6	116,000	131,000	8.0
-31	600	115,000	16.2	110,000	126,000	7.6
Average		119,000	16.3			
DSLB6-4	800	102,000	13.4	96,900	114,000	6.0
-10	800	104,000	13.4	90,300	120,000	5.1
-12	800	105,000	13.7	98,200	128,000	4.4
Average		104,000	13.5			
DSLB7-3	900	89,600	11.7	83,100	99,700	5.9
-6	900	93,000	12.8	84,800	101,000	6.1
-28	900	88,000	11.5	81,700	96,600	6.3
Average		90,200	12.0			
DSLB8-1	1000	70,500	10.9	63,100	75,800	6.2
-9	1000	73,900	10.1	66,600	79,300	6.0
-21	1000	68,200	11.1	56,600	73,000	4.4
Average		70,900	10.8			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. 84765)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI E 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
DSTA1-2	80	182,000	18.0	182,000	202,000	9.5
-4	80	179,000	17.1	177,000	199,000	8.6
-5	80	187,000	17.5	186,000	209,000	8.5
-8	80	196,000	17.6	196,000	218,000	9.1
-14	80	192,000	16.8	198,000	-	-
-17	80	183,000	16.6	182,000	-	-
-20	80	191,000	17.9	190,000	212,000	9.1
-23	80	193,000	17.1	193,000	215,000	9.3
-26	80	190,000	17.9	192,000	216,000	8.8
-29	80	190,000	16.8	196,000	219,000	9.1
Average		189,000	17.3			
DSTA7-7	200	169,000	16.5	167,000	-	-
-19	200	161,000	16.9	158,000	178,000	8.8
-22	200	170,000	16.9	168,000	188,000	7.3
Average		167,000	16.8			
DSTB3-13	600	148,000	15.7	143,000	174,000	5.3
-24	600	143,000	15.9	139,000	168,000	6.7
-25	600	144,000	15.9	138,000	160,000	7.0
Average		145,000	15.8			
DSTB6-15	600	130,000	16.7	126,000	-	-
-18	600	120,000	16.0	115,000	131,000	7.7
-31	600	126,000	16.9	121,000	146,000	5.7
Average		125,000	16.8			
DSTB6-6	800	111,000	16.2	103,000	125,000	5.6
-10	800	118,000	16.2	111,000	139,000	4.9
-30	800	116,000	16.0	110,000	132,000	5.8
Average		115,000	16.1			
DSTB7-3	900	96,900	12.6	87,200	105,000	5.8
-16	900	99,600	13.3	91,600	109,000	6.9
-28	900	104,000	13.1	97,300	116,000	6.1
Average		99,600	13.0			
DSTB8-1	1000	74,000	12.1	64,500	78,200	5.6
-9	1000	79,000	11.4	70,900	86,000	5.6
-21	1000	81,600	11.5	73,800	88,500	5.9
Average		78,200	11.7			

TABLE CCXXXVII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, (CRUCIBLE HEAT NO. R4815)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
DØLB1-2	80	188,000	16.7	188,000	205,000	11.2
-5	80	188,000	16.8	182,000	199,000	10.9
-6	80	189,000	17.6	182,000	202,000	9.5
-8	80	193,000	17.0	193,000	210,000	11.5
-11	80	198,000	16.6	192,000	-	-
-14	80	189,000	17.0	188,000	205,000	11.2
-17	80	188,000	17.4	188,000	-	-
-20	80	192,000	16.8	192,000	-	-
-23	80	190,000	16.3	190,000	207,000	11.4
-29	80	188,000	16.5	188,000	-	-
Average		189,000	16.8			
DØLB2-7	200	169,000	15.9	167,000	-	-
-19	200	171,000	15.4	171,000	192,000	8.1
-22	200	163,000	14.7	162,000	183,000	8.3
Average		168,000	15.3			
DØLB3-13	400	141,000	14.1	140,000	162,000	7.1
-24	400	140,000	14.2	138,000	158,000	7.6
-27	400	139,000	15.7	136,000	155,000	7.8
Average		140,000	14.6			
DØLB4-15	600	119,000	14.2	117,000	131,000	8.8
-18	600	120,000	14.7	115,000	134,000	6.8
-25	600	113,000	13.3	110,000	127,000	6.8
Average		117,000	14.1			
DØLB6-31	800	103,000	13.1	97,000	112,000	7.8
-10	800	112,000	12.6	107,000	-	-
-12	800	116,000	12.6	109,000	132,000	5.6
Average		110,000	12.8			
DØLB7-3	900	91,800	13.4	83,700	100,000	6.0
-16	900	88,700	13.2	80,600	96,000	6.1
-28	900	94,600	12.4	87,500	105,000	5.9
Average		91,800	13.0			
DØLB8-1	1000	68,400	9.27	63,200	75,000	6.2
-9	1000	69,400	9.67	62,000	75,500	5.5
-21	1000	70,700	10.2	65,100	76,300	6.6
Average		69,500	9.71			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. R4815)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter, n
DØTB1-2	80	186,000	17.6	184,000	208,000	8.26
-5	80	183,000	16.5	183,000	204,000	9.15
-8	80	200,000	16.6	197,000	218,000	9.73
-11	80	197,000	17.5	195,000	218,000	8.95
-14	80	199,000	17.1	195,000	220,000	8.37
-17	80	183,000	17.3	181,000	203,000	8.71
-23	80	193,000	17.1	192,000	214,000	9.15
-26	80	194,000	16.9	193,000	-	-
-29	80	194,000	17.2	194,000	214,000	10.0
-30	80	196,000	17.2	194,000	-	-
Average		192,000	17.1			
DØTB2-7	200	176,000	17.2	167,000	193,000	7.1
-19	200	160,000	15.6	159,000	182,000	7.6
-22	200	174,000	17.1	169,000	194,000	7.4
Average		170,000	16.6			
DØTB3-13	400	146,000	15.8	141,000	167,000	6.2
-24	400	131,000	16.4	126,000	143,000	8.0
-27	400	130,000	16.5	127,000	142,000	9.0
Average		136,000	16.2			
DØTB4-15	600	129,000	15.4	125,000	-	-
-18	600	111,000	15.7	106,000	123,000	7.8
-25	600	122,000	15.0	118,000	141,000	8.0
Average		121,000	15.2			
DØTB6-4	800	114,000	14.3	97,500	117,000	5.4
-10	800	121,000	15.8	109,000	141,000	4.4
-12	800	117,000	14.1	108,000	135,000	5.0
Average		114,000	14.7			
DØTB7-3	900	88,700	13.7	77,600	95,100	5.4
-16	900	90,300	12.3	82,700	98,200	6.2
-28	900	94,600	12.9	85,300	102,000	6.0
Average		91,200	13.0			
DØTB8-1	1000	71,500	10.3	65,000	75,300	7.0
-9	1000	77,300	9.95	69,800	83,400	6.0
-21	1000	70,800	10.4	61,500	76,100	5.2
Average		73,200	10.2			

TABLE CCXXXVIII

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R6736)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
DJLB1-8	80	162,000	16.4	160,000	176,000	10.3
-14	80	164,000	16.1	162,000	177,000	10.8
-20	80	166,000	16.8	164,000	177,000	12.1
-23	80	163,000	16.5	161,000	176,000	11.0
-26	80	165,000	16.7	162,000	179,000	10.1
-29	80	163,000	16.9	161,000	175,000	11.8
-30	80	165,000	16.8	162,000	178,000	11.1
-31	80	162,000	16.6	161,000	176,000	11.0
-32	80	158,000	16.6	155,000	171,000	10.0
-33	80	164,000	16.4	159,000	174,000	10.9
Average		163,000	16.6			
DJLB2-7	200	147,000	15.6	144,000	159,000	9.9
-19	200	147,000	15.6	143,000	159,000	9.5
-22	200	149,000	16.0	146,000	158,000	12.4
Average		148,000	15.7			
DJLB3-6	400	117,000	14.6	113,000	123,000	11.3
-13	400	123,000	14.9	116,000	127,000	9.0
-27	400	124,000	14.8	120,000	134,000	8.6
Average		121,000	14.8			
DJLB4-15	600	109,000	13.9	102,000	118,000	7.1
-18	600	114,000	13.4	109,000	126,000	7.5
-25	600	110,000	13.4	104,000	120,000	7.4
Average		111,000	13.6			
DJLB5-4	800	93,400	12.6	87,900	100,000	7.7
-10	800	99,900	12.7	93,600	110,000	8.4
-12	800	100,000	12.7	93,800	112,000	5.9
Average		97,800	12.7			
DJLB7-3	900	78,500	12.7	71,600	86,100	5.9
-16	900	84,400	11.4	81,700	98,900	5.6
-28	900	86,500	12.7	79,400	92,000	7.0
Average		81,500	12.3			
DJLB8-1	1000	68,800	10.9	61,300	72,900	6.2
-9	1000	69,500	10.8	61,700	73,800	5.9
-21	1000	71,500	11.1	62,300	76,300	5.4
Average		69,900	11.0			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R6736)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
DJTB1-2	80	194,000	17.7	194,000	216,000	9.0
-5	80	195,000	18.2	194,000	219,000	8.4
-6	80	199,000	18.1	197,000	224,000	7.9
-8	80	199,000	17.9	199,000	223,000	8.6
-14	80	205,000	17.7	204,000	-	-
-17	80	190,000	17.2	189,000	222,000	6.6
-20	80	209,000	17.8	210,000	232,000	9.7
-26	80	206,000	17.6	208,000	228,000	10.7
-29	80	207,000	18.2	207,000	228,000	10.2
-30	80	202,000	17.8	209,000	-	-
Average		201,000	17.8			
DJTB2-7	200	180,000	17.2	177,000	208,000	6.5
-19	200	184,000	16.9	183,000	205,000	8.7
-40	200	173,000	17.0	170,000	200,000	6.5
Average		179,000	17.0			
DJTB3-13	400	154,000	16.5	148,000	176,000	6.0
-24	400	156,000	16.2	152,000	175,000	7.3
-27	400	151,000	16.1	146,000	174,000	5.8
Average		154,000	16.3			
DJTB4-15	600	140,000	15.4	132,000	152,000	7.3
-18	600	137,000	15.3	130,000	150,000	5.4
-25	600	128,000	15.8	118,000	147,000	5.0
Average		135,000	15.5			
DJTB5-4	800	114,000	15.1	104,000	130,000	5.0
-10	800	122,000	15.0	112,000	-	-
-12	800	127,000	14.7	120,000	-	-
Average		121,000	14.9			
DJTB7-3	900	103,000	13.2	95,000	116,000	5.6
-16	900	107,000	13.4	97,900	121,000	5.2
-28	900	101,000	12.9	94,600	118,000	5.0
Average		104,000	13.2			
DJTB8-1	1000	80,200	12.2	70,700	86,500	5.4
-9	1000	81,400	12.2	72,600	87,300	5.8
-21	1000	82,700	12.4	73,000	89,300	5.4
Average		81,400	12.3			

TABLE CCXXXIX

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R6741)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.65 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
D6LB1-2	80	159,700	16.7	155,000	172,000	9.4
-5	80	163,600	16.5	161,000	176,000	11.0
-8	80	163,000	16.8	161,000	174,000	12.3
-11	80	167,000	16.0	166,000	184,000	9.6
-14	80	168,000	15.9	167,000	181,000	10.3
-17	80	170,000	16.8	161,000	181,000	10.8
-20	80	163,000	16.2	162,000	176,000	11.2
-23	80	165,000	16.9	161,000	179,000	10.3
-26	80	168,000	16.3	160,000	181,000	11.0
-29	80	167,000	15.6	160,000	176,000	10.6
Average		165,300	16.4			
D6LB2-7	200	150,000	17.3	147,000	164,000	11.4
-9	200	148,000	16.7	141,000	158,000	11.3
-32	200	150,000	16.6	144,000	160,000	11.6
Average		149,000	16.9			
D6LB3-24	600	128,000	15.4	124,000	138,000	9.6
-27	600	123,000	15.1	121,000	132,000	9.6
-32	600	126,000	15.6	121,000	136,000	11.7
Average		125,000	15.4			
D6LB4-15	800	113,000	14.2	107,000	124,000	7.0
-18	800	113,700	14.2	101,000	121,000	6.7
-35	800	112,000	14.2	107,000	122,000	7.8
Average		112,900	14.2			
D6LB5-4	800	95,500	13.5	86,000	107,000	7.0
-10	800	100,000	12.7	91,000	111,000	6.4
-12	800	97,300	13.0	91,900	111,000	5.8
Average		98,300	13.1			
D6LB7-6	900	85,000	12.4	78,700	90,300	7.5
-30	900	86,700	11.7	81,200	95,300	6.6
-31	900	85,200	12.4	80,600	93,000	7.2
Average		85,600	11.9			
D6LB8-1	1000	67,700	12.9	59,400	71,700	5.7
-9	1000	70,200	11.4	66,200	74,700	5.1
-21	1000	70,100	12.2	63,400	74,200	5.6
Average		69,300	11.8			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3.6o-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R6741)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI x 10^{-6}	F_c at 0.65 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
D6TB1-2	80	233,000	15.6	199,000	227,000	7.7
-5	80	233,000	17.9	199,000	226,000	6.1
-8	80	234,000	15.2	198,000	223,000	8.4
-11	80	232,000	17.1	202,000	227,000	8.6
-14	80	232,000	17.1	202,000	226,000	7.6
-17	80	233,000	17.9	203,000	226,000	9.1
-20	80	232,000	17.9	199,000	222,000	9.1
-23	80	233,000	17.1	201,000	229,000	7.6
-26	80	235,000	15.1	200,000	-	-
-29	80	234,000	17.7	200,000	224,000	7.9
Average						
D6TB2-7	200	210,000	16.8	178,000	210,000	7.1
-19	200	210,000	17.3	175,000	205,000	7.1
-27	200	210,000	17.1	177,000	210,000	7.1
Average		210,000	17.1	176,000	208,000	7.1
D6TB3-24	600	192,000	16.0	135,000	165,000	4.1
-13	600	194,000	16.3	141,000	-	-
-27	600	192,000	16.1	141,000	172,000	4.1
Average		192,000	16.5			
D6TB4-10	800	172,000	14.7	106,000	157,000	4.5
-15	800	174,000	14.5	110,000	159,000	4.5
-25	800	174,000	14.7	110,000	161,000	4.4
Average		173,000	14.6			
D6TB5-3	900	110,000	13.0	103,000	130,000	5.5
-12	900	110,000	13.0	107,000	136,000	4.5
-26	900	110,000	13.0	109,000	-	-
Average		110,000	13.0			
D6TB7-4	900	95,700	13.0	89,000	105,000	5.2
-10	900	98,900	12.7	93,000	109,000	4.6
-31	900	96,500	13.0	86,000	104,000	5.3
Average		97,000	12.9			
D6TB8-1	1000	77,700	12.4	67,000	83,000	5.2
-9	1000	74,100	12.1	63,000	79,000	5.1
-21	1000	77,000	12.1	66,000	83,000	4.7
Average		76,000	12.2			

TABLE CCXL

LONGITUDINAL COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. P7647)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
D9LB1-2	80	153,000	16.6	149,300	166,000	9.4
-5	80	154,000	16.4	150,000	166,000	10.3
-6	80	154,000	16.1	153,000	167,000	11.1
-8	80	163,000	16.3	161,000	176,000	10.8
-11	80	161,000	16.4	159,000	173,000	11.4
-17	80	157,000	16.4	154,000	170,000	9.9
-20	80	156,000	16.4	153,000	169,000	10.2
-23	80	166,000	16.2	164,000	181,000	10.2
-26	80	161,000	16.7	158,000	176,000	9.5
-30	80	157,000	16.1	154,000	170,000	10.0
Average		158,000	16.4			
D9LB2-22	200	145,000	15.9	143,000	158,000	9.4
-32	200	142,000	16.5	138,000	152,000	9.0
-33	200	143,000	15.7	139,000	156,000	8.7
Average		143,000	15.7			
D9LB3-7	400	122,000	14.3	118,000	131,000	9.1
-24	400	123,000	13.9	119,000	135,000	8.2
-27	400	117,000	14.1	112,000	127,000	8.1
Average		121,000	14.1			
D9LB4-15	600	95,300	13.6	91,900	99,500	10.9
-31	600	99,100	14.0	95,400	108,000	8.2
-40	600	101,000	13.4	99,800	112,000	8.7
Average		99,150	13.7			
D9LB6-4	800	93,000	13.6	87,700	97,300	9.5
-10	800	93,900	13.9	87,900	101,000	7.3
-12	800	94,100	14.2	88,200	102,000	7.2
Average		93,750	13.2			
D9LB7-3	900	81,400	12.0	74,100	86,900	6.6
-16	900	80,700	11.3	74,800	87,000	6.8
-28	900	85,300	11.8	79,100	91,600	7.0
Average		85,500	11.7			
D9LB8-1	1000	61,600	10.9	53,300	63,600	6.0
-9	1000	69,000	10.2	54,200	73,200	7.9
-21	1000	64,300	10.3	57,600	67,500	6.6
Average		65,000	10.5			

TRANSVERSE COMPRESSIVE PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. P7647)

Specimen Number	Test Temp., °F	F_{cy}, PSI	E, PSI X 10^{-6}	F_c at 0.85 E, PSI	F_c at 0.70 E, PSI	Shape Parameter n
D9TB1-2	80	187,000	18.1	185,000	209,000	8.0
-6	80	183,000	18.1	180,000	205,000	7.7
-17	80	188,000	18.1	185,000	-	-
-20	80	188,000	17.9	186,000	210,000	8.3
-23	80	199,000	17.8	196,000	-	-
-26	80	196,000	17.8	197,000	-	-
-29	80	186,000	17.6	186,000	214,000	7.4
-36	80	187,000	18.0	184,000	-	-
-37	80	191,000	17.7	189,000	216,000	7.6
-38	80	192,000	17.5	189,000	216,000	7.6
Average		196,000	17.9			
D9TB2-7	200	162,000	17.4	157,000	181,000	7.1
-19	200	168,000	17.2	160,000	186,000	6.8
-22	200	175,000	17.2	173,000	199,000	7.5
Average		167,000	17.3			
D9TB3-24	400	146,000	16.1	137,000	-	-
-28	400	149,000	15.8	144,000	170,000	6.5
-30	400	145,000	17.3	136,000	163,000	6.0
Average		147,300	16.4			
D9TB4-15	600	123,000	15.9	114,000	146,000	4.6
-18	600	118,000	16.5	102,000	123,000	5.7
-25	600	125,000	16.0	115,000	-	-
Average		121,700	16.1			
D9TB6-40	800	108,000	14.2	98,900	125,000	4.8
-41	800	108,000	13.9	100,000	123,000	5.3
-42	800	109,000	14.5	102,000	126,000	4.9
Average		108,000	14.2			
D9TB7-1	900	91,900	13.6	81,900	100,000	5.4
-3	900	90,000	12.7	81,400	98,500	5.6
-25	900	99,800	13.2	89,800	114,000	4.7
Average		93,900	13.2			
D9TB8-21	1000	73,100	13.8	62,800	78,200	5.1
-39	1000	76,000	12.9	64,100	80,100	5.0
-43	1000	77,800	12.5	62,500	77,200	5.2
Average		75,600	12.1			

TABLE CCXLI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5 BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. 21[illegible])

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
D1LD1-[illegible]	80	294,000	257,000	
-24	80	298,000	282,000	
-27	80	298,000	266,000	
-56	80	295,000	267,000	
-65	80	299,000	263,000	
-75	80	284,000	274,000	
-91	80	308,000	279,000	
-104	80	300,000	264,000	
-115	80	295,000	253,000	
-168	80	288,000	259,000	
Average		296,000	266,000	
D1LD2-31	200	279,000	272,000	
-53	200	287,000	254,000	
-67	200	269,000	265,000	
Average		278,000	257,000	
D1LD3-13	400	252,000	232,000	
-49	400	248,000	226,000	
-147	400	241,000	209,000	
Average		250,000	222,000	
D1LD4-55	600	240,000	219,000	
-93	600	236,000	219,000	
-120	600	221,000	199,000	
Average		233,000	212,000	
D1LD5-43	800	219,000	202,000	
-46	800	216,000	202,000	
-125	800	213,000	201,000	
Average		218,000	202,000	
D1LD7-154	900	203,000	190,000	
-157	900	198,000	179,000	
-160	900	199,000	179,000	
Average		200,000	183,000	
D1LD8-17	1000	161,000	139,000	
-52	1000	172,000	162,000	
-62	1000	167,000	161,000	148,000
Average		167,000	147,000	

(1) Initial failure.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. 21[illegible])

Specimen Number	Test Temperature °F	F_{bru}, PSI	F_{bry}, PSI
D1TD1-4	[illegible]	[illegible]	[illegible]
-24	[illegible]	[illegible]	[illegible]
-27	[illegible]	[illegible]	[illegible]
-56	[illegible]	[illegible]	[illegible]
-65	[illegible]	[illegible]	[illegible]
-75	[illegible]	[illegible]	[illegible]
-91	[illegible]	[illegible]	[illegible]
-104	[illegible]	[illegible]	[illegible]
-168	[illegible]	[illegible]	[illegible]
-169	[illegible]	[illegible]	[illegible]
Average		[illegible]	[illegible]
D1TD2-49	[illegible]	[illegible]	[illegible]
-53	[illegible]	[illegible]	[illegible]
-67	[illegible]	[illegible]	[illegible]
Average		[illegible]	[illegible]
D1TD3-13	[illegible]	[illegible]	[illegible]
-31	[illegible]	[illegible]	[illegible]
-147	[illegible]	[illegible]	[illegible]
Average		[illegible]	[illegible]
D1TD4-55	[illegible]	[illegible]	[illegible]
-93	[illegible]	[illegible]	[illegible]
-120	[illegible]	[illegible]	[illegible]
Average		[illegible]	[illegible]
D1TD6-40	[illegible]	[illegible]	[illegible]
-46	[illegible]	[illegible]	[illegible]
-160	[illegible]	[illegible]	[illegible]
Average		[illegible]	[illegible]
D1TD7-125	[illegible]	[illegible]	[illegible]
-154	[illegible]	[illegible]	[illegible]
-157	[illegible]	[illegible]	[illegible]
Average		[illegible]	[illegible]
D1TD8-17	[illegible]	[illegible]	[illegible]
-52	[illegible]	[illegible]	[illegible]
-70	[illegible]	[illegible]	[illegible]
Average		[illegible]	[illegible]

TABLE CCXLII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
DA1D1-4	80	285,000	250,000
-24	80	303,000	267,000
-27	80	272,000	255,000
-56	80	259,000	246,000
-65	80	282,000	253,000
-75	80	283,000	245,000
-91	80	290,000	254,000
-104	80	292,000	264,000
-115	80	290,000	270,000
-158	80	290,000	247,000
Average		286,000	255,000
DA1D2-31	200	261,000	256,000
-53	200	267,000	237,000
-67	200	260,000	240,000
Average		263,000	244,000
DA1D3-13	400	232,000	212,000
-49	400	237,000	217,000
-173	400	241,000	221,000
Average		237,000	217,000
DA1D4-93	600	227,000	193,000
-99	600	204,000	200,000
-125	600	225,000	213,000
Average		219,000	201,000
DA1D5-40	800	200,000	184,000
-46	800	202,000	192,000
-120	800	205,000	188,000
Average		202,000	188,000
DA1D7-154	900	179,000	(1)
-157	900	193,000	174,000
-160	900	181,000	171,000
Average		185,000	172,500
DA1D8-17	1000	160,000	141,000
-52	1000	152,000	130,000
-62	1000	153,000	139,000
Average		155,000	137,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5 BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{by}(1), PSI
DA2D1-4	80	298,000	272,000	
-24	80	307,000	272,000	
-27	80	296,000	268,000	
-56	80	297,000	264,000	
-65	80	288,000	235,000	
-75	80	290,000	247,000	
-91	80	294,000	272,000	
-104	80	313,000	268,000	
-115	80	313,000	275,000	
-168	80	276,000	244,000	
Average		297,000	262,000	
DA2D2-31	200	261,000	246,000	
-53	200	272,000	238,000	
-67	200	262,000	226,000	
Average		265,000	237,000	
DA2D3-13	400	256,000	230,000	
-49	400	251,000	240,000	
-120	400	253,000	230,000	
Average		253,000	233,000	
DA2D4-55	600	221,000	197,000	
-93	600	233,000	209,000	
-147	600	229,000	207,000	
Average		228,000	204,000	
DA2D6-40	800	205,000	188,000	
-46	800	194,000	170,000	
-125	800	211,000	193,000	
Average		203,000	184,000	
DA2D7-154	900	185,000	170,000	
-157	900	183,000	164,000	
-160	900	198,000	178,000	190,000
Average		189,000	171,000	
DA2D8-17	1000	183,000	161,000	
-52	1000	167,000	128,000	
-62	1000	173,000	146,000	151,000
Average		174,000	145,000	

(1) Initial failure.

TABLE CCXLIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. RL805)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D7LD1-4	80	297,000	269,000
-24	80	300,000	262,000
-27	80	294,000	273,000
-56	80	306,000	286,000
-65	80	303,000	264,000
-75	80	300,000	257,000
-91	80	289,000	247,000
-104	80	301,000	262,000
-168	80	290,000	249,000
-171	80	299,000	273,000
Average		298,000	264,000
D7LD2-31	200	267,000	247,000
-53	200	268,000	244,000
-67	200	274,000	239,000
Average		270,000	243,000
D7LD3-13	400	246,000	208,000
-49	400	238,000	208,000
-147	400	228,000	202,000
Average		237,000	206,000
D7LD4-55	600	220,000	197,000
-93	600	223,000	199,000
-120	600	206,000	176,000
Average		216,000	191,000
D7LD6-40	800	204,000	183,000
-46	800	205,000	188,000
-125	800	203,000	184,000
Average		204,000	185,000
D7LD7-154	900	195,000	182,000
-157	900	182,000	162,000
-160	900	177,000	152,000
Average		185,000	169,000
D7LD8-17	1000	158,000	118,000
-52	1000	164,000	127,000
-62	1000	163,000	132,000
Average		162,000	126,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. RL805)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D7TD1-4	80	273,000	[illegible]
-24	80	284,000	2[illegible],000
-27	80	296,000	2[illegible],000
-56	80	283,000	[illegible]
-65	80	284,000	[illegible]
-75	80	281,000	[illegible]
-91	80	287,000	[illegible]
-104	80	281,000	[illegible]
-115	80	287,000	[illegible]
-168	80	289,000	[illegible]
Average		284,000	[illegible]
D7TD2-31	200	265,000	[illegible]
-53	200	274,000	[illegible]
-67	200	276,000	[illegible]
Average		205,000	[illegible]
D7TD3-13	400	2[illegible],000	[illegible]
-49	400	2[illegible],000	-(1)
-55	400	243,000	[illegible]
Average		247,000	[illegible]
D7TD4-93	600	2[illegible],000	[illegible]
-120	600	222,000	[illegible]
-147	600	214,000	[illegible]
Average		223,000	[illegible]
D7TD6-40	800	200,000	[illegible]
-46	800	213,000	[illegible]
-125	800	212,000	[illegible]
Average		208,000	[illegible]
D7TD7-154	900	210,000	[illegible]
-157	900	19[illegible],000	[illegible]
-160	900	179,000	[illegible]
Average		194,000	[illegible]
D7TD8-17	1000	153,000	[illegible]
-52	1000	166,000	[illegible]
-62	1000	16[illegible],000	[illegible]
Average		16[illegible],000	[illegible]

(1) Unusable load-deformation curve.

TABLE CCXLIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4AL-3Mo-1V TITANIUM ALLOY SHEET, 0.030 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER =0.1875 INCH (CRUCIBLE HEAT NO. R4815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
D1LD1- 38	80	271,000	239,000	
58	80	268,000	258,000	
66	80	275,000	244,000	
71	80	275,000	254,000	270,000
87	80	284,000	250,000	
92	80	287,000	258,000	
118	80	283,000	255,000	
132	80	284,000	254,000	
134	80	288,000	256,000	
141	80	281,000	248,000	
Average		282,000	252,000	
D1LD2- 51	200	262,000	(2)	
105	200	273,000	255,000	
129	200	282,000	258,000	
Average		272,000	256,000	
D1LD3- 36	400	217,000	206,000	
73	400	239,000	231,000	
88	400	247,000	224,000	
Average		234,000	220,000	
D1LD4- 80	600	220,000	203,000	
139	600	212,000	189,000	
156	600	212,000	186,000	
Average		215,000	193,000	
D1LD6-117	800	202,000	186,000	
146	800	195,000	179,000	
159	800	215,000	204,000	
Average		204,000	190,000	
D1LD7- 21	900	187,000	173,000	
30	900	178,000	167,000	
33	900	189,000	172,000	
Average		185,000	171,000	
D1LD8- 41	1000	151,000	131,000	
59	1000	160,000	135,000	
61	1000	152,000	142,000	145,000
Average		154,000	136,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4AL-3Mo-1V TITANIUM ALLOY SHEET, 0.030 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER =0.1875 INCH (CRUCIBLE HEAT NO. R4815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D1TD1- 38	80	259,000	226,000
58	80	272,000	231,000
66	80	274,000	232,000
71	80	278,000	252,000
87	80	268,000	250,000
92	80	275,000	247,000
118	80	274,000	253,000
132	80	264,000	248,000
134	80	295,000	259,000
141	80	264,000	261,000
Average		274,000	246,000
D1TD2- 51	200	256,000	225,000
105	200	264,000	222,000
124	200	270,000	231,000
Average		270,000	226,000
D1TD3- 36	400	225,000	194,000
80	400	250,000	215,000
156	400	242,000	201,000
Average		239,000	203,000
D1TD4- 73	600	220,000	178,000
88	600	230,000	182,000
139	600	216,000	168,000
Average		222,000	176,000
D1TD6-117	800	209,000	188,000
146	800	201,000	183,000
159	800	206,000	178,000
Average		205,000	183,000
D1TD7- 21	900	185,000	-(1)
30	900	179,000	160,000
133	900	183,000	168,000
Average		184,000	164,000
D1TD8- 41	1000	162,000	-(1)
59	1000	162,000	135,000
61	1000	162,000	135,000
Average		162,000	135,000

(1) Unusable load-deformation curve.

TABLE CCXLV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
D6LD1-38	80	272,000	249,000	
-58	80	277,000	252,000	
-66	80	269,000	252,000	
-71	80	270,000	243,000	
-87	80	286,000	253,000	
-92	80	285,000	261,000	
-118	80	291,000	262,000	
-132	80	286,000	260,000	
-134	80	290,000	263,000	
-141	80	287,000	254,000	
Average		277,000	254,000	
D6LD2-51	200	251,000	226,000	
-105	200	265,000	- (2)	
-124	200	259,000	252,000	
Average		258,000	239,000	
D6LD3-36	400	214,000	- (2)	
-80	400	229,000	206,000	
-156	400	238,000	209,000	
Average		224,000	208,000	
D6LD4-73	600	210,000	185,000	
-88	600	215,000	196,000	
-139	600	208,000	195,000	
Average		211,000	192,000	
D6LD5-117	800	181,000	165,000	
-159	800	163,000	- (3)	141,000
-177	800	191,000	167,000	
Average		178,000	166,000	
D6LD7-21	900	193,000	178,000	
-30	900	173,000	149,000	
-133	900	183,000	167,000	
Average		183,000	165,000	
D6LD8-41	1000	134,000	119,000	
-59	1000	148,000	127,000	
-171	1000	150,000	136,000	
Average		144,000	127,000	

(1) Initial failure.
(2) Unusable load-deformation curve.
(3) Failure occurred prior to attaining yield deformation.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D6TD1-38	80	282,000	249,000
-58	80	280,000	248,000
-66	80	266,000	235,000
-71	80	270,000	240,000
-87	80	296,000	265,000
-92	80	295,000	265,000
-118	80	289,000	261,000
-132	80	286,000	255,000
-134	80	295,000	263,000
-141	80	292,000	263,000
Average		285,000	254,000
D6TD2-51	200	258,000	235,000
-105	200	271,000	242,000
-124	200	262,000	243,000
Average		264,000	240,000
D6TD3-36	400	234,000	213,000
-80	400	203,000	176,000
-156	400	234,000	194,000
Average		224,000	194,000
D6TD4-73	600	198,000	179,000
-88	600	206,000	194,000
-139	600	202,000	186,000
Average		202,000	186,000
D6TD6-30	800	194,000	171,000
-146	800	198,000	174,000
-159	800	197,000	178,000
Average		196,000	174,000
D6TD7-21	900	189,000	164,000
-117	900	170,000	146,000
-133	900	175,000	151,000
Average		178,000	153,000
D6TD8-41	1000	154,000	119,000
-59	1000	144,000	96,400
-61	1000	145,000	110,000
Average		148,000	109,000

(1) Specimen failed prior to obtaining yield deformation.

TABLE CCXLVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.060 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. 54805)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
DTLD1-38	80	285,000	266,000
-58	80	294,000	259,000
-66	80	276,000	263,000
-71	80	286,000	256,000
-87	80	283,000	252,000
-92	80	298,000	259,000
-118	80	276,000	255,000
-132	80	266,000	261,000
-134	80	256,000	(1)
-141	80	303,000	262,000
Average		280,000	259,000
DTLD2-105	200	261,000	240,000
-124	200	282,000	251,000
-151	200	269,000	230,000
Average		273,000	240,000
DTLD3-36	400	237,000	213,000
-80	400	246,000	221,000
-156	400	230,000	209,000
Average		238,000	214,000
DTLD4-73	600	227,000	195,000
-88	600	219,000	194,000
-139	600	212,000	195,000
Average		219,000	195,000
DTLD6-117	800	207,000	185,000
-146	800	198,000	183,000
-159	800	164,000	180,000
Average		203,000	183,000
DTLD7-21	900	185,000	162,000
-30	900	183,000	170,000
-133	900	191,000	177,000
Average		186,000	170,000
DTLD8-41	1000	164,000	158,000
-51	1000	169,000	161,000
-80	1000	163,000	(2)
Average		165,000	160,000

(1) Specimen failed prior to obtaining yield deformation.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.060 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. 54805)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
DTTD1-38	80	286,000	251,000
-58	80	249,000	(1)
-66	80	282,000	262,000
-71	80	284,000	262,000
-87	80	301,000	271,000
-92	80	295,000	257,000
-118	80	283,000	263,000
-132	80	299,000	268,000
-134	80	279,000	261,000
-141	80	287,000	256,000
Average		284,000	261,000
DTTD2-105	200	269,000	237,000
-124	200	274,000	252,000
-151	200	260,000	248,000
Average		268,000	246,000
DTTD3-36	400	235,000	215,000
-61	400	234,000	214,000
-156	400	246,000	221,000
Average		238,000	217,000
DTTD4-73	600	217,000	200,000
-88	600	223,000	200,000
-139	600	225,000	201,000
Average		222,000	200,000
DTTD6-117	800	203,000	188,000
-146	800	204,000	192,000
-159	800	202,000	191,000
Average		203,000	190,000
DTTD7-21	900	192,000	185,000
-30	900	197,000	180,000
-133	900	195,000	180,000
Average		195,000	182,000
DTTD8-41	1000	166,000	150,000
-51	1000	169,000	153,000
-80	1000	165,000	157,000
Average		167,000	153,000

(1) Specimen failed prior to obtaining yield deformation.

TABLE CCXLVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-2Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. RL615)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
D1LD1-45	80	268,000	247,000	
-47	80	270,000	240,000	
-48	80	281,000	246,000	
-64	80	274,000	243,000	
-72	80	274,000	252,000	
-106	80	271,000	259,000	
-108	80	279,000	257,000	
-114	80	286,000	256,000	
-150	80	275,000	240,000	
-162	80	272,000	245,000	
Average		273,000	248,000	
D1LD2-1	200	252,000	220,000	
-34	200	249,000	210,000	242,000
-165	200	247,000	- (2)	215,000
Average		249,000	291,000	
D1LD3-19	400	198,000	198,000	
-69	400	215,000	206,000	
-145	400	210,000	201,000	
Average		208,000	202,000	
D1LD4-50	600	205,000	183,000	
-97	600	221,000	203,000	
-111	600	217,000	200,000	
Average		214,000	195,000	
D1LD6-37	800	190,000	- (2)	
-42	800	198,000	181,000	
-163	800	208,000	177,000	
Average		197,000	179,000	
D1LD7-138	900	182,000	166,000	
-152	900	179,000	160,000	
-176	900	185,000	146,000	
Average		182,000	154,000	
D1LD8-28	1000	150,000	122,000	
-155	1000	154,000	118,000	
-167	1000	156,000	- (2)	
Average		153,000	120,000	

(1) Initial failure.
(2) Unstable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-2Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. RL615)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
D1TD1-45	80	276,000	242,000	
-47	80	275,000	250,000	
-48	80	273,000	242,000	
-64	80	263,000	241,000	
-72	80	279,000	257,000	
-106	80	280,000	252,000	
-108	80	285,000	245,000	
-114	80	284,000	244,000	
-150	80	282,000	244,000	
-162	80	281,000	246,000	
Average		278,000	247,000	
D1TD2-1	200	256,000	221,000	247,000
-33	200	290,000	259,000	
-165	200	268,000	230,000	
Average		271,000	236,000	
D1TD3-19	400	216,000	196,000	
-69	400	227,000	206,000	
-163	400	217,000	196,000	
Average		220,000	200,000	
D1TD4-50	600	204,000	166,000	
-97	600	211,000	169,000	
-111	600	214,000	166,000	
Average		210,000	167,000	
D1TD6-18	800	207,000	161,000	
-37	800	202,000	170,000	
-115	800	196,000	171,000	
Average		203,000	175,000	
D1TD7-42	900	163,000	142,000	
-138	900	166,000	170,000	
-152	900	161,000	158,000	
Average		163,000	157,000	
D1TD8-28	1000	154,000	130,000	
-155	1000	150,000	129,000	
-167	1000	160,000	126,000	
Average		154,000	128,000	

(1) Initial failure.

TABLE CCXLVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
DALD1-45	80	276,000	240,000
-47	80	268,000	260,000
-48	80	274,000	250,000
-64	80	288,000	(1)
-72	80	274,000	256,000
-106	80	290,000	265,000
-108	80	291,000	298,000
-114	80	276,000	260,000
-150	80	270,000	248,000
-168	80	273,000	257,000
Average		277,000	255,000
DALD2-1	200	250,000	227,000
-33	200	246,000	224,000
-165	200	225,000	226,000
Average		241,000	226,000
DALD3-19	400	220,000	204,000
-69	400	184,000	172,000
-163	400	219,000	208,000
Average		208,000	195,000
DALD4-50	600	203,000	181,000
-111	600	211,000	198,000
-172	600	193,000	156,000
Average		202,000	178,000
DALD6-18	800	198,000	175,000
-42	800	210,000	180,000
-145	800	196,000	160,000
Average		201,000	172,000
DALD7-37	900	186 000	(1)
-138	900	191,000	(1)
-152	900	179,000	158,000
Average		185,000	
DALD8-28	1000	156,000	124,000
-155	1000	155,000	123,000
-167	1000	160,000	133,000
Average		157,000	127,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
DATD1-45	80	306,000	278,000	
-47	80	300,000	278,000	297,000
-48	80	288,000	258,000	
-64	80	275,000	247,000	
-72	80	271,000	243,000	
-108	80	287,000(2)	266,000	270,000
-114	80	286,000	272,000	275,000
-150	80	296,000	263,000	
-162	80	289,000	262,000	
-169	80	286,000	254,000	
Average		288,000	262,000	
DATD2-19	200	279,000	243,000	
-69	200	250,000	227,000	
-71	200	249,000	223,000	
Average		259,000	229,000	
DATD3-33	400	231,000	210,000	227,000
-163	400	237,000	196,000	
-165	400	226,000	197,000	
Average		232,000	201,000	
DATD4-19	600	215,000	200,000	
-50	600	203,000	189,000	
-97	600	217,000	197,000	209,000
Average		212,000	195,000	
DATD6-37	800	192,000	179,000	
-111	800	214,000	205,000	
-172	800	196,000	181,000	
Average		201,000	188,000	
DATD7-42	900	193,000	154,000	
-138	900	188,000	160,000	185,000
-152	900	174,000	150,000	
Average		185,000	155,000	
DATD8-28	1000	149,000	124,000	
-155	1000	148,000	126,000	
-167	1000	145,000	130,000	
Average		147,000	127,000	

(1) Initial failure.
(2) Tensile failure at net section.

TABLE CCXLIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED Ti-3Al-8Mo-8V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. A4605)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
L7LD1-45	80	279,000	276,000	
-47	80	285,000	263,000	282,000
-48	80	309,000	269,000	
-64	80	284,000	275,000	
-72	80	286,000	279,000	283,000
-106	80	315,000	274,000	
-108	80	281,000	271,000	280,000
-114	80	322,000	279,000	285,000
-150	80	275,000	262,000	269,000
-167	80	278,000	270,000	
Average		295,000	272,000	
D7LD2-1	200	262,000	245,000	
-33	200	266,000	241,000	252,000
-165	200	256,000	247,000	253,000
Average		261,000	245,000	
D7LD3-19	400	239,000	216,000	
-69	400	239,000	207,000	
-163	400	244,000	208,000	
Average		252,000	210,000	
D7LD4-50	600	206,000	191,000	
-97	600	217,000	195,000	
-111	600	207,000	193,000	
Average		210,000	193,000	
D7LD6-18	800	198,000	182,000	
-37	800	201,000	187,000	
-145	800	192,000	178,000	
Average		196,000	182,000	
D7LD7-42	900	190,000	165,000	
-138	900	182,000	160,000	
-152	900	196,000	168,000	
Average		189,000	165,000	
D7LD6-9(	1000	152,000	123,000	
-155	1000	154,000	122,000	
-167	1000	168,000	-- (2)	
Average		159,000	117,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED Ti-3Al-8Mo-8V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. A4605)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
D7TD1-45	80	281,000	272,000	
-47	80	291,000	278,000	
-48	80	274,000(2)	264,000	
-64	80	310,000	274,000	309,000
-106	80	286,000(2)	267,000	271,000
-108	80	301,000	265,000	
-114	80	306,000	282,000	
-162	80	286,000	275,000	
-177	80	256,000	-- (3)	
-178	80	264,000	-- (3)	232,000
Average		286,000	272,000	
D7TD2-1	200	247,000	239,000	
-165	200	216,000	-- (2)	
-169	200	270,000	-- (4)	157,000
Average		244,000	239,000	
D7TD3-19	400	233,000	209,000	223,000
-69	400	223,000	204,000	
-176	400	114,000	212,000	
Average		173,000	208,000	
D7TD4-50	600	193,000	183,000	
-97	600	217,000	193,000	
-111	600	211,000	206,000	
Average		207,000	194,000	
D7TD6-18	800	203,000	184,000	
-37	800	197,000	186,000	
-145	800	192,000	193,000	
Average		200,000	187,000	
D7TD7-42	900	181,000	161,000	
-138	900	186,000	166,000	
-152	900	190,000(2)	167,000	
Average		186,000	165,000	
D7TD6-155	1000	159,000	119,000	
-167	1000	160,000	122,000	
-175	1000	171,000	130,000	
Average		163,000	124,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Failure occurred prior to attaining yield deformation.
(4) Unusable load-deformation curve.

TABLE CCL

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING BOLT DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. P7653)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D6LD1-9	80	260,000	242,000
-13	80	247,000	224,000
-16	80	256,000	240,000
-21	80	257,000	241,000
-26	80	252,000	241,000
-29	80	261,000	242,000
-31	80	247,000	221,000
-33	80	248,000	224,000
-47	80	261,000	236,000
-51	80	248,000	230,000
Average		253,000	233,000
D2LD2-1	200	231,000	209,000
-17	200	240,000	220,000
-48	200	235,000	214,000
Average		235,000	214,000
D2LD3-14	400	199,000	170,000
-23	400	199,000	173,000
-55	400	199,000	178,000
Average		199,000	174,000
D2LD4-3	600	183,000	164,000
-30	600	193,000	180,000
-43	600	198,000	172,000
Average		191,000	172,000
D2LD6-2	800	172,000	152,000
-40	800	183,000	162,000
-42	800	169,000	146,000
Average		175,000	153,000
D2LD7-10	900	172,000	151,000
-24	900	155,000	138,000
-25	900	167,000	152,000
Average		165,000	147,000
D2LD8-7	1000	147,000	116,000
-18	1000	142,000	121,000
-35	1000	139,000	116,000
Average		143,000	118,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING BOLT DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. P7653)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D6TD1-9	80	276,000 (1)	246,000
-13	80	257,000	224,000
-16	80	275,000	242,000
-21	80	265,000	244,000
-26	80	269,000 (1)	242,000
-29	80	257,000 (1)	238,000
-31	80	273,000 (1)	238,000
-33	80	262,000 (1)	234,000
-47	80	271,000 (1)	243,000
-51	80	271,000 (1)	239,000
Average		268,000	239,000
D2TD2-1	200	237,000	199,000
-17	200	245,000	214,000
-48	200	239,000	210,000
Average		240,000	208,000
D2TD3-14	400	212,000	175,000
-23	400	208,000	180,000
-55	400	213,000	191,000
Average		211,000	182,000
D2TD4-3	600	192,000	166,000
-30	600	203,000	175,000
-43	600	208,000	174,000
Average		201,000	172,000
D2TD6-2	800	182,000	154,000
-40	800	188,000	171,000
-42	800	184,000	156,000
Average		185,000	160,000
D2TD7-10	900	176,000	152,000
-24	900	160,000	144,000
-25	900	172,000	154,000
Average		169,000	150,000
D2TD8-7	1000	149,000	118,000
-18	1000	144,000	114,000
-35	1000	152,000	119,000
Average		148,000	117,000

(1) Tensile failure at net section.

TABLE CCLI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D5LD1-9	80	273,000	257,000
-13	80	281,000	256,000
-16	80	273,000	248,000
-21	80	273,000	245,000
-26	80	273,000	250,000
-29	80	278,000	253,000
-31	80	275,000	253,000
-33	80	277,000	252,000
-47	80	273,000	244,000
-51	80	269,000	243,000
Average		275,000	250,000
D5LD2-1	200	255,000	232,000
-48	200	256,000	229,000
-59	200	255,000	235,000
Average		255,000	232,000
D5LD3-14	400	237,000	219,000
-23	400	238,000	221,000
-55	400	234,000	208,000
Average		236,000	216,000
D5LD4-40	600	210,000	195,000
-42	600	214,000	200,000
-45	600	205,000	195,000
Average		210,000	197,000
D5LD6-2	800	193,000	178,000
-3	800	195,000	173,000
-30	800	197,000	179,000
Average		195,000	177,000
D5LD7-18	900	184,000	155,000
-24	900	181,000	(1)
-25	900	181,000	168,000
Average		182,000	161,000
D5LD8-7	1000	153,000	133,000
-10	1000	155,000	145,000
-35	1000	156,000	132,000
Average		155,000	137,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D5TD1-9	80	291,000	251,000
-13	80	283,000	250,000
-16	80	280,000	245,000
-21	80	291,000(1)	250,000
-26	80	288,000	252,000
-29	80	291,000	258,000
-31	80	279,000	245,000
-33	80	282,000	248,000
-47	80	289,000	252,000
-51	80	284,000(1)	254,000
Average		286,000	251,000
D5TD2-1	200	257,000	225,000
-17	200	265,000	233,000
-48	200	265,000	234,000
Average		262,000	231,000
D5TD3-14	400	257,000	[illegible]
-23	400	242,000	[illegible]
-55	400	241,000	[illegible]
Average		247,000	[illegible]
D5TD4-3	600	219,000	[illegible]
-30	600	229,000	[illegible]
-43	600	211,000	[illegible]
Average		220,000	[illegible]
D5TD6-2	800	200,000	[illegible]
-40	800	211,000	[illegible]
-42	800	200,000	[illegible]
Average		204,000	[illegible]
D5TD7-10	900	192,000	[illegible]
-24	900	192,000	[illegible]
-25	900	190,000	[illegible]
Average		191,000	[illegible]
D5TD8-7	1000	167,000	[illegible]
-18	1000	166,000	[illegible]
-35	1000	173,000	[illegible]
Average		169,000	[illegible]

(1) Tensile failure at net section

TABLE CCLII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING BOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B4815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D6LD1-9	80	287,000	257,000
-13	80	287,000	262,000
-16	80	281,000	258,000
-21	80	280,000	254,000
-26	80	283,000(1)	262,000
-29	80	284,000	253,000
-31	80	283,000	260,000
-33	80	280,000	252,000
-47	80	280,000(1)	254,000
-51	80	279,000	251,000
Average		282,000	256,000
D6LD2-1	200	256,000	234,000
-17	200	260,000	232,000
-48	200	261,000	238,000
Average		259,000	235,000
D6LD3-23	400	239,000	212,000
-30	400	240,000	215,000
-55	400	238,000	213,000
Average		239,000	213,000
D6LD4-4	600	220,000	199,000
-43	600	215,000	186,000
-59	600	222,000	185,000
Average		219,000	190,000
D6LD5-2	800	154,000	174,000
-40	800	197,000	178,000
-57	800	191,000	173,000
Average		195,000	175,000
D6LD7-10	900	174,000	168,000
-24	900	180,000	166,000
-42	900	187,000	171,000
Average		180,000	168,000
D6LD8-7	1000	174,000	(2)
-18	1000	150,000	137,000
-35	1000	159,000	125,000
Average		161,000	131,000

(1) Tensile failure at net section
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 1.5, BEARING BOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B4815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D6TD1-9	80	276,000	255,000
-13	80	276,000	259,000
-16	80	276,000	239,000
-21	80	279,000	252,000
-26	80	278,000	257,000
-29	80	286,000	262,000
-31	80	292,000	268,000
-33	80	273,000	259,000
-47	80	277,000	251,000
-51	80	282,000	253,000
Average		279,000	255,000
D6TD2-1	200	265,000	236,000
-17	200	257,000	233,000
-48	200	267,000	243,000
Average		263,000	237,000
D6TD3-14	400	241,000	213,000
-23	400	240,000	218,000
-55	400	229,000	206,000
Average		237,000	212,000
D6TD4-3	600	216,000	190,000
-30	600	222,000	200,000
-43	600	221,000	203,000
Average		220,000	198,000
D6TD6-2	800	203,000	179,000
-40	800	204,000	179,000
-42	800	199,000	181,000
Average		202,000	180,000
D6TD7-10	900	195,000	167,000
-24	900	187,000	164,000
-25	900	190,000	158,000
Average		191,000	163,000
D6TD8-7	1000	158,000	126,000
-18	1000	158,000	123,000
-35	1000	156,000	130,000
Average		155,000	126,000

TABLE CCLIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6736)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D3LD1-9	80	263,000	240,000
-13	80	257,000	237,000
-16	80	264,000	239,000
-21	80	262,000	218,000
-26	80	260,000	234,000
-29	80	259,000	237,000
-31	80	253,000	226,000
-33	80	248,000	226,000
-47	80	251,000	229,000
-51	80	249,000	232,000
Average		257,000	230,000
D3LD2-1	200	230,000	210,000
-17	200	235,000	227,000
-48	200	233,000	222,000
Average		233,000	220,000
D3LD3-14	400	193,000	189,000
-23	400	208,000	200,000
-55	400	202,000	162,000
Average		201,000	184,000
D3LD4-3	600	168,000	174,000
-30	600	(2)	178,000
-43	600	139,000	184,000
Average		188,000	179,000
D3LD6-2	800	176,000	168,000
-40	800	161,000	168,000
-42	800	147,000	(1)
Average		161,000	168,000
D3LD7-10	900	181,000	148,000
-24	900	179,000	156,000
-25	900	175,000	163,000
Average		178,000	156,000
D3LD8-7	1000	153,000	139,000
-18	1000	159,000	(1)
-35	1000	149,000	129,000
Average		154,000	134,000

(1) Unusable load-deformation curve.
(2) Specimen removed for inspection, no ultimate obtained.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6736)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D3TD1-9	80	280,000 (1)	241,000
-13	80	287,000 (1)	252,000
-16	80	280,000	248,000
-21	80	281,000 (1)	244,000
-26	80	290,000 (1)	252,000
-29	80	284,000	253,000
-31	80	276,000 (1)	232,000
-33	80	283,000 (1)	243,000
-47	80	282,000 (1)	252,000
-51	80	286,000 (1)	255,000
Average		283,000	247,000
D3TD2-1	200	242,000 (1)	212,000
-17	200	250,000 (1)	217,000
-48	200	275,000 (1)	240,000
Average		256,000	223,000
D3TD3-14	400	217,000 (1)	193,000
-23	400	222,000	181,000
-43	400	247,000 (1)	213,000
Average		229,000	196,000
D3TD4-3	600	205,000	162,000
-30	600	203,000	168,000
-55	600	220,000	190,000
Average		209,000	173,000
D3TD6-2	800	190,000	162,000
-40	800	205,000	166,000
-42	800	205,000	169,000
Average		200,000	166,000
D3TD7-10	900	188,000	163,000
-24	900	190,000	166,000
-25	900	187,000	166,000
Average		188,000	165,000
D3TD8-7	1000	151,000	130,000
-18	1000	150,000	130,000
-35	1000	158,000	129,000
Average		153,000	130,000

(1) Tensile failure at net section.

TABLE CCLIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO 86741)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D6LD1-9	80	276,000	255,000
-13	80	271,000	253,000
-16	80	266,000	248,000
-21	80	267,000	245,000
-26	80	272,000	254,000
-29	80	271,000	251,000
-31	80	258,000	239,000
-33	80	264,000	246,000
-47	80	261,000	256,000
-51	80	273,000	255,000
Average		268,000	250,000
D6LD2-1	200	245,000	232,000
-17	200	243,000	229,000
-58	200	253,000	242,000
Average		247,000	234,000
D6LD3-14	400	220,000	207,000
-23	400	220,000	206,000
-55	400	213,000	204,000
Average		218,000	206,000
D6LD4-3	600	195,000	187,000
-30	600	199,000	185,000
-57	600	226,000	215,000
Average		207,000	196,000
D6LD6-2	800	182,000	171,000
-40	800	183,000	170,000
-42	800	181,000	172,000
Average		182,000	171,000
D6LD7-10	900	177,000	156,000
-24	900	177,000	169,000
-25	900	172,000	156,000
Average		175,000	160,000
D6LD8-7	1000	157,000	126,000
-18	1000	157,000	125,000
-35	1000	149,000	138,000
Average		154,000	130,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. 86741)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D6TD1-9	80	264,000	245,000
-13	80	263,000	249,000
-16	80	261,000	240,000
-21	80	261,000	247,000
-26	80	260,000	248,000
-29	80	263,000	247,000
-31	80	262,000	250,000
-33	80	274,000	244,000
-47	80	263,000	- (2)
-51	80	266,000	252,000
Average		262,000(1)	247,000
D6TD2-1	200	243,000	210,000
-17	200	259,000	224,000
-57	200	272,000(1)	- (2)
Average		258,000	217,000
D6TD3-14	400	220,000	193,000
-23	400	207,000	- (2)
-48	400	220,000	188,000
Average		216,000	188,000
D6TD4-3	600	199,000	162,000
-30	600	207,000	179,000
-58	600	220,000	184,000
Average		209,000	175,000
D6TD6-2	800	195,000	172,000
-40	800	203,000	178,000
-42	800	201,000	172,000
Average		200,000	174,000
D6TD7-10	900	186,000	157,000
-24	900	187,000	- (2)
-25	900	183,000	157,000
Average		185,000	157,000
D6TD8-7	1000	165,000	135,000
-18	1000	162,000	129,000
-35	1000	158,000	125,000
Average		162,000	130,000

(1) Tensile failure at net section for all room temperature tests

(2) Unusable load deformation curve

TABLE CCLW

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. P7647)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D9LD1- 9	80	270,000	252,000
13	80	263,000	242,000
21	80	260,000	246,000
26	80	271,000	256,000
29	80	266,000	252,000
31	80	262,000	248,000
33	80	260,000	248,000
47	80	271,000	255,000
51	80	276,000	241,000
57	80	266,000	249,000
Average		266,000	251,000
D9LD2- 1	200	233,000	219,000
17	200	234,000	223,000
48	200	234,000	228,000
Average		234,000	220,000
D9LD3-14	400	201,000	190,000
23	400	217,000	196,000
55	400	208,000	189,000
Average		209,000	198,000
D9LD4- 3	600	181,000	176,000
30	600	189,000	177,000
43	600	190,000	178,000
Average		187,000	177,000
D9LD6- 2	800	171,000	165,000
40	800	175,000	164,000
42	800	176,000	163,000
Average		176,000	164,000
D9LD7-10	900	171,000	158,000
24	900	173,000	161,000
25	900	173,000	157,000
Average		172,000	159,000
D9LD8- 7	1000	156,000	134,000
18	1000	149,000	- (1)
35	1000	156,000	131,000
Average		154,000	132,000

(1) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 1.5, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. P7647)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D9TD1-13	80	276,000	243,000
16	80	278,000	242,000
21	80	279,000	244,000 (2)
26	80	272,000	242,000 (2)
29	80	280,000	241,000
31	80	274,000	237,000
33	80	278,000	240,000
47	80	283,000	246,000
51	80	280,000	241,000 (2)
58	80	285,000	250,000
Average		278,000	243,000
D9TD2- 1	200	252,000	210,000
17	200	258,000	230,000
48	200	255,000	224,000
Average		255,000	221,000
D9TD3-14	400	232,000	201,000
23	400	244,000	214,000
55	400	239,000	200,000
Average		238,000	205,000
D9TD4- 3	600	209,000	179,000
30	600	218,000	185,000
43	600	212,000	180,000
Average		213,000	181,000
D9TD6- 2	800	189,000	163,000
40	800	194,000	166,000
42	800	192,000	- (1)
Average		192,000	164,000
D9TD7-10	900	184,000	163,000
24	900	189,000	166,000
25	900	183,000	- (1)
Average		185,000	164,000
D9TD8- 7	1000	164,000	143,000
18	1000	162,000	136,000
35	1000	157,000	128,000
Average		161,000	136,000

(1) Unusable load-deformation curve
(2) Tensile failure at net section

TABLE CCIXI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4Mo-1V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. 84815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
D1LD1-6	80	347,000	293,000	
-15	80	339,000	293,000	
-43	80	358,000	297,000	
-57	80	350,000	291,000	389,000
-89	80	368,000	280,000	
-113	80	341,000	286,000	
-121	80	343,000	308,000	
-135	80	336,000	280,000	
-140	80	334,000	285,000	
-144	80	338,000	284,000	
Average		342,000	290,000	
D1LD2-34	200	-(2)	298,000	
-77	200	388,000	304,000	
-158	200	381,000	295,000	
Average		386,000	297,000	
D1LD3-20	400	288,000	260,000	
-95	400	286,000	267,000	
-99	400	300,000	272,000	
Average		289,000	266,000	
D1LD4-26	600	257,000	257,000	
-110	600	260,000	259,000	262,000
-143	600	265,000	274,000	
Average		261,000	260,000	
D1LD6-82	800	222,000	221,000	
-164	800	241,000	210,000	
-171	800	272,000	221,000	
Average		245,000	217,000	
D1LD7-3	900	231,000	200,000	
-44	900	230,000	205,000	
-129	900	234,000	205,000	230,000
Average		232,000	203,000	
D1LD8-32	1000	188,000	151,000	
-74	1000	208,000	162,000	
-86	1000	196,000	168,000	
Average		197,000	158,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4Mo-1V TITANIUM ALLOY SHEET, 0.080 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. 84815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
D1TD1-6	80	341,000	287,000	332,000
-15	80	342,000	292,000	319,000
-43	80	351,000	283,000	326,000
-57	80	342,000	285,000	336,000
-89	80	340,000	295,000	329,000
-113	80	354,000	303,000	335,000
-121	80	326,000	267,000	269,000
-135	80	340,000	306,000	338,000
-140	80	350,000	291,000	305,000
-144	80	344,000	288,000	309,000
Average		343,000	292,000	
D1TD2-34	200	331,000	281,000	316,000
-77	200	347,000	294,000	327,000
-158	200	322,000	283,000	316,000
Average		333,000	286,000	
D1TD3-20	400	317,000	283,000	301,000
-95	400	309,000	256,000	256,000
-99	400	300,000	269,000	288,000
Average		309,000	269,000	
D1TD4-26	600	247,000	232,000	
-129	600	273,000	242,000	262,000
-143	600	276,000	211,000	253,000
Average		265,000	228,000	
D1TD6-44	800	264,000	218,000	235,000
-110	800	261,000	226,000	237,000
-164	800	230,000	205,000	220,000
Average		252,000	212,000	
D1TD7-3	900	224,000	178,000	180,000
-81	900	256,000	210,000	219,000
-82	900	217,000	217,000	235,000
Average		239,000	202,000	
D1TD8-32	1000	202,000	165,000	
-74	1000	210,000	162,000	143,000
-86	1000	209,000	171,000	
Average		207,000	166,000	

(1) Initial failure.

TABLE CCLVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING MILE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. RL765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F_{bf}(1) PSI
DLLD1-6	80	355,000	298,000	353,000
-43	80	348,000	311,000	346,000
-89	80	354,000	311,000	
-113	80	342,000	303,000	
-121	80	362,000	304,000	
-135	80	352,000	300,000	326,000
-140	80	354,000	300,000	351,000
-144	80	347,000	313,000	
-17	80	364,000	262,000	
-160	80	361,000	305,000	
Average		356,000	300,000	
DLLD2-34	200	316,000	271,000	237,000
-77	200	321,000	274,000	297,000
-158	200	319,000	281,000	
Average		319,000	276,000	
DLLD3-20	400	304,000	275,000	
-143	400	292,000	248,000	
-176	400	256,000	-(2)	276,000
Average		294,000	262,000	
DLLD4-26	600	262,000	214,000	
-95	600	245,000	241,000	242,000
-110	600	267,000	227,000	255,000
Average		258,000	227,000	
DLLD6-44	800	264,000	227,000	227,000
-129	800	243,000	213,000	234,000
-175	800	255,000	200,000	240,000
Average		254,000	213,000	
DLLD7-3	900	245,000	199,000	211,000
-81	900	250,000	212,000	166,000
-82	900	245,000	202,000	
Average		247,000	204,000	
DLLD8-32	1000	197,000	143,000	
-85	1000	218,000	160,000	
-13	1000	225,000	155,000	
Average		213,000	153,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING MILE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. RL765)

Specimen Number	Test Temperature °F	F_{bru}, PSI	F_{bry}, PSI	F_{bf}(1) PSI
DLTD1-6	80	338,000	305,000	[illegible]
-15	80	382,000	[illegible]	[illegible]
-43	80	354,000	[illegible]	[illegible]
-57	80	362,000	[illegible]	[illegible]
-89	80	358,000	[illegible]	[illegible]
-113	80	383,000	[illegible]	[illegible]
-121	80	347,000	[illegible]	[illegible]
-135	80	379,000	[illegible]	[illegible]
-140	80	366,000	[illegible]	[illegible]
-144	80	371,000	[illegible]	[illegible]
Average		364,000	[illegible]	
DLTD2-34	200	352,000	[illegible]	[illegible]
-77	200	345,000	[illegible]	[illegible]
-155	200	335,000	-(2)	[illegible]
Average		[illegible]	[illegible]	
DLTD3-20	400	306,000	[illegible]	[illegible]
-99	400	321,000	[illegible]	[illegible]
-143	400	[illegible]	[illegible]	[illegible]
Average		[illegible]	[illegible]	
DLTD4-26	600	270,000	[illegible]	[illegible]
-55	600	297,000	[illegible]	[illegible]
-110	600	286,000	[illegible]	[illegible]
Average		[illegible]	[illegible]	
DLTD6-44	800	252,000	[illegible]	[illegible]
-129	800	265,000	[illegible]	[illegible]
-164	800	251,000	[illegible]	[illegible]
Average		[illegible]	[illegible]	
DLTD7-3	900	236,000	[illegible]	[illegible]
-81	900	248,000	[illegible]	[illegible]
-86	900	223,000	[illegible]	[illegible]
Average		[illegible]	[illegible]	
DLTD8-32	1000	202,000	[illegible]	[illegible]
-74	1000	212,000	[illegible]	[illegible]
-170	1000	210,000	-(2)	[illegible]
Average		[illegible]	[illegible]	

(1) Initial failure.
(2) Unusable load-deformation curve

TABLE CCLVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. R1605)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
DTTD1-15	80	343,000	297,000	
-43	80	347,000	294,000	
-57	80	352,000	288,000	
-89	80	333,000	285,000	
-113	80	349,000	284,000	344,000
-119	80	350,000	295,000	
-121	80	349,000	297,000	335,000
-135	80	323,000	284,000	
-140	80	332,000	289,000	
-144	80	328,000	291,000	
Average		341,000	291,000	
DTTD2-34	200	309,000	273,000	
-77	200	329,000	272,000	313,000
-158	200	309,000	269,000	
Average		316,000	271,000	
DTTD3-20	400	284,000	240,000	283,000
-99	400	283,000	233,000	268,000
-143	400	265,000	249,000	
Average		277,000	241,000	
DTTD4-26	600	236,000	221,000	
-95	600	234,000	219,000	
-110	600	212,000	229,000	251,000
Average		227,000	223,000	
DTTD6-44	800	207,000	199,000	229,000
-129	800	245,000	239,000	
-164	800	206,000	211,000	
Average		234,000	216,000	
DTTD7-3	900	227,000	183,000	219,000
-81	900	235,000	195,000	219,000
-82	900	236,000	208,000	214,000
Average		233,000	195,000	
DTTD8-32	1000	192,000	- (2)	
-74	1000	194,000	167,000	
-86	1000	189,000	158,000	
Average		192,000	162,000	

(1) Initial failure.
(2) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1250 INCH (CRUCIBLE HEAT NO. R1605)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
DTTD1-6	80	334,000	303,000	
-15	80	314,000	285,000	
-43	80	317,000	301,000	314,000
-57	80	329,000	296,000	
-89	80	327,000	287,000	315,000
-113	80	332,000	294,000	
-121	80	327,000	282,000	
-135	80	328,000	289,000	323,000
-140	80	332,000	297,000	
-144	80	342,000	309,000	
Average		326,000	296,000	
DTTD2-34	200	311,000	293,000	291,000
-77	200	322,000	280,000	300,000
-158	200	318,000	299,000	
Average		317,000	291,000	
DTTD3-20	400	266,000	259,000	274,000
-99	400	265,000	244,000	272,000
-143	400	292,000	259,000	266,000
Average		280,000	254,000	
DTTD4-26	600	256,000	239,000	253,000
-95	600	261,000	220,000	236,000
-110	600	267,000	255,000	265,000
Average		261,000	238,000	
DTTD6-44	800	219,000	199,000	211,000
-129	800	232,000	204,000	220,000
-164	800	236,000	222,000	231,000
Average		229,000	208,000	
DTTD7-3	900	214,000	180,000	210,000
-81	900	213,000	191,000	194,000
-82	900	234,000	222,000	228,000
Average		220,000	198,000	
DTTD8-32	1000	201,000	161,000	186,000
-74	1000	195,000	162,000	
-86	1000	171,000	157,000	
Average		189,000	160,000	

(1) Initial failure.

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-2Mo-1V TITANIUM ALLOY SHEET, 0.060 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R4815)

Specimen Number	Test Temperature, °F	F_{tru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
DLTD1-12	RT	344,000	286,000	
-28	80	333,000	281,000	
-68	80	303,000	263,000	
-96	80	330,000	269,000	
-102	80	326,000	278,000	
-103	80	316,000	268,000	
-112	80	306,000	291,000	
-137	80	325,000	285,000	
-148	80	319,000	280,000	
-166	80	296,000	278,000	
Average		314,000	285,000	
DLTD2-2	200	323,000	269,000	
-5	200	277,000	251,000	
-70	200	346,000	265,000	
Average		315,000	262,000	
DLTD3-94	400	258,000	229,000	
-109	400	294,000	241,000	
-116	400	258,000	244,000	
Average		270,000	238,000	
DLTD4-12	600	242,000	220,000	
-39	600	236,000	193,000	
-127	600	247,000	216,000	
Average		241,000	212,000	
DLTD5-29	800	196,000	208,000	
-107	800	154,000	207,000	
-128	800	197,000	215,000	
Average		183,000	210,000	
DLTD7-9	900	218,000	196,000	
-85	900	216,000	195,000	
-142	900	244,000	194,000	222,000
Average		226,000	195,000	
DLTD8-10	1000	197,000	160,000	
-94	1000	219,000	137,000	
-153	1000	200,000	145,000	195,000
Average		205,000	147,000	

(1) Initial failure.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-2Mo-1V TITANIUM ALLOY SHEET, 0.060 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. R4815)

Specimen Number	Test Temperature, °F	F_{tru}, PSI	F_{bry} PSI	$F_{br}^{(1)}$, PSI
DLTD1-2	RT	301,000(2)	258,000	
-22	80	332,000	265,000	312,000
-68	80	299,000	276,000	
-96	80	294,000	276,000	
-102	80	302,000	293,000	
-103	80	336,000	283,000	316,000
-112	80	290,000	281,000	
-137	80	303,000	294,000	
-148	80	343,000	- (3)	298,000
-166	80	308,300	- (3)	
Average		312,000	278,000	
DLTD2-98	200	328,000	274,000	313,000
-153	200	[illegible],000	[illegible],000	315,000
-115	200	[illegible],000	[illegible],000	
Average		[illegible],000	[illegible],000	
DLTD3-94	400	323,000	246,000	295,000
-109	400	330,000	275,000	324,000
-116	400	296,300	257,000	258,000
Average		316,000	259,000	
DLTD4-12	600	304,000	241,000	
-127	600	303,000	250,000	267,000
-122	600	294,000	228,000	209,000
Average		300,000	240,000	
DLTD5-9	800	277,000	232,000	
-142	800	231,000	221,000	229,000
-128	800	251,000	216,000	221,000
Average		253,000	223,000	
DLTD7-29	900	245,000	- (3)	
-99	900	249,000	194,000	
-85	900	238,000	176,200	211,000
Average		244,000	184,000	
DLTD8-10	1000	222,000	157,000	
-35	1000	217,000	- (3)	
-70	1000	220,000	150,300	
Average		220,000	154,000	

(1) Initial failure.
(2) Tensile failure at net section
(3) Unusable load-deformation curve

TABLE CCLX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.060 INCH THICK, e/D = 2.0, STANDARD HOLE DIAMETER = 0.1015 INCH (CRUCIBLE HEAT NO. RA765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
DA1Z1-2	80	324,000	278,000	
-22	80	296,000	280,000	
-68	80	301,000	278,000	
-96	80	316,000	291,000	
-102	80	312,000	254,000	
-103	80	287,000	282,000	
-112	80	309,000	278,000	
-138	80	297,000	257,000	
-166	80	302,000	266,000	
-137	80	(2)	297,000	
Average		[illegible]	278,000	
DA1Z6-5	200	294,000	268,000	288,000
-98	200	289,000	268,000	
-153	200	300,000	261,000	287,000
Average		295,000	266,000	
DA1Z3-94	400	270,000	292,000	
-107	400	264,000	241,000	
-116	400	279,000	282,000	271,000
Average		271,000	267,000	
DA1Z4-109	600	227,000	215,000	
-120	600	248,000	238,000	239,000
-128	600	240,000	234,000	
Average		238,000	229,000	
DA1Z5-12	800	227,000	200,000	230,000
-29	800	230,000	195,000	232,000
-142	800	240,000	200,000	208,000
Average		233,000	198,000	
DA1Z7-9	900	239,000	188,000	223,000
-39	900	238,000	190,000	198,000
-85	900	234,000	189,000	201,000
Average		237,000	189,000	
DA1Z8-10	1000	193,000	148,000	
-35	1000	213,000	165,000	203,000
-70	1000	202,000	142,000	
Average		202,000	152,000	

(1) Initial failure.
(2) Specimen failed at loading hole.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. RA765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
DA7D1-2	80	295,000	277,000	35,000
-22	80	335,000	294,000	299,000
-68	80	298,000	271,000	
-96	80	334,000	294,000	308,000
-102	80	347,000	278,000	301,000
-103	80	300,000	285,000	
-112	80	347,000	300,000	317,000
-137	80	329,000	292,000	305,000
-148	80	282,000	272,000	
-166	80	305,000	279,000	263,000
Average		319,000	284,000	
DA7D2-5	200	343,000	275,000	
-98	200	316,000	307,000	134,000
-153	200	343,000	284,000	
Average		334,000	289,000	
DA7D3-10	400	266,000	234,000	
-109	400	294,000	269,000	270,000
-116	400	279,000	258,000	
Average		280,000	253,000	
DA7D4-122	600	251,000	215,000	
-128	600	255,000	219,000	242,000
-175	600	243,000	212,000	222,000
Average		250,000	216,000	
DA7D6-12	800	221,000	221,000	
-29	800	251,000	207,000	221,000
-142	800	251,000	220,000	
Average		241,000	213,000	
DA7D7-9	900	241,000	180,000	212,000
-39	900	198,000	190,000	
-85	900	206,000	178,000	190,000
Average		215,000	183,000	
DA7D8-35	1000	221,000	148,000	
-70	1000	195,000	154,000	
-96	1000	237,000	256,000	184,000
Average		218,000	153,000	

(1) Initial failure.

TABLE CCLXI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. RL605)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{bry} (1), PSI
D7LD1-2	80	252,000(3)	- (2)	233,000
-22	80	317,000	- (2)	209,000
-68	80	316,000	- (2)	223,000
-96	80	342,000(3)	267,000	469,000
-102	80	309,000	268,000	286,000
-103	80	344,000	289,000	303,000
-112	80	341,000	273,000	274,000
-137	80	309,000	- (2)	230,000
-148	80	299,000	- (2)	242,000
-156	80	306,000	- (2)	237,000
Average		323,000	271,000	
D7LD2-5	200	299,000	- (2)	210,000
-98	200	338,000	236,000	
-153	200	280,000	279,000	232,000
Average		306,000	258,000	
D7LD3-10	400	264,000	205,000	215,000
-107	400	276,000	205,000	215,000
-116	400	275,000	215,000	217,000
Average		272,000	208,000	
D7LD4-12	600	254,000	- (2)	193,000
-107	600	228,000	203,000	218,000
-150	600	231,000	- (2)	195,000
Average		237,000		
D7LD6-29	800	249,000	221,000	
-128	800	213,000	185,000	197,000
-142	800	230,000	169,000	
Average		231,000	192,000	
D7LD7-9	900	202,000	148,000	169,000
-39	900	202,000	150,000	195,000
-85	900	201,000	158,000	203,000
Average		202,000	152,000	
D7LD8-35	1000	181,000	135,000	175,000
-70	1000	175,000	134,000	
-94	1000	187,000	136,000	
Average		182,000	134,000	

1) Initial failure.
2) Failure occurred prior to attaining yield deformation.
3) Tensile failure at net section.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.1875 INCH (CRUCIBLE HEAT NO. RL605)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{bry} (2), PSI
D7TD1-2	80	357,000	- (2)	260,000
-22	80	351,000	- (2)	255,000
-68	80	333,000	- (2)	242,000
-96	80	372,000	300,000	
-102	80	343,000	243,000	297,000
-103	80	342,000	270,000	271,000
-112	80	363,000	272,000	271,000
-137	80	324,000	264,000	265,000
-148	80	339,000	- (2)	241,000
-156	80	345,000	- (2)	270,000
Average		346,000	275,000	
D7TD2-5	200	347,000	238,000	
-98	200	327,000	263,000	243,000
-153	200	354,000	- (2)	244,000
Average		357,000	250,000	
D7TD3-10	400	279,000	- (2)	215,000
-109	400	283,000	245,000	215,000
-177	400	312,000	256,000	248,000
Average		291,000	251,000	
D7TD4-12	600	246,000	183,000	214,000
-107	600	250,000	221,000	193,000
-122	600	240,000	195,000	193,000
Average		245,000	203,000	
D7TD6-29	800	193,000	- (2)	150,000
-142	800	214,000	156,000	170,000
-128	800	217,000	152,000	170,000
Average		208,000	154,000	
D7TD7-9	900	173,000	- (2)	150,000
-39	900	219,000	160,000	175,000
-85	900	211,000	174,000	170,000
Average		201,000	167,000	
D7TD8-35	1000	200,000	- (2)	160,000
-70	1000	212,000	137,000	173,000
-94	1000	194,000	135,000	162,000
Average		202,000	136,000	

(1) Initial failure.
(2) Failure occurred prior to attaining yield deformation.

TABLE CCLXII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4Mo-1V TITANIUM ALLOY SHEET, 0.030 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R4815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
D1LD1-8	80	330,000	264,000	313,000
-11	80	341,000	272,000	300,000
-16	80	336,000	274,000	303,000
-60	80	335,000	265,000	304,000
-79	80	328,000	291,000	307,000
-84	80	312,000	266,000	304,000
-127	80	328,000	267,000	310,000
-137	80	307,000	269,000	
-151	80	331,000	267,000	306,000
-161	80	- (2)	260,000	
Average		326,000	271,000	
D1LD2-54	200	299,000	262,000	
-100	200	288,000	248,000	264,000
-131	200	304,000	- (3)	262,000
Average		297,000	255,000	
D1LD3-23	400	267,000	224,000	243,000
-101	400	275,000	- (3)	252,000
-126	400	266,000	234,000	254,000
Average		269,000	229,000	
D1LD4-7	600	234,000	217,000	
-123	600	227,000	207,000	220,000
-130	600	243,000	219,000	
Average		235,000	214,000	
D1LD6-76	800	224,000	201,000	
-78	800	221,000	204,000	
-83	800	226,000	201,000	228,000
Average		224,000	202,000	
D1LD7-11	900	233,000	162,000	212,000
-25	900	232,000	182,000	195,000
-119	900	224,000	177,000	
Average		230,000	174,000	
D1LD8-63	1000	203,000	158,000	
-119	1000	200,000	151,000	
-149	1000	188,000	144,000	
Average		197,000	151,000	

(1) Initial failure.
(2) Specimen fail t in loading hole
(3) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4Mo-1V TITANIUM ALLOY SHEET, 0.030 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R4815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
D1TD1-8	80	330,000	278,000	320,000
-11	80	307,000	272,000	296,000
-16	80	334,000	286,000	322,000
-60	80	294,000	253,000	266,000
-79	80	295,000	256,000	277,000
-84	80	295,000	266,000	276,000
-127	80	345,000	268,000	
-136	80	334,000	269,000	309,000
-151	80	312,000	262,000	302,000
-161	80	353,000	276,000	292,000
Average		320,000	269,000	
D1TD2-23	200	311,000	281,000	302,000
-100	200	326,000	259,000	276,000
-131	200	314,000	266,000	272,000
Average		317,000	267,000	
D1TD3-54	400	274,000	219,000	250,000
-101	400	296,000	230,000	249,000
-126	400	280,000	216,000	260,000
Average		283,000	222,000	
D1TD4-83	600	254,000	216,000	240,000
-123	600	275,000	212,000	252,000
-130	600	268,000	219,000	223,000
Average		266,000	216,000	
D1TD6-14	800	222,000	195,000	
-85	800	244,000	209,000	225,000
-76	800	244,000	199,000	202,000
Average		237,000	201,000	
D1TD7-7	900	234,000	185,000	201,000
-78	900	230,000	183,000	187,000
-119	900	236,000	- (2)	225,000
Average		233,000	184,000	
D1TD8-63	1000	183,000	147,000	
-90	1000	186,000	141,000	
-149	1000	184,000	150,000	
Average		184,000	146,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TABLE CCLXIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.050 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B4765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
D4LD1-8	RT	317,000	235,000	310,000
-11	RT	324,000	254,000	317,000
-16	RT	309,000	290,000	339,000
-79	RT	275,000	230,000	
-80	RT	259,000 (2)	220,000	236,000
-84	RT	325,000	253,000	305,000
-127	RT	307,000	238,000	304,000
-136	RT	324,000	255,000	307,000
-151	RT	319,000	231,000	299,000
-161	RT	320,000	251,000	308,000
Average		314,000	252,000	
D4LD2-23	200	300,000	268,000	
-54	200	298,000	242,000	263,000
-121	200	306,000	254,000	287,000
Average		301,000	256,000	
D4LD3-100	400	273,000	230,000	
-126	400	267,000	226,000	252,000
-131	400	260,000	244,000	255,000
Average		267,000	233,000	
D4LD4-23	600	231,000	177,000	
-123	600	226,000	207,000	
-130	600	230,000	204,000	
Average		229,000	196,000	
D4LD5-7	800	209,000	187,000	
-63	800	209,000	192,000	
-159	800	202,000	187,000	
Average		206,000	189,000	
D4LD7-63	900	210,000	176,000	
-119	900	220,000	185,000	195,000
-170	900	216,000	169,000	
Average		215,000	176,000	
D4LD8-25	1000	187,000	145,000	
-90	1000	202,000	- (2)	
-149	1000	195,000	156,000	
Average		195,000	151,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.050 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B4765)

Specimen Number	Test Temperature °F	F_{bru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
D4TD1-8	RT	321,000	257,000	
-11	RT	320,000	261,000	
-16	RT	319,000	265,000	297,000
-80	RT	320,000	269,000	
-79	RT	310,000	248,000	
-84	RT	324,000	264,000	
-127	RT	317,000	270,000	303,000
-136	RT	321,000	273,000	302,000
-151	RT	331,000	258,000	289,000
-161	RT	317,000	246,000	
Average		323,000	261,000	
D4TD2-23	200	294,000	270,000	279,000
-100	200	291,000(2)	256,000	284,000
-131	200	307,000	264,000	
Average		297,000	263,000	
D4TD3-101	400	297,000	- (3)	250,000
-123	400	285,000(2)	230,000	240,000
-130	400	288,000	237,000	255,000
Average		290,000	234,000	
D4TD4-54	600	248,000	200,000	215,000
-83	600	253,000	200,000	227,000
-126	600	256,000	213,000	233,000
Average		252,000	204,000	
D4TD6-7	800	239,000	187,000	206,000
-14	800	242,000	200,000	211,000
-76	800	216,000	173,000	
Average		232,000	187,000	
D4TD7-63	900	232,000	190,000	220,000
-78	900	214,000	164,000	
-119	900	227,000	188,000	197,000
Average		224,000	181,000	
D4TD8-25	1000	196,000	143,000	
-90	1000	204,000	152,000	
-149	1000	196,000	151,000	188,000
Average		199,000	149,000	

(1) Initial failure.
(2) Tensile failure at net section
(3) Unusable load-deformation curve

TABLE CCLXIV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6505)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
D7LD1-8	80	351,000	303,000	346,000
-11	80	334,000	296,000	
-16	80	356,000	306,000	
-60	80	335,000	320,000	
-79	80	343,000	313,000	341,000
-84	80	341,000	297,000	344,000
-127	80	347,000	316,000	335,000
-136	80	313,000	313,000	
-151	80	332,000	296,000	
-161	80	321,000	309,000	319,000
Average		341,000	307,000	
D7LD2-23	200	296,000	258,000	
-100	200	291,000	249,000	
-131	200	315,000	267,000	
Average		301,000	258,000	
D7LD3-54	400	275,000	237,000	
-101	400	271,000	234,000	268,000
-126	400	277,000	245,000	232,000
Average		281,000	239,000	
D7LD4-83	600	245,000	206,000	
-123	600	237,000	211,000	
-130	600	234,000	204,000	
Average		235,000	207,000	
D7LD6-7	800	220,000	203,000	218,000
-14	800	229,000	199,000	
-25	800	200,000	178,000	
Average		217,000	193,000	
D7LD7-76	900	212,000	181,000	209,000
-78	900	209,000	195,000	206,000
-119	900	215,000	184,000	215,000
Average		212,000	187,000	
D7LD8-63	1000	201,000	- (2)	195,000
-90	1000	203,000	156,000	
-149	1000	170,000	132,000	166,000
Average		192,000	143,000	

(1) Initial failure.
(2) Failure occurred prior to attaining yield deformation.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY Sheet, 0.020 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R6505)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
D7TD1-8	80	280,000	262,000	283,000
-11	80	307,000	- (3)	299,000
-16	80	340,000	307,000	
-60	80	349,000	306,000	306,000
-79	80	335,000	309,000	319,000
-84	80	343,000	307,000	325,000
-127	80	285,000(2)	272,000	288,000
-136	80	305,000	282,000	296,000
-151	80	280,000(2)	- (3)	271,000
-161	80	288,000(2)	279,000	284,000
Average		311,000	290,000	
D7TD2-23	200	282,000	261,000	264,000
-100	200	273,000	240,000	261,000
-131	200	261,000	244,000	259,000
Average		272,000	250,000	
D7TD3-54	400	250,000	236,000	249,000
-101	400	250,000	226,000	238,000
-126	400	244,000	221,000	242,000
Average		248,000	228,000	
D7TD4-83	600	210,000	201,000	202,000
-123	600	231,000	222,000	
-130	600	215,000	203,000	
Average		219,000	209,000	
D7TD6-7	800	216,000	189,000	211,000
-14	800	214,000	191,000	206,000
-25	800	206,000	186,000	185,000
Average		212,000	189,000	
D7TD7-76	900	208,000	182,000	204,000
-78	900	209,000	186,000	
-119	900	231,000	200,000	202,000
Average		216,000	189,000	
D7TD8-63	1000	198,000	144,000	
-90	1000	202,000	164,000	194,000
-149	1000	187,000	164,000	174,000
Average		196,000	151,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Failure occurred prior to attaining yield deformation.

TABLE CCLXV

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. P7653)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
DZLD1- 4	80	322,000	281,000	320,000
5	80	323,000	282,000	
11	80	320,000	273,000	
15	80	306,000	247,000	
19	80	314,000	286,000	310,000
39	80	319,000	275,000	
41	80	305,000	245,000	
44	80	299,000	253,000	
45	80	308,000	246,000	
56	80	310,000	251,000	
Average		313,000	266,000	
DZLD2-36	200	269,000	263,000	
46	200	270,000	240,000	
52	200	271,000	264,000	
Average		277,000	256,000	
DZLD3-20	400	255,000	226,000	
22	400	256,000	209,000	
37	400	262,000	215,000	
Average		258,000	222,000	
DZLD4-27	600	223,000	206,000	
34	600	231,000	199,000	
54	600	232,000	210,000	
Average		229,000	205,000	
DZLD6- 6	800	214,000	201,000	211,000
12	800	213,000	198,000	206,000
36	800	211,000	188,000	203,000
Average		213,000	196,000	
DZLD7-26	900	204,000	171,000	193,000
32	900	201,000	161,000	193,000
50	900	203,000	176,000	196,000
Average		204,000	169,000	
DZLD8- 8	1000	193,000	147,000	
49	1000	187,000	146,000	
53	1000	178,000	135,000	
Average		186,000	143,000	

(1) Initial failure.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. P7653)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
DZTD1- 4	80	344,000	300,000	302,000
5	80	337,000	302,000	320,000
11	80	342,000(2)	300,000	326,000
15	80	326,000	266,000	305,000
19	80	337,000	293,000	
39	80	352,000	288,000	
41	80	328,000(2)	293,000	322,000
44	80	332,000	279,000	285,000
45	80	336,000(2)	282,000	324,000
56	80	337,000(2)	293,000	326,000
Average		337,000	290,000	
DZTD2-36	200	314,000	273,000	277,000
46	200	301,000	230,000	283,000
52	200	302,000	251,000	300,000
Average		306,000	251,000	
DZTD3-20	400	277,000	245,000	270,000
22	400	268,000	226,000	250,000
37	400	286,000	246,000	266,000
Average		277,000	239,000	
DZTD4-27	600	247,000	227,000	233,000
34	600	235,000	214,000	
54	600	250,000	214,000	235,000
Average		244,000	218,000	
DZTD6- 6	800	234,000	212,000	216,000
12	800	233,000	203,000	206,000
36	800	230,000	210,000	222,000
Average		232,000	208,000	
DZTD7-26	900	213,000	131,000	205,000
32	900	212,000	150,000	
50	900	220,000	132,000	207,000
Average		215,000	134,000	
DZTD8- 8	1000	200,000	145,000	192,000
49	1000	191,000	145,000	190,000
53	1000	190,000	139,000	180,000
Average		194,000	143,000	

(1) Initial failure.
(2) Tensile failure at net section

TABLE CCLXVI

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3185 INCH (CRUCIBLE HEAT NO. RA765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
D5LD1-4	80	321,000	284,000	316,000
-5	80	327,000	279,000	320,000
-11	80	327,000	292,000	318,000
-15	80	305,000	284,000	318,000
-19	80	336,000	294,000	
-39	80	314,000	297,000	
-41	80	309,000	291,000	
-44	80	319,000	298,000	
-45	80	316,000	(2)	273,000
-56	80	321,000	296,000	
Average		321,000	293,000	
D5LD2-38	200	298,000	253,000	305,000
-46	200	295,000	264,000	
-52	200	306,000	278,000	297,000
Average		300,000	265,000	
D5LD3-20	400	280,000	235,000	
-22	400	270,000	238,000	
-37	400	285,000	235,000	236,000
Average		285,000	236,000	
D5LD4-27	600	250,000	219,000	
-38	600	238,000	218,000	
-54	600	244,000	226,000	
Average		244,000	221,000	
D5LD6-6	800	286,000	198,000	
-12	800	285,000	208,000	
-36	800	280,000	206,000	
Average		284,000	206,000	
D5LD7-28	900	283,000	198,000	204,000
-32	900	218,000	182,000	210,000
-50	900	282,000	181,000	206,000
Average		261,000	187,000	
D5LD8-8	1000	173,000	144,000	
-49	1000	173,000	151,000	
-53	1000	182,000	130,000	
Average		176,000	142,000	

(1) Initial failure.
(2) Unusable load-deformation curve

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3185 INCH (CRUCIBLE HEAT NO. RA765)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
D5EE1-4	80	331,000(2)	(3)	299,000
-5	80	326,000	279,000	314,000
-11	80	338,000	302,000	305,000
-15	80	335,000(2)	302,000	306,000
-19	80	347,000	302,000	326,000
-39	80	358,000(2)	297,000	319,000
-41	80	350,000	303,000	315,000
-44	80	351,000(2)	302,000	317,000
-45	80	350,000	298,000	324,000
-56	80	348,000	308,000	337,000
Average		343,000	299,000	
D5EE2-38	200	316,000	256,000	282,000
-46	200	307,000	289,000	291,000
-52	200	337,000(2)	283,000	310,000
Average		320,000	276,000	
D5EE3-20	400	294,000	247,000	262,000
-22	400	302,000	255,000	264,000
-37	400	300,000	253,000	277,000
Average		299,000	252,000	
D5EE4-6	600	268,000	227,000	246,000
-27	600	276,000	228,000	249,000
-34	600	270,000	231,000	244,000
Average		271,000	229,000	
D5EE6-12	800	252,000	221,000	226,000
-25	800	249,000	209,000	218,000
-34	800	251,000	218,000	226,000
Average		251,000	216,000	
D5EE7-28	900	228,000	196,000	214,000
-35	900	228,000	185,000	196,000
-50	900	228,000	187,000	210,000
Average		228,000	189,000	
D5EE8-8	1000	182,000	153,000	
-49	1000	188,000	171,000	
-53	1000	188,000	143,000	
Average		186,000	156,000	

(1) Initial failure.
(2) Tensile failure at net section
(3) Unusable load-deformation curve

TABLE CCLXVII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B4815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
D0LD1-4	80	334,000	294,000	
-5	80	331,000	301,000	
-11	80	300,000	300,000	299,000
-15	80	326,000	305,000	314,000
-17	80	338,000	294,000	
-39	80	337,000	303,000	328,000
-41	80	332,000	282,000	317,000
-44	80	315,000	284,000	311,000
-45	80	333,000	281,000	
-56	80	326,000	281,000	318,000
Average		327,000	293,000	
D0LD2-33	200	300,000	265,000	296,000
-46	200	318,000	275,000	306,000
-52	200	324,000	281,000	
Average		314,000	274,000	
D0LD3-20	400	294,000	235,000	274,000
-22	400	279,000	244,000	271,000
-37	400	313,000	241,000	252,000
Average		295,000	241,000	
D0LD4-27	600	249,000	215,000	223,000
-34	600	244,000	230,000	
-54	600	255,000	223,000	251,000
Average		249,000	223,000	
D0LD6-6	800	226,000	208,000	216,000
-12	800	234,000	209,000	222,000
-26	800	227,000	208,000	
Average		229,000	208,000	
D0LD7-28	900	221,000	189,000	211,000
-32	900	228,000	196,000	217,000
-50	900	227,000	186,000	211,000
Average		225,000	190,000	
D0LD8-3	1000	172,000	142,000	
-49	1000	168,000	140,000	
-53	1000	177,000	141,000	
Average		172,000	141,000	

(1) Initial failure.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B4815)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F_{br}^{(1)}$, PSI
D0TD1-4	80	345,000	307,000	340,000
-5	80	349,000	308,000	327,000
-11	80	345,000	304,000	331,000
-15	80	336,000	305,000	309,000
-17	80	350,000	305,000	330,000
-39	80	351,000	310,000	332,000
-41	80	350,000	309,000	324,000
-44	80	343,000(2)	305,000	327,000
-45	80	355,000	306,000	333,000
-56	80	344,000	306,000	327,000
Average		347,000	307,000	
D0TD2-33	200	333,000	288,000	303,000
-46	200	332,000(2)	285,000	286,000
-52	200	329,000	(3)	276,000
Average		331,000	287,000	
D0TD3-20	400	300,000	241,000	271,000
-22	400	306,000	252,000	276,000
-37	400	301,000	249,000	274,000
Average		302,000	247,000	
D0TD4-27	600	275,000	229,000	250,000
-34	600	268,000	235,000	247,000
-54	600	260,000	(3)	246,000
Average		268,000	232,000	
D0TD6-6	800	250,000	208,000	230,000
-12	800	252,000	213,000	234,000
-26	800	257,000	214,000	230,000
Average		253,000	212,000	
D0TD7-28	900	225,000	189,000	212,000
-32	900	230,000	191,000	214,000
-50	900	222,000	184,000	210,000
Average		226,000	188,000	
D0TD8-3	1000	178,000	146,000	
-49	1000	182,000	145,000	
-53	1000	178,000	142,000	
Average		179,000	145,000	

(1) Initial failure.
(2) Tensile failure at net section
(3) Initial failure occurred before yield deformation was reached

TABLE CCLXVIII

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4Mo-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING BOLT DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B6736)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D3LD1- 4	80	311,000	285,000
5	80	307,000	271,000
11	80	318,000	293,000
19	80	314,000	287,000
39	80	317,000	272,000
41	80	311,000	293,000
44	80	314,000	297,000
45	80	319,000	292,000
56	80	321,000	277,000
57	80	318,000	288,000
Average		315,000	285,000
D3LD2-37	200	295,000	270,000
46	200	296,000	266,000
52	200	296,000	273,000
Average		296,000	270,000
D3LD3-20	400	254,000	233,000
22	400	245,000	233,000
37	400	257,000	230,000
Average		252,000	232,000
D3LD4-27	600	219,000	201,000
34	600	217,000	- (1)
54	600	222,000	205,000
Average		219,000	203,000
D3LD6- 6	800	204,000	198,000
12	800	213,000	206,000
36	800	207,000	198,000
Average		208,000	199,000
D3LD7-28	900	202,000	178,000
32	900	208,000	178,000
50	900	209,000	189,000
Average		206,000	182,000
D3LD8- 8	1000	197,000	151,000
49	1000	199,000	170,000
53	1000	186,000	153,000
Average		194,000	158,000

(1) Specimen failed prior to attaining yield deformation

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-4Mo-4V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING BOLT DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. B6736)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	$F'^{(1)}_{br}$, PSI
D3TD1- 4	80	342,000(2)	(3)	303,000
5	80	343,000(2)	298,000	293,000
11	80	352,000(2)	291,000	308,000
15	80	346,000(2)	307,000	318,000
19	80	343,000(2)	305,000	308,000
39	80	350,000(2)	304,000	324,000
41	80	330,000(2)	(3)	322,000
44	80	349,000(2)	(3)	301,000
45	80	342,000(2)	312,000	323,000
56	80	321,000(2)	313,000	
Average		342,000	304,000	
D3TD2-37	200	323,000(2)	299,000	314,000
46	200	328,000(2)	(3)	264,000
52	200	330,000	289,000	294,000
Average		327,000	294,000	
D3TD3-20	400	283,000	246,000	265,000
27	400	279,000	235,000	259,000
38	400	271,000(2)	236,000	260,000
Average		278,000	239,000	
D3TD4-22	600	251,000	(3)	212,000
34	600	242,000	233,000	241,000
54	600	247,000	220,000	238,000
Average		247,000	226,000	
D3TD6- 6	800	236,000	209,000	213,000
12	800	244,000	203,000	225,000
36	800	240,000	202,000	225,000
Average		240,000	205,000	
D3TD7-28	900	224,000	190,000	212,000
32	900	234,000	197,000	213,000
50	900	240,000	192,000	215,000
Average		233,000	193,000	
D3TD8- 8	1000	204,000	180,000	
49	1000	205,000	165,000	195,000
53	1000	198,000	(3)	
Average		202,000	172,000	

(1) Initial failure.
(2) Tensile failure at net section
(3) Unusable load-deformation curve

TABLE CCLXIX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R07141)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D6LD1-11	80	311,000	285,000
-15	80	315,000	295,000
-19	80	326,000	288,000
-39	80	319,000	260,000
-41	80	320,000	268,000
-44	80	311,000	277,000
-45	80	318,000	279,000
-201	80	341,000	312,000
-202	80	330,000	294,000
-203	80	315,000	194,000
Average		323,500	280,500
D6LD2-38	200	293,000	268,000
-40	200	301,000	269,000
-52	200	284,000	274,000
Average		293,000	270,500
D6LD3-20	400	268,000	240,000
-22	400	257,000	230,000
-37	400	258,000	227,000
Average		261,000	232,500
D6LD4-27	600	208,000	200,000
-32	600	223,000	202,000
-34	600	224,000	202,000
Average		218,500	211,000
D6LD5-6	800	211,000	206,000
-12	800	215,000	210,000
-36	800	215,000	205,000
Average		214,000	207,000
D6LD7-28	900	202,000	183,000
-50	900	213,000	196,000
-54	900	209,000	184,000
Average		208,000	188,000
D6LD8-49	1000	193,000	147,000
-53	1000	196,000	142,000
-58	1000	200,000	150,000
Average		196,000	146,000

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. R07141)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br}, (1) PSI
D6TD1-4	80	307,000	269,000	326,000
-5	80	349,000(2)	294,000	329,000
-11	80	352,000(2)	307,000	334,000
-15	80	333,000(2)	302,000	334,000
-19	80	333,000(2)	286,000	332,000
-39	80	338,000(2)	307,000	335,000
-41	80	331,000(2)	304,000	331,000
-44	80	343,000(2)	291,000	337,000
-45	80	341,000(2)	316,000	331,000
-201	80	333,000(2)	308,000	340,000
Average		340,000	299,000	335,000
D6TD2-38	200	316,000	290,000	320,000
-42	200	323,000(2)	281,000	320,000
-52	200	322,000	279,000	318,000
Average		320,000	283,000	
D6TD3-20	400	295,000(2)	256,000	296,000
-22	400	284,000	255,000	293,000
-37	400	274,000(2)	233,000	294,000
Average		284,000	248,000	
D6TD4-27	600	254,000	245,000	284,000
-28	600	249,000	- (3)	283,000
-34	600	253,000	226,000	284,000
Average		252,000	235,500	
D6TD5-6	800	238,000	238,000	268,000
-12	800	243,000	226,000	274,000
-202	800	236,000	- (3)	
Average		239,000	232,000	
D6TD7-28	900	219,000	190,000	247,000
-50	900	227,000	196,000	246,000
-54	900	215,000	185,000	227,000
Average		221,000	190,000	
D6TD8-49	1000	203,000	176,000	
-53	1000	196,000	- (3)	
-203	1000	159,000	150,000	
Average		179,000	163,000	

(1) Initial failure.
(2) Tensile failure at net section.
(3) Unusable load-deformation curve.

TABLE CCLXX

LONGITUDINAL BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. P7647)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI
D9LD1- 4	80	323,000	277,000
5	80	318,000	282,000
11	80	324,000	280,000
15	80	327,000	277,000
19	80	325,000	277,000
39	80	318,000	266,000
41	80	317,000	275,000
44	80	320,000	280,000
45	80	332,000	276,000
56	80	328,000	275,000
Average		323,000	276,000
D9LD2-38	200	301,000	272,000
46	200	296,000	256,000
52	200	286,000	278,000
Average		294,000	267,000
D9LD3-22	400	250,000	243,000
37	400	290,000	211,000
58	400	253,000	221,000
Average		271,000	225,000
D9LD4-27	600	225,000	208,000
34	600	215,000	(1)
54	600	228,000	204,000
Average		223,000	206,000
D9LD6- 6	800	201,000	186,000
12	800	205,000	192,000
36	800	211,000	186,000
Average		206,000	188,000
D9LD7-28	900	202,000	176,000
32	900	196,000	169,000
50	900	204,000	177,000
Average		201,000	174,000
D9LD8- 9	1000	183,000	134,000
49	1000	195,000	154,000
53	1000	185,000	127,000
Average		188,000	138,000

(1) Unusable load-deformation curve.

TRANSVERSE BEARING PROPERTIES FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK, e/D = 2.0, BEARING HOLE DIAMETER = 0.3125 INCH (CRUCIBLE HEAT NO. P7647)

Specimen Number	Test Temperature, °F	F_{bru}, PSI	F_{bry}, PSI	F'_{br} (1), PSI
D9TD1- 4	80	336,000	276,000	316,000
5	80	333,000 (2)	279,000	318,000
11	80	332,000	286,000	316,000
15	80	339,000	290,000	332,000
19	80	339,000 (2)	293,000	
39	80	343,000	298,000	
41	80	337,000	291,000	
44	80	343,000	298,000	
45	80	333,000 (2)	298,000	
56	80	328,000 (2)	264,000	
Average		336,000	289,000	
D9TD2-38	200	307,000 (2)	258,000	294,000
46	200	317,000 (2)	273,000	309,000
52	200	305,000	288,000	294,000
Average		310,000	273,000	
D9TD3-20	400	272,000	216,000	261,000
22	400	284,000	248,000	263,000
34	400	270,000	236,000	257,000
Average		275,000	233,000	
D9TD4-27	600	252,000	224,000	243,000
37	600	242,000 (2)	215,000	238,000
54	600	255,000	224,000	240,000
Average		250,000	221,000	
D9TD6- 6	800	225,000	190,000	215,000
12	800	232,000	201,000	219,000
36	800	229,000	192,000	215,000
Average		229,000	193,000	
D9TD7-28	900	199,000 (2)	162,000	
32	900	211,000	178,000	207,000
50	900	215,000	168,000	207,000
Average		208,000	169,000	
D9TD8-49	1000	197,000	138,000	193,000
53	1000	206,000	160,000	202,000
57	1000	206,000	152,000	201,000
Average		203,000	150,000	

(1) Initial failure.
(2) Tensile failure at net section

TABLE CCLXXI

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— 6Al-3Mo-1V
THICKNESS— 0.020 INCH

TEST TEMP °F	HEAT NUMBER RL815 LONGITUDINAL SPECIMEN NUMBER	F_{SU}, PSI	HEAT NUMBER RL815 TRANSVERSE SPECIMEN NUMBER	F_{SU}, PSI	HEAT NUMBER RL765 LONGITUDINAL SPECIMEN NUMBER	F_{SU}, PSI	HEAT NUMBER RL765 TRANSVERSE SPECIMEN NUMBER	F_{SU}, PSI	HEAT NUMBER RL805 LONGITUDINAL SPECIMEN NUMBER	F_{SU}, PSI	HEAT NUMBER RL805 TRANSVERSE SPECIMEN NUMBER	F_{SU}, PSI
80	D1LE1M-1	116,000	D1TE1M-1	120,000(1)	D6LE2M-7	[illegible]	D6TE1M-1	127,000	D7LE1M-1	[illegible]	D7TE1M-1	[illegible]
	-7	115,000(1-3)	-7	123,000(1)	-11	113,000	-7	121,000	-7	[illegible](2)	-7	116,000(2)
	-9	116,000(1)	-11	122,000(1-2)	-12	116,000	-9	12[illegible],000	-9	[illegible],000(2)	-9	114,000
	-11	116,000(1-2)	-12	122,000(1-2)	-20	123,000	-11	1[illegible],000	-11	[illegible],000(2)	-11	117,000(2)
	-12	120,000	-20	124,000(1)	-21	118,000	-12	1[illegible],000	-12	[illegible],000(2)	-12	112,000(2)
	-20	117,000(2)	-23	124,000(1)	-23	123,000	-21	126,000	-20	[illegible],000(2)	-20	112,000(2)
	-21	118,000	-24	124,000(1)	-24	120,000	-23	127,000	-23	[illegible],000(2)	-21	110,000(2)
	-23	117,000	-26	124,000(1)	-26	116,000	-24	127,000	-24	[illegible],000(2)	-23	116,000(2)
	-24	116,000(2)	-30	119,000	-36	119,000	-26	120,000	-26	[illegible],000(2)	-24	113,000
	-26	117,000(2)	-38	120,000	-37	115,000	-29	119,000	-30	[illegible],000(2)	-29	[illegible],000(2)
	Average	117,000	Average	121,000	Average	115,000	Average	122,000	Average	[illegible],000	Average	[illegible],000
200	D1LE2M-14	109,000	D1TE2M-14	113,000	D6LE2M-14	107,000	D6TE2M-14	115,000	D7LE2M-14	[illegible],000	D7TE2M-15	102,000
	-15	112,000	-15	113,000	-15	110,000	-15	115,000	-15	[illegible],000	-30	110,000
	-17	108,000	-17	109,000(2)	-17	106,000	-17	[illegible],000	-31	[illegible],000	-31	106,000
	Average	110,000	Average	113,000	Average	108,000	Average	111,000	Average	[illegible],000	Average	106,000
400	D1LE3M-2	94,300	D1TE3M-10	106,000	D6LE3M-2	94,000	D6TE3M-2	[illegible],000	D7LE3M-2	[illegible],000	D7TE3M-2	96,000
	-10	98,300	-25	107,000	-20	96,000	-1[illegible]	[illegible],000	-1	92,500	-10	92,600
	-25	98,100	-35	101,000	-25	99,600(3)	-25	[illegible],000	-25	[illegible],000	-25	94,000
	Average	96,900	Average	105,000	Average	95,000	Average	103,000	Average	[illegible],500	Average	94,000
600	D1LE4M-5	87,800	D1TE4M-5	93,500	D6LE4M-5	91,700	D6TE4M-5	96,400	D7LE4M-5	[illegible],700	D7TE4M-5	86,500
	-8	89,000	-8	94,000	-8	94,300	-8	99,000	-8	[illegible],200	-8	[illegible],300
	-16	92,000	-16	93,400	-16	86,600	-16	93,500	-16	[illegible],900	-16	[illegible],[illegible]
	Average	89,600	Average	93,600	Average	91,000	Average	96,300	Average	[illegible],600	Average	[illegible],[illegible]
800	D1LE6M-13	81,400	D1TE6M-13	86,400	D6LE6M-13	82,500	D6TE6M-13	[illegible],200	D7LE6M-[illegible]	[illegible],[illegible]	D7TE6M-13	[illegible],[illegible]
	-18	82,800	-18	84,500	-18	83,500	-18	85,700	-18	[illegible],900	-18	82,900
	-19	78,200	-19	80,200	-29	77,500	-19	84,600	-19	[illegible],[illegible]	-32	78,600
	Average	80,800	Average	87,300	Average	81,200	Average	[illegible],500	Average	[illegible],[illegible]	Average	[illegible],[illegible]
900	D1LE7M-4	71,900	D1TE7M-4	78,000	D6LE7M-22	76,600	D6TE7M-4	76,800	D7LE7M-4	[illegible],000	D7TE7M-4	[illegible],[illegible]
	-22	76,900	-22	77,800	-27	76,000	-22	81,700	-27	[illegible],400	-22	[illegible],[illegible]
	-27	71,700	-27	78,800	-38	71,600	-30	77,300	-31	72,800	-27	69,000
	Average	73,200	Average	78,000	Average	74,500	Average	[illegible],800	Average	70,200	Average	[illegible],[illegible]
1000	D1LE8M-3	59,500	D1TE8M-3	63,400	D6LE8M-3	62,000	D6TE8M-3	65,700	D7LE8M-3	64,000	D7TE8M-3	60,500
	-6	64,200	-6	65,500	-8	62,000	-6	67,600	-6	61,600	-6	62,700
	-28	58,300	-28	64,300	-28	60,600	-28	67,200	-29	61,100	-28	59,000
	Average	60,500	Average	64,400	Average	61,700	Average	[illegible],[illegible]	Average	62,200	Average	[illegible],[illegible]

All specimens were laterally supported from buckling except those noted by (1).

(2) Tensile fracture after plastically deforming in shear.
(3) Tensile failure with plastic buckling not included in average.

TABLE CCLXXII

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY- 6Al-2Mo-1V
THICKNESS-(.063) INCH

TEST	HEAT NUMBER 17663				HEAT NUMBER 24765				HEAT NUMBER 24815			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
TEMP °F	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi	SPECIMEN NUMBER	F_{su}, psi
80	D2LA1M-1	96,900	D2TA1M-1	105,000(2)	D5LA1M-1	112,000(2,1)	D5TA1M-1	112,000(2)	D8LA1M-1	114,000(2)	D8TA1M-1	116,000(2)
	-7	107,000	-9	110,000(2)	-7	113,000(2)	-7	114,000(2)	-7	113,000(2)	-7	119,000(2)
	-9	107,000	-11	111,000(2)	-9	114,000(2)	-9	114,000(2)	-8	116,000(2)	-9	117,000(2)
	-11	105,000	-13	110,000(2)	-11	114,000(2)	-11	114,000(2)	-9	114,000	-11	118,000(2)
	-12	107,000	-20	111,000(2)	-12	114,000(2)	-12	114,000(2)	-12	116,000(2,1)	-19	119,000(2)
	-20	104,000(2)	-21	107,000(2)	-20	117,000(2)	-20	113,000(2)	-20	114,000(2)	-23	117,000(2)
	-21	108,000	-23	98,800(2)	Average	114,000	-21	113,000(2)	-21	117,000(2,1)	-24	116,000(2)
	-23	96,400	-24	103,000(2)			-23	113,000(2)	-23	119,000(2)	-26	117,000(2)
	-24	96,700	-26	108,000(2)			-24	116,000(2)	-29	119,000(2)	-29	119,000(2,1)
	-26	101,000	-29	108,000(2)			-29	115,000(2,1)	-30	118,000(2)	-30	124,000(2)
	Average	101,000	Average	107,000			Average	114,000	Average	116,000	Average	116,000
200	D2LE2M-14	87,500	D2TE2M-14	91,600(2)	D5LE2M-14	106,000	D5TE2M-14	106,000(2)	D8LE2M-14	107,000	D8TE2M-14	109,000(2)
	-15	88,600	-15	93,900(2)	-17	108,000	-15	104,000(2)	-15	104,000	-15	108,000(2)
	-17	95,400	-17	100,000(2)	-24	106,000(2)	-17	104,000(2)	-17	104,000	-17	105,000(2)
	Average	90,500	Average	97,000	Average	106,000	Average	105,000	Average	105,000	Average	107,000
400	D2LE3M-10	87,700	D2TE3M-2	88,500	D5LE3M-2	91,300	D5TE3M-2	96,600	D8LE3M-2	95,100	D8TE3M-2	95,800
	-25	85,700	-10	94,200	-10	92,200	-10	97,200	-10	96,300	-10	97,800
	-29	81,700	-25	94,200	-25	90,200	-25	94,200	-25	96,100	-25	95,700
	Average	85,100	Average	92,500	Average	91,300	Average	96,000	Average	95,800	Average	96,600
600	D2LE4M-5	76,600	D2TE4M-8	87,000	D5LE4M-5	84,700	D5TE4M-5	86,600	D8LE4M-5	85,600	D8TE4M-5	90,200
	-8	76,900	-16	86,200	-8	84,600	-8	88,500	-16	84,800	-8	88,600
	-16	77,200	-30	85,600	-29	84,200	-16	85,400	-26	85,600	-16	87,900
	Average	76,900	Average	86,300	Average	84,500	Average	86,800	Average	85,300	Average	88,900
800	D2LE5M-13	82,100	D2TE5M-13	75,800	D5LE5M-13	76,900	D5TE5M-13	81,700	D8LE5M-13	79,000	D8TE5M-13	83,700
	-19	78,900	-18	78,900	-18	75,300	-18	78,000	-18	76,900	-18	74,700
	-20	78,100	-19	79,000	-19	77,800	-19	80,200	-19	75,100	-20	78,200
	Average	87,800	Average	77,900	Average	76,600	Average	80,000	Average	76,700	Average	78,900
1000	D2LE7M-4	80,400	D2TE7M-4	76,400	D5LE7M-22	73,600	D5TE7M-4	69,300	D8LE7M-4	72,200	D8TE7M-4	76,600
	-22	80,300	-22	71,300	-27	72,700	-22	69,600	-22	70,900	-22	74,200
	-27	85,500	-27	77,600	-30	69,900	-27	68,200	-27	70,600	-27	72,300
	Average	84,700	Average	74,900	Average	71,100	Average	69,000	Average	71,200	Average	74,500
1200	D2LE8M-3	53,300	D2TE8M-3	62,800	D5LE8M-3	62,200	D5TE8M-3	63,300	D8LE8M-3	62,700	D8TE8M-3	71,900
	-6	59,500	-6	64,800	-6	62,000	-6	64,700	-6	63,000	-6	69,400
	-28	56,200	-28	61,900	-28	63,700	-28	67,100	-28	63,800	-26	67,700
	Average	56,300	Average	62,800	Average	62,600	Average	65,000	Average	63,200	Average	69,600

All room temperature specimens were supported with doublers except those noted by (1).
(2. Tensile fracture after plastically deforming in shear.

TABLE CCLXXIII

SINGLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY- 6Al-3Mo-1V
THICKNESS- 0.125 INCH

TEST TEMP °F	HEAT NUMBER 3.736				HEAT NUMBER 84743				HEAT NUMBER P76L7			
	LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE		LONGITUDINAL		TRANSVERSE	
	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI
80	D3LE1M-1	112,000(1)	D3TE1M-1	116,000(1)	D6LE1M-8	116,000	D6TE1M-1	114,000(1)	D9LE1M-1	107,000	D9TE1M-7	112,000(1)
	-7	113,000(1)	-9	119,000(1)	-12	116,000	-9	115,000(1)	-7	111,000(1)	-9	117,000(1)
	-9	113,000(1)	-11	121,000(1)	-20	113,000(1)	-11	115,000(1)	-9	109,000	-11	115,000(1)
	-11	114,000(1)	-12	121,000(1)	-21	119,000	-12	117,000(1)	-11	110,000	-12	112,000(1)
	-12	115,000(1)	-21	119,000(1)	-23	114,000(1)	-20	119,000(1)	-12	110,000(1)	-20	113,000(1)
	-20	114,000(1)	-24	121,000(1)	-24	115,000	-21	118,000(1)	-20	108,000	-21	113,000(1)
	-21	114,000(1)	-26	119,000(1)	-26	114,000(1)	-23	115,000(1)	-21	109,000(1)	-23	116,000(1)
	-23	112,000(1)	-29	120,000(1)	-37	113,000	-26	115,000(1)	-23	110,000(1)	-24	120,000(1)
	-26	116,000(1)	-31	119,000(1)	-39	115,000	-29	116,000(1)	-24	112,000(1)	-26	119,000(1)
	-35	112,000(1)	-57	122,000(1)	-41	116,000	-30	116,000(1)	-26	112,000	-30	117,000(1)
	Average	113,200	Average	120,091	Average	115,333	Average	116,100	Average	110,000	Average	115,500
800	D3LE2M-14	103,000	D3TE2M-15	117,000(1)	D6LE2M-14	105,000	D6TE2M-14	111,000(1)	D9LE2M-15	98,200	D9TE2M-14	116,000(1)
	-17	105,000	-30	116,000(1)	-15	107,000	-25	108,000(1)	-17	99,900	-25	116,000(1)
	-29	121,000	-58	115,000(1)	-17	126,000	-27	111,000(1)	-29	102,000	-27	104,000(1)
	Average	109,000	Average	111,000	Average	112,333	Average	110,000	Average	100,033	Average	105,000
400	D3LE3M-2	87,700	D3TE3M-2	99,000(1)	D6LE3M-2	90,000	D6TE3M-2	95,000(1)	D9LE3M-2	86,000	D9TE3M-2	95,200
	-8	90,700	-5	98,000(1)	-10	94,200	-10	101,000(1)	-10	89,600	-10	99,400
	-16	86,200	-16	98,000(1)	-25	91,800	-25	102,000	-25	92,900	-25	98,600
	Average	88,200	Average	98,500	Average	92,000	Average	98,333	Average	89,500	Average	97,733
600	D3LE4M-5	80,300	D3TE4M-8	91,800	D6LE4M-5	82,300	D6TE4M-5	89,700	D9LE4M-5	77,200	D9TE4M-5	89,200
	-10	83,700	-10	91,800	-14	82,600	-8	89,700	-8	79,400	-8	91,400
	-25	83,500	-25	91,800	-29	80,600	-16	93,600	-14	78,100	-16	91,600
	Average	82,500	Average	91,800	Average	81,900	Average	91,000	Average	78,200	Average	90,733
800	D3LE6M-12	72,600	D3TE6M-13	85,300	D6LE6M-13	75,700	D6TE6M-13	82,000	D9LE6M-13	70,700	D9TE6M-13	80,100
	-18	77,900	-19	84,200	-18	72,600	-18	82,300	-18	70,500	-19	79,300
	-22	74,700	-20	82,700	-19	74,200	-19	81,400	-19	70,700	-20	79,600
	Average	75,100	Average	84,300	Average	74,170	Average	81,900	Average	70,633	Average	79,667
900	D3LE7M-13	75,200	D3TE7M-7	78,700	D6LE7M-4	68,500	D6TE7M-4	77,400	D9LE7M-4	63,400	D9TE7M-4	78,100
	-19	69,100	-23	78,500	-27	72,200	-22	75,300	-22	62,900	-22	77,400
	-27	71,300	-27	81,200	-28	69,600	-27	77,100	-27	67,800	-27	77,500
	Average	72,500	Average	79,500	Average	69,400	Average	77,600	Average	64,700	Average	77,667
1000	D3LE8M-3	60,200	D3TE8M-3	67,600	D6LE8M-3	58,000	D6TE8M-3	69,200	D9LE8M-6	56,200	D9TE8M-3	76,400
	-6	60,000	-6	67,800	-6	61,100	-6	67,400	-28	60,200	-6	65,800
	-28	61,400	-28	71,500	-22	64,700	-28	67,600	-30	60,100	-26	64,400
	Average	60,533	Average	69,300	Average	61,333	Average	68,100	Average	58,300	Average	68,200

(1) Tensile fracture after plastically deforming in shear.

All room temperature specimens supported with doublers.

TABLE CCLXXIV

DOUBLE SHEAR STRENGTH OF SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY- [illegible]
THICKNESS- 0.125 INCH

TEST TEMP. °F	HEAT NUMBER [illegible] LONGITUDINAL		HEAT NUMBER [illegible] TRANSVERSE		HEAT NUMBER [illegible] LONGITUDINAL		HEAT NUMBER [illegible] TRANSVERSE		HEAT NUMBER [illegible] LONGITUDINAL		HEAT NUMBER [illegible] TRANSVERSE	
	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI	SPECIMEN NUMBER	F_{SU}, PSI
RT	[illegible]-1	101,000	[illegible]-1	93,600	[illegible]-1	109,000	[illegible]-1	111,000	[illegible]-1	[illegible],000	[illegible]-1	[illegible],000
	-7	103,000	-7	116,000	-7	114,000	-7	[illegible],000	-7	111,000	-7	113,000
	-9	99,100	-9	120,000	-9	117,000	-9	[illegible],000	-9	109,000	-9	117,000
	-11	110,000	-11	114,000	-11	113,000	-11	109,000	-11	109,000	-11	113,000
	-12	[illegible],000	-12	98,300	-12	111,000	-12	[illegible],000	-12	104,000	-12	110,000
	-20	[illegible],000	-20	114,000	-20	[illegible],000	-20	[illegible],000	-20	106,000	-21	123,000
	-21	[illegible],000	-21	95,100	-21	[illegible],000	-21	[illegible],000	-21	113,000	-23	110,000
	-23	108,000	-26	[illegible],000	-23	97,900	-23	109,000	-24	108,000	-24	122,000
	-24	101,000	-29	123,000	-24	[illegible],000	-24	122,000	-26	108,000	-26	102,000
	-26	[illegible],000	-30	[illegible],000	-26	[illegible],000	-26	[illegible],000	-29	110,000		[illegible],000
	Average	[illegible],000	Average	[illegible],000	Average	[illegible],000	Average	[illegible],000	Average	109,000	Average	[illegible],000
200	[illegible]-14	106,000	[illegible]-14	103,000	[illegible]-14	107,000	[illegible]-14	110,000	[illegible]-14	103,000	[illegible]-14	107,000
	-15	105,000	-15	103,000	-15	[illegible],000	-15	112,000	-15	102,000	-15	111,000
	-17	[illegible],000	-17	[illegible],000	-17	[illegible],000	-17	[illegible],000	-17	99,900	-17	[illegible],000
	Average	105,000	Average	103,000	Average	[illegible],000	Average	[illegible],000	Average	102,000	Average	[illegible],000
400	[illegible]-2	96,000	[illegible]-2	105,000	[illegible]-2	85,500	[illegible]-2	96,400	[illegible]-2	83,300	[illegible]-2	97,200
	-10	100,000	-10	101,000	-10	85,400	-10	96,900	-10	87,500	-10	92,600
	-25	95,100	-25	[illegible],000	-25	[illegible],000	-25	96,100	-25	86,900	-25	[illegible],000
	Average	[illegible],000	Average	103,000	Average	[illegible],000	Average	97,100	Average	85,900	Average	[illegible],000
600	[illegible]-5	89,100	[illegible]-5	89,200	[illegible]-5	[illegible],000	[illegible]-5	83,300	[illegible]-5	71,800	[illegible]-5	[illegible],000
	-8	85,900	-8	92,400	-8	[illegible],000	-8	87,500	-8	73,100	-8	88,800
	-16	[illegible],000	-16	[illegible],000	-16	[illegible],000	-16	[illegible],000	-16	[illegible],500	-16	[illegible],000
	Average	[illegible],000	Average	[illegible],000	Average	[illegible],000	Average	[illegible],000	Average	[illegible],500	Average	[illegible],000
800	[illegible]-13	78,200	[illegible]-13	68,200	[illegible]-13	75,600	[illegible]-13	69,600	[illegible]-13	68,300	[illegible]-13	82,700
	-18	76,400	-18	84,000	-18	[illegible],000	-18	72,400	-18	67,000	-18	[illegible],000
	-19	[illegible],000	-19	[illegible],000	-19	[illegible],000	-19	[illegible],000	-19	[illegible],000	-19	[illegible],000
	Average	[illegible],000	Average	[illegible],000	Average	[illegible],000	Average	[illegible],000	Average	[illegible],000	Average	[illegible],000
900	[illegible]-4	[illegible],700	[illegible]-4	65,900	[illegible]-4	[illegible],500	[illegible]-4	67,900	[illegible]-4	64,300	[illegible]-4	[illegible],500
	-22	67,400	-22	[illegible],500	-22	[illegible],000	-22	68,600	-22	66,300	-22	83,200
	-27	[illegible],100	-27	[illegible],400	-27	[illegible],000	-27	[illegible],200	-27	[illegible],000	-27	[illegible],000
	Average	[illegible],200	Average	[illegible],000	Average	[illegible],500	Average	[illegible],300	Average	[illegible],100	Average	[illegible],700
1000	[illegible]-3	65,600	[illegible]-3	53,400	[illegible]-3	68,700	[illegible]-3	64,800	[illegible]-3	57,300	[illegible]-3	71,500
	-6	64,300	-6	59,200	-6	[illegible],700	-6	63,200	-6	63,900	-6	73,900
	-28	67,500	-28	62,600	-28	[illegible],200	-28	[illegible],100	-28	[illegible],000	-28	[illegible],500
	Average	[illegible],800	Average	[illegible],700	Average	[illegible],700	Average	[illegible],800	Average	[illegible],100	Average	[illegible],700

TABLE CCLXXV

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED Ti-13V-11Cr-3Al-17 TITANIUM ALLOY SHEET 0.063 INCH THICK (CRUCIBLE HEAT NO. P7693)

Specimen Number	Test Temp., °F	Tensile Stress PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
DRLD -2	500	152,000	-	-	-	-	-	-	(1)
-16	500	150,000	2.81	-	-	-	8.00	(2)	-
-21	500	148,000	-	-	-	-	-	-	(1)
-25	500	146,000	-	-	-	-	-	-	(1)
-26	500	144,000	-	-	-	-	-	-	(1)
DRLGh-13	600	145,000	2.08	-	-	-	0.71	66.0	(2)
-4	600	144,000	-	-	-	-	-	-	(1)
-8	600	142,000	1.95	-	-	0.02	-	-	[illegible]
-12	600	142,000	1.94	-	-	-	25.0	319	(2)
-9	600	141,000	2.03	-	-	0.28	28.0	252	(3)
-11	600	140,000	1.79	-	-	1.50	90.0	719	(2)
-20	600	131,000	2.26	-	-	0.10	19.0	-	-
-23	600	120,000	1.70	-	0.90	75.0	920	-	-
-15	600	106,000	0.96	0.22	17.0	305	-	-	-
-29	600	98,200	(4)	4.00	44.5	-	-	-	-
-42	600	80,000	(4)	70.0	660	-	-	-	-
-53	600	67,000	(4)	(2)	-	-	-	-	-
-43	600	65,100	0.50	(2)	-	-	-	-	-
-46	600	60,000	0.32	(2)	-	-	-	-	-
DRLG5-27	700	143,000	-	-	-	-	-	-	(1)
-28	700	141,000	-	-	-	-	-	-	(1)
-1	700	140,000	-	-	-	-	-	-	(1)
-17	700	138,000	2.21	-	-	-	0.16	[illegible]	2a.0
-7	700	135,000	1.77	-	-	0.06	1.29	7.20	119
-3	700	130,000	1.31	-	-	-	0.03	0.34	16.9
-32	700	125,000	1.68	-	-	0.92	17.1	66.5	509
-33	700	95,000	0.81	-	0.15	2.00	145	690	-
-37	700	78,000	0.66	3.00	20.0	100	700	-	-
-38	700	65,000	0.50	30.0	160	600	-	-	-
-51	700	59,000	0.49	90.0	-	-	-	-	-
-39	700	51,000	0.37	370	370	-	-	-	-
-49	700	34,100	0.19	150	-	-	-	-	-
-52	700	29,100	0.20	(2)	-	-	-	-	-
DRLG6-5	800	130,000	-	-	-	-	-	-	(1)
-6	800	129,000	(5)	-	-	-	-	-	0.07
-14	800	123,000	1.40	-	-	0.01	0.14	0.46	5.10
-10	800	120,000	1.66	-	-	0.03	0.19	2.56	17.2
-19	800	99,000	0.69	-	0.06	0.21	1.75	6.90	48
-45	800	78,000	0.75	.05	0.19	0.80	7.45	31.3	(3)
-34	800	75,000	.91	-	0.19	0.75	6.05	31.0	529
-36	800	55,000	0.39	1.41	4.25	14.5	82.5	275	-
-40	800	50,200	(4)	0.55	2.15	16.2	150	500	-
-44	800	47,500	0.36	1.15	10.0	56.0	420	-	-
-41	800	34,500	0.26	3.10	14.5	92.0	560	-	-
-47	800	31,200	0.23	17.0	79.0	320	-	-	-
-48	800	17,500	0.15	71.0	375	-	-	-	-
-50	800	10,100	0.07	260	-	-	-	-	-
DRLG7-26	900	115,000	-	-	-	-	-	-	(1)
-31	900	105,000	1.59	-	-	-	0.03	0.26	0.66
-18	900	95,100	0.76	-	-	0.04	0.15	0.37	5.50
-22	900	75,200	0.59	-	0.03	0.08	0.38	1.30	18.1
-35	900	55,100	0.35	0.05	0.14	0.11	1.93	5.70	80.0

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Temperature varied beyond the prescribed limits before rupture occurred.
(4) Initial loading strain was indeterminate.
(5) Unusable strain curve - excessive drift.

TABLE CCLXXVI

TRANSVERSE TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED Ti-Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK (SPECIMEN HEAT NO. F7653)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
12T04-7	500	153,000	-	-	-	-	-	-	(1)
-11	500	152,000	-	-	-	-	-	-	(1)
-12	500	151,000	-	-	-	-	-	-	(1)
-16	500	150,000	-	-	-	-	-	-	(1)
-18	500	146,000	2.15	-	-	0.10	13.8	131	(2)
-6	600	145,000	1.50	-	0.15	7.80	225	(2)	(2)
12T05-9	700	149,000	-	-	-	-	-	-	(1)
-10	700	147,000	-	-	-	-	-	-	(1)
-11	700	146,000	-	-	-	-	-	-	(1)
-5	700	145,000	2.24	-	-	-	0.15	0.94	11.3
-1	700	141,000	1.80	-	-	0.10	1.16	4.90	74.7
-17	700	135,000	1.71	-	0.04	0.22	2.70	12.4	(3)
-22	700	127,000	1.25	0.03	0.22	1.70	14.2	46.8	410
12T06-4	800	137,000	1.77	-	-	-	0.04	0.10	0.84
-2	800	135,000	1.75	-	-	-	0.04	0.16	1.49
-3	800	125,000	1.36	-	-	0.04	0.21	0.64	5.41
-23	800	112,000	1.16	-	-	0.08	0.32	1.30	18.5
-8	800	105,000	0.99	-	0.04	0.13	1.16	5.25	57.9
-20	800	93,000	0.99	-	0.10	0.74	4.55	19.2	234

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Time to rupture was indeterminate.

TABLE CCLXXVII

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. R4765)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
D5LG4-4	600	154,000	-	-	-	-	-	-	(1)
-5	600	152,000	-	-	-	-	-	-	(1)
-11	600	150,000	1.99	-	-	-	7.40	132	(2)
-16	600	148,000	2.06	-	-	0.04	2.80	84.0	(2)
-20	600	143,000	1.98	-	0.15	2.15	100	(2)	-
-12	600	141,000	-	-	-	-	-	-	(3)
-25	600	128,000	1.85	-	1.55	40.5	690	-	-
-32	600	105,000	0.88	-	1.55	165	-	-	-
-21	600	100,000	1.17	1.60	15.0	185	-	-	-
-38	600	92,000	(4)	40.0	310	-	-	-	-
-26	600	85,100	0.86	7.00	180	(2)	-	-	-
-40	600	80,000	0.45	80.0	-	-	-	-	-
-31	600	40,100	0.43	640	-	-	-	-	-
D5LG5-14	700	150,000	3.46	-	-	-	-	-	0.16
-13	700	148,000	1.80	-	-	-	-	0.03	0.90
-9	700	145,000	2.25	-	-	-	0.03	0.19	7.60
-8	700	140,000	1.86	-	-	-	0.16	1.05	15.5
-1	700	135,000	1.75	-	-	0.03	0.47	1.94	30.2
-18	700	122,000	1.19	-	0.06	0.76	7.80	38.5	816
-29	700	109,000	0.94	-	0.42	4.35	50.5	205	-
-33	700	107,000	(4)	0.16	0.88	2.95	18.8	-	-
-19	700	96,100	0.77	-	0.35	9.60	150	580	-
-36	700	80,000	0.54	0.50	3.00	35.5	308	-	-
-39	700	64,900	0.48	17.5	86.0	370	-	-	-
-24	700	51,000	(4)	56.0	275	-	-	-	-
-22	700	35,000	(4)	310	-	-	-	-	-
D5LG6-10	800	135,000	2.00	-	-	-	-	0.06	0.72
-7	800	127,000	1.64	-	-	-	0.09	0.24	2.41
-3	800	125,000	1.79	-	-	-	0.05	0.15	1.39
-2	800	123,000	1.58	-	-	-	0.07	0.22	2.40
-6	800	95,800	1.01	-	0.04	0.24	1.34	5.30	57.3
-15	800	77,500	(4)	0.17	0.54	1.72	13.7	48.5	551
-34	800	64,100	1.20	-	0.06	0.45	3.40	12.2	-
-28	800	49,000	0.30	0.50	3.45	17.9	144	500	-
-17	800	49,200	(4)	-	50.0	130	430	-	-
-30	800	31,900	0.22	5.40	21.9	96.0	-	-	-
-37	800	22,000	0.15	13.0	72.0	510	-	-	-
-27	800	17,300	0.10	58.0	250	-	-	-	-
-23	800	10,000	0.09	250	-	-	-	-	-

(1) Specimens failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Specimens failed at loading hole.
(4) Initial loading strain was indeterminate.

TABLE CCLXXVIII

LONGITUDINAL TENSILE CREEP-RUPTURE DATA FOR SOLUTION TREATED AND AGED 6Al-2Mo-1V TITANIUM ALLOY SHEET, 0.063 INCH THICK (CRUCIBLE HEAT NO. B4815)

Specimen Number	Test Temp., °F	Tensile Stress, PSI	Initial Loading Strain, Percent	Time to Indicated Strains and Rupture, Hours					
				0.05 Percent	0.1 Percent	0.2 Percent	0.5 Percent	1.0 Percent	Rupture
D6L04-27	600	156,000	-	-	-	-	-	-	(1)
-31	600	155,000	3.21	-	-	-	-	0.07	98.2
-11	600	153,000	(3)	-	-	0.03	1.10	88.9	(2)
-9	600	152,000	1.30	-	-	0.05	1.73	83.5	(2)
-30	600	145,000	1.79	-	-	-	40.0	475	-
-33	600	131,000	1.22	-	0.39	47.0	900	-	-
-19	600	120,000	1.28	0.42	9.50	110	-	-	-
-6	600	110,000	0.92	-	1.90	208	-	-	-
-24	600	105,000	0.97	-	2.10	220	-	-	-
-38	600	91,800	(3)	28.0	165	-	-	-	-
-18	600	85,000	0.68	80.0	660	-	-	-	-
-46	600	80,000	0.59	(2)	-	-	-	-	-
-35	600	75,000	(3)	400	-	-	-	-	-
-30	600	67,000	0.47	(2)	-	-	-	-	-
D6L05-21	700	146,000	(3)	-	-	-	-	0.10	0.68
-16	700	144,000	1.82	-	-	-	0.14	0.85	11.1
-13	700	142,000	2.06	-	-	0.11	0.83	3.40	33.5
-4	700	140,000	2.02	-	-	-	0.16	0.78	9.80
-1	700	135,000	1.19	-	-	0.19	1.70	7.70	76.9
-2	700	130,000	1.49	-	-	0.34	3.80	15.5	81.6
-8	700	125,000	1.12	0.20	1.05	4.10	18.8	60.0	107+
-26	700	92,200	0.69	-	0.28	4.9[illegible]	10[illegible]	635	-
-29	700	75,000	0.52	11.5	38.0	258	(2)	-	-
-34	700	70,100	0.50	0.66	5.25	35.5	-	-	-
-37	700	62,500	0.46	31.0	165	670	-	-	-
-36	700	55,100	0.36	36.0	160	-	-	-	-
-40	700	47,900	(3)	11.5	130	-	-	-	-
-43	700	42,100	(3)	14.5	220	-	-	-	-
-15	700	35,000	0.28	55.0	350	-	-	-	-
-41	700	28,000	0.19	920	-	-	-	-	-
D6L06-17	800	137,000	(3)	-	-	-	-	-	0.07
-12	800	130,000	1.71	-	-	-	0.07	0.17	1.20
-7	800	106,000	0.98	-	0.05	0.17	0.91	2.80	29.9
-3	800	100,000	1.06	-	0.07	0.19	1.00	3.08	40.8
-14	800	75,000	0.56	0.20	0.62	2.60	13.5	42.5	595
-42	800	67,000	0.69	0.13	0.86	2.30	15.3	50.0	-
-45	800	48,300	0.75	0.92	4.60	28.3	186	60	-
-28	800	39,000	0.22	2.60	14.0	68.0	338	-	-
-44	800	29,000	0.20	4.08	20.0	100	-	-	-
-32	800	27,600	0.16	8.25	34.5	139	-	-	-
-42	800	12,500	(3)	63.0	305	(2)	-	-	-
-39	800	8,080	0.04	510	-	-	-	-	-

(1) Specimen failed during application of load.
(2) Indicated strain or rupture did not occur within 500 hours - test discontinued.
(3) Initial loading strain was indeterminate.

TABLE CCLXXIX

Ti–4.0 Al–3 Mo–1 V ALLOY SHEET (Heat No. D7653)[1] – Compressive Creep Properties[2] at 600° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.05%	0.1%	0.2%	0.5%	1.0%
D2LH4 -4	130.0	0.74	1.2	13.0	>500.0		
-8	150.0	0.73	1.3	8.8	>500.0		
-10	165.0	2.00	45.0	>500.0			
-18	180.0	1.34	10.0	149.0	>500.0		
-20	190.0	1.66	1.8	34.2	–[4]		
-73	200.0	5.37	0.6	6.9	–[4]		
Spare	100.0	0.63	–[5]				

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross sectional area.
[4] Evaluation was discontinued because desired datum points could not be reached within reasonable times.
[5] Equipment failure.

TABLE CCLXXX

Ti–4.0 Al–3 Mo–1 V ALLOY SHEET (Heat No. P7653)[1] – Compressive Creep Properties[2] at 700° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr				
			0.5%	0.1%	0.3%	0.5%	1.0%
D2LH3 -3	60.0	0.42	55.3	211.0	>500.0		
-12	80.0	0.60	0.40	6.5	–[4]		
-16	80.0	0.53	0.30	1.3	6.6	315.0	>500.0
-66	110.0	0.55	5.1	21.0	97.0	–[4]	
-69	120.0	1.17	0.70	1.7	11.7	300.0	–[4]
-72	130.0	0.98	10.0	24.2	100.0	–[4]	
-77	140.0	0.63	0.10	0.4	1.3	5.5	29.6
-80	150.0	1.02	0.46	2.5	43.0	–[4]	
-81	50.0	0.32	130.0	–[4]			
-84	70.0	0.46	38.0	140.0	–[4]		
-86	90.0	0.62	1.5	5.0	54.3	–[4]	
-87	100.0	0.84	0.08	1.0	11.3	–[4]	
-90	125.0	1.05	0.6	3.3	25.5	–[4]	
-91	140.0	1.65	0.06	0.3	1.6	8.4	36.5
-94	155.0	2.5	0.01	0.02	0.05	0.67	7.4
-96	90.0	0.58	0.8	4.0	19.8	–[4]	
-100	145.0	1.98	0.02	0.22	6.3	–[4]	
-101	165.0	1.58	0.07	34.5	–[4]		
-105	150.0	1.41	1.0	12.7	115.0	–[4]	
-107	100.0	0.8	0.09	0.65	13.0	–[4]	
Spare	120.0	1.19	0.45	2.2	9.0	62.5	305.0
Spare	130.0	2.7	0.02	0.06	0.4	6.8	45.3
Spare	70.0	0.45	1.3	8.3	15.6	–[4]	

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 3 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area
[4] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CCLXXXI

Ti–4.0 Al–3 Mo–1 V ALLOY SHEET (Heat No. P7653)[1]—Compressive Creep Properties[2] at 800° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr 0.05%	0.1%	0.2%	0.5%	1.0%
D2LH6 -5	50.0	0 04	98.5	422.0	>500.0		
-7	20.0	0 12	11 0	133.0	490.0	>500.0	
-9	70.0	0 30	1 7	6 2	29.7	198.0	>500.0
-15	90 0	0 06	4.6	18 3	116.8	>500.0	
-19	100 0	0 58	0.04	0.27	1.0	7.5	31.8
-67	120 0	0 39	0 04	0.20	7 4	–[4]	
-70	110.0	1.02	0 08	0.20	0.5	2.1	8.5
-74	105.0	0 82	–	–	0 6	3.9	14.3
-75	130.0	0.81	0.05	0.20	1.4	20.4	–[4]
-78	60.0	0.5	2.25	7.0	43.0	174.0	–[4]
-79	80.0	0.54	0.1	0.3	1.5	9.1	46.3
-83	100.0	1.48	0.1	1.0	3.2	18.6	–[4]
-85	140 0	1.15	0.07	0.23	1.4	77.0	–[4]
-88	115.0	1.02	0.03	0.12	0.66	5.5	–[4]
-92	95.0	0.75	0.06	0.25	1.2	8.1	24.8
-93	85.0	0.93	6.9	24.0	–[4]		
-95	75.0	0.25	1.5	6.8	20.8	117.0	–[4]
-99	135.0	1.45	0.04	0.16	1.2	99.5	–[4]
-102	125.0	1.14	0.03	0.08	2.5	–[4]	
-103	150.0	1.5	0.95	38.4	–[4]		
-106	40.0	0.5	0.23	1.1	4.0	25.4	93.2
-108	115.0	0.97	0.04	0.09	0.31	2.5	–[4]
Spare	30.0	0.18	3.5	11.2	92.8	–[4]	
Spare	10.0	0.07	26.7	63.7	250.6	–[4]	

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CCLXXXII

Ti–4.0 Al–3 Mo–1 V ALLOY SHEET (Heat No. P7653)[1]—Compressive Creep Properties[2] at 900° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Compressive Stress[3] 1000 psi	Loading Strain %	Time to Strain, hr 0.05%	0.1%	0.2%	0.5%	1.0%
D2LH7-2	20.0	0.12	2.3	7.8	28.3	132.0	343 0
-6	10.0	C.04	70.0	>500.0			
-13	30.0	0.19	16.5	>500.0			
-68	60.0	0.31	0.5	1.3	3.3	14.5	–[4]
-71	40.0	0.27	0 3	0.8	2.7	17.8	–[4]
-89	35.0	0.26	0.7	1.6	4.3	15.0	41.4
-104	35.0	0.18	0.37	1.7	6.1	–[4]	
-110	25.0	0.16	1.0	4.5	15.5	69.0	–[4]

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Compressive stress is equal to the load divided by the cross-sectional area.
[4] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CCLXXXIII

Ti–4.0 Al–3 Mo–1 V ALLOY SHEET (Heat No. P7653)[1]—Bearing Creep Properties[2] at 600° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet and have e/d = 2

Specimen No	Bearing Stress[3] 1000 psi	Loading Deformation %	Time to Deformation[4], hr				Time to Rupture hr
			0.5%	1.0%	2.0%	4.0%	
D2LJ4 -10	200 0	6.25	4.0	142.0	–[6]	–	–[5]
-18	210 0	7.9	0.25	19.4	>230.0		–[5]
-68	220 0						00.0
-35	215 0	9 3	0 03	0.06	95 0	–[6]	–[5]
-52	217.5						00 0
-36	199.0	7.7	0.04	20.0	–[6]		–[5]
-72	180 0	5.8	0.02	20.8	–[6]		–[5]
-85	160 0	3.4	0.02	0.3	22.0	–[6]	–[5]
-100	160 0	3.4	>283.0	–[6]			–[5]
Spare	216.0	7.94	C 3	44.2	>500 0		>500.0

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter.
[4] Percent of bearing-hole diameter.
[5] Rupture data were not obtained.
[6] Evaluation was discontinued because datum points could not be reached within reasonable times.

TABLE CCLXXXIV

Ti–4.0 Al–3 Mo–1 V ALLOY SHEET (Heat No. P7653)[1]—Bearing Creep Properties[2] at 700° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet and have e/d = 2

Specimen No.	Bearing Stress[3] 1000 psi	Loading Deformation[4] %	Time to Deformation[4], hr 0.5%	1.0%	2.0%	4.0%	Time to Rupture hr
D2LJ5 -11	185.0	6.1	0.06	0.7	10.2	61.8	–[5]
-12	170.0	4.1	1.0	16.3	66.0	283.0	>500.0
-22	192.5	6.6	0.07	0.6	7.4	56.4	–[5]
-23	160.0						00.0
-27	150.0	3.0	3.0	29.7	278.0	>500.0	>500.0
-28	190.0	9.7	0.03	0.18	2.0	18.3	–[5]
-29	180.0	6.1	0.06	0.83	15.9	89.5	–[5]
-31	160.0	3.7	5.4	>258.0	–[6]	–	–[5]
-33	197.5	10.4	0.03	0.15	1.5	25.1	–[5]
-34	215.0						0.02
-42	140.0	2.8	94.0	–[6]	–	–	>500.0
-43	205.0						>500.0
-45	130.0	2.0	56.0	160.8	500.0	–	>500.0
-59	120.0	2.3	46.0	–[6]	–	–	–[5]
-61	205.0	9.0	0.02	0.1	0.8	6.1	6.1
-71	110.0	1.73	77.5	–[6]			–[5]
-74	100.0	1.77	265.0	–[6]			–[5]
-75	140.0	2.72	13.6	104.6	–[6]		–[5]
-79	210.0						00.0
-84	150.0	2.78	14.0	140.8	–[6]		–[5]
-86	170.0	3.75	6.0	46.2	187.1		–[5]
-106	207.5						0.02
Spare	200.0	5.0	0.02	0.10	14.7	117.6	–[5]
Spare	195.0	4.1	0.24	4.7	45.7	–[6]	–[5]
Spare	206.8						>500.0

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter.
[4] Percent of bearing-hole diameter.
[5] Rupture data were not obtained.
[6] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CCLXXXV

Ti—4.0 Al—3 Mo—1 V ALLOY SHEET (Heat No. P7653)[1]—Bearing Creep Properties[2] at 800° F

All specimens were taken in the longitudinal direction from 0.063 in. sheet and have e/d = 2

Specimen No.	Bearing Stress[3] 1000 psi	Loading Deformation[4] %	Time to Deformation[4], hr 0.5%	1.0%	2.0%	4.0%	Time to Rupture hr
D3LJ6 -9	160.0						00.0
-15	120.0	5.7	C.5	1.8	11.7	11.2	>500.0
-19	140.0	2.25	0.7	2.1	17.0	69.0	>500.0
-20	70.0	1.16	19.5	126.0	—[5]	—	—[5]
-21	145.0	2.9	0.8	3.0	14.0	43.0	—[5]
-24	100.0	1.37	3.1	20.0	126.5	>500.0	>500.0
-30	180.0	4.95	0.01	0.02	0.3	4.2	—[5]
-32	155.0	4.09	0.06	0.3	1.6	9.4	>500.0
-39	90.0	2.48	>180.0	—[5]	—	—	—[5]
-46	150.0	2.4	0.2	3.3	20.2	55.0	>500.0
-53	130.0	2.76	2.2	12.5	34.5	157.0	—[5]
-60	80.0	0.91	20.7	—[6]	—	—	—[5]
-63	90.5	1.7	77.0	193.0	—[5]	—	—[5]
-67	60.0	0.67	44.1	—[5]	—	—	—[5]
-69	155.0	4.6	0.01	0.03	0.22	1.5	—[5]
-70	110.0	1.67	9.3	28.3	93.0	283.3	>500.0
-73	125.0	2.38	0.48	2.6	22.4	83.4	—[5]
-80	180.0						>500.0
-83	90.0	1.45	8.6	97.4	—[5]		
-87	70.0	1.22	>300.0				
-88	100.0	1.80	19.8	65.4	—[5]		—[5]
-101	200.0						13.0
-104	137.5						3.0
-105	195.0						25.8
Spare	205.0						00.0
-106	175.0	9.5	0.03	0.14	0.80	3.2	—[5]
Spare	190.0						105.2

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 1/2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Bearing stress is equal to the load divided by the bearing area, which is the product of the thickness of the specimen and the bearing-hole diameter.
[4] Percent of bearing-hole diameter.
[5] Rupture data were not obtained.
[6] Evaluation was discontinued because desired datum points could not be reached within reasonable times.

TABLE CCLXXXVI

Ti–4.0 Al–3 Mo–1 V ALLOY SHEET (Heat No. P 7653)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
D2LK4M -4	80.0	00.0	600
-7	75.0	> 500.0	600
-8	77 5	00.0	600
-13	76.0	> 500.0	600
-15	77.5	00.0	600
-17	76 8	00.0	600
D2LK5M -3	71.5	00.0	700
-5	75 0	00.0	700
-11	70 0	17 9	700
-12	65.0	> 500.0	700
-14	67.5	380.8	700
-18	73.5	00.0	700
-20	69 0	00.0	700
D2LK6M -1	65.0	00 7	800
-2	60 0	8 7	800
-6	50 0	280 1	800
-10	55 0	43.0	800
-16	47.5	184.6	800
-19	57 5	51.6	800
-21	60.0	00.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits.

Ti–4.0 Al–3 Mo–1 V ALLOY SHEET (Heat No. R 4765)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
D5LK4 -7	82.5	> 500.0	600
-8	85.0	> 500.0	600
-13	76.1	00.0	600
-15	86.5	00.0	600
-17	79.6	> 500.0	600
D5LK5 -3	80.0	00.0	700
-5	82.C	00.0	700
-12	76.1	> 500.0	700
-14	77.9	00.0	700
-18	72.0	280.7	700
-19	74.9	88.5	700
D5LK6-1	50.1	179.3	800
-6	60.1	22.4	800
-9	70.1	00.0	800
-10	70.0	0 1	800
-16	Tensile failure on loading		800
-20	64.9	00.0	800
-4	63.0	00.0	800
-11	45.0	> 500.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits.

TABLE CCLXXXVII

Ti--4.0 Al--3 Mo--1 V ALLOY SHEET (Heat No. P 4815)[1]—Single-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.063 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
D8LK4M-4	86.0	15.0	600
-7	86.1	4.8	600
-8	89.1	00.0	600
-15	80.0	>500.0	600
-17	83.0	>500.0	600
D8LK5M-3	55.0	>500.0	700
-5	75.0	24.0	700
-11	70.0	00.0	700
-12	70.1	488.6	700
-14	72.3	322.1	700
-18	77.0	00.0	700
-19	79.6	00.0	700
D8LK6M-1	60.1	18.1	800
-2	41.0	424.8	800
-6	67.0	5.2	800
-9	75.0	00.0	800
-10	43.0	>500.0	800
-16	73.0	0.7	800
-20	53.1	56.3	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by the shear area, which is the product of the thickness of the specimen and the axial distance between the roots of the slits

TABLE CCLXXXVIII

Ti-4.0 Al-3 Mo-1 V ALLOY SHEET (Heat No. R6736)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
D3LK4N -24	93.0	00.0	600
-27	85.2	00.0	600
-28	78.1	>500.0	600
-33	83.1	00.0	600
-35	69.1	00.0	600
-37	91.1	00.0	600
D3LK5N -25	80.0	00.0	700
-31	74.6	18.1	700
-32	70.0	216.6	700
-34	72.6	97.4	700
-35	76.6	0.1	700
Spare	67.5	78.7	700
D3LK6N -21	80.0	00.0	800
-22	69.6	00.3	800
-26	50.0	268.3	800
-29	40.0	>300.0	800
-30	60.1	27.4	800
-36	64.9	2.8	800
D3LK5N -23	80.0	00.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min.
[3] Shear stress is equal to the load divided by two times the cross-sectional area

Ti-4.0 Al-3 Mo-1 V ALLOY SHEET (Heat No. R 6741)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
D6LK4N -24	78.2	>500.0	600
-27	81.0	00.0	600
-28	78.1	00.0	600
-33	80.1	00.0	600
-35	76.8	00.0	600
-37	73.6	>500.0	600
D6LK5N -23	74.1	9.7	700
-25	70.1	214.3	700
-31	72.1	1.8	700
-32	68.1	50.4	700
-34	66.1	259.0	700
-36	75.4	0.1	700
Spare	64.0	>500.0	700
D6LK6N -21	65.2	2.4	800
-22	45.0	>500.0	800
-26	56.0	53.4	800
-29	60.9	0.5	800
-30	60.0	37.7	800
-36	50.0	104.9	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min
[3] Shear stress is equal to the load divided by two times the cross-sectional area.

TABLE CCLXXXIX

Ti-4.0 Al-3 Mo-1 V ALLOY SHEET (Heat No. P7647)[1]—Double-Shear Stress-Rupture Properties[2]

All specimens were taken in the longitudinal direction from 0.125 in. sheet

Specimen No.	Shear Stress[3] 1000 psi	Time to Rupture hr	Temperature °F
D9LK4N -4	80.0	00.0	600
-7	75.0	>500.0	600
-8	77.5	00.0	600
-13	72 5	>500 0	600
-15	73 5	0.6	600
-17	76 0	>500.0	600
D9LK5N -3	75.0	00 0	700
-5	70 0	80 7	700
-11	65 0	>500 0	700
-12	72 5	138 1	700
-14	74 0	16 3	700
-18	72 5	123 7	700
D9LK6N -1	65 0	0 6	800
-2	60 0	170 4	800
-6	60 0	30 4	800
-9	55 0	102.7	800
-16	62 5	8 0	800
-10	47 5	>500.0	800
-19	46 8	>500.0	800

[1] Solution treated and aged.
[2] Specimens were heated to test temperature in approximately 2 hr, soaked at temperature 1/2 hr, then loaded within 2 min
[3] Shear stress is equal to the load divided by two times the cross-sectional area.

TABLE CCXC

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY, 0.020 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = ∞ (CRUCIBLE HEAT NOS. R4815, R4810, AND R4805)(2)

ROOM TEMPERATURE			400°F			500°F			600°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D1K-19	200,000	99	D1K-16	180,000	3	D1K-55	150,000	12	D1K-39	150,000	15	D1K-50	150,000	1
D1A-7	185,000	514	D1K-4	170,000	65	D1K-29	147,000	138	D1K-16	135,000	213	D1K-38	135,000	13
D1K-11	170,000	1,175	D1L-50 Average	170,000	222	D1K-29	140,000	435	D1K-37	120,000	396	D1K-46	125,000	133
D1 -14	150,000	1,166	D1K-21	152,000	680	D1J-54	130,000	348	D1G-13	110,000	224	D1L-14	113,500	397
D1A-33	140,000	4,609	D1K-34	140,000	913	D1K-9	110,000	2,480	D1K-30	100,000	2,140	D1K-4	90,000	2,395
D1K-52	120,000	11,876	D1K-4	110,000	6,547	D1G-1	90,000	7,123	D1L-4	80,000	7,972	D1K-36	75,000	6,731
D1G-60	100,000	15,634	D1C-42	80,000	12,090	D1K-44	75,000	11,000	D1P-42	60,000	18,800	D1K-10	50,000	24,000
			D1A-26	80,000	11,000	D1K-29	75,000	28,000	D1A-47	60,000	58,000	D1K-39	50,000	175,000
D1L-40	95,000	13,000	D1L-46	80,000	46,000	D1L-10	75,000	36,000	D1K-24	60,000	12,000	D1A-2	50,000	210,000
			Average		37,000	Average		65,000	Average		47,300	Average		150,000
D1K-35	85,000	45,000												
			D1K-25	70,000	77,000	D1K-9	65,000	12,000	D1D-32	50,000	78,000	D1K-12	45,000	345,000
D1K-8	80,000	35,000	D1K-5	70,000	180,000	D1L-49	65,000	18,000	D1K-45	50,000	310,000	D1K-22	45,000	379,000
D1J-19	80,000	47,000	Average		128,000	Average		18,000	D1G-33	50,000	1,565,000	D1K-22	45,000	661,000
D1L-15	80,000	170,000							Average		824,000	Average		608,000
Average		72,500	D1A-9	60,000	60,000	D1P-16	55,000	354,000						
						D1K-25	55,000	2,529,000	D1B-6	40,000	277,000	D1P-20	42,500	755,000
D1L-56	77,500	466,000	D1K-15	60,000	70,000	Average		1,357,000	D1A-57	40,000	352,000	D1P-17	42,500	2,551,000
D1P-49	77,500	8,731,000(1)	D1P-51	60,000	80,000				D1F-27	40,000	1,181,000	Average		1,153,000
D1J-10	77,500	10,000,000(1)	Average		85,000	D1K-19	50,000	1,041,000	Average		804,000			
						D1G-38	50,000	1,841,000				D1P-21	40,000	966,000
D1K-28	75,000	397,000	D1K-48	55,000	160,000	D1K-38	50,000	2,731,000	D1P-10	37,500	9,479,000	D1P-30	40,000	3,958,000
D1K-31	75,000	5,811,000	D1P-47	55,000	188,000	Average		1,762,000	D1F-38	37,500	10,000,000(1)	D1K-30	40,000	10,000,000(1)
D1J-13	75,000	10,000,000	D1K-8	55,000	1,000,000							D1P-33	40,000	10,000,000(1)
Average		6,476,000	Average		1,781,000	D1D-3	45,000	1,144,000	D1B-15	35,000	10,000,000(1)			
									D1K-23	35,000	10,000,000(2)	D1P-19	35,000	10,000,000(1)
D1K-39	60,000	17,000,000(1)	D1P-45	52,500	791,000	D1A-10	35,000	212,000	D1F-18	35,000	10,000,000(1)			
D1L-42	60,000	10,000,000(1)				D1L-44	35,000	8,029,000				D1B-17	30,000	10,000,000(1)
D1L-54	60,000	12,700,000(1)	D1B-36	50,000	2,303,000	D1F-55	35,000	10,000,000(1)	D1B-12	30,000	5,671,000	D1P-26	30,000	10,000,000(1)
			D1F-26	50,000	10,000,000(1)				D1B-13	30,000	10,000,000(1)			
			D1P-31	50,000	10,000,000(1)	D1P-3	30,000	8,565,000	D1F-40	30,000	10,000,000(1)			
						D1C-4	30,000	15,000,000(1)						
						D1J-44	30,000	10,000,000(1)						

(1) Test discontinued, no failure.
(2) In specimen numbers, third digit A through D, and L through R denotes Heat No. R4815; E through K denotes Heat No. R4810; P denotes Heat No. R4805.

Stress Ratio = Min. Alternating Stress / Max. Stress

TABLE CCXCI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY, 0.020 INCH THICK.
STRESS CONCENTRATION = 1.0, STRESS RATIO = 1.0 (CRUCIBLE HEAT NOS. RA615 AND RA610)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D1L-2	160,000	13	D1L-13	180,000	191	D1L-16	160,000	17	D1F-12	115,000	15	D1E-14	110,000	22
D1L-59	160,000	21	D1M-20	170,000	1,547	D1M-16	160,000	16	D1M-31	112,000	109	D1K-28	105,000	32
D1B-4	160,000	12	D1J-12	163,000	3,434	D1J-53	150,000	24	D1J-38	110,000	197	D1J-7	105,000	1,625
Average		22				D1M-41	150,000	74				Average		627
D1B-2	150,000	1,041	D1L-47	160,000	190	Average		84	D1M-41	130,000	130	D1M-38	103,000	2,221
D1B-19	150,000	1,814												
D1C-31	150,000	2,747	D1J-57	155,000	3,320	D1L-37	155,000	490	M1K-4	130,000	3,018	D1M-17	130,000	2,683
Average		1,895												
D1A-44	120,000	57,000	D1J-55	150,000	5,282	D1M-33	150,000	900	D1J-8	120,000	9,147	D1K-11	100,000	12,300
D1F-14	120,000	119,000												
D1E-55	120,000	200,000	D1E-23	120,000	25,000	D1C-3	120,000	12,000	D1A-36	100,000	11,000	D1M-20	90,000	12,000
Average		117,000	D1G-24	120,000	28,000	D1E-24	120,000	12,000	D1G-46	100,000	11,000	D1C-55	90,000	13,000
			D1M-5	120,000	61,000	D1L-59	120,000	25,000	D1K-52	100,000	12,000	D1L-43	90,000	21,000
D1A-51	118,000	26,000	Average		38,000	Average		16,000	Average		12,000	Average		16,000
D1F-25	118,000	31,000												
D1C-24	118,000	62,000	M1G-59	115,000	21,000	D1G-54	110,000	20,000	D1K-22	95,000	19,000	D1E-37	80,000	38,000
Average		36,000	D1L-29	115,000	21,000	D1C-45	110,000	28,000	D1L-37	95,000	20,000	D1A-21	80,000	74,000
			D1A-35	115,000	43,000	D1F-38	110,000	20,000	D1J-16	95,000	16,000	D1B-3	80,000	250,000
D1F-11	110,000	170,000	Average		28,000	Average		22,000	Average		25,000	Average		154,000
D1F-50	110,000	2,300,000												
Average		1,735,000	D1G-31	110,000	23,000	D1K-25	100,000	34,000	D1G-42	90,000	95,000	D1C-41	75,000	45,000
			D1M-31	110,000	23,000	D1F-16	100,000	49,000	D1J-32	90,000	175,000	D1G-43	75,000	61,000
D1B-47	100,000	3,626,000	Average		70,000	D1G-53	100,000	5,137,000	D1F-54	90,000	212,000	D1B-28	75,000	57,000
D1A-37	100,000	3,024,000 (1)				Average		5,137,000	Average		161,000	Average		61,000
D1M-55	100,000	10,000,000 (1)	D1B-3	110,000	78,000									
D1L-3	100,000	10,000,000 (1)	D1M-51	110,000	8,561,000 (1)	D1M-41	95,000	36,000	D1C-18	85,000	16,000	D1L-56	70,000	1,611,000
			D1M-56	110,000	10,000,000 (1)	D1A-38	95,000	46,000	D1C-7	85,000	1,022,000	D1C-47	70,000	2,357,000
D1B-39	90,000	10,000,000 (1)				Average		42,000	D1D-1	85,000	7,456,000	D1D-53	70,000	6,242,000
			D1K-10	106,000	35,000				Average		2,850,000	Average		3,403,000
D1C-43	80,000	10,000,000 (1)				D1L-58	90,000	40,000						
D1B-29	80,000	10,000,000 (1)	D1G-11	95,000	10,000,000 (1)				D1B-29	80,000	9,392,000	D1G-15	60,000	8,350,000
						D1F-60	85,000	9,021,000	D1F-19	80,000	10,000,000 (1)	D1C-53	60,000	10,000,000 (1)
D1B-53	75,000	10,000,000 (1)	D1C-36	93,000	10,000,000 (1)	D1A-31	35,000	10,000,000 (1)	D1F-50	80,000	10,000,000 (1)	D1J-21	60,000	10,000,000 (1)
						D1C-9	85,000	10,000,000 (1)						
D1A-40	70,000	10,000,000 (1)	D1C-49	90,000	5,201,000 (1)									
			D1A-16	70,000	10,000,000 (1)									
			D1L-19	70,000	10,000,000 (1)									

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through D, and L through M denotes Heat No. RA615; E through K denotes Heat No. RA610.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCXCII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-3Mo-2V TITANIUM ALLOY, 0.050 INCH THICK.
STRESS CONCENTRATION = 1.0, STRESS RATIO = 0.1 (CRUCIBLE HEAT NOS. A1815 AND A1810)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D11-57	208,000	10	DLJ-59	177,000	69	DJD-7	170,000	7	DLJ-31	160,000	3	BLJ-3	136,000	15
DLJ-9	196,000	5,108	DLB-47	177,000	344									
Average		2,554	Average		172	DLC-40	165,000	3	DLB-85	155,000	1,299	DLJ-86	130,000	113
						DLB-18	165,000	5						
DLF-4	206,000	8,004				Average		4	DLB-81	150,000	707	BLB-2	125,000	109
DLB-34	201,000	2,598	BLJ-17	175,000	540									
			BLJ-58	171,000	605	DLJ-40	160,000	10,513	BLB-89	150,000	5,680	BLF-6	122,000	21,566
DLE-35	190,000	11,800												
			DLL-35	170,000	10,100	DLJ-11	140,000	12,000	DLE-44	136,000	12	BLB-39	120,000	8,000
DLF-35	170,000	14,430												
DLD-34	170,000	35,000	DLB-56	165,000	9,536	DLB-5	150,000	7,755	DLL-85	130,000	3,903	DLB-1	110,000	19,070
DLF-39	170,000	17,000												
DLD-37	170,000	51,000	DLD-44	150,000	10,000	DLE-5	130,000	19,000	BLB-17	120,000	169,000	BLB-84	90,000	17,000
Average		31,000	DLE-43	150,000	25,000	DLB-48	150,000	21,000				BLB-88	90,000	58,000
			DLB-17	150,000		DLB-87	130,000		DLJ-36	110,000	37,000	DLB-57	90,000	
			Average			Average			DLL-54	110,000		Average		
									DLD-87	110,000				
DLC-15	145,000	68,000							Average					
DLF-45	145,000	125,000	DLB-27	147,000	24,000	DLJ-48	140,000	86,000				BLB-56	85,000	67,000
DLD-46	145,000		DLB-28	147,000	83,000	DLD-89	140,000	31,000				DLB-50	85,000	90,000
Average			DLB-13	147,000		DLB-11	140,000	10,000,000(1)	DLL-38	105,000	76,000	DLA-6	85,000	
			Average						DLJ-46	105,000		Average		
									Average					
DLB-40	180,000	9,203,000				DLA-43	130,000	38,000						
			DLB-26	145,000	29,000	DLB-47	130,000	295,000				DLJ-58	75,000	66,000
DLA-14	150,000	43,000	DLA-1	145,000	68,000	DLB-25	130,000		DLB-9	100,000	40,000	DLB-8	75,000	211,000
DLF-1	150,000	10,000,000(1)	DLJ-21	145,000	10,000,000(1)	Average			DLB-33	100,000		DLB-19	75,000	
									DLL-66	100,000		Average		
DLC-10	140,000	60,000	DLA-40	143,000	40,000	DLB-88	126,000	35,000	Average					
DLB-30	140,000	10,000,000(1)	DLB-44	143,000	45,000	DLD-18	126,000	43,000				DLB-30	70,000	2,200,000
			DLJ-42	143,000	10,000,000(1)	DLB-32	126,000		DLJ-35	95,000	2,243,063	DLB-48	70,000	4,525,000
DLB-10	130,000	376,000				Average			DLB-60	95,000	5,235,000	DLB-14	70,000	
DLC-60	130,000	10,000,000(1)	DLA-26	140,000	35,000				DLB-36	95,000	10,000,000(1)	Average		
			DLF-1	140,000	38,000	DLB-13	120,000	4,401,000						
DLB-32	120,000	10,000,000(1)	DLB-18	140,000	49,000	DLB-7	120,000	,000,000(1)	DLF-3	90,000	3,285,000	DLJ-80	60,000	3,185,000
DLA-12	120,000	10,000,000(1)	DLF-2	140,000	10,000,000(1)	DLD-33	120,000	10,000,000(1)	DLB-37	90,000	10,000,000(1)	DLJ-17	60,000	10,046,000
DLF-4	120,000	10,000,000(1)							DLF-15	90,000	10,000,000(1)	DLJ-27	60,000	10,000,000(1)
			DLB-41	136,000	10,000,000(1)									
DLF-43	110,000	10,000,000(1)												
			DLC-58	130,000	3,473,000									
DLB-42	100,000	10,000,000(1)	DLB-49	120,000	6,455,000									
DLB-36	100,000	10,000,000(1)	DLA-4	120,000	10,000,000(1)									

(1) Test discontinued, no failure.
(2) In specimen numbers, third cipher A through D, and L through N denotes Heat No. A1815; J through K denotes Heat No. A1810.

Stress Ratio = Min. Alternating Stress / Mean Stress

TABLE CCXCIII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-1Mo-1V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = ∞ (CRUCIBLE HEAT NOS. F7653 AND RA765) (2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
DEB-16	190,000	87	DEF-43	160,000	10	DEB-7	150,000	19	DEB-45	140,000	8	DEA-54	130,000	25
DEA-58	175,000	203	DEC-48	155,000	44	DEB-19	140,000	98	DEJ-21	130,000	11	DEB-55	115,000	7
DEL-48	160,000	833	DEA-43	150,000	179	DEC-5	130,000	136	DEC-33	120,000	147	DEB-56	110,000	1,176
DEF-16	150,000	1,043	DEB-43	140,000	961	DEL-11	115,000	1,143	DEL-14	115,000	35	DEB-58	100,000	1,440
DEC-40	140,000	2,084	DEB-15	130,000	2,754	DEB-41	100,000	3,144	DEC-7 Average	115,000	85	DEB-52	80,000	2,898
DEB-6	95,000	15,982	DEJ-31	90,000	9,582	DEB-24	80,000	13,483	DEA-47	100,000	1,519	DEB-13	60,000	15,435
DEA-48	80,000	39,000	DEF-51	70,000	41,000	DEL-26	70,000	23,000	DEB-19	80,500	4,773	DEB-1	45,000	23,000
DEC-42	80,000	44,000	DEC-9	70,000	55,000	DEC-36	70,000	29,118				DEB-12	45,000	49,000
DEB-4 Average	80,000	53,000	Average		57,000	DEB-38 Average	70,000	33,000	DEB-14	60,000	8,000	DEB-38 Average	45,000	146,000
DEF-53	70,000	47,000	DEL-50	60,000	42,000				DEA-57	50,000	96,000			73,000
DEB-17	70,000	82,000	DEA-34	60,000	157,000	DEL-49	60,000	59,000				DEL-15	60,000	146,000
DEB-35 Average	70,000	171,000	Average		100,000				DEB-15	60,000	78,000	DEB-36	60,000	148,000
		125,000	DEL-47	55,000	112,000	DEB-12	55,000	54,000	DEB-29	60,000	82,000	DEB-1 Average	60,000	1,438,000
DEF-45	60,000	211,000	DEB-48 Average	55,000	146,000	DEB-3	50,000	140,000	DEB-27 Average	60,000	80,000			657,000
DEJ-44	60,000	253,000			180,000	DEB-40 Average	50,000	1,047,000			97,000	DEB-37	30,000	720,000
DEB-49	60,000	(9,000,000(1)	DEB-25	50,000	1,883,000			1,198,000	DEB-6	35,000	449,000	DEB-34	30,000	1,158,000
DEL-20	50,000	1,215,000	DEA-36	45,000	888,000	DEB-9	45,000	844,000	DEJ-4	35,000	1,481,000	DEB-33	30,000	10,000,000(1)
DEB-42	50,000	1,877,000	DEB-11	45,000	2,403,000	DEB-3	40,000	5,501,000	DEB-31	35,000	10,000,000(1)			
DEJ-38	50,000	4,559,000(1)	DEL-46	40,000	10,000,000(1)	DEB-44 Average	40,000	3,173,000	DEB-22	30,000	606,000	DEA-33	25,000	4,488,000
DEB-12	50,000	10,000,000(1)	Average		3,760,000				DEJ-37	30,000	8,951,000	DEB-2	25,000	8,148,000
			DEB-26	35,000	1,147,000	DEF-28	30,000	778,000	DEB-3	30,000	10,000,000(1)	DEB-47	25,000	10,000,000(1)
DEB-26	45,000	2,120,000	DEB-38	35,000	7,368,000	DEA-18	30,000	1,587,000	DEB-35	25,000	1,979,000	DEB-28	20,000	6,103,000
DEJ-45	45,000	2,406,000	DEB-9	35,000	10,000,000(1)	DEB-42	30,000	10,000,000(1)	DEB-36	25,000	5,103,000	DEB-4	20,000	10,000,000(1)
DEB-39	45,000	10,000,000(1)							DEB-39	25,000	10,000,000(1)	DEB-9	20,000	10,000,000(1)
DEB-21	45,000	10,000,000(1)	DEA-37	30,000	2,227,000	DEB-25	25,000	1,500,000						
DEB-2	45,000	10,000,000(1)	DEF-33 Average	30,000	2,000,000	DEB-14 Average	25,000	1,750,000	DEB-32	20,000	9,284,000			
					2,113,000				DEF-21	20,000	10,000,000(1)			
			DEF-23	25,000	5,000,000	DEB-39	20,000	7,327,000	DEB-1	20,000	10,000,000(1)			
			DEB-8	25,000	10,000,000(1)	DEA-27	20,000	10,000,000(1)	DEB-49	20,000	10,000,000(1)			
			DEB-35	25,000	10,000,000(1)	DEB-16	20,000	10,000,000(1)						

(1) Test discontinued, no failure.
(2) Ti test specimens fashioned, third sighter A through L, and H denotes Heat No. F7653; H denotes Heat No. RA765.

Stress Ratio = Min. Alternating Stress / Max. Stress

TABLE CCXCIV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = 1.0 (CRUCIBLE HEAT NO. P7653)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
22L-47	199,000	172	DEK-10	160,000	373	DED-59	150,000	12	DDC-50	141,500	171	DPC-55	130,000	170
DEA-38	185,000	1,310	DED-52	158,500	39	DEJ-19	155,000	64	DEM-31	137,000	2,508	DPE-47	128,000	7
22D-34	177,500	2,973	DEL-13	154,000	1,861	DED-58	150,000	377	DDC-7	136,500	316	DEB-3	127,500	65
22C-53	171,000	2,612	DEF-56	150,000	3,276	DEJ-10	149,500	58	DDB-34	129,000	2,785	DEE-56	125,000	122
22C-2.	165,500	4,571	DEJ-45	140,000	3,754	DEK-56	145,000	63	DEF-19	120,000	3,94[illegible]	DEJ-8	122,000	1,204
22J-12	160,000	4,590	DDC-43	120,000	4,944	DEF-14	140,000	2,954	DEJ-15	115,000	8,772	DEM-17	117,500	2,529
22C-53	110,000	17,000	DEF-45	100,000	51,000	DEJ-55	130,000	11,540	DEE-16	89,000	14,000	DEL-12	100,000	9,272
22A-20	110,000	30,000	DEB-50	100,000	317,000				DEF-54	83,000	54,000			
22C-21	110,000	35,000	Average		184,000	DEL-58	90,000	18,000	DEF-50	80,000	172,000	DPD-53	80,000	45,000
Average		77,000				DDC-54	90,000	31,000	Average		142,000	DEJ-37	80,000	40,000
			DPD-19	95,000	41,000	DEM-41	90,000	80,000				DEJ-38	80,000	92,000
22A-39	100,000	68,000	DEE-5	95,000	97,000	Average		65,000	DED-48	75,000	151,000	DEE-26	80,000	164,000
22F-31	100,000	70,000	Average		69,000				DEA-31	75,000	703,000	Average		76,000
22C-30	100,000	84,000				DDC-53	80,000	49,000	DEE-59	75,000	1,964,000			
Average		74,000	DEF-52	90,000	19,000	DEJ-43	80,000	56,000	Average		933,000	DEF-6	70,000	59,000
			DEF-29	90,000	48,000	DDC-45	80,000	83,000				DED-43	70,000	115,000
22L-32	90,000	76,000	DDC-4	90,000	9,830,000 (1)	Average		120,000	DEE-58	70,000	10,000	DEE-38	70,000	201,000
DEA-19	90,000	123,000							DDC-46	70,000	1,115,000	Average		135,000
22A-52	90,000	1,710,000	DEE-43	80,000	157,000	DDC-25	70,000	230,000	DEJ-32	70,000	1,178,000			
Average		636,000	DDC-36	80,000	173,000	DEJ-16	70,000	295,000	Average		617,000	DEB-28	65,000	2,738,000
			DEA-44	80,000	4,350,000	DEL-55	70,000	10 000,000 (1)				DDC-41	65,000	1,168,000
22C-59	85,000	207,000	Average		2,160,000				DEA-21	60,000	8,121,000	Average		1,953,000
22A-31	85,000	760,000				DEA-45	60,000	132,000	DDC-18	60,000	10,000,000 (1)			
DDC-51	85,000	1,841,000	DEF-38	75,000	1,417,000	DEJ-53	60,000	181,000	DEM-4	60,000	10,000,000 (1)	DEK-60	60,000	3,893,000
Average		2,885,000	DEB-39	75,000	1,917,000	DEL-37	60,000	451,000	DEE-42	60,000	10,000,000 (1)	DDC-47	60,000	10,000,000 (1)
			DDC-48	75,000	10,000,000 (1)	DED-31	60,000	1,118,000						
22B-29	80,000	10,000,000 (1)				Average		570,000	DDC-42	50,000	10,000,000 (1)	DED-4	50,000	4,751,013
22D-44	80,000	10,000,000 (1)	DED-8	70,000	10,000,000 (1)				DEE-41	50,000	10,000,000 (1)	DPB-30	50,000	10,000,000 (1)
22L-22	80,000	10,000,000 (1)	DEF-34	70,000	10,000,000 (1)	DEM-4	50,000	10,000,000 (1)						
			DDC-24	70,000	10,000,000 (1)	DEE-55	50,000	10,000,000 (1)				DEJ-41	40,000	10,000,000 (1)
						DEM-7	50,000	10,000,000 (1)				DEB-11	40,000	10,000,000 (1)

(1) Test discontinued, no failure.

Stress Ratio = Min. Alternating Stress / Mean Stress

TABLE CCXCV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = 0.) (CRUCIBLE HEAT NO. P765) AND M4765 (2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D2G-37	200,000	78	D2L-17	170,000	16	D2G-14	162,000	2	D2L-38	145,000	31	D2E-50	134,000	26
D2E-15	195,000	146	D2K-36	169,500	17	D2E-36	160,000	42	D2H-2	142,000	20	D2K-4	130,000	34
D2H-15	192,500	11,838	D2L-18	167,500	22	D2A-52	156,500	10,947	D2L-21	140,500	132	D2H-20	125,000	466
D2J-2	190,000	5,626	D2G-59	165,000	6	D2J-60	151,500	5	D2J-1	139,500	2,877	D2J-48	122,500	1,058
D2A-12	180,000	23,216	D2G-57	162,500	10	D2L-22	151,500	2,447	D2K-6	137,000	1,826	D2L-43	120,000	125
D2K-30	155,000	13,000	D2A-42	160,000	19,458	Average		4,926						
D2G-32	145,000	46,000	D2E-60	155,000	25,823	D2D-50	148,000	4,231	D2D-16	130,000	24,891	D2G-38	115,000	2,376
D2F-49	145,000	71,000				D2F-60	120,000	42,000	D2F-15	115,000	44,000	D2L-19	105,000	5,254
Average		58,000	D2E-26	140,000	30,000	D2G-44	120,000	43,000	D2D-54	115,000	105,000			
			D2L-32	140,000	41,000	D2K-46	120,000	114,000	D2D-9	115,000	300,000	D2L-56	100,000	16,000
D2K-42	140,000	23,000	Average		36,000	Average		66,500	Average		150,000	D2K-6	100,000	44,000
D2E-4	140,000	40,000										D2K-9	100,000	47,000
D2J-30	140,000	68,000	D2H-5	132,000	50,000	D2D-33	117,500	45,000	D2H-39	100,000	81,000	Average		37,000
Average		90,000				D2K-13	117,500	58,000	D2G-26	100,000	182,000			
			D2A-14	130,000	36,000	D2E-28	117,500	241,000	D2J-46	100,000	116,000	D2J-20	90,000	58,000
D2H-11	130,000	63,000				Average		115,000	Average		199,000	D2K-19	90,000	228,000
D2K-43	130,000	147,000	D2D-39	120,000	55,000							D2J-14	90,000	792,000
Average		105,000	D2F-1	110,000	79,000	D2D-18	115,000	142,000	D2H-21	90,000	379,000	Average		359,000
			Average		67,000	D2A-43	115,000	1,517,000	D2D-7	90,000	444,000			
D2F-30	120,000	41,000				D2L-27	115,000	1,922,000	D2G-27	90,000	2,000,000	D2G-48	80,000	156,000
D2G-41	120,000	2,425,000	D2H-51	110,000	849,000	Average		1,094,000	Average		1,274,000	D2A-6	80,000	307,000
Average		1,743,000										D2J-17	80,000	896,000
			D2E-12	100,000	150,000	D2K-25	110,000	38,000	D2A-52	80,000	52,000	Average		453,000
D2A-51	100,000	110,000	D2G-58	100,000	522,000	D2H-60	110,000	40,000	D2F-3	80,000	4,711,000			
D2E-30	100,000	2,149,000	Average		336,000	D2L-46	110,000	2,272,000	D2K-17	80,000	10,000,000 (1)	D2D-24	70,000	1,755,000
D2G-30	100,000	10,000,000 (1)				Average		717,000				D2A-3	70,000	6,119,000
			D2G-40	90,000	181,000	D2D-47	105,000	10,000,000 (1)	D2C-37	70,000	10,000,000 (1)	D2K-56	70,000	8,111,000
D2B-30	90,000	10,000,000 (1)	D2J-22	90,000	1,103,000				D2J-56	70,000	10,000,000 (1)	Average		5,408,000
D2K-56	90,000	10,000,000 (1)	D2K-2	90,000	10,000,000 (1)	D2E-44	100,000	6,301,000	D2H-29	60,000	10,000,000 (1)	D2F-16	60,000	2,772,000
D2L-30	90,000	10,000,000 (1)				D2G-28	100,000	7,542,000				D2B-57	60,000	10,000,000(1)
			D2D-41	85,000	8,775,000	D2C-15	100,000	10,000,000 (1)						
						D2F-59	100,000	10,000,000 (1)				D2J-40	50,000	10,000,000(1)
			D2J-10	80,000	6,144,000							D2K-22	50,000	10,000,000(1)
			D2C-14	80,000	10,000,000 (1)									
			D2K-16	80,000	10,000,000 (1)									

(1) Test discontinued, no failure.
(2) In test specimen numbers, third cipher A through L, and R denotes Heat No. P765); M denotes Heat No. M4765.

Stress Ratio = $\frac{\text{Min. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCXCVI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-2Mo-1V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = ∞ (CRUCIBLE HEAT NOS. R6741, R6736, AND P7647)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D3L-48	180,000	91	D3C-9	175,000	2	D3E-60	159,500	2	D3D-53	130,000	6	D3E-4	117,500	8
D3L-38	170,000	191	D3A-30	150,000	72	D3F-60	145,000	26	D3E-13	115,000	243	D3E-14	115,000	70
D3C-13	150,000	490	D3A-24	135,000	184	D3D-40	130,000	102	D3E-48	110,000	731	D3L-30	110,000	295
D3E-24	130,000	2,554	D3L-46	120,000	1,560	D3A-51	115,000	1,208	D3D-50	100,000	1,658	D3E-21	100,000	958
D3K-44	117,500	5,801	D3L-50	110,000	1,530	D3E-19	100,000	1,681	D3E-11	90,000	2,684	D3A-33	90,000	2,400
D3A-60	100,000	11,170	D3E-3	90,000	7,796	D3C-5	90,000	6,168	D3A-20	75,000	7,660	D3F-21	70,000	6,896
D3A-4	70,000	34,000	D3A-39	70,000	19,000	D3E-47	65,000	71,000	D3E-11	50,000	108,000	D3E-48	50,000	13,000
D3C-42	70,000	50,000	D3F-41	70,000	25,000	D3A-2	65,000	25,000	D3E-12	50,000	170,000	D3D-13	50,000	101,700
D3A-31	70,000	170,000	D3A-53	70,000	82,000	D3E-59	65,000	185,000	D3D-14	50,000	114,000	D3E-31	50,000	210,000
Average		85,000	Average		42,000	Average		77,000	Average		130,000	Average		108,000
D3F-53	65,000	31,000	D3C-12	60,000	138,000	D3D-29	60,000	68,000	D3F-27	50,000	146,000	D3F-16	50,000	223,000
D3K-12	65,000	64,000	D3F-25	60,000	150,000	D3E-44	50,000	100,000	D3A-47	50,000	155,000	D3E-39	50,000	606,000
D3L-35	65,000	1,497,000	D3A-13	60,000	484,000	D3L-10	60,000	2,377,000	D3E-6	50,000	701,000	D3L-14	50,000	1,256,000
Average		931,000	Average		190,000	Average		982,000	Average		335,000	Average		695,000
D3A-56	62,500	1,250,000	D3A-9	50,000	162,000	D3L-49	50,000	590,000	D3E-55	37,500	449,000	D3E-41	37,500	1,708,000
D3C-40	62,500	1,598,000	D3E-45	50,000	193,000	D3D-39	50,000	1,514,000	D3A-57	37,500	2,460,000	D3A-7	37,500	1,765,000
D3D-58	62,500	1,600,000	D3E-44	50,000	260,000	D3E-19	50,000	2,792,000	Average		1,651,000	D3E-50	37,500	1,860,000
Average		1,650,000	Average		138,000	Average		1,615,000				Average		1,777,000
D3D-15	60,000	571,000	D3E-38	47,500	860,000	D3F-11	45,000	897,000	D3E-37	35,000	1,073,000			
D3K-19	60,000	10,000,000(1)	D3E-8	47,500	1,311,000	D3L-41	45,000	925,000	D3D-15	35,000	1,331,000	D3L-15	35,000	2,043,000
D3A-14	60,000	10,000,000(1)	D3E-3	47,500	1,446,000	D3D-3	45,000	1,446,000	D3D-37	35,000	10,000,000(1)	D3C-1	35,000	10,000,000(1)
			Average		1,539,000	Average		1,756,000	D3D-31	35,000	10,000,000(1)	D3E-20	35,000	10,000,000(1)
D3A-18	55,000	10,000,000(1)	D3L-4	45,000	8,735,000(1)	D3E-43	40,000	13,069,200	D3C-33	30,000	4,942,000	D3D-37	30,000	9,031,000
D3F-24	55,000	10,000,000(1)	D3A-7	45,000	10,000,000(1)	D3E-9	40,000	10,000,000(1)	D3D-3	30,000	10,000,000(1)	D3E-46	30,000	10,000,000(1)
D3F-42	50,000	5,821,000	D3A-32	45,000	10,000,000(1)	D3L-11	40,000	10,000,000(1)	D3A-41	30,000	10,000,000(1)	D3A-54	30,000	10,000,000(1)
D3C--	50,000	10,000,000(1)												
D3A-47	50,000	10,000,000(1)												

(1) Test discontinued, no failure.

(2) In specimen numbers, third digit A through C denotes Heat No. R6741; D through H denotes Heat No. R6736; J through N denotes Heat No. P7647.

$$\text{Stress Ratio} = \frac{\text{Min. Alternating Stress}}{\text{Mean Stress}}$$

TABLE CCXCVII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = 1.0 (CRUCIBLE HEAT NOS. R6736, R6741 AND P7647)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
DJC-21	200,000	149	DJH-16	166,500	134	DJJ-16	153,500	2	DJK-16	135,500	43	DJD-56	125,000	116
DJE-23	190,500	41	DJJ-18	165,000	59	DJ--32	150,000	178	DJA-31	135,000	376	DJC-43	122,500	3,350
DJB-53	180,000	2,648	DJD-2	160,000	2,015	DJF-22	147,500	7	DJF-38	133,500	2,144	DJJ-8	120,500	5
DJA-42	175,000	2,890	DJB-19	155,000	2,948	DJF-10	145,000	540	DJA-44	132,500	2,843	DJA-21	120,000	1,279
DJE-15	165,000	4,100	DJC-53	147,500	1,739	DJA-1	140,000	2,903	DJD-1	130,000	2,759	DJC-28	117,500	147
DJA-35	160,000	7,505	DJE-32	140,000	8,045	DJH-53	135,000	4,369	L--32	125,000	3,353	DJL-20	115,000	10,488
DJA-40	122,000	30,000	DJC-58	95,000	90,000	DJH-41	85,000	36,000	DJJ-15	100,000	12,000	DJB-18	90,000	13,000
			DJJ-29	95,000	449,000	DJE-19	85,000	49,000	DJC-26	100,000	18,000	DJC-38	90,000	28,000
DJL-19	120,000	37,000	DJF-28	15,000	276,000	DJF-44	85,000	121,000	DJF-19	100,000	34,000	DJH-38	90,000	29,000
DJB-54	120,000	187,000	Average		906,000	Average		169,000	Average		21,000	Average		45,000
Average		162,000												
			DJC-43	91,000	911,000	DJD-59	80,000	37,000	DJE-41	90,000	18,000	DJK-11	80,000	24,000
DJG-37	100,000	68,000				DJJ-53	80,000	60,000	DJF-54	90,000	20,000	DJF-6	80,000	77,000
DJA-19	100,000	71,000	DJJ-55	90,000	71,000	DJG-54	80,000	47,000	DJG-42	90,000	22,000	DJE-37	80,000	168,000
DJJ-57	100,000	1,134,000	DJK-10	90,000	469,000	Average		61,000	Average		20,000	Average		136,000
Average		2,885,000	DJG-10	90,000	10,000,000 (1)									
						DJE-2	75,000	212,000	DJK-42	87,500	17,000	DJJ-38	70,000	26,000
DJK-33	90,000	1,027,000	DJF-52	87,500	10,000,000 (1)	DJH-27	75,000	370,000	DJA-8	87,500	60,000	DJE-28	70,000	30,000
DJC-59	90,000	7,177,000				DJE-57	75,000	1,242,000	DJG-46	87,500	231,000	DJL-43	70,000	579,000
DJL-12	90,000	8,554,000 (1)	DJC-34	85,000	52,000	Average		710,000	Average		103,000	Average		212,000
			DJE-43	85,000	10,000,000 (1)									
DJB-29	80,000	101,000	DJG-24	85,000	10,000,000 (1)	DJL-53	70,000	78,000	DJD-48	85,000	298,000	DJH-3	65,000	604,000
DJE-30	80,000	248,000				DJB-4	70,000	7,037,000	DJH-4	85,000	324,000	DJH-17	65,000	536,000
DJE-29	80,000	686,000 (1)	DJL-13	80,000	385,000	DJG-11	70,000	10,000,000 (1)	DJC-7	85,000	952,000	DJC-47	65,000	2,412,000
DJJ-44	80,000	10,000,000 (1)	DJH-20	80,000	758,000				DJF-50	85,000	10,000,000 (1)	Average		1,151,000
			DJE-14	80,000	1,558,000	DJE-55	65,000	7,800,000 (1)						
DJD-52	70,000	10,000,000 (1)	Average		900,000	DJL-8	65,000	10,000,000 (1)	DJH-7	60,000	3,451,000	DJD-53	60,000	7,638,000
DJE-33	70,000	10,000,000 (1)				DJH-20	65,000	10,000,000 (1)	DJC-18	60,000	10,003,000	DJE-56	60,000	8,685,000
DJH-31	70,000	10,000,000 (1)	DJH-26	70,000	2,700,000				DJF-18	60,000	10,000,000 (1)	DJH-28	60,000	10,000,000 (1)
			DJH-35	70,000	10,000,000 (1)									
			DJH-58	70,000	10,000,000 (1)				DJG-50	70,000	10,000,000 (1)			
									DJL-47	60,000	3,066,000			
									DJC-5	60,000	10,000,000 (1)			

(1) Test discontinued, no failure.
(2) In test specimen numbers, third cipher A through D denotes Heat No. R6741; E through H denotes Heat No. R6736; J through N denotes Heat No. P7647.

Stress Ratio = $\frac{\text{Min. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCXCVIII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND [illegible] 6Al-4Mo-1V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 1.0, STRESS RATIO = 0.3 (CRUCIBLE HEAT NOS. R6736, R6741 AND P7647)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
DJJ-2	191,000	16	DJF-1	175,000	36	DJK-5	157,500	7	DJJ-46	145,000	14	DJE-14	130,000	1,060
DJH-53	180,000	11,708	DJJ-58	170,000	10	DJJ-60	155,000	738	DJA-52	144,000	10,167	DJE-16	125,000	1,779
DJF-30	177,000	20,610	DJH-55	160,000	3,711	DJB-48	152,500	2,203	DJD-9	142,000	18,870	DJJ-17	123,500	12
DJH-15	175,000	4,118	DJH-44 Average	160,000	16,870 10,291	DJD-18	150,000	12,767	DJA-39	140,000	20,823	DJD-[illegible] DJH-4 Average	120,000 128,000	14 1,181 3,513
DJA-16	170,000	25,035	DJJ-21	158,000	319	DJH-40	142,700	6	DJB-37	137,500	3			
DJE-12	165,000	37,370	DJL-17	155,000	16,416	DJL-56	145,000	24,763	DJL-26	130,000	16,088	DJC-30	115,000	88,431
DJF-49	145,000	16,000	DJJ-59	150,000	30,000	DJE-27	140,000	27,000	DJF-3	120,000	40,000	DJH-39	110,000	32,000
DJA-12	145,000	33,000	DJA-1	150,000	38,000	DJE-28	140,000	27,000	DJF-8	120,000	51,000			
DJF-31	145,000	46,000	DJA-14	150,000	40,000	DJF-59	140,000	30,000	DJF-15	120,000	44,000	DJA-[illegible]	100,000	47,000
Average		31,000	Average		38,000	Average		28,000	Average		37,000	DJE-58	100,000	75,000
												DJF-36	100,000	77,000
DJE-57	135,000	45,000	DJF-46	140,000	49,000	DJE-52	130,000	53,000	DJD-54	100,000	48,000	Average		87,000
DJD-42	135,000	436,000	DJE-26	140,000	304,000				DJB-17	100,000	46,000			
DJE-13	135,000	464,000	DJH-40	140,000	10,000,000 (1)	DJD-22	120,000	26,000	DJE-38	100,000	117,000	DJE-51	90,000	33,000
Average		317,000				DJA-43	120,000	48,000	Average		81,000	DJB-24	90,000	117,000
			DJH-45	130,000	32,000	DJB-7	120,000	512,000				DJJ-20	90,000	165,000
DJE-4	125,000	223,000	DJH-37	130,000	35,000	Average		195,000	DJD-55	97,500	127,000	Average		138,000
DJH-26	125,000	2,151,000	DJB-22	130,000	47,000				DJL-22	97,500	519,000			
Average		1,187,000	Average		51,000	DJB-25	117,000	27,000	DJE-58	97,500	1,400,000	DJH-1	80,000	144,000
						DJD-33	113,000	144,000	Average		889,000	DJH-14	80,000	157,000
DJC-40	120,000	10,000,000 (1)	DJD-41	120,000	41,000	DJD-29	113,000	2,733,000				DJC-46	80,000	177,000
			DJC-10	120,000	66,000	Average		968,000	DJD-16	95,000	1,053,000	Average		159,000
DJJ-56	115,000	41,000	DJD-44	120,000	2,410,000				DJH-16	95,000	1,379,000			
DJD-56	115,000	89,000	Average		722,000	DJJ-11	105,000	74,000	DJH-29	95,000	5,610,000	DJH-56	70,000	117,000
DJD-32	115,000	125,000				DJD-46	105,000	157,000	Average		3,494,000	DJH-20	70,000	1,117,000
Average		85,000	DJD-35	100,000	194,000	DJD-47	105,000	466,000				DJF-57	70,000	3,259,000
			DJC-40	100,000	10,000,000 (1)	Average		230,000	DJD-27	90,000	10,000,000 (1)	DJC-41	70,000	2,241,000 (1)
DJD-26	105,000	147,000												
			DJH-36	90,000	3,009,000	DJH-13	100,000	10,000,000 (1)	DJD-7	80,000	10,000,000 (1)	DJB-57	65,000	1,488,000
DJL-31	95,000	2,489,000	DJF-4	90,000	7,079,000				DJC-57	80,000	10,000,000 (1)			
DJA-3	95,000	10,000,000 (1)	DJH-39	90,000	10,000,000 (1)	DJD-14	90,000	10,000,000 (1)				DJB-11	60,000	7,780,000
DJF-34	95,000	10,000,000 (1)				DJJ-48	90,000	10,000,000 (1)				DJH-9	60,000	10,000,000 (1)

(1) Test discontinued, no failure.
(2) In test specimen numbers, third cipher A through B denotes Heat No. R6741; E through H denotes Heat No. R6736; J through N denotes Heat No. P7647.

Stress Ratio = Min Alternating Stress / Mean Stress

TABLE CCXCIX

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-1Mo-1V TITANIUM ALLOY, 0.020 INCH THICK.
STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.0 (CRUCIBLE HEAT NOS. RL815, RL810 AND RL805)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
[illegible]-15	165,000	38	D1A-17	130,000	37	D1B-33	140,000	12	D1B-9	130,000	13	D1A-22	127,500	10
[illegible]-18	135,000	124	D1E-32	115,000	106	D1G-33	120,000	41	D1H-55	100,000	129	D1B-22	116,000	39
D1B-45	130,000	89	D1M-4	100,000	687	D1M-23	100,000	290	D1A-59	90,000	196	D1B-15	100,000	80
D1M-37	130,000	293	D1G-10	87,500	655	D1J-37	85,000	683	D1E-8	75,000	1,054	D1C-59	80,000	366
[illegible]-29	80,000	2,041	D1E-19	80,000	1,844	D1B-8	60,000	830	D1M-3	65,000	6,388	D1A-34	70,000	1,003
D1L-5	70,500	2,026	D1C-46	65,000	1,311	D1A-56	55,000	7,479	D1G-51	50,000	11,519	D1F-32	55,000	3,556
D1A-23	65,000	15,000	D1F-13	50,000	24,000	D1C-16	50,000	17,000	D1A-40	40,000	22,000	D1K-53	40,000	15,000
						D1E-58	50,000	18,000	D1C-44	40,000	31,000	D1A-8	40,000	19,000
D1C-39	50,000	35,000	D1J-50	40,000	68,000	D1A-7	50,000	26,000	D1B-38	40,000	37,000	D1E-13	40,000	17,000
			D1E-12	40,000	122,000	Average		30,000			30,000	Average		21,000
D1A-21	40,000	32,000	D1L-23	40,000	233,000									
D1F-7	40,000	40,000	Average		141,000	D1G-55	40,000	30,000	D1E-46	30,000	38,000	D1A-10	30,000	29,000
[illegible]-24	40,000	41,000				D1C-	40,000	33,000	D1G-1	30,000	249,000	D1L-27	30,000	73,000
Average		45,000	D1F-16	37,500	244,000	D1L-2	40,000	44,000	D1F-46	30,000	834,000	D1M-8	30,000	140,000
			D1E-11	37,500	354,000	Average		37,000	Average		374,000	Average		84,000
[illegible]	35,000	130,000	D1M-33	37,500	416,000									
[illegible]	35,000	234,000	Average		476,000	D1E-47	35,000	121,000	D1M-24	27,500	2,079,000	D1F-43	27,500	95,000
[illegible]-8	35,000	10,000,000(1)				D1D-8	35,000	155,000	D1K-15	27,500	4,575,000	D1A-31	27,500	201,000
			D1E-13	35,000	970,000	D1F-40	35,000	272,000	D1A-21	27,500	6,210,000	D1F-9	27,500	1,138,000
D1B-55	30,000	532,000	D1F-9	35,000	1,182,000	Average		183,000	Average		4,333,000	Average		458,000
D1F-17	30,000	631,000	D1-47	35,000	1,298,000									
D1C-57	30,000	1,214,000	D1B-43	35,000	15,777,000	D1E-17	30,000	1,840,000	D1F-26	25,000	3,629,000	D1C-32	3,000	135,000
Average		1,459,000	Average		4,807,000	D1A-60	30,000	4,997,000	D1A-54	25,000	12,407,000	D1L-13	25,000	650,000
						D1K-24	30,000	10,000,000(1)	D1G-48	25,000	10,000,000(1)	D1K-50	25,000	10,000,000(1)
D1D-57	27,500	3,538,000	D1F-48	30,000	1,877,000									
D1K-11	27,500	10,000,000(1)	D1E-2	30,000	6,618,000	D1B-49	25,000	10,000,000(1)	D1B-32	20,000	10,000,000(1)	D1B-58	22,500	10,000,000(1)
D1F-28	27,500	10,000,000(1)	D1A-5	30,000	10,000,000(1)	D1K-26	25,000	10,000,000(1)	D1C-50	20,000	10,000,000(1)			
			D1L-39	30,000	10,000,000(1)	D1M-47	25,000	10,000,000(1)	D1D-26	20,000	10,000,000(1)	D1D-60	20,000	7,207,000
D1A-47	45,000	10,000,000(1)										D1B-46	20,000	10,000,000(1)
			D1E-34	27,500	6,804,000(1)							D1M-12	20,000	10,000,000(1)
D1K-35	20,000	10,000,000(1)	D1M-32	27,500	10,000,000(1)							D1M-15	20,000	17,000,000(1)
D1C-19	20,000	10,000,000(1)	D1F-31	27,500	10,000,000(1)									

(1) Test discontinued, no failure.

(2) In specimen numbers, third cipher A through D, and L through N denotes Heat No. RL815; E through K denotes Heat No. RL810; P denotes Heat No. RL805.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCC

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4Mo-1V TITANIUM ALLOY, 0.020 INCH THICK.
STRESS CONCENTRATION = 2.62, STRESS RATIO = -1.0 (CRUCIBLE HEAT NOS. RL815 AND RL810)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D1A-51	140,000	40	D1A-38	115,000	140	D1C-43	150,000	20	D1D-23	150,000	21	D1A-21	140,000	17
D1A-42	140,000	224												
Average		132	D1A-25	140,000	85	D1F-23	140,000	41	D1L-45	145,000	52	D1C-13	140,000	90
D1A-36	130,000	318	D1L-1	135,000	604	D1E-26	145,000	245	D1F-27	140,000	284	D1E-49	132,000	130
D1A-21	100,000	53	D1D-39	125,000	883	D1N-18	140,000	350	D1C-24	130,000	179	D1B-44	130,000	122
D1A-12	130,000	361												
D1A-46	120,000	720	D1L-17	100,000	122	D1A-15	135,000	413	D1F-33	120,000	880	D1N-21	125,000	1,40
Average		373	D1L-12	100,000	1,859									
			Average		1,990	D1E-52	130,000	464	D1A-11	100,000	5,539	D1B-3	120,000	5,0
D1A-29	50,000	45,000												
D1C-43	50,000	51,000	D1D-20	65,000	21,000	D1L-9	60,000	21,000	D1J-5	55,000	16,000	D1B-21	50,000	16,000
D1F-20	50,000	51,000	D1N-28	65,000	22,000	D1F-13	60,000	25,000	D1J-7	55,000	27,000	D1N-19	50,000	26,000
D1E-39	50,000	51,000	D1N-58	65,000	29,000	D1L-6	60,000	31,000	D1L-3	55,000	18,000	D1N-4	50,000	21,000
Average		56,500	D1F-30	65,000	41,000	Average		24,000	Average		26,000	Average		15,000
			Average		28,000									
D1B-31	49,000	10,000,000 (1)	D1N-42	62,500	25,000	D1N-42	56,000	72,000	D1D-23	50,000	22,000	D1L-2	45,000	32,000
D1C-45	46,500	10,000,000 (1)	D1N-12	62,500	11,000	D1F-47	55,000	39,000	D1B-12	50,000	28,000	D1G-6	45,000	55,000
			Average		18,000				D1F-10	50,000	49,000	D1L-34	45,000	58,000
D1A-26	47,500	10,000,000 (1)			25,000	D1F-21	53,000	39,000	Average		33,000	Average		48,000
D1L-5	45,000	137,000	D1A-54	60,000	22,000				D1E-13	45,000	40,000	D1E-5	40,000	127,000
D1F-43	45,000	10,000,000 (1)	D1E-37	60,000	128,000	D1F-40	50,000	64,000	D1E-25	45,000	64,000	D1C-7	40,000	221,000
D1A-55	45,000	10,000,000 (1)	D1N-53	60,000	4,600,000	D1E-35	50,000	139,000	D1C-6	45,000	70,000	D1E-5	40,000	183,000
			D1J-18	60,000	9,122,000	D1F-2	50,000	10,000,000 (1)	Average		60,000	Average		255,000
D1E-23	60,000	218,000	Average		3,688,000									
D1J-29	50,000	10,000,000 (1)	D1L-21	55,000	26,000	D1A-2	45,000	182,000	D1F-31	42,500	131,000	D1F-55	37,500	116,000
D1C-28	50,000	10,000,000 (1)				D1N-41	45,000	2,938,000	D1C-31	42,500	10,000,000 (1)	D1L-8	37,500	200,000
			L1N-57	54,000	39,000	D1A-30	45,000	10,000,000 (1)	D1G-49	42,500	10,000,000 (1)	D1N-10	37,500	3,445,000
D1E-22	35,000	10,000,000 (1)	D1N-46	54,000	43,000							Average		882,000
D1E-30	35,000	10,000,000 (1)	Average		41,000	D1E-11	60,000	2,115,000	D1D-21	40,000	6,274,000			
						D1F-34	50,000	10,000,000 (1)	D1E-2	40,000	10,000,000 (1)	D1F-17	35,000	1,335,000
			D1N-59	42,500	10,000,000 (1)	D1J-28	40,000	10,000,000 (1)	D1L-40	40,000	10,000,000 (1)	D1A-17	35,000	10,000,000 (1)
												D1B-1	35,000	10,000,000 (1)
			D1J-48	40,000	10,000,000 (1)							D1E-35	35,000	10,000,000 (1)
			D1L-30	40,000	10,000,000 (1)									

(1) Test discontinued, no failure.
(2) In specimen number, third cipher A through J, and L through N denotes Heat No. RL815; E through K denotes Heat No. RL810.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCCI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY, 0.020 INCH THICK.
STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.) (CRUCIBLE HEAT NOS. R4815, R4810, AND R4805X2

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D1A-3	200,000	9	D1J-32	170,000	10	D1L-6	160,000	3	D1D-5	150,000	2	D1C-31	140,000	3
D1F-38	195,000	70	D1M-48	170,000	16	D1A-28	157,000	92	D1E-24	138,000	12	D1E-23	135,000	35
D1D-12	190,000	56	Average		13	D1J-49	150,000	130	D1E-7	130,000	3,841	D1A-24	130,000	100
D1D-6	180,000	1,791	D1L-5	165,000	12	D1E-20	148,000	770	D1J-6	128,000	1,330	D1D-22	120,000	396
D1F-57	170,000	3,266	D1E-33	155,000	83	D1E-21	145,000	1,403	D1M-6	125,000	5,850	D1L-18	100,000	1,520
D1C-52	145,000	8,846	D1M-5	140,000	3,000	D1E-40	120,000	7,000	D1D-55	110,000	11,000	D1D-13	90,000	4,035
D1F-58	78,000	20,000	D1M-44	120,000	8,000	D1E-22	110,000	11,000	D1B-51	100,000	20,000	D1B-16	85,000	20,000
D1C-37	78,000	44,000	D1E-51	120,000	12,000	D1D-8	110,000	26,300	D1D-23	100,000	27,000	D1C-35	85,000	22,000
D1C-17	78,000	50,000	D1M-30	120,000	15,000	D1M-26	110,000	10,000,000(1)	D1B-52	100,000	32,000	D1C-11	85,000	70,000
Average		47,000	Average		12,000				Average		26,000	Average		37,000
D1D-45	71,500	61,000	D1M-40	110,000	16,000	D1A-50	100,000	14,000						
D1A-7	71,500	189,000				D1J-36	100,000	16,000	D1J-45	90,000	13,000	D1C-30	75,000	42,000
D1A-22	71,500	1,489,000	D1M-7	105,000	39,000	D1M-28	100,000	16,000	D1M-39	90,000	15,000	D1C-25	75,000	478,000
Average		806,000				Average		15,300	Average		14,000	D1B-44	75,000	1,800,000
			D1L-29	95,000	20,000	D1K-30	90,000	17,000	D1D-43	80,000	27,000	Average		800,000
D1A-27	65,000	177,000	D1M-36	95,000	6,953,000	D1K-9	90,000	52,000				D1B-21	65,000	385,000
D1C-22	65,000	182,000	D1M-27	75,000	1,351,000(1)	Average		34,000	D1F-8	70,000	27,000	D1C-12	65,000	732,000
D1A-50	65,000	465,000										D1A-13	65,000	1,083,000
Average		274,000	D1E-36	70,000	27,000	D1J-37	80,000	30,000	D1F-23	60,000	34,000	D1N-3	65,000	1,189,000
						D1M-35	80,000	6,192,000	D1A-4	60,000	70,000	Average		832,000
D1A-51	58,000	45,000	D1K-27	75,000	45,000	D1A-25	80,000	11,934,000	D1B-16	60,000	141,000			
D1F-5	58,000	123,000	D1J-16	75,000	111,000	Average		6,052,000	D1J-33	60,000	1,478,000	D1K-40	55,000	745,000
D1A-58	58,000	141,000	Average		176,000				D1D-42	60,000	8,417,000	D1E-1	55,000	2,478,000
Average		103,000				D1K-41	75,000	30,000	Average		2,128,000	D1E-33	55,000	1,117,000
			D1M-9	70,000	844,000(2)							Average		1,446,000
D1C-56	52,000	10,000,000(1)				D1D-35	60,000	10,000,000(1)	D1M-33	55,000	56,000			
D1A-49	52,000	10,000,000(1)	D1C-6	65,000	10,000,000(1)	D1D-57	60,000	10,000,000(1)	D1E-22	55,000	10,000,000(1)	D1C-47	40,000	10,000,000(1)
D1B-34	52,000	10,000,000(1)	D1B-53	65,000	10,000,000(1)	D1K-14	60,000	10,000,000(1)	D1K-34	55,000	10,000,000(1)	D1J-4	40,000	10,000,000(1)
			D1E-56	65,000	10,000,000(1)							D1L-7	40,000	10,000,000(1)
									D1M-19	52,000	10,000,000(1)			
									D1C-43	46,000	10,000,000(1)			
									D1D-4	46,000	10,000,000(1)			
									D1J-2	46,000	10,000,000(1)			

(1) Test discontinued, no failure
(2) In specimen numbers, third cipher A through C, and L through N denotes Heat No. R4815; D through K denotes Heat No. R4810; P denotes Heat No. R4805.

Stress Ratio = Min. Alternating Stress / Mean Stress

TABLE CCCII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.0 (CRUCIBLE HEAT NOS. P7653 AND R4765)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
[illegible]-3	130,000	53	DEF-40	125,000	72	DEH-32	125,000	33	DEE-15	120,000	20	DEA-8	115,000	11
D24-[illegible]	125,000	50	DEJ-39	115,000	136	DEG-39	110,000	91	DEC-50	110,000	59	DFH-51	100,000	131
D2[illegible]-13	115,000	157	DEH-54	110,000	109	DFH-3	100,000	144	DEH-33	100,000	156	DEA-58	80,000	436
D2A-24	110,000	316	DEA-23	100,000	448	DEL-10	90,000	320	DED-1	80,000	480	DEE-5	70,000	665
D2[illegible]-22	100,000	5,000	DEH-45	90,000	1,476	DEH-57	80,000	1,701	DEA-41	70,000	1,489	DEH-41	60,000	2,711
D2A-21	90,000	808	DEE-45	85,000	7,089	DEB-49	80,000	4,483	DEF-46	50,000	9,193	DEE-7	50,000	4,775
D2[illegible]-19	80,000	9,000	DEC-39	50,000	31,000	DEJ-24	60,000	11,000	DEC-48	35,000	61,000	DEH-54	40,000	15,492
D2G-17	70,000	33,000	DEC-59	40,000	43,000	Average		7,742	DEL-38	35,000	64,000			
D2F-17	60,000	24,000	DEB-22	40,000	55,000	DEL-23	50,000	14,000	DEL-9	35,000	74,000	DEL-27	30,000	43,000
D2C-57	50,000	79,000	DEH-37	40,000	21,000				Average		67,000	DEF-23	30,000	84,000
D2H-22	40,000	10,000	Average		43,000	DFG-55	40,000	33,000				DEC-32	30,000	58,000
Average		20,000				LEE-49	40,000	45,000	DEF-26	30,000	113,000	Average		67,000
D2[illegible]	45,000	38,000	DEE-11	35,000	44,000	DED-8	40,000	42,000	DEH-38	30,000	165,000			
D2[illegible]-39	45,000	61,000	DEH-43	35,000	104,000	Average		42,000	DEA-59	30,000	146,000	DEF-13	25,000	61,000
D2[illegible]-36	45,000	61,000	DED-57	35,000	83,000				Average		141,000	DEB-13	25,000	146,000
Average		54,000	Average		116,000	DEA-60	30,000	122,000				DED-60	25,000	212,000
						DEL-59	30,000	139,000	DEE-16	28,000	56,000	Average		106,000
D2[illegible]-33	40,000	59,000	D2F-48	30,000	1,100,000	DEF-58	30,000	210,000						
D2[illegible]-21	40,000	74,000	DEE-13	30,000	8,197,000	Average		190,000	DED-60	27,500	109,000	DEC-46	22,500	123,000
D2B-55	40,000	111,000	DEL-12	30,000	10,000,000(1)	DEL-31	27,500	2,281,000	DEE-14	27,500	780,000	DEH-50	22,500	270,000
Average		100,000				DEJ-33	27,500	2,922,000	Average		444,000	DEA-10	22,500	357,000
			DEJ-50	25,000	1,750,000	DEE-8	27,500	5,111,000				Average		250,000
D2A-23	35,000	389,000	DEE-53	25,000	8,465,000	Average		3,671,000	DED-26	25,000	6,215,000			
D2G-39	35,000	1,552,000	D2B-24	25,000	10,000,000(1)				DED-21	25,000	8,543,000	DFH-19	20,000	475,000
D2[illegible]-3	35,000	3,366,000				DFH-56	25,000	1,930,000	DEA-58	25,000	9,773,000	DEA-46	20,000	1,719,000
Average		1,596,000	D2B-8	20,000	10,000,000(1)	DEJ-43	25,000	1,132,000	Average		8,160,000	DED-15	20,000	1,760,000
			D2H-34	20,000	10,000,000(1)	DEE-7	25,000	40,000,000(1)				Average		1,169,000
D2G-10	30,000	7,155,000	D2J-47	20,000	10,000,000(1)				DEB-36	20,000	10,000,000(1)			
D2H-18	30,000	10,000,000(1)				DEF-60	20,000	5,898,000	DEC-44	20,000	10,000,000(1)	DEA-34	15,000	10,000,000(1)
D2C-2	30,000	10,000,000(1)				DEB-60	20,000	10,000,000(1)	DEE-8	20,000	10,000,000(1)	DEB-46	15,000	10,000,000(1)
D2H-55	30,000	10,000,000(1)				DEC-16	20,000	10,000,000(1)				DEJ-22	15,000	10,000,000(1)

(1) Test discontinued, no failure.
(2) In test specimen numbers, third cipher A through L, and R denotes Heat No. P7653; M denotes Heat No. R4765.

Stress Ratio = Max. Alternating Stress / Mean Stress

TABLE CCCIII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED Ti-13V-11Cr-3Al TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 3.92, STRESS RATIO = 1.0 (CRUCIBLE HEAT NOS. P7653 AND A4765)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D2A-38	170,000	161	DFH-53	137,000	303	D2C-35	151,000	76	D2A-33	145,500	25	D2A-17	131,500	9
D2A-35	157,500	210	D2K-25	130,000	591	D2J-26	130,000	367	D2L-12	110,000	960	DEF-43	110 000	435
D2L-35	145,000	533	D2L-1	125,000	708	D2L-10	110,000	690	D2J-57	100,000	2,221	DFC-13	90,000	1,934
D2A-34	135,000	1,075	D2E-46	120,000	1,126	D2A-1	100,000	1,587	D2E-25	90,000	2,334	D2B-27	82,500	4,535
D2A-55	125,000	2,056	DEC-26	110,000	2,055	D2A-33	90,000	5,302	D2D-5	85,000	2,840	DE1-35	75,000	4,267
D2B-12	100,000	15,000	D2D-10	100,000	3,834	D2A-15	70,000	22,000	D2F-31	75,000	7,961	7E4-7	60,000	12,007
D2L-6	90,000	19,000	DEA-37	80,000	11,470	D2L-3	60,000	37,000	DEC-24	50,000	50,000	D2L-8	50,000	28,000
D2C-39	80,000	18,000	D2F-17	80,000	27,000	D2B-35	60,000	81,300	D2D-21	50,000	46,000	DEA-16	50,000	31,000
D2L-29	80,000	31,000	D2H-58	80,000	23,000	D2L-9	60,000	124,000	D2C-47	50,000	54,000	D2L-1	50,000	29,200
Average		25,000	D2A-25	80,000	25,000	Average		109,000	Average		50,000	Average		110,000
D2C-36	70,000	68,000	D2J-27	80,000	63,000	D2C-57	50,000	52,000	D2H-5	42,500	61,000	D2L-34	40,000	52,000
D2A-5	70,000	115,000	Average		36,000	D2L-24	50,000	141,000	D2H-55	42,500	137,000			
D2L-20	70,000	111,000	D2A-13	50,000	36,000	D2H-19	50,000	585,000	D2L-6	42,500	1,262,000	D2H-10	35,000	52,000
Average		135,000	D2C-24	50,000	42,000	Average		359,500	Average		1,287,000	D2H-17	35,000	251,000
D2A-30	65,000	50,000	D2H-42	50,000	45,000	D2L-26	45,000	716,000	D2L-13	40,000	329,000	D2A-42	35,000	1,626,000
D2A-29	65,000	50,000	Average		42,000	D2H-40	45,000	1,376,000	D2A-1	40,000	151,000	Average		957,000
D2L-7	65,000	52,000	D2L-5	47,500	109,000	D2L-44	45,000	1,440,000	D2L-23	40,000	972,000	D2C-51	30,000	110,000
Average		50,000	D2A-9	47,500	125,000	Average		1,844,000	Average		107,000	D2A-26	30,000	225,000
D2C-40	60,000	85,000	D2H-54	47,500	1,811,000	D2L-6	40,000	335,000	D2L-45	37,500	469,000	L2A-29	30,000	10,000,000(1)
D2H-30	50,000	52,000	Average		730,000	D2B-47	40,000	555,000	D2C-31	37,500	5,761,000	D2E-49	25,000	1,064,000
D2A-31	50,000	101,000	D2C-45	45,000	5,062,000	D2L-35	40,000	10,000,000(1)	D2J-22	37,500	10,000,000(1)	D2C-9	25,000	4,333,000
D2L-32	50,000	140,000	D2D-17	45,000	10,000,000(1)	D2H-8	40,000	10,000,000(1)				D2A-46	25,000	10,000,000(1)
Average		98,000	D2L-42	45,000	10,000,000(1)	D2L-11	35,000	10,000,000(1)	D2C-8	35,000	10,000,000(1)			
D2H-28	47,500	583,000	D2F-39	40,000	8,740,000	D2J-13	35,000	10,000,000(1)	D2J-5	35,000	10,000,000(1)	D2H-10	20,000	10,000,000(1)
D2A-60	47,500	1,427,000	D2E-24	40,000	13,126,000	D2A-26	35,000	10,000,000(1)	D2H-2)	35,000	10,000,000(1)	D2H-27	20,000	10,000,000(1)
D2A-9	47,500	10,000,000(1)	D2H-12	40,000	10,000,000(1)							D2B-7	20,000	10,000,000(1)
D2L-40	45,000	10,000,000(1)							D2A-2	30,000	10,000,000(1)			
D2A-70	40,000	10,000,000(1)												
D2A-69	40,000	7,511,000												
D2L-20	40,000	10,000,000(1)												
D2A-59	40,000	10,000,000(1)												

(1) Test discontinued, no failure.
(2) In test specimen numbers, third cipher A through L, and N denotes Heat No. P7653; M denotes Heat No. A4765.

Stress Ratio = $\frac{\text{Max. Alternating Stress}}{\text{Mean Stress}}$

TABLE CCCIV

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al-3Mo-1V TITANIUM ALLOY, 0.063 INCH THICK, STRESS CONCENTRATION = 2.82, STRESS RATIO = 0.5 (CRUCIBLE HEAT NOS. F765) AND 84,765)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
DEL-24	184,000	2	DFL-1	158,500	27	DEB-5y	150,000	2	DEF-6	142,500	2	EHB-03	137,500	3
DFL-30	170,000	80	DEJ-52	155,000	139	DEO-6	145,000	540	DFK-4	137,500	10	EFD-02	135,000	98
DEC-27	160,000	1,238	DFL-52	150,000	1,649	DEK-59	140,000	1,055	DFB-51	135,000	2,385	EEJ-4	130,000	168
DEL-29	150,000	3,973	DEE-27	145,000	4,169	DEA-35	130,000	4,330	DEG-23	130,000	3,681	EEC-05	125,000	779
DEJ-42	140,000	6,037	DEL-38	140,000	4,127	DEA-3	120,000	5,554	DEF-18	120,000	5,580	EEE-40	120,000	1,897
DFL-27	115,000	23,079	EEB-04	95,000	34,000	DEF-44	90,000	33,000	EEB-02	110,000	8,845	EEE-7	100,000	4,888
DEA-19	100,000	18,000	EEE-51	85,000	47,000	DEE-21	80,000	45,000	DEJ-51	80,000	35,000	EEA-6	70,000	30,000
DFC-36	100,000	39,000	EEE-45	85,000	47,000	DEL-40	80,000	45,000	DEL-24	80,000	36,000	EEA-16	70,000	47,000
DFA-4	100,000	50,000	EEF-5	85,000	81,000	DEJ-35	80,000	46,000	DEF-16	80,000	74,000	EEG-12	70,000	57,000
Average		32,000	Average		57,000	Average		55,000	Average		57,000	Average		57,000
DEA-2	90,000	45,000	EEE-36	90,000	31,000	DEA-25	70,000	46,000	DEL-50	70,000	58,000	EEA-24	65,000	117,000
DEC-37	80,000	78,000	EEE-31	80,000	61,000	DEJ-49	70,000	47,000	DEG-5	70,000	127,000	EEC-26	65,000	187,000
DEA-17	80,000	84,000	EEF-10	80,000	71,000	DEJ-37	70,000	66,000	DEK-25	70,000	211,000	EEB-13	65,000	245,000
Average		79,000	Average		91,000	Average		55,000	Average		132,000	Average		183,000
DEC-56	75,000	101,000	EEB-9	75,000	41,000	DEA-50	67,500	122,000	DEE-53	65,000	117,000	EEE-41	60,000	300,000
DEL-31	75,000	142,000	EEF-5	75,000	91,000	DEF-28	67,500	141,000	DEK-11	65,000	1,000,000	EEC-29	60,000	451,000
DEA-7	75,000	145,000	EEE-32	75,000	1,000,000	DEL-50	67,500	200,000	DEA-4	65,000	1,000,000	EEE-21	60,000	1,000,000
Average		130,000	Average		1,000,000	Average		391,000	Average		1,000,000	Average		750,000
DEC-22	72,500	188,000	EEE-40	72,500	71,000	EEA-41	65,000	1,103,000	DEG-42	60,000	3,736,000	EEA-42	50,000	3,000,000
EEB-34	72,500	773,000	EEE-49	72,500	154,000	EEA-56	65,000	4,056,000	DEK-45	60,000	7,768,000	EEC-13	50,000	4,363,000
EEA-22	72,500	1,000,000	EEE-57	72,500	1,000,000	DEB-43	65,000	10,000,000(1)	EEE-49	60,000	10,000,000(1)	EEA-16	50,000	5,000,000
Average		730,000	Average		1,000,000							Average		4,000,000
EEC-8	70,000	4,249,000	EEE-2	70,000	10,000,000(1)	EEC-52	60,000	10,000,000(1)	EEC-21	50,000	10,000,000(1)	EEE-4	40,000	5,376,000
EEA-12	70,000	10,000,000(1)	EEE-4	70,000	10,000,000(1)	EEE-38	60,000	10,000,000(1)	EEC-5	50,000	10,000,000(1)	EEE-14	40,000	10,000,000(1)
EEC-17	70,000	10,000,000(1)	EEE-36	70,000	10,000,000(1)	EEE-34	60,000	10,000,000(1)	EEL-33	50,000	10,000,000(1)	EEE-23	40,000	10,000,000(1)
EEF-38	70,000	10,000,000(1)												

(1) Test discontinued, no failure.
(2) In test specimen numbers, third digit A through L, and U denotes Heat No. F765); M denotes Heat No. 84765.

Stress Ratio = Min. Alternating Stress / Max. Stress

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED & AGED [illegible] TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 4.84, [illegible] (1)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
D3A-43	150,000	81	D3K-33	140,000	29	D3A-49	[illegible]	15	[illegible]-49	110,000	74	D3A-8	125,000	24
D3C-51	130,000	115	D3A-5	135,000	39	D3A-42	120,000	13*	D3A-37	110,000	52	D3D-40	110,000	37
D3A-3	119,500	172	D3B-8	100,000	331	D3A-37	90,000	295	D3A-32	100,000	118	D3C-46	100,000	137
D3D-6	100,000	643	D3B-34	85,000	1,289	D3A-16	80,000	1,057	D3A-50	75,000	501	D3A-16	70,000	600
D3A-58	80,000	1,940	D3A-39	70,000	3,796	D3A-48	65,000	3,049	D3A-24	65,000	2,917	D3K-49	56,500	3,231
D3B-25	65,000	5,587	D3B-36	60,000	4,239	D3A-45	60,000	2,[illegible]00	D3A-39	50,000	7,[illegible]2	D3A-23	45,000	8,355
D3C-33	55,000	28,000	D3A-40	60,000	44,000	D3K-43	50,000	34,000	D3A-4	35,000	27,000	D3A-53	30,000	27,000
D3A-17	55,000	30,000	D3A-48	45,000	59,000	D3A-7	50,000	44,000	D3A-24	35,000	50,000	D3A-56	30,000	39,000
D3A-21	55,000	46,000	D3A-21	40,000	150,000	D3A-40	50,000	52,000	D3A-5	35,000	75,000	D3A-8	30,000	162,000
Average		39,000	Average		84,000	Average		43,000	Average		51,000	Average		76,000
D3B-30	45,000	52,000	D3K-26	35,000	90,000	D3A-5	45,000	46,000	D3B-31	30,000	76,000	D3C-35	27,500	99,000
D3C-27	45,000	144,000	D3C-39	35,000	142,000	D3A-7	40,000	85,000	D3A-26	30,000	87,000	D3A-27	27,500	92,000
D3F-9	45,000	156,000	D3A-47	35,000	220,000	D3B-38	40,000	140,000	D3A-47	30,000	110,000	D3K-53	27,500	95,000
Average		117,000	Average		150,500	D3C-42	40,000	150,000	Average		90,000	Average		92,000
D3C-19	40,000	107,000	D3A-57	32,500	1,130,000	Average		97,000	D3A-32	27,500	81,000	D3B-13	25,000	850,000
D3B-24	40,000	115,000	D3K-59	32,500	1,500,000				D3B-22	27,500	89,000	D3A-39	25,000	1,011,000
D3B-18	40,000	117,000	D3F-37	32,500	2,478,000	D3A-26	35,000	69,000	D3A-31	27,500	87,000	D3A-14	25,000	1,407,000
Average		113,000	Average		2,778,000	D3A-54	35,000	106,000	Average		89,000	Average		1,089,000
D3A-35	35,000	1,750,000	D3B-12	30,000	279,000	D3A-52	35,000	523,000	D3C-44	25,000	983,000	D3A-15	20,000	523,000
D3B-21	35,000	5,212,000	D3A-38	30,000	2,910,000	Average		209,000	D3A-59	25,000	1,046,000	D3A-58	20,000	1,195,000
D3C-57	35,000	10,000,000(1)	D3K-3	30,000	9,040,000	D3A-60	30,000	1,122,000	D3C-6	25,000	2,256,000	D3F-13	20,000	10,000,000(1)
D3F-17	30,000	10,000,000(1)	D3K-37	30,000	10,000,000(1)	D3K-25	30,000	2,593,000	Average		1,526,000			
D3A-37	30,000	10,000,000(1)	D3A-34	30,000	10,000,000(1)				D3C-5	22,000	6,549,000	D3A-25	15,000	10,000,000(1)
D3A-49	30,000	10,000,000(1)	D3A-23	25,000	15,000,000(1)	D3E-47	25,000	5,285,000(1)				D3A-46	15,000	10,000,000(1)
D3B-40	30,000	10,000,000(1)	D3C-6	25,000	10,000,000(1)	D3K-7	25,000	6,467,000(1)	D3A-38	10,000	5,849,000	D3A-12	10,000	10,000,000(1)
			D3E-45	25,000	10,000,000(1)	D3A-4	25,000	6,954,000(1)	D3A-44	10,000	7,836,000			
						D3J-16	25,000	10,000,000(1)	D3B-9	20,000	10,000,000(1)			
						D3L-2	25,000	10,000,000(1)						

(1) Test discontinued, no failure.
(2) In test specimen numbers, third digit: A through D denotes Heat No. R6741; E through H denotes Heat No. R6736; J through N denotes Heat No. R7447.

Stress Ratio = Max Alternating Stress / Mean Stress

TABLE CCCVI

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 6Al-4Mo-1V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 2.32, STRESS RATIO = 1.0 (CRUCIBLE HEAT NOS. R6736, R6741 AND P7067)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
DJJ-1	172,500	56	DJB-2	145,000	2	DJJ-9	130,500	67	DJC-21	134,900	71	DJL-24	126,000	7
DJA-55	125,000	510	DJE-54	125,000	391	DJE-35	120,000	636	DJJ-23	112,500	568	DJC-49	110,000	631
DJB-5	120,000	946	DJF-39	120,000	750	DJF-35	115,000	591	DJA-2	105,000	1,208	DJB-27	102,000	834
DJC-9	110,000	1,087	DJH-46	110,000	1,501	DJJ-43	110,000	1,151	DJC-8	100,000	1,845	DJE-10	90,000	1,499
DJI-21	100,000	5,613	DJG-12	100,000	1,843	DJH-23	100,000	1,114	DJG-49	90,000	2,871	DJD-51	80,000	2,304
DJE-34	90,000	7,281	DJC-26	90,000	4,563	DJL-25	90,300	3,633	DJJ-3	75,000	6,251	DJE-35	75,000	3,979
DJC-49	70,000	63,000	DJD-17	60,000	20,000	DJE-4	60,000	30,000	DJC-51	75,000	12,000	DJC-9	60,000	17,000
DJE-12	70,000	84,000	DJL-42	60,000	48,000	DJI-6	60,000	34,000	Average		9,750	DJH-49	60,000	21,000
DJC-19	70,000	126,000	DJH-48	60,000	141,000	DJJ-11	60,000	44,000	DJD-23	60,000	28,000	DJA-27	60,000	52,000
Average		93,000	Average		72,000	Average		36,000	DJE-13	60,000	36,000	Average		40,000
DJC-10	65,000	66,000	DJL-57	50,000	40,000	DJJ-20	55,000	34,000	DJC-23	60,000	46,000	DJB-26	50,000	25,000
DJC-28	65,000	74,000	DJH-45	50,000	83,000	DJH-41	55,000	48,000	Average		37,000	DJA-16	50,000	47,000
DJA-25	65,000	84,000	DJA-31	50,000	87,000	DJF-47	55,000	49,000				DJE-59	50,000	50,000
Average		74,000	DJF-12	50,000	10,000,000 (1)	DJH-40	55,000	10,000,000 (1)	DJG-1	50,000	42,000	DJE-18	50,000	251,000
DJC-20	60,000	183,000	DJE-59	45,000	81,000	DJJ-3	50,000	152,000	DJE-40	50,000	81,000	Average		94,000
DJI-43	60,000	248,000	DJJ-37	45,000	91,000	DJL-9	50,000	10,000,000 (1)	DJC-24	50,000	175,000	DJA-10	40,000	11,000
DJI-19	60,000	10,000,000 (1)	DJE-42	45,000	10,000,000 (1)	DJH-42	50,000	10,000,000 (1)	Average		163,000	DJC-13	40,000	1,235,000
DJF-29	55,000	153,000	DJD-4	40,000	97,000	DJA-15	50,000	10,000,000 (1)	DJC-20	40,000	2,341,000	DJI-17	40,000	2,515,000
DJI-30	55,000	3,139,000	DJL-40	42,500	2,111,000				DJH-33	40,000	9,563,000	Average		1,918,000
DJH-9	55,000	10,220,000 (1)	DJC-45	42,500	10,000,000 (1)	DJE-11	40,000	304,000	DJI-45	40,000	10,050,000			
DJF-20	45,000	9,067,000	DJC-39	40,000	10,000,000 (1)	DJH-44	40,000	2,299,000	DJF-33	40,000	10,000,000 (1)	D"B-30	35,000	239,000
DJH-30	45,000	10,000,000 (1)	DJH-38	40,000	10,000,000 (1)	DJL-44	40,000	10,000,000 (1)	DJJ-6	35,000	1,166,000	DJJ-12	35,000	2,570,000
DJC-31	45,000	10,000,000 (1)	DJJ-65	40,000	10,000,000 (1)	DJH-21	40,000	10,000,000 (1)	DJI-25	35,000	10,000,000 (1)	DJC-40	35,000	7,963,000
						DJD-5	35,000	2,104,000				Average		3,591,000
						DJH-4	35,000	2,250,000	DJC-52	30,000	4,815,000			
						DJH-22	35,000	8,279,000	DJI-52	30,000	10,000,000 (1)	DJJ-22	30,000	7,156,000
						DJE-51	35,000	10,000,000 (1)	DJH-7	30,000	10,000,000 (1)	DJD-43	30,000	10,000,000 (1)
												DJB-56	30,000	10,000,000 (1)

(1) Test discontinued, no failure.
(2) In specimen numbers, third digit A through D denotes heat No. R6741; E through H denotes heat No. R6736; J through M denotes Heat No. P7067.

Stress Ratio = Max. Alternating Stress / Mean Stress

TABLE CCCVII

AXIAL LOAD FATIGUE DATA FOR SOLUTION TREATED AND AGED 4Al 3Mo-1V TITANIUM ALLOY, 0.125 INCH THICK, STRESS CONCENTRATION = 2.42, STRESS RATIO = 0.) (CRUCIBLE HEAT NOS. R6736, R6741 AND P7547)(2)

ROOM TEMPERATURE			400°F			600°F			800°F			900°F		
SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES	SPECIMEN NUMBER	MAXIMUM STRESS, PSI	LIFE CYCLES
DJA-47	170,000	40	DJH-50	145,000	500	[illegible]	145,000	1	[illegible]-29	135,000	5	DJG-47	120,000	5
DJE-4	160,000	2,086	DJH-5	140,000	2	[illegible]	140,000	492	DJJ-33	125,000	624	DJC-23	115,000	218
DJC-27	150,000	1,932	DJE-6	140,000	1,000	[illegible]	140,000	159	DJE-24	130,000	619	DJC-25	112,500	1,396
DJL-29	141,000	3,881	DJL-20	136,500	2,150	[illegible]	135,000	2,579	DJJ-19	125,000	2,727	DJL-33	107,500	2,330
DJA-22	135,000	8,611	DJC-7	133,000	2,716	[illegible]	130,000	3,710	[illegible]-7	123,000	4,041	DJB-46	105,000	3,938
DJA-49	130,000	6,878	DJJ-10	125,000	8,756	[illegible]	125,000	6,140	DJC-21	122,500	4,997	DJA-24	105,000	4,787
DJA-27	100,000	24,000	DJE-45	90,000	26,000	DJE-54	120,000	6,233	DJH-25	120,000	3,910	Average		4,362
DJA-27	100,000	38,000	DJH-5	90,000	26,000							DJL-42	90,000	33,000
DJI-58	100,000	44,000	DJL-34	90,000	45,000	DJC-35	90,000	33,000	DJH-23	90,000	29,000	DJC-35	80,000	35,000
Average		35,000	Average		30,000				DJB-52	90,000	41,000	DJL-7	80,000	38,000
						DJA-51	85,000	30,000	Average		35,000	DJB-16	80,000	127,000
DJK-20	90,000	38,000	DJA-24	85,000	45,000	DJC-37	85,000	43,000				Average		67,000
DJA-33	90,000	60,000	DJE-49	85,000	51,000	DJA-22	85,000	42,000	DJA-4	80,000	26,000			
DJJ-52	90,000	36,000	DJC-5	85,000	54,000	Average		40,000	DJA-45	80,000	44,000	DJH-10	70,000	48,000
Average		49,000	Average		50,000				DJA-23	80,000	51,000	DJK-1	70,000	55,000
						DJC-8	80,000	56,000	Average		40,000	DJE-40	70,000	170,000
DJE-50	80,000	30,000	DJH-40	80,000	37,000	DJA-43	80,000	84,000				Average		91,000
DJJ-42	80,000	100,000	DJH-26	80,000	3,[illegible]	DJ-[illegible]	80,000	611,000	DJB-23	70,000	105,000			
DJH-32	80,000	6,000,000 (1)	DJE-24	80,000	7,[illegible]	DJ-[illegible]	80,000	10,000,000 (1)	DJJ-7	70,000	317,000	DJJ-4	60,000	107,000
			DJB-36	80,000	10,000,000 (1)				DJC-15	70,000	610,000	DJD-22	60,000	169,000
DJC-22	75,000	71,000				DJA-25	75,000	81,000	Average		309,000	DJK-40	60,000	661,000
DJH-30	75,000	174,000	DJ-57	75,000	68,000	DJA-26	75,000	261,000				Average		279,000
DJK-31	75,000	5,311,000	DJ-27	75,000	133,000	DJC-[illegible]	75,000	576,000	DJH-57	65,000	215,000			
Average		1,775,000	DJC-27	70,000	111,000	Average		346,000	DJK-7	65,000	1,202,000	DJC-12	50,000	2,162,000
			Average		93,000				Average		708,000	DJL-35	50,000	6,230,000
DJH-30	70,000	5,123,000				DJC-55	70,000	81,000				Average		4,196,000
DJB-2	70,000	10,000,000 (1)	DJ-22	65,000	145,000	DJE-20	70,000	45,000	DJJ-51	60,000	455,000			
DJC-17	70,000	10,000,000 (1)	[illegible]-9	65,000	[illegible],000	DJB-1	70,000	1[illegible],000	DJB-59	60,000	7,660,000	DJB-10	60,000	10,000,000 (1)
DJC-36	70,000	10,000,000 (1)	DJ-25	65,000	1[illegible],000	Average		115,000	DJA-6	60,000	10,000,000 (1)	DJC-38	60,000	10,000,000 (1)
			DJH-2	65,000	10,000,000 (1)							DJJ-50	60,000	10,000,000 (1)
			DJA-58	60,000	10,000,000 (1)	DJA-22	65,000	10,000,000 (1)	DJE-22	50,000	10,000,000 (1)			
			DJE-12	60,000	10,000,000 (1)	DJE-3	65,000	10,000,000 (1)	DJL-34	50,000	10,000,000 (1)			
			DJK-51	60,000	10,000,000 (1)	DJE-41	65,000	10,000,000 (1)						
						DJE-17	65,000	10,000,000 (1)						

(1) Test discontinued, no failure.
(2) In test specimen numbers, third cipher A thro[illegible] D denotes Heat No. R6741; E through H denotes Heat No. R6736; J through N denotes Heat No. P7547.

Stress Ratio = $\frac{\text{Max Alternating Stress}}{\text{Mean Stress}}$

Table CCCVIII

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-6Al-3Mo-1V HEAT — CRUCIBLE R4815

FASTENER — NAS 675-72 NOMINAL DIA.— 5/16 INCH

TEST TEMP. °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	D8LL1G-1	0.0654	0.0655	6860	5970	(2)	D8TL1G-1	0.0672	0.0678	6750	6240	(1)
	-6	0.0682	0.0682	7110	6330	(2)	-6	0.0672	0.0674	6860	6140	(2)
	-11	0.0680	0.0672	7340	6320	(2)	-11	0.0656	0.0633	6600	5900	(2)
	Average	0.0672	0.0670	7100	6210		Average	0.0667	0.0662	6740	6100	
-65	D8LL5G-2	0.0681	0.0670	7940	7350	(1)	D8TL5G-2	0.0660	0.0647	5680	- (3)	(1)
	-5	0.0681	0.0681	7070	7210	(2)	-5	0.0674	0.0670	7510	6890	(2)
	-12	0.0703	0.0707	7940	6620	(2)	-12	0.0665	0.0645	7900	- (4)	(1)
	Average	0.0688	0.0686	7670	7060		Average	0.0666	0.0654	7030		
-100	D8LL10G-3	0.0673	0.0681	7620	7000	(1)	D8TL10G-3	0.0674	0.0674	7510	6990	(2)
	-8	0.0684	0.0682	7810	7030	(2)	-8	0.0673	0.0668	7510	6970	(2)
	-13	0.0686	0.0678	8250	7100	(2)	-13	0.0688	0.0687	7510	6890	(2)
	Average	0.0681	0.0680	7890	7360		Average	0.0678	0.0676	7510	6950	
-200	D8LL11G-4	0.0681	0.0673	8440	7850	(2)	D8TL11G-4	0.0670	0.0670	8280	7620	(2)
	-9	0.0692	0.0686	8300	7590	(1)	-9	0.0667	0.0653	8360	7750	(2)
	-14	0.0690	0.0692	8380	7620	(2)	-14	0.0686	0.0685	8040	7490	(1)
	Average	0.0688	0.0684	8370	7690		Average	0.0674	0.0669	8230	7620	
-320	D8LL12G-5	0.0680	0.0689	9300	8570	(1)	D8TL12G-5	0.0672	0.0679	7470	- (3)	(1)
	-10	0.0692	0.0690	8500	7890	(2)	-10	0.0684	0.0652	8150	- (3)	(1)
	-15	0.0679	0.0680	8900	8180	(2)	-15	0.0675	0.0672	8830	8140	(1)
	Average	0.0684	0.0686	8900	8210		Average	0.0650	0.0668	8150		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Failed prior to attaining yield deformation.
(4) Unusable load-deformation curve.

TABLE XXIX

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-6Al-4Mo-1V HEAT — CRUCIBLE R4615

FASTENER — NAS 2013-V2 NOMINAL DIA.— 5/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	D8LL1H-1	0.0689	0.0677	7180	6250	(2)	D8TLL1-1	0.0664	0.0676	8030	6980	(1)
	-6	0.0690	0.0690	6720	5840	(2)	-6	0.0646	0.0633	6700	5570	(2)
	-11	0.0683	0.0672	7070	6100	(2)	-11	0.0644	0.0663	6750	5750	(2)
	Average	0.0687	0.0680	7023	6060		Average	0.0651	0.0657	6720	5430	
-65	D8LL9H-2	0.0677	0.0674	7530	6590	(2)	D8TL9H-2	0.0652	0.0676	7270	6400	(1)
	-7	0.0684	0.0688	7480	6580	(1)	-7	0.0673	0.0665	7710	6630	(2)
	-12	0.0692	0.0692	7600	6710	(2)	-12	0.0631	0.0652	7160	6360	(1)
	Average	0.0684	0.0685	7540	6630		Average	0.0652	0.0664	7310	6475	
-100	D8LL10H-3	0.0684	0.0683	7710	7030	(2)	D8TL10H-3	0.0667	0.0662	7600	6730	(1)
	-8	0.0678	0.0688	7280	- (3)	(2)	-8	0.0671	0.0672	7610	6510	(1)
	-13	0.0707	0.0702	7520	6520	(2)	-13	0.0650	0.0669	7260	6410	(2)
	Average	0.0690	0.0691	7500	6780		Average	0.0663	0.0668	7490	6560	
-200	D8LL11H-4	0.0682	0.0684	8440	7520	(1)	D8TL11H-4	0.0679	0.0677	8020	7420	(1)
	-9	0.0653	0.0654	8350	7570	(2)	-9	0.0669	0.0666	8240	- (4)	(2)
	-14	0.0698	0.0693	8570	7520	(2)	-14	0.0690	0.0690	8520	7290	(2)
	Average	0.0678	0.0677	8420	7540		Average	0.0679	0.0678	8260	7360	
-320	D8LL12H-5	0.0677	0.0684	8080	8330	(1)	D8TL12H-5	0.0664	0.0662	8620	- (3)	(1)
	-10	0.0635	0.0630	8490	7930	(1)	-10	0.0657	0.0635	8680	8040	(1)
	-15	0.0686	0.0686	8950	8180	(1)	-15	0.0676	0.0680	8620	- (3)	(1)
	Average	0.0666	0.0667	8840	8150		Average	0.0666	0.0659	8640		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Failed prior to attaining yield deformation.
(4) Unusable load-deformation curve.

TABLE CCCX

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-6Al-3Mo-1V HEAT — CRUCIBLE RL815

FASTENER — HL12V-6-3 NOMINAL DIA.— 3/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	D8LL1J-1	0.0667	0.0668	2600	2420	(2)	D8TL1J-1	0.0676	0.0674	2340	2300	(2)
	-6	0.0683	0.0685	2420	2370	(2)	-6	0.0635	0.0622	2340	2240	(2)
	-11	0.0699	0.0704	2800	2730	(2)	-11	0.0664	0.0658	2340	2240	(2)
	Average	0.0683	0.0686	2610	2510		Average	0.0658	0.0651	2340	2260	
-65	D8LL9J-2	0.0665	0.0666	2470	2400	(2)	D8TL9J-2	0.0669	0.0683	2660	2280	(2)
	-7	0.0690	0.0691	2660	2440	(2)	-7	0.0636	0.0620	2530	2440	(2)
	-12	0.0655	0.0656	2520	2360	(2)	-12	0.0667	0.0657	2610	2470	(2)
	Average	0.0670	0.0671	2550	2410		Average	0.0657	0.0653	2600	2400	
-100	D8LL10J-3	0.0673	0.0672	2730	2540	(2)	D8TL10J-3	0.0678	0.0679	2580	2440	(2)
	-8	0.0642	0.0633	2540	2490	(2)	-8	0.0647	0.0626	2550	2500	(2)
	-13	0.0682	0.0684	2480	2370	(2)	-13	0.0691	0.0691	3070	- (4)	(3)
	Average	0.0666	0.0663	2580	2470		Average	0.0672	0.0665	2750	2470	
-200	D8LL11J-4	0.0679	0.0676	2860	2850	(2)	D8TL11J-4	0.0685	0.0684	3090	2860	(3)
	-9	0.0632	0.0628	2840	2780	(3)	-9	0.0671	0.0678	2680	2660	(3)
	-14	0.0686	0.0686	3000	2910	(3)	-14	0.0688	0.0690	3670	3640	(3)
	Average	0.0666	0.0663	2900	2850		Average	0.0681	0.0684	3150	3050	
-320	D8LL12J-5	0.0685	0.0680	2760	- (4)	(2)	D8TL12J-5	0.0686	0.0684	2600	-(4)(5)	(1)
	-10	0.0610	0.0603	2950	- (4)	(3)	-10	0.0679	0.0683	3170	3100	(2)
	-15	0.0680	0.0680	3020	- (4)	(3)	-15	0.0679	0.0674	3220	3140	(2)
	Average	0.0662	0.0658	2910			Average	0.0681	0.0680	3200	3120	

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Fastener head failed.
(4) Failed prior to attaining yield deformation.
(5) Not included in average.

TABLE CCCXI

SINGLE FASTENER LAP JOINT PROPERTIES FOR 6Al-4V TITANIUM ALLOY FASTENERS IN 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET, e/D=2.0, W/D=5.0

SHEET ALLOY— Ti-6Al-3Mo-2V HEAT — CRUCIBLE RA815

FASTENER — MS 2506-3 NOMINAL DIA.— 3/16 INCH

TEST TEMP °F	LONGITUDINAL						TRANSVERSE					
	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE	SPECIMEN NUMBER	THICKNESS, INCH		ULTIMATE STRENGTH, POUNDS	YIELD STRENGTH, POUNDS	TYPE FAILURE
		TOP	BOTTOM					TOP	BOTTOM			
80	D6TL11K-1	0.0656	0.0668	2410	2210	(2)	D6TL11K-1	0.0676	0.0661	2360	2270	(3)
	-6	0.0661	0.0683	2500	2380	(3)	-6	0.0634	0.0620	2310	2100	(2)
	-11	0.0647	0.0646	2420	2140	(2)	-11	0.0666	0.0660	2300	2120	(2)
	Average	0.0655	0.0666	2443	2243		Average	0.0659	0.0654	2323	2163	
-65	D6TL15K-2	0.0671	0.0671	2420	2360	(2)	D6TL15K-2	0.0677	0.0677	2360	2330	(3)
	-7	0.0668	0.0689	2460	2340	(3)	-7	0.0644	0.0626	2400	2400	(3)
	-12	0.0650	0.0647	2380	2270	(2)	-12	0.0663	0.0652	2660	2530	(2)
	Average	0.0670	0.0669	2420	2323		Average	0.0661	0.0652	2573	2523	
-100	D6TL10K-3	0.0658	0.0661	2700	2540	(2)	D6TL10K-3	0.0664	0.0662	2480	2300	(3)
	-8	0.0690	0.0690	2470	2310	(3)	-8	0.0652	0.0669	2400	- (4)	(3)
	-13	0.0661	0.0661	2500	2350	(2)	-13	0.0664	0.0658	2420	2370	(3)
	Average	0.0670	0.0671	2560	2400		Average	0.0667	0.0670	2433	2340	
-200	D6TL11K-4	0.0677	0.0673	2600	2730	(3)	D6TL11K-4	0.0685	0.0684	2750	2690	(3)
	-9	0.0636	0.0630	2710	2690	(2)	-9	0.0680	0.0681	2690	2730	(1)
	-14	0.0666	0.0656	2750	2710	(3)	-14	0.0677	0.0668	2810	- (4)	(3)
	Average	0.0667	0.0663	2753	2690		Average	0.0681	0.0678	2750	2715	
-320	D6TL12K-5	0.0662	0.0680	3220	- (4)	(3)	D6TL12K-5	0.0683	0.0662	2960	- (4)	(3)
	-10	0.0629	0.0626	3020	- (4)	(3)	-10	0.0680	0.0684	3100	- (4)	(1)
	-15	0.0690	0.0689	3260	3220	(3)	-15	0.0677	0.0670	2920	- (4)	(1)
	Average	0.0660	0.0665	3170			Average	0.0680	0.0679	3000		

(1) Sheet failed in tension across fastener hole.
(2) Fastener sheared.
(3) Fastener head failed.
(4) Failed prior to attaining yield deformation.

TABLE CCCXII

TENSILE PROPERTIES FOR 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET CONTAINING FUSION WELDS

CONDITION— ANNEALED IN SOLUTION TREATED AND AGED CONDITION
ALLOY— Ti-6Al-3Mo-1V
HEAT NUMBER— CRUCIBLE 8A815

TEST TEMP °F	LONGITUDINAL									TRANSVERSE								
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E_t, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/2 IN.	ELONGATION, % IN 1/4 IN.	EFFICIENCY FOR F_{TU}	EFFICIENCY FOR F_{TY}	FAILURE LOCATION	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E_t, PSI	ELONGATION, % IN 2 IN.	ELONGATION, % IN 1/2 IN.	ELONGATION, % IN 1/4 IN.	EFFICIENCY FOR F_{TU}	EFFICIENCY FOR F_{TY}	FAILURE LOCATION
-80	D6L11-1	179,000	168,000	10.3×10^6	1.0	6	6	87.7	4.9	(1)	D6TM1-1	177,000	166,000	16.0×10^6	-	-	-(2)	86.7	97.2	(1)
	-6	185,000	171,000	16.2	3.5	6	8	90.7	100.0	(1)	-6	183,000	170,000	16.9	1.0	6	8	89.7	100.0	(1)
	-11	177,000	167,000	16.3	2.5	8	9	86.8	98.2	(1)	-11	176,000	172,000	16.6	2.5	8	8	86.3	101.2	(1)
	Average	180,000	169,000	16.7	2.5	7	8	88.4	99.3		Average	179,000	169,000	16.7	1.5	7	8	87.6	99.5	
-65	D6L14-7	211,000	180,000	16.6×10^6	-	-	-(2)	87.3	100.0	(1)	D6TM9-2	208,000	184,000	17.0×10^6	2.5	4	12	86.6	95.1	(1)
	-7	212,000	183,000	16.4	-	-	-(2)	87.4	100.0	(1)	-7	207,000	180,000	17.2	1.0	8	20	86.2	96.1	(1)
	-12	215,000	182,000	16.8	-	-	-(2)	88.7	98.4	(1)	-12	211,000	182,000	17.1	-	-	-(2)	87.8	98.6	(1)
	Average	213,000	181,000	16.6	-	-	-(2)	87.8	99.4		Average	209,000	182,000	17.1	1.5	6	16	86.9	96.6	
-100	D6L10-3	215,000	194,000	16.7×10^6	1.0	6	10	90.7	98.5	(1)	D6TM1-3	208,000	200,000	17.2×10^6	0.5	4	7	85.3	94.5	(1)
	-8	209,000	193,000	17.0	3.5	6	8	88.2	97.1	(1)	-8	211,000	201,000	17.9	-	-	-(2)	86.9	100	(1)
	-13	215,000	201,000	17.2	2.5	8	-(2)	90.7	98.5	(1)	-13	211,000	210,000	17.6	1.5	12	20	87.8	100	(1)
	Average	213,000	196,000	16.9	2.3	7	-	89.9	97.8		Average	210,000	204,000	17.5	1.0	8	13	86.7	98.2	
-200	D6TM11-4	232,000	214,000	16.4×10^6	-	-	-(2)	88.0	96.4	(1)	D6TM11-4	242,000	226,000	17.2×10^6	1.0	8	12	91.7	96.6	(1)
	-9	235,000	209,000	17.2	-	-	-(2)	90.0	95.2	(1)	-9	244,000	231,000	17.7	1.0	4	12	93.5	98.7	(1)
	-14	232,000	214,000	17.5	2.5	6	12	88.6	97.6	(1)	-14	241,000	226,000	17.6	-	-	-(2)	92.4	96.6	(1)
	Average	230,000	212,000	17.0	2.5	6	12	88.9	96.4		Average	242,000	228,000	17.6	1.0	6	8	92.6	97.3	
-300	D6L12-5	262,000	254,000	17.4×10^6	-	-	-(2)	86.8	98.1	(1)	D6TM12-5	263,000	266,000	17.9×10^6	-	-	-(2)	90.0	98.0	(1)
	-10	261,000	-	17.5	-	-	(2,3)	86.1	-	(1)	-10	259,000	-	18.2	-	-	-(2)	88.7	-	(1)
	-15	264,000	-	17.6	-	-	(2,3)	87.1	-	(1)	-15	260,000	-	18.0	-	-	(2,3)	89.0	-	(1)
	Average	263,000		17.5				86.9			Average	263,000		18.0				89.2		

(1) Heat affected zone adjacent to weld.
(2) Elongation less than 0.5 percent.
(3) Failed prior to attaining yield deformation.

TABLE CCCXIII

TENSILE PROPERTIES FOR 0.063 INCH THICK SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET CONTAINING FUSION WELDS

CONDITION— AGED AFTER WELDING IN SOLUTION TREATED CONDITION.

ALLOY— Ti-6Al-2Mo-1V

HEAT NUMBER— CANADIAN P7647

TEST TEMP °F	LONGITUDINAL									TRANSVERSE								
	SPECIMEN NUMBER	F_{TU}, psi	F_{TY}, psi	E_t, psi	ELONGATION % in 2 in	ELONGATION % in 1/2 in	ELONGATION % in 1/8 in	EFFICIENCY FOR F_{TU}	EFFICIENCY FOR F_{TY}	FAILURE LOCATION	SPECIMEN NUMBER	F_{TU}, psi	F_{TY}, psi	E_t, psi	ELONGATION % in 2 in	ELONGATION % in 1/2 in	ELONGATION % in 1/8 in	EFFICIENCY FOR F_{TU}	EFFICIENCY FOR F_{TY}	FAILURE LOCATION
80	-111LM11-1	177,300	154,300	16.7x10⁶	3.5	-	-	97.7	97.3	(3)										
	-6	166,900	144,700	16.5	3.5	-	-	91.9	91.3	(3)										
	-11	171,200	151,000	16.5	3.5	-	-	94.3	95.3	(3)										
	Average	171,800	153,300	16.5	3.5	-	-	94.6	96.3	(3)										
-60	-111LM-1-2	142,900	123,900	16.4x10⁶	2.5	-	5	78.7	78.2	(3)										
	-7	165,300	-	-	2.5	-	(2,5)	91.0	-	(3)										
	-12	159,200	122,200	15.4	2.5	-	5	87.6	77.1	(3)										
	Average	155,800	122,200	15.9	2.5	-	5	85.8	77.1	(3)										
-100	-111LM10-3	134,300	101,300	16.7x10⁶	-	-	-(5)	74.0	63.9	(3)										
	-8	134,200	125,200	17.1	-	-	-(5)	73.9	79.0	(3)										
	-13	137,200	122,200	16.8	-	-	-(5)	75.6	77.1	(3)										
	Average	135,700	116,700	16.9	-	-	-(5)	74.8	73.6	(3)										
-200	-111LM11-4	215,300	147,000	17.7x10⁶	3.5	-	6 (4)	93.6	92.3	(3)										
	-9	215,300	135,200	17.7	3.5	-	10	93.6	93.3	(3)										
	-14	-	137,200	17.4	-	-	-(5)	-	86.5	(3)										
	Average	215,300	140,500	17.6	3.5	-	-(5)	93.6	88.6	(3)										
-320	-111LM12-5	214,300	142,200	17.5x10⁶	-	-	5,(4)	93.0	90.7	(3)										
	-10	-	131,400	17.7	-	-	-(5)	-	82.3	(4)										
	-15	214,300	134,200	17.6	-	-	(5,5)	93.0	84.5	(3)										
	Average	214,300	135,900	17.6	-	-	-	93.0	85.8	(3)										

(1) Heat affected zone adjacent to weld.
(2) Unusable load-deformation curve.
(3) Parent material.
(4) Failed outside test section.
(5) Elongation less than 0.5 percent.
(6) Pulled at plate edge.

TABLE CCCXIV

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— Ti-6Al-3Mo-1V
THICKNESS— 0.063 INCH
HEAT NUMBER— CRUCIBLE R4815

TEST TEMP. °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN.	1/8 IN.	1/32 IN.	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	1/8 IN.	1/32 IN.
80	D8LA1-42	205,000	176,000	16.6×10^6	6.0	28	44	D8TA1-41	207,000	180,000	16.9×10^6	5.5	16	28
	-46	206,000	178,000	16.5	5.0	24	-	-46	207,000	182,000	17.4	5.5	28	40
	-52	201,000	177,000	16.6	7.0	24	-	-51	201,000	177,000	16.9	6.5	24	40
	Average	204,000	177,000	16.6	6.0	25		Average	205,000	180,000	17.1	5.8	23	36
-96	D8LA9-42	231,000	198,000	16.3×10^6	5.5	24	44	D8TA9-42	235,000	204,000	16.6×10^6	2.0	20	20(1)
	-47	234,000	202,000	16.3	5.0	20	36	-47	236,000	208,000	16.7	4.5	22	32
	-52	228,000	198,000	16.5	5.0	24	32	-52	225,000	199,000	16.7	5.5	-	-
	Average	231,000	199,000	16.4	5.2	23	37	Average	232,000	204,000	16.7	4.0	21	26
-100	D8LA10-43	238,000	205,000	16.9×10^6	4.0	18	-	D8TA10-43	212,000	-	17.1×10^6	-	-	(2,3)
	-48	240,000	207,000	16.6	3.5	18	40	-48	240,000	214,000	16.9	2.5	12	28
	-53	234,000	203,000	16.9	5.5	26	28	-53	232,000	207,000	16.7	5.0	28	-
	Average	237,000	205,000	16.8	4.3	21	34	Average	228,000	210,000	16.9	2.5	13	
-200	D8LA11-44	263,000	230,000	17.7×10^6	3.0	18	-	D8TA11-44	263,000	-	17.6×10^6	2.0	8	-(4)
	-49	263,000	234,000	17.4	3.5	20	-	-49	264,000	238,000	17.8	3.0	16	24
	-54	258,000	228,000	17.3	3.0	22	-	-54	255,000	231,000	17.9	4.0	16	-
	Average	261,000	231,000	17.5	3.2	20		Average	261,000	234,000	17.8	3.0	13	
-320	D8LA12-45	295,000	260,000	17.9×10^6	2.0	8	-(1)	D8TA12-45	281,000	263,000	16.8×10^6	4.5	12	12
	-50	295,000	263,000	17.8	3.5	16	28	-50	301,000	278,000	17.4	4.0	12	12
	-55	294,000	260,000	17.2	-	-	-	-55	294,000	273,000	17.5	4.5	-	-
	Average	295,000	261,000	17.8	2.8	12		Average	292,000	271,000	17.7	4.3	12	12

(1) Failed at knife edge.
(2) Specimen failed prior to attaining yield deformation.
(3) Elongation less than 0.3 percent.
(4) Unusable load-deformation curve beyond proportional limit.

TABLE CCCXV

TENSILE PROPERTIES FOR SOLUTION TREATED AND AGED TITANIUM ALLOY SHEET

ALLOY— Ti-6Al-2Mo-1V
THICKNESS— 0.063 INCH
HEAT NUMBER— CRUCIBLE P7647

TEST TEMP °F	LONGITUDINAL							TRANSVERSE						
	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN	SPECIMEN NUMBER	F_{TU}, PSI	F_{TY}, PSI	E, PSI	ELONGATION, % IN 2 IN	ELONGATION, % IN 1/4 IN	ELONGATION, % IN 1/8 IN
80	D11LA11L-1	157,000	153,000	16.0×10^6	5.5	18	26	D11LA11L-1	158,000	161,000	17.4×10^6	4.0	16	28
	-6	165,000	149,000	17.0	5.0	16	20	-6	156,000	159,000	17.3	7.0	24	25
	-11	164,000	149,000	16.4	7.0	22	32	-11	165,000	160,000	17.4	7.5	20	26
	Average	155,000	150,000	16.5	5.8	17	27	Average	160,000	160,000	17.4	6.2	23	25
-95	D11LA9L-2	209,000	175,000	16.5×10^6	3.0	16	24	D11LA9L-2	216,000	197,000	17.3×10^6	1.5	8	-
	-7	204,000	171,000	16.6	4.0	10	12	-7	206,000	186,000	17.4	3.0	14	20
	-12	203,000	170,000	16.6	3.5	20	26	-12	206,000	185,000	17.7	2.5	14	16
	Average	205,000	172,000	16.6	3.5	15	21	Average	209,000	189,000	17.5	2.3	11	12
-100	D11LA10L-3	214,000	181,000	16.6×10^6	4.0	22	26	D11LA10L-3	226,000	202,000	17.7×10^6	2.0	12	25
	-8	215,000	182,000	16.7	3.5	14	20	-8	221,000	199,000	17.9	2.5	16	20
	-13	213,000	180,000	16.8	4.0	20	32	-13	220,000	196,000	17.6	2.5	16	26
	Average	214,000	181,000	16.7	3.8	19	27	Average	222,000	199,000	17.7	2.3	15	23
-200	D11LA11L-4	-	215,000	17.5×10^6	-	-	-(1)	D11LA11L-4	251,000	231,000	17.9×10^6	1.0	8	12
	-9	231,000	203,000	17.6	2.5	14	20	-9	249,000	229,000	18.4	1.5	12	12
	-14	240,000	210,000	17.4	2.3	13	16	-14	234,000	220,000	17.3	1.0	4	8(3)
	Average	236,000	209,000	17.5	2.2	12	18	Average	245,000	220,000	17.9	1.2	8	11
-320	D11LA12L-5	252,000	236,000	17.4×10^6	-	-	(2,3)	D11LA12L-5	262,000	253,000	18.2×10^6	-	-	(2,3)
	-10	233,000	-	17.1	-	-	(2,3,4)	-10	272,000	251,000	18.7	-	-	(2,3)
	-15	259,000	232,000	17.7	-	-	(2,3)	-15	267,000	249,000	18.0	-	-	(2,3)
	Average	248,000	235,000	17.4				Average	267,000	251,000	18.3			

(1) Failed outside test section.
(2) Elongation less than 0.3 percent.
(3) Failed at knife edge.
(4) Failed prior to attaining yield deformation.

TABLE CCCXVI

ELEVATED TEMPERATURE THERMAL EXPANSION PROPERTIES FOR 6Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R67_6, SHEET NO. B-32)

Temp. Range, °F	Expansion, Inch per Inch				Mean Linear Thermal Expansion Coefficient, Inch Per Inch Per °F
	Specimen No. D3EE-1	Specimen No. D3EE-2	Specimen No. D3EE-3	Average	
100 - 200	0.00053	0.00048	0.00051	0.000507	5.07×10^{-6}
100 - 300	0.00102	0.00104	0.00103	0.001030	5.15
100 - 400	0.00156	0.00159	0.00158	0.001577	5.26
100 - 500	0.00211	0.00215	0.00215	0.002137	5.34
100 - 600	0.00265	0.00270	0.00267	0.002673	5.35
100 - 700	0.00318	0.00325	0.00323	0.003220	5.37
100 - 800	0.00374	0.00382	0.00381	0.003790	5.41
100 - 900	0.00429	0.00442	0.00435	0.004353	5.44
100 - 1000	0.00486	0.00496	0.00494	0.004920	5.47
100 - 1100	0.00543	0.00554	0.00553	0.005500	5.50
100 - 1200	0.00601	0.00616	0.00615	0.006107	5.55

TABLE CCCXVII

LOW I[illegible]TURE THERMAL EXPANSION PROPERTIES FOR 6Al-3Mo-1V TITANIUM ALLOY [illegible], 0.[illegible]25 INCH THICK (CRUCIBLE HEAT NO. R6736, SHEET NO. B-32)

Temp. Range, °F	Expansion, Inch per Inch				Mean Linear Thermal Expansion Coefficient, Inch Per Inch Per °F
	Specimen No. D3EL-4	Specimen No. D3EL-5	Specimen No. D3EL-6	Average	
-10 to 35	0.00019	0.00018	0.00023	0.000200	4.44x10^{-6}
-55 to 35	0.00039	0.00037	0.00045	0.000403	4.48
-100 to 35	0.00058	0.00055	0.00065	0.000593	4.39
-145 to 35	0.00076	0.00074	0.00085	0.000783	4.35
-190 to 35	0.00095	0.00091	0.00104	0.000967	4.30
-235 to 35	0.00112	0.00108	0.00123	0.001143	4.23
-280 to 35	0.00128	0.00123	0.00139	0.001300	4.13
-325 to 35	0.00143	0.00137	0.00154	0.001447	4.02
-370 to 35	0.00156	0.00151	0.00163	0.001567	3.87
-415 to 35	0.00165	0.00161	0.00170	0.001653	3.67
-453 to 35	0.00170	0.00166	0.00174	0.001700	3.48

TABLE CCCXVIII

ELEVATED TEMPERATURE THERMAL CONDUCTIVITY OF 4Al-3Mo-1V TITANIUM ALLOY SHEET, 0.125 INCH THICK (CRUCIBLE HEAT NO. R6736, SHEET NO. B-32)

Mean Temp., °F	Thermal Conductivity, BTU/ft hr °F			
	Specimen No. D3KE-1	Specimen No. D3KE-2	Specimen No. D3KE-3	Average
300	6.1	6.0	6.3	6.1
400	6.9	6.7	7.0	6.9
500	7.7	7.3	7.6	7.5
600	8.4	8.0	8.3	8.2
700	9.1	8.7	9.1	9.0
800	9.9	9.6	10.0	9.8
900	10.8	10.4	10.9	10.7
1000	11.6	11.1	11.4	11.4
1100	12.0	11.5	11.8	11.8
1200	12.1	11.6	12.0	11.9

AD 284 [illegible]

Aeronautical Systems Division, D' /Materials and Processes, Applications Lab
Wright-Patterson AFB, Ohio.
Rpt Nr ASD-TDR-62-335 Vol 3. DETERMINATION OF DESIGN DATA FOR HEAT TREATED TITANIUM ALLOY SHEET: Tables of Data Collected. Final report, Dec 62, 331 p, incl illus., tables.
Unclassified Report

Mechanical and physical property data, necessary to fulfill the requirements of Phase II of the Department of Defense Titanium Alloy Sheet Rolling Program, were obtained for selected solution treated and aged titanium alloys in sheet form.

Alloys investigated: B120VCA (Ti-13V-11Cr-3Al),

(over)

Ti-6Al-4V, Ti-2.5Al-16V, and Ti-4Al-3Mo-1V. They were supplied in the heat treated condition from three or more heats and three thicknesses of each alloy. Static mechanical property data for tension, compression, bearing, shear, and crippling; creep and rupture data for tension, compression, bearing and shear; and axial-load fatigue data were obtained at room and elevated temperatures. Fastener and weld joint data from -320°F to 80°F and physical properties from -420°F to 1200°F were obtained.

Volume 3 is a tabular compilation of all data obtained in the program.

1. Titanium alloy
2. Physical property data
3. Mechanical property data
I. AFSC Project 7381 Task 738103
II. Contract AF 33(616) -6346
III. Lockheed-Georgia Company, Marietta, Georgia
IV. Aval fr CTS
V. In ASTIA collection

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