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D-1A NOSE FAIRING SEPARATION FITTING LOAD TEST

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16. Abstract

The D-1A Centaur nose fairing was structurally tested in the Space Power Chamber at LeRC to determine fairing separation system latch bolt loads imposed during flight. This testing was conducted to supplement and/or verify analytic techniques used in calculating bolt loads for D-1A, and to gain insight into the general structural behavior of separation latch systems. It was shown that the assumed bolt load magnification due to prying action of the latch fittings on the bolt does occur, but is strongly dependent on fairing shell stiffness.

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SUMMARY

The D-1A Centaur nose fairing was structurally tested in the Space Power Chamber at LeRC to determine fairing separation system latch bolt loads imposed during flight. This testing was conducted to supplement and/or verify analytic techniques used in calculating bolt loads for D-1A, and to gain insight into the general structural behavior of separation latch systems.

It was shown that the assumed bolt load magnification due to prying action of the latch fittings on the bolt does occur, but is strongly dependent on fairing shell stiffness.

INTRODUCTION

The Atlas/Centaur D-1A nose fairing is a two-piece "clamshell" protective covering for the spacecraft. The two jettisonable halves of the fairing are held together and to the launch vehicle by 20 explosive bolt latches. All fairing flight loads, except shear, are transferred through these latches from lift-off until fairing jettison. At that time, the latch bolts are severed by explosive charges and the fairing halves pivot free of the vehicle on hinges mounted at their aft ends.

A typical latch/bolt installation is shown in figure 1. The latches are mounted on the external surface of the fairing shell structure at the split-line (line of juncture of the two halves of the fairing to each other and to the launch vehicle). Under the application of flight loads, a skin tensile load, P_s, is developed tending to open up the split-line at the latches as shown in figure 2. The latch bolts resist this skin load with bolt loads P_b. However, due to the resulting offset of the latch bolt centerline from the shell skin, there is a local moment (m, in figure 2) induced in the shell/latch structure. This moment is resisted by the adjacent shell structure and by a "heel-toe" prying action on the bolt by the latch halves as shown in figure 2. The relative proportions of the two resisting moments are determined by the shell stiffness--a weak shell will result in large latch prying, a stiff one in small prying.

Since quantitative values for latch bolt prying are difficult to determine, it has been customary to assume maximum prying; i.e., zero shell stiffness. This approach results in over-strength latch bolts, which are difficult to break. If any one of the 20 latch bolts on D-1A fairings were to fail to separate at jettison command, it would be well to have the bolt as weak as possible so that action of the jettison actuators might break it. Therefore, a series of structural tests was conducted on the D-1A fairing to determine latch bolt flight loads and prying factors at each of the 20 latches, and the results are reported herein.

SYMBOLS AND ABBREVIATIONS

S	Shims used under bolt head
NS	No shims under bolt head
B/M	Bending moment
f	Heel-toe factor
DLL	Design limit load
N/F	Nose fairing
S/C	Spacecraft
PSID	Pounds per square inch, differential
KIP	One-thousand pounds
P_B	Load in bolt, pounds
P_S	Load in shell skin that is reacted by a single bolt, pounds
m	Moment due to bolt offset from skin centerline, inch-pounds
x	Amount of offset of bolt from skin centerline, inches
mv	Millivolt
P	Applied load, pounds
psi	Pounds per square inch
S_B	Bending stress
P_{r_1}, P_{r_2}, P_{r_3}	Applied pressures, psid

TEST DESCRIPTION

1. General

The test hardware listed in Table 1 was mounted in test cell no. 2 of the Space Power Chamber at LeRC. Test support hardware is listed in Table 2. The

fairing split-line plane was oriented transverse to the test chamber North-South (main) axis, with the LH_2 vent stack simulated mass directed westerly. Figure 3 shows the test setup, load application system, maximum load values, and bolt locations. Instrumentation is given in Table 3.

One purpose of the test was to determine axial and bending stresses and loads in each of the 20 fairing latch bolts due to separate application of (a) external design limit loads, and (b) design burst pressure. The second test objective was to determine the true heel-toe prying factor at each latch, and to thereby evaluate the advisability of reducing the analytical prying factors.

To accomplish these objectives, each of the flight latch bolts was replaced with a strain-gaged test bolt as shown in figure 4, mounted as shown in figure 1. Each of the test bolts was calibrated using a tensile test machine. All of the bolt calibration curves were linear and nearly identical so that a single calibration constant could be used for data reduction as indicated in Appendix A. A shim was installed between latch fittings as shown in figure 1 to determine the bolt load without heel-toe prying. This load, when greater than the bolt preload, is necessarily identical to the load in the fairing skin at the latch. The expected flight load in the same latch bolt is obtained as the test load without a shim. The ratio of these two loads is the true heel-toe factor as shown in figure 5.

2. Bending Tests

These tests were conducted to determine bolt loads and heel-toe prying factors for the circumferential latch bolts at station 193.75. Loads were applied through a strap wrapped around the fairing conical section as shown in figure 3. The strap was located to give 90 percent of DLL bending moment at the split barrel aft face (Centaur station 193.75). Coincidentally, the corresponding axial and shear loads also closely matched 90 percent of DLL. Loading was limited to less than DLL so that the test hardware could be refurbished for flight; test results were extrapolated to DLL for comparison to calculated values. Seven tests were conducted, of which three were bending tests, as summarized in Table 5. Test no. 1 with shims supplied the circumferential latch skin loads. Test no. 7 without shims yielded 90 percent of expected flight bolt limit loads for the same latches. These two tests were thus used to calculate heel-toe factors for the circumferential latches. Test no. 2 was conducted to investigate the effect of varying bolt preload. Since the applied load produced almost exactly the expected flight proportions of shear, axial, and bending loads at station 193.75, heel-toe factors calculated from test results for latches 13 through 16 must be considered correct. Therefore, discrepancies noted between test results and analytic results for heel-toe factors must indicate errors in the analysis.

3. Pressure Tests

These tests were conducted to determine bolt loads and prying factors for the vertical split-line latch bolts. The hardware interface seams were sealed

and pressure was introduced to the cavity through the base as shown in figure 3. The fairing was pressurized to a maximum value of 1.7 PSID burst, which is 90 percent of the average DLL pressure. (Flight differential pressure across the N/F varies with station and thus could not be simulated in the test; an average value was used.) Tests nos. 3 through 6 (reference Table 5) were pressure tests. Three of these four were with flight preload (7000 pounds) in the bolts, while the fourth--test no. 4--was with 700 pounds bolt preload. Test no. 3 was with shims to get skin load at the latches. As shown in Table 4, only three of the 12 vertical split-line latch bolts exceeded preload. Thus, only these three bolts recorded latch skin loads, and only three heel-toe factors could be calculated for the vertical split-line. Tests nos. 5 and 6 were without shims, and were used with test no. 3 (with shims) to calculate heel-toe factors. Test no. 6 was a rerun (duplicate) of test no. 5, and was conducted to demonstrate repeatability. As shown in figures B1 through B12, Appendix B, results were quite repeatable.

TEST RESULTS

Tests results are presented in tabular form in Appendix A, graphically in Appendix B, and summarized in Table 4. The circumferential split-line latch results (bending tests) and vertical split-line latch results (pressure tests) differ and will be discussed separately.

1. Vertical Split-line Latches

Test data is summarized and compared to GDC analysis in Table 4. There are three significant comparisons to be made: latch skin load, maximum latch bolt load without shims (DLL), and heel-toe factors.

As noted above, only three latch bolt loads exceeded their preload values: bolts 9, 10, and 12 (latches 7, 8, and 10). For these latches, the maximum shimmed bolt loads given in Table 4 are the skin loads at the latches. The test skin loads are 36 percent lower than the analytic values. At least part of this difference may be attributed to the fact that a varying pressure profile was used in the analysis whereas the test was, of course, run with a uniform internal burst pressure. This test/analysis pressure difference is discussed further below. The max bolt loads recorded with shims for bolts 1-6, 9, 11, and 12 (reference figure 3 and Table 4) did not exceed preload level. Therefore, all that may be said about skin loads at these latches is that they are less than the max (shimmed) bolt loads recorded. Consequently, since skin loads are not known, heel-toe factors cannot be calculated.

All test maximum (no shim) bolt loads may validly be compared to corresponding analytic values. In making this comparison, note that there is greater disparity for bolts 3 through 6 than for the others (reference Table 4 and figure 3). The reason for this is again the difference between the variable design pressure and the uniform test pressure. Reference to the design pressure profile (ICT-48-3A) shows an average pressure of about 1.9 PSID. If test

bolt loads for latches 1 through 4 are scaled down by the ratio of the pressure at the latch (from ICT-48-3A) to 1.9 PSID, the resultant loads are about 90 percent of the analytic values. Thus, the apparently poor agreement between test and analytic results for these latches can be explained, and no real disparity exists. The load comparisons for latches 5 through 12 are also quite good in view of the design pressure variation referred to above. Note that latches 11 and 12 are more lightly loaded than the others, and that the test/analytic correlation holds for this difference.

Heel-toe factor comparison for the three available test latch factors is very good--test values average 12 percent lower than analytic factors.

2. Circumferential Split-line Latches

With reference to Table 4 and figure 3, note that whereas test skin loads are only 27 percent lower than design values, maximum test bolt loads are 156 percent lower. The reason for this is the disparity in heel-toe factors. The true factors range from 1.02 to 1.07, and thus, are repeatable and consistent and are almost exactly half the predicted value of 2.07. Therefore, the good agreement between test and analysis which has been noted throughout the above discussion does not hold in this case. In all of the test/analysis comparisons, one disparity exists--the analytic heel-toe factor for the circumferential latches is roughly 90 percent high.

CONCLUDING REMARKS

The LeRC structural testing of the D-1A nose fairing latches verified the analysis in GDC-BTD-71-006 in all respects but one. GDC analytic skin loads, design limit bolt loads, and heel-toe factors were all validated for the vertical split-line latches. The numbers quoted in the analysis may be considered correct for the vertical split-line latches. Skin loads were reasonably well verified for the circumferential latches, but the analytic heel-toe factor for these latches is roughly double that measured in the tests. The reason the analytic vertical split-line heel-toe factors were good, whereas the circumferential factors were poor, is that the shell flexibilities are much different in the circumferential and axial directions. It is recommended that the present analysis be corrected to agree with test results for all circumferential latch bolts, and that the same corrected analytic procedure be used to size latch bolts for any future designs.

The effect of varying latch bolt preload is shown graphically on figures B17 and B18 of Appendix B, for two of the highest-loaded bolts. The effect shown is typical of all of the test bolts. As expected, the bolt load per unit applied load is dependent on bolt preload only until all preload is exceeded in all bolts. For high values of applied load, bolt load per unit applied load is nearly the same for finger-tight nuts as for flight-torqued nuts.

TABLE 1 - TEST HARDWARE

ITEM	DESCRIPTION	QUANTITY
1	Test Nose Fairing, EID 55-0605-1 (Modified)	1
2	Stub Adapter (Modified), EID 55-0603-1	1
3	Split Barrel (with Vent Fin Mass), EID 55-0604-1	1
4	Equipment Module, EID 55-0601-1	1
5	Mission Peculiar Adapter - Intelsat, EID 55-0602-1	1
6	Intelsat Spacecraft Envelope Mock-up (Modified)	1
7	Simulated, Strain-Gaged, Explosive Bolts, and Flight-Type Nuts	20

TABLE 2 - TEST SUPPORT HARDWARE

ITEM	DESCRIPTION	QUANTITY
1	Fairing Setup Tools (Bolts)	20
2	GSE Fairing Handling Tools	-
3	Special Wrenches for Bolt Installation and Torquing	-
4	Still Photo Service and Materials	-
5	Movable Work Platform and Winch Support Equipment	-
6	Closed Circuit TV for Test Specimen Monitoring during Testing	-
7	Spool Ring CF600402	1
8	Modified Support Base SK D-1A-3	1
9	B/M Load Strap SK D-1A-72	1
10	B/M Load Train (Cables, etc.)	1
11	Thwing-Albert Inst. Co. Load Cell (20K lb.)	1
12	Hydraset	1
13	Pressure Transducers	3
14	Remote Pressure Valve	1
15	Deflectometers	2

TABLE 3 - INSTRUMENTATION

Channel No.	Parameter	Type	Range	Accuracy	Latch No.
1	B/M Load	Load Cell	0-20,000 lbs.	± .05%	-
2	N/F Pres.	Pres. Transd.	0-5 PSID	± .5%	-
3	"	"	"	"	-
4	"	"	"	"	-
5	Bolt Strain	Strain Gage	0-200 KSI	± 2%	1
6	.	.	.	.	1
7	.	.	.	.	2
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
44	Bolt Strain	Strain Gage	0-200 KSI	± 2%	20
45	N/F Defl.	Extensiometer	0-20 In.	± 2%	-
46	S/C-N/F Defl.	"	"	"	-

TABLE 4 - BOLT LOAD AND HEEL-TOE FACTOR SUMMARY

TEST TYPE	BOLT NO.	LATCH NO. (REF.)	TEST (ADJUSTED TO DLL)* (A) MAX. BOLT LOAD WITH SHIMS (KIPS)	(B) MAX. BOLT LOAD NO SHIMS (KIPS)	HEEL-TOE FACTOR, f (B)/(A)	GDC ANALYSIS - DLL** (C) SKIN LOAD (KIPS)	(D) MAX. BOLT LOAD (KIPS)	THEORETICAL HEEL-TOE FACTOR, f (D)/(C)
Pres.	3	1	6.28	10.40		1.372	3.389	2.47
"	4	2	6.70	10.4[illegible]		1.372	3.389	2.47
"	5	3	6.35	14.05		1.372	3.389	2.48
"	6	4	6.30	14.50		1.372	3.389	2.48
"	7	5	6.05	19.60		9.19	22.794	2.48
"	8	6	6.05	17.15		9.19	22.794	2.48
"	9	7	[7.53]	18.00	2.39	12.66	31.394	2.48
"	10	8	[8.61]	19.80	2.30	12.66	31.394	2.48
"	11	9	6.91	17.35		12.66	31.394	2.48
"	12	10	[8.07]	15.50	1.92	12.66	31.394	2.48
"	13	11	6.89	9.78		8.7	18.183	2.09
"	14	12	6.73	9.55		8.7	18.183	2.09
B/M	15	13	[10.42]	11.15	1.07	13.8	28.566	2.07
"	16	14	[10.90]	10.90	1.00	13.8	28.566	2.07
"	17	15	[7.35]	7.57	1.03	13.8	28.566	2.07
"	18	16	[8.43]	8.60	1.02	13.8	28.566	2.07

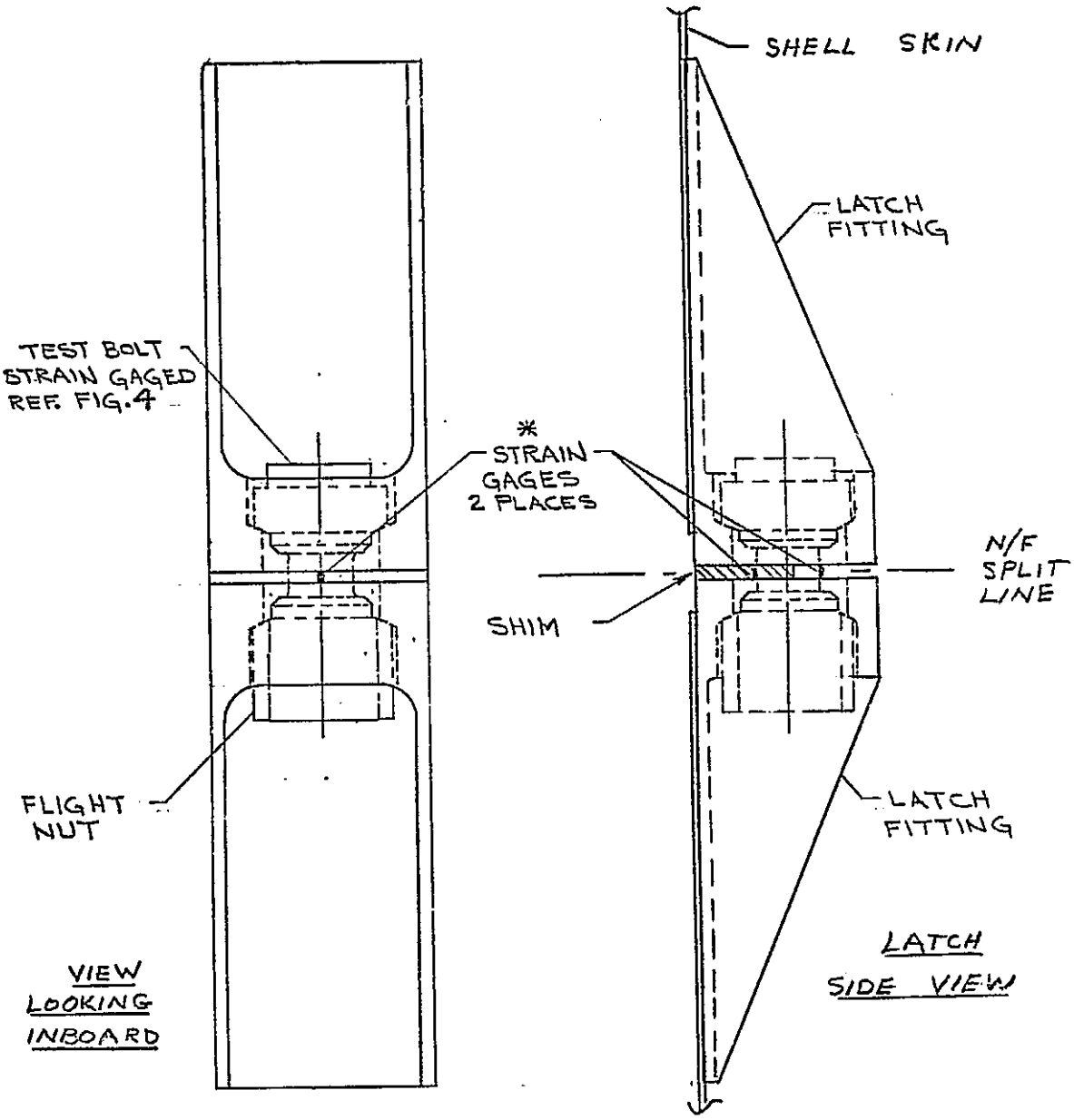
NOTES: * This data from Appendix B
** Ref. GDC - BTD-71-006 Pg. 88, 106

1. Preload 6500-7000 for all results presented in Table 4
2. Boxed loads are skin loads, others in same column are not
3. Pressure test results from tests 3, 5, 6; B/M test results from tests 1, 7

TABLE 5 - TEST SUMMARY

TEST * NO.	TEST TYPE	APPROX. BOLT PRELOAD (LB)	SHIMS
1	B/M	7000	Yes
2	B/M	700	Yes
3	Pres	7000	Yes
4	Pres	700	Yes
5	Pres	7000	No
6	Pres	7000	No
7	B/M	7000	No

* "RDG No.", in Appendix A



*NOTE: INSTALL BOLTS WITH STRAIN GAGES ORIENTED AS SHOWN USING NOTCHES ON BOLT HEAD

FIGURE 1

TYPICAL LONGITUDINAL OR CIRCUMFERENTIAL LATCH FITTING - STRAIN GAGED BOLT & SHIM INSTALLATION

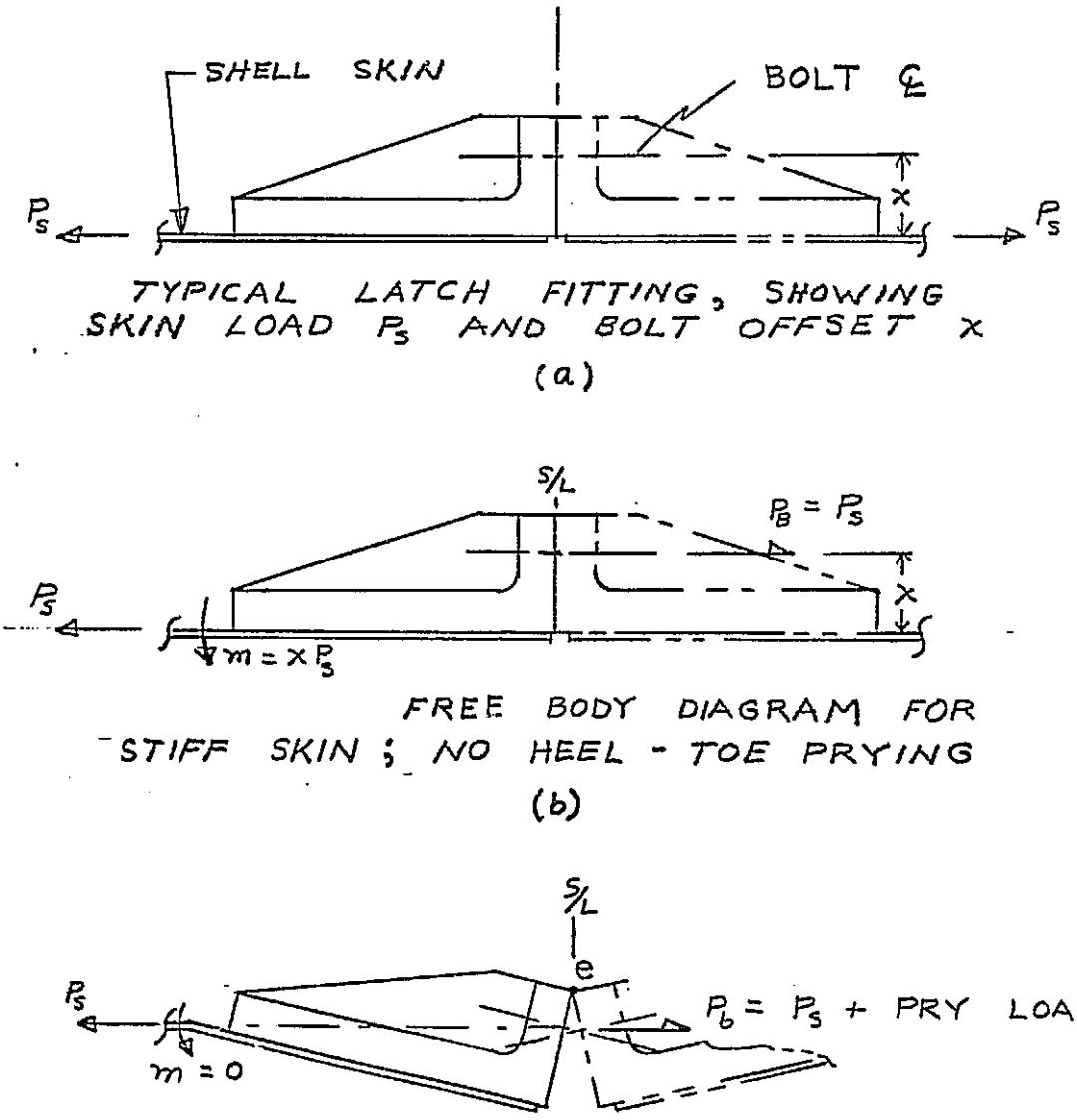


FIGURE 2

ILLUSTRATION OF HEEL-TOE PRYING

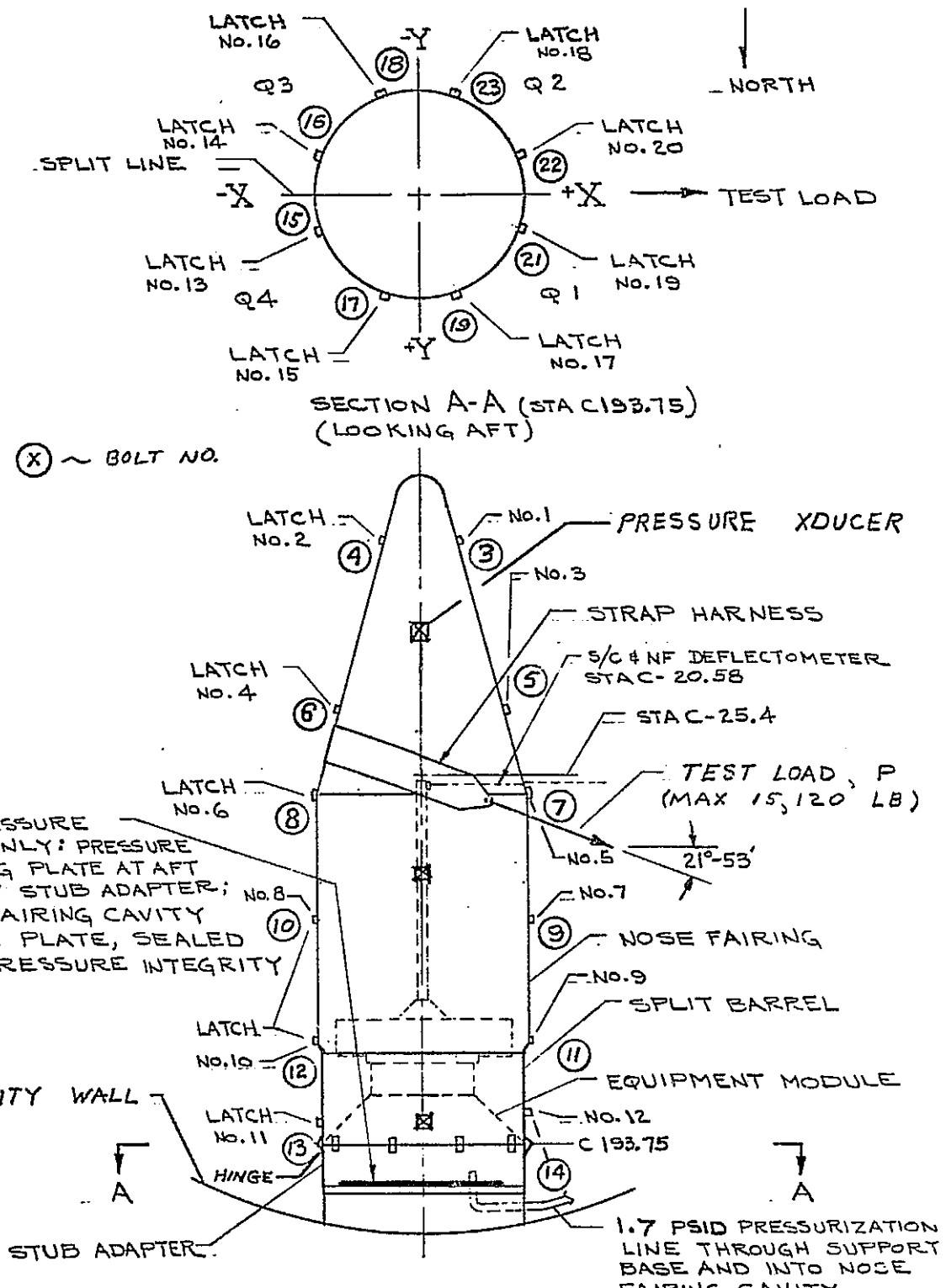
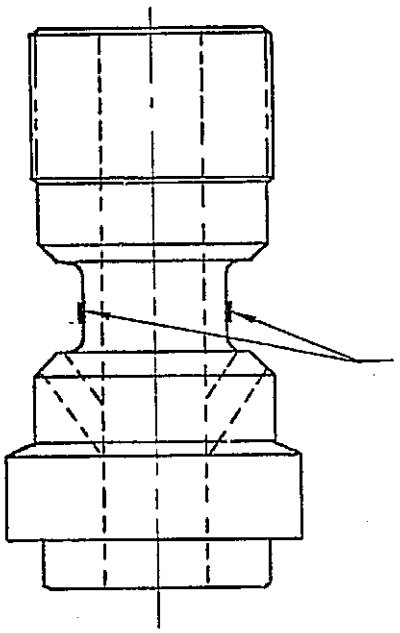


FIGURE 3

NOSE FAIRING STRUCTURAL TEST SET-UP



~ NOTES ~

1. BIAXIAL STRAIN GAGES INSTALLED AND WIRED TO OBTAIN AXIAL LOAD IN THE BOLT AND BENDING IN ONE DIRECTION

2. NOTCH BOLT HEAD TO SHOW STRAIN GAGE ORIENTATION.

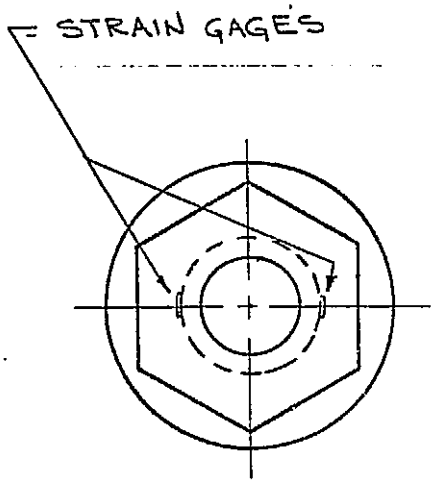
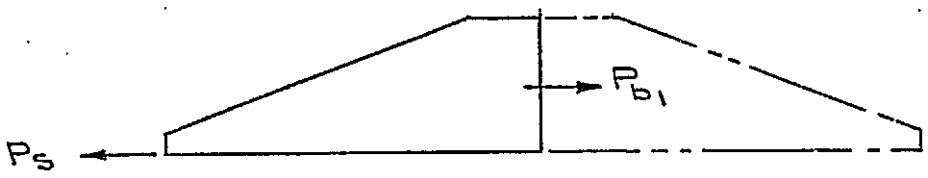
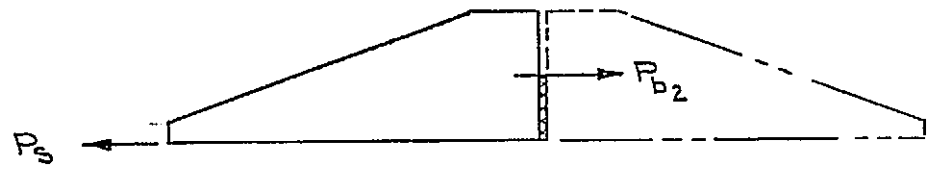


FIGURE 4

TEST BOLT - STRAIN GAGED



(a) LATCH WITHOUT SHIM



(b) LATCH WITH SHIMS

$$f = \frac{P_{b_1}}{P_{b_2}} = \left(\frac{P_{b_1}}{P_S}\right)^{*}, \quad P_S = \text{SKIN LOAD AT LATCH, SAME LOAD FOR (a) AND (b)}$$

P_{b_1}, P_{b_2} = MEASURED BOLT LOADS, FROM TESTS

* PROVIDING P_{b_1} > BOLT PRELOAD

FIGURE 5

DEFINITION OF TEST HEEL AND TOE FACTOR (f)

APPENDIX A

TABULATED DATA

APPENDIX A TABLE OF CONTENTS

	Page
Data identification, reduction formulae, and coefficients	A1
Data reduction procedure	A1
Test summary page data	A2
Test 1 data (B/M - 7000 lb. preload - shims)	A3
Summary	A13
Test 2 data (B/M - 700 lb. preload - shims)	A14
Summary	A24
Test 3 data (pres. - 7000 lb. preload - shims)	A25
Summary	A35
Test 4 data (pres. - 700 lb. preload - shims)	A36
Summary	A46
Test 5 data (pres. - 7000 lb. preload - no shims)	A47
Summary	A57
Test 6 data (pres. - 7000 lb. preload - no shims)	A58
Summary	A68
Test 7 data (B/M - 7000 lb. preload - no shims)	A69
Summary	A79

DATA IDENTIFICATION, REDUCTION FORMULAE, AND COEFFICIENTS

Channel No.	Identification	Reduction Formula	Coefficients
0	-	-	-
1	Applied load	Linear	Slope = $-2000 \frac{lb}{mv}$
2-4	Applied pressure	"	Slope = $0.333 \frac{psi}{mv}$
5	Bolt No. 3	$P_B = \frac{K}{2}(mv_5 + mv_6)$	$K = 4275 \frac{lb}{mv}$
6	Strain gages	$S_B = \frac{C}{2}\lvert mv_5 - mv_6 \rvert$	$C = 11600 \frac{psi}{mv}$
7	Bolt No. 4	(SAME AS ABOVE . . . . .)	
8	Strain gages	(" " " . . . . .)	
9-44	(. . . . . SAME AS ABOVE, BOLT/CHANNEL CORRELATION GIVEN ON PAGE A4)		

DATA REDUCTION PROCEDURE

The computer print-out of data for Test 1 (labeled "reading 1") is presented on Pages A3 through A13. Page A3 is the title page and gives test (reading) number, test type, and bolt preload level in pounds. Each of Pages A4 through A12 presents the raw and reduced data for a load "cycle" (applied load level between zero and max test load). Page A13 summarizes the data presented on Pages A4 through A12, and is thus a summary page for Test 1. This same pattern of data presentation is followed for each of the succeeding tests. Cycle one data reduction for Test 1 is as follows:

- Ignore channel "0" data
- Channel 1 millivolt reading is converted to applied load, P, by use of the coefficient:

$$P = -0.18002\ (-2000) = 360.04\ lb.$$

- Ignore channels 2, 3, 4 for this test, since there is no applied pressure (for pressure tests convert these mv readings to pressures by using the coefficient, 0.333, given above).

- Bolt No. 3 load is determined by:

$$P_B = \frac{4275}{2} (0.54905 + 2.8033) = 7165.6 \text{ lb.}$$

- Bolt No. 3 bending stress is:

$$S_B = \frac{11600}{2} \left| 0.54905 \quad -2.8033 \right| = 13075 \text{ psi}$$

- Other bolt loads and stresses determined similarly from channel 7-44 data

- Ignore channel 45 and on data

Bolt, pressure, and load identification is given only on Page A4; identification on all other cycle data pages is the same. All other cycle data reduction for all tests is similar to above.

TEST SUMMARY PAGE DATA

The data summarized on Page A13 for Test 1 is all taken from the cycle data pages, with two exceptions:

1. The second line of data, M (in-lb), is the moment developed at Station 193.75 (reference figure 3) by application of the load P (first line of data). For pressure tests these two lines of data are replaced by the single line of average applied pressure, which is derived from channel 2, 3, 4 data per load cycle (see, e.g., Pages A26, A35).

2. Numbers penciled in are applied load percentages of DLL.

SEC-2 SEQ 1* [illegible] REV. 7000.C [illegible]

[illegible] TEST WITH SHIPS

* "TEST NO.", IN REPORT

CYCLE 1

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.	
* 0	-3.7160				
1	-0.1F007	P (APPLD LOAD)		360.04	
2	0.019002	P_{A1}		0.0063339	
3	0.053005	P_{A2} (APPLD		0.017669	
4	0.013001	P_{A3} PRESSURE)		0.0043337	BOLT NO.
5	0.54005	7165.6			3
6	2.8033		13074.		4
7	0.95909	7221.2			5
8	2.5193		9629.0		6
9	1.2661	6693.2			7
10	1.8452		3242.5		8
11	1.3121	6F00.1		LONGITUDINAL	9
12	1.8692		3230.9		10
13	1.4621	6851.8			11
14	1.7502		1902.6		12
15	0.48305	6809.6			13
16	2.7023		12371.		14
17	1.0591	6705.8			15
18	2.1212		6166.0		16
19	1.5477	6703.6			17
20	1.6212		497.25		18
21	0.81708	6725.3			19
22	2.3292		8770.5		23
23	0.95006	6919.9			21
24	2.3572		8567.4		22
25	1.2211	6661.1			
26	1.8652		3900.6		
27	1.0771	6698.8			
28	2.1072		6496.6		
29	1.2671	6812.8			15
30	1.8202		3787.8		16
31	0.61506	6851.4		CIRCUMFERENTIAL	17
32	2.5903		11456.		18
33	1.2401	6355.4			19
34	1.7332		2950.7		23
35	1.2451	6955.6			21
36	1.8622		4150.0		22
37	1.4741	8523.1			
38	2.5533		6499.6		
39	0.77006	6804.3			
40	2.4132		9530.3		
41	1.2741	7499.5			
42	2.2302		5545.4		
43	0.61006	6803.6			
44	2.5752		11398.		
45	-0.055006				
46	0.0850				
* 47	0.57210				
48	-7.3252				
49	-6.4036				

* CHANNEL 0, 45 & 47 CONTAIN INFORMATION NOT RELEVANT TO THIS REPORT.

CYCLE 2

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	4.03430			
1	-0.00108			1602.7
2	0.019002			0.0063339
3	0.046005			0.015335
4	0.012001			0.0040004
5	0.53005	7146.4		
6	2.8043		13138.	
7	0.55405	7223.7		
8	2.5193		9594.2	
9	1.2171	6691.0		
10	1.9172		4083.6	
11	1.5022	6748.9		
12	1.3551		2592.9	
13	1.3011	6556.3		
14	1.9352		2575.5	
15	0.85505	7065.1		
16	2.4502		9251.9	
17	1.0431	6776.6		
18	2.1272		6297.8	
19	1.5852	6819.3		
20	1.6052		116.01	
21	0.85008	6727.4		
22	2.2572		8393.4	
23	0.55209	6621.5		
24	2.3462		8434.0	
25	1.2111	6678.7		
26	1.9132		4072.0	
27	1.0791	7011.7		
28	2.2022		6519.9	
29	1.2871	7033.1		
30	2.0032		4153.2	
31	0.67507	7075.8		
32	2.6353		11369.	
33	1.2191	6178.0		
34	1.6712		2621.5	
35	1.2871	6974.9		
36	1.9102		8603.0	
37	1.5092	8259.8		
38	2.3542		4907.3	
39	0.84502	6582.0		
40	2.2202		8010.6	
41	1.1311	6799.4		
42	2.0452		5301.7	
43	0.51005	6493.7		
44	2.5143		11572.	
45	0.11401			
46	2.5452			
47	2.5252			
48	0.7400			
49	-0.85205			

CYCLE 3

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-0.88300			
1	-2.2002			4580.5
2	0.019002			0.0063239
3	0.047005			0.015669
4	0.012001			0.0040004
5	0.53505	7149.5		
6	2.8063		13155.	
7	0.87700	7236.2		
8	2.5083		8460.7	
9	1.0841	6691.0		
10	2.0462		5580.2	
11	1.0252	6783.0		
12	1.2481		3027.0	
13	1.2631	6838.5		
14	1.0362		3003.8	
15	0.84600	7163.5		
16	2.4052		8463.0	
17	1.0171	6755.2		
18	2.1432		6531.5	
19	1.6212	6053.5		
20	1.5852		209.82	
21	0.87000	6742.3		
22	2.2842		8202.0	
23	0.89700	6017.6		
24	2.3492		8480.4	
25	1.2001	6735.0		
26	1.0422		4251.8	
27	1.0511	7026.7		
28	2.2362		6873.7	
29	1.3111	7417.0		
30	2.1592		4618.9	
31	0.71207	7503.4		
32	2.7983		12100.	
33	1.2221	6334.0		
34	1.7412		3010.5	
35	1.2521	7054.5		
36	2.0482		4617.3	
37	1.5312	7084.8		
38	2.2512		4176.4	
39	0.85200	6430.2		
40	2.1562		7562.0	
41	0.84805	6111.7		
42	1.5112		5586.0	
43	0.37204	5972.8		
44	2.4722		11801.	
45	0.30103			
46	2.1218			
47	-2.5733			
48	4.7704			
49	2.5129			

CYCLE 4

CHANNEL	MILLIVOLTS	BOLT LOAD	BEAM STRESS	MISC.
0	0.5120			
1	-3.8124			7624.0
2	0.021002			0.0070006
3	0.046005			0.015335
4	0.011001			0.0036670
5	0.52005	7140.0		
6	2.9113		13236.	
7	0.55000	7231.0		
8	2.4042		9309.9	
9	0.52609	6697.5		
10	2.2072		7430.5	
11	2.0562	6800.1		
12	1.0951		5964.4	
13	1.1101	6770.1		
14	2.0572		5493.1	
15	1.0721	7206.0		
16	2.3402		7349.3	
17	0.58410	6723.1		
18	2.1612		6827.3	
19	1.6622	6985.6		
20	1.5502		597.46	
21	0.99000	6748.8		
22	2.2602		7000.0	
23	0.88006	6611.2		
24	2.3532		8544.3	
25	1.1021	6768.0		
26	1.5742		4536.1	
27	1.0211	7045.9		
28	2.2752		7273.0	
29	1.2921	7011.7		
30	2.4102		6595.3	
31	0.64206	8044.2		
32	3.1203		14368.	
33	1.2071	6522.2		
34	1.5442		3605.0	
35	1.1601	7330.2		
36	2.2602		6328.4	
37	1.5542	7875.3		
38	2.1302		3341.1	
39	0.46300	6278.5		
40	2.0742		7024.5	
41	0.75408	5305.2		
42	1.7672		5876.0	
43	0.21002	5440.5		
44	2.3252		12326.	
45	0.56106			
46	2.5068			
47	0.76208			
48	0.6200			
49	2.4018			

CYCLE 5

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	9.4010			
1	-5.3245			1064e.
2	0.021002			0.2070006
3	0.046005			0.015235
4	0.012001			0.0040004
5	0.51e05	7137.8		
6	2.e203		13347.	
7	0.e020e	722e.7		
8	2.4802		e153.3	
9	0.75508	6710.3		
10	2.3842		e449.1	
11	2.3152	6817.2		
12	0.8740e		8358.6	
13	0.e4103	6731.7		
14	2.2082		7349.3	
15	1.2971	7511.9		
16	2.2172		5336.5	
17	0.e5510	6699.6		
18	2.1912		7123.1	
19	1.7152	6941.2		
20	1.5322		1061.5	
21	0.e2e0e	6774.4		
22	2.2402		7604.6	
23	0.8660e	6e00.5		
24	2.3622		8677.7	
25	1.1511	6787.2		
26	2.0242		5063.9	
27	0.e8610	7052.3		
28	2.3132		7697.4	
29	1.0521	8619.3		
30	2.e263		11171.	
31	0.41504	8768.9		
32	3.6074		18979.	
33	1.2651	6785.1		
34	1.e0e2		3735.6	
35	1.1231	7631.6		
36	2.4472		7680.0	
37	1.6152	7443.5		
38	1.e672		1461.8	
39	0.e5810	6009.1		
40	1.e532		5191.5	
41	0.60706	4681.6		
42	1.5823		5649.8	
43	0.031003	4809.9		
44	2.2192		12691.	
45	0.95509			
46	7.0047			
47	-2.4902			
48	-7.8628			
49	-4.8057			

CYCLE 6

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	6.6080			
1	-6.0786			12157.
2	0.021002			0.0070006
3	0.045004			0.015001
4	0.011001			0.0036670
5	0.51605	7144.2		
6	2.8263		13309.	
7	0.51106	7231.6		
8	2.4722		9054.7	
9	0.66907	6723.1		
10	2.4772		10493.	
11	2.4552	6825.7		
12	0.73807		9959.6	
13	0.84806	6714.6		
14	2.2032		8381.8	
15	1.4361	7650.9		
16	2.1402		4066.2	
17	0.53406	6680.4		
18	2.1912		7291.3	
19	1.7442	6968.6		
20	1.5162		1322.5	
21	0.55410	6793.6		
22	2.2242		7366.7	
23	0.85606	6896.3		
24	2.3702		8782.1	
25	1.1271	6765.8		
26	2.0522		5365.5	
27	0.57610	7063.0		
28	2.3282		7842.4	
29	0.88009	6057.5		
30	3.3573		14369.	
31	0.25803	6196.4		
32	4.0444		21960.	
33	1.3141	6881.3		
34	1.6052		3428.1	
35	1.0061	7602.7		
36	2.5623		9550.1	
37	1.6732	7221.2		
38	1.7052		195.61	
39	1.0061	5868.0		
40	1.7302		4217.0	
41	0.58006	4301.1		
42	1.4321		4942.1	
43	-0.032003	4478.5		
44	2.1272		12523.	
45	1.0071			
46	6.7067			
47	-8.5088			
48	-3.7554			
49	-2.6403			

CYCLE 7

CHANNEL	MILLIVOLTS	BOLT LOAD	PEND.STRESS	MISC.
C	2.6460			
1	-6.8277			13675.
2	0.020002			0.0066673
3	0.044004			0.014668
4	0.011001			0.0036670
5	0.51005	7142.1		
6	2.8213		13463.	
7	0.51509	7231.9		
8	2.4642		8961.9	
9	0.57406	6729.5		
10	2.5743		11601.	
11	2.5573	6812.9		
12	0.63006		11177.	
13	0.75209	6697.5		
14	2.3812		9449.1	
15	1.5317	7740.7		
16	2.0002		3242.5	
17	0.51605	6661.1		
18	2.2002		7447.9	
19	1.7702	6994.6		
20	1.5021		1554.6	
21	0.57510	6804.3		
22	2.2042		7105.7	
23	0.84009	6985.6		
24	2.3912		8938.7	
25	1.0871	6802.2		
26	2.0952		5847.0	
27	0.8741C	7082.2		
28	2.3352		7917.8	
29	0.66207	9544.9		
30	3.7834		17987.	
31	0.57006	9596.2		
32	3.9154		19426.	
33	1.3271	7045.9		
34	1.0652		3724.0	
35	1.0421	8003.6		
36	2.7023		9629.C	
37	1.7212	7063.0		
38	1.5832		800.48	
39	1.0491	5746.2		
40	1.6292		3422.3	
41	0.54805	3886.4		
42	1.2701		4183.0	
43	-0.01[illegible]	4100.1		
44	2.0012		12089.	
45	1.1671			
46	6.3796			
47	7.7009			
48	7.0147			
49	-1.3741			

CYCLE P

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	1.3740			
1	-7.5868			15176.
2	0.021002			0.0070006
3	0.040005			0.016335
4	0.012001			0.0040004
5	0.50205	7140.0		
6	2.8373		13539.	
7	0.526009	7229.7		
8	2.4562		8874.0	
9	0.47705	6748.8		
10	2.6803		12779.	
11	2.6663	6815.0		
12	0.52205		12436.	
13	0.65006	6676.1		
14	2.4732		10574.	
15	1.6252	7839.0		
16	2.0422		2418.8	
17	0.556606	6637.6		
18	2.2052		7616.2	
19	1.7542	7018.1		
20	1.4851		1769.2	
21	1.0081	6823.6		
22	2.1842		6821.5	
23	0.52108	6874.0		
24	2.3852		9130.1	
25	1.0321	6773.7		
26	2.1302		6421.2	
27	0.550010	7114.3		
28	2.3482		7035.2	
29	0.71207	9085.0		
30	2.0644		18863.	
31	1.1621	10169.		
32	3.5854		14112.	
33	1.3701	7189.1		
34	2.0332		4077.8	
35	0.556610	8225.9		
36	2.5523		10765.	
37	1.7512	6940.7		
38	1.5001		1455.9	
39	1.0081	5613.6		
40	1.5302		2610.3	
41	0.53105	3482.3		
42	1.0581		3248.9	
43	-0.082003	3651.2		
44	1.7902		10853.	
45	1.3241			
46	6.0936			
47	-2.2032			
48	7.6719			
49	-1.1961			

CHANNEL	MILLIVOLTS	BOLT LOAD	BEAD.STRESS	MISC.
0	1.1890			
1	-0.17602			352.04
2	0.021002			0.0070006
3	0.050005			0.016668
4	0.011001			0.0036670
5	0.54405	7144.2		
6	2.7983		13074.	
7	0.87809	7231.0		
8	2.5052		5437.5	
9	1.2861	6696.8		
10	1.8422		3225.1	
11	1.3151	6706.0		
12	1.8222		2940.9	
13	1.4561	6906.9		
14	1.7753		1850.4	
15	0.60806	6753.0		
16	2.5513		11270.	
17	1.0691	6806.5		
18	2.1152		6067.4	
19	1.5752	6795.8		
20	1.6042		169.22	
21	0.88409	6746.6		
22	2.2722		8051.2	
23	0.60806	6934.7		
24	2.3362		8283.2	
25	1.2211	6695.3		
26	1.9112		4002.4	
27	1.1191	7009.6		
28	2.1612		6050.0	
29	1.7472	6515.7		
30	1.2011		2587.1	
31	2.5103	6000.6		
32	0.29702		12836.	
33	1.4101	5806.0		
34	1.3061		603.26	
35	1.4941	6603.2		
36	1.0332		864.29	
37	1.6032	7890.3		
38	1.9582		1760.2	
39	1.1491	6421.7		
40	1.8562		4106.8	
41	1.4011	6605.5		
42	1.6952		1670.6	
43	0.78309	6246.4		
44	2.1352		7865.6	
45	0.046005			
46	0.60029			
47	-1.0001			
48	-6.4226			
49	4.6565			

A 13

P (LB)

360.04	1602.2	4580.5	7624.8	10649.	12157.	13675.	15179.	352.04

M (IN-LB)

2.15	9.58	27.4	45.61	63.69	72.72	81.8	90.79	
73720.	325830.	931520.	1550600.	2165600.	2472400.	2781100.	3087000.	71593.

BELT LOAD (LB)

3	7165.6	7146.4	7148.5	7140.0	7137.8	7144.2	7142.1	7140.0	7144.2	0.00000
4	7221.2	7229.7	7236.2	7231.9	7225.7	7231.9	7231.9	7229.7	7231.9	0.00000
5	6693.2	6691.0	6691.0	6697.5	6710.3	6723.1	6729.5	6749.8	6686.8	0.00000
6	6800.1	6748.8	6783.0	6800.1	6817.2	6825.7	6812.9	6815.0	6706.0	0.00000
7	6951.8	6856.3	6838.5	6770.1	6731.7	6714.6	6697.5	6676.1	6906.9	0.00000
8	6808.6	7065.1	7163.5	7295.0	7511.9	7650.9	7740.7	7937.0	6753.0	0.00000
9	6795.8	6776.6	6755.2	6723.1	6659.6	6660.4	6661.1	6627.6	6906.5	0.00000
10	6793.6	6819.3	6853.5	6895.6	6541.2	6546.9	6594.6	7018.1	6755.8	0.00000
11	6725.2	6727.4	6742.3	6760.8	6774.4	6753.6	6804.3	6823.6	6746.6	0.00000
12	6913.8	6521.9	6917.6	6511.2	6555.5	6996.3	6965.6	6974.9	6934.7	0.00000
13	6661.1	6675.2	6735.5	6763.0	6787.2	6755.8	6802.2	6778.7	6695.3	0.00000
14	6959.5	7011.7	7026.7	7045.9	7052.3	7063.0	7082.2	7114.3	7009.6	0.00000
15	6812.9	7033.1	7417.5	7511.7	8615.3	9057.5	9544.9	9995.9	6515.7	0.00000
16	6951.4	7075.8	7503.4	8044.2	5768.9	9156.4	9596.2	10169.	6000.6	0.00000
17	6355.4	6178.0	6334.0	6522.2	6785.1	6851.3	7045.9	7169.1	5906.0	0.00000
18	6955.6	6874.9	7054.5	7330.2	7631.6	7802.7	8003.6	8225.9	6663.2	0.00000
19	8523.1	8255.8	8044.8	7675.3	7443.5	7221.2	7063.0	6944.7	7850.3	0.00000
20	6804.3	6582.0	6430.2	6279.5	6009.1	5864.0	5746.2	5613.6	6421.7	0.00000
21	7490.5	6769.4	6111.7	5393.2	4681.6	4301.1	3996.4	3482.3	6605.5	0.00000
22	6908.6	6483.7	5972.8	5440.5	4909.9	4478.5	4100.1	3651.2	6246.4	0.00000

BENDING STRESS (PSI)

3	13074.	13138.	13155.	13236.	13347.	13399.	13463.	13538.	13074.	0.00000
4	9620.0	9554.2	9460.7	9309.9	9153.3	9054.7	8961.9	8874.9	9437.5	0.00000
5	3242.5	4083.6	5580.2	7430.5	9449.1	10493.	11601.	12778.	3225.1	0.00000
6	2230.9	2592.0	3927.0	5864.4	8358.6	9959.6	11177.	12436.	2940.9	0.00000
7	1902.6	2575.5	3903.8	5453.1	7349.3	8381.8	9449.1	10574.	1950.4	0.00000
8	12871.	9251.9	8463.0	7348.3	5376.5	4066.2	3242.5	2418.8	11270.	0.00000
9	6166.0	6297.8	6531.5	6827.3	7122.1	7291.3	7447.9	7610.2	6067.4	0.00000
10	487.25	116.01	203.82	557.46	1061.5	1322.5	1564.6	1763.2	168.22	0.00000
11	8770.5	9393.4	8202.0	7932.0	7604.6	7366.7	7105.7	6821.5	8051.2	0.00000
12	8567.4	8434.0	8460.4	8564.3	8677.7	6792.1	8938.7	9130.1	8283.2	0.00000
13	3901.6	4072.0	4251.8	4513.1	5067.9	5365.5	5847.0	6421.2	4902.4	0.00000
14	6496.6	6519.9	6873.7	7271.4	7457.4	7542.4	7517.8	7935.2	6050.0	0.00000
15	3767.8	4152.2	4918.5	6595.1	11171.	14364.	17097.	19863.	2587.1	0.00000
16	11456.	11769.	12100.	14363.	16575.	21560.	19426.	14112.	12836.	0.00000
17	2856.7	2621.9	3919.5	3655.0	3735.6	3424.1	3724.0	4077.8	601.36	0.00000
18	4159.0	3608.0	4617.3	6373.4	7650.0	6553.1	9629.0	10765.	864.29	0.00000
19	6609.5	4337.3	4176.4	3341.1	1461.8	115.61	800.48	1455.9	1763.2	0.00000
20	5530.3	3019.6	7543.5	7024.9	5151.5	4217.0	3472.7	2610.3	4156.[illegible]	0.00000
21	5540.4	5301.7	5586.6	5876.0	9545.8	4962.1	4198.0	3294.9	1670.6	0.00000
22	11335.	11572.	11351.	12176.	12661.	12423.	[illegible]	10858.	7375.6	0.00000

SSC-2 PDC 2 PRELOAD LEV. 700.00 LB

BASIC TEST WITH SHIMS

CYCLE 1

CHANNEL	VOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	-6.9950			
1	-0.17502			250.03
2	0.023002			0.0076673
3	0.050005			0.016669
4	0.017002			0.0056672
5	0.61406	7268.2		
6	2.7863		12599.	
7	0.63605	7291.7		
8	2.4752		8827.1	
9	1.4611	6753.0		
10	1.6582		1374.7	
11	1.4271	6795.8		
12	1.7522		1885.2	
13	0.20002	714.00		
14	0.13401		382.84	
15	0.12601	448.92		
16	0.082006		266.83	
17	0.10601	596.42		
18	0.17302		388.64	
19	0.18302	771.71		
20	0.17902		29.003	
21	0.22102	780.27		
22	0.14401		446.64	
23	0.054005	669.10		
24	0.25603		1190.1	
25	0.11601	617.60		
26	0.17302		330.63	
27	-0.017002	658.42		
28	0.33503		1983.8	
29	0.10501	600.03		
30	0.22202		679.67	
31	0.14401	691.93		
32	0.17502		176.82	
33	0.18602	1113.7		
34	0.23503		864.29	
35	0.13601	797.37		
36	0.23702		585.86	
37	0.17402	645.59		
38	0.12901		266.83	
39	0.096010	2571.7		
40	1.1071		5964.4	
41	0.27603	919.22		
42	0.15402		707.67	
43	0.17302	754.61		
44	0.18002		40.604	
45	0.050008			
46	0.6506			
47	-4.5645			
48	0.9500			
49	-7.1947			

CYCLE 2

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	9.1700			
1	-0.79609			1596.2
2	0.021002			0.0070006
3	0.042004			0.014001
4	0.014001			0.0046671
5	0.60406	7242.6		
6	2.7843		12645.	
7	0.93509	7269.2		
8	2.4652		8874.9	
9	1.3971	6733.8		
10	1.7582		2123.0	
11	1.9902	6763.7		
12	1.1741		4733.3	
13	0.17302	691.93		
14	0.14601		155.62	
15	0.12001	271.49		
16	0.0070007		655.47	
17	0.095009	572.91		
18	0.17302		452.45	
19	0.31103	859.36		
20	0.091009		1276.1	
21	0.24502	752.49		
22	0.10701		800.48	
23	0.13601	743.92		
24	0.21202		440.84	
25	0.15202	684.07		
26	0.16802		92.809	
27	0.099009	722.55		
28	0.24902		923.09	
29	0.20502	850.81		
30	0.19302		69.607	
31	0.35003	974.80		
32	0.10601		1415.3	
33	0.29803	1154.4		
34	0.24202		324.83	
35	0.32503	1103.5		
36	0.18402		875.89	
37	0.046004	265.09		
38	0.079008		197.22	
39	0.20302	2319.4		
40	0.98209		3950.2	
41	0.045004	64.131		
42	-0.015001		349.03	
43	0.097010	474.57		
44	0.12501		162.42	
45	0.25403			
46	8.3598			
47	3.5424			
48	0.65607			
49	7.1617			

CYCLE 3

CHANNEL	MILLIVOLTS	BOLT LOAD	PENP.STRESS	MISC.
0	7.1610			4586.5
1	-2.2037			0.0070006
2	0.021002			0.014335
3	0.043004			0.0046671
4	0.014001			
5	0.60106	7251.1		
6	2.7013		12703.	
7	0.64509	7268.2		
8	2.4552		6759.9	
9	1.2741	6739.1		
10	1.8782		3503.5	
11	2.1122	6789.4		
12	1.0641		6070.0	
13	0.015002	677.66		
14	0.25803		1619.4	
15	0.21102	312.11		
16	-0.065006		1601.0	
17	0.035003	579.32		
18	0.23602		1165.9	
19	0.37504	695.70		
20	0.044004		1920.0	
21	0.23502	677.66		
22	0.052008		887.49	
23	0.16902	819.74		
24	0.21402		261.03	
25	0.15101	731.10		
26	0.15102		232.02	
27	0.0040004	656.28		
28	0.30303		1734.4	
29	0.15502	1504.0		
30	0.54205		1089.6	
31	0.24602	1075.2		
32	0.67207		2505.8	
33	0.35504	1220.6		
34	0.15202		1200.7	
35	0.24402	1626.9		
36	0.51705		1593.6	
37	0.024002	-32.066		
38	-0.035004		365.44	
39	0.32003	1609.7		
40	0.43304		655.46	
41	-0.040008	-289.59		
42	-0.055005		145.01	
43	-0.025003	200.94		
44	0.12301		891.69	
45	0.45505			
46	7.8668			
47	-7.4457			
48	-0.64506			
49	-7.6239			

CYCLE 4

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	-9.6230			
1	-3.8114			7622.8
2	0.022002			0.0073340
3	0.043004			0.014335
4	0.014001			0.0046671
5	0.55306	7249.0		
6	2.7983		12790.	
7	0.55510	7270.4		
8	2.4462		8648.7	
9	1.1161	6742.3		
10	2.0282		5349.1	
11	2.2962	6819.3		
12	0.60109		8051.2	
13	-0.13701	737.51		
14	0.46205		3590.6	
15	0.32903	386.93		
16	-0.14701		2755.3	
17	-0.020003	592.15		
18	0.30603		1943.2	
19	0.44204	936.32		
20	-0.0040004		2587.1	
21	0.23702	609.25		
22	0.049005		1096.3	
23	0.19302	895.70		
24	0.23602		307.43	
25	0.11901	752.48		
26	0.23402		672.87	
27	-0.030003	656.28		
28	0.33703		2129.8	
29	0.066007	3046.2		
30	1.3501		7500.1	
31	0.16902	3510.1		
32	1.4741		7575.6	
33	0.25604	1720.9		
34	0.40504		75.406	
35	0.15003	2257.4		
36	0.56609		3921.2	
37	0.027003	-27.790		
38	-0.040004		388.64	
39	0.40204	914.94		
40	0.026003		2131.0	
41	-0.12101	-470.30		
42	-0.055010		127.61	
43	-0.043004	27.790		
44	0.056006		574.26	
45	0.74507			
46	7.3427			
47	0.78409			
48	0.56506			
49	-7.0357			

CYCLE 5

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-7.0380			
1	-5.3225			10645.
2	0.022002			0.0077340
3	0.041004			0.013668
4	0.013001			0.0043337
5	0.58206	7246.8		
6	2.8083		12512.	
7	0.96410	7272.5		
8	2.4382		8550.1	
9	0.83009	6753.0		
10	2.2282		7534.9	
11	2.5353	6849.2		
12	0.66807		10923.	
13	-0.15202	805.92		
14	0.52805		3950.2	
15	0.45405	557.94		
16	-0.15302		3753.0	
17	-0.10201	602.84		
18	0.38504		2830.7	
19	0.51305	1002.6		
20	-0.044004		3230.9	
21	0.24202	564.36		
22	0.022002		1276.1	
23	0.17202	576.93		
24	0.22403		643.66	
25	0.051005	746.06		
26	0.25603		1432.7	
27	-0.040005	675.52		
28	0.36404		2389.8	
29	0.052005	4985.1		
30	2.2802		12923.	
31	0.22302	5502.5		
32	2.3512		12343.	
33	0.36204	2456.2		
34	0.78705		2465.2	
35	0.22302	2632.6		
36	1.1291		5255.3	
37	0.020003	10.239		
38	-0.021002		295.93	
39	0.12601	316.38		
40	0.022002		603.26	
41	-0.15502	-598.56		
42	-0.12501		174.02	
43	-0.031003	-70.545		
44	-0.0020002		169.22	
45	1.0291			
46	6.7857			
47	7.6338			
48	-1.7302			
49	5.5166			

CYCLE 6

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	5.5180			
1	-6.0786			12157.
2	0.023002			0.0076673
3	0.040004			0.013335
4	0.014001			0.0046671
5	0.57306	7238.3		
6	2.8133		12093.	
7	0.56510	7276.8		
8	2.4252		8503.6	
9	0.83208	6765.9		
10	2.3332		8706.7	
11	2.6463	6868.5		
12	0.56706		12059.	
13	-0.15602	848.67		
14	0.55306		4112.6	
15	0.51605	643.45		
16	-0.21502		4240.2	
17	-0.14001	619.94		
18	0.43004		3306.3	
19	0.54205	1026.1		
20	-0.063006		3515.1	
21	0.24302	542.99		
22	0.011001		1345.7	
23	0.16302	1021.8		
24	0.31503		881.69	
25	0.020002	752.47		
26	0.33203		1809.8	
27	-0.051005	686.21		
28	0.37204		2453.6	
29	0.13201	6051.9		
30	2.6653		14990.	
31	0.24602	6569.2		
32	2.5253		14949.	
33	0.24403	2813.2		
34	0.57210		3642.8	
35	0.27402	3291.4		
36	1.2611		5725.2	
37	0.023003	-2.1377		
38	-0.024003		389.64	
39	0.030003	121.95		
40	0.027003		17.402	
41	-0.17102	-579.32		
42	-0.10001		411.84	
43	-0.031003	-117.57		
44	-0.024002		40.604	
45	1.1771			
46	4.5247			
47	4.3654			
48	3.4833			
49	-5.2415			

CYCLE 7

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	5.2410			
1	-6.8337			13667.
2	0.023002			0.0076673
3	0.043004			0.014335
4	0.014001			0.0046671
5	0.56706	7240.4		
6	2.9203		13068.	
7	0.57310	7270.4		
8	2.4282		8439.8	
9	0.73107	6778.7		
10	2.4402		9913.2	
11	2.7543	6881.3		
12	0.46505		13277.	
13	-0.16102	895.70		
14	0.58006		4298.2	
15	0.58006	726.82		
16	-0.24002		4756.5	
17	-0.17002	624.21		
18	0.47105		3770.4	
19	0.57306	1047.5		
20	-0.083009		3805.2	
21	0.24302	521.60		
22	0.0010001		1403.7	
23	0.15101	1062.4		
24	0.34603		1131.1	
25	-0.061005	669.10		
26	0.36404		2407.2	
27	-0.040005	711.86		
28	0.38304		2500.0	
29	0.16402	7133.5		
30	3.1423		17105.	
31	0.28003	7633.9		
32	3.2913		17465.	
33	0.33603	3200.2		
34	1.1501		4762.3	
35	0.31703	3636.2		
36	1.3841		6183.2	
37	0.035003	25.653		
38	-0.023002		336.43	
39	0.012001	79.095		
40	0.025002		75.407	
41	-0.18702	-688.34		
42	-0.13601		290.03	
43	-0.043004	-166.74		
44	-0.035003		46.405	
45	1.3291			
46	6.2616			
47	7.1927			
48	4.5145			
49	5.4725			

CYCLE 8

CHAN. #	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	5.4720			
1	-7.5918			15183.
2	0.024002			0.0080007
3	0.042004			0.014001
4	0.013001			0.0043337
5	0.55506	7242.6		
6	2.8283		13167.	
7	0.58010	7276.8		
8	2.4242		8376.0	
9	0.62006	6785.1		
10	2.5543		11219.	
11	2.8523	6887.7		
12	0.37004		14357.	
13	-0.16902	938.46		
14	0.60806		4507.0	
15	0.64106	912.33		
16	-0.26103		5232.1	
17	-0.21102	632.76		
18	0.50705		4164.8	
19	0.60206	1066.7		
20	-0.10201		4082.4	
21	0.24802	515.19		
22	-0.0070007		1479.1	
23	0.17601	1111.6		
24	0.38404		1438.5	
25	-0.07702	671.24		
26	0.28104		2714.7	
27	-0.038004	739.65		
28	0.38504		2459.4	
29	0.27303	8225.5		
30	3.5754		19153.	
31	0.26003	9702.6		
32	3.8114		20597.	
33	0.34103	3612.7		
34	1.3451		5847.0	
35	0.35404	3991.1		
36	1.5132		6722.9	
37	0.034003	25.653		
38	-0.022002		324.83	
39	0.011001	76.958		
40	0.025002		81.208	
41	-0.15402	-743.92		
42	-0.15001		278.43	
43	-0.060006	-233.01		
44	-0.045005		63.906	
45	1.4741			
46	5.9716			
47	-7.8843			
48	-5.6056			
49	0.8060			

CYCLE C

CHANNEL	MILLIVOLTS	AXIAL LOAD	BEND.STRESS	MISC.
0	0.8050			
1	-0.17102			342.03
2	0.023002			0.0076673
3	0.041004			0.013669
4	0.013001			0.0043337
5	0.60706	7253.3		
6	2.7863		12639.	
7	0.84109	7274.6		
8	2.4622		8822.7	
9	1.4511	6750.9		
10	1.7072		1485.0	
11	1.5642	6748.8		
12	1.5932		168.22	
13	0.26304	673.38		
14	-0.048005		2384.0	
15	-0.13801	371.96		
16	0.31203		2610.2	
17	0.15202	572.91		
18	0.11601		209.82	
19	0.25903	818.74		
20	0.12401		783.08	
21	0.23202	808.06		
22	0.14601		499.85	
23	0.12601	718.27		
24	0.21002		487.25	
25	0.13102	669.10		
26	0.13201		284.23	
27	0.14201	720.41		
28	0.19502		207.43	
29	0.33203	684.07		
30	-0.012001		1995.4	
31	0.37304	722.55		
32	-0.035003		2366.6	
33	0.33203	872.19		
34	0.076008		1494.9	
35	0.29503	947.01		
36	0.14401		899.09	
37	0.056010	630.63		
38	0.15702		574.26	
39	0.076008	2573.8		
40	1.1291		6102.2	
41	0.21702	600.70		
42	0.064006		887.49	
43	0.30603	684.07		
44	0.014001		1693.8	
45	0.15302			
46	8.5509			
47	1.9952			
48	4.4254			
49	8.1568			

P (HP)

350.03	1598.2	4586.5	7622.8	10645.	12157.	13667.	15183.	342.03

M (IN-LB)

2.09 | 9.56 | 27.43 | 45.59 | 63.67 | 72.72 | 81.75 | 90.82

71196.	325010.	932740.	1550200.	2164800.	2472400.	2779500.	3087800.	69559.

BELT LOAD (LB)

3	7268.7	7242.6	7251.1	7249.0	7246.8	7238.3	7240.4	7242.6	7253.3	0.00000
4	7291.7	7268.2	7268.2	7270.4	7272.5	7276.9	7270.4	7276.8	7274.6	0.00000
5	6753.6	6723.8	6738.1	6747.3	6753.0	6765.9	6778.7	6785.1	6750.9	0.00000
6	6795.8	6763.7	6785.4	6813.3	6845.2	6868.5	6881.3	6887.7	6748.3	0.00000
7	714.00	681.93	677.66	737.51	805.92	848.67	895.70	938.46	673.38	0.00000
8	448.97	271.49	312.11	386.93	557.94	643.45	726.82	812.33	371.96	0.00000
9	596.42	572.91	579.32	592.15	602.64	619.94	674.21	632.76	572.91	0.00000
10	771.71	859.36	875.70	936.32	1002.6	1026.1	1047.5	1066.7	918.74	0.00000
11	780.27	757.48	677.66	609.25	564.36	542.94	521.60	515.19	806.06	0.00000
12	669.10	743.97	818.74	895.70	976.93	1021.8	1062.4	1111.6	719.27	0.00000
13	617.60	684.07	731.10	752.49	746.06	752.47	669.10	671.24	669.10	0.00000
14	658.42	722.55	656.28	656.29	675.57	686.21	711.86	739.65	720.41	0.00000
15	699.03	850.41	1594.0	3066.2	4485.1	6051.3	7133.5	8225.9	634.07	0.00000
16	681.93	974.60	1975.2	3513.1	5507.5	6563.2	7633.8	8702.6	722.55	0.00000
17	1113.7	1154.4	1220.6	1729.9	2456.2	2913.2	3200.2	3612.7	872.19	0.00000
18	797.37	1109.5	1626.8	2257.4	2932.9	3241.4	3636.2	3991.1	947.01	0.00000
19	645.59	265.08	-32.066	-27.790	15.239	-2.1377	25.653	25.653	630.63	0.00000
20	2571.7	2319.4	1605.7	514.04	316.39	121.85	75.095	76.958	2573.2	0.00000
21	919.22	64.131	-288.59	-470.30	-596.56	-579.32	-698.34	-743.92	600.70	0.00000
22	754.61	474.57	200.54	27.799	-70.545	-117.57	-166.74	-233.01	694.07	0.00000

BEARING STRESS (PSI)

3	12548.	12645.	12703.	12790.	12912.	12993.	13068.	13167.	12635.	0.00000
4	8927.1	8874.9	8758.9	8641.7	8556.1	8503.6	8439.8	8376.0	8922.7	0.00000
5	1374.7	2123.0	3503.5	5348.1	7534.9	8706.7	9913.2	11218.	1485.0	0.00000
6	1985.2	4733.3	6079.0	9051.2	10973.	12059.	13277.	14397.	168.22	0.00000
7	392.64	156.62	1618.4	3559.6	3958.2	4112.6	4293.2	4507.0	2364.3	0.00000
8	266.83	655.47	1601.0	2759.3	3753.0	4740.2	4756.5	5232.1	2610.3	0.00000
9	388.64	452.45	1165.9	1943.2	2830.7	3306.3	3770.4	4164.8	208.82	0.00000
10	29.003	1276.1	1920.0	2597.1	3230.9	3515.1	3805.2	4049.4	793.06	0.00000
11	446.64	800.48	897.49	1096.3	1276.1	1345.7	1401.7	1474.1	498.85	0.00000
12	1189.1	440.86	261.03	307.43	643.86	681.69	1131.1	1438.5	497.25	0.00000
13	330.63	92.409	232.07	672.[illegible]7	1437.7	1805.8	2407.2	2714.7	294.23	0.00000
14	1983.8	926.09	1734.4	212[illegible].6	2395.8	2453.6	2500.0	2459.4	307.43	0.00000
15	678.67	65.607	1989.6	7501.1	12973.	14840.	17105.	19153.	1395.4	0.00000
16	179.92	1415.3	2505.6	7575.6	12343.	14948.	17465.	20597.	2366.6	0.00000
17	864.29	324.63	1200.7	75.406	2465.2	3642.8	4762.3	5847.0	1464.5	0.00000
18	585.86	875.89	1597.6	2921.2	5255.3	5725.2	6169.2	6722.9	890.09	0.00000
19	266.63	197.22	345.44	363.64	295.83	388.64	336.43	329.83	574.26	0.00000
20	5364.4	3950.2	655.46	2131.0	693.26	17.402	75.407	81.208	6102.2	0.00000
21	707.67	348.03	145.01	127.61	174.02	411.84	290.03	278.43	887.49	0.00000
22	60.404	163.42	540.69	574.26	168.77	40.604	46.405	63.906	1693.5	0.00000

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SPC-2 RDG 3 PRELOAD LEV. 7000.0 LB

PRESSURE TEST WITH SHIMS

CYCLE 1

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-1.9610			
1	0.020002			-40.004
2	0.0050005			0.0016668
3	0.021002			0.0070006
4	0.0020002			0.00066673
5	0.79308	6887.7		
6	2.4292		9489.7	
7	0.91109	6464.4		
8	2.1132		6972.3	
9	1.4901	6740.2		
10	1.6632		1003.5	
11	0.83508	6731.7		
12	2.3142		8579.1	
13	0.96710	6772.3		
14	2.2012		7157.9	
15	0.54005	6586.3		
16	2.5413		11606.	
17	1.2631	6641.9		
18	1.8442		3370.1	
19	0.87109	7016.0		
20	2.4112		8932.9	
21	1.2751	6688.9		
22	1.8542		3358.5	
23	1.3691	7052.3		
24	1.9302		3254.1	
25	1.2791	6979.6		
26	1.9862		4101.0	
27	0.44604	6787.2		
28	2.7293		13242.	
29	1.0191	6975.4		
30	2.2442		7105.7	
31	0.62606	6988.2		
32	2.6433		11699.	
33	1.4451	6763.7		
34	1.7192		1589.4	
35	1.1421	6851.4		
36	2.0632		5342.3	
37	1.4061	6733.8		
38	1.7442		1960.6	
39	1.2411	6960.4		
40	2.0152		4489.6	
41	1.3831	6849.2		
42	1.8212		2540.7	
43	0.70707	6881.3		
44	2.5123		10470.	
45	-1.4621			
46	8.1588			
47	-4.6885			
48	-4.3004			
49	6.5057			

CYCLE 2

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-6.5050			
1	0.020002			-40.004
2	0.74707			0.24902
3	0.82008			0.27336
4	0.75808			0.25269
5	0.29203	6877.0		
6	2.9253		15272.	
7	0.42804	6498.6		
8	2.6123		12668.	
9	0.12001	6817.2		
10	3.0693		17105.	
11	0.22702	6381.1		
12	2.7583		14681.	
13	0.12001	6618.4		
14	2.9763		16566.	
15	-0.18902	6212.2		
16	3.0953		19049.	
17	0.57506	6131.0		
18	2.2932		9965.4	
19	0.28203	6637.6		
20	2.8233		14739.	
21	0.72507	6479.4		
22	2.3062		9170.7	
23	0.82108	6842.8		
24	2.3802		9043.1	
25	1.1371	6917.6		
26	2.0992		5580.2	
27	0.34003	6763.7		
28	2.8243		14408.	
29	0.98010	6939.0		
30	2.2662		7459.5	
31	0.57906	7020.2		
32	2.7053		12332.	
33	1.4341	7285.3		
34	1.9742		3132.3	
35	1.0471	6842.8		
36	2.1542		6421.2	
37	1.3461	6680.4		
38	1.7792		2511.7	
39	1.1851	6902.7		
40	2.0442		4982.7	
41	1.3731	6932.6		
42	1.8702		2882.9	
43	0.69307	6904.8		
44	2.5373		10696.	
45	-1.4671			
46	8.1588			
47	-3.8234			
48	-4.6945			
49	-3.1183			

CYCLE 3

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-3.1180			
1	0.020002			-40.004
2	1.4971			0.49904
3	1.6432			0.54772
4	1.5152			0.50505
5	-0.33503	6930.5		
6	3.5774		22691.	
7	-0.18102	6611.9		
8	3.2743		20041.	
9	-0.38904	6267.8		
10	3.3213		21520.	
11	-0.037004	5564.5		
12	2.6403	.	15528.	
13	-0.42904	6325.5		
14	3.3883		22140.	
15	-1.1231	5893.7		
16	3.8804		29020.	
17	-0.39004	5733.3		
18	3.0723		20081.	
19	-0.35404	6259.2		
20	3.2823		21090.	
21	-0.094009	6511.5		
22	3.1403		18759.	
23	-0.041004	6872.7		
24	3.2563		19124.	
25	1.0011	6898.4		
26	2.2262		7105.7	
27	0.22902	6729.5		
28	2.9193		15603.	
29	0.94809	6960.4		
30	2.3082		7888.8	
31	0.52505	7054.5		
32	2.7753		13051.	
33	1.3961	7420.0		
34	2.0752		3938.6	
35	0.95710	6872.7		
36	2.2582		7546.6	
37	1.2761	6614.1		
38	1.8182		3143.9	
39	1.1341	6881.3		
40	2.0852		5516.3	
41	1.3631	6947.6		
42	1.8872		3039.5	
43	0.66907	6919.8		
44	2.5683		11015.	
45	-1.4641			
46	8.1578			
47	-8.1378			
48	-5.3115			
49	-3.1653			

CYCLE 4

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	3.1650			
1	0.019002			-38.004
2	2.2342			0.74473
3	2.4592			0.81974
4	2.2612			0.75373
5	-0.48905	6673.9		
6	3.6114		23782.	
7	-0.65307	6635.5		
8	3.7574		25580.	
9	-0.52505	5818.9		
10	3.2473		21879.	
11	-0.095009	5012.9		
12	2.4402		14704.	
13	-0.47105	5966.4		
14	3.2623		21653.	
15	-1.4491	5365.7		
16	3.9594		31369.	
17	-1.5362	5686.3		
18	4.1964		33248.	
19	-0.45505	6141.6		
20	3.3283		21943.	
21	-0.33803	6428.1		
22	3.3453		21363.	
23	-0.85909	7001.0		
24	4.1344		28962.	
25	0.84208	6868.5		
26	2.3712		8869.1	
27	0.092009	6669.7		
28	3.0283		17030.	
29	0.90309	6954.0		
30	2.3502		8393.4	
31	0.46805	7090.8		
32	2.8493		13811.	
33	1.3431	7497.0		
34	2.1642		4762.3	
35	0.86609	6902.7		
36	2.3632		8683.5	
37	1.1991	6567.1		
38	1.8732		3909.6	
39	1.0791	6855.6		
40	2.1282		6084.8	
41	1.3591	7065.1		
42	1.9462		3404.9	
43	0.65707	6975.4		
44	2.6063		11305.	
45	-1.4711			
46	8.1578			
47	-5.6866			
48	-6.1096			
49	-3.0153			

CYCLE 5

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-3.0150			
1	0.019002			-38.004
2	2.9713			0.99042
3	3.2793			1.0931
4	3.0123			1.0041
5	-0.41904	6430.2		
6	3.4273		22309.	
7	-0.73207	6584.2		
8	3.8124		26357.	
9	-0.51205	5485.4		
10	3.0783		20824.	
11	-0.052005	4643.1		
12	2.2242		13202.	
13	-0.46305	5767.5		
14	3.1613		21021.	
15	-1.4191	5060.0		
16	3.7864		30192.	
17	-1.3561	5788.9		
18	4.0644		31439.	
19	-0.37704	6387.5		
20	3.3653		21705.	
21	-0.33603	6458.0		
22	3.3573		21421.	
23	-1.0601	7056.6		
24	4.3614		31444.	
25	0.66907	6859.9		
26	2.5403		10852.	
27	-0.033003	6659.0		
28	3.1483		18451.	
29	0.86909	7001.0		
30	2.4062		8915.5	
31	0.41804	7165.6		
32	2.9343		14594.	
33	1.2821	7539.7		
34	2.2452		5586.0	
35	0.78408	6958.3		
36	2.4712		9785.6	
37	1.1231	6588.4		
38	1.9592		4849.3	
39	1.0211	6827.9		
40	2.1732		6682.3	
41	1.3421	7001.0		
42	1.9332		3428.1	
43	0.64606	7063.0		
44	2.6583		11670.	
45	-1.4961			
46	8.1608			
47	-5.8306			
48	-7.5118			
49	-2.9813			

CYCLE 6

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	2.9810			
1	0.019002			-38.004
2	3.7004			1.2334
3	4.0944			1.3648
4	3.7584			1.2528
5	-0.50305	6400.3		
6	3.4973		23202.	
7	-0.77508	6603.4		
8	3.8644		26908.	
9	-1.3181	5500.3		
10	3.8914		30215.	
11	-0.57306	4673.0		
12	2.7593		19327.	
13	-0.47305	5756.9		
14	3.1663		21108.	
15	-1.4221	5083.5		
16	3.8004		30290.	
17	-1.4881	6186.5		
18	4.3824		34049.	
19	-0.44604	6906.9		
20	3.6774		23915.	
21	-0.27703	6517.9		
22	3.3263		20899.	
23	-1.0901	7234.0		
24	4.4744		32274.	
25	0.49305	6855.6		
26	2.7143		12883.	
27	-0.16402	6637.6		
28	3.2693		19913.	
29	0.82108	7028.8		
30	2.4672		9547.8	
31	0.35104	7225.5		
32	3.0293		15533.	
33	1.2071	7475.6		
34	2.2902		6282.0	
35	0.69607	7018.1		
36	2.5873		10968.	
37	1.0421	6597.0		
38	2.0442		5812.2	
39	0.96310	6812.9		
40	2.2242		7314.5	
41	1.3381	7086.5		
42	1.9772		3706.6	
43	0.63406	7154.9		
44	2.7133		12059.	
45	-1.5162			
46	8.1608			
47	-6.3796			
48	-5.7966			
49	-3.0323			

CYCLE 7

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	3.0320			
1	0.019002			-38.004
2	4.4524			1.4841
3	4.9425			1.6475
4	4.5395			1.5131
5	-0.55206	6413.1		
6	3.5524		23805.	
7	-0.83708	6686.8		
8	3.9654		27854.	
9	-1.9022	5427.7		
10	4.4414		36793.	
11	-1.7722	4910.3		
12	4.0694		33881.	
13	-0.45605	5795.3		
14	3.1673		21015.	
15	-1.3971	5412.7		
16	3.9294		30893.	
17	-1.5792	6688.9		
18	4.7085		36468.	
19	-0.45705	7567.5		
20	3.9974		25835.	
21	-0.34603	6686.8		
22	3.4743		22158.	
23	-1.1571	7561.1		
24	4.6945		33939.	
25	0.30403	6866.3		
26	2.9083		15104.	
27	-0.30303	6680.4		
28	3.4283		21641.	
29	0.76508	7067.3		
30	2.5413		10301.	
31	0.27303	7293.9		
32	3.1393		16624.	
33	1.1241	7315.3		
34	2.2982		6809.9	
35	0.59506	7086.5		
36	2.7203		12326.	
37	0.95710	6609.8		
38	2.1352		6833.1	
39	0.90609	6817.2		
40	2.2832		7987.4	
41	1.3171	7182.7		
42	2.0432		4211.2	
43	0.60906	7251.1		
44	2.7833		12610.	
45	-1.5322			
46	8.1608			
47	-6.3516			
48	-7.3597			
49	-3.2023			

CYCLE 8

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-3.2020			
1	0.020002			-40.004
2	4.9905			1.6635
3	5.5556			1.8518
4	5.1045			1.7015
5	-0.52005	6357.6		
6	3.4943		23283.	
7	-0.81208	6697.5		
8	3.9454		27593.	
9	-2.9753	5842.4		
10	5.7086		50366.	
11	-2.8736	5532.4		
12	5.4615		48342.	
13	-0.39504	5934.3		
14	3.1713		20684.	
15	-1.3141	5716.2		
16	3.9884		30754.	
17	-1.7242	7178.4		
18	5.0825		39478.	
19	-0.40604	8155.4		
20	4.2214		26839.	
21	-0.22502	6778.7		
22	3.3963		21003.	
23	-1.1061	7854.0		
24	4.7805		34142.	
25	0.15802	6898.4		
26	3.0693		16885.	
27	-0.43504	6716.7		
28	3.5774		23271.	
29	0.71807	7116.4		
30	2.6113		10980.	
31	0.20502	7330.2		
32	3.2243		17511.	
33	1.0571	7231.9		
34	2.3262		7360.9	
35	0.52105	7144.2		
36	2.8213		13341.	
37	0.89209	6646.1		
38	2.2172		7685.8	
39	0.86409	6825.7		
40	2.3292		8497.8	
41	1.2881	7255.4		
42	2.1062		4744.9	
43	0.58406	7321.7		
44	2.8413		13091.	
45	-1.5522			
46	8.1598			
47	-6.7287			
48	-6.1646			
49	-3.1603			

CYCLE 9

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-3.1600			
1	0.020002			-40.004
2	0.0090009			0.0030003
3	0.023002			0.0076673
4	0.0060006			0.0020002
5	2.9773	5209.6		
6	-0.54005		20400.	
7	3.1673	4998.0		
8	-0.82908		23179.	
9	2.7513	4739.3		
10	-0.53405		19054.	
11	2.2522	4249.8		
12	-0.26403		14594.	
13	2.9073	5391.3		
14	-0.38504		19095.	
15	3.4083	4638.8		
16	-1.2381		26949.	
17	3.4623	4916.7		
18	-1.1621		26821.	
19	3.1663	5583.7		
20	-0.55406		21578.	
21	2.8883	5387.0		
22	-0.36804		18886.	
23	3.6674	5690.6		
24	-1.0051		27100.	
25	1.2741	6874.9		
26	1.9422		3874.8	
27	0.44204	6793.6		
28	2.7363		13306.	
29	1.0391	7024.5		
30	2.2472		7007.1	
31	0.64406	7082.2		
32	2.6693		11746.	
33	1.4541	6556.4		
34	1.6132		922.30	
35	1.1481	6868.5		
36	2.0652		5319.1	
37	1.3921	6819.3		
38	1.7982		2355.0	
39	1.2411	6975.4		
40	2.0222		4530.3	
41	1.3801	6808.6		
42	1.8052		2465.2	
43	0.75508	6968.9		
44	2.5052		10151.	
45	-1.4891			
46	8.1588			
47	-5.6366			
48	-5.9486			
49	-3.0373			

ORIGINAL PAGE IS
OF POOR QUALITY

A 35

PAVG (PSID)

0.17 13.74 27.51 41.10 54.74 68.38 82.35 92.49 } % limit load (2.22)

0.0031114 0.25836 0.51727 0.77274 1.0292 1.2837 1.5482 1.7389 0.0042226

BOLT LOAD (LB)

3	6887.7	6877.0	6930.5	6873.9	6430.2	6400.3	6413.1	6357.6	5209.6	0.00000
4	6464.4	6498.6	6611.9	6635.5	6584.2	6603.4	6686.8	6697.5	4998.0	0.00000
5	6740.2	6817.2	6267.8	5818.9	5485.4	5500.3	5427.7	5842.4	4739.3	0.00000
6	6731.7	6381.1	5564.5	5012.9	4643.1	4673.0	4910.3	5532.4	4249.8	0.00000
7	6772.3	6618.4	6325.5	5966.4	5767.5	5756.9	5795.3	5934.3	5391.3	0.00000
8	6586.3	6212.2	5893.7	5365.7	5060.0	5083.5	5412.7	5716.2	4638.8	0.00000
9	6641.9	6131.0	5733.3	5686.3	5788.9	6186.5	6688.9	7178.4	4916.7	0.00000
10	7016.0	6637.6	6259.2	6141.6	6387.5	6906.9	7567.5	8155.4	5583.7	0.00000
11	6688.9	6479.4	6511.5	6428.1	6458.0	6517.9	6686.8	6778.7	5387.0	0.00000
12	7052.3	6842.8	6872.7	7001.0	7056.6	7234.0	7561.1	7854.0	5690.6	0.00000
13	6979.6	6917.6	6898.4	6868.5	6859.9	6855.6	6866.3	6898.4	6874.9	0.00000
14	6787.2	6763.7	6729.5	6669.7	6659.0	6637.6	6680.4	6716.7	6793.6	0.00000
15	6975.4	6939.0	6960.4	6954.0	7001.0	7028.8	7067.3	7116.4	7024.5	0.00000
16	6988.2	7020.2	7054.5	7090.8	7165.6	7225.5	7293.9	7330.2	7082.2	0.00000
17	6763.7	7285.3	7420.0	7497.0	7539.7	7475.6	7315.3	7231.9	6556.4	0.00000
18	6851.4	6842.8	6872.7	6902.7	6958.3	7018.1	7086.5	7144.2	6868.5	0.00000
19	6733.8	6680.4	6614.1	6567.1	6588.4	6597.0	6609.8	6646.1	6819.3	0.00000
23	6960.4	6902.7	6881.3	6855.6	6827.9	6812.9	6817.2	6825.7	6975.4	0.00000
21	6849.2	6932.6	6947.6	7065.1	7001.0	7086.5	7182.7	7255.4	6808.6	0.00000
22	6881.3	6904.8	6919.8	6975.4	7063.0	7154.9	7251.1	7321.7	6968.9	0.00000

BENDING STRESS (PSI)

3	9489.7	15272.	22691.	23782.	22309.	23202.	23805.	23283.	20400.	0.00000
4	6972.3	12668.	20041.	25580.	26357.	26908.	27854.	27593.	23179.	0.00000
5	1003.5	17105.	21520.	21879.	20824.	30215.	36793.	50366.	19054.	0.00000
6	8579.1	14681.	15528.	14704.	13202.	19327.	33881.	48342.	14594.	0.00000
7	7157.9	16566.	22140.	21653.	21021.	21108.	21015.	20684.	19095.	0.00000
8	11606.	19049.	29020.	31369.	30192.	30290.	30893.	30754.	26949.	0.00000
9	3370.1	9965.4	20081.	33248.	31439.	34049.	36468.	39478.	26821.	0.00000
10	8932.9	14739.	21090.	21943.	21705.	23915.	25835.	26839.	21578.	0.00000
11	3358.5	9170.7	18759.	21363.	21421.	20899.	22158.	21003.	18886.	0.00000
12	3254.1	9043.1	19124.	28962.	31444.	32274.	33939.	34142.	27100.	0.00000
13	4101.0	5580.2	7105.7	8869.1	10852.	12883.	15104.	16885.	3874.8	0.00000
14	13242.	14408.	15603.	17030.	18451.	19913.	21641.	23271.	13306.	0.00000
15	7105.7	7459.5	7888.8	8393.4	8915.5	9547.8	10301.	10980.	7007.1	0.00000
16	11699.	12332.	13051.	13811.	14594.	15533.	16624.	17511.	11746.	0.00000
17	1589.4	3132.3	3938.6	4762.3	5586.0	6282.0	6809.9	7360.9	922.30	0.00000
18	5342.3	6421.2	7546.6	8683.5	9785.6	10968.	12326.	13341.	5319.1	0.00000
19	1960.6	2511.7	3143.9	3909.6	4849.3	5812.2	6833.1	7685.8	2355.0	0.00000
23	4489.6	4982.7	5516.3	6084.8	6682.3	7314.5	7987.4	8497.8	4530.3	0.00000
21	2540.7	2882.9	3039.5	3404.9	3428.1	3706.6	4211.2	4744.9	2465.2	0.00000
22	10470.	10696.	11015.	11305.	11670.	12059.	12640.	13091.	10151.	0.00000

SEC-2   REC 4   PRELOAD LEV. 700.00 LB

PRESSURE TEST WITH SHIMS

ORIGINAL PAGE IS OF POOR QUALITY

CYCLE 1

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-8.5520			
1	0.0810C8			-162.02
2	0.071007			0.023669
3	0.066007			0.022002
4	0.07C007			0.023335
5	0.31703	352.72		
6	-0.15202		2720.5	
7	0.30203	412.58		
8	-0.10501		2384.0	
9	0.35504	581.46		
10	-0.11301		2888.7	
11	0.37204	605.52		
12	0.005005		2128.8	
13	0.44304	648.67		
14	-0.045004		2824.9	
15	0.43704	757.37		
16	-0.004006		2506.1	
17	0.35604	720.41		
18	-0.045005		2523.3	
19	0.35504	650.81		
20	0.005005		2204.2	
21	0.20402	720.41		
22	0.12301		411.64	
23	0.30303	752.47		
24	0.045005		1473.3	
25	0.16602	652.95		
26	0.22202		388.64	
27	0.15502	605.25		
28	0.005006		605.06	
29	0.055005	648.67		
30	0.30503		1251.5	
31	0.005006	602.11		
32	0.35704		1653.8	
33	0.11601	-870.05		
34	-0.52305		3706.6	
35	0.14501	765.30		
36	0.21002		395.64	
37	0.071007	626.35		
38	0.22202		875.85	
39	0.14701	652.62		
40	0.17702		174.02	
41	0.15402	607.11		
42	0.13001		135.21	
43	0.11401	487.40		
44	0.15802		487.25	
45	-0.5707			
46	0.1519			
47	0.0006006			
48	-1.5202			
49	0.72507			

CYCLE 2

CHANNEL	MILLIVOLTS	BOLT LOAD	BEAM STRESS	MISC.
0	-0.72500			
1	0.08700			-174.02
2	0.69707			0.23235
3	0.77008			0.25669
4	0.70607			0.23535
5	0.40004	647.72		
6	-0.09701		2882.9	
7	0.57706	545.12		
8	-0.32203		5214.7	
9	0.62006	557.94		
10	-0.35504		5678.8	
11	0.45505	748.20		
12	-0.10501		3248.3	
13	0.35004	657.70		
14	0.05505		1525.8	
15	0.76308	1075.3		
16	-0.26003		5534.0	
17	1.0541	1358.1		
18	-0.40004		8434.0	
19	0.78805	1464.3		
20	-0.10301		5168.3	
21	0.15101	722.55		
22	0.18702		2068.82	
23	0.66407	857.22		
24	-0.24303		5377.1	
25	0.16002	568.63		
26	0.10601		313.23	
27	0.11601	679.76		
28	0.20202		4068.85	
29	0.04505	638.46		
30	0.39004		1978.0	
31	-0.05105	735.37		
32	0.42504		2935.1	
33	0.10601	-602.84		
34	-0.35504		2865.5	
35	0.14401	561.97		
36	0.30603		930.60	
37	0.14301	694.76		
38	0.19202		226.22	
39	0.19202	833.71		
40	0.30603		150.81	
41	0.27004	561.28		
42	0.05505		1565.2	
43	0.11501	506.78		
44	0.14601		156.62	
45	-0.6037			
46	0.1498			
47	0.1039			
48	-0.0022			
49	-0.2248			

CYCLE 3

CHANNEL	MILLIVOLTS	FELT LEAD	FEMT.STRESS	MISC.
0	-9.324C			
1	0.0[illegible]1CC9			-1F2.C2
2	1.4461			0.4E2C4
3	1.5[illegible]72			C.5323F
4	1.4[illegible]61			C.4[illegible]71
5	-C.12301	1165.1		
6	C.6[illegible]C7		4[illegible].3	
7	-0.0[illegible]40C[illegible]	1042.2		
8	C.572C6		3[illegible]C5.2	
9	-C.3[illegible]C4	1C41.1		
10	0.[illegible]46C[illegible]		6[illegible].7	
11	-C.125C1	1355.3		
12	C.7[illegible]CE		[illegible]127.7	
13	-0.22[illegible]02	14[illegible]4.3		
14	C.927CC		66[illegible].7	
15	-C.14CC1	16[illegible]E.7		
16	C.[illegible]15CC		[illegible]11[illegible].E	
17	-C.22EC2	2300.2		
18	1.3C21		[illegible][illegible]3.3	
19	-0.[illegible]CE03	24[illegible]4.7		
20	1.4721		1C31[illegible].	
21	-C.19EC2	133[illegible].2		
22	0.[illegible]220[illegible]		[illegible][illegible]C[illegible].C	
23	-C.11[illegible]C1	1500.7		
24	C.[illegible]2CC[illegible]		[illegible]44C.[illegible]	
25	0.0[illegible]7CC6	[illegible]P1.4E		
26	C.215C2		[illegible]16.4[illegible]	
27	-C.C44CC4	[illegible]C3.7E		
28	C.42CC4		2[illegible]C1.[illegible]	
29	C.CCCCC	102[illegible].2		
30	C.481C[illegible]		27[illegible]C.1	
31	-0.16[illegible]C2	[illegible]C5.[illegible]2		
32	C.[illegible]4CC[illegible]		4C77.[illegible]	
33	C.C[illegible]CCE	-[illegible]3C.15		
34	-0.[illegible]1[illegible]C3		21[illegible]2.E	
35	C.1C[illegible]C1	12[illegible]3.3		
36	C.4[illegible]EC[illegible]		2244.[illegible]	
37	0.0[illegible]CCC[illegible]	[illegible]E2.[illegible]E		
38	C.[illegible]3C[illegible]		1351.[illegible]	
39	C.115C1	1C[illegible]E.C		
40	C.[illegible]C[illegible]C4		1E12.E	
41	C.2[illegible]EC3	12[illegible]E.[illegible]		
42	C.[illegible]3EC3		4C[illegible].C4	
43	C.124C1	[illegible]3C.15		
44	C.1[illegible]1C2		38[illegible].[illegible]4	
45	-[illegible].[illegible][illegible]7			
46	[illegible].14[illegible][illegible]			
47	[illegible].[illegible]7[illegible]			
48	-1.[illegible]CC2			
49	-[illegible].45[illegible]			

CYCLE 4

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-9.4540			
1	0.000000			-180.02
2	2.1662			0.72206
3	2.3622			0.79740
4	2.1572			0.73240
5	-0.354C4	1684.5		
6	1.1721		5025.7	
7	-0.57005	1566.9		
8	1.2671		10400.	
9	-0.61706	1594.7		
10	1.3631		11455.	
11	-0.17902	1996.6		
12	1.1131		7494.3	
13	-0.37904	2071.4		
14	1.3481		10017.	
15	-0.937C5	2308.7		
16	2.0172		17134.	
17	-1.0001	3236.5		
18	2.5143		20383.	
19	-0.51005	2401.1		
20	2.1012		15145.	
21	-0.25203	2047.5		
22	1.2101		8450.4	
23	-0.59706	2251.0		
24	1.6502		13033.	
25	-0.13701	440.37		
26	0.34303		2784.3	
27	-0.25703	972.66		
28	0.71207		5620.8	
29	-0.07500C8	1105.2		
30	0.596C6		3915.4	
31	-0.26203	917.08		
32	0.69107		5527.0	
33	-0.087005	-835.85		
34	-0.30403		1258.7	
35	0.18202	1765.8		
36	0.67407		3027.0	
37	0.07800F	1231.3		
38	0.50005		2455.4	
39	0.08500C8	1355.3		
40	0.54905		2651.5	
41	0.25503	1641.8		
42	0.50905		1450.1	
43	0.11901	508.78		
44	0.25503		812.08	
45	-0.0007			
46	0.14908			
47	0.77BC			
48	-1.7622			
49	-0.1078			

CYCLE 5

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-8.1970			
1	0.085009			-178.02
2	2.9173			0.97242
3	3.2223			1.0741
4	2.9603			0.98676
5	-0.45105	2131.3		
6	1.4481		11015.	
7	-0.63806	2015.9		
8	1.5812		12871.	
9	-0.74007	2135.6		
10	1.7392		14379.	
11	-0.21702	2697.8		
12	1.4791		9837.8	
13	-0.46105	2742.7		
14	1.7442		12790.	
15	-1.1971	2969.3		
16	2.5863		21943.	
17	-1.2341	4207.0		
18	3.2023		25731.	
19	-0.63306	4408.0		
20	2.6953		19304.	
21	-0.32902	2802.5		
22	1.5402		10261.	
23	-0.76208	3037.7		
24	2.1922		17092.	
25	-0.15402	463.88		
26	0.27104		3045.3	
27	-0.35404	1175.7		
28	0.90409		7297.1	
29	-0.15602	1231.3		
30	0.73207		5150.9	
31	-0.31203	1004.7		
32	0.79208		6345.8	
33	-0.15807	545.12		
34	0.41304		3312.1	
35	0.20202	2143.0		
36	0.80008		3468.7	
37	0.090009	1500.7		
38	0.61206		3027.9	
39	0.079808	1524.2		
40	0.63406		3219.3	
41	0.25103	2054.3		
42	0.71007		2662.5	
43	0.11801	504.50		
44	0.32003		1171.7	
45	-6.6117			
46	9.1488			
47	9.1039			
48	-1.0552			
49	-9.5049			

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CYCLE 6

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	0.5040			
1	0.0[illegible]10			-196.02
2	3.6404			1.2134
3	4.0314			1.3438
4	3.7014			1.2338
5	-0.51505	2573.8		
6	1.7192		12558.	
7	-0.72407	2456.2		
8	1.8822		19180.	
9	-1.0221	2709.5		
10	2.2002		16222.	
11	-0.26004	3389.3		
12	1.6452		13370.	
13	-0.52905	3389.3		
14	1142		15330.	
15	-1.2231	3636.3		
16	2.6242		24171.	
17	-1.3501	5130.5		
18	3.7504		29592.	
19	-0.67907	5414.8		
20	3.2123		22570.	
21	-0.21702	3519.7		
22	1.8632		17065.	
23	-0.[illegible]709	3826.5		
24	2.6873		20785.	
25	-0.15002	553.67		
26	0.41504		3312.1	
27	-0.41404	1408.8		
28	1.0731		8625.5	
29	-0.21102	1400.2		
30	0.[illegible]609		6247.2	
31	-0.[illegible]003	1156.5		
32	0.[illegible]109		7198.5	
33	-0.20302	-867.61		
34	0.[illegible]309		4153.2	
35	-0.20003	1477.2		
36	0.[illegible]009		6432.8	
37	0.[illegible]6009	1723.0		
38	0.72007		3677.6	
39	0.[illegible]0009	1752.9		
40	0.74007		3828.4	
41	0.70302	2466.9		
42	0.[illegible]21C		4350.4	
43	0.11901	508.78		
44	0.41104		1693.8	
45	-0.6107			
46	0.1478			
47	0.[illegible]6[illegible]			
48	-0.73707			
49	-0.[illegible]96			

CYCLE 7

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-5.9390			
1	0.090009			-180.02
2	4.3494			1.4498
3	4.8405			1.6135
4	4.4464			1.4821
5	-0.56706	2956.5		
6	1.9902		14600.	
7	-0.81508	2851.7		
8	3.1492		17192.	
9	-2.1327	3599.0		
10	3.7954		34380.	
11	-1.7132	4309.6		
12	3.7244		31624.	
13	-0.58506	3997.5		
14	2.4552		17633.	
15	-1.2971	4224.1		
16	3.2733		26508.	
17	-1.3951	6054.0		
18	4.2274		32610.	
19	-0.64406	4404.6		
20	3.6404		24849.	
21	-0.22902	4226.3		
22	2.2062		14124.	
23	-0.54709	4643.1		
24	3.1193		23585.	
25	-0.19202	686.21		
26	0.50305		3973.4	
27	-0.47405	1763.6		
28	1.2991		10284.	
29	-0.21602	1626.8		
30	0.97710		6520.1	
31	-0.38004	1366.0		
32	1.0191		3115.0	
33	-0.34502	-1047.5		
34	0.57106		4733.3	
35	-0.21307	1637.5		
36	0.97910		6514.3	
37	0.099009	1887.6		
38	0.78809		4019.8	
39	0.083008	1994.5		
40	0.85008		4449.0	
41	0.30202	3007.8		
42	1.2051		5819.0	
43	0.12901	551.53		
44	0.52205		2279.6	
45	-6.6057			
46	8.1498			
47	0.14701			
48	-3.5583			
49	2.8423			

CYCLE F

CHANNEL	VOLTS/VOLTS	BOLT LOAD	BEAM STRESS	MISC.
0	-2.9420			
1	0.0020C9			-184.02
2	4.9425			1.6478
3	5.5026			1.8342
4	5.0555			1.6852
5	-0.6290C6	3285.7		
6	2.1752		16317.	
7	-0.0030C9	3210.9		
8	2.4052		19188.	
9	-2.2753	4337.4		
10	5.2045		45703.	
11	-2.8753	5188.3		
12	5.2885		47350.	
13	-0.6730C7	4499.0		
14	2.7783		20013.	
15	-1.3551	4743.6		
16	3.5744		28501.	
17	-1.7182	6870.6		
18	4.0325		36573.	
19	-0.6850C7	7285.3		
20	4.0074		27761.	
21	-0.3400C2	4833.4		
22	2.0073		17125.	
23	-1.0201	5302.7		
24	2.5114		26340.	
25	-0.2100C2	914.04		
26	0.6390C6		4010.0	
27	-0.5470C5	2075.7		
28	1.5182		11978.	
29	-0.2250C2	1825.6		
30	1.0751		7563.0	
31	-0.4390C4	1552.0		
32	1.1501		9234.9	
33	-0.2630C3	-1124.4		
34	0.7750C5		6021.0	
35	-0.2270C2	1765.7		
36	1.0521		7424.7	
37	0.0550C1C	2065.0		
38	0.5670C5		4454.8	
39	0.0540C9	2229.6		
40	0.5400C5		4050.5	
41	0.2150C2	919.22		
42	1.4291		7041.9	
43	-0.1480C1	-632.76		
44	0.6440C6		4504.1	
45	-6.6117			
46	5.1468			
47	5.5750			
48	-2.7683			
49	5.6100			

CYCLE 9

CHANNEL	VOLTS	FELT LOAD	FEET STRESS	MISC.
0	0.0000			
1	0.0000			-100.00
2	0.0000			0.000000
3	0.0000			0.000000
4	0.0000			0.000000
5	0.2500	162.47		
6	-0.1830		2503.9	
7	0.4400	286.00		
8	-0.3230		4454.8	
9	0.4470	448.92		
10	-0.2370		3507.0	
11	0.3750	478.85		
12	-0.1510		3051.1	
13	0.4000	673.38		
14	-0.1500		3515.4	
15	0.7400	718.27		
16	-0.4040		6635.9	
17	0.5020	656.28		
18	-0.2750		4511.1	
19	0.4000	530.15		
20	-0.2210		4002.4	
21	0.4220	572.51		
22	-0.1540		3341.1	
23	0.5040	594.28		
24	-0.2200		4234.0	
25	0.4500	718.27		
26	-0.1140		3271.5	
27	0.4270	525.88		
28	-0.1810		2526.8	
29	0.4100	1017.6		
30	0.0000		2009.2	
31	0.3200	857.22		
32	0.0720		1490.7	
33	0.1000	666.97		
34	-0.0260		4536.1	
35	0.4000	675.52		
36	-0.1600		3792.0	
37	0.2030	427.54		
38	-0.0030000		1194.9	
39	0.3700	624.21		
40	-0.0960		2691.5	
41	0.3600	1573.4		
42	0.0820		1650.0	
43	0.2500	1068.9		
44	-0.1230		2102.0	
45	-0.5407			
46	0.1440			
47	0.5000			
48	-0.4400			
49	-0.0140			

RAVE (PSIF)

0.023002 0.24143 0.50106 0.75062 1.0111 1.2627 1.5151 1.7322 0.021557

BELT LEAF (LB)

3	952.72	647.73	1165.1	1664.5	2131.2	2573.6	2556.5	3285.7	162.47	0.00000
4	412.56	545.12	1042.2	1566.9	2019.9	2456.2	2651.7	3210.6	260.80	0.00000
5	581.46	551.54	1041.1	1554.7	2135.6	2708.5	3555.0	4237.4	446.52	0.00000
6	808.92	745.20	1355.3	1556.6	2657.6	2866.3	4309.6	5156.3	478.45	0.00000
7	846.67	557.70	1459.3	2071.4	2742.7	3288.3	3557.5	4455.5	632.38	0.00000
8	757.37	1075.3	1656.7	2305.7	2565.3	3630.3	4224.1	4743.6	716.27	0.00000
9	720.41	1358.1	2300.2	3226.5	4207.6	5130.5	6054.0	6870.6	656.24	0.00000
10	850.81	1464.3	2454.7	3401.1	4406.0	5414.6	6404.6	7265.3	530.15	0.00000
11	720.41	722.55	1332.2	2047.9	2802.5	3516.3	4226.3	4833.4	572.91	0.00000
12	752.47	857.22	1500.7	2251.0	3031.7	3826.5	4643.1	5303.7	594.26	0.00000
13	552.95	565.63	581.46	440.37	463.88	553.67	656.21	514.54	716.27	0.00000
14	609.25	675.79	803.76	572.66	1135.7	1403.6	1763.6	2075.7	525.66	0.00000
15	648.67	536.46	1028.2	1105.2	1331.3	1400.2	1626.6	1825.6	1017.4	0.00000
16	502.11	735.37	805.52	517.08	1004.7	1156.5	1366.0	1552.0	557.22	0.00000
17	-870.05	-602.84	-530.15	-535.25	545.12	-667.51	-1047.5	-1124.4	666.97	0.00000
18	765.30	561.97	1293.3	1765.8	2143.0	1477.2	1537.5	1765.7	675.52	0.00000
19	626.35	654.76	582.66	1231.3	1500.7	1723.0	1947.6	2005.0	427.54	0.00000
20	692.62	833.71	1086.0	1355.3	1527.2	1752.5	1554.5	2225.6	624.21	0.00000
21	603.11	551.28	1286.5	1641.0	2054.3	2460.5	2001.6	515.22	1173.4	0.00000
22	487.40	506.78	530.15	506.78	504.50	504.76	551.53	-632.76	1068.9	0.00000

BENDING STRESS (PSI)

3	2720.5	2662.9	4588.3	5025.7	11015.	12958.	14600.	16317.	2563.9	0.00000
4	2394.0	5214.7	3805.2	10400.	12871.	15100.	17192.	19188.	4454.6	0.00000
5	2883.7	5678.8	6985.7	11465.	14375.	19333.	24350.	45762.	3567.6	0.00000
6	2128.5	3246.3	5127.7	7454.3	5537.8	13370.	31624.	47350.	3051.1	0.00000
7	2824.9	1925.8	6655.7	10017.	12750.	15330.	17633.	20017.	3915.4	0.00000
8	2506.1	5534.0	6115.6	17134.	21943.	24171.	28508.	28551.	6635.9	0.00000
9	2522.3	8434.0	8863.3	20253.	25731.	29582.	32610.	30573.	4571.1	0.00000
10	7204.2	5168.3	10319.	15145.	15304.	22570.	24649.	27761.	4002.4	0.00000
11	411.84	208.82	5905.0	8430.4	10261.	12065.	14174.	17125.	3341.1	0.00000
12	1473.3	5377.1	5440.5	13073.	17082.	20765.	23585.	26340.	4234.4	0.00000
13	368.64	312.23	916.45	2784.3	3045.3	3312.1	3573.4	4519.9	3271.5	0.00000
14	609.08	498.65	2691.5	5620.8	7297.1	8628.5	10244.	11578.	3526.8	0.00000
15	1281.9	1578.0	2790.1	3515.4	5150.5	6767.2	6520.1	7563.9	2068.2	0.00000
16	1453.9	2935.1	4077.6	5527.9	6345.6	7155.5	8115.0	5724.5	1450.7	0.00000
17	3706.6	2665.5	2152.6	1256.7	3312.1	4153.2	4733.9	6021.0	4536.1	0.00000
18	355.64	935.69	2244.8	3027.9	3461.7	6437.8	6514.3	7424.7	3793.5	0.00000
19	675.85	226.22	1351.5	7457.4	3027.9	3677.6	4015.8	4454.8	1154.5	0.00000
20	174.02	150.51	1612.6	2651.5	3315.3	3320.4	4449.0	4555.5	2651.5	0.00000
21	135.71	1555.2	406.64	1450.1	2662.5	4350.4	5516.0	3041.5	1659.0	0.00000
22	467.25	156.62	398.64	612.08	1173.7	1653.6	2215.6	4554.1	2163.6	0.00000

SPC-2 RDG 5 PRELOAD LEV. 7000.0 LB

PRESSURE TEST WITHOUT SHIMS

CYCLE 1

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-5.4640			
1	0.084008			-168.02
2	0.064006			0.021335
3	0.070007			0.023335
4	0.058006			0.019335
5	2.5693	6659.0		
6	0.54605		11734.	
7	2.6533	5912.9		
8	0.11301		14733.	
9	2.0382	6107.4		
10	0.81908		7070.9	
11	2.8793	6257.1		
12	0.048005		16421.	
13	2.5613	4807.7		
14	-0.31203		16665.	
15	2.7803	5848.8		
16	-0.044004		16380.	
17	1.5582	6111.7		
18	1.3011		1490.8	
19	1.5322	6800.1		
20	1.6492		678.67	
21	2.6703	6252.8		
22	0.25503		14008.	
23	1.9652	5992.0		
24	0.83808		6537.3	
25	2.1712	6302.0		
26	0.77708		8086.0	
27	1.9462	6389.6		
28	1.0431		5237.9	
29	1.4441	5600.8		
30	1.1761		1554.6	
31	1.6172	4968.0		
32	0.70707		5278.5	
33	0.99110	4382.3		
34	1.0591		394.44	
35	1.5092	5540.9		
36	1.0831		2471.0	
37	1.5162	5872.3		
38	1.2311		1653.2	
39	1.4571	5949.3		
40	1.3261		759.88	
41	1.6862	6631.2		
42	1.4161		1566.2	
43	1.9082	8157.5		
44	1.1721		4269.2	
45	-6.6397			
46	8.1468			
47	8.9069			
48	-2.5743			
49	-6.5877			

CYCLE 2

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	6.5870			
1	0.090009			-180.02
2	0.69407			0.23135
3	0.76008			0.25336
4	0.70707			0.23569
5	2.5523	6845.0		
6	0.65006		11032.	
7	2.6273	6400.3		
8	0.36704		13109.	
9	1.9782	6535.0		
10	1.0791		5214.7	
11	2.8483	6703.9		
12	0.28803		14849.	
13	2.3592	6721.0		
14	0.78508		9130.1	
15	2.6723	6515.7		
16	0.37604		13318.	
17	1.4881	6562.8		
18	1.5822		545.25	
19	1.4541	6981.8		
20	1.8122		2076.6	
21	2.5933	7011.7		
22	0.68707		11055.	
23	1.8852	6857.8		
24	1.3231		3259.9	
25	2.1552	6586.3		
26	0.92609		7128.9	
27	1.8852	6564.9		
28	1.1861		4054.6	
29	1.4461	5673.5		
30	1.2081		1380.5	
31	1.6172	5049.3		
32	0.74507		5058.1	
33	1.0001	4735.0		
34	1.2151		1247.1	
35	1.4901	5654.3		
36	1.1551		1943.2	
37	1.5192	5853.1		
38	1.2191		1740.2	
39	1.4381	5981.3		
40	1.3601		452.45	
41	1.6712	6644.0		
42	1.4371		1357.3	
43	1.9072	8153.2		
44	1.2091		4048.8	
45	-6.6527			
46	8.1478			
47	9.0439			
48	-0.18602			
49	-4.9535			

CYCLE 3

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	4.9530			
1	0.090009			-180.02
2	1.4431			0.48104
3	1.5902			0.53005
4	1.4631			0.48771
5	2.5403	7033.1		
6	0.75007		10383.	
7	2.6013	6862.1		
8	0.60906		11554.	
9	1.9172	7030.9		
10	1.3721		3161.3	
11	2.8063	7214.8		
12	0.56906		12975.	
13	2.2332	8285.8		
14	1.6432		3422.3	
15	2.5363	7759.9		
16	1.0941		8364.4	
17	1.4461	7052.3		
18	1.8532		2360.8	
19	1.3431	7484.1		
20	2.1582		4727.5	
21	2.5423	8035.7		
22	1.2171		7685.8	
23	1.8252	7864.6		
24	1.8542		168.22	
25	2.1432	6889.8		
26	1.0801		6166.0	
27	1.8542	6834.3		
28	1.3431		2964.1	
29	1.4401	5714.1		
30	1.2331		1200.7	
31	1.6132	5109.1		
32	0.77708		4849.3	
33	0.99610	4820.5		
34	1.2591		1525.6	
35	1.4821	5754.7		
36	1.2101		1577.8	
37	1.5112	5872.3		
38	1.2361		1595.2	
39	1.4281	6019.8		
40	1.3881		232.02	
41	1.6742	6708.1		
42	1.4641		1218.1	
43	1.9102	8166.1		
44	1.2431		3869.0	
45	-6.6327			
46	8.1478			
47	4.0944			
48	-2.5563			
49	-1.6742			

CYCLE 4

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-1.6740			
1	0.095009			-190.02
2	2.1762			0.72540
3	2.3952			0.79840
4	2.2022			0.73407
5	2.5323	7300.3		
6	0.88309		9565.2	
7	2.5733	7402.9		
8	0.89009		9762.4	
9	1.8382	7777.0		
10	1.8002		220.42	
11	2.7643	7995.0		
12	0.97610		10371.	
13	2.1262	9925.4		
14	2.5173		2268.0	
15	2.3972	9234.9		
16	1.9232		2749.5	
17	1.3821	8149.0		
18	2.4302		6079.0	
19	1.1421	9081.0		
20	3.1063		11392.	
21	2.4732	9474.3		
22	1.9592		2981.5	
23	1.7692	8905.7		
24	2.3972		3642.8	
25	2.1012	7255.4		
26	1.2931		4686.9	
27	1.8192	7129.3		
28	1.5162		1757.6	
29	1.4261	5714.1		
30	1.2471		1038.3	
31	1.6052	5154.0		
32	0.80608		4634.7	
33	0.98110	5051.4		
34	1.3821		2326.0	
35	1.4641	5900.1		
36	1.2961		974.49	
37	1.5092	5966.4		
38	1.2821		1316.7	
39	1.4361	6118.1		
40	1.4261		58.008	
41	1.6752	6815.0		
42	1.5132		939.69	
43	1.9302	8251.6		
44	1.2821		3758.8	
45	-6.6437			
46	8.1508			
47	9.3889			
48	-9.8540			
49	9.0349			

CYCLE 5

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	9.0340			
1	0.091009			-182.02
2	2.9073			0.96909
3	3.2083			1.0694
4	2.9483			0.98275
5	2.5133	7704.3		
6	1.0911		8248.4	
7	2.5403	8010.0		
8	1.2071		7732.2	
9	1.7422	8897.2		
10	2.4202		3932.8	
11	2.7213	9076.7		
12	1.5252		6937.5	
13	2.0392	11765.		
14	3.4653		8271.6	
15	2.2492	10859.		
16	2.8313		3375.9	
17	1.3001	10100.		
18	3.4253		12326.	
19	1.0641	11299.		
20	4.2224		18318.	
21	2.4182	11007.		
22	2.7313		1815.6	
23	1.7192	9972.4		
24	2.9463		7117.3	
25	2.0842	7727.8		
26	1.5312		3207.7	
27	1.7882	7539.7		
28	1.7392		284.23	
29	1.4141	5752.6		
30	1.2771		794.68	
31	1.5942	5213.9		
32	0.84508		4344.6	
33	0.96310	5196.8		
34	1.4681		2929.3	
35	1.4571	6071.1		
36	1.3831		429.25	
37	1.5132	6098.9		
38	1.3401		1003.5	
39	1.4321	6225.0		
40	1.4801		278.42	
41	1.6392	6830.0		
42	1.5562		481.45	
43	1.9412	8298.6		
44	1.3291		3550.0	
45	-6.6347			
46	8.1508			
47	9.4059			
48	-4.0844			
49	7.2837			

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CYCLE 6

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-7.2830			
1	0.089009			-178.02
2	3.6614			1.2204
3	4.0414			1.3471
4	3.7104			1.2368
5	2.4872	8317.8		
6	1.4041		6282.0	
7	2.5063	8724.0		
8	1.5752		5400.3	
9	1.6472	10237.		
10	3.1423		8671.9	
11	2.6813	10457.		
12	2.2112		2726.3	
13	1.9702	13674.		
14	4.4274		14252.	
15	2.1242	12704.		
16	3.8194		9832.0	
17	1.2301	12370.		
18	4.5575		19298.	
19	1.1751	13736.		
20	5.2515		23643.	
21	2.3772	12631.		
22	3.5324		6699.7	
23	1.6702	11193.		
24	3.5664		10997.	
25	2.0662	8249.4		
26	1.7932		1583.6	
27	1.7602	7986.5		
28	1.9762		1252.9	
29	1.4041	5793.2		
30	1.3061		568.45	
31	1.5862	5269.5		
32	0.87909		4101.0	
33	0.94909	5361.4		
34	1.5592		3538.4	
35	1.4431	6259.2		
36	1.4851		243.63	
37	1.5152	6237.8		
38	1.4031		649.66	
39	1.4271	6312.7		
40	1.5262		574.26	
41	1.6102	6862.1		
42	1.6002		58.006	
43	1.9562	8362.7		
44	1.3771		3358.5	
45	-6.6417			
46	8.1528			
47	9.0379			
48	-2.8713			
49	-5.4235			

CYCLE 7

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	5.4230			
1	0.094009			-188.02
2	4.3934			1.4645
3	4.8485			1.6161
4	4.4574			1.4858
5	2.4582	9106.7		
6	1.8022		3805.2	
7	2.4712	9465.8		
8	1.9572		2981.5	
9	1.5682	11614.		
10	3.8654		13323.	
11	2.6543	12052.		
12	2.9843		1914.2	
13	1.9112	15502.		
14	5.3415		19895.	
15	2.0362	14540.		
16	4.7665		15835.	
17	1.1741	14596.		
18	5.6546		25986.	
19	1.4261	16227.		
20	6.1656		27488.	
21	2.3702	14239.		
22	4.2914		11142.	
23	1.6202	12516.		
24	4.2354		15168.	
25	2.0492	8801.0		
26	2.0682		110.21	
27	1.7372	8463.2		
28	2.2222		2813.3	
29	1.3991	5878.7		
30	1.3511		278.43	
31	1.5762	5344.3		
32	0.92409		3782.0	
33	0.93409	5485.4		
34	1.6322		4048.8	
35	1.4321	6468.7		
36	1.5942		939.69	
37	1.5132	6378.9		
38	1.4711		243.63	
39	1.4181	6413.1		
40	1.5822		951.30	
41	1.5862	6906.9		
42	1.6452		342.24	
43	1.9492	8332.8		
44	1.4231		3051.1	
45	-6.6637			
46	8.1538			
47	0.29003			
48	-0.63706			
49	-7.2617			

CYCLE . 8

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	7.2610			
1	0.091009			-182.02
2	4.9905			1.6635
3	5.5116			1.8372
4	5.0605			1.6868
5	2.4392	9812.1		
6	2.1512		1670.6	
7	2.4462	10092.		
8	2.2752		991.90	
9	1.5152	12802.		
10	4.4744		17163.	
11	2.6283	13382.		
12	3.6324		5823.8	
13	1.8742	16999.		
14	6.0786		24385.	
15	1.9862	16026.		
16	5.5116		20447.	
17	1.1361	16400.		
18	6.5367		31323.	
19	1.6332	18245.		
20	6.9027		30563.	
21	2.3942	15558.		
22	4.8845		14443.	
23	1.5802	13666.		
24	4.8135		18753.	
25	2.0452	9296.9		
26	2.3042		1502.3	
27	1.7222	8863.0		
28	2.4242		4072.0	
29	1.3931	5938.6		
30	1.3851		46.402	
31	1.5722	5425.5		
32	0.96610		3515.2	
33	0.90709	5472.5		
34	1.6532		4327.2	
35	1.4321	6671.8		
36	1.6892		1490.7	
37	1.5272	6535.0		
38	1.5302		17.402	
39	1.4191	6513.6		
40	1.6282		1212.3	
41	1.5832	6990.3		
42	1.6872		603.26	
43	1.9532	8349.9		
44	1.4661		2824.9	
45	-6.6487			
46	8.1538			
47	8.2618			
48	-1.3861			
49	-0.79208			

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CYCLE 9

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-0.79200			
1	0.091009			-182.02
2	0.066007			0.022002
3	0.069007			0.023002
4	0.063006			0.021002
5	2.5653	6622.6		
6	0.53305		11786.	
7	2.6463	5883.0		
8	0.10601		14733.	
9	2.0512	5885.1		
10	0.70207		7825.0	
11	2.8833	6195.1		
12	0.015001		16636.	
13	2.5283	4839.8		
14	-0.26403		16195.	
15	2.7383	5643.6		
16	-0.098010		16450.	
17	1.5532	5917.2		
18	1.2151		1960.6	
19	2.3912	6449.5		
20	0.62606		10238.	
21	2.6093	5513.2		
22	-0.030003		15307.	
23	1.9582	5500.3		
24	0.61506		7790.2	
25	2.1332	6210.1		
26	0.77208		7894.6	
27	1.9342	6295.6		
28	1.0111		5353.9	
29	1.4451	5637.1		
30	1.1921		1467.5	
31	1.6102	4944.5		
32	0.70307		5261.1	
33	0.97610	3894.9		
34	0.84608		754.08	
35	1.5292	5767.5		
36	1.1691		2088.2	
37	1.5862	6062.6		
38	1.2501		1949.0	
39	1.4861	6032.6		
40	1.3361		870.09	
41	1.5302	6184.4		
42	1.3631		968.69	
43	1.9102	8166.1		
44	1.1811		4228.6	
45	-6.5867			
46	8.1528			
47	1.0581			
48	-0.40904			
49	-7.3767			

ORIGINAL PAGE IS
OF POOR QUALITY

A 57

PAVG (PSID)

1.06 12.77 26.57 40.03 53.57 67.45 80.96 91.48

0.021335	0.24013	0.49960	0.75262	1.0071	1.2681	1.5221	1.7292	0.022002	

BOLT LOAD (LB)

3	6659.0	6845.0	7033.1	7300.3	7704.3	8317.8	9106.7	9812.1	6622.6	0.00000
4	5912.9	6400.3	6862.1	7402.9	8010.0	8724.0	9465.8	10092.	5883.0	0.00000
5	6107.4	6535.0	7030.9	7777.0	8897.2	10237.	11614.	12802.	5885.1	0.00000
6	6257.1	6703.9	7214.8	7995.0	9076.7	10457.	12052.	13382.	6195.1	0.00000
7	4807.7	6721.0	8285.8	9925.4	11765.	13674.	15502.	16999.	4839.8	0.00000
8	5848.8	6515.7	7759.9	9234.9	10859.	12704.	14540.	16026.	5643.6	0.00000
9	6111.7	6562.8	7052.3	8149.0	10100.	12370.	14596.	16400.	5917.2	0.00000
10	6800.1	6981.8	7484.1	9081.0	11299.	13736.	16227.	18245	6449.5	0.00000
11	6252.8	7011.7	8035.7	9474.3	11007.	12631.	14239.	15558.	5513.2	0.00000
12	5992.0	6857.8	7864.6	8905.7	9972.4	11193.	12516.	13666.	5500.3	0.00000
13	6302.0	6586.3	6889.8	7255.4	7727.8	8249.4	8801.0	9296.9	6210.1	0.00000
14	6389.6	6564.9	6834.3	7129.3	7539.7	7986.5	8463.2	8863.0	6295.6	0.00000
15	5600.8	5673.5	5714.1	5714.1	5752.6	5793.2	5878.7	5938.6	5637.1	0.00000
16	4968.0	5049.3	5109.1	5154.0	5213.9	5269.5	5344.3	5425.5	4944.5	0.00000
17	4382.3	4735.0	4820.5	5051.4	5196.8	5361.4	5485.4	5472.5	3894.9	0.00000
18	5540.9	5654.3	5754.7	5900.1	6071.1	6259.2	6468.7	6671.8	5767.5	0.00000
19	5872.3	5853.1	5872.3	5966.4	6098.9	6237.8	6378.9	6535.0	6062.6	0.00000
23	5949.3	5981.3	6019.8	6118.1	6225.0	6312.7	6413.1	6513.6	6032.6	0.00000
21	6631.2	6644.0	6708.1	6815.0	6830.0	6862.1	6906.9	6990.3	6184.4	0.00000
22	8157.5	8153.2	8166.1	8251.6	8298.6	8362.7	8332.8	8349.9	8166.1	0.00000

BENDING STRESS (PSI)

3	11734.	11032.	10383.	9565.2	8248.4	6282.0	3805.2	1670.6	11786.	0.00000
4	14733.	13109.	11554.	9762.4	7732.2	5400.3	2981.5	991.90	14733.	0.00000
5	7070.9	5214.7	3161.3	220.42	3932.8	8671.9	13323.	17163.	7825.0	0.00000
6	16421.	14849.	12975.	10371.	6937.5	2724.3	1914.2	5823.8	16636.	0.00000
7	16665.	9130.1	3422.3	2268.0	8271.6	14252.	19895.	24385.	16195.	0.00000
8	16380.	13318.	8364.4	2749.5	3375.9	9832.0	15835.	20447.	16450.	0.00000
9	1490.8	545.25	2360.8	6079.0	12326.	19298.	25986.	31323.	1960.6	0.00000
10	678.67	2076.6	4727.5	11392.	18318.	23643.	27488.	30563.	10238.	0.00000
11	14008.	11055.	7685.8	2981.5	1815.6	6699.7	11142.	14443.	15307.	0.00000
12	6537.3	3259.9	168.22	3642.8	7117.3	10997.	15168.	18753.	7790.2	0.00000
13	8086.0	7128.9	6166.0	4686.9	3207.7	1583.6	110.21	1502.3	7894.6	0.00000
14	5237.9	4054.6	2964.1	1757.6	284.23	1252.9	2813.3	4072.0	5353.9	0.00000
15	1554.6	1380.5	1200.7	1038.3	794.68	568.45	278.43	46.402	1467.5	0.00000
16	5278.5	5058.1	4849.3	4634.7	4344.6	4101.0	3782.0	3515.2	5261.1	0.00000
17	394.44	1247.1	1525.6	2326.0	2929.3	3538.4	4048.8	4327.2	754.08	0.00000
18	2471.0	1943.2	1577.8	974.49	429.25	2[illegible]63	939.69	1490.7	2088.2	0.00000
19	1653.2	1740.2	1595.2	1316.7	1003.5	649.66	243.63	17.402	1949.0	0.00000
23	759.88	452.45	232.02	58.008	278.42	574.26	951.30	1212.3	870.09	0.00000
21	1566.2	1357.3	1218.1	939.69	481.45	58.006	342.24	603.26	968.69	0.00000
22	4269.2	4048.8	3869.0	3758.8	3550.0	3358.5	3051.1	2824.9	4228.6	0.00000

SPC-2 RDG 6 PRELOAD LEV. 7000.0 LB

PRESSURE TEST WITHOUT SHIMS

CYCLE # 1

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-1.5400			
1	0.091009			-182.02
2	0.066007			0.022002
3	0.074007			0.024669
4	0.059006			0.019668
5	2.5253	6569.2		
6	0.54805		11467.	
7	2.5723	6235.7		
8	0.34503		12917.	
9	1.5412	6921.9		
10	1.6972		904.89	
11	2.2502	6847.1		
12	0.95310		7523.3	
13	2.7913	6682.5		
14	0.33503		14246.	
15	1.8852	6669.7		
16	1.2351		3770.4	
17	1.7712	6727.4		
18	1.3761		2291.2	
19	1.5051	6911.2		
20	1.7282		1293.5	
21	2.9373	6729.5		
22	0.21102		15812.	
23	2.1942	6763.7		
24	0.97010		7099.9	
25	1.8212	6842.8		
26	1.3801		2558.1	
27	1.8442	6885.6		
28	1.3771		2708.9	
29	1.5112	6631.2		
30	1.5912		464.05	
31	1.6432	6329.8		
32	1.3181		1885.2	
33	1.5192	6349.0		
34	1.4511		394.44	
35	1.6122	5806.0		
36	1.1041		2946.7	
37	1.4391	6148.1		
38	1.4371		11.600	
39	1.2191	6190.8		
40	1.6772		2656.7	
41	1.6192	7050.2		
42	1.6792		348.04	
43	1.8282	6759.4		
44	1.3341		2865.5	
45	-6.5297			
46	8.1408			
47	9.5190			
48	-0.77808			
49	0.63506			

CYCLE 2

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	0.63500			
1	0.094009			-188.02
2	0.69707			0.23235
3	0.77208			0.25736
4	0.71107			0.23702
5	2.5133	6763.7		
6	0.65106		10800.	
7	2.5583	6607.7		
8	0.53305		11746.	
9	1.4931	7261.8		
10	1.9042		2384.0	
11	2.2212	7180.6		
12	1.1381		6282.0	
13	2.5823	8414.0		
14	1.3541		7123.1	
15	1.8122	7103.6		
16	1.5112		1746.0	
17	1.7242	7048.0		
18	1.5732		875.88	
19	1.4371	7105.8		
20	1.8872		2610.3	
21	2.8863	7558.9		
22	0.65006		12970.	
23	2.1272	7663.7		
24	1.4581		3880.6	
25	1.8142	7054.5		
26	1.4861		1902.6	
27	1.8082	7097.2		
28	1.5122		1717.0	
29	1.5112	6686.8		
30	1.6172		614.86	
31	1.6462	6451.6		
32	1.3721		1589.4	
33	1.6192	6964.7		
34	1.6392		116.01	
35	1.5912	5878.7		
36	1.1591		2505.8	
37	1.4391	6096.8		
38	1.4131		150.81	
39	1.1911	6173.7		
40	1.6972		2935.1	
41	1.5982	6915.5		
42	1.6372		226.22	
43	1.7922	6725.2		
44	1.3541		2540.7	
45	-6.5277			
46	8.1428			
47	0.54105			
48	-9.8830			
49	0.0030003			

CYCLE 3

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-0.0029990			
1	0.082008			-164.02
2	1.4431			0.48104
3	1.5942			0.53138
4	1.4671			0.48904
5	2.5022	6977.5		
6	0.76208		10093.	
7	2.5463	7071.6		
8	0.76208		10348.	
9	1.4371	7704.3		
10	2.1672		4234.4	
11	2.1882	7537.6		
12	1.3381		4930.5	
13	2.4352	9974.6		
14	2.2312		1183.3	
15	1.7272	7768.4		
16	1.9072		1044.1	
17	1.6792	7452.1		
18	1.8072		742.47	
19	1.3341	7558.9		
20	2.2022		5034.9	
21	2.8323	8555.1		
22	1.1701		9640.6	
23	2.0762	8647.0		
24	1.9692		620.66	
25	1.7872	7227.6		
26	1.5942		1119.5	
27	1.7842	7328.1		
28	1.6442		812.08	
29	1.5021	6686.8		
30	1.6262		719.28	
31	1.6432	6511.5		
32	1.4031		1392.1	
33	1.6042	7016.0		
34	1.6782		429.24	
35	1.5922	6002.7		
36	1.2161		2181.0	
37	1.4321	6141.6		
38	1.4411		52.205	
39	1.1911	6237.8		
40	1.7272		3109.1	
41	1.6112	7082.2		
42	1.7022		527.85	
43	1.8122	6830.0		
44	1.3831		2488.4	
45	-6.5217			
46	8.1458			
47	8.8459			
48	-1.1171			
49	3.3753			

CYCLE 4

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-3.3750			
1	0.092009			-184.02
2	2.1822			0.72740
3	2.4112			0.80374
4	2.2152			0.73840
5	2.4892	7261.8		
6	0.90809		9170.7	
7	2.5343	7635.9		
8	1.0381		8677.7	
9	1.3791	8253.7		
10	2.4822		6398.0	
11	2.1432	8097.7		
12	1.6452		2888.7	
13	2.3012	11635.		
14	3.1423		4878.3	
15	1.5732	9132.3		
16	2.6993		6531.4	
17	1.6092	8352.0		
18	2.2982		3996.6	
19	1.1401	9083.1		
20	3.1093		11421.	
21	2.7653	9938.2		
22	1.8842		5110.3	
23	2.0312	9705.2		
24	2.5093		2772.7	
25	1.7562	7477.7		
26	1.7422		81.205	
27	1.7592	7603.8		
28	1.7982		226.23	
29	1.4911	6686.8		
30	1.6372		846.88	
31	1.6362	6552.1		
32	1.4291		1200.7	
33	1.5892	7150.6		
34	1.7562		968.70	
35	1.5802	6135.2		
36	1.2901		1682.2	
37	1.4331	6222.9		
38	1.4781		261.03	
39	1.1861	6308.4		
40	1.7652		3358.5	
41	1.5922	7112.2		
42	1.7352		829.49	
43	1.8342	6951.8		
44	1.4181		2413.0	
45	-6.5217			
46	8.1478			
47	9.0089			
48	-0.49105			
49	4.6025			

CYCLE 5

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-4.6020			
1	0.090009			-180.02
2	2.9283			0.97609
3	3.2293			1.0764
4	2.9763			0.99209
5	2.4712	7732.1		
6	1.1461		7685.8	
7	2.5123	8228.1		
8	1.3371		6815.7	
9	1.2911	9078.9		
10	2.9563		9658.0	
11	2.0872	8976.3		
12	2.1122		145.01	
13	2.1892	13493.		
14	4.1234		11218.	
15	1.3891	11043.		
16	3.7774		13851.	
17	1.5212	10367.		
18	3.3293		10487.	
19	1.0421	11445.		
20	4.3124		18967.	
21	2.6983	11543.		
22	2.7023		23.203	
23	1.9912	10821.		
24	3.0713		6264.6	
25	1.7312	7856.1		
26	1.9442		1235.5	
27	1.7312	7948.0		
28	1.9872		1484.9	
29	1.4821	6729.5		
30	1.6662		1067.3	
31	1.6272	6592.7		
32	1.4571		986.10	
33	1.5702	7375.1		
34	1.8802		1798.2	
35	1.5592	6267.8		
36	1.3731		1078.9	
37	1.4341	6366.1		
38	1.5442		638.06	
39	1.1831	6398.2		
40	1.8102		3637.0	
41	1.5572	7110.0		
42	1.7692		1229.7	
43	1.8422	7039.5		
44	1.4511		2268.0	
45	-6.5047			
46	8.1498			
47	7.8948			
48	-9.1729			
49	-1.2291			

CYCLE 6

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-1.2290			
1	0.086009			-172.02
2	3.6424			1.2141
3	4.0264			1.3421
4	3.7014			1.2338
5	2.4412	8396.9		
6	1.4871		5533.8	
7	2.4882	8865.1		
8	1.6592		4808.7	
9	1.1911	10211.		
10	3.5864		13892.	
11	2.0412	10117.		
12	2.6923		3776.2	
13	2.1092	15310.		
14	5.0535		17076.	
15	1.2561	12854.		
16	4.7575		20307.	
17	1.4591	12544.		
18	4.4094		17111.	
19	1.0311	13754.		
20	5.4035		25360.	
21	2.6653	13142.		
22	3.4833		4744.9	
23	1.9602	11986.		
24	3.6474		9785.6	
25	1.7122	8339.2		
26	2.1892		2766.9	
27	1.7182	8349.9		
28	2.1882		2726.3	
29	1.4731	6757.3		
30	1.6882		1247.1	
31	1.6222	6641.9		
32	1.4851		794.68	
33	1.5552	7193.4		
34	1.8102		1479.2	
35	1.5612	6464.4		
36	1.4631		568.45	
37	1.4341	6470.9		
38	1.5932		922.29	
39	1.1771	6445.2		
40	1.8382		3834.2	
41	1.5462	7169.9		
42	1.8082		1519.8	
43	1.8522	7135.7		
44	1.4861		2123.0	
45	-6.5427			
46	8.1508			
47	1.7202			
48	-9.2749			
49	-8.3288			

CYCLE 7

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	8.3280			
1	0.091009			-182.02
2	4.3744			1.4581
3	4.8425			1.6141
4	4.4534			1.4845
5	2.4002	9230.6		
6	1.9182		2795.9	
7	2.4682	9585.5		
8	2.0162		2621.9	
9	1.1081	11528.		
10	4.2854		18428.	
11	1.9962	11582.		
12	3.4223		8271.6	
13	2.0482	17123.		
14	5.9626		22703.	
15	1.1751	14619.		
16	5.6646		26038.	
17	1.4111	14788.		
18	5.5076		23759.	
19	1.1691	16161.		
20	6.3916		30290.	
21	2.6533	14786.		
22	4.2644		9344.7	
23	1.9282	13341.		
24	4.3134		13834.	
25	1.6922	8897.2		
26	2.4702		4512.8	
27	1.7082	8796.7		
28	2.4072		4054.6	
29	1.4691	6817.2		
30	1.7202		1455.9	
31	1.6172	6693.2		
32	1.5142		597.46	
33	1.5302	7283.2		
34	1.8772		2012.8	
35	1.5542	6682.5		
36	1.5722		104.41	
37	1.4431	6648.3		
38	1.6672		1299.3	
39	1.1771	6575.6		
40	1.8992		4188.0	
41	1.5142	7195.5		
42	1.8522		1960.6	
43	1.8582	7229.7		
44	1.5242		1937.4	
45	-6.5707			
46	8.1478			
47	2.3142			
48	-9.6480			
49	8.8519			

CYCLE 8

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-8.8510			
1	0.087009			-174.02
2	4.9645			1.6548
3	5.5076			1.8358
4	5.0645			1.6882
5	2.3762	9931.8		
6	2.2702		614.86	
7	2.4512	10203.		
8	2.3222		748.28	
9	1.0441	12674.		
10	4.8855		22280.	
11	1.9652	12916.		
12	4.0774		12250.	
13	2.0022	18585.		
14	6.6927		27204.	
15	1.1261	16056.		
16	6.3856		30505.	
17	1.3751	16603.		
18	6.3926		29101.	
19	1.2211	18089.		
20	7.2417		34919.	
21	2.6563	16139.		
22	4.8945		12981.	
23	1.8992	14502.		
24	4.8855		17320.	
25	1.6862	9376.0		
26	2.7003		5881.8	
27	1.7012	9166.5		
28	2.5873		5139.3	
29	1.4681	6877.0		
30	1.7492		1630.0	
31	1.6102	6740.2		
32	1.5432		388.64	
33	1.5182	7340.9		
34	1.9162		2308.6	
35	1.5422	6836.4		
36	1.6562		661.27	
37	1.4471	6761.6		
38	1.7162		1560.4	
39	1.1771	6646.1		
40	1.9322		4379.4	
41	1.5122	7274.6		
42	1.8912		2198.4	
43	1.8662	7317.4		
44	1.5572		1792.4	
45	-6.5657			
46	8.1488			
47	9.3349			
48	-1.1121			
49	3.0243			

CYCLE 9

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-3.0240			
1	0.096010			-192.02
2	0.062006			0.020669
3	0.065006			0.021669
4	0.060006			0.020002
5	2.5343	6558.5		
6	0.53405		11601.	
7	2.5633	6163.0		
8	0.32003		13010.	
9	1.5842	6718.8		
10	1.5592		145.01	
11	2.2922	6845.0		
12	0.91009		8016.4	
13	2.7623	6654.7		
14	0.35104		13985.	
15	1.9312	6505.1		
16	1.1121		4750.7	
17	1.7712	6603.4		
18	1.3181		2627.7	
19	2.1422	6676.1		
20	0.98110		6734.5	
21	2.9083	6426.0		
22	0.098010		16299.	
23	2.1632	6560.6		
24	0.88609		7523.4	
25	1.8012	6759.4		
26	1.3611		2552.3	
27	1.8432	6834.3		
28	1.3541		2836.5	
29	1.5142	6629.0		
30	1.5872		423.45	
31	1.6452	6355.4		
32	1.3281		1838.8	
33	1.5582	6507.2		
34	1.4861		417.64	
35	1.6212	5966.4		
36	1.1701		2616.1	
37	1.4981	6374.7		
38	1.4841		81.207	
39	1.2421	6252.8		
40	1.6832		2558.1	
41	1.4731	6618.4		
42	1.6232		870.09	
43	1.8242	6735.9		
44	1.3271		2882.9	
45	-6.5777			
46	8.1488			
47	9.1139			
48	-8.4858			
49	9.7080			

PAVG (PSID)

1.18	12.89	26.62	40.241	53.98	67.20	80.79	91.82		
0.022113	0.24224	0.50049	0.75651	1.0149	1.2633	1.5189	1.7263	0.020780	

BOLT LOAD (LB)

3	6569.2	6763.7	6977.5	7261.8	7732.1	8396.9	9230.6	9931.8	6558.5	0.00000
4	6235.7	6607.7	7071.6	7635.9	8228.1	8865.1	9585.5	10203.	6163.0	0.00000
5	6921.9	7261.8	7704.3	8253.7	9078.9	10211.	11528.	12674.	6718.8	0.00000
6	6847.1	7180.6	7537.6	8097.7	8976.3	10117.	11582.	12916.	6845.0	0.00000
7	6682.5	8414.0	9974.6	11635.	13493.	15310.	17123.	18585.	6654.7	0.00000
8	6669.7	7103.6	7768.4	9132.3	11043.	12854.	14619.	16056.	6505.1	0.00000
9	6727.4	7048.0	7452.1	8352.0	10367.	12544.	14788.	16603.	6603.4	0.00000
10	6911.2	7105.8	7558.9	9083.1	11445.	13754.	16161.	18089.	6676.1	0.00000
11	6729.5	7558.9	8555.1	9938.2	11543.	13142.	14786.	16139.	6426.0	0.00000
12	6763.7	7663.7	8647.0	9705.2	10821.	11986.	13341.	14502.	6560.6	0.00000
13	6842.8	7054.5	7227.6	7477.7	7856.1	8339.2	8897.2	9376.0	6759.4	0.00000
14	6885.6	7097.2	7328.1	7603.8	7948.0	8349.9	8796.7	9166.5	6834.3	0.00000
15	6631.2	6686.8	6686.8	6686.8	6729.5	6757.3	6817.2	6877.0	6629.0	0.00000
16	6329.8	6451.6	6511.5	6552.1	6592.7	6641.9	6693.2	6740.2	6355.4	0.00000
17	6349.0	6964.7	7016.0	7150.6	7375.1	7193.4	7283.2	7340.9	6507.2	0.00000
18	5806.0	5878.7	6002.7	6135.2	6267.8	6464.4	6682.5	6836.4	5966.4	0.00000
19	6148.1	6096.8	6141.6	6222.9	6366.1	6470.9	6648.3	6761.6	6374.7	0.00000
20	6190.5	6173.7	6237.8	6308.4	6398.2	6445.2	6575.6	6646.1	6252.8	0.00000
21	7050.2	6915.5	7082.2	7112.2	7110.0	7169.9	7193.5	7274.6	6618.4	0.00000
22	6759.4	6725.2	6830.0	6951.8	7039.5	7135.7	7229.7	7317.4	6735.9	0.00000

BENDING STRESS (PSI)

3	11467.	10800.	10093.	9170.7	7685.8	5533.8	2795.9	614.86	11601.	0.00000
4	12917.	11746.	10348.	8677.7	6815.7	4808.7	2621.9	748.28	13010.	0.00000
5	904.89	2384.0	4234.4	6398.0	9658.0	13892.	18428.	22280.	145.01	0.00000
6	7523.3	6282.0	4930.5	2888.7	145.01	3776.2	8271.6	12250.	8016.4	0.00000
7	14246.	7123.1	1183.3	4878.3	11218.	17076.	22703.	27204.	13985.	0.00000
8	3770.4	1746.0	1044.1	6531.4	13851.	20307.	26038.	30505.	4750.7	0.00000
9	2291.2	875.88	742.47	3996.6	10487.	17111.	23759.	29101.	2627.7	0.00000
10	1293.5	2610.3	5034.9	11421.	18967.	25360.	30290.	34919.	6734.5	0.00000
11	15812.	12970.	9640.6	5110.3	23.203	4744.9	9344.7	12981.	16299.	0.00000
12	7099.9	3880.6	620.66	2772.7	6264.6	9785.6	13034.	17320.	7523.4	0.00000
13	2558.1	1902.6	1119.5	81.205	1235.5	2766.9	4512.8	5881.8	2552.3	0.00000
14	2708.9	1717.0	812.08	226.23	1484.9	2726.3	4054.6	5139.3	2836.5	0.00000
15	464.05	614.86	719.28	846.86	1067.3	1247.1	1455.9	1630.0	423.45	0.00000
16	1885.2	1589.4	1392.1	1200.7	986.10	794.68	597.46	388.64	1838.8	0.00000
17	394.44	116.01	429.24	968.70	1798.2	1479.2	2012.8	2308.6	417.64	0.00000
18	2946.7	2505.8	2181.0	1682.2	1078.9	568.45	104.41	661.27	2616.1	0.00000
19	11.600	150.81	52.205	261.03	638.16	922.29	1299.3	1560.4	81.207	0.00000
20	2656.7	2935.1	3109.1	3358.5	3637.0	3834.2	4188.0	4379.4	2558.1	0.00000
21	348.04	226.22	527.85	829.49	1229.7	1519.8	1960.6	2198.4	870.09	0.00000
22	2865.5	2540.7	2488.4	2413.0	2268.0	2123.0	1937.4	1792.4	2882.9	0.00000

SPC-2 PDG 7 PRELOAD LEV. 7000.0 LB

BENDING TEST WITHOUT SHIMS

ORIGINAL PAGE IS
OF POOR QUALITY

CYCLE 1

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	1073700.			
1	-0.39004			780.08
2	0.052005			0.017335
3	0.071007			0.023669
4	0.061006			0.020335
5	2.4622	6212.2		
6	0.44404		11705.	
7	2.4582	5609.4		
8	0.16602		13294.	
9	1.5872	14314.		
10	5.1095		20429.	
11	2.2202	6282.7		
12	0.71907		8706.7	
13	2.7293	6560.6		
14	0.34003		13857.	
15	1.9622	-5023.6		
16	-4.3124		36392.	
17	1.8582	6804.3		
18	1.3251		3091.7	
19	1.5182	6981.8		
20	1.7482		1334.1	
21	2.9243	6821.4		
22	0.36704		14252.	
23	2.2012	6759.4		
24	0.96110		7192.7	
25	1.7172	6949.7		
26	1.5342		1061.5	
27	1.8522	6867.1		
28	1.3591		2865.5	
29	1.6112	6573.5		
30	1.4641		852.69	
31	1.8782	6663.2		
32	1.2361		3706.6	
33	1.6302	5632.9		
34	1.0051		3625.4	
35	1.5612	6316.9		
36	1.3541		968.69	
37	1.6072	6269.9		
38	1.3261		1630.0	
39	1.4351	6353.3		
40	1.5372		591.66	
41	1.6752	6669.7		
42	1.4451		1334.1	
43	1.7822	6725.2		
44	1.3641		2424.6	
45	0.14501			
46	0.2719			
47	0.5300			
48	-0.6160			
49	-1.7042			

CYCLE 2

CHANNEL	MILLIVOLTS	BOLT LOAD	PEND.STRESS	MISC.
0	1.7040			
1	-0.85509			1710.2
2	0.052005			0.017335
3	0.074007			0.024669
4	0.065006			0.021669
5	2.4642	6218.6		
6	0.44504		11711.	
7	2.4602	5602.9		
8	0.16107		13335.	
9	1.5882	14344.		
10	5.1225		20499.	
11	2.2312	6150.7		
12	0.64606		9193.9	
13	2.7213	6635.5		
14	0.38304		13561.	
15	2.0012	-5224.6		
16	-4.4454		37390.	
17	1.8612	6815.0		
18	1.3271		3097.5	
19	1.5222	6997.5		
20	1.7492		1316.7	
21	2.8243	6817.2		
22	0.36504		14263.	
23	2.2032	6693.7		
24	0.62309		7453.7	
25	1.7382	6996.7		
26	1.5352		1177.5	
27	1.8712	6802.2		
28	1.3111		3248.3	
29	1.6232	6714.6		
30	1.5182		609.06	
31	1.8912	6785.1		
32	1.2931		3526.8	
33	1.5832	5690.6		
34	1.0791		2023.5	
35	1.5632	6368.2		
36	1.4161		852.69	
37	1.4241	5809.2		
38	1.2931		759.98	
39	1.4351	6197.2		
40	1.4641		168.21	
41	1.5982	6227.2		
42	1.3141		1653.2	
43	1.7642	6543.5		
44	1.2971		2709.9	
45	0.16202			
46	0.1849			
47	1.5342			
48	-8.2868			
49	-0.84509			

CYCLE 3

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	-0.84500			
1	-2.3652			4730.5
2	0.050005			0.016668
3	0.072007			0.024336
4	0.062006			0.021502
5	2.4642	6216.5		
6	0.44404		11717.	
7	2.4562	5595.8		
8	0.15702		13335.	
9	1.5852	14369.		
10	5.1375		20603.	
11	2.2342	6122.4		
12	0.63006		9304.1	
13	2.6943	6881.3		
14	0.52505		12581.	
15	2.0112	-5273.7		
16	-4.4754		37639.	
17	1.8592	6823.6		
18	1.3331		3051.1	
19	1.5222	6971.1		
20	1.7392		1258.7	
21	2.8213	6851.4		
22	0.38404		14136.	
23	2.2182	6522.2		
24	0.83308		8033.8	
25	1.7532	7043.8		
26	1.7422		1223.9	
27	1.8872	6773.7		
28	1.2941		3497.7	
29	1.6432	7060.9		
30	1.6602		98.613	
31	1.9242	7159.2		
32	1.4251		2894.5	
33	1.6272	5962.1		
34	1.1621		2697.3	
35	1.5752	6560.6		
36	1.4041		469.95	
37	1.4011	5566.6		
38	1.2031		1148.5	
39	1.4231	5985.6		
40	1.3771		266.82	
41	1.5112	5600.8		
42	1.1091		2331.8	
43	1.7002	6126.7		
44	1.1661		3097.5	
45	0.21502			
46	0.0019			
47	2.3302			
48	-0.7459			
49	-0.0320			

CYCLE 4

CHANNEL	MILLIVOLTS	BOLT LOAD	PEND.STRESS	MISC.
0	-9.9310			
1	-3.8714			7742.8
2	0.053005			0.017668
3	0.074007			0.024669
4	0.062006			0.020669
5	2.4662	6225.0		
6	0.44604		11717.	
7	2.4662	5594.4		
8	0.15101		13428.	
9	1.5902	14406.		
10	5.1595		20760.	
11	2.2412	6043.9		
12	0.60506		9489.7	
13	2.6643	7176.3		
14	0.69307		11432.	
15	2.0252	-5325.0		
16	-4.5165		37941.	
17	1.8552	6836.4		
18	1.3431		2969.9	
19	1.5272	6962.5		
20	1.7302		1177.5	
21	2.8173	6899.4		
22	0.41004		13961.	
23	2.2272	6349.0		
24	0.74307		8609.1	
25	1.7992	7033.1		
26	1.5512		1090.5	
27	1.8932	6729.5		
28	1.2551		3700.8	
29	1.6522	7514.1		
30	1.8632		1223.9	
31	1.9532	7668.0		
32	1.6342		1850.4	
33	1.6342	6252.8		
34	1.2911		1999.6	
35	1.5752	6838.5		
36	1.6242		284.23	
37	1.3481	5224.6		
38	1.0961		1461.7	
39	1.4171	5803.9		
40	1.2991		690.27	
41	1.4491	5171.1		
42	0.97010		2778.5	
43	1.6492	5729.1		
44	1.0311		3584.8	
45	0.20602			
46	8.7269			
47	2.2482			
48	7.6588			
49	-0.92409			

CYCLE 5

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-0.92400			
1	-5.3985			10777.
2	0.055005			0.018335
3	0.069007			0.023002
4	0.063006			0.021669
5	2.4682	6229.3		
6	0.44604		11728.	
7	2.4612	5573.0		
8	0.14601		13428.	
9	1.5752	14421.		
10	5.1715		20858.	
11	2.2532	6002.7		
12	0.55506		9849.4	
13	2.6283	7492.7		
14	0.57709		10156.	
15	2.0582	-5427.7		
16	-4.5975		39602.	
17	1.5412	6819.3		
18	1.2491		2853.9	
19	1.5322	6956.1		
20	1.7222		1102.1	
21	2.8073	6947.6		
22	0.44304		13713.	
23	2.2392	6190.8		
24	0.65707		9176.5	
25	1.7202	7018.1		
26	1.5632		910.69	
27	1.9062	6622.6		
28	1.1521		4141.6	
29	1.6542	8275.1		
30	2.2172		3265.7	
31	1.5622	8431.1		
32	1.5922		116.01	
33	1.6072	6571.3		
34	1.4671		812.09	
35	1.5922	7269.2		
36	1.8182		1368.9	
37	1.2961	5015.1		
38	1.0491		1450.1	
39	1.4201	5594.4		
40	1.1971		1293.5	
41	1.2261	4566.1		
42	0.81008		2993.1	
43	1.5022	5312.2		
44	0.89309		4054.6	
45	0.25603			
46	2.4029			
47	1.0891			
48	-7.5258			
49	-1.5902			

CYCLE 6

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	-1.5900			
1	-6.1426			12285.
2	0.054005			0.013002
3	0.071007			0.023669
4	0.068007			0.022669
5	2.4742	6252.8		
6	0.45105		11734.	
7	2.4652	5570.9		
8	0.14101		13480.	
9	1.5722	14450.		
10	5.1885		20974.	
11	2.2602	5938.6		
12	0.51805		10104.	
13	2.6003	7736.4		
14	1.0191		9170.7	
15	2.1002	-5521.7		
16	-4.6835		39345.	
17	1.8332	6806.5		
18	1.3511		2795.9	
19	1.5342	6954.0		
20	1.7192		1073.1	
21	2.8013	6992.5		
22	0.47005		13521.	
23	2.2422	6103.2		
24	0.61306		9449.1	
25	1.7122	7030.9		
26	1.5772		783.08	
27	1.9212	6592.0		
28	1.1581		4425.8	
29	1.6492	4871.5		
30	2.5012		4942.1	
31	1.9552	5061.8		
32	2.2242		1908.4	
33	1.6012	6868.5		
34	1.6122		63.805	
35	1.5882	7644.5		
36	1.9882		2320.2	
37	1.2901	4693.2		
38	0.39810		1688.0	
39	1.4291	5489.6		
40	1.1391		1682.2	
41	1.7221	4100.1		
42	0.69607		3051.1	
43	1.5542	5030.0		
44	0.79908		4379.4	
45	0.21602			
46	2.3418			
47	4.4254			
48	-7.9838			
49	-3.3183			

CYCLE 7

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND. STRESS	MISC.
0	-3.3180			
1	-6.8997			13797.
2	0.053005			0.017668M
3	0.065006			0.021669
4	0.065006			0.021669
5	2.4742	6257.1		
6	0.45305		11722.	
7	2.4752	5594.4		
8	0.14201		13532.	
9	1.5712	14480.		
10	5.2035		21067.	
11	2.2632	5923.6		
12	0.50805		10190.	
13	2.5813	7896.7		
14	1.1131		8515.3	
15	2.1112	-5529.1		
16	-4.6976		39490.	
17	1.8312	6804.3		
18	1.3521		2778.5	
19	1.5362	6949.7		
20	1.7152		1038.3	
21	2.7953	7076.7		
22	0.49205		13358.	
23	2.2442	6049.7		
24	0.58606		9617.4	
25	1.7052	7048.0		
26	1.5922		655.46	
27	1.9302	6567.1		
28	1.1421		4570.9	
29	1.6492	9500.0		
30	2.7953		6647.5	
31	1.9962	9824.9		
32	2.6003		3503.5	
33	1.6062	7084.4		
34	1.7002		591.66	
35	1.5892	7941.6		
36	2.1262		3114.9	
37	1.2811	4779.9		
38	0.95510		1891.0	
39	1.4241	5387.0		
40	1.0961		1902.6	
41	1.1591	3766.7		
42	0.60306		3225.1	
43	1.5212	4812.0		
44	0.73007		4588.3	
45	0.27203			
46	2.2378			
47	5.0245			
48	-5.6246			
49	-3.3783			

CYCLE 8

CHANNEL	MILLIVOLTS	BOLT LOAD	BEND.STRESS	MISC.
0	-3.3780			
1	-7.6548			15309.
2	0.053005			0.017668H
3	0.062006			0.020669
4	0.065006			0.021669
5	2.4732	6246.4		
6	0.44904		11740.	
7	2.4722	5579.4		
8	0.13801		13538.	
9	1.5692	14506.		
10	5.2175		21160.	
11	2.2712	5842.4		
12	0.46205		10493.	
13	2.5633	8069.9		
14	1.2121		7836.6	
15	2.1522	-5570.9		
16	-4.7585		40082.	
17	1.8272	6800.1		
18	1.3541		2743.7	
19	1.5412	6954.0		
20	1.7122		991.90	
21	2.7903	7065.1		
22	0.51505		13196.	
23	2.2472	5992.0		
24	0.55606		9809.8	
25	1.6972	7069.4		
26	1.6102		504.65	
27	1.9402	6543.5		
28	1.1211		4750.7	
29	1.6452	10312.		
30	3.1793		8898.1	
31	1.9362	10476.		
32	2.9653		5969.8	
33	1.6102	7375.1		
34	1.8402		1334.1	
35	1.5882	8270.8		
36	2.2912		4019.8	
37	1.2821	4735.0		
38	0.83309		2024.4	
39	1.4321	5329.3		
40	1.0611		2152.0	
41	1.0841	3413.9		
42	0.51305		3312.1	
43	1.4911	4600.4		
44	0.66107		4814.5	
45	0.24602			
46	8.0388			
47	3.7304			
48	-8.4448			
49	-3.6654			

CYCLE 9

CHANNEL	MILLIVOLTS	BOLT LOAD	PEND. STRESS	MISC.
0	3.6650			
1	-0.33103			662.07
2	0.055005			0.018335H
3	0.060006			0.020002
4	0.068007			0.022669
5	2.4602	6212.2		
6	0.43704		11736.	
7	2.4702	5617.9		
8	0.14901		13515.	
9	1.5032	14365.		
10	5.1275		20495.	
11	2.2182	6263.5		
12	0.71207		8735.7	
13	2.7163	6560.6		
14	0.35304		13706.	
15	1.9882	-5149.8		
16	-4.3574		37036.	
17	1.8352	6744.5		
18	1.3201		2997.3	
19	1.5202	6986.0		
20	1.7482		1322.5	
21	2.9153	6770.1		
22	0.35204		14296.	
23	2.1062	6699.6		
24	0.84809		7181.1	
25	1.6522	6866.3		
26	1.5202		397.71	
27	1.8722	6633.3		
29	1.2311		3718.2	
29	1.5842	6453.9		
30	1.4351		864.28	
31	1.8292	6511.5		
32	1.2171		3550.0	
33	1.4461	5166.8		
34	0.97110		2755.3	
35	1.5962	6291.3		
36	1.3471		1444.3	
37	1.2911	5763.3		
38	1.4051		661.26	
39	1.4921	6086.1		
40	1.2551		794.68	
41	1.4851	6079.7		
42	1.3501		730.97	
43	1.7047	6616.2		
44	1.2011		2959.7	
45	0.19202			
46	0.23209			
47	5.1015			
48	-4.7665			
49	-3.5694			

C.2

A 79

ORIGINAL PAGE IS OF POOR QUALITY

5706 axial → at = 3100
14206 lateral
Σ axial = 8800 (design is 8900)
.9 DL = 8010 Test value 10% high

P (LB) (applied load, @ 21°53′ = 21.88333°)

780.08	1710.2	4730.5	7742.8	10777.	12285.	13797.	15309.	662.07

M (IN-LB)

(moment arm = 219.15)

% DL (% DL moment)	11.67	10.23	28.3	46.31	64.46	73.48	82.53	91.3 ✓	
	158640.	347790.	962030.	1574600.	2191700.	2498400.	2805900.	3113400.	134640.

DL = 3.4E6
.9 DL = 3.06E6
Test value 2% high

BELT LOAD (LB)

3	6212.2	6218.6	6216.5	6225.0	6229.3	6252.8	6257.1	6246.4	6212.2	0.00000
4	5609.4	5602.9	5595.8	5594.6	5573.0	5570.9	5594.4	5579.4	5617.3	0.00000
5	14314.	14344.	14369.	14406.	14421.	14450.	14480.	14506. X	14365.	0.00000
6	6242.7	6150.2	6127.4	6043.9	6002.7	5938.6	5923.6	5842.4	6263.5	0.00000
7	6559.6	6635.5	6881.3	7176.3	7492.7	7736.4	7856.7	8063.9	6560.5	0.00000
8	-5023.6	-5224.6	-5273.7	-5325.0	-5427.7	-5521.7	-5529.1	-5570.9 X	-5149.8	0.00000
9	6904.3	6815.0	6923.6	6835.4	6819.3	6906.5	6804.3	6800.1	6744.5	0.00000
10	6931.8	6992.5	6971.1	6962.5	6956.1	6954.0	6949.7	6954.0	6986.3	0.00000
11	6891.4	6817.2	6851.4	6899.4	6947.6	6932.5	7026.7	7065.1	6770.1	0.00000
12	6759.4	6693.2	6522.2	6343.0	6190.8	6103.2	6049.7	5992.0	6699.5	0.00000
13	6640.7	6966.7	7043.8	7033.1	7018.1	7030.9	7048.0	7069.4	6366.3	0.00000
14	6862.1	6802.2	6778.7	6724.5	6622.6	6542.0	6567.1	6543.5	6633.3	0.00000
✓15	6573.5	6714.6	7060.9	7514.1	8275.1	8971.5	9500.0	✓10312.	6453.3	0.00000
✓16	6663.2	6785.1	7159.2	7663.0	8431.1	9061.9	9824.9	✓10476. ✓	6511.5	0.00000
✓17	5632.9	5650.6	5962.1	6252.9	6571.3	6868.5	7084.4	✓7375.1	5166.3	0.00000
✓18	6316.9	6349.2	6560.6	6839.5	7268.2	7644.5	7941.6	✓8270.8	6291.3	0.00000
19	6269.9	5808.2	5566.6	5224.6	5015.1	4893.2	4779.9	4735.0	5763.3	0.00000
20	6352.3	6197.2	5945.6	5803.9	5594.4	5429.6	5387.0	5329.3	6096.1	0.00000
21	6669.7	6227.7	5600.8	5171.1	4566.1	4190.1	3766.7	3413.9	6079.7	0.00000
22	6725.2	6543.5	6126.7	5723.1	5312.2	5030.0	4812.0	4600.4	6616.2	0.00000

BENDING STRESS (PSI)

3	11705.	11711.	11717.	11717.	11728.	11734.	11722.	11740.	11786.	0.00000
4	13294.	13335.	13335.	13428.	13428.	13480.	13532.	13538.	13515.	0.00000
5	20429.	20499.	20603.	20760.	20858.	20974.	21067.	21160. X	20499.	0.00000
6	8706.7	9193.9	9304.1	9499.7	9949.4	10104.	10190.	10493.	8735.7	0.00000
7	13957.	13561.	12581.	11432.	10156.	9170.7	8515.3	7836.6	13706.	0.00000
8	36302.	37390.	37634.	37961.	38602.	39345.	39490.	40082. X	37036.	0.00000
9	3041.7	3037.5	3051.1	2963.4	2853.4	2795.9	2778.5	2743.7	2987.3	0.00000
10	1334.1	1316.7	1258.7	1177.5	1102.1	1073.1	1039.3	991.90	1372.5	0.00000
11	14252.	14263.	14136.	13961.	13712.	13521.	13359.	13196.	✓14286.	0.00000
12	7192.7	7453.7	8033.8	8603.1	9176.5	9449.1	9617.4	9808.8 ✓	7181.1	0.00000
13	1061.5	1177.5	1223.9	1099.5	910.69	788.04	655.44	504.65	907.71	0.00000
14	2465.5	3244.3	3497.7	3703.9	4141.6	4425.8	4570.9	4750.7	3718.2	0.00000
15	852.69	603.06	94.613	1223.9	3265.7	4942.1	6647.5	8898.1	854.29	0.00000
16	3706.6	3526.3	2894.5	1959.4	116.01	1406.4	3503.5	5968.8	3550.3	0.00000
17	3625.4	2923.5	2597.3	1903.4	812.09	63.805	591.66	1334.1	2755.3	0.00000
18	967.69	852.69	469.45	284.23	136.45	2320.2	3114.3	4013.8	1444.3	0.00000
19	1630.0	759.99	1145.5	1461.7	1450.1	1643.0	1391.0	2023.4	661.25	0.00000
20	591.66	168.21	256.92	690.77	1293.5	1662.2	1902.6	2152.0	734.68	0.00000
21	1335.1	1653.2	2331.8	2775.5	2993.1	3051.1	3225.1	3312.1	730.87	0.00000
22	2426.6	2701.9	3097.5	3583.3	4056.6	4379.4	4588.3	4814.5	2459.7	0.00000

APPENDIX B

DATA PLOTS

Selected portions of the tabulated data in Appendix A are plotted herein as follows:

a) Flight preload in bolts (7000 lb) - For each of bolts 3 through 18, the test results are plotted which result in the highest load. Thus for bolts 3 through 14 (reference figure 3), the results of (pressure) Tests 3, 5, and 6 are presented. For bolts 15 through 18, the results of (B/M) Tests 1 and 7 are shown. No plots are included for bolts 19, 21, 22, or 23 since these are on the compression side of the bending neutral axis for the B/M tests and are lightly loaded in the pressure tests. For each figure on which a portion of the S curve exceeds bolt preload, the ratio of NS to S is also plotted; this f curve is the heel-toe factor plot. Each of the plots is extrapolated to 100 percent DLL, and the values of both load and heel-toe factor at that load are tabulated in Table 4.

b) Negligible bolt preload (700 lb) - For each of the pressure and B/M tests, the effect of bolt preload without heel-toe prying is shown for the highest-loaded bolt. Thus, bolt 16 results from Tests 1 and 2 are plotted for B/M loading, and bolt 10 results from Tests 3 and 4 for pressure loading.

BLL

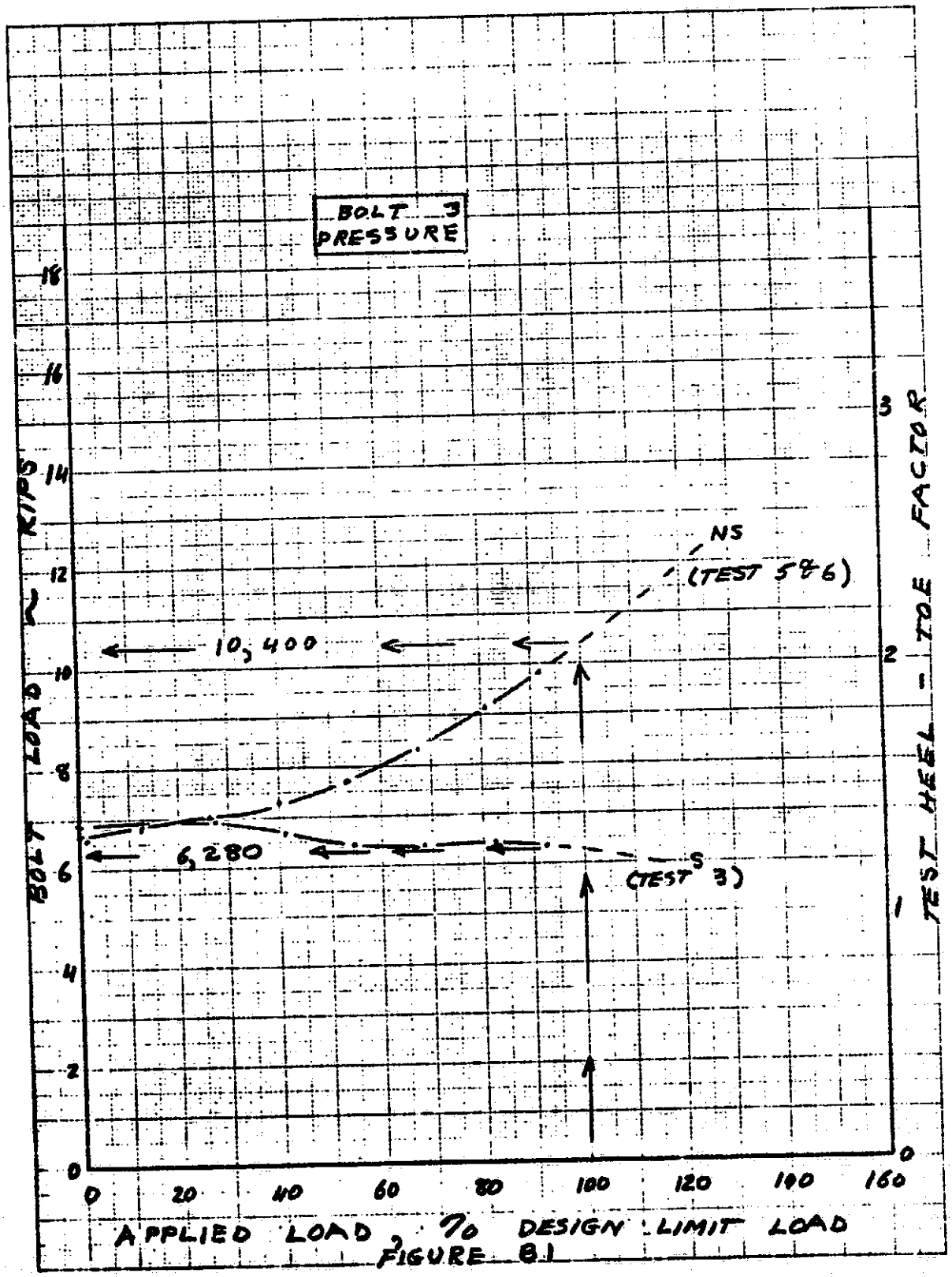

FIGURE 81

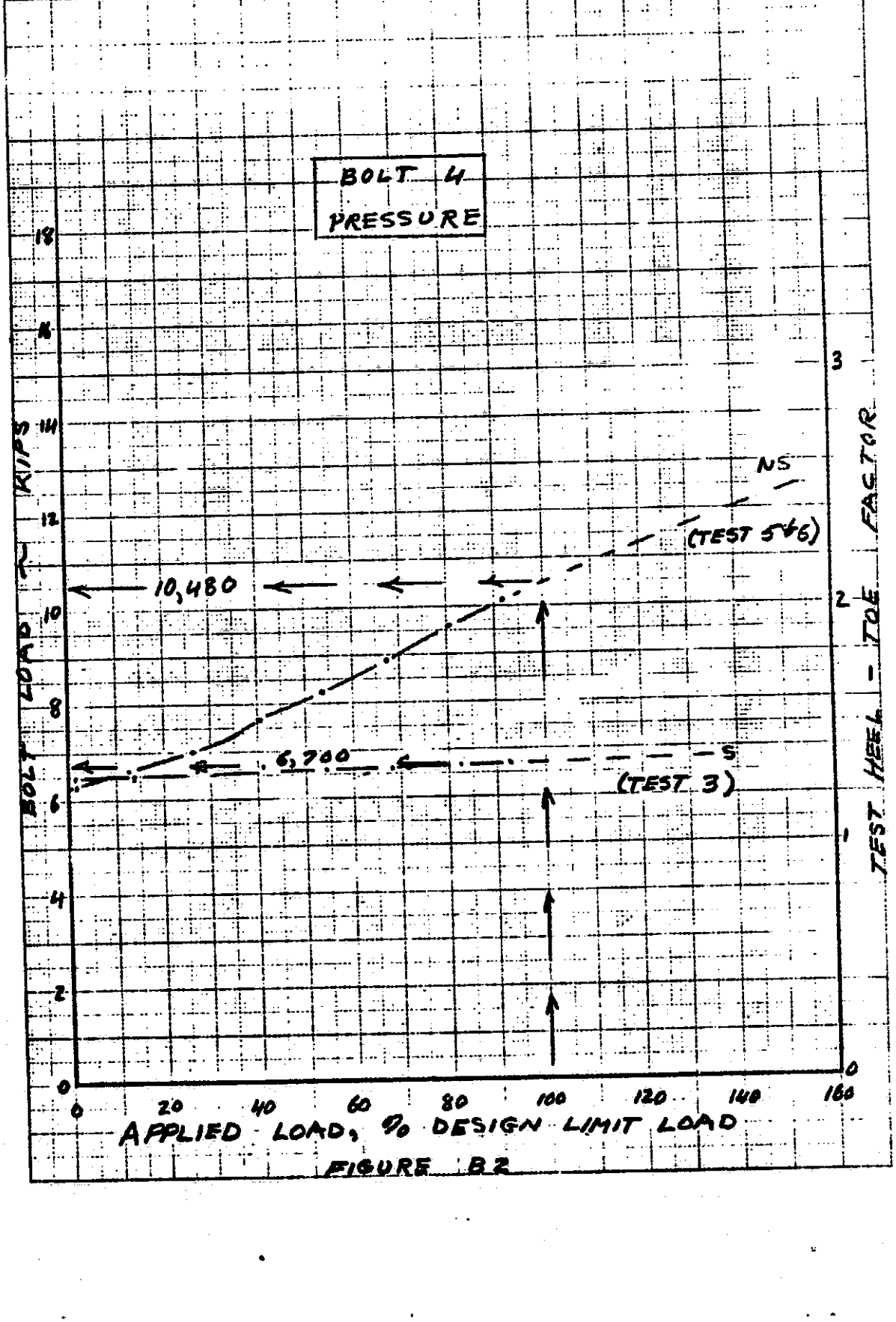

FIGURE B2

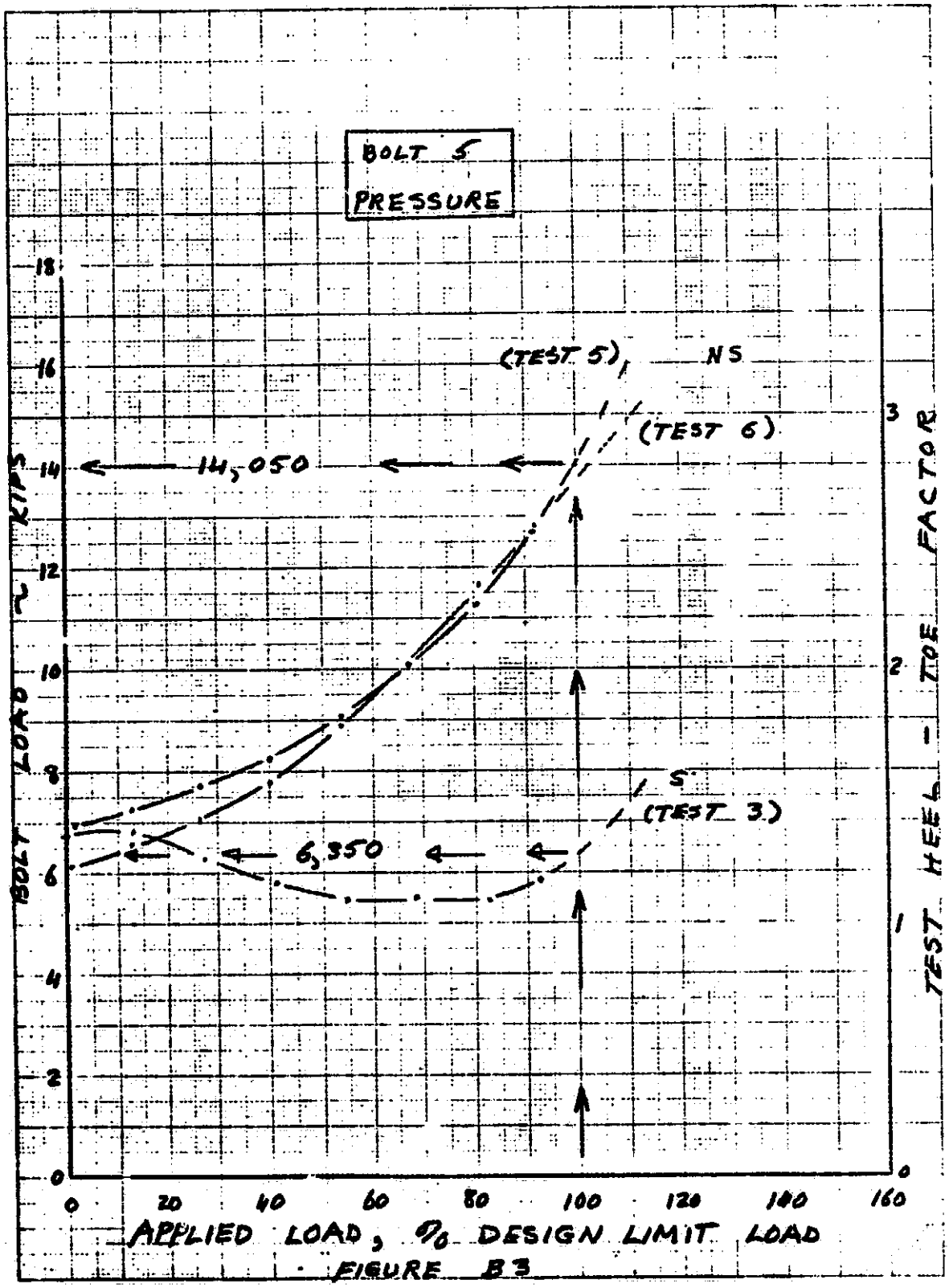
BOLT 5
PRESSURE
(TEST 5)
NS
(TEST 6)
14,050
5
(TEST 3)
6,350
BOLT LOAD ~ KIPS
TEST HEEL - TOE FACTOR
0
2
4
6
8
10
12
14
16
18
0
1
2
3
0
20
40
60
80
100
120
140
160
APPLIED LOAD, % DESIGN LIMIT LOAD

FIGURE B3

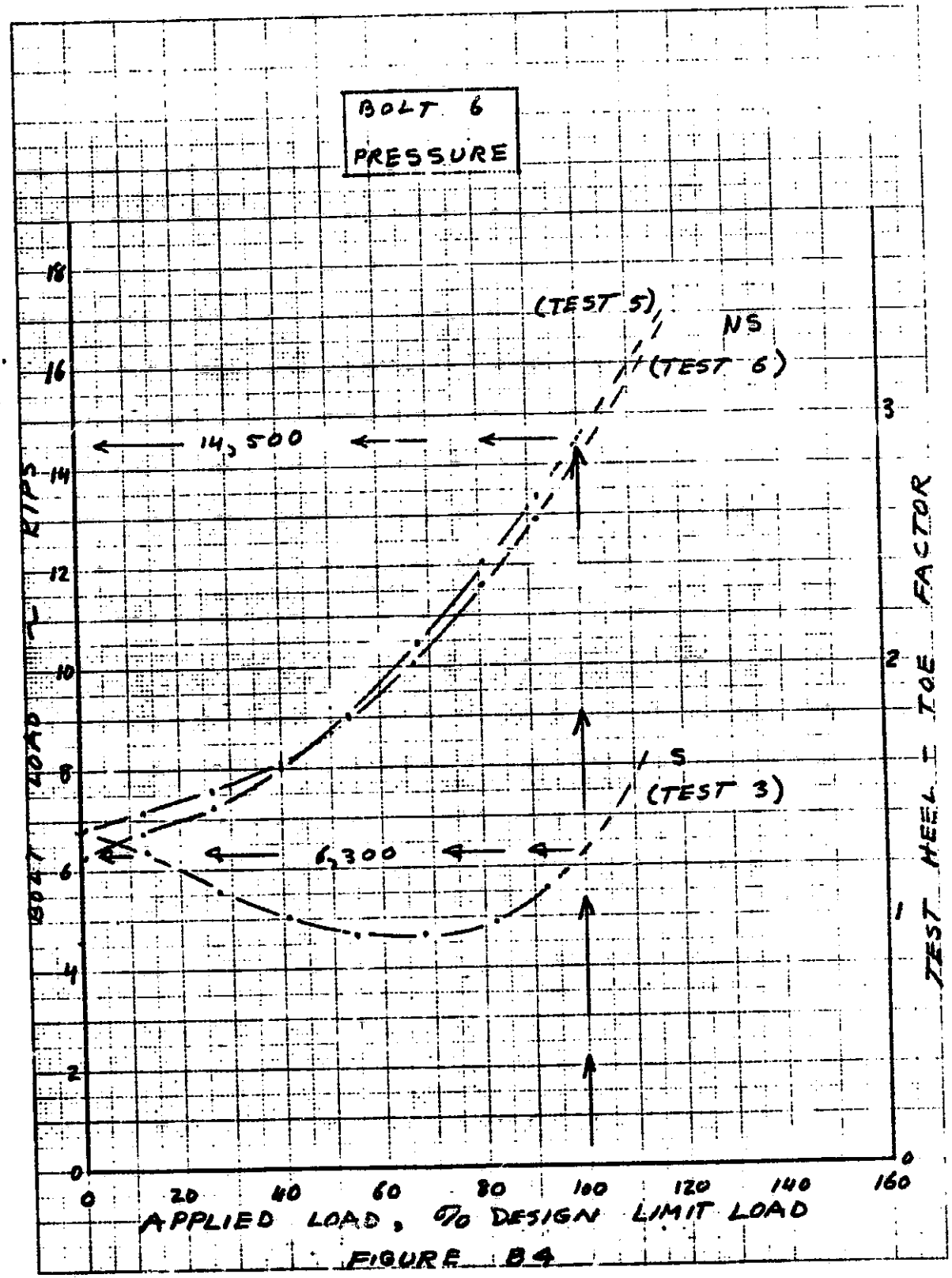
BOLT 6
PRESSURE
(TEST 5)
NS
(TEST 6)
14,500
S
(TEST 3)
6,300
LOAD, KIPS
TEST HEEL TOE FACTOR
APPLIED LOAD, % DESIGN LIMIT LOAD
0
2
4
6
8
10
12
14
16
18
1
3
20
40
60
80
100
120
140
160

FIGURE B4

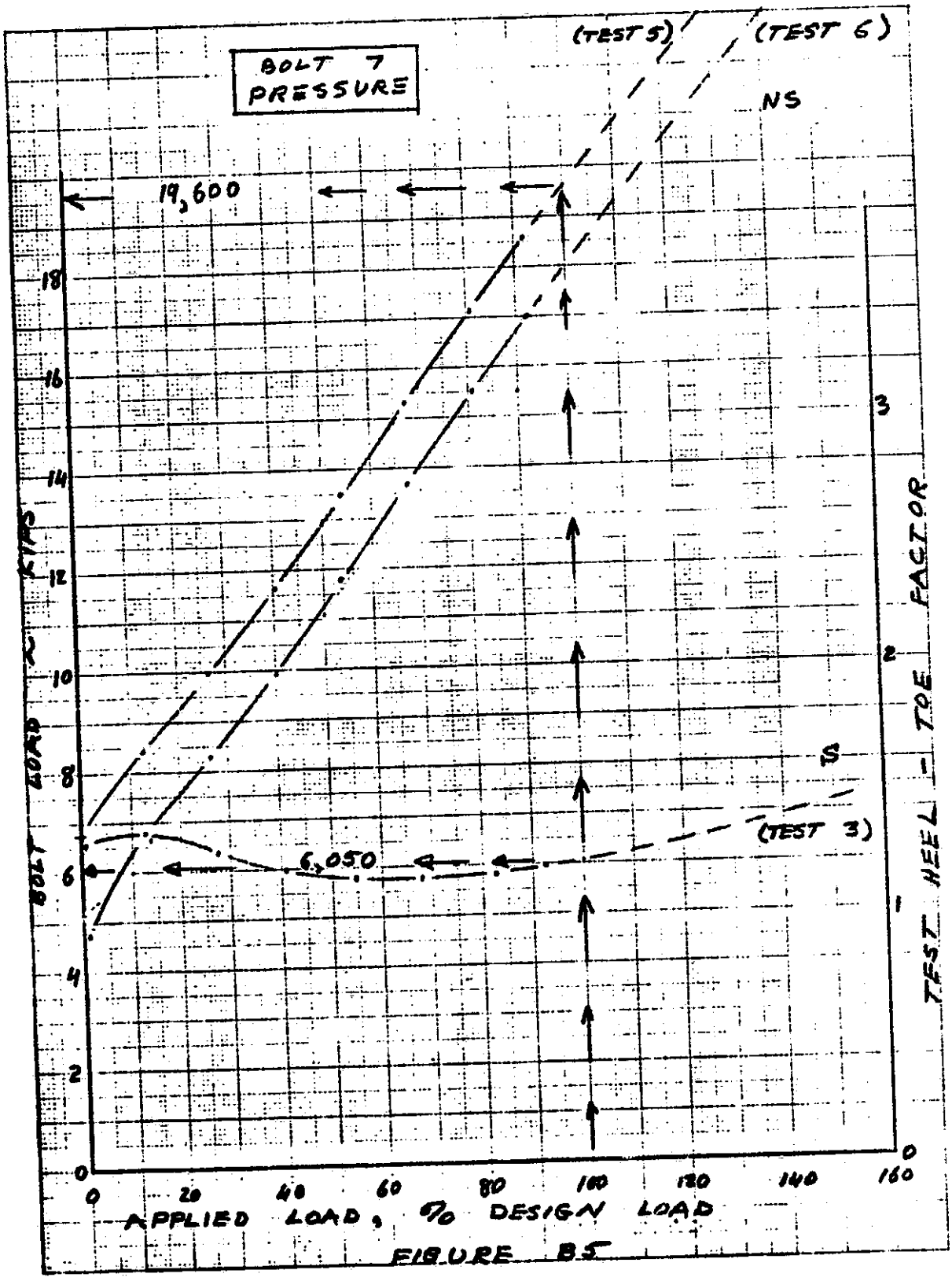

FIGURE B5

BOLT 8
PRESSURE
NS
17,150
(TEST 6)
S
(TEST 3)
6,050
(TEST 5)
BOLT LOAD KIPS
TEST HEEL - TOE FACTOR
0
2
4
6
8
10
12
14
16
18
0
1
2
3
0
20
40
60
80
100
120
140
160
APPLIED LOAD, % DESIGN LIMIT LOAD

FIGURE B6

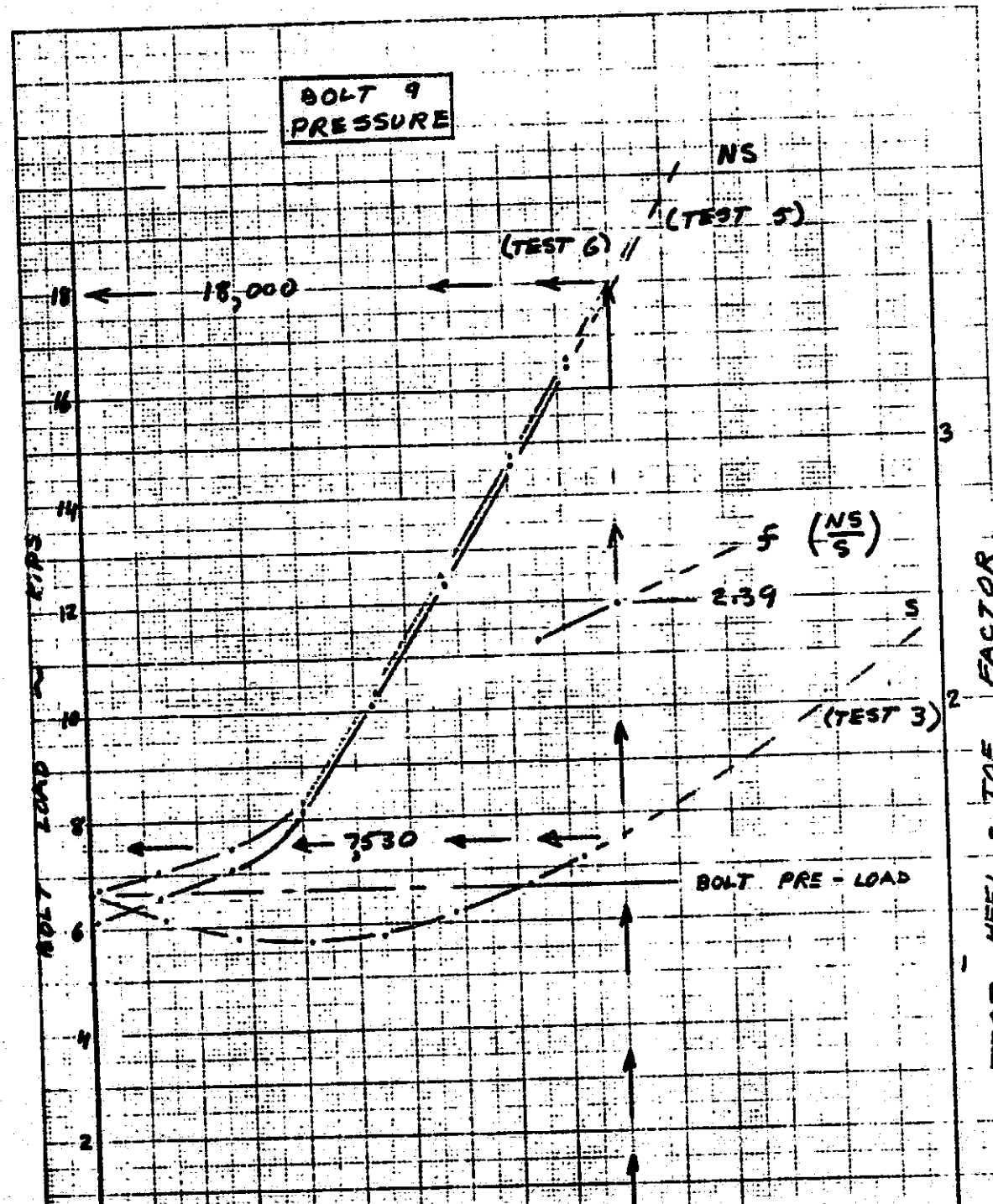
BOLT 9
PRESSURE
NS
(TEST 5)
(TEST 6)
18,000
7530
2.39
$f\left(\frac{NS}{S}\right)$
S
(TEST 3)
BOLT PRE - LOAD
BOLT LOAD, KIPS
TEST HEEL - TOE FACTOR
0
2
4
6
8
10
12
14
16
18
0
1
2
3
0
20
40
60
80
100
120
140
160
APPLIED LOAD, % DESIGN LIMIT LOAD

FIGURE B7

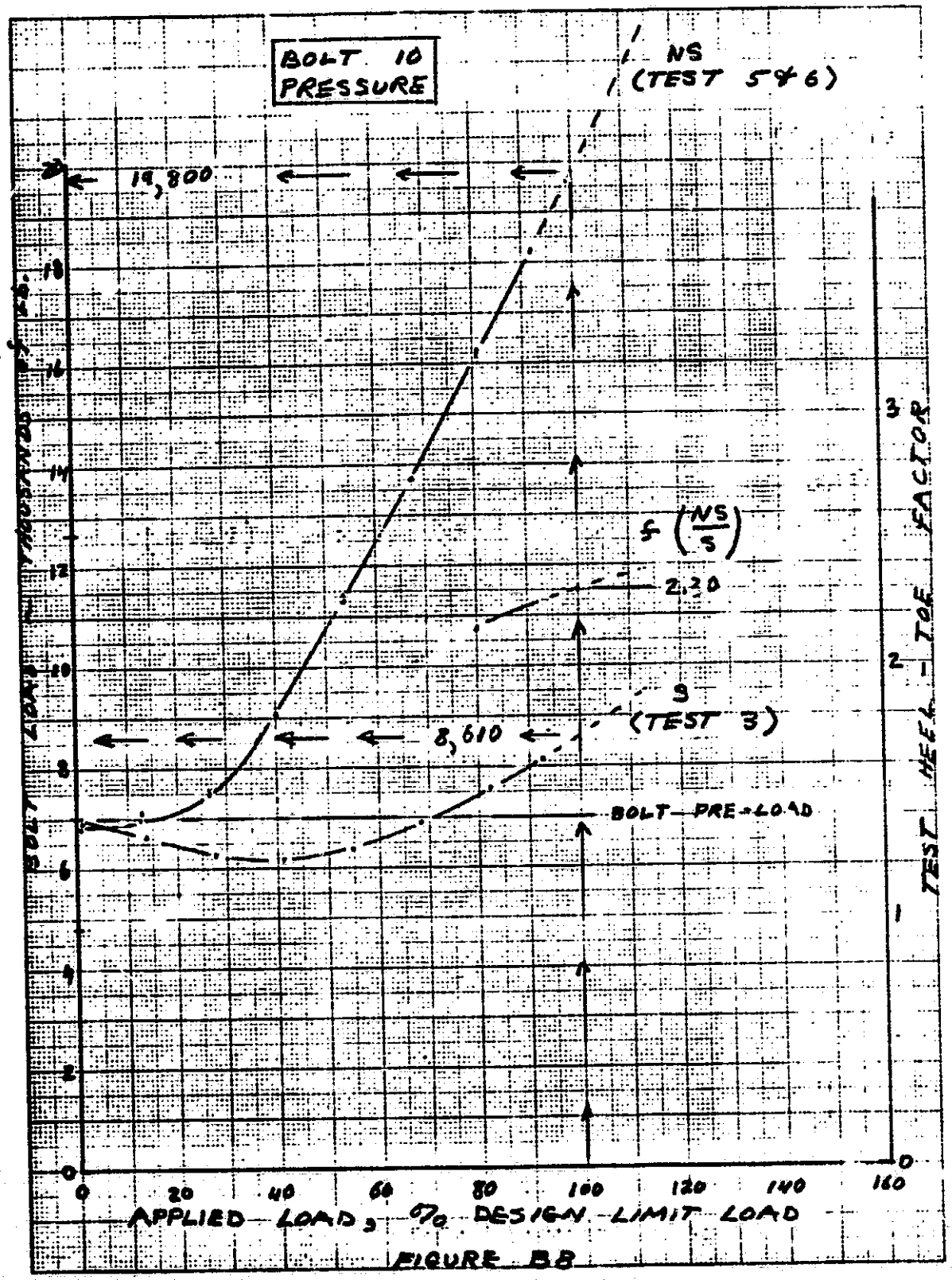

FIGURE 88

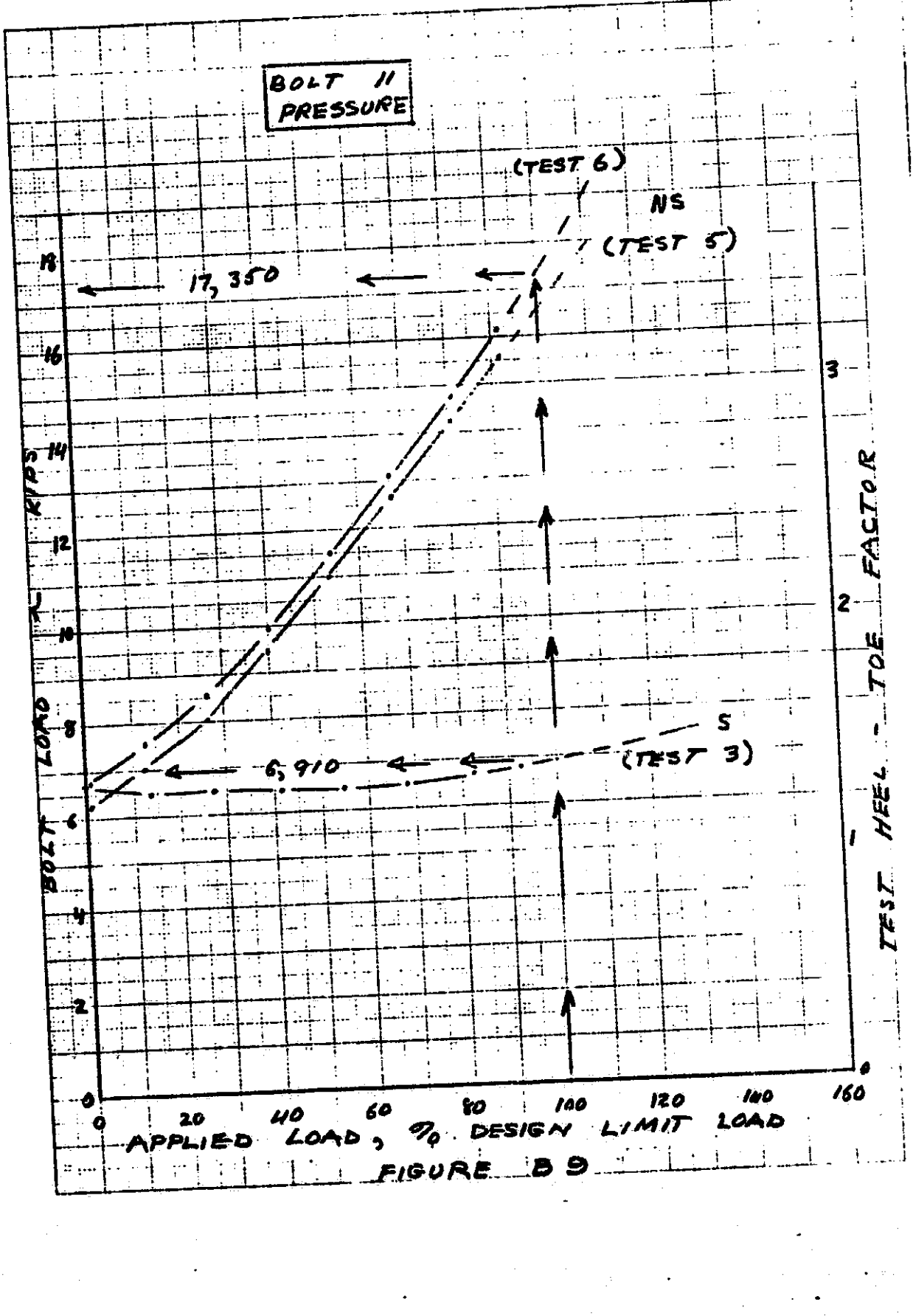
BOLT 11
PRESSURE
(TEST 6)
NS
(TEST 5)
17,350
6,910
S
(TEST 3)
BOLT LOAD, KIPS
TEST HEEL - TOE FACTOR
0
2
4
6
8
10
12
14
16
18
0
1
2
3
0
20
40
60
80
100
120
140
160
APPLIED LOAD, % DESIGN LIMIT LOAD

FIGURE 59

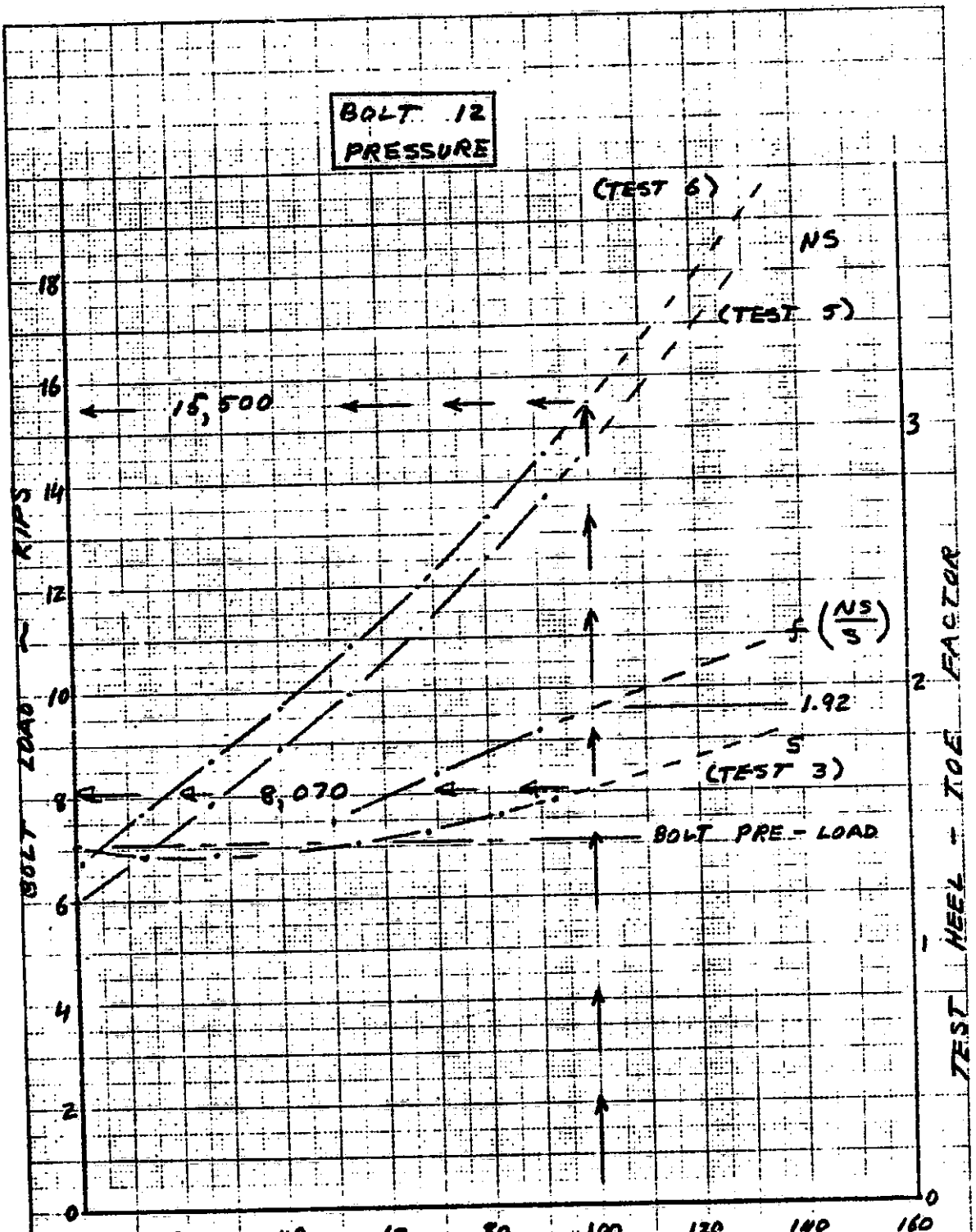
BOLT 12
PRESSURE
(TEST 6)
NS
(TEST 5)
15,500
8,070
BOLT PRE-LOAD
(TEST 3)
1.92
BOLT LOAD - KIPS
TEST HEEL - TOE FACTOR
APPLIED LOAD, % DESIGN LIMIT LOAD
0
2
4
6
8
10
12
14
16
18
0
20
40
60
80
100
120
140
160
1
2
3

FIGURE B 10

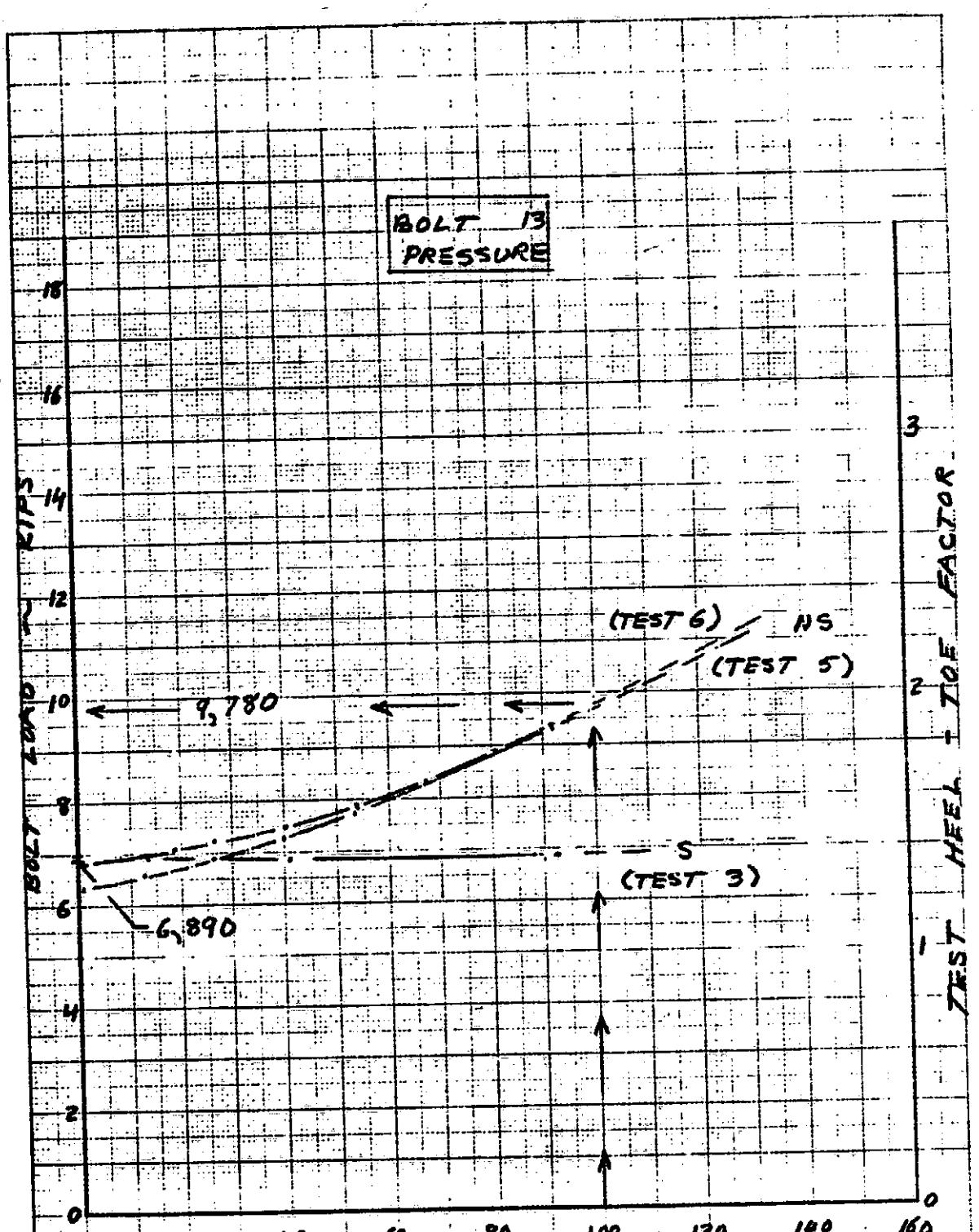

FIGURE B 11

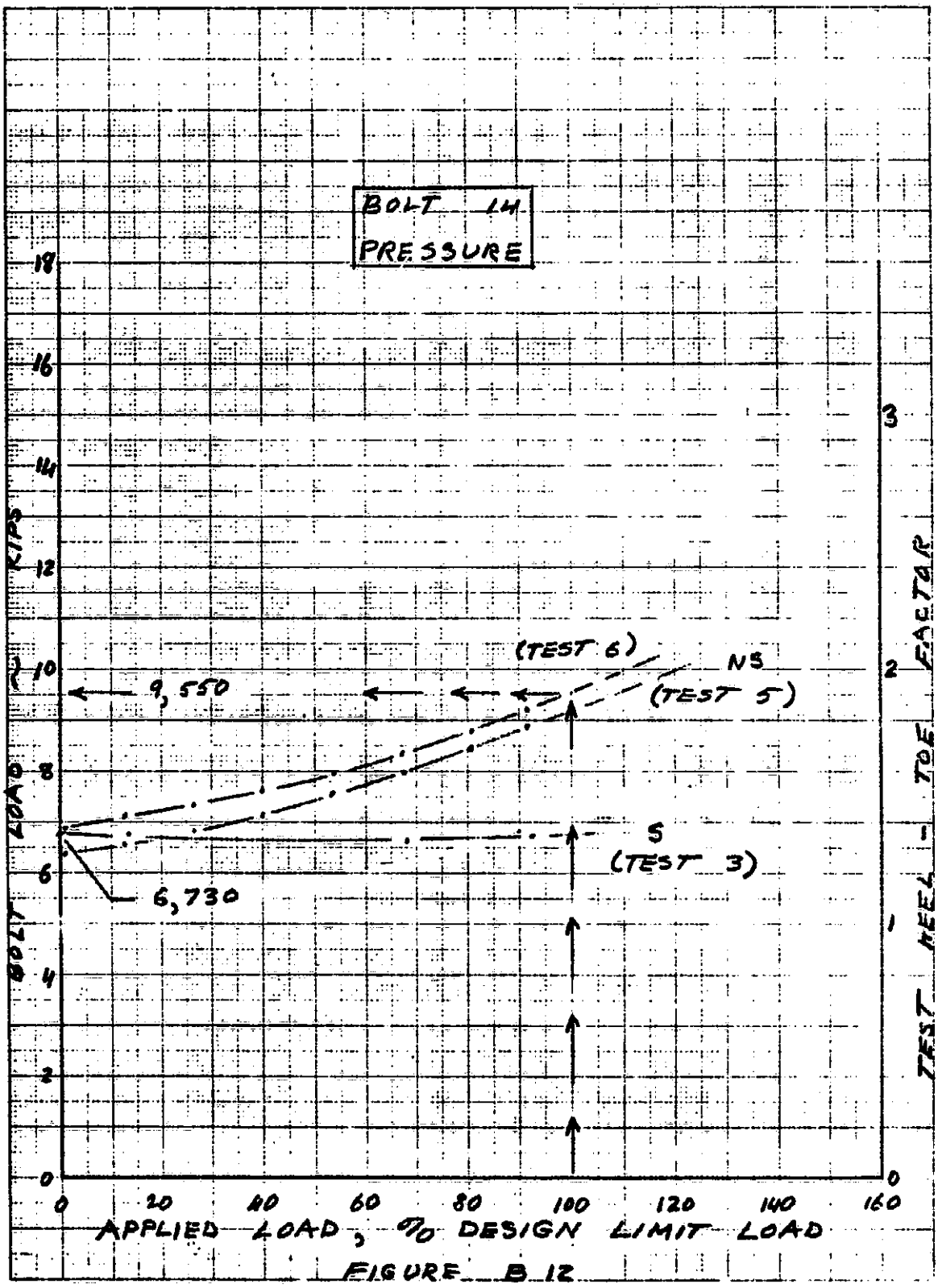

FIGURE B 12

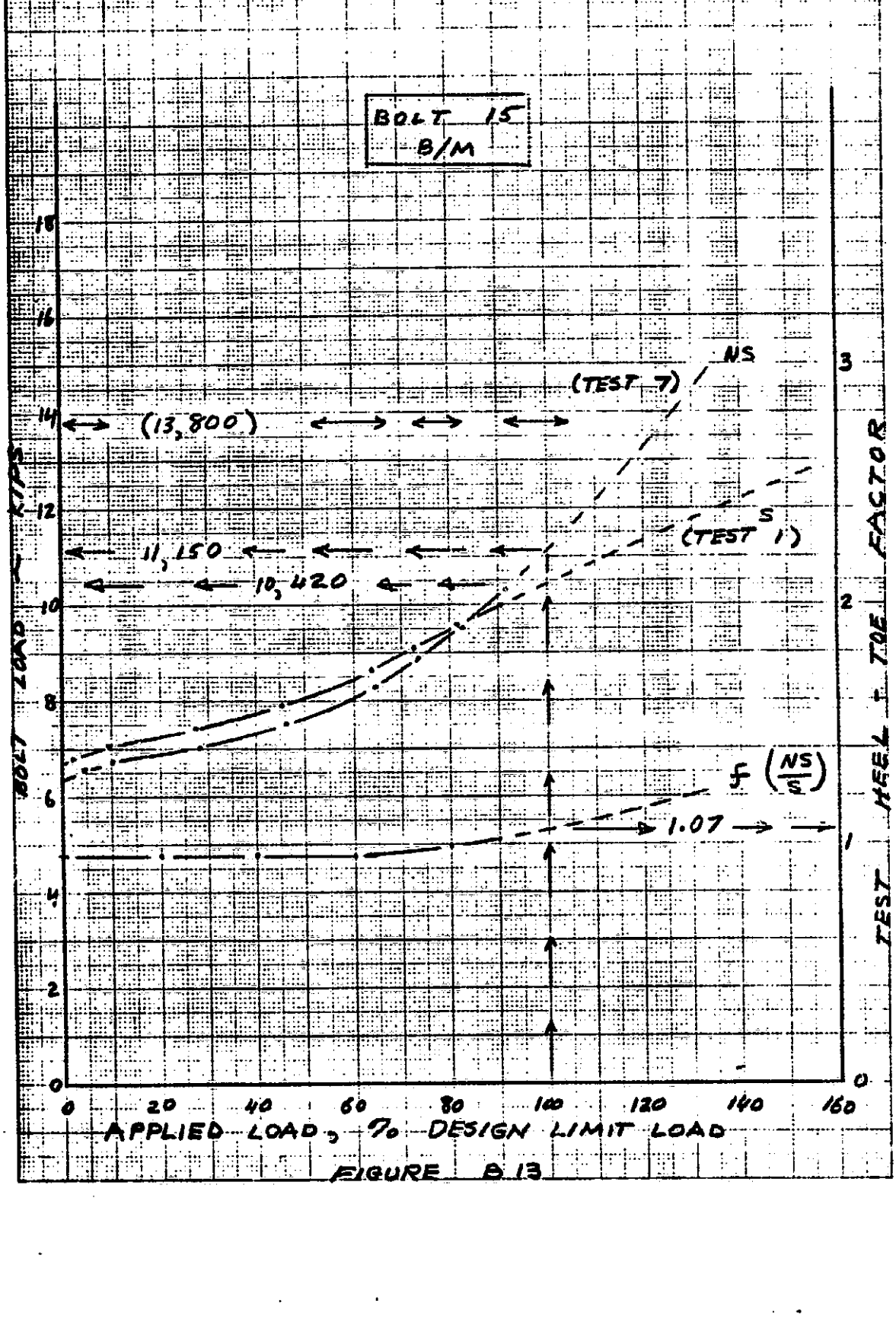

FIGURE B 13

FIGURE B 14

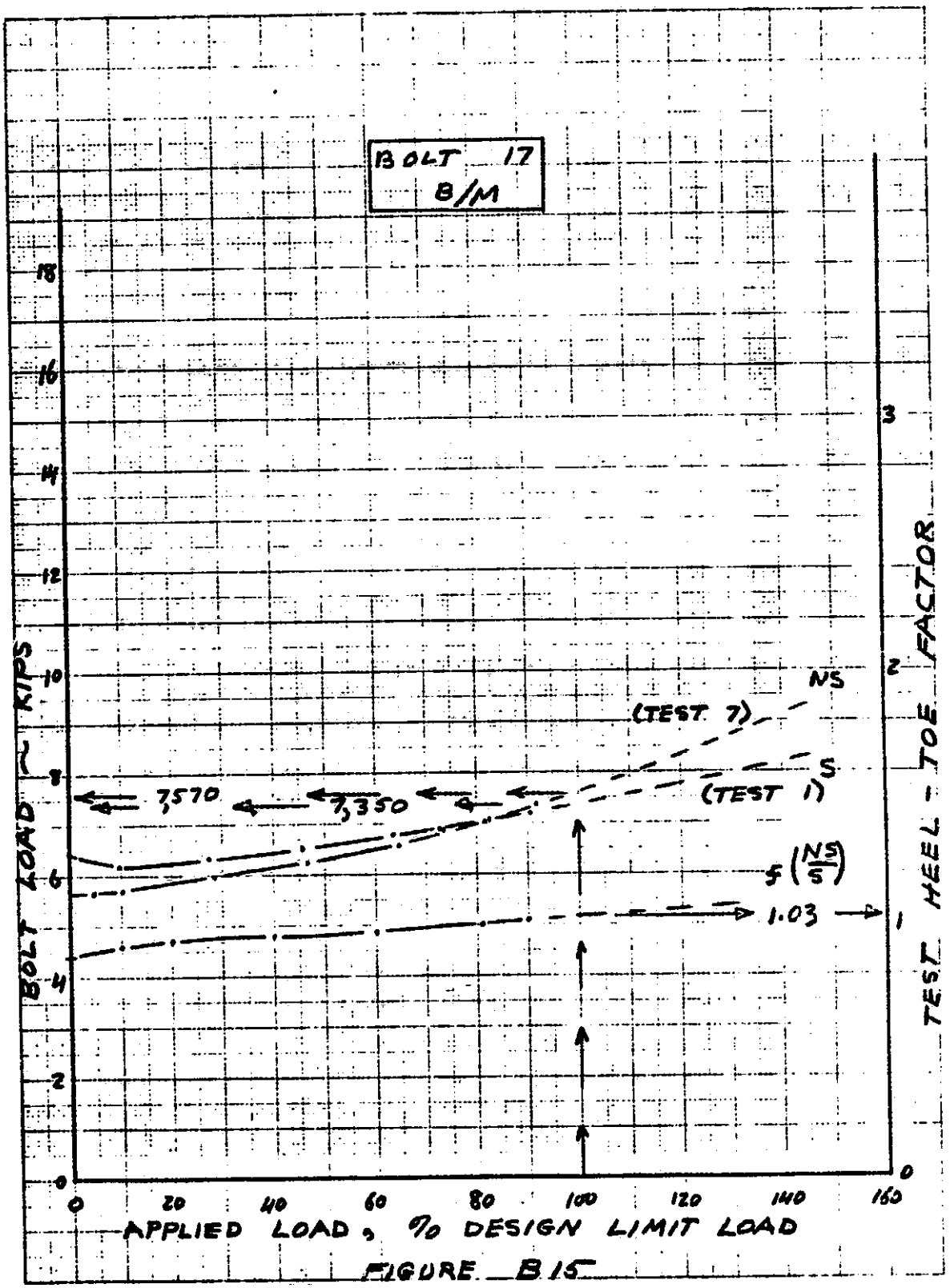
BOLT 17
B/M
BOLT LOAD ~ KIPS
TEST HEEL - TOE FACTOR
NS
(TEST 7)
(TEST 1) S
7,570
7,350
S (NS/S)
1.03
0
2
4
6
8
10
12
14
16
18
0
20
40
60
80
100
120
140
160
1
2
3
APPLIED LOAD, % DESIGN LIMIT LOAD

FIGURE B 15

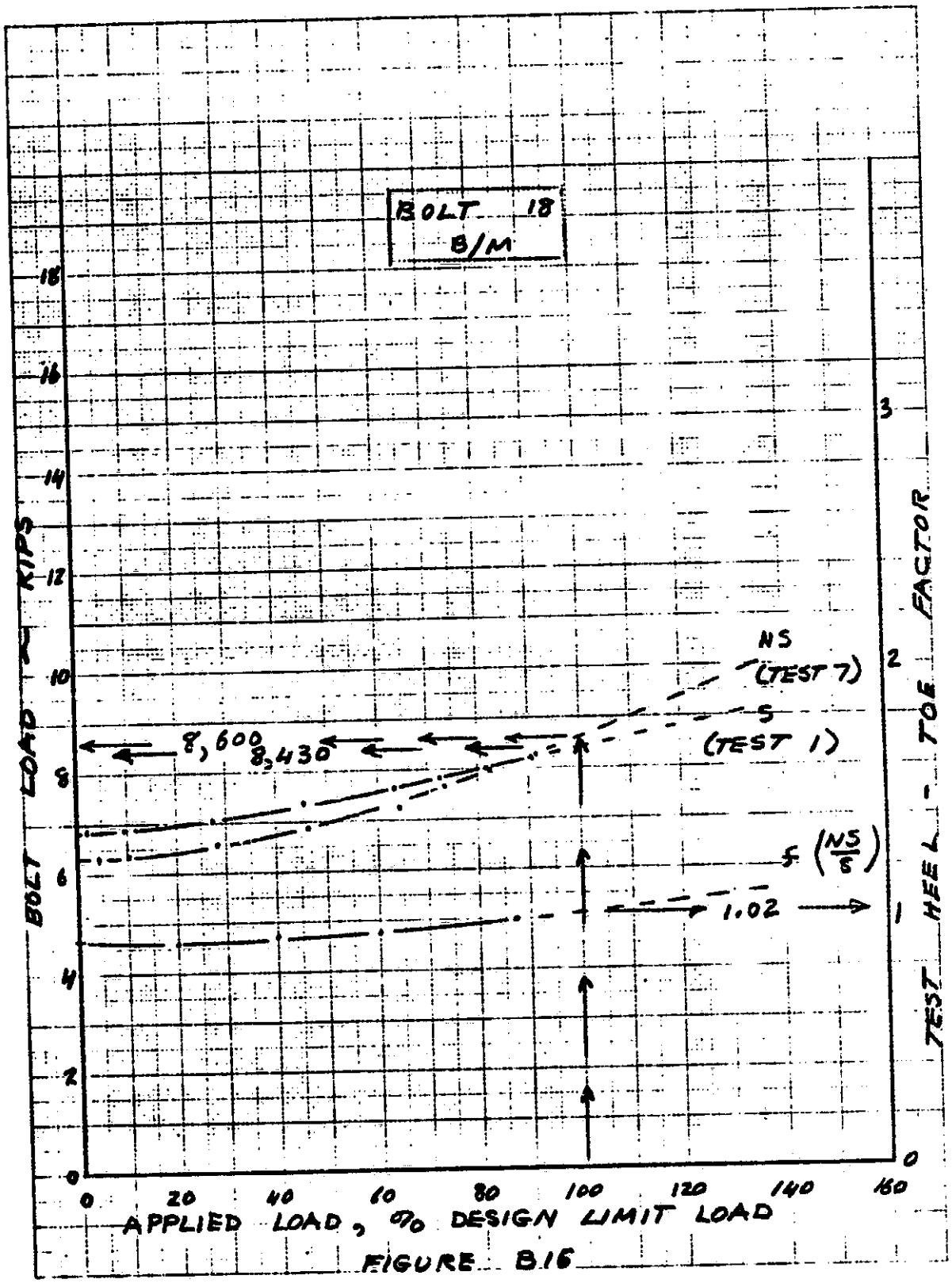
BOLT 18
B/M
BOLT LOAD — KIPS
TEST HEEL - TOE FACTOR
NS
(TEST 7)
S
(TEST 1)
8,600
8,430
S (NS/S)
1.02
0
2
4
6
8
10
12
14
16
18
0
1
2
3
0
20
40
60
80
100
120
140
160
APPLIED LOAD, % DESIGN LIMIT LOAD

FIGURE B.16

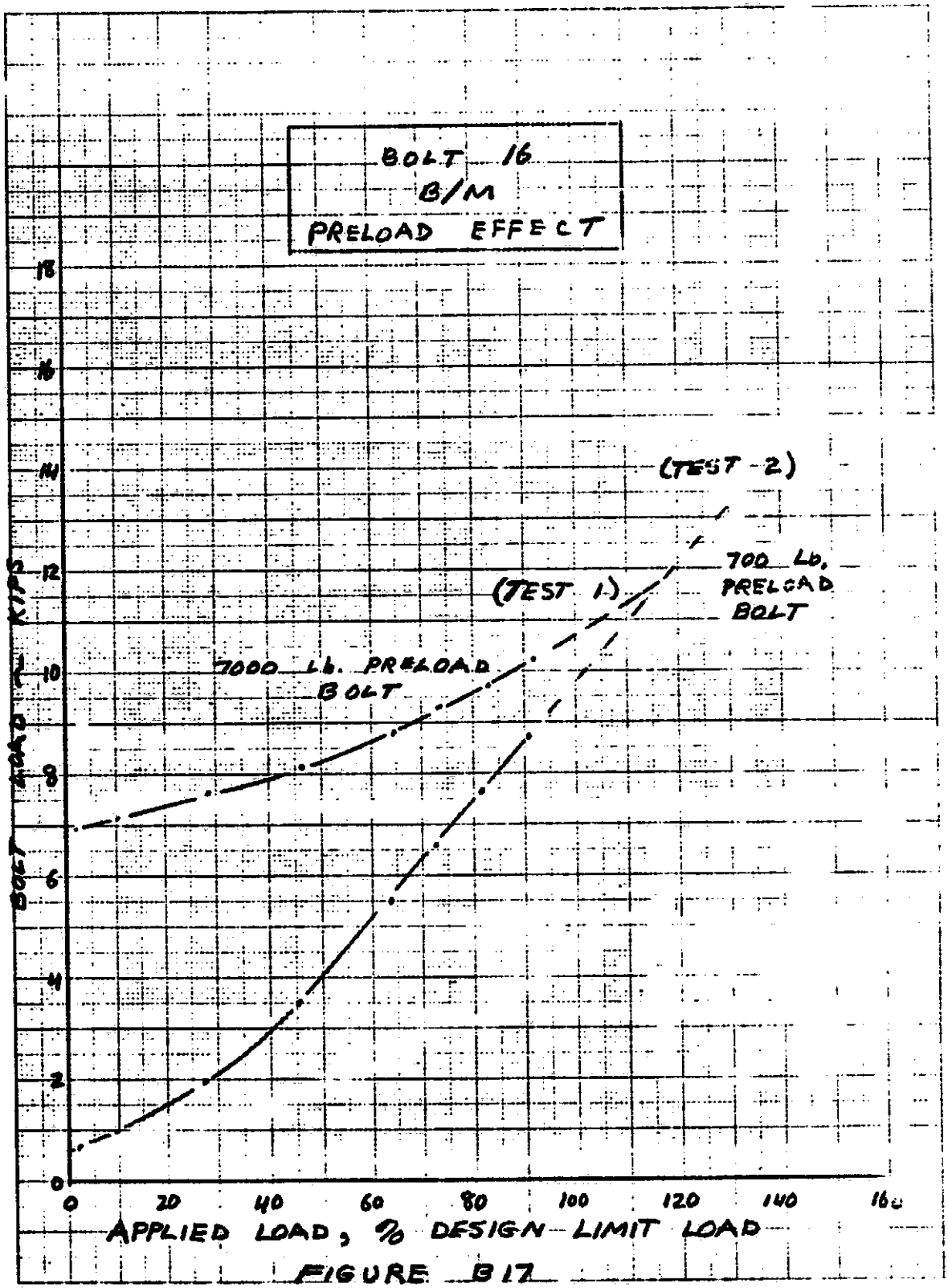
BOLT 16
B/M
PRELOAD EFFECT
(TEST 2)
700 Lb. PRELOAD BOLT
(TEST 1)
7000 Lb. PRELOAD BOLT
BOLT LOAD, KIPS
0
2
4
6
8
10
12
14
16
18
0
20
40
60
80
100
120
140
160
APPLIED LOAD, % DESIGN-LIMIT LOAD

FIGURE B17

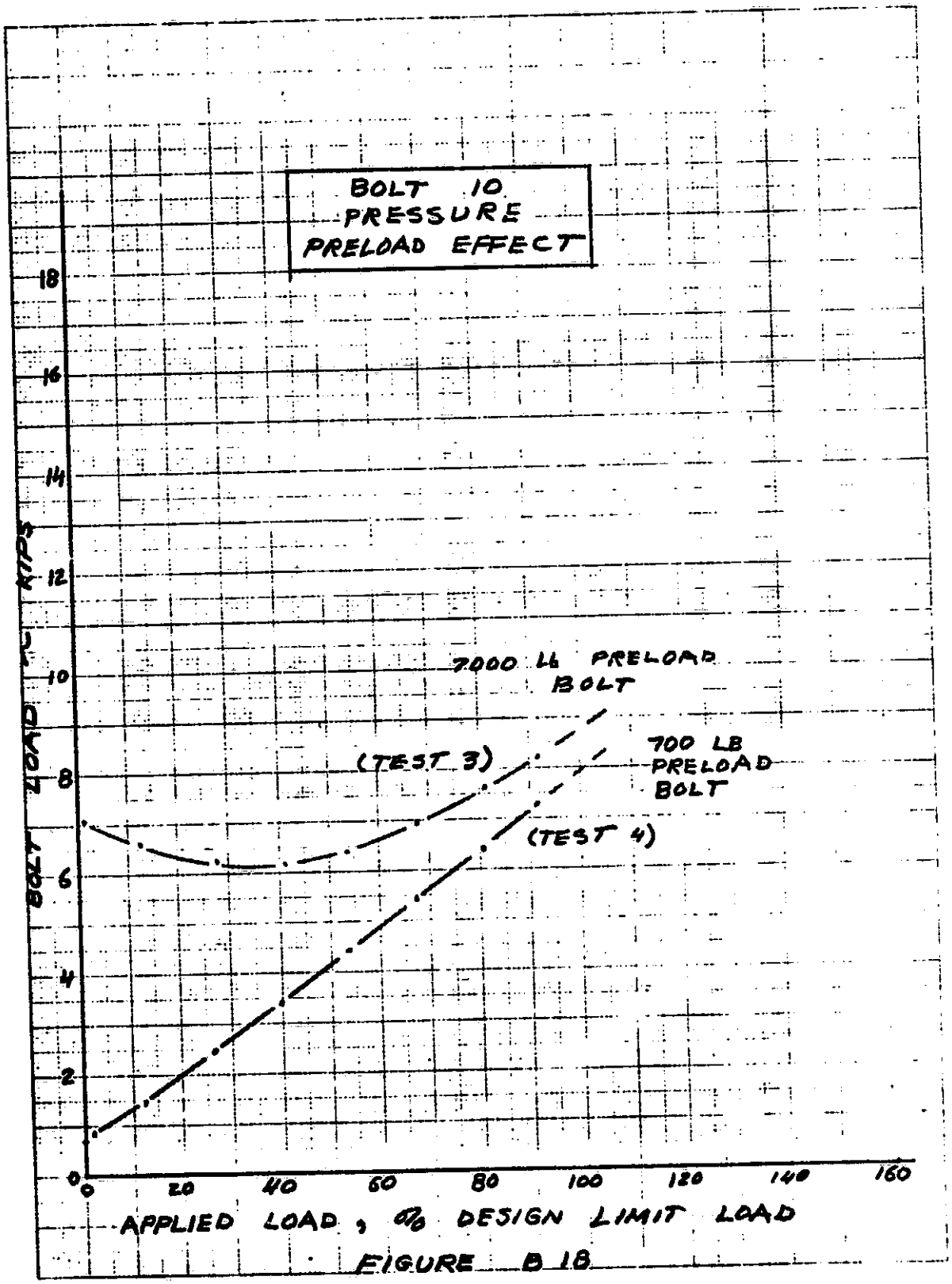
BOLT 10
PRESSURE
PRELOAD EFFECT
BOLT LOAD, KIPS
0
2
4
6
8
10
12
14
16
18
0
20
40
60
80
100
120
140
160
APPLIED LOAD, % DESIGN LIMIT LOAD
7000 LB PRELOAD
BOLT
(TEST 3)
700 LB
PRELOAD
BOLT
(TEST 4)

FIGURE B 18