

~~AD B130189~~

730 6503A

107

NAVAL AIR DEVELOPMENT CENTER

WARMINSTER, PA. 18974

REPORT CONTROL SYMBOL NADC 13920-2

1 NOV 1973

STATISTICAL REVIEW OF COUNTING
ACCELEROMETER DATA FOR NAVY AND MARINE
FLEET AIRCRAFT
FROM 1 JAN 1962 TO 1 JUL 1973

Tech. Info.

SEMI-ANNUAL SUMMARY REPORT

AIRTASK A53530/202/78012-74-84
Work Unit No. 01

Approved for public release; distribution unlimited.

19970609 168



THIS QUALITY INSPECTED 1

```

1 OF 1
1 - AD NUMBER: B130189
2 - FIELDS AND GROUPS: 1/2, 1/3, 20/11
3 - ENTRY CLASSIFICATION: UNCLASSIFIED
5 - CORPORATE AUTHOR: NAVAL AIR DEVELOPMENT CENTER WARMINSTER PA
6 - UNCLASSIFIED TITLE: STATISTICAL REVIEW OF COUNTING
ACCELEROMETER DATA FOR NAVY AND MARINE FLEET AIRCRAFT FROM 1
JANUARY 1962 TO 30 JUNE 1988.
8 - TITLE CLASSIFICATION: UNCLASSIFIED
9 - DESCRIPTIVE NOTE: SEMI-ANNUAL SUMMARY REPT. 1 JAN 62-30 JUN 88

10 - PERSONAL AUTHORS: LIN, DAVID H.
11 - REPORT DATE: NOV 01, 1988
12 - PAGINATION: 153P MEDIA COST: $ 11.00 PRICE CODE: AB
14 - REPORT NUMBER: NADC-13920-2
20 - REPORT CLASSIFICATION: UNCLASSIFIED
21 - SUPPLEMENTARY NOTE: SUPERSEDES PREVIOUS ISSUES OF THE
SEMIANNUAL REPT.
22 - LIMITATIONS (ALPHA): DISTRIBUTION AUTHORIZED TO U.S. GOV'T.

AGENCIES AND THEIR CONTRACTORS; ADMINISTRATIVE/OPERATIONAL USE

NOV 88. OTHER REQUESTS SHALL BE REFERRED TO COMNAVAIRDEVCCEN,
WARMINSTER, PA 18974-5000.
DESCRIPTORS: *ACCELERATION, *ACCELEROMETERS, *AIRCRAFT,
<<P FOR NEXT PAGE>> OR <<ENTER NEXT COMMAND>>

```



DEPARTMENT OF THE NAVY
NAVAL AIR DEVELOPMENT CENTER
WARMINSTER, PA. 18974

AIR VEHICLE TECHNOLOGY DEPARTMENT

REPORT CONTROL SYMBOL NADC 13920-2

1 NOV 1973

STATISTICAL REVIEW OF COUNTING
ACCELEROMETER DATA FOR NAVY AND MARINE
FLEET AIRCRAFT
FROM 1 JAN 1962 TO 1 JUL 1973

SEMI-ANNUAL SUMMARY REPORT
AIRTASK A53530/202/78012-74-84
WORK UNIT NO. 01

This report provides a specialized summary of normal acceleration data recorded by counting accelerometers. Data are separated by calendar time and major category of fleet experience. Only data reported in the counting accelerometer program are included.

Reported by: Thomas DeFior
THOMAS A. DE FIORE
Mathematician

Approved by: C. G. Weeber
C. G. WEEBER, Supt.
Structures Division

Approved for public release; distribution unlimited

DTIC QUALITY INSPECTED 1

SUMMARY

This is a semi-annual progress report, and it presents a specialized summary of the data in the counting accelerometer program. Statistics describing Navy and Marine aircraft cumulative g-count exceedances are calculated and tabulated. These tabulations are separated by calendar time and into four major categories of fleet experience: Navy Training, Navy Combat, Marine Training, and Marine Combat.

These data show that the load rate distributions (counts at 1000 hours) for most models and most g-levels have a non-normal distribution. Within a model (F-4B, F-8H, etc.) differences in the average load rates exist when data are separated by calendar time or mission category.

NADC 13920-2

SPECIAL NOTES

1. This report supersedes and replaces all previous issues of this semi-annual report. (Previous issue report control symbol NADC-13920-2 dated 1 May 1973.

2. Additional copies of this report may be obtained from:

Administrator
Defense Documentation Center for Scientific
and Technical Information (DDC)
Building 5, Cameron Station
Alexandria, Virginia 22314

3. Any inquiries, questions, or additional information desired concerning the contents of this report shall be directed to:

Naval Air Development Center
Air Vehicle Technology Department (30322)
Warminster, Pa. 18974
Area Code 215 OS 2-9000 (Ext. 2896)
Autovon 441-2896

TABLE OF CONTENTS

	PAGE
SUMMARY	iii
SPECIAL NOTES	iv
INDEX OF CURRENTLY OPERATIONAL MODELS	vi
INDEX OF OUT-OF-SERVICE MODELS AND MODELS WHICH HAVE NOT REPORTED COUNTING ACCELEROMETER DATA DURING THE PREVIOUS 12 MONTHS.	vii
INTRODUCTION.	1
DISCUSSION.	2
ACKNOWLEDGEMENT	4
TABLES	5
APPENDIX A - OUT-OF-SERVICE MODELS AND MODELS WHICH HAVE NOT REPORTED COUNTING ACCELEROMETER DATA DURING THE PREVIOUS 12 MONTHS.	A-1
APPENDIX B - THE DETERMINATION OF SAMPLE STATISTICS FOR COUNTING ACCELEROMETER DATA	B-1

NADC 13920-2
INDEX OF CURRENTLY OPERATIONAL MODELS

<u>Model</u>	<u>Previous 12 Months Data</u>	<u>All Data</u>
F-4J (Blue Angels)	PAGE 6	PAGE 7
FA-3B	8	9
EKA-3B	10	11
A-4F	12	13
TA-4F	14	15
A-4G	16	17
TA-4J	18	19
A-4M	20	21
RA-5C	22	23
A-6A	24	25
EA-6A	26	27
A-6B	28	29
EA-6B	30	31
A-6C	32	33
KA-6D	34	35
A-6E	36	37
A-7A	38	39
A-7B	40	41
A-7C	42	43
A-7E	44	45
C-2A	46	47
F-4B	48	49
RF-4B	50	51
F-4J	52	53
F-4N	54	55
RF-8G	56	57
F-8H	58	59
F-8J	60	61
F-8K	62	63
F-8L	64	65
DF-8L	66	67
P-3A	68	69
P-3B	70	71
P-3C	72	73
ES-2D	74	75
S-2E	76	77
S-2G	78	79
S-3A	80	81
T-2B	82	83
T-2C	84	85
T-28B	86	87
T-28C	88	89
T-34B	90	91

NADC 13920-2

INDEX OF OUT-OF-SERVICE MODELS AND MODELS WHICH HAVE NOT REPORTED COUNTING
ACCELEROMETER DATA DURING THE PREVIOUS 12 MONTHS (APPENDIX A)

<u>Model</u>	<u>All Data</u>
F-11A(Blue Angels)*	A-2
F-11A (Blue Angels)**	A-3
AF-1E	A-4
A-1H	A-5
A-1J	A-6
A-3B	A-7
A-4B	A-8
TA-4B	A-9
A-5A	A-10
A-5B	A-11
KC-130F	A-12
F-4A	A-13
TF-4A	A-14
F-4G	A-15
F-6A	A-16
F-8A	A-17
RF-8A	A-18
TF-8A	A-19
F-8B	A-20
F-8C	A-21
F-8D	A-22
F-8E	A-23
DF-8F	A-24
EF-10B	A-25
F-11A	A-26
S-2D	A-27
T-2A	A-28

* TRANSDUCER LOAD-LEVEL RANGE (4-, 5-, 6-, 7-g)

** TRANSDUCER LOAD-LEVEL RANGE (6-, 7-, 8.5-, 10-g)

INTRODUCTION

The NAVAIRDEVCON (Naval Air Development Center) is engaged in various flight maneuver-loads programs as assigned by the Naval Air Systems Command. One of these is the counting accelerometer program, and under this program data have been collected and reported since 1955.

The primary purpose of this program is to provide the flight load history of individual Navy and Marine aircraft. Other purposes include, but are not limited to, the comparison of operational loads environment with structural design requirements, the comparison of load histories of one model with another, and the determination of expected loads environment of future models. More recently, however, these data are used as the major input in the NAVAIRDEVCON Aircraft Structural Fatigue Life Program in estimating structural fatigue damage for those aircraft which do not have counting accelerometer data.

DISCUSSION

This is a semi-annual progress report and includes statistical summaries for all Navy and Marine aircraft (whether they are currently in service or out of service) which have reported in the counting accelerometer program. Out-of-service models or models which have not reported counting accelerometer data during the previous 12 months appear in Appendix A. The summary for each out-of-service model is its final summary. New models are added as their counting accelerometer data become available.

For each model, the following statistics are presented: (See Appendix B for the statistical procedures.)

- x - the estimated mean load exceedances (counts at 1000 flt. hrs.) for each g-level recorded on the counting accelerometer.
- S - estimated standard deviation (counts at 1000 flt. hrs.) of the load exceedances for each g-level.
- A₃ - estimated skewness factor for the load exceedance distribution.

Two statistical summaries describing cumulative g-count exceedances and flight hours for each currently operational model are presented:

1. The first summary includes all quality-control accepted data reported in the time period comprising the terminal date of this report and the 12 months preceding that date.
2. The second includes all quality-control accepted data reported in the counting accelerometer program from the day each airplane was delivered for service to the terminal date of this report.

The first summary, which includes only the most recent 12 months, shows an indication of a model's current severity of usage. The second summary **describes** the severity of loads experienced by all airplanes of each model since acceptance. A comparison of the first summary with the second shows whether current usage for any model is more or less severe than usage over its full lifetime.

A further breakdown by mission category is provided. These are provided for each airplane model in both of the aforementioned summaries. These categories are defined as follows:

1. Navy Training - an airplane in a Navy squadron assigned to a non-combat zone. (This includes all Navy airplanes not classified as being in a combat zone.)

2. Navy Combat - an airplane in a Navy squadron assigned to a combat zone.

3. Marine Training - an airplane in a Marine squadron assigned to a non-combat zone. (This includes all Marine airplanes not classified as being in a combat zone.)

4. Marine Combat - an airplane in a Marine squadron assigned to a combat zone.

The statistics for the F-4J Blue Angels are separated into solo aircraft and diamond formation aircraft. In the subsequent tables, the total flight hours shown for a given model are the sum of the hours reported for each category. However, summing the number of airplanes reporting in each category can result in a number exceeding the total aircraft, because the same airplane may have seen service in two or more categories. Its data were separated for calculation of statistics for each respective category.

Some general statistical observations for fleet-wide loads data are the following:

1. The load exceedance distribution for many of the aircraft models is non-normal (particularly asymmetrical) at all the g-levels recorded. In general, the degree of asymmetry increased with increasing g-level.

2. The scatter measure $\frac{S}{\bar{x}}$ (coefficient of variation) increases with higher g-levels.

3. For a given g-level, there is more scatter in loads received during training than during combat.

4. Differences exist in loads frequency among various configurations of the same model and various mission categories within the same configuration.

NADC 13920-2

ACKNOWLEDGEMENT

The author wishes to acknowledge Project Team Members, Messrs. Joseph Caristo and Mark Libeskind of the Air Vehicle Technology Department of the Naval Air Development Center, for their assistance in the preparation of this report.

T A B L E S

Counting accelerometer data are subject to quality control criteria modifications. Thus, in succeeding reports, model-wide summary statistics are subject to change even though a model may no longer be in service.

MODEL F-4J

9 AIRPLANES 1031 HOURS

BLUE ANGELS

NAVY

6 AIRPLANES
589 HOURS

DIAMOND	6.00	7.00	8.50	10.00
$\bar{X}$	329.27	38.89	0.00	0.00
S	**			
A ₃				

4 AIRPLANES
441 HOURS

SOLO	6.00	7.00	8.50	10.00
$\bar{X}$	923.05	149.96	13.43	10.07
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

	6.00	7.00	8.50	10.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

	6.00	7.00	8.50	10.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4J

14 AIRPLANES 7961 HOURS

BLUE ANGELS

NAVY

13 AIRPLANES
5328 HOURS

DIAMOND	6.0G	7.0G	8.5G	10.0G
$\bar{X}$	505.85	166.73	21.41	1.76
S	121.70	82.78	14.01	1.23
A ₃	0.17	0.77	0.46	0.50

10 AIRPLANES
2633 HOURS

SOLO	6.0G	7.0G	8.5G	10.0G
$\bar{X}$	2236.20	808.32	147.18	12.88
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

	6.0G	7.0G	8.5G	10.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

	6.0G	7.0G	8.5G	10.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL KA-3B

7 AIRPLANES 2174 HOURS

NAVY

7 AIRPLANES
2174 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	21.23	1.16	0.13	0.00
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL KA-3B

41 AIRPLANES 31111 HOURS

NAVY

39 AIRPLANES
28083 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	113.02	14.49	3.13	0.33
S	144.46	16.94	4.68	0.96
A ₃	2.77	1.46	1.95	2.83

11 AIRPLANES
3028 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	172.44	30.93	5.69	0.19
S	47.42	17.09	5.41	0.59
A ₃	0.51	1.14	0.88	2.69

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL EKA-3B

6 AIRPLANES 644 HOURS

NAVY

6 AIRPLANES
644 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	0.67	0.00	0.00	0.00
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL EKA-3B

12 AIRPLANES 7125 HOURS

NAVY

11 AIRPLANES
5717 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	419.22	77.50	25.46	4.14
S	311.48	67.83	26.70	4.98
A ₃	0.20	0.93	1.06	1.07

5 AIRPLANES
1408 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	99.38	6.56	0.00	0.00
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-4F

60 AIRPLANES 7742 HOURS

NAVY

45 AIRPLANES
5048 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	351.03	30.28	6.31	2.29
S	242.09	37.03	9.85	7.21
A ₃	2.25	3.77	4.43	6.21

1 AIRPLANES
57 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	0.00	0.00	0.00	0.00
S	***			
A ₃				

MARINE

16 AIRPLANES
2637 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	402.05	78.00	7.91	1.67
S	251.01	54.11	4.51	1.13
A ₃	1.67	1.87	1.39	1.76

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL H-4F

85 AIRPLANES 32588 HOURS

NAVY

75 AIRPLANES
22349 HOURS

TRAINING	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	668.86	109.25	10.53	1.16
S	356.19	71.32	9.95	3.65
A ₃	-0.24	1.23	2.19	6.69

23 AIRPLANES
5718 HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	532.05	157.13	23.02	4.08
S	105.58	39.10	7.81	2.10
A ₃	-0.34	0.25	0.28	0.75

MARINE

19 AIRPLANES
4521 HOURS

TRAINING	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	767.70	151.29	17.37	3.62
S	256.64	54.20	7.14	1.92
A ₃	-0.72	-0.53	0.69	1.04

AIRPLANES
HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
$\bar{X}$				
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL TA-4F

28 AIRPLANES 7026 HOURS

NAVY

25 AIRPLANES
6468 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	325.92	27.57	2.42	0.91
S	123.22	11.56	2.73	1.95
A ₃	0.50	1.08	3.54	4.33

1 AIRPLANES
40 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	0.00	0.00	0.00	0.00
S	**			
A ₃				

MARINE

3 AIRPLANES
518 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	1225.04	30.02	0.00	0.00
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL TA-4F

153 AIRPLANES 164126 HOURS

NAVY

132 AIRPLANES
125718 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	153.86	18.47	1.55	0.19
S	168.05	26.79	2.81	0.76
A ₃	2.39	3.57	2.52	4.80

9 AIRPLANES
2115 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	572.20	58.96	3.30	0.75
S	**			
A ₃				

MARINE

37 AIRPLANES
36293 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	667.56	82.37	6.94	0.82
S	416.43	35.82	11.44	2.16
A ₃	1.50	4.16	3.99	4.63

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-4G

13 AIRPLANES 2328 HOURS

NAVY

13 AIRPLANES
2328 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	2710.03	376.39	36.18	4.95
S	460.02	57.90	9.88	2.78
A ₃	0.22	-0.23	-0.09	1.17

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-4G

15 AIRPLANES 8960 HOURS

NAVY

15 AIRPLANES
8960 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	2370.24	420.86	51.01	5.00
S	477.35	88.32	13.48	2.77
A ₃	-0.34	-0.41	-0.63	0.16

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL TA-4J

289 AIRPLANES 102114 HOURS

NAVY

282 AIRPLANES
99686 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	281.50	28.26	5.21	1.24
S	119.18	18.80	7.20	3.70
A ₃	0.96	1.64	4.32	3.73

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

MARINE

7 AIRPLANES
2427 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	658.36	28.00	6.78	5.68
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL TH-4J

299 AIRPLANES 152963 HOURS

NAVY

292 AIRPLANES
148275 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	330.28	35.54	4.57	1.01
S	161.80	26.49	7.15	3.54
A ₃	2.30	3.36	3.84	7.48

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

MARINE

11 AIRPLANES
4688 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	700.06	23.38	4.41	3.86
S	468.95	19.63	6.89	7.01
A ₃	1.18	0.28	1.97	2.10

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-4M

19 AIRPLANES 2265 HOURS

NAVY

2 AIRPLANES
388 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	943.43	128.74	25.23	9.43
S	**			
A_3				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A_3				

MARINE

18 AIRPLANES
1876 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	1421.95	279.22	22.56	1.65
S	189.46	80.67	11.42	3.38
A_3	-0.32	1.25	2.12	2.94

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A_3				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A_3 SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-4M

31 AIRPLANES 4581 HOURS

NAVY

10 AIRPLANES
755 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	1337.20	150.50	10.53	2.35
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

MARINE

29 AIRPLANES
3826 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	1108.09	207.27	26.14	2.94
S	303.82	119.15	21.07	4.38
A ₃	1.19	2.44	2.63	2.70

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL RA-5C

49 AIRPLANES - 16425 HOURS

NAVY

48 AIRPLANES
12716 HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	157.95	5.40	0.64	0.45
S	77.65	4.92	1.13	0.94
A ₃	1.17	2.06	3.02	4.45

22 AIRPLANES
3709 HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	590.71	40.72	2.94	0.24
S	183.49	15.68	2.64	0.52
A ₃	1.05	0.91	3.03	4.09

MARINE

AIRPLANES
HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL RA-5C

129 AIRPLANES 119646 HOURS

NAVY

129 AIRPLANES
98732 HOURS

TRAINING	3.0G	4.0G	5.0G	6.0G
$\bar{X}$	215.29	15.41	1.11	0.18
S	120.60	29.44	2.05	0.62
A ₃	3.11	8.61	3.18	3.41

95 AIRPLANES
20914 HOURS

COMBAT	3.0G	4.0G	5.0G	6.0G
$\bar{X}$	933.05	100.10	13.47	0.66
S	435.32	69.94	18.97	1.29
A ₃	3.16	3.42	6.45	3.68

MARINE

AIRPLANES
HOURS

TRAINING	3.0G	4.0G	5.0G	6.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.0G	4.0G	5.0G	6.0G
$\bar{X}$	*			
S				
A ₃				

 $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS

S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS

A₃ SKEWNESS OF LOAD RATE DISTRIBUTION

* NO DATA IN THIS CATEGORY

** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-6A

198 AIRPLANES 43398 HOURS

NAVY

152 AIRPLANES
25408 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1414.30	524.63	94.51	7.69
S	413.99	195.56	45.91	5.33
A ₃	1.42	2.17	2.17	2.18

36 AIRPLANES
6095 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1178.09	514.22	114.47	10.63
S	221.89	130.66	60.97	9.49
A ₃	0.89	0.48	1.38	2.59

MARINE

53 AIRPLANES
9699 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	840.15	202.10	29.43	2.34
S	206.22	94.68	30.77	4.90
A ₃	0.99	2.35	5.06	5.09

17 AIRPLANES
3204 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	820.97	373.66	53.59	7.82
S	212.07	160.79	36.42	8.99
A ₃	0.63	2.29	2.37	2.59

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-6A

415 AIRPLANES 339013 HOURS

NAVY

380 AIRPLANES
197810 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1336.51	428.75	73.95	6.94
S	450.46	214.02	56.66	8.98
A ₃	0.54	1.74	3.63	7.38

197 AIRPLANES
38646 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1069.84	446.93	108.93	12.84
S	268.88	153.49	56.49	7.63
A ₃	4.30	4.63	3.34	2.06

MARINE

175 AIRPLANES
76096 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	890.24	216.23	31.14	2.77
S	363.71	121.41	25.61	4.17
A ₃	0.82	1.00	1.92	3.21

75 AIRPLANES
26461 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	456.94	149.59	23.35	1.37
S	210.87	110.28	21.44	3.45
A ₃	1.10	2.90	3.25	7.00

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL EA-6A

13 AIRPLANES 3654 HOURS

NAVY

	TRAINING	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

	COMBAT	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

MARINE

	TRAINING	4.00	5.00	6.00	7.00
13 AIRPLANES	$\bar{X}$	42.77	1.49	0.00	0.00
3555 HOURS	S	11.87	1.07	0.00	0.00
	A ₃	-0.93	0.98	0.00	0.00

	COMBAT	4.00	5.00	6.00	7.00
1 AIRPLANES	$\bar{X}$	0.00	0.00	0.00	0.00
100 HOURS	S	**			
	A ₃				

 $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS

S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS

A₃ SKEWNESS OF LOAD RATE DISTRIBUTION

* NO DATA IN THIS CATEGORY

** INSUFFICIENT DATA IN THIS CATEGORY

MODEL EA-6A

19 AIRPLANES 14226 HOURS

NAVY

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

19 AIRPLANES
13789 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	44.77	4.22	0.17	0.00
S	22.82	4.58	0.52	0.28
A ₃	1.83	1.56	1.63	4.02

5 AIRPLANES
438 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	10.56	1.51	0.00	0.00
S	**			
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-6B

15 AIRPLANES 3628 HOURS

NAVY

14 AIRPLANES
3071 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	449.46	91.25	14.93	0.92
S	201.14	43.63	10.02	2.95
A ₃	1.12	1.00	1.22	2.28

5 AIRPLANES
557 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	426.63	106.37	33.28	11.25
S	XX			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-6B

18 AIRPLANES 9218 HOURS

NAVY

17 AIRPLANES
7297 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	410.54	85.65	15.53	1.97
S	132.98	40.40	13.91	2.90
A ₃	0.60	1.18	1.65	2.30

10 AIRPLANES
1921 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	301.71	91.54	9.41	1.92
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL EA-6B

16 AIRPLANES 4504 HOURS

NAVY

16 AIRPLANES
4489 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	62.35	3.84	0.00	0.00
S	31.51	4.60	0.00	0.00
A ₃	1.02	2.73	0.00	0.00

2 AIRPLANES
15 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	60.35	0.00	0.00	0.00
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL EA-6B

20 AIRPLANES 9233 HOURS

NAVY

20 AIRPLANES
9218 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	55.99	15.92	2.39	0.00
S	68.80	24.27	6.86	0.00
A ₃	3.14	3.08	3.74	0.00

2 AIRPLANES
15 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	60.35	0.00	0.00	0.00
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-6C

9 AIRPLANES 906 HOURS

NAVY

9 AIRPLANES
763 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	602.41	128.49	7.57	1.35
S	**			
A ₃				

1 AIRPLANES
143 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	0.00	0.00	0.00	0.00
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-6C

12 AIRPLANES 2887 HOURS

NAVY

12 AIRPLANES
2583 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	160.37	113.35	6.86	0.33
S	61.89	24.17	4.46	0.62
A ₃	-0.85	0.47	0.61	2.57

3 AIRPLANES
304 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	593.18	316.07	65.16	9.74
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL KA-6D

49 AIRPLANES 13993 HOURS

NAVY

47 AIRPLANES
8963 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	93.08	11.41	1.93	0.29
S	62.57	10.00	1.99	0.29
A ₃	1.91	3.42	3.03	4.14

22 AIRPLANES
5129 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	21.10	3.19	0.47	0.00
S	11.79	2.98	0.58	0.00
A ₃	1.00	2.44	2.16	0.00

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL KA-60

52 AIRPLANES 30121 HOURS

NAVY

51 AIRPLANES
21495 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	41.39	4.93	0.87	0.18
S	48.41	7.39	1.48	0.46
A ₃	3.28	4.53	3.57	4.89

32 AIRPLANES
8625 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	21.61	3.62	0.87	0.00
S	16.26	4.17	1.70	0.00
A ₃	1.12	2.40	3.48	0.00

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-6E

29 AIRPLANES 7050 HOURS

NAVY

29 AIRPLANES
7050 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	656.40	136.53	15.10	1.39
S	168.07	59.64	11.67	3.49
A ₃	0.70	0.98	1.44	3.09

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-6E

29 AIRPLANES 9596 HOURS

NAVY

29 AIRPLANES
9596 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	875.28	175.51	19.97	1.99
S	408.70	85.97	18.64	3.25
A ₃	3.24	1.84	2.65	2.48

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-7A

91 AIRPLANES 28176 HOURS

NAVY

93 AIRPLANES
19343 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	927.96	232.92	26.12	2.43
S	337.63	124.23	22.58	3.49
A ₃	1.36	1.91	2.71	3.84

32 AIRPLANES
8933 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	971.20	356.20	30.45	1.69
S	214.26	110.62	14.30	2.29
A ₃	-0.01	0.62	0.63	3.48

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-7A

194 AIRPLANES 245370 HOURS

NAVY

194 AIRPLANES
180786 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	1127.18	217.90	22.33	2.27
S	423.99	106.60	17.31	2.97
A ₃	0.05	0.63	1.26	2.07

133 AIRPLANES
64584 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	762.38	240.54	32.68	2.52
S	160.86	77.45	16.00	2.45
A ₃	0.08	1.49	0.87	1.75

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-7B

81 AIRPLANES 30583 HOURS

NAVY

76 AIRPLANES
21936 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	1075.86	320.93	38.81	4.62
S	332.24	126.40	27.44	10.35
A ₃	2.43	1.36	2.28	5.02

25 AIRPLANES
8647 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	1306.63	418.21	55.23	3.96
S	357.05	122.25	33.48	4.41
A ₃	-0.02	0.93	2.91	3.34

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-7B

93 AIRPLANES 42423 HOURS

NAVY

93 AIRPLANES
33031 HOURS

TRAINING	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	1106.76	315.46	41.19	5.10
S	408.00	150.34	43.50	11.79
A ₃	1.22	1.09	3.95	5.42

28 AIRPLANES
9392 HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	1321.19	428.20	56.77	4.01
S	346.79	118.41	33.00	4.54
A ₃	-0.00	0.86	3.00	3.59

MARINE

AIRPLANES
HOURS

TRAINING	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-7C

27 AIRPLANES 10425 HOURS

NAVY

24 AIRPLANES
2929 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	644.04	95.87	5.56	0.00
S	321.67	54.39	5.11	0.00
A ₃	0.86	0.99	2.06	0.00

21 AIRPLANES
7497 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	654.68	149.31	16.68	1.15
S	157.67	35.51	6.69	1.04
A ₃	1.57	-0.20	0.18	1.02

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-7C

30 AIRPLANES 15196 HOURS

NAVY

29 AIRPLANES
7699 HOURS

TRAINING	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	325.00	111.10	6.52	0.54
S	255.33	46.14	4.67	0.66
A ₃	0.11	0.33	1.56	1.73

21 AIRPLANES
7497 HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	554.68	149.31	16.68	1.15
S	157.67	35.51	6.69	1.04
A ₃	1.57	0.20	0.18	1.02

MARINE

AIRPLANES
HOURS

TRAINING	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-7E

137 AIRPLANES 43732 HOURS

NAVY

137 AIRPLANES
35907 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	927.31	108.05	5.53	0.65
S	277.68	44.53	4.62	1.35
A ₃	1.59	2.37	3.89	5.54

34 AIRPLANES
7824 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	315.36	62.65	4.96	0.67
S	61.50	20.35	2.97	1.09
A ₃	0.00	0.23	1.54	4.20

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-7E

142 AIRPLANES 47426 HOURS

NAVY

142 AIRPLANES
39602 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	944.84	113.45	5.82	0.61
S	278.75	44.12	4.53	1.30
A ₃	1.29	1.93	3.58	5.58

34 AIRPLANES
7824 HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	315.36	52.65	4.96	0.57
S	61.50	20.35	2.97	1.09
A ₃	0.00	0.23	1.54	4.20

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL C-2A

8 AIRPLANES 2415 HOURS

NAVY

8 AIRPLANES
2415 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	24.77	4.81	1.21	0.74
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL C-2A

14 AIRPLANES 40706 HOURS

NAVY

14 AIRPLANES
40706 HOURS

TRAINING	2.00	2.50	3.00	3.50
X	55.02	17.00	7.23	1.75
S	61.22	27.57	13.23	4.01
A ₃	2.10	2.04	1.95	1.67

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4B

206 AIRPLANES 38358 HOURS

NAVY

133 AIRPLANES
15257 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	2599.57	1067.08	414.77	117.05
S	998.56	490.19	242.47	89.59
A ₃	4.35	4.68	4.93	7.01

30 AIRPLANES
5443 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1206.31	464.08	179.06	47.43
S	336.39	145.29	80.47	39.20
A ₃	1.02	1.07	1.35	1.95

MARINE

69 AIRPLANES
13656 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	3257.28	1299.42	414.34	116.47
S	912.82	492.04	209.24	83.20
A ₃	1.03	1.53	1.66	2.42

15 AIRPLANES
4001 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	2597.44	1162.60	526.29	191.23
S	893.56	315.22	216.01	126.09
A ₃	0.70	0.18	0.32	0.87

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4B

611 AIRPLANES 836467 HOURS

NAVY

573 AIRPLANES
430061 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1865.24	637.89	177.47	43.83
S	1096.81	496.46	204.54	74.45
A ₃	2.13	2.51	3.90	6.09

291 AIRPLANES
108405 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1137.73	405.31	129.20	31.32
S	372.90	132.70	67.31	31.02
A ₃	2.98	1.94	4.10	8.73

MARINE

329 AIRPLANES
191396 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	2216.56	710.32	173.39	39.25
S	1134.14	491.33	187.70	60.03
A ₃	1.45	1.99	2.52	3.77

226 AIRPLANES
106604 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	2222.87	864.81	226.04	47.48
S	694.66	341.03	155.58	51.27
A ₃	1.47	1.21	2.23	4.41

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL RF-4B

28 AIRPLANES 5464 HOURS

NAVY

AIRPLANES HOURS	TRAINING	4.00	5.00	6.00	7.00
	$\bar{X}$	*			
	S				
	A ₃				

AIRPLANES HOURS	COMBAT	4.00	5.00	6.00	7.00
	$\bar{X}$	*			
	S				
	A ₃				

MARINE

28 AIRPLANES 5402 HOURS	TRAINING	4.00	5.00	6.00	7.00
	$\bar{X}$	313.79	94.76	28.11	7.25
	S	128.18	53.64	21.51	5.95
	A ₃	1.60	2.12	2.32	2.44

2 AIRPLANES 62 HOURS	COMBAT	4.00	5.00	6.00	7.00
	$\bar{X}$	1190.76	430.07	126.90	0.00
	S	**			
	A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL RF-4B

46 AIRPLANES 52691 HOURS

NAVY

	TRAINING	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

	COMBAT	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

MARINE

	TRAINING	4.00	5.00	6.00	7.00
46 AIRPLANES	$\bar{X}$	375.61	92.86	20.05	4.88
44676 HOURS	S	235.14	85.59	23.74	8.58
	A ₃	1.01	3.05	2.28	3.72

	COMBAT	4.00	5.00	6.00	7.00
16 AIRPLANES	$\bar{X}$	1097.24	210.75	41.81	8.94
8015 HOURS	S	405.94	78.46	26.06	5.37
	A ₃	1.59	1.80	2.18	1.10

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4J

357 AIRPLANES 90384 HOURS

NAVY

267 AIRPLANES
45007 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	2798.01	1089.23	230.93	58.26
S	842.79	396.22	139.96	42.61
A ₃	1.03	1.24	1.57	3.01

130 AIRPLANES
23900 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1026.91	409.06	127.02	31.43
S	312.57	141.08	56.20	27.29
A ₃	3.71	4.47	4.12	5.29

MARINE

95 AIRPLANES
17325 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	4200.61	1515.18	439.33	104.78
S	971.91	443.64	206.41	70.32
A ₃	0.62	1.04	1.76	3.26

18 AIRPLANES
4153 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	2354.72	1122.88	305.94	47.66
S	375.63	152.03	111.49	29.45
A ₃	2.27	0.11	1.03	1.55

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4J

462 AIRPLANES 368761 HOURS

NAVY

422 AIRPLANES
200810 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	3421.09	1234.29	415.52	105.38
S	1684.21	820.05	337.79	107.69
A ₃	1.26	1.52	2.11	2.87

175 AIRPLANES
53541 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	1103.58	452.57	136.58	34.43
S	342.19	158.01	64.77	37.01
A ₃	1.71	2.76	2.63	4.23

MARINE

179 AIRPLANES
105224 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	4795.80	1847.67	605.72	173.16
S	1528.56	647.29	289.91	115.35
A ₃	1.09	1.11	1.10	1.63

47 AIRPLANES
9185 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	2863.36	1357.33	433.47	78.72
S	621.22	267.37	171.78	45.78
A ₃	2.61	2.13	1.86	1.55

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4N

10 AIRPLANES 560 HOURS

NAVY

10 AIRPLANES
560 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	362.30	521.75	220.00	154.00
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL RF-8G

18 AIRPLANES 3318 HOURS

NAVY

18 AIRPLANES
3195 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	208.34	31.97	3.91	0.71
S	69.48	14.92	4.22	0.70
A ₃	0.54	1.15	1.67	1.93

2 AIRPLANES
133 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	539.33	175.29	89.89	26.97
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4N

10 AIRPLANES 573 HOURS

NAVY

10 AIRPLANES
573 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	4251.55	2413.34	1156.94	233.86
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL RF-8G

34 AIRPLANES 25548 HOURS

NAVY

34 AIRPLANES
24356 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	459.80	138.80	32.63	4.79
S	221.21	74.56	27.74	8.09
A ₃	-0.10	0.34	1.57	4.57

11 AIRPLANES
1192 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	1481.32	391.60	63.37	8.37
S	387.16	90.25	26.29	5.98
A ₃	1.13	1.89	1.75	1.30

MARINE

AIRPLANES
HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8H

45 AIRPLANES 10243 HOURS

NAVY

45 AIRPLANES
10243 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1523.23	471.07	77.74	10.90
S	349.52	138.11	32.52	7.19
A ₃	-0.29	0.56	1.55	2.94

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8H

86 AIRPLANES 66563 HOURS

NAVY

86 AIRPLANES
53342 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	1526.23	483.68	94.51	12.67
S	506.18	176.70	40.60	8.48
A ₃	0.51	0.72	0.25	1.60

45 AIRPLANES
13220 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	711.67	197.56	41.43	6.17
S	254.48	82.47	19.81	4.49
A ₃	2.35	2.77	2.28	1.32

MARINE

AIRPLANES
HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8J

87 AIRPLANES 17699 HOURS

NAVY

82 AIRPLANES
11962 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	2610.66	911.75	142.95	19.91
S	495.23	205.39	42.22	10.13
A ₃	0.55	1.40	1.66	1.94

34 AIRPLANES
5837 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1056.71	334.49	79.04	9.03
S	197.06	85.59	24.08	9.19
A ₃	0.68	0.04	0.60	2.93

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8J

134 AIRPLANES 100553 HOURS

NAVY

134 AIRPLANES
73310 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	2124.87	654.19	123.67	15.21
S	619.64	224.00	49.12	9.73
A ₃	0.54	0.54	0.53	1.15

93 AIRPLANES
27243 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	771.14	257.37	54.85	8.28
S	317.05	138.00	35.53	9.12
A ₃	2.49	2.93	2.88	3.73

MARINE

AIRPLANES
HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8K

46

AIRPLANES

8221

HOURS

NAVY

46 AIRPLANES
8221 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	2622.75	828.11	157.06	16.75
S	740.69	235.58	51.31	9.95
A ₃	0.74	0.72	1.58	2.14

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8K

73 AIRPLANES 33489 HOURS

NAVY

73 AIRPLANES
33457 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1549.79	477.18	101.32	12.17
S	728.18	245.49	56.79	8.48
A ₃	1.76	2.46	3.63	1.70

2 AIRPLANES
32 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	4829.26	1394.82	324.53	24.96
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8L

1 AIRPLANES 3 HOURS

NAVY

		TRAINING	4.00	5.00	6.00	7.00
1	AIRPLANES	$\bar{X}$	0.00	0.00	0.00	0.00
	3	S	**			
	HOURS	A ₃				

		COMBAT	4.00	5.00	6.00	7.00
AIRPLANES		$\bar{X}$	*			
		S				
	HOURS	A ₃				

MARINE

		TRAINING	4.00	5.00	6.00	7.00
AIRPLANES		$\bar{X}$	*			
		S				
	HOURS	A ₃				

		COMBAT	4.00	5.00	6.00	7.00
AIRPLANES		$\bar{X}$	*			
		S				
	HOURS	A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8L

36 AIRPLANES 9856 HOURS

NAVY

36 AIRPLANES
9856 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1711.41	498.06	122.95	19.19
S	427.64	204.07	66.52	13.14
A_3	0.81	0.84	1.31	1.17

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A_3				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A_3				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A_3				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A_3 SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL DF-8L

5 AIRPLANES 456 HOURS

NAVY

5 AIRPLANES
456 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	740.44	136.16	19.30	6.20
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL DF-8L

5 AIRPLANES 591 HOURS

NAVY

5 591	AIRPLANES HOURS	TRAINING	4.0G	5.0G	6.0G	7.0G
		$\bar{X}$	1028.22	290.68	43.04	3.63
		S	**			
		A ₃				

AIRPLANES HOURS	COMBAT	4.0G	5.0G	6.0G	7.0G
	$\bar{X}$	*			
	S				
	A ₃				

MARINE

AIRPLANES HOURS	TRAINING	4.0G	5.0G	6.0G	7.0G
	$\bar{X}$	*			
	S				
	A ₃				

AIRPLANES HOURS	COMBAT	4.0G	5.0G	6.0G	7.0G
	$\bar{X}$	*			
	S				
	A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL P-3A

83 AIRPLANES 48766 HOURS

NAVY

83 AIRPLANES
45411 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	4.70	0.21	0.05	0.00
S	7.20	0.59	0.25	0.00
A ₃	3.59	3.30	4.94	0.00

7 AIRPLANES
3355 HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	10.16	0.00	0.00	0.00
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL P-3A

151 AIRPLANES 755101 HOURS

NAVY

150 AIRPLANES
664158 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	19.02	1.79	0.22	0.03
S	39.87	4.83	1.59	0.28
A ₃	3.51	6.19	9.41	7.10

101 AIRPLANES
90943 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	12.40	1.10	0.09	0.01
S	14.95	2.36	0.41	0.11
A ₃	2.84	2.44	4.00	9.84

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL P-3B

114 AIRPLANES 83065 HOURS

NAVY

114 AIRPLANES
69718 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	3.43	0.27	0.12	0.09
S	5.06	0.79	0.57	0.52
A ₃	3.81	4.00	7.03	8.45

47 AIRPLANES
13346 HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	4.72	0.43	0.00	0.00
S	4.34	0.73	0.00	0.00
A ₃	2.12	3.78	0.00	0.00

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL P-3B

124 AIRPLANES 544476 HOURS

NAVY

124 AIRPLANES
459732 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	11.62	1.02	0.12	0.04
S	25.99	2.38	0.45	0.27
A ₃	2.29	2.12	1.92	4.81

78 AIRPLANES
85744 HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	4.99	0.44	0.03	0.01
S	5.50	0.82	0.15	0.11
A ₃	0.63	2.75	5.62	8.37

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL P-3C

55 AIRPLANES 29712 HOURS

NAVY

TRAINING		2.00	2.50	3.00	3.50
55 AIRPLANES	$\bar{X}$	4.75	0.66	0.09	0.01
29377 HOURS	S	5.52	1.75	0.49	0.19
	A ₃	1.60	4.31	4.13	7.20

COMBAT		2.00	2.50	3.00	3.50
2 AIRPLANES	$\bar{X}$	0.00	0.00	0.00	0.00
335 HOURS	S	**			
	A ₃				

MARINE

TRAINING		2.00	2.50	3.00	3.50
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

COMBAT		2.00	2.50	3.00	3.50
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL P-30

55 AIRPLANES 57299 HOURS

NAVY

55 AIRPLANES
56964 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	13.09	0.60	0.07	0.04
S	57.12	2.34	0.43	0.23
A ₃	6.53	4.32	3.53	3.92

2 AIRPLANES
335 HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	0.00	0.00	0.00	0.00
S	*			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL ES-20

6 AIRPLANES 1607 HOURS

NAVY

6 AIRPLANES
1607 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	24.18	1.85	0.73	0.00
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL ES-20

6 AIRPLANES 4265 HOURS

NAVY

6 AIRPLANES
4265 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	12.04	1.33	0.47	0.00
S	***			
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	***			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	***			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	***			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL S-2E

112 AIRPLANES 39584 HOURS

NAVY

112 AIRPLANES
39435 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	67.25	11.87	3.13	1.52
S	173.58	20.92	7.70	5.77
A ₃	8.88	4.69	4.02	5.10

4 AIRPLANES
148 HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	0.00	0.00	0.00	0.00
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL S-2E

229 AIRPLANES 553160 HOURS

NAVY

229 AIRPLANES
524279 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	71.47	12.24	3.03	1.09
S	255.65	25.41	7.21	3.56
A ₃	5.64	3.29	2.43	2.65

65 AIRPLANES
28891 HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	40.67	7.47	1.14	0.42
S	67.96	7.95	1.70	1.33
A ₃	5.07	2.05	2.66	5.80

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL S-2G

44 AIRPLANES 15240 HOURS

NAVY

		TRAINING	2.0G	2.5G	3.0G	3.5G
44 AIRPLANES 15240 HOURS	$\bar{X}$		41.93	10.14	2.79	1.66
	S		41.49	19.39	8.28	5.25
	A ₃		1.88	4.27	4.53	3.97

		COMBAT	2.0G	2.5G	3.0G	3.5G
AIRPLANES HOURS	$\bar{X}$		*			
	S					
	A ₃					

MARINE

		TRAINING	2.0G	2.5G	3.0G	3.5G
AIRPLANES HOURS	$\bar{X}$		*			
	S					
	A ₃					

		COMBAT	2.0G	2.5G	3.0G	3.5G
AIRPLANES HOURS	$\bar{X}$		*			
	S					
	A ₃					

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL S-2G

44 AIRPLANES 19973 HOURS

NAVY

44 AIRPLANES
19973 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	35.69	7.54	1.98	1.19
S	41.02	17.22	7.27	4.59
A ₃	1.90	4.18	4.54	3.88

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL S-3A

9 AIRPLANES 1127 HOURS

NAVY

9 AIRPLANES
1127 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	685.99	239.03	93.77	29.14
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL S-3A

9 AIRPLANES 1179 HOURS

NAVY

9 AIRPLANES
1179 HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	615.67	213.63	75.18	25.25
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.0G	2.5G	3.0G	3.5G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-2B

72 AIRPLANES 26846 HOURS

NAVY

72 AIRPLANES
26846 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	223.99	36.99	5.92	1.82
S	190.26	41.28	9.14	3.77
A ₃	3.65	4.13	5.47	5.25

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-2B

90 AIRPLANES 124660 HOURS

NAVY

90 AIRPLANES
124660 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	249.55	28.33	3.35	0.73
S	259.76	43.60	6.12	2.13
A ₃	3.11	3.62	4.12	5.81

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-2C

20 AIRPLANES 5068 HOURS

NAVY

20 AIRPLANES
5068 HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	56.46	7.59	1.94	1.01
S	39.58	5.70	2.71	1.20
A ₃	2.21	1.55	2.32	2.64

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.00	6.00	7.00	8.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-2C

20 AIRPLANES 5068 HOURS

NAVY

20 AIRPLANES
5068 HOURS

TRAINING	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	56.46	7.58	1.94	1.01
S	38.58	5.70	2.71	1.20
A ₃	2.21	1.56	2.32	2.64

AIRPLANES
HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	5.0G	6.0G	7.0G	8.0G
$\bar{X}$	*			
S				
A ₃				

$\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

NADC 13920-2

DATA FROM
07-72 TO 06-73

MODEL T-28B

45 AIRPLANES 17354 HOURS

NAVY

45 AIRPLANES
17354 HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	99.78	32.09	25.98	20.65
S	99.16	40.78	39.95	32.41
A ₃	0.20	2.90	3.96	4.09

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-28B

98 AIRPLANES 404909 HOURS

NAVY

98 AIRPLANES
404909 HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	323.83	43.87	5.19	0.82
S	633.30	112.62	22.58	7.80
A ₃	1.12	2.34	4.02	8.38

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

NADC 13920-2

DATA FROM
07-72 TO 06-73

MODEL T-28C

30 AIRPLANES 9459 HOURS

NAVY

30 AIRPLANES
9459 HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	449.09	53.56	2.73	0.92
S	310.91	43.51	3.85	1.95
A ₃	0.95	1.49	2.69	4.42

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-28C

43 AIRPLANES 154560 HOURS

NAVY

43 AIRPLANES
154560 HOURS

TRAINING	3.0G	4.0G	5.0G	6.0G
$\bar{X}$	1041.32	136.78	7.91	0.56
S	1279.33	191.80	12.21	1.19
A ₃	0.07	0.47	0.84	1.26

AIRPLANES
HOURS

COMBAT	3.0G	4.0G	5.0G	6.0G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	3.0G	4.0G	5.0G	6.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.0G	4.0G	5.0G	6.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-34B

25 AIRPLANES 15507 HOURS

NAVY

25 AIRPLANES
15507 HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	516.14	59.25	4.51	0.00
S	490.27	60.96	5.19	0.00
A ₃	0.49	0.77	1.06	0.00

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-34B

75 AIRPLANES 151359 HOURS

NAVY

75 AIRPLANES
151359 HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	1982.12	284.35	26.89	1.52
S	1327.31	233.13	24.05	5.03
A ₃	-9.35	0.11	0.80	7.11

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

NADC 13920-2

APPENDIX A

OUT-OF-SERVICE MODELS AND MODELS WHICH HAVE NOT REPORTED COUNTING
ACCELEROMETER DATA DURING THE PREVIOUS 12 MONTHS

MODEL F-11A

12 AIRPLANES 3744 HOURS

NAVY

BLUE ANGELS

		TRAINING	4.00	5.00	6.00	7.00
12	AIRPLANES	$\bar{X}$	5414.80	1826.99	520.71	198.94
3744	HOURS	S	2263.49	740.91	208.44	85.14
		A ₃	-0.39	-0.65	-0.79	-0.37

		COMBAT	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*				
HOURS	S					
	A ₃					

MARINE

		TRAINING	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*				
HOURS	S					
	A ₃					

		COMBAT	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*				
HOURS	S					
	A ₃					

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-11A

11 AIRPLANES 4400 HOURS

NAVY

BLUE ANGELS

11 AIRPLANES
4400 HOURS

TRAINING	6.00	7.00	8.50	10.00
$\bar{X}$	749.74	192.71	12.43	3.88
S	217.97	62.76	7.33	7.05
A ₃	0.19	0.26	0.95	2.32

AIRPLANES
HOURS

COMBAT	6.00	7.00	8.50	10.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	6.00	7.00	8.50	10.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	6.00	7.00	8.50	10.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL AF-1E

21 AIRPLANES 4527 HOURS

NAVY

21 AIRPLANES
4527 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	593.04	125.53	22.27	3.60
S	200.25	52.92	16.14	4.72
A ₃	0.29	0.61	1.63	2.00

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-1H

28 AIRPLANES 7290 HOURS

NAVY

22 AIRPLANES
374 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	263.05	94.29	6.31	0.00
S	42.25	16.64	2.73	0.00
A ₃	1.13	0.69	2.05	0.00

28 AIRPLANES
6916 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	322.42	89.29	14.34	0.00
S	77.52	27.19	6.46	0.00
A ₃	1.14	1.22	1.07	0.00

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-1J

4

AIRPLANES

917

HOURS

NAVY

1 AIRPLANES
32 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	0.00	0.00	0.00	0.00
S	**			
A ₃				

4 AIRPLANES
885 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	306.82	125.89	17.28	0.00
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-3B

80 AIRPLANES 69204 HOURS

NAVY

80 AIRPLANES
60301 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	649.10	175.85	55.56	12.41
S	417.74	111.84	45.83	24.05
A ₃	1.40	1.18	1.99	6.35

24 AIRPLANES
8903 HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	623.15	187.91	76.93	37.49
S	244.96	120.08	77.16	46.34
A ₃	0.61	1.43	2.55	2.86

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-4B

58 AIRPLANES 23177 HOURS

NAVY

55 AIRPLANES
20376 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	681.15	238.03	49.07	7.87
S	358.28	164.65	46.69	9.80
A ₃	0.67	1.04	2.09	2.14

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

8 AIRPLANES
2800 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	268.45	64.34	10.94	0.99
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL TA-4B

21 AIRPLANES 8198 HOURS

NAVY

21 AIRPLANES
8198 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	394.01	143.16	41.39	7.28
S	416.24	182.80	54.39	12.96
A ₃	1.32	1.56	1.97	2.59

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-5A

30 AIRPLANES 11790 HOURS

NAVY

		TRAINING	3.00	4.00	5.00	6.00
30 AIRPLANES 11790 HOURS	$\bar{X}$		579.58	128.26	9.04	0.89
	S		487.22	42.19	4.68	1.00
	A ₃		4.57	0.57	0.75	1.63

		COMBAT	3.00	4.00	5.00	6.00
AIRPLANES HOURS	$\bar{X}$		*			
	S					
	A ₃					

MARINE

		TRAINING	3.00	4.00	5.00	6.00
AIRPLANES HOURS	$\bar{X}$		*			
	S					
	A ₃					

		COMBAT	3.00	4.00	5.00	6.00
AIRPLANES HOURS	$\bar{X}$		*			
	S					
	A ₃					

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL A-5B

5 AIRPLANES 985 HOURS

NAVY

5 AIRPLANES
985 HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	125.50	13.83	1.01	0.00
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	3.00	4.00	5.00	6.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL KC-130F

12 AIRPLANES 17648 HOURS

NAVY

	TRAINING	2.0G	2.5G	3.0G	3.5G
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

	COMBAT	2.0G	2.5G	3.0G	3.5G
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

MARINE

	TRAINING	2.0G	2.5G	3.0G	3.5G
12 AIRPLANES	$\bar{X}$	6.76	0.42	0.09	0.00
17648 HOURS	S	5.79	0.51	0.22	0.00
	A ₃	-0.38	0.30	1.92	0.00

	COMBAT	2.0G	2.5G	3.0G	3.5G
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4A

27 AIRPLANES 17193 HOURS

NAVY

	TRAINING	4.00	5.00	6.00	7.00
27 AIRPLANES	$\bar{X}$	794.95	261.01	66.29	11.89
17193 HOURS	S	275.55	127.26	42.65	8.70
	A ₃	0.09	0.33	0.71	1.19

	COMBAT	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

MARINE

	TRAINING	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

	COMBAT	4.00	5.00	6.00	7.00
AIRPLANES	$\bar{X}$	*			
HOURS	S				
	A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL TF-4A

4 AIRPLANES 433 HOURS

NAVY

4 AIRPLANES
433 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	135.48	23.72	3.32	0.00
S	**			
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-4C

AIRPLANES 1668 HOURS

NAVY

12 AIRPLANES
7848 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1026.48	290.88	80.22	17.65
S	146.46	78.80	33.48	11.25
A ₃	-0.36	-0.07	0.03	0.30

10 AIRPLANES
2448 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1579.58	589.78	138.67	27.35
S	243.27	132.59	53.36	13.34
A ₃	0.80	1.14	1.24	0.97

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-6A

46 AIRPLANES 17986 HOURS

NAVY

29 AIRPLANES
12399 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	190.91	25.88	1.93	0.20
S	143.14	29.94	2.18	0.75
A ₃	2.41	2.60	1.96	2.92

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

26 AIRPLANES
5587 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	147.15	17.74	0.53	0.00
S	32.97	7.42	0.68	0.00
A ₃	1.24	0.80	2.11	0.00

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8A

48 AIRPLANES 33043 HOURS

NAVY

48 AIRPLANES
33043 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	678.64	171.70	32.28	5.44
S	330.20	100.28	22.83	4.33
A ₃	0.32	0.50	0.75	1.38

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL RF-8A

28 AIRPLANES 20290 HOURS

NAVY

23 AIRPLANES
15203 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	317.32	80.22	13.37	2.55
S	120.58	36.11	7.56	1.88
A ₃	0.56	0.52	0.61	1.90

4 AIRPLANES
355 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	221.00	34.00	5.73	5.73
S	**			
A ₃				

MARINE

10 AIRPLANES
4726 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	151.04	28.24	4.41	0.56
S	**			
A ₃				

1 AIRPLANES
6 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	0.00	0.00	0.00	0.00
S	**			
A ₃				

 $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS

S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS

A₃ SKEWNESS OF LOAD RATE DISTRIBUTION

* NO DATA IN THIS CATEGORY

** INSUFFICIENT DATA IN THIS CATEGORY

MODEL TF-8A

30 AIRPLANES 4924 HOURS

NAVY

30 AIRPLANES
4924 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	1274.72	393.67	82.63	14.88
S	354.70	139.02	33.41	6.09
A ₃	0.88	2.10	2.48	0.98

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8B

53 AIRPLANES 40015 HOURS

NAVY

46 AIRPLANES
29272 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	813.00	203.88	34.52	3.65
S	316.12	100.90	23.43	3.94
A ₃	0.99	1.13	1.73	2.98

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

MARINE

36 AIRPLANES
10743 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	778.09	148.63	19.24	2.49
S	188.70	53.00	9.18	2.34
A ₃	1.26	1.68	1.46	2.06

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8C

87 AIRPLANES 76054 HOURS

NAVY

78 AIRPLANES
53012 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	875.42	217.67	38.78	4.09
S	534.39	184.74	37.06	6.76
A ₃	1.20	1.14	1.60	2.57

11 AIRPLANES
1689 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	848.92	194.84	49.77	6.46
S	575.01	119.04	27.36	6.78
A ₃	0.22	0.30	0.17	1.45

MARINE

37 AIRPLANES
20851 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	1217.83	346.89	67.32	10.17
S	370.14	107.60	22.36	4.73
A ₃	1.83	1.60	1.66	6.05

11 AIRPLANES
502 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	748.69	333.97	61.52	9.71
S	150.27	64.69	13.85	2.68
A ₃	0.24	0.03	0.32	0.47

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8D

101 AIRPLANES 70988 HOURS

NAVY

93 AIRPLANES
49588 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	1176.54	326.40	68.29	11.47
S	490.92	154.19	37.61	7.70
A ₃	0.55	0.48	0.72	1.25

15 AIRPLANES
1060 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	1380.67	394.15	107.24	22.87
S	468.87	79.59	21.81	6.83
A ₃	2.59	0.29	0.19	0.71

MARINE

46 AIRPLANES
19583 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	826.64	216.72	45.39	8.03
S	398.11	118.51	30.75	5.85
A ₃	0.83	0.90	1.13	1.50

11 AIRPLANES
758 HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	546.18	88.42	8.42	4.32
S	71.24	22.70	6.19	6.09
A ₃	0.78	0.56	1.85	2.38

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-8E

248 AIRPLANES 198601 HOURS

NAVY

243 AIRPLANES
125946 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1994.36	510.43	131.38	19.56
S	717.23	205.58	53.09	11.45
A ₃	1.87	1.50	1.62	2.23

103 AIRPLANES
27936 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1074.97	372.62	92.68	17.22
S	193.19	101.22	41.20	15.20
A ₃	0.06	0.97	3.20	5.50

MARINE

88 AIRPLANES
26217 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	1551.79	453.60	92.16	15.17
S	451.22	138.34	35.57	9.01
A ₃	0.49	0.04	0.50	1.61

52 AIRPLANES
18501 HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	1334.99	460.44	118.91	19.35
S	373.38	123.04	28.68	8.02
A ₃	3.39	0.45	0.60	1.56

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL DF-8F

13 AIRPLANES 9599 HOURS

NAVY

13 AIRPLANES
9599 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	405.48	91.31	11.23	0.82
S	271.17	85.23	15.41	1.65
A ₃	0.49	0.76	1.93	1.35

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL FF-JOB

16 AIRPLANES 9853 HOURS

NAVY

AIRPLANES HOURS	TRAINING	3.00	4.00	5.00	6.00
	$\bar{X}$	*			
	S				
	A ₃				

AIRPLANES HOURS	COMBAT	3.00	4.00	5.00	6.00
	$\bar{X}$	*			
	S				
	A ₃				

MARINE

14 AIRPLANES 7526 HOURS	TRAINING	3.00	4.00	5.00	6.00
	$\bar{X}$	16.24	0.00	0.00	0.00
	S	10.06	0.00	0.00	0.00
	A ₃	-0.59	0.00	0.00	0.00

10 AIRPLANES 2327 HOURS	COMBAT	3.00	4.00	5.00	6.00
	$\bar{X}$	45.06	2.22	0.00	0.00
	S	**			
	A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL F-11A

36 AIRPLANES 22538 HOURS

NAVY

36 AIRPLANES
22538 HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	2796.39	593.37	80.02	10.38
S	316.87	259.16	60.36	10.36
A ₃	1.30	1.37	3.46	3.50

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.00	5.00	6.00	7.00
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL S-2D

67 AIRPLANES 59015 HOURS

NAVY

67 AIRPLANES
59445 HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	33.25	7.71	1.77	0.74
S	34.30	9.23	5.36	4.95
A ₃	1.72	1.98	6.51	7.25

8 AIRPLANES
570 HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	25.35	2.10	0.00	0.00
S	**			
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	2.00	2.50	3.00	3.50
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

MODEL T-2A

147 AIRPLANES 584869 HOURS

NAVY

147 AIRPLANES
584869 HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	591.14	44.72	4.84	0.89
S	446.55	58.91	6.48	2.09
A ₃	0.74	1.99	1.83	2.81

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

MARINE

AIRPLANES
HOURS

TRAINING	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

AIRPLANES
HOURS

COMBAT	4.0G	5.0G	6.0G	7.0G
$\bar{X}$	*			
S				
A ₃				

- $\bar{X}$ MEAN CUMULATIVE COUNTS PER 1000 HOURS
 S STANDARD DEVIATION OF CUMULATIVE COUNTS PER 1000 HOURS
 A₃ SKEWNESS OF LOAD RATE DISTRIBUTION
 * NO DATA IN THIS CATEGORY
 ** INSUFFICIENT DATA IN THIS CATEGORY

NADC 13920-2

APPENDIX B
THE DETERMINATION OF SAMPLE STATISTICS
FOR COUNTING ACCELEROMETER DATA

APPENDIX B

AIR VEHICLE TECHNOLOGY DEPARTMENT NAVAL AIR DEVELOPMENT CENTER WARMINSTER, PA. 18974

Subj: The Determination of Sample Statistics for Counting Accelerometer Data

Ref: (a) Brownlee, K. A., "Statistical Theory and Methodology in Science and Engineering," Wiley 1965, pp. 358-359
(b) Dixon & Massey, Introduction to Statistical Analysis, McGraw-Hill, Second Edition, 1957, pp. 194-195

1. The purpose of this technical memorandum is to define and justify the methods used at NAVAIRDEVCON in calculating statistics describing counting accelerometer data. The subsequent outlined sequence is repeated for each aircraft model, for each mission category, and for each g-level where there is sufficient data.

2. These are the methods used for determining sample statistics. Consider a scatter diagram of cumulative counts (at any g-level) vs. flight hours,

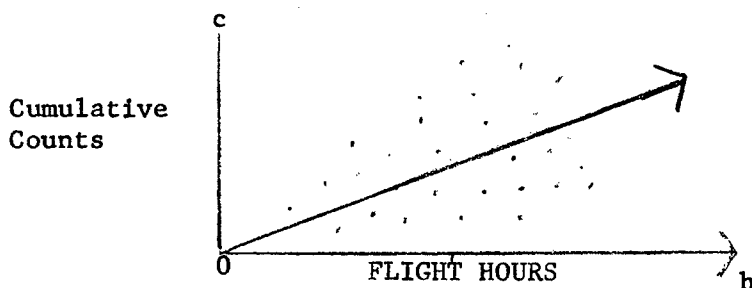


Figure 1

where each dot represents the cumulative counts and flight hours accrued by an individual serial number which is flying or has flown.

Let h_i be the total quality control accepted flight hours for the i^{th} plane ($i=1, 2, \dots, N$)

Let c_i be the cumulative counts during the h_i hours for the i^{th} plane ($i=1, 2, \dots, N$)

N is the total number of aircraft of this model and mission category for which there is recorded information.

Then

$$(1) \ b = \frac{\sum_{i=1}^N c_i h_i}{\sum_{i=1}^N h_i^2} \quad \text{where } b \text{ is slope of line (Figure 1) through origin fitted by least squares}$$

$$(2) \ \bar{x} = 1000b \quad \text{estimated mean load exceedances at 1000 hours}$$

$$(3) \bar{h} = \frac{\sum_{i=1}^N h_i}{N} \quad \text{average flight hours}$$

$$(4) \hat{\sigma}_{ch}^2 = \frac{\sum_{i=1}^N (c_i - b h_i)^2}{N-1} \quad \text{estimator of the population standard error squared of the regression}$$

$$\hat{\sigma}_{ch} = \sqrt{\hat{\sigma}_{ch}^2} \quad \text{estimator of the population standard error of the regression}$$

$$(5) S = \sqrt{1000 \hat{\sigma}_{ch}^2 / h} \quad \text{estimated standard deviation (counts at 1000 hours) of the load exceedances for each g-level}$$

$$(6) A_3 = \frac{\sum_{i=1}^N (c_i - b h_i)^3}{N \hat{\sigma}_{ch}^3} \quad \text{estimated skewness}$$

3. The following is the explanation and justification for these methods:

Aircraft which do not have any flight hours must have zero counts; therefore, the line in figure 2 must go through (0,0). Brownlee (reference (a)) describes the methods for fitting a least squares line through the origin (0,0). The slope of this line is the estimated mean exceedance rate (per hour). Multiplying this rate by 1000 will result in exceedances at 1000 hours (equation (2)). Multiplying b by any other h number of hours will result in mean exceedances at h hours.

If the data in figure 1 were separated into flight hour intervals (see figure 2) and the standard error in each interval were plotted against average flight hours (see figure 3) in that interval, the resultant curve is assumed to have the square root functional form.* Due to limitations in sample size, these individual $\hat{\sigma}$'s could not be determined accurately; thus, it was necessary to calculate a single $\hat{\sigma}_{ch}$ for all h combined and apply it at $\bar{h}$.** Equation (5) uses figure 3 to convert $\hat{\sigma}_{ch}$ at $\bar{h}$ to S at 1000 hours.

* This is partially justified by the fact that the variance of a sum of independent random variables is equal to the sum of the independent variances. Unreported statistical tests performed at NAVAIRDEVCON show that figure 3 is a reasonable fit to actual data. It should be noted that the $\hat{\sigma}$'s in figure 2 are estimated by equation (4), but each $\hat{\sigma}$ was calculated using the data points in the respective interval.

**The estimated standard error $\hat{\sigma}_{ch}$ is used as the standard error of estimate for a hypothetical distribution of planes all having $\bar{h}$ hours. This follows from work in reference (b).

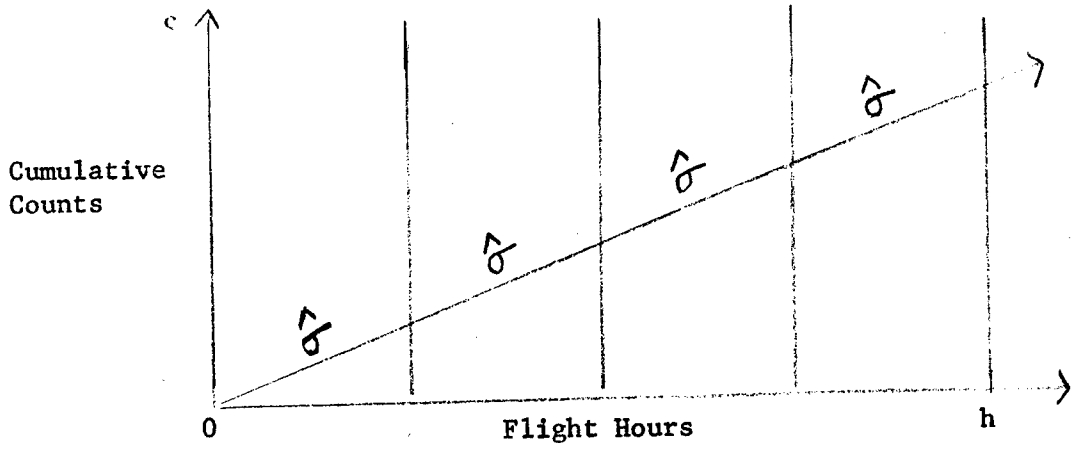


FIGURE 2

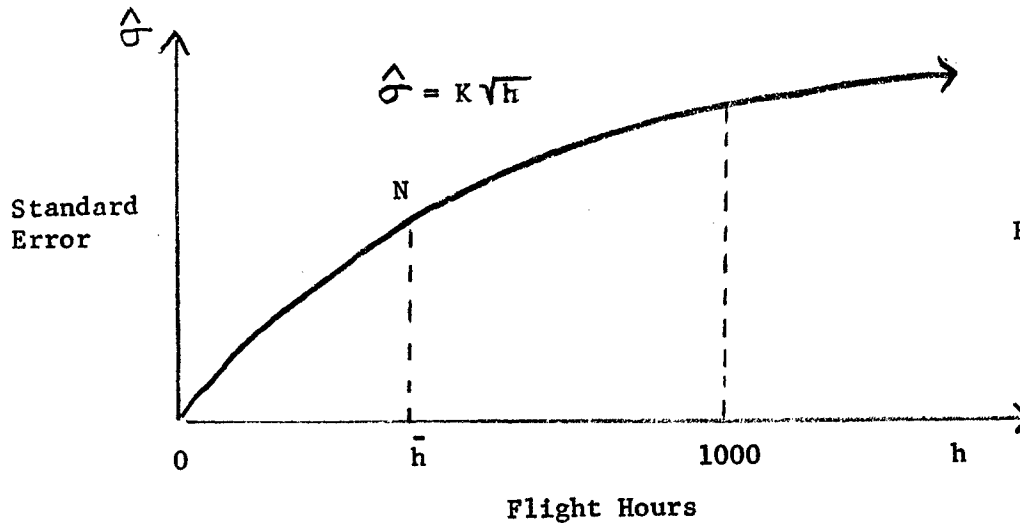


FIGURE 3

If one wanted the standard error at some other value of hours h , he would simply replace 1000 in equation (5) by that value of hours h , and the appropriate standard error would result.

Skewness A_3 is computed in equation (6). This measure indicates whether more airplane load exceedances are above the mean line or below the mean line. If:

- $A_3 < 0$ More load exceedances are above mean line than below
 $A_3 = 0$ Equal number of load exceedances above and below mean
 $A_3 > 0$ More load exceedances are below mean line than above

(Strictly speaking a distribution is symmetrical only if all its odd moments are zero; however, the above statement is approximately true.)

4. For ease of computation, equation (4) can be expanded as follows:

$$(N-1) \hat{\sigma}_{ch}^2 = \sum_{i=1}^N (c_i - bh_i)^2$$

$$(N-1) \hat{\sigma}_{ch}^2 = \sum_{i=1}^N (c_i^2 - 2bc_i h_i + b^2 h_i^2)$$

$$(7) (N-1) \hat{\sigma}_{ch}^2 = \sum_{i=1}^N c_i^2 - 2b \sum_{i=1}^N c_i h_i + b^2 \sum_{i=1}^N h_i^2$$

but

$$b = \frac{\sum_{i=1}^N c_i h_i}{\sum_{i=1}^N h_i^2}$$

and (7) can be reduced to

$$(N-1) \hat{\sigma}_{ch}^2 = \sum_{i=1}^N c_i^2 - 2b \sum_{i=1}^N c_i h_i + b \frac{\sum_{i=1}^N c_i h_i \sum_{i=1}^N h_i^2}{\sum_{i=1}^N h_i^2}$$

then

$$(8) \hat{\sigma}_{ch}^2 = \left(\sum_{i=1}^N c_i^2 - b \sum_{i=1}^N c_i h_i \right) / (N-1)$$

Equation (8) will be used in lieu of equation (4) in determining $\hat{\sigma}_{ch}^2$.

5. An example using F-4G training Navy data, 12 airplanes 4.0G level:

<u>Serial No.</u>	<u>Counts (c_i)</u>	<u>Hours (h_i)</u>
150481	1567	1341.7
150484	649	618.2
150487	1114	1100.8
150489	5	27.3
150492	768	691.7
150625	23	139.6
150629	396	555.1
150633	718	831.3
150636	854	839.1
150639	536	695.4
150642	910	775.3
150645	160	233.0

The following are tabulated:

$$\sum_{i=1}^N h_i = 7848.5$$

$$\sum_{i=1}^N c_i = 7700$$

$$\sum_{i=1}^N c_i h_i = 6913341.6$$

$$\sum_{i=1}^N h_i^2 = 6735017.87$$

$$\sum_{i=1}^N c_i^2 = 7250716.00$$

$$\sum_{i=1}^N (c_i - b h_i)^3 = -7082690$$

and are used in the following equations:

$$(1) \ b = \frac{6913341.6}{6735017.87} = 1.02647 \text{ cts. per hr.}$$

$$(2) \ \bar{x} = 1000 (1.02647) = 1026.47 \text{ cts. at 1000 hrs.}$$

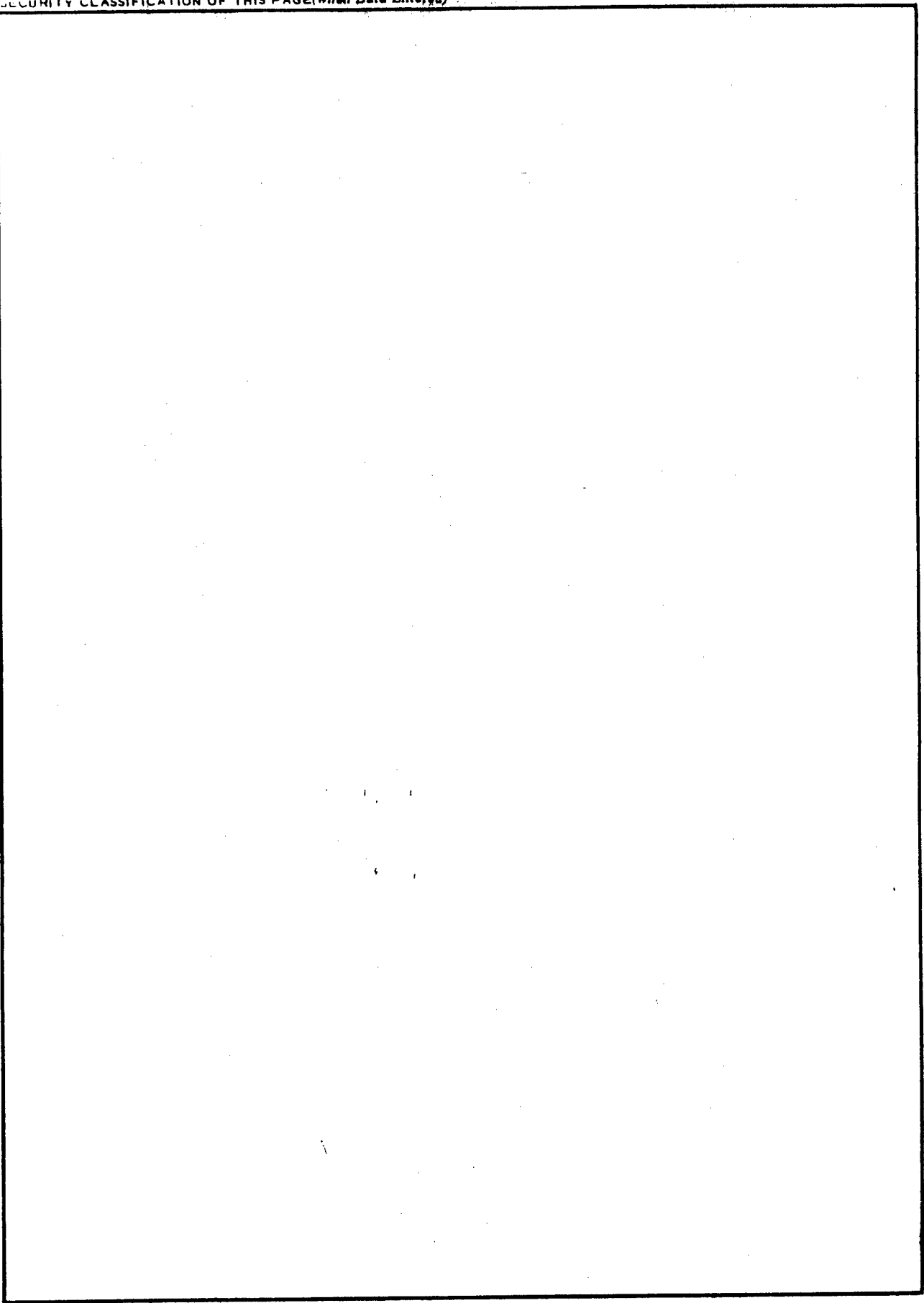
$$(3) \ \bar{h} = \frac{7848.5}{12} = 654.04 \text{ hours}$$

$$(8) \ \hat{\sigma}_{ch}^2 = \frac{7250716 - 1.02647 (6913341.6)}{11} = 14034 \quad \hat{\sigma}_{ch}=118.5$$

$$(5) \ s = \sqrt{1000 (14034)/654} = 146.46 \text{ cts. at 1000 hours.}$$

$$(6) \ A_3 = \frac{-7082690}{12 (118.5)^3} = -.36$$

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER RCS NADC 13920-2	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) "Statistical Review of Counting Accelerometer Data for Navy and Marine Fleet Aircraft from 1 Jan 1962 to 1 July 1973"		5. TYPE OF REPORT & PERIOD COVERED Semi-Annual Summary Report/ From 1 Jan 1962 to 1 Jul 1973
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Thomas A. DeFiore		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Air Vehicle Technology Department Naval Air Development Center Warminster, Pa. 18974		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS AIRTASK A53530/202/78012- 74-84/ Work Unit No. 01
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Air Systems Command Department of the Navy, Washington, D.C. 20361		12. REPORT DATE 1 November 1973
		13. NUMBER OF PAGES 134
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Counting Accelerometer Statistics; Calendar Time Separations; Training Navy; Combat Navy; Training Marine; Combat Marine		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report is a specialized summary of normal acceleration data recorded by counting accelerometers. Data are separated by calendar time and mission category. Only data reported in the counting accelerometer program are included.		



UNCLASSIFIED

DISTRIBUTION LIST (Concluded)

REPORT CONTROL SYMBOL NADC 13920-2

	<u>No. of Copies</u>
AFPLANTREPO, St. Louis, MO.	1
ASD, WPAFB, Ohio	
(Attn: ASZA)	1
(Attn: ASNFS)	1
(Attn: ASNFS/10)	1
(Attn: ASNFS/20)	1
AFFDL, WPAFB, Ohio (Code FDTR)	1
National Aviation Facilities Experimental Center, FAA, Atlantic City, N. J. (Code RD-851)	1
DDC	12
Boeing Co., Renton, Washington (Attn: R. Walter)	1
Grumman Aircraft Corp., Bethpage, N.Y.	
(Attn: Technical Library)	1
(Attn: A. Goode)	1
(Attn: W. King)	1
Lockheed-California Co., Burbank, California	
(Attn: Technical Library)	1
(Attn: J. Hall)	1
Ling-Temco-Vought Corp., Dallas, Texas	
(Attn: Technical Library)	1
(Attn: L. Well)	1
McDonnell Douglas Corp., Long Beach, California	
(Attn: Technical Library)	1
(Attn: F. Kam)	2
North American Rockwell Corp., Columbus, Ohio	
(Attn: Technical Library)	1
(Attn: J. J. Gruff)	1
Battelle Memorial Institute, Columbus, Ohio	
(Attn: Dr. Grover)	1
Brooks AFB, School of Aviation Medicine	
(Attn: S. L. rett)	1
Cornell Aeronautical Lab, Inc., Buffalo, N.Y.	1
Technology, Inc., Dayton, Ohio	
(Attn: C. nam)	1
(Attn: K. ey)	1
NAVAIRDEVCE, minster, Pennsylvania 18974	43
(3 for 813)	(1 for 301)
(3 for 3002)	
(1 for 03)	
(1 for 20)	(1 for 304)
(1 for 40)	(1 for 305)
(1 for 50)	(28 for 3032)

DISTRIBUTION LIST

REPORT CONTROL SYMBOL NADC 13920-2

AIRTASK A53530/202/78012-74-84
WORK UNIT NO. 01

No. of
Copies

NAVAIRSYSCOM, (AIR-50174).	23
(2 for retention, 1 for AIR-03, 1 for AIR-05,	
1 for AIR-04, 1 for AIR-04B, 1 for AIR-410,	
1 for AIR-411, 1 for AIR-4117, 1 for AIR-1014,	
1 for AIR-510, 1 for AIR-5102, 1 for AIR-5103,	
1 for AIR-5105, 1 for AIR-4302, 1 for AIR-53022,	
1 for AIR-530212, 1 for AIR-5314, 1 for AIR-5318,	
1 for PMA-232-1, 1 for PMA-234, 1 for PMA-240,	
1 for PMA-235 and 1 for PMA-246)	
COMNAVIAIRLANT (Code 50A1).	1
COMNAVIAIRPAC	1
NAVAIRSYSCOMREPLANT.	1
NAVAIRSYSCOMREPAC	1
Naval Aviation Integrated Logistic Support Center,	
Patuxent River, MD.	1
COMRECONATKWIN ONE	1
NAVAIREWORKFAC, ALAMEDA (Codes 300 and 310).	2
NAVAIREWORKFAC, Cherry Point (Codes 300 and 310)	2
NAVAIREWORKFAC, Jacksonville (Codes 300 and 310 and 05A)	3
NAVAIREWORKFAC, Norfolk (Codes 300 and 310 and 05A).	3
NAVAIREWORKFAC, North Island (Codes 300 and 310 and 05A)	3
NAVAIREWORKFAC, Pensacola (Codes 300 and 310).	2
NAVAIREWORKFAC, Quonset Point (Codes 300 and 310).	2
COMFAIRWHIDBEY	1
COMFAIRNORFOLK	1
COMFAIRJAX	1
COMNAVSAFCEN	1
CNO (OP 512)	2
CNATRA	1
Commander, Naval Air Reserve, NAS, Glenview, Ill.	1
NRL, Washington, D.C.	1
PLANTREPO, Bethpage, N.Y.	
PLANTREPO, Burbank, California	
PLANTREPO, Columbus, Ohio	
PLANTREPO, Dallas, Texas	1
PLANTREPO, Long Beach, California	1

CONTINUED ON INSIDE COVER

7300503A