AFFDL-TR-68-131
VOLUME II, PART I

APPLICATION OF MULTIPARAMETER FLIGHT LOADS DATA TO STRUCTURAL DESIGN CRITERIA

VOLUME II: DISTRIBUTIONS OF PEAKS AND CORRELATED VARIABLES
PART I. GRAPHICAL PRESENTATION

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and

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FOREWORD

This report was prepared by North American Rockwell Corporation, Downey, California, for the Structures Division, Air Force Flight Dynamics Laboratory, Wright-Patterson Air Force Base, Ohio, under Air Force Contract No. AF33(615)-3448, Project No. 1367, "Structural Design Criteria," Task No. 136717, "Empirical Loads Interpretation and Analysis."

The study and analysis, on which this report is based, were accomplished by the Methods and Criteria Unit of the Structures and Design Department in the Space Division of North American Rockwell during the period from January 1966 to July 1968. Mr. I. Bouton was Program Manager for North American Rockwell. Mr. E. Durkee of the AFFDL (FDTR) was the Project Engineer.

The contractor's designation of this report is SD 68-627-2, Part I. This report was submitted by the authors in August 1968.

This technical report has been reviewed and is approved.

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ABSTRACT

Volume II of this report presents a statistical analysis of 22.8 flight hours of multiparameter flight loads data. These data were obtained during routine training operations with F-105D airplanes at three different Air Force bases. The graphical data presented in this Part I of Volume II are the output from the computer program described in Volume IV of this report. The data are produced by cathode ray tube (CRT) equipment. Part II of Volume II presents the same data in tabular form.

This abstract is subject to special export controls and each transmittal to foreign nationals or foreign governments may be made only with prior approval of the Air Force Flight Dynamics Laboratory (FDTR), Wright-Patterson AFB, Ohio 45433.

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ILLUSTRATIONS

The International System of Units (SI) was adopted by the Eleventh General Conference on Weights and Measures, Paris, October, 1960, in Resolution No. 12. Conversion factors for the units used herein are given in the following table:

CONVERSION FACTORS

To Convert from U.S. Customary Units	Multiply By	To Obtain SI Units
Degree	0.017453292519943	radian
Foot	0.3048	meter
$Foot^2$	0.09290304	$meter^2$
$Foot/Sec^2$	0.3048	$meter/second^2$
Free fall, Standard(g)	9.80665	$meter/second^2$
Inch	0.0254	meter
Inch-pound	0.011521246198	meter-kilograms
Knot	0.5144444444	meter/second
Pound force	4.4482216152605	newton
psf	47.880258	$newton/meter^2$
psi	6894.7572	$newton/meter^2$
psi	6.8947572	$meganewton/meter^2$

SECTION I

INTRODUCTION

Multiparameter flight loads data may be analyzed many ways and put into various forms for the purpose of developing structural design criteria. One of these forms that should prove useful is peak distributions of loading parameters correlated with simultaneous values of other variables. This Volume II, Part I, contains graphs of peak distributions for the 22.8 flight hours of available data. Tables containing the same data are included in Volume II, Part II.

The graphs in this volume were prepared by the computer programs described in Volume IV. The raw data were calibrated and reduced in Program 1. Program 2 computed some additional parameters and screened the data for significant peaks. Correlated variables were recorded at the time of each peak. Program 3 used the resulting data to compute distributions of the data and print the tables that appear in Volume II, Part II. The graphical data were prepared by Program 4, which employed a SC-4020 cathode ray tube (CRT) plotter to plot the graphs.

The probabilities shown in this report are conditional probabilities, or frequency ratios which are only an approximation of the theoretical probabilities. For instance, on Figure 1 there are a total of 530 positive peaks. Thirty of them occur in the range 0.4 to 0.6 and none higher. Therefore, the fraction of the positive peaks exceeding 0.4 is 30/530 = .0566. It is this value that is plotted at 0.4 on Figure 1. It should be kept in mind that this conditional probability is not the same as the probability of exceedance per flight or per lifetime. This probability must be read as follows: "If a positive peak in n_x occurs, the probability that it will exceed 0.4 is .0566." These data are for 22.8 hours of flight. To obtain probabilities for other periods of time these values must be appropriately ratioed.

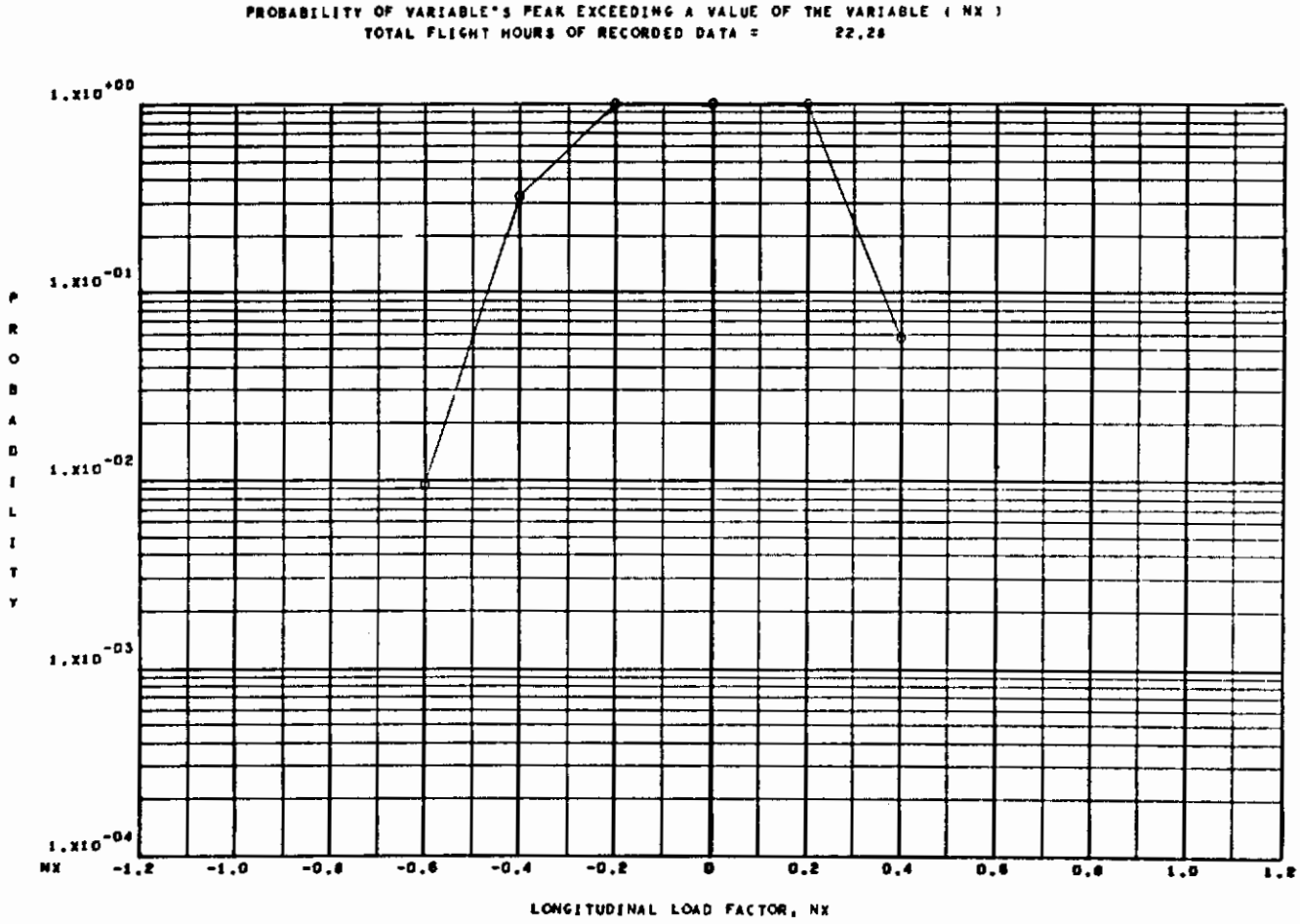
The limited amount of data available at the time this report was prepared makes it difficult to draw meaningful conclusions from the results. In order to include as much data as possible, all graphs were included that represent six or more peaks. These data could hardly be regarded as statistically significant, and should therefore be used with caution.

SECTION II

ONE-DIMENSIONAL DISTRIBUTIONS OF SEVEN LOADING PARAMETERS

This section of the report presents cathode ray tube (CRT) graphs of the probability of a variable's peak exceeding a value of the variable. The seven variables considered are n_x, q, r, pr, pq, qr, and ϕ (phi). These plots are shown on Figures 1 through 7.

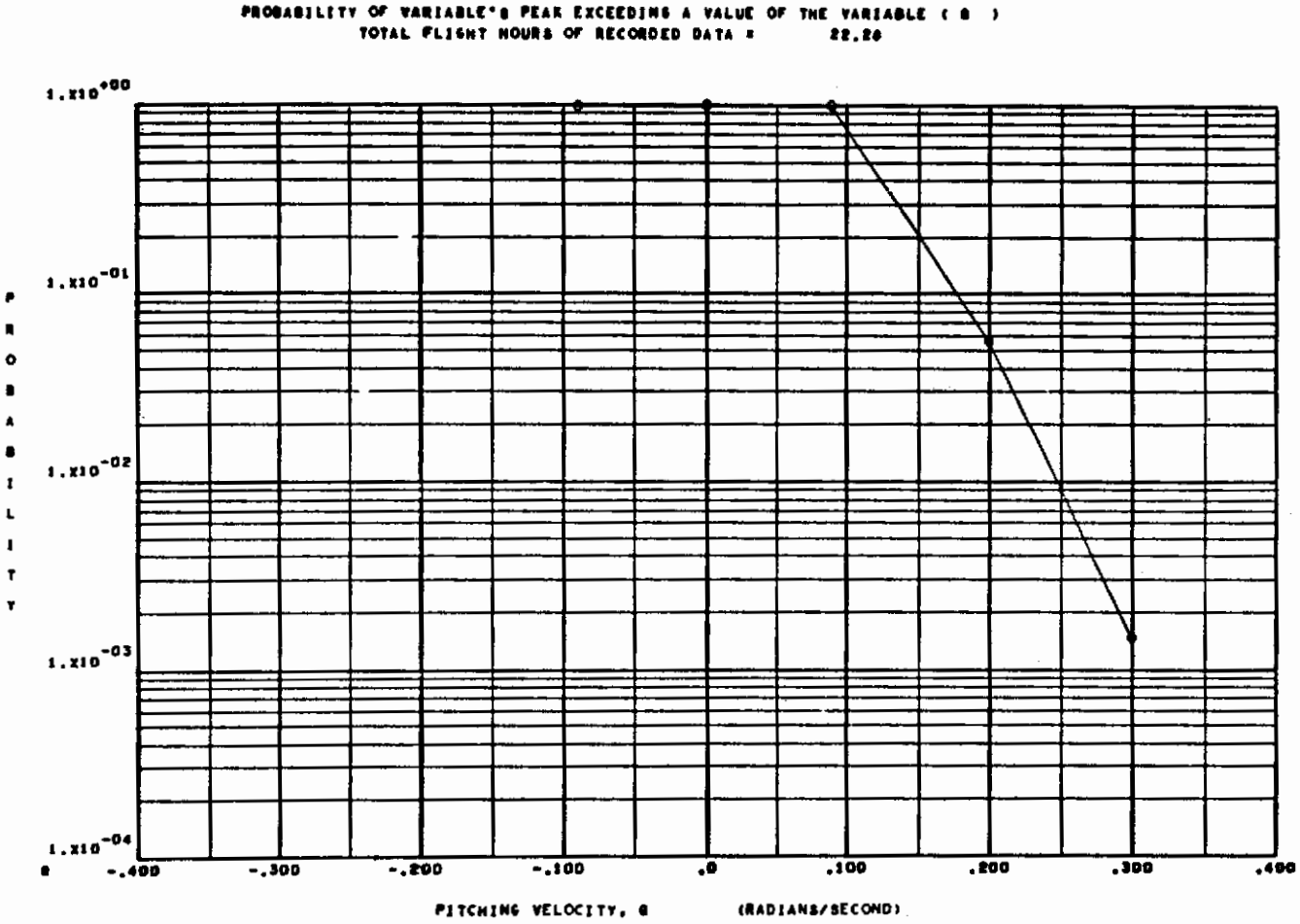
Figure 1



	NO. OF PEAKS
TOTAL	635.
NEGATIVE	105.
POSITIVE	530.

CASE NO. 1

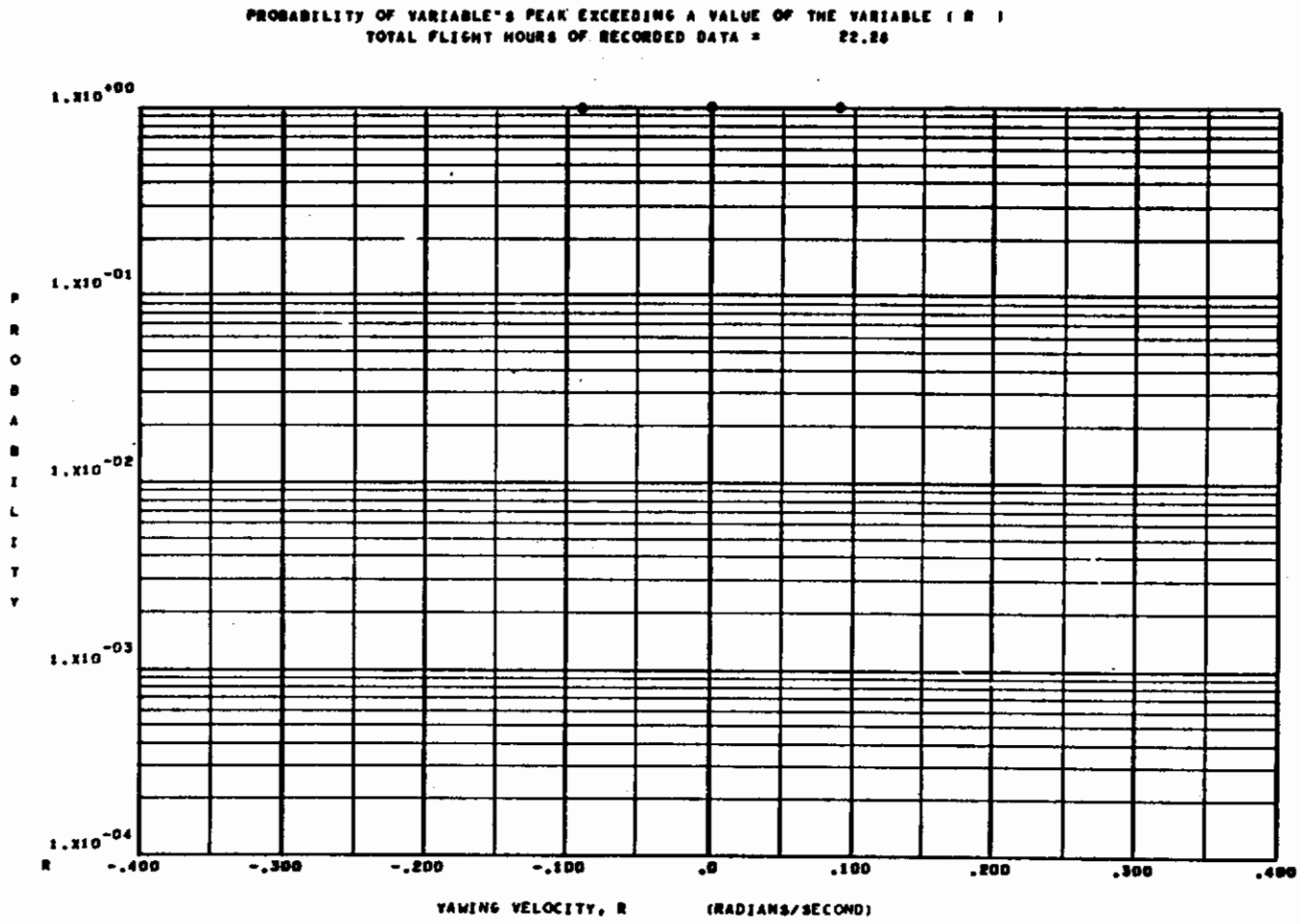
Figure 2



	NO. OF PEAKS
TOTAL	703.
NEGATIVE	6.
POSITIVE	697.

CASE NO. 22

Figure 3



	NO. OF PEAKS
TOTAL	122.
NEGATIVE	75.
POSITIVE	47.

CASE NO. 26

Figure 4

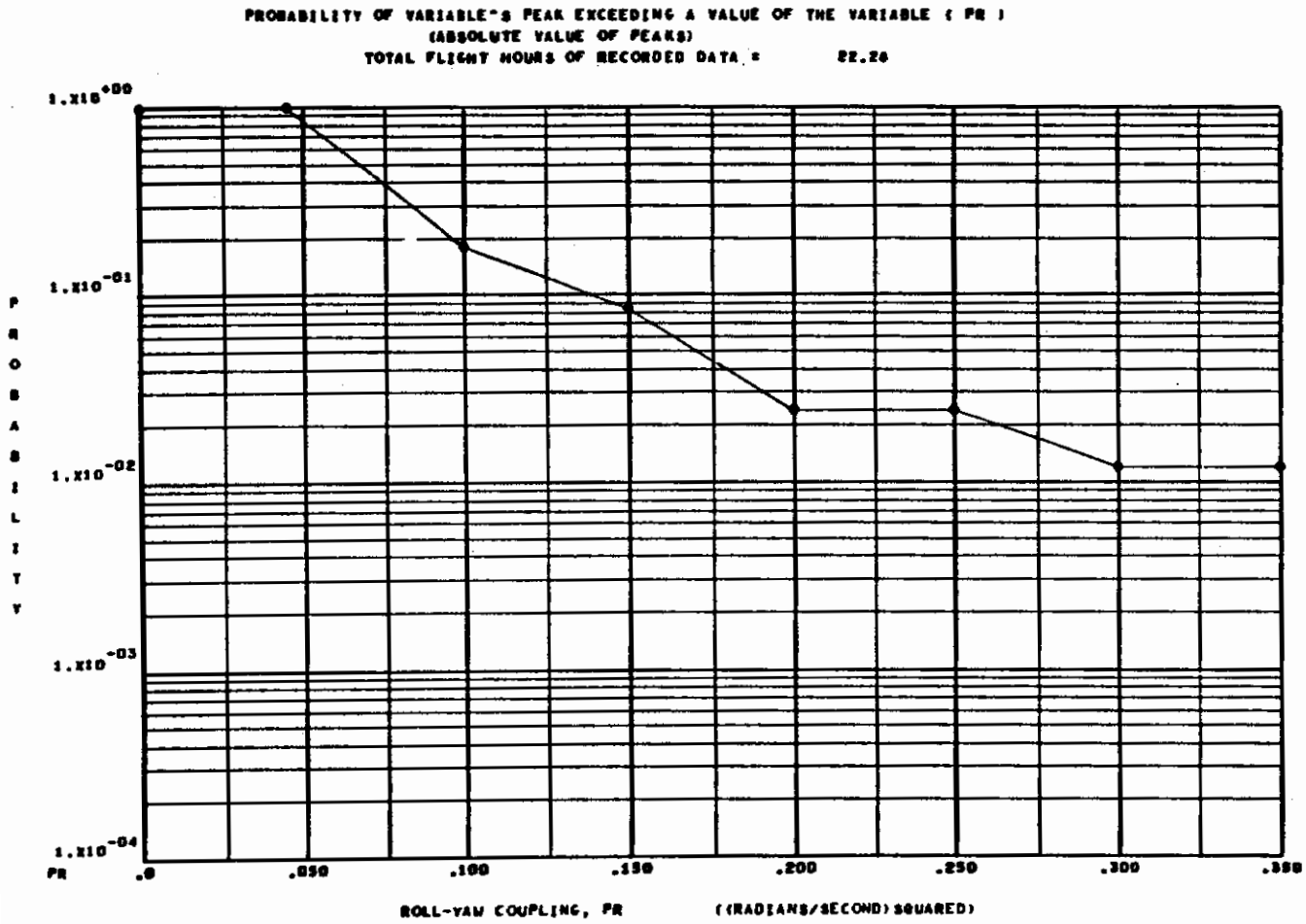
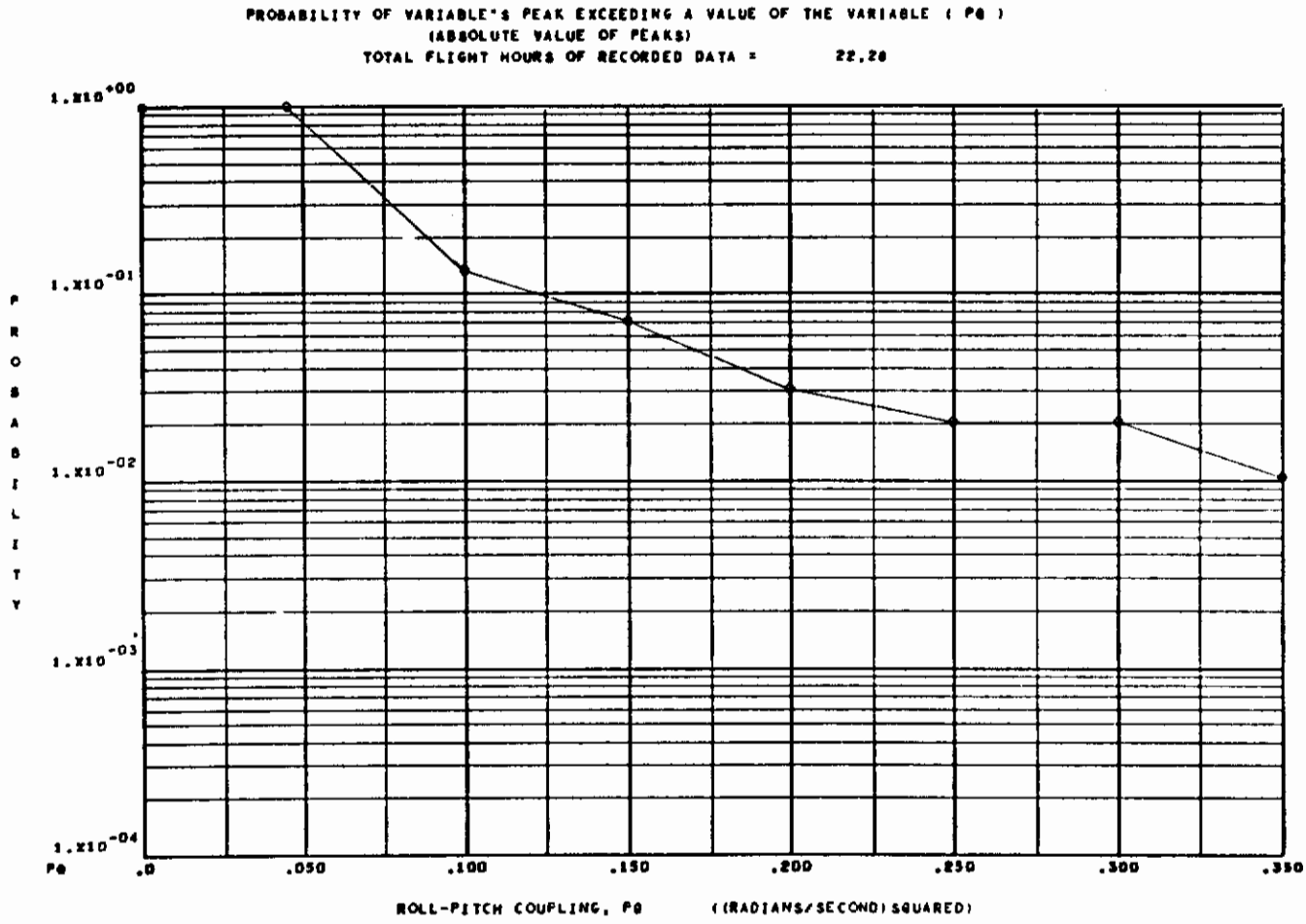
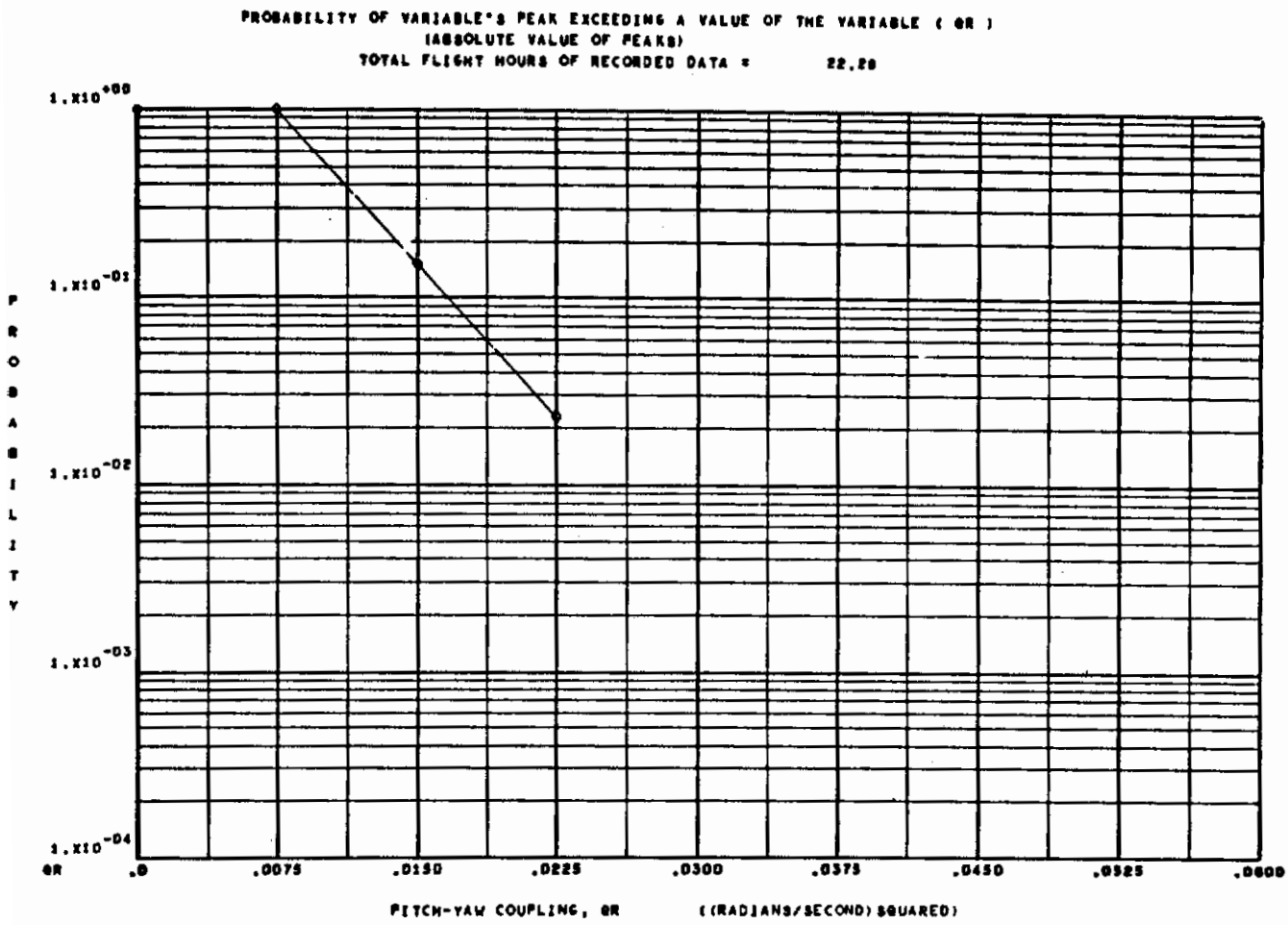


Figure 5



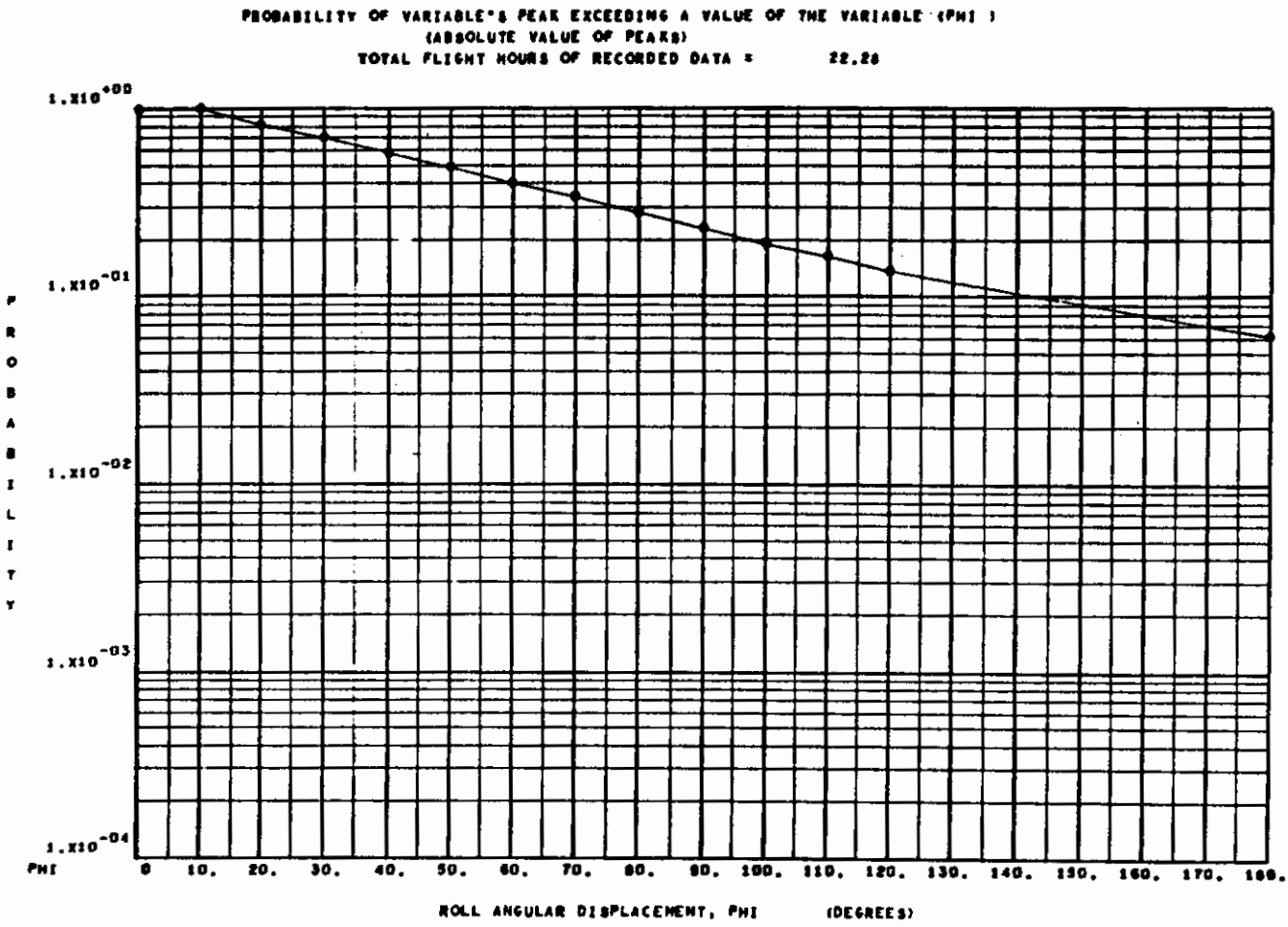
CASE NO. 3

Figure 6



CASE NO. 6

Figure 7



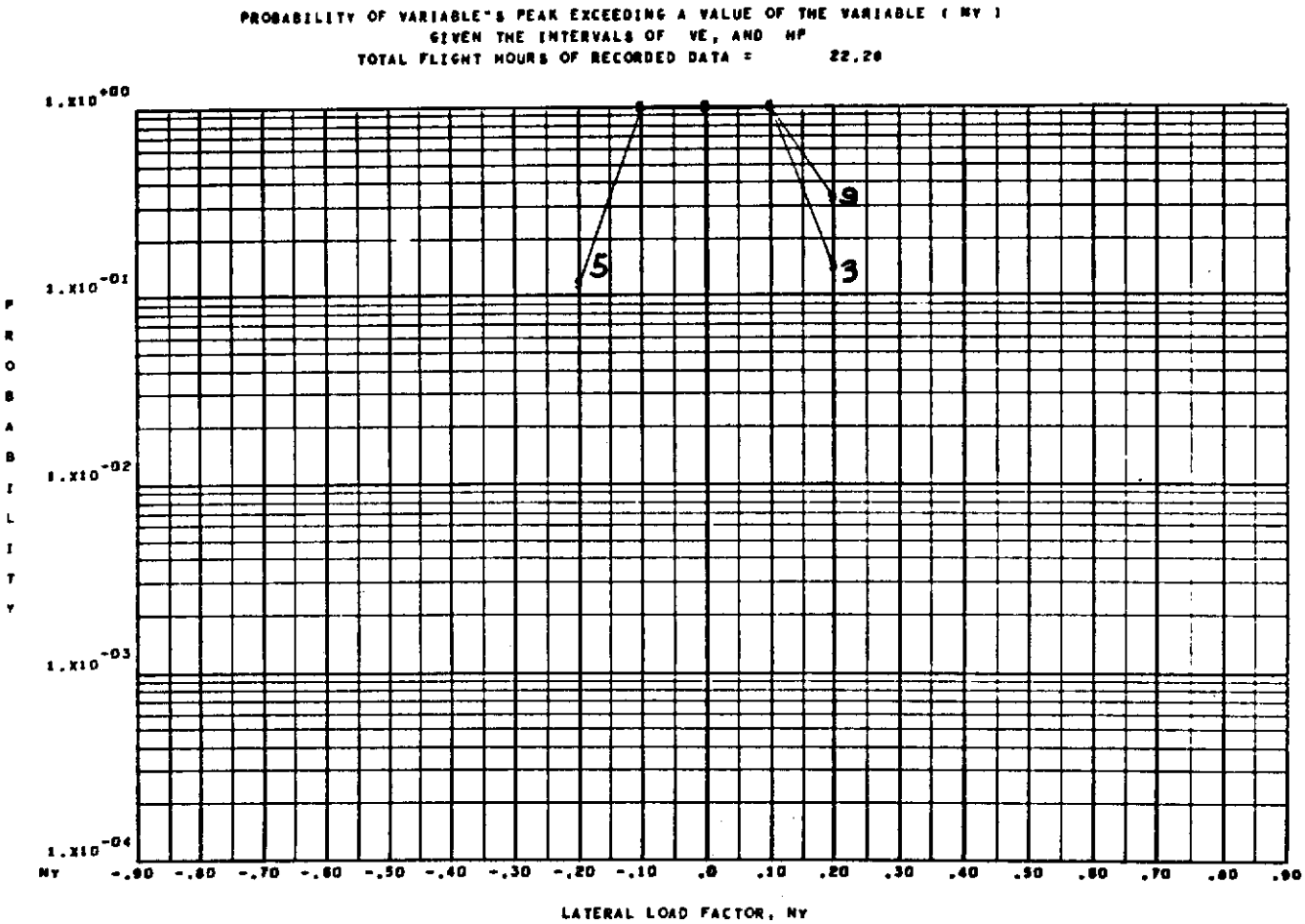
SECTION III

PEAK DISTRIBUTIONS IN TERMS OF VELOCITY AND ALTITUDE INTERVALS

This section of the report presents CRT graphs of the probability of a variable exceeding a value of the variable in terms of velocity and altitude intervals. Nine parameters (n_y, n_z, p, q, r, n_{z_e}, $\dot{p}$, $\dot{q}$ and $\dot{r}$) are considered as variables. One set of graphs is presented for each variable. One plot is shown for each altitude interval with separate curves shown on each plot for each velocity range in which there were sufficient data points to plot a curve. The plots are shown on Figures 8 through 17.

A similar set of graphs is presented for the same nine variables in terms of altitude intervals only. These plots are shown on Figures 18 through 25.

Figure 8

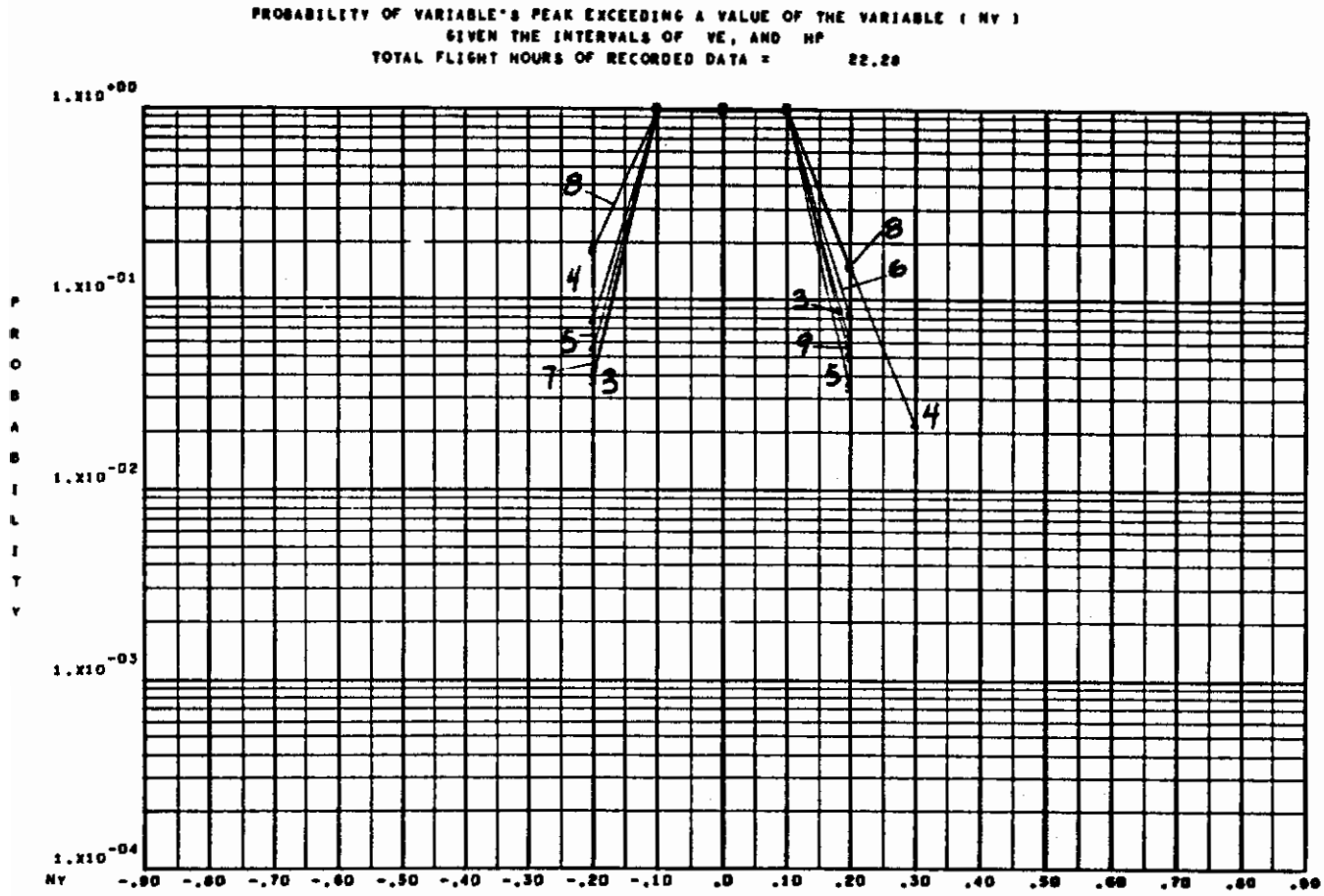


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (NY) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	1.	0.
2	2	250.	300.	0.	0.	0.
3	3	300.	350.	11.	4.	7.
4	4	350.	400.	31.	24.	7.
5	5	400.	450.	32.	26.	6.
6	6	450.	500.	2.	0.	2.
7	7	500.	550.	1.	0.	1.
8	8	550.	600.	4.	2.	2.
9	9	600.	650.	7.	4.	3.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 9

Figure 8--Continued

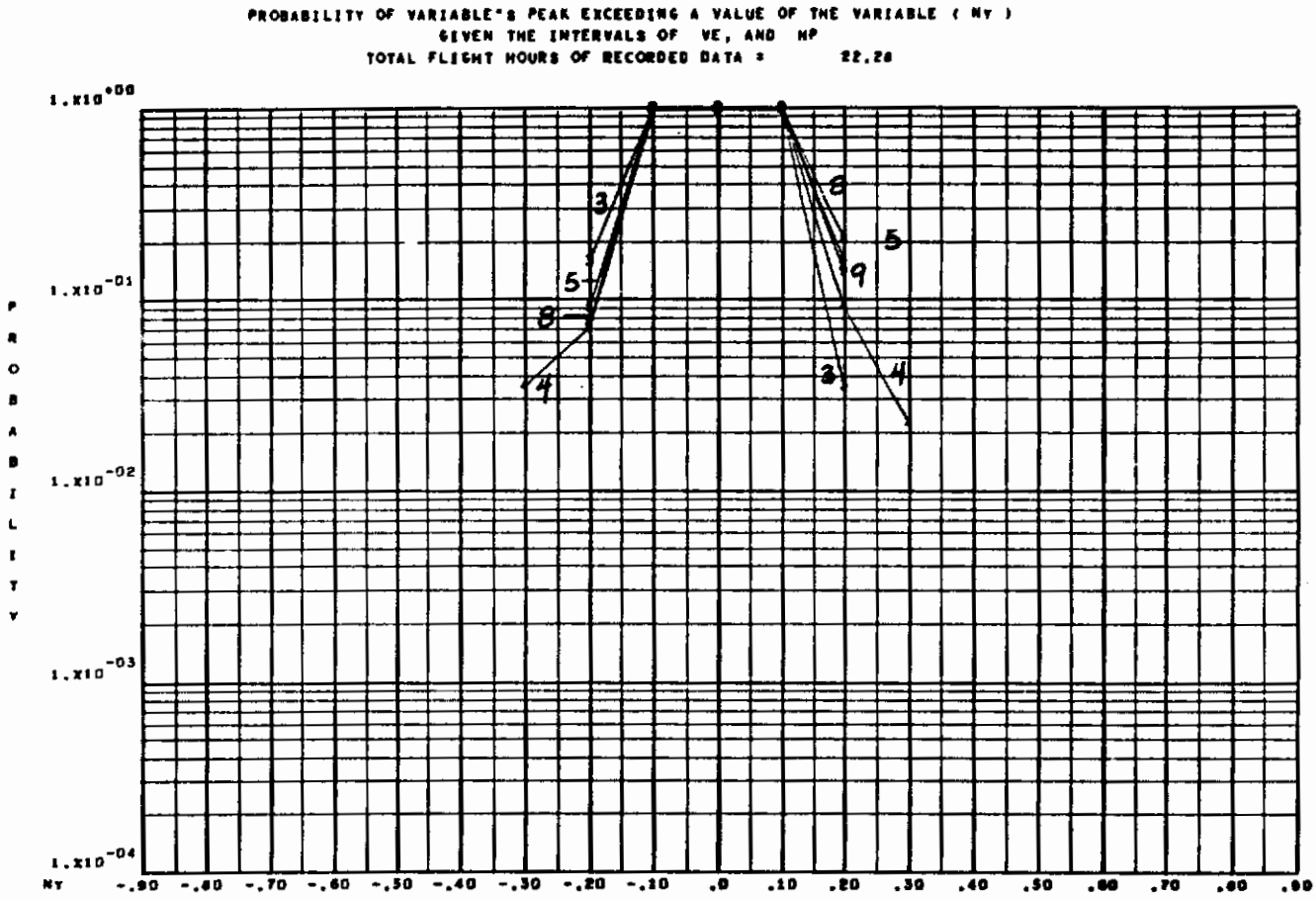


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (NY) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	10.	6.	4.
3	3	300.	350.	87.	54.	33.
4	4	350.	400.	138.	92.	46.
5	5	400.	450.	86.	57.	29.
6	6	450.	500.	18.	6.	12.
7	7	500.	550.	28.	25.	3.
8	8	550.	600.	31.	11.	20.
9	9	600.	650.	31.	11.	20.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 3000. (FEET)

CASE NO. 9

Figure 8--Continued

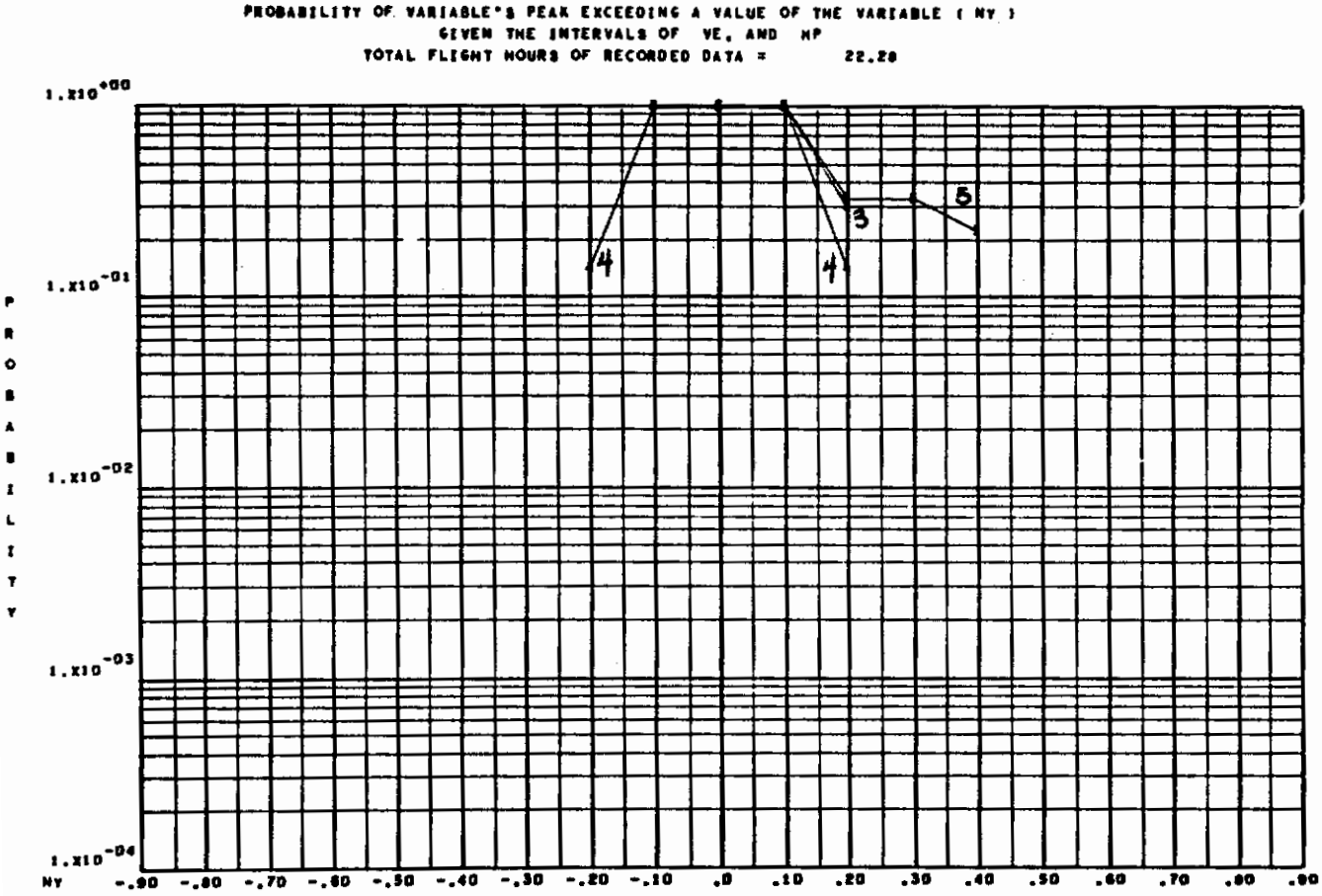


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (Ny)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	28.	7.	21.
3	3	300.	350.	47.	19.	28.
4	4	350.	400.	72.	28.	44.
5	5	400.	450.	54.	11.	43.
6	6	450.	500.	34.	9.	25.
7	7	500.	550.	36.	9.	27.
8	8	550.	600.	37.	13.	24.
9	9	600.	650.	12.	5.	7.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 9

Figure 8--Continued

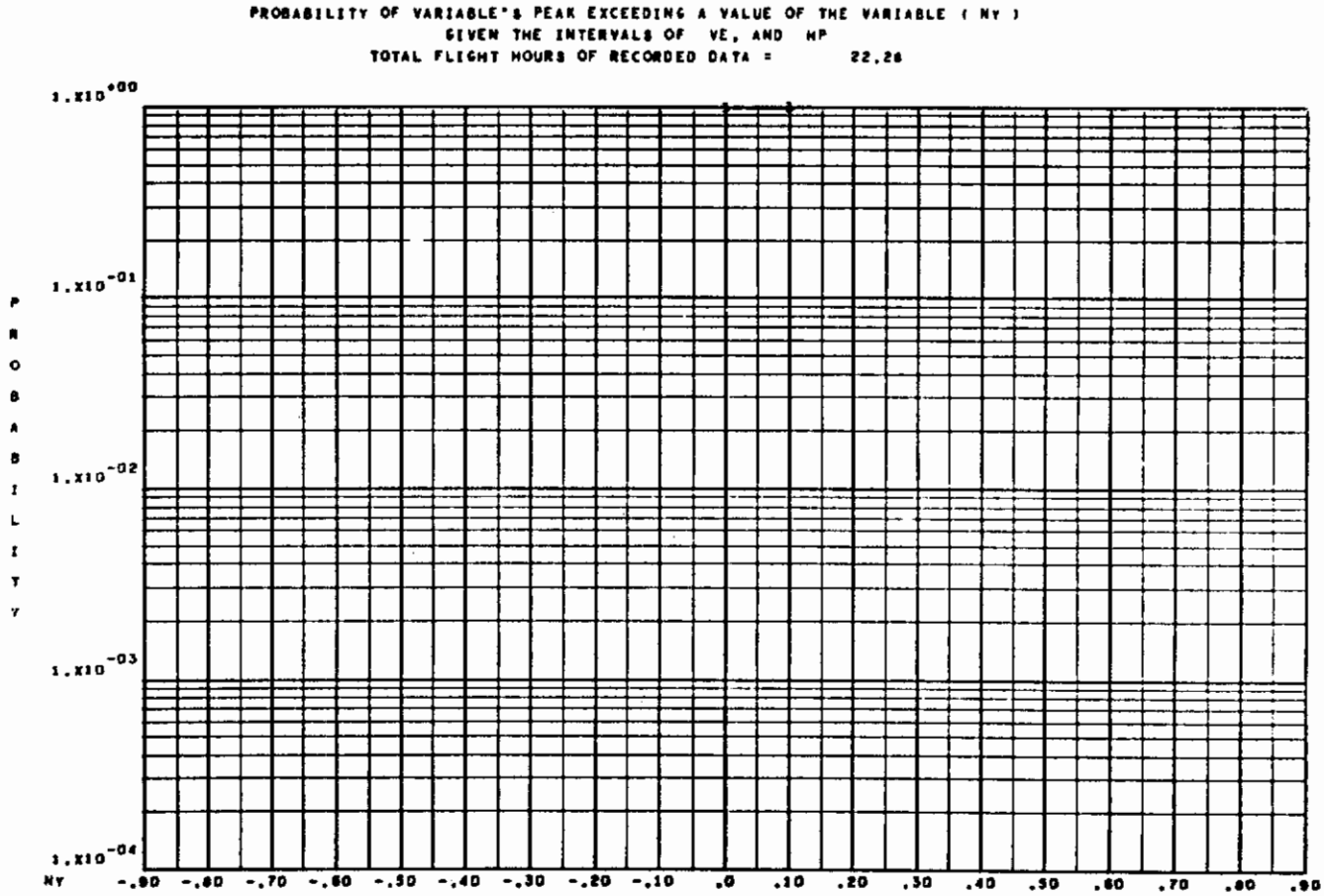


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (NY)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	2.	0.	2.
3	3	300.	350.	11.	1.	10.
4	4	350.	400.	21.	7.	14.
5	5	400.	450.	10.	1.	9.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 9

Figure 8--Concluded

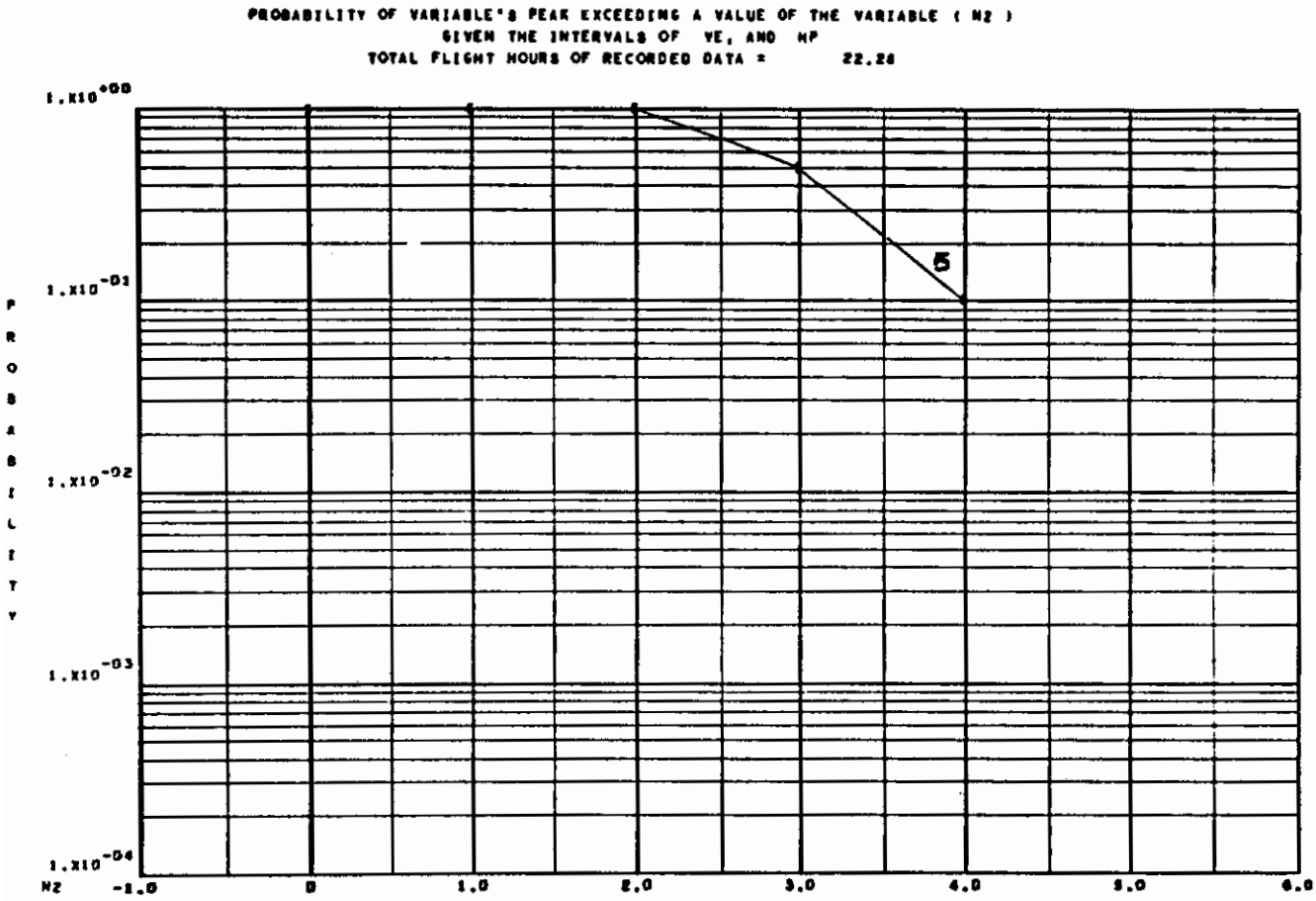


	VELOCITY, VE, (KNOTS)			NO. OF PEAKS, (Ny)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	2.	0.	2.
2	2	250.	300.	4.	1.	3.
3	3	300.	350.	11.	0.	11.
4	4	350.	400.	2.	0.	2.
5	5	400.	450.	0.	0.	0.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 30000. (FEET)

CASE NO. 9

Figure 9



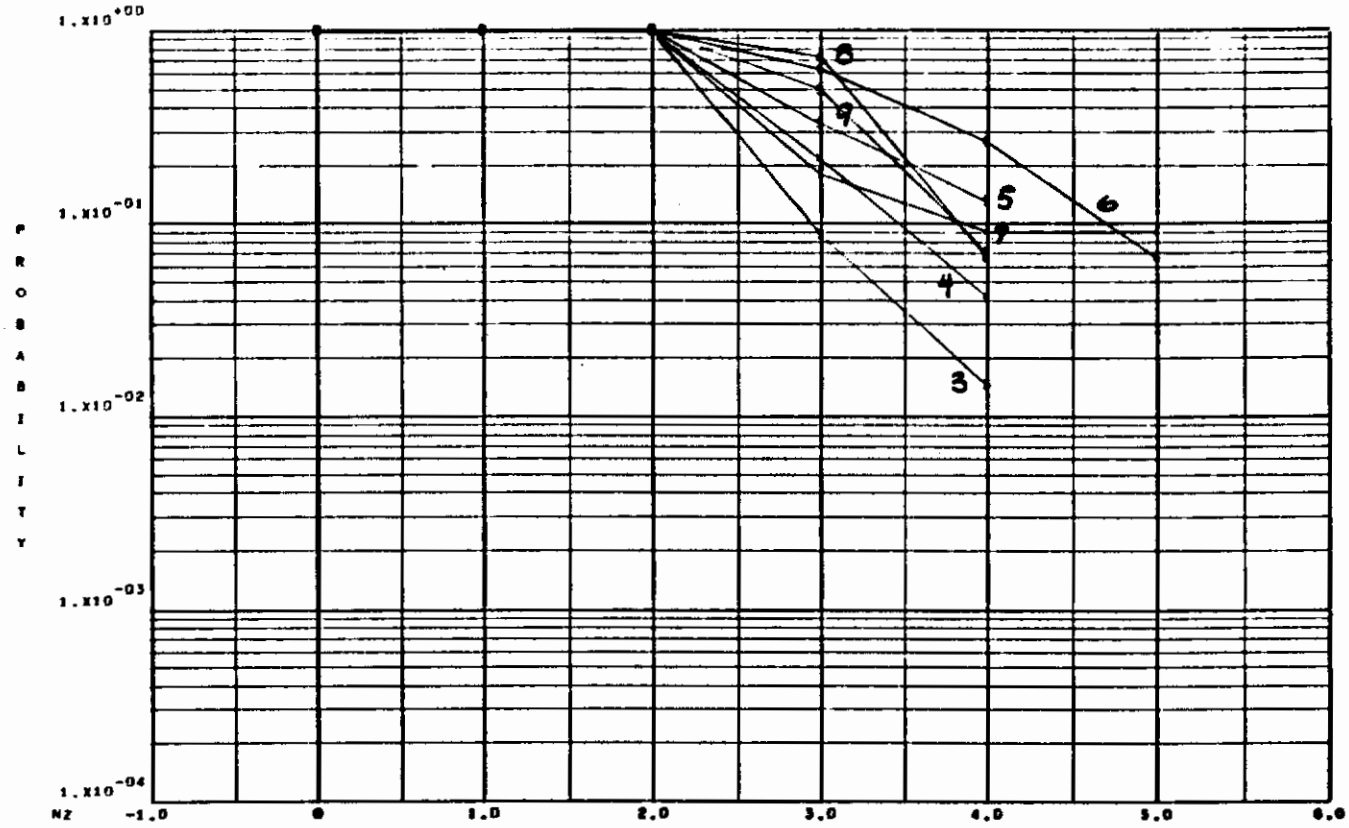
VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (NZ)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	0.	0.	0.
3	3	300.	350.	1.	0.	1.
4	4	350.	400.	5.	0.	5.
5	5	400.	450.	20.	0.	20.
6	6	450.	500.	3.	0.	3.
7	7	500.	550.	1.	0.	1.
8	8	550.	600.	3.	0.	3.
9	9	600.	650.	2.	0.	2.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 11

Figure 9--Continued

PROBABILITY OF VARIABLE'S PEAK EXCEEDING A VALUE OF THE VARIABLE (NZ)
GIVEN THE INTERVALS OF VE, AND HF
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



NORMAL LOAD FACTOR, NZ

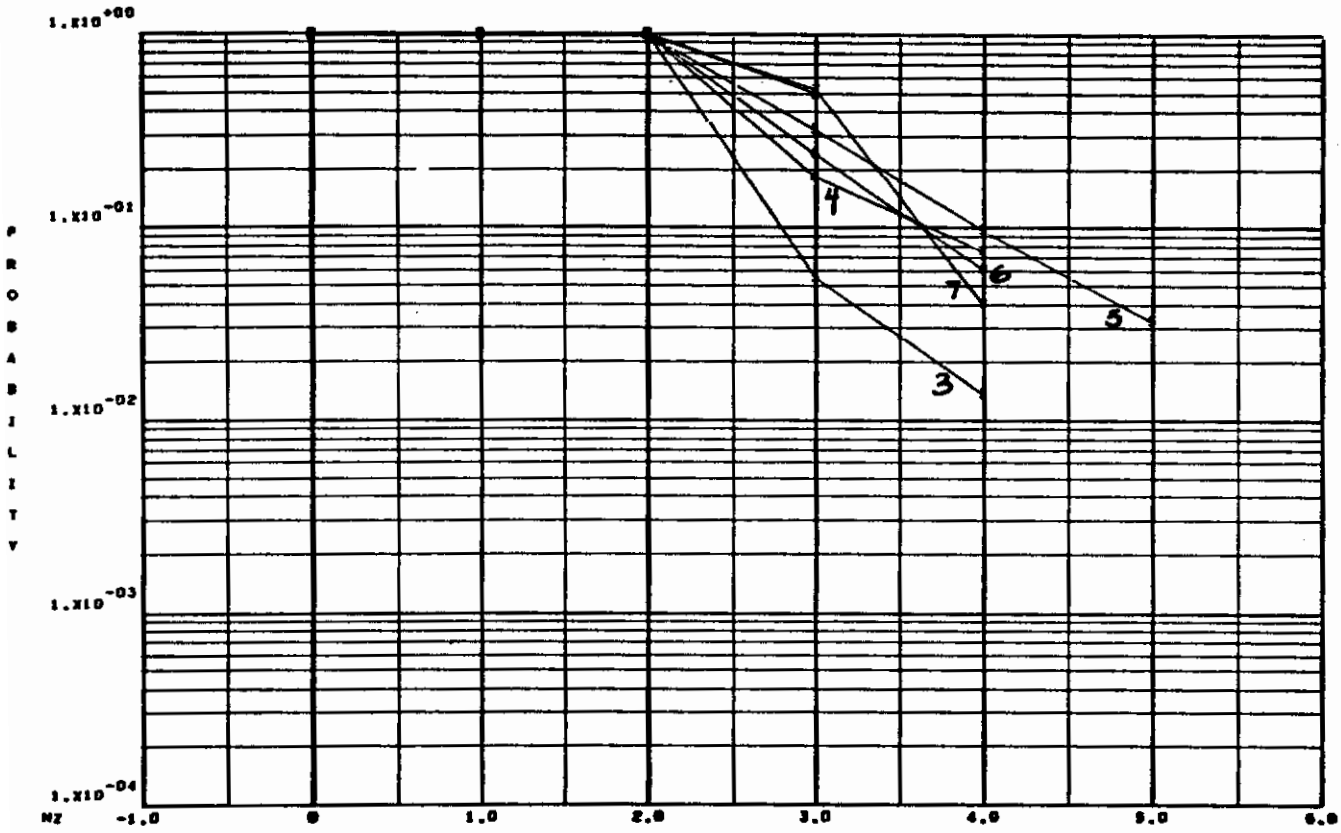
VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (NZ)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	14.	0.	14.
3	3	300.	350.	69.	0.	69.
4	4	350.	400.	120.	0.	120.
5	5	400.	450.	115.	0.	115.
6	6	450.	500.	31.	1.	30.
7	7	500.	550.	11.	0.	11.
8	8	550.	600.	15.	0.	15.
9	9	600.	650.	14.	0.	14.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HF, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 31

Figure 9--Continued

PROBABILITY OF VARIABLE'S PEAK EXCEEDING A VALUE OF THE VARIABLE (NZ)
GIVEN THE INTERVALS OF VE, AND HP
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



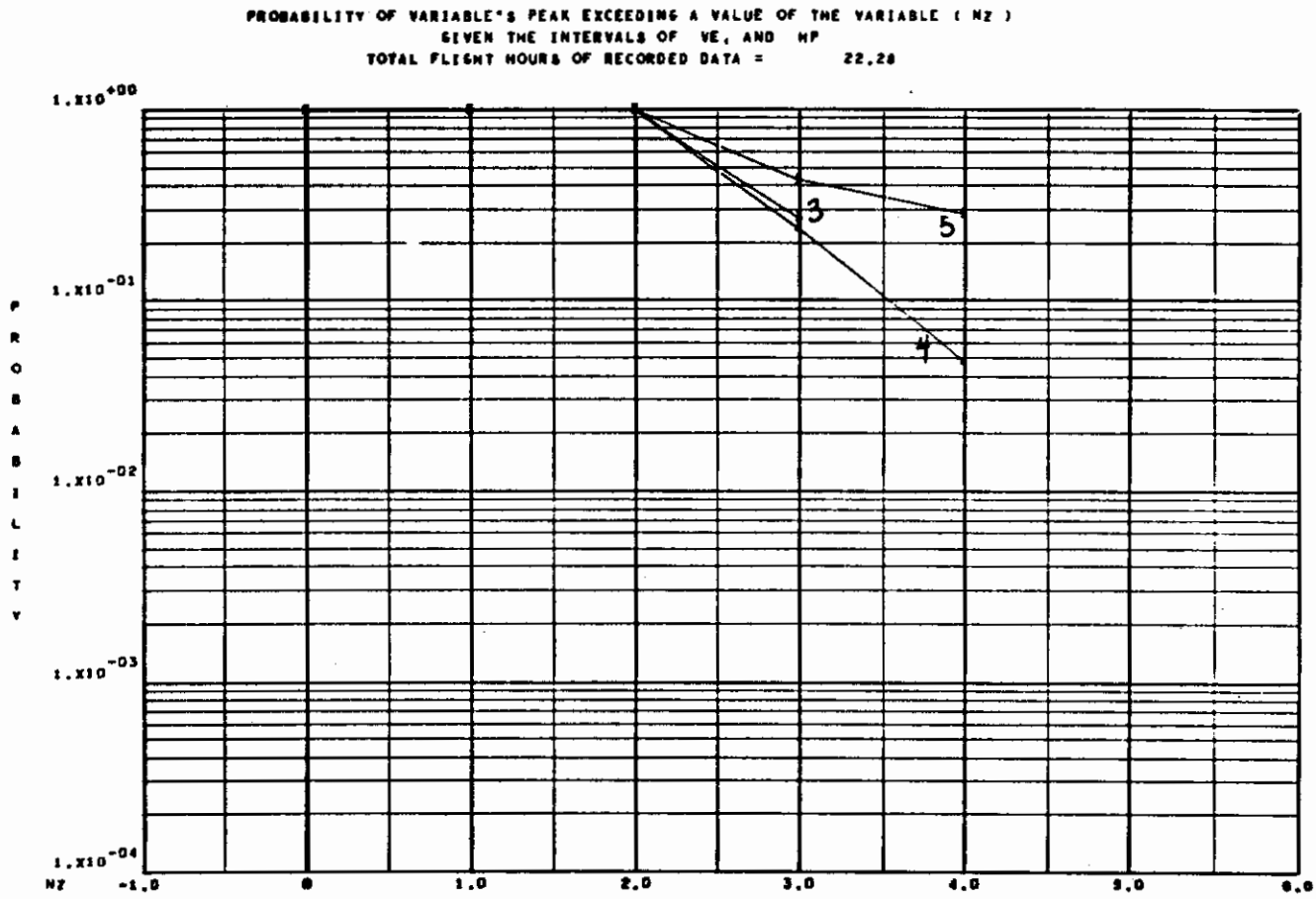
NORMAL LOAD FACTOR, NZ

VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (NZ)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	25.	0.	25.
3	3	300.	350.	73.	0.	73.
4	4	350.	400.	93.	0.	93.
5	5	400.	450.	61.	0.	61.
6	6	450.	500.	33.	0.	33.
7	7	500.	550.	25.	0.	25.
8	8	550.	600.	8.	0.	8.
9	9	600.	650.	1.	0.	1.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 9000. TO 15000. (FEET)

CASE NO. 11

Figure 9--Continued

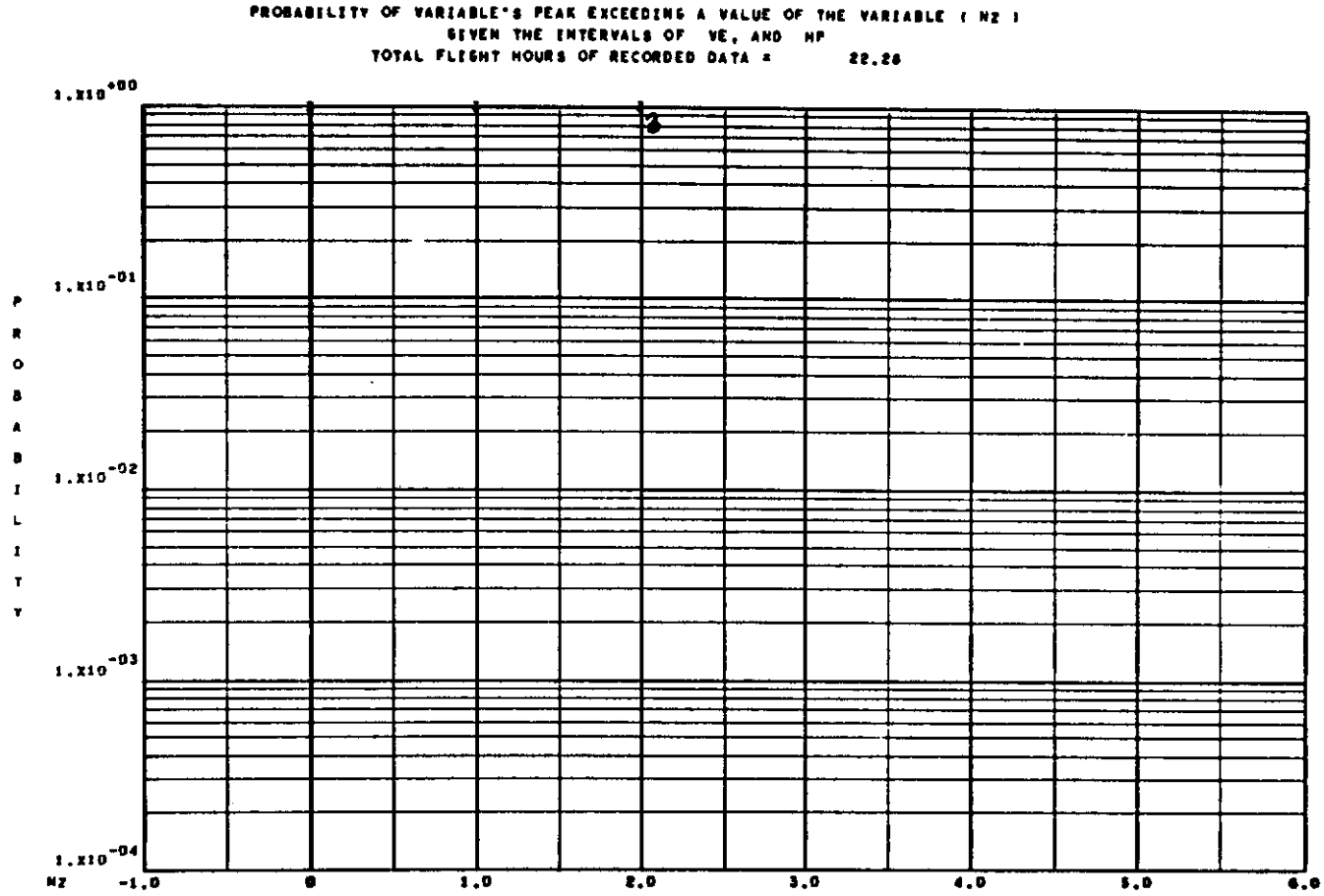


SYMBOL	INT.NO.	VELOCITY, VE, (KNOTS) FROM	TO	NO. OF PEAKS, (NZ) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	3.	0.	3.
3	3	300.	350.	11.	0.	11.
4	4	350.	400.	21.	0.	21.
5	5	400.	450.	7.	0.	7.
6	6	450.	500.	5.	0.	5.
7	7	500.	550.	1.	0.	1.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 11

Figure 9--Concluded

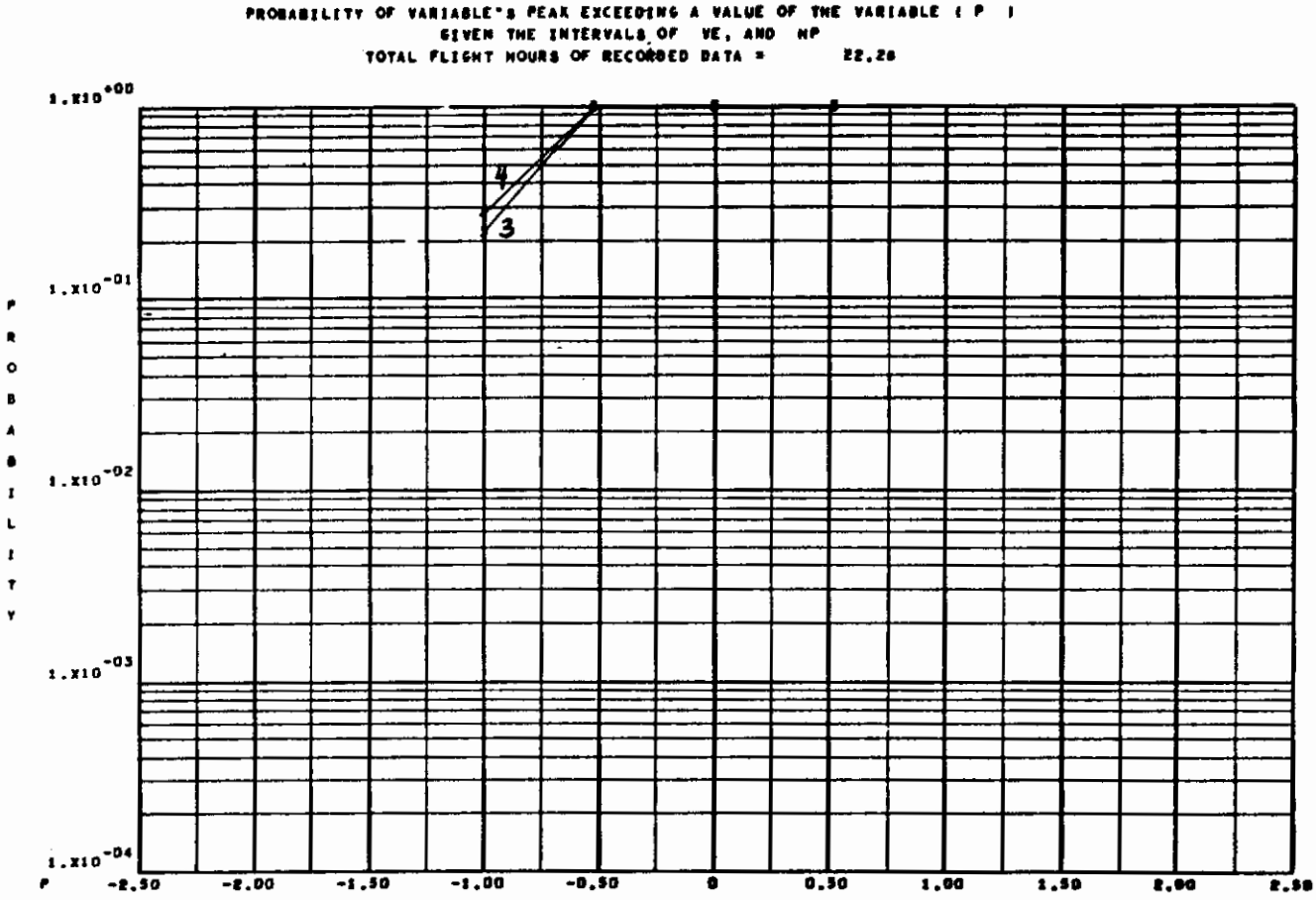


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (NZ)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	1.	0.	1.
3	3	300.	350.	9.	0.	9.
4	4	350.	400.	3.	0.	3.
5	5	400.	450.	0.	0.	0.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 30000. (FEET)

CASE NO. 11

Figure 10

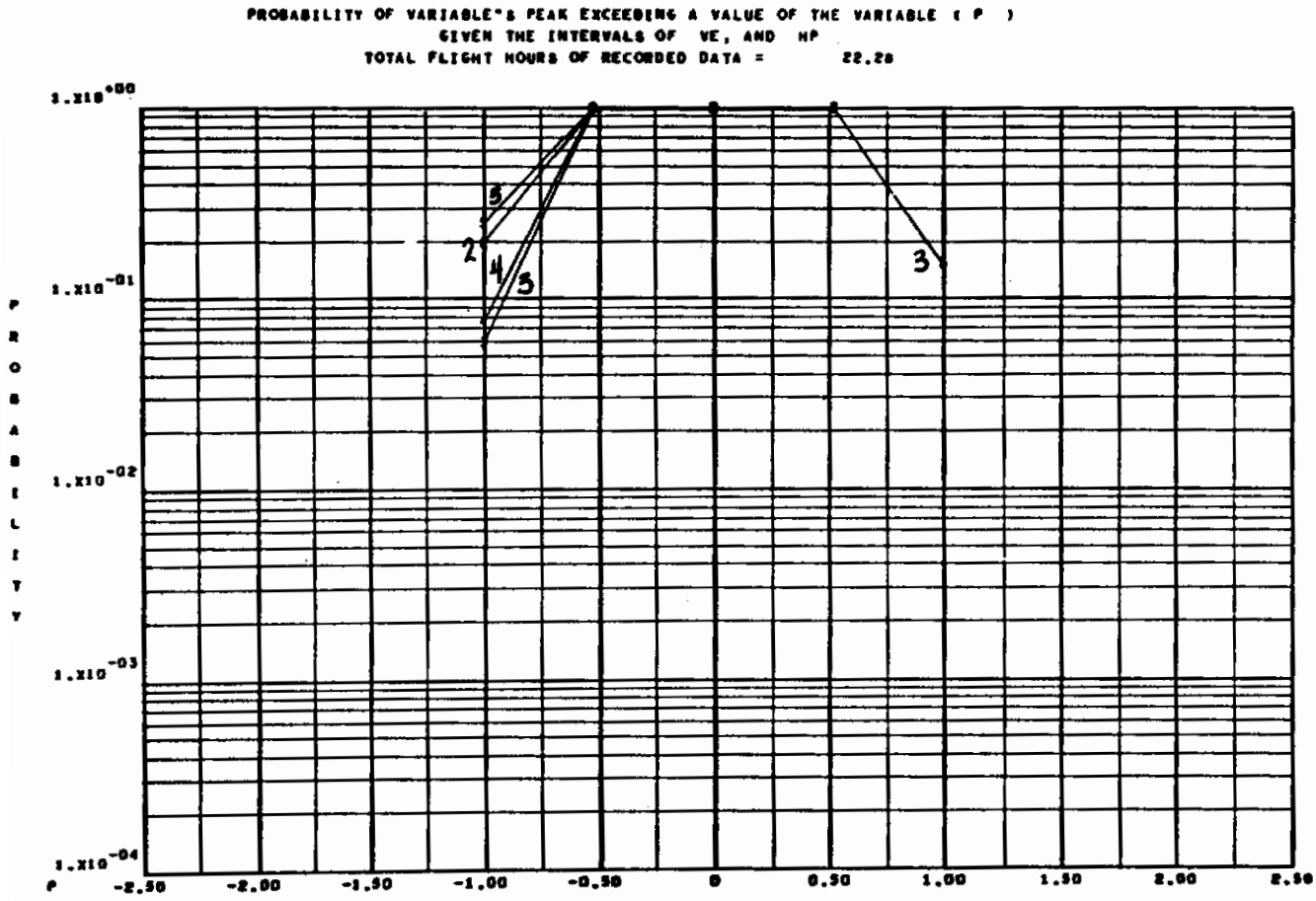


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (P) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	3.	0.	3.
3	3	300.	350.	14.	9.	5.
4	4	350.	400.	21.	18.	3.
5	5	400.	450.	9.	7.	2.
6	6	450.	500.	1.	0.	1.
7	7	500.	550.	5.	3.	2.
8	8	550.	600.	5.	4.	1.
9	9	600.	650.	2.	2.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 20

Figure 10--Continued

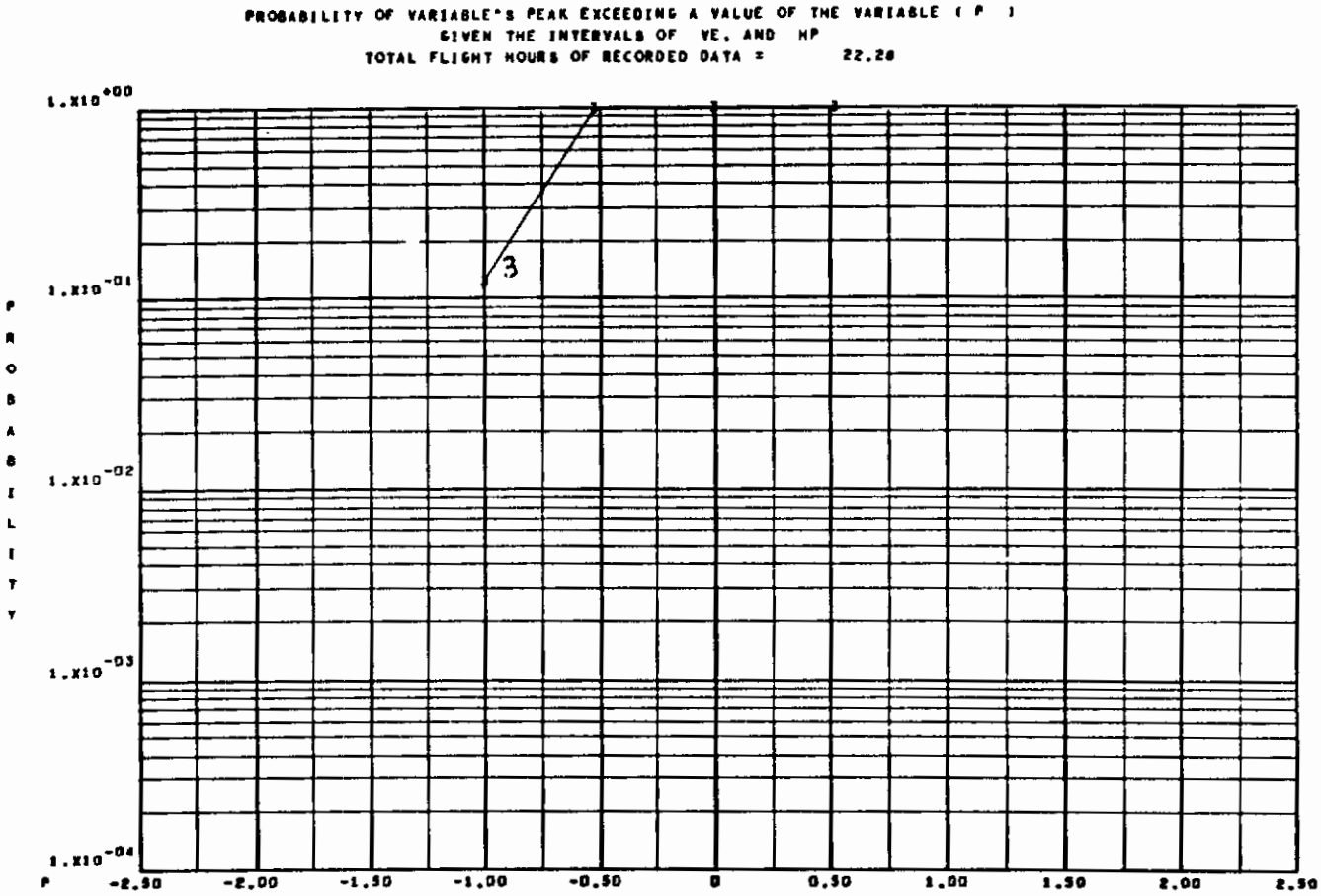


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (P)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	14.	10.	4.
3	3	300.	350.	30.	17.	13.
4	4	350.	400.	26.	13.	13.
5	5	400.	450.	11.	8.	3.
6	6	450.	500.	4.	1.	3.
7	7	500.	550.	4.	2.	2.
8	8	550.	600.	3.	2.	1.
9	9	600.	650.	0.	0.	9.
0	10	650.	810.	0.	0.	9.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 26

Figure 10--Concluded

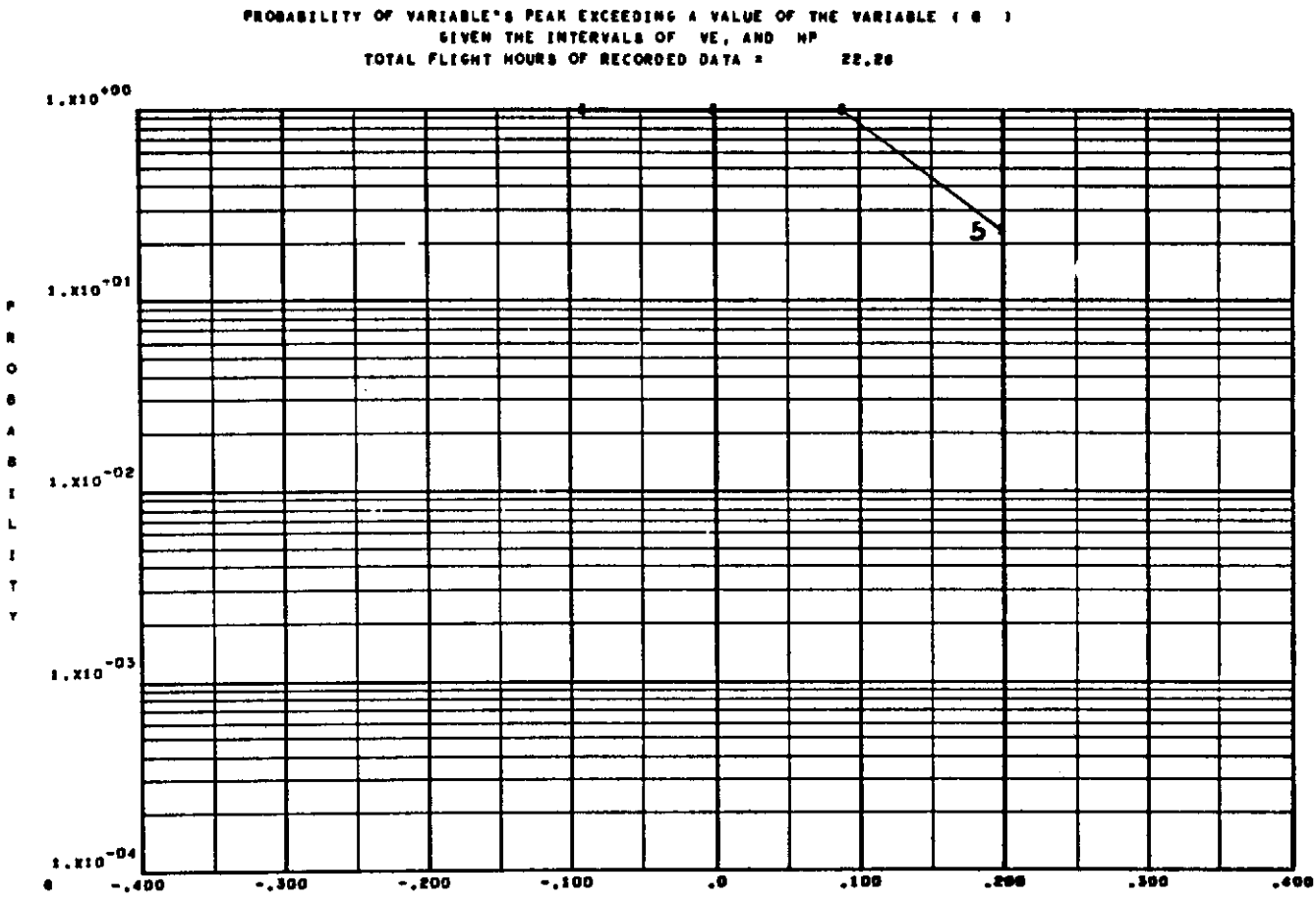


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (P)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	1.	0.	1.
3	3	300.	350.	10.	8.	2.
4	4	350.	400.	2.	1.	1.
5	5	400.	450.	0.	0.	0.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 6, FROM 25000. TO 30000. (FEET)

CASE NO. 20

Figure 11

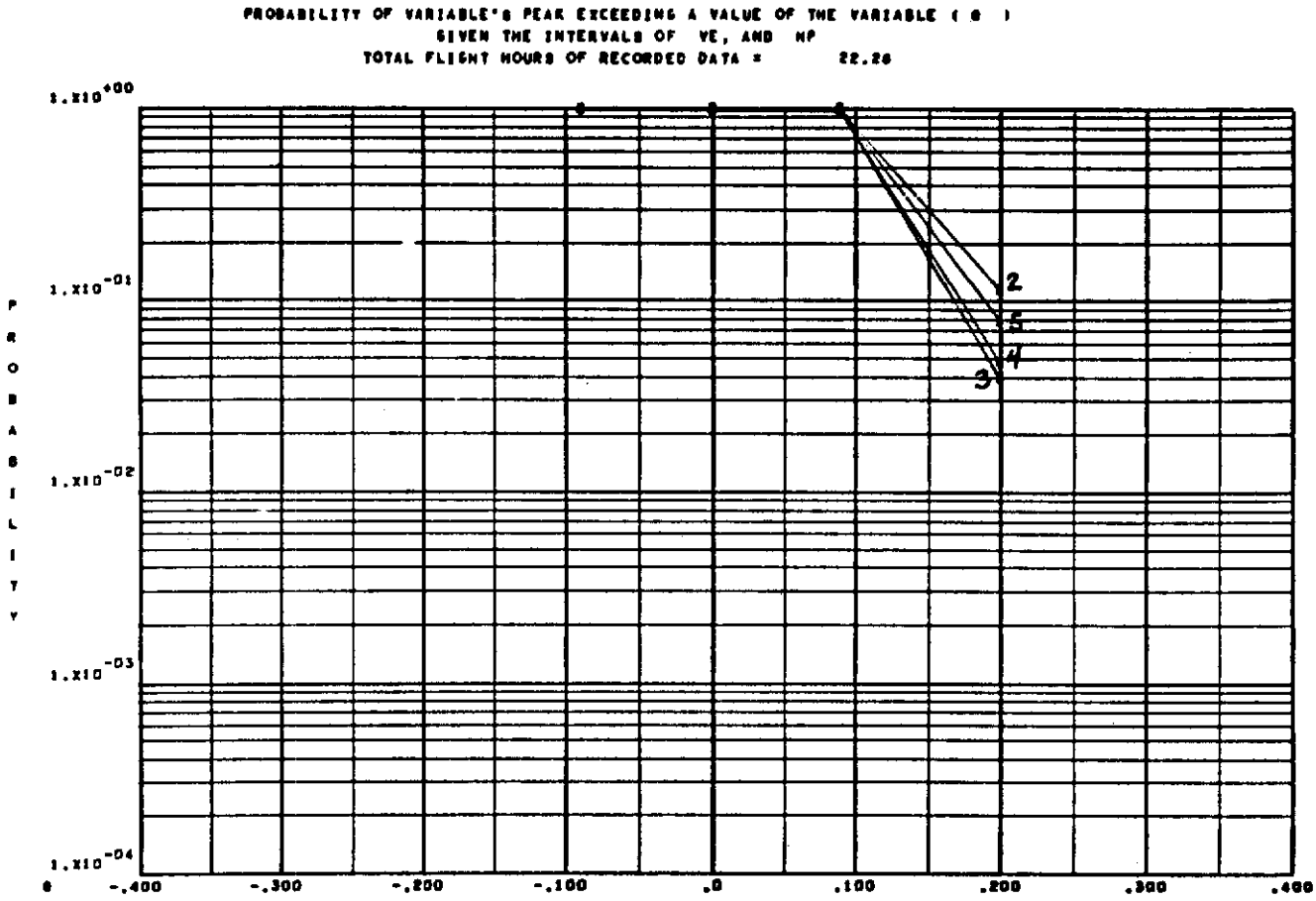


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (θ)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	1.	0.	1.
3	3	300.	350.	1.	0.	1.
4	4	350.	400.	8.	1.	7.
5	5	400.	450.	18.	1.	17.
6	6	450.	500.	3.	0.	3.
7	7	500.	550.	1.	0.	1.
8	8	550.	600.	1.	0.	1.
9	9	600.	650.	2.	0.	2.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 25

Figure 11--Continued

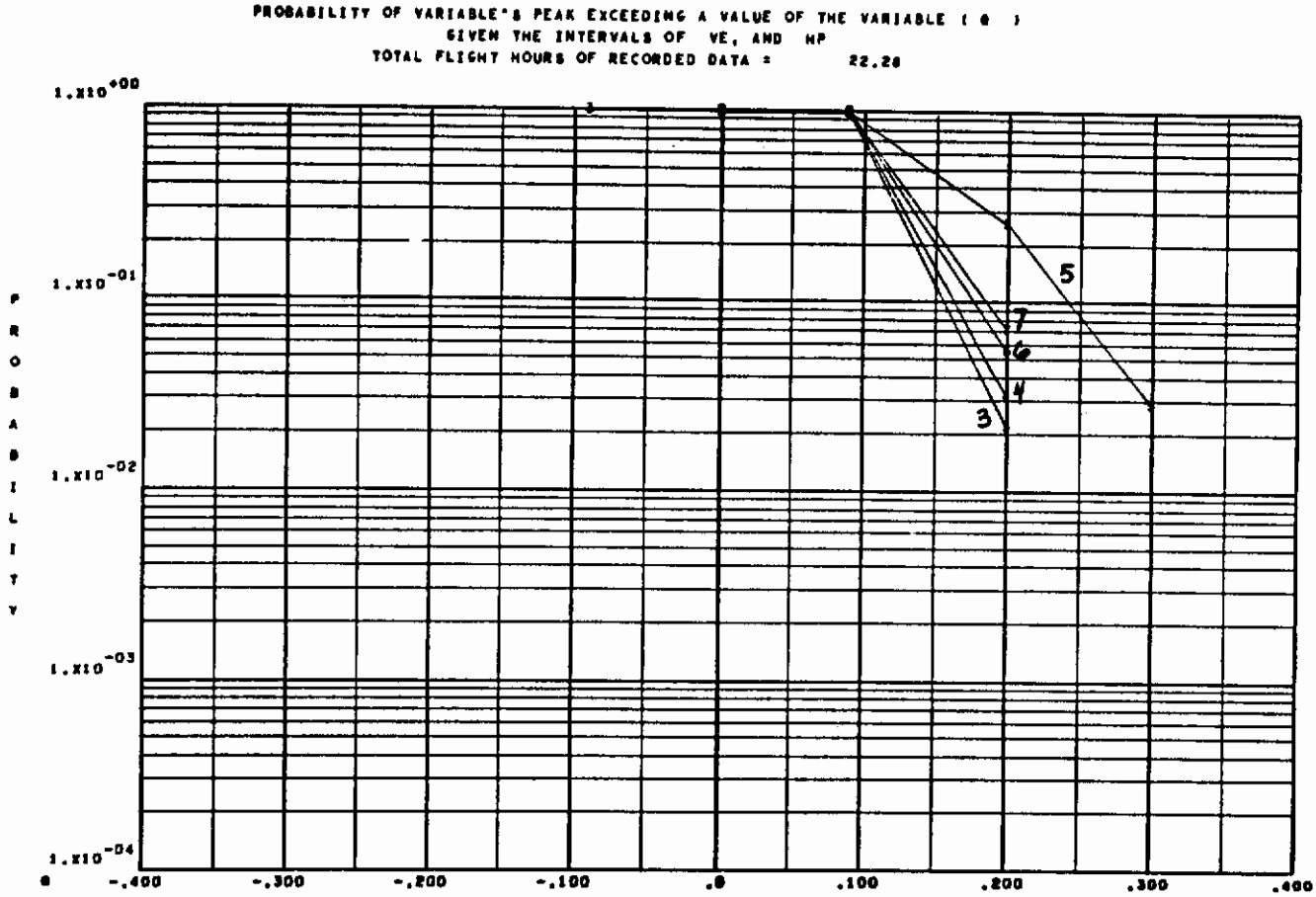


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (θ) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	26.	0.	26.
3	3	300.	350.	78.	1.	77.
4	4	350.	400.	105.	1.	104.
5	5	400.	450.	76.	0.	76.
6	6	450.	500.	16.	0.	16.
7	7	500.	550.	2.	0.	2.
8	8	550.	600.	11.	0.	11.
9	9	600.	650.	5.	0.	5.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 25

Figure 11--Continued

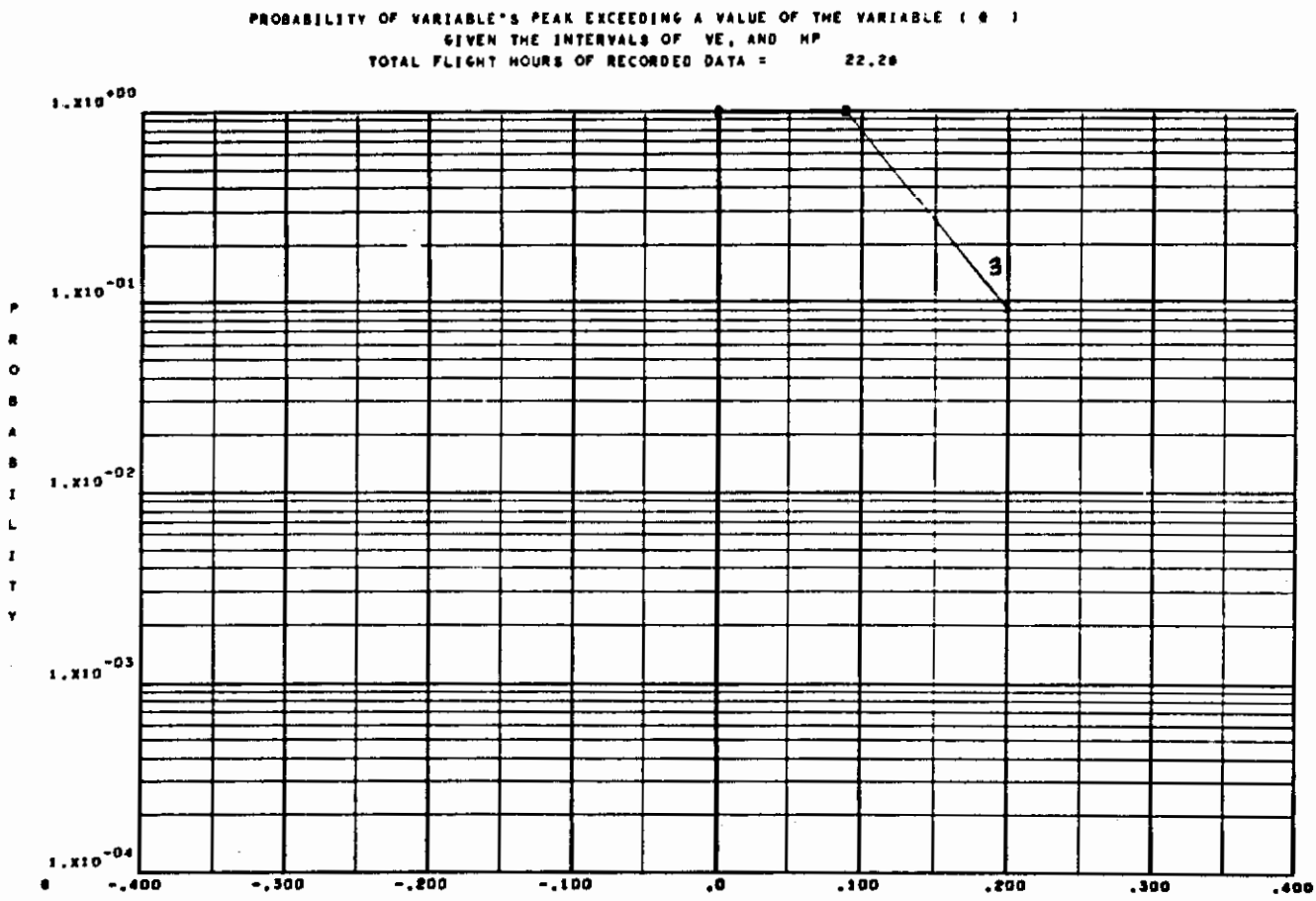


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (θ) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	7.	0.	7.
2	2	250.	300.	58.	0.	58.
3	3	300.	350.	92.	1.	91.
4	4	350.	400.	63.	0.	63.
5	5	400.	450.	35.	0.	35.
6	6	450.	500.	18.	0.	18.
7	7	500.	550.	14.	0.	14.
8	8	550.	600.	2.	0.	2.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 25

Figure 11--Continued



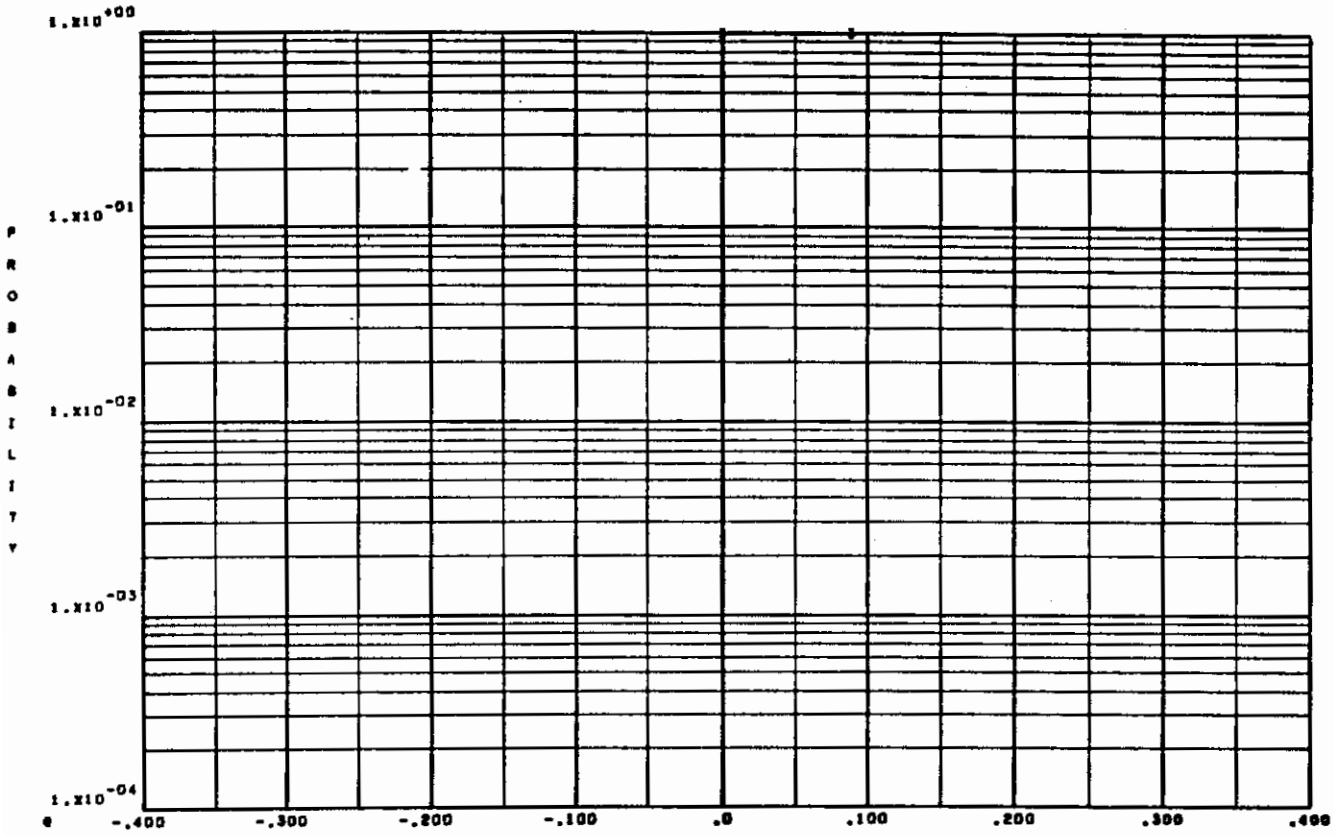
VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (θ)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	3.	0.	3.
2	2	250.	300.	6.	0.	6.
3	3	300.	350.	11.	0.	11.
4	4	350.	400.	18.	0.	18.
5	5	400.	450.	5.	0.	5.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 25

Figure 11-Concluded

PROBABILITY OF VARIABLE'S PEAK EXCEEDING A VALUE OF THE VARIABLE (θ)
GIVEN THE INTERVALS OF VE, AND HP
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



PITCHING VELOCITY, θ (RADIANS/SECOND)

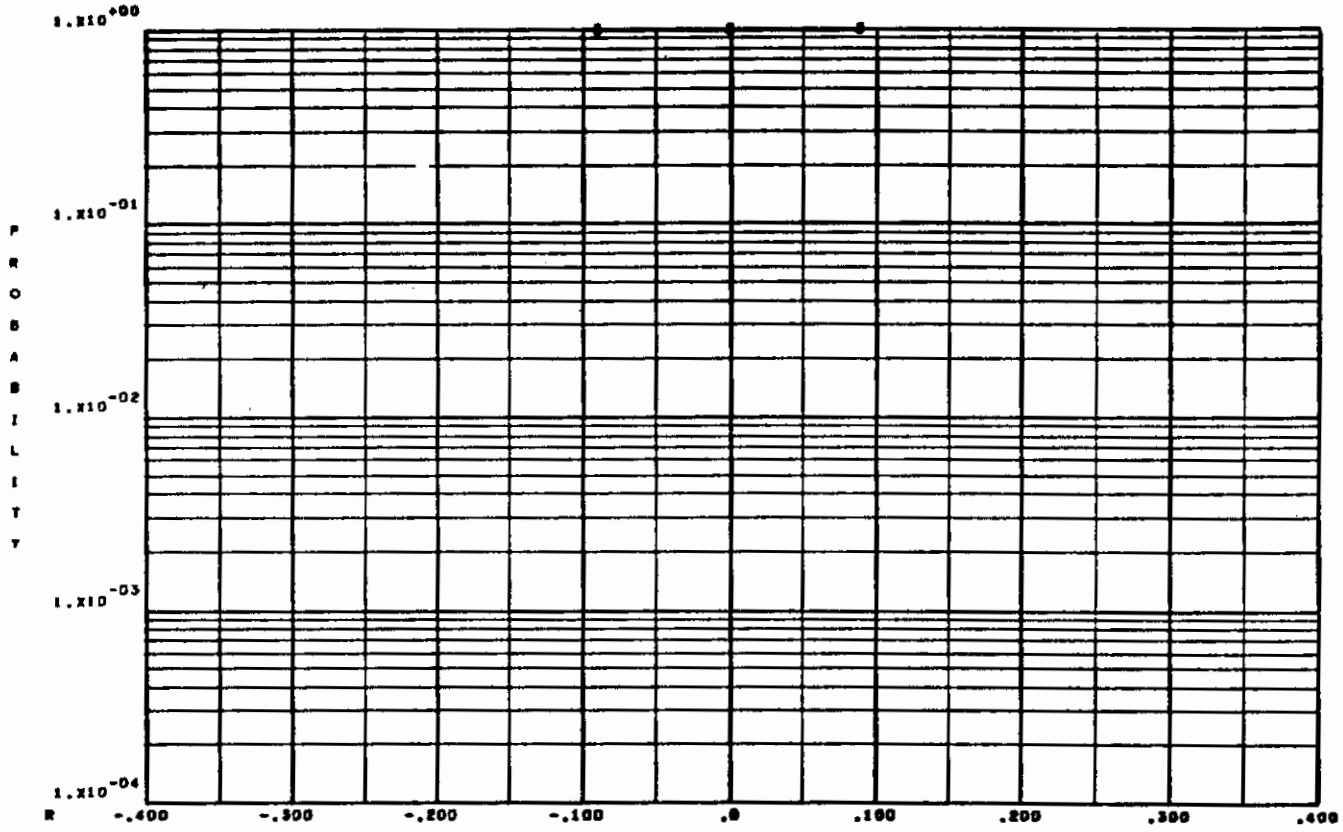
SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (θ) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	4.	0.	4.
2	2	250.	300.	2.	0.	2.
3	3	300.	350.	6.	0.	6.
4	4	350.	400.	4.	1.	3.
5	5	400.	450.	0.	0.	0.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 30000. (FEET)

CASE NO. 25

Figure 12

PROBABILITY OF VARIABLE'S PEAK EXCEEDING A VALUE OF THE VARIABLE (R)
GIVEN THE INTERVALS OF VE, AND HP
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.26



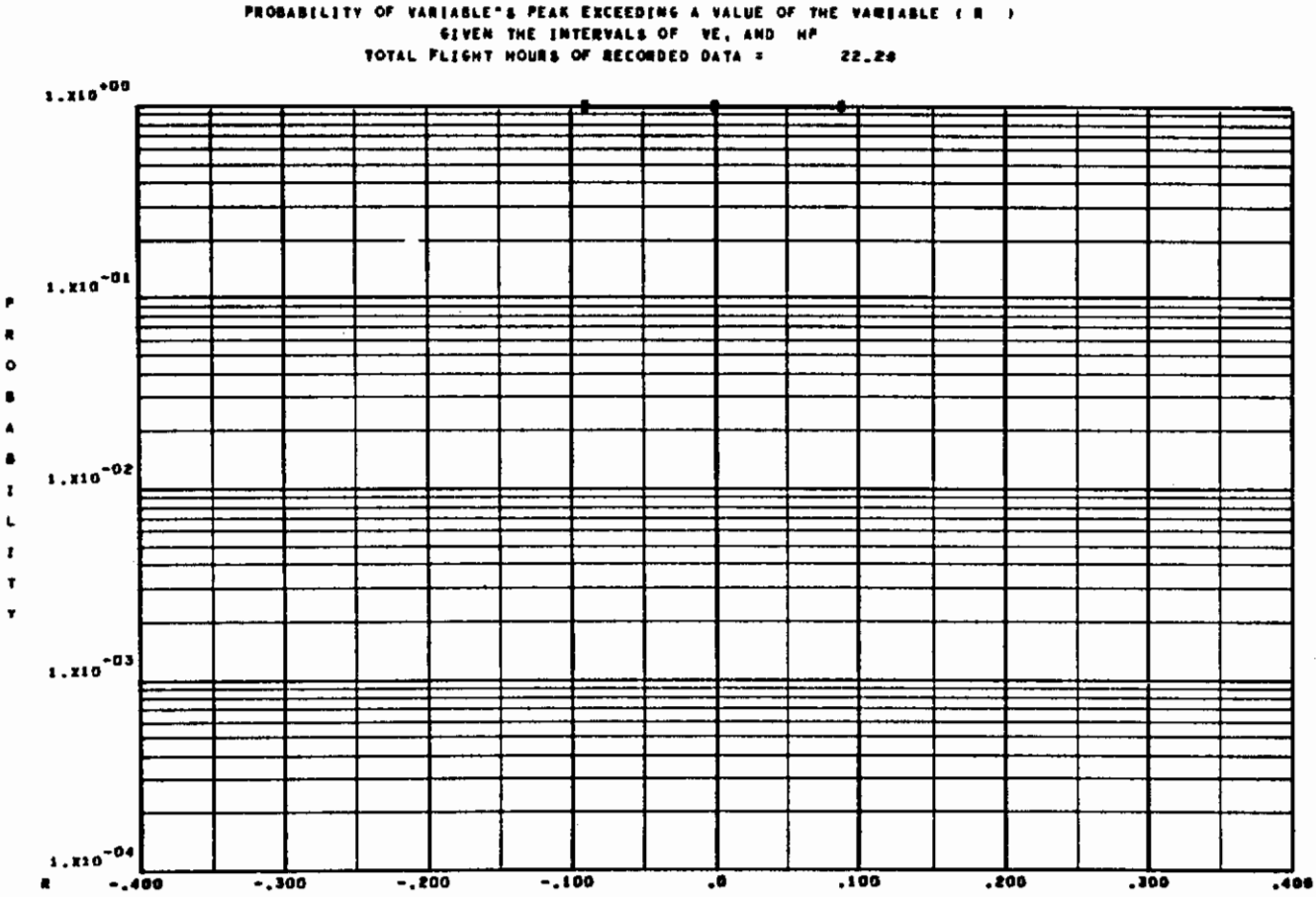
YAWING VELOCITY, R (RADIANS/SECOND)

VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (R)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	3.	3.	0.
3	3	300.	350.	11.	10.	1.
4	4	350.	400.	16.	11.	5.
5	5	400.	450.	7.	6.	1.
6	6	450.	500.	2.	0.	2.
7	7	500.	550.	1.	0.	1.
8	8	550.	600.	1.	1.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 3000. (FEET)

CASE NO. 30

Figure 12--Concluded

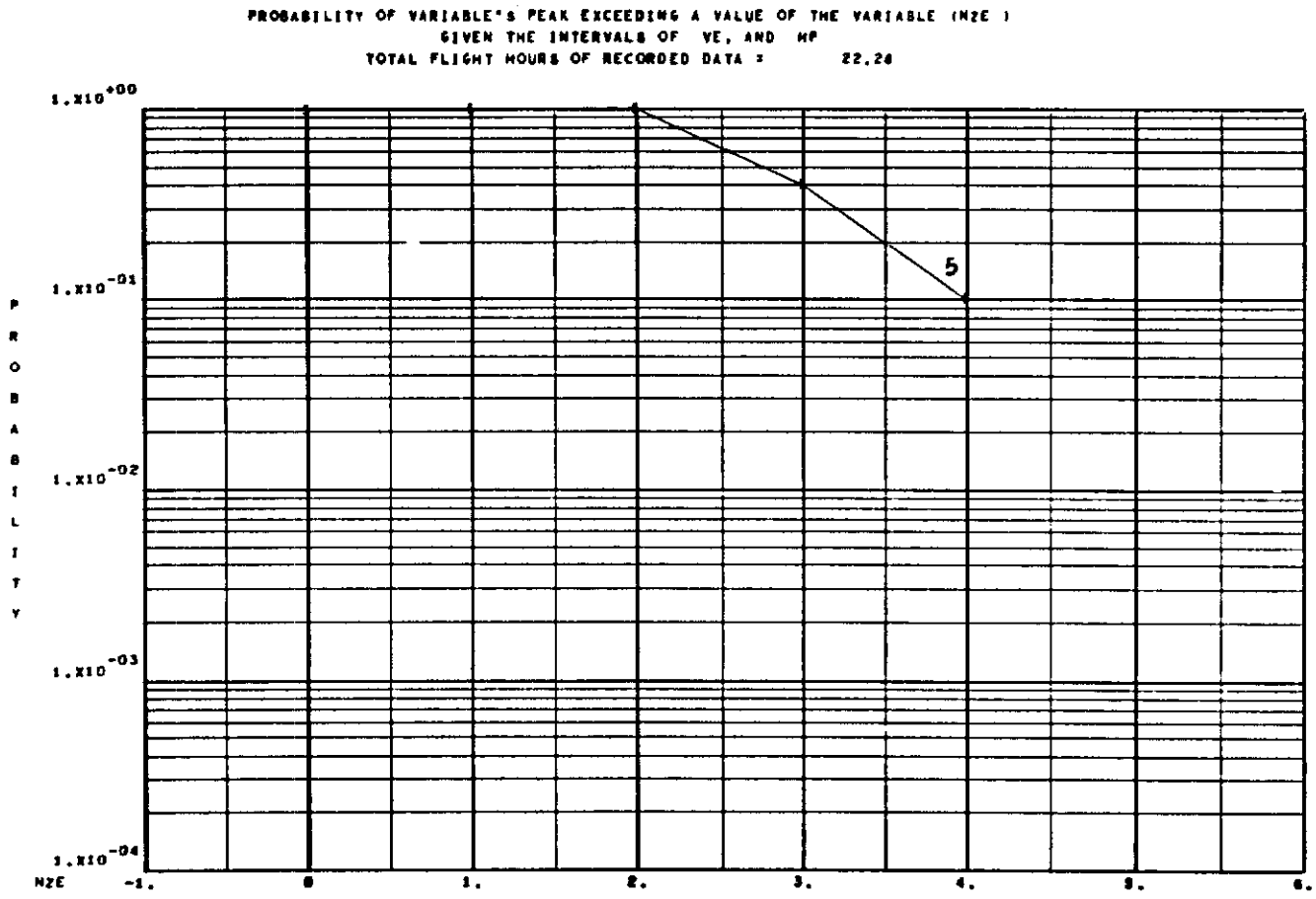


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (R)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	4.	2.	2.
2	2	250.	300.	16.	9.	7.
3	3	300.	350.	21.	11.	10.
4	4	350.	400.	10.	5.	5.
5	5	400.	450.	6.	5.	1.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	2.	2.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 30

Figure 13



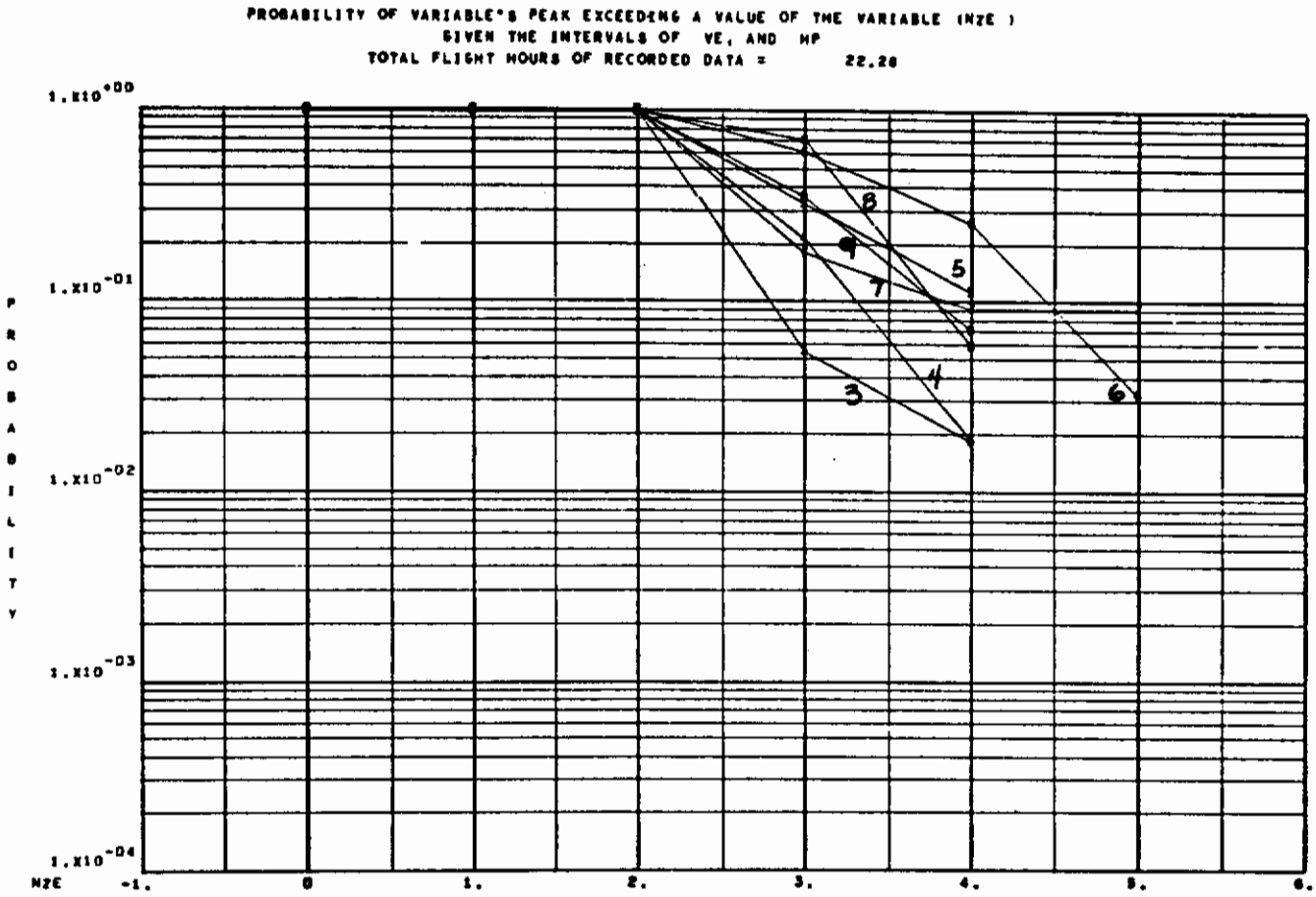
EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((N2)*(WI/WO))

SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (NZE) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	0.	0.	0.
3	3	300.	350.	1.	0.	1.
4	4	350.	400.	5.	0.	5.
5	5	400.	450.	20.	0.	20.
6	6	450.	500.	3.	0.	3.
7	7	500.	550.	1.	0.	1.
8	8	550.	600.	3.	0.	3.
9	9	600.	650.	2.	0.	2.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 31

Figure 13--Continued



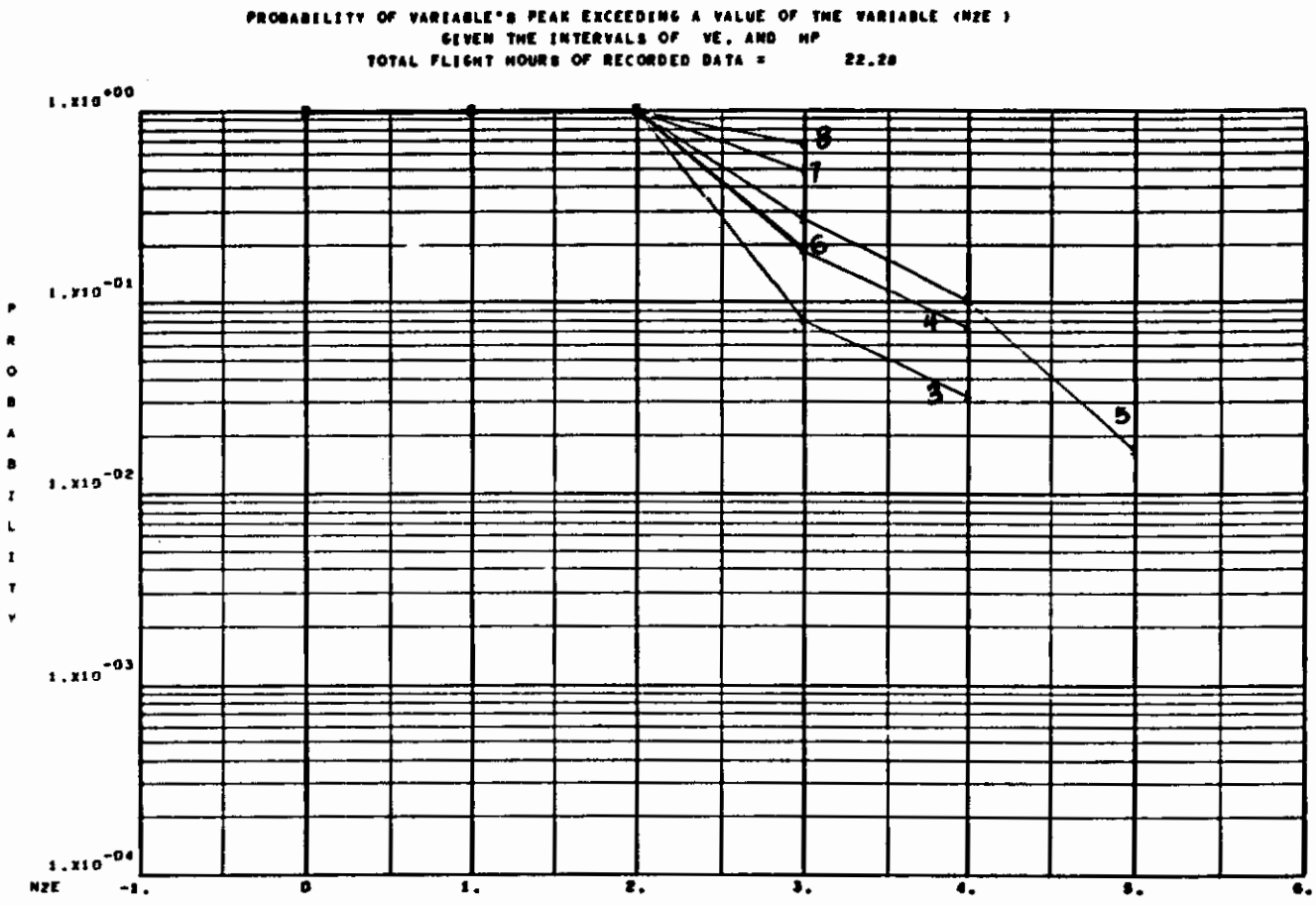
EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)*(WI/WO))

SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (NZE) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	5.	0.	5.
3	3	300.	350.	54.	0.	54.
4	4	350.	400.	106.	0.	106.
5	5	400.	450.	115.	0.	115.
6	6	450.	500.	32.	1.	31.
7	7	500.	550.	11.	0.	11.
8	8	550.	600.	17.	0.	17.
9	9	600.	650.	14.	0.	14.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 31

Figure 13--Continued

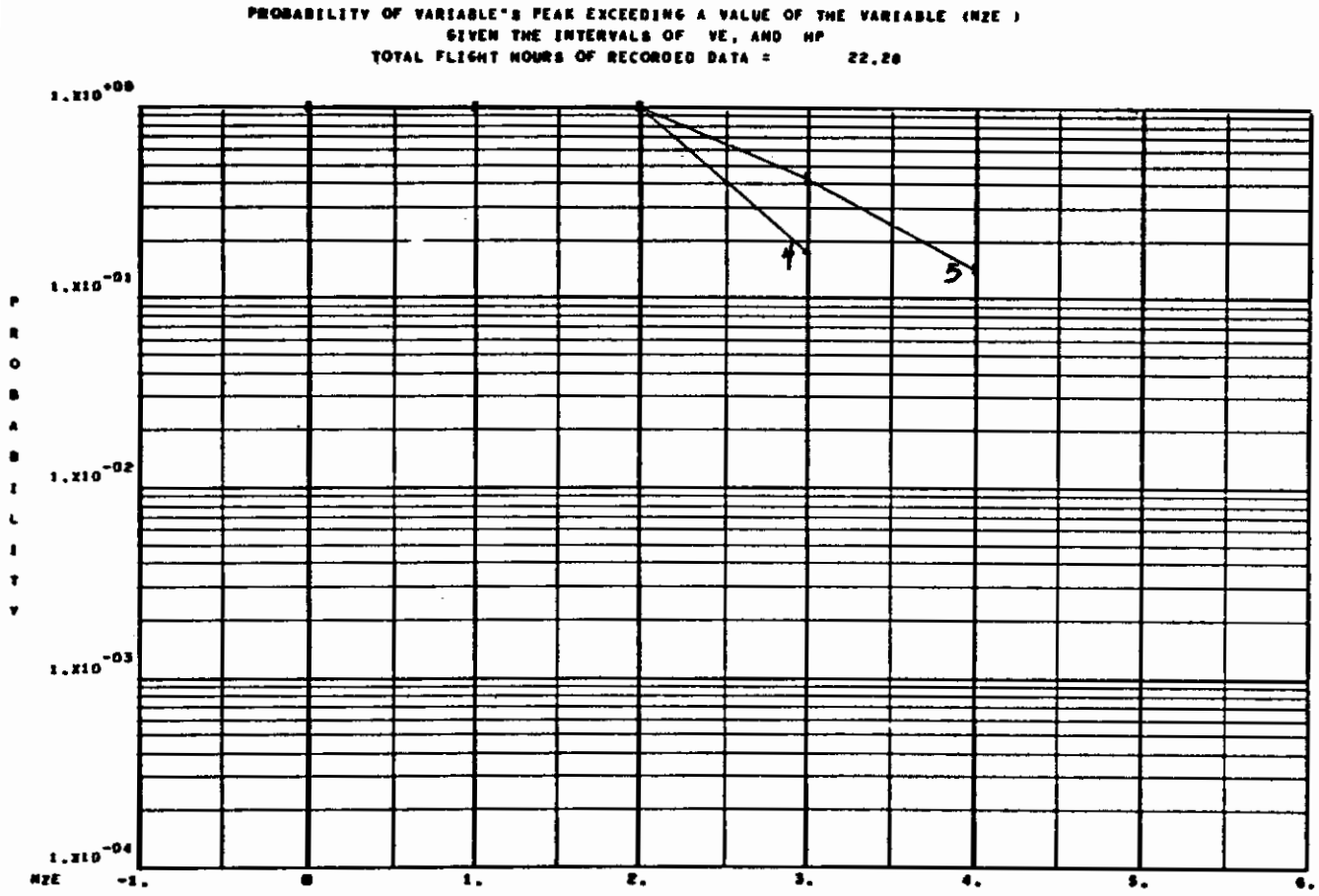


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (NZE) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	19.	0.	19.
3	3	300.	350.	62.	0.	62.
4	4	350.	400.	61.	0.	61.
5	5	400.	450.	39.	0.	39.
6	6	450.	500.	31.	0.	31.
7	7	500.	550.	25.	0.	25.
8	8	550.	600.	6.	0.	6.
9	9	600.	650.	1.	0.	1.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 31

Figure 13--Continued



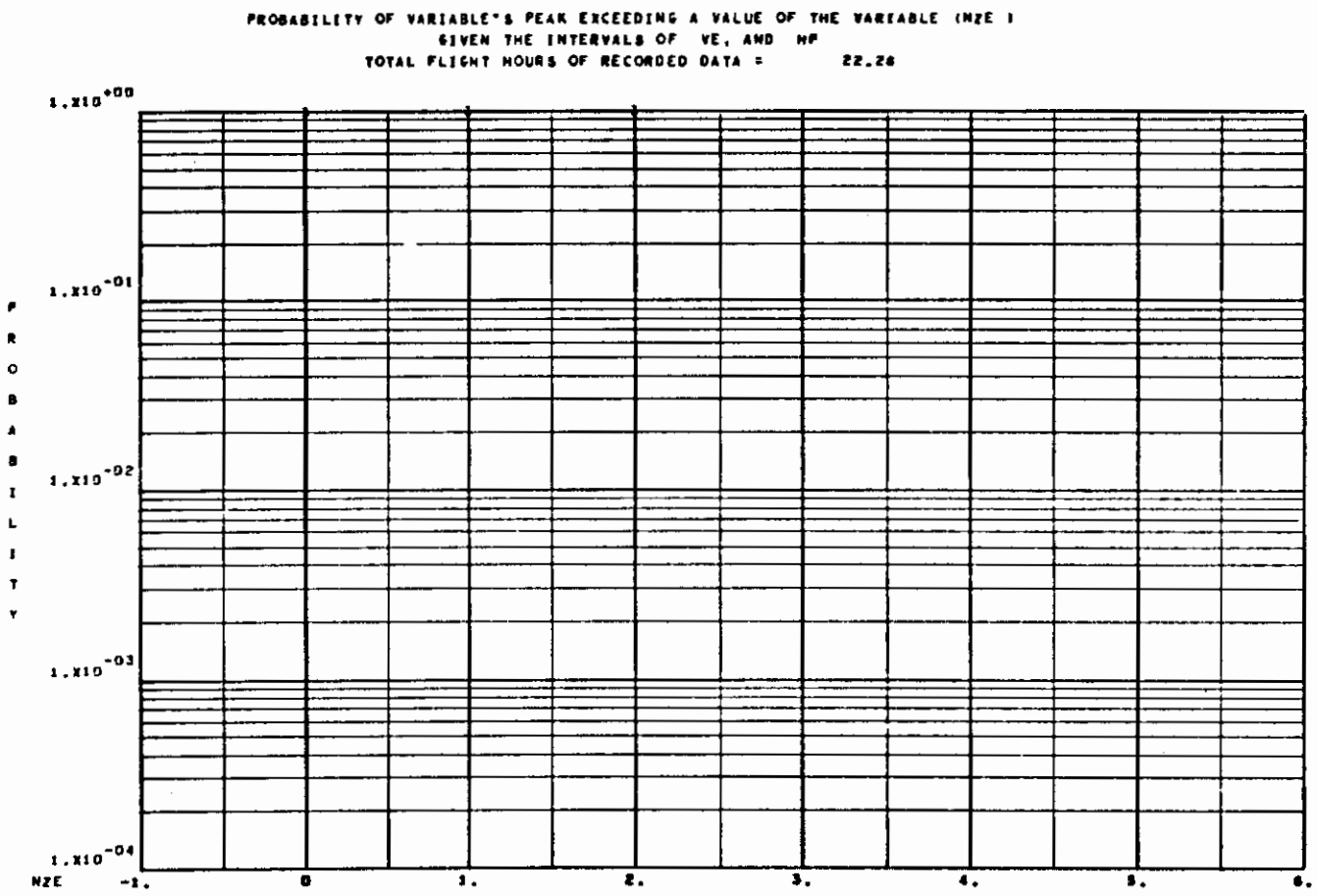
EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)*(WI/WD))

VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (NZE)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	3.	0.	3.
3	3	300.	350.	10.	0.	10.
4	4	350.	400.	17.	0.	17.
5	5	400.	450.	7.	0.	7.
6	6	450.	500.	5.	0.	5.
7	7	500.	550.	1.	0.	1.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 31

Figure 13--Concluded



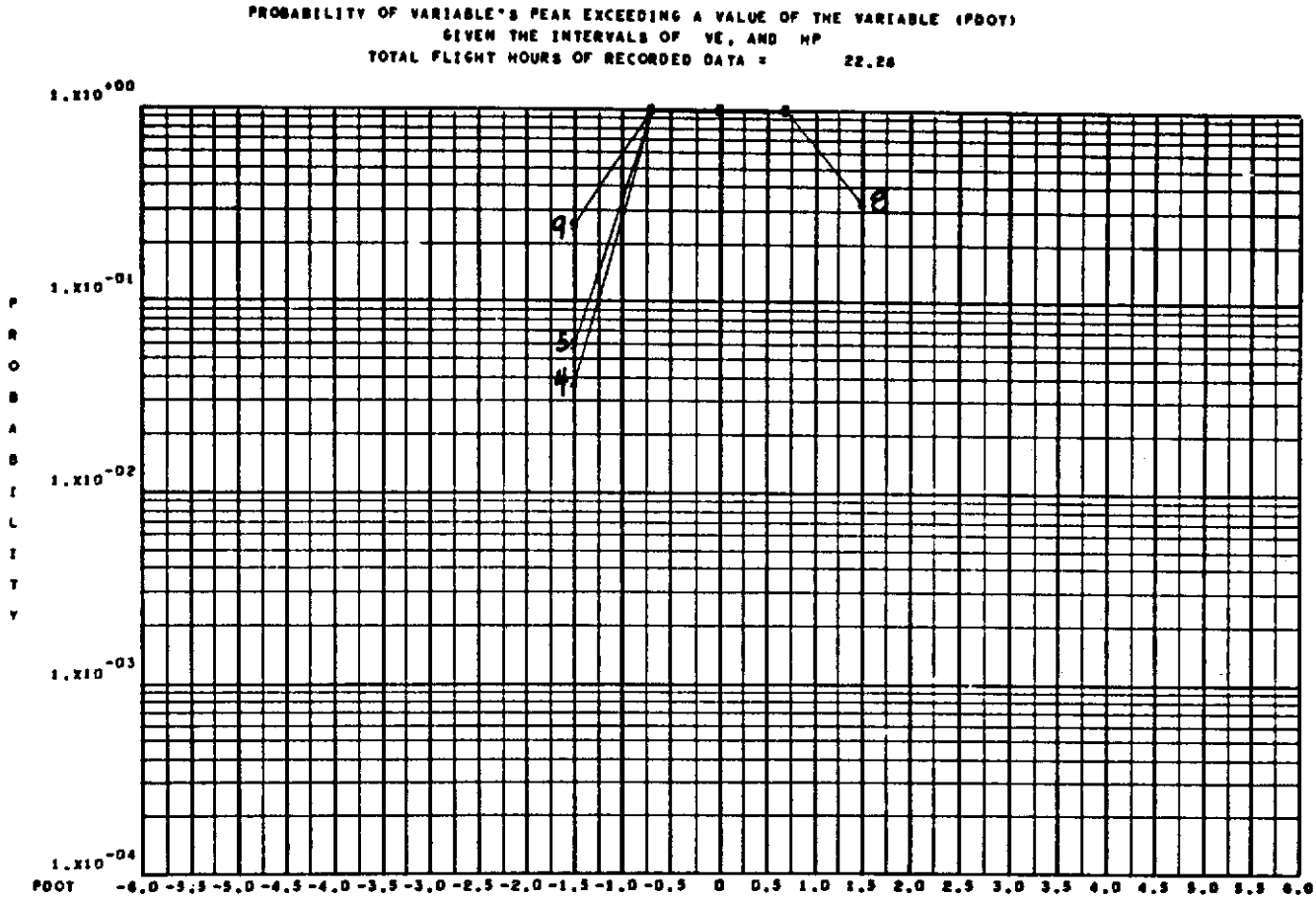
EFFECTIVE NORMAL LOAD FACTOR, NzE, OR ((Nz)*(WI/WO))

	VELOCITY, VE, (KNOTS)			NO. OF PEAKS, (NZE)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	2.	0.	2.
3	3	300.	350.	9.	0.	9.
4	4	350.	400.	3.	0.	3.
5	5	400.	450.	0.	0.	0.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 30000. (FEET)

CASE NO. 31

Figure 14

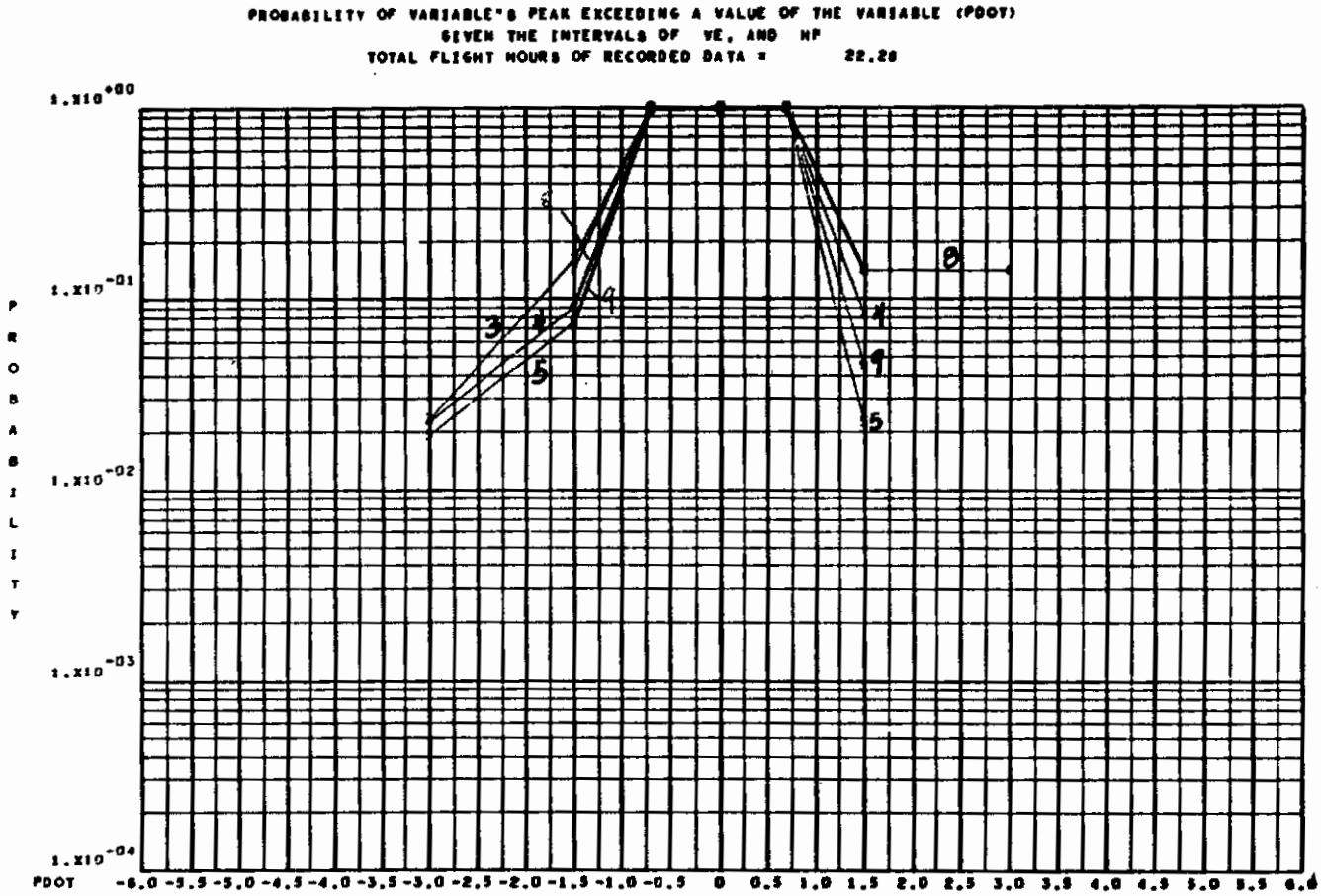


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (PDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	0.	0.	0.
3	3	300.	350.	4.	2.	2.
4	4	350.	400.	38.	27.	11.
5	5	400.	450.	33.	17.	16.
6	6	450.	500.	2.	1.	1.
7	7	500.	550.	3.	2.	1.
8	8	550.	600.	6.	3.	3.
9	9	600.	650.	8.	4.	4.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 36

Figure 14--Continued

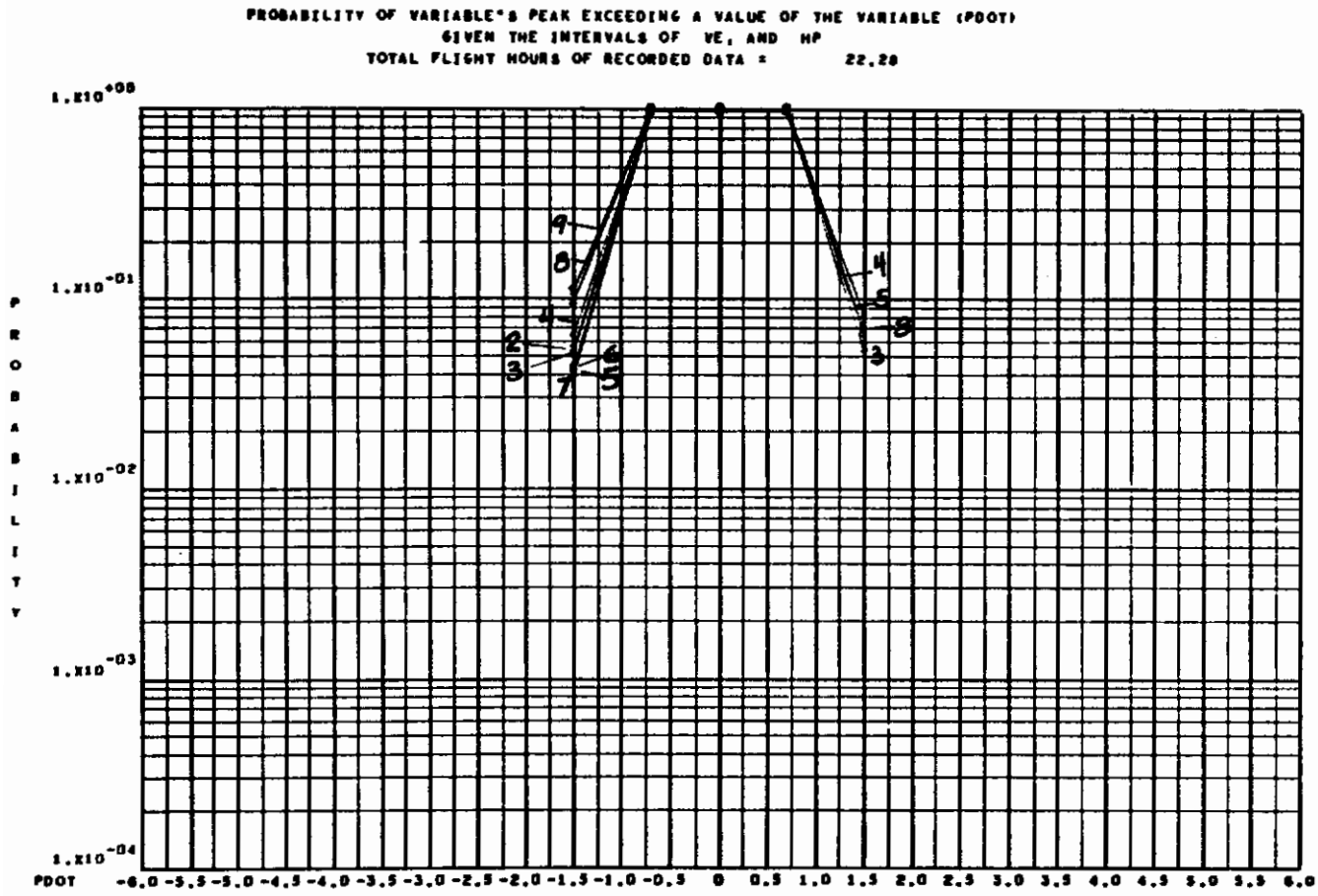


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	10.	5.	5.
3	3	300.	350.	85.	43.	42.
4	4	350.	400.	161.	88.	73.
5	5	400.	450.	96.	52.	44.
6	6	450.	500.	21.	11.	10.
7	7	500.	550.	27.	14.	13.
8	8	550.	600.	29.	22.	7.
9	9	600.	650.	50.	28.	22.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 36

Figure 14--Continued

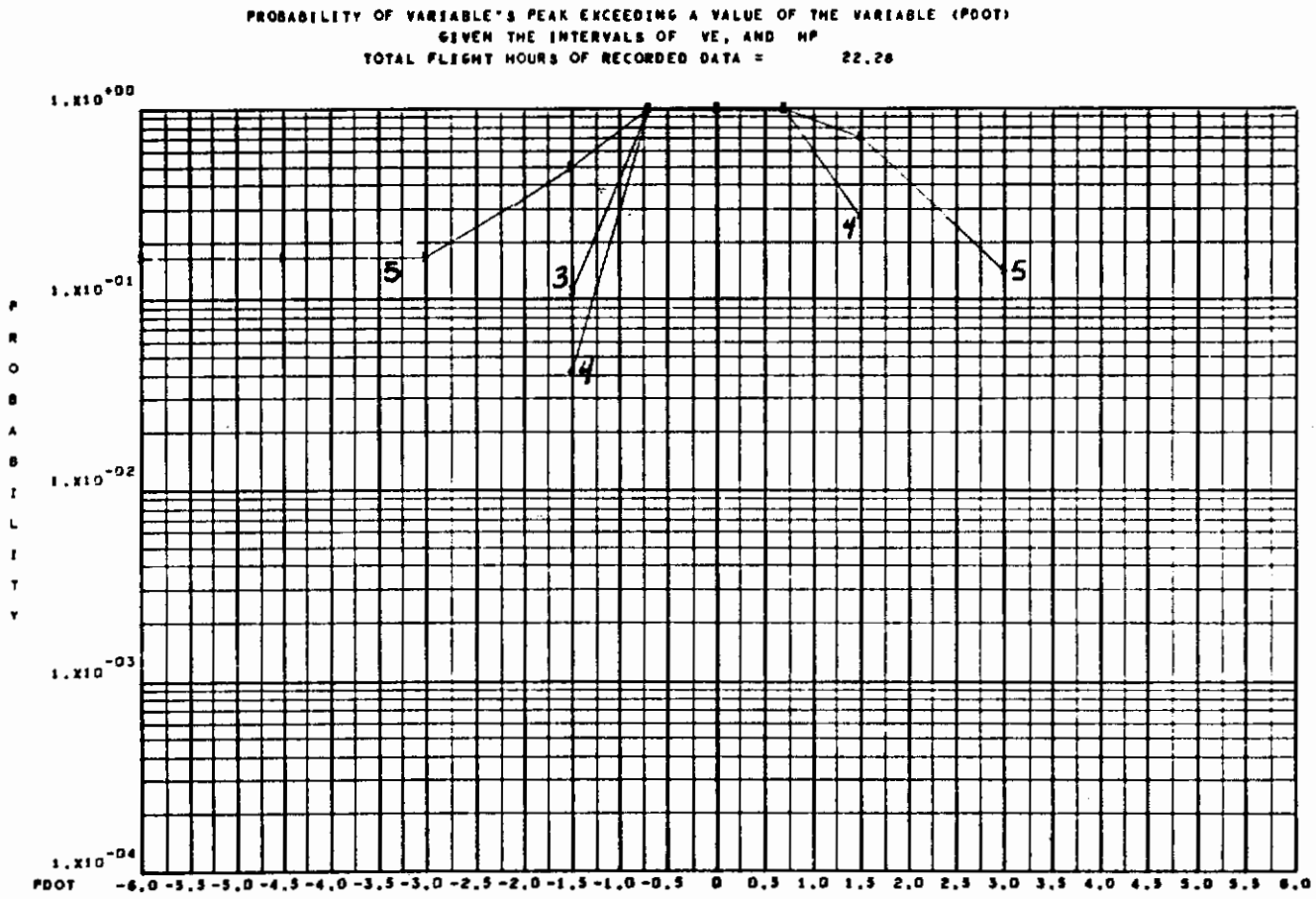


	VELOCITY, VE, (KNOTS)			NO. OF PEAKS, (PDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	37.	18.	19.
3	3	300.	350.	111.	57.	54.
4	4	350.	400.	111.	62.	49.
5	5	400.	450.	77.	49.	28.
6	6	450.	500.	43.	23.	20.
7	7	500.	550.	45.	25.	20.
8	8	550.	600.	36.	21.	15.
9	9	600.	650.	16.	9.	7.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 36

Figure 14--Continued

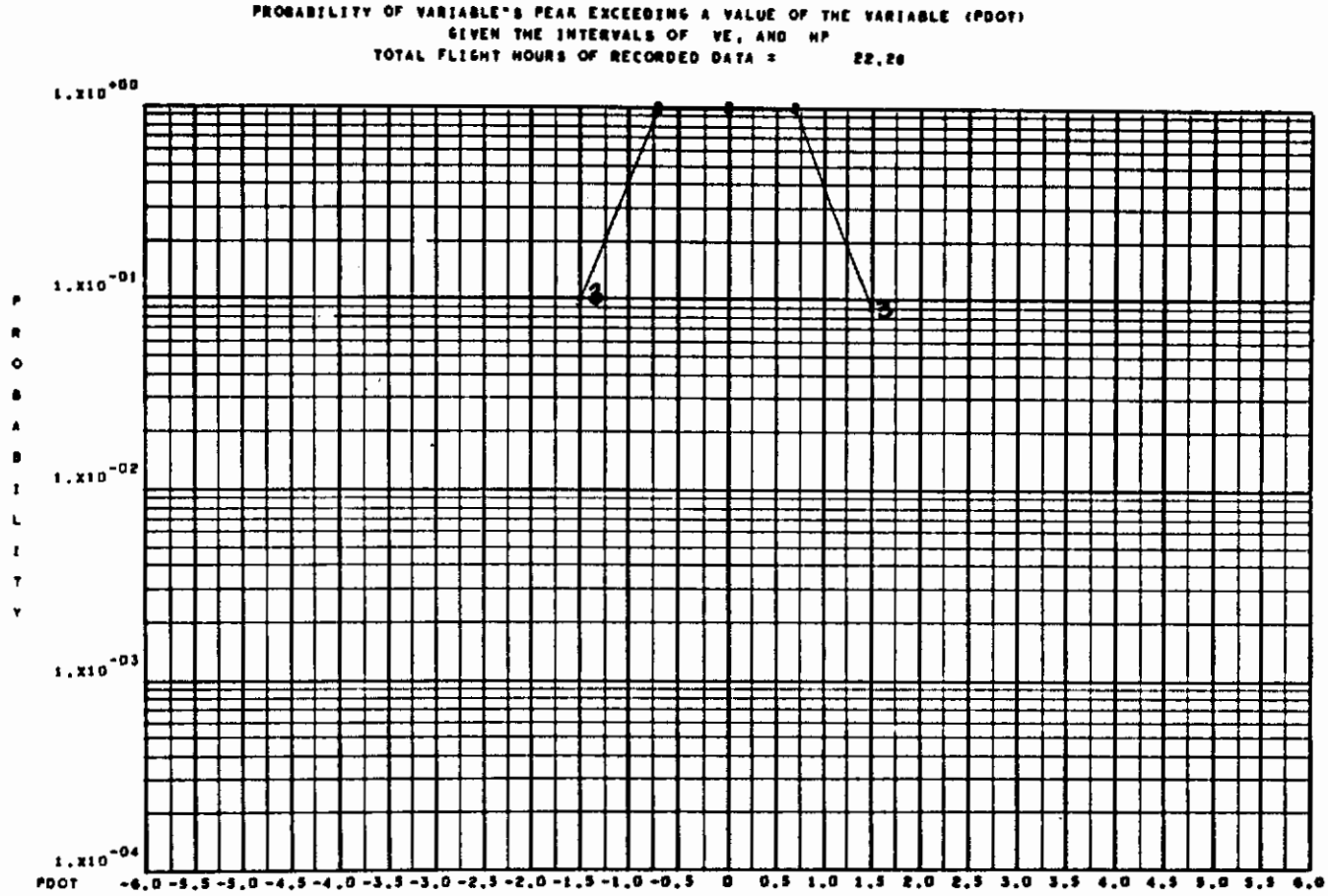


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	1.	0.
2	2	250.	300.	2.	1.	1.
3	3	300.	350.	16.	9.	7.
4	4	350.	400.	35.	24.	11.
5	5	400.	450.	13.	6.	7.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 36

Figure 14--Concluded



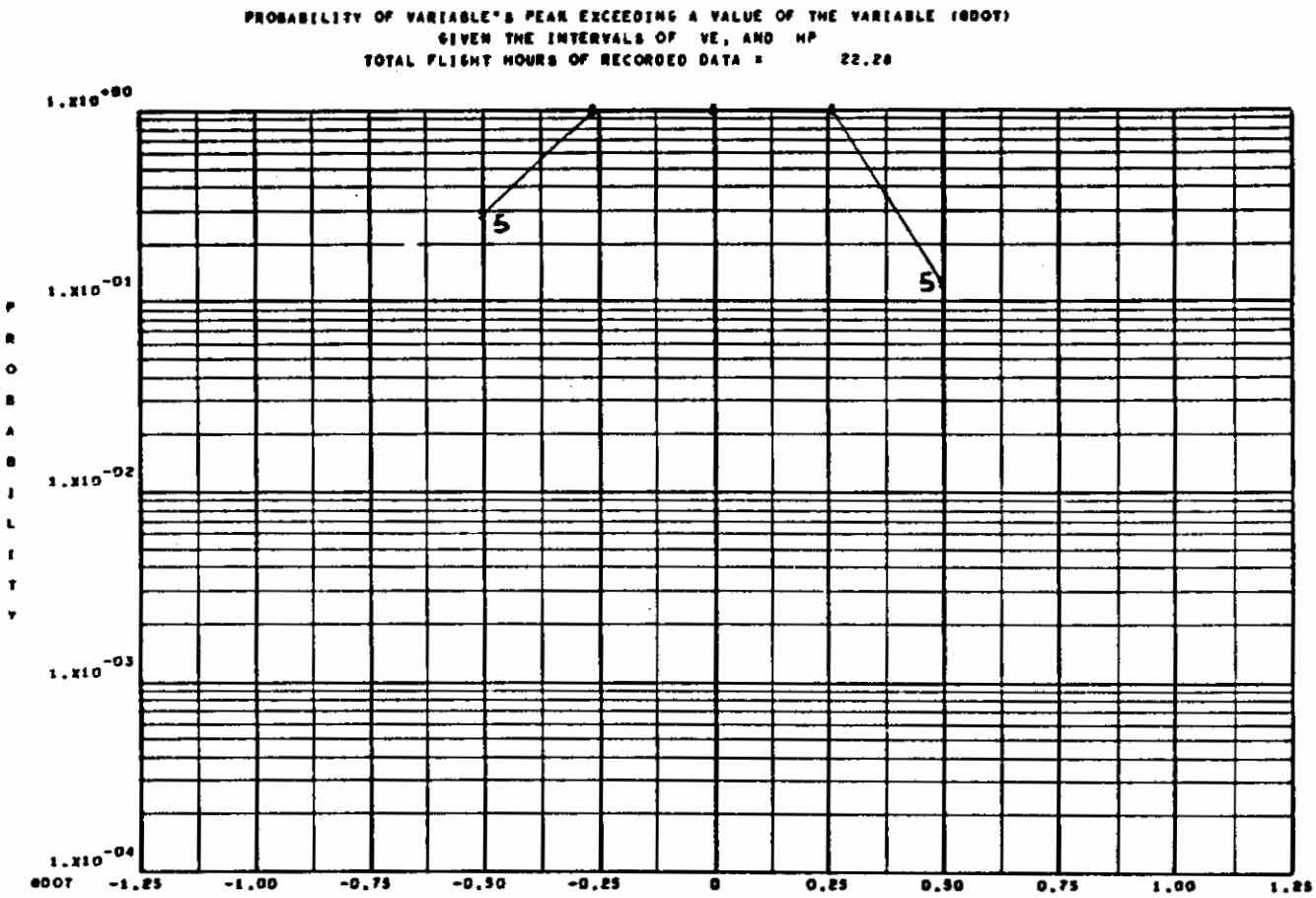
ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

	VELOCITY, VE, (KNOTS)			NO. OF PEAKS, (PDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	2.	2.	0.
2	2	250.	300.	6.	3.	3.
3	3	300.	350.	32.	21.	11.
4	4	350.	400.	21.	13.	8.
5	5	400.	450.	0.	0.	0.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 30000. (FEET)

CASE NO. 36

Figure 15

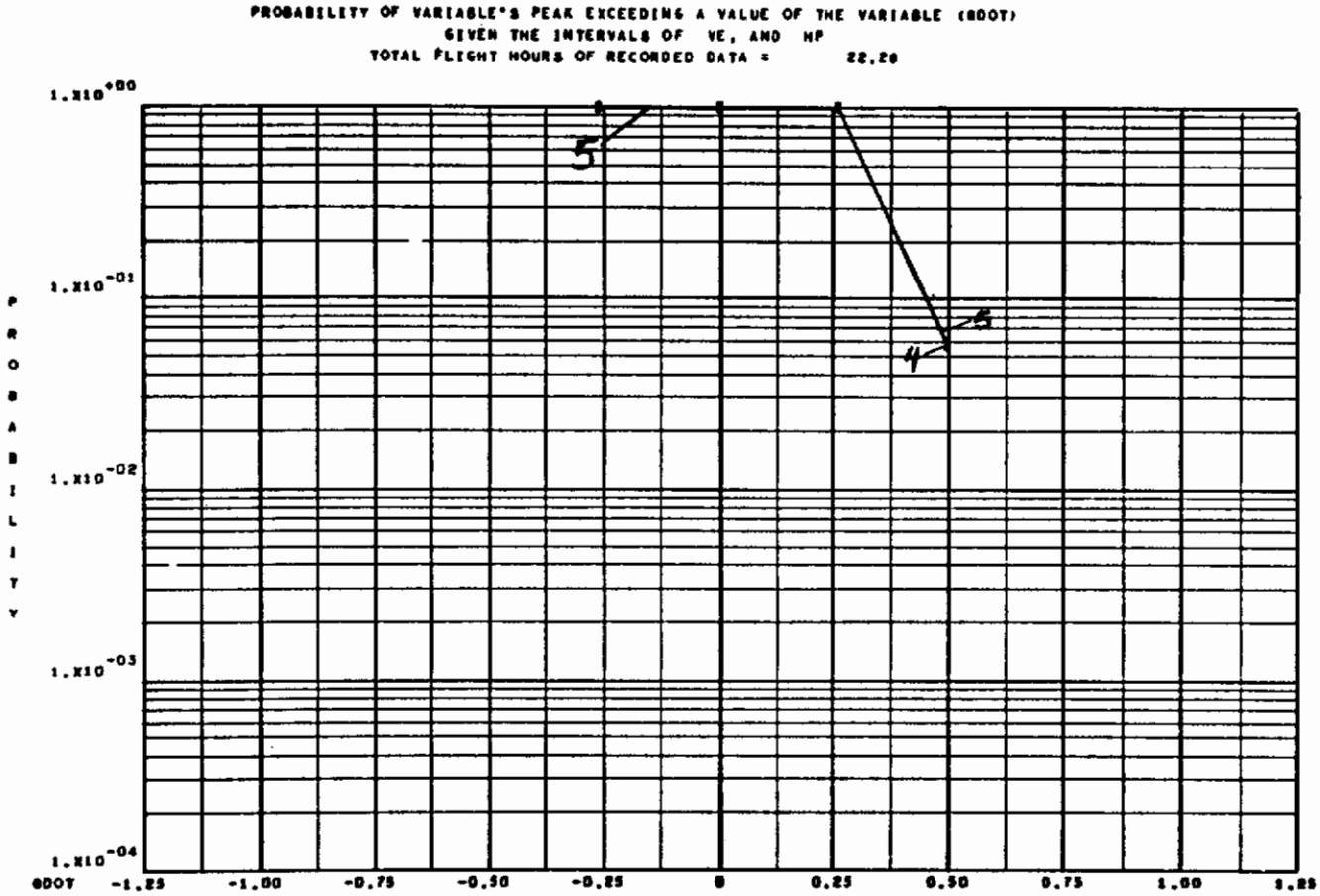


	VELOCITY, VE, (KNOTS)			NO. OF PEAKS, (ΘDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	1.	0.
2	2	250.	300.	0.	0.	0.
3	3	300.	350.	0.	0.	0.
4	4	350.	400.	18.	8.	10.
5	5	400.	450.	15.	7.	8.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	1.	0.	1.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	1.	1.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 40

Figure 15--Continued

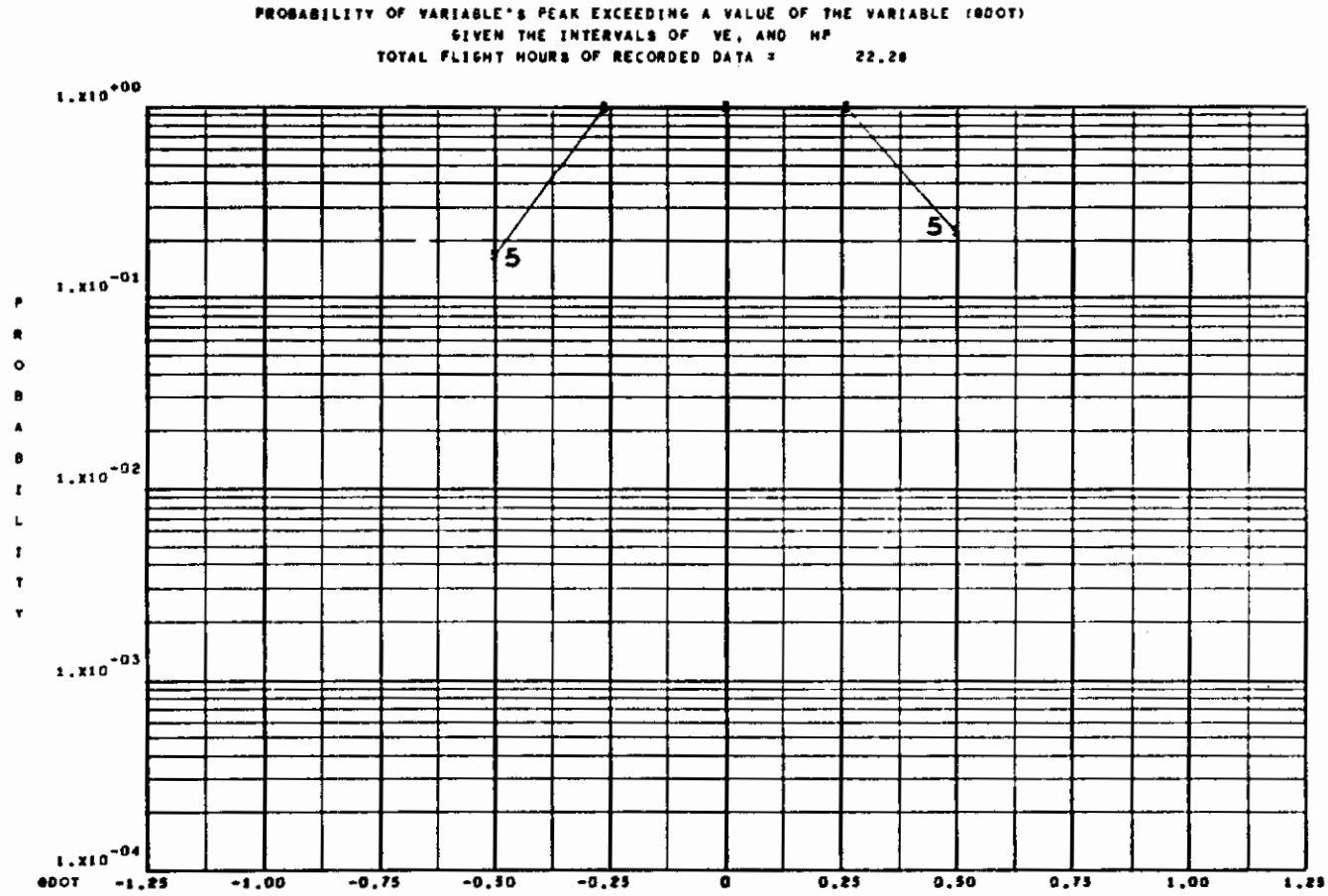


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (ØDOT) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	2.	0.	2.
3	3	300.	350.	9.	3.	6.
4	4	350.	400.	29.	11.	18.
5	5	400.	450.	25.	8.	17.
6	6	450.	500.	3.	1.	2.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	1.	1.	0.
9	9	600.	650.	1.	1.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 3000. (FEET)

CASE NO. 40

Figure 15--Continued

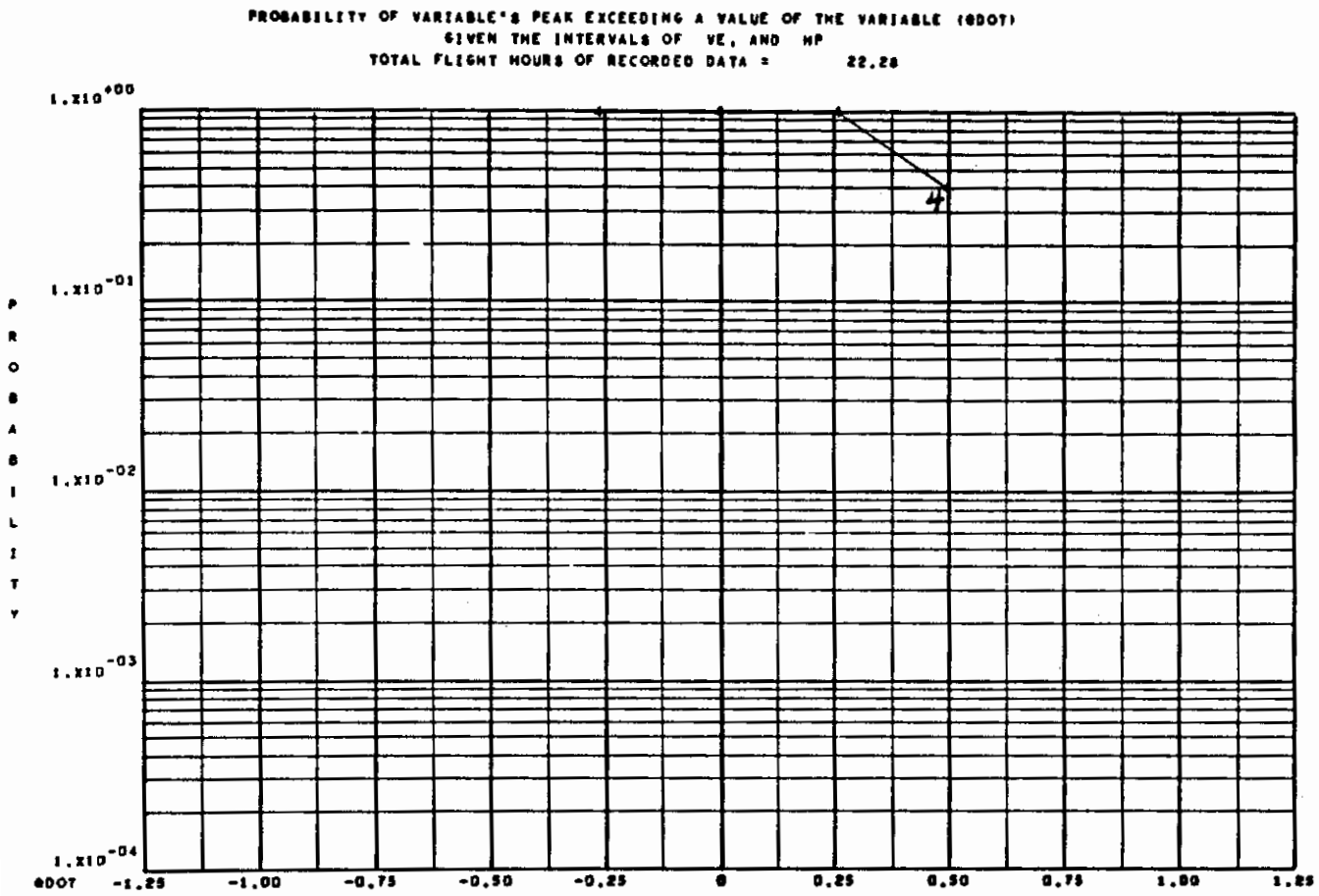


	VELOCITY, VE, (KNOTS)			NO. OF PEAKS, (ØDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	2.	0.	2.
3	3	300.	350.	10.	2.	8.
4	4	350.	400.	13.	2.	11.
5	5	400.	450.	15.	6.	9.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	1.	1.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 40

Figure 15--Continued

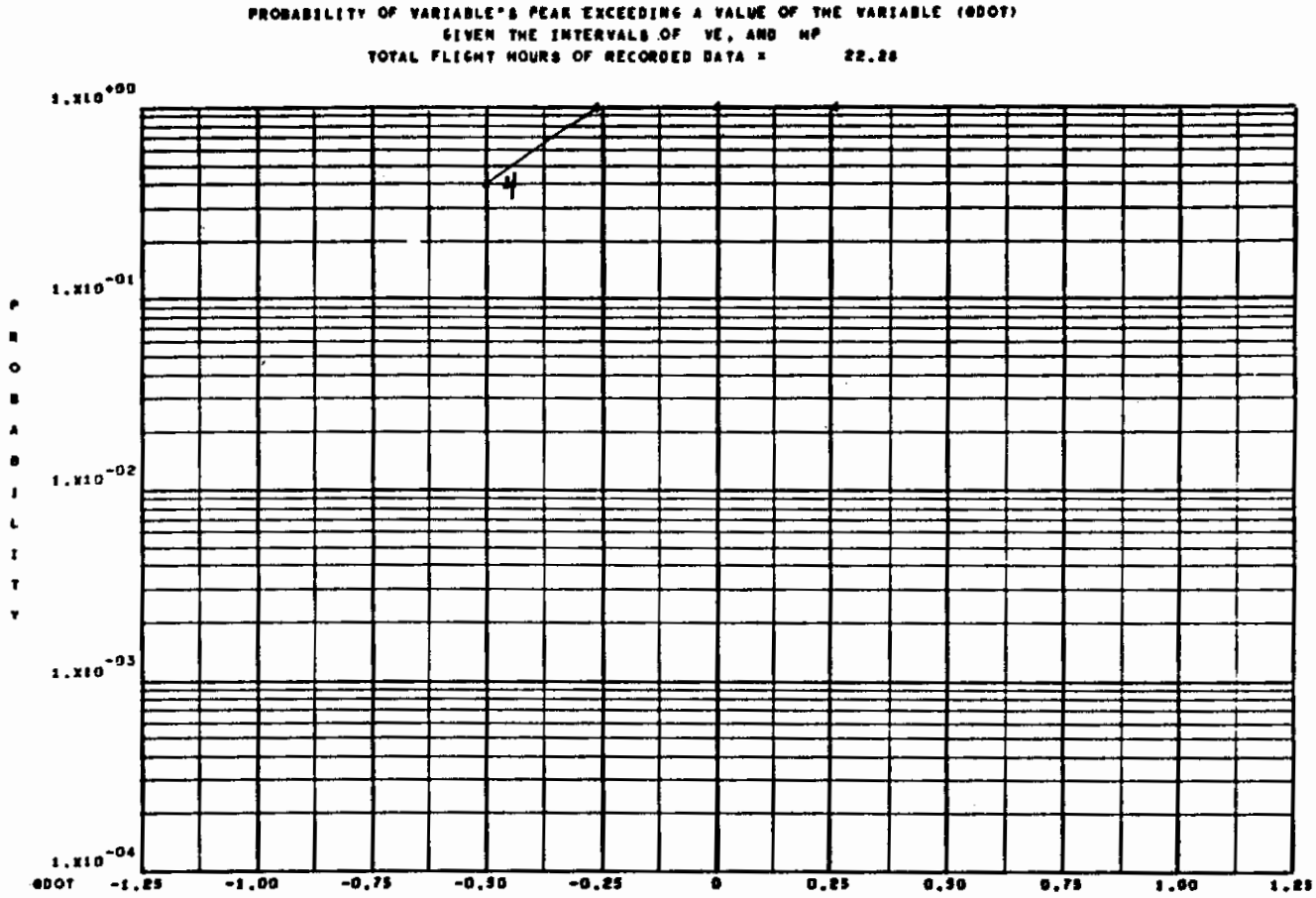


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (ΘDOT) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	1.	0.	1.
3	3	300.	350.	0.	0.	0.
4	4	350.	400.	15.	10.	5.
5	5	400.	450.	3.	1.	2.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 40

Figure 15--Concluded

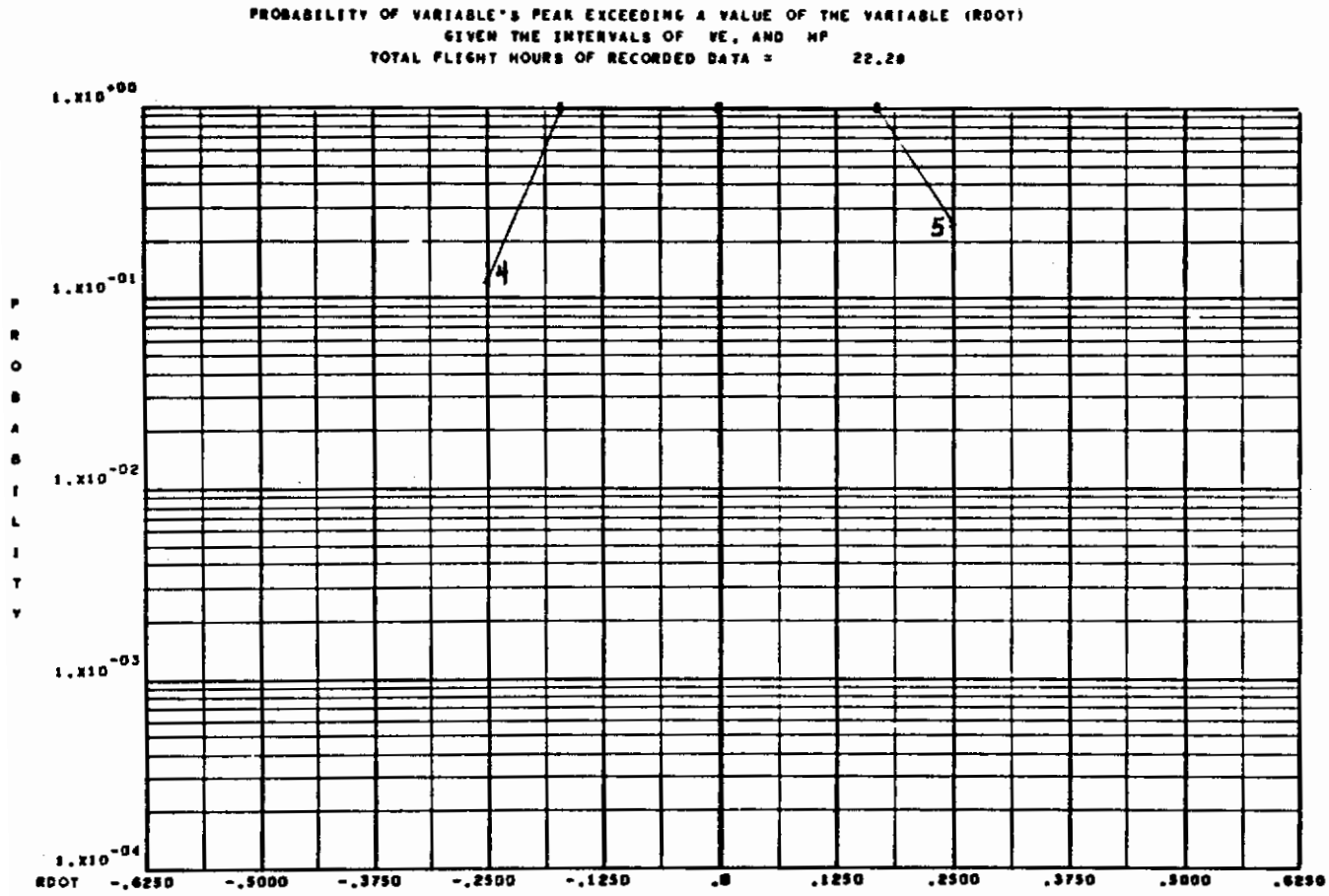


VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (ΘDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	1.	0.	1.
2	2	250.	300.	0.	0.	0.
3	3	300.	350.	3.	2.	1.
4	4	350.	400.	11.	5.	6.
5	5	400.	450.	0.	0.	0.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	0.	0.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 30000. (FEET)

CASE NO. 49

Figure 16

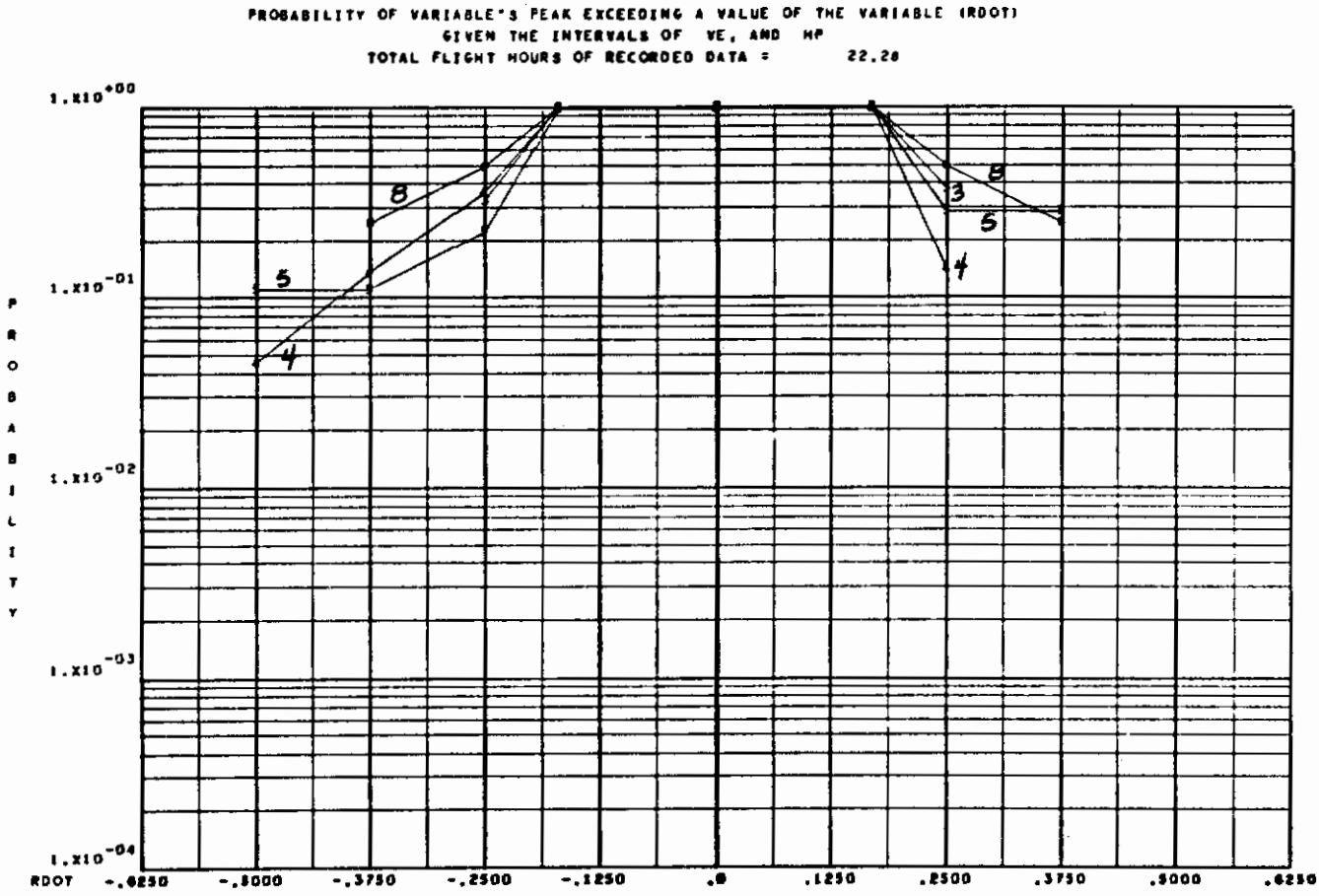


	VELOCITY, VE, (KNOTS)			NO. OF PEAKS, (RDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	0.	0.	0.
3	3	300.	350.	3.	2.	1.
4	4	350.	400.	29.	16.	13.
5	5	400.	450.	12.	8.	4.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	2.	2.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 45

Figure 16--Continued



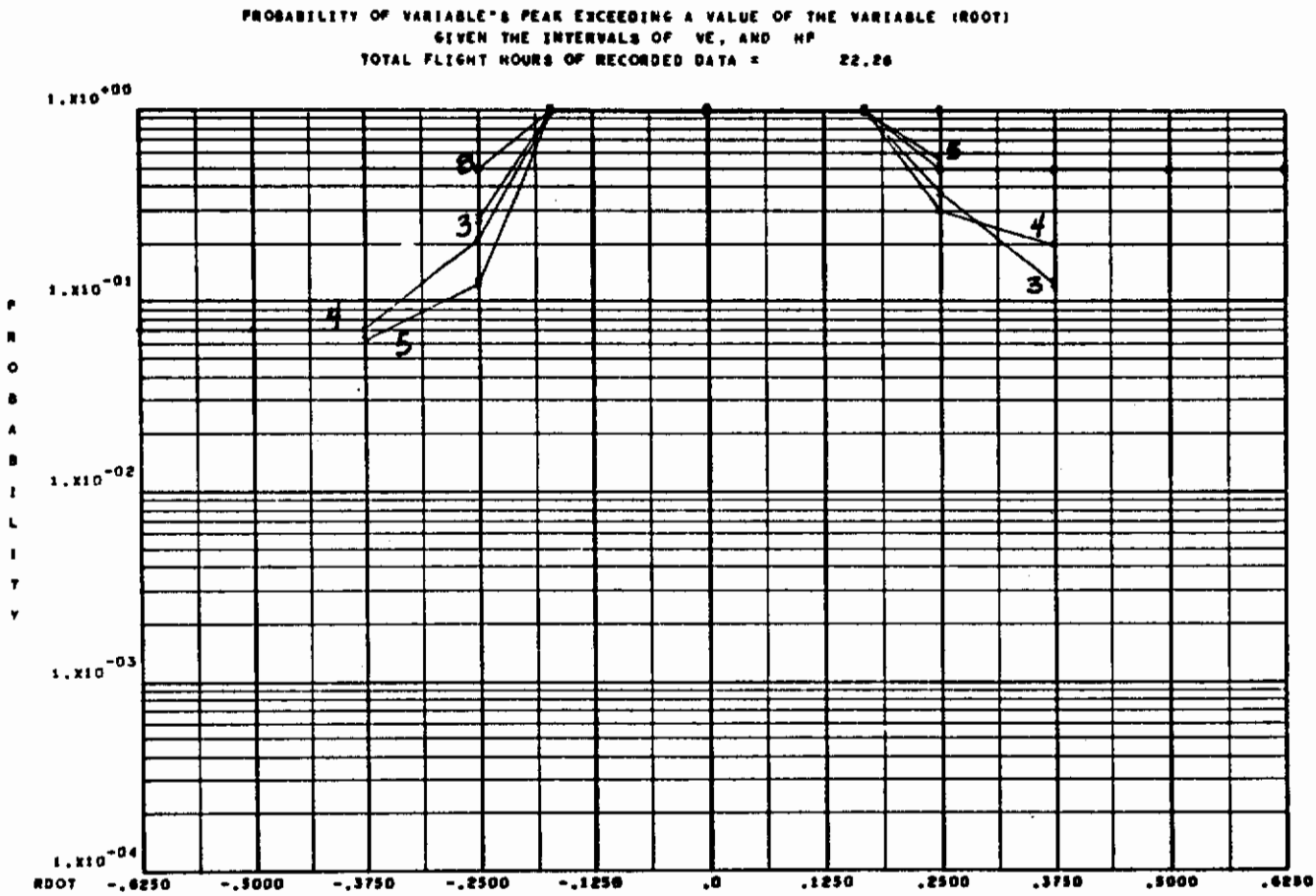
YAWING ACCELERATION, R DOT (RADIANS/SECOND SQUARED)

VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (RDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	1.	0.	1.
3	3	300.	350.	17.	9.	8.
4	4	350.	400.	36.	22.	14.
5	5	400.	450.	16.	9.	7.
6	6	450.	500.	4.	2.	2.
7	7	500.	550.	4.	4.	0.
8	8	550.	600.	8.	4.	4.
9	9	600.	650.	1.	1.	0.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2; FROM 2000. TO 3000. (FEET)

CASE NO. 45

Figure 16--Continued

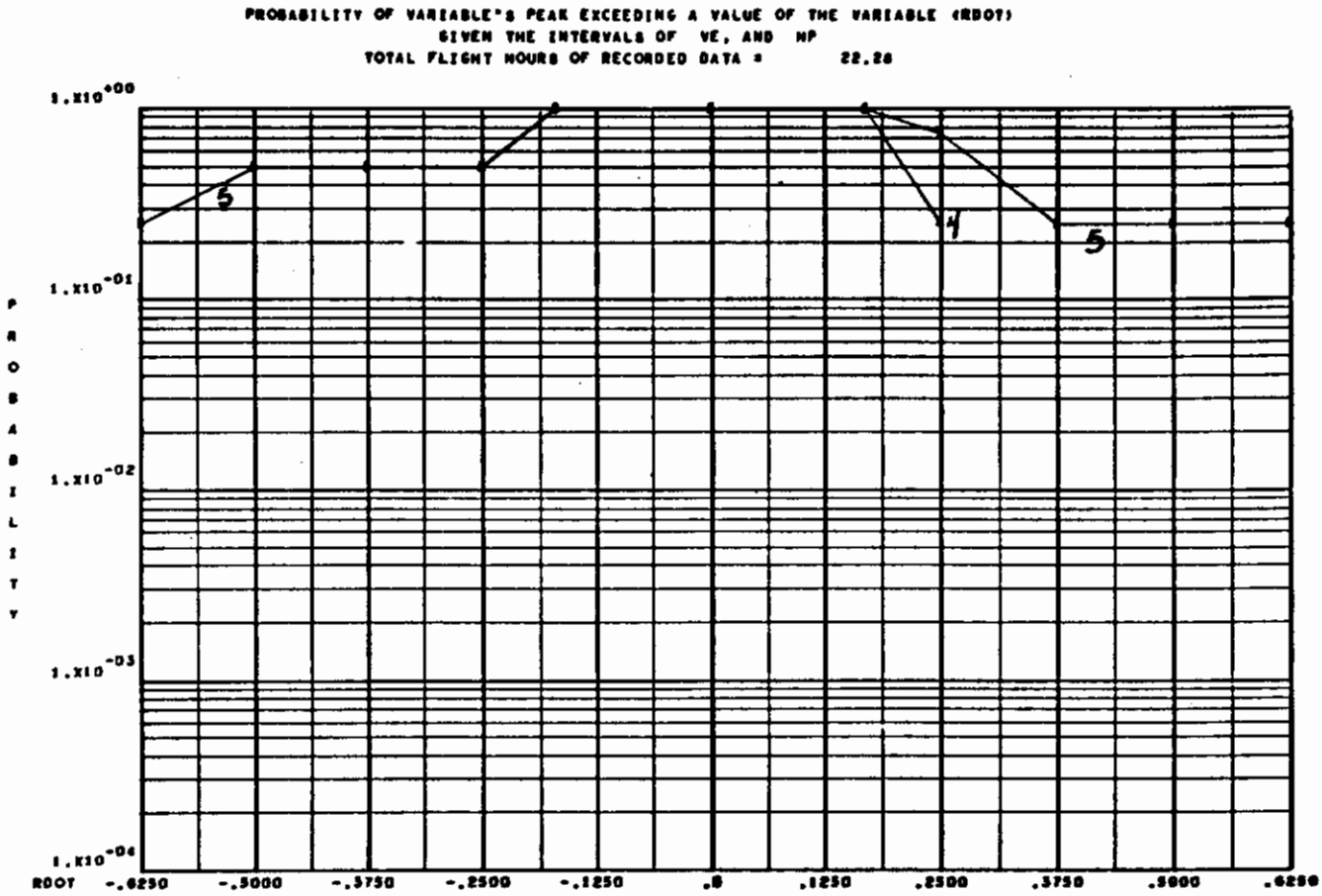


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	3.	1.	2.
3	3	300.	350.	19.	11.	8.
4	4	350.	400.	24.	14.	10.
5	5	400.	450.	25.	16.	9.
6	6	450.	500.	2.	1.	1.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	8.	6.	2.
9	9	600.	650.	7.	6.	1.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 48

Figure 16--Concluded



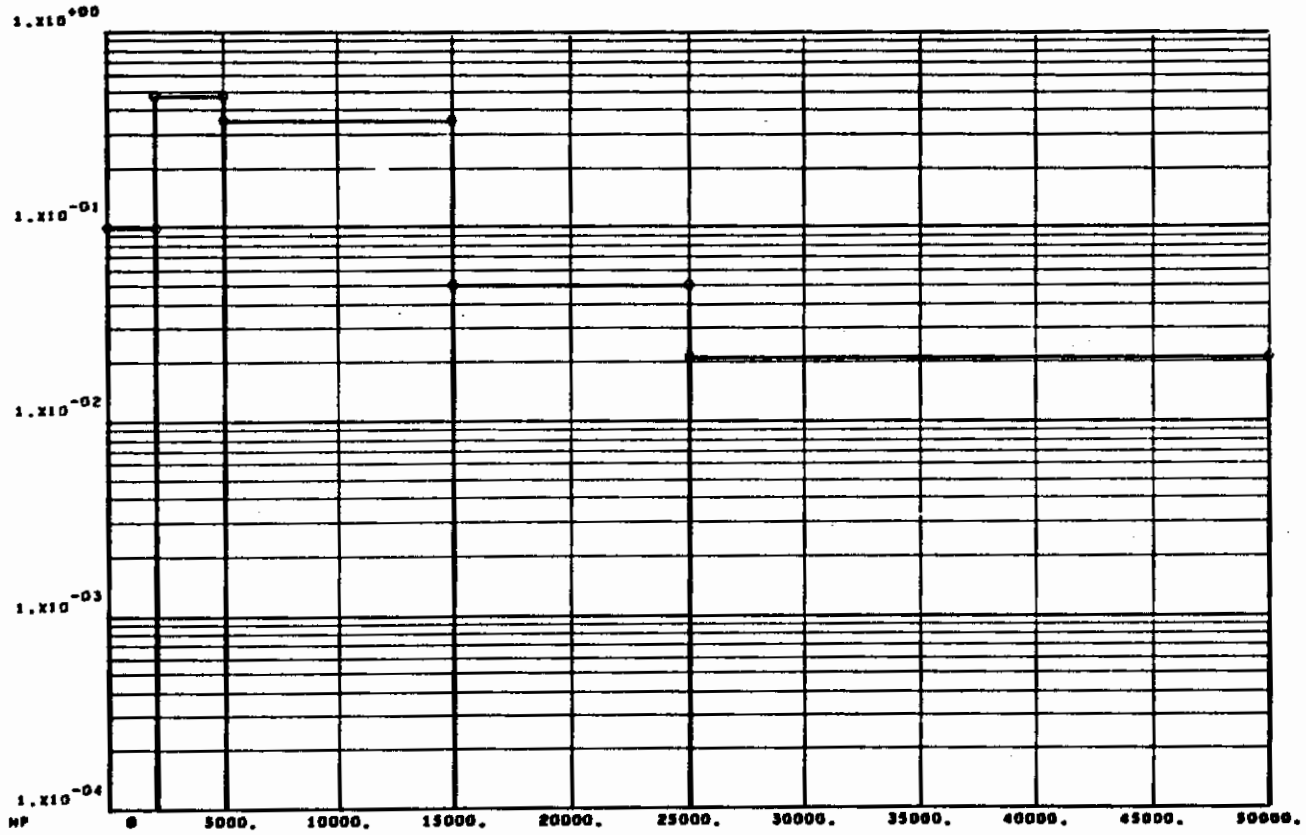
VELOCITY, VE, (KNOTS)				NO. OF PEAKS, (RDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.	250.	0.	0.	0.
2	2	250.	300.	0.	0.	0.
3	3	300.	350.	5.	2.	1.
4	4	350.	400.	10.	6.	4.
5	5	400.	450.	8.	4.	4.
6	6	450.	500.	0.	0.	0.
7	7	500.	550.	0.	0.	0.
8	8	550.	600.	0.	0.	0.
9	9	600.	650.	8.	0.	5.
0	10	650.	810.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 45

Figure 17

PROBABILITY OF BEING IN AN ALTITUDE INTERVAL, HP, WHEN Nv EXHIBITS A PEAK
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.26



TOTAL NO. OF PEAKS = 902.

PEAKING VARIABLE (Nv)

CASE NO. 61

Figure 18

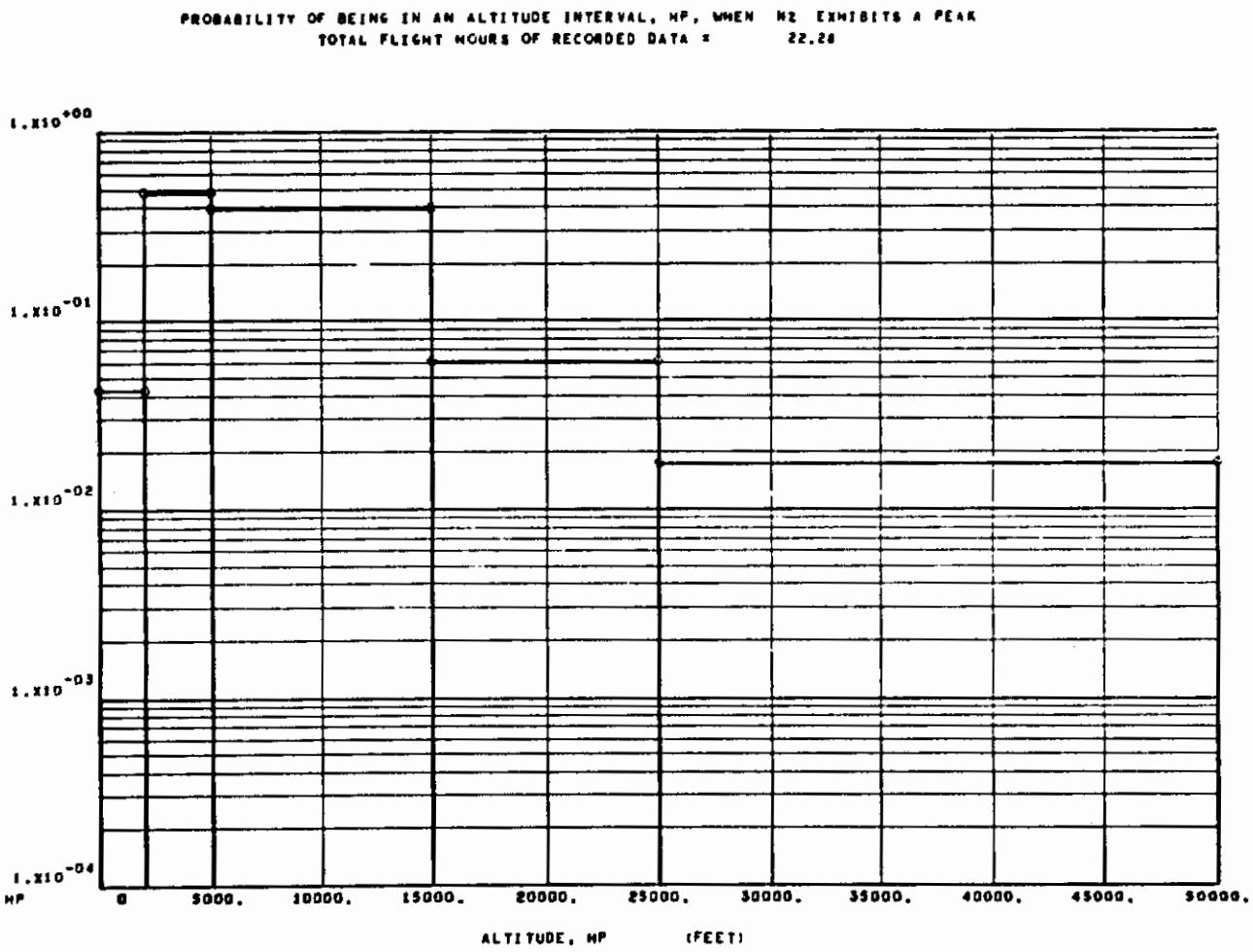
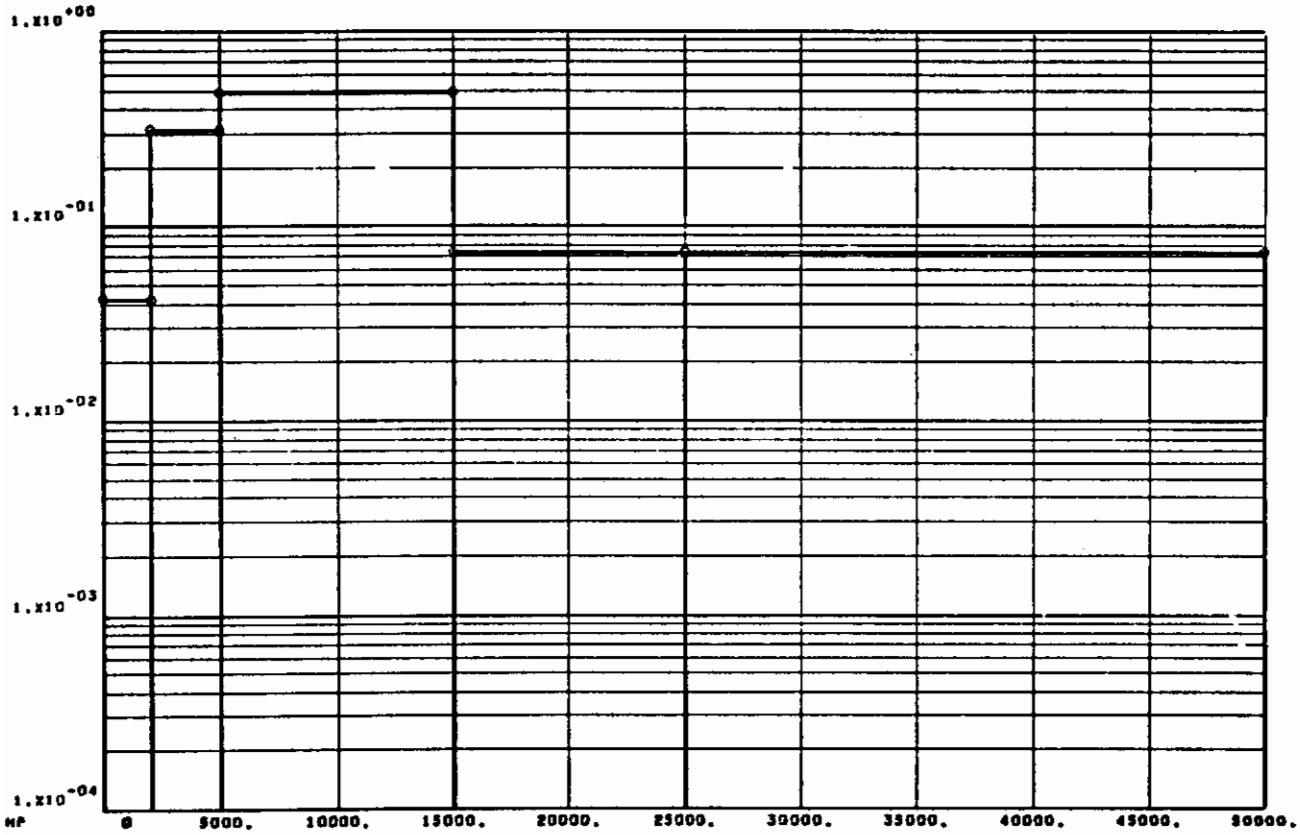


Figure 19

PROBABILITY OF BEING IN AN ALTITUDE INTERVAL, HP, WHEN P EXHIBITS A PEAK
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



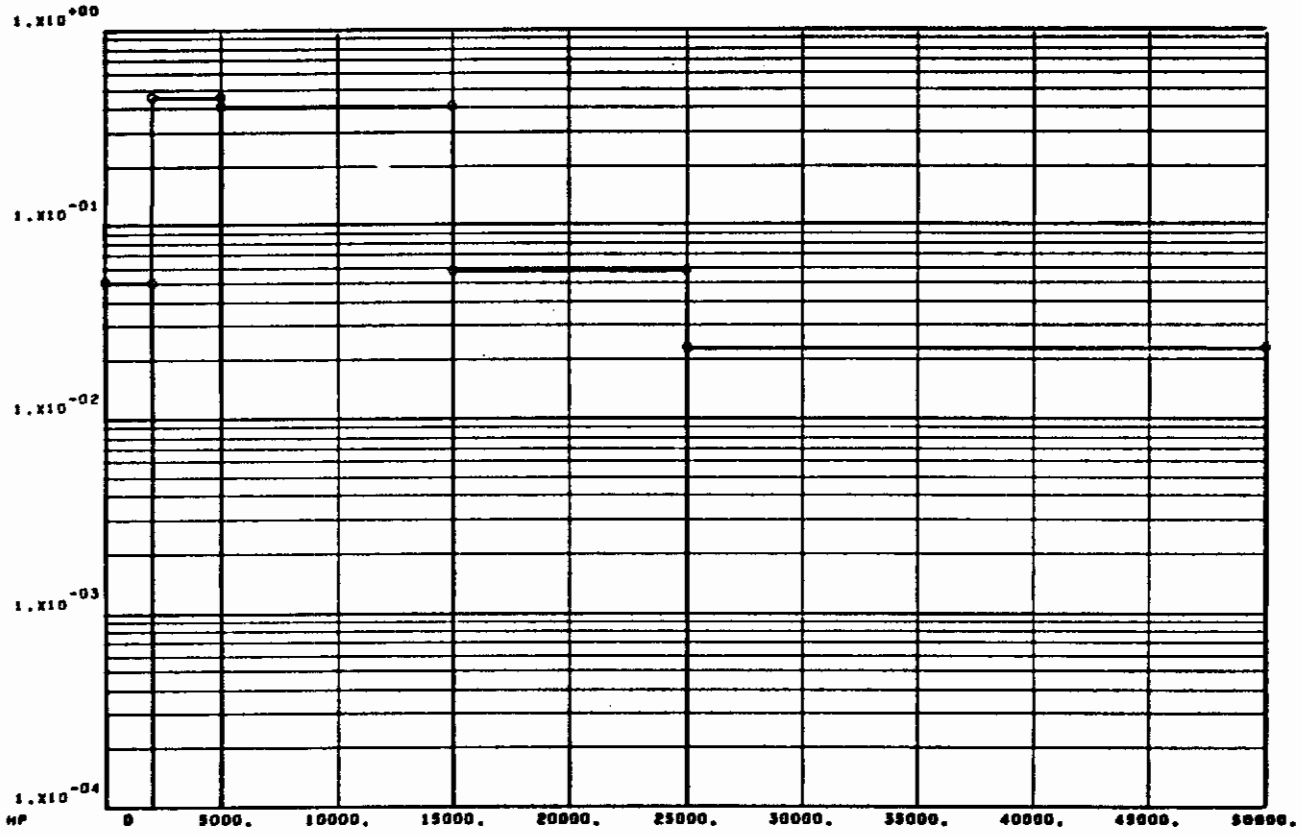
TOTAL NO. OF PEAKS = 189.

PEAKING VARIABLE (P)

CASE NO. 83

Figure 20

PROBABILITY OF BEING IN AN ALTITUDE INTERVAL, HP, WHEN θ EXHIBITS A PEAK
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.26



TOTAL NO. OF PEAKS = 703.

PEAKING VARIABLE (θ)

CASE NO. 64

Figure 21

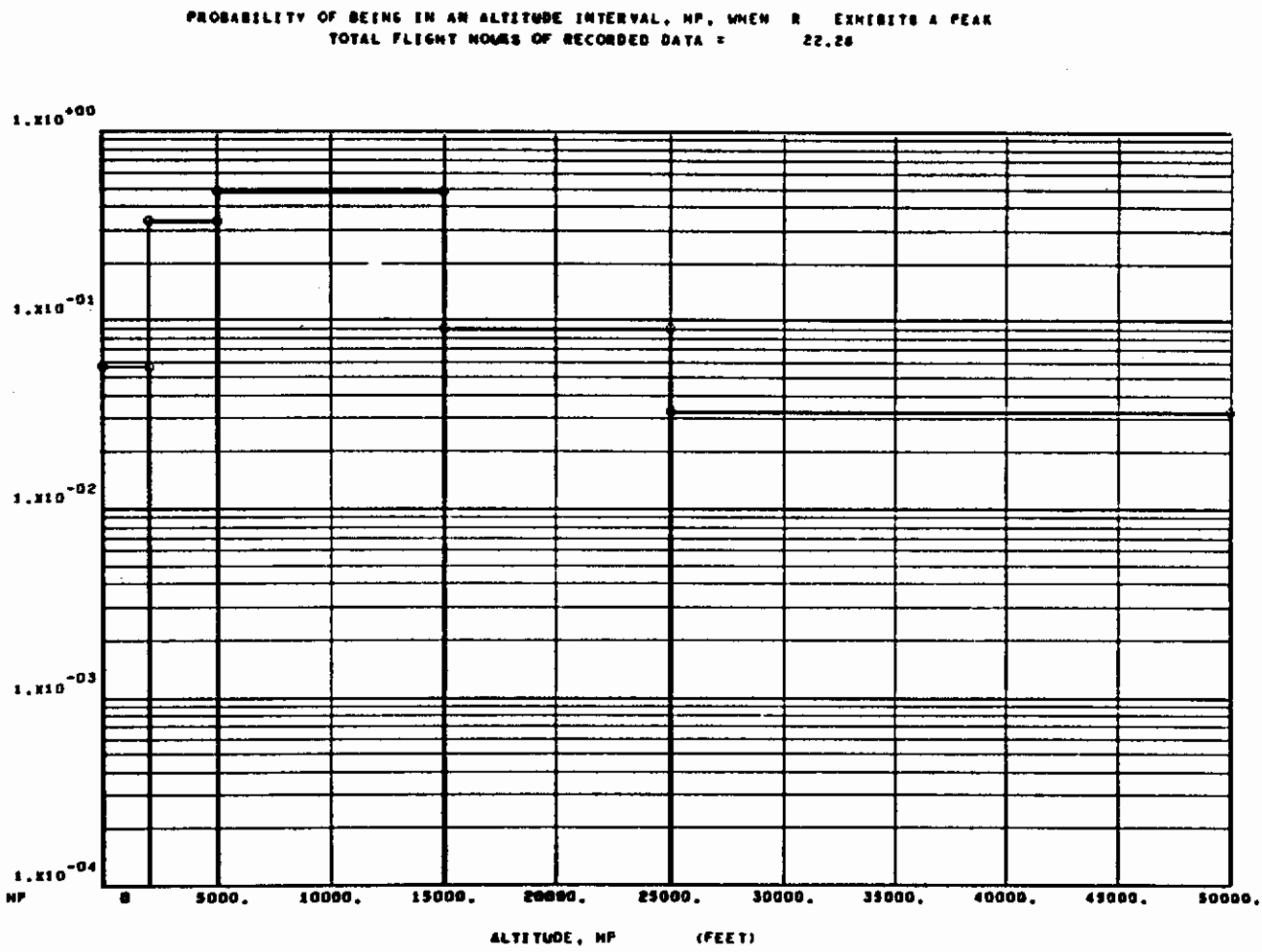
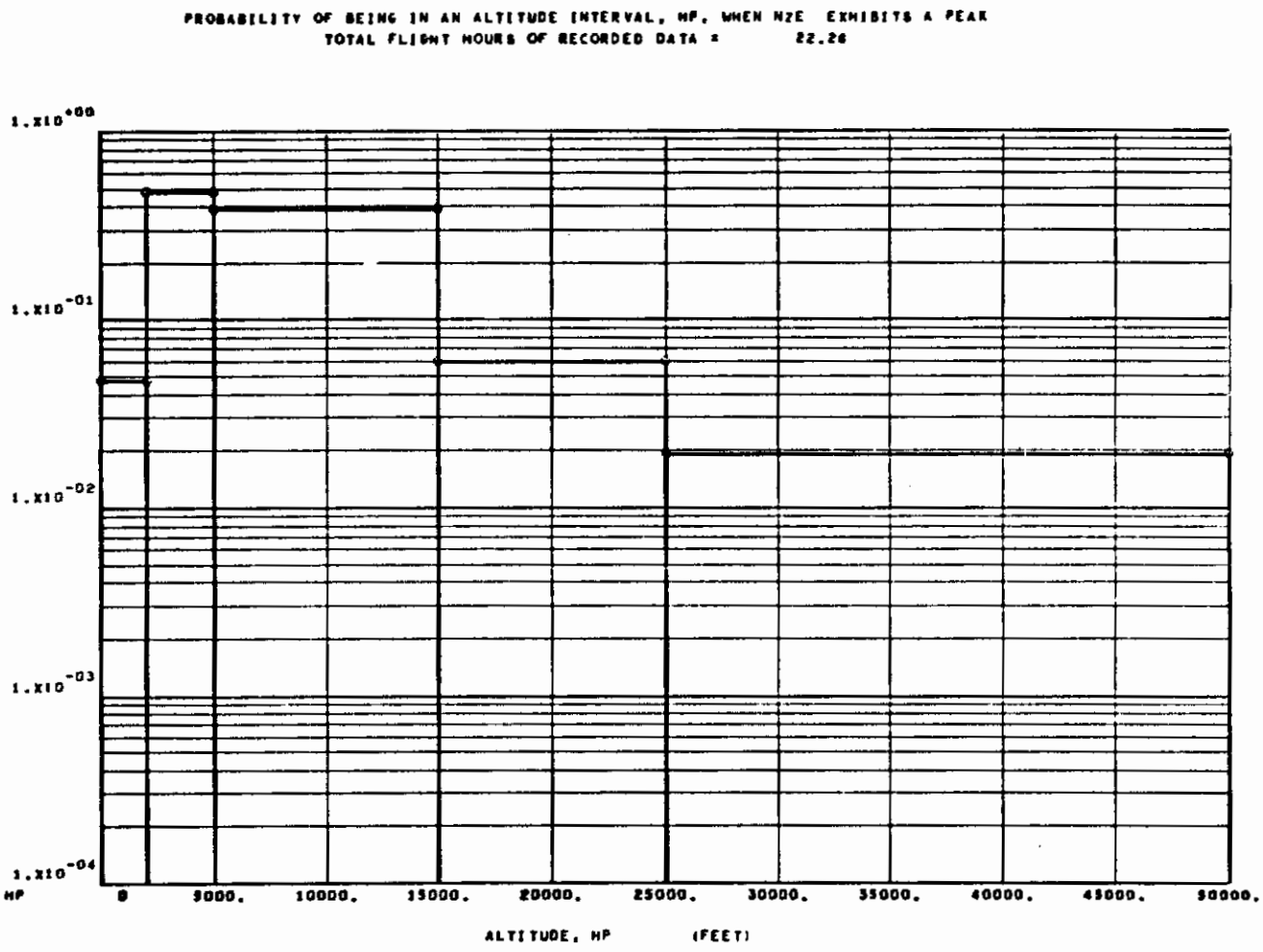
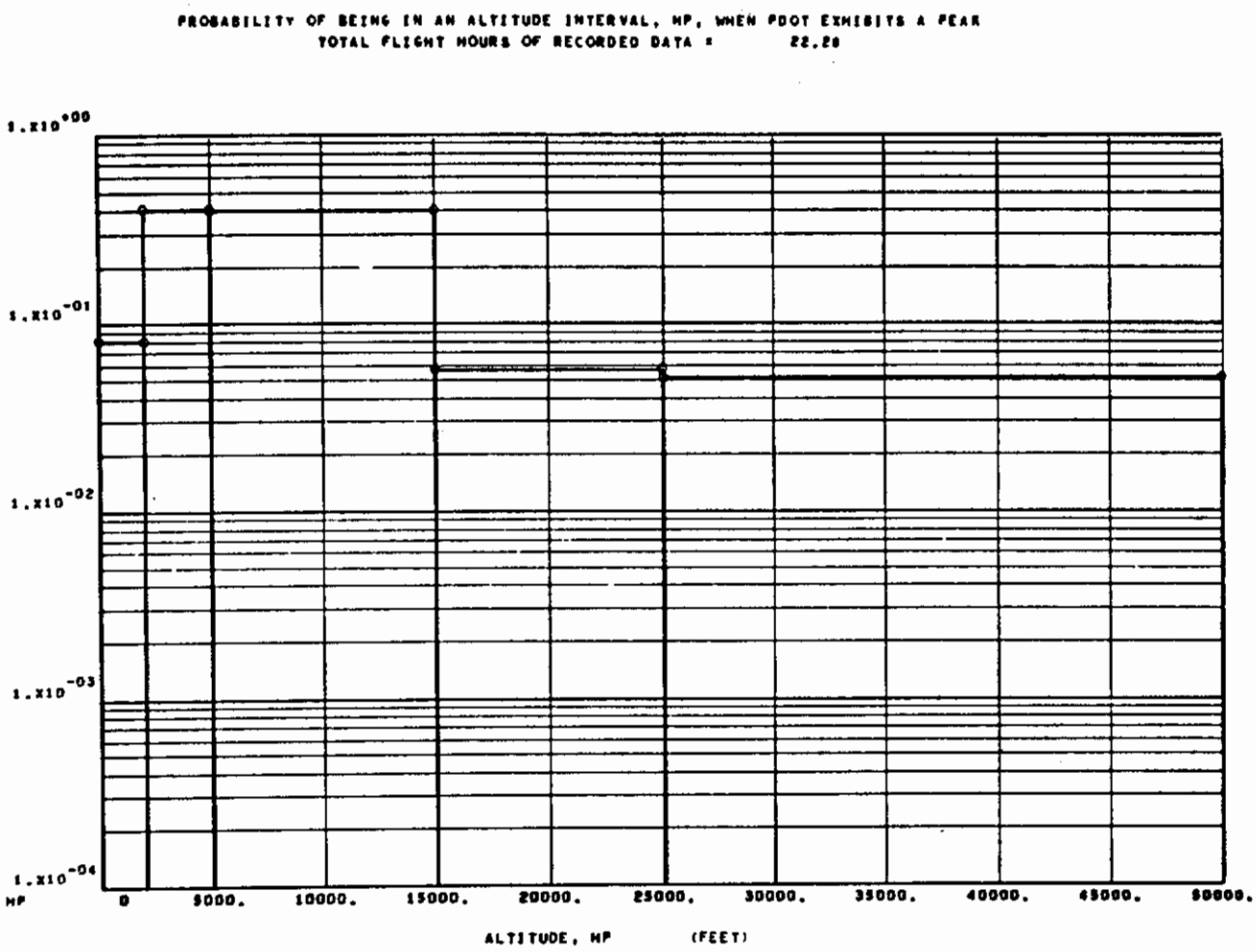


Figure 22



CASE NO. 66

Figure 23



CASE NO. 67

Figure 24

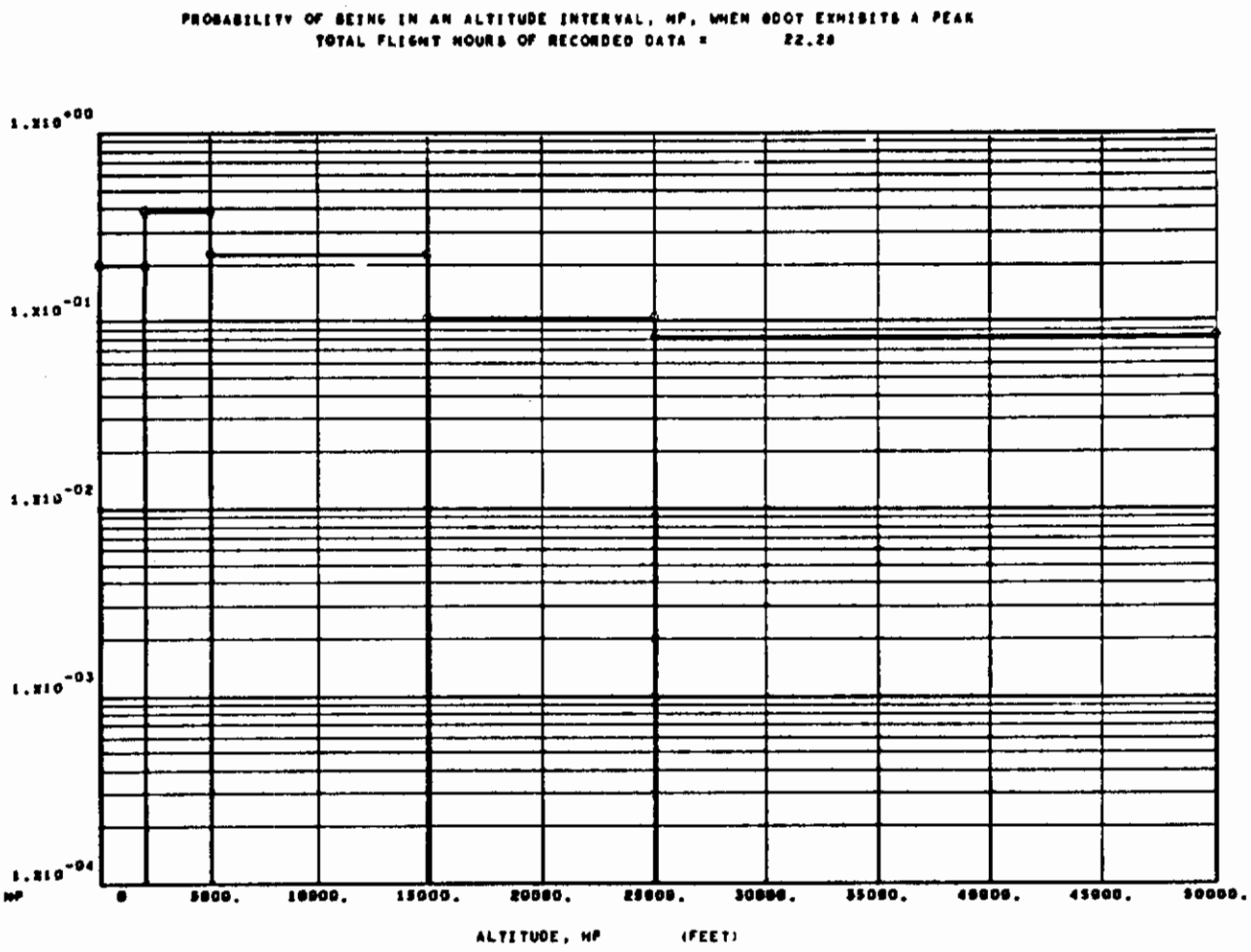
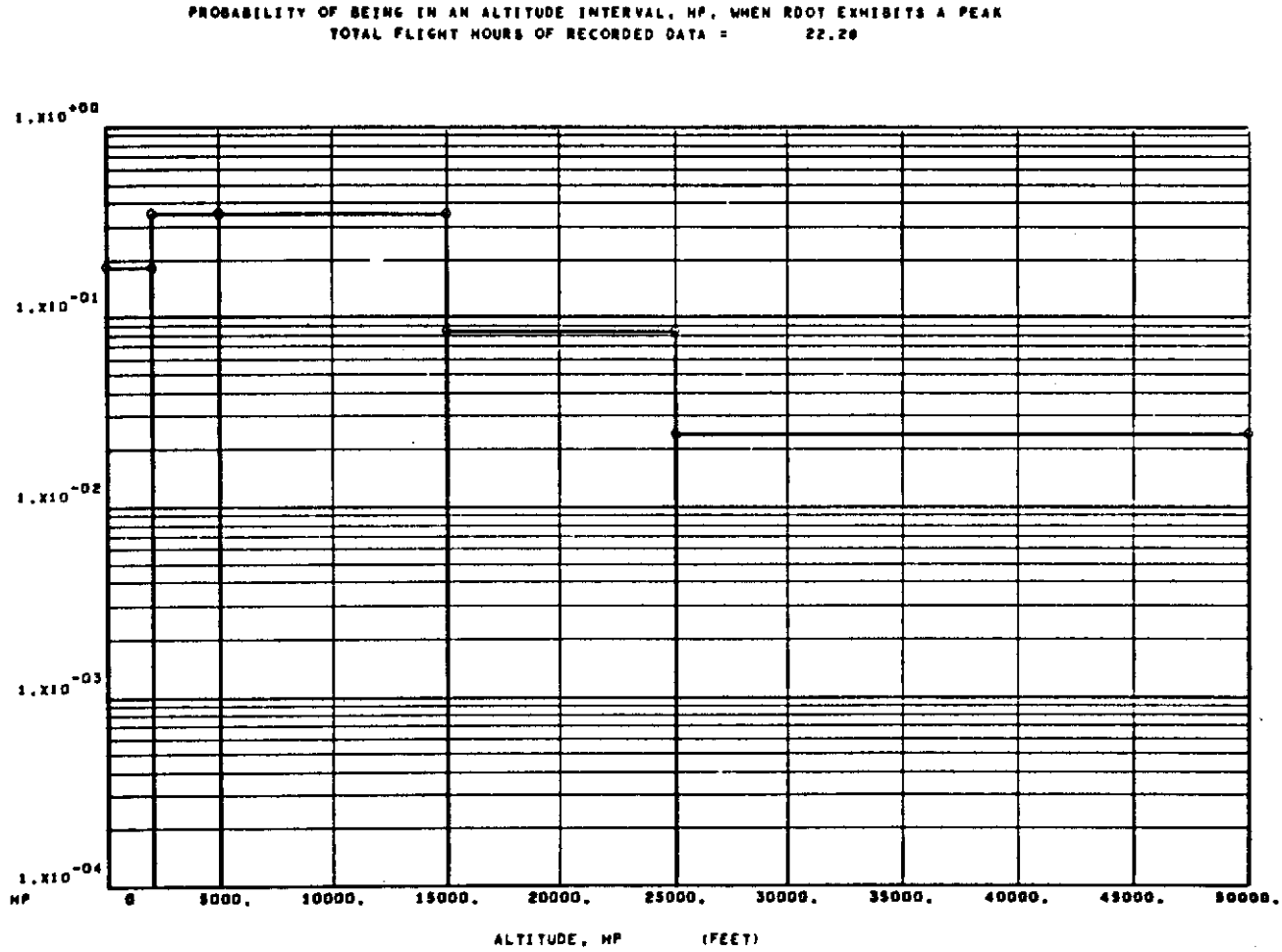


Figure 25



SECTION IV

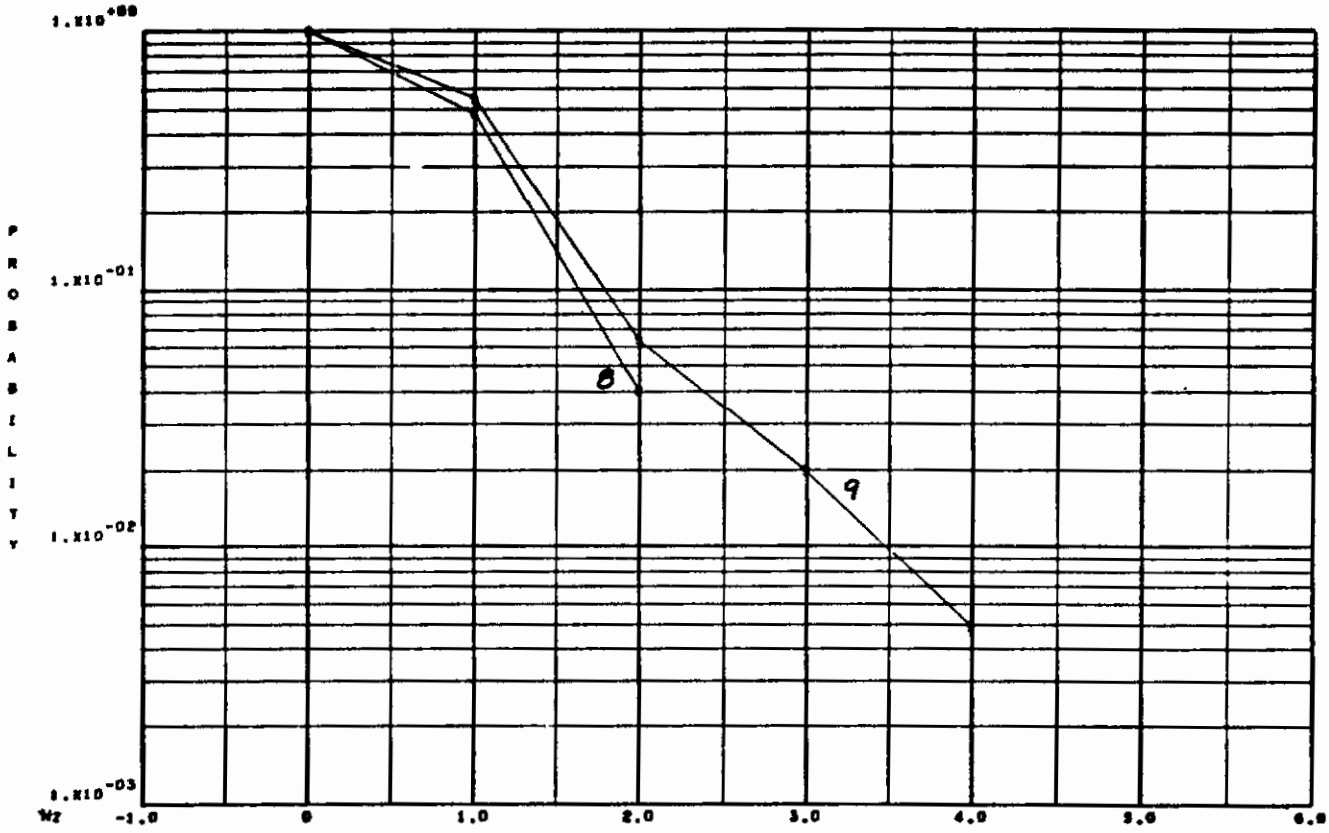
CORRELATION OF PEAKS OF SEVEN PARAMETERS WITH SIMULTANEOUSLY RECORDED VALUES OF N_Z AND N_{Z_E}

This section of the report presents CRT graphs of the probability of exceeding a value of n_z and n_{z_e} when a variable exhibits a peak in a specified interval of the variable. Seven parameters (n_y, p, q, r, $\dot{p}$, $\dot{q}$, and $\dot{r}$) are considered as variables. Each figure shows a set of curves for intervals of the variable from minimum to maximum. The plots are shown on Figures 26 through 39.

Similar graphs are presented for absolute values of three peaking variables (n_y, p and $\dot{p}$). The plots are shown on Figures 40 through 42.

Figure 26

PROBABILITY OF EXCEEDING A VALUE OF Nz , WHEN Ny EXHIBITS A PEAK IN THE SPECIFIED ENTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.20



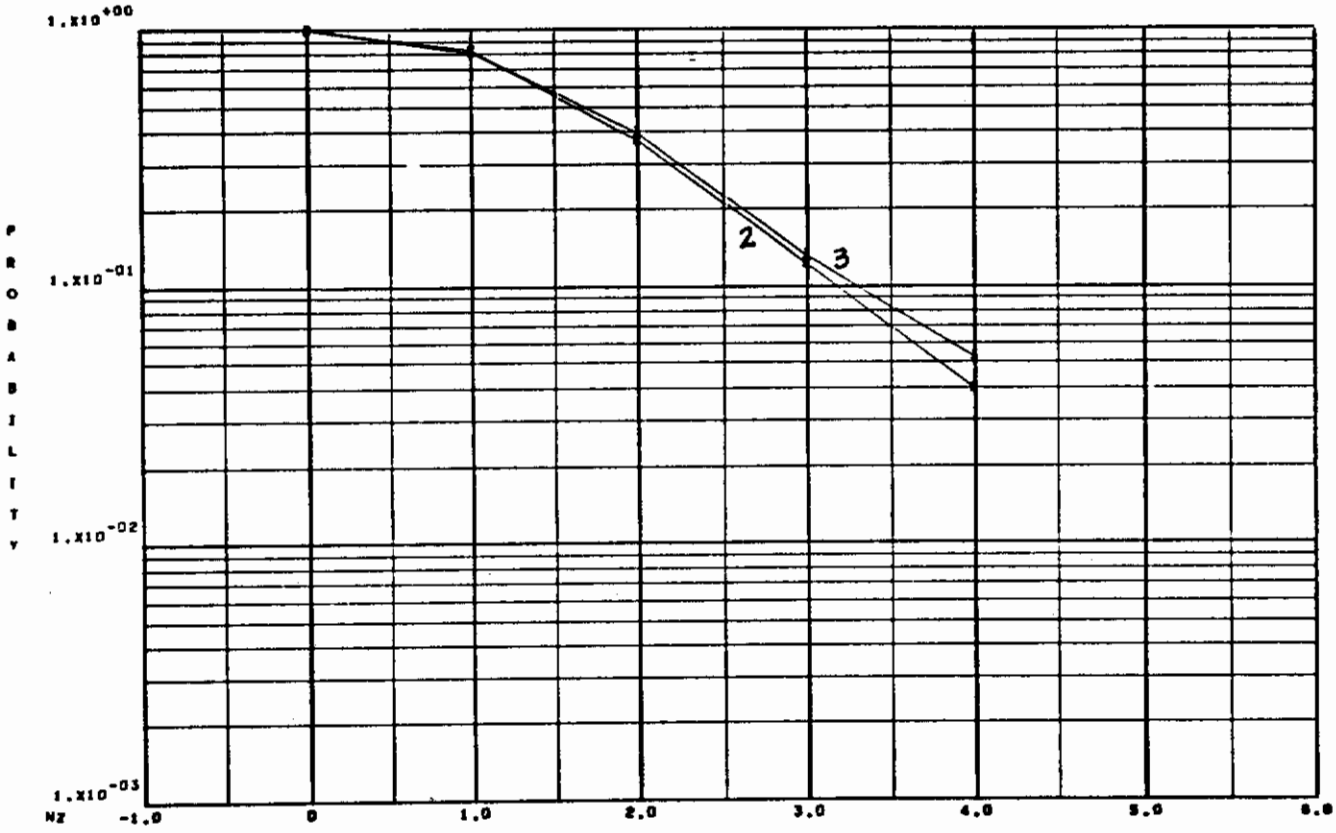
NORMAL LOAD FACTOR, Nz

PEAKING VARIABLE (Ny)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-1.0000	-0.9000	0.	0.	0.
2	2	-0.9000	-0.8000	0.	0.	0.
3	3	-0.8000	-0.7000	0.	0.	0.
4	4	-0.7000	-0.6000	0.	0.	0.
5	5	-0.6000	-0.5000	0.	0.	0.
6	6	-0.5000	-0.4000	0.	0.	0.
7	7	-0.4000	-0.3000	1.	0.	1.
8	8	-0.3000	-0.2000	25.	0.	25.
9	9	-0.2000	-0.1000	498.	0.	498.
0	10	-0.1000	0.0000	0.	0.	0.

CASE NO. 6

Figure 26--Concluded

PROBABILITY OF EXCEEDING A VALUE OF NZ , WHEN NY EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



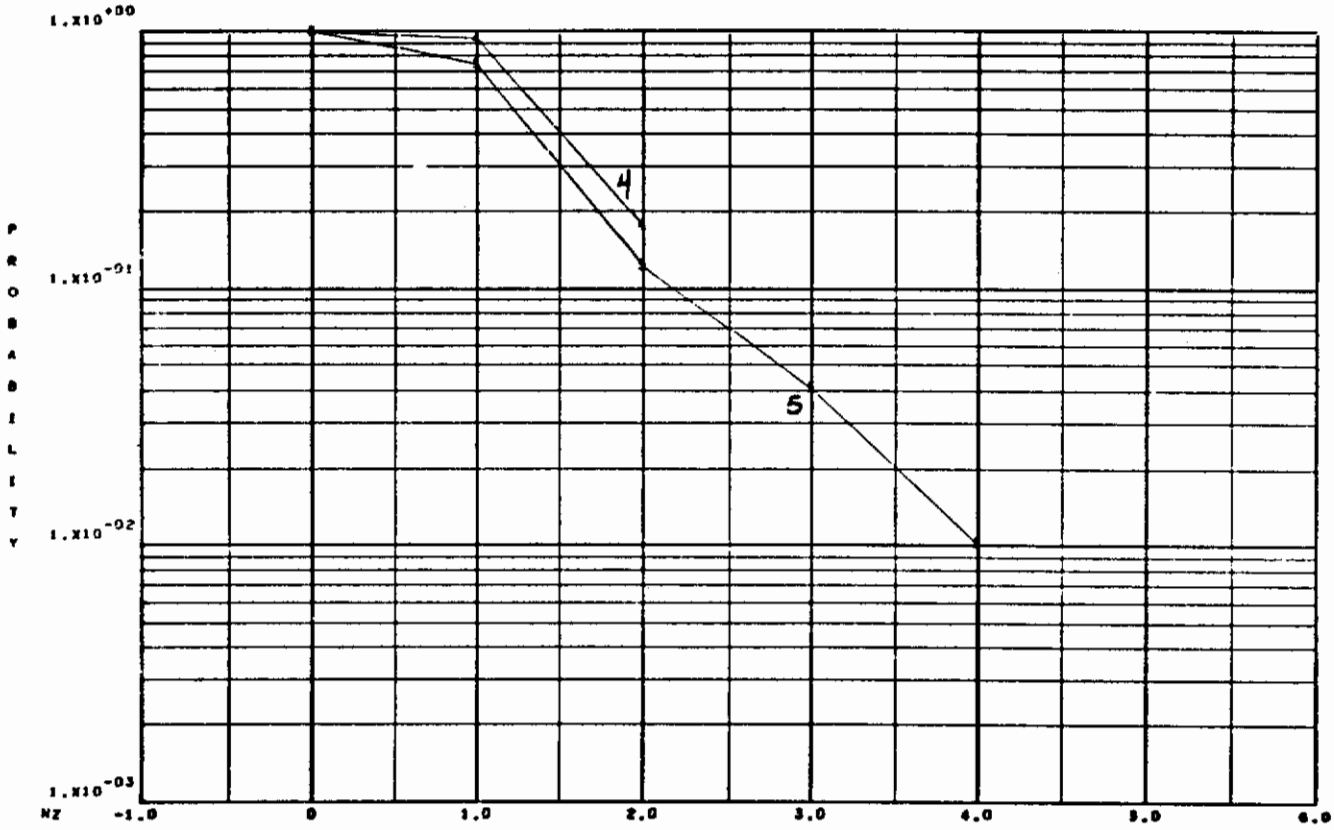
NORMAL LOAD FACTOR, NZ

PEAKING VARIABLE (NY)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	11	0.0000	0.1000	0.	0.	0.
2	12	0.1000	0.2000	425.	1.	424.
3	13	0.2000	0.3000	38.	0.	38.
4	14	0.3000	0.4000	3.	0.	3.
5	15	0.4000	0.5000	2.	0.	2.
6	16	0.5000	0.6000	0.	0.	0.
7	17	0.6000	0.7000	0.	0.	0.
8	18	0.7000	0.8000	0.	0.	0.
9	19	0.8000	0.9000	0.	0.	0.
0	20	0.9000	1.0000	0.	0.	0.

CASE NO. 6

Figure 27

PROBABILITY OF EXCEEDING A VALUE OF NZ , WHEN P EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

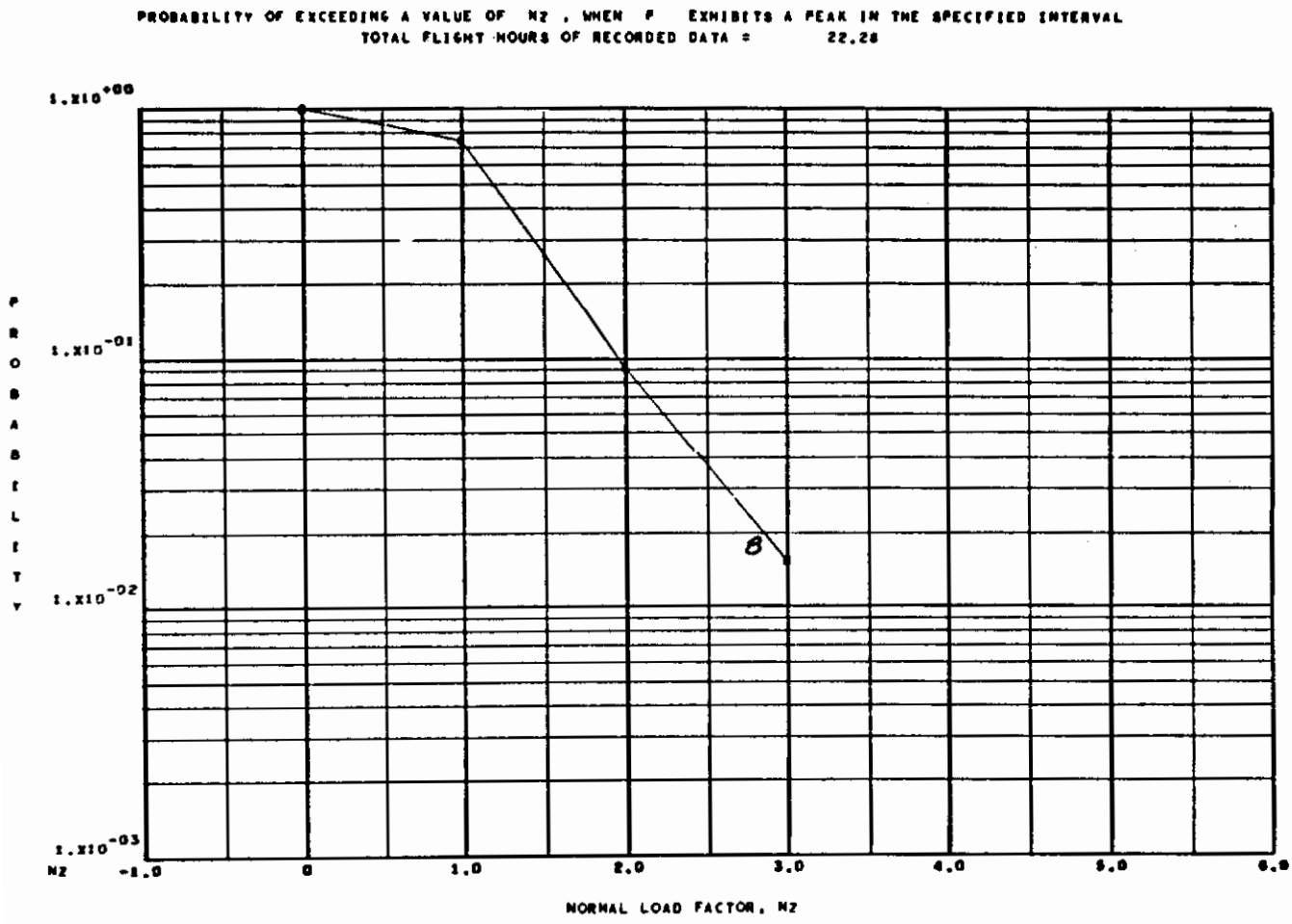


NORMAL LOAD FACTOR, NZ

PEAKING VARIABLE (P)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-3.0000	-2.5000	0.	0.	0.
2	2	-2.5000	-2.0000	1.	0.	1.
3	3	-2.0000	-1.5000	1.	0.	1.
4	4	-1.5000	-1.0000	17.	0.	17.
5	5	-1.0000	-0.5200	98.	0.	98.
6	6	-0.5200	0.0000	0.	0.	0.

CASE NO. 13

Figure 27--Concluded

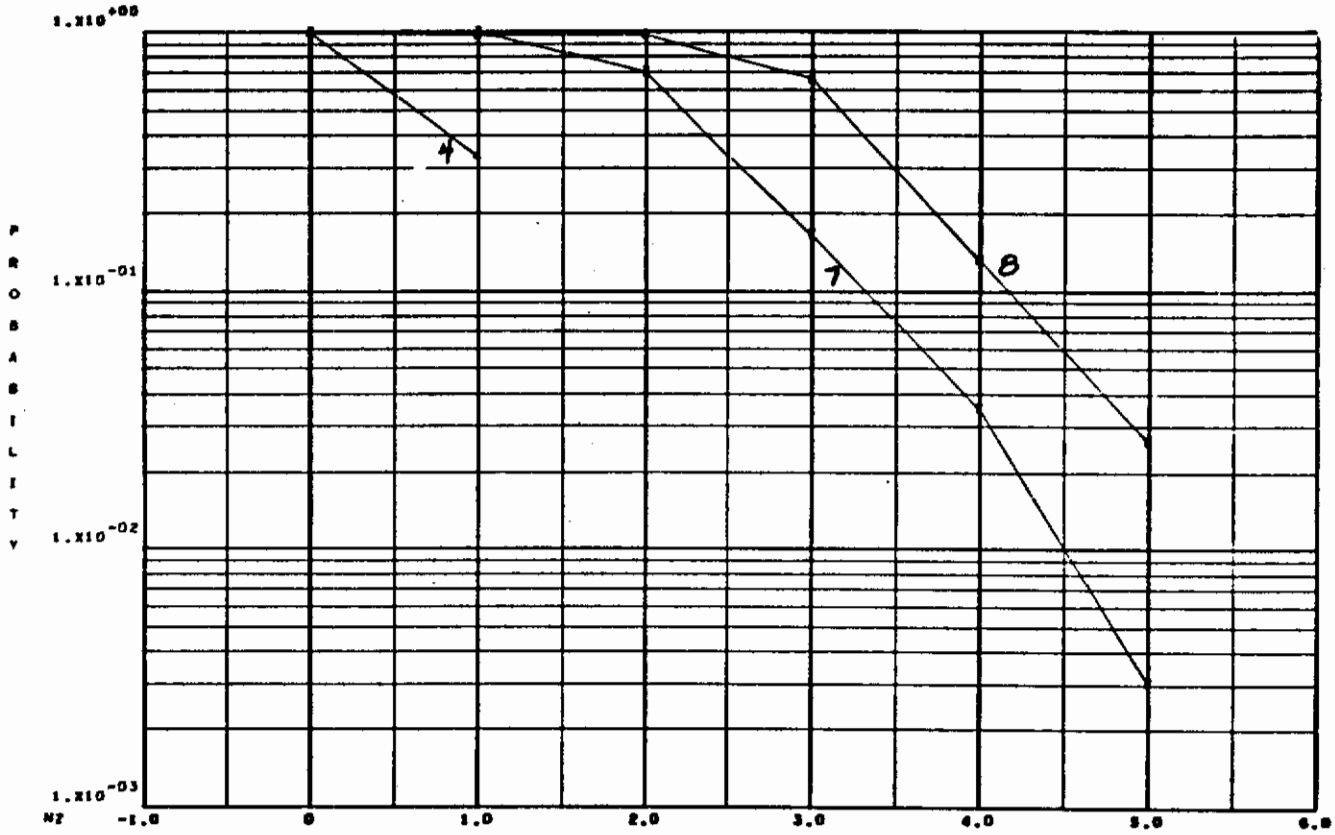


PEAKING VARIABLE (P)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.5200	0.	0.	0.
8	8	0.5200	1.0000	67.	1.	66.
9	9	1.0000	1.5000	4.	0.	4.
0	10	1.5000	2.0000	0.	0.	0.
1	11	2.0000	2.5000	1.	0.	1.
2	12	2.5000	3.0000	0.	0.	0.

CASE NO. 13

Figure 28

PROBABILITY OF EXCEEDING A VALUE OF NZ , WHEN Θ EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.26

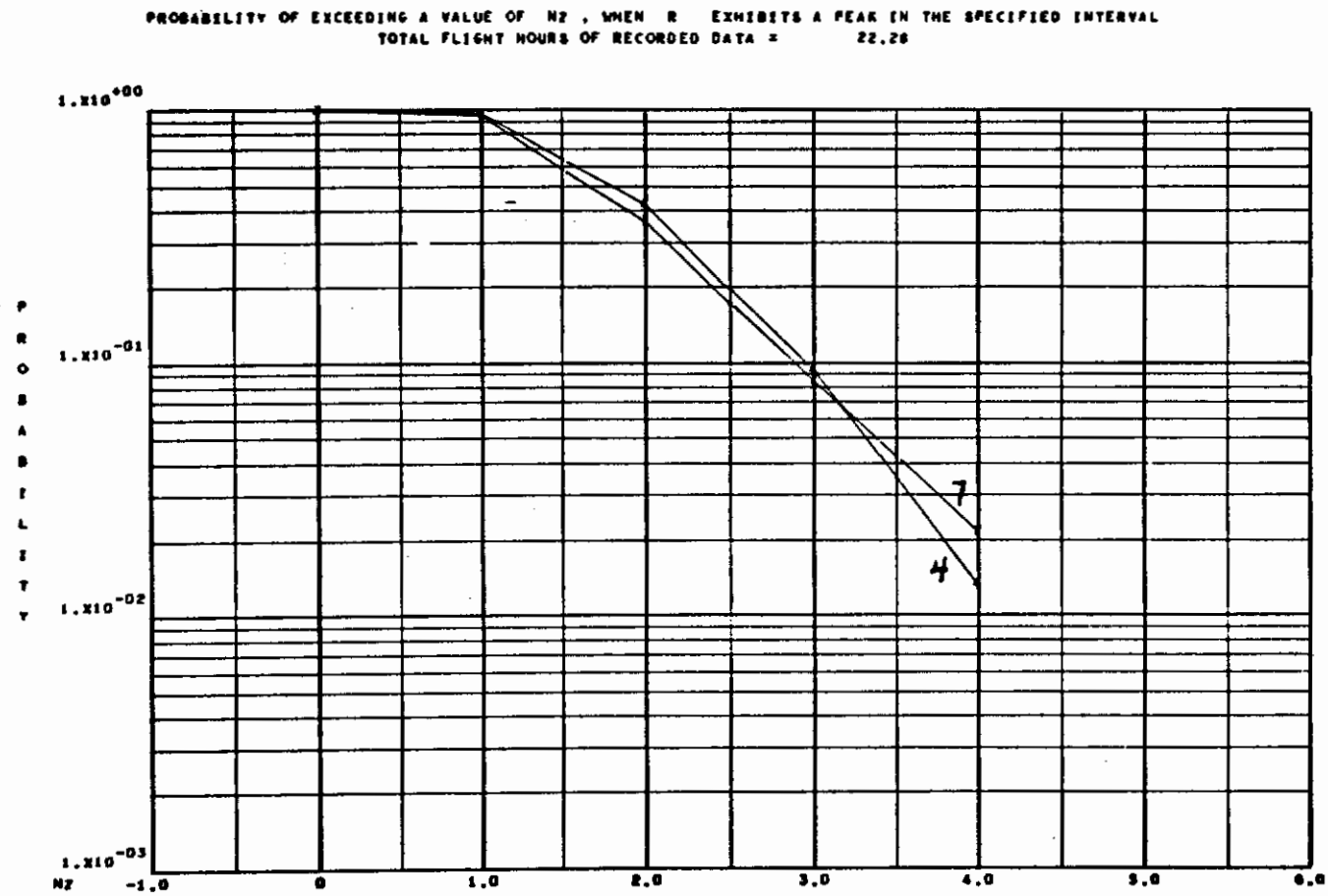


NORMAL LOAD FACTOR, NZ

PEAKING VARIABLE (Θ)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-0.5000	-0.4000	0.	0.	0.
2	2	-0.4000	-0.3000	0.	0.	0.
3	3	-0.3000	-0.2000	0.	0.	0.
4	4	-0.2000	-0.0900	6.	0.	6.
5	5	-0.0900	0.0000	0.	0.	0.
6	6	0.0000	0.0900	0.	0.	0.
7	7	0.0900	0.2000	658.	0.	658.
8	8	0.2000	0.3000	38.	0.	38.
9	9	0.3000	0.4000	1.	0.	1.
0	10	0.4000	0.5000	0.	0.	0.

CASE NO. 23

Figure 29

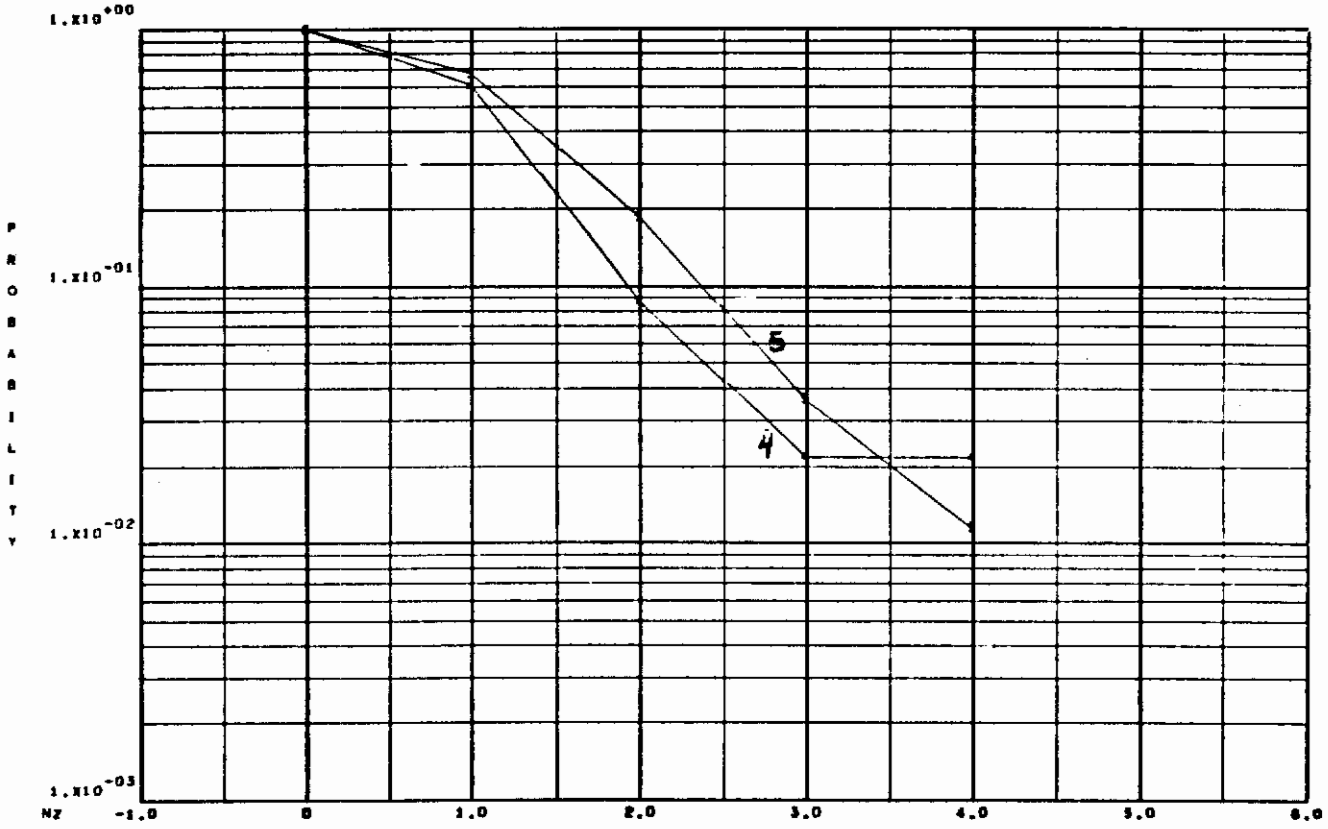


PEAKING VARIABLE (R)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-0.5000	-0.4000	0.	0.	0.
2	2	-0.4000	-0.3000	0.	0.	0.
3	3	-0.3000	-0.2000	0.	0.	0.
4	4	-0.2000	-0.0900	75.	0.	75.
5	5	-0.0900	0.0000	0.	0.	0.
6	6	0.0000	0.0900	0.	0.	0.
7	7	0.0900	0.2000	47.	0.	47.
8	8	0.2000	0.3000	0.	0.	0.
9	9	0.3000	0.4000	0.	0.	0.
0	10	0.4000	0.5000	0.	0.	0.

CASE NO. 27

Figure 30

PROBABILITY OF EXCEEDING A VALUE OF NZ , WHEN PDOT EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

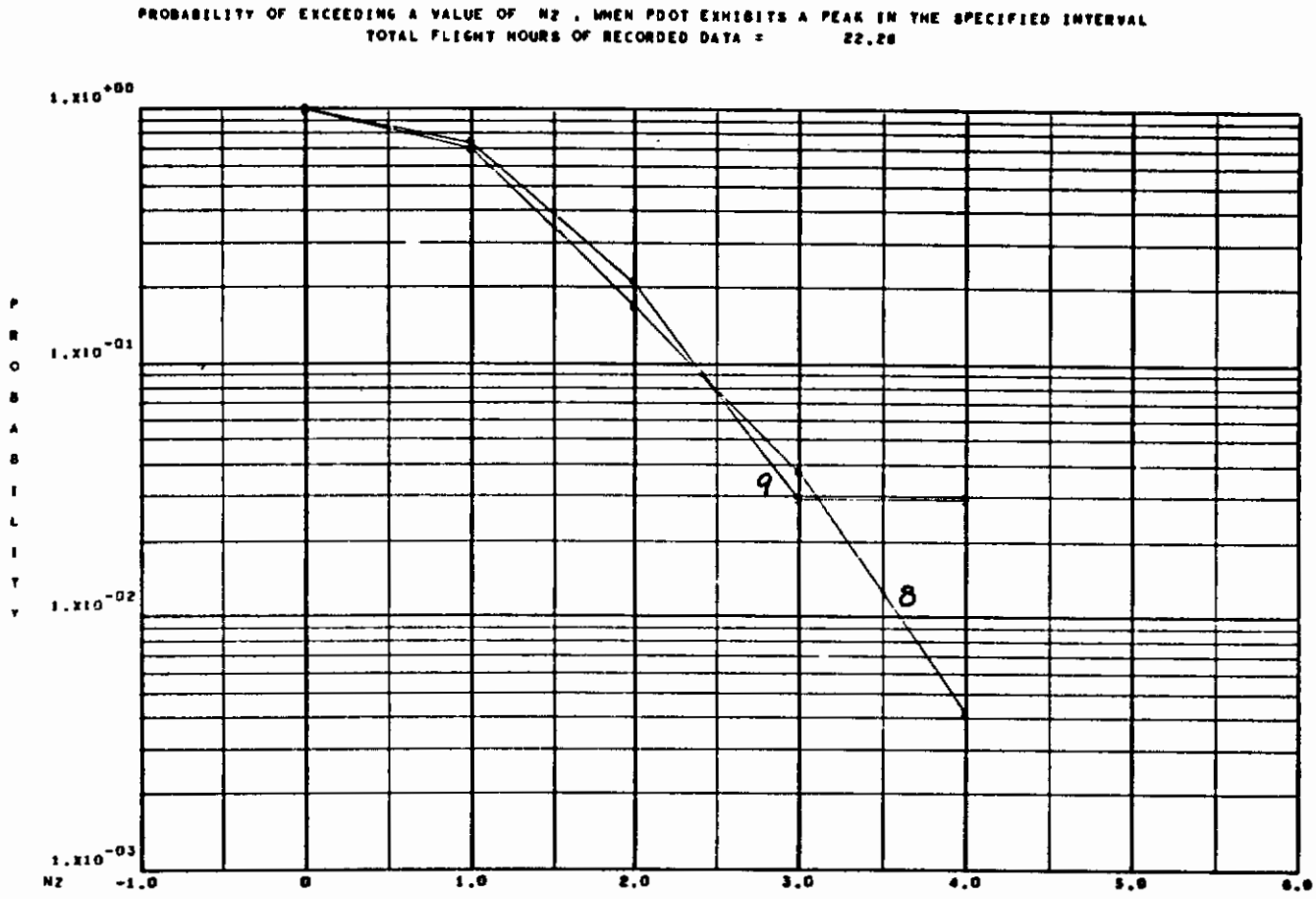


NORMAL LOAD FACTOR, NZ

PEAKING VARIABLE (PDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-7.5000	-6.0000	1.	0.	1.
2	2	-6.0000	-4.5000	0.	0.	0.
3	3	-4.5000	-3.0000	4.	0.	4.
4	4	-3.0000	-1.5000	46.	0.	46.
5	5	-1.5000	-0.7000	612.	0.	612.
6	6	-0.7000	0.0000	0.	0.	0.

CASE NO. 33

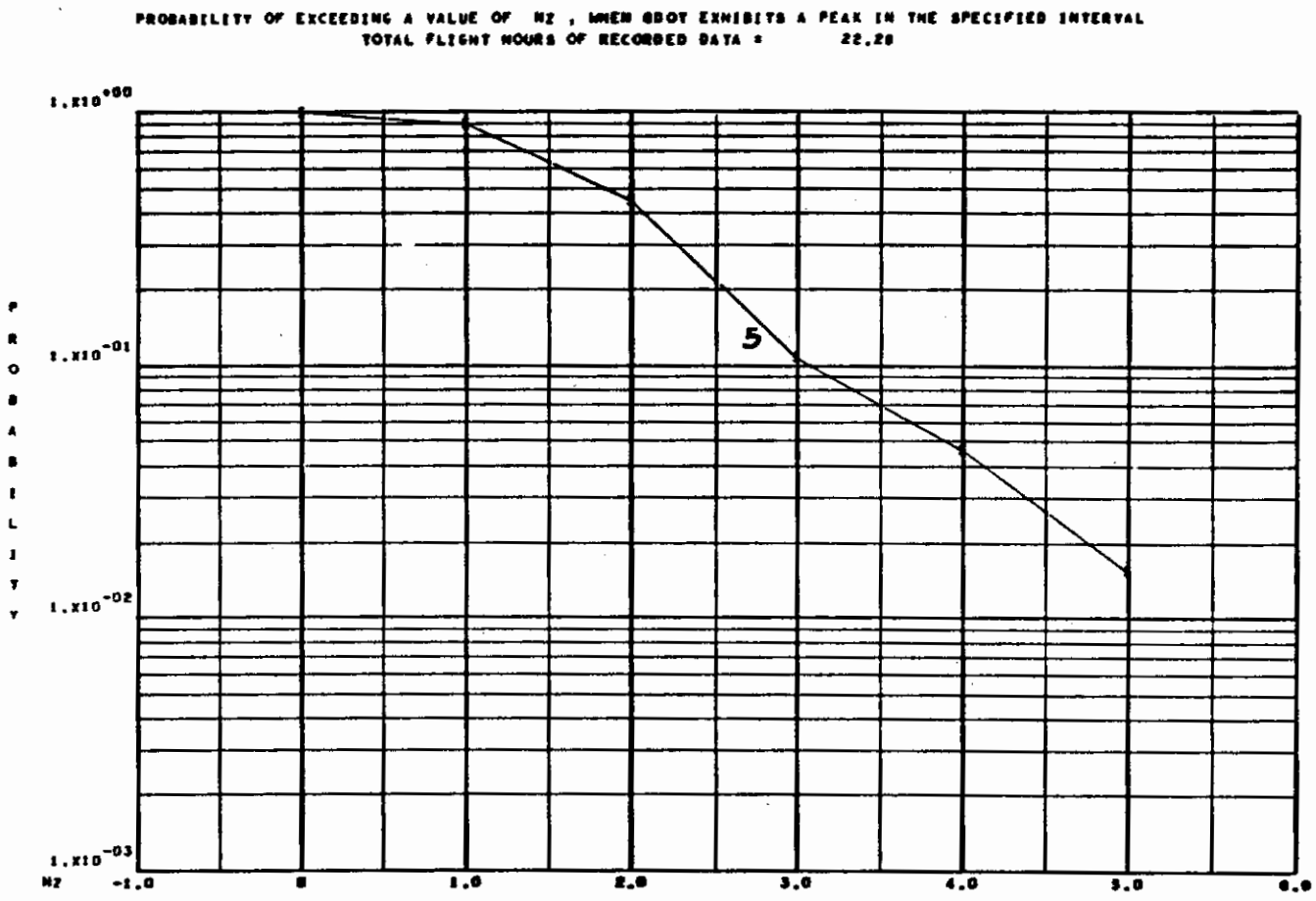
Figure 30--Concluded



PEAKING VARIABLE (PDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.7000	0.	0.	0.
8	8	0.7000	1.5000	481.	0.	481.
9	9	1.5000	3.0000	34.	0.	34.
0	10	3.0000	4.5000	2.	0.	2.
1	11	4.5000	6.0000	0.	0.	0.
2	12	6.0000	7.5000	0.	0.	0.

CASE NO. 33

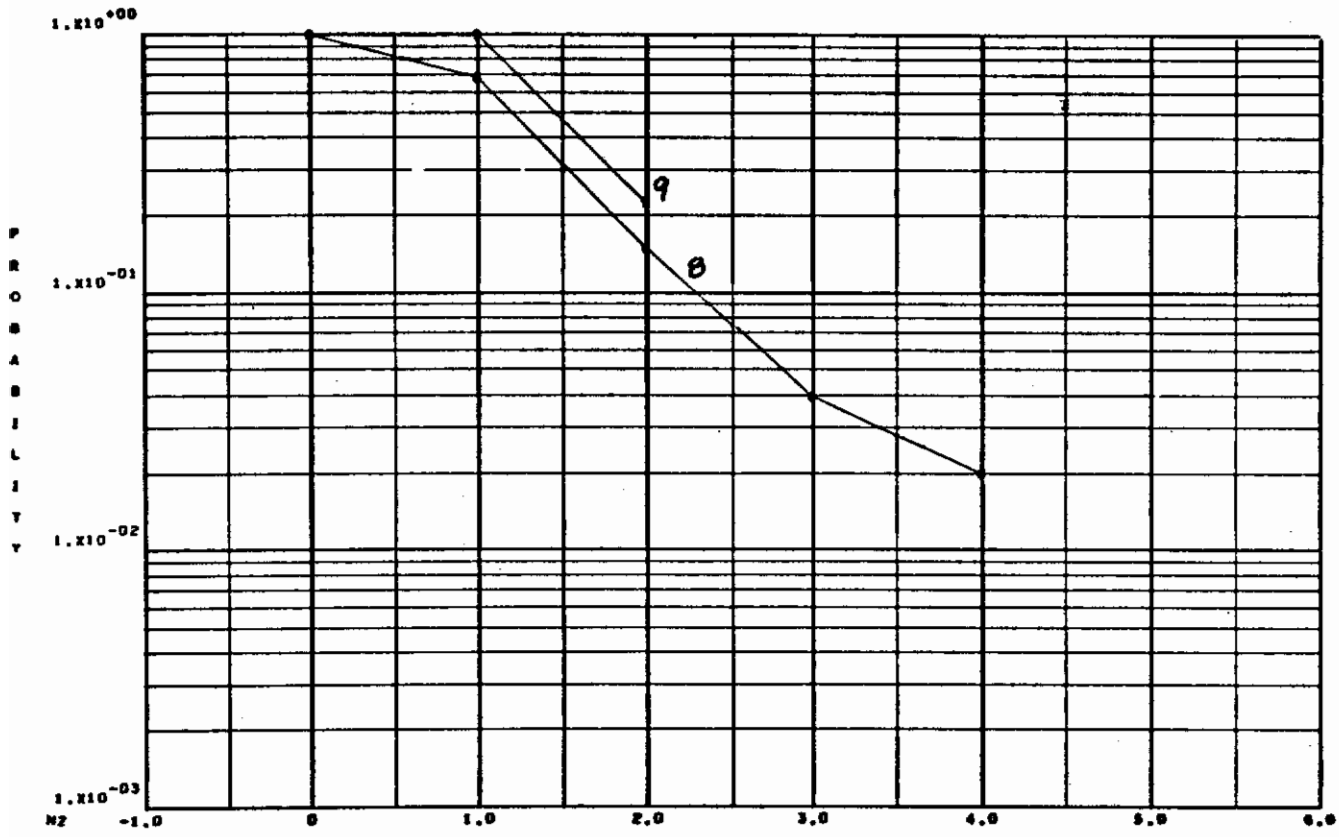
Figure 31



PEAKING VARIABLE (GDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-1.5000	-1.2500	0.	0.	0.
2	2	-1.2500	-1.0000	1.	0.	1.
3	3	-1.0000	-0.7500	0.	0.	0.
4	4	-0.7500	-0.5000	5.	0.	5.
5	5	-0.5000	-0.2500	65.	0.	65.
6	6	-0.2500	0.0000	0.	0.	0.

CASE NO. 30

Figure 31--Concluded

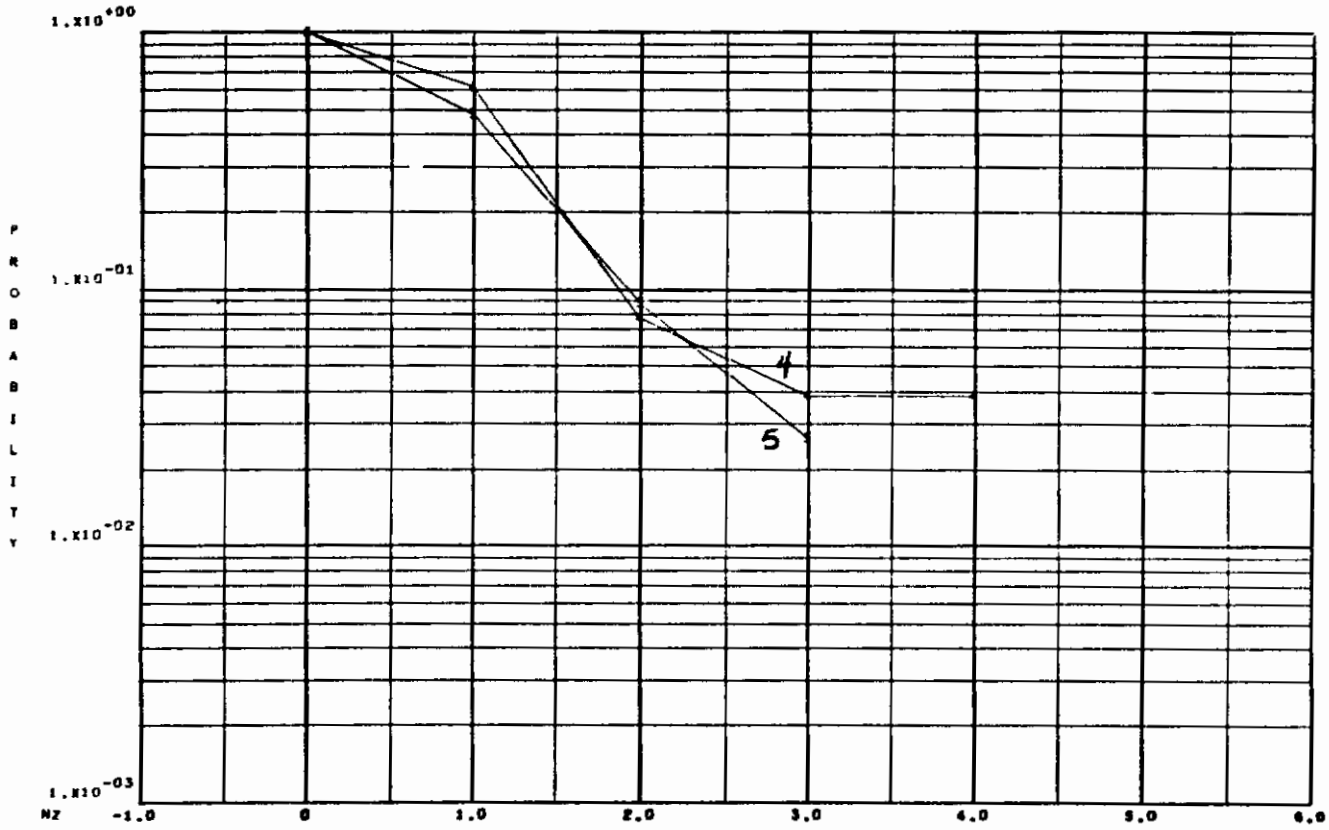


PEAKING VARIABLE (QDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.2600	0.	0.	0.
8	8	0.2600	0.5000	191.	0.	191.
9	9	0.5000	0.7500	9.	0.	9.
0	10	0.7500	1.0000	0.	0.	0.
1	11	1.0000	1.2500	0.	0.	0.
2	12	1.2500	1.5000	0.	0.	0.

CASE NO. 38

Figure 32

PROBABILITY OF EXCEEDING A VALUE OF NZ , WHEN RDOT EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

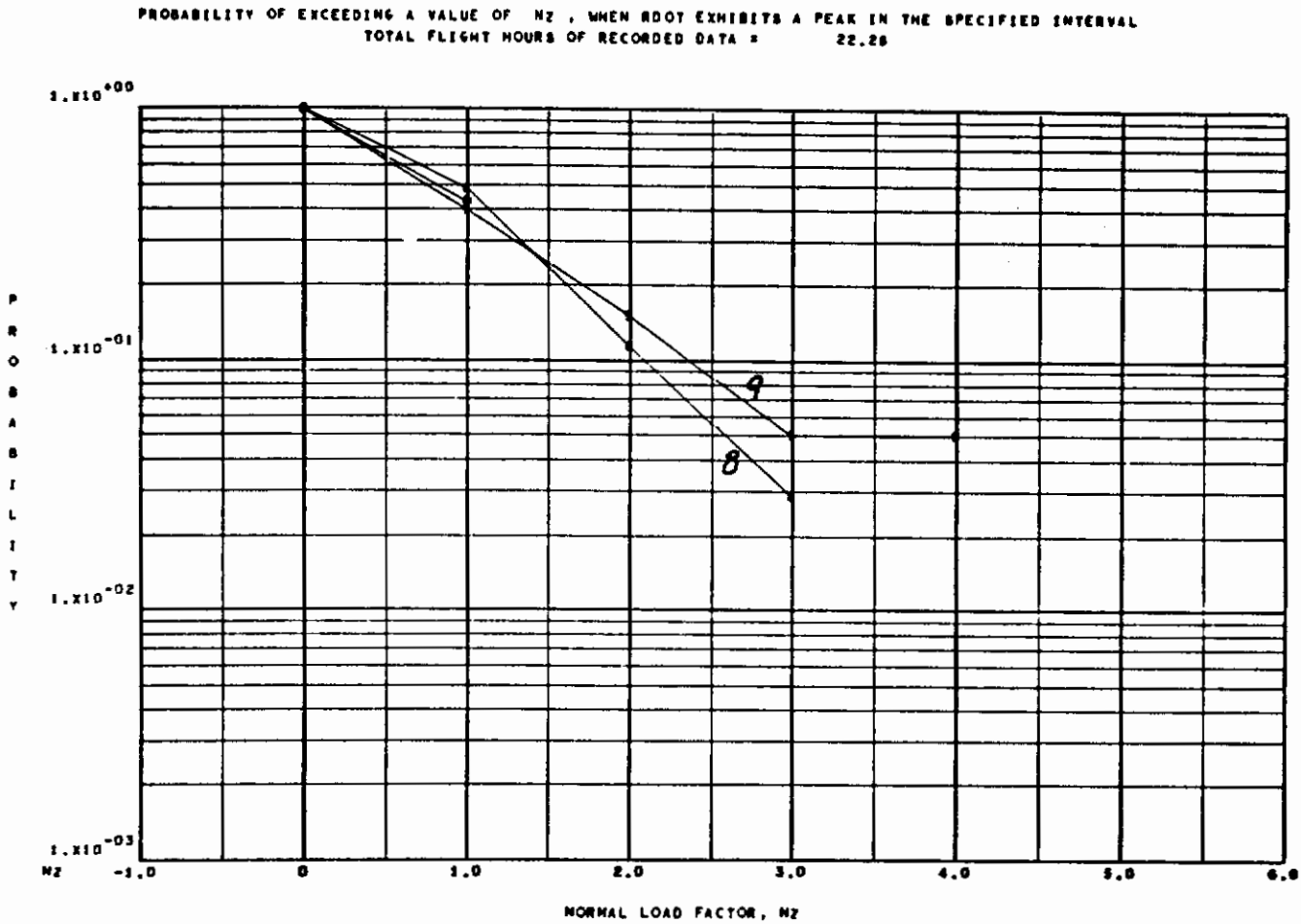


NORMAL LOAD FACTOR, NZ

PEAKING VARIABLE (RDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-0.7500	-0.6250	2.	0.	2.
2	2	-0.6250	-0.5000	3.	0.	3.
3	3	-0.5000	-0.3750	4.	0.	4.
4	4	-0.3750	-0.2500	26.	0.	26.
5	5	-0.2500	-0.1700	114.	0.	114.
6	6	-0.1700	0.0000	0.	0.	0.

CASE NO. 43

Figure 32--Concluded

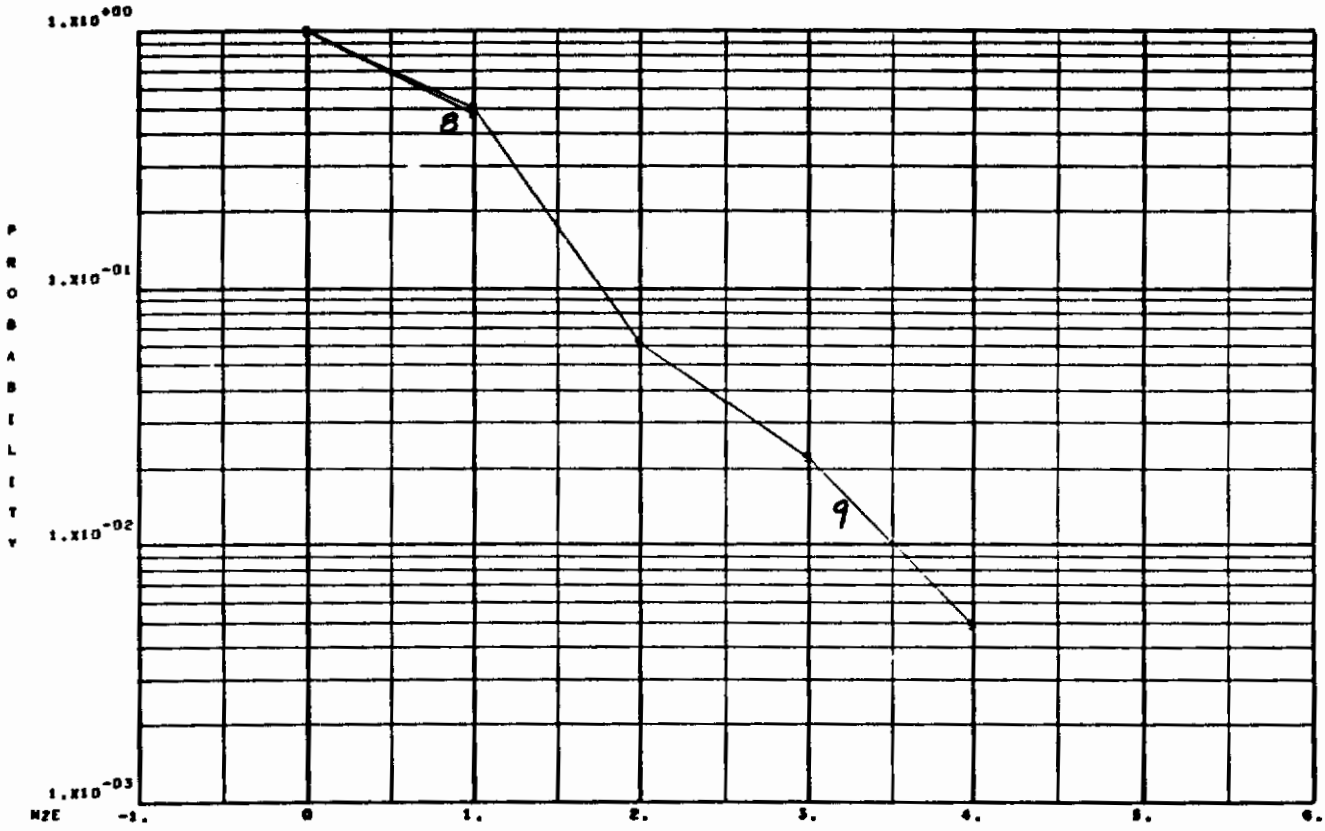


PEAKING VARIABLE (RDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.1700	0.	0.	0.
8	8	0.1700	0.2500	70.	0.	70.
9	9	0.2500	0.3750	20.	0.	20.
0	10	0.3750	0.5000	7.	0.	7.
1	11	0.5000	0.6250	0.	0.	0.
2	12	0.6250	0.7500	2.	0.	2.

CASE NO. 43

Figure 33

PROBABILITY OF EXCEEDING A VALUE OF NZE , WHEN NY EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

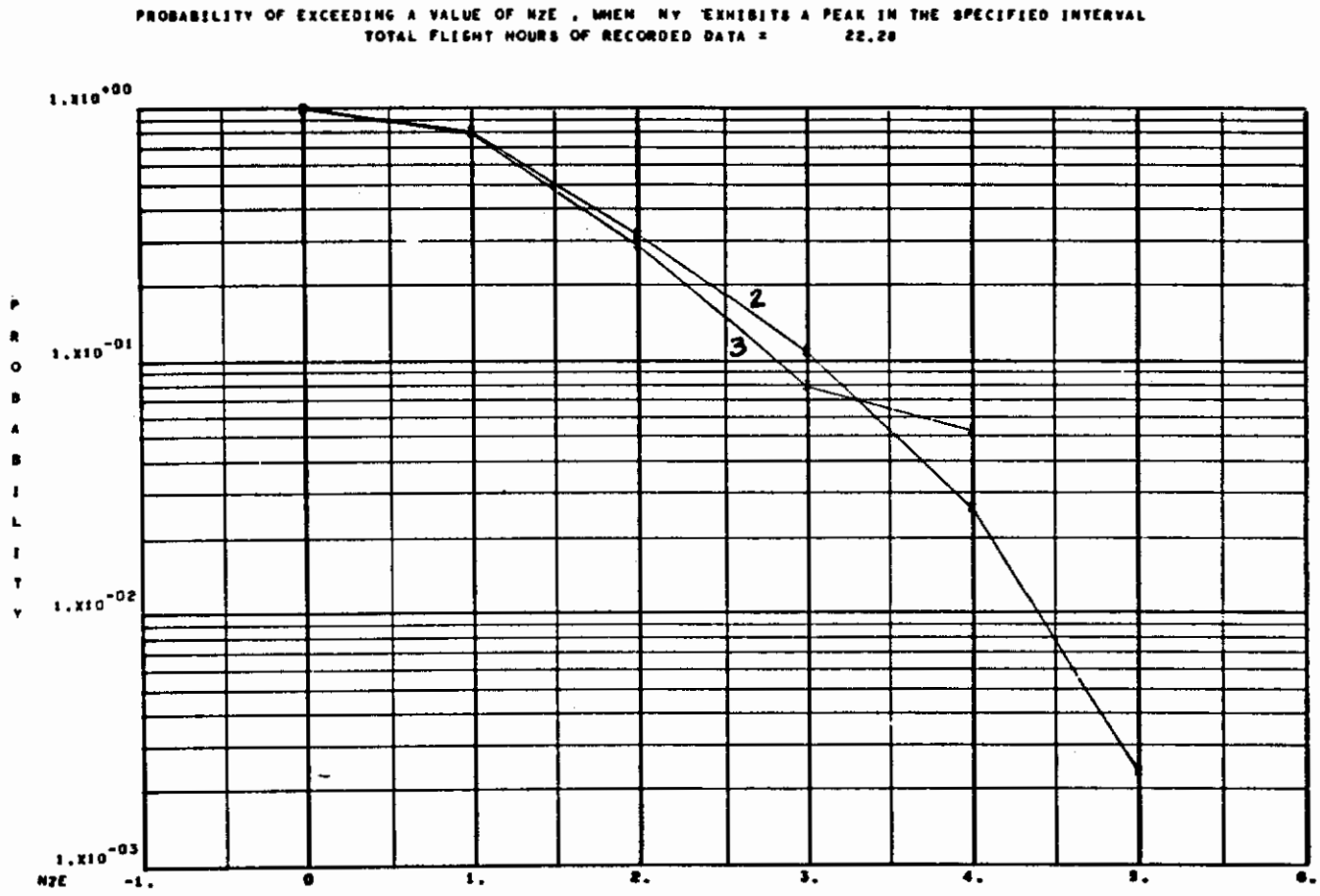


EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)*(WE/WO))

PEAKING VARIABLE (NY)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-1.0000	-0.9000	0.	0.	0.
2	2	-0.9000	-0.8000	0.	0.	0.
3	3	-0.8000	-0.7000	0.	0.	0.
4	4	-0.7000	-0.6000	0.	0.	0.
5	5	-0.6000	-0.5000	0.	0.	0.
6	6	-0.5000	-0.4000	0.	0.	0.
7	7	-0.4000	-0.3000	1.	0.	1.
8	8	-0.3000	-0.2000	25.	0.	25.
9	9	-0.2000	-0.1000	408.	0.	408.
0	10	-0.1000	0.0000	0.	0.	0.

CASE NO. 0

Figure 33--Concluded

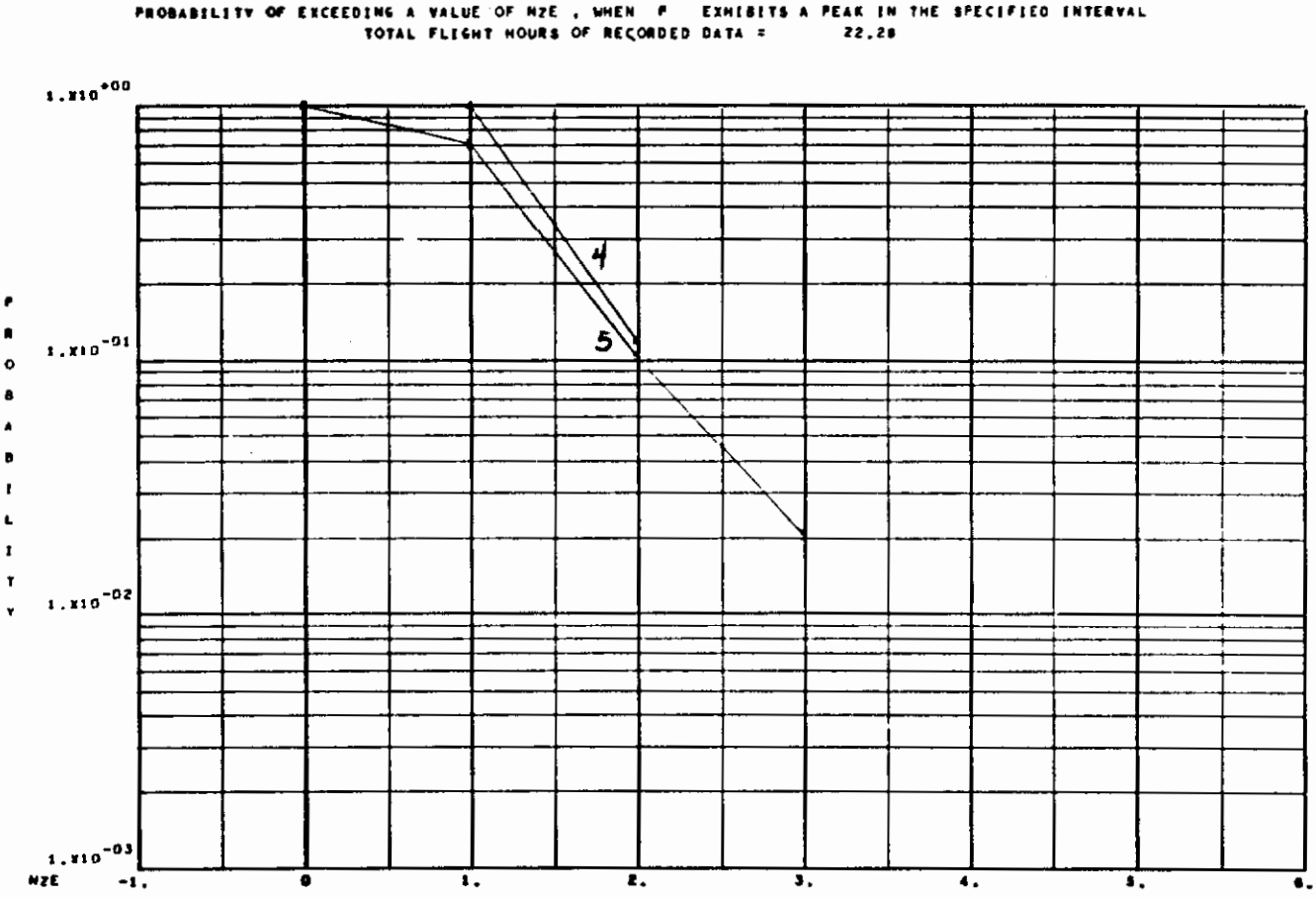


EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)+(WI/WO))

PEAKING VARIABLE (NY)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	11	0.0000	0.1000	0.	0.	0.
2	12	0.1000	0.2000	425.	1.	424.
3	13	0.2000	0.3000	38.	0.	38.
4	14	0.3000	0.4000	3.	0.	3.
5	15	0.4000	0.5000	2.	0.	2.
6	16	0.5000	0.6000	0.	0.	0.
7	17	0.6000	0.7000	0.	0.	0.
8	18	0.7000	0.8000	0.	0.	0.
9	19	0.8000	0.9000	0.	0.	0.
0	20	0.9000	1.0000	0.	0.	0.

CASE NO. 8

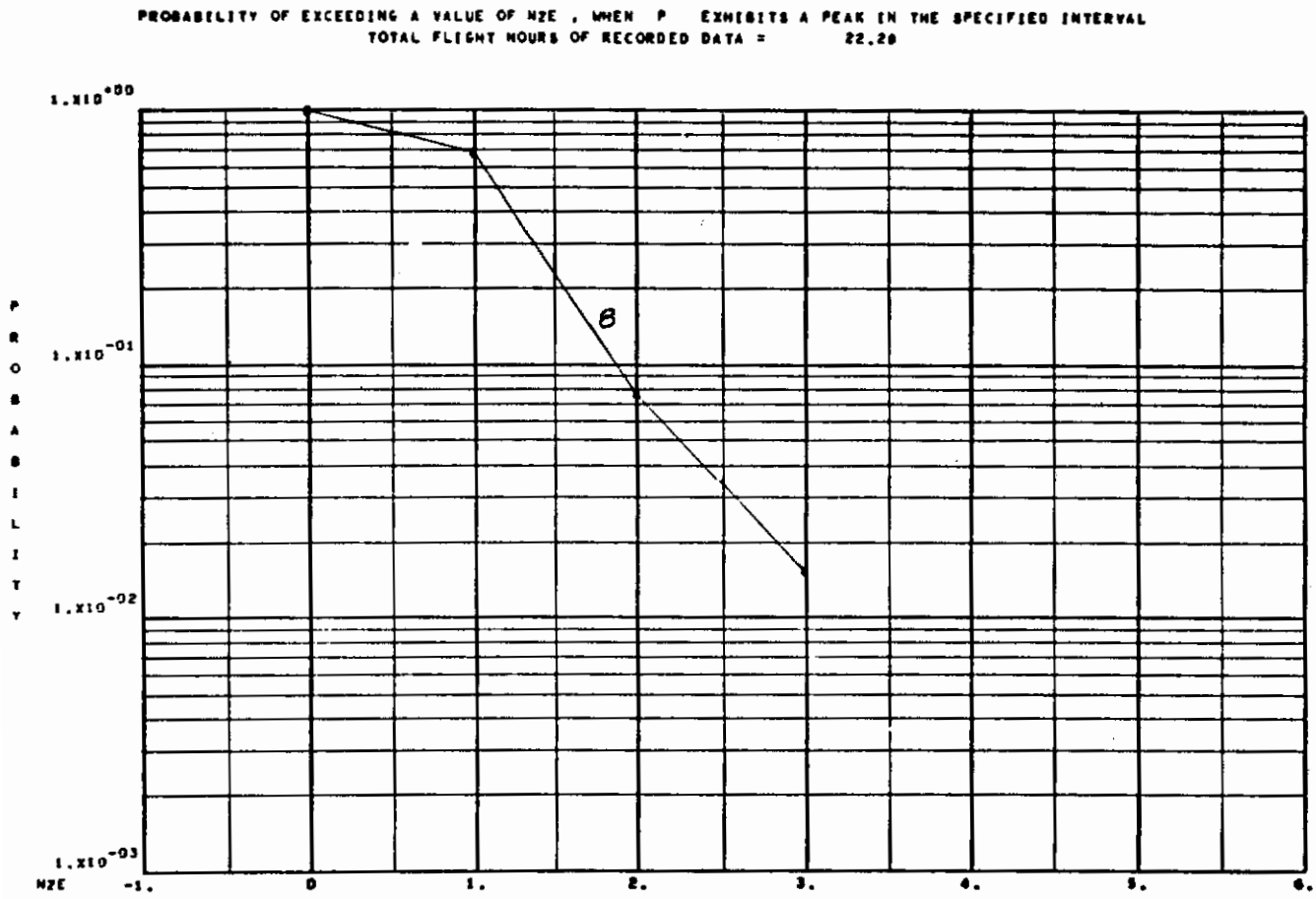
Figure 34



PEAKING VARIABLE (P)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-3.0000	-2.5000	0.	0.	0.
2	2	-2.5000	-2.0000	1.	0.	1.
3	3	-2.0000	-1.5000	1.	0.	1.
4	4	-1.5000	-1.0000	17.	0.	17.
5	5	-1.0000	-0.5200	90.	0.	90.
6	6	-0.5200	0.0000	0.	0.	0.

CASE NO. 15

Figure 34--Concluded

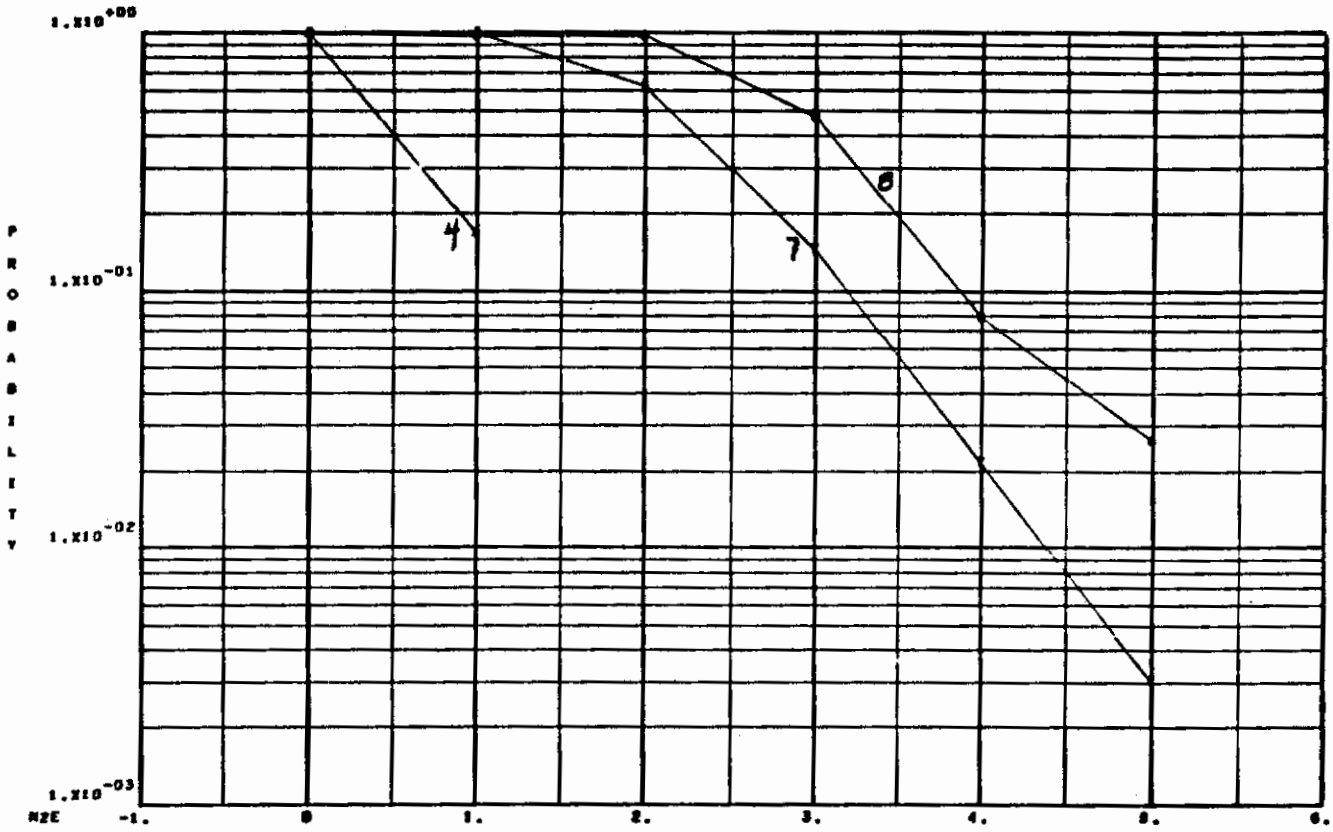


SYMBOL	INT.NO.	PEAKING VARIABLE (P) FROM	TO	NUMBER OF PEAKS TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.5200	0.	0.	0.
8	8	0.5200	1.0000	67.	1.	66.
9	9	1.0000	1.5000	4.	0.	4.
0	10	1.5000	2.0000	0.	0.	0.
1	11	2.0000	2.5000	1.	0.	1.
2	12	2.5000	3.0000	0.	0.	0.

CASE NO. 15

Figure 35

PROBABILITY OF EXCEEDING A VALUE OF NZE , WHEN EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.26



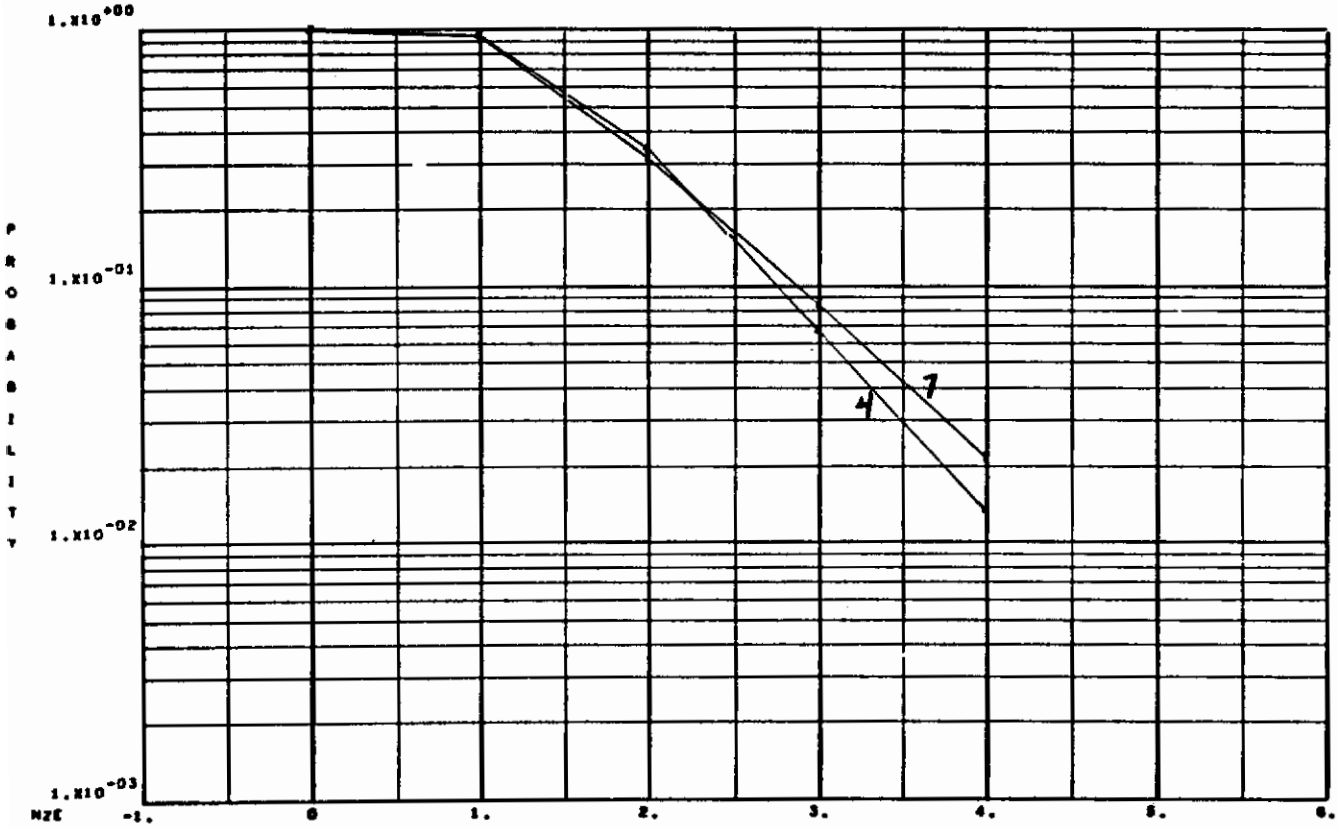
EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)*(WI/WO))

PEAKING VARIABLE (θ)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-0.5000	-0.4000	0.	0.	0.
2	2	-0.4000	-0.3000	0.	0.	0.
3	3	-0.3000	-0.2000	0.	0.	0.
4	4	-0.2000	-0.0900	6.	0.	6.
5	5	-0.0900	0.0000	0.	0.	0.
6	6	0.0000	0.0900	0.	0.	0.
7	7	0.0900	0.2000	656.	0.	656.
8	8	0.2000	0.3000	38.	0.	38.
9	9	0.3000	0.4000	1.	0.	1.
0	10	0.4000	0.5000	0.	0.	0.

CASE NO. 24

Figure 36

PROBABILITY OF EXCEEDING A VALUE OF NZE , WHEN R EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



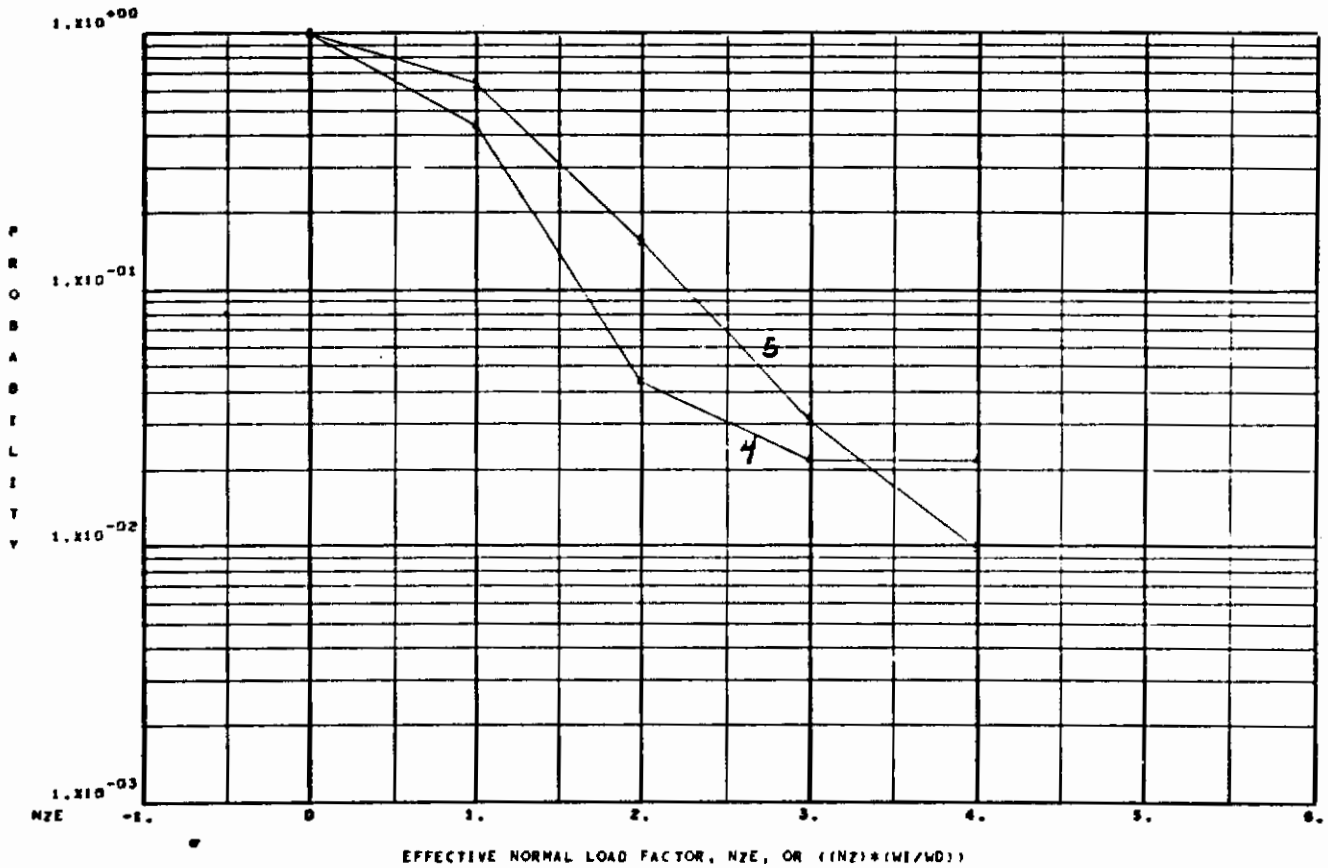
EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)+(WI/WO))

PEAKING VARIABLE (R)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-0.5000	-0.4000	0.	0.	0.
2	2	-0.4000	-0.3000	0.	0.	0.
3	3	-0.3000	-0.2000	0.	0.	0.
4	4	-0.2000	-0.0900	75.	0.	75.
5	5	-0.0900	0.0000	0.	0.	0.
6	6	0.0000	0.0900	0.	0.	0.
7	7	0.0900	0.2000	47.	0.	47.
8	8	0.2000	0.3000	0.	0.	0.
9	9	0.3000	0.4000	0.	0.	0.
0	10	0.4000	0.5000	0.	0.	0.

CASE NO. 20

Figure 37

PROBABILITY OF EXCEEDING A VALUE OF NZE , WHEN PDOT EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

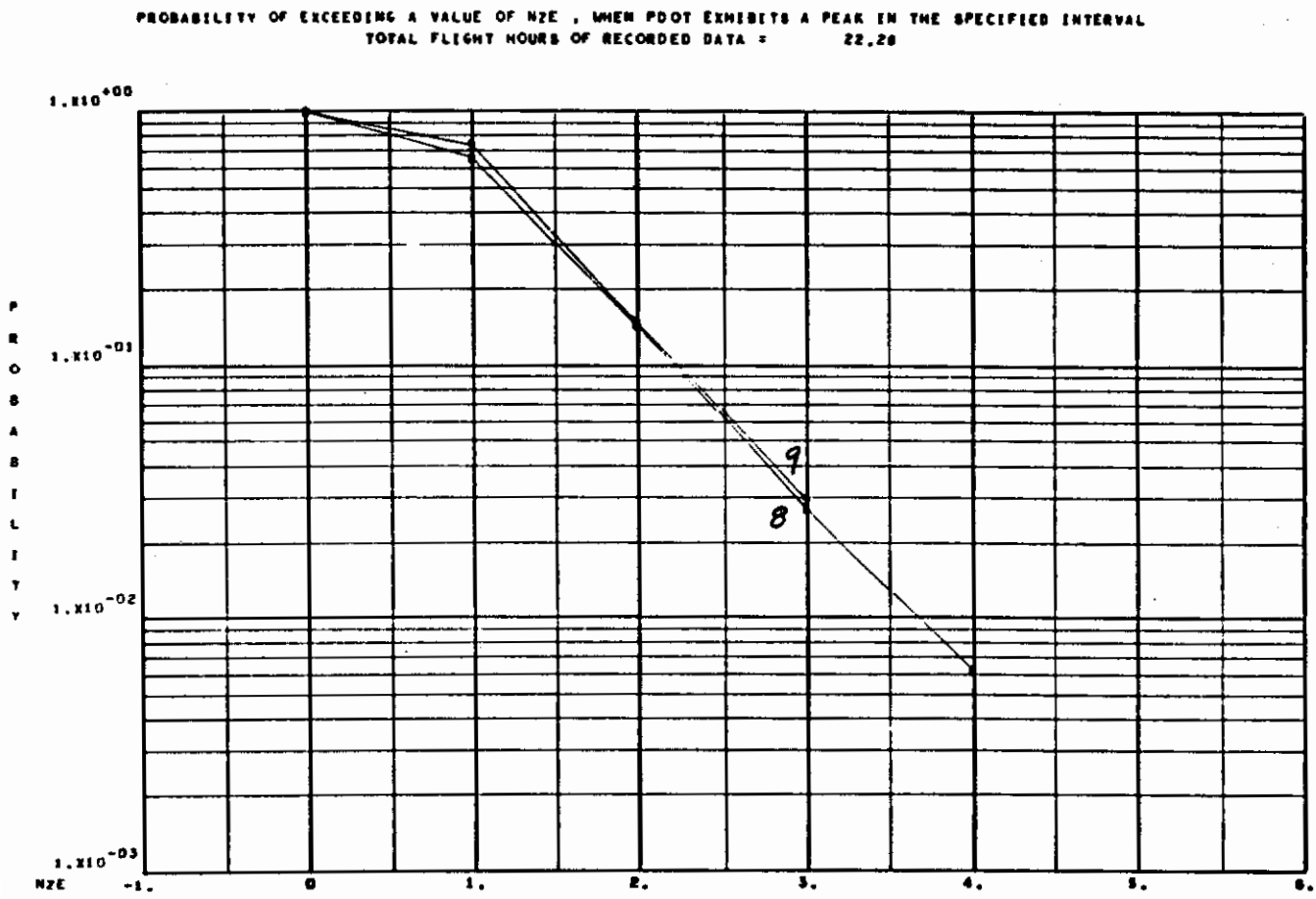


EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)*(WI/WD))

PEAKING VARIABLE (PDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-7.5000	-6.0000	1.	0.	1.
2	2	-6.0000	-4.5000	0.	0.	0.
3	3	-4.5000	-3.0000	4.	0.	4.
4	4	-3.0000	-1.5000	46.	0.	46.
5	5	-1.5000	-0.7900	612.	0.	612.
6	6	-0.7900	0.0000	0.	0.	0.

CASE NO. 35

Figure 37--Concluded

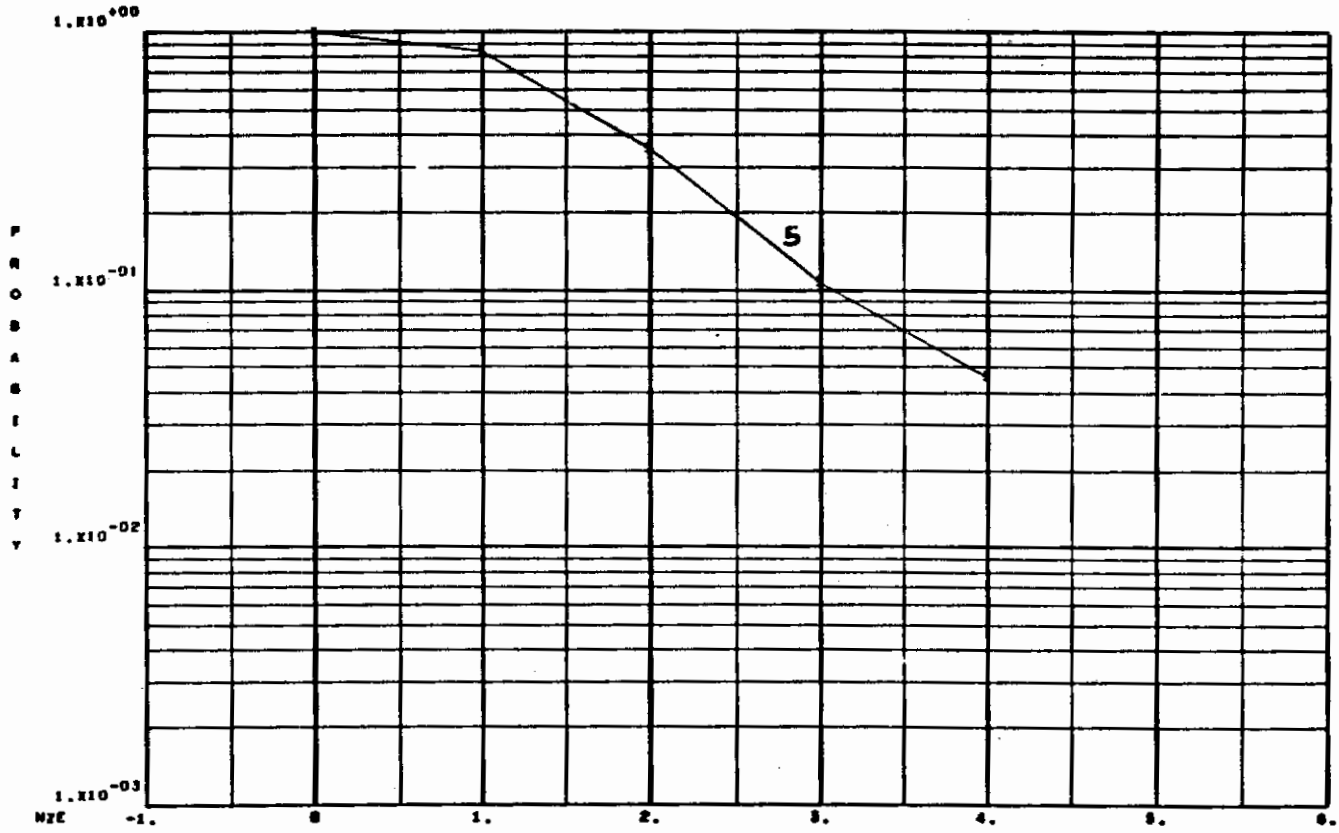


PEAKING VARIABLE (PDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.7000	0.	0.	0.
8	8	0.7000	1.5000	481.	0.	481.
9	9	1.5000	3.0000	34.	0.	34.
0	10	3.0000	4.5000	2.	0.	2.
1	11	4.5000	6.0000	0.	0.	0.
2	12	6.0000	7.5000	0.	0.	0.

CASE NO. 38

Figure 38

PROBABILITY OF EXCEEDING A VALUE OF NZE , WHEN GDOT EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

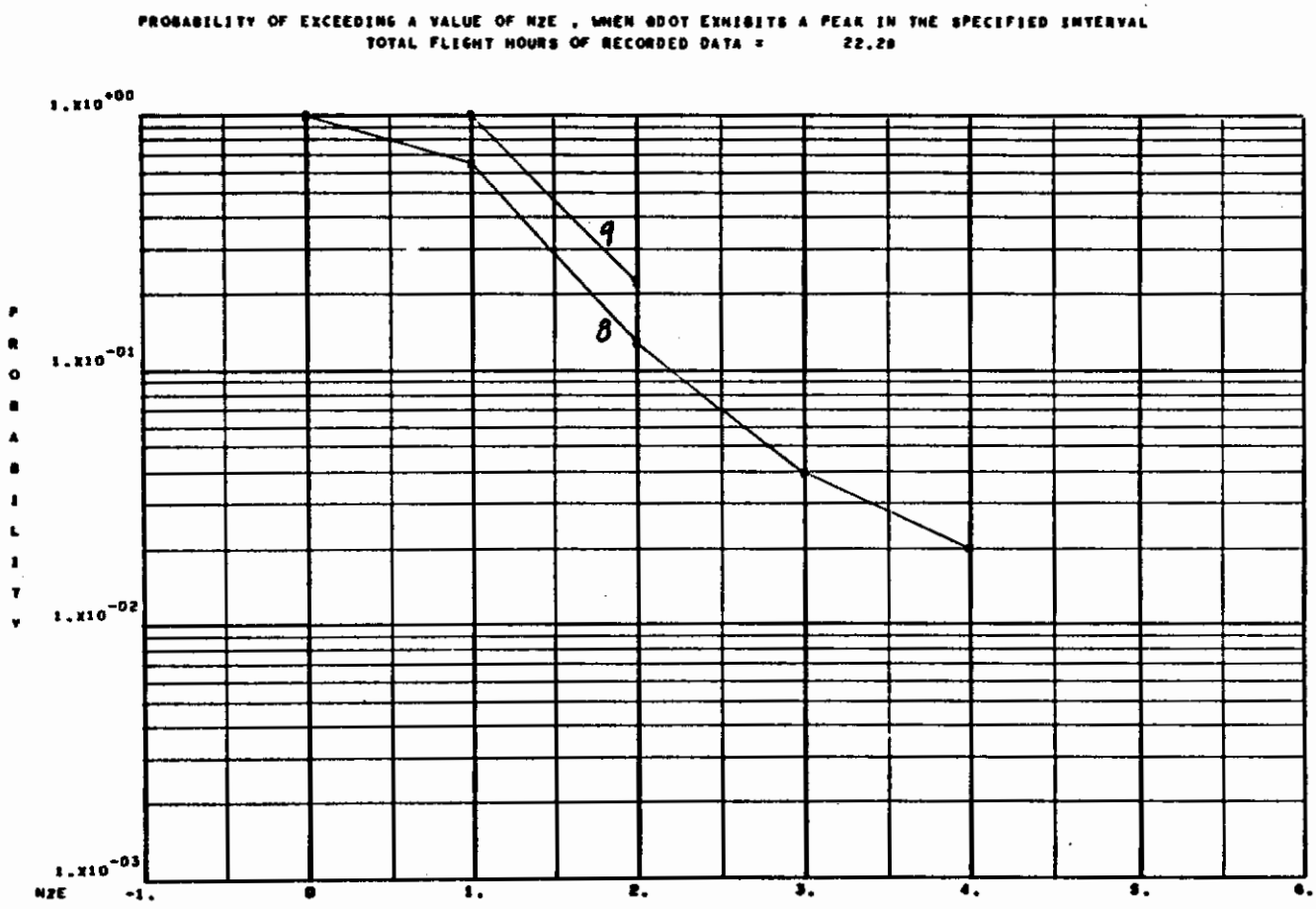


EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((N2)+(WI/WO))

PEAKING VARIABLE (GDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-1.5000	-1.2500	0.	0.	0.
2	2	-1.2500	-1.0000	1.	0.	1.
3	3	-1.0000	-0.7500	0.	0.	0.
4	4	-0.7500	-0.5000	5.	0.	5.
5	5	-0.5000	-0.2500	65.	0.	65.
6	6	-0.2500	0.0000	0.	0.	0.

CASE NO. 39

Figure 38--Concluded

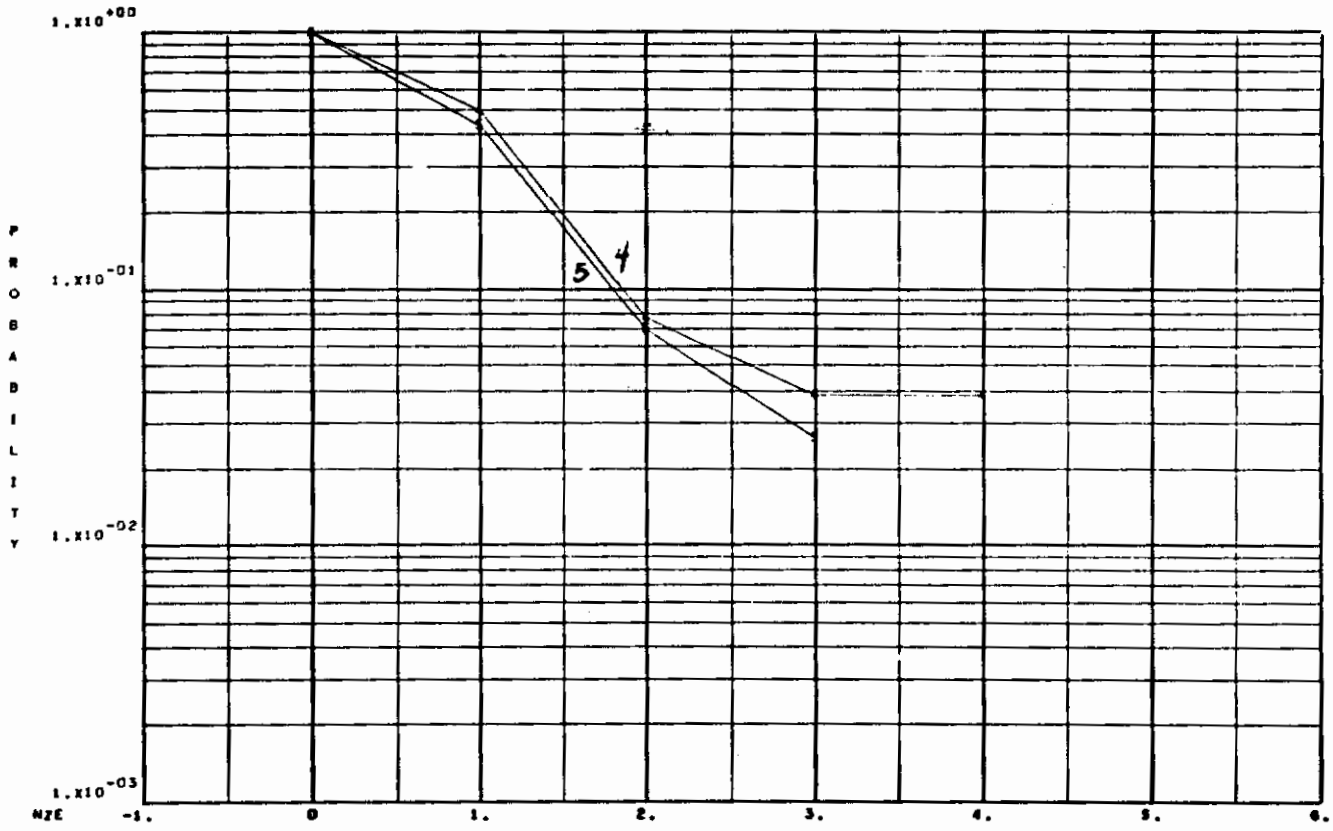


PEAKING VARIABLE (GDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.2500	0.	0.	0.
8	8	0.2500	0.5000	101.	0.	101.
9	9	0.5000	0.7500	9.	0.	9.
0	10	0.7500	1.0000	0.	0.	0.
1	11	1.0000	1.2500	0.	0.	0.
2	12	1.2500	1.5000	0.	0.	0.

CASE NO. 39

Figure 39

PROBABILITY OF EXCEEDING A VALUE OF NZE , WHEN RDOT EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

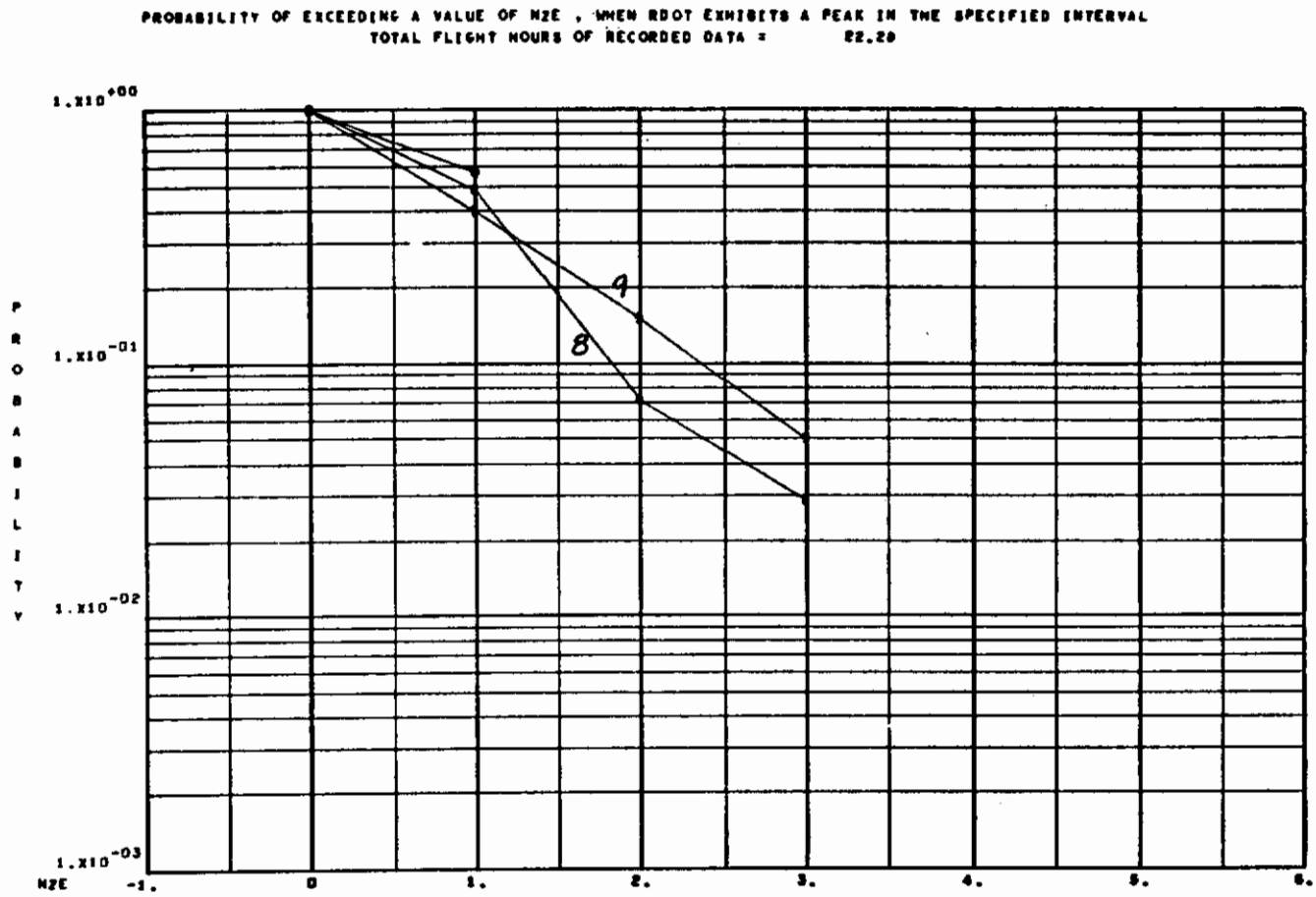


EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)*(WI/WO))

PEAKING VARIABLE (RDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-0.7500	-0.6250	2.	0.	2.
2	2	-0.6250	-0.5000	3.	0.	3.
3	3	-0.5000	-0.3750	4.	0.	4.
4	4	-0.3750	-0.2500	26.	0.	26.
5	5	-0.2500	-0.1700	114.	0.	114.
6	6	-0.1700	0.0000	0.	0.	0.

CASE NO. 44

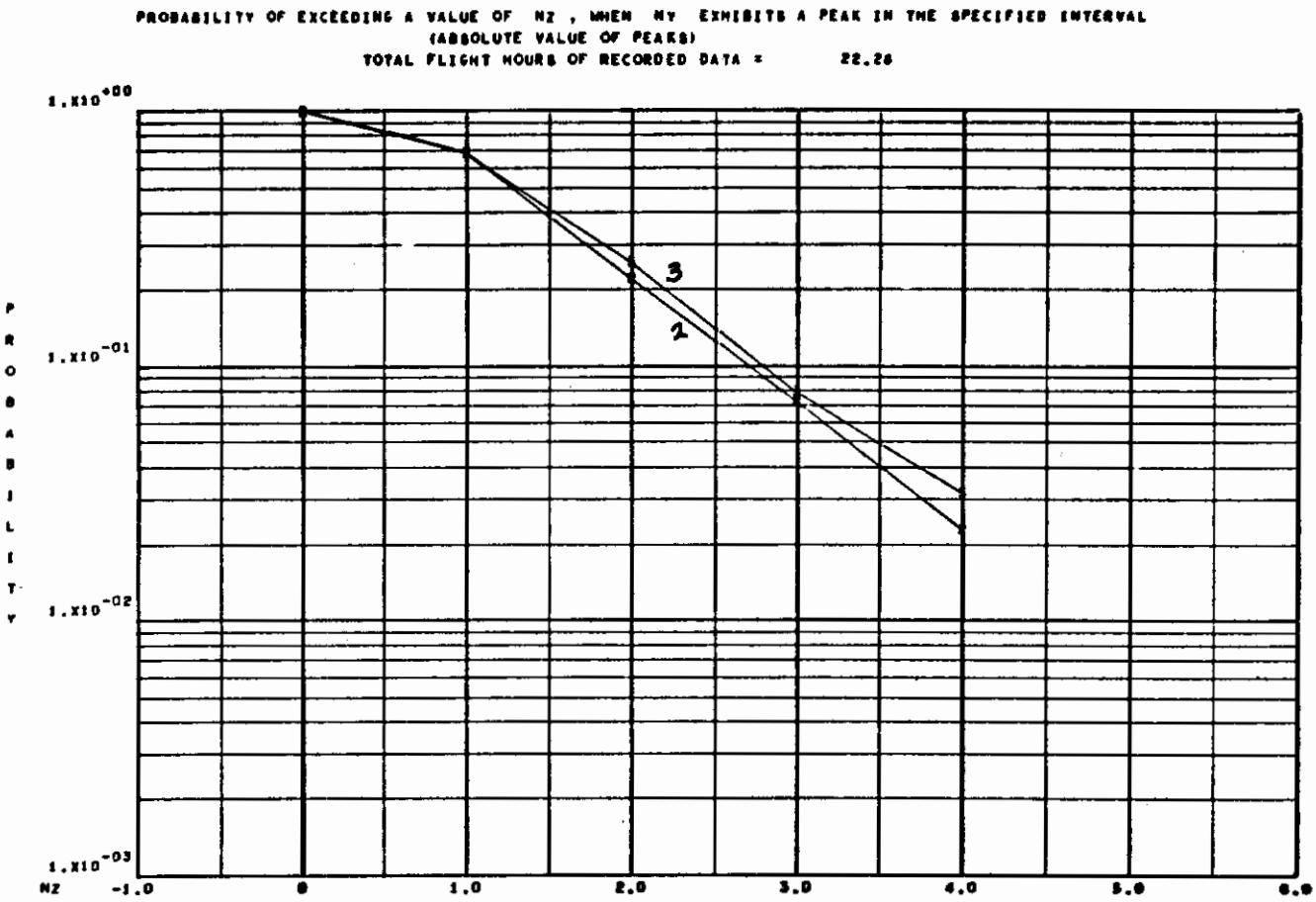
Figure 39--Concluded



PEAKING VARIABLE (RDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.1700	0.	0.	0.
8	8	0.1700	0.2500	70.	0.	70.
9	9	0.2500	0.3750	20.	0.	20.
0	10	0.3750	0.5000	7.	0.	7.
1	11	0.5000	0.6250	0.	0.	0.
2	12	0.6250	0.7500	2.	0.	2.

CASE NO. 44

Figure 40



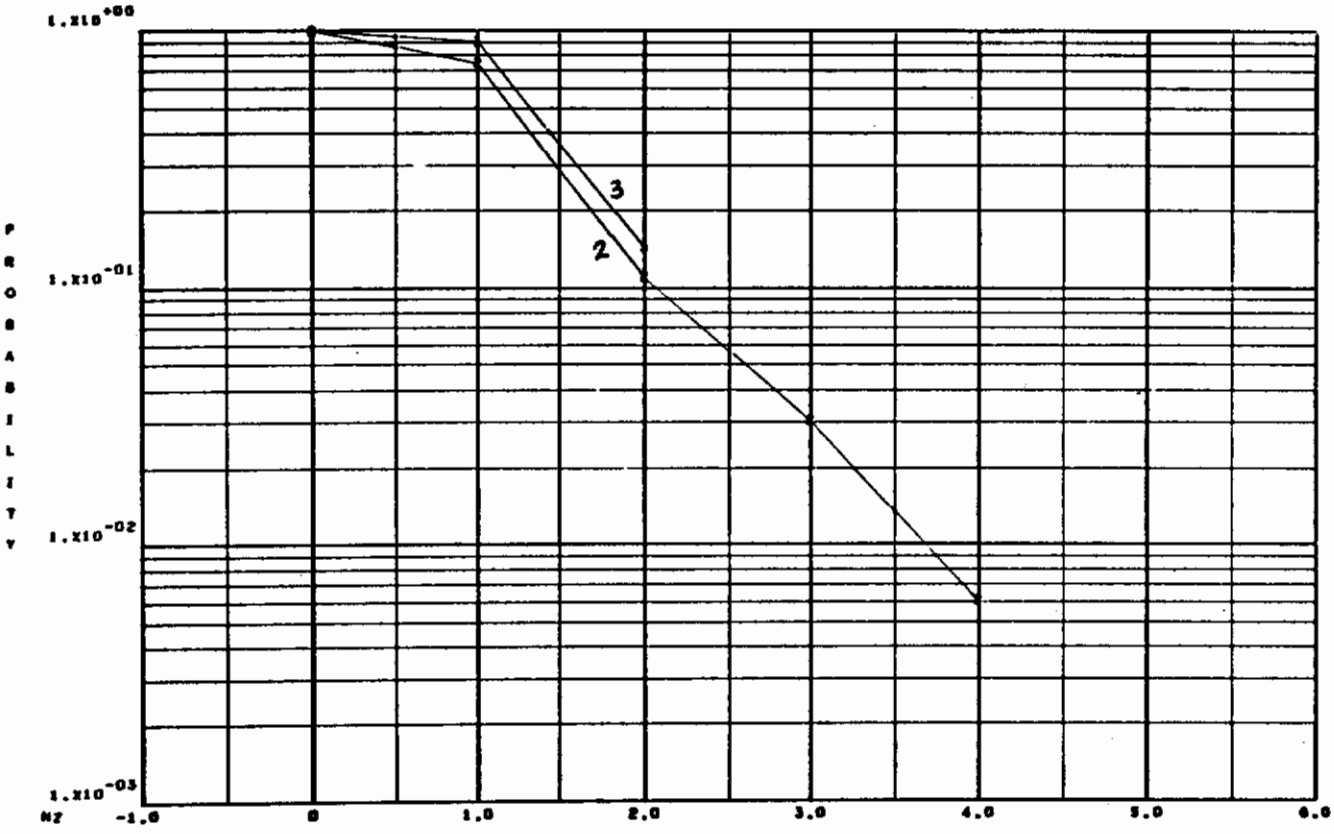
PEAKING VARIABLE (NY)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.0000	0.1000	0.	0.	0.
2	2	0.1000	0.2000	633.	1.	632.
3	3	0.2000	0.3000	63.	0.	63.
4	4	0.3000	0.4000	4.	0.	4.
5	5	0.4000	0.5000	2.	0.	2.
6	6	0.5000	0.6000	0.	0.	0.
7	7	0.6000	0.7000	0.	0.	0.
8	8	0.7000	0.8000	0.	0.	0.
9	9	0.8000	0.9000	0.	0.	0.
0	10	0.9000	1.0000	0.	0.	0.

CASE NO. 7

Figure 41

ABCD-EF
047 066

PROBABILITY OF EXCEEDING A VALUE OF NZ , WHEN P EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
(ABSOLUTE VALUE OF PEAKS)
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.20

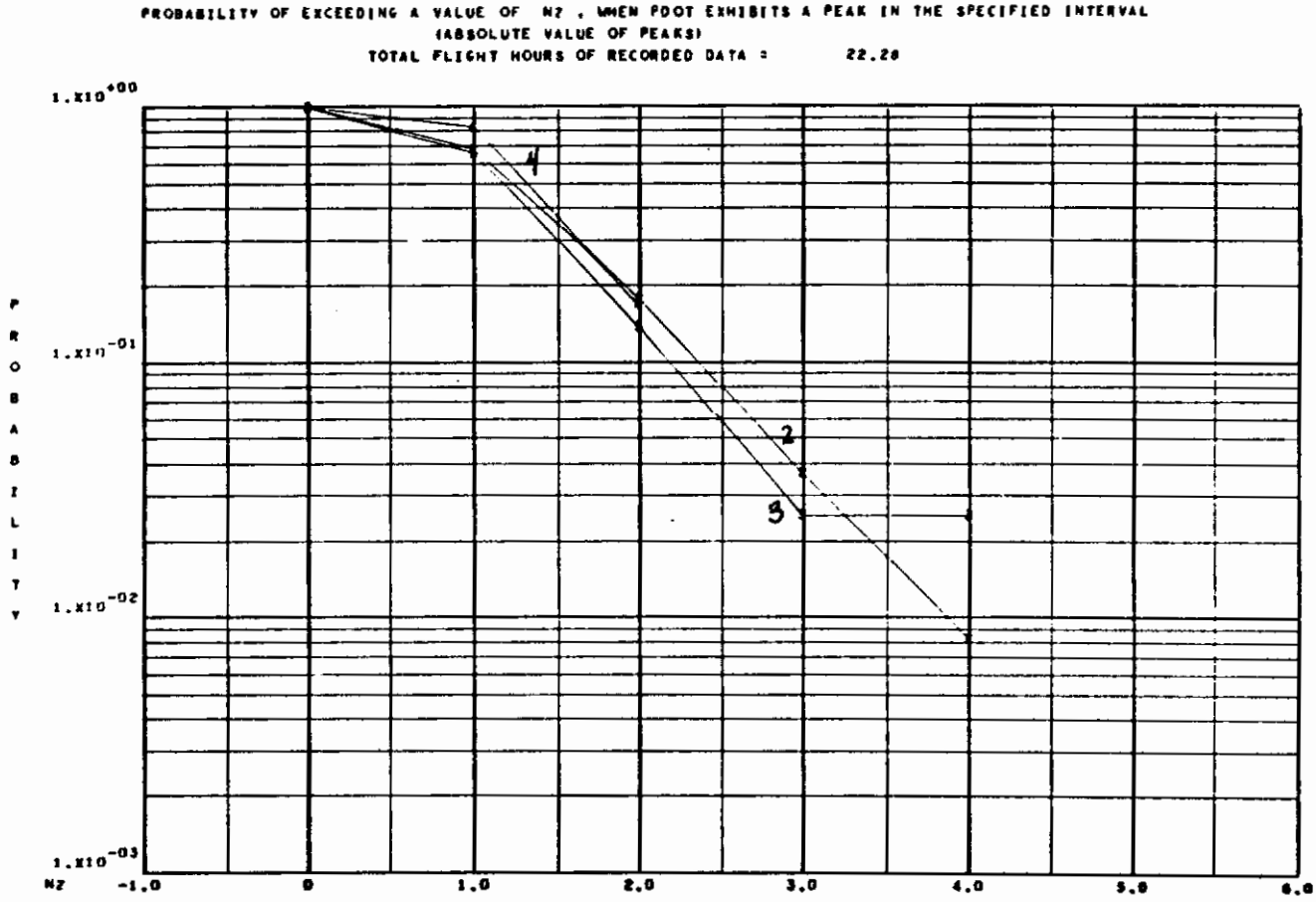


NORMAL LOAD FACTOR, NZ

PEAKING VARIABLE (P)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.0000	0.5200	0.	0.	0.
2	2	0.5200	1.0000	165.	1.	164.
3	3	1.0000	1.5000	21.	0.	21.
4	4	1.5000	2.0000	1.	0.	1.
5	5	2.0000	2.5000	2.	0.	2.
6	6	2.5000	3.0000	0.	0.	0.

CASE NO. 24

Figure 42



PEAKING VARIABLE (PDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	0.0000	0.7000	0.	0.	0.
2	2	0.7000	1.5000	1093.	0.	1093.
3	3	1.5000	3.0000	80.	0.	80.
4	4	3.0000	4.5000	6.	0.	6.
5	5	4.5000	6.0000	0.	0.	0.
6	6	6.0000	7.5000	1.	0.	1.

CASE NO. 34

SECTION V

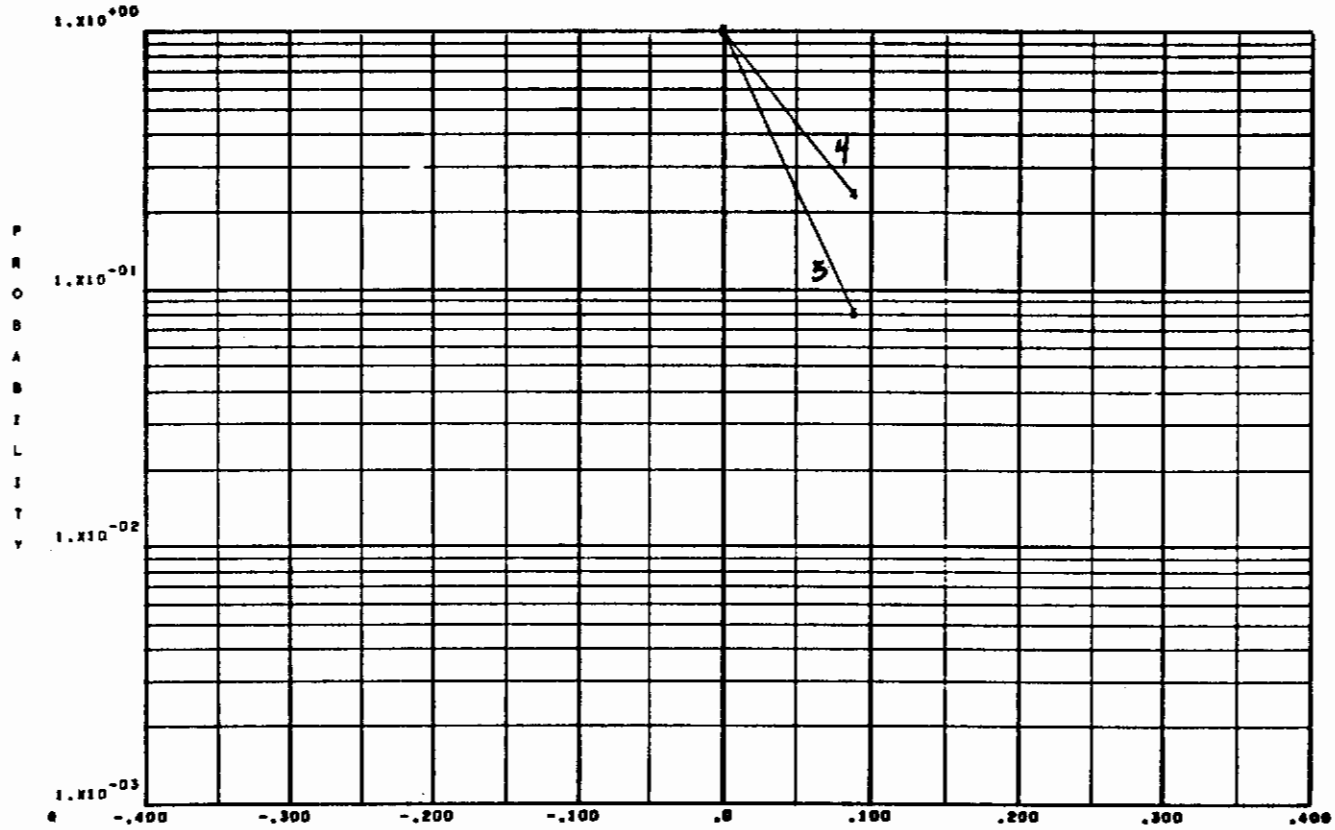
CORRELATION OF PEAKS OF ANGULAR VELOCITY

WITH SIMULTANEOUSLY RECORDED VALUES OF A DIFFERENT ANGULAR VELOCITY

This section of the report presents CRT graphs of the probability of exceeding a value of q when p exhibits a peak in the interval specified on the graph. Then, the probability of exceeding a value of q when p exhibits a peak in the specified interval is presented. The plots are shown on Figures 43 and 44.

Figure 43

PROBABILITY OF EXCEEDING A VALUE OF θ , WHEN P EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

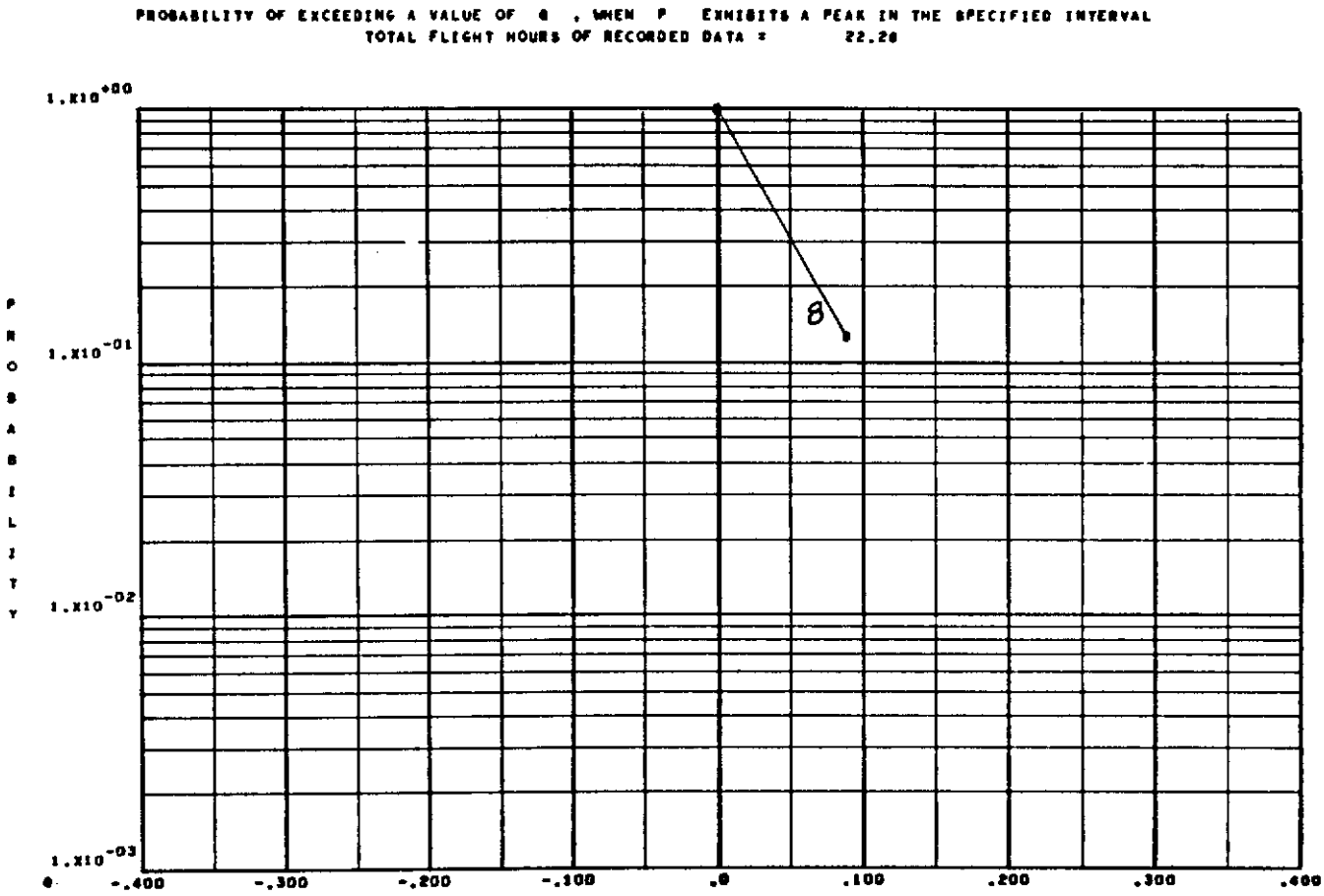


PITCHING VELOCITY, θ (RADIANS/SECOND)

PEAKING VARIABLE (P)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-3.0000	-2.5000	0.	0.	0.
2	2	-2.5000	-2.0000	1.	0.	1.
3	3	-2.0000	-1.5000	1.	0.	1.
4	4	-1.5000	-1.0000	17.	0.	17.
5	5	-1.0000	-0.5200	98.	23.	75.
6	6	-0.5200	0.0000	0.	0.	0.

CASE NO. 16

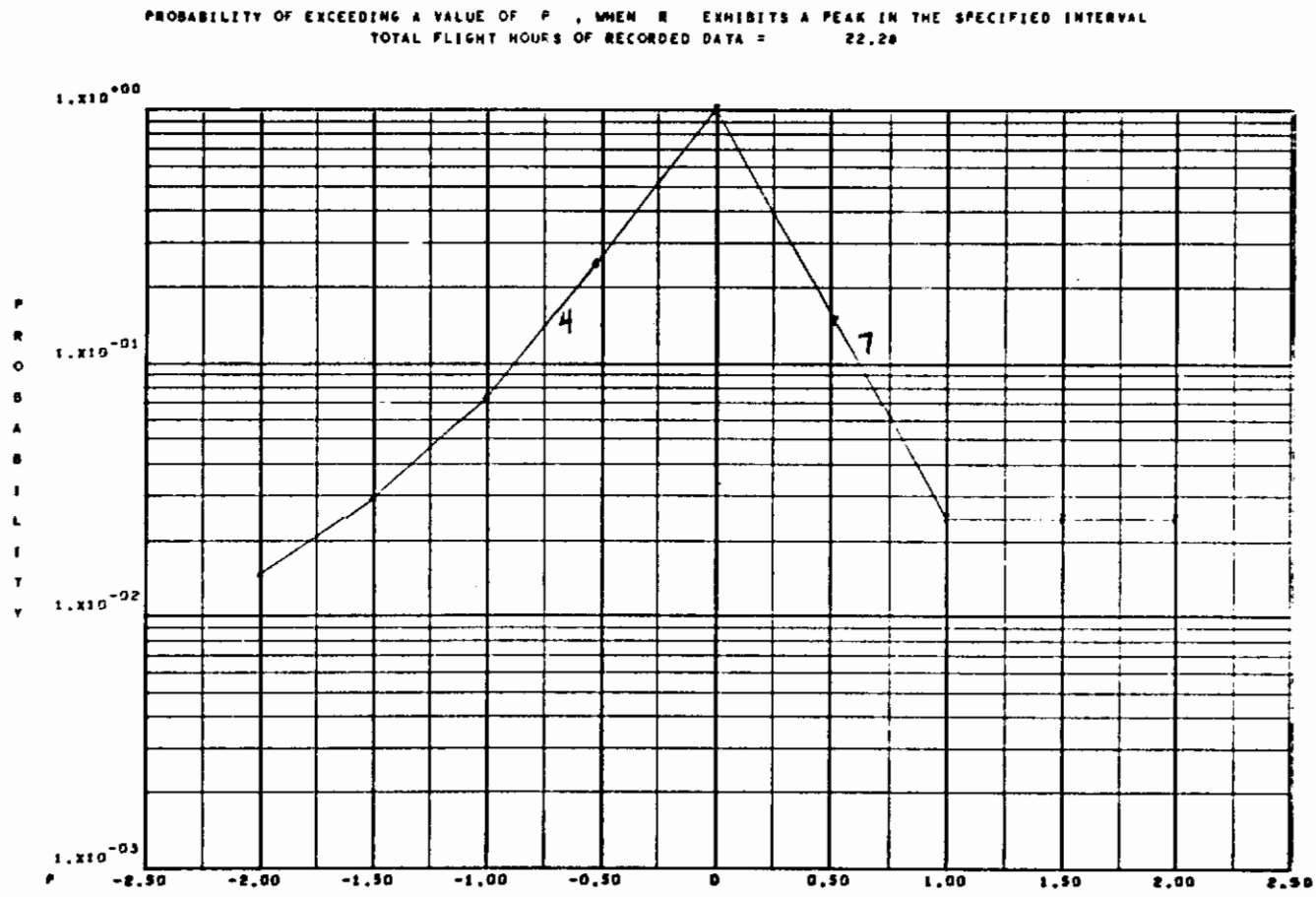
Figure 43--Concluded



PEAKING VARIABLE (F)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.5200	0.	0.	0.
8	8	0.5200	1.0000	67.	11.	56.
9	9	1.0000	1.5000	4.	0.	4.
0	10	1.5000	2.0000	0.	0.	0.
1	11	2.0000	2.5000	1.	0.	1.
2	12	2.5000	3.0000	0.	0.	0.

CASE NO. 16

Figure 44



SYMBOL	PEAKING VARIABLE (R) INT.NO.	FROM	TO	NUMBER OF PEAKS TOTAL	NEGATIVE	POSITIVE
1	1	-0.5000	-0.4000	0.	0.	0.
2	2	-0.4000	-0.3000	0.	0.	0.
3	3	-0.3000	-0.2000	0.	0.	0.
4	4	-0.2000	-0.0900	75.	68.	7.
5	5	-0.0900	0.0900	0.	0.	0.
6	6	0.0900	0.0900	0.	0.	0.
7	7	0.0900	0.2000	47.	6.	41.
8	8	0.2000	0.3000	0.	0.	0.
9	9	0.3000	0.4000	0.	0.	0.
0	10	0.4000	0.5000	0.	0.	0.

CASE NO. 29

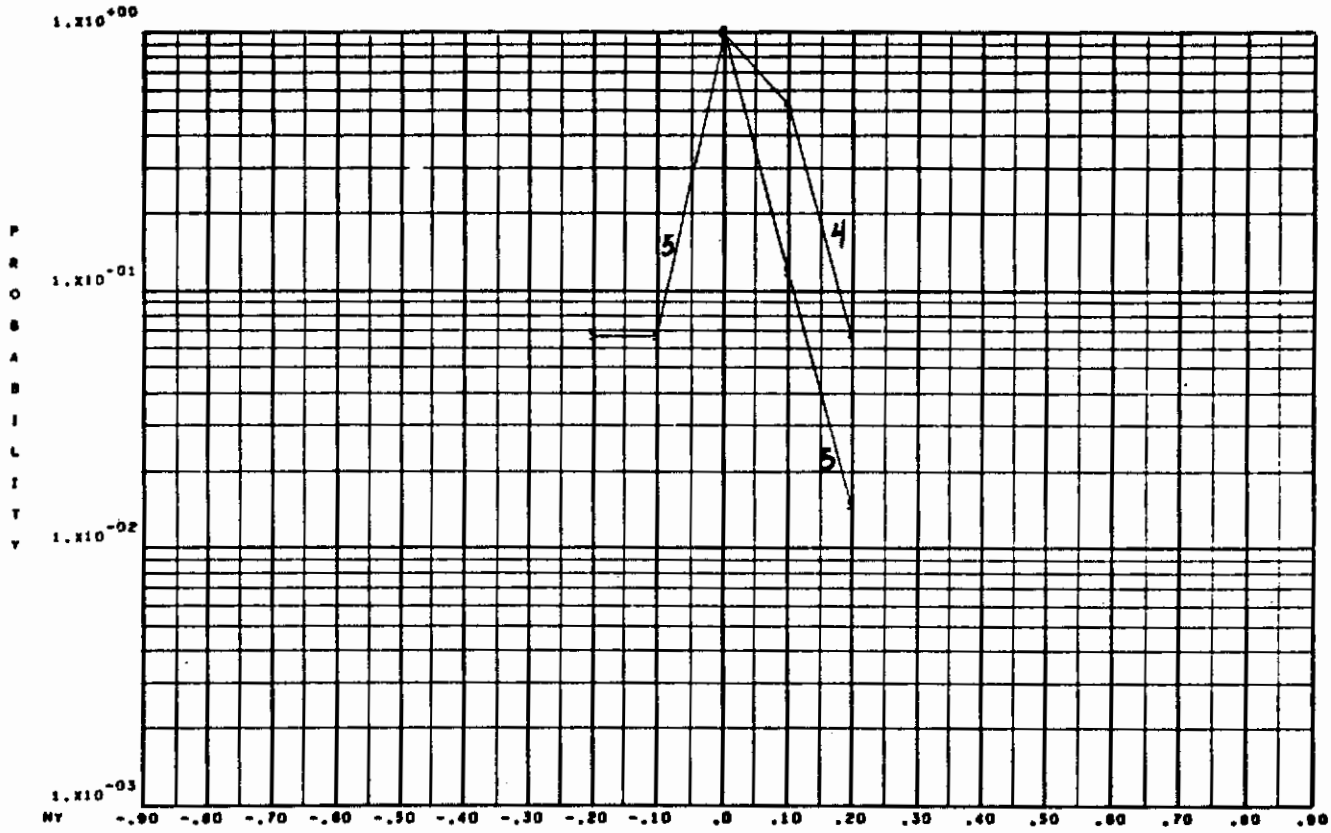
SECTION VI

CORRELATION OF P AND $\dot{R}$ PEAKS WITH N_Y

This section of the report presents CRT graphs of the probability of exceeding a value of n_y when p exhibits a peak in the specified interval. A similar graph for peaks of $\dot{r}$ is presented next. The plots are shown on Figures 45 and 46.

Figure 45

PROBABILITY OF EXCEEDING A VALUE OF NY , WHEN P EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



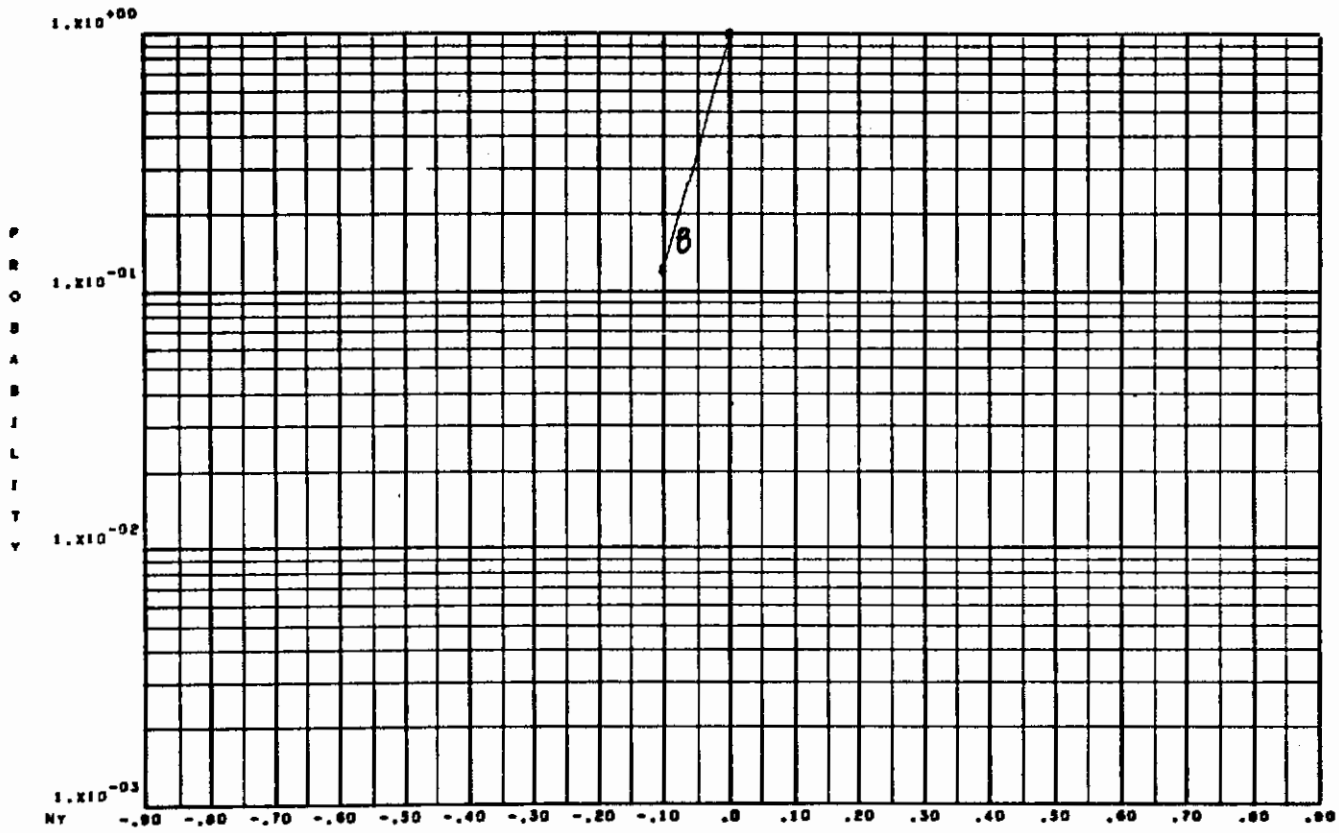
LATERAL LOAD FACTOR, NY

PEAKING VARIABLE (P)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-3.0000	-2.5000	0.	0.	0.
2	2	-2.5000	-2.0000	1.	0.	1.
3	3	-2.0000	-1.5000	1.	0.	1.
4	4	-1.5000	-1.0000	17.	2.	15.
5	5	-1.0000	-0.5200	98.	30.	68.
6	6	-0.5200	0.0000	0.	0.	0.

CASE NO. 17

Figure 45--Concluded

PROBABILITY OF EXCEEDING A VALUE OF NY , WHEN P EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



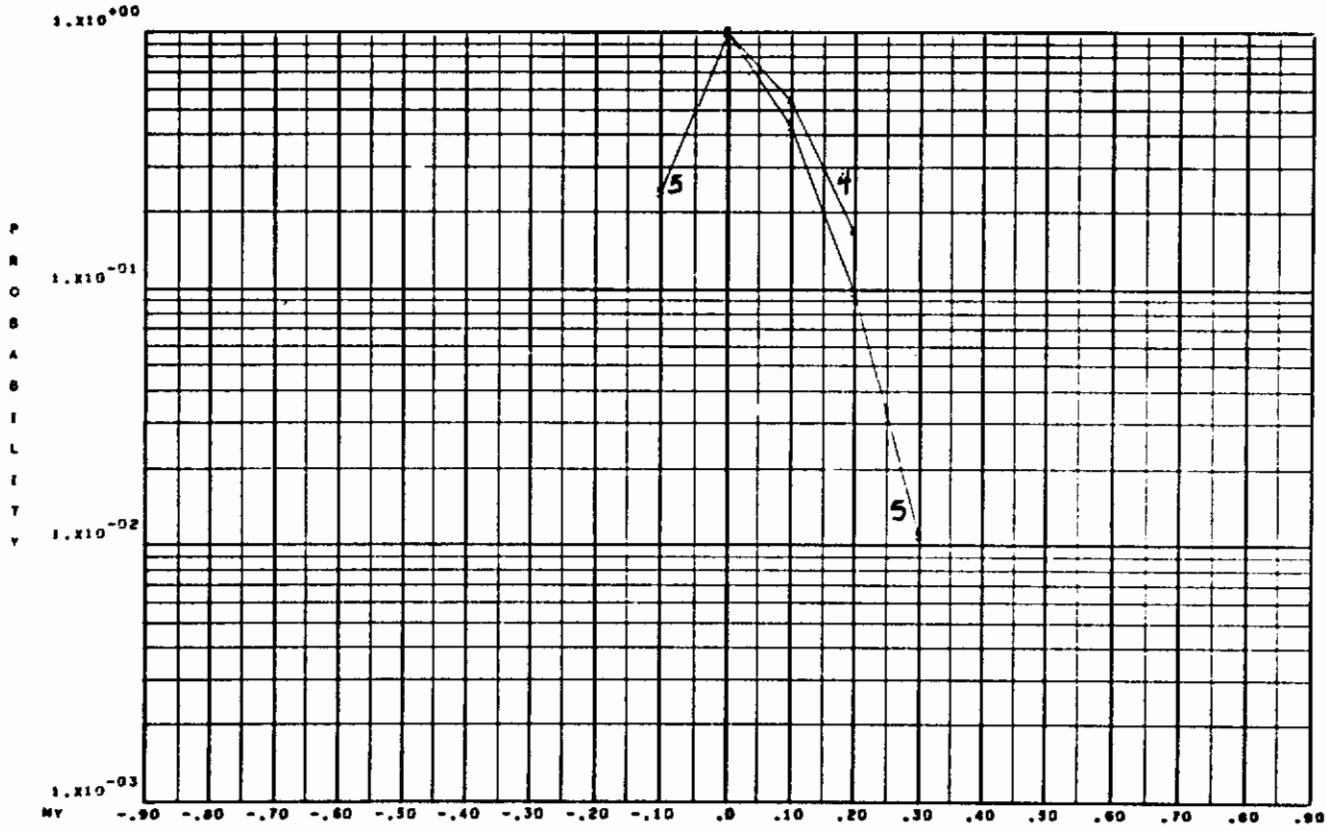
LATERAL LOAD FACTOR, NY

PEAKING VARIABLE (P)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.5200	0.	0.	0.
8	8	0.5200	1.0000	67.	41.	26.
9	9	1.0000	1.5000	4.	2.	2.
0	10	1.5000	2.0000	0.	0.	0.
1	11	2.0000	2.5000	1.	0.	1.
2	12	2.5000	3.0000	0.	0.	0.

CASE NO. 17

Figure 46

PROBABILITY OF EXCEEDING A VALUE OF NY , WHEN RDOT EXHIBITS A PEAK IN THE SPECIFIED INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28

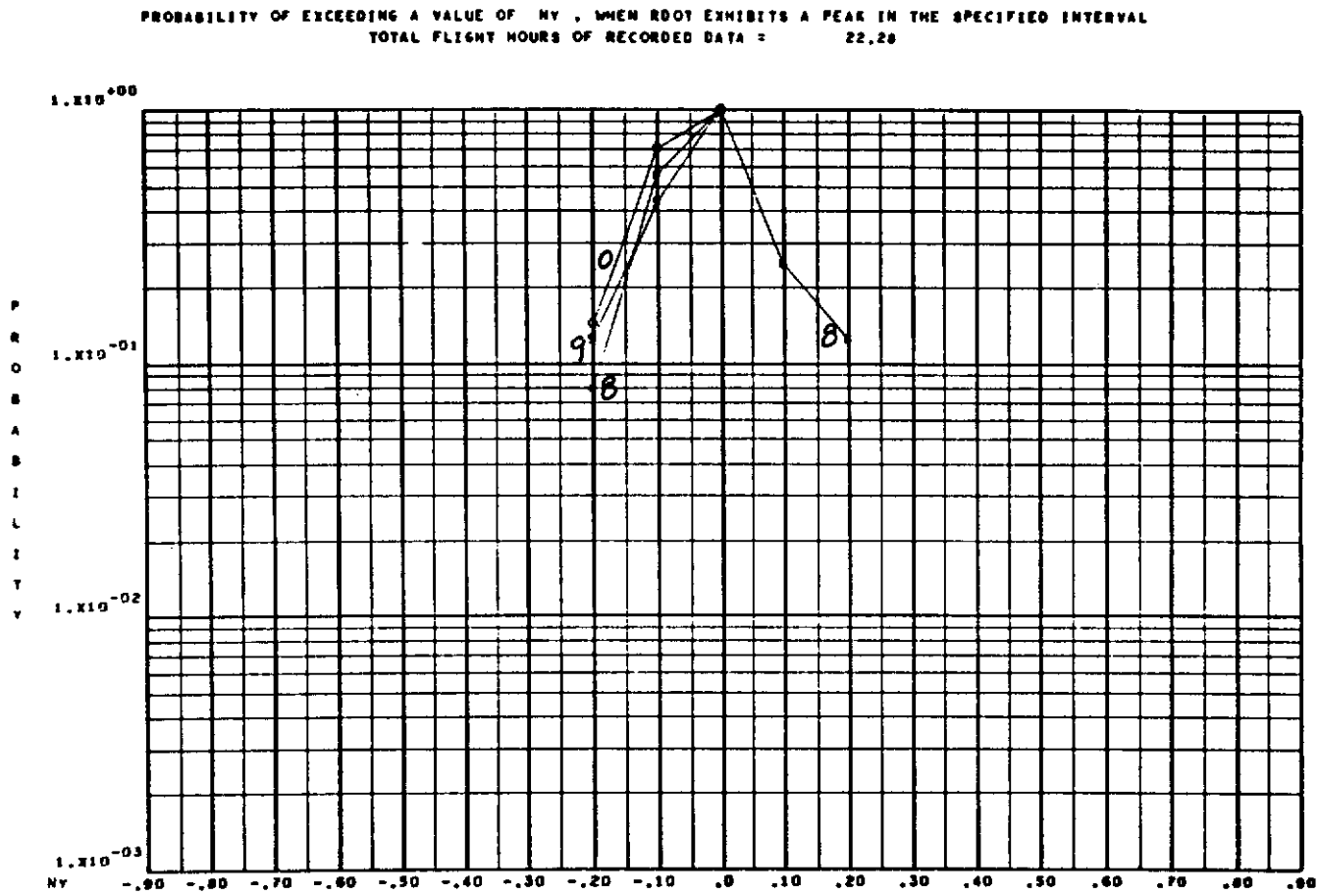


LATERAL LOAD FACTOR, NY

PEAKING VARIABLE (RDOT)				NUMBER OF PEAKS		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-0.7500	-0.6250	2.	0.	2.
2	2	-0.6250	-0.5000	3.	0.	3.
3	3	-0.5000	-0.3750	4.	0.	4.
4	4	-0.3750	-0.2500	26.	2.	24.
5	5	-0.2500	-0.1700	114.	21.	93.
6	6	-0.1700	0.0000	0.	0.	0.

CASE NO. 42

Figure 46--Concluded



SYMBOL	PEAKING VARIABLE (RDOT) INT.NO.	FROM	TO	NUMBER OF PEAKS TOTAL	NEGATIVE	POSITIVE
7	7	0.0000	0.1700	0.	0.	0.
8	8	0.1700	0.2500	70.	62.	8.
9	9	0.2500	0.3750	20.	16.	4.
0	10	0.3750	0.5000	7.	7.	0.
1	11	0.5000	0.6250	0.	0.	0.
2	12	0.6250	0.7500	2.	2.	0.

CASE NO. 42

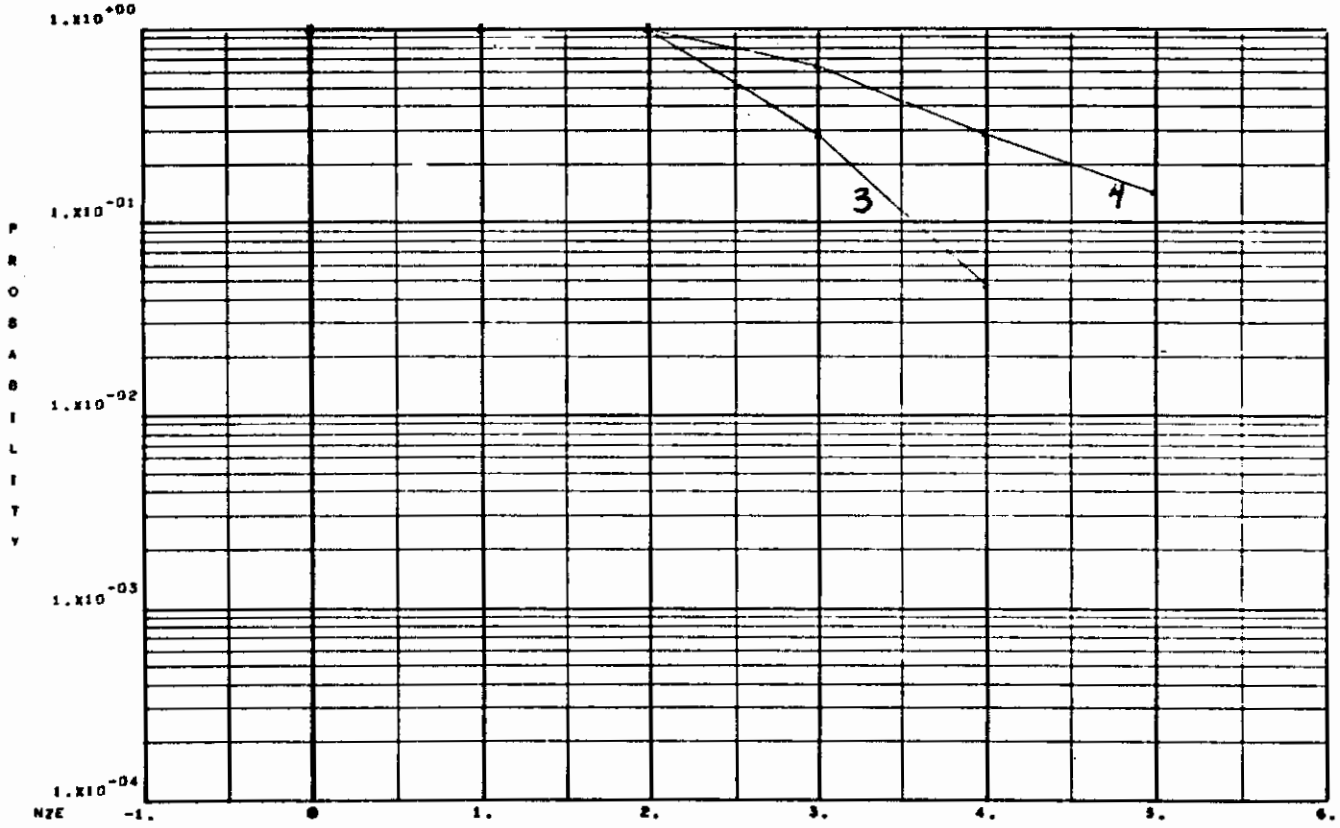
SECTION VII

CORRELATION OF PEAKS OF N_{Z_E} AND P WITH TWO OTHER VARIABLES

This section of the report presents CRT graphs of the probability of an n_{z_e} peak exceeding a value of n_{z_e} given the intervals of temperature and altitude, the probability of exceeding a stagnation temperature, T_s, when n_{z_e} exhibits a peak in the specified altitude interval, then, the probability of the absolute value of p exceeding a value of p given the intervals of velocity and altitude. The plots are shown on Figures 47 through 49.

Figure 47

PROBABILITY OF VARIABLE'S PEAK EXCEEDING A VALUE OF THE VARIABLE (NZE)
GIVEN THE INTERVALS OF TS, AND HP
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.26



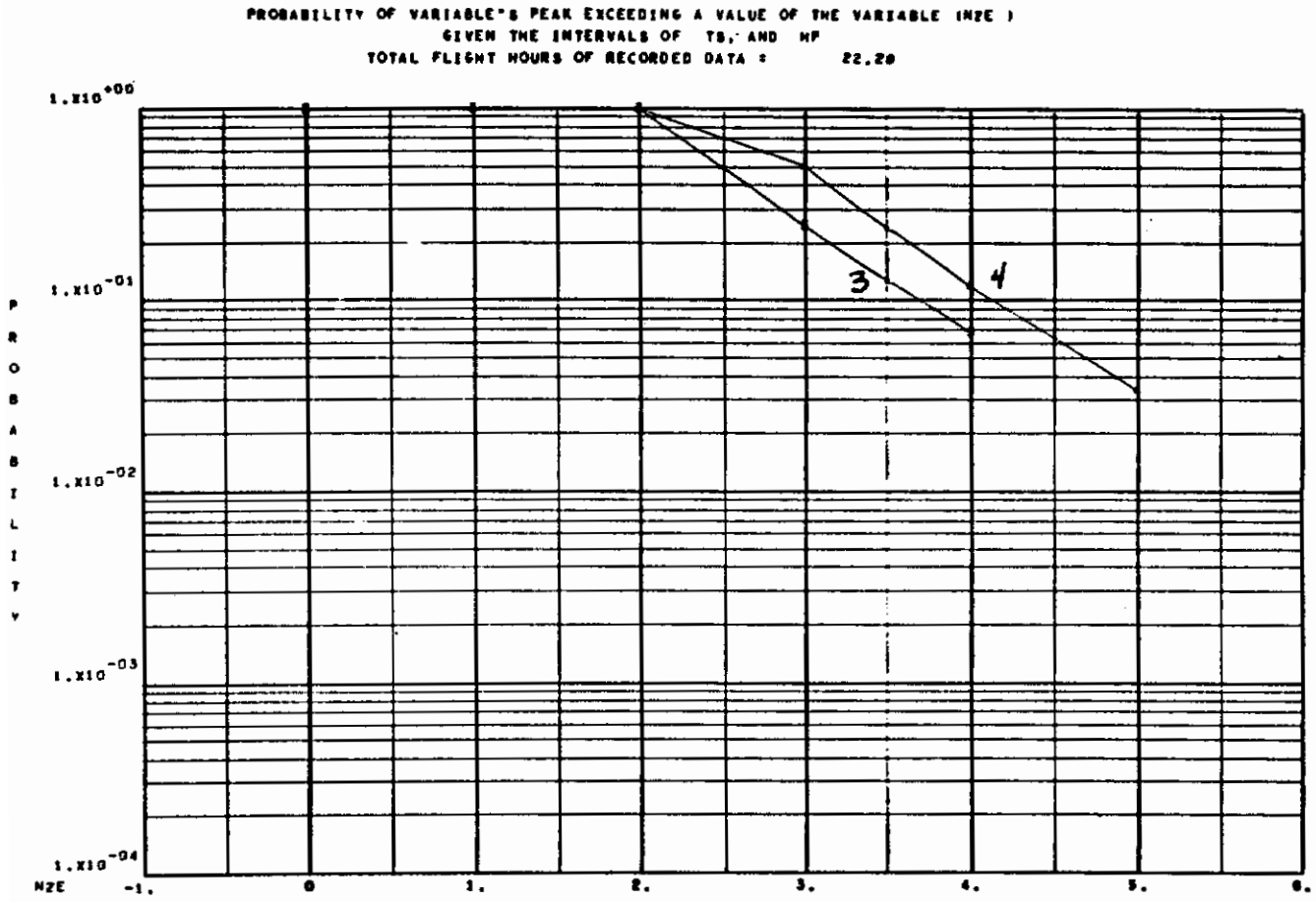
EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)*(WI/WD))

SYMBOL	STAGNATION TEMP.,TS,(DEG. F) INT.NO.	FROM	TO	NO. OF PEAKS, (NZE) TOTAL	NEGATIVE	POSITIVE
1	1	-70.	0.	0.	0.	0.
2	2	0.	50.	0.	0.	0.
3	3	50.	100.	21.	0.	21.
4	4	100.	150.	14.	0.	14.
5	5	150.	200.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 32

Figure 47--Continued

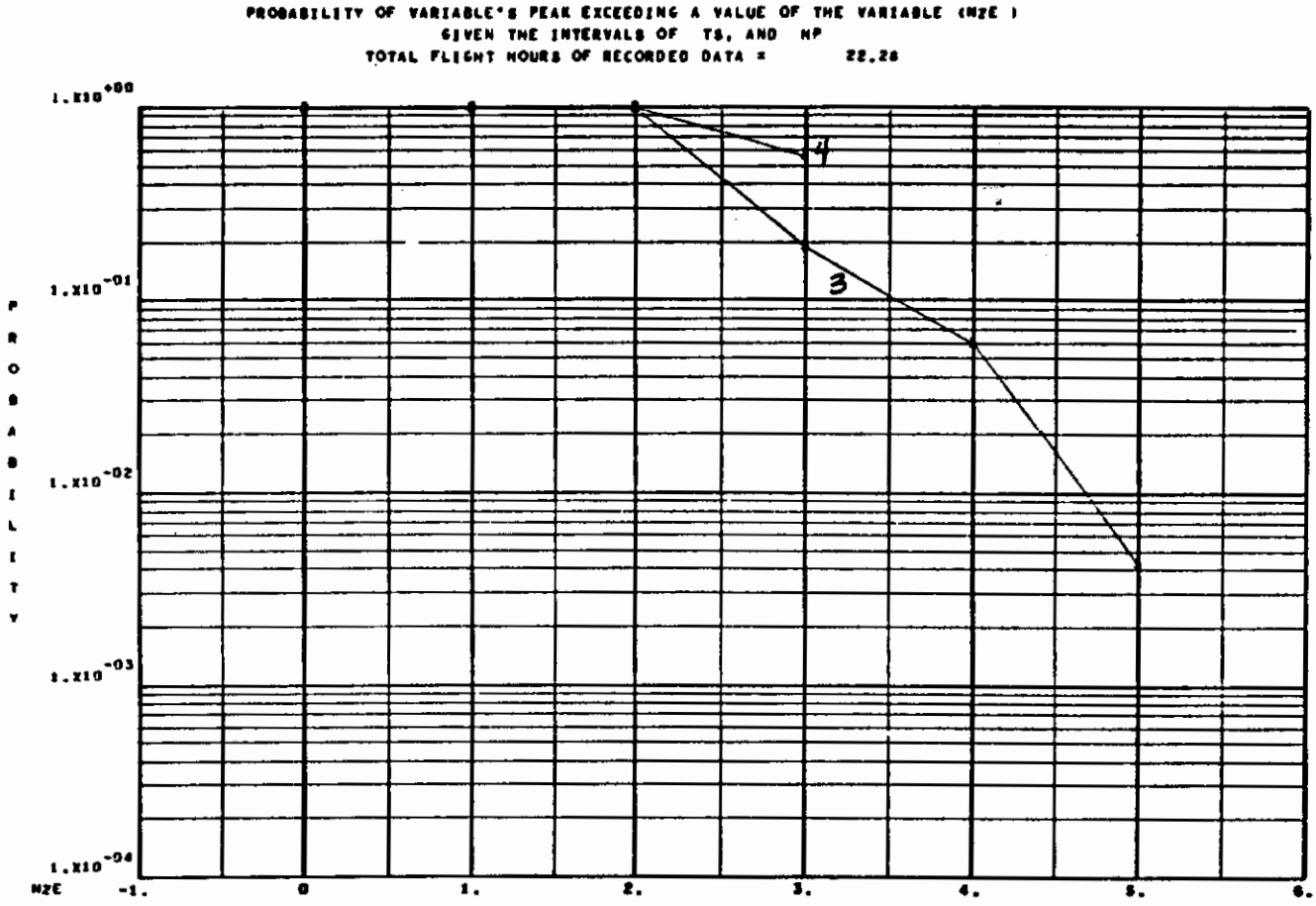


SYMBOL	STAGNATION TEMP.,TS,(DEG. F) INT.NO.	FROM	TO	NO. OF PEAKS, (NZE) TOTAL	NEGATIVE	POSITIVE
1	1	-70.	0.	0.	0.	0.
2	2	0.	50.	0.	0.	0.
3	3	50.	100.	295.	1.	294.
4	4	100.	150.	59.	0.	59.
5	5	150.	200.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 32

Figure 47--Continued



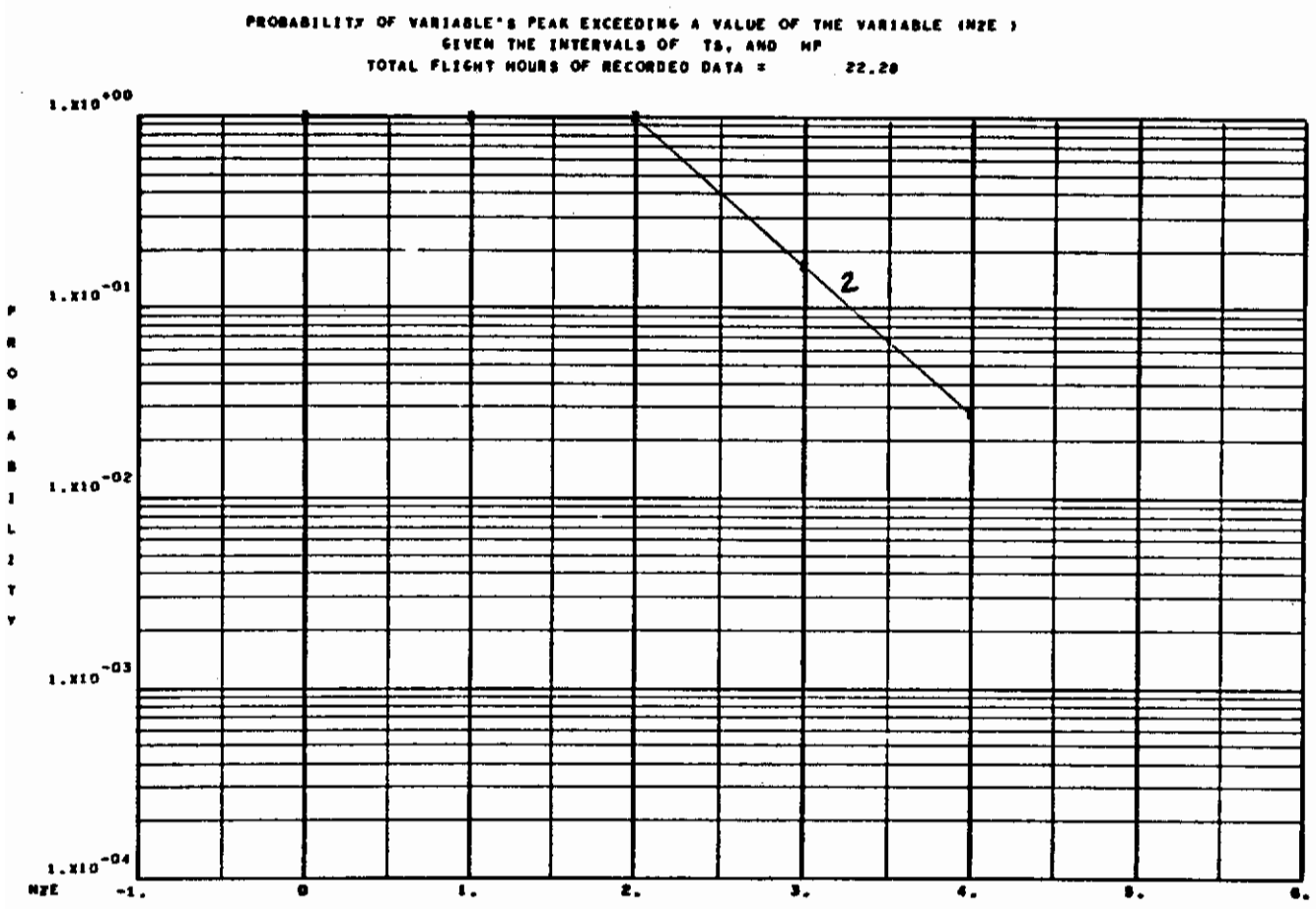
EFFECTIVE NORMAL LOAD FACTOR, NZE, OR ((NZ)*(WI/WO))

STAGNATION TEMP.,TS,(DEG. F)				NO. OF PEAKS, (NZE)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-70.	0.	0.	0.	0.
2	2	0.	50.	27.	0.	27.
3	3	50.	100.	232.	0.	232.
4	4	100.	150.	25.	0.	25.
5	5	150.	200.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 3. FROM 5000. TO 15000. (FEET)

CASE NO. 32

Figure 47--Continued

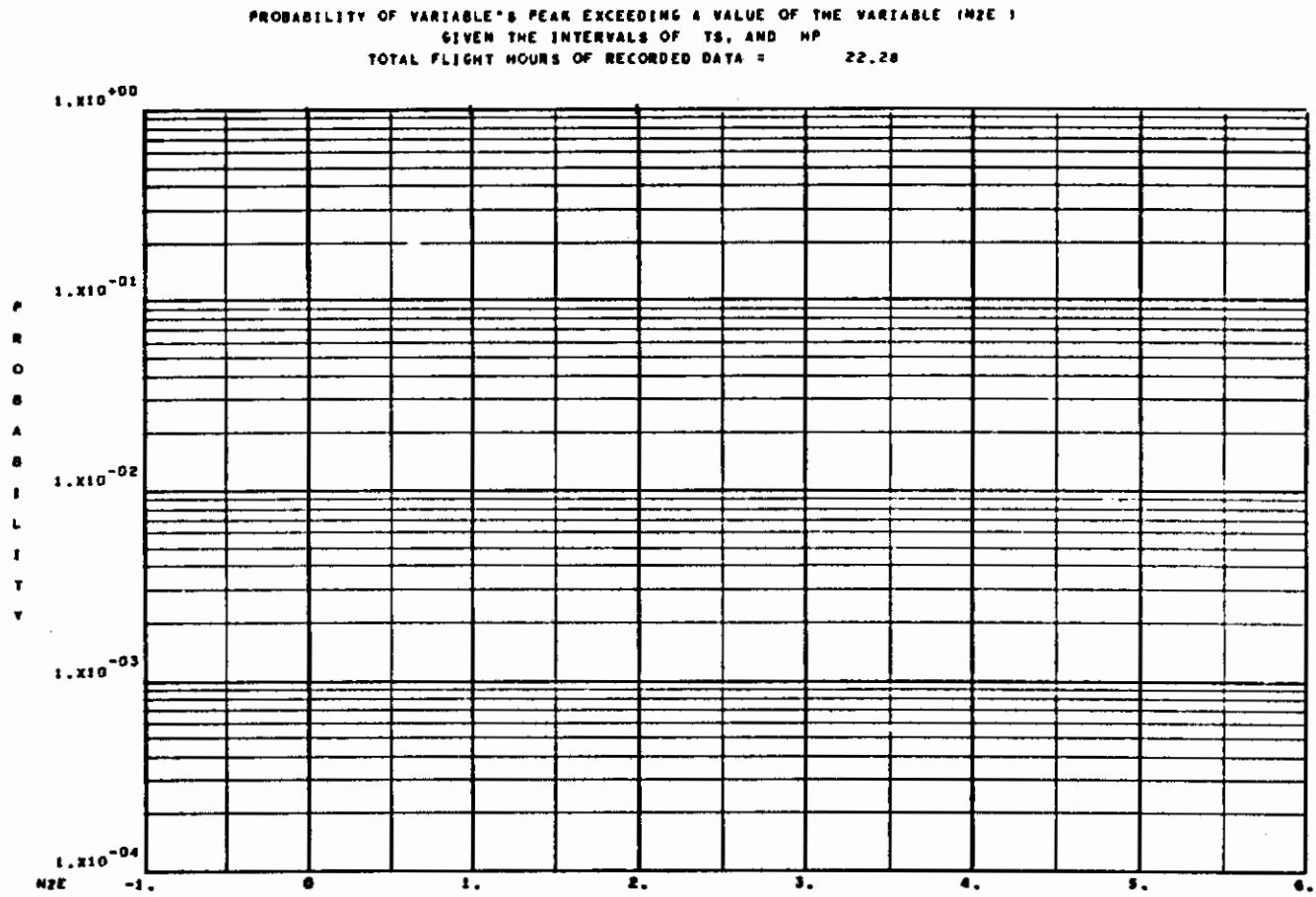


STAGNATION TEMP.,TS,(DEG. F)				NO. OF PEAKS, (NZE)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-70.	0.	2.	0.	2.
2	2	0.	50.	36.	0.	36.
3	3	50.	100.	6.	0.	6.
4	4	100.	150.	0.	0.	0.
5	5	150.	200.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 32

Figure 47--Concluded



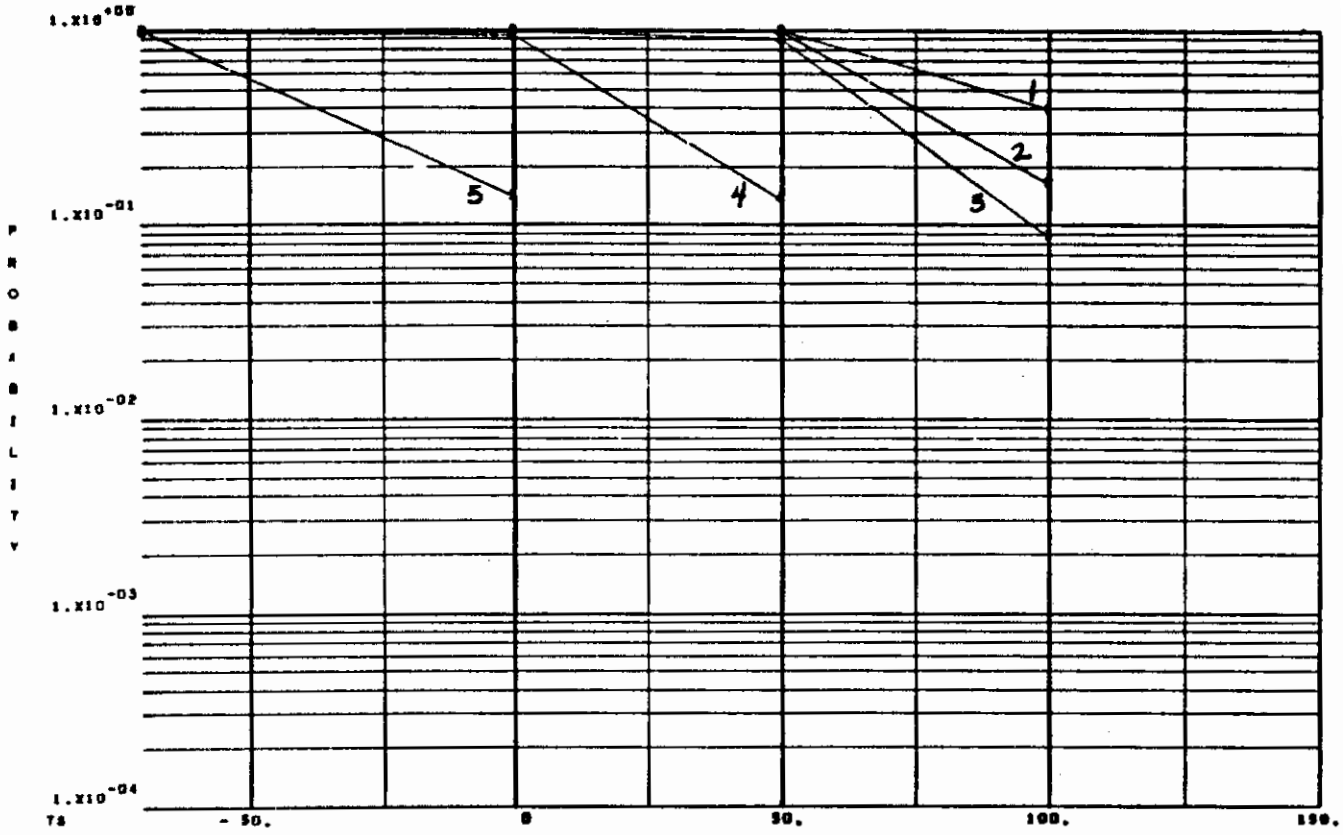
STAGNATION TEMP.,TS,(DEG. F)				NO. OF PEAKS. (NZE)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	-70.	0.	12.	0.	12.
2	2	0.	50.	2.	0.	2.
3	3	50.	100.	0.	0.	0.
4	4	100.	150.	0.	0.	0.
5	5	150.	200.	0.	0.	0.

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 50000. (FEET)

CASE NO. 32

Figure 48

PROBABILITY OF EXCEEDING A STAGNATION TEMPERATURE, TS, WHEN NZE EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL.
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



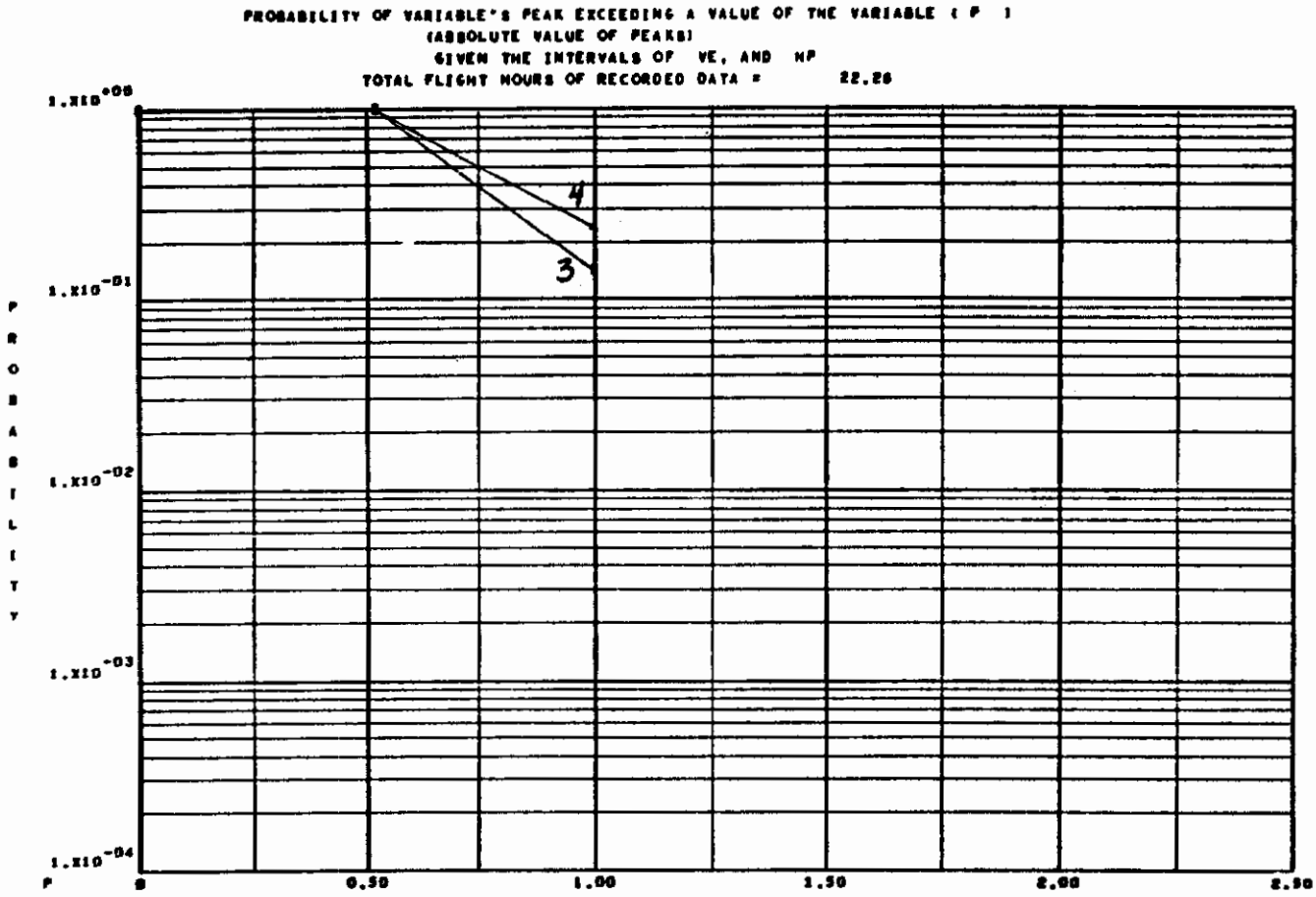
STAGNATION TEMPERATURE, TS (DEGREES F)

SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (NZE) TOTAL
1	1	0.	2000.	35.
2	2	2000.	5000.	353.
3	3	5000.	15000.	264.
4	4	15000.	25000.	44.
5	5	25000.	50000.	14.

POSITIVE NZE VALUES

CASE NO. F2

Figure 49

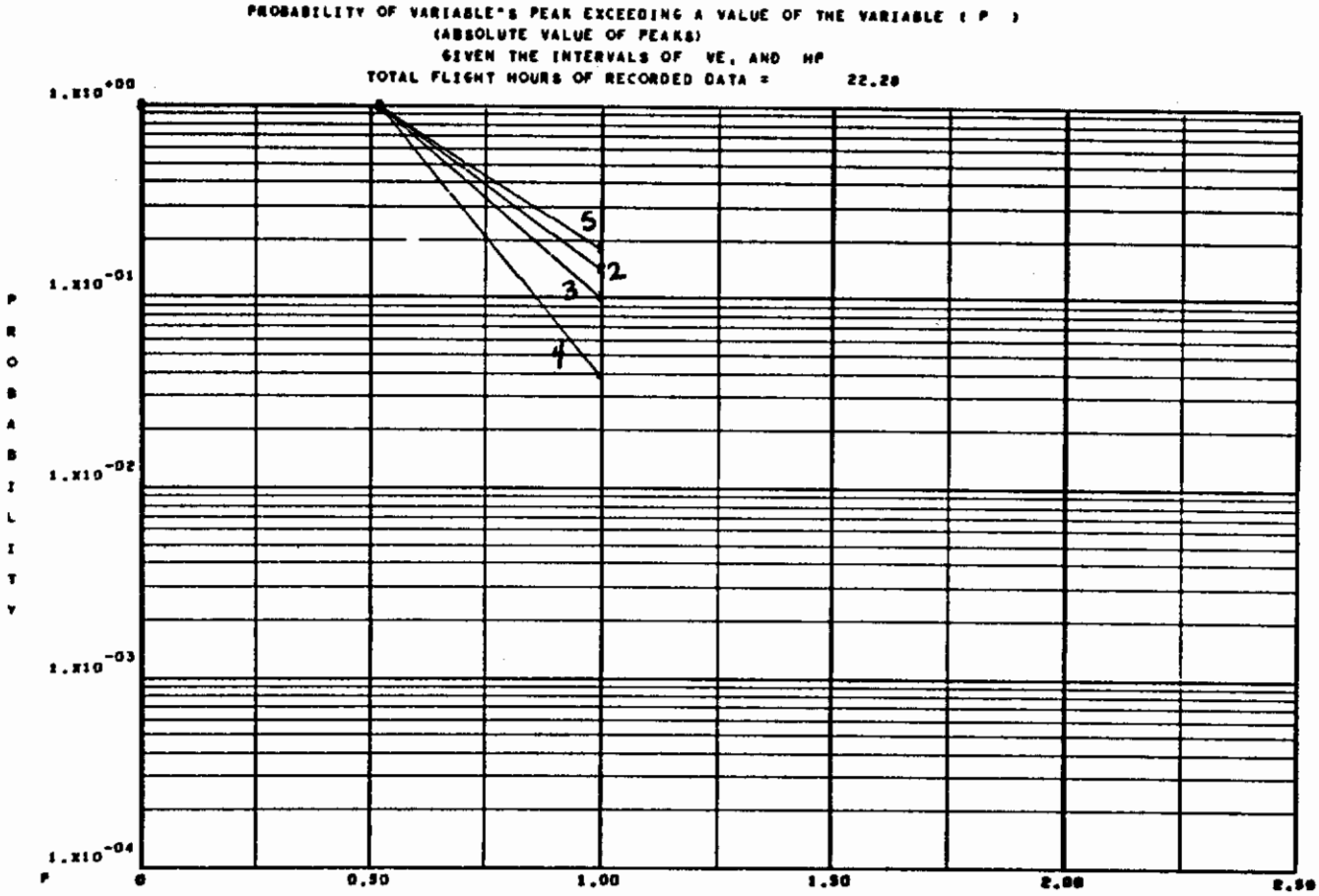


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (P) TOTAL
1	1	0.	250.	0.
2	2	250.	300.	3.
3	3	300.	350.	14.
4	4	350.	400.	21.
5	5	400.	450.	9.
6	6	450.	500.	1.
7	7	500.	550.	5.
8	8	550.	600.	5.
9	9	600.	650.	2.
0	10	650.	810.	0.

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 21

Figure 49--Continued

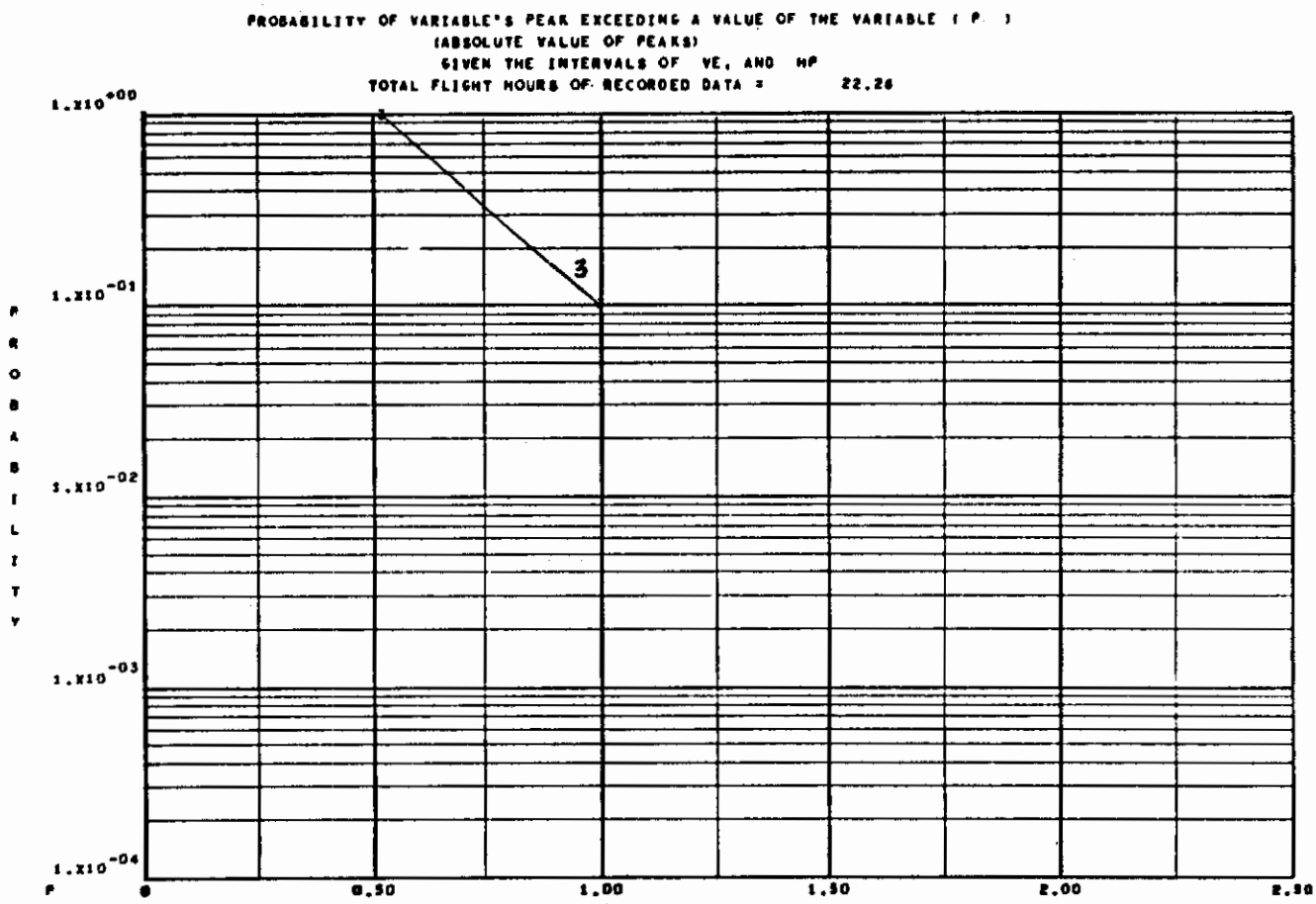


SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (P) TOTAL
1	1	0.	250.	1.
2	2	250.	300.	14.
3	3	300.	350.	30.
4	4	350.	400.	26.
5	5	400.	450.	11.
6	6	450.	500.	4.
7	7	500.	550.	4.
8	8	550.	600.	3.
9	9	600.	650.	0.
0	10	650.	810.	0.

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 21

Figure 49--Concluded



ROLLING VELOCITY, P (RADIANS/SECOND)

SYMBOL	VELOCITY, VE, (KNOTS) INT.NO.	FROM	TO	NO. OF PEAKS, (P) TOTAL
1	1	0.	250.	1.
2	2	250.	300.	1.
3	3	300.	350.	10.
4	4	350.	400.	2.
5	5	400.	450.	0.
6	6	450.	500.	0.
7	7	500.	550.	0.
8	8	550.	600.	0.
9	9	600.	650.	0.
0	10	650.	810.	0.

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 30000. (FEET)

CASE NO. 21

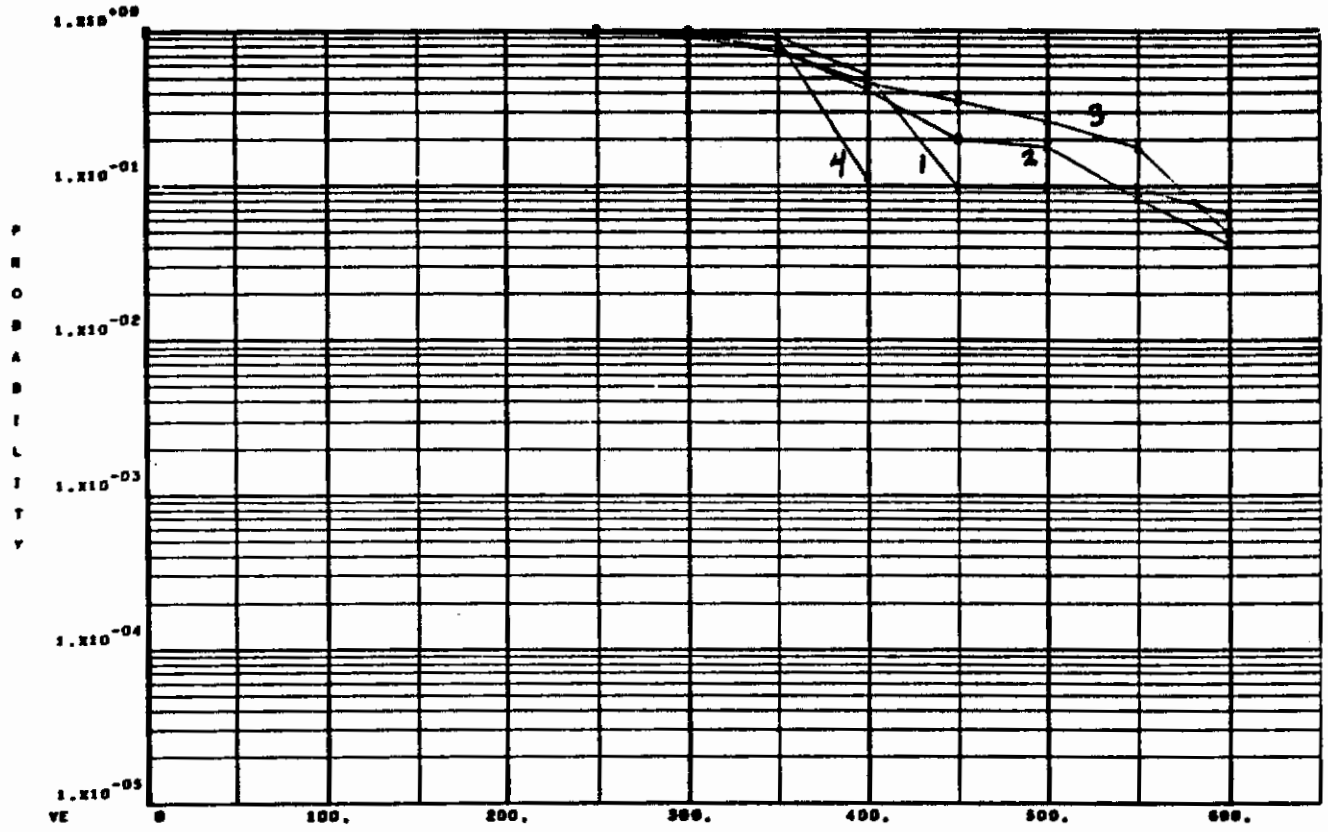
SECTION VIII

CORRELATION OF PEAKS OF NINE PARAMETERS WITH AIRSPEED FOR GIVEN ALTITUDE INTERVALS

This section of the report presents CRT graphs of the probability of exceeding an airspeed when a variable exhibits a peak in the specified altitude interval. Nine parameters (n_y, n_z, p, q, r, n_{z_e}, $\dot{p}$, $\dot{q}$ and $\dot{r}$) are considered as variables. These graphs are comparable to those in Section III except that the magnitude of the peaking variable is not considered, only whether the value is positive, negative, or the absolute value. These plots are shown on Figures 50 through 58.

Figure 50

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN NY EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



VELOCITY, VE (KNOTS)

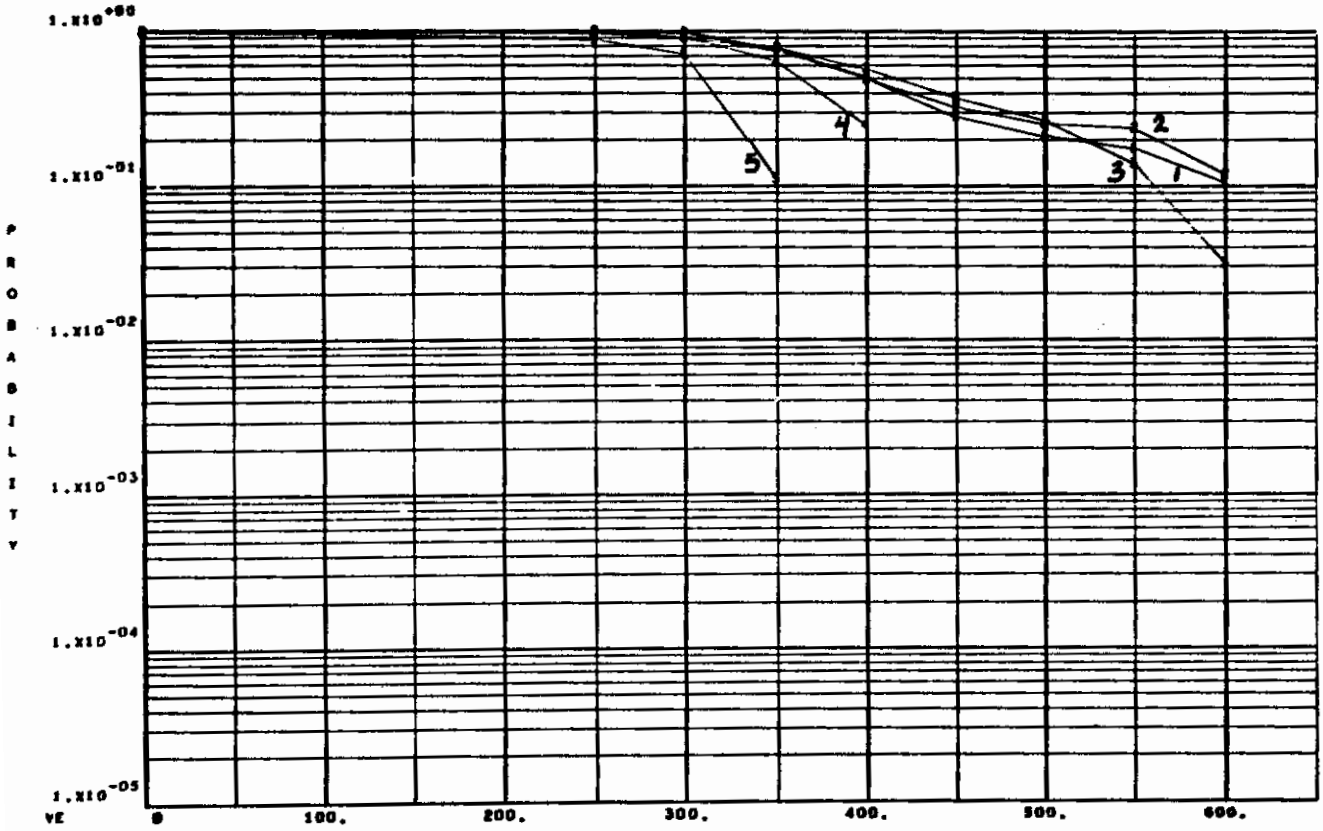
SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (NY) TOTAL
1	1	0.	2000.	61.
2	2	2000.	5000.	262.
3	3	5000.	15000.	101.
4	4	15000.	25000.	9.
5	5	25000.	50000.	1.

NEGATIVE NY VALUES

CASE NO. 91

Figure 50--Continued

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN NY EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



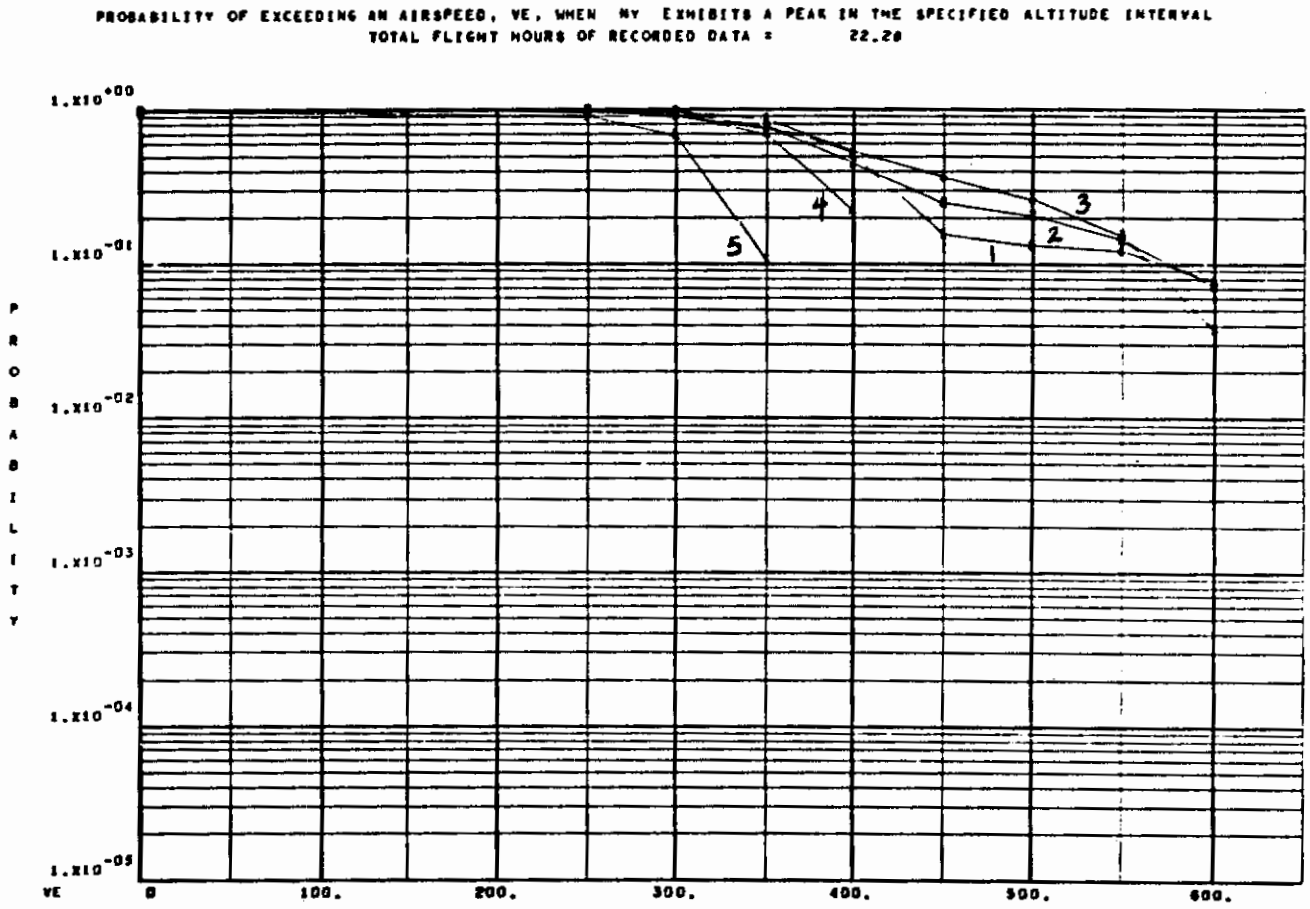
VELOCITY, VE (KNOTS)

SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (NY) TOTAL
1	1	0.	2000.	28.
2	2	2000.	5000.	167.
3	3	5000.	15000.	219.
4	4	15000.	25000.	36.
5	5	25000.	50000.	16.

POSITIVE NY VALUES

CASE NO. 51

Figure 50--Concluded



VELOCITY, VE (KNOTS)

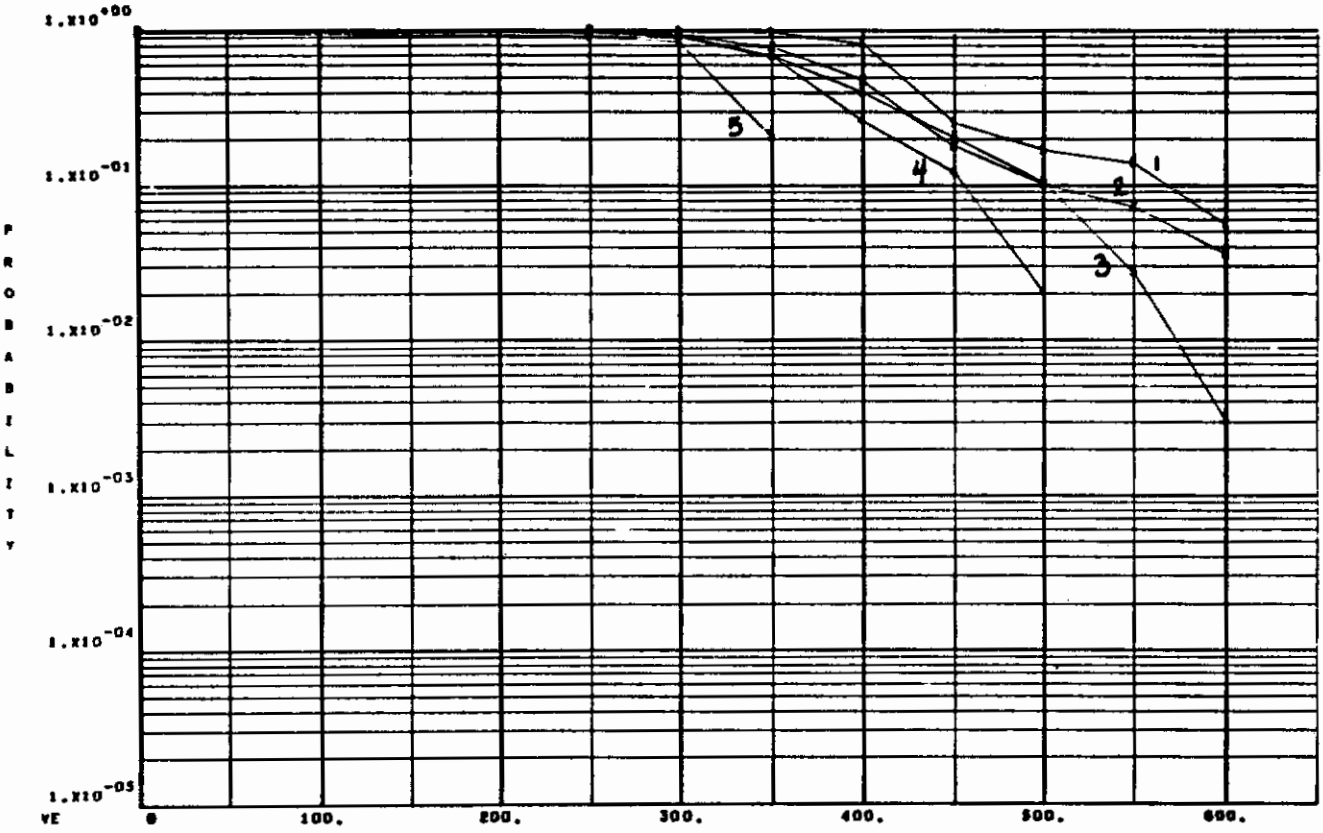
SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (NY) TOTAL
1	1	0.	2000.	89.
2	2	2000.	5000.	429.
3	3	5000.	15000.	320.
4	4	15000.	25000.	45.
5	5	25000.	30000.	19.

ABSOLUTE NY VALUES

CASE NO. 51

Figure 51

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN NZ EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.20



VELOCITY, VE (KNOTS)

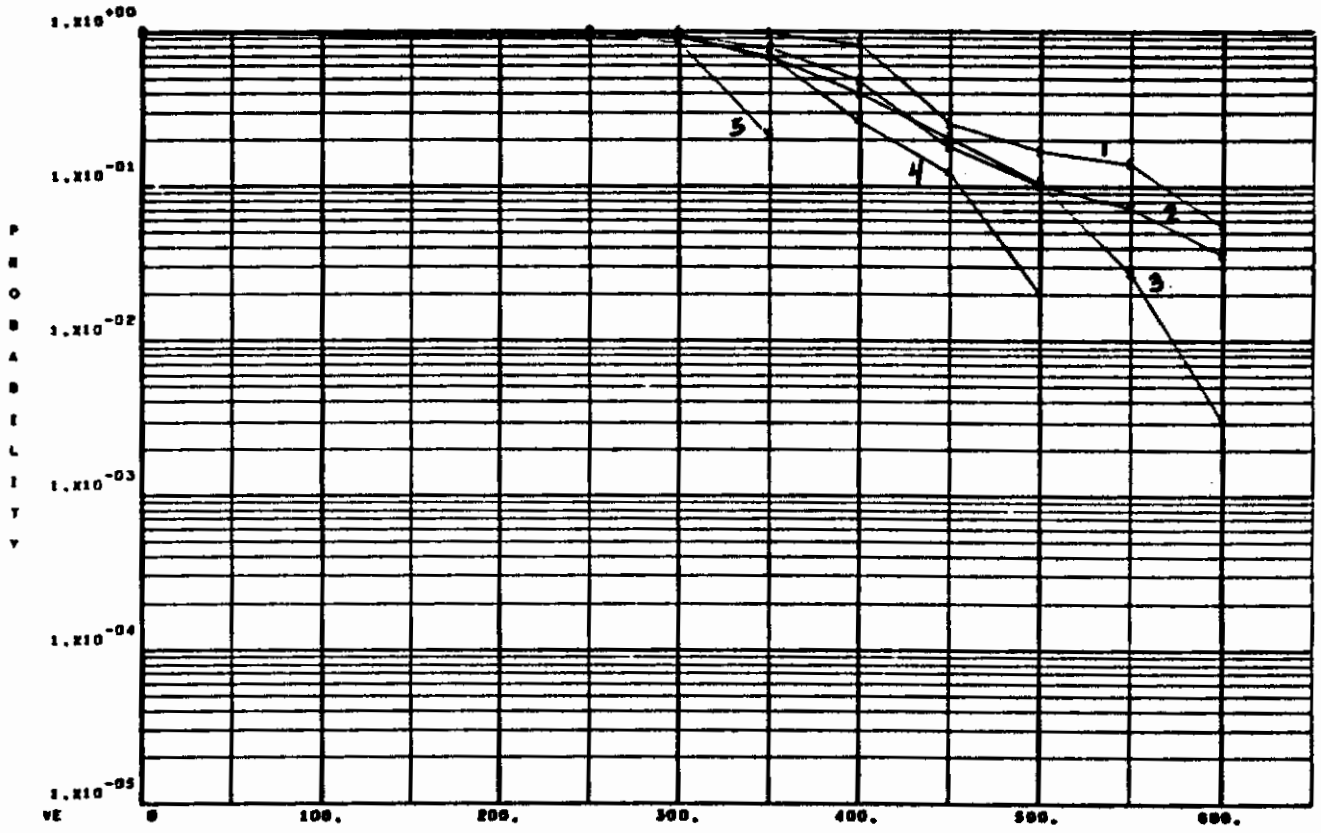
SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (NZ) TOTAL
1	1	0.	2000.	35.
2	2	2000.	5000.	388.
3	3	5000.	15000.	320.
4	4	15000.	25000.	49.
5	5	25000.	50000.	14.

POSITIVE NZ VALUES

CASE NO. 32

Figure 51--Concluded

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN NZ EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.20



VELOCITY, VE (KNOTS)

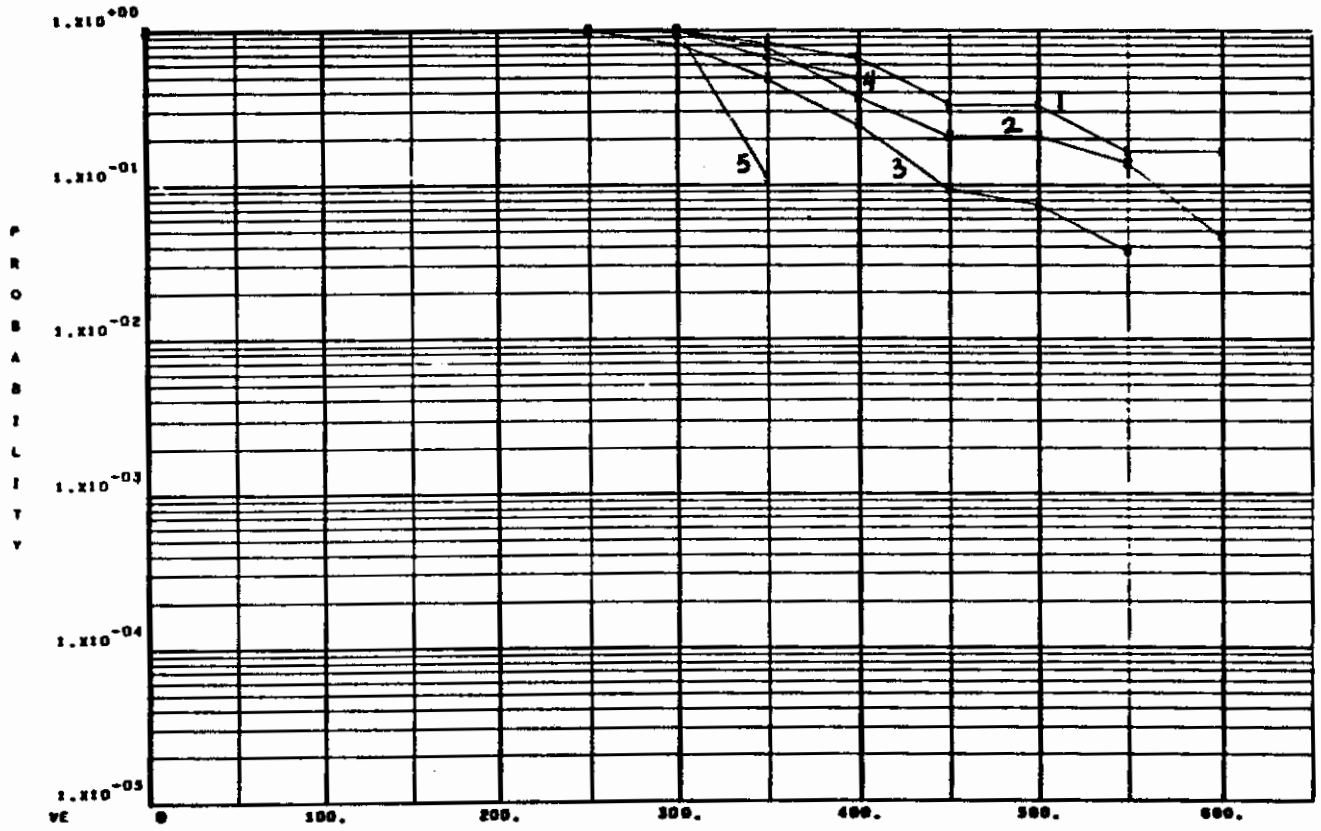
SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (NZ) TOTAL
1	1	0.	2000.	35.
2	2	2000.	5000.	368.
3	3	5000.	15000.	320.
4	4	15000.	25000.	49.
5	5	25000.	50000.	14.

ABSOLUTE NZ VALUES

CASE NO. 52

Figure 52

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN P EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.20



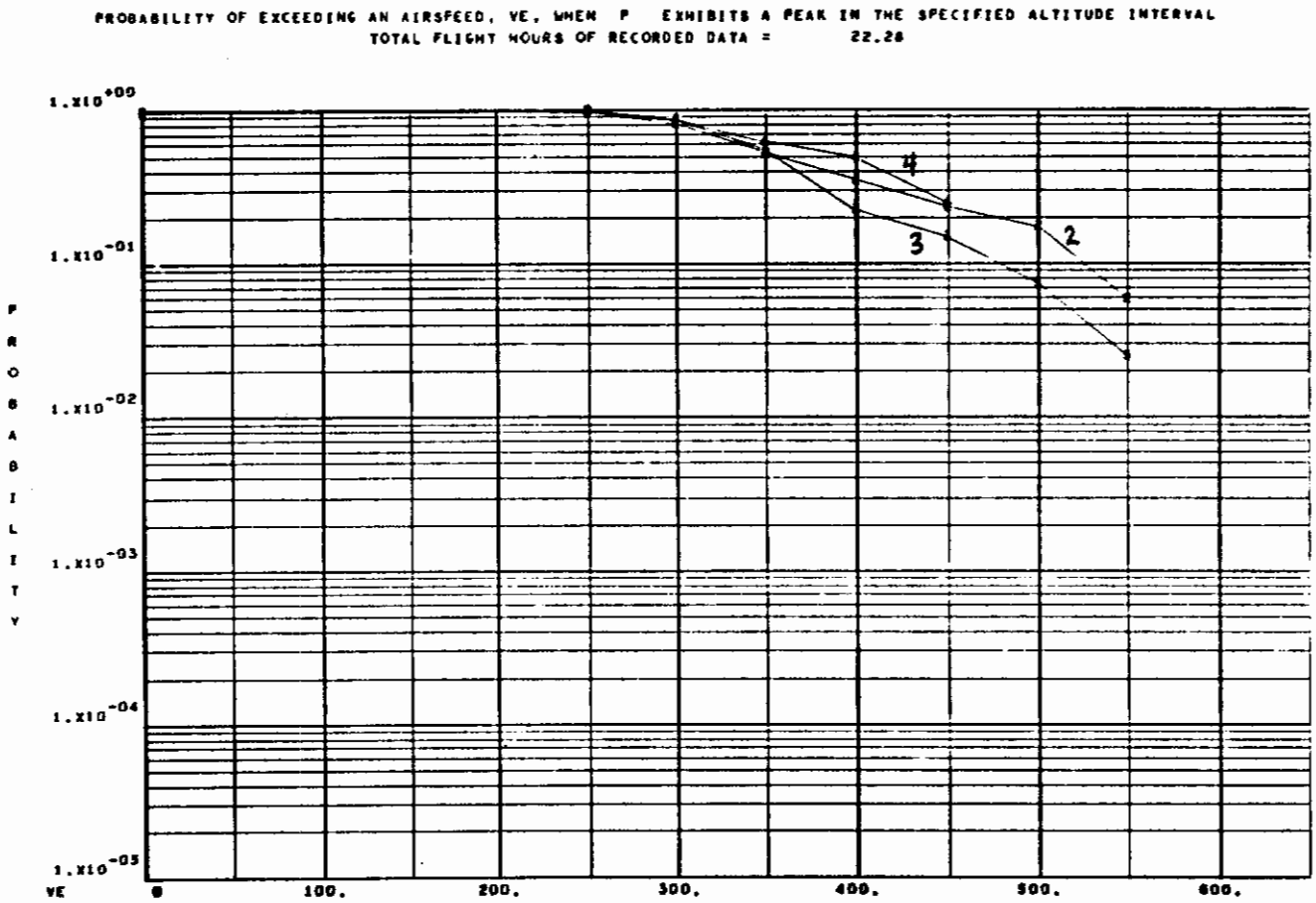
VELOCITY, VE (KNOTS)

SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (P) TOTAL
1	1	0.	2000.	8.
2	2	2000.	5000.	43.
3	3	5000.	15000.	53.
4	4	15000.	25000.	6.
5	5	25000.	50000.	9.

NEGATIVE P VALUES

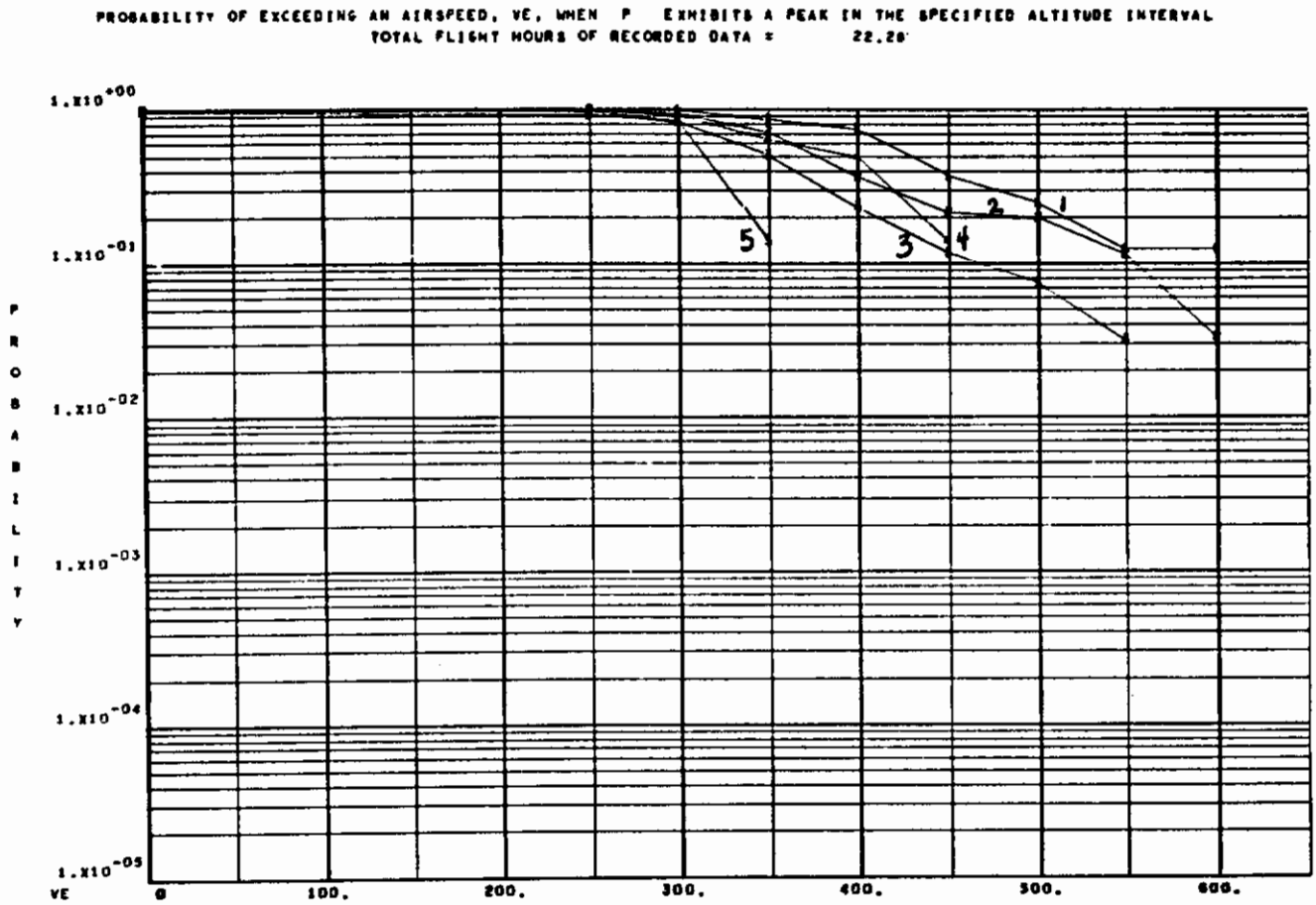
Case NO. 33

Figure 52--Continued



CASE NO. 33

Figure 52--Concluded

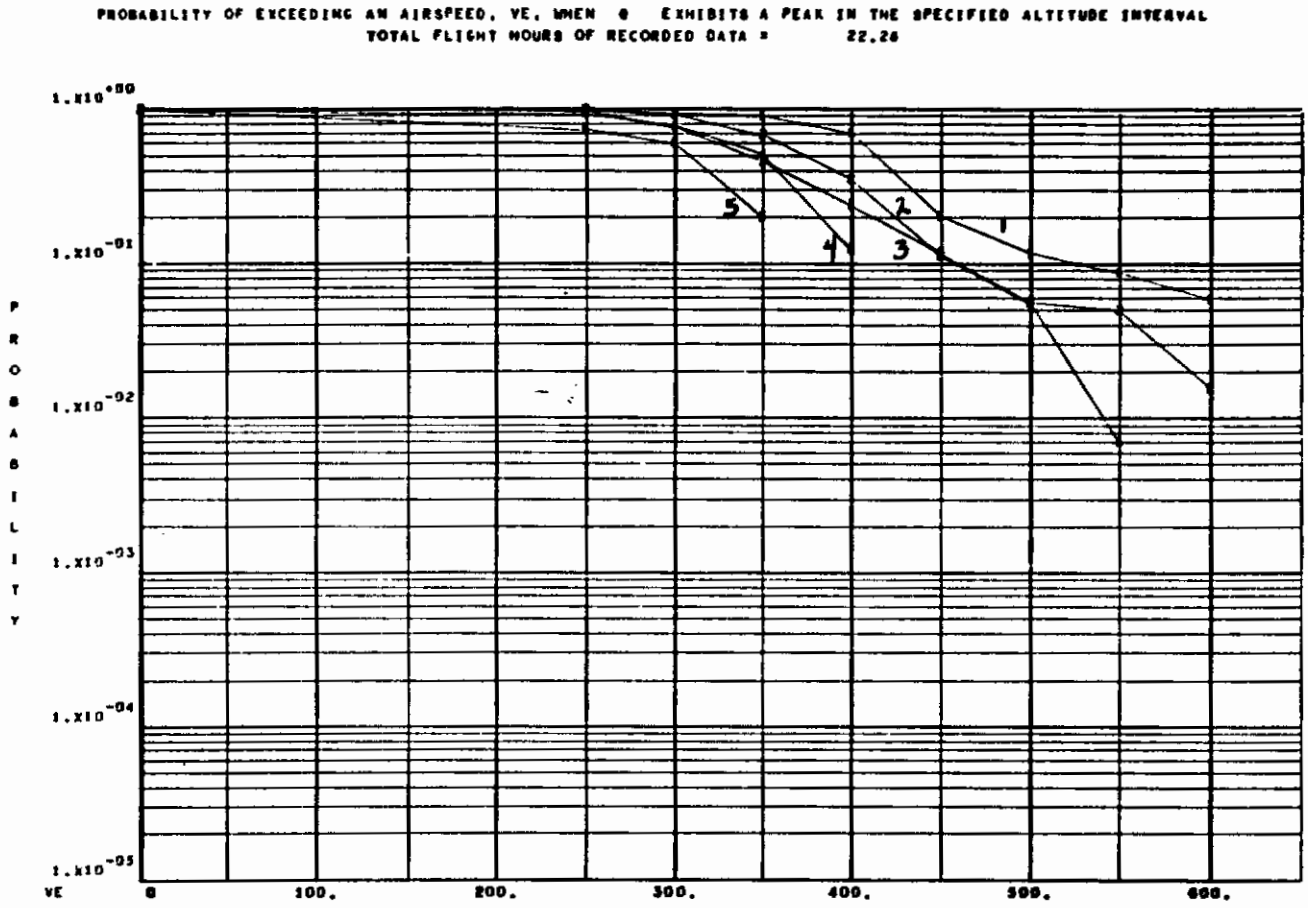


SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (P) TOTAL
1	1	0.	2000.	8.
2	2	2000.	5000.	60.
3	3	5000.	15000.	93.
4	4	15000.	25000.	14.
5	5	25000.	30000.	14.

ABSOLUTE P VALUES

CASE NO. 33

Figure 53



CASE NO. 84

Figure 53--Concluded

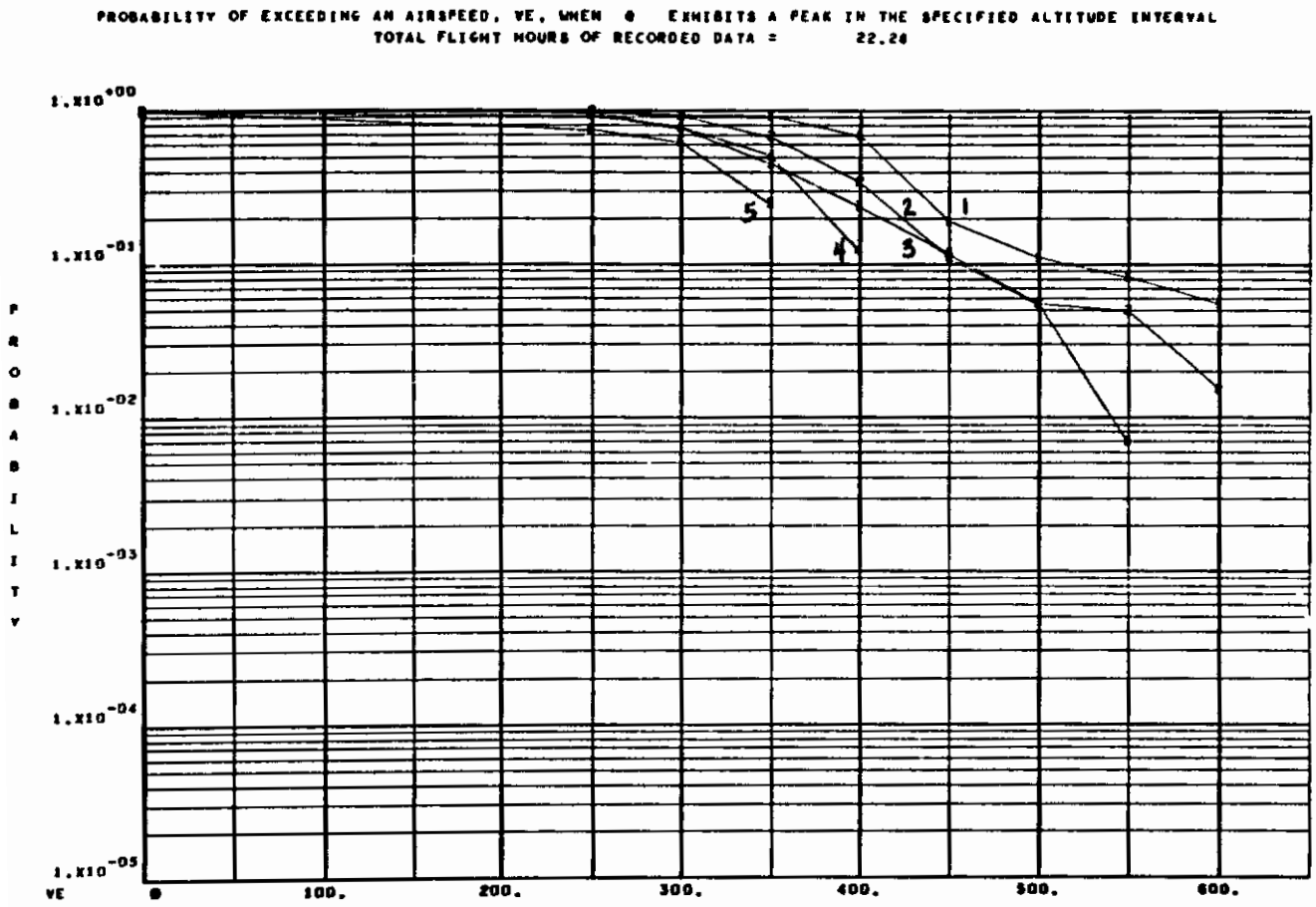
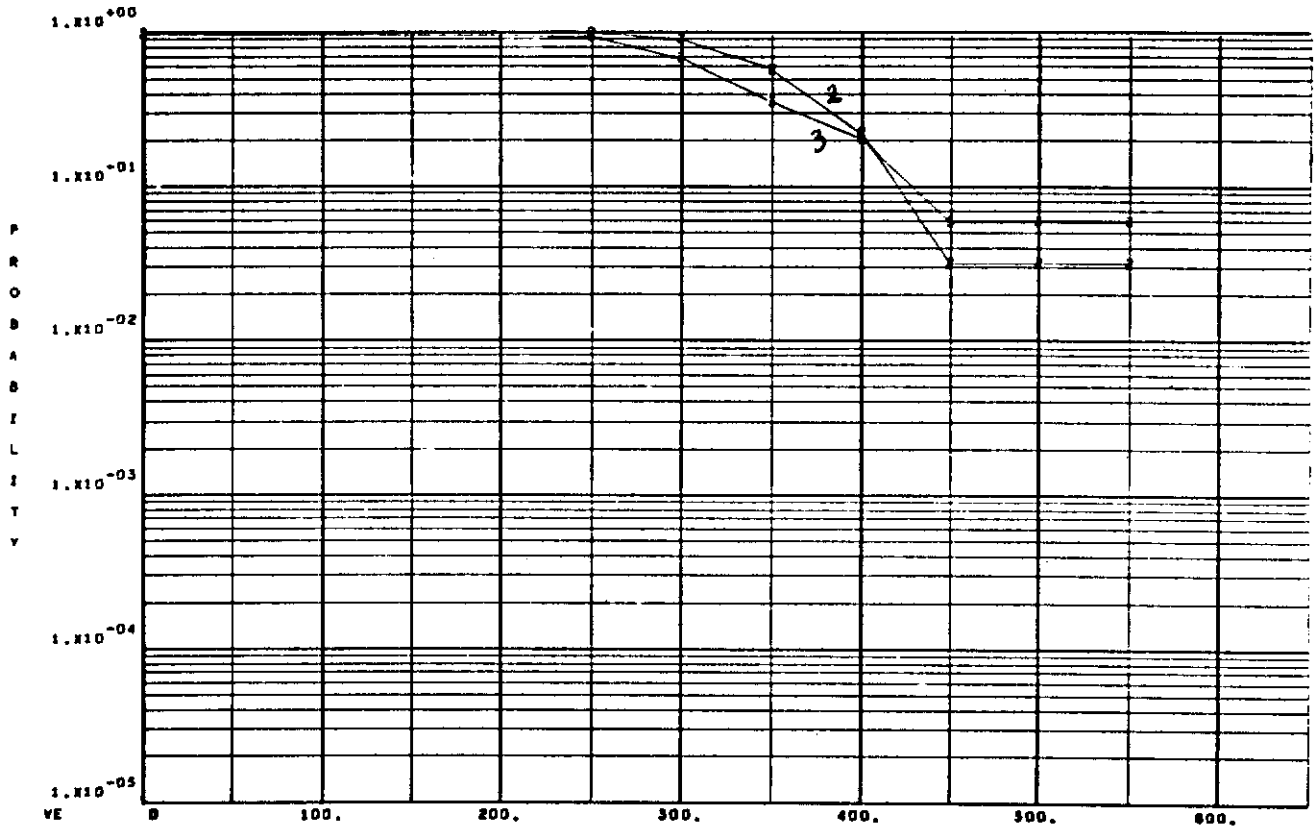


Figure 54

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN R EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



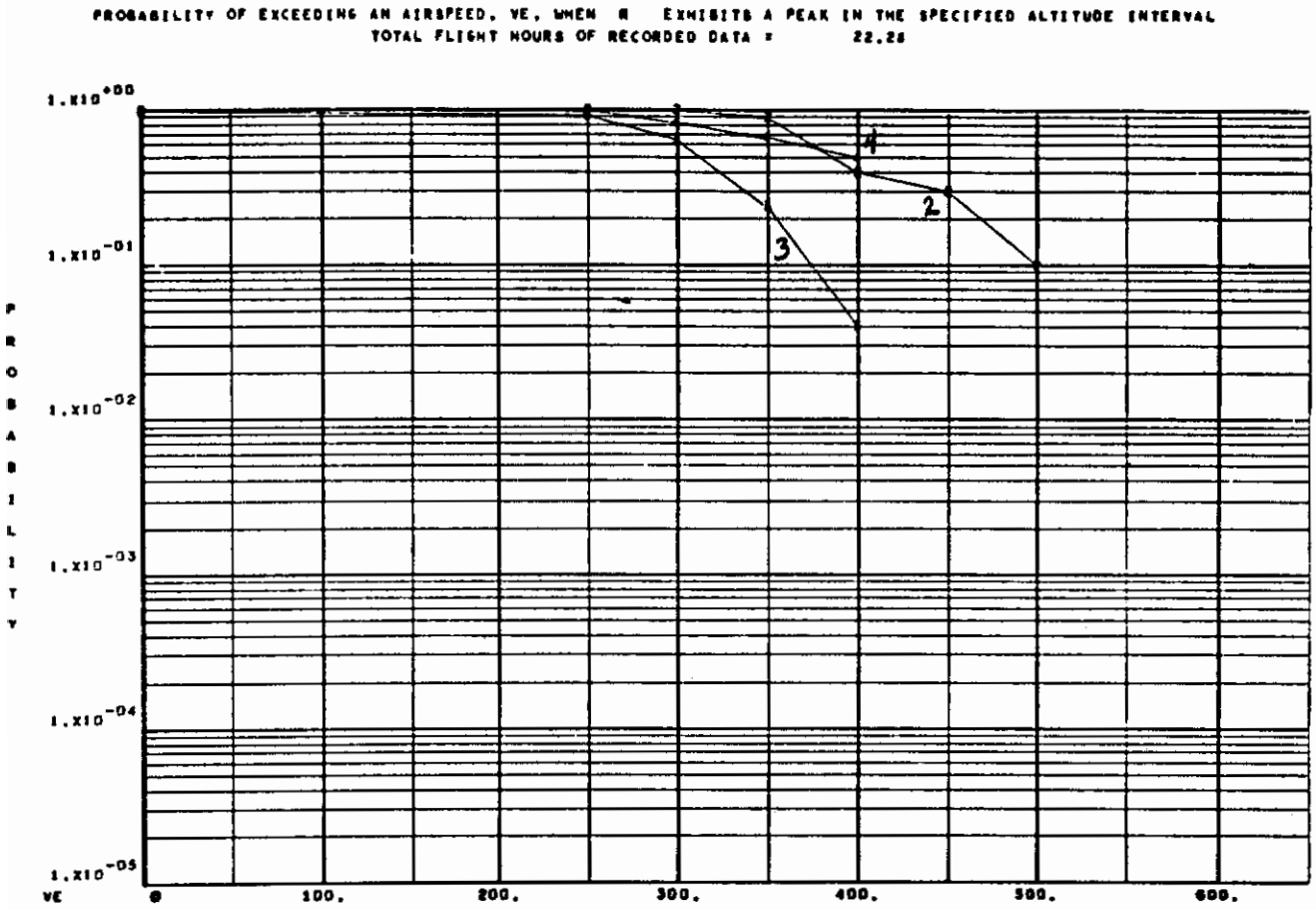
VELOCITY, VE (KNOTS)

SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (R) TOTAL
1	1	0.	2000.	3.
2	2	2000.	5000.	31.
3	3	5000.	15000.	34.
4	4	15000.	25000.	5.
5	5	25000.	50000.	2.

NEGATIVE R VALUES

CASE NO. 55

Figure 54--Continued



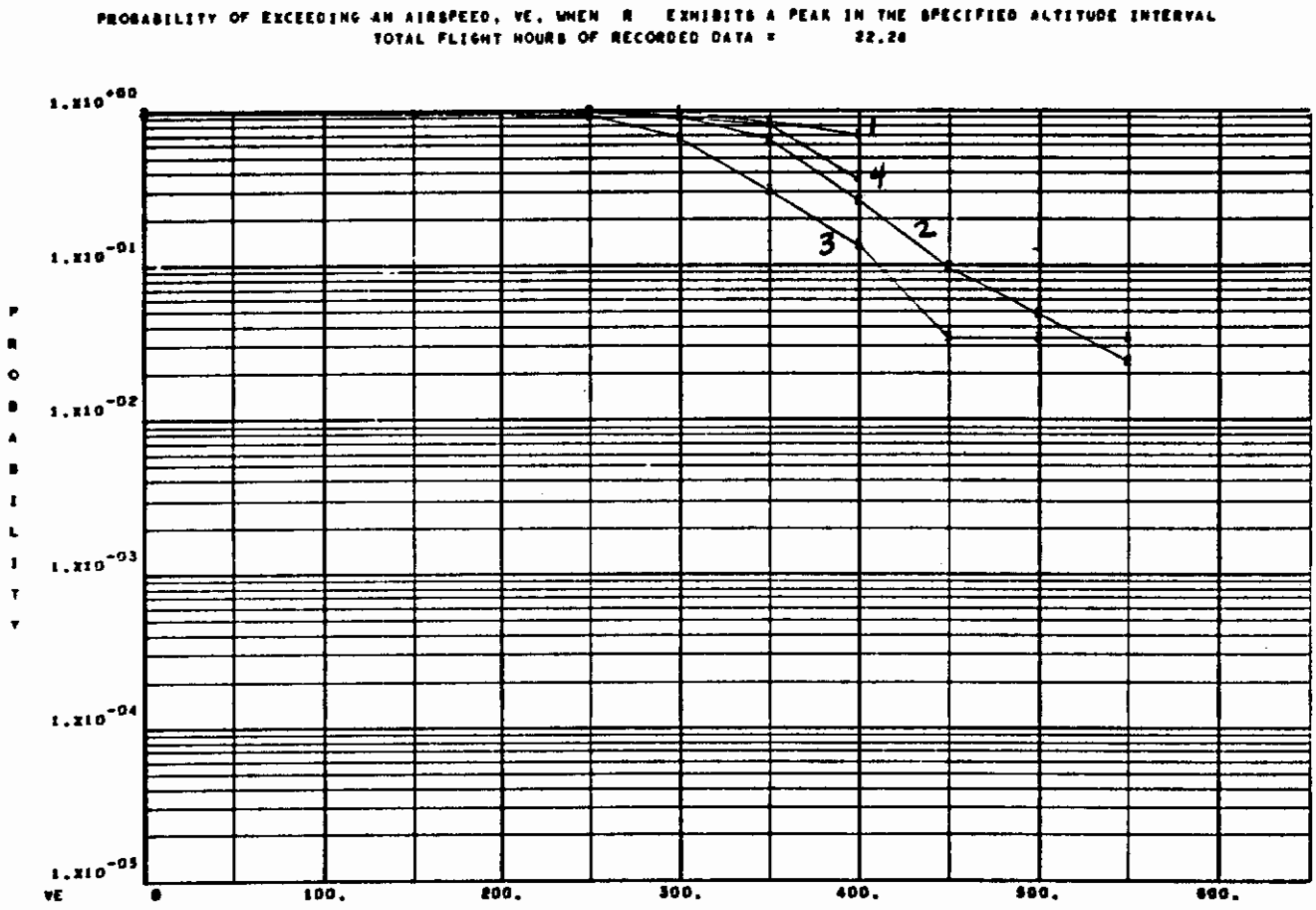
VELOCITY, VE (KNOTS)

SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (R) TOTAL
1	1	0.	2000.	4.
2	2	2000.	5000.	10.
3	3	5000.	15000.	25.
4	4	15000.	25000.	6.
5	5	25000.	50000.	2.

POSITIVE R VALUES

CASE NO. 55

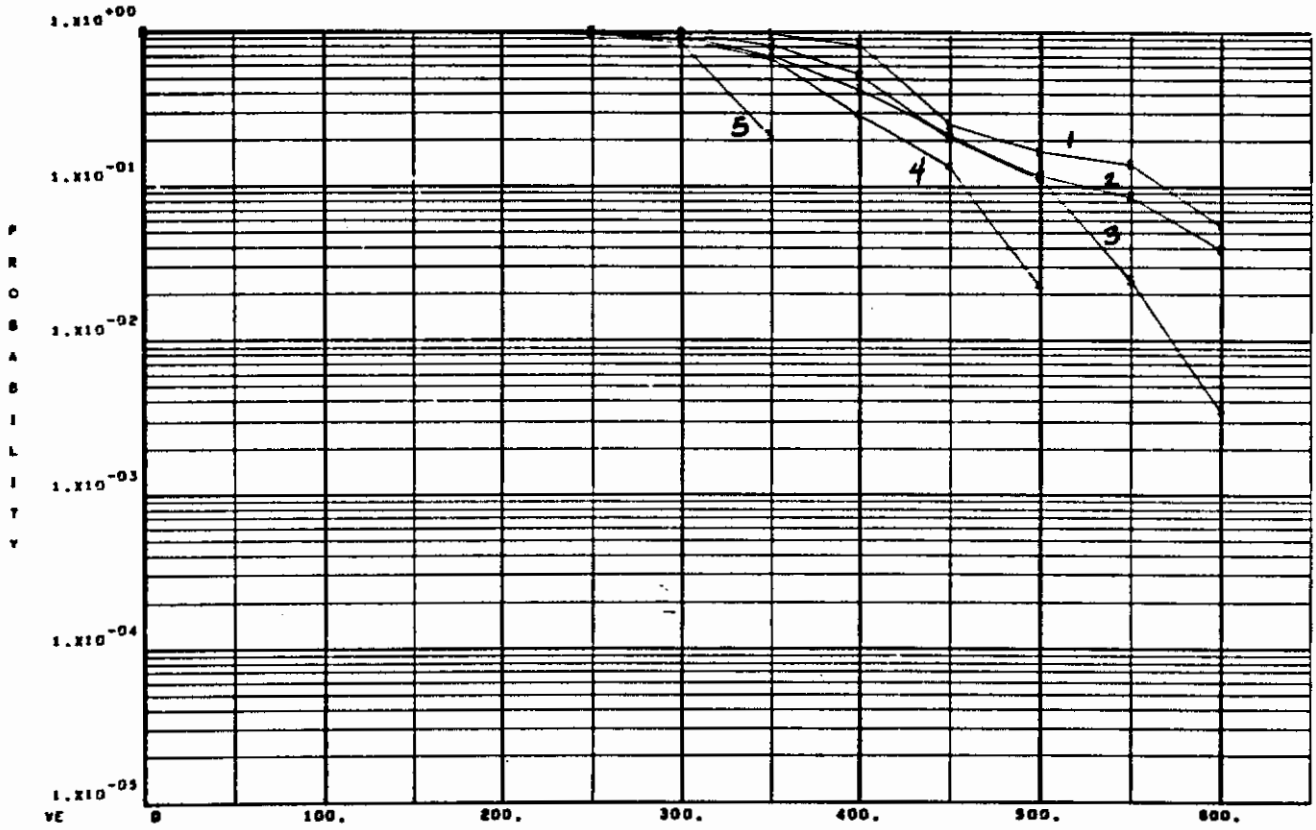
Figure 54--Concluded



CASE NO. 55

Figure 55

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN NZE EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



VELOCITY, VE (KNOTS)

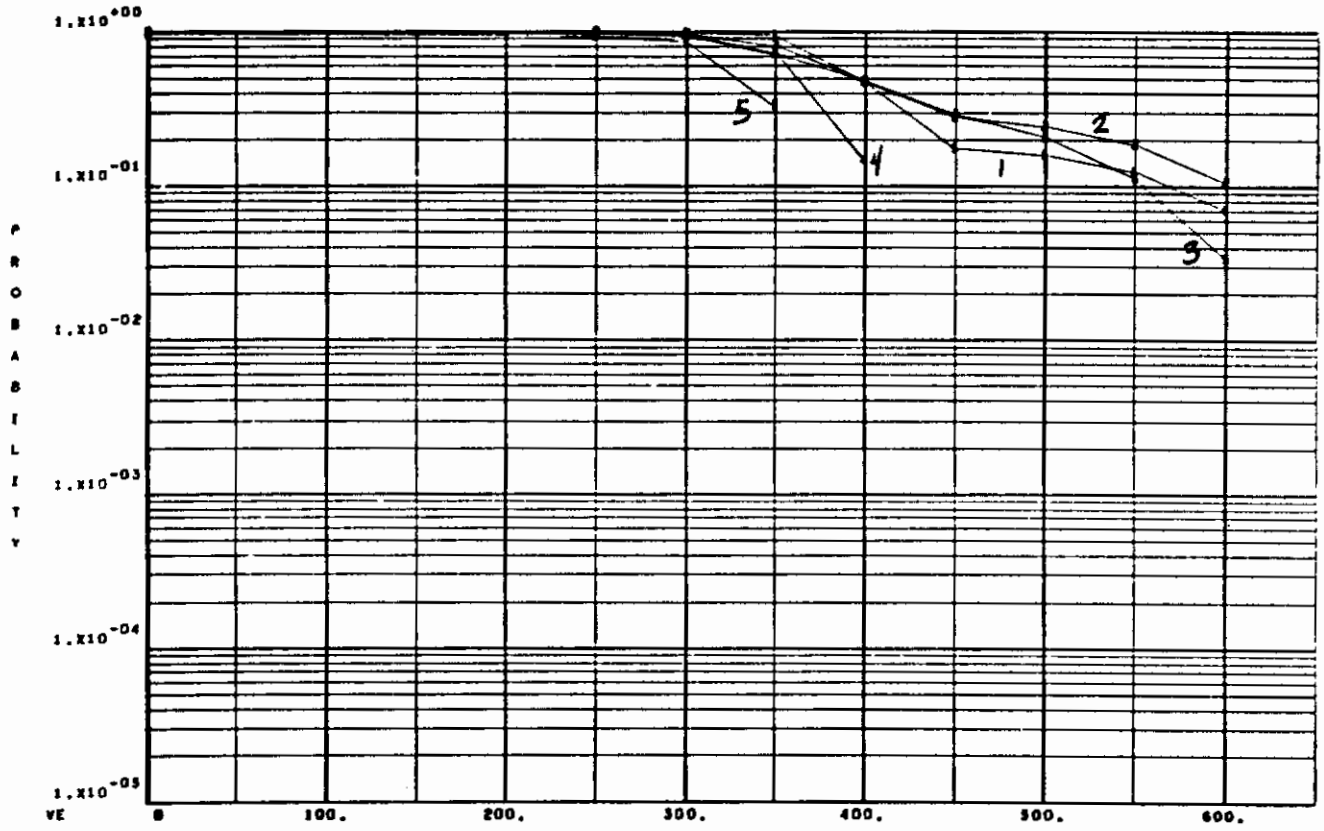
SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (NZE) TOTAL
1	1	0.	2000.	35.
2	2	2000.	5000.	353.
3	3	5000.	15000.	284.
4	4	15000.	25000.	44.
5	5	25000.	30000.	14.

POSITIVE NZE VALUES

CASE NO. 96

Figure 56

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN PDOT EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



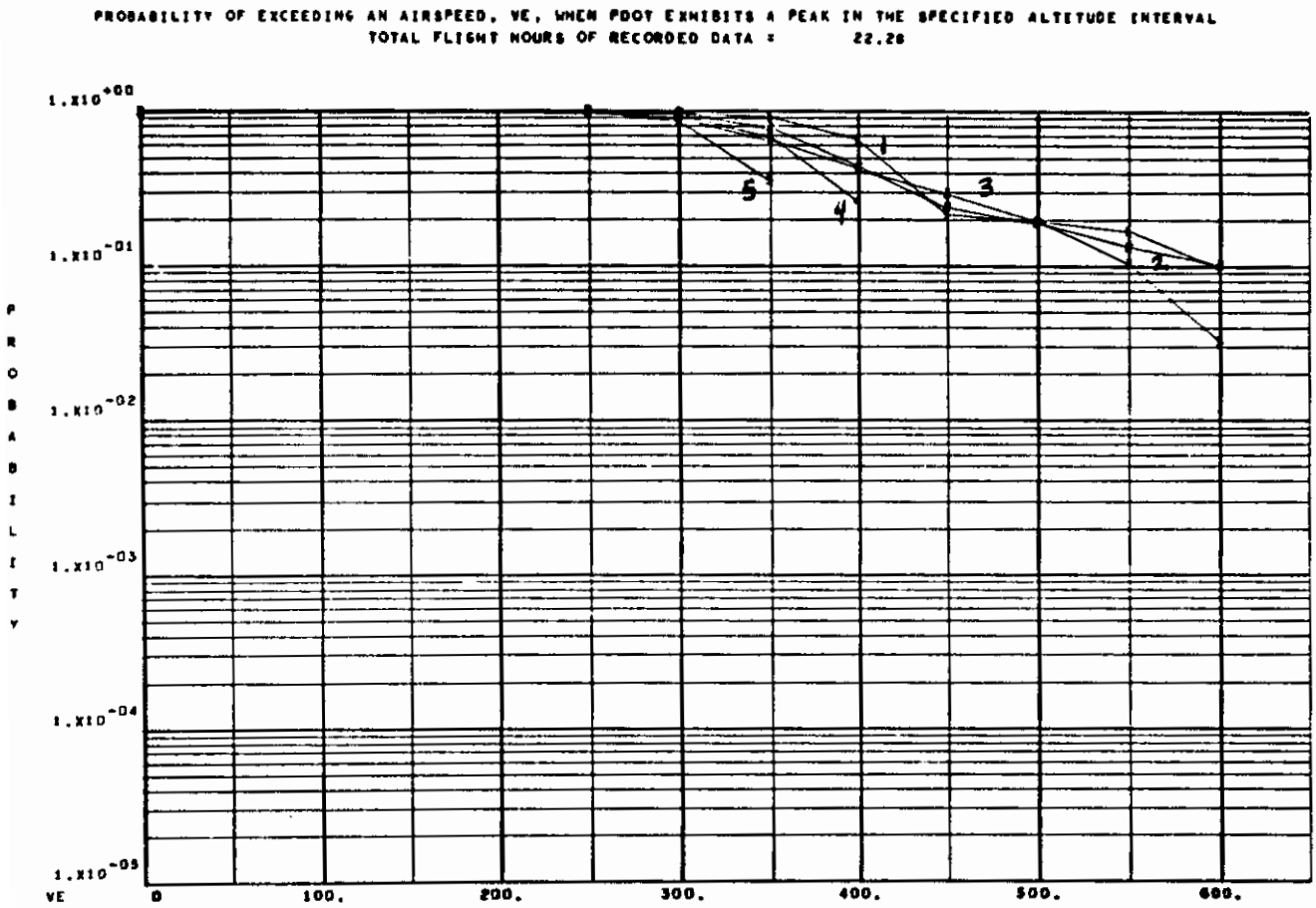
VELOCITY, VE (KNOTS)

SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	0.	2000.	56.
2	2	2000.	5000.	263.
3	3	5000.	15000.	264.
4	4	15000.	25000.	41.
5	5	25000.	50000.	39.

NEGATIVE PDOT VALUES

CASE NO. 57

Figure 56--Continued



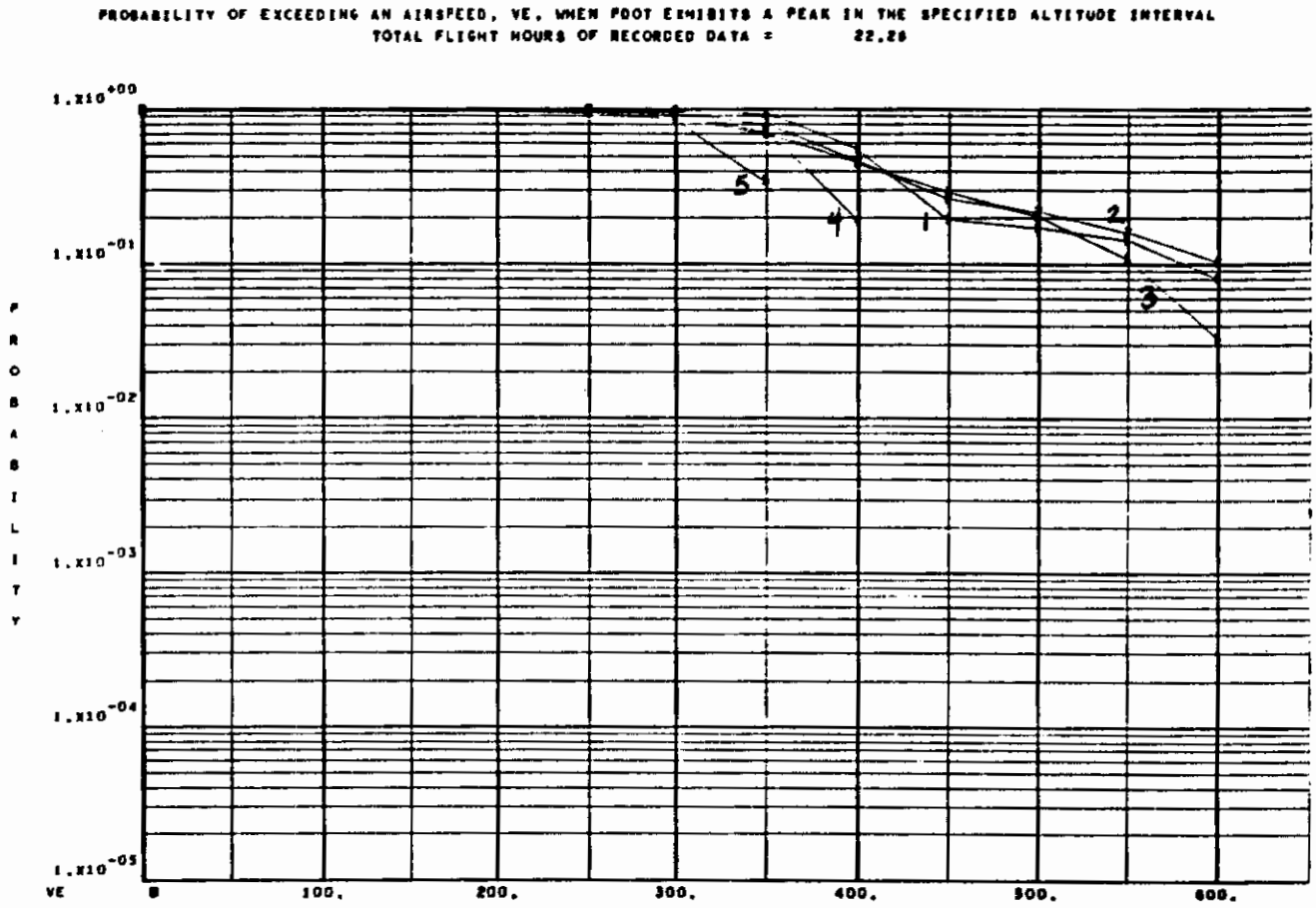
VELOCITY, VE (KNOTS)

SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	0.	2000.	41.
2	2	2000.	5000.	216.
3	3	5000.	15000.	212.
4	4	15000.	25000.	26.
5	5	25000.	50000.	22.

POSITIVE PDOT VALUES

CASE NO. 57

Figure 56--Concluded



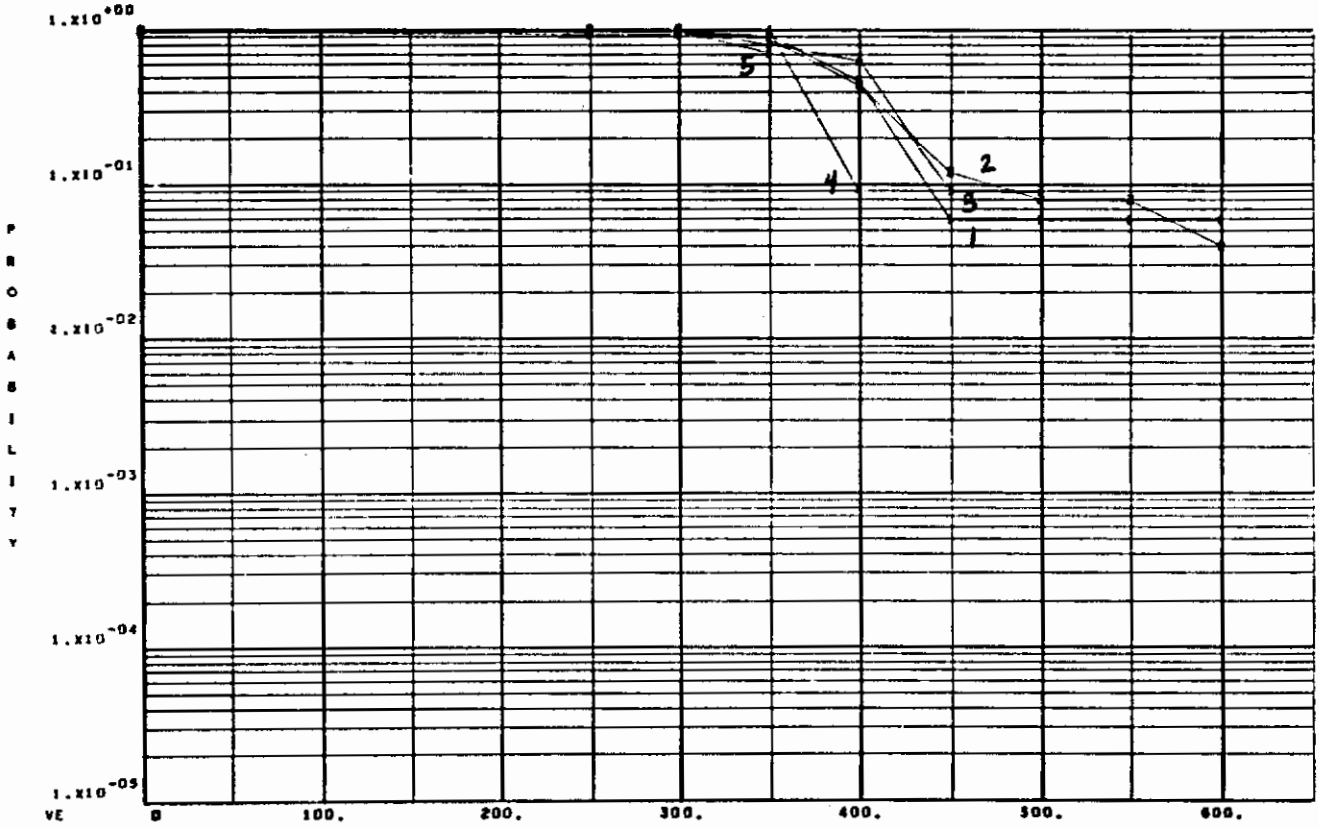
ALTITUDE, HP, (FEET)				NO. OF PEAKS, (FDOT)
SYMBOL	INT.NO.	FROM	TO	TOTAL
1	1	0.	2000.	97.
2	2	2000.	5000.	479.
3	3	5000.	15000.	476.
4	4	15000.	25000.	67.
5	5	25000.	50000.	61.

ABSOLUTE FDOT VALUES

CASE NO. 57

Figure 57

PROBABILITY OF EXCEEDING AN AIRSPEED, VE, WHEN ODOT EXHIBITS A PEAK IN THE SPECIFIED ALTITUDE INTERVAL
TOTAL FLIGHT HOURS OF RECORDED DATA = 22.28



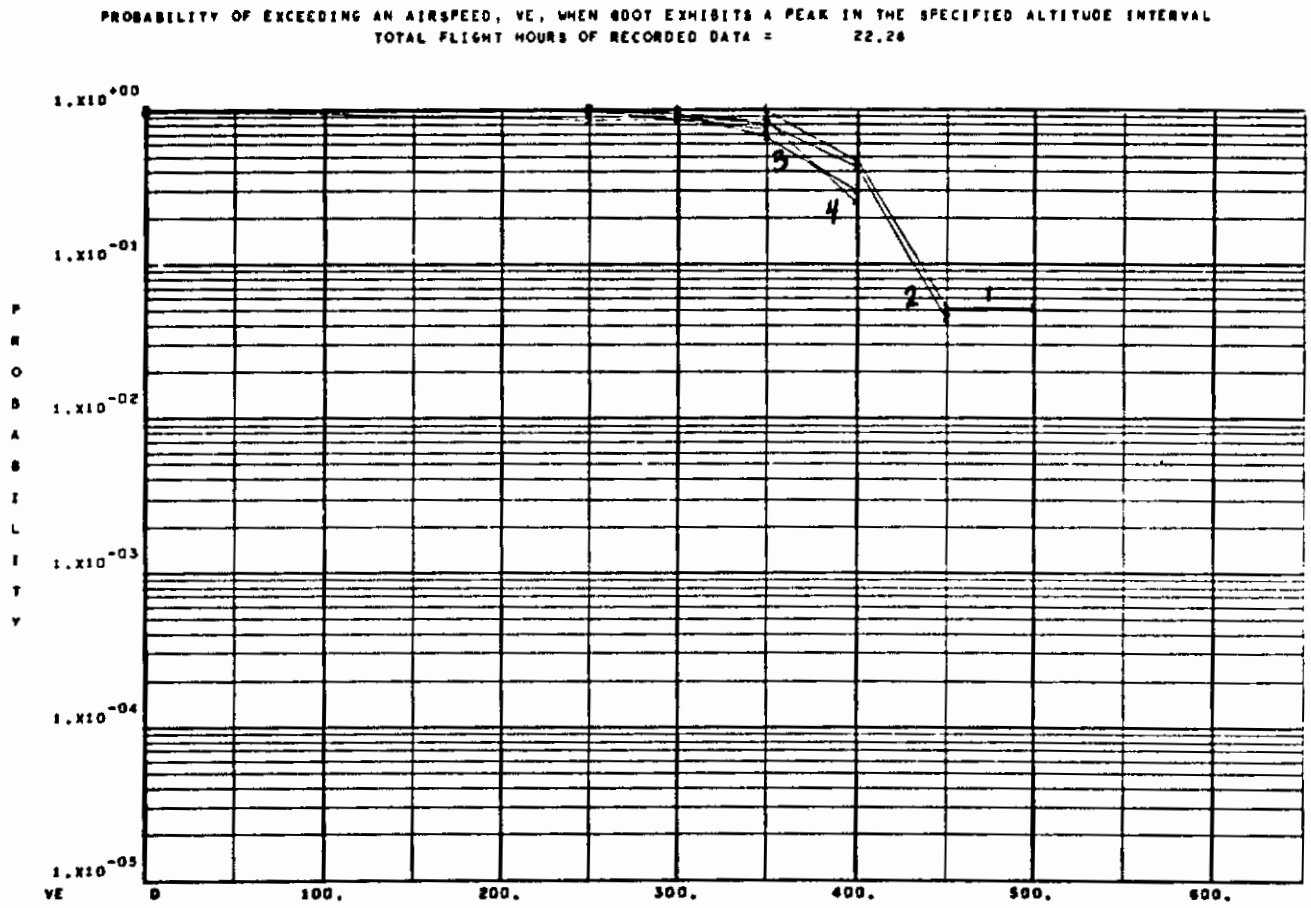
VELOCITY, VE (KNOTS)

SYMBOL	ALTITUDE, HP, (FEET) INT.NO.	FROM	TO	NO. OF PEAKS, (ODOT) TOTAL
1	1	0.	2000.	17.
2	2	2000.	5000.	25.
3	3	5000.	15000.	11.
4	4	15000.	25000.	11.
5	5	25000.	50000.	7.

NEGATIVE ODOT VALUES

CASE NO. 58

Figure 57--Continued

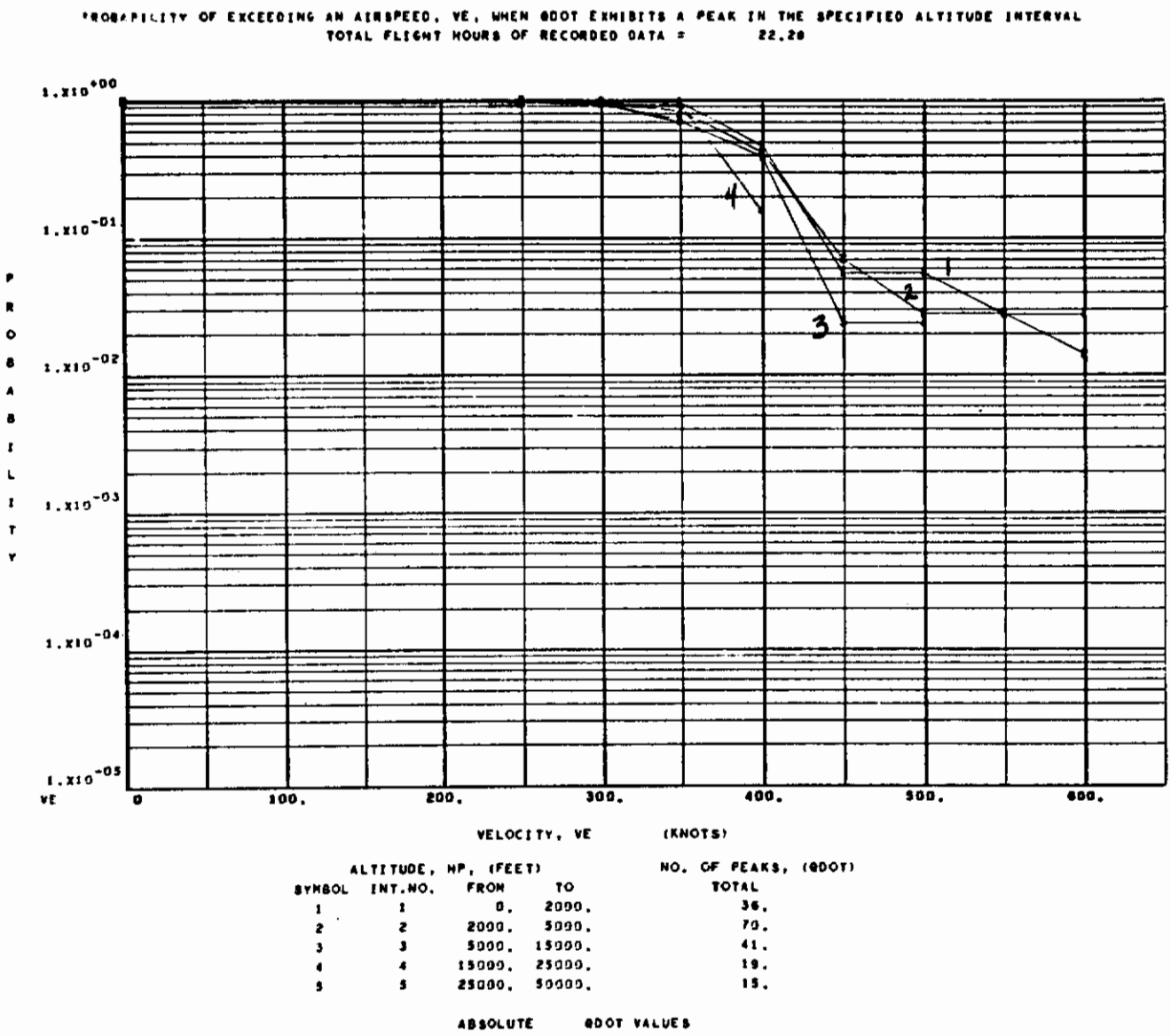


ALTITUDE, HP, (FEET)				NO. OF PEAKS, (ØDOT)
SYMBOL	INT.NO.	FROM	TO	TOTAL
1	1	0.	2000.	19.
2	2	2000.	5000.	45.
3	3	5000.	15000.	30.
4	4	15000.	25000.	6.
5	5	25000.	50000.	6.

POSITIVE ØDOT VALUES

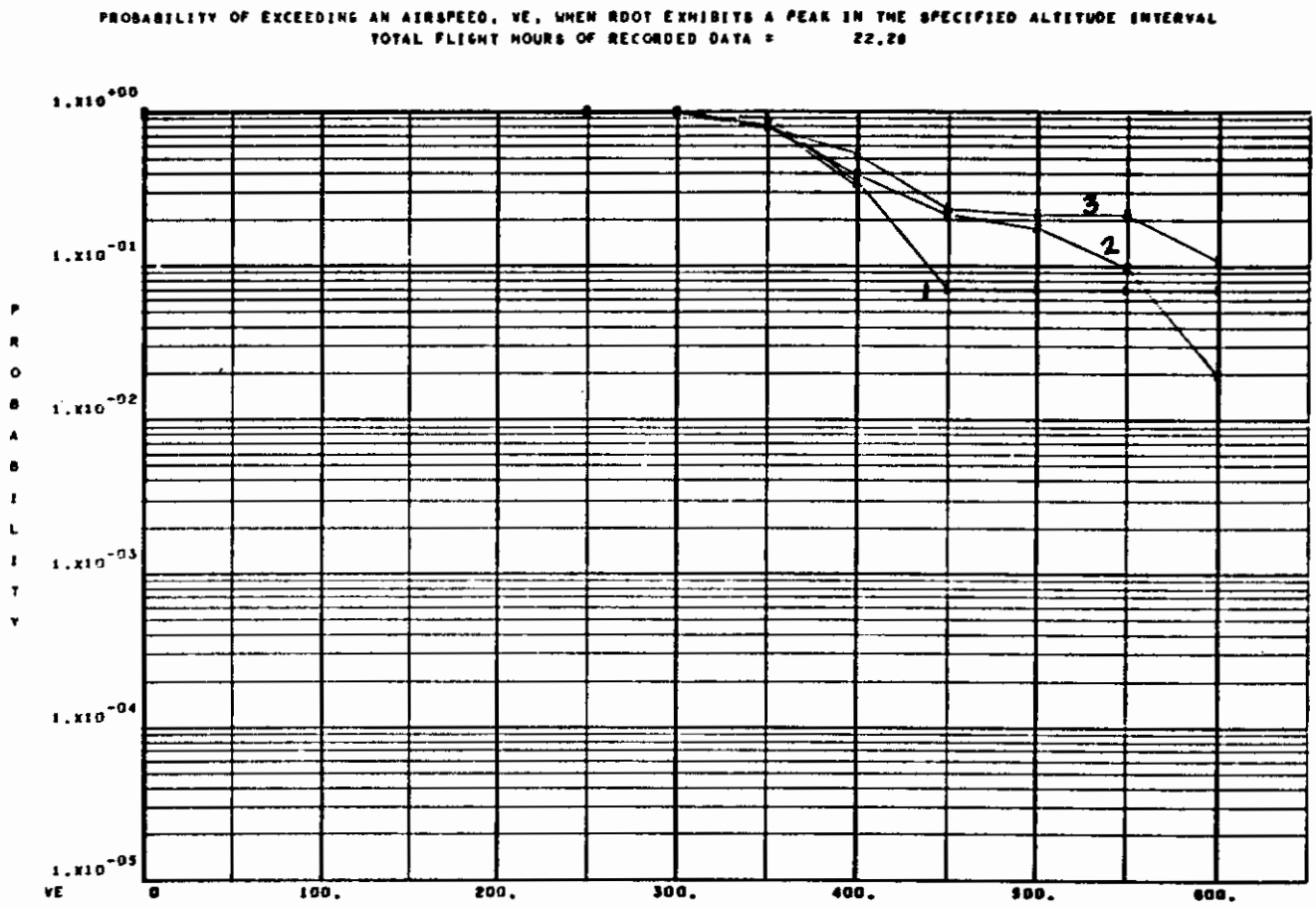
CASE NO. 36

Figure 57--Concluded



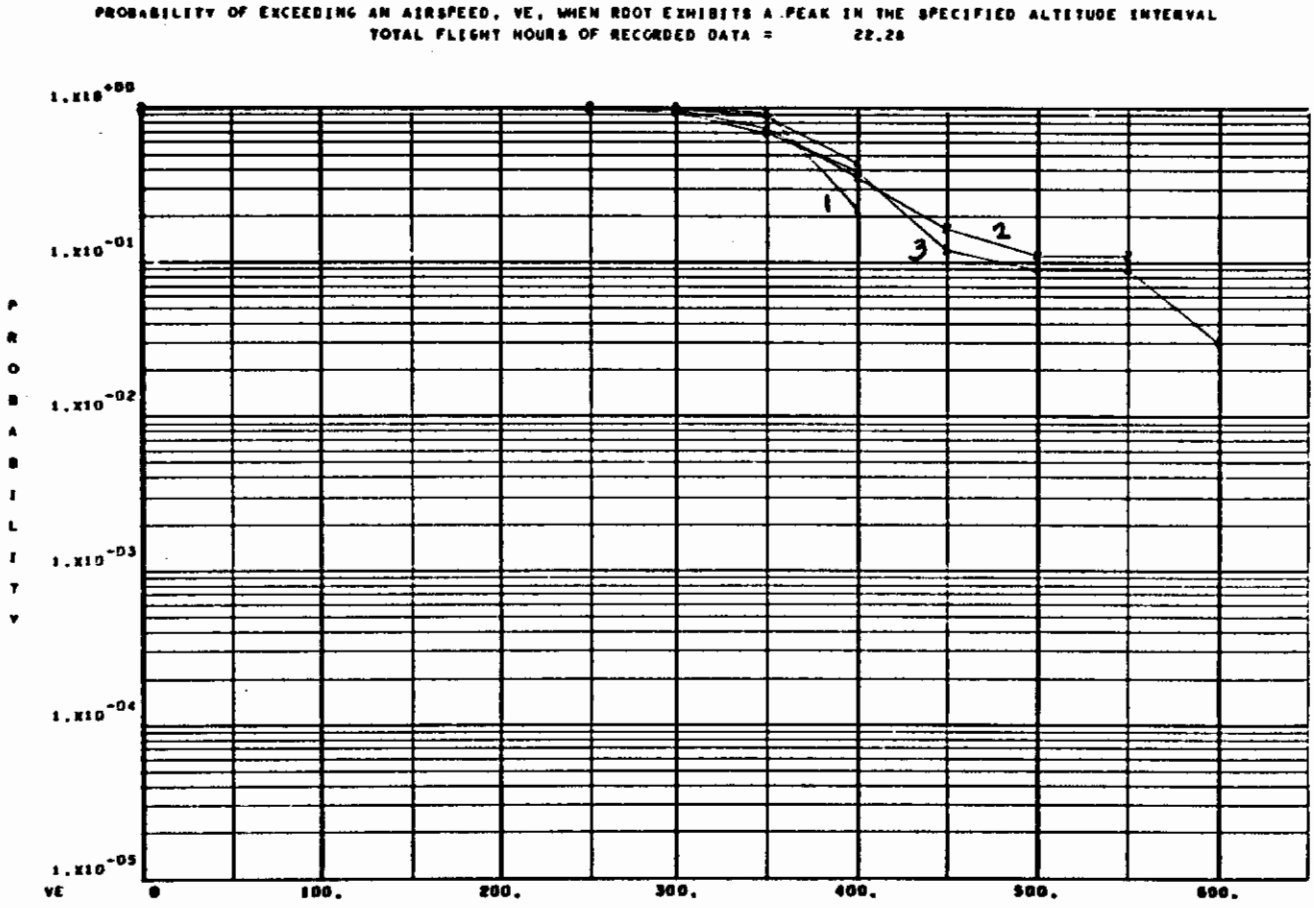
CASE NO. 98

Figure 58



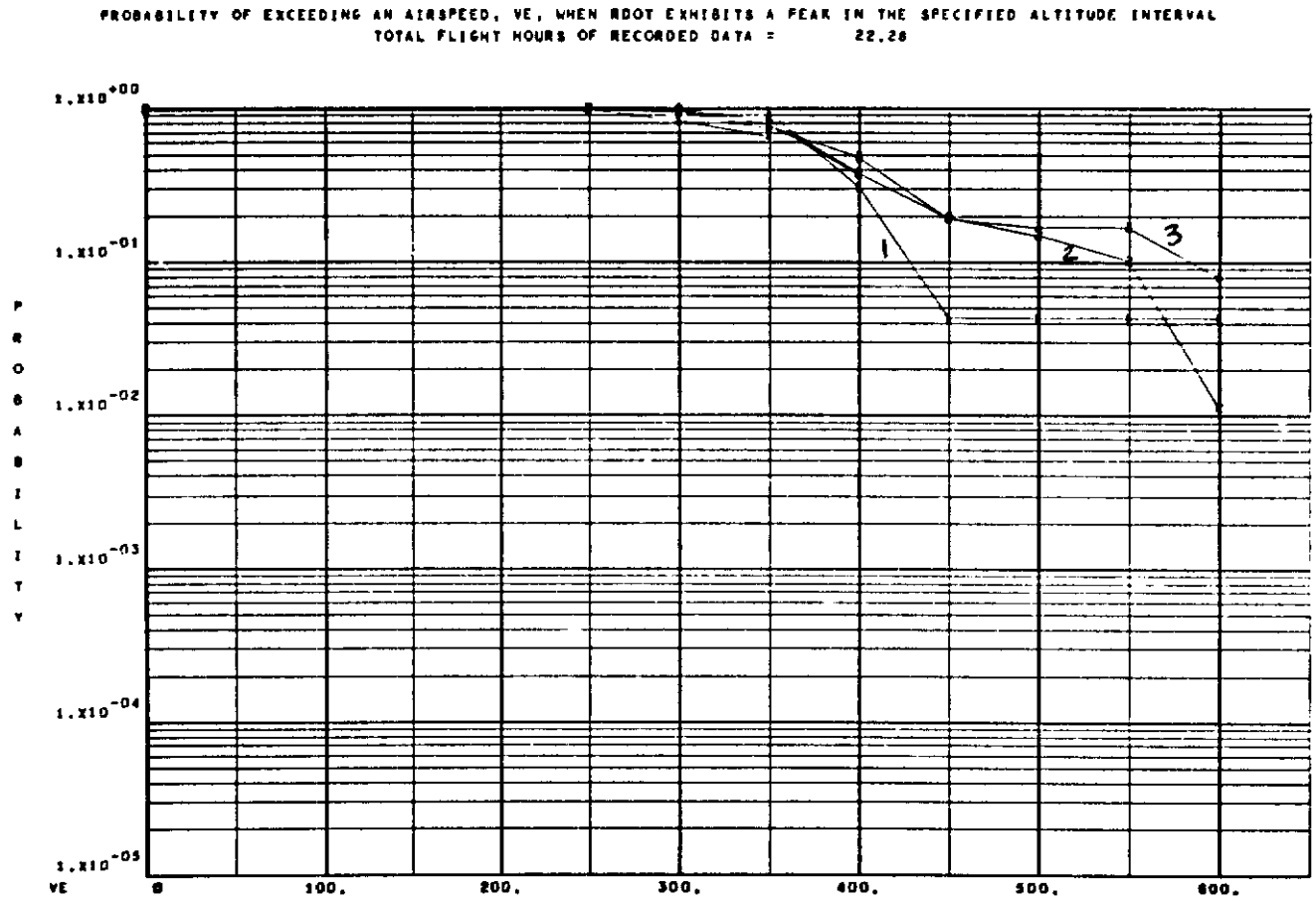
CASE NO. 59

Figure 58--Continued



CASE NO. 99

Figure 58--Concluded

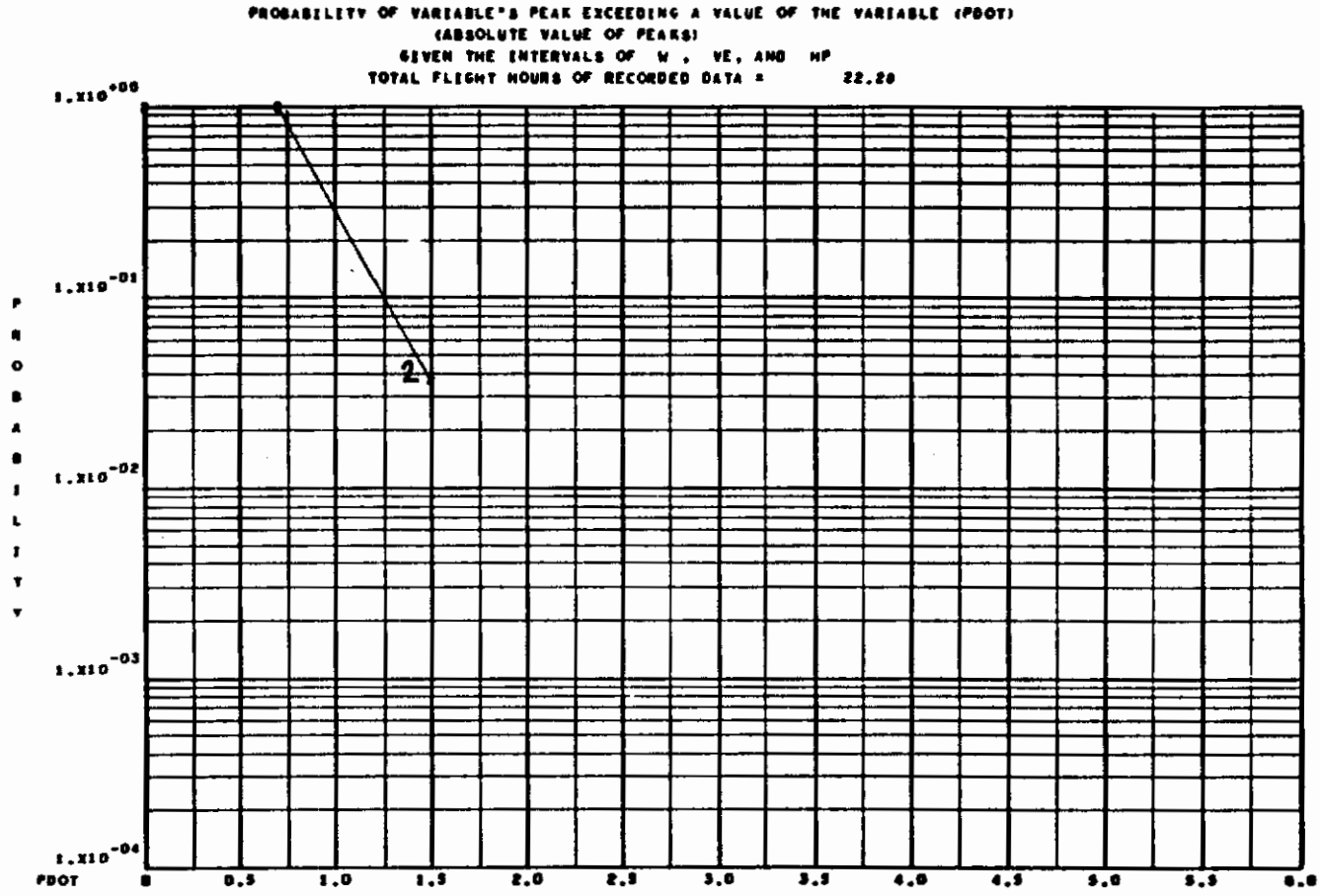


SECTION IX

THREE DIMENSIONAL CORRELATIONS OF FIVE LOAD PARAMETERS

This section of the report presents CRT graphs of the probability of a variable's peak exceeding a value of the variable given the intervals of weight, velocity and altitude. Five parameters (n_y, n_z, $\dot{p}$, $\dot{q}$, and $\dot{r}$) are considered as variables. One set of graphs is presented for each variable, starting with the lowest speed and altitude interval. Curves for each weight interval are plotted on the same graph. The speed interval is increased in increments to the maximum and then the cycle is repeated for the higher altitude intervals. Finally, the cycles are repeated for each of the other variables. The plots are presented on Figures 59 through 72.

Figure 59



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

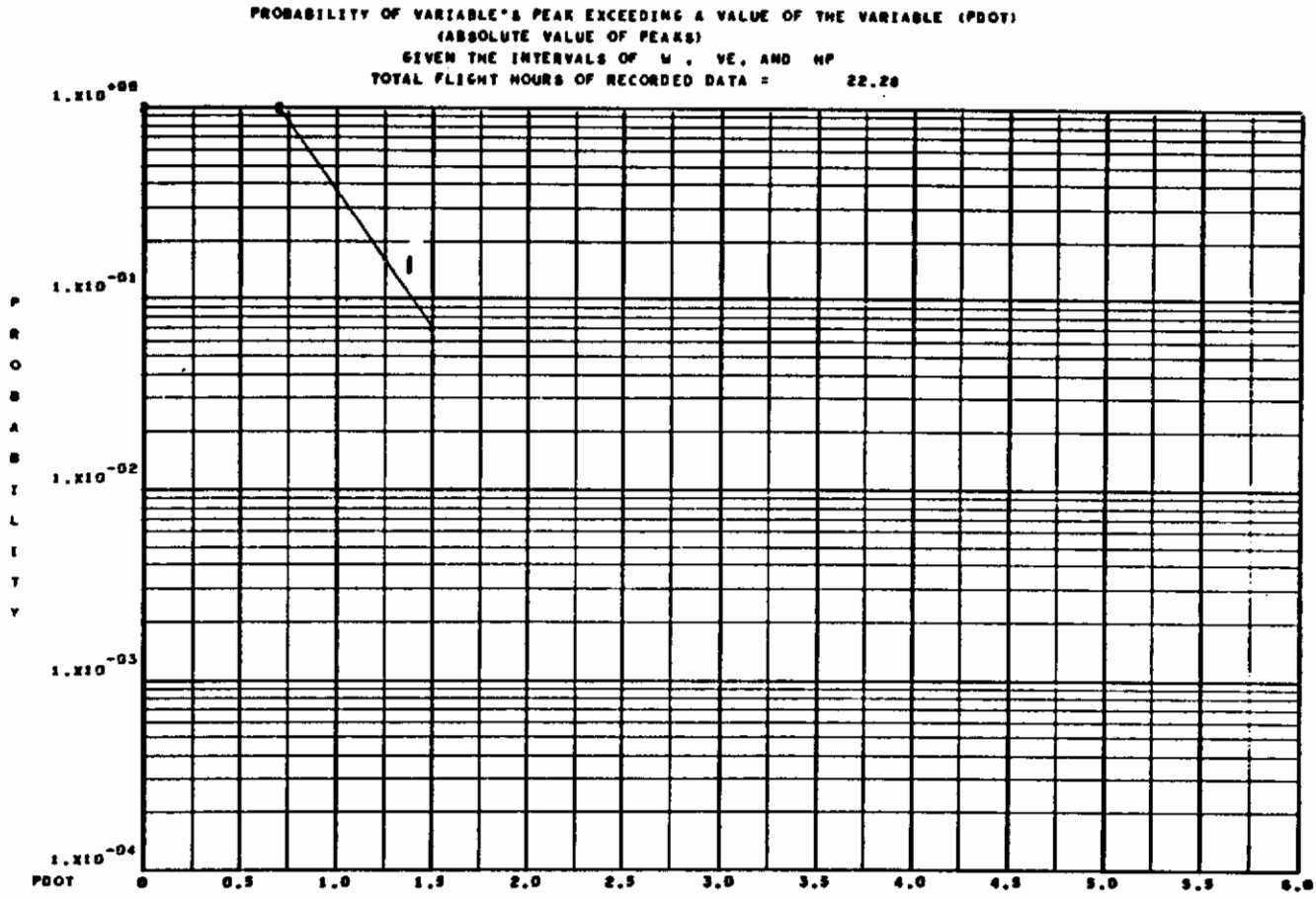
SYMBOL	INT.NO.	WEIGHT, W, (POUNDS) FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	11.
2	2	35000.	40000.	27.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 37

Figure 59--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

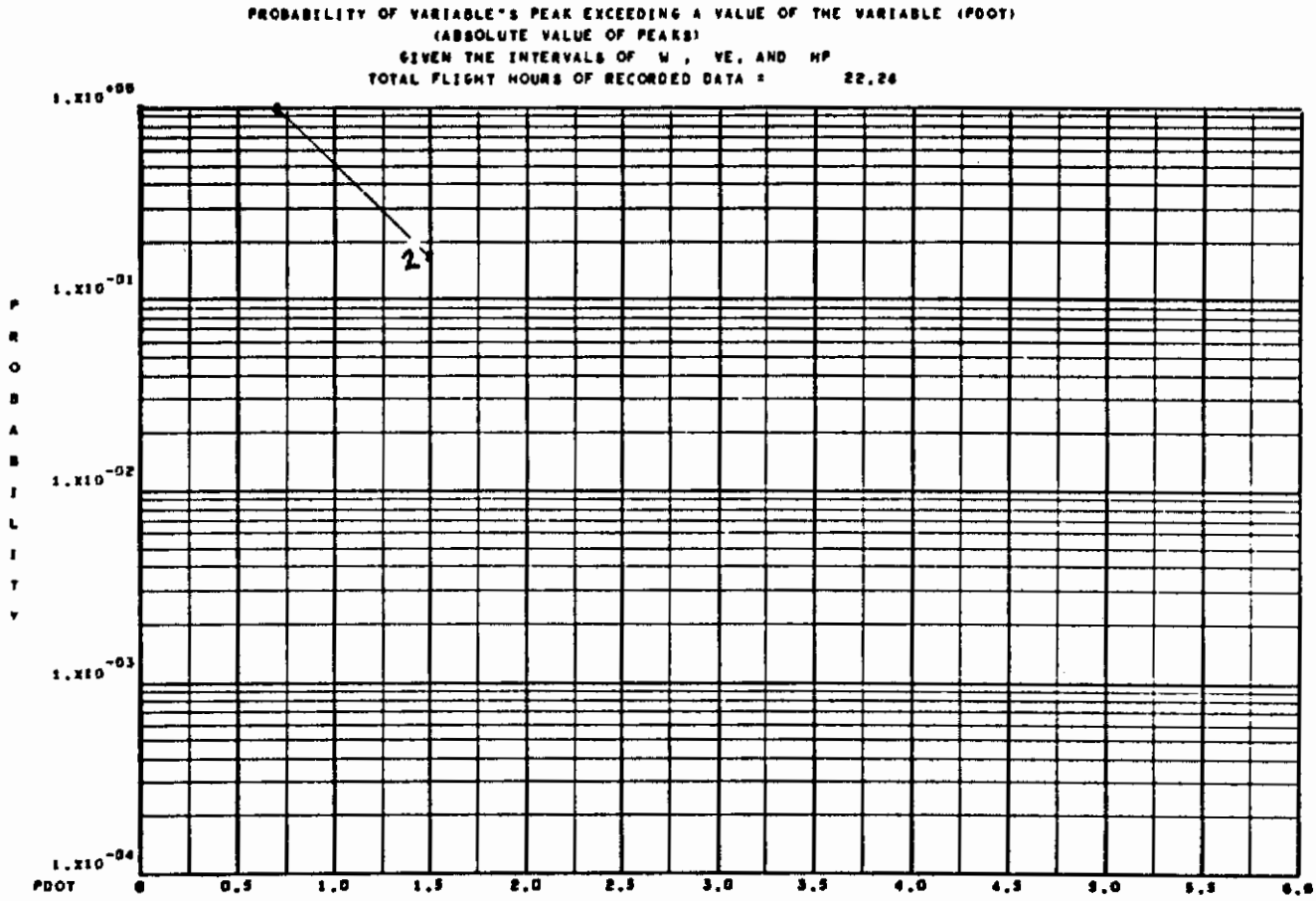
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	14.
2	2	35000.	40000.	21.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 37

Figure 59--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

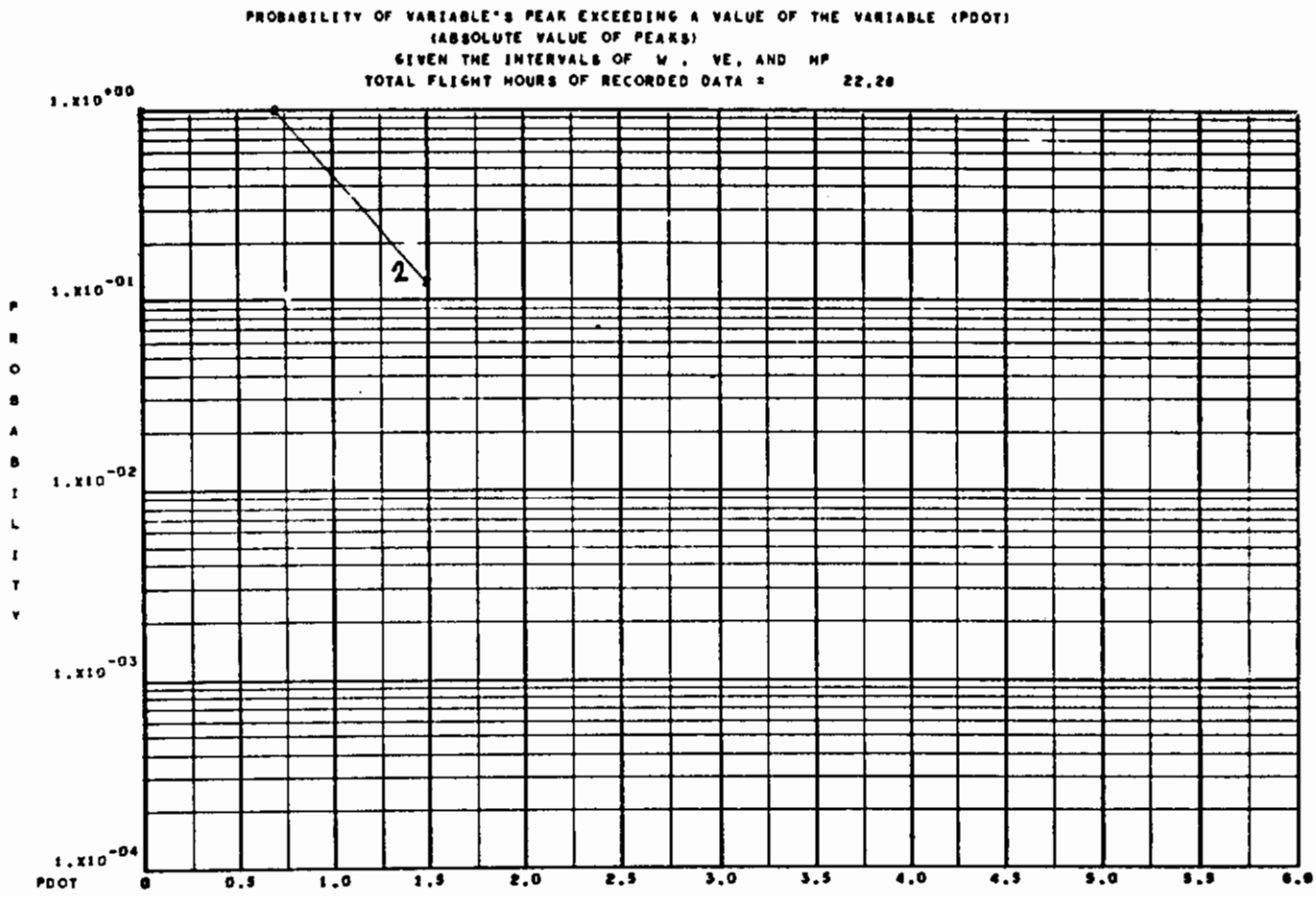
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	0.
2	2	35000.	40000.	6.
3	3	40000.	45000.	5.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 0, FROM 550. TO 600. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 37

Figure 59--Concluded



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

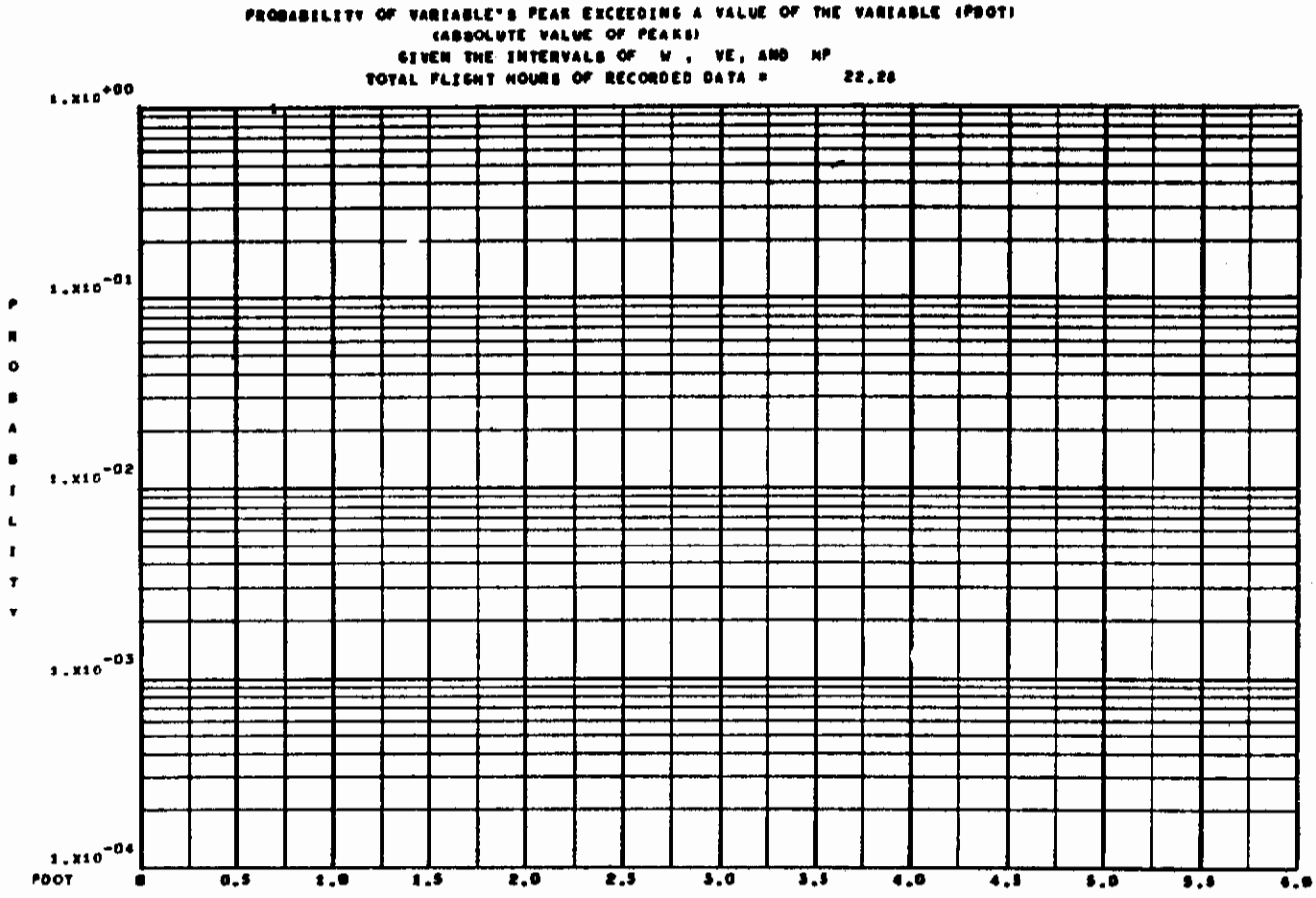
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	0.
2	2	35000.	40000.	8.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 9, FROM 600. TO 650. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 39

Figure 60



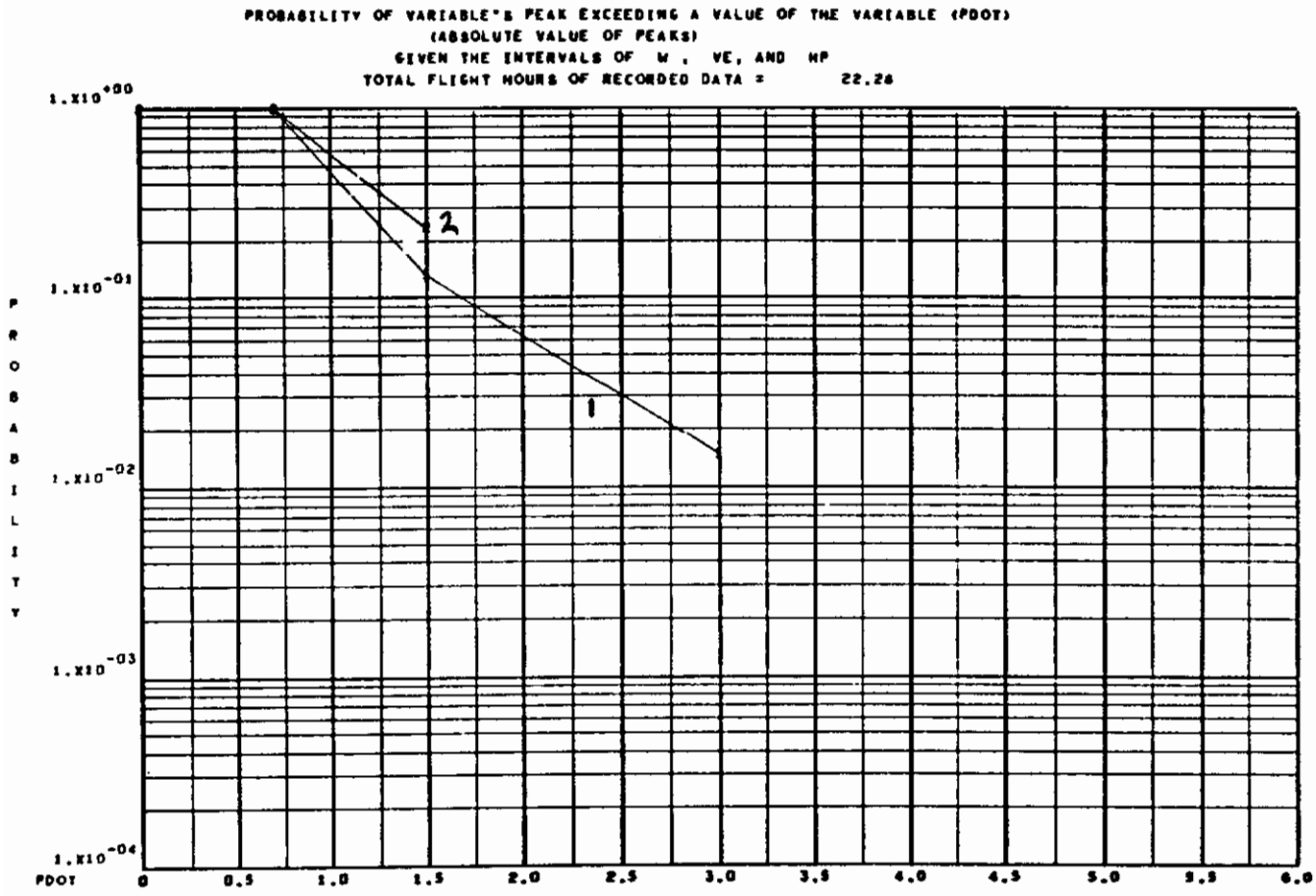
WEIGHT, W, (POUNDS)				NO. OF PEAKS, (PDOT)
SYMBOL	INT.NO.	FROM	TO	TOTAL
1	1	25000.	35000.	10.
2	2	35000.	40000.	0.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 2, FROM 250. TO 300. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 57

Figure 60--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

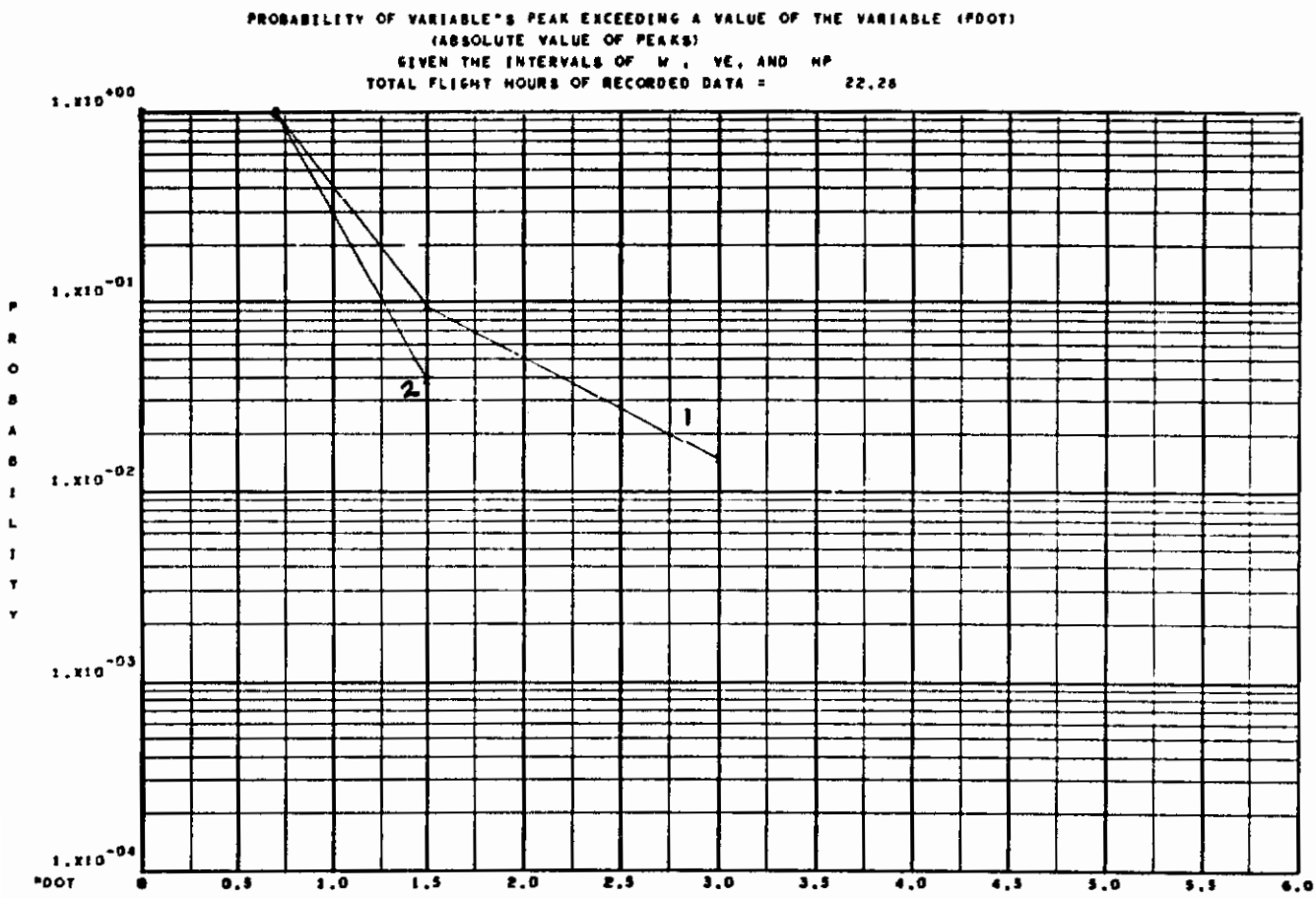
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	68.
2	2	35000.	40000.	17.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 300. TO 350. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 37

Figure 60--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

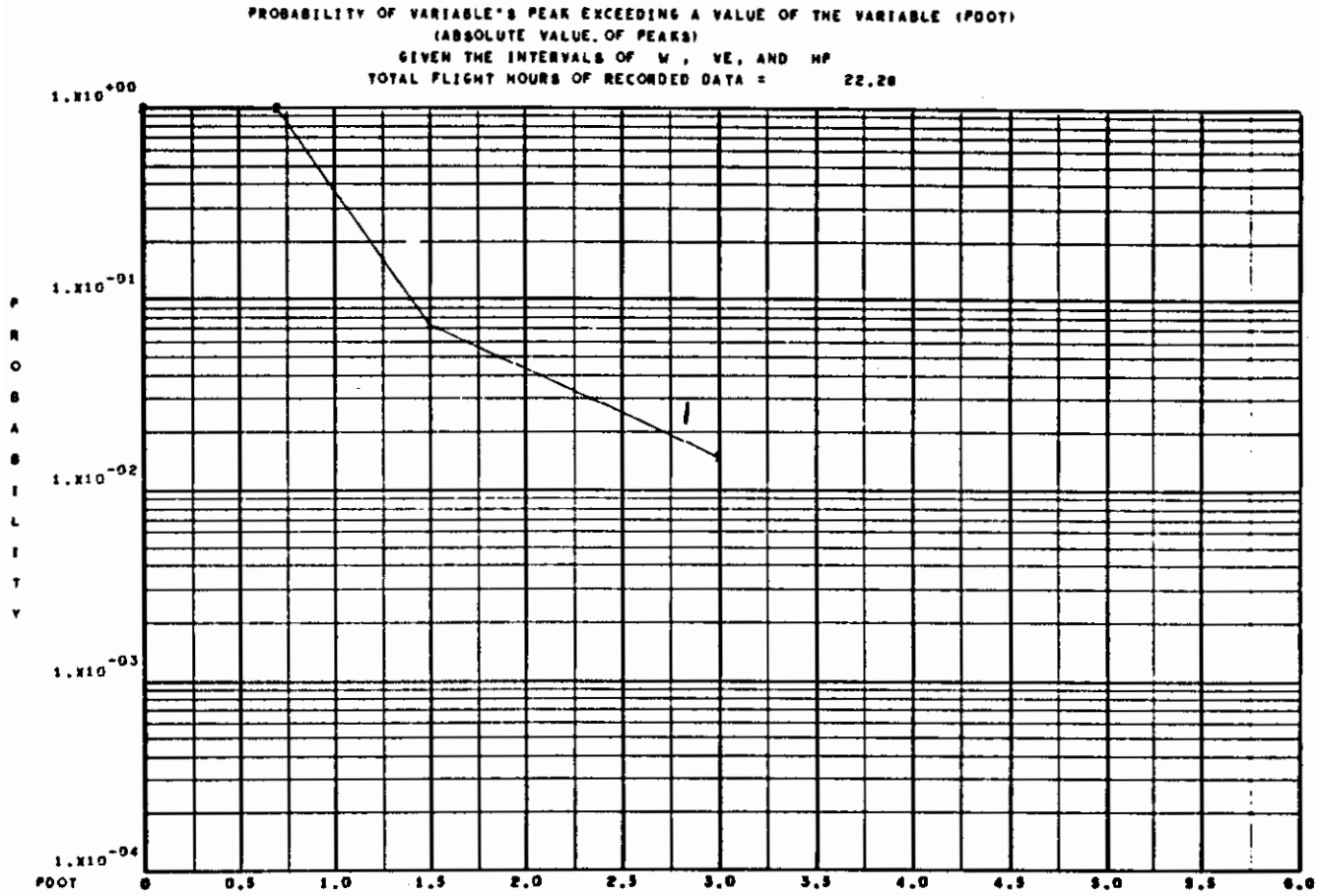
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	135.
2	2	35000.	40000.	26.
3	3	40000.	45000.	9.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 37

Figure 60--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

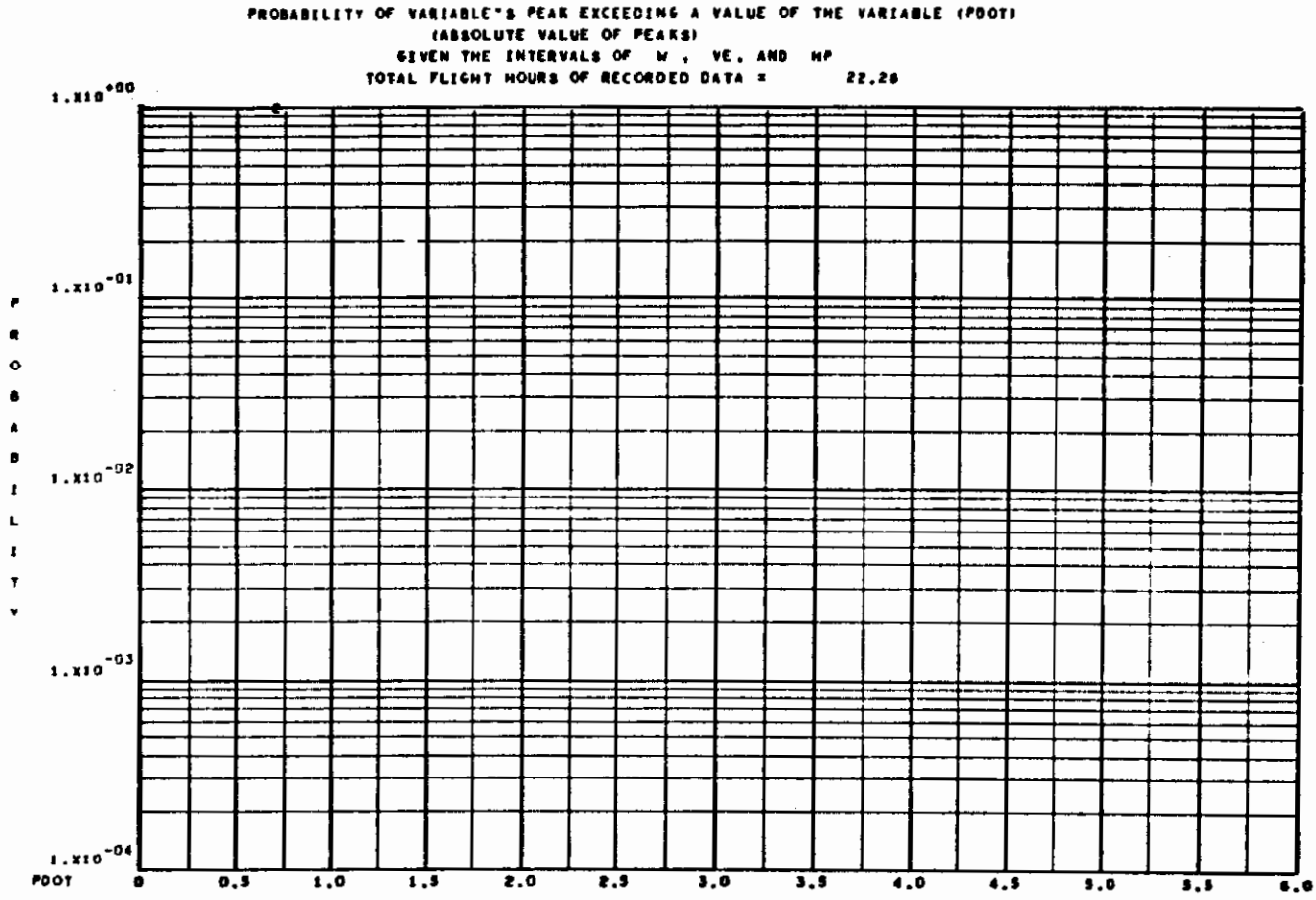
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (FDOT) TOTAL
1	1	25000.	35000.	68.
2	2	35000.	40000.	28.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 37

Figure 60--Continued



ROLLING ACCELERATION, F DOT (RADIANS/SECOND SQUARED)

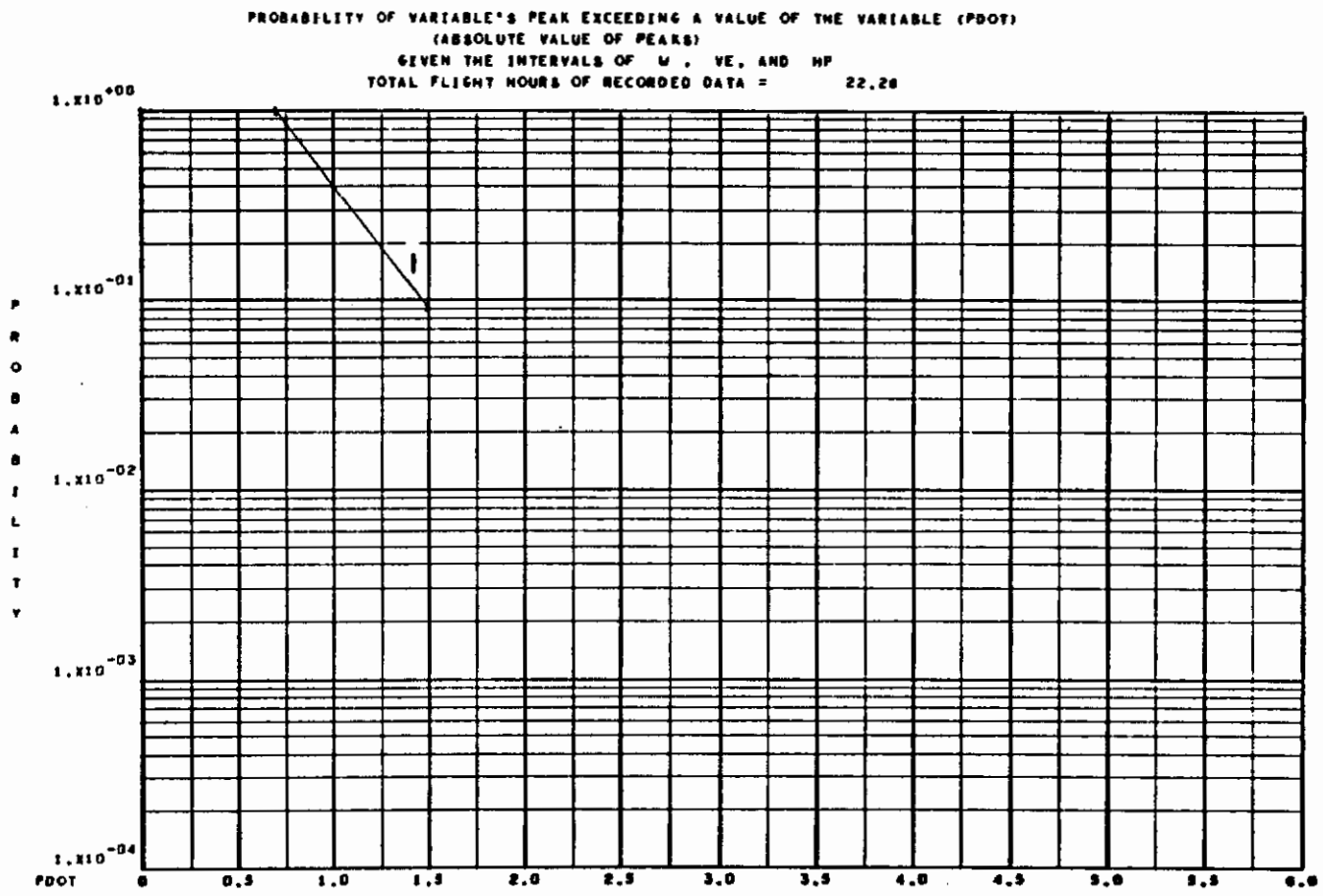
WEIGHT, W, (POUNDS)				NO. OF PEAKS, (PDOT)
SYMBOL	INT.NO.	FROM	TO	TOTAL
1	1	25000.	35000.	5.
2	2	35000.	40000.	16.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 6, FROM 450. TO 500. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 37

Figure 60--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

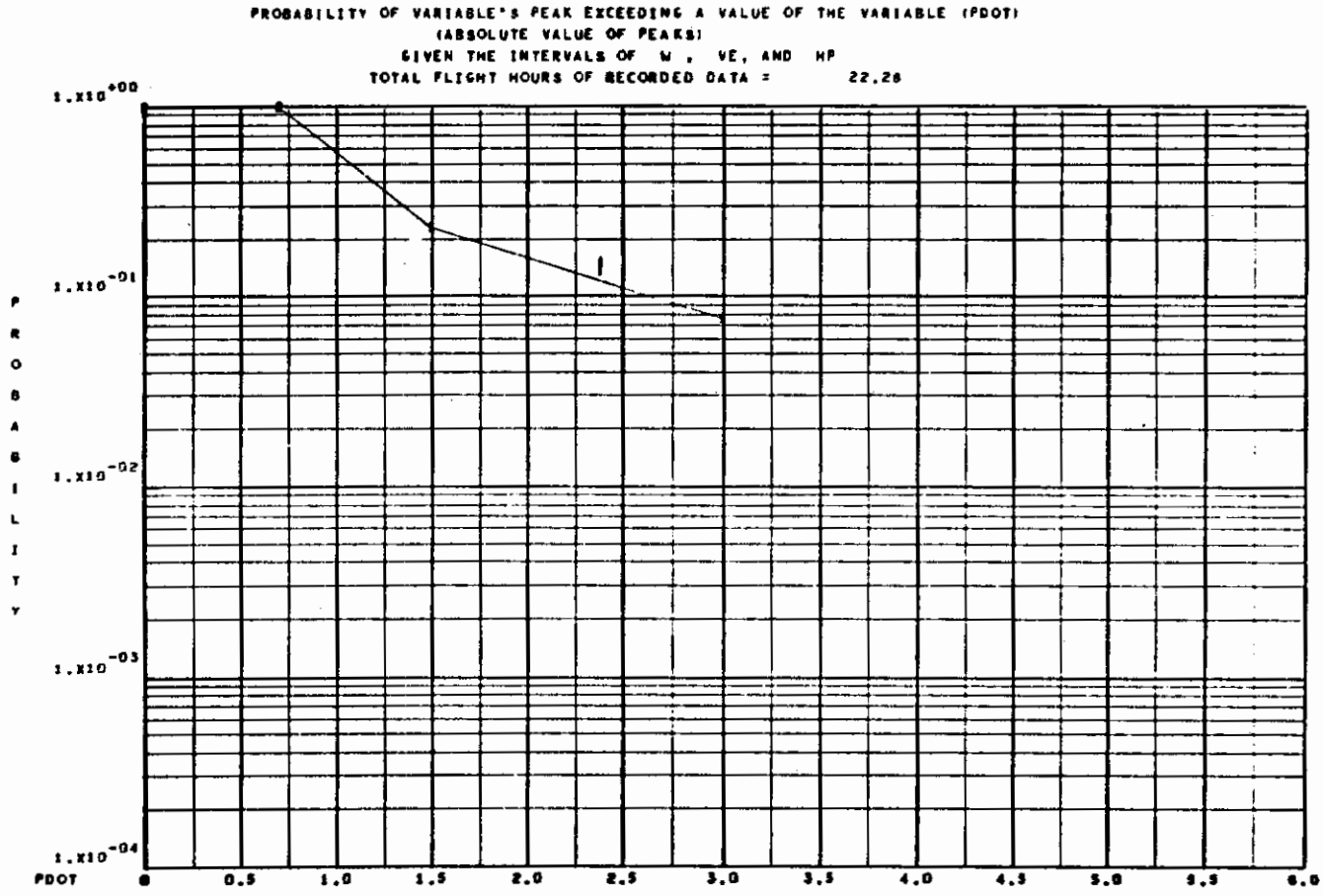
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	22.
2	2	35000.	40000.	5.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 1, FROM 500. TO 550. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 3F

Figure 60--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

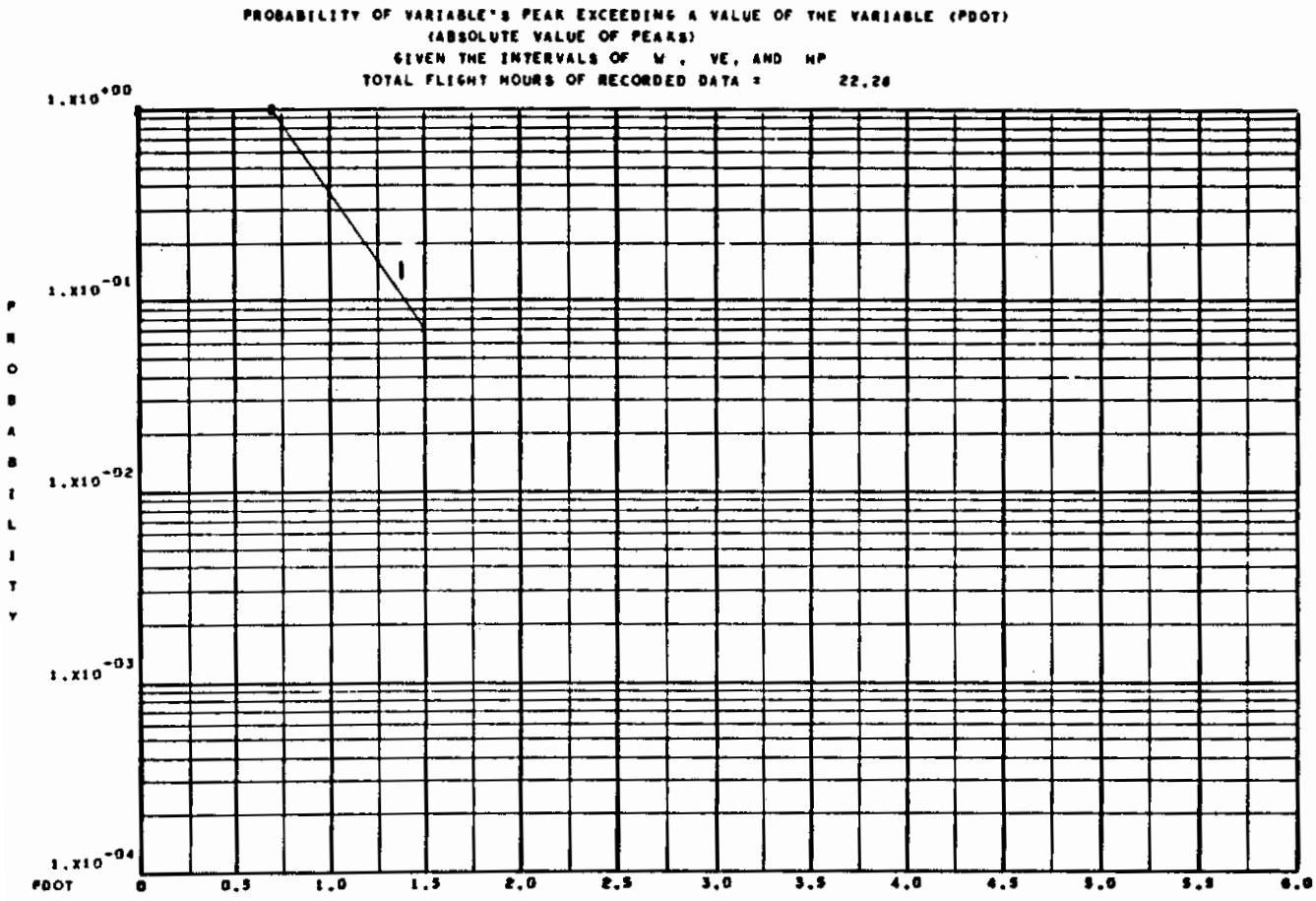
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	13.
2	2	35000.	40000.	16.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 8, FROM 550. TO 600. (KNOTS)

ALTITUCE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 37

Figure 60--Concluded



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

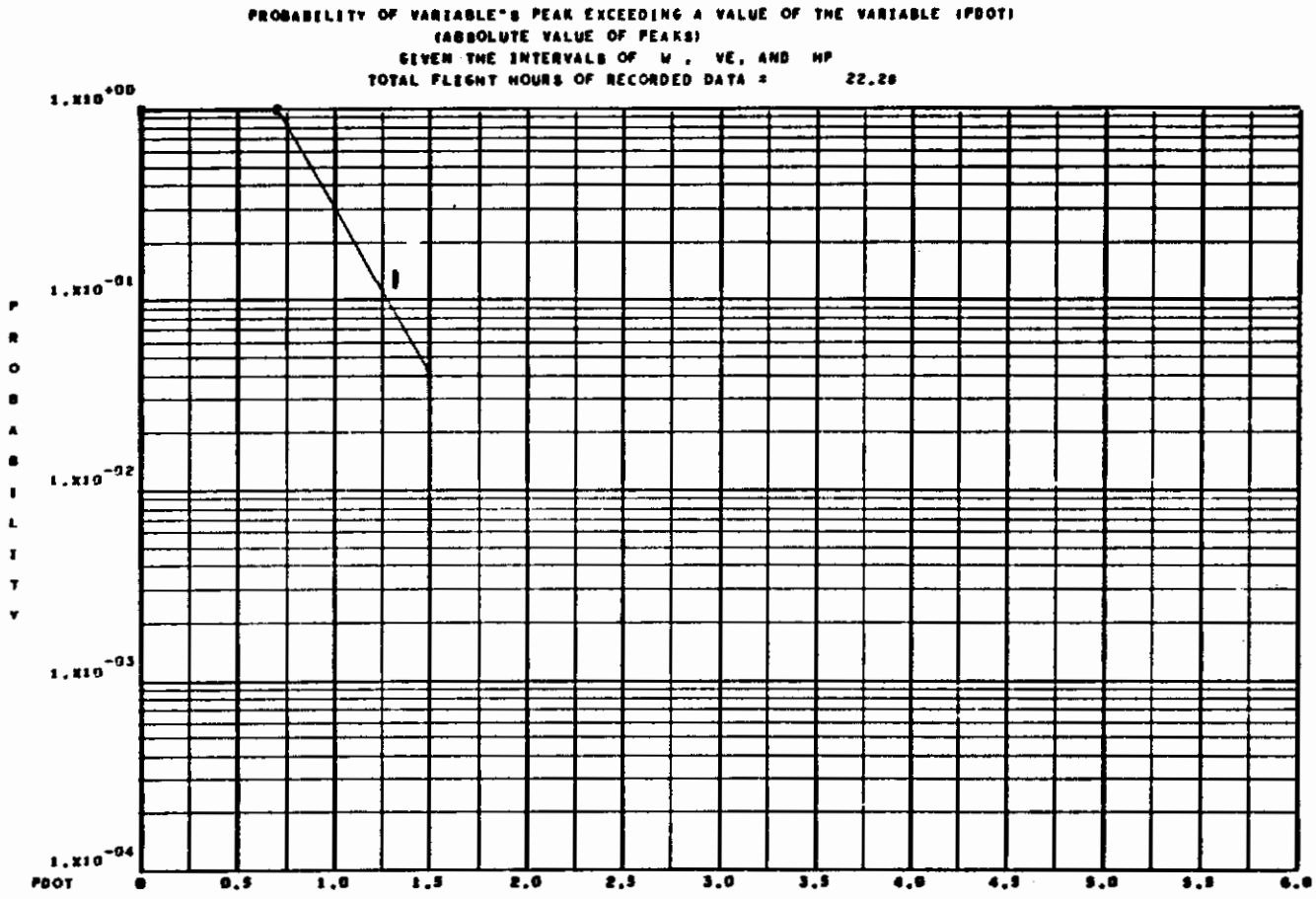
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	42.
2	2	35000.	40000.	8.
3	3	40000.	45000.	9.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 9, FROM 600. TO 650. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 37

Figure 61



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

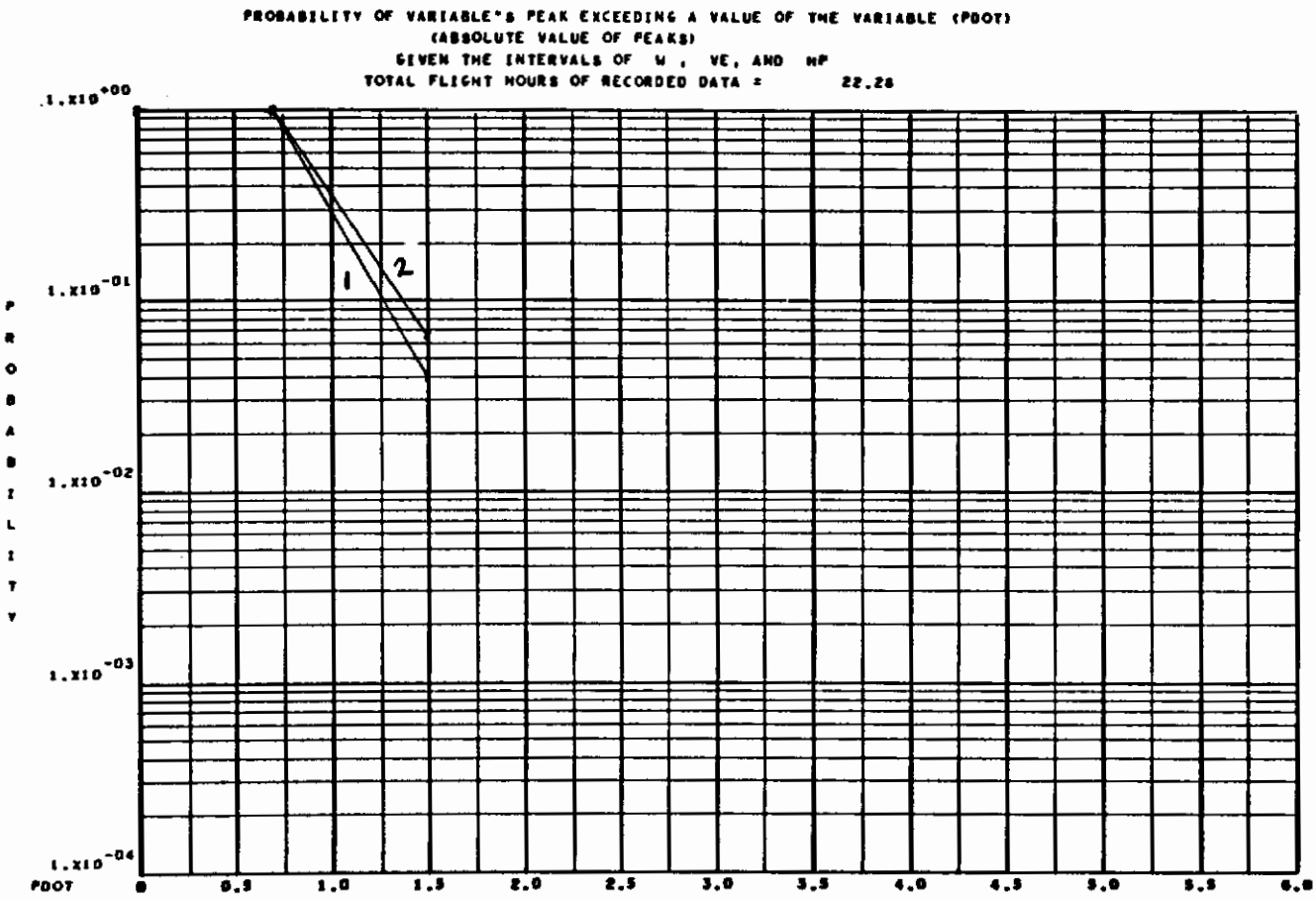
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	24.
2	2	35000.	40000.	13.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 2, FROM 250. TO 300. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 37

Figure 61--Continued



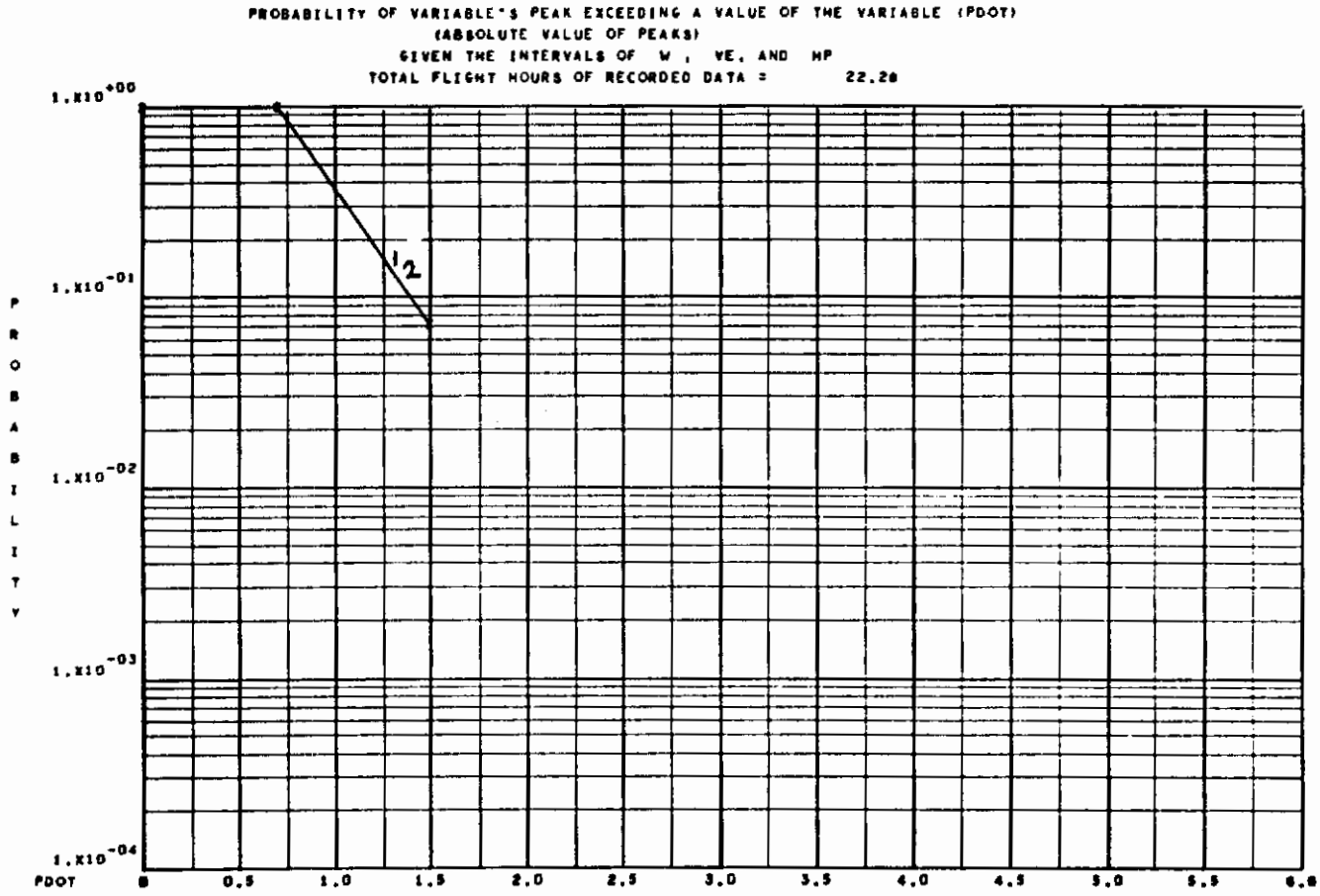
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	59.
2	2	35000.	40000.	61.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 300. TO 350. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

Case NO. 37

Figure 61--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

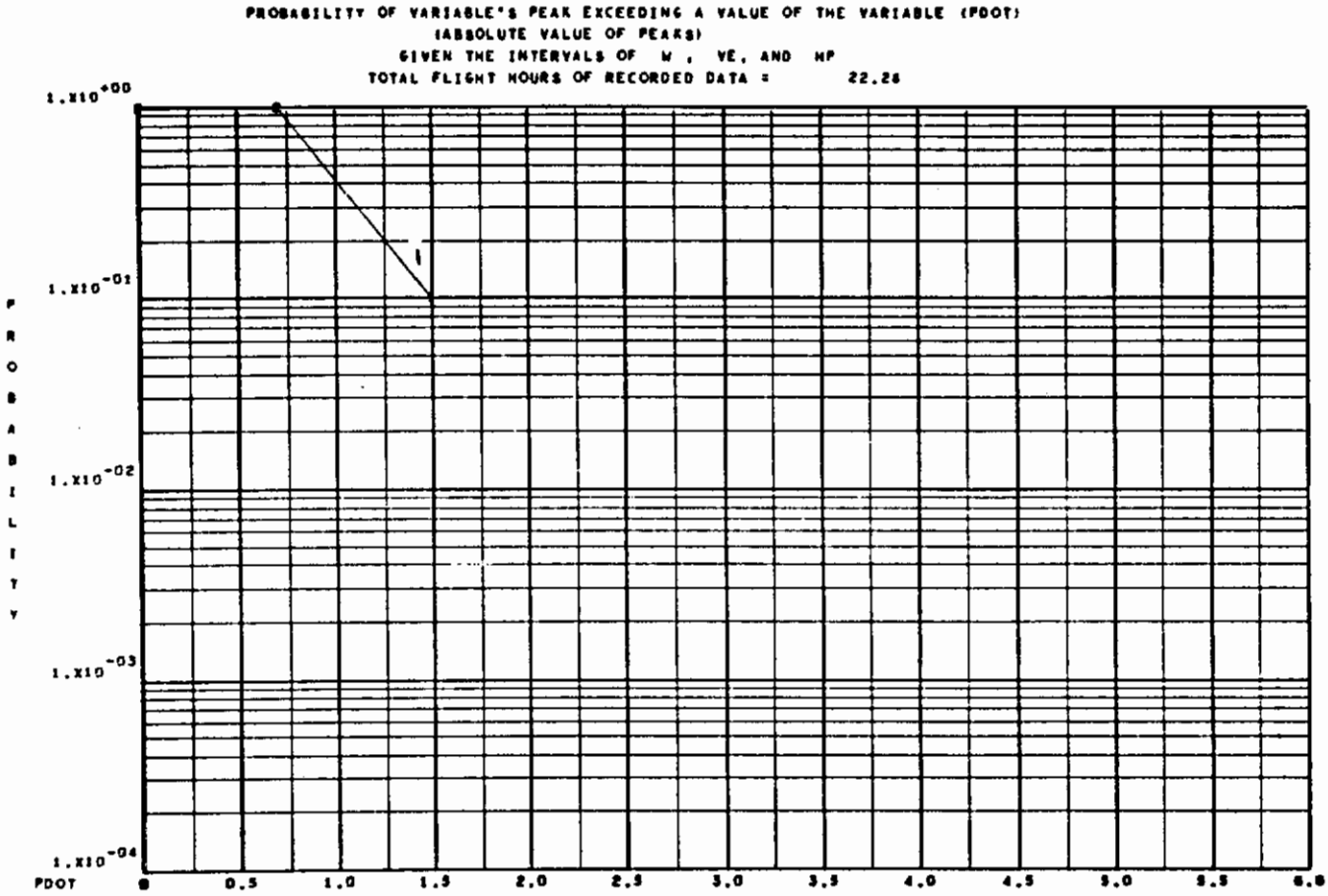
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	56.
2	2	35000.	40000.	55.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 37

Figure 61--Continued



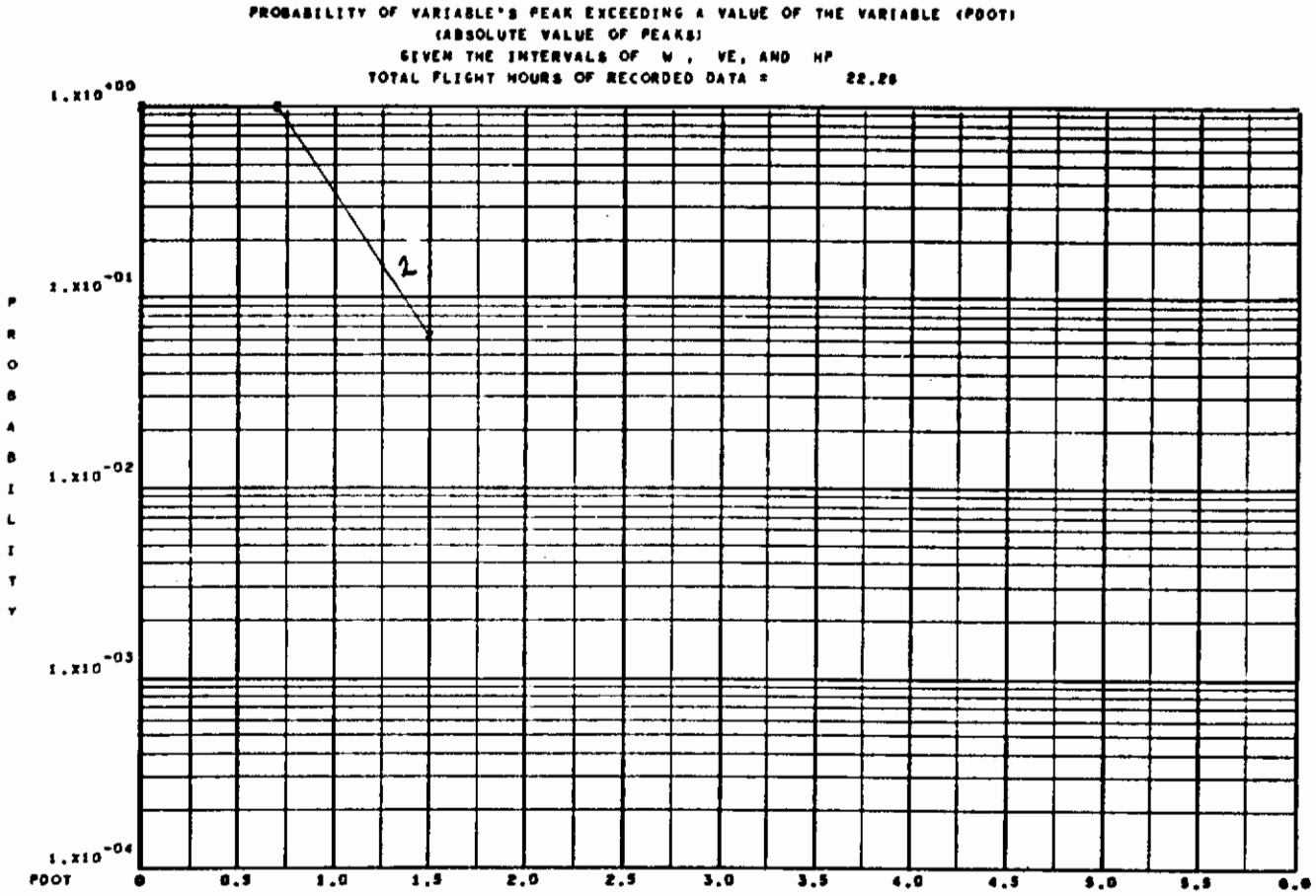
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	40.
2	2	35000.	40000.	37.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 5, FROM 5000. TO 15000. (FEET)

CASE NO. 37

Figure 61--Continued



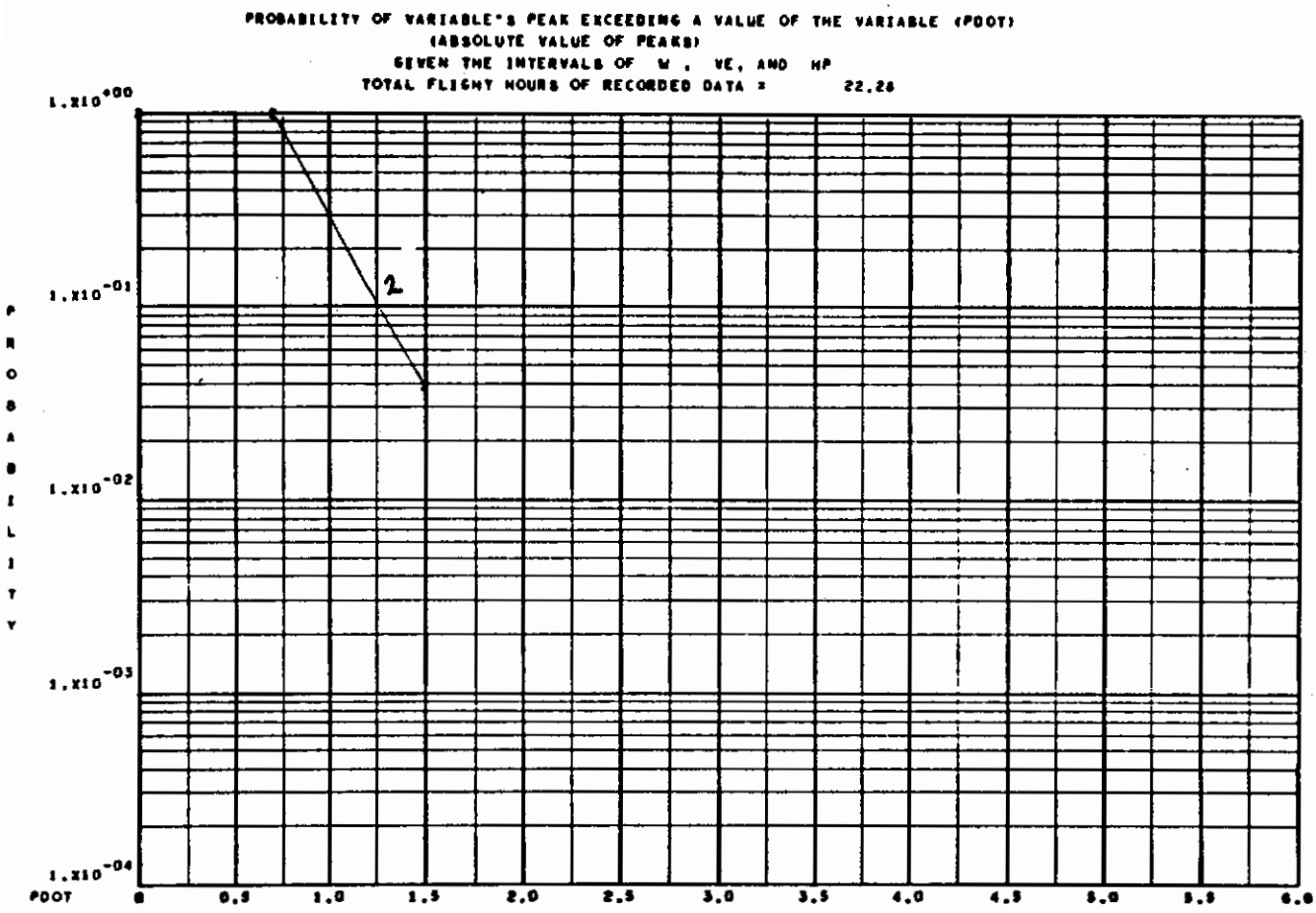
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	27.
2	2	35000.	40000.	16.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 6, FROM 450. TO 500. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 37

Figure 61--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

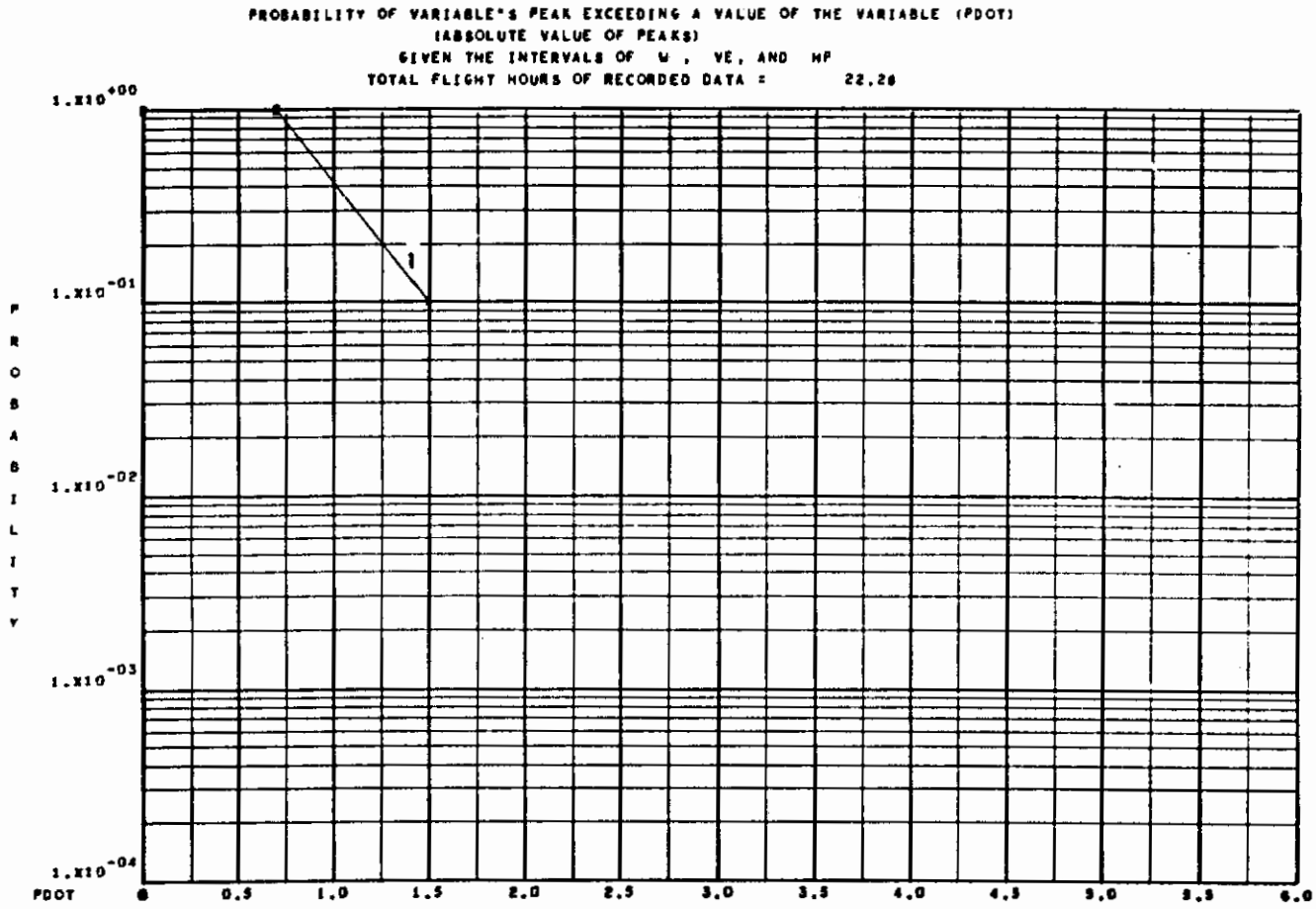
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	19.
2	2	35000.	40000.	26.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 7, FROM 500. TO 550. (KNOTS)

ALTITUCE, HP, INTERVAL NO. 3, FROM 9000. TO 13000. (FEET)

CASE NO. 37

Figure 61--Continued



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

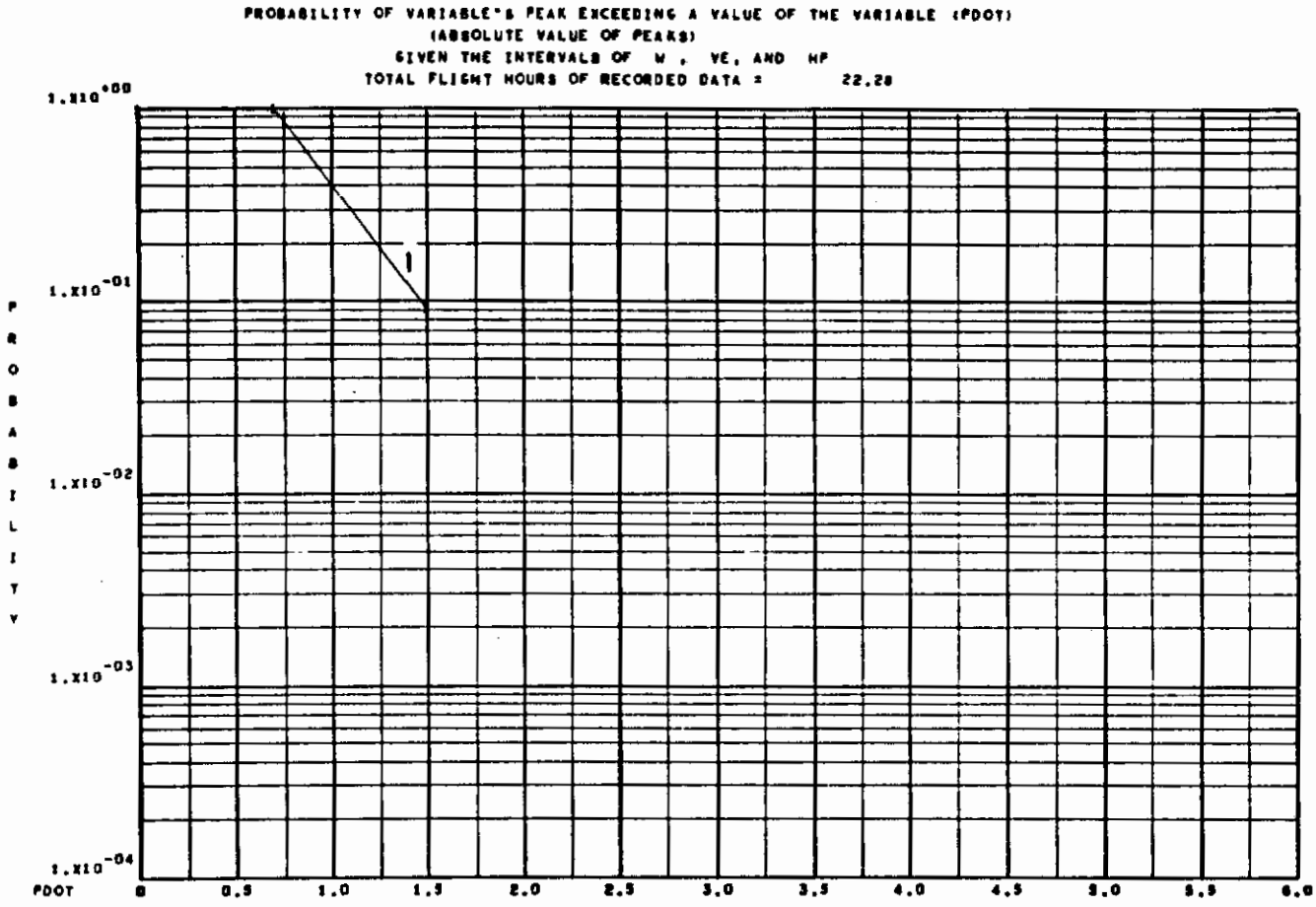
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	30.
2	2	35000.	40000.	6.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 6, FROM 550. TO 600. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 37

Figure 61--Concluded



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

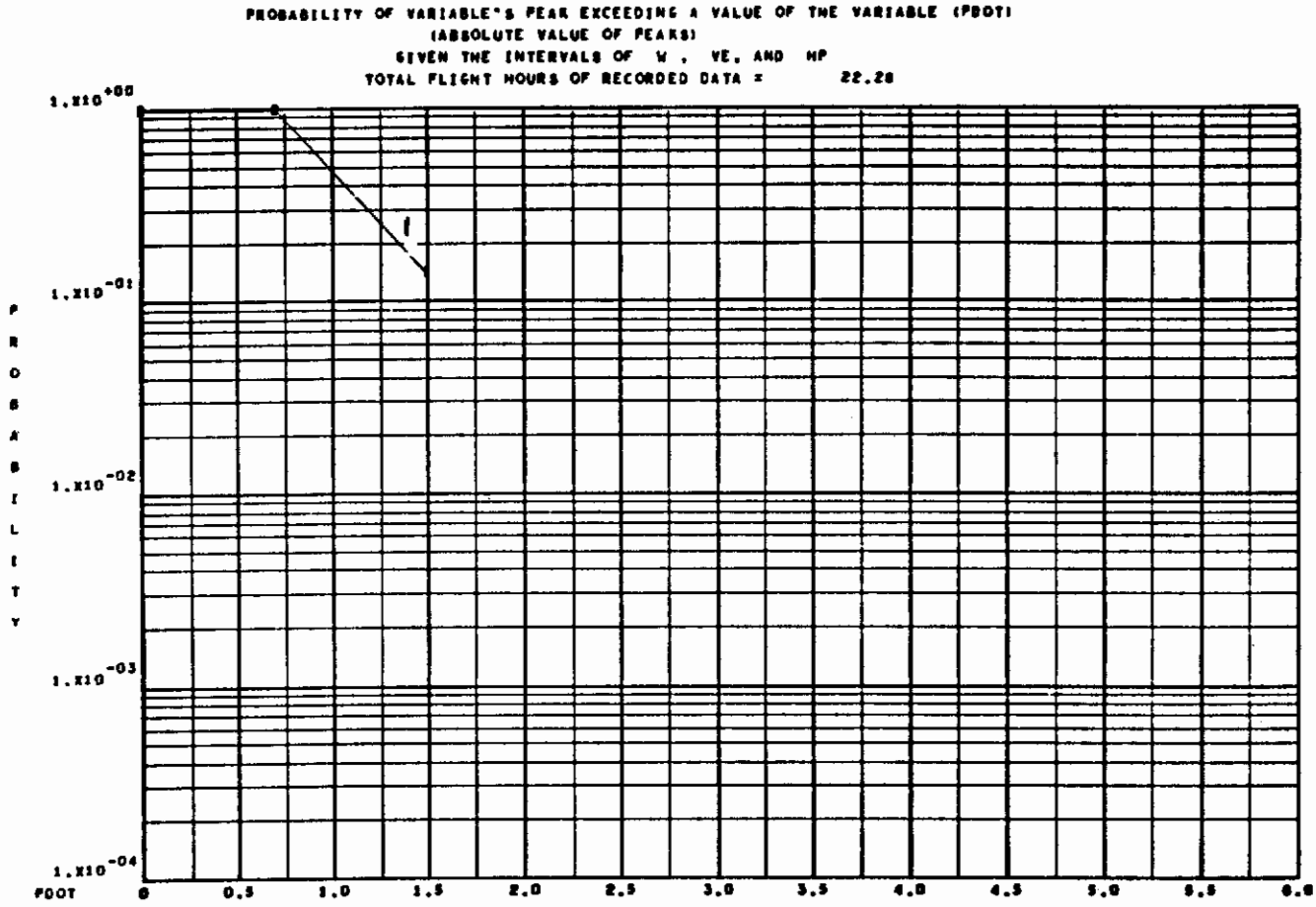
SYMBOL	INT.NO.	WEIGHT, W, (POUNDS) FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	11.
2	2	35000.	40000.	5.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 9, FROM 600. TO 650. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 37

Figure 62



SYMBOL	INT.NO.	WEIGHT, W, (POUNDS) FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	7.
2	2	35000.	40000.	9.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 300. TO 350. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 37

Figure 62--Continued

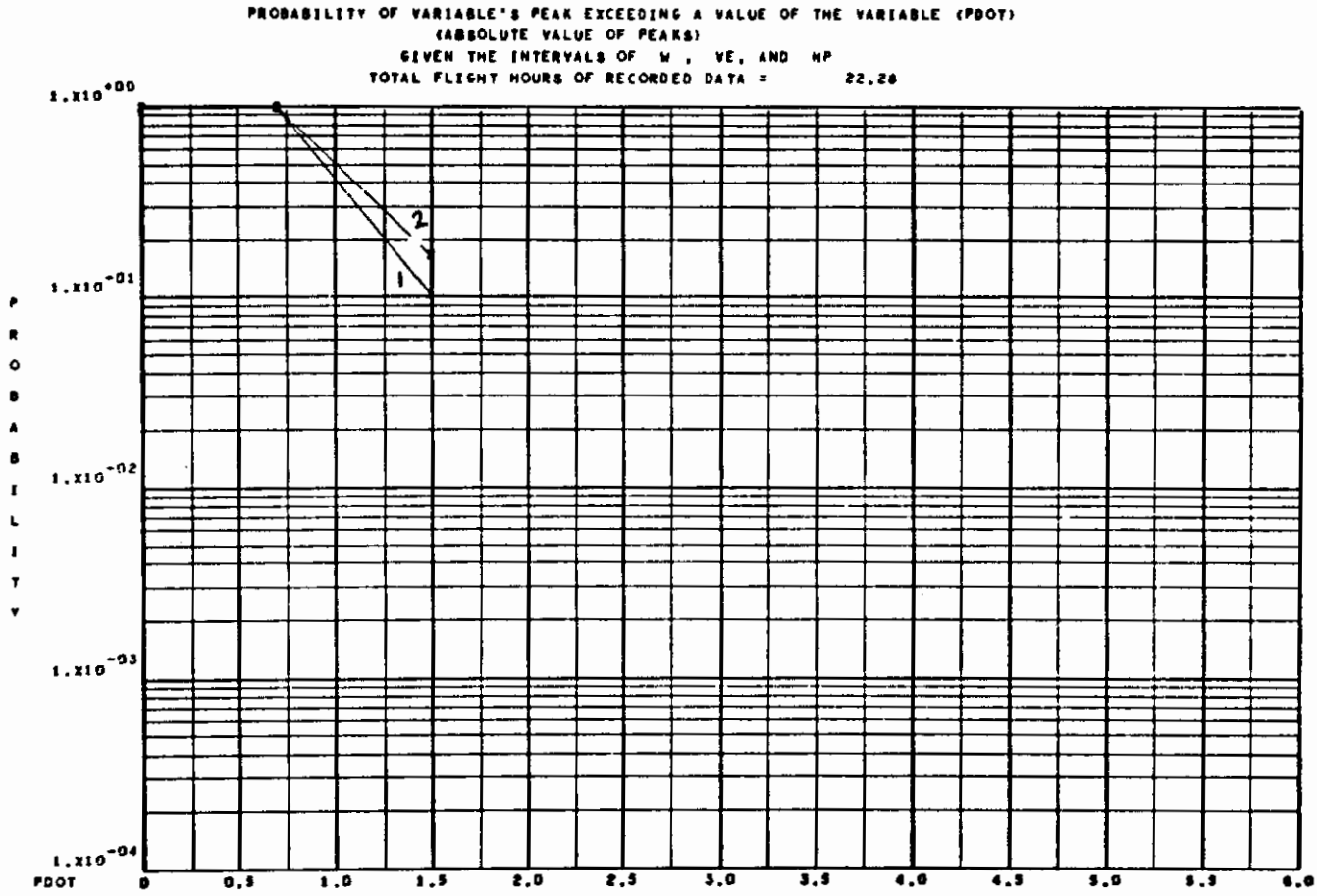
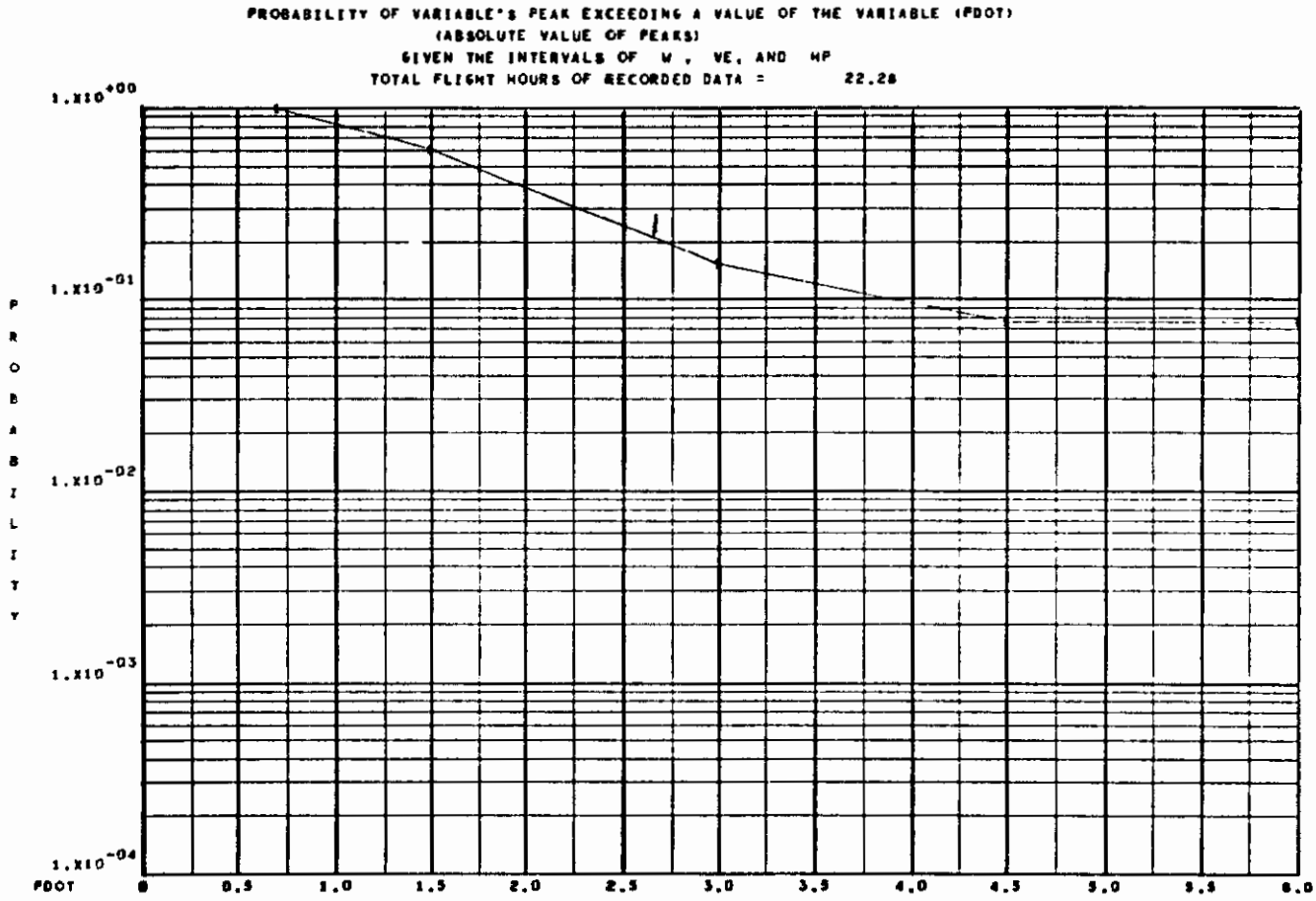


Figure 62--Concluded



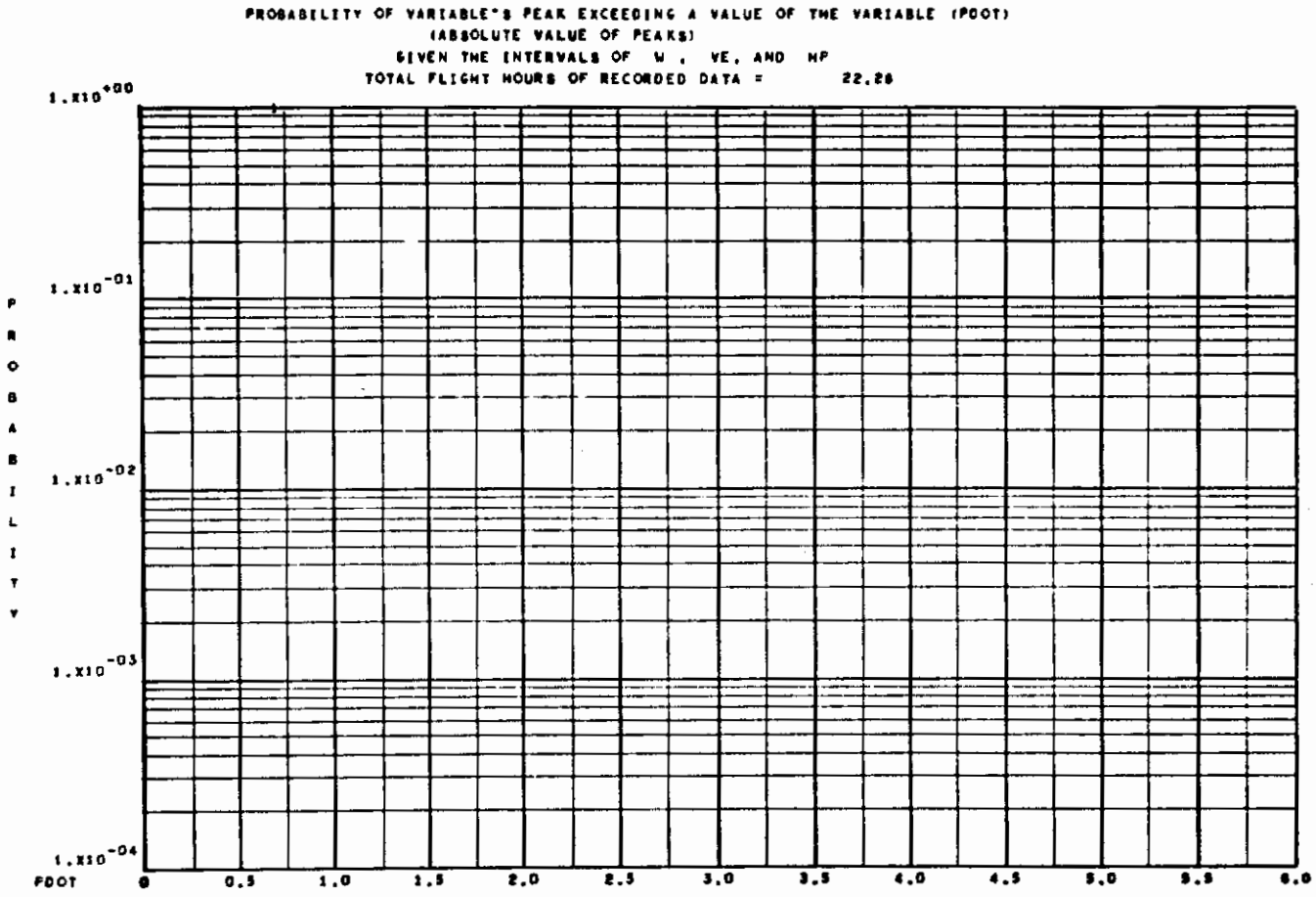
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (FDOT) TOTAL
1	1	25000.	35000.	13.
2	2	35000.	40000.	0.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 37

Figure 63



ROLLING ACCELERATION, P DOT (RADIANS/SECOND SQUARED)

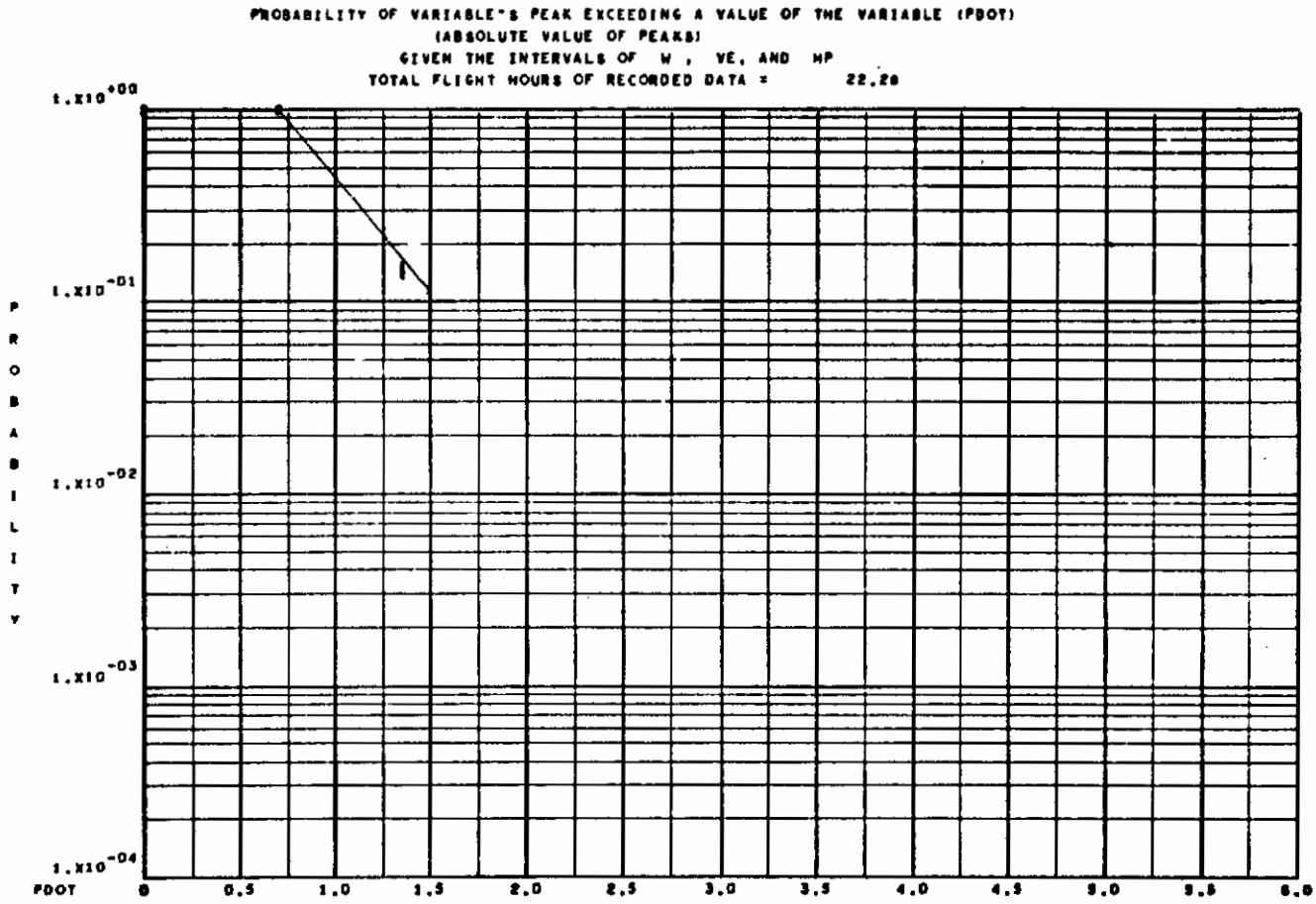
SYMBOL	INT.NO.	WEIGHT, W, (POUNDS) FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	6.
2	2	35000.	40000.	0.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 2, FROM 250. TO 300. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 50000. (FEET)

CASE NO. 37

Figure 63--Continued



SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (PDOT) TOTAL
1	1	25000.	35000.	26.
2	2	35000.	40000.	6.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 300. TO 350. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 50000. (FEET)

CASE NO. 37

Figure 63--Concluded

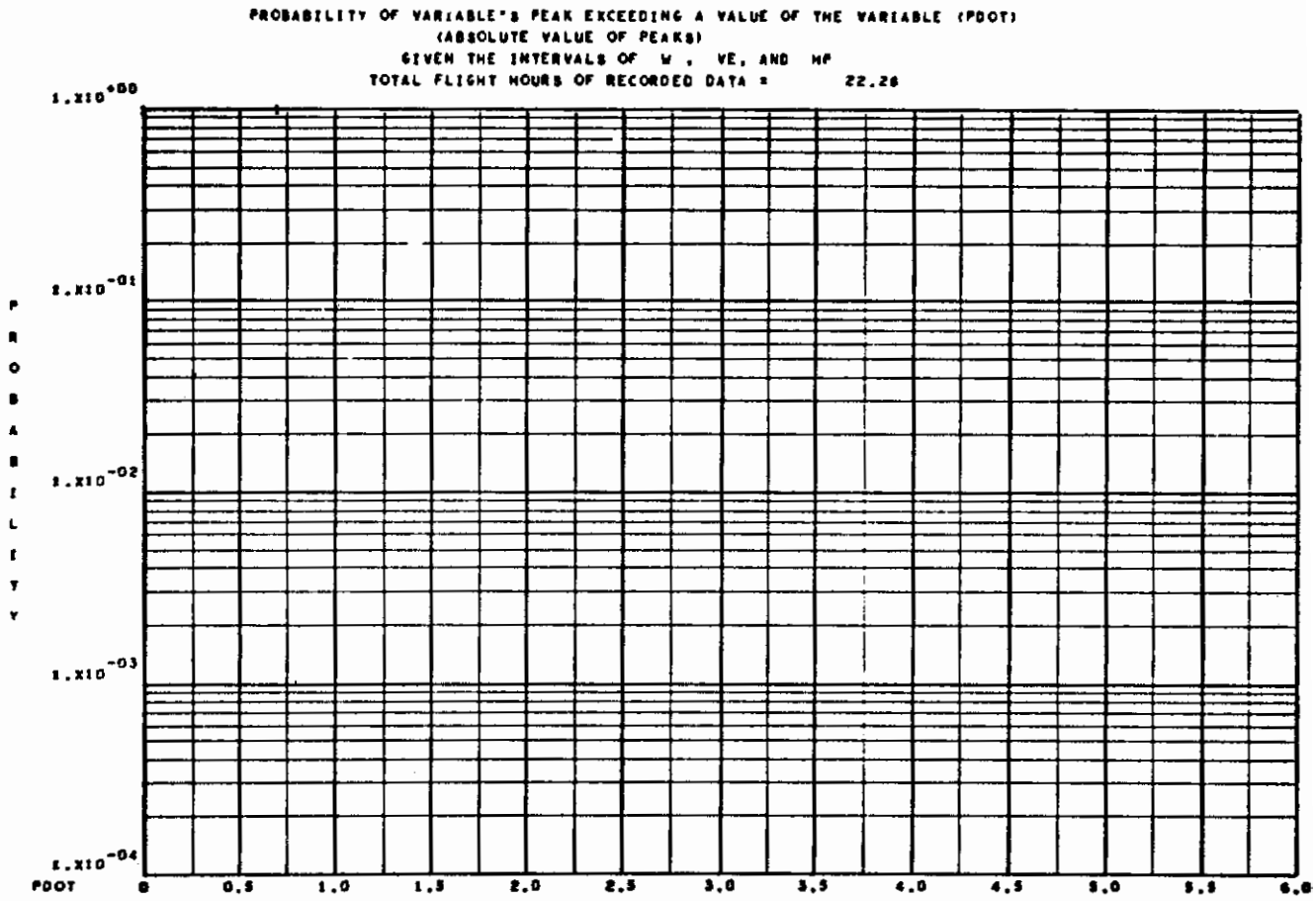
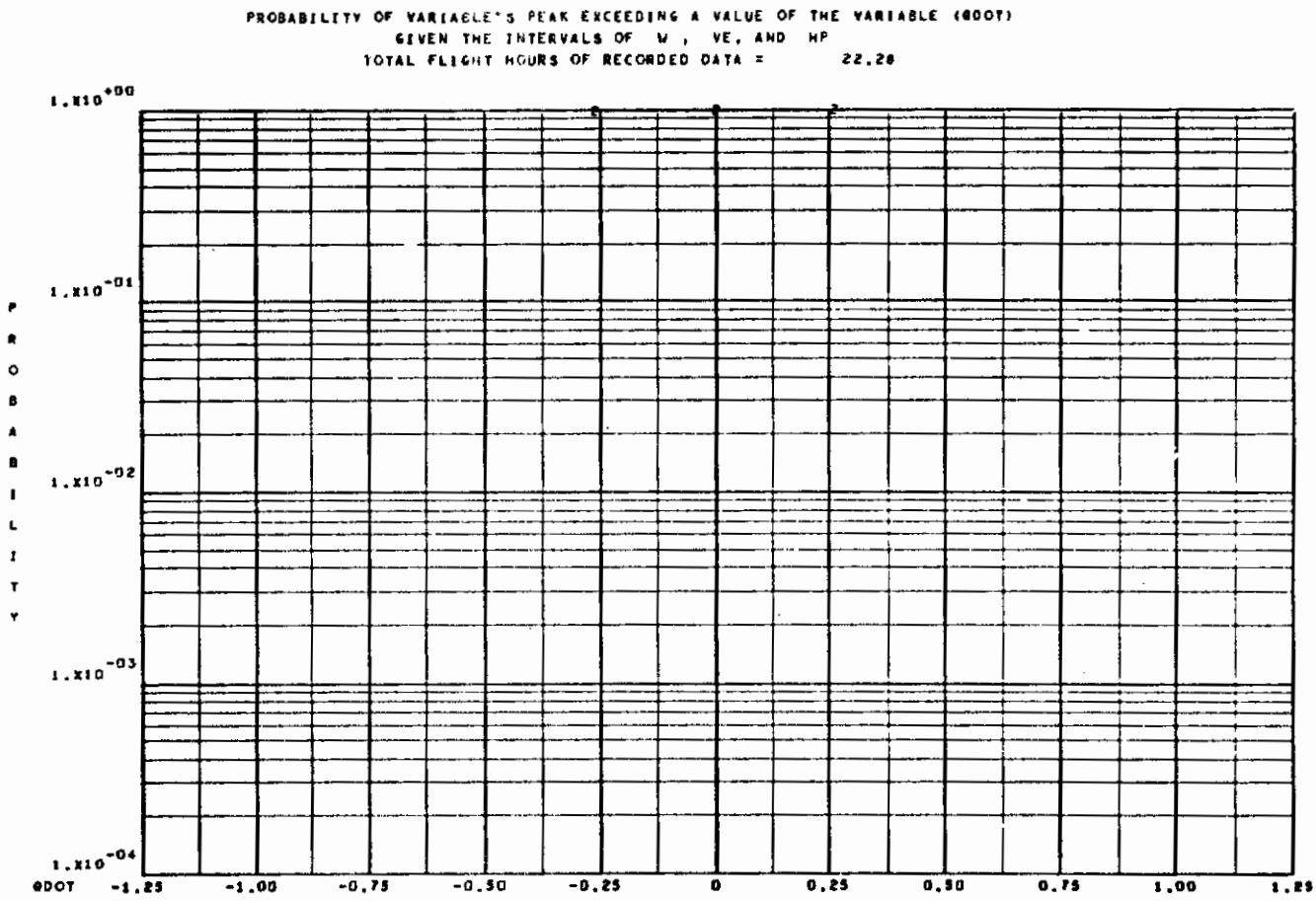


Figure 64



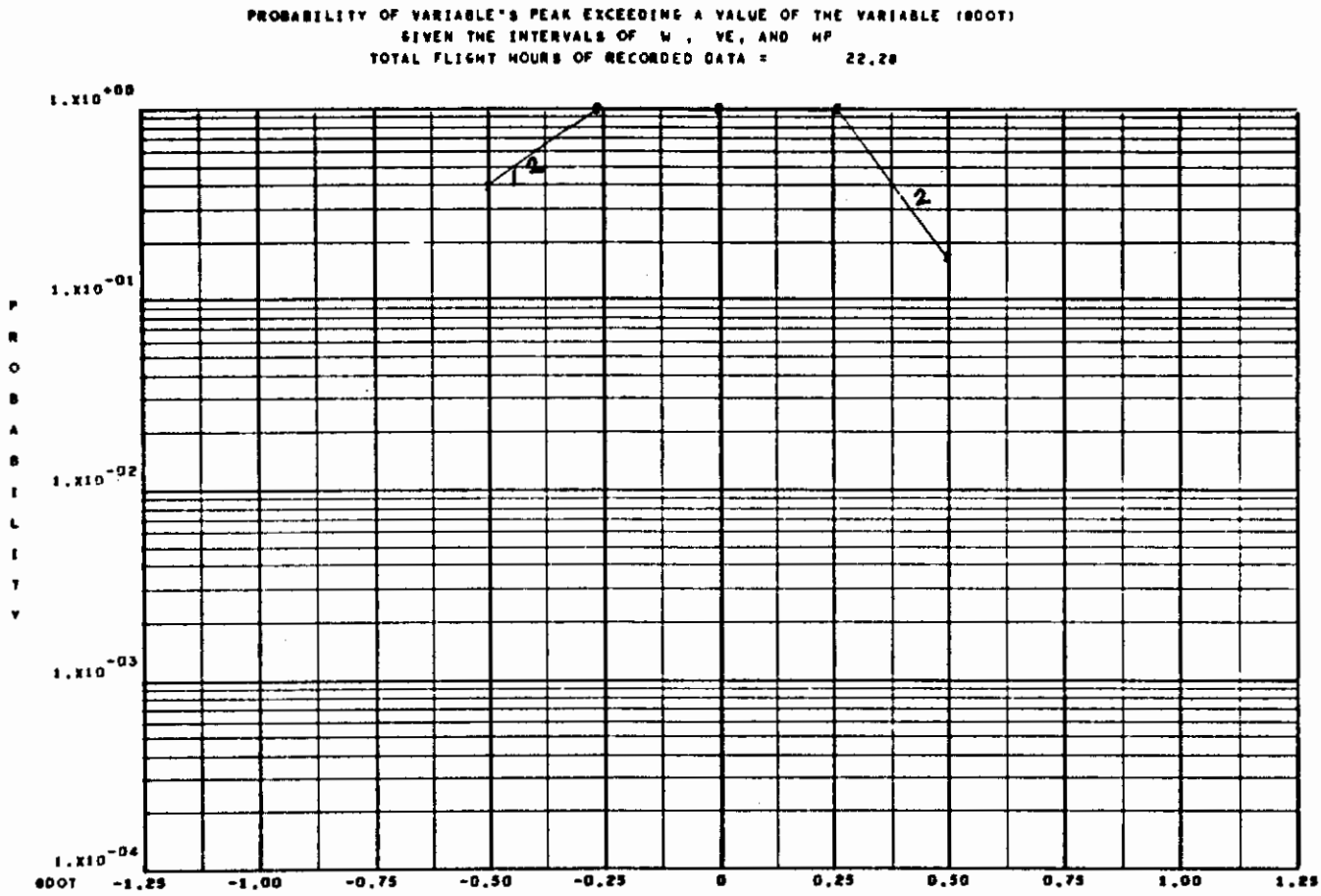
SYMBOL	INT.NO.	WEIGHT, W, (POUNDS) FROM	TO	NO. OF PEAKS, (ΘDOT) TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	1.	0.	1.
2	2	35000.	40000.	17.	8.	9.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 41

Figure 64--Concluded



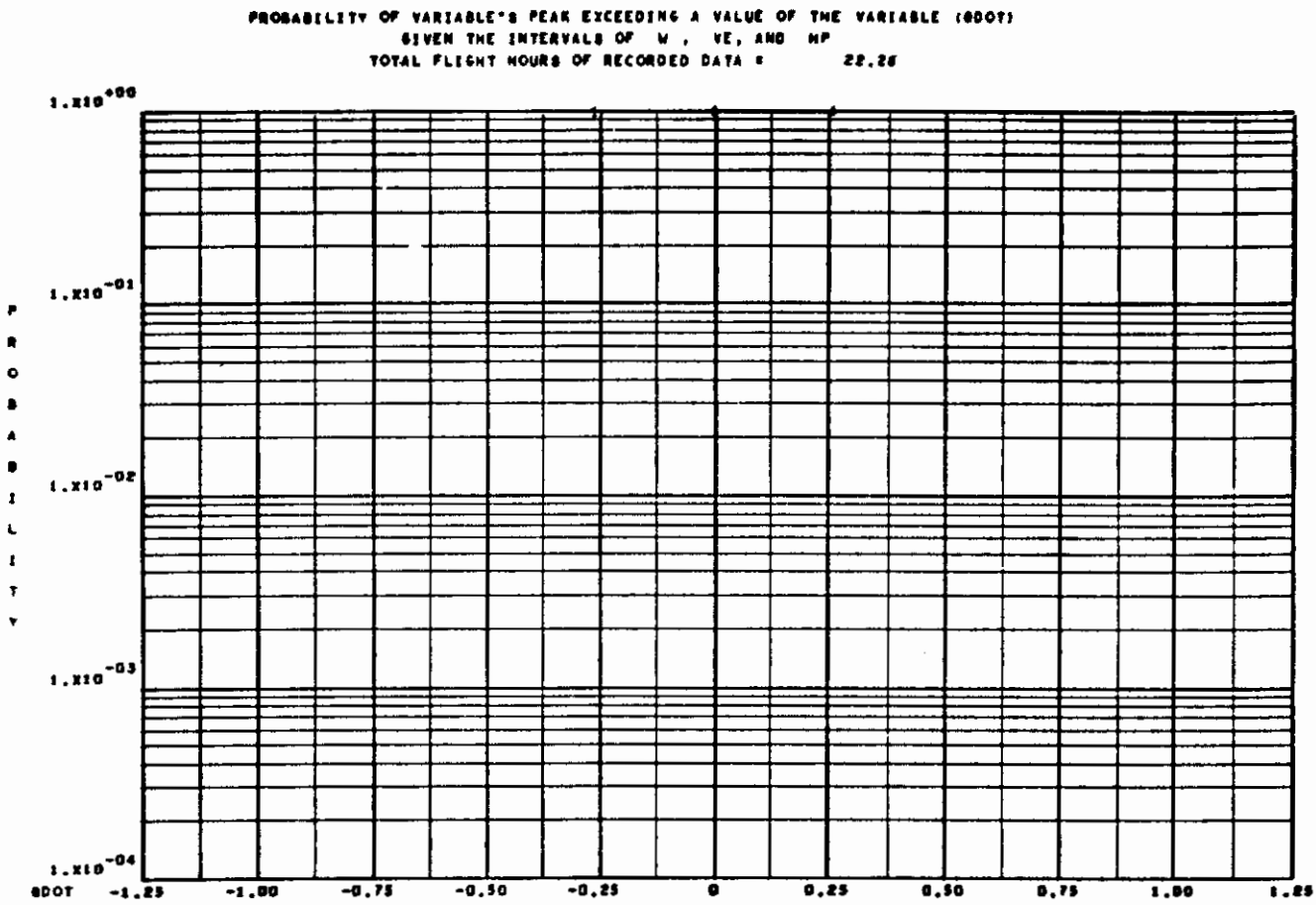
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (ΘDOT) TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	7.	5.	2.
2	2	35000.	40000.	8.	2.	6.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

CASE NO. 41

Figure 65



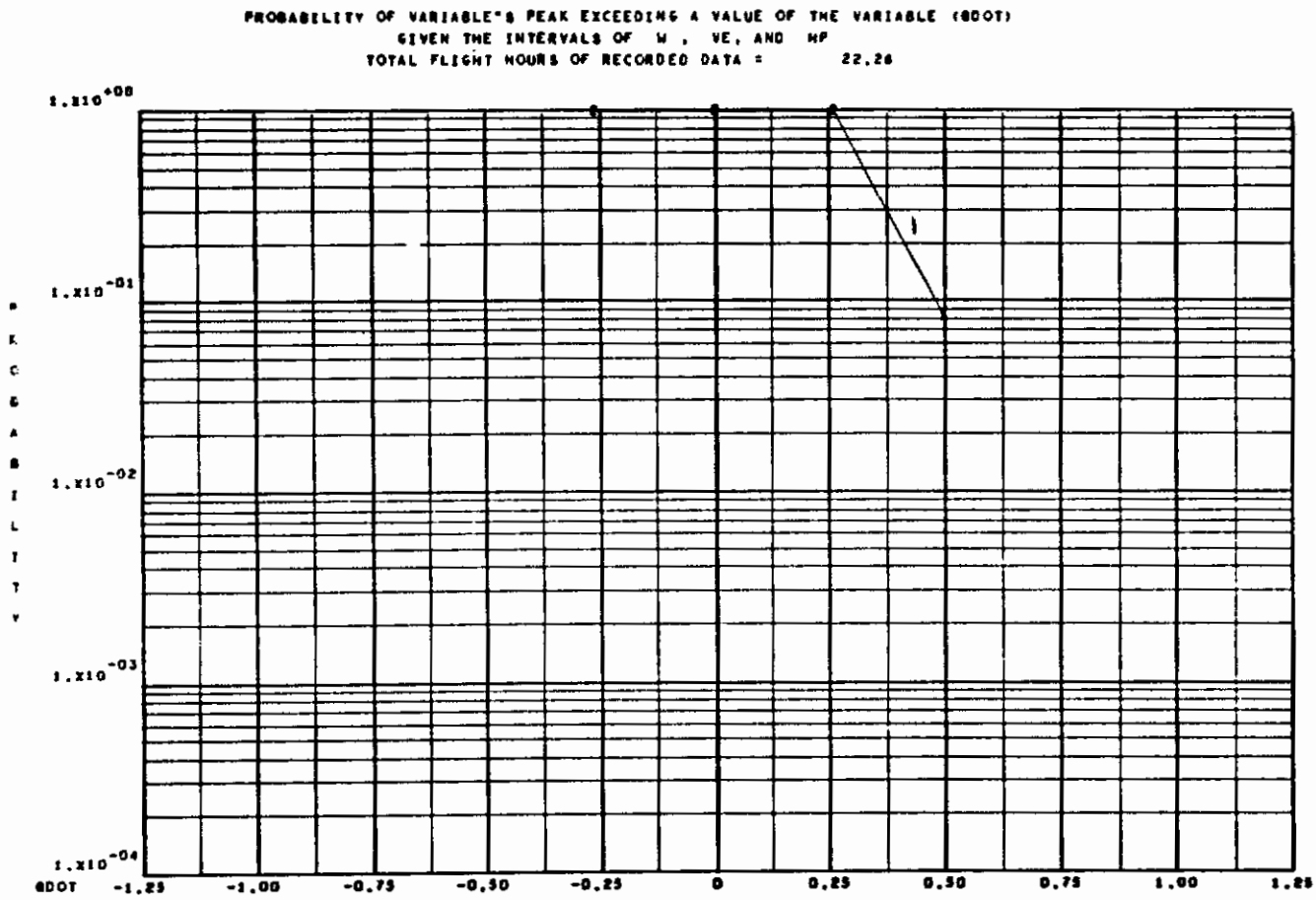
	WEIGHT, W, (POUNDS)			NO. OF PEAKS, (ΘDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	7.	2.	5.
2	2	35000.	40000.	2.	1.	1.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 300. TO 350. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 41

Figure 65--Continued



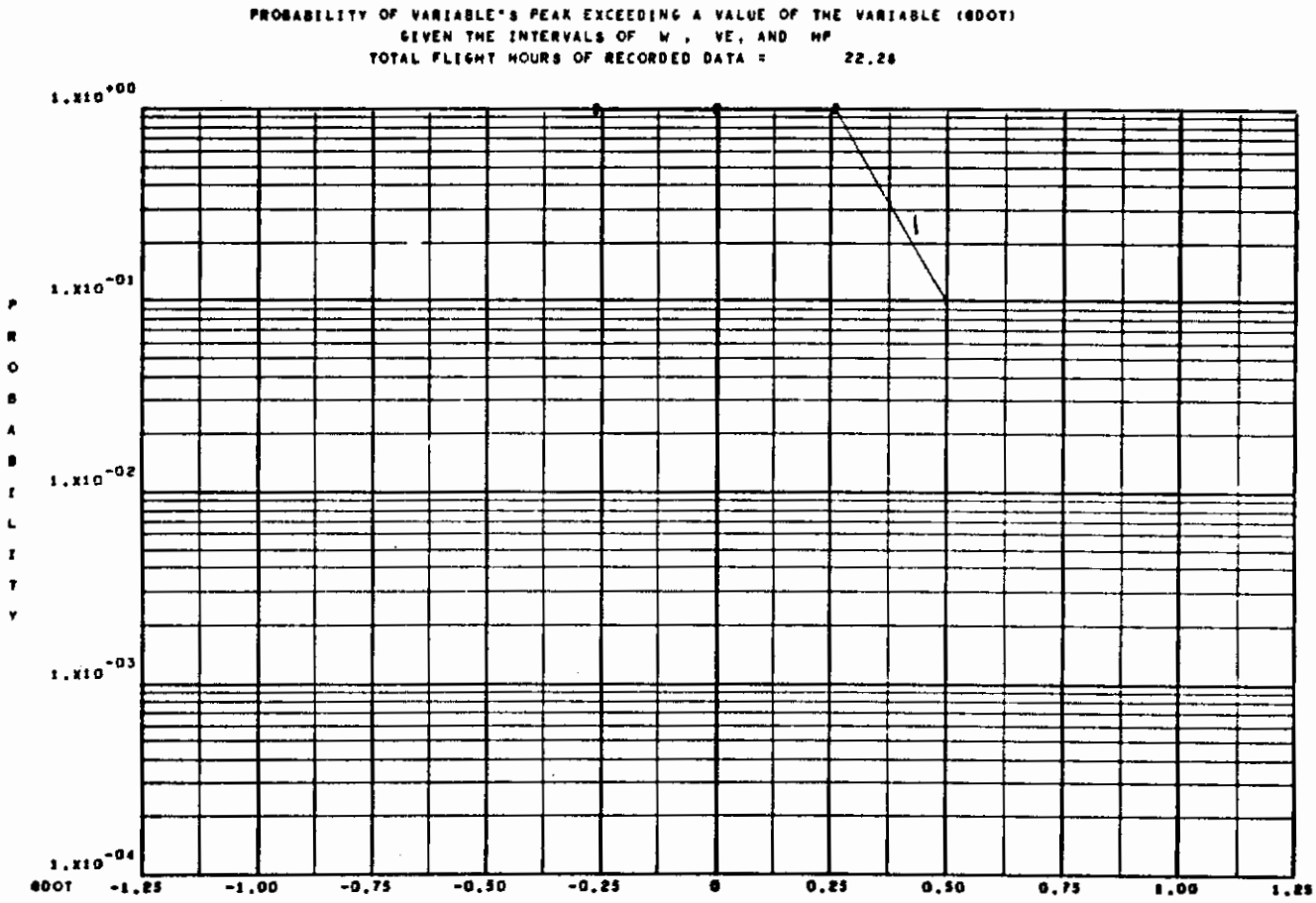
SYMBOL	INT.NO.	WEIGHT, W, (POUNDS) FROM	TO	NO. OF PEAKS, (ØDOT) TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	19.	7.	12.
2	2	35000.	40000.	10.	4.	6.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 41

Figure 65--Concluded



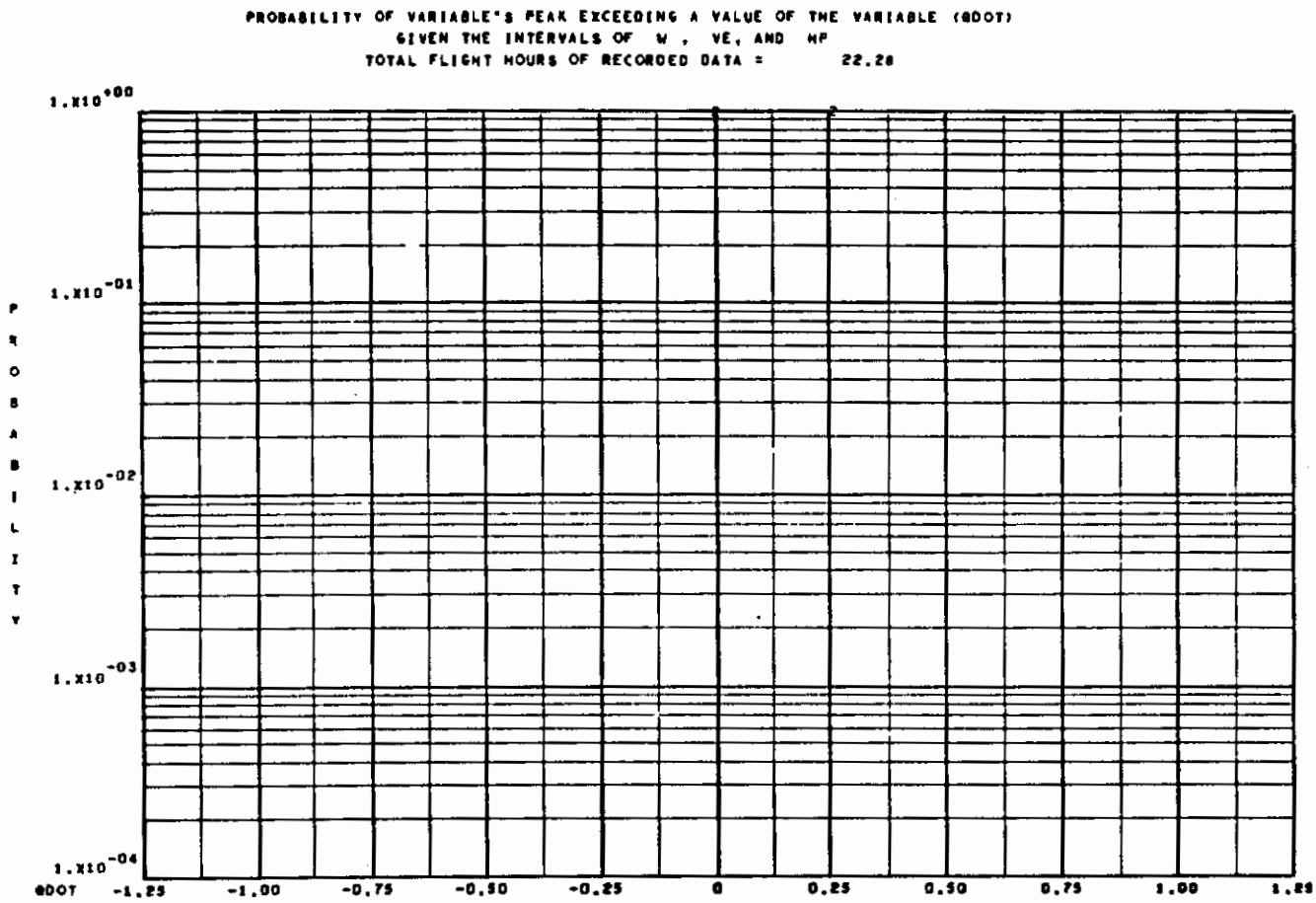
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (ΘDOT) TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	17.	7.	10.
2	2	35000.	40000.	8.	1.	7.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 41

Figure 66



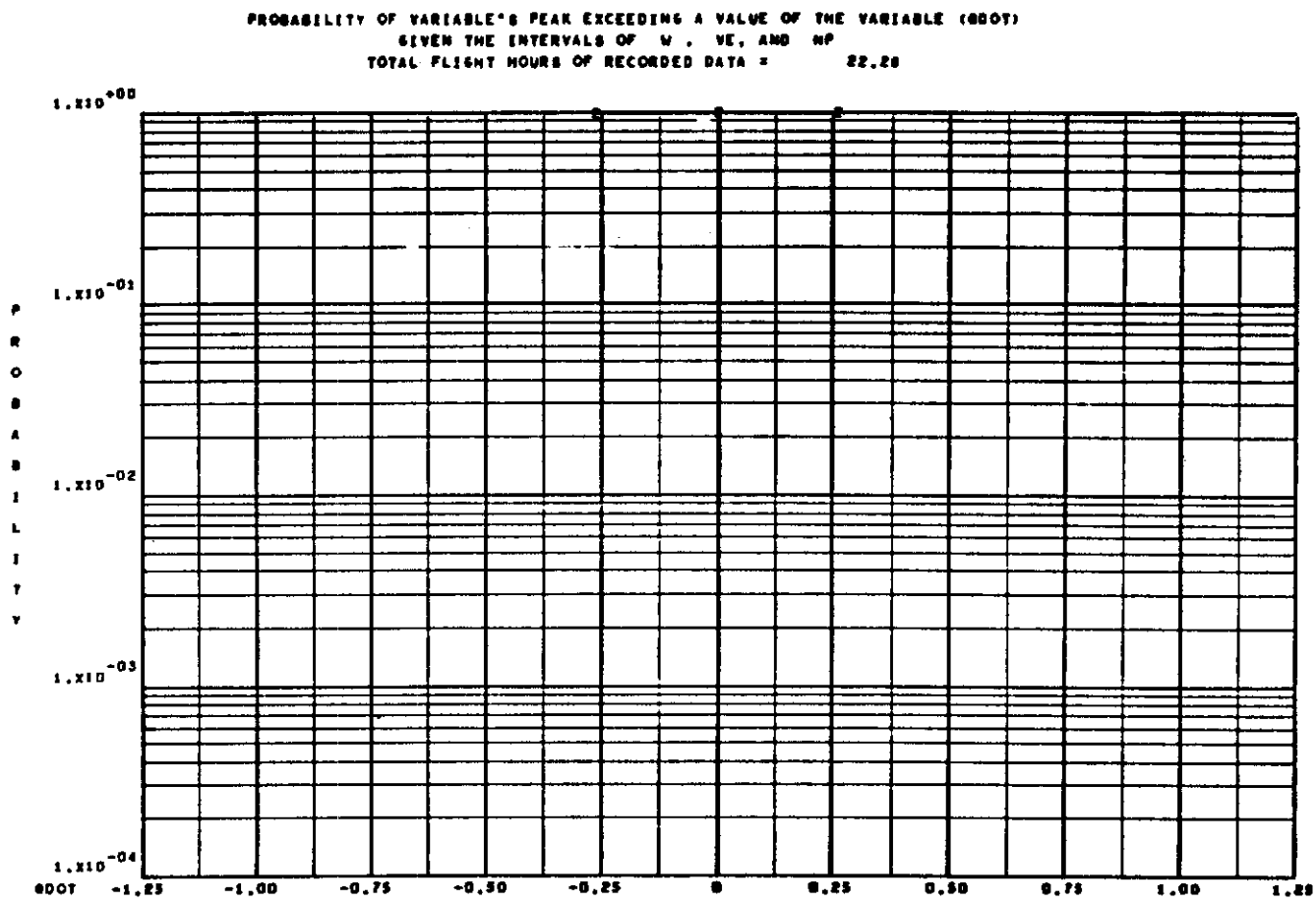
	WEIGHT, W, (POUNDS)			NO. OF PEAKS, (ØDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	4.	2.	2.
2	2	35000.	40000.	6.	0.	6.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 300. TO 350. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 41

Figure 66--Continued



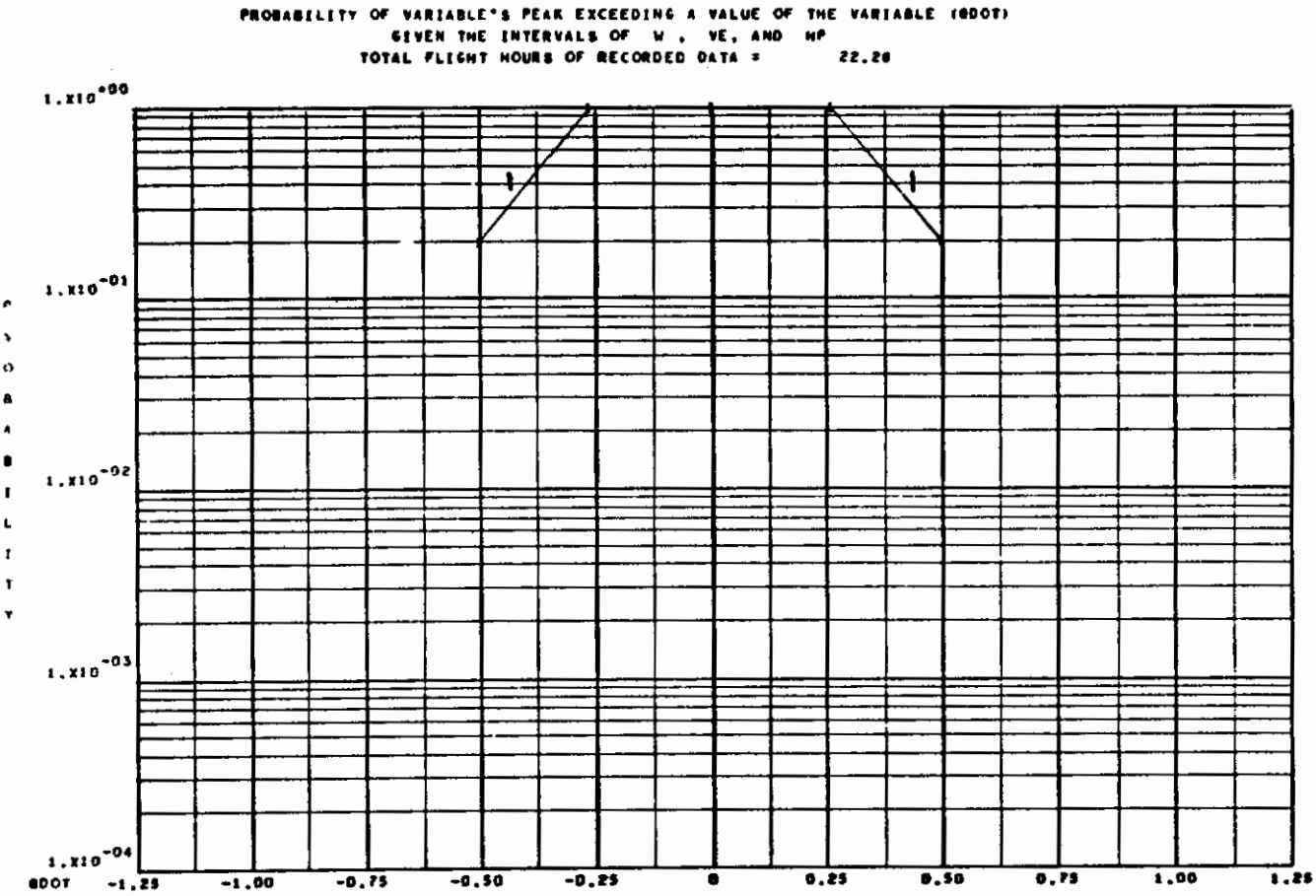
	WEIGHT, W, (POUNDS)			NO. OF PEAKS, (ΘDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	5.	1.	4.
2	2	35000.	40000.	8.	1.	7.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 41

Figure 66--Concluded



PITCHING ACCELERATION, θ DOT (RADIANS/SECOND SQUARED)

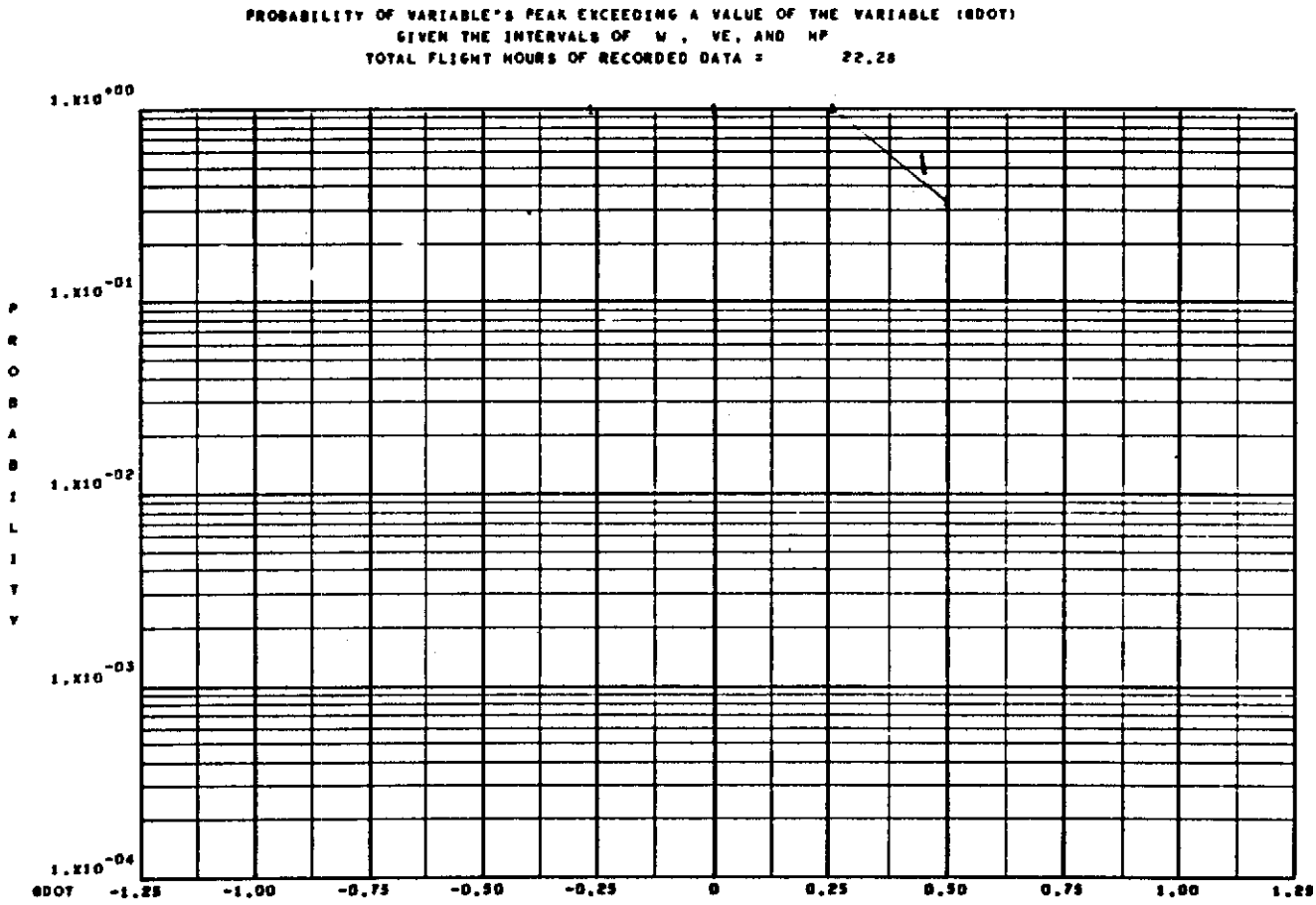
	WEIGHT, W, (POUNDS)			NO. OF PEAKS, (ØDOT)		
SYMBOL	INT.NO.	FROM	TO	TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	10.	5.	5.
2	2	35000.	40000.	5.	1.	4.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 41

Figure 67



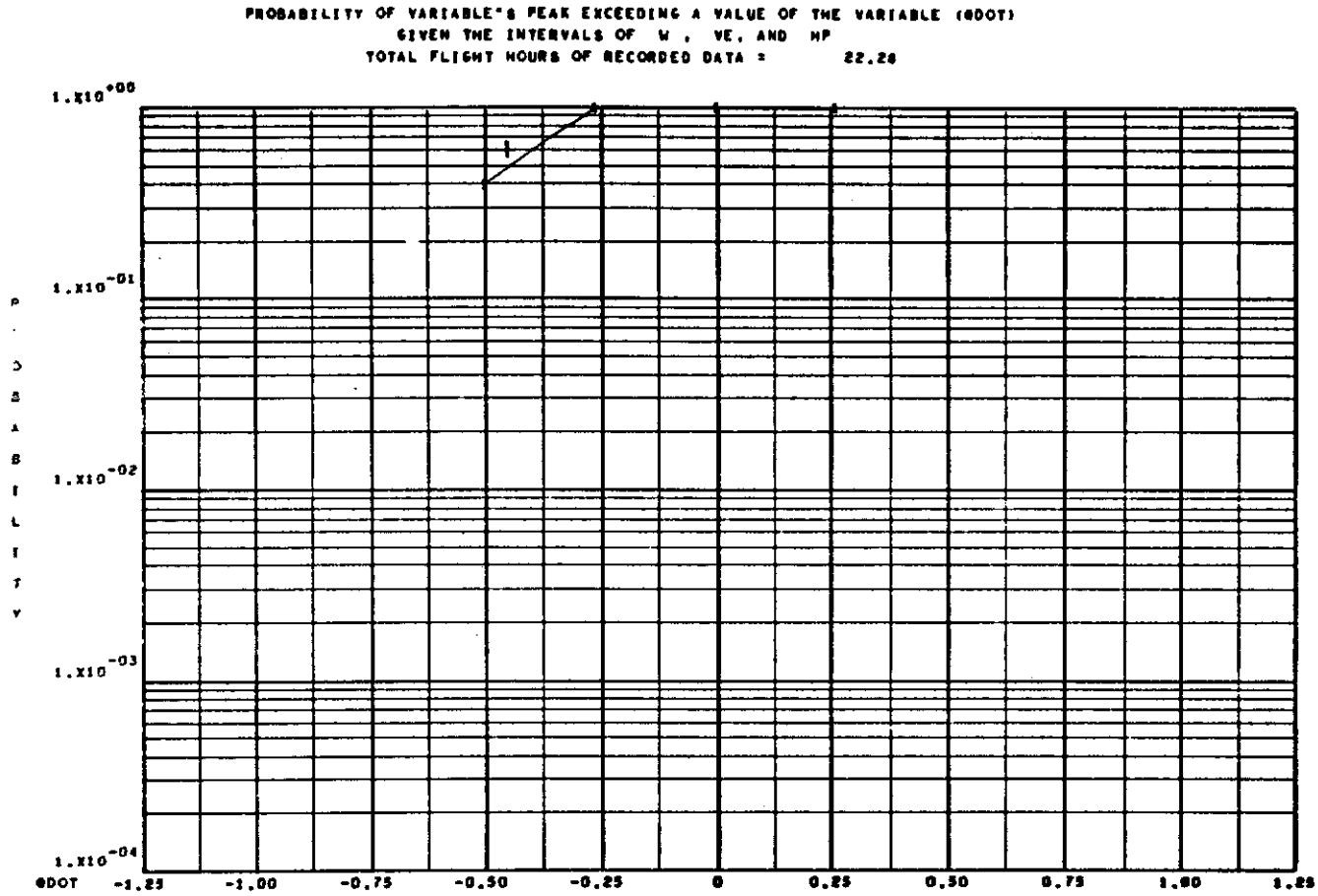
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (ØDOT) TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	12.	9.	3.
2	2	35000.	40000.	3.	1.	2.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

CASE NO. 41

Figure 68



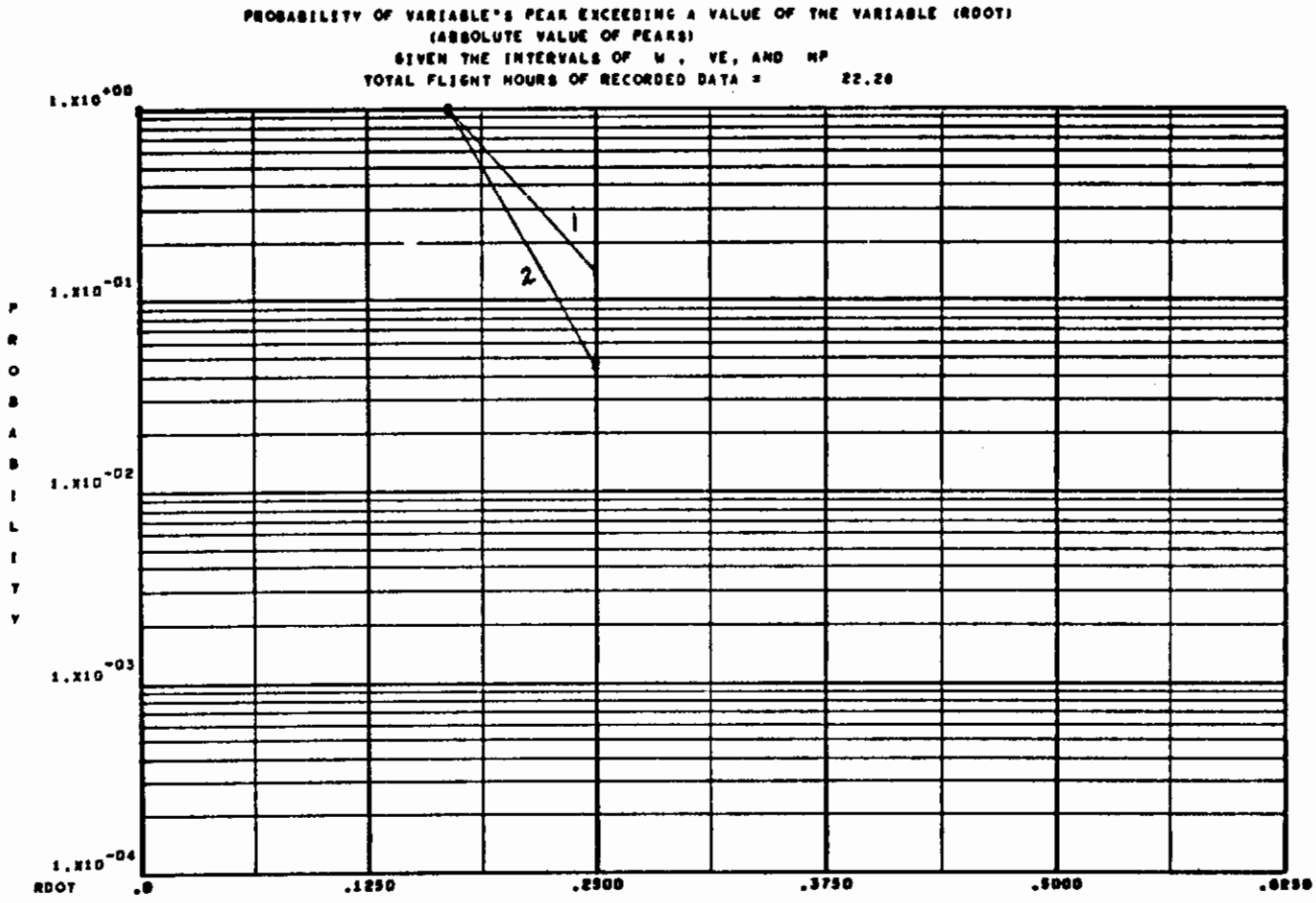
SYMBOL	INT.NO.	WEIGHT, W, (POUNDS) FROM	TO	NO. OF PEAKS, (ΦDOT) TOTAL	NEGATIVE	POSITIVE
1	1	25000.	35000.	11.	5.	6.
2	2	35000.	40000.	0.	0.	0.
3	3	40000.	45000.	0.	0.	0.
4	4	45000.	50000.	0.	0.	0.
5	5	50000.	55000.	0.	0.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 5, FROM 25000. TO 50000. (FEET)

CASE NO. 41

Figure 69



YAWING ACCELERATION, R DOT (RADIANS/SECOND SQUARED)

SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL
1	1	25000.	35000.	7.
2	2	35000.	40000.	22.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 1, FROM 0. TO 2000. (FEET)

Case NO. 46

Figure 69--Concluded

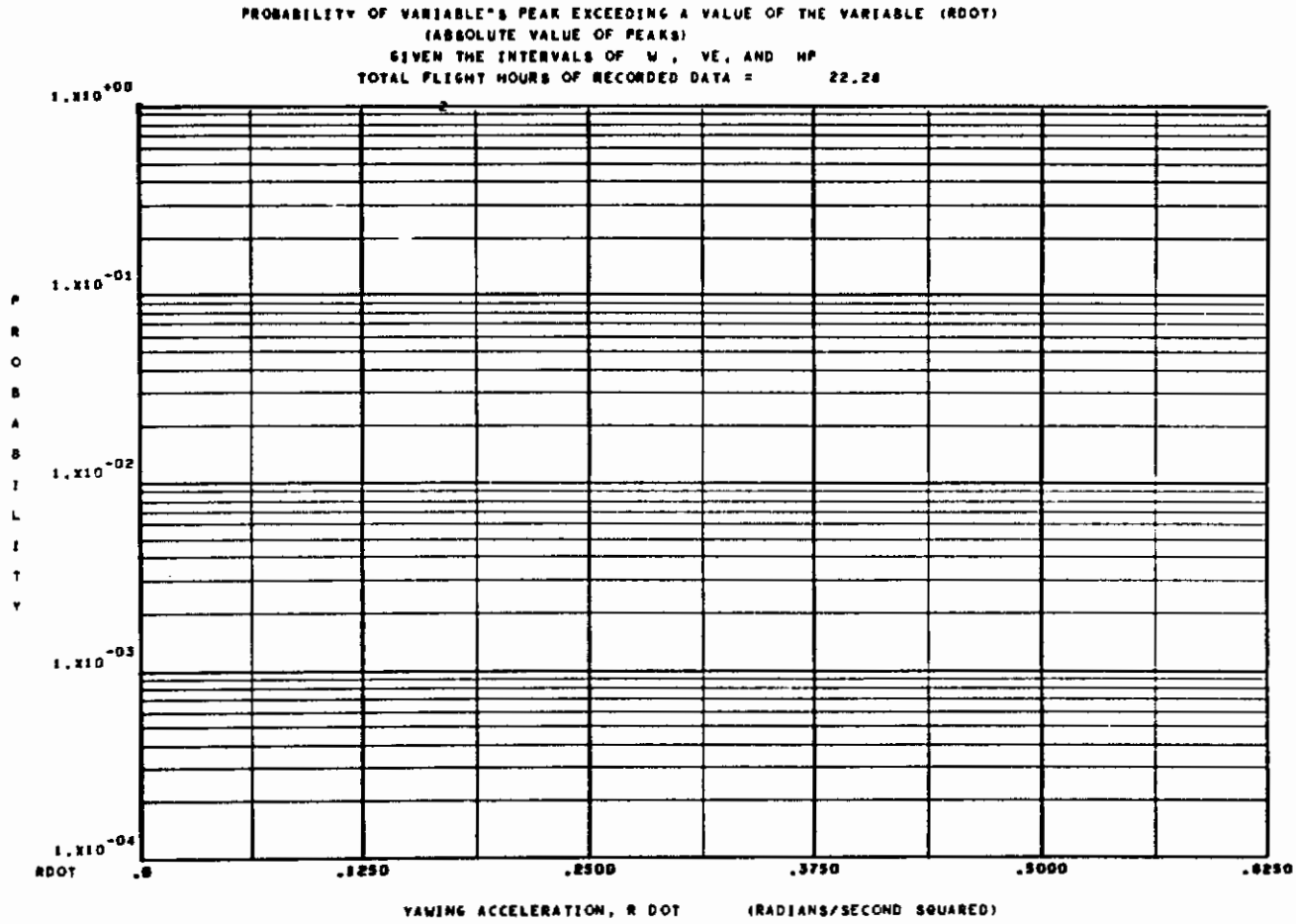
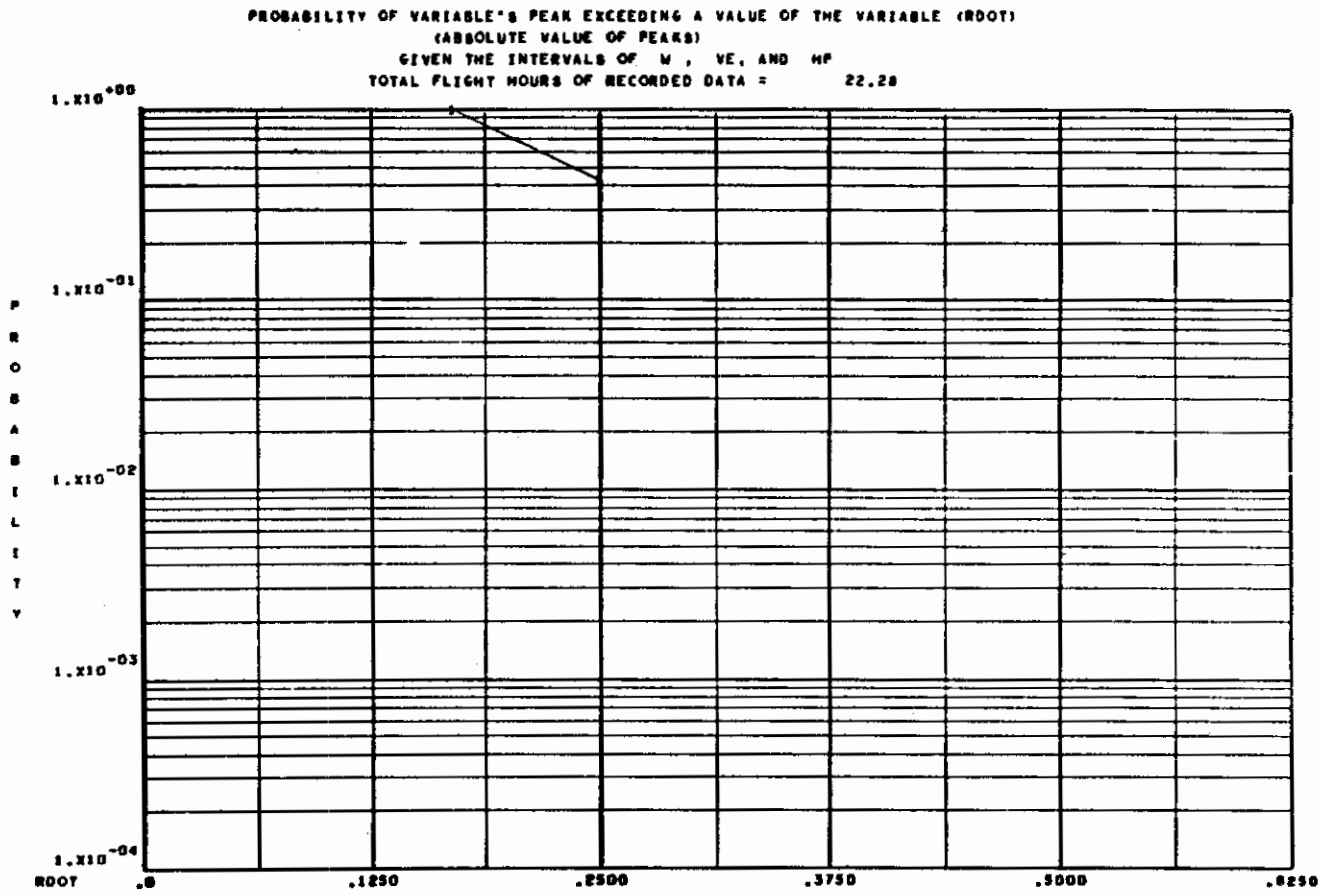


Figure 70



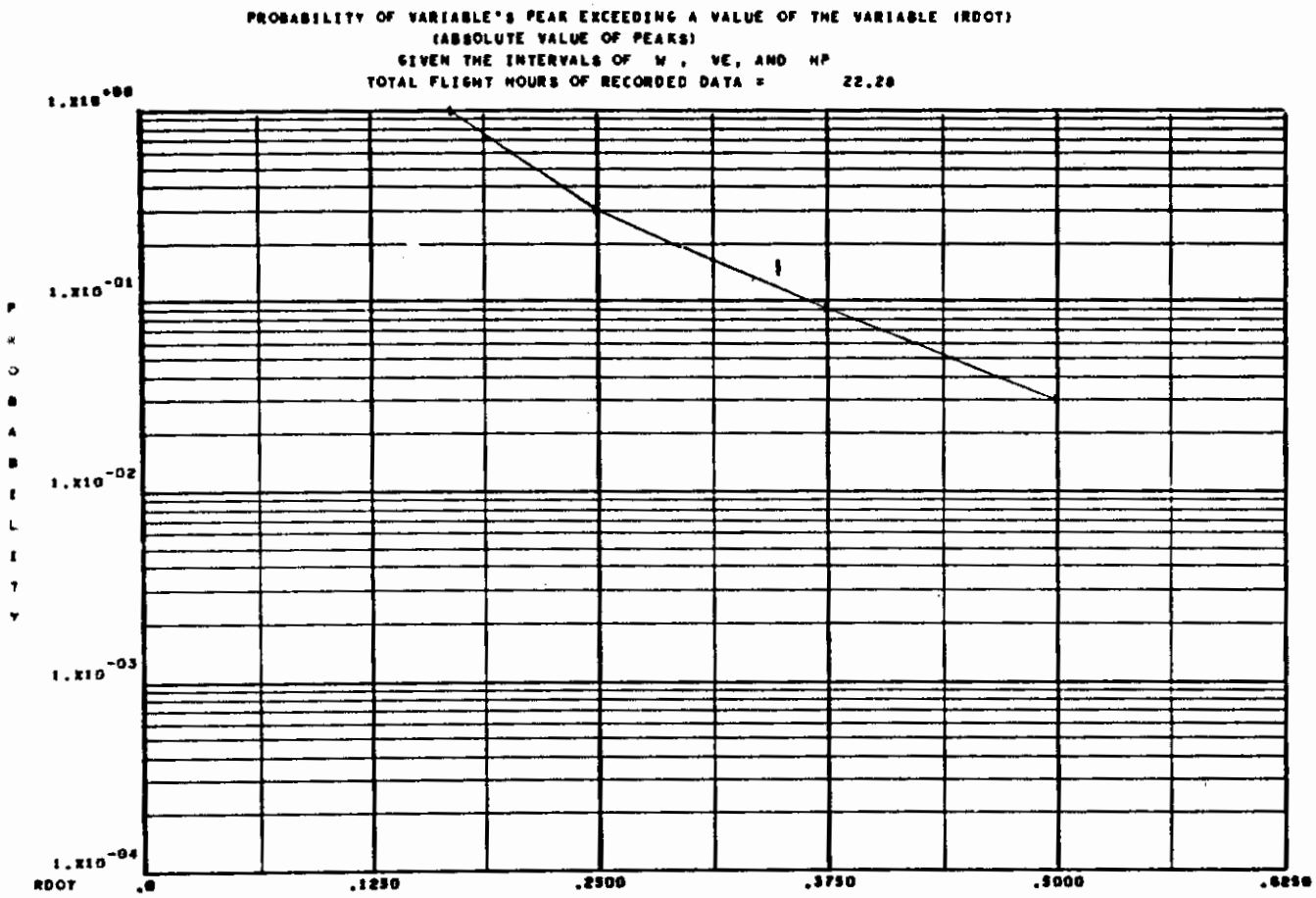
WEIGHT, W, (POUNDS)				NO. OF PEAKS, (RDOT)
SYMBOL	INT.NO.	FROM	TO	TOTAL
1	1	25000.	35000.	14.
2	2	35000.	40000.	3.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 300. TO 350. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

Case NO. 46

Figure 70--Continued



YAWING ACCELERATION, R DOT (RADIANS/SECOND SQUARED)

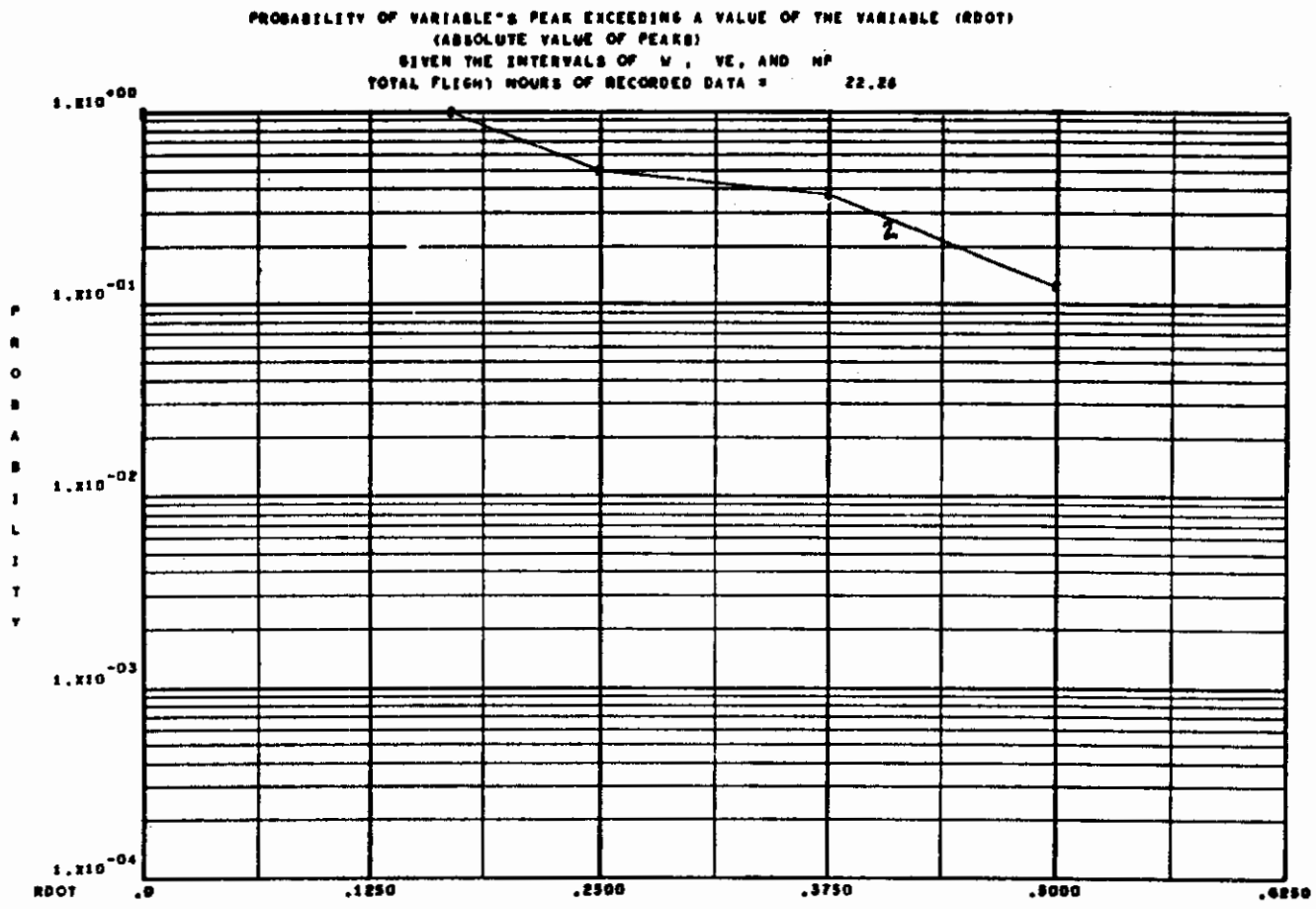
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL
1	1	25000.	35000.	33.
2	2	35000.	40000.	3.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 46

Figure 70--Concluded



YAWING ACCELERATION, R DOT (RADIANS/SECOND SQUARED)

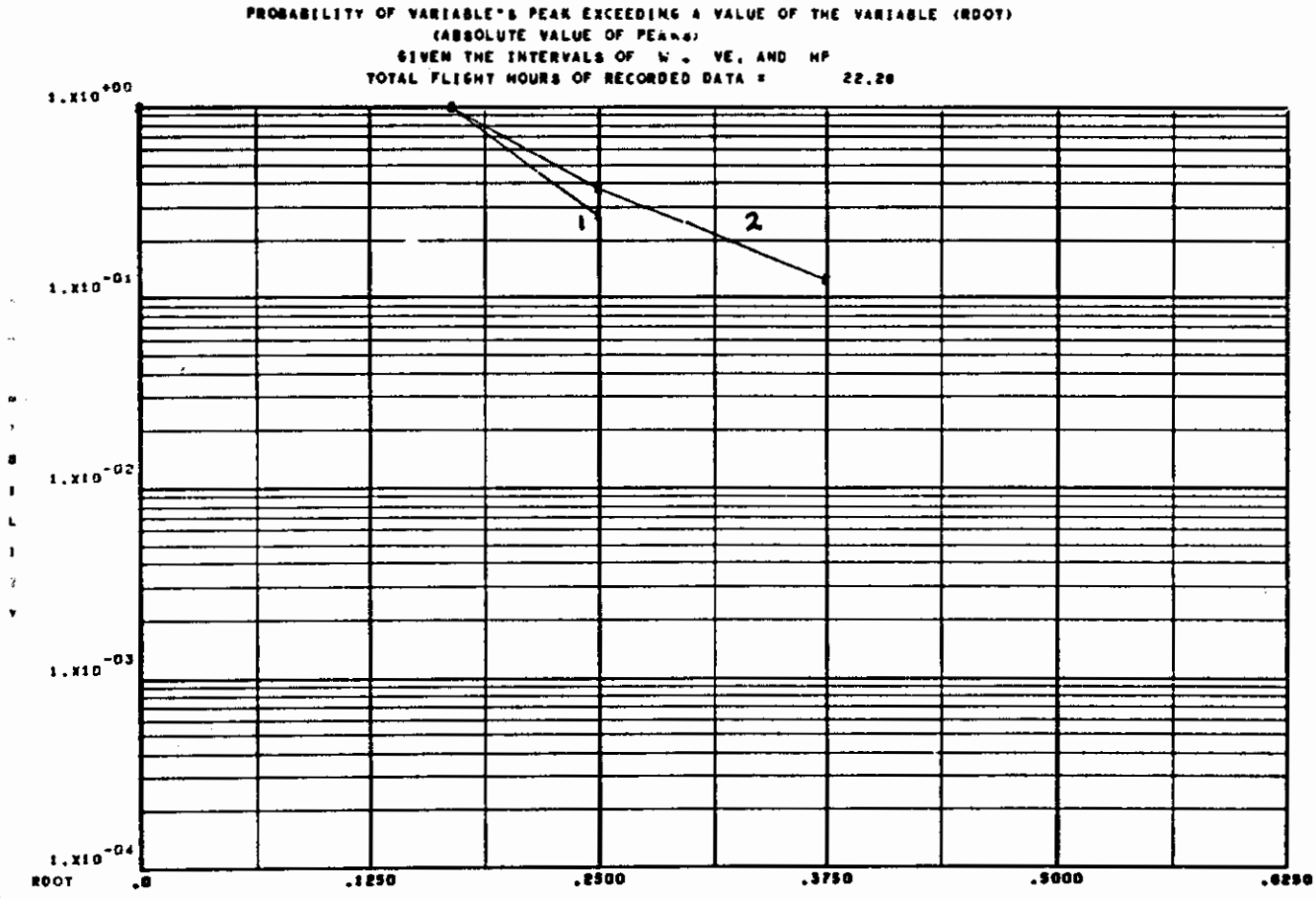
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL
1	1	25000.	35000.	0.
2	2	35000.	40000.	0.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 2, FROM 2000. TO 5000. (FEET)

CASE NO. 46

Figure 71



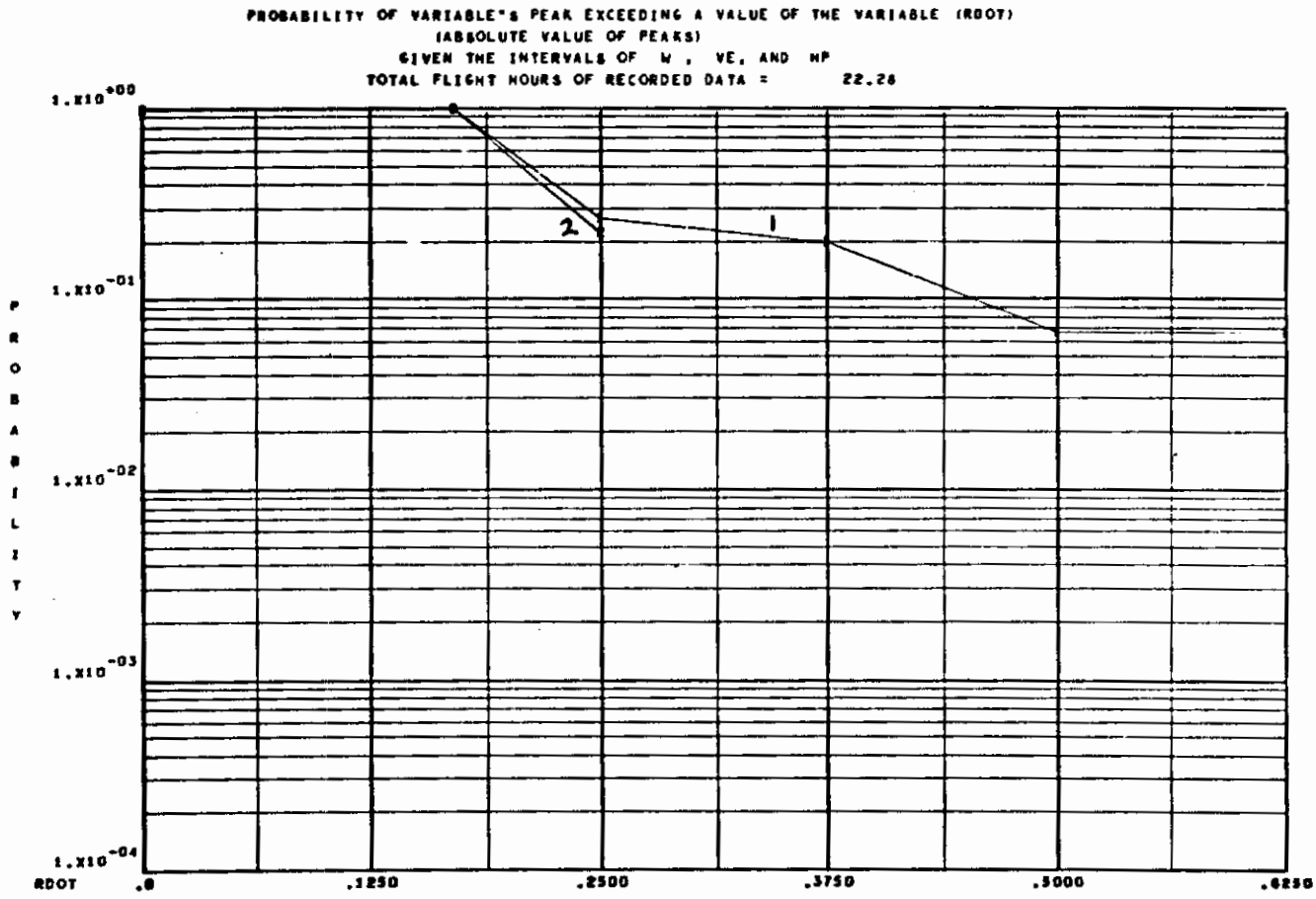
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL
1	1	25000.	35000.	11.
2	2	35000.	40000.	8.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 3, FROM 300. TO 350. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 46

Figure 71--Continued



YAWING ACCELERATION, R DOT (RADIANS/SECOND SQUARED)

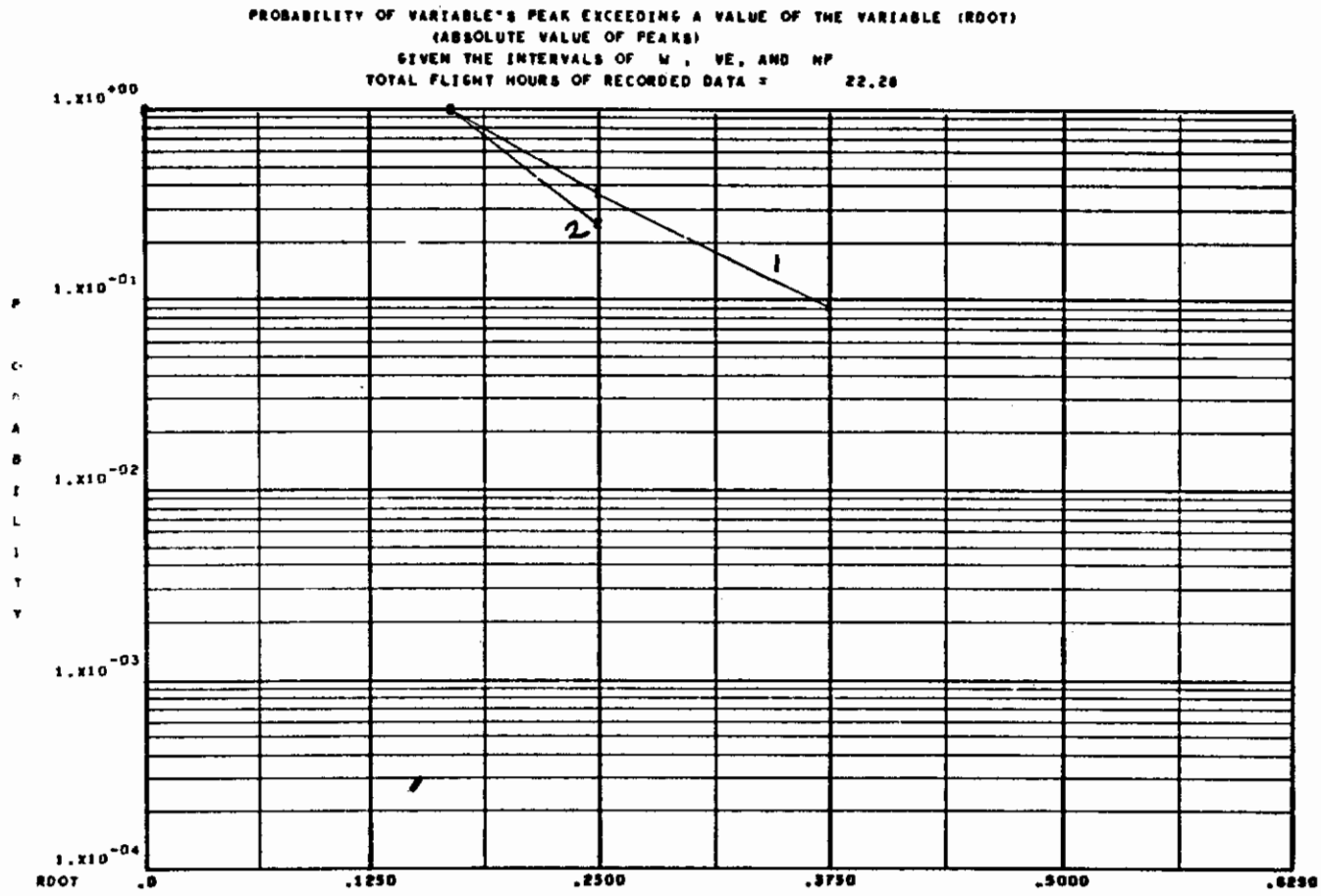
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL
1	1	25000.	35000.	15.
2	2	35000.	40000.	9.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 4, FROM 350. TO 400. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 46

Figure 71--Continued



YAWING ACCELERATION, R DOT (RADIANS/SECOND SQUARED)

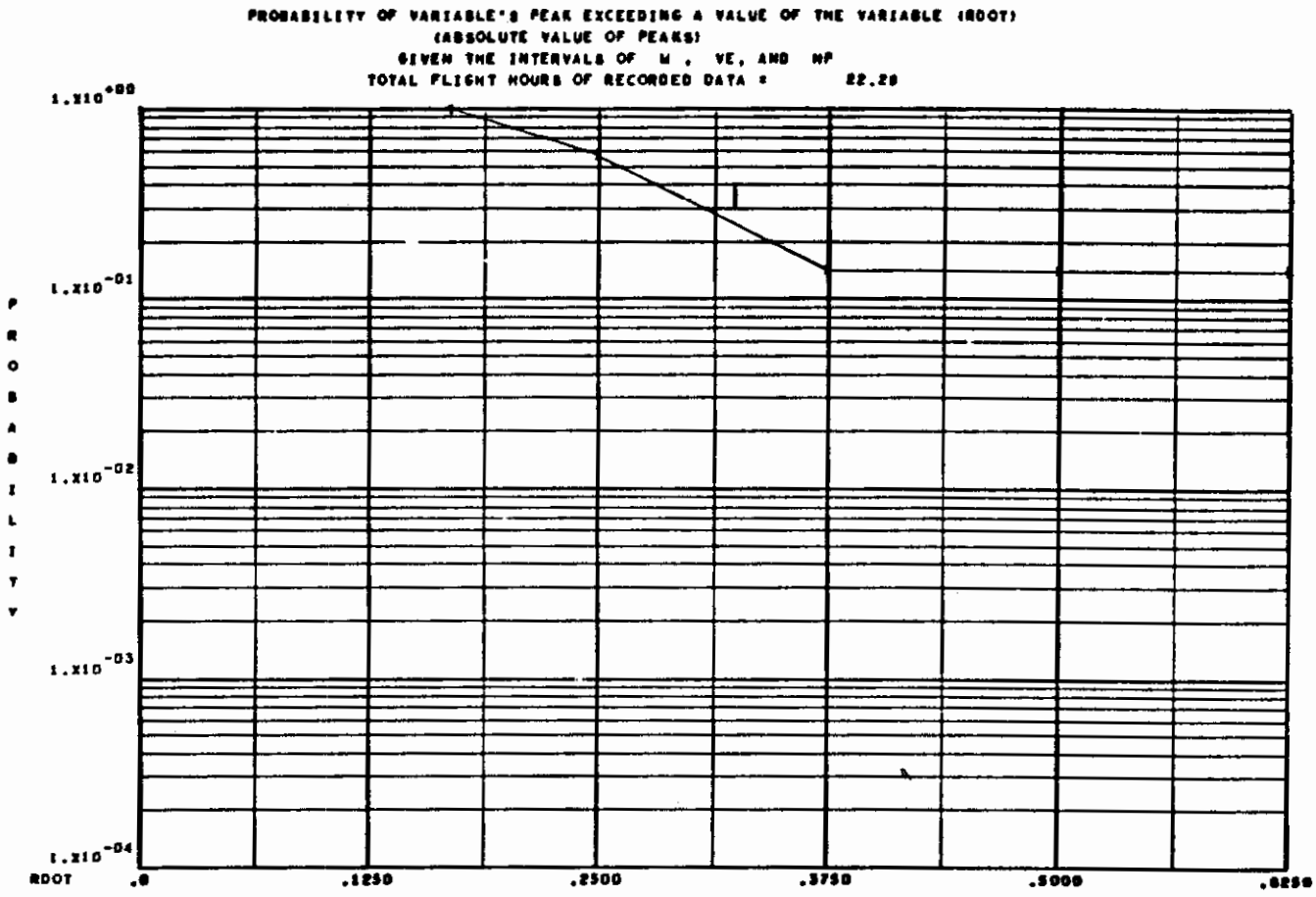
SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL
1	1	25000.	35000.	11.
2	2	35000.	40000.	12.
3	3	40000.	45000.	2.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 5, FROM 5000. TO 15000. (FEET)

CASE NO. 46

Figure 71--Concluded



SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL
1	1	25000.	35000.	7.
2	2	35000.	40000.	1.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 8, FROM 550. TO 600. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 3, FROM 5000. TO 15000. (FEET)

CASE NO. 46

Figure 72

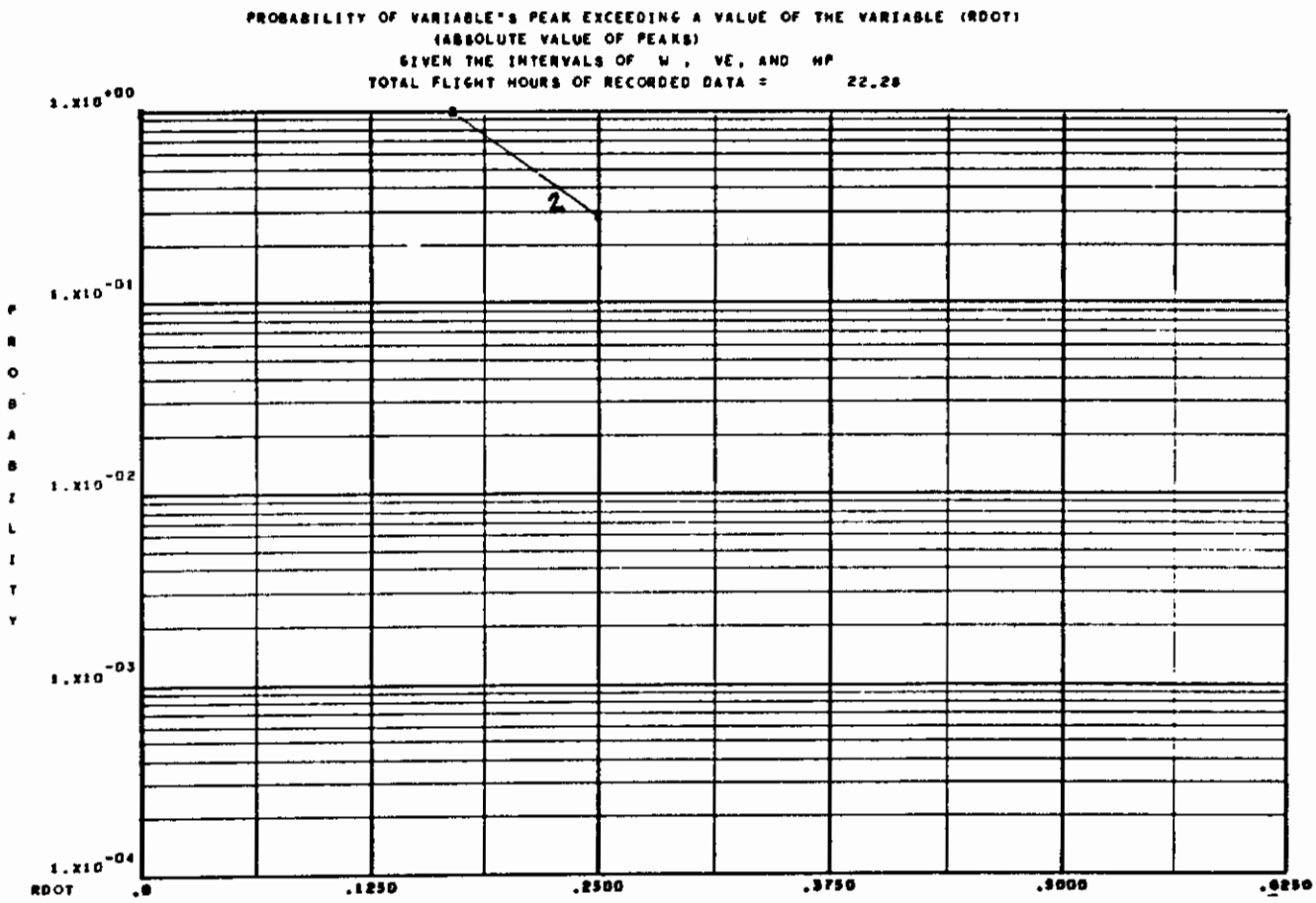
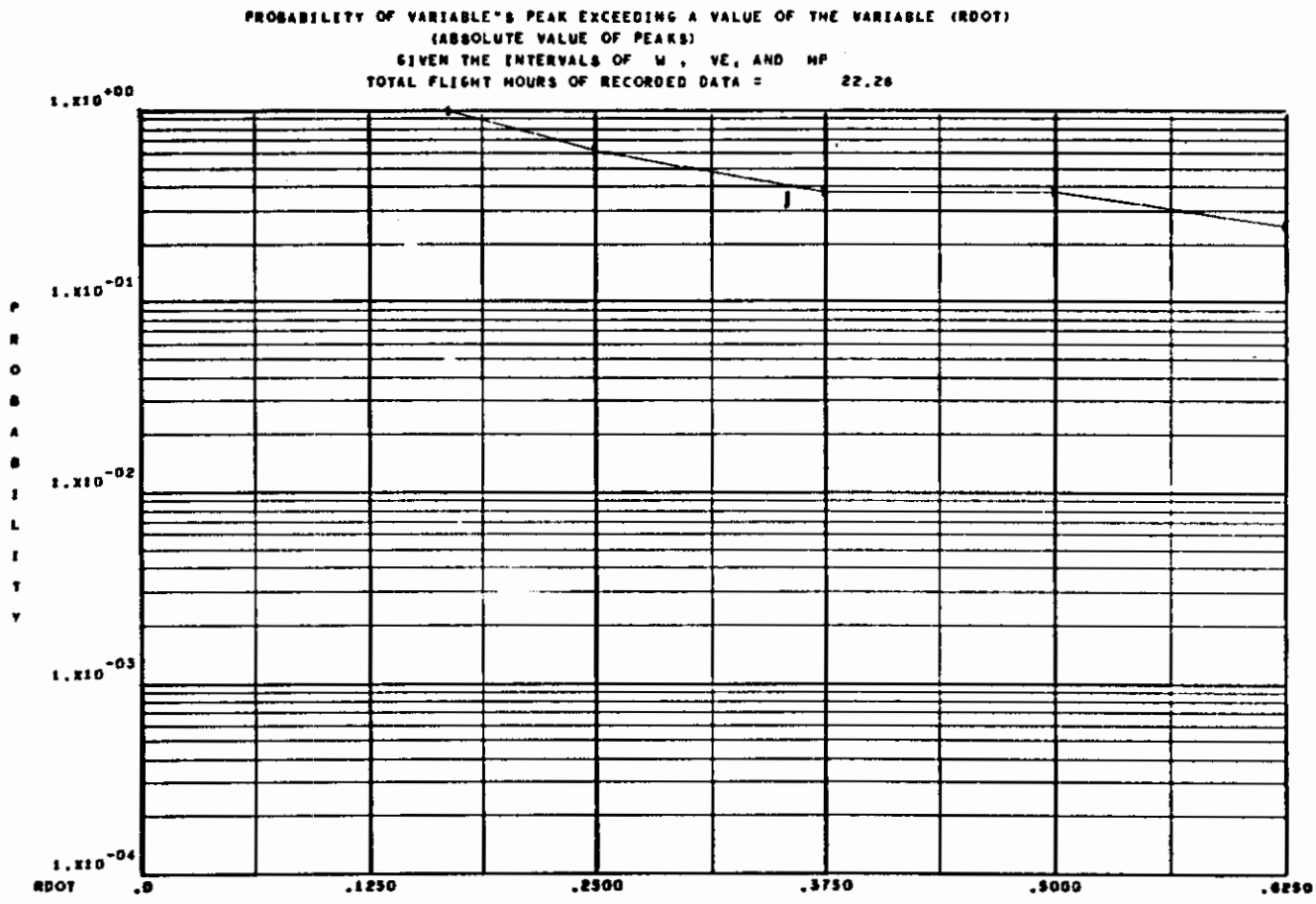


Figure 72--Concluded



SYMBOL	WEIGHT, W, (POUNDS) INT.NO.	FROM	TO	NO. OF PEAKS, (RDOT) TOTAL
1	1	25000.	35000.	8.
2	2	35000.	40000.	0.
3	3	40000.	45000.	0.
4	4	45000.	50000.	0.
5	5	50000.	55000.	0.

VELOCITY, VE, INTERVAL NO. 5, FROM 400. TO 450. (KNOTS)

ALTITUDE, HP, INTERVAL NO. 4, FROM 15000. TO 25000. (FEET)

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13. ABSTRACT

Volume II of this report presents a statistical analysis of 22.8 flight hours of multiparameter flight loads data. These data were obtained during routine training operations with F-105D airplanes at three different Air Force bases. The graphical data presented in this Part I of Volume II are the output from the computer program described in Volume IV of this report. The data are produced by cathode ray tube (CRT) equipment. Part II of Volume II presents the same data in tabular form.

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