NASA TECHNICAL MEMORANDUM

NASA TM X-64897

NORMAL PROBABILITIES FOR VANDENBERG AFB WIND COMPONENTS – MONTHLY REFERENCE PERIODS FOR ALL FLIGHT AZIMUTHS, 0- TO 70-km ALTITUDES

(NASA-TM-X-64897) NORMAL PROBABILITIES FOR VANDENBERG AFB WIND COMPONENTS - MONTHLY REFERENCE PERIODS FOR ALL FLIGHT AZIMUTHS, 0- TO 70-km ALTITUDES (NASA) 172 p HC $6.25 CSCL 04B G3/47 N75-17042 Unclas 09707

By L. W. Falls
Space Sciences Laboratory

January 1975

MAR 1975
INPUT

NASA

George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama

TECHNICAL REPORT STANDARD TITLE PAGE

1. REPORT NO. NASA TM X-64897	2. GOVERNMENT ACCESSION NO.	3. RECIPIENT'S CATALOG NO.
4. TITLE AND SUBTITLE Normal Probabilities for Vandenberg AFB Wind Components — Monthly Reference Periods for All Flight Azimuths, 0- to 70-km Altitudes		5. REPORT DATE January 1975
		6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) L. W. Falls		8. PERFORMING ORGANIZATION REPORT #
9. PERFORMING ORGANIZATION NAME AND ADDRESS George C. Marshall Space Flight Center Marshall Space Flight Center, Alabama 35812		10. WORK UNIT NO.
		11. CONTRACT OR GRANT NO.
12. SPONSORING AGENCY NAME AND ADDRESS National Aeronautics and Space Administration Washington, D.C. 20546		13. TYPE OF REPORT & PERIOD COVERED Technical Memorandum
		14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES

Prepared by Space Sciences Laboratory, Science and Engineering

16. ABSTRACT

This report presents Vandenberg Air Force Base (AFB), California, wind component statistics to be used for aerospace engineering applications that require component wind probabilities for various flight azimuths and selected altitudes. The normal (Gaussian) distribution is presented as a statistical model to represent component winds at Vandenberg AFB. Head-, tail-, and crosswind components are tabulated for all flight azimuths for altitudes from 0 to 70 km by monthly reference periods. Wind components are given for 11 selected percentiles ranging from 0.135 percent to 99.865 percent for each month. The results of statistical goodness-of-fit tests are presented to verify the use of the Gaussian distribution as an adequate model to represent component winds at Vandenberg AFB.

17. KEY WORDS Normal distribution In-flight wind components Statistical analysis Lilliefors KS test	18. DISTRIBUTION STATEMENT Unclassified-unlimited L. W. Falls

19. SECURITY CLASSIF. (of this report)	20. SECURITY CLASSIF. (of this page)	21. NO. OF PAGES	22. PRICE
Unclassified	Unclassified	172	NTIS

MSFC - Form 3292 (Rev December 1972)

For sale by National Technical Information Service, Springfield, Virginia 22151

ACKNOWLEDGMENT

Thanks are due to Mr. Paul Harness, Data Systems Laboratory, and Mr. Dale Johnson, Space Sciences Laboratory, Marshall Space Flight Center, for the computer program work.

TABLE OF CONTENTS

	Page
INTRODUCTION	1
THE NORMAL DISTRIBUTION	2
ANALYSIS	5
CONCLUSIONS	7
REFERENCES	9

LIST OF ILLUSTRATIONS

Figure	Title	Page
1.	Normal distributions with different values of μ and same σ	4
2.	Normal distributions with different values of σ and same μ	4
3.	Range of azimuths for which the published values should be used without interpolation	6

LIST OF TABLES

Table	Title	Page
1.1-1.12	Vandenberg Bivariate Normal Statistics, 90-Degree Flight Azimuth	10-21
2.1-2.12	Vandenberg Head- and Tailwind Components, 30-Degree Flight Azimuth	22-33
3.1-3.12	Vandenberg Right and Left Crosswind Components, 30-Degree Flight Azimuth	34-45
4.1-4.12	Vandenberg Head- and Tailwind Components, 45-Degree Flight Azimuth	46-57
5.1-5.12	Vandenberg Right and Left Crosswind Components, 45-Degree Flight Azimuth	58-69
6.1-6.12	Vandenberg Head- and Tailwind Components, 60-Degree Flight Azimuth	70-81
7.1-7.12	Vandenberg Right and Left Crosswind Components, 60-Degree Flight Azimuth	82-93
8.1-8.12	Vandenberg Head- and Tailwind Components, 75-Degree Flight Azimuth	94-105
9.1-9.12	Vandenberg Right and Left Crosswind Components, 75-Degree Flight Azimuth	106-117
10.1-10.12	Vandenberg Head- and Tailwind Components, 90-Degree Flight Azimuth	118-129
11.1-11.12	Vandenberg Right and Left Crosswind Components, 90-Degree Flight Azimuth	130-141
12.1-12.12	Vandenberg Head- and Tailwind Components, 105-Degree Flight Azimuth	142-153
13.1-13.12	Vandenberg Right and Left Crosswind Components, 105-Degree Flight Azimuth	154-165

TECHNICAL MEMORANDUM X-64897

NORMAL PROBABILITIES FOR VANDENBERG AFB WIND COMPONENTS – MONTHLY REFERENCE PERIODS FOR ALL FLIGHT AZIMUTHS, 0- TO 70-km ALTITUDES

INTRODUCTION

Vandenberg Air Force Base (AFB), California, empirical wind component statistics are presently being used for aerospace engineering applications that require component wind probabilities for various azimuths and selected altitudes. This document replaces the empirical statistics with theoretical statistics using the normal (Gaussian) distribution as a statistical model for component winds for altitudes of from 0 to 70 km at Vandenberg AFB. Tabulations for all months, January through December, are included. The normal distribution was not applied to the annual reference period since this is a heterogeneous sample and should not be represented by a univariate statistical model. If statistics are required for the annual reference period, it is recommended that empirical statistics be used.

Tables 1.1 through 1.12 present bivariate normal statistics for all months for the 90-deg flight azimuth. Tables 2.1 through 13.12 present head- and tailwind components and right and left crosswind components for all altitudes of from 0 through 70 km for flight azimuths ranging from 30 deg to 105 deg in 15-deg increments. Head- and tailwinds are coincident with flight azimuth; right and left crosswinds are orthogonal to flight azimuth. Considering head- and tailwinds for a given flight azimuth, a negative wind indicates a headwind and a positive wind a tailwind. Also, for right and left crosswinds, a negative wind indicates a left crosswind and a positive wind a right crosswind. All wind components are in meters per second. Symmetry allows one to obtain all 15-deg incremental flight azimuths not given in the tables from the following tabulation.

USE OF PUBLISHED STATISTICS TO OBTAIN OTHER FLIGHT AZIMUTHS (α = FLIGHT AZIMUTH)

To Obtain	Headwind	Tailwind	Left Crosswind	Right Crosswind
α = 15 deg	Use α = 105 deg Left Crosswind (-)	Use α = 105 deg Right Crosswind (+)	Use α = 105 deg Tailwind (+)	Use α = 105 deg Headwind (-)
α = 360 deg	Use α = 90 deg Left Crosswind (-)	Use α = 90 deg Right Crosswind (+)	Use α = 90 deg Tailwind (+)	Use α = 90 deg Headwind (-)
α = 120 deg	Use α = 30 deg Right Crosswind (+)	Use α = 30 deg Left Crosswind (-)	Use α = 30 deg Headwind (-)	Use α = 30 deg Tailwind (+)
α = 135 deg	Use α = 45 deg Right Crosswind (+)	Use α = 45 deg Left Crosswind (-)	Use α = 45 deg Headwind (-)	Use α = 45 deg Tailwind (+)
α = 150 deg	Use α = 60 deg Right Crosswind (+)	Use α = 60 deg Left Crosswind (-)	Use α = 60 deg Headwind (-)	Use α = 60 deg Tailwind (+)
α = 165 deg	Use α = 75 deg Right Crosswind (+)	Use α = 75 deg Left Crosswind (-)	Use α = 75 deg Headwind (-)	Use α = 75 deg Tailwind (+)
α = 180 deg	Use α = 90 deg Right Crosswind (+)	Use α = 90 deg Left Crosswind (-)	Use α = 90 deg Headwind (-)	Use α = 90 deg Tailwind (+)
α = 195 deg	Use α = 105 deg Right Crosswind (+)	Use α = 105 deg Left Crosswind (-)	Use α = 105 deg Headwind (-)	Use α = 105 deg Tailwind (+)

THE NORMAL DISTRIBUTION

The normal distribution has many advantages for use as a statistical model to represent random variables. It is the best known and most useful distribution in mathematical statistics. Its probability density function is

$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} \exp\left[-\frac{(x-\mu)^2}{2\sigma^2}\right] ,$$

$$-\infty < x < \infty \quad , \quad -\infty < \mu < \infty \quad , \quad \sigma > 0 \quad , \tag{1}$$

where μ and σ are location and scale parameters, respectively, of the distribution; μ is the mean and σ is the standard deviation. Normal distributions with different values of μ and a common σ, and with different values of σ for a common μ, are shown in Figures 1 and 2, respectively. All normal distributions are symmetric and have the same bell-type shape.

The cumulative normal distribution function is

$$F(x) = \frac{1}{\sigma\sqrt{2\pi}} \int_{-\infty}^{x} \exp\left[-\frac{(z-\mu)^2}{2\sigma^2}\right] dz \quad . \tag{2}$$

The distribution function [equation (2)] gives the probability of a randomly selected value from a normal distribution with parameters μ and σ being less than or equal to x. This cumulative probability is the "cumulative percentage probability" or "percentiles" given in the tables. The random variable x (wind components in meters per second) is given in the body of the tables. To relate percentiles to the normal distribution function, one may use:

Normal Distribution	Percentile
Mean - 3 standard deviations	0.135
Mean - 2 standard deviations	2.280
Mean - 1 standard deviation	15.900
Mean	50.000
Mean + 1 standard deviation	84.100
Mean + 2 standard deviations	97.720
Mean + 3 standard deviations	99.865

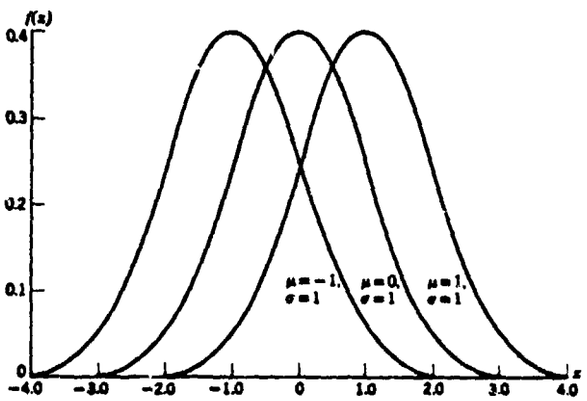


Figure 1. Normal distributions with different values of μ and same σ.

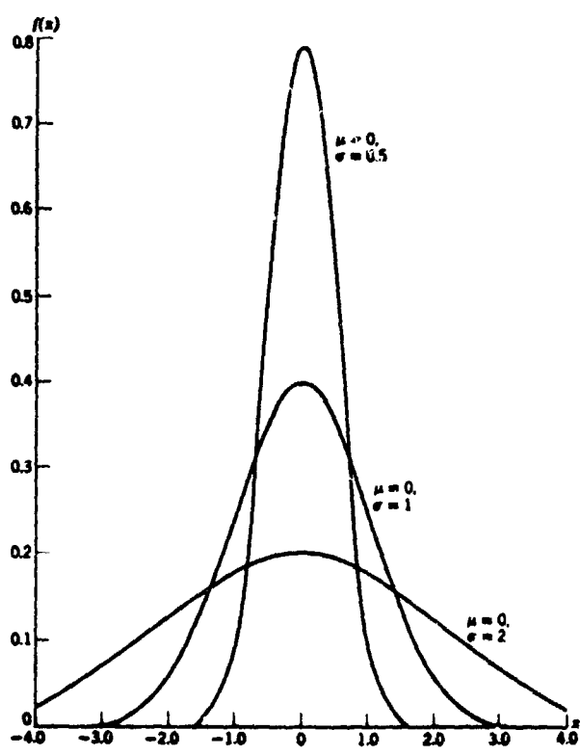


Figure 2. Normal distributions with different values of σ and same μ.

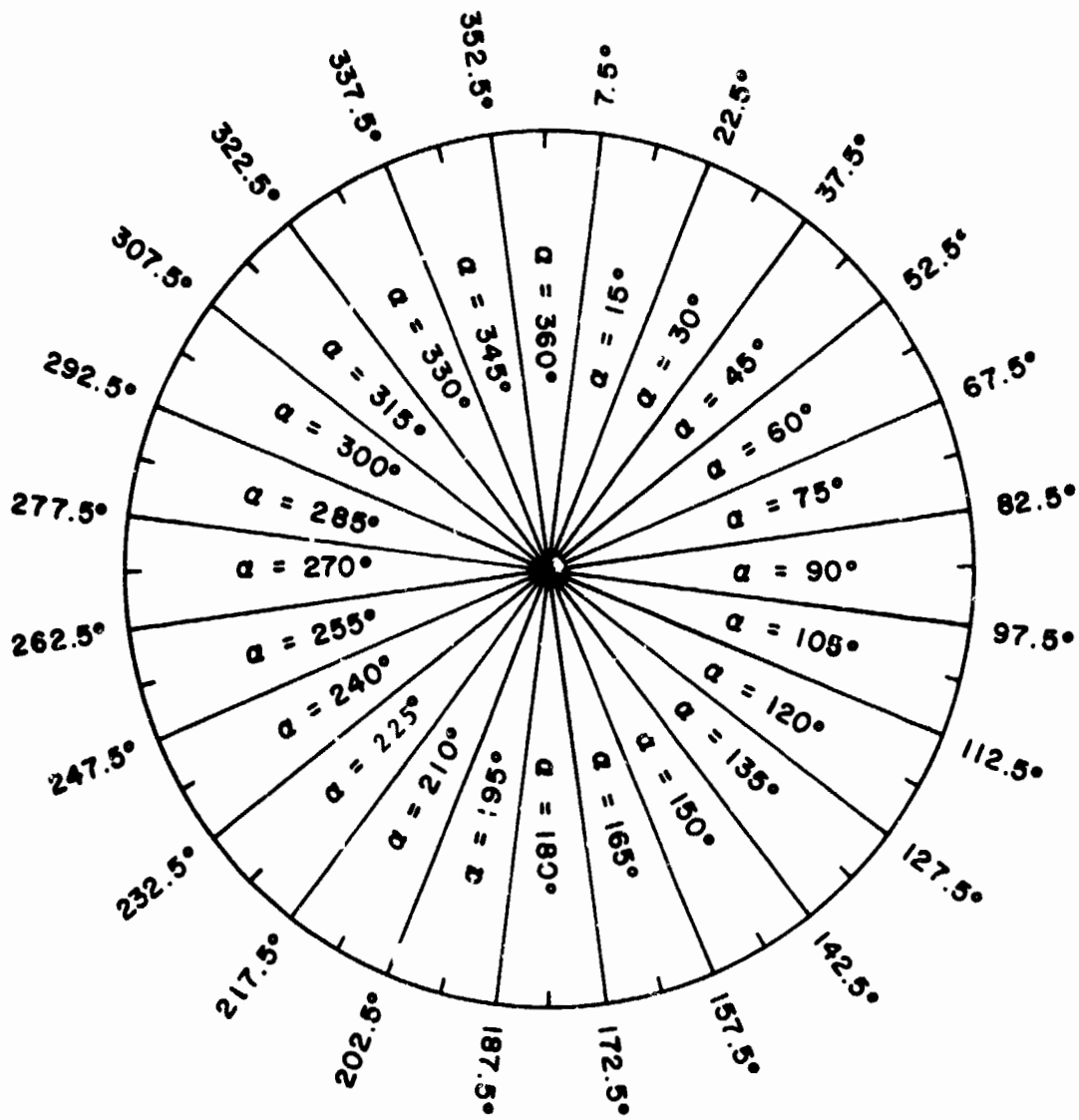
ANALYSIS

Two data samples were used in this analysis. The sample for altitudes of from 0 to 27 km consists of 8 years of serially complete radiosonde observations taken twice daily. The period of record is from January, 1965, to December, 1972. The data sample for altitudes of from 28 to 70 km consists of all rocketsonde observations currently available for Point Mugu, California. Point Mugu is the closest rocketsonde observation site to Vandenberg AFB. The period of record is from May 27, 1959, to September 11, 1967.

Figure 3 shows the range of azimuths for which the tables in this report may be used. All data used in this study were recorded as vector winds (wind speed and corresponding direction). The vector winds were subsequently resolved into components along the azimuths α = 90 deg and α = 360 deg (true north).

The bivariate normal statistics for all months for the 90-deg flight azimuth (α = 90 deg) are given in Tables 1.1 through 1.12. For this flight azimuth, the standard meteorological notation defines u as the zonal wind component and v as the meridional wind component. In this study, u is the headwind component while v is the crosswind component. The sample estimates of the theoretical mean μ are $\bar{u}$ and $\bar{v}$. The sample estimates of the theoretical standard deviation σ are S(u) and S(v). R(uv) is the sample estimate of the theoretical correlation coefficient between u and v, S(uv) is the covariance of u and v, and N is the sample size.

Available rocketsonde data above 60 km were considered to be too sparse to give valid representative statistics for this study. For this reason, linear interpolations for the required statistics (Tables 1.1 through 1.12) were made from 60 km to estimates of the parameters at 70 km. The estimates of the means $\bar{u}$ and $\bar{v}$ at 70 km were made using the profile of strongest monthly 50th percentiles. This profile established a strongest monthly 50th percentile at 60 km and another at 70 km. The means for each month were assumed to decrease with altitude at the same rate as these two means decreased with altitude. The monthly standard deviations S(u) and S(v) at 70 km were estimated by choosing the magnitudes of the standard deviations below 60 km that corresponded to the estimated values of the means at 70 km. For example, if the estimated mean at 70 km was 27 m/sec, then the standard deviation below 60 km that corresponds to a mean of 27 m/sec was used for the standard deviation at 70 km. The correlation coefficient R(uv) above 60 km was assumed to be zero because of lack of data and because the general trend of the correlation coefficient with increasing altitude appeared to be approaching zero.



(NOTE: IF THE DESIRED FLIGHT AZIMUTH FALLS ON A LINE OF SEPARATION, CHOOSE THE α TOWARDS THE E-W AXIS. DIRECTION AZIMUTHS ARE WITH REFERENCE TO TRUE NORTH.)

Figure 3. Range of azimuths for which the published values should be used without interpolation.

The five statistics, $\bar{u}$, $\bar{v}$, $S(u)$, $S(v)$ and $R(uv)$, completely define a bivariate normal elliptical distribution. Using these five parameters at azimuth α = 90 deg, the statistics for any rotation of axes of the bivariate normal surface may be obtained [1]. This method was used to compute the means and standard deviations required for the normal distribution at the other required azimuths α = 30, 45, 60, 75, and 105 deg.

The Kolmogorov-Smirnov (KS) test was used to determine goodness of fit in this study for a number of reasons. This test is superior to the familiar Chi-Square (χ^2) test in several ways. When samples are of moderate size and adjacent categories must be combined before χ^2 may properly be computed, the χ^2 test is definitely less powerful than the KS test. For the χ^2 test, when adjacent categories must be combined, one is sometimes faced with the impossible problem of zero or negative degrees of freedom for the test, which means simply that no valid test exists. For very small samples, the χ^2 test is not appropriate at all, but the KS test is. Siegel [2] states that "the Kolmogorov-Smirnov test may in all cases be more powerful than its alternative, the χ^2 test." Standard tables used for the KS test are valid when testing whether or not a set of observations is from a completely specified continuous distribution. If parameters must be estimated from the sample, as in our case, then the standard tables are no longer valid. Standard tables would give "conservative" results; i.e., conservative in the sense that some distributions would not be rejected at the chosen significance level when they should be rejected. Lilliefors [3] has developed tables of critical values for the KS test when testing for normality in the case when the parameters are estimated from the sample. Lilliefors' tables were used in this study for determining goodness of fit.

CONCLUSIONS

Care must be exercised in making decisions about which is a "best" model for a random variable. The question is not "Do the data come from some specified distribution?" because one can never be sure they do, but rather "Is some specified distribution a reasonable model for the description of the data?" If the physical constraints for the random variable are satisfied by a hypothetical distribution and after repeated sampling of this random variable it is found that the hypothetical distribution cannot be rejected by an appropriate statistical test, then one may reach the conclusion that this hypothetical distribution is an adequate model for the random variable under investigation.

Wind velocity components are variables that are unbounded at both ends. This constraint is satisfied by the normal distribution whose domain is from minus infinity to plus infinity. As mentioned previously, the use of the Gaussian model has many advantages. For example, if the wind components u and v are normally distributed, the scalar wind,

$$w = (u^2 + v^2)^{1/2} \quad ,$$

has a noncentral chi distribution. From a theoretical point of view, this property of the normal distribution illustrates one of its many advantages as a statistical model to represent random variables.

The empirical wind component distributions for Vandenberg AFB for all months for altitudes of from 0 to 70 km were tested using Lilliefors' [3] Kolmogorov-Smirnov goodness-of-fit statistic to determine whether the normal distribution could be rejected as a reasonable model for the data. Results of tests on distributions above 60 km cannot be considered significant because of lack of data. It was found that 75 percent of the distributions tested could not be rejected at the 5-percent rejection level (95-percent confidence level). The percentage of distributions not rejected as normal could be increased to above 90 percent if the rejection level was decreased to [illegible] percent rather than using the "customary" 5-percent rejection level. Hence, one may reach the conclusion that the normal distribution provides a reasonable model for wind components at Vandenberg AFB.

REFERENCES

1. Falls, L.W.; and Crutcher, H.L.: Determination of Statistics for Any Rotation of Axes of a Bivariate Normal Elliptical Distribution. NASA TM X-64595, 1971.

2. Siegel, Sidney: Nonparametric Statistics. McGraw-Hill Book Co., New York, 1956.

3. Lilliefors, Hubert W.: On the Kolmogorov-Smirnov Test for Normality with Mean and Variance Unknown. Journal of the American Statistical Association, Vol. 62, No. 318, June 1967, pp. 399-402.

TABLE 1.1. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

JANUARY

Alt (km)	$\bar{u}$	$\bar{v}$	S(u)	S(v)	S(uv)	R(uv)	N
0	.91	-.57	7.91	3.91	-4.46	-.4493	495
1	.91	-1.64	9.28	6.98	2.91	.0986	
2	3.18	-2.69	5.81	7.52	5.91	.1353	
3	5.89	-3.16	7.72	8.26	14.70	.2305	
4	8.19	-3.27	9.47	9.09	20.54	.2384	
5	10.95	-3.17	11.29	10.29	30.92	.2691	
6	12.22	-3.34	12.71	11.38	40.29	.2782	
7	13.93	-3.78	14.88	12.59	50.11	.2827	
8	15.75	-4.09	15.77	13.98	60.16	.2729	
9	17.82	-4.62	17.29	15.32	64.76	.2495	
10	20.13	-4.93	18.79	16.59	71.60	.2297	
11	22.94	-4.99	19.98	17.06	71.34	.2093	
12	24.60	-5.11	19.16	16.87	57.30	.1841	
13	23.95	-4.95	16.21	13.27	50.18	.2333	
14	22.28	-4.01	14.03	11.26	46.46	.2941	
15	19.59	-3.68	11.58	9.77	34.59	.3079	
16	16.71	-3.34	10.82	8.42	28.61	.3391	
17	13.46	-3.10	8.79	6.73	20.10	.3398	
18	10.02	-3.10	7.48	5.59	13.75	.3318	
19	6.68	-3.09	7.08	4.87	12.83	.3721	
20	3.91	-3.07	7.22	4.22	9.46	.3104	
21	1.95	-3.01	7.26	3.98	7.54	.2609	
22	.35	-3.07	7.38	3.56	9.65	.3266	
23	-.69	-3.04	8.35	4.01	11.87	.3546	
24	-.89	-2.89	9.54	4.29	16.44	.4018	
25	-1.03	-2.51	10.71	4.47	19.12	.3993	
26	-.73	-2.68	11.40	4.80	22.72	.4081	
27	.19	-2.88	12.81	5.54	33.20	.4678	495
28	2.65	-1.47	14.95	7.75	95.79	.7285	71
29	3.39	-1.32	17.86	8.53	111.54	.7329	72
30	4.04	-1.44	18.39	9.10	124.72	.7455	75
31	5.09	-1.02	18.62	10.07	140.84	.7517	76
32	6.26	-.46	19.15	11.19	157.15	.7367	75
33	6.99	.46	19.62	12.21	179.25	.7485	75
34	8.36	1.18	20.98	13.44	206.02	.7352	73
35	10.00	1.36	22.58	14.25	209.67	.534	74
36	11.79	1.33	24.89	14.85	237.81	.934	74
37	14.62	1.86	27.36	15.31	253.81	.040	75
38	17.60	2.10	29.55	15.57	256.53	.5578	75
39	20.38	2.94	31.67	16.07	273.73	.5379	75
40	23.98	3.93	33.20	16.94	311.04	.5531	76
41	29.25	5.75	35.00	16.59	293.96	.5082	77
42	34.37	7.32	35.87	16.33	260.67	.4415	77
43	38.90	8.93	36.87	15.63	221.36	.4014	77
44	42.09	9.40	37.51	15.33	238.06	.4014	78
45	45.82	11.13	37.99	16.41	299.69	.3783	78
46	48.34	12.28	37.65	16.60	297.02	.4781	77
47	51.74	13.47	36.73	16.41	319.18	.5294	76
48	54.29	14.51	36.17	17.11	336.60	.5440	75
49	58.39	16.11	35.59	18.57	359.75	.5346	72
50	61.05	16.91	35.56	18.07	348.00	.5416	70
51	63.36	16.19	35.64	17.55	353.05	.5645	69
52	67.70	16.90	32.89	16.83	265.68	.4918	66
53	68.98	16.96	30.33	17.21	242.22	.5022	62
54	69.39	16.38	29.51	17.09	255.68	.5068	57
55	69.14	16.31	29.25	15.65	227.10	.4959	53
56	74.71	19.17	26.57	13.83	153.77	.4184	45
57	75.87	17.78	24.97	14.84	188.72	.4490	39
58	82.00	17.76	28.49	15.07	225.34	.5622	34
59	84.00	16.07	30.70	14.88	293.03	.5622	30
60	86.00	18.84	32.76	14.50	283.15	.5237	26
61	83.50	18.10	32.90	14.50	.00	.0000	23
62	81.90	17.30	32.10	14.90	.00	.0000	18
63	80.90	16.50	31.80	14.90	.00	.0000	16
64	78.80	15.70	31.50	14.30	.00	.0000	13
65	77.30	14.90	31.10	14.30	.00	.0000	9
66	75.70	14.10	30.80	14.20	.00	.0000	3
67	74.20	13.90	30.50	14.20	.00	.0000	2
68	72.60	12.40	30.20	14.10	.00	.0000	2
69	71.10	11.80	29.80	14.10	.00	.0000	1
70	69.50	11.00	29.50	14.00	.00	.0000	0

TABLE 1.2. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

FEBRUARY

Alt (km)	$\bar{u}$	$\bar{v}$	$\sigma(u)$	$\sigma(v)$	$\sigma(uv)$	$\rho(uv)$	N
[illegible]	.77	-1.02	3.06	3.26	-5.39	-.5383	452
1	.23	-2.67	[illegible]	7.32	-6.08	[illegible]	
2	2.10	-2.90	5.49	8.48	-7.28	-.1605	
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
4	7.33	-3.39	8.13	10.59	-2.60	-.0325	
5	9.45	-3.96	9.99	11.56	[illegible]	[illegible]	
6	11.42	-3.99	13.53	12.69	8.83	.0681	
7	13.57	-3.69	11.93	14.00	18.28	.1183	
8	15.71	-4.46	13.59	15.14	33.96	.1891	
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
10	20.57	-5.08	17.42	17.54	64.69	[illegible]	
11	23.33	-5.82	[illegible]	17.34	79.84	[illegible]	
12	25.[illegible]	-4.52	16.07	15.65	78.32	[illegible]	
13	[illegible]	-3.73	13.79	13.84	[illegible]	.3916	
14	22.73	-3.43	11.85	11.56	39.62	.2887	
15	[illegible]	[illegible]	9.29	9.46	[illegible]	[illegible]	
16	17.37	-2.01	6.95	8.43	22.60	.3099	
17	14.35	-2.71	7.31	[illegible]	16.02	[illegible]	
18	13.77	-2.67	6.91	5.65	9.91	.2761	
19	[illegible]	[illegible]	5.33	[illegible]	[illegible]	[illegible]	
20	5.[illegible]9	[illegible].42	6.63	3.84	7.59	.3256	
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
22	1.92	-2.95	6.61	3.31	6.20	.2401	
23	1.33	-2.12	6.72	3.36	5.52	.2436	
24	1.16	-1.96	7.33	3.66	5.57	.2192	
25	1.96	-1.68	6.27	3.61	[illegible]	[illegible]	
26	2.16	-1.61	9.23	5.27	9.55	.2593	
27	[illegible]	[illegible]	13.78	[illegible]	[illegible]	[illegible]	452
28	-1.01	-1.08	10.18	9.92	14.50	.3227	74
29	-.36	-.59	10.60	5.93	9.38	.1629	74
30	1.38	-.29	11.59	6.23	18.29	.2542	77
31	1.83	-.02	11.72	7.22	29.59	.3493	79
32	2.92	-.73	11.86	7.45	27.49	.3111	80
33	[illegible]	.18	13.45	7.82	28.29	.2908	80
34	7.72	-.30	14.69	7.73	36.64	.3228	79
35	10.99	-1.24	16.16	6.68	61.85	.5727	79
36	13.19	-1.09	18.09	7.60	80.91	.5884	79
37	15.69	-1.30	19.57	8.9;	92.03	.5592	78
38	17.82	-1.80	20.77	9.86	99.66	.5033	78
39	20.30	-2.33	22.29	9.31	[illegible]	[illegible]	78
40	22.93	-2.54	23.69	9.36	81.09	.3655	76
41	25.59	-1.82	24.95	10.17	106.12	.4180	77
42	28.35	-.79	26.12	10.91	119.97	.4017	76
43	32.57	.33	27.09	12.05	191.28	.4330	76
44	35.90	1.41	28.02	12.84	174.96	.4850	74
45	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	73
46	41.49	4.17	30.46	14.08	209.07	.4876	70
47	44.90	6.31	31.05	13.13	194.74	.4779	69
48	46.99	7.21	30.36	13.90	183.77	.4356	69
49	48.37	7.99	30.05	14.79	178.35	.3959	67
50	49.68	8.85	29.92	15.40	165.81	.3553	62
51	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	59
52	51.78	10.01	30.39	14.94	139.29	.3067	57
53	52.51	10.61	30.26	14.76	143.02	.3282	53
54	53.22	10.71	30.31	16.17	129.96	.2652	45
55	53.81	12.84	29.15	16.48	68.47	.1530	39
56	54.74	12.39	28.54	15.61	29.36	.0659	33
57	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	21
58	61.26	8.70	23.52	12.09	148.98	.0264	20
59	61.97	8.03	24.02	13.71	174.60	.0300	20
60	63.36	8.10	22.93	15.54	172.99	.0864	15
61	61.80	7.80	23.60	15.40	.00	.0000	15
62	60.30	7.10	24.30	15.20	.00	.0000	7
63	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4
64	57.20	6.10	25.80	14.90	.00	.0000	1
65	55.70	5.80	26.80	14.80	.00	.0000	1
66	54.10	5.00	27.20	14.60	.00	.0000	0
67	52.60	4.95	27.90	14.50	.00	.0000	0
68	51.10	4.00	28.60	14.30	.00	.0000	0
69	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
70	48.00	3.00	30.00	14.00	.00	.0000	

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE L.3. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

MARCH

Alt (km)	$\bar{u}$	$\bar{v}$	$\sigma(u)$	$\sigma(v)$	$\sigma(uv)$	$\rho(uv)$	N
0	1.84	-1.68	2.02	3.50	-5.71	-.5705	496
1	.76	-3.53	3.78	6.37	-2.60	-.1080	
2	2.80	-3.42	4.00	7.96	-3.65	-.1006	
3	5.27	-3.48	6.66	8.55	-2.83	-.1082	
4	8.38	-3.32	8.28	9.51	2.92	.0370	
5	10.73	-3.36	9.97	10.62	6.09	.0577	
6	12.78	-3.50	11.28	11.78	13.15	.0993	
7	14.87	-3.80	12.78	13.14	22.55	.1350	
8	16.86	-4.02	14.35	14.09	35.62	.1713	
9	18.73	-4.18	15.52	15.79	47.73	.1855	
10	21.06	-4.14	15.04	16.67	55.40	.2102	
11	23.52	-3.96	15.39	16.18	54.42	.2121	
12	25.08	-3.27	14.10	14.83	37.55	.1796	
13	25.02	-2.54	13.05	12.80	23.22	.1526	
14	23.80	-1.62	10.37	10.71	20.94	.1885	
15	21.92	-1.32	8.52	8.78	10.82	.1483	
16	18.85	-1.18	8.67	7.42	6.87	.1207	
17	16.15	-1.48	7.24	6.51	3.60	.0763	
18	12.78	-1.37	6.28	5.01	1.45	.0462	
19	9.46	-1.33	5.92	4.17	-.06	-.0023	
20	7.27	-1.50	5.04	3.78	.19	.0065	
21	5.50	-1.96	6.12	3.36	-1.33	-.0508	
22	4.29	-1.20	6.46	2.99	-1.72	-.0893	
23	4.41	-.94	6.82	3.14	.73	.0338	
24	4.95	-.52	7.25	3.27	3.59	.1418	
25	5.63	-.22	8.52	3.20	5.45	.1988	
26	6.59	-.11	9.22	3.26	9.48	.3289	
27	8.08	.17	9.86	3.62	15.86	.4881	
28	9.04	1.04	13.66	4.59	24.42	.3812	496
29	7.00	.95	14.75	5.61	30.78	.4165	83
30	6.03	.75	16.15	5.78	36.65	.3933	83
31	3.40	1.66	17.17	6.57	43.26	.3859	85
32	10.08	2.52	17.99	7.48	55.12	.4107	85
33	12.33	2.95	19.36	6.74	53.22	.4685	85
34	15.01	3.35	20.62	7.01	59.21	.4625	85
35	17.24	2.83	21.27	7.26	63.27	.4430	85
36	18.75	2.13	22.22	7.63	70.19	.4812	85
37	22.39	1.31	23.26	7.61	71.77	.4180	85
38	24.68	.23	24.15	7.68	63.56	.3435	85
39	26.01	-.70	24.80	7.12	47.04	.2654	85
40	28.55	-1.33	23.99	7.04	13.74	.0814	84
41	29.11	-1.14	23.92	7.18	-5.74	-.0334	84
42	29.72	-.43	23.79	7.53	-7.01	-.0314	84
43	30.52	.59	22.19	7.60	16.97	.0977	83
44	31.57	1.58	20.92	8.08	35.56	.2105	83
45	31.35	2.04	20.87	8.28	37.92	.2274	82
46	31.32	2.38	18.99	8.48	37.82	.2343	81
47	34.22	4.92	17.89	8.22	45.00	.3061	81
48	35.14	6.01	17.69	7.99	44.15	.3123	81
49	37.66	7.07	18.27	8.47	34.32	.2213	78
50	38.45	7.40	18.13	8.64	38.97	.2482	76
51	39.34	7.10	16.12	8.63	[illegible]	.2931	74
52	40.67	6.01	18.36	8.49	56.99	.3656	73
53	41.74	6.01	19.45	8.15	58.28	.3545	66
54	40.88	6.82	20.57	8.27	30.45	.1789	58
55	44.33	6.44	22.75	8.74	-1.53	-.0077	47
56	40.50	6.34	25.82	8.59	-7.99	-.0360	39
57	43.46	7.78	22.78	8.73	-66.82	-.3355	29
58	52.55	7.56	22.22	8.31	-108.10	-.5856	17
59	57.03	7.63	21.44	8.96	-112.13	-.5840	15
60	57.61	5.44	22.59	8.57	-86.52	-.4488	13
61	56.20	5.20	22.60	8.50	.00	.0000	10
62	4.70	6.30	22.70	8.50	.00	.0000	6
63	13.20	4.70	22.70	8.50	.00	.0000	1
64	51.80	4.40	22.80	8.50	.00	.0000	0
65	50.36	4.20	22.80	8.40	.00	.0000	0
66	49.30	4.00	22.80	8.40	.00	.0000	0
67	47.40	3.70	22.91	8.40	.00	.0000	0
68	[illegible]	3.50	22.90	8.40	.00	.0000	0
69	46.50	3.20	23.00	8.30	.00	.0000	0
70	43.00	3.00	23.00	8.30	.00	.0000	0

TABLE 1.4. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

APRIL

Alt (km)	$\bar{u}$	$\bar{v}$	$\sigma(u)$	$\sigma(v)$	$\sigma(uv)$	$R(uv)$	N
0	2.13	-2.22	2.82	3.23	-5.50	-.6127	400
1	1.34	-3.79	4.09	5.57	-2.38	-.1048	
2	2.82	-3.12	5.09	6.80	-6.33	-.1250	
3	5.59	-3.15	6.42	8.11	.52	.0100	
4	8.55	-3.08	8.22	9.70	4.79	.0601	
5	11.37	-2.90	10.15	11.21	14.39	.1256	
6	13.94	-2.95	11.93	13.00	23.50	.1515	
7	16.42	-2.70	13.28	14.62	35.74	.2041	
8	13.47	-2.86	14.71	16.00	52.90	.2251	
9	20.21	-2.61	15.58	16.68	72.83	.2805	
10	21.94	-2.64	15.60	16.76	80.37	.3076	
11	23.25	-2.13	15.22	16.25	75.29	.3044	
12	23.87	-1.05	13.68	14.90	61.99	.3001	
13	22.21	.23	11.63	12.38	42.60	.3126	
14	21.46	1.34	9.00	10.38	27.77	.2973	
15	19.14	1.78	7.90	8.74	23.34	.3381	
16	16.19	1.82	6.44	7.33	16.28	.3297	
17	13.04	1.67	6.08	6.19	7.89	.2103	
18	9.86	1.60	5.33	4.92	7.53	.1306	
19	6.97	1.38	4.81	3.91	1.57	.0836	
20	4.56	.87	4.50	3.25	2.14	.1465	
21	3.08	.62	4.68	3.15	1.28	.2846	
22	1.84	.31	4.67	2.83	3.16	.2394	
23	1.31	.27	4.87	2.60	3.28	.2584	
24	1.86	.09	5.19	2.65	3.53	.2889	
25	2.49	-.03	5.67	2.90	5.31	.3229	
26	3.03	-.15	6.19	2.98	5.64	.3069	
27	4.31	-.10	6.69	3.34	.00	.0000	400
28	4.52	1.73	6.84	3.18	4.78	.4527	96
29	6.24	1.94	7.08	3.22	7.68	.3162	88
30	4.02	1.78	7.36	3.64	4.40	.1795	90
31	4.56	1.84	7.48	4.09	3.03	.0891	91
32	11.20	2.02	8.30	4.23	6.44	.1834	90
33	13.02	2.48	8.52	4.28	9.19	.2522	90
34	15.35	3.03	8.94	4.79	11.78	.2771	90
35	17.00	3.29	10.24	4.59	20.94	.4449	90
36	19.18	2.78	10.60	4.51	25.22	.5249	91
37	20.60	1.83	11.20	5.20	26.03	.4441	91
38	21.48	.74	12.35	5.46	20.40	.3026	91
39	21.39	-.44	13.10	5.15	6.41	.0951	90
40	21.27	-1.32	13.57	4.38	-4.42	-.1254	89
41	20.52	-.85	13.09	5.23	-13.27	-.1939	89
42	19.05	.23	12.44	6.08	-16.42	-.2223	87
43	18.21	1.31	11.82	6.69	-8.80	-.1417	85
44	17.70	2.47	11.61	7.08	2.53	.0307	85
45	17.01	3.09	11.55	7.12	13.93	.1683	85
46	16.41	4.00	11.80	6.39	14.58	.1947	85
47	16.75	5.03	12.23	5.47	7.53	.1125	85
48	16.25	5.45	12.39	5.36	13.97	.1892	84
49	16.30	5.73	13.62	5.38	13.17	.1616	82
50	16.75	5.48	14.78	5.69	15.06	.1792	81
51	16.82	5.23	14.90	5.40	24.85	.3676	79
52	16.09	3.72	14.73	5.89	19.38	.2387	71
53	14.14	3.12	14.41	5.39	13.63	.1754	61
54	13.65	1.75	14.57	4.39	11.92	.1638	49
55	10.38	.92	15.41	5.51	11.94	.1407	39
56	7.41	.01	14.51	6.08	14.35	.1676	30
57	5.29	-.37	15.85	7.83	21.27	.1714	26
58	.21	.65	14.07	11.87	76.96	.4606	17
59	-5.08	5.75	14.65	6.65	-26.16	-.2685	8
60	-5.22	7.80	17.02	4.49	-50.22	-.7229	5
61	-5.00	7.40	16.70	5.10	.00	.0000	3
62	-4.80	7.00	16.40	5.30	.00	.0000	3
63	-4.50	6.70	16.10	5.50	.00	.0000	3
64	-4.30	6.30	15.90	5.70	.00	.0000	2
65	-4.10	5.90	15.50	5.90	.00	.0000	1
66	-3.90	5.50	15.20	6.20	.00	.0000	1
67	-3.70	5.10	14.90	6.40	.00	.0000	1
68	-3.40	4.30	14.60	6.60	.00	.0000	1
69	-3.20	4.40	14.30	6.80	.00	.0000	1
70	-3.00	4.00	14.00	7.00	.00	.0000	1

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 1.8. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

MAY

Alt (km)	$\bar{u}$	$\bar{v}$	$\sigma(u)$	$\sigma(v)$	$S(uv)$	$R(uv)$	N
0	2.49	-2.20	2.35	2.52	-3.70	-.6251	496
1	1.02	-3.83	3.08	4.55	-7.13	-.1588	
2	.95	-2.36	4.14	5.58	-3.47	-.3666	
3	2.74	-2.96	5.87	6.74	-16.12	-.4075	
4	4.70	-2.20	7.21	7.72	-19.62	-.3524	
5	6.45	-2.01	8.08	8.35	-15.47	.2198	
6	7.89	-2.09	9.51	9.07	-9.31	-.1079	
7	9.23	-2.33	10.59	10.25	-3.33	-.0307	
8	10.75	-2.70	11.59	11.69	5.60	.0407	
9	12.23	-2.53	12.38	12.84	18.02	.1186	
10	13.80	-2.33	12.90	13.62	32.31	.1833	
11	15.18	-2.14	13.44	14.07	47.11	.2091	
12	16.22	-1.33	12.45	12.65	42.19	.2673	
13	16.31	-.09	10.46	10.23	27.39	.2560	
14	15.61	.81	9.36	8.33	12.40	.1780	
15	13.91	1.30	6.55	6.71	2.26	.1024	
16	11.67	1.48	5.59	5.71	4.70	.1483	
17	8.93	1.33	4.78	4.38	2.15	.1027	
18	5.74	1.05	3.91	3.29	1.25	.0975	
19	2.71	.68	3.57	2.67	1.00	.1044	
20	.20	.02	3.42	2.35	1.21	.1507	
21	-1.45	-.45	3.40	2.50	1.52	.1725	
22	-2.42	-.55	3.29	2.22	.58	.2802	
23	-2.85	-.72	3.70	2.24	.61	.0977	
24	-2.67	-.75	4.17	2.35	.50	.0508	
25	-2.62	-.71	4.37	2.36	.61	.0590	
26	-2.44	-.63	4.56	2.53	.16	.0128	
27	-1.84	-.69	5.48	2.83	.14	.0082	496
28	-1.38	.41	6.86	2.79	4.88	.3597	95
29	-1.25	.44	7.18	2.66	2.67	.1361	96
30	-.88	.39	7.04	3.34	-2.37	-.1088	97
31	-.46	.90	6.69	3.35	-1.66	-.0741	102
32	.31	.83	7.04	3.42	1.72	.0716	104
33	.75	1.48	7.53	3.34	4.66	.1851	105
34	.07	1.44	8.44	3.63	6.80	.1787	105
35	.12	1.26	9.01	3.36	3.31	.1074	105
36	.61	1.29	9.43	3.34	3.69	.1171	105
37	.45	1.11	9.48	3.82	1.39	.0384	105
38	-.36	.32	9.68	4.19	-2.55	-.0643	105
39	-1.61	-.33	9.46	3.86	-4.74	-.1298	105
40	-2.43	-.72	9.19	3.37	-6.40	-.2067	105
41	-5.45	-.50	9.09	3.66	-5.69	-.1608	105
42	-7.43	.10	9.60	3.09	-2.62	-.0700	105
43	-9.23	.92	9.67	4.07	2.64	.0670	105
44	-10.68	2.17	9.10	4.49	3.06	.0946	105
45	-11.64	3.10	9.45	4.64	1.15	.0262	104
46	-12.43	3.70	9.99	4.95	-1.05	-.0212	104
47	-13.29	4.25	10.59	4.49	-2.87	-.0609	102
48	-14.41	4.87	10.60	4.00	-7.04	-.1361	100
49	-15.48	4.92	10.76	5.24	-8.81	-.1357	98
50	-16.67	5.49	10.92	5.81	-5.09	-.0802	56
51	-17.68	5.46	11.26	5.97	-4.29	-.0631	91
52	-18.92	4.60	11.35	5.50	-10.30	-.1956	84
53	-20.07	3.83	11.66	5.13	-14.99	-.2500	77
54	-21.07	3.23	12.18	5.45	-20.29	-.2940	70
55	-24.09	3.17	12.76	5.59	-18.63	-.2612	51
56	-26.31	2.96	12.86	6.27	-11.66	-.1435	34
57	-27.65	2.97	13.42	5.58	-13.03	-.1486	28
58	-29.10	1.00	14.07	6.00	10.64	.0000	23
59	-29.34	.26	12.20	6.00	29.18	.3302	15
60	-30.00	.00	14.00	7.64	37.63	.3374	11
61	-28.00	.00	14.20	7.60	.00	.0000	8
62	-27.00	.00	13.90	7.60	.00	.0000	6
63	-26.20	.00	13.60	7.60	.00	.0000	6
64	-24.90	.00	13.20	7.60	.00	.0000	6
65	-23.60	.00	12.80	7.60	.00	.0000	3
66	-22.20	.00	12.40	7.60	.00	.0000	3
67	-20.90	.00	12.10	7.60	.00	.0000	2
68	-19.60	.00	11.70	7.60	.00	.0000	1
69	-18.30	.00	11.40	7.60	.00	.0000	0
70	-17.00	.00	11.00	7.60	.00	.0000	

TABLE 1.6. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

JUNE

Alt (km)	$\bar{u}$	$\bar{v}$	$\sigma(u)$	$\sigma(v)$	$\sigma(uv)$	$\rho(uv)$	N
	[illegible]	-1.31	[illegible]	2.28	-2.97	-.5731	480
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-4.00	-.2887	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-10.07	-.0703	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.0384	
[illegible]	[illegible]	[illegible]	[illegible]	6.64	-16.77	-.3629	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-18.51	-.3140	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-21.07	-.2784	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.2489	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-29.31	-.1892	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.1564	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-15.30	-.0823	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.0335	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.09	.0040	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.0024	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.40	.0563	
[illegible]	[illegible]	[illegible]	[illegible]	7.41	[illegible]	.0357	
[illegible]	[illegible]	[illegible]	[illegible]	5.70	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.54	-.0750	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.14	-.1033	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.16	-.1496	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.23	-.0363	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.0724	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.0052	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.12	.0180	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.17	-.0273	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.0651	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.13	-.1415	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.0124	480
[illegible]	-22.12	.15	6.00	2.21	-2.16	-.1554	90
[illegible]	-11.23	.58	6.33	2.56	-1.92	-.1172	96
[illegible]	-11.72	.66	6.39	2.33	-1.65	-.1044	98
[illegible]	-17.23	.59	6.42	2.25	-3.18	-.1509	100
[illegible]	-17.48	.69	6.41	2.57	-.77	-.0463	101
[illegible]	-12.60	.91	6.32	2.61	.88	.0532	103
[illegible]	-13.03	1.17	6.24	2.81	1.56	.1122	103
[illegible]	-14.55	.53	6.73	2.80	1.47	.0772	104
[illegible]	-15.98	.37	6.92	2.52	4.07	.2019	104
[illegible]	-17.71	.23	7.07	2.61	-.09	-.0051	104
[illegible]	-19.29	.40	7.59	2.58	-5.22	-.2309	105
[illegible]	-21.11	.43	6.27	3.22	3.14	.1557	105
[illegible]	-22.77	.69	6.67	3.19	7.51	.2480	106
[illegible]	-24.55	.38	7.13	3.60	4.80	.1873	107
[illegible]	-26.44	.54	8.21	4.17	5.74	.1718	107
[illegible]	-27.32	.56	7.51	3.70	1.79	.0630	106
[illegible]	-30.47	.49	8.07	3.98	-2.12	-.0651	36
[illegible]	-33.45	1.53	8.49	4.17	-5.22	-.1483	106
[illegible]	-35.58	2.82	8.18	4.60	-4.71	-.1254	105
[illegible]	-38.79	3.33	7.93	4.58	-2.46	-.0672	104
[illegible]	-35.82	4.71	8.23	4.65	.71	.0173	104
[illegible]	-36.31	5.24	8.75	4.95	5.52	.1505	103
[illegible]	-35.38	5.48	10.00	4.04	8.69	.1440	103
[illegible]	-40.52	6.27	11.39	4.70	3.91	.1051	99
[illegible]	-42.32	7.19	12.23	4.77	1.77	.0281	98
[illegible]	-43.54	7.54	14.82	5.02	-12.37	-.1650	97
[illegible]	-44.42	6.26	14.17	5.21	-2.45	-.0340	90
[illegible]	-45.53	5.72	13.63	5.81	-13.74	-.1729	83
[illegible]	-46.35	3.32	14.28	5.52	-16.58	-.2408	75
[illegible]	-43.14	2.37	14.08	6.37	-9.33	-.1005	60
[illegible]	-52.76	2.05	12.43	7.55	32.62	.3476	46
[illegible]	-52.33	-.18	11.14	8.98	29.39	.2933	32
[illegible]	-56.60	-1.54	12.18	9.54	18.44	.1587	27
[illegible]	-54.30	-1.30	12.10	9.50	.00	.0000	23
[illegible]	-57.61	-1.70	12.00	9.40	.00	.0000	18
[illegible]	-50.30	-1.60	11.31	9.40	.00	.0000	17
[illegible]	-47.70	-1.50	11.71	9.20	.00	.0000	14
[illegible]	-47.50	-1.50	11.50	9.30	.00	.0000	5
[illegible]	-45.41	-1.40	11.51	9.20	.00	.0000	2
[illegible]	-44.10	-1.30	11.40	9.20	.00	.0000	1
[illegible]	-42.40	-1.20	11.20	9.10	.00	.0000	0
[illegible]	-40.70	-1.10	11.10	9.10	.00	.0000	0
[illegible]	-39.10	-1.00	11.00	9.00	.00	.0000	0

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 1.7. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

JULY

A'. (km)	ū	v̄	S(u)	S(v)	S(uv)	R(uv)	N
0	2.08	-1.50	1.67	1.71	-1.80	-.5425	496
1	.26	-1.80	2.57	3.91	-2.08	-.2067	
2	-.39	.10	3.09	3.87	-2.21	-.1882	
3	.65	1.87	3.72	4.30	-1.95	-.1157	
4	1.48	3.14	4.70	4.65	1.09	.0476	
5	2.00	3.82	5.20	4.76	2.53	.1023	
6	2.62	4.51	5.47	5.07	3.47	.1164	
7	3.37	5.44	6.37	5.84	5.45	.1465	
8	4.57	6.69	7.20	6.70	8.26	.1692	
9	5.50	8.20	7.90	7.42	7.87	.1295	
10	6.62	10.02	8.91	8.30	8.99	.1216	
11	7.98	12.10	9.51	8.76	9.06	.1085	
12	8.88	13.69	9.63	9.25	9.49	.1060	
13	9.21	13.71	9.29	8.96	12.99	.1502	
14	8.30	12.33	8.30	8.13	13.72	.2033	
15	5.88	7.91	6.91	6.05	9.50	.2272	
16	2.46	[illegible]	5.00	[illegible]	3.89	.1690	
17	-.72	4.02	3.80	3.50	3.27	.2440	
18	-3.49	2.28	3.18	2.74	2.19	.2497	
19	-5.62	1.49	2.65	2.10	.92	.1719	
20	-7.38	.84	2.38	1.97	.74	.1577	
21	-9.07	.44	2.49	1.94	.29	.0582	
22	-10.69	.05	2.40	2.02	.30	.0424	
23	-11.97	-.19	2.59	2.03	-.01	-.0013	
24	-13.19	-.16	2.69	2.11	.10	.0175	
25	-14.31	.02	2.78	2.05	-.20	-.0352	
26	-15.02	.14	2.82	2.00	-.00	-.0006	
27	-15.62	.06	2.99	2.14	.20	.0375	496
28	-17.43	-.13	3.08	2.23	-.49	-.0768	96
29	-19.53	-.15	3.70	2.68	-.54	-.0548	97
30	-19.56	.22	3.88	2.42	-2.53	-.2706	98
31	-20.32	1.21	3.45	2.62	-1.89	-.2088	101
32	-20.83	1.69	3.52	3.22	-.75	-.0659	105
33	-21.26	1.52	3.87	2.91	1.05	.0930	108
34	-21.85	1.27	4.28	2.96	.18	.0141	108
35	-23.31	.78	4.45	3.69	.13	.0079	108
36	-24.49	.40	4.03	3.86	1.01	.0649	108
37	-26.03	.42	4.02	3.86	-1.96	-.1267	108
38	-27.38	1.00	4.35	3.97	-1.55	-.0898	108
39	-28.90	1.36	4.13	3.84	-1.54	-.0971	107
40	-30.62	.52	3.82	3.68	-.82	-.0585	107
41	-32.99	-.37	4.00	4.02	.59	.0367	107
42	-35.53	-.64	4.56	4.36	1.73	.0871	106
43	-38.10	.19	4.35	4.27	1.42	.0621	106
44	-40.78	1.53	5.62	4.33	-.25	-.0102	105
45	-42.39	2.74	5.96	4.76	-1.37	-.0483	104
46	-43.84	3.94	6.01	4.84	-2.94	-.1011	102
47	-45.34	4.95	5.13	5.08	-4.02	-.1546	101
48	-46.76	5.66	4.69	4.99	-2.83	-.1210	101
49	-48.10	6.05	4.91	5.00	-2.84	-.1173	99
50	-49.19	6.14	5.84	5.17	-.02	-.0008	97
51	-51.31	5.92	6.22	5.62	-.92	-.0259	93
52	-53.37	5.40	7.54	6.36	2.89	.0603	93
53	-54.47	5.62	7.64	6.28	.60	.0125	87
54	-55.79	5.18	7.85	6.15	2.51	.0819	81
55	-57.90	4.77	7.84	6.89	-3.55	-.0658	73
56	-60.56	3.97	9.40	7.60	-7.81	-.1093	62
57	-63.02	2.07	9.64	8.81	-1.13	-.0133	47
58	-64.89	.91	9.58	11.54	37.72	.3612	36
59	-66.68	1.29	12.13	12.18	71.40	.4834	25
60	-64.98	1.31	9.05	12.24	11.45	.1327	15
61	-63.30	1.30	6.90	12.20	.00	.0000	9
62	-61.60	1.20	6.70	12.20	.00	.0000	8
63	-59.90	1.20	6.50	12.10	.00	.0000	6
64	-58.20	1.20	6.30	12.10	.00	.0000	3
65	-56.50	1.20	6.10	12.10	.00	.0000	3
66	-54.80	1.10	5.80	12.10	.00	.0000	2
67	-53.10	1.10	5.60	12.10	.00	.0000	1
68	-51.40	1.10	5.40	12.00	.00	.0000	0
69	-49.70	1.00	5.20	12.00	.00	.0000	0
70	-48.00	1.00	5.00	12.00	.00	.0000	0

TABLE 1.8. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

AUGUST

Alt (km)	$\bar{u}$	$\bar{v}$	$\sigma(u)$	$\sigma(v)$	$\sigma(uv)$	$\rho(uv)$	N
0	4.01	-1.50	2.05	1.81	-2.35	-.6301	496
1	.63	-2.06	2.68	3.11	-3.49	-.3126	
2	.13	-.37	3.19	3.33	-3.99	-.2888	
3	1.18	1.22	3.94	3.46	-4.64	-.2643	
4	1.73	2.16	4.63	3.47	-3.71	-.1792	
5	2.42	2.90	5.58	3.85	-2.82	-.1041	
6	3.69	2.65	6.32	5.69	-2.09	-.0366	
7	4.77	3.19	6.97	6.50	.02	.0009	
8	6.18	3.97	7.48	7.40	.48	.0086	
9	7.74	5.06	8.10	8.03	-3.10	-.0476	
10	9.09	6.26	8.69	6.26	-.70	-.0128	
11	10.46	7.49	9.79	7.49	.49	.0071	
12	11.25	8.40	9.15	9.18	2.91	.0346	
13	10.09	8.64	8.67	8.82	2.69	.0339	
14	9.84	7.77	7.49	7.96	3.15	.0528	
15	7.41	6.46	6.29	6.29	3.05	.0771	
16	3.91	4.03	5.34	4.73	1.13	.0449	
17	.18	3.06	4.32	3.73	2.33	.1446	
18	-2.81	1.84	3.60	2.90	1.39	.1320	
19	-5.18	1.12	3.23	2.32	.09	.0048	
20	-7.15	.07	2.85	2.16	-.71	-.1146	
21	-8.59	.39	2.87	1.96	-.15	-.0268	
22	-10.22	.05	2.98	1.86	-.29	-.0438	
23	-11.61	.06	2.93	1.60	-.63	-.1139	
24	-12.62	.09	3.00	1.95	-1.12	-.1907	
25	-13.60	.04	3.03	1.95	-.97	-.1435	
26	-14.39	-.03	3.05	1.93	-.71	-.1199	
27	-15.00	-.10	3.29	2.07	-.47	-.0543	496
29	-15.66	-.02	3.34	2.54	.29	.0293	116
29	-17.15	.15	3.85	2.56	-1.00	-.1012	117
31	-17.75	.43	3.47	2.72	-.22	-.0232	118
31	-17.47	.99	3.90	2.83	-.02	-.0021	121
32	-18.35	1.49	4.25	2.60	.27	.0295	122
33	-19.28	2.01	4.32	2.69	-.02	-.0017	122
34	-19.01	1.70	4.37	3.03	-.36	-.0236	123
35	-18.16	1.15	4.69	3.08	-1.18	-.0814	123
36	-13.38	.94	5.27	3.62	-.16	-.0093	123
37	-21.34	.36	5.39	3.09	.87	.0491	123
38	-22.67	.07	6.00	3.23	1.13	.0584	124
39	-23.89	-.03	6.11	3.53	-.23	-.0106	124
40	-25.03	.44	6.22	3.68	1.53	.0869	124
41	-26.59	.29	6.53	3.42	1.40	.0625	123
42	-23.77	-.27	6.97	3.79	.36	.0136	122
43	-30.69	-.02	7.87	4.15	.55	.0290	122
44	-32.51	.37	8.34	4.23	1.40	.0366	120
45	-33.72	1.40	9.60	4.55	-3.21	-.0730	120
46	-35.07	2.57	10.00	4.97	-8.79	-.0963	116
47	-35.71	3.28	10.06	5.23	-12.79	-.2431	114
48	-36.31	4.25	9.95	6.18	-17.44	-.2838	113
49	-37.08	5.13	9.75	6.46	-16.67	-.2649	112
50	-37.83	6.06	9.89	6.78	-6.76	-.1006	110
51	-38.70	7.23	10.23	6.67	7.19	.1055	109
52	-39.46	8.76	11.39	7.38	3.97	.1187	104
53	-39.60	5.89	12.38	8.02	10.95	.1103	96
54	-40.23	5.77	14.05	8.59	-5.54	-.0459	90
55	-41.83	5.29	14.37	8.85	14.29	.1131	71
56	-41.20	4.36	16.67	9.94	17.62	.1208	55
57	-41.01	3.71	14.93	10.60	21.05	.1318	38
58	-39.04	3.56	16.30	9.88	5.07	.0304	27
59	-37.76	1.57	18.67	10.04	38.94	.2077	23
60	-35.20	-1.10	22.75	10.23	95.33	.4094	19
61	-34.50	-1.00	21.00	10.20	.00	.0000	15
62	-32.40	-.30	19.20	10.20	.00	.0000	13
63	-31.00	-.60	17.40	10.10	.00	.0000	11
64	-29.30	-.70	15.70	10.10	.00	.0000	7
65	-27.80	-.60	13.90	10.10	.00	.0000	5
66	-25.90	-.40	12.10	10.10	.00	.0000	5
67	-24.20	-.30	10.30	10.10	.00	.0000	2
68	-22.40	-.20	8.60	10.00	.00	.0000	2
69	-20.70	-.10	6.80	10.10	.00	.0000	2
70	-19.00	.00	5.00	10.00	.00	.0000	2

TABLE 1.9. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

SEPTEMBER

Alt (km)	$\bar{u}$	$\bar{v}$	S(u)	S(v)	S(uv)	R(uv)	N
0	1.72	-1.38	2.26	2.17	-3.09	-.6714	480
1	-.42	-1.33	2.89	4.36	-4.17	-.3309	
2	-.58	.04	4.09	5.06	-6.33	-.3058	
3	1.18	.40	5.51	5.71	-6.19	-.1962	
4	2.65	.85	6.65	6.63	-4.29	-.0961	
5	4.02	.56	7.56	7.56	-4.69	-.0822	
6	5.27	.34	8.49	8.50	-1.04	-.0144	
7	6.72	.51	9.56	9.50	6.57	.0723	
8	8.41	.53	10.70	10.82	21.01	.1815	
9	10.26	.89	12.03	12.03	38.83	.2403	
10	12.35	1.32	13.31	12.82	57.32	.3359	
11	14.71	1.90	14.19	13.39	73.49	.3889	
12	16.51	2.64	13.87	12.81	65.94	.3711	
13	17.18	3.37	12.82	11.60	50.24	.3375	
14	15.85	2.71	10.38	9.83	28.96	.28[illegible]	
15	12.68	1.98	8.43	8.16	17.29	.2514	
16	9.42	1.34	7.40	6.25	10.81	.2337	
17	5.57	.93	5.95	4.85	4.76	.1649	
18	2.32	-.11	5.02	3.65	2.18	.1197	
19	.08	-.30	4.35	2.97	1.90	.1473	
20	-1.63	-.42	4.03	2.43	1.13	.1155	
21	-2.89	-.38	3.86	2.33	1.05	.1121	
22	-4.06	-.50	3.52	2.18	1.48	.1935	
23	-4.49	-.32	3.85	2.16	1.93	.1725	
24	-5.72	-.24	3.92	2.20	.38	.0446	
25	-6.23	-.13	4.15	2.09	.73	.0897	
26	-6.68	.05	4.57	2.11	1.07	.1110	
27	-6.95	.03	5.20	2.09	.75	.0713	480
28	-7.49	.10	5.11	2.26	2.33	.2022	84
29	-7.29	-.27	5.26	2.81	4.31	.2910	84
30	-7.06	-.07	5.76	2.87	4.25	.2572	85
31	-7.30	.91	6.41	2.95	3.07	.1623	86
32	-7.00	1.38	6.56	2.92	4.21	.2206	86
33	-6.21	1.88	6.74	2.98	7.11	.3836	86
34	-6.32	2.52	6.88	3.18	6.50	.2976	85
35	-4.55	2.13	6.88	2.97	6.62	.3243	85
36	-4.09	.76	7.18	3.03	5.96	.2737	85
37	-3.97	.11	7.74	3.54	7.27	.2663	85
38	-4.70	-.13	8.21	3.81	6.05	.1613	85
39	-5.77	.13	8.70	4.29	9.75	.2553	85
40	-5.80	.44	9.01	4.30	8.63	.2276	84
41	-5.82	-.02	9.75	4.62	7.24	.1607	84
42	-5.90	-.34	10.50	4.35	-2.48	-.0542	84
43	-6.72	-.12	10.30	4.33	-8.75	-.1962	83
44	-7.71	.15	10.20	4.50	-8.77	-.1912	81
45	-8.29	.70	10.44	4.40	-2.49	-.0517	80
46	-8.29	1.40	11.29	4.3[illegible]	2.99	.0610	80
47	-7.74	2.54	11.77	4.62	3.70	.0679	80
48	-7.32	3.45	12.56	5.48	3.94	.0572	77
49	-6.76	4.22	13.70	6.59	5.39	.0598	75
50	-6.36	4.59	14.61	6.21	9.75	.1082	73
51	-6.33	4.25	14.73	5.53	7.12	.0873	68
52	-6.49	6.04	14.99	5.68	.09	.0011	61
53	-6.17	6.69	15.27	5.53	-5.12	-.0686	53
54	-3.41	6.86	15.38	5.77	-11.32	-.1275	47
55	-2.02	6.42	15.64	6.77	-7.17	-.0677	44
56	-1.66	5.67	15.94	7.09	12.76	.1130	34
57	-.33	4.57	15.49	6.97	21.68	.2087	22
58	4.23	4.17	15.48	6.88	52.98	.4976	17
59	6.63	6.81	16.11	7.80	39.52	.3143	15
60	8.98	6.07	20.21	7.62	26.36	.1696	12
61	8.50	5.85	19.70	7.30	.00	.0000	11
62	8.00	5.50	19.20	7.10	.00	.0000	9
63	7.50	5.20	18.80	6.20	.00	.0000	9
64	7.00	4.90	18.30	6.60	.00	.0000	8
65	6.50	4.60	17.80	6.35	.00	.0000	5
66	6.00	4.20	17.30	6.00	.00	.0000	2
67	5.50	3.90	16.80	5.80	.00	.0000	2
68	5.00	3.60	16.40	5.60	.00	.0000	2
69	4.50	3.30	15.90	5.30	.00	.0000	0
70	4.00	3.00	15.40	5.00	.00	.0000	

TABLE 1.10. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

OCTOBER

Alt (km)	$\bar{u}$	$\bar{v}$	$S(u)$	$S(v)$	$S(uv)$	$R(uv)$	N
0	1.39	-1.21	2.67	2.60	-3.87	-.6797	496
1	.13	-2.15	2.94	5.28	-1.18	-.0750	
2	.76	-2.07	4.30	6.19	-6.03	-.2266	
3	2.38	-2.49	6.03	7.38	-8.11	-.1822	
4	4.19	-2.70	7.73	8.76	4.67	.0699	
5	5.85	-3.03	8.94	9.73	4.68	.0787	
6	7.18	-3.13	10.19	11.05	16.26	.1342	
7	8.66	-3.33	11.67	12.91	27.10	.1871	
8	9.98	-3.29	12.96	14.06	41.91	.2300	
9	11.43	-3.27	14.16	15.15	61.27	.2856	
10	13.08	-3.46	14.77	15.77	74.49	.3205	
11	14.97	-3.36	15.00	15.74	81.67	.3455	
12	16.77	-3.35	14.44	15.04	76.43	.3473	
13	16.89	-3.04	12.76	13.11	63.46	.3196	
14	16.15	-2.44	11.33	11.82	38.91	.2981	
15	14.55	-2.19	9.20	9.63	23.38	.2639	
16	12.13	-1.93	7.68	7.81	12.97	.2079	
17	9.11	-1.68	6.35	6.07	6.18	.1603	
18	6.06	-1.46	5.24	4.62	3.84	.1586	
19	3.70	-1.44	4.67	3.67	3.90	.2337	
20	2.29	-1.27	4.67	3.51	4.03	.2513	
21	1.65	-1.27	4.58	3.23	3.07	.2075	
22	1.47	-1.40	4.69	2.92	3.14	.2396	
23	1.37	-.66	4.77	2.83	2.04	.1511	
24	1.82	-.50	5.18	2.80	1.77	.1222	
25	2.20	-.25	5.66	2.66	1.34	.0690	
26	2.98	.02	6.40	2.69	4.05	.2353	
27	3.93	.10	7.03	3.02	5.78	.2724	496
28	5.36	.42	7.37	3.39	5.69	.2277	87
29	6.20	.51	7.79	3.24	3.03	.1200	91
30	7.34	.54	8.08	3.42	3.79	.1373	96
31	8.48	1.29	8.87	3.98	6.66	.1888	97
32	10.20	2.23	9.68	4.52	8.09	.1856	99
33	11.91	3.30	10.90	4.40	14.68	.3210	97
34	14.72	4.42	11.35	4.85	20.32	.3493	97
35	17.85	4.72	11.43	4.89	26.40	.4446	100
36	20.18	4.09	12.29	4.26	34.29	.6264	100
37	22.13	2.48	14.19	5.17	40.08	.6469	100
38	23.76	2.11	15.04	5.26	34.97	.4921	101
39	26.44	1.42	15.68	5.05	29.78	.3764	101
40	27.14	.99	16.53	5.36	28.61	.3232	101
41	28.22	.18	16.89	5.65	22.18	.2336	101
42	29.01	.27	17.19	6.39	24.55	.2235	101
43	29.07	.22	16.97	7.10	30.55	.2683	97
44	30.45	1.51	16.92	7.07	39.88	.3339	97
45	32.36	2.70	17.23	7.31	51.31	.4075	97
46	33.67	3.94	17.23	7.60	53.17	.4061	97
47	35.36	5.24	17.45	7.82	61.94	.4517	95
48	37.00	6.35	17.89	7.64	72.29	.5284	94
49	38.37	7.28	17.66	7.62	68.57	.5099	94
50	39.27	8.45	16.88	8.29	66.14	.4602	93
51	40.35	8.48	16.89	9.34	74.87	.4743	87
52	41.22	8.15	16.46	10.33	76.68	.4450	83
53	42.61	8.51	16.72	10.45	84.44	.4833	78
54	43.09	8.68	16.57	10.29	84.42	.4953	75
55	44.90	9.11	16.77	9.91	82.46	.4962	68
56	46.92	8.53	17.05	10.28	73.11	.4171	59
57	47.24	7.81	17.68	10.94	93.62	.4841	51
58	49.38	8.41	18.85	11.20	114.71	.5432	41
59	51.53	12.86	19.04	18.79	80.53	.3921	31
60	53.69	14.63	20.03	18.97	50.79	.2311	26
61	52.20	13.80	19.80	18.70	.00	.0000	26
62	50.50	13.10	19.60	18.34	.00	.0000	23
63	48.80	12.30	19.40	18.00	.00	.0000	22
64	47.10	11.40	19.20	9.68	.00	.0000	17
65	45.50	10.80	19.00	9.30	.00	.0000	12
66	43.80	10.00	18.70	9.00	.00	.0000	9
67	42.10	9.30	18.50	8.60	.00	.0000	5
68	40.40	8.60	18.30	8.30	.00	.0000	
69	38.70	7.83	18.10	7.90	.00	.0000	1
70	37.00	7.00	17.90	7.60	.00	.0000	1

TABLE 1.11. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

NOVEMBER

Alt (km)	$\bar{u}$	$\bar{v}$	S(u)	S(v)	S(uv)	R(uv)	N
0	.57	-.66	2.67	3.03	-4.69	-.5796	480
1	.25	-.70	3.40	6.85	-2.62	-.1004	
2	1.83	-.51	5.27	7.86	.49	.0110	
3	4.23	-.45	7.05	8.99	5.67	.0804	
4	6.52	-.82	8.62	10.01	17.43	.1441	
5	8.68	-.81	10.57	11.57	23.70	.1938	
6	10.89	-1.07	12.17	13.66	45.04	.2709	
7	12.91	-1.05	13.80	15.68	68.88	.3183	
8	14.69	-.95	15.37	17.71	97.83	.3594	
9	16.35	-.67	16.72	19.37	132.11	.4079	
10	18.19	-.86	18.07	20.84	168.14	.4165	
11	19.80	-.82	18.65	20.82	136.85	.4812	
12	21.15	-.11	18.23	19.12	166.47	.4776	
13	20.82	-.04	16.24	16.41	122.08	.4581	
14	19.21	.31	13.40	13.62	84.48	.4629	
15	16.74	.02	10.87	11.02	53.23	.4888	
16	13.90	-.29	8.90	8.63	29.38	.3738	
17	11.47	-.60	7.48	6.99	16.51	.3167	
18	8.45	-.95	6.44	5.58	9.35	.2603	
19	6.22	-1.24	5.87	4.70	6.01	.2179	
20	4.39	-1.67	5.82	4.16	5.68	.2304	
21	3.44	-1.76	5.92	3.76	4.19	.1883	
22	3.05	-1.91	6.47	3.74	5.13	.2121	
23	2.86	-1.75	6.89	3.44	4.81	.2028	
24	3.27	-1.46	7.57	3.25	4.38	.1780	
25	3.83	-1.25	8.32	3.33	7.50	.2660	
26	4.96	-1.12	9.35	3.48	11.91	.3659	
27	6.21	-1.05	10.55	3.91	17.86	.4313	480
28	12.28	.11	11.11	3.47	13.44	.3484	65
29	13.66	.29	10.94	4.14	18.15	.4002	68
30	15.30	.19	11.44	4.31	26.69	.5195	68
31	14.92	.28	12.12	4.27	30.41	.5875	72
32	18.94	1.39	12.93	5.18	41.96	.6248	73
33	20.78	2.95	14.08	6.47	47.62	.5448	73
34	23.23	3.46	14.42	6.47	53.62	.5664	73
35	24.82	4.22	14.11	6.59	56.97	.5611	75
36	29.71	4.11	16.24	6.98	59.76	.5332	74
37	32.83	3.83	16.32	7.18	56.49	.5031	74
38	35.84	3.31	17.11	8.33	60.84	.4125	74
39	38.62	2.87	18.18	8.22	71.02	.4723	75
40	41.15	2.56	18.69	8.30	77.48	.4938	75
41	43.67	1.93	19.36	8.42	79.77	.4868	75
42	45.98	.93	20.06	8.87	76.02	.4272	75
43	47.44	.85	19.87	9.02	72.11	.4004	75
44	49.65	1.16	19.49	9.26	64.59	.3447	76
45	51.67	1.62	19.46	9.84	64.99	.3326	75
46	53.40	2.64	20.29	10.43	83.86	.3943	75
47	54.65	3.39	21.03	11.02	101.37	.4383	74
48	56.91	4.44	21.42	12.01	112.66	.4848	75
49	58.29	6.39	21.88	11.28	116.47	.4846	71
50	59.97	7.70	21.66	11.61	129.72	.5226	69
51	61.72	8.89	21.86	11.79	132.01	.5162	67
52	63.82	7.97	22.78	11.18	126.41	.4978	66
53	64.22	8.78	24.89	12.08	155.21	.5063	64
54	66.49	8.22	31.78	13.83	126.39	.4211	60
55	68.23	9.31	22.31	14.18	137.46	.4105	51
56	68.49	9.87	22.81	15.74	127.33	.3596	46
57	68.51	8.37	23.96	17.68	170.38	.4229	36
58	66.19	9.43	22.46	15.96	156.39	.4335	30
59	65.97	5.75	22.74	17.99	165.10	.4041	23
60	61.43	4.83	22.16	18.66	169.71	.4099	22
61	59.78	3.78	22.88	17.78	.00	.0000	18
62	57.90	3.46	21.40	16.80	.00	.0000	16
63	56.70	3.18	21.50	15.80	.00	.0000	12
64	54.48	2.80	21.30	14.40	.00	.0000	7
65	52.78	2.58	21.18	13.90	.00	.0000	5
66	51.00	2.28	20.90	12.96	.00	.0000	2
67	49.28	1.98	20.78	11.98	.00	.0000	1
68	47.58	1.68	20.48	10.98	.00	.0000	1
69	45.78	1.38	20.28	10.88	.00	.0000	0
70	44.08	1.08	20.08	9.88	.00	.0000	0

TABLE 1.12. VANDENBERG BIVARIATE NORMAL STATISTICS

90-DEGREE FLIGHT AZIMUTH

DECEMBER

Alt (km)	$\bar{u}$	$\bar{v}$	$\Sigma(u)$	$\Sigma(v)$	$\Sigma(uv)$	$\Sigma(uv)$	N
0	.33	-.96	2.89	3.10	-4.14	-.4632	496
1	1.39	-2.73	4.60	6.55	-1.45	-.0438	
2	4.00	-3.15	5.30	8.18	2.41	.0494	
3	7.02	-3.68	7.71	9.76	7.07	.0834	
4	9.32	-4.29	9.60	11.65	11.34	.1008	
5	12.44	-4.72	11.27	13.20	24.09	.1619	
6	14.63	-5.17	12.73	15.05	46.26	.2403	
7	16.84	-5.65	14.57	17.06	75.99	.3057	
8	18.93	-5.72	16.15	18.61	107.12	.3564	
9	21.06	-5.91	17.42	20.21	132.66	.3768	
10	23.09	-5.73	18.07	21.21	154.30	.4024	
11	24.60	-5.38	17.61	20.91	135.67	.3793	
	24.91	-4.36	16.03	18.59	121.32	.3987	
13	24.24	-3.23	14.46	16.28	92.70	.3936	
14	22.52	-2.29	12.19	13.30	71.04	.4195	
15	20.21	-1.98	10.38	11.73	51.76	.4366	
16	17.03	-1.73	9.17	9.81	3[illegible].15	.4241	
17	13.65	-1.55	8.15	8.33	30.75	.4530	
18	10.21	-1.66	6.92	6.39	21.98	.4977	
19	6.98	-2.07	6.08	5.02	14.28	.4693	
20	4.62	-2.39	5.93	4.33	10.15	.3912	
21	2.63	-2.53	5.24	4.11	7.42	.3041	
22	1.17	-2.55	6.29	3.36	5.67	.3503	
23	.32	-2.37	6.82	3.75	6.93	.2671	
24	.13	-2.73	7.24	3.65	6.33	.2404	
25	-.19	-2.59	7.75	3.59	8.48	.3049	
26	-.01	-2.62	5.38	3.37	12.00	.3413	
27	.76	-2.74	10.56	4.66	18.55	.3780	496
28	10.98	-.89	13.27	4.41	29.67	.6067	52
29	12.93	-1.07	14.49	4.89	41.75	.6086	52
30	14.91	-1.17	16.19	5.91	54.70	.6091	53
31	16.62	-.81	17.78	6.78	63.42	.6287	54
32	19.95	-.90	18.20	7.26	78.66	.6829	54
33	23.97	.34	19.37	9.38	72.73	.6002	55
34	29.05	.69	20.23	10.56	65.82	.5073	57
35	34.04	1.44	20.10	11.39	71.68	.5151	58
36	38.83	2.40	19.79	11.78	75.19	.5255	58
37	43.97	2.85	19.88	12.18	75.42	.5116	58
38	47.60	3.94	20.82	13.41	74.90	.5094	58
39	51.94	3.58	20.87	14.48	65.69	.5174	58
40	55.72	3.94	20.74	14.72	54.90	.5058	57
41	58.61	4.77	20.56	15.89	38.58	.5249	57
42	62.08	4.89	20.39	16.16	23.87	.5719	57
43	65.60	7.46	21.58	17.11	20.27	.5649	57
44	68.75	8.74	21.87	13.32	49.03	.5896	55
45	70.68	9.87	22.25	19.11	3[illegible].17	.5733	54
46	71.31	10.10	22.38	19.10	-18.31	-.5238	53
47	73.69	9.62	23.65	17.63	-5.67	-.0208	53
48	75.64	10.24	24.29	17.54	-10.88	-.0356	51
49	76.75	9.79	24.20	17.96	18.48	.0425	50
50	79.82	10.23	24.84	17.96	4.18	.0130	48
51	78.38	11.56	25.93	17.80	-13.58	-.0294	44
52	77.69	14.16	25.10	17.83	-17.18	-.0360	41
53	77.86	14.99	25.55	18.01	-28.57	-.0621	38
54	76.29	14.97	25.72	18.55	-61.27	-.1288	31
55	75.77	13.06	26.11	17.83	-59.34	-.1276	26
56	75.38	15.81	25.30	20.04	-64.07	-.1343	19
57	73.73	16.25	25.89	19.86	-74.32	-.1507	16
58	72.43	15.69	25.55	21.83	-62.73	-.1171	12
59	75.68	12.66	23.41	23.59	-66.29	-.1284	9
60	83.33	11.52	15.85	23.22	18.77	.0271	7
61	81.68	[illegible]	16.50	22.40	.00	.0000	6
62	79.88	10.00	17.00	21.50	.00	.0000	4
63	78.00	9.30	17.60	20.70	.00	.0000	3
64	76.30	8.50	18.20	19.80	.00	.0000	2
65	74.60	7.80	18.60	19.00	.00	.0000	2
66	72.90	7.00	19.30	18.10	.00	.0000	2
67	71.20	6.30	19.90	17.30	.00	.0000	2
68	69.50	5.50	20.50	16.50	.00	.0000	1
69	67.70	4.80	21.00	15.60	.00	.0000	1
70	66.00	4.00	21.60	15.70	.00	.0000	

TABLE 2.1. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.21	-6.43	-5.57	-4.63	-2.93	-.29	2.35	4.06	4.99	5.86	7.64
1	-25.61	-16.20	-14.87	-11.74	-7.53	-.98	5.56	9.78	12.13	14.29	18.65
2	-23.14	-13.1[illegible]	-15.66	-13.03	-8.18	-.70	6.79	11.41	14.27	16.71	21.75
3	-26.92	-20.[illegible]	-17.56	-14.39	-8.67	.21	9.09	14.81	17.94	20.86	26.84
4	-29.03	-22.[illegible]	-18.98	-15.36	-8.85	1.26	11.37	17.09	21.48	24.78	31.69
5	-32.67	-25.78	-20.95	-16.79	-9.29	2.48	14.20	21.75	25.91	29.79	37.63
6	-36.17	-27.32	-23.64	-18.38	-9.91	3.22	16.35	24.81	29.47	33.76	42.60
7	-39.97	-30.17	-25.42	-20.25	-10.46	3.69	18.25	27.63	32.80	37.55	47.34
8	-44.12	-33.29	-27.97	-22.23	-11.82	4.33	20.49	30.90	36.44	41.91	52.79
9	-47.64	-35.84	-30.13	-23.90	-12.61	4.91	22.43	33.72	39.94	45.66	57.46
10	-50.86	-38.14	-31.98	-25.27	-13.09	5.80	24.68	36.86	43.57	49.73	62.45
11	-51.31	-38.18	-31.82	-24.95	-12.33	7.16	26.65	39.22	46.14	52.50	65.63
12	-47.04	-34.71	-28.76	-22.29	-10.[illegible]	7.87	28.19	37.98	44.49	50.46	62.79
13	-3[illegible].97	-28.01	-22.94	-17.43	-7.41	8.12	23.65	33.67	39.18	44.25	54.72
14	-3[illegible].09	-23.93	-19.50	-14.68	-5.92	[illegible].67	21.25	30.01	34.84	39.27	48.42
15	-28.22	-20.41	-16.62	-12.50	-5.02	6.58	18.19	25.67	29.79	33.57	41.39
16	-25.01	-18.17	-14.86	-11.25	-4.71	5.45	15.40	22.14	25.75	29.06	35.98
17	-21.14	-15.51	-12.77	-9.78	-4.36	4.05	12.45	17.88	20.86	23.60	29.27
18	-18.46	-13.94	-11.66	-9.14	-4.67	2.33	9.32	13.83	16.31	18.60	23.31
19	-16.55	-14.21	-12.11	-9.82	-5.67	.76	7.25	11.35	13.64	15.74	20.07
20	-14.34	-14.38	-12.46	-10.38	-6.58	-.78	5.18	8.97	11.04	12.98	16.94
21	-14.49	-14.71	-12.87	-10.88	-7.25	-1.63	3.99	7.41	9.41	11.44	15.23
22	-20.01	-16.07	-14.17	-12.09	-8.33	-2.48	3.36	7.13	9.20	11.11	15.09
23	-21.90	-17.65	-15.59	-13.35	-9.28	-2.98	3.33	7.90	9.64	11.69	15.94
24	-24.33	-19.52	-17.23	-14.67	-10.04	-2.95	4.14	8.78	11.31	13.63	18.43
25	-25.97	-20.79	-18.21	-15.45	-10.45	-2.69	5.07	10.08	12.83	15.36	20.59
26	-27.89	-22.23	-19.49	-16.51	-11.09	-2.69	5.72	11.19	14.12	16.86	22.52
27	-31.32	-24.83	-21.69	-18.27	-12.06	-2.42	7.21	13.92	16.84	19.98	26.97
28	-32.35	-32.83	-28.22	-23.20	-15.08	.05	14.19	23.31	28.33	32.94	42.46
29	-35.02	-34.79	-29.83	-24.93	-14.54	.56	15.75	25.55	30.94	35.90	46.19
30	-3[illegible]	-36.39	-31.13	-25.46	-15.17	.78	16.74	27.03	32.70	37.91	48.66
31	-40.98	-37.62	-32.11	-26.12	-15.29	1.63	18.51	29.39	35.38	40.88	52.25
32	-51.01	-38.99	-33.18	-26.79	-15.19	2.73	20.64	32.19	38.55	44.40	56.46
33	-53.28	-40.49	-34.22	-27.46	-15.17	3.69	22.95	35.29	42.01	48.23	61.07
34	-56.76	-42.85	-36.11	-28.78	-15.46	5.20	25.85	39.17	46.51	53.25	67.16
35	-58.21	-43.75	-36.75	-29.13	-15.29	6.17	27.44	41.48	49.10	56.10	70.56
36	-61.77	-46.31	-38.[illegible]	-30.68	-15.89	7.05	29.99	44.78	52.93	60.41	75.89
37	-63.50	-47.24	-39.36	-30.79	-15.22	8.92	33.06	49.62	57.20	65.07	81.34
38	-64.21	-47.41	-39.27	-30.41	-14.32	10.[illegible]	35.56	51.64	60.50	68.64	85.44
39	-65.58	-47.99	-39.47	-30.20	-13.37	12.74	38.84	55.67	64.94	73.46	91.05
40	-67.32	-48.75	-39.76	-29.96	-12.18	15.39	42.96	60.74	70.53	79.53	98.10
41	-63.37	-49.74	-35.71	-25.89	-8.05	19.61	47.26	65.10	74.92	83.95	102.58
42	-58.98	-40.00	-31.09	-21.39	-3.78	23.53	50.84	68.95	78.14	87.06	105.95
43	-53.95	-35.83	-27.06	-17.50	-.15	26.75	53.46	71.00	80.55	89.33	107.45
44	-51.58	-33.40	-24.60	-15.02	2.38	29.36	56.34	73.75	83.33	92.13	110.31
45	-50.88	-32.26	-23.24	-13.42	4.41	32.05	59.69	77.52	87.34	96.36	114.98
46	-50.89	-31.69	-22.32	-12.18	6.24	34.80	63.36	81.78	91.93	101.25	120.49
47	-48.15	-28.91	-19.69	-9.45	8.77	37.53	66.10	84.52	94.66	104.98	123.22
48	-47.15	-27.65	-18.21	-7.9[illegible]	10.74	39.69	68.64	87.31	97.59	107.04	126.54
49	-45.99	-26.97	-16.28	-5.73	13.43	43.14	72.05	92.01	102.56	112.26	132.27
50	-42.93	-23.15	-13.57	-3.14	16.80	45.16	74.53	95.47	103.90	113.48	133.26
51	-42.49	-22.48	-13.24	-2.88	5.97	46.20	74.52	93.27	103.65	113.19	132.88
52	-38.89	-13.67	-4.43	4.94	22.[illegible]	48.49	74.95	92.01	101.90	110.84	127.86
53	-29.01	-11.45	-2.95	6.31	23.11	49.18	76.24	92.05	101.31	109.81	127.37
54	-28.10	-10.81	-2.44	6.67	23.22	48.88	74.54	91.88	100.19	108.67	125.85
55	-29.5	-3.02	-.08	8.59	24.32	48.70	73.08	88.80	97.46	105.41	121.84
56	-9.0	4.44	11.38	18.94	32.67	53.46	75.25	88.98	96.54	103.48	117.82
57	-14.44	.78	8.15	16.17	30.[illegible]	53.33	75.92	90.49	98.52	106.04	121.11
58	-13.75	2.00	9.63	17.93	33.[illegible]	54.38	77.76	94.84	103.14	110.77	126.52
59	-15.52	.91	8.87	17.53	33.26	57.65	82.04	97.74	106.43	114.38	130.81
60	-21.56	-3.51	5.23	14.79	32.02	58.81	85.60	102.88	112.39	121.14	139.19
61	-7.38	7.17	14.22	21.89	35.02	67.43	79.03	92.96	100.63	107.68	122.23
62	-8.36	6.08	13.07	20.69	34.50	65.93	77.36	91.19	98.80	105.79	120.23
63	-9.47	4.89	11.85	19.42	33.17	64.49	75.81	89.56	97.13	104.09	118.45
64	-10.95	3.79	10.70	18.21	31.85	63.00	74.15	87.79	95.30	102.20	116.48
65	-11.45	2.70	9.55	17.01	30.55	61.55	72.56	86.10	93.56	100.41	114.56
66	-12.44	1.60	8.40	15.79	29.23	60.06	70.89	84.33	91.73	98.52	112.54
67	-13.46	.58	7.26	14.62	27.98	58.70	69.43	82.79	90.15	96.91	110.87
68	-14.45	-.60	6.11	13.40	26.66	57.21	67.76	81.02	88.37	95.02	108.83
69	-15.45	-1.70	4.96	12.20	25.36	55.77	66.18	79.34	86.58	93.29	106.99
70	-16.44	-2.80	3.80	10.99	24.09	54.28	64.51	77.67	84.76	91.36	104.99

TABLE 2.2. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.67	-4.05	-5.23	-4.39	-2.86	-.60	1.07	3.39	4.23	6.00	6.60
1	-26.27	-19.47	-19.67	-11.87	-7.88	-1.48	5.32	8.62	11.72	12.79	16.91
2	-23.17	-18.19	-15.78	-13.15	-6.38	-.97	6.91	11.18	13.86	16.22	21.20
3	-26.96	-20.03	-17.76	-14.95	-9.62	-.28	8.95	14.80	17.16	20.03	25.91
4	-29.60	-22.32	-19.69	-15.67	-9.16	.73	10.06	17.03	20.55	23.76	30.96
5	-31.67	-24.87	-20.97	-16.62	-9.36	1.29	12.48	20.86	24.79	27.58	35.09
6	-34.72	-26.32	-22.25	-17.42	-9.70	2.67	15.16	23.20	27.62	31.69	40.09
7	-36.37	-28.37	-23.27	-17.39	-10.36	3.65	17.06	26.68	31.86	36.22	45.85
8	-38.[illegible]	-32.22	-27.68	-21.98	-11.32	5.49	20.20	30.[illegible]	36.95	41.16	51.71
9	-42.66	-35.39	-29.89	-23.52	-12.22	6.08	22.93	35.84	37.86	46.67	57.17
10	-51.07	-38.78	-32.68	-25.34	-13.10	6.69	25.87	37.11	43.85	50.05	62.84
11	-54.78	-47.49	-35.38	-28.97	-14.95	7.88	28.84	39.38	46.27	53.46	66.68
12	-55.86	-52.41	-38.78	-28.03	-9.15	8.79	26.07	38.23	49.56	55.38	62.93
13	-38.67	-28.13	-31.39	-16.98	-6.20	8.89	25.18	34.97	39.36	45.32	58.55
14	-34.66	-21.78	-17.61	-12.88	-6.47	8.57	21.61	30.01	34.64	38.96	47.68
15	-29.71	-16.60	-14.96	-10.03	-3.57	7.31	18.22	25.[illegible]	27.13	32.69	38.09
16	-24.25	-15.85	-12.76	-9.38	-3.25	6.25	15.74	21.00	25.26	28.35	34.75
17	-18.81	-13.56	-10.93	-8.13	-3.15	5.41	12.71	17.77	20.59	23.14	28.96
18	-16.57	-12.15	-9.77	-7.66	-3.95	3.07	9.00	13.[illegible]	16.12	18.25	22.69
19	-15.45	-11.48	-9.00	-7.08	-3.47	1.51	7.10	10.7[illegible]	12.89	13.51	18.27
20	-13.65	-11.57	-9.88	-6.06	-4.72	.45	5.61	8.75	10.78	12.46	15.94
21	-15.19	-11.67	-10.27	-8.57	-5.39	-.54	3.81	7.98	9.93	11.09	13.38
22	-15.67	-12.43	-10.85	-9.13	-6.61	-1.17	3.07	6.79	8.51	10.09	13.35
23	-16.13	-12.79	-11.17	-9.40	-6.20	-1.23	3.74	6.99	8.70	10.32	13.97
24	-16.06	-11.31	-11.59	-9.73	-6.32	-1.05	3.27	7.62	9.99	11.21	14.76
25	-17.61	-14.04	-12.19	-10.19	-6.58	-.94	3.70	8.[illegible]	10.33	12.17	15.98
26	-19.74	-15.55	-13.94	-11.14	-6.98	-.46	4.08	10.18	12.94	14.60	18.96
27	-21.[illegible]	-16.76	-15.30	-12.77	-7.[illegible]	.27	7.[illegible]	12.21	15.91	17.3[illegible]	22.23
28	-23.30	-18.39	-16.31	-13.42	-8.73	-1.49	5.89	10.59	13.13	15.51	20.91
29	-23.41	-18.47	-16.93	-13.26	-8.33	-.69	6.96	11.87	14.69	17.08	22.22
30	-24.06	-20.10	-17.21	-14.07	-8.37	.48	9.33	15.03	18.17	21.06	27.02
31	-26.47	-22.96	-19.98	-15.99	-9.67	.38	10.33	16.74	20.27	23.62	30.20
32	-29.00	-22.25	-18.97	-15.91	-8.94	1.09	11.12	17.59	21.15	24.92	31.18
33	-29.91	-22.22	-18.74	-14.95	-8.07	2.60	13.27	20.15	23.94	27.92	34.41
34	-30.67	-22.97	-19.25	-15.19	-7.83	3.60	15.02	22.39	26.[illegible]	30.17	37.86
35	-32.65	-24.34	-20.31	-15.93	-7.97	4.37	16.72	24.68	29.06	33.09	41.90
36	-36.27	-24.86	-22.38	-17.33	-8.32	5.65	19.62	28.63	33.59	38.15	47.57
37	-38.42	-28.44	-25.92	-18.14	-8.39	6.92	21.84	31.59	36.96	41.89	52.07
38	-40.21	-29.53	-24.36	-18.73	-8.50	7.35	23.20	33.43	39.06	44.23	54.91
39	-41.40	-30.31	-24.98	-19.10	-8.49	7.94	24.41	35.02	40.86	46.23	57.31
40	-40.59	-29.40	-23.97	-18.07	-7.34	9.24	25.88	36.63	42.50	47.92	59.12
41	-42.71	-30.58	-24.98	-18.28	-6.65	11.39	29.42	41.05	47.45	53.34	65.49
42	-43.35	-30.58	-24.40	-17.67	-5.46	13.49	32.44	44.66	51.38	57.57	70.33
43	-44.47	-30.74	-24.12	-16.70	-3.77	16.57	36.42	50.09	57.26	63.90	77.01
44	-45.74	-31.32	-24.23	-16.53	-2.53	19.17	40.87	54.87	62.67	69.66	84.28
45	-47.59	-31.92	-24.38	-15.13	-1.18	22.00	45.18	60.13	68.36	75.92	9[illegible].54
46	-46.76	-30.88	-23.06	-14.65	.63	24.33	48.03	63.31	71.73	79.46	95.43
47	-41.72	-26.08	-18.51	-10.27	4.70	27.92	51.13	66.10	74.34	81.92	97.96
48	-39.64	-24.07	-16.52	-8.31	6.59	29.71	52.83	67.74	75.95	83.49	99.06
49	-38.65	-22.90	-15.40	-7.14	7.05	31.10	54.35	69.35	77.40	85.19	100.95
50	-37.84	-22.05	-14.39	-6.07	9.06	32.50	55.95	71.08	79.40	87.05	102.86
51	-35.19	-19.69	-12.19	-4.02	10.82	33.83	56.84	71.68	79.86	87.35	102.89
52	-33.78	-18.43	-11.00	-2.91	11.78	34.57	57.35	72.09	80.13	87.56	102.91
53	-32.72	-17.41	-10.00	-1.93	12.72	35.44	58.16	72.81	80.88	88.30	103.60
54	-33.72	-18.07	-10.52	-2.28	12.68	35.88	59.08	74.09	82.28	89.85	105.48
55	-35.69	-19.44	-9.94	2.97	14.41	37.94	60.91	76.66	84.96	94.96	101.31
56	-22.77	-9.10	-2.48	4.73	17.82	38.11	58.40	71.49	78.70	85.32	98.99
57	-23.73	-10.33	-3.02	3.26	16.08	36.00	55.91	68.76	75.82	82.31	96.73
58	-20.00	-6.94	-.41	6.27	18.78	38.16	57.55	70.05	76.94	83.27	96.33
59	-24.73	-10.66	-3.04	3.50	17.05	37.44	58.83	72.31	79.72	86.64	100.42
60	-25.81	-11.32	-4.35	3.33	17.20	38.70	60.20	74.07	81.70	88.72	103.20
61	-19.94	-3.99	1.07	8.19	19.67	37.98	56.88	66.73	73.18	78.81	84.86
62	-17.44	-5.37	.47	6.83	18.39	36.30	59.21	65.77	72.13	77.97	90.04
63	-19.20	-7.05	-1.13	5.38	16.99	35.12	53.24	64.93	71.37	77.28	89.44
64	-20.84	-8.56	-2.61	3.87	15.64	33.88	52.13	63.98	70.37	76.33	88.62
65	-22.40	-10.19	-4.17	2.30	14.26	32.70	51.13	63.02	69.57	75.58	88.00
66	-24.33	-11.82	-5.76	.83	12.81	31.38	49.95	61.93	68.52	74.58	87.09
67	-26.11	-13.47	-7.34	-.68	11.49	30.20	48.83	61.03	67.74	73.86	86.84
68	-27.74	-14.99	-8.82	-2.10	10.10	29.01	47.93	60.13	66.85	73.02	85.77
69	-29.60	-16.71	-10.49	-3.60	8.65	27.78	46.91	59.29	66.09	72.28	85.16
70	-31.26	-18.27	-11.98	-5.13	7.31	26.60	45.89	58.32	65.17	71.47	84.46

TABLE 2.3. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.20	-6.51	-5.70	-4.81	-3.20	-.71	1.79	3.40	4.28	5.20	6.78
1	-19.57	-15.78	-13.99	-11.99	-8.31	-2.68	2.95	6.59	8.59	10.42	14.22
2	-21.79	-17.25	-15.05	-12.65	-8.70	-1.56	5.18	9.53	11.92	14.12	18.67
3	-23.99	-18.63	-16.04	-13.21	-9.08	-.13	7.83	12.95	15.78	18.37	23.73
4	-26.79	-20.49	-17.44	-14.12	-9.08	1.27	10.63	16.66	19.99	23.04	29.34
5	-29.66	-22.44	-18.95	-15.15	-8.25	2.46	13.16	20.06	23.86	27.35	34.57
6	-33.03	-24.87	-20.92	-16.62	-8.82	3.29	15.40	23.20	27.50	31.45	39.61
7	-37.14	-27.87	-23.38	-18.49	-9.62	4.14	17.38	26.78	31.67	36.16	45.43
8	-41.51	-31.08	-25.02	-20.52	-10.54	4.95	20.43	30.42	35.97	40.97	51.40
9	-45.10	-33.63	-28.15	-22.18	-11.20	5.75	22.69	33.63	39.64	45.17	56.59
10	-46.63	-34.60	-29.77	-22.43	-10.91	6.94	24.40	36.32	42.66	48.49	60.52
11	-43.84	-32.12	-26.45	-20.27	-9.06	8.33	25.72	36.83	43.11	48.78	60.50
12	-37.46	-26.87	-21.74	-16.15	-6.01	9.71	25.43	35.57	41.15	46.28	56.87
13	-29.75	-20.76	-16.40	-11.66	-3.04	10.31	23.66	32.28	37.02	41.38	50.37
14	-23.85	-16.13	-12.40	-8.33	-.95	10.50	21.94	29.33	33.39	37.83	44.84
15	-18.06	-11.86	-8.85	-5.58	.36	9.57	18.78	24.71	27.99	30.99	37.19
16	-15.21	-9.91	-7.34	-4.54	.53	8.40	16.27	21.35	24.14	26.71	32.02
17	-13.92	-9.26	-6.39	-4.55	-.07	6.86	13.79	18.26	20.72	22.88	27.65
18	-11.25	-7.57	-5.78	-3.84	-.31	5.16	10.64	14.16	16.11	17.89	21.58
19	-10.41	-7.27	-5.75	-4.09	-1.09	3.58	8.24	11.25	12.91	14.43	17.57
20	-10.85	-7.89	-6.45	-4.89	-2.06	2.34	6.73	9.57	11.13	12.56	15.52
21	-10.73	-7.97	-6.64	-5.18	-2.56	1.53	5.69	8.24	9.69	11.03	13.78
22	-10.74	-8.08	-6.79	-5.39	-2.84	1.11	5.05	7.60	9.00	10.29	12.95
23	-11.95	-8.96	-7.51	-5.98	-3.06	1.39	5.04	8.71	10.29	11.74	14.74
24	-13.32	-9.87	-8.20	-6.39	-3.09	2.02	5.14	10.44	12.25	13.92	17.37
25	-14.00	-10.27	-8.46	-6.49	-2.92	2.62	6.17	11.78	13.71	15.52	19.25
26	-15.04	-10.95	-9.96	-6.80	-2.88	3.20	9.28	13.20	15.36	17.35	21.44
27	-16.61	-11.95	-9.69	-7.25	-2.77	4.15	11.07	15.53	17.98	20.24	24.90
28	-27.0[illegible]	-17.4[illegible]	-14.44	-11.1[illegible]	[illegible]	[illegible]	17.3[illegible]	3[illegible]	22.26	25.26	31.4[illegible]
29	-21.67	-16.2[illegible]	-13.67	-11.12	-6.53	4.32	14.21	20.76	24.31	27.57	34.30
30	-24.4[illegible]	-20.8[illegible]	-17.29	-13.47	-6.7[illegible]	4.05	15.[illegible]	[illegible]	26.77	30.87	37.81
31	-30.15	-22.11	-19.22	-13.93	-7.[illegible]	5.64	17.17	25.26	29.50	33.39	41.43
32	-31.94	-23.15	-21.69	-14.25	-7.[illegible]	7.[illegible]	20.37	28.[illegible]	33.13	37.55	46.38
33	-30.84	-21.96	-17.06	-13.37	-4.47	9.72	22.31	30.41	35.09	39.40	48.28
34	-31.22	-21.90	-19.42	-17.4[illegible]	-[illegible]	10.41	24.[illegible]	[illegible]	36.23	42.77	52.15
35	-32.41	-22.70	-17.[illegible]	-12.73	-7.4[illegible]	11.12	25.66	35.03	42.19	44.94	54.73
36	-34.24	-23.95	-1[illegible]	-13.48	-[illegible]	11.72	27.15	36.[illegible]	42.37	47.37	57.69
37	-34.32	-23.34	-13.77	-1[illegible].75	-7.[illegible]	12.32	27.08	37.31	43.43	[illegible].51	58.38
38	-34.41	-23.87	-2[illegible].76	[illegible]	-[illegible]	12.54	26.18	[illegible]	4[illegible].84	48.54	55.45
39	-33.17	-22.87	-17.[illegible]	[illegible]	-[illegible]	12.70	27.49	37.35	43.27	49.26	58.56
40	-28.[illegible]	-19.20	-14.[illegible]	.72	[illegible]	13.[illegible]	27.11	35.[illegible]	40.70	45.42	54.79
41	-26.32	-17.37	[illegible].03	-3.30	[illegible]	13.57	26.27	35.44	40.16	44.50	53.46
42	-25.49	-16.[illegible]	-1[illegible]	-7.47	[illegible]	14.46	27.81	36.[illegible]	41.13	45.47	54.35
43	-24.60	-15.59	-1[illegible].16	-6.3[illegible]	[illegible]	15.72	29.19	37.83	42.40	46.95	56.24
44	-24.10	[illegible]	-1[illegible]	-5.[illegible]	[illegible]	17.15	30.[illegible]	39.77	44.65	49.14	58.40
45	-2[illegible].45	[illegible]	[illegible]	-3.33	[illegible]	18.42	32.[illegible]	40.33	45.67	50.12	59.33
46	-20.30	-11.2[illegible]	[illegible].01	-2.2[illegible]	[illegible]	19.55	33.68	41.46	46.18	50.52	59.49
47	-17.71	-3.94	[illegible]	[illegible].08	[illegible]	21.36	34.28	42.78	47.41	51.66	60.43
48	-15.[illegible]	-7.[illegible]	[illegible]	1.66	[illegible]	22.77	35.79	43.66	48.41	52.60	61.[illegible]
49	-14.02	-5.3[illegible]	-1.[illegible]	3.45	11.[illegible]	24.65	37.54	45.85	50.43	54.63	63.32
50	-13.75	-4.50	[illegible]	4.04	12.[illegible]1	25.64	38.76	47.22	51.89	56.17	65.02
51	-14.57	-5.50	-1.10	3.63	12.70	25.32	39.28	47.96	52.74	57.13	66.20
52	-15.66	-4.43	-1.66	2.90	11.74	25.44	39.34	47.57	52.24	57.31	66.53
53	-15.68	-6.[illegible]	-1.76	3.18	12.[illegible]	26.07	39.19	48.96	53.30	58.44	67.82
54	-14.29	-[illegible]	[illegible]	4.06	12.[illegible]	26.35	39.69	48.63	53.44	57.46	66.99
55	-15.11	-[illegible]	-1.49	3.34	12.12	25.74	33.35	48.13	52.97	57.41	66.58
56	-16.26	[illegible]	-[illegible].19	1.6[illegible]	11.[illegible]	25.74	40.41	49.27	55.08	59.86	69.74
57	-5.61	[illegible]	[illegible].75	9.[illegible]	17.11	29.47	39.53	47.15	51.19	54.89	62.55
58	5.77	[illegible]	14.35	17.9[illegible]	22.79	32.82	41.05	47.67	50.68	53.83	59.91
59	8.69	1[illegible]	17.67	20.60	25.30	35.13	43.06	49.65	52.78	55.87	61.61
60	2.41	[illegible]	1[illegible].7[illegible]	1[illegible].9[illegible]	2[illegible].1[illegible]	33.51	43.78	50.56	54.29	57.63	64.41
61	-7.31	1	[illegible].53	10.3[illegible]	1[illegible].07	32.35	4[illegible].4	54.74	59.53	63.93	73.01
62	-8.95	[illegible]	4.14	9.34	18.07	31.53	4[illegible]	53.65	58.65	63.06	72.18
63	-9.91	-[illegible]	.61	3.42	17.14	30.67	44.20	[illegible]	57.73	62.14	71.25
64	-11.60	[illegible]	[illegible].27	7.35	16.14	29.31	42.[illegible]	[illegible]	56.[illegible]	61.28	70.42
65	-11.78	-2.67	1.74	[illegible].50	14.20	23.79	37.31	41.03	55.33	60.25	69.16
66	-12.71	-3.60	.8[illegible]	5.62	14.74	27.86	41.79	50.21	54.51	59.32	68.43
67	-13.79	-4.65	-.23	4.59	13.34	26.30	40.47	[illegible].22	54.04	58.46	67.60
68	-14.72	-5.86	-1.15	3.67	12.42	25.98	39.[illegible]	48.29	53.11	57.54	66.68
69	-15.66	-6.53	-2.10	2.71	11.4[illegible]	25.02	38.59	47.33	52.14	56.57	65.71
70	-16.59	-7.45	-3.03	1.79	10.54	24.10	[illegible]	46.41	51.22	55.65	64.78

TABLE 2.4. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.55	-6.05	-5.32	-4.58	-3.09	-.86	1.37	2.81	3.61	4.33	5.04
1	-17.73	-14.33	-12.63	-10.90	-7.65	-2.61	2.43	5.68	7.47	9.11	12.51
2	-19.62	-15.51	-13.51	-11.34	-7.40	-1.29	4.82	8.76	10.93	12.32	17.04
3	-23.19	-17.97	-15.44	-12.65	-7.69	.07	7.02	12.82	15.57	18.10	23.33
4	-27.11	-20.66	-17.53	-14.14	-7.96	1.61	11.18	17.35	20.75	23.87	30.32
5	-31.35	-23.60	-19.85	-15.76	-8.34	3.17	14.68	22.11	26.19	29.95	37.70
6	-36.13	-27.03	-22.62	-17.82	-9.10	4.42	17.93	26.65	31.45	35.86	44.96
7	-40.19	-29.85	-24.85	-19.40	-9.50	5.89	21.18	31.07	38.52	41.53	51.86
8	-44.50	-32.95	-27.42	-21.35	-10.32	6.76	23.85	34.87	40.93	46.51	58.02
9	-47.01	-34.73	-29.78	-22.31	-13.56	7.67	25.90	37.55	44.13	50.08	62.36
10	-46.72	-34.28	-28.26	-21.70	-5.79	8.68	27.15	39.06	45.62	51.65	64.09
11	-43.58	-31.91	-25.06	-19.70	-5.14	9.78	27.70	39.26	45.62	51.47	63.54
12	-37.99	-24.98	-21.65	-15.85	-5.31	11.03	27.37	37.90	43.70	49.04	60.04
13	-29.70	-19.60	-15.20	-10.40	-1.70	11.80	25.30	34.01	38.80	43.21	52.31
14	-21.67	-14.13	-10.48	-6.52	.71	11.49	23.08	30.25	34.26	37.91	45.45
15	-17.84	-11.34	-9.19	-4.76	1.46	11.11	20.76	26.98	30.41	33.56	40.26
16	-14.72	-9.24	-6.59	-3.70	1.54	9.67	17.40	23.04	25.93	28.58	34.06
17	-12.10	-7.60	-5.41	-3.04	1.24	7.97	14.66	18.97	21.35	23.53	28.03
18	-9.65	-6.06	-4.33	-2.44	.99	6.32	11.64	15.07	16.96	18.69	22.28
19	-9.26	-5.36	-3.95	-2.42	.37	4.68	8.99	11.78	13.31	14.72	17.82
20	-8.52	-5.93	-4.67	-3.30	-.82	3.03	6.69	9.37	10.74	11.99	14.59
21	-9.79	-7.12	-5.83	-4.43	-1.49	2.08	6.03	8.58	9.99	11.28	13.94
22	-10.12	-7.58	-6.35	-5.01	-2.58	1.19	4.96	7.39	8.72	9.95	12.49
23	-10.27	-7.77	-6.55	-5.23	-2.83	.89	4.61	7.01	8.33	9.59	12.35
24	-10.59	-7.99	-6.73	-5.35	-2.86	1.01	4.68	7.37	8.74	10.00	12.61
25	-11.84	-8.91	-7.49	-5.94	-3.13	1.22	5.57	8.38	9.92	11.34	14.28
26	-12.48	-9.31	-7.81	-6.18	-3.21	1.39	5.96	8.55	10.58	12.08	15.17
27	-11.20	-8.22	-6.78	-5.21	-2.35	2.07	6.49	9.34	10.91	12.36	15.33
28	-12.02	-8.48	-6.76	-4.85	-1.50	3.76	9.61	12.40	14.27	15.99	19.53
29	-10.63	-7.17	-5.42	-3.66	-.34	4.40	9.55	13.26	15.09	16.77	20.23
30	-10.22	-6.68	-4.96	-3.10	.29	5.55	10.60	14.12	16.06	17.77	21.31
31	-9.81	-6.17	-4.41	-2.50	.98	6.39	11.77	15.25	17.16	18.92	22.56
32	-10.71	-6.65	-4.69	-2.55	1.33	7.35	13.37	17.21	19.39	21.35	25.41
33	-10.27	-6.02	-3.96	-1.72	2.35	8.66	14.97	19.04	21.28	23.34	27.59
34	-10.30	-5.68	-3.44	-1.00	3.43	10.30	17.16	21.55	24.03	26.27	31.50
35	-11.62	-6.33	-3.46	-1.11	3.90	11.65	19.48	24.42	27.17	29.72	34.33
36	-12.28	-6.82	-4.19	-1.32	3.90	12.00	20.19	25.31	28.18	30.82	36.27
37	-14.02	-8.21	-5.39	-2.32	3.25	11.88	20.52	26.38	29.15	31.97	37.79
38	-15.14	9.18	-6.30	-3.16	2.54	11.38	20.22	25.57	29.06	31.95	37.90
39	-14.48	-8.91	-5.22	-3.28	2.05	10.32	18.58	23.91	28.85	29.54	35.11
40	-13.14	-8.06	-5.60	-2.92	1.95	9.49	17.04	21.90	24.58	27.05	32.12
41	-12.03	-7.23	-4.84	-2.38	2.32	9.52	16.72	21.37	23.92	26.27	31.13
42	-11.88	-7.03	-4.68	-2.12	2.52	9.72	16.92	21.57	24.13	26.47	31.33
43	-13.11	-7.85	-5.32	-2.56	2.48	10.24	18.33	23.05	25.81	28.35	33.60
44	-13.74	-8.96	-6.16	-3.12	2.41	10.39	19.57	25.10	28.14	30.94	36.72
45	-16.30	-10.13	-7.14	-3.89	2.02	11.18	20.34	26.24	29.49	32.48	38.65
46	-14.57	-8.63	-5.76	-2.63	3.08	11.87	20.68	26.38	29.49	32.37	38.30
47	-11.71	-6.22	-3.56	-.67	4.58	12.75	20.38	26.14	29.03	31.69	37.18
48	-13.33	-7.41	-4.54	-1.45	4.24	13.02	21.60	27.47	30.59	33.45	39.37
49	-14.49	-8.29	-5.29	-2.07	3.92	13.11	22.31	28.24	31.51	34.51	40.71
50	-15.65	-9.19	-6.06	-2.66	3.53	13.12	22.74	28.49	32.30	35.42	41.48
51	-16.96	-10.25	-7.00	-3.46	3.07	12.94	22.61	29.33	32.87	36.13	42.24
52	-17.74	-11.23	-8.07	-4.64	1.60	11.27	20.94	27.18	30.61	33.97	40.28
53	-17.93	-11.25	-8.23	-6.05	.52	9.77	19.02	24.38	28.27	31.28	37.52
54	-18.84	-12.73	-9.78	-6.56	-.72	8.34	17.40	23.25	26.47	29.42	35.53
55	-27.56	-16.08	-12.35	-9.53	-3.33	6.28	15.90	22.13	25.51	28.65	35.13
56	-25.18	-18.69	-15.55	-12.18	-5.92	3.77	13.35	19.56	22.93	26.12	32.61
57	-31.52	-23.92	-17.24	-16.23	-8.96	2.32	13.60	20.86	24.88	28.56	36.16
58	-44.02	-33.95	-29.13	-23.84	-14.23	.66	15.56	25.17	30.46	35.32	41.35
59	-21.53	-15.20	-12.53	-10.74	-5.57	2.44	10.49	15.62	18.06	21.07	26.47
60	-18.41	-10.25	-8.23	-6.03	-2.04	4.14	10.33	14.32	16.51	18.53	22.76
61	-24.43	-18.07	-14.98	-11.63	-5.54	3.91	13.39	19.45	22.80	25.88	32.25
62	-24.53	-18.20	-15.13	-11.86	-5.74	3.66	13.06	19.12	22.46	25.52	31.85
63	-24.51	-18.21	-15.15	-11.83	-5.80	3.55	12.91	18.94	22.26	25.31	31.61
64	-24.64	-18.36	-15.32	-12.02	-6.01	3.31	12.62	18.63	21.94	24.98	31.25
65	-24.73	-18.53	-15.51	-12.29	-6.22	3.10	12.34	18.33	21.63	24.65	30.91
66	-25.10	-18.82	-15.80	-12.48	-6.49	2.81	12.12	18.12	21.42	24.46	30.73
67	-25.23	-19.03	-15.99	-12.71	-6.72	2.57	11.89	17.84	21.14	24.17	30.42
68	-25.36	-19.11	-16.09	-12.79	-6.81	2.46	11.73	17.71	21.00	24.03	30.27
69	-25.58	-19.34	-16.32	-13.03	-7.05	2.21	11.47	17.45	20.74	23.76	30.00
70	-25.82	-19.58	-16.56	-13.27	-7.30	1.96	11.22	17.20	20.48	23.51	29.70

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 2.5. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.80	-4.65	-4.09	-3.41	-2.37	-.66	1.05	2.16	2.77	3.33	4.49
1	-14.79	-12.06	-10.76	-9.35	-6.78	-2.81	1.17	3.72	5.35	6.84	[illegible]
2	-15.61	-12.57	-11.10	-9.50	-6.59	-2.09	2.42	5.32	6.92	8.39	11.43
3	-16.84	-13.23	-11.48	-9.55	-6.12	-.76	4.60	6.06	[illegible]	11.71	15.32
4	-13.70	-14.46	-12.32	-10.05	-5.44	.44	6.83	10.34	13.14	15.29	19.59
5	-21.[illegible]	-15.03	-13.57	-10.90	-5.04	1.48	5.64	13.67	16.54	18.99	24.07
6	-24.06	-18.18	-15.33	-12.23	-5.60	2.14	10.57	16.50	19.60	22.45	23.33
7	-27.99	-21.12	-17.79	-14.17	-7.60	2.60	12.29	19.37	22.99	26.31	33.18
8	-33.01	-24.92	-21.00	-16.73	-8.99	3.04	15.05	22.80	27.07	30.99	39.09
9	-36.12	-27.13	-22.77	-18.03	-9.42	3.92	17.27	25.88	30.62	34.17	43.36
10	-38.46	-28.73	-24.61	-18.83	-9.56	4.46	19.33	29.65	33.78	38.49	48.22
11	-40.20	-29.88	-24.89	-19.45	-9.57	5.74	21.62	30.52	36.36	41.35	51.67
12	-34.97	-25.55	-20.99	-16.03	-7.02	6.30	20.93	29.35	34.91	39.47	48.88
13	-26.07	-18.40	-14.69	-10.65	-3.31	8.48	19.46	26.84	30.84	34.66	42.23
14	-15.37	-12.33	-9.41	-6.23	-.45	9.51	17.46	23.24	26.42	29.35	35.33
15	-13.11	-8.35	-6.05	-3.54	1.02	8.08	15.15	19.76	22.21	24.52	29.28
16	-10.34	-6.88	-4.92	-2.73	1.10	7.12	13.14	17.02	19.15	21.12	25.17
17	-8.44	-5.29	-3.76	-2.02	.93	5.62	10.20	13.33	14.99	16.62	19.68
18	-7.05	-4.62	-3.44	-2.16	.17	3.78	7.29	9.72	11.00	12.18	14.51
19	-7.25	-5.19	-4.19	-3.10	-1.12	1.59	5.11	6.59	8.07	9.02	11.24
20	-5.42	-6.50	-5.57	-4.56	-2.77	-.12	2.96	4.80	5.81	6.74	8.65
21	-10.06	-7.05	-7.08	-6.02	-4.16	-1.11	1.67	3.79	4.85	5.82	7.83
22	-9.56	-7.79	-5.94	-6.00	-4.31	-1.63	.94	2.63	3.56	4.42	6.19
23	-10.47	-8.58	-7.67	-6.67	-4.86	-2.05	.76	2.57	3.57	4.48	6.38
24	-10.94	-8.93	-7.56	-6.90	-4.97	-1.98	1.00	2.93	3.99	4.96	6.39
25	-11.16	-9.09	-8.08	-6.96	-5.00	-1.92	1.15	3.14	4.23	5.24	7.51
26	-11.64	-9.43	-8.35	-7.13	-5.05	-1.77	1.53	3.55	4.82	5.89	8.11
27	-12.57	-10.09	-8.69	-7.56	-5.20	-1.52	2.17	4.54	5.85	7.05	9.54
28	-14.92	-11.65	-10.07	-8.39	-5.22	-.37	3.48	7.61	9.33	10.92	14.18
29	-13.54	-10.51	-9.05	-7.45	-4.64	-.07	4.42	7.32	8.91	10.38	13.48
30	-13.04	-10.13	-8.72	-7.18	-4.39	-.07	4.24	7.06	8.64	10.00	12.94
31	-12.67	-9.88	-8.41	-6.89	-4.14	.12	4.38	7.13	8.44	10.03	12.98
32	-13.41	-10.28	-8.69	-6.94	-3.89	.07	4.43	8.30	10.39	11.84	15.40
33	-13.89	-10.42	-8.73	-6.90	-3.57	1.58	6.74	10.07	11.90	13.58	17.06
34	-15.34	-11.53	-9.68	-7.66	-4.00	1.68	7.36	11.02	13.04	14.89	18.72
35	-15.37	-11.58	-9.75	-7.75	-4.12	1.50	7.12	10.75	12.75	14.58	18.37
36	-16.02	-12.18	-10.21	-8.19	-4.39	1.43	7.29	10.99	13.06	14.98	18.87
37	-16.46	-12.58	-10.58	-8.49	-4.70	1.19	7.07	10.86	12.95	14.87	18.84
38	-17.30	-13.39	-11.90	-9.44	-5.70	-.18	5.90	9.64	11.70	13.59	17.98
39	-17.38	-13.72	-11.95	-10.02	-6.52	-1.10	4.33	7.83	9.76	11.53	15.18
40	-17.02	-13.72	-12.12	-10.39	-7.23	-2.39	2.48	5.71	7.45	9.09	12.39
41	-18.42	-14.99	-13.33	-11.52	-8.24	-3.15	1.93	5.21	7.02	8.68	12.11
42	-20.64	-16.82	-14.97	-12.95	-9.36	-3.63	2.09	5.70	7.71	9.46	13.30
43	-22.36	-18.1[illegible]	-16.19	-13.98	-10.80	-3.82	2.35	6.34	8.53	10.54	14.78
44	-22.26	-18.03	-15.98	-13.76	-9.72	-3.48	2.02	6.06	7.80	11.12	15.30
45	-21.99	-17.76	-15.71	-13.47	-9.42	-3.14	3.15	7.20	9.43	11.48	15.71
46	-21.95	-17.31	-15.38	-13.12	-9.16	-3.01	3.12	7.10	9.20	11.20	15.48
47	-22.08	-17.78	-15.70	-13.43	-9.32	-2.99	3.44	7.56	9.82	11.91	16.28
48	-22.19	-17.93	-15.87	-13.65	-9.54	-3.25	3.07	7.14	9.38	11.44	15.49
49	-22.94	-18.57	-16.45	-14.15	-9.97	-3.48	3.00	7.18	9.48	11.60	15.97
50	-24.96	-20.14	-17.84	-15.31	-10.71	-3.84	3.64	8.13	10.46	12.80	17.38
51	-26.18	-21.12	-18.78	-16.08	-11.31	-3.91	3.49	8.26	10.89	13.30	18.28
52	-25.37	-20.98	-18.73	-16.37	-12.08	-5.42	1.24	6.63	7.90	10.07	14.66
53	-25.86	-21.56	-19.47	-17.21	-13.09	-6.71	-.33	3.78	4.85	6.13	12.43
54	-27.91	-23.47	-21.32	-18.98	-14.73	-8.15	-1.66	2.70	3.84	7.19	11.63
55	-30.09	-25.42	-23.16	-20.70	-16.23	-9.30	-2.37	2.10	4.56	6.82	11.49
56	-33.07	-28.72	-26.10	-23.41	-18.38	-10.68	-3.34	3.34	5.80	7.85	13.80
57	-36.51	-30.83	-28.09	-25.10	-19.67	-11.25	-2.83	2.68	5.59	8.34	14.01
58	-42.34	-35.79	-32.54	-29.07	-22.75	-12.96	-3.13	3.14	6.62	9.82	16.41
59	-42.14	-35.92	-32.91	-29.63	-23.68	-14.45	-5.23	.73	4.00	7.02	13.23
60	-49.19	-41.52	-37.81	-33.77	-26.92	-16.04	-3.46	3.69	7.73	11.46	18.18
61	-43.45	-36.92	-33.76	-30.32	-24.08	-14.40	-4.72	1.52	4.96	8.12	14.64
62	-42.97	-36.02	-32.84	-29.49	-23.32	-13.36	-4.14	1.88	5.38	8.68	14.80
63	-41.38	-35.03	-31.96	-28.61	-22.53	-13.10	-3.67	2.41	5.76	8.83	15.18
64	-40.41	-34.13	-31.09	-27.78	-21.77	-12.46	-3.13	2.88	6.19	9.23	16.64
65	-39.34	-33.14	-30.16	-26.90	-20.98	-11.80	-2.62	3.38	6.56	9.56	15.74
66	-38.23	-32.13	-29.18	-26.07	-20.19	-11.18	-3.04	3.77	6.98	9.93	16.03
67	-37.27	-31.24	-28.33	-25.16	-19.39	-10.45	-1.51	4.26	7.43	10.35	16.37
68	-36.22	-30.26	-27.41	-24.20	-18.47	-9.80	-.88	4.68	7.84	10.68	16.68
69	-35.27	-29.48	-26.56	-23.47	-17.86	-9.15	-.44	5.17	8.26	11.10	16.97
70	-34.23	-28.45	-25.65	-22.61	-17.09	-8.50	.04	5.61	8.66	11.45	17.83

TABLE 2.6. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.22	[illegible]	2.84	3.27	4.46
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.33	[illegible]	4.56	5.75	9.19
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.[illegible]	[illegible]	5.73	6.97	9.60
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9.05	10.38	13.74
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.72	[illegible]	12.26	14.07	17.80
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.75	[illegible]	15.22	17.33	21.09
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18.20	20.85	25.72
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.73	[illegible]	21.46	24.29	30.13
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25.75	29.16	36.00
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18.[illegible]	[illegible]	30.05	33.97	42.08
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34.33	38.76	47.63
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	37.30	41.87	51.00
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	38.35	42.92	52.32
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	39.38	40.02	49.35
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34.40	34.75	41.78
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29.46	27.01	32.28
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	17.08	19.54	22.36
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12.27	13.89	16.23
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.40	6.35	10.42
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.37	[illegible]	4.37	5.17	6.11
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.41	[illegible]	2.72	3.48	5.02
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.53	2.31	3.77
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.57	1.40	3.23
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.32	1.02	2.53
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.01	.76	2.32
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.10	.39	2.22
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.24	.56	2.10
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.03	.22	2.53
29	-17.41	-13.16	-12.07	-10.83	-8.73	-5.33	-2.[illegible]	.22	1.31	2.40	4.65
30	-16.12	-13.65	-12.45	-11.15	-8.79	-5.12	-1.45	.02	2.22	3.62	5.89
31	-16.03	-12.65	-12.43	-11.21	-8.63	-5.29	-1.70	.62	2.90	3.07	5.50
32	-16.17	-13.72	-12.58	-11.34	-9.[illegible]	-5.55	-2.19	.18	2.40	2.54	4.90
33	-17.05	-14.21	-12.27	-11.91	-9.85	-5.69	-1.82	.64	1.99	3.23	5.30
34	-17.52	-14.82	-13.51	-12.03	-9.51	-5.51	-1.51	1.08	2.50	3.80	6.50
35	-17.93	-15.13	-13.43	-12.35	-9.67	-5.50	-1.74	1.35	2.83	4.10	6.99
36	-18.64	-16.72	-15.30	-13.75	-11.[illegible]	-6.68	-2.[illegible]	.43	1.96	3.27	6.28
37	-21.63	-18.54	-17.07	-15.36	-12.34	-7.67	-3.00	.02	0.68	3.20	6.35
38	-21.17	-18.34	-16.56	-15.45	-13.79	-8.66	-4.41	-1.71	-.23	1.44	3.96
39	-21.50	-18.[illegible]	-17.43	-15.93	-13.36	-9.30	-5.73	-2.61	-1.17	.16	2.30
40	-23.66	-21.62	-19.15	-17.55	-14.64	-10.14	-6.63	-2.73	-1.13	.54	3.38
41	-25.36	-22.09	-20.50	-18.73	-15.64	-10.79	-5.73	-2.80	-1.07	.91	3.79
42	-28.53	-2[illegible].46	-21.78	-19.95	-16.62	-11.47	-6.32	-2.01	-1.17	.51	3.58
43	-29.35	-25.02	-29.11	-22.03	-18.26	-12.40	-6.55	-2.78	-.70	1.21	5.15
44	26.93	-25.46	-22.78	-21.95	-18.67	-13.47	-8.32	-4.59	-3.18	-1.00	1.59
45	-30.32	-26.85	-25.15	-23.32	-19.99	-14.31	-9.64	-6.30	-4.46	-2.77	.71
46	-31.26	-28.[illegible]1	-25.14	-23.32	-20.67	-14.50	-9.78	-6.48	-4.66	-2.95	.46
47	-30.56	-26.97	-25.22	-23.33	-19.89	-14.55	-9.22	-5.78	-3.88	-2.14	1.45
48	-30.23	-26.72	-24.58	-23.01	-19.51	-14.67	-8.64	-5.14	-3.21	-1.42	2.23
49	-31.63	-27.03	-25.69	-23.59	-19.76	-13.43	-7.85	-4.06	-1.96	-.02	3.38
50	-32.63	-28.20	-27.16	-24.77	-20.49	-13.52	-7.25	-3.11	-.78	1.37	5.79
51	-35.01	-30.39	-29.16	-25.72	-21.30	-14.45	-7.60	-3.13	-.74	1.49	6.11
52	-37.46	-32.37	-29.91	-27.28	-22.77	-14.82	-7.29	-2.42	.25	2.71	7.79
53	-33.63	-33.31	-30.73	-27.92	-22.82	-14.93	-7.03	-1.94	.87	3.44	9.76
54	-39.20	-33.83	-32.23	-28.40	-23.26	-15.25	-7.22	-2.18	.65	3.25	8.62
55	-41.34	-35.81	-32.13	-30.21	-24.92	-16.70	-8.49	-3.20	-.28	2.40	7.33
56	-41.53	-36.30	-33.77	-31.01	-26.61	-18.25	-10.48	-5.48	-2.72	-.19	5.04
57	-42.83	-37.79	-35.32	-32.69	-27.74	-20.16	-12.58	-7.70	-5.01	-2.93	2.57
58	-46.32	-40.86	-38.22	-35.35	-30.13	-22.62	-13.22	-6.71	-5.04	-3.20	2.26
59	-55.77	-48.72	-45.30	-41.58	-34.87	-24.36	-13.49	-7.14	-3.42	-.00	7.05
60	-59.65	-52.36	-47.83	-45.00	-38.02	-27.21	-16.39	-9.42	-5.58	-2.05	5.23
61	-62.77	-55.30	-51.71	-47.80	-40.69	-29.68	-18.67	-11.56	-7.65	-4.06	3.36
62	-59.35	-52.47	-49.12	-45.51	-38.95	-28.71	-16.50	-11.51	-8.28	-4.95	1.93
63	-59.11	-51.30	-49.00	-44.41	-37.93	-27.77	-17.66	-11.14	-7.55	-4.25	2.57
64	-58.00	-50.22	-46.54	-43.27	-36.89	-26.84	-16.78	-10.30	-6.73	-3.85	3.33
65	-55.76	-49.06	-45.81	-42.22	-35.85	-25.90	-15.39	-9.53	-5.99	-2.74	3.96
66	-54.82	-48.14	-44.90	-41.37	-34.97	-25.05	-15.12	-8.72	-5.20	-1.96	4.73
67	-53.59	-46.97	-43.76	-40.27	-33.98	-24.11	-14.29	-7.95	-4.46	-1.26	5.36
68	-52.57	-45.97	-42.77	-39.29	-32.97	-23.18	-13.38	-7.06	-3.58	-.89	6.21
69	-51.24	-44.73	-41.57	-38.14	-31.91	-22.24	-12.57	-6.34	-2.90	.25	6.76
70	-50.22	-43.72	-41.58	-37.16	-31.04	-21.31	-11.66	-5.45	-2.02	1.62	7.61
71	-49.33	-42.56	-39.44	-36.06	-29.51	-20.37	-10.43	-4.67	-1.29	1.83	8.25

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 2.7. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.95	-3.12	-2.72	-2.28	-1.49	-.26	.97	1.74	2.20	2.68	3.45
1	-11.52	-9.26	-8.16	-6.96	-4.79	-1.93	1.99	4.11	5.30	6.50	8.46
2	-10.39	-8.09	-6.93	-5.72	-3.52	-.11	3.30	5.50	6.71	7.82	10.18
3	-10.06	-7.17	-6.06	-4.69	-2.06	1.99	5.95	8.53	9.95	11.76	13.96
4	-10.82	-7.61	-6.06	-4.37	-1.30	3.46	8.22	11.29	12.98	14.53	17.78
5	-10.97	-7.59	-5.98	-4.07	-.79	4.31	9.98	12.69	14.50	16.16	19.69
6	-11.96	-7.72	-5.90	-3.93	-.39	5.22	10.77	14.36	16.33	18.15	21.89
7	-12.69	-8.90	-6.32	-4.30	.39	6.90	12.76	16.26	19.12	21.19	25.97
8	-13.19	-9.16	-6.75	-4.12	.69	8.33	15.42	20.18	22.81	25.22	30.19
9	-13.54	-9.66	-6.90	-3.51	1.79	9.80	18.02	23.27	26.16	28.82	34.31
10	-13.73	-8.73	-5.82	-2.66	3.29	11.99	20.89	26.49	29.80	32.70	38.70
11	-13.72	-7.39	-4.32	-.99	5.37	14.47	23.86	29.92	33.26	36.33	42.68
12	-13.07	-6.48	-3.33	.18	6.98	16.25	26.03	32.33	35.80	38.99	45.67
13	-12.35	-5.87	-2.79	.67	8.07	16.18	26.07	32.28	35.70	38.83	45.38
14	-11.78	-5.81	-2.91	.29	5.96	14.83	23.70	29.92	32.57	35.46	41.40
15	-9.61	-5.96	-2.71	-.26	3.19	11.89	17.99	22.99	24.89	27.14	31.79
16	-8.26	-4.89	-3.26	-1.98	1.79	6.75	11.75	14.98	16.75	18.39	21.76
17	-8.79	-6.09	-4.29	-3.38	-.83	3.12	7.04	9.42	11.03	12.32	14.98
18	-9.30	-7.15	-6.11	-4.98	-2.93	.25	3.44	5.49	6.42	7.66	9.81
19	-8.79	-7.13	-6.35	-5.50	-3.96	-1.66	.83	2.37	3.22	4.00	5.42
20	-9.65	-8.15	-7.42	-6.63	-5.19	-2.96	-.73	.70	1.49	2.22	3.72
21	-10.72	-9.29	-8.53	-7.76	-6.35	-3.16	-1.90	-.57	.20	.92	2.39
22	-11.82	-10.35	-9.64	-8.87	-7.46	-5.28	-3.09	-1.69	-.91	-.20	1.27
23	-12.73	-11.23	-10.51	-9.74	-8.33	-6.15	-3.97	-2.54	-1.79	-1.07	.48
24	-13.57	-12.09	-11.33	-10.49	-9.22	-6.75	-4.48	-3.01	-2.21	-1.46	.07
25	-13.79	-12.29	-11.57	-10.78	-9.46	-7.19	-4.92	-3.49	-2.71	-1.98	-.49
26	-13.09	-12.58	-11.85	-11.06	-9.62	-7.39	-5.16	-3.72	-2.92	-2.19	-.69
27	-13.92	-13.36	-12.51	-11.44	-10.11	-7.71	-5.31	-3.74	-2.90	-2.12	-.58
28	-15.33	-14.38	-13.61	-12.72	-11.22	-8.83	-6.44	-4.90	-4.06	-3.28	-1.67
29	-18.06	-16.12	-15.17	-14.15	-12.29	-9.40	-6.51	-4.84	-3.62	-2.68	-.73
30	-16.50	-15.26	-14.46	-13.60	-12.02	-9.59	-7.15	-5.58	-4.71	-3.92	-2.27
31	-16.75	-15.03	-14.20	-13.30	-11.65	-9.11	-6.76	-4.52	-4.01	-3.18	-1.46
32	-19.55	-16.39	-15.35	-14.21	-12.15	-8.95	-5.75	-3.68	-2.55	-1.80	.65
33	-19.27	-17.03	-15.55	-14.77	-12.67	-9.32	-6.00	-3.86	-2.68	-1.60	.63
34	-19.91	-17.65	-15.55	-15.38	-13.19	-9.83	-6.42	-4.30	-3.11	-2.01	.26
35	-22.69	-20.06	-19.79	-17.40	-14.88	-10.93	-7.07	-4.55	-3.16	-1.89	.74
36	-23.93	-21.23	-19.92	-18.50	-15.31	-11.30	-7.89	-5.30	-3.88	-2.57	.13
37	-23.67	-21.20	-20.00	-18.65	-16.77	-12.65	-8.98	-6.61	-5.31	-4.11	-1.64
38	-24.53	-21.90	-20.63	-19.24	-18.77	-12.82	-8.92	-6.40	-5.02	-3.74	-1.12
39	-24.48	-21.98	-20.75	-19.42	-17.01	-13.27	-9.53	-7.12	-5.80	-4.58	-2.06
40	-25.72	-23.28	-22.10	-20.81	-13.48	-14.06	-11.24	-8.91	-7.62	-6.44	-4.00
41	-29.06	-26.31	-24.97	-23.53	-20.89	-16.81	-12.73	-10.55	-8.65	-7.31	-4.56
42	-32.05	-28.97	-27.43	-25.85	-22.90	-18.32	-13.74	-10.79	-9.16	-7.87	-4.58
43	-32.96	-29.80	-28.27	-26.60	-23.50	-18.89	-14.19	-11.17	-9.50	-7.97	-4.81
44	-33.05	-29.91	-28.39	-26.74	-23.73	-19.07	-14.41	-11.40	-9.74	-8.22	-5.08
45	-33.72	-30.28	-28.76	-26.95	-23.79	-18.82	-13.85	-10.65	-8.89	-7.26	-3.92
46	-33.22	-29.92	-28.31	-26.57	-23.41	-18.50	-13.60	-10.44	-8.69	-7.09	-3.79
47	-32.56	-29.38	-27.83	-26.18	-23.11	-18.38	-13.66	-10.61	-8.93	-7.35	-4.22
48	-32.45	-29.31	-27.79	-26.14	-23.14	-18.48	-13.82	-10.81	-9.16	-7.60	-4.50
49	-32.97	-29.79	-28.25	-26.58	-23.53	-18.81	-14.09	-11.05	-9.37	-7.83	-4.68
50	-35.30	-31.70	-29.96	-28.08	-24.62	-19.27	-13.93	-10.49	-8.59	-6.85	-3.25
51	-37.81	-33.93	-32.05	-30.01	-25.29	-20.53	-14.37	-11.05	-9.01	-7.13	-3.26
52	-42.48	-37.96	-35.72	-33.29	-28.86	-22.01	-15.15	-10.73	-8.29	-6.05	-1.43
53	-42.39	-37.89	-35.71	-33.34	-29.04	-22.36	-15.69	-11.39	-9.62	-6.84	-2.34
54	-43.74	-39.17	-36.96	-34.55	-30.18	-23.41	-16.63	-12.26	-9.85	-7.64	-2.87
55	-45.58	-40.92	-38.66	-36.20	-31.74	-24.82	-17.50	-13.42	-10.98	-8.72	[illegible]
56	-49.82	-44.66	-42.16	-39.44	-34.50	-26.84	-19.18	-14.24	-12.53	-9.03	[illegible]
57	-56.62	-50.58	-47.66	-44.47	-38.69	-29.72	-20.76	-14.97	-12.78	-8.06	-2.81
58	-69.50	-61.09	-57.02	-52.60	-44.55	-32.00	-19.61	-11.57	-7.14	-3.07	5.31
59	-75.67	-65.91	-61.19	-56.05	-46.70	-32.22	-17.94	-8.39	-3.25	1.48	11.23
60	-66.17	-58.35	-54.57	-50.45	-42.96	-31.35	-19.75	-12.26	-8.14	-4.35	3.46
61	-63.87	-56.38	-52.75	-48.81	-41.64	-30.72	-19.41	-12.24	-8.30	-4.67	2.82
62	-63.01	-55.55	-51.33	-47.39	-40.84	-29.76	-18.68	-11.53	-7.59	-3.98	3.49
63	-61.82	-54.43	-50.85	-46.96	-39.88	-28.91	-17.94	-10.46	-6.97	-3.39	4.00
64	-60.89	-53.52	-49.95	-46.06	-38.00	-28.06	-17.12	-10.06	-6.18	-2.61	4.77
65	-59.95	-52.60	-49.04	-45.16	-38.12	-27.21	-16.30	-9.26	-5.38	-1.82	5.53
66	-59.07	-51.74	-48.19	-44.33	-37.32	-26.45	-15.57	-8.56	-4.78	-1.15	6.17
67	-58.14	-50.83	-47.29	-43.44	-36.44	-25.60	-14.75	-7.76	-3.90	-.37	6.94
68	-56.96	-49.73	-46.22	-42.41	-35.48	-24.75	-14.01	-7.09	-3.27	.23	7.46
69	-56.12	-48.90	-45.41	-41.61	-34.70	-23.98	-13.27	-6.36	-2.66	.94	8.15
70	-55.20	-48.02	-44.51	-40.72	-33.82	-23.13	-12.45	-5.55	-1.76	1.73	8.93

TABLE 2.8. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.95	-3.13	-2.73	-2.30	-1.51	-.29	.92	1.71	2.14	2.64	3.34
1	-11.70	-9.42	-8.31	-7.11	-4.92	-1.69	1.05	4.48	5.29	6.36	8.03
2	-11.13	-8.69	-7.51	-6.22	-3.88	-.24	3.37	5.71	7.00	8.18	10.62
3	-9.89	-7.10	-6.09	-4.68	-2.20	1.65	5.49	7.97	9.32	10.69	13.18
4	-9.60	-6.89	-5.54	-4.07	-1.40	2.79	6.87	9.54	11.01	12.36	15.15
5	-11.09	-7.86	-6.30	-4.60	-1.51	3.29	8.08	11.17	12.88	14.44	17.67
6	-13.09	-9.20	-7.39	-5.31	-1.69	3.06	9.77	13.44	15.47	17.33	21.17
7	-14.74	-10.26	-8.10	-5.79	-1.97	5.15	11.77	16.44	18.39	20.56	25.81
8	-15.84	-10.60	-8.37	-5.72	-.92	6.53	13.98	18.78	21.92	23.85	28.87
9	-15.37	-10.16	-7.49	-4.69	.39	8.27	16.15	21.23	24.04	26.40	31.91
10	-10.77	-6.11	-3.65	-1.90	3.07	9.08	16.90	21.36	23.84	26.08	30.74
11	-12.30	-6.91	-4.30	-1.96	3.71	11.71	19.74	24.08	27.72	30.33	35.73
12	-15.03	-8.76	-6.72	-2.91	3.69	12.90	22.21	28.21	31.54	34.55	40.83
13	-19.20	-8.20	-5.29	-2.13	3.62	12.53	21.99	27.18	30.35	33.25	39.26
14	-12.90	-7.00	-4.39	-1.54	3.63	11.65	19.67	24.84	27.66	30.30	35.78
15	-10.24	-5.87	-3.75	-1.44	2.75	9.25	15.74	19.93	22.24	24.35	28.74
16	-9.00	-5.49	-4.01	-2.24	.94	5.94	10.95	14.17	15.94	17.67	20.93
17	-9.67	-6.48	-5.53	-4.07	-1.40	2.79	6.84	9.56	11.01	12.36	15.15
18	-9.56	-7.18	-6.32	-5.17	-3.07	.17	3.42	5.31	6.46	7.72	9.91
19	-9.35	-7.62	-6.78	-5.85	-4.20	-1.62	.94	2.62	3.54	4.38	6.11
20	-9.65	-8.15	-7.43	-6.64	-5.21	-2.99	-.78	.85	1.44	2.16	3.66
21	-10.52	-9.09	-8.32	-7.54	-6.13	-4.03	-1.74	-.62	.46	1.17	2.65
22	-11.50	-10.06	-9.36	-8.60	-7.21	-5.07	-2.92	-1.54	-.78	-.07	1.37
23	-11.97	-10.69	-9.91	-9.17	-7.84	-5.76	-3.69	-2.35	-1.61	-.94	.46
24	-12.33	-10.96	-10.30	-9.58	-8.27	-6.23	-4.20	-2.69	-1.16	-1.50	-.13
25	-13.09	-11.70	-11.02	-10.28	-8.94	-6.87	-4.79	-3.45	-2.71	-2.04	-.64
26	-13.59	-12.16	-11.47	-10.71	-9.34	-7.22	-5.14	-3.73	-2.97	-2.28	-.85
27	-14.69	-13.09	-12.32	-11.48	-9.95	-7.59	-5.24	-3.69	-2.85	-2.08	-.49
28	-17.24	-15.24	-14.27	-13.21	-11.73	-8.34	-5.38	-3.47	-2.42	-1.65	.55
29	-16.73	-14.92	-13.91	-13.02	-11.73	-8.45	-5.66	-3.87	-2.38	-1.97	-.10
30	-17.17	-15.22	-14.28	-13.25	-11.79	-8.50	-5.61	-3.75	-2.72	-1.78	.17
31	-17.76	-15.65	-14.63	-13.52	-11.51	-8.38	-5.26	-3.24	-2.13	-1.11	.39
32	-17.58	-15.47	-14.45	-13.34	-11.32	-8.18	-5.15	-3.12	-1.92	-.85	1.22
33	-17.31	-15.67	-14.59	-13.33	-11.24	-7.30	-4.56	-2.40	-1.22	-.13	2.12
34	-18.75	-16.34	-15.17	-13.51	-11.61	-8.02	-4.46	-2.16	-.89	.28	2.69
35	-19.31	-16.51	-15.40	-14.13	-11.39	-8.58	-5.18	-2.98	-1.77	-.65	1.54
36	-20.27	-17.76	-16.57	-15.28	-12.88	-9.16	-5.49	-3.10	-1.79	-.55	1.50
37	-22.39	-19.69	-18.33	-16.96	-14.37	-10.36	-6.25	-3.76	-2.34	-1.03	1.57
38	-23.94	-21.10	-19.72	-18.22	-15.51	-11.28	-7.15	-4.22	-2.83	-1.40	1.39
39	-24.87	-22.97	-20.57	-19.04	-16.77	-11.37	-7.67	-4.90	-3.18	-1.97	.32
40	-25.93	-22.83	-21.23	-19.71	-16.77	-12.12	-7.52	-5.56	-2.93	-1.43	1.67
41	-26.63	-23.62	-22.14	-20.52	-17.59	-13.05	-8.20	-5.57	-3.95	-2.47	.59
42	-28.08	-25.87	-24.26	-22.55	-19.44	-14.67	-9.50	-6.02	-4.58	-3.81	-.16
43	-31.53	-27.94	-25.14	-24.25	-20.77	-15.36	-9.95	-6.40	-4.54	-2.77	.87
44	-33.20	-29.23	-27.30	-25.21	-21.40	-15.50	-9.40	-5.75	-3.70	-1.77	2.20
45	-33.33	-29.28	-27.32	-25.13	-21.31	-15.30	-9.30	-5.42	-3.29	-1.32	2.72
46	-34.13	-29.91	-27.86	-25.63	-21.58	-15.31	-9.13	-5.43	-2.75	-.71	3.52
47	-32.03	-28.72	-25.60	-24.71	-20.91	-15.01	-9.12	-5.32	-3.23	-1.30	2.67
48	-33.03	-28.86	-26.85	-24.65	-21.66	-14.47	-8.29	-4.70	-2.10	-.08	4.08
49	-33.23	-29.93	-27.35	-24.59	-22.49	-14.10	-7.72	-3.51	-1.35	.73	5.03
50	-35.55	-30.63	-27.25	-25.66	-21.96	-13.66	-6.27	-1.66	.53	3.81	8.22
51	-37.41	-31.95	-29.21	-26.43	-21.20	-13.09	-4.38	.24	3.12	5.77	11.23
52	-41.02	-34.52	-31.57	-28.76	-22.92	-12.87	-4.02	1.01	4.23	7.18	13.28
53	-44.03	-37.49	-34.29	-30.81	-24.49	-14.69	-4.49	1.42	4.90	8.30	14.70
54	-45.11	-36.27	-33.21	-31.56	-25.11	-15.12	-5.12	1.33	4.88	8.44	14.88
55	-49.48	-42.04	-39.43	-34.51	-27.39	-16.34	-5.79	1.89	5.76	9.37	16.31
56	-52.72	-44.66	-40.75	-36.51	-28.79	-16.92	-4.46	2.66	7.11	11.01	19.07
57	-55.20	-45.63	-42.56	-38.03	-29.33	-17.29	-4.65	3.50	7.99	12.11	20.63
58	-52.55	-44.33	-41.25	-36.01	-28.15	-15.94	-3.74	4.12	8.46	12.85	21.67
59	-59.57	-50.13	-45.56	-40.59	-31.54	-17.52	-3.50	5.54	10.51	15.09	24.53
60	-71.19	-58.76	-53.14	-47.05	-36.10	-19.65	-2.61	8.58	15.04	20.60	32.08
61	-59.23	-50.04	-45.55	-40.63	-31.84	-13.12	-4.39	4.85	9.33	13.80	23.55
62	-56.32	-47.53	-43.27	-38.64	-31.22	-17.16	-4.22	4.28	8.91	13.17	21.56
63	-53.20	-44.99	-40.27	-36.49	-29.52	-16.19	-3.36	4.10	8.49	12.51	20.92
64	-50.51	-42.60	-38.76	-34.59	-27.61	-15.26	-3.50	4.18	8.25	12.08	20.00
65	-47.84	-40.31	-36.66	-32.70	-25.89	-14.32	-3.15	4.06	8.02	11.87	19.20
66	-45.20	-33.04	-34.57	-30.79	-23.92	-13.34	-2.46	4.20	7.97	11.44	18.61
67	-42.61	-35.97	-32.66	-29.08	-22.51	-12.36	-2.21	4.34	7.94	11.25	18.09
68	-40.28	-33.87	-31.71	-27.26	-21.04	-11.27	-1.30	4.53	7.56	11.12	17.63
69	-38.35	-32.08	-29.84	-25.74	-19.74	-10.49	-1.13	4.87	8.17	11.21	17.47
70	-36.54	-30.47	-28.52	-24.32	-18.51	-9.51	-.49	5.23	8.53	11.47	17.54

TABLE 2.9. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-4.75	-3.76	-3.28	-2.76	-1.61	-.39	1.14	2.09	2.61	3.09	4.08
1	-12.07	-9.66	-8.50	-7.23	-4.93	-1.36	2.21	4.51	5.78	6.94	9.39
2	-12.95	-10.10	-8.72	-7.22	-4.49	-.26	3.90	6.70	8.21	9.59	12.46
3	-14.99	-10.99	-9.25	-7.41	-4.17	1.11	6.29	9.63	11.47	13.16	16.68
4	-17.00	-12.72	-10.69	-8.39	-4.29	2.06	8.41	12.51	14.77	16.84	21.12
5	-19.19	-14.28	-11.93	-9.37	-4.72	2.49	9.71	14.36	16.92	19.27	24.13
6	-22.90	-16.71	-13.96	-10.96	-5.51	2.93	11.37	16.82	19.87	22.57	28.26
7	-25.63	-19.02	-15.82	-12.33	-6.31	3.80	13.41	19.99	23.42	26.62	33.23
8	-30.19	-22.33	-18.54	-14.42	-6.94	4.66	16.27	23.75	27.87	31.66	39.47
9	-34.16	-25.17	-20.81	-16.07	-7.45	5.90	19.26	27.87	32.61	36.97	45.96
10	-36.69	-26.97	-22.16	-16.92	-7.92	7.32	22.06	31.56	36.79	41.60	51.53
11	-38.32	-27.69	-22.56	-16.95	-6.77	9.00	25.77	34.96	40.55	45.69	56.32
12	-39.79	-29.61	-19.68	-14.32	-4.57	10.59	28.69	38.39	43.75	48.68	58.86
13	-29.62	-20.49	-15.99	-11.16	-2.37	11.28	29.87	33.65	38.49	42.94	52.11
14	-23.20	-15.60	-12.29	-8.08	-.89	10.27	21.93	28.62	32.59	36.23	43.74
15	-19.12	-13.00	-10.03	-6.80	-.99	8.15	17.28	23.11	26.34	29.31	35.43
16	-15.63	-10.94	-8.60	-6.03	-1.36	5.87	13.11	17.77	20.39	22.70	27.58
17	-13.49	-9.71	-7.91	-5.99	-2.38	3.16	8.69	12.26	14.22	16.03	19.74
18	-11.73	-8.66	-7.46	-5.95	-3.20	1.60	5.33	8.08	9.59	10.98	13.86
19	-11.03	-8.61	-7.43	-6.15	-3.87	-.22	3.30	5.71	6.99	8.17	10.59
20	-10.41	-8.33	-7.33	-6.29	-4.26	-1.18	1.90	3.88	4.94	5.98	8.06
21	-10.81	-8.70	-7.80	-6.73	-4.70	-1.77	1.24	3.18	4.25	5.23	7.24
22	-10.92	-9.02	-8.10	-7.10	-5.20	-2.46	.36	2.17	3.18	4.10	5.99
23	-11.49	-9.53	-8.58	-7.55	-5.67	-2.77	.13	2.01	3.09	3.99	5.98
24	-11.45	-9.57	-8.66	-7.64	-5.86	-3.07	-.27	1.53	2.52	3.43	5.31
25	-11.83	-9.90	-8.96	-7.93	-6.19	-3.23	-.36	1.49	2.51	3.44	5.37
26	-12.54	-10.46	-9.46	-8.36	-6.38	-3.30	-.22	1.77	2.86	3.87	5.94
27	-13.02	-10.87	-9.83	-8.70	-6.64	-3.45	-.26	.80	2.93	3.97	6.12
28	-14.19	-11.82	-10.67	-9.42	-7.15	-3.63	-.12	2.15	3.40	4.55	6.92
29	-16.08	-13.33	-12.00	-10.56	-7.93	-3.85	.22	2.85	4.29	5.62	8.37
30	-16.38	-13.60	-12.11	-10.60	-7.86	-3.59	.67	3.42	4.93	6.32	9.19
31	-16.59	-13.57	-12.13	-10.56	-7.71	-3.70	1.12	3.97	5.53	6.97	9.95
32	-15.98	-12.91	-11.42	-9.80	-6.86	-2.31	2.26	5.19	6.81	8.30	11.37
33	-16.23	-12.92	-11.31	-9.56	-6.39	-1.48	3.49	6.61	8.36	9.96	13.27
34	-15.48	-12.12	-10.48	-8.71	-5.48	-.48	4.52	7.75	9.52	11.15	14.52
35	-15.18	-11.87	-10.26	-8.52	-5.39	-.43	4.49	7.66	9.41	11.01	14.32
36	-16.36	-12.99	-11.36	-9.68	-6.36	-1.36	3.63	6.85	8.63	10.26	13.62
37	-18.50	-14.77	-12.97	-11.00	-7.43	-1.89	3.65	7.22	9.18	10.99	14.72
38	-19.46	-15.65	-13.80	-11.78	-8.13	-2.46	3.21	6.87	8.88	10.73	14.55
39	-22.22	-17.86	-15.74	-13.44	-9.26	-2.77	3.71	7.89	10.19	12.31	16.68
40	-21.92	-17.67	-15.45	-13.16	-8.99	-2.62	3.95	8.12	10.42	12.53	16.89
41	-23.29	-18.72	-16.50	-14.09	-9.72	-2.93	3.86	8.24	10.65	12.86	17.43
42	-22.13	-17.89	-15.84	-13.66	-9.54	-3.25	3.05	7.11	9.34	11.40	15.64
43	-20.70	-16.83	-14.95	-12.91	-9.21	-3.47	2.20	5.98	8.02	9.90	13.77
44	-21.11	-17.21	-15.32	-13.26	-9.62	-3.73	2.07	5.81	7.87	9.76	13.66
45	-23.05	-18.67	-16.55	-14.24	-10.04	-3.54	2.97	7.16	9.47	11.59	15.97
46	-23.85	-19.15	-16.88	-14.40	-9.90	-2.93	4.04	8.54	11.01	13.29	17.99
47	-23.70	-18.75	-16.36	-13.75	-9.02	-1.68	5.66	10.90	13.00	15.90	20.39
48	-24.92	-19.47	-16.83	-13.96	-8.75	-.67	7.42	12.63	15.50	18.19	23.50
49	-27.22	-21.05	-18.06	-14.80	-8.89	.27	9.49	15.36	18.60	21.60	27.77
50	-27.67	-21.28	-18.18	-14.81	-8.69	.79	10.28	16.39	19.76	22.86	29.25
51	-26.01	-19.86	-16.88	-13.64	-7.76	1.38	10.51	16.90	19.69	22.62	28.77
52	-24.93	-18.89	-15.96	-12.78	-6.99	1.98	10.95	16.79	19.92	22.85	28.89
53	-23.08	-17.18	-14.32	-11.21	-5.56	3.21	11.93	17.62	20.73	23.59	29.50
54	-21.62	-15.81	-13.00	-9.94	-4.38	4.59	12.86	18.92	21.98	24.29	30.10
55	-23.01	-17.44	-14.35	-11.00	-4.90	4.55	14.00	20.10	23.45	26.54	32.90
56	-27.70	-20.57	-17.11	-13.35	-6.51	4.08	14.67	21.51	25.27	28.73	35.86
57	-28.91	-21.18	-17.67	-13.86	-6.99	3.80	14.53	21.95	25.27	28.77	36.00
58	-29.93	-21.92	-18.04	-13.82	-6.16	5.73	17.61	25.26	29.50	33.38	41.39
59	-26.88	-18.78	-14.85	-10.58	-2.82	9.22	21.25	29.01	33.26	37.21	45.32
60	-29.10	-20.37	-16.15	-11.55	-3.20	9.75	22.70	31.05	35.65	39.87	48.59
61	-25.84	-17.95	-14.14	-9.78	-2.43	9.27	20.98	28.63	32.68	36.50	44.39
62	-25.44	-17.76	-14.04	-9.99	-2.64	8.76	20.14	27.52	31.56	35.28	42.96
63	-25.02	-17.55	-13.93	-9.99	-2.84	8.25	19.35	26.50	30.44	34.06	41.53
64	-24.62	-17.35	-13.83	-10.00	-3.05	7.74	18.53	25.49	29.32	32.84	40.11
65	-24.08	-17.05	-13.64	-9.94	-3.21	7.23	17.67	24.41	28.11	31.52	38.55
66	-23.62	-16.84	-13.54	-9.96	-3.45	6.69	16.73	23.24	26.82	30.11	36.91
67	-23.23	-16.64	-13.45	-9.97	-3.66	.13	15.91	22.23	25.70	28.90	35.49
68	-22.83	-16.44	-13.35	-9.98	-3.87	5.62	15.10	21.22	24.58	27.68	34.07
69	-22.44	-16.25	-13.25	-9.99	-4.07	5.11	14.29	20.21	23.47	26.46	32.65
70	-21.90	-15.[illegible]	-13.07	-9.93	-4.24	4.60	13.43	19.13	22.27	25.15	31.18

TABLE 2.10. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.80	-9.65	-9.85	-3.98	-2.21	-.38	1.46	2.64	3.29	3.89	5.13
1	-15.80	-12.72	-11.19	-9.52	-6.49	-1.00	2.90	5.93	7.59	9.13	12.29
2	-17.34	-13.78	-12.08	-10.19	-6.72	-1.91	2.89	7.31	9.20	10.93	14.50
3	-20.62	-16.21	-14.87	-11.74	-7.54	-.97	5.80	9.01	12.14	14.27	18.69
4	-24.54	-20.69	-17.85	-14.76	-9.14	-.44	8.24	13.87	16.97	19.81	25.67
5	-29.24	-22.66	-19.39	-15.69	-9.54	.30	10.15	16.49	19.99	23.20	29.83
6	-33.39	-25.70	-21.97	-17.91	-10.54	.88	12.36	19.67	23.73	27.95	35.15
7	-38.01	-29.15	-24.84	-20.19	-11.71	1.45	14.60	23.68	27.75	32.05	40.91
8	-43.01	-32.87	-27.76	-22.62	-12.91	2.19	17.19	26.70	32.25	37.16	47.30
9	-46.9[illegible]	-35.72	-30.30	-24.91	-13.71	2.80	19.46	30.18	36.07	41.48	52.66
10	-48.93	-37.15	-31.49	-26.23	-13.96	3.53	21.01	32.29	38.50	44.26	55.98
11	-48.49	-36.58	-30.81	-24.53	-13.13	4.54	22.29	33.65	39.92	46.69	57.61
12	-45.35	-33.93	-28.98	-22.39	-11.46	5.48	22.93	33.36	39.37	44.90	56.32
13	-38.27	-28.37	-23.58	-18.36	-8.88	6.81	20.51	29.98	35.26	39.99	49.89
14	-32.45	-23.99	-19.80	-15.23	-6.99	8.92	18.70	27.47	31.63	35.83	44.99
15	-26.24	-19.13	-15.69	-11.95	-5.16	8.38	15.91	22.71	26.45	29.88	36.98
16	-20.99	-15.25	-12.49	-9.50	-4.05	9.39	12.89	18.28	21.26	24.09	29.72
17	-16.59	-12.17	-10.02	-7.69	-3.46	3.10	9.66	13.69	16.22	18.37	22.79
18	-13.59	-10.14	-8.47	-6.65	-3.35	1.77	6.86	10.19	12.00	13.67	17.12
19	-12.26	-9.37	-7.97	-5.95	-3.68	.60	4.69	7.66	9.16	10.58	13.47
20	-12.67	-9.81	-8.43	-6.92	-4.19	.05	4.28	7.01	8.56	9.90	12.76
21	-12.17	-9.50	-8.21	-6.80	-4.29	-.27	3.69	6.25	7.66	8.95	11.62
22	-11.51	-8.95	-7.72	-6.37	-3.92	-.13	3.66	6.11	7.45	8.69	11.25
23	-10.91	-8.44	-7.24	-5.94	-3.57	.10	3.77	6.13	7.43	8.63	11.10
24	-10.80	-8.27	-7.04	-5.70	-3.28	.98	4.24	6.66	7.99	9.22	11.75
25	-10.53	-7.97	-6.73	-5.37	-2.92	.80	5.69	7.14	8.49	9.73	12.30
26	-11.63	-8.68	-7.25	-5.70	-2.67	1.51	5.89	8.71	10.27	11.69	14.69
27	-12.71	-9.39	-7.79	-6.04	-2.87	2.05	6.97	10.14	11.89	13.50	16.81
28	-12.92	-8.91	-7.21	-5.36	-2.00	3.21	8.42	11.78	13.63	15.33	18.84
29	-11.66	-8.29	-6.58	-4.79	-1.52	3.59	8.61	11.87	13.67	15.32	18.74
30	-11.84	-8.25	-6.52	-4.62	-1.19	4.19	9.46	12.90	14.79	16.53	20.12
31	-12.97	-8.85	-6.86	-4.69	-.75	5.36	11.46	15.40	17.67	19.67	23.68
32	-13.15	-8.62	-6.43	-4.09	.30	7.03	13.76	18.09	20.48	22.68	27.21
33	-13.28	-8.32	-5.92	-3.38	1.45	8.82	16.18	20.94	23.55	25.96	30.92
34	-13.49	-7.91	-5.23	-2.32	2.98	11.19	19.40	24.70	27.61	30.29	35.83
35	-12.90	-7.08	-4.26	-1.19	4.38	13.01	21.65	27.22	30.28	33.10	38.92
36	-14.69	-8.29	-5.22	-1.87	4.21	13.63	23.06	29.13	32.48	35.55	41.90
37	-17.36	-10.47	-7.12	-3.48	3.13	13.38	23.63	30.25	33.89	37.23	44.14
38	-17.41	-10.42	-7.04	-3.35	3.33	13.71	24.08	30.77	34.45	37.83	44.82
39	-16.99	-10.04	-6.67	-3.01	3.64	13.95	24.26	30.91	34.58	37.94	44.89
40	-16.15	-10.44	-7.44	-3.64	3.26	13.97	24.67	31.57	35.37	38.87	46.08
41	-17.84	-10.63	-7.13	-3.33	3.57	14.27	24.92	31.87	35.67	39.16	46.37
42	-16.91	-11.36	-7.70	-3.71	3.52	14.73	25.96	33.18	37.17	40.82	48.38
43	-19.74	-12.00	-8.26	-4.17	3.24	14.73	26.21	33.62	37.70	41.45	49.19
44	-19.42	-11.34	-7.43	-3.18	4.55	16.54	28.54	36.25	40.50	44.41	52.79
45	-19.27	-10.79	-6.68	-2.20	5.92	18.52	31.12	39.24	43.71	47.83	56.31
46	-18.12	-9.80	-5.33	-.79	7.46	20.25	33.04	41.29	45.83	50.50	58.62
47	-17.54	-8.61	-4.29	.42	8.97	22.22	35.47	44.02	48.73	52.95	61.90
48	-16.97	-7.77	-3.31	1.54	10.34	24.00	37.65	46.46	51.31	55.74	64.96
49	-14.84	-5.80	-1.41	3.37	12.04	25.49	38.94	47.62	52.39	56.78	65.86
50	-13.14	-4.14	.22	4.97	13.59	26.95	40.32	48.93	53.68	58.04	67.04
51	-15.09	-5.62	-.88	4.16	13.32	27.62	41.72	50.88	55.92	60.55	70.12
52	-16.15	-6.31	-1.54	3.65	13.07	27.67	42.28	51.79	56.87	61.65	71.49
53	-16.36	-6.26	-1.37	3.96	13.63	28.63	43.63	53.38	58.62	63.52	73.62
54	-15.37	-5.35	-.50	4.78	14.37	29.29	44.11	53.70	58.98	63.83	73.85
55	-13.69	-3.80	.99	6.20	15.66	30.39	45.02	54.48	59.69	64.48	74.37
56	-13.17	-3.28	1.50	6.71	16.17	30.85	45.52	54.98	60.19	64.98	74.36
57	-14.95	-4.32	-1.17	4.93	14.60	30.38	46.16	56.35	61.94	67.09	77.72
58	-15.26	-4.94	-1.46	4.51	15.39	32.14	48.95	59.78	65.75	71.23	82.55
59	-10.31	.29	5.43	11.02	21.16	36.90	52.69	62.78	68.37	73.51	84.11
60	-4.39	3.98	8.98	14.42	24.30	39.62	54.93	64.61	70.25	75.25	85.57
61	-2.63	6.51	10.93	15.75	24.49	38.05	51.61	60.36	65.17	69.60	78.73
62	-3.16	5.77	10.09	14.80	23.34	36.57	49.85	58.39	63.18	67.42	76.35
63	-3.96	4.80	9.05	13.66	22.05	35.05	48.06	56.44	61.86	66.38	74.86
64	-4.50	4.05	8.20	12.71	20.90	33.60	46.38	54.49	59.96	63.14	71.69
65	-5.26	3.13	7.19	11.62	19.65	32.18	44.56	52.69	57.81	61.88	69.47
66	-5.96	2.29	6.22	10.59	18.39	30.56	42.73	50.68	54.91	58.88	67.08
67	-6.52	1.48	5.36	9.57	17.23	29.18	40.98	48.64	52.86	56.73	64.73
68	-7.36	.49	4.29	8.42	15.93	27.56	39.20	46.78	50.83	54.63	62.47
69	-7.93	-.29	3.41	7.44	14.76	26.11	37.45	44.77	48.80	52.50	60.14
70	-8.77	-1.28	2.34	6.29	13.45	24.56	35.67	42.84	46.78	50.41	57.89

TABLE 2.11. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.73	-5.28	-4.52	-3.02	-2.47	-.29	1.36	3.24	4.01	4.71	6.15
1	-13.61	-14.34	-12.57	-10.92	-6.53	-.48	5.53	9.46	11.61	13.58	17.68
2	-21.51	-16.57	-14.18	-11.58	-6.85	.47	7.80	12.53	15.13	17.52	22.46
3	-25.11	-19.16	-15.28	-13.14	-7.45	1.38	10.22	15.30	19.04	21.92	27.87
4	-28.12	-21.23	-17.89	-14.26	-7.67	2.55	12.77	19.36	23.99	26.33	33.22
5	-32.96	-24.74	-20.76	-16.43	-9.56	3.64	15.64	23.71	28.04	32.02	40.24
6	-39.57	-29.67	-24.67	-19.66	-10.18	5.52	19.21	28.69	38.91	38.71	48.61
7	-45.69	-34.18	-29.61	-22.55	-11.53	5.55	22.62	33.64	39.70	45.27	56.78
8	-51.88	-38.77	-32.41	-25.50	-12.95	6.52	25.99	38.55	45.46	51.81	64.53
9	-57.15	-42.61	-35.57	-27.90	-13.99	7.59	29.17	43.09	50.75	57.80	72.33
10	-62.20	-46.35	-38.68	-30.38	-15.17	8.35	31.87	47.03	55.38	63.05	78.90
11	-62.33	-46.49	-38.38	-29.87	-14.42	9.54	33.49	48.94	57.45	65.26	81.40
12	-56.70	-41.61	-34.31	-26.35	-11.91	10.48	32.87	47.33	55.27	62.57	77.66
13	-47.61	-38.59	-28.28	-21.82	-3.95	10.38	29.70	43.17	49.83	55.34	68.36
14	-38.24	-27.83	-22.20	-16.54	-6.16	9.87	25.91	36.25	41.95	47.18	57.98
15	-30.36	-21.66	-17.45	-12.86	-4.53	8.38	21.29	29.62	34.20	38.42	47.11
16	-23.85	-16.99	-13.67	-10.05	-3.49	6.70	16.88	23.45	27.07	30.39	37.25
17	-18.95	-13.52	-10.83	-8.03	-2.34	5.22	13.27	18.46	21.32	23.95	29.38
18	-16.00	-11.64	-9.53	-7.24	-3.08	3.40	9.67	14.04	16.36	18.85	22.80
19	-14.50	-10.79	-8.99	-7.03	-3.48	2.04	7.65	11.10	12.86	14.86	18.67
20	-13.62	-11.16	-9.49	-7.66	-4.35	.78	5.92	9.23	11.05	12.73	16.19
21	-14.19	-10.89	-9.39	-7.69	-4.60	.20	4.99	8.08	9.79	11.35	14.[illegible]
22	-15.25	-11.85	-10.21	-8.42	-5.17	-.13	4.91	8.16	9.95	11.60	14.99
23	-15.06	-11.70	-10.07	-8.29	-5.08	-.09	4.91	8.12	9.90	11.52	14.89
24	-14.94	-11.50	-9.84	-8.02	-4.73	.37	5.47	8.76	10.58	12.24	15.68
25	-16.25	-12.91	-10.55	-8.53	-4.86	.83	6.53	10.20	12.22	14.08	17.91
26	-17.76	-13.33	-11.34	-9.05	-4.91	1.51	7.53	12.07	14.36	16.45	20.78
27	-20.05	-15.05	-12.63	-10.00	-5.22	2.20	9.61	14.39	17.02	19.48	24.44
28	-15.44	-10.63	-8.26	-5.71	-1.50	6.10	13.27	17.96	20.45	22.60	27.65
29	-15.87	-10.71	-8.22	-5.58	-.67	7.09	14.78	19.67	22.34	24.88	30.08
30	-17.87	-11.46	-8.78	-5.83	-.48	7.81	16.18	21.45	24.90	27.16	32.69
31	-17.67	-11.67	-8.81	-5.70	-.05	8.71	17.96	23.11	26.22	29.08	34.98
32	-19.06	-12.38	-9.14	-5.87	.77	10.68	20.66	26.99	30.51	33.76	40.43
33	-20.98	-12.97	-9.34	-5.39	1.79	12.93	23.06	31.29	35.26	38.83	46.31
34	-19.79	-12.86	-8.32	-4.24	3.15	14.61	26.06	33.40	37.61	41.29	49.02
35	-18.42	-10.45	-6.59	-2.39	5.23	17.07	28.80	36.52	40.[illegible]	44.08	52.58
36	-16.74	-10.40	-6.36	-1.96	6.03	19.42	30.00	38.39	43.1[illegible]	47.23	55.58
37	-17.61	-9.22	-5.16	-.74	7.29	19.79	32.18	40.21	44.83	48.42	57.08
38	-19.04	-10.10	-5.76	-1.05	7.51	20.79	34.07	42.62	47.34	51.68	60.42
39	-20.06	-10.67	-6.12	-1.17	7.81	21.74	35.68	44.68	49.[illegible]	54.15	63.58
40	-26.49	-16.40	-6.10	-.98	8.30	22.70	37.04	46.36	51.49	56.19	65.89
41	-20.03	-10.72	-5.92	-.69	8.80	23.62	38.23	47.72	52.[illegible]	57.75	67.44
42	-21.29	-11.18	-6.28	-.94	8.74	23.95	38.77	48.46	53.[illegible]	58.68	68.79
43	-20.23	-10.17	-5.38	-.08	9.93	25.54	39.99	49.12	54.12	59.30	69.26
44	-18.42	-8.50	-3.69	1.54	11.84	26.77	40.51	50.81	55.24	60.04	69.97
45	-19.13	-7.97	-3.05	2.38	12.83	27.11	42.20	51.92	57.28	62.20	72.26
46	-19.31	-8.48	-3.24	2.47	12.83	28.90	44.94	55.32	61.03	66.27	77.10
47	-20.08	-9.41	-3.86	2.28	13.17	30.23	47.27	58.20	64.31	69.87	81.25
48	-22.06	-10.43	-4.43	2.09	13.94	32.11	50.68	62.52	67.86	75.04	87.42
49	-17.78	-6.08	-.38	6.91	17.19	35.60	52.14	63.49	69.65	76.14	87.18
50	-17.61	-5.41	.08	6.93	18.61	36.72	54.83	66.51	72.94	76.85	91.05
51	-17.36	-4.95	1.88	7.59	19.94	37.87	56.28	68.18	73.87	80.87	91.09
52	-16.69	-3.72	2.26	8.74	20.53	38.81	57.09	68.88	76.37	81.34	93.65
53	-19.41	-6.87	.49	7.03	20.59	38.68	60.78	73.79	80.08	87.49	100.78
54	-17.88	-4.91	1.37	8.20	20.62	39.87	59.19	71.53	78.36	84.66	97.61
55	-21.24	-6.99	-.09	7.41	21.09	42.10	63.2[illegible]	76.99	84.99	91.39	105.58
56	-19.83	-5.92	.81	8.14	21.46	42.10	62.74	76.80	83.39	90.13	104.04
57	-27.50	-12.87	-4.55	3.02	18.48	41.51	65.54	79.39	87.57	95.08	110.06
58	-21.50	-7.10	-.26	7.30	21.00	42.20	63.61	77.22	84.76	91.70	106.02
59	-20.50	-15.27	-7.07	.19	14.03	37.52	68.22	79.00	84.91	90.32	104.61
60	-34.76	-19.42	-11.98	-3.71	11.16	34.21	67.24	72.13	86.31	87.84	103.37
61	-23.66	-10.89	-4.08	2.82	14.19	33.06	61.92	64.87	74.79	76.99	89.64
62	-22.64	-10.40	-4.46	1.99	13.72	31.69	58.87	61.88	68.26	74.19	84.43
63	-21.92	-9.78	-4.82	2.16	13.38	30.78	58.19	59.41	65.59	71.24	82.99
64	-20.37	-9.14	-3.78	2.21	12.96	29.62	56.29	57.84	62.95	68.39	79.62
65	-19.58	-8.72	-3.58	2.19	12.61	28.52	55.62	54.89	60.53	65.75	76.53
66	-18.49	-8.18	-3.19	2.24	12.11	27.41	52.78	52.67	58.88	62.99	73.38
67	-17.87	-7.73	-2.97	2.22	11.64	26.25	48.86	50.27	55.46	60.22	70.86
68	-16.86	-7.19	-2.66	2.28	11.24	25.19	37.83	48.88	52.73	57.47	66.83
69	-16.94	-6.97	-2.63	2.09	10.67	23.98	37.28	45.89	54.58	54.93	63.89
70	-16.17	-6.63	-2.49	2.01	10.19	22.87	35.54	43.72	48.22	52.36	60.78

TABLE 2.12. VANDENBERG HEAD- AND TAILWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.63	-6.22	-5.44	-4.59	-3.05	-.67	1.72	3.26	4.11	4.89	6.30
1	-20.36	-16.08	-14.01	-11.76	-7.67	-1.32	5.02	9.11	11.37	13.40	17.71
2	-24.19	-18.92	-16.37	-13.55	-8.55	-.72	7.09	12.13	14.91	17.46	22.72
3	-25.52	-22.04	-19.30	-15.49	-9.29	.32	9.34	16.14	19.55	22.69	29.16
4	-33.60	-25.78	-21.59	-17.80	-11.37	1.24	12.46	20.35	24.48	28.27	36.69
5	-34.43	-29.36	-24.94	-20.14	-11.41	2.13	15.47	24.40	25.21	33.63	42.75
6	-44.67	-34.00	-28.83	-23.21	-13.00	2.64	16.67	28.85	34.51	39.68	50.34
7	-51.56	-39.19	-33.20	-26.64	-14.32	3.53	21.29	33.72	40.25	45.24	54.61
8	-56.78	-43.01	-36.34	-29.08	-15.90	4.54	24.97	38.16	45.43	52.08	65.85
9	-61.47	-46.45	-39.18	-31.26	-15.88	5.41	27.71	42.03	50.00	57.28	72.30
10	-63.57	-48.13	-40.46	-32.34	-16.95	6.56	30.47	45.23	53.58	61.25	77.08
11	-61.19	-45.73	-39.25	-30.10	-15.30	7.64	30.58	45.36	53.53	61.01	76.47
12	-54.30	-40.16	-33.31	-25.85	-12.31	8.68	29.67	43.21	50.66	57.51	71.66
13	-45.29	-33.02	-27.08	-20.62	-9.85	9.32	27.53	39.26	45.73	51.67	63.93
14	-37.34	-27.03	-21.53	-16.39	-6.33	9.28	24.88	34.55	40.49	45.59	56.09
15	-31.20	-22.30	-17.59	-13.30	-4.78	8.42	21.63	30.15	34.84	39.15	48.05
16	-26.69	-19.12	-15.45	-11.46	-4.22	7.02	18.25	25.50	28.49	33.15	40.72
17	-23.70	-17.12	-13.94	-10.47	-4.13	5.58	15.34	21.64	25.11	28.29	34.87
18	-19.68	-14.59	-11.63	-9.28	-4.18	3.67	11.52	16.55	19.36	21.92	27.21
19	-17.33	-13.10	-11.02	-8.76	-4.65	1.70	8.06	12.16	14.42	16.49	20.78
20	-16.68	-12.68	-11.04	-9.04	-5.40	.24	5.28	9.57	11.52	13.36	17.16
21	-16.31	-13.25	-11.53	-9.65	-5.25	-.96	4.32	7.73	9.61	11.33	14.39
22	-17.79	-14.16	-12.40	-10.49	-7.01	-1.62	3.77	7.24	9.15	10.91	14.54
23	-14.09	-14.43	-12.75	-10.35	-7.42	-2.07	3.27	6.72	8.62	10.36	13.96
24	-22.36	-14.76	-13.02	-11.13	-7.69	-2.35	2.58	6.43	8.32	10.08	13.66
25	-19.32	-15.50	-13.66	-11.65	-3.00	-2.34	3.32	6.37	8.38	10.83	14.64
26	-21.68	-17.32	-15.21	-12.91	-6.74	-2.27	4.19	6.37	10.66	12.77	17.13
27	-25.73	-20.06	-17.53	-14.77	-7.75	-1.99	5.77	10.78	13.54	16.07	21.31
28	-22.86	-16.66	-13.66	-10.90	-4.48	4.70	13.84	19.81	23.87	26.06	32.26
29	-28.44	-18.48	-15.11	-11.46	-4.79	8.84	15.87	22.52	26.19	29.56	36.82
30	-29.98	-21.38	-17.94	-13.21	-5.61	8.49	18.38	24.87	30.33	35.23	42.28
31	-31.29	-22.67	-18.24	-13.74	-5.39	7.56	20.61	28.66	33.46	37.60	46.41
32	-31.80	-22.56	-18.09	-13.13	-4.21	9.63	23.47	32.37	37.31	41.82	51.15
33	-32.49	-22.44	-17.87	-12.26	-2.64	12.29	27.29	36.89	42.14	47.01	57.07
34	-31.66	-21.17	-16.90	-10.95	-.48	15.12	30.72	40.70	46.22	51.41	61.92
35	-29.80	-19.01	-13.76	-8.00	2.39	18.43	34.53	44.91	50.63	55.88	66.71
36	-27.39	-16.17	-11.06	-5.28	5.22	21.40	37.74	48.29	54.07	57.38	70.14
37	-25.33	-14.15	-8.74	-2.84	7.86	24.15	41.06	51.75	57.64	63.06	74.23
38	-24.28	-13.49	-7.92	-1.74	9.41	26.27	43.16	55.19	61.58	67.16	78.85
39	-24.85	-12.74	-6.38	-.40	11.10	29.07	47.04	58.63	65.81	72.07	82.98
40	-22.98	-10.34	-4.51	1.88	13.38	31.97	49.13	60.78	67.84	73.49	84.95
41	-19.25	-7.42	-1.69	4.55	16.87	33.43	50.99	62.32	68.55	74.28	86.11
42	-17.74	-4.61	.27	6.64	18.27	36.27	53.26	65.89	72.28	78.16	90.28
43	-17.10	-4.49	1.66	8.33	20.45	39.36	58.06	70.19	76.87	83.08	95.67
44	-18.41	-5.81	1.58	8.74	21.77	41.95	62.18	75.15	82.22	88.91	102.51
45	-17.94	-4.66	2.47	9.99	23.28	43.87	64.49	77.79	85.18	91.83	105.71
46	-15.24	-1.85	5.32	12.24	25.84	45.48	63.75	76.56	83.99	89.84	102.03
47	-12.10	.72	6.96	13.74	26.87	45.10	65.36	76.62	83.41	89.65	102.52
48	-10.81	2.11	8.36	15.17	27.69	46.71	56.89	78.26	85.86	91.32	104.29
49	-12.48	1.87	7.63	14.77	27.74	47.85	67.94	80.93	88.88	94.64	108.19
50	-11.69	1.89	8.37	15.47	28.37	48.37	68.38	81.28	88.38	93.91	104.38
51	-10.42	2.96	9.44	16.49	29.38	49.16	69.81	81.82	88.87	95.35	108.73
52	-7.95	5.78	12.87	19.88	31.59	51.11	70.63	83.22	90.15	96.52	107.67
53	-6.78	6.46	12.84	19.78	32.38	51.91	71.46	84.06	90.78	97.36	110.52
54	-7.27	5.74	12.49	18.89	31.39	50.45	69.94	82.51	89.24	95.54	108.57
55	-6.83	5.91	12.88	18.79	30.98	49.67	68.70	80.98	87.78	93.86	106.48
56	-9.63	3.93	10.98	17.42	30.67	50.47	70.70	83.70	90.89	97.05	111.08
57	-8.80	5.00	11.32	18.26	30.70	50.07	69.46	81.94	88.82	95.14	109.19
58	-14.07	.32	7.27	14.83	29.87	49.60	71.14	84.89	92.56	99.41	113.75
59	-17.76	-2.98	4.20	12.18	26.82	48.76	71.00	85.34	93.24	100.49	115.47
60	-13.41	.80	7.92	15.67	29.79	51.67	73.42	87.58	95.25	102.38	117.89
61	-13.14	1.06	7.94	15.43	29.82	50.18	71.18	84.78	92.26	99.14	113.34
62	-13.80	.95	7.62	14.89	28.87	48.66	69.83	83.23	89.98	96.17	107.74
63	-12.86	.68	7.11	14.21	27.68	47.65	67.87	79.98	86.99	93.61	106.46
64	-14.73	.35	6.69	13.58	26.18	45.61	64.92	77.44	84.34	90.47	102.78
65	-12.88	-.83	4.15	12.08	25.18	44.04	63.81	76.23	81.76	88.14	100.91
66	-12.71	-.31	5.70	12.23	24.18	42.51	60.92	72.29	79.33	85.23	97.71
67	-12.98	-.78	5.09	11.47	23.07	41.60	59.04	70.64	77.03	82.98	95.81
68	-13.00	-1.24	4.43	10.46	21.95	39.60	56.98	68.27	74.99	80.21	92.21
69	-13.32	-1.80	3.70	9.66	20.79	38.01	55.12	66.15	72.23	77.81	89.34
70	-13.62	-2.17	3.00	8.88	19.77	36.60	53.16	63.94	69.85	75.38	86.55

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 3.1. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.51	[illegible].07	-7.83	-6.60	-4.26	-.69	2.98	5.32	6.80	7.79	10.23
1	-16.09	-12.80	-11.29	-9.53	-6.93	-1.62	3.19	6.29	8.00	9.57	12.81
2	-21.65	-17.71	-15.79	-13.71	-9.93	-4.07	1.79	5.56	7.65	9.56	13.50
3	-27.69	-22.97	-20.68	-18.20	-13.68	-6.68	.32	4.84	7.32	9.61	14.38
4	-33.85	-28.21	-25.48	-22.50	-17.10	-8.73	-.38	5.05	8.02	10.76	16.90
5	-39.84	-33.28	-30.10	-26.65	-20.37	-10.63	-.90	5.38	8.83	12.01	18.67
6	-44.94	-37.60	-34.04	-30.17	-23.15	-12.25	-1.36	5.67	9.54	13.09	20.43
7	-50.07	-41.94	-38.03	-33.75	-25.99	-13.95	-1.92	5.85	10.12	14.05	22.16
8	-56.30	-47.18	-42.76	-37.95	-29.22	-15.68	-2.15	6.58	11.39	15.81	24.93
9	-62.92	-52.78	-47.86	-42.51	-32.80	-17.74	-2.68	7.03	12.38	17.29	27.44
10	-69.34	-58.29	-52.86	-47.01	-36.38	-19.90	-3.42	7.21	13.06	18.44	29.54
11	-75.23	-63.34	-57.61	-51.34	-40.00	-22.38	-4.76	6.60	12.86	18.60	30.47
12	-74.97	-63.49	-57.93	-51.88	-40.90	-23.86	-4.82	4.17	10.22	16.77	27.25
13	-65.14	-55.67	-51.08	-46.09	-37.02	-22.97	-8.91	.16	5.15	9.74	19.21
14	-56.68	-48.74	-44.89	-40.70	-33.09	-21.30	-9.51	-1.90	2.29	6.14	14.08
15	-47.71	-41.21	-38.06	-34.63	-28.41	-18.76	-9.11	-2.89	.63	3.68	10.18
16	-40.93	-35.37	-32.67	-29.74	-24.41	-16.15	-7.89	-2.56	.37	3.07	8.63
17	-34.81	-29.96	-27.61	-25.05	-20.41	-13.21	-6.01	-1.34	1.20	3.55	8.40
18	-28.65	-24.52	-22.51	-20.33	-16.37	-10.23	-4.09	-.12	2.04	4.04	8.28
19	-24.58	-20.75	-18.89	-16.87	-13.20	-7.50	-1.81	1.86	3.88	5.74	9.58
20	-22.76	-19.75	-16.81	-14.70	-10.87	-4.92	1.03	4.86	6.97	8.91	12.92
21	-21.43	-17.34	-15.35	-13.19	-9.27	-3.19	2.89	6.81	8.97	10.95	15.05
22	-20.46	-16.28	-14.25	-12.05	-8.05	-1.89	4.37	8.37	10.58	12.60	16.70
23	-21.28	-16.71	-14.49	-12.08	-7.71	-.92	5.86	10.24	12.65	14.86	19.43
24	-23.64	-18.49	-15.99	-13.27	-8.33	-.67	6.98	11.92	14.64	17.14	22.28
25	-24.25	-20.44	-17.62	-14.56	-8.99	-.36	8.27	13.83	16.90	19.71	25.63
26	-28.69	-22.41	-19.34	-16.05	-10.09	-.71	8.42	14.63	17.96	20.99	27.27
27	-31.86	-25.06	-21.76	-18.17	-11.66	-1.56	8.54	15.05	18.64	21.93	28.74
28	-39.48	-31.30	-27.33	-23.02	-15.18	-3.03	9.12	16.95	21.27	25.23	33.42
29	-41.62	-33.08	-28.96	-24.45	-16.27	-3.60	9.08	17.25	21.75	25.89	34.43
30	-42.94	-34.25	-30.04	-25.46	-17.14	-4.24	8.66	16.98	21.54	25.77	34.46
31	-43.21	-34.60	-30.43	-25.89	-17.65	-4.67	7.91	16.15	20.69	24.86	33.47
32	-44.76	-35.98	-31.73	-27.10	-18.69	-5.65	7.38	15.74	20.42	24.67	33.46
33	-45.01	-36.21	-31.94	-27.31	-18.88	-5.82	7.24	15.67	20.31	24.57	33.37
34	-48.59	-39.17	-34.61	-29.64	-20.63	-6.65	7.34	16.35	21.32	25.88	35.30
35	-55.33	-44.69	-39.54	-33.94	-23.76	-7.98	7.80	17.98	23.58	28.73	39.36
36	-62.70	-50.76	-44.98	-38.69	-27.26	-9.55	8.17	19.60	25.89	31.67	43.41
37	-71.79	-58.27	-51.74	-44.64	-31.73	-11.73	8.28	21.18	28.28	34.81	48.29
38	-80.81	-65.85	-58.60	-50.72	-36.40	-14.19	8.02	22.34	30.22	37.47	52.43
39	-88.92	-72.28	-64.34	-55.79	-40.26	-16.18	7.89	23.42	31.97	39.83	56.05
40	-94.03	-77.14	-68.96	-60.05	-43.88	-18.00	6.27	22.45	31.35	39.53	56.43
41	-103.32	-85.16	-76.36	-66.79	-49.41	-22.45	4.50	21.88	31.46	40.25	58.41
42	-111.37	-92.22	-82.95	-72.84	-54.53	-26.11	2.32	20.64	30.74	40.01	59.16
43	-116.63	-98.53	-88.86	-78.30	-59.16	-29.48	.21	19.35	29.89	39.50	59.50
44	-122.36	-101.98	-92.12	-81.38	-61.88	-31.65	-1.42	18.08	28.82	38.65	59.06
45	-123.59	-103.38	-93.48	-82.78	-63.37	-33.25	-3.14	16.27	26.97	36.79	57.08
46	-124.41	-104.49	-94.86	-84.35	-65.28	-35.72	-6.16	12.91	23.90	33.06	52.97
47	-123.07	-103.98	-94.74	-84.68	-66.41	-38.07	-9.74	8.53	18.59	27.84	46.93
48	-122.57	-103.97	-94.96	-85.15	-67.34	-39.72	-12.10	5.71	15.52	24.53	43.14
49	-123.52	-105.33	-96.62	-86.93	-69.62	-42.61	-15.51	1.90	11.49	20.30	40.49
50	-125.37	-107.20	-98.40	-88.81	-71.40	-44.41	-17.42	-.01	9.57	18.38	36.86
51	-126.69	-108.51	-99.73	-90.17	-72.82	-45.91	-19.00	-1.65	7.91	16.69	34.82
52	-129.46	-107.78	-99.78	-90.91	-74.94	-50.17	-25.41	-9.44	-.65	7.43	24.11
53	-120.79	-105.18	-97.41	-89.38	-74.44	-51.26	-28.09	-13.14	-4.91	2.65	18.26
54	-119.31	-104.17	-96.84	-88.86	-74.37	-51.98	-29.44	-14.95	-6.97	.36	15.80
55	-119.43	-104.07	-96.73	-88.73	-74.22	-51.72	-29.71	-14.70	-6.71	.63	15.79
56	-118.35	-104.18	-97.27	-89.79	-76.19	-55.12	-34.04	-20.45	-12.96	-6.08	8.13
57	-119.69	-105.49	-98.67	-91.23	-77.74	-56.81	-35.88	-22.39	-14.96	-8.13	5.97
58	-126.70	-112.20	-105.16	-97.54	-83.66	-62.14	-40.61	-26.74	-19.88	-12.07	2.45
59	-133.82	-118.88	-110.45	-102.15	-87.08	-63.71	-40.34	-25.27	-16.97	-9.36	6.40
60	-139.36	-122.48	-114.30	-105.41	-89.25	-64.19	-37.14	-22.98	-14.09	-5.91	10.97
61	-141.0[illegible]	-123.38	-121.76	-111.37	-92.51	-63.26	-34.02	-15.15	-4.77	4.77	24.48
62	-149.23	-129.78	-128.34	-109.45	-91.26	-62.28	-33.29	-14.68	-4.31	5.16	24.67
63	-147.68	-126.22	-118.84	-108.64	-90.11	-61.38	-32.64	-14.11	-3.91	5.47	24.82
64	-145.81	-124.63	-117.34	-107.23	-88.86	-60.37	-31.92	-13.66	-3.45	5.84	25.02
65	-143.91	-124.95	-115.77	-106.78	-87.63	-59.49	-31.35	-13.21	-3.21	5.97	24.98
66	-142.14	-123.36	-114.26	-104.34	-86.38	-58.61	-30.63	-12.65	-2.76	6.34	25.12
67	-140.[illegible]4	-121.83	-112.81	-103.00	-85.19	-57.56	-29.93	-12.11	-2.30	6.71	25.32
68	-138.67	-120.23	-111.30	-101.59	-83.94	-56.57	-29.21	-11.56	-1.84	7.09	25.52
69	-136.78	-118.54	-109.74	-100.14	-82.71	-55.67	-28.64	-11.21	-1.41	7.21	25.43
70	-135.80	-116.97	-108.23	-98.72	-81.46	-54.69	-27.92	-10.85	-1.15	7.09	25.65

TABLE 3.2. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.61	-9.96	-8.73	-7.39	-4.95	-1.18	2.60	5.69	6.38	7.0[illegible]	10.16
1	-18.21	-14.40	-12.55	-10.59	-6.87	-1.22	4.93	6.50	1[illegible].07	11.72	15.74
2	-24.26	-18.73	-16.63	-14.16	-9.81	-3.09	3.66	7.97	16.36	12.65	17.08
3	-27.14	-23.[illegible]	-21.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13.57	[illegible]
4	-34.66	-28.85	-26.74	-22.76	-16.[illegible]	-8.09	.90	6.67	9.85	12.77	18.80
5	-37.63	-33.11	-27.86	-28.32	-15.08	-9.91	.02	6.[illegible]	1[illegible].69	3.30	20.02
6	-44.01	-36.74	-34.22	-29.39	-22.43	-11.49	-.84	6.12	9.95	13.47	20.74
7	-48.98	-41.03	-37.18	-32.99	-26.37	-13.[illegible]	-1.28	5.81	1[illegible].06	13.[illegible]	21.80
8	-5[illegible].43	-46.76	-41.56	-36.99	-28.08	-15.81	-2.93	5.37	9.99	17.[illegible]	22.82
9	-61.[illegible]	-51.[illegible]	-46.[illegible]	-41.[illegible]	-33.[illegible]	-18.[illegible]	-3.[illegible]	5.[illegible]	1[illegible]	15.[illegible]	28.72
10	-67.20	-56.68	-51.86	-46.04	-36.97	-20.35	-4.74	5.33	10.87	15.57	26.49
11	-7[illegible].9[illegible]	-59.97	-55.[illegible]	-50.[illegible]	-38.58	-22.43	-5.7[illegible]	3.53	7.21	13.[illegible]	25.13
12	-68.26	-58.38	-53.54	-46.38	-38.92	-24.70	-9.59	-.13	5.38	9.88	19.74
13	-58.97	-52.[illegible]	-46.99	-42.73	-35.[illegible]	-23.[illegible]	-11.[illegible]	-3.33	.97	9.[illegible]	12.91
14	-51.97	-45.08	-41.76	-38.19	-31.52	-21.30	-11.68	-4.48	-.85	2.48	7.37
15	-49.83	-48.[illegible]	-38.32	-35.97	-27.[illegible]	-18.[illegible]	-10.[illegible]	-8.7[illegible]	-[illegible]	1.12	6.70
16	-38.12	-33.26	-30.70	-28.33	-23.67	-16.45	-9.29	-4.58	-2.6[illegible]	.36	5.23
17	-34.51	-2[illegible].33	-28.27	-24.05	-20.63	-13.74	-7.84	-3.51	-1.36	.74	5.75
18	-27.13	-23.43	-21.04	-19.69	-16.15	-10.60	-5.17	-1.63	.32	2.11	5.81
19	-22.40	-19.[illegible]	-17.[illegible]	-15.74	-12.80	-7.94	-3.[illegible]	.11	1.96	4.[illegible]	6.28
20	-20.45	-17.14	-15.[illegible]	-13.75	-10.56	-5.62	-.68	2.51	4.27	5.[illegible]	9.21
21	-18.07	-15.35	-13.73	-11.97	-8.76	-3.[illegible]	1.17	4.17	5.13	7.7[illegible]	11.10
22	-17.32	-15.62	-13.93	-11.69	-8.35	-2.67	2.61	6.15	8.09	9.46	13.57
23	-17.37	-15.[illegible]	-13.98	-11.84	-7.95	-2.[illegible]	3.54	7.14	9.17	11.03	14.88
24	-20.75	-16.58	-14.84	-12.33	-8.32	-2.11	4.11	8.16	10.32	12.35	16.54
25	-24.69	-19.[illegible]	-18.[illegible]	-13.28	-8.98	-2.15	5.[illegible]	9.[illegible]	11.[illegible]	13.71	18.31
26	-25.98	-22.78	-19.25	-15.51	-1[illegible].52	-2.79	4.9[illegible]	9.97	12.07	15.[illegible]	20.90
27	-31.33	-25.10	-22.17	-18.92	-13.[illegible]	-2.[illegible]	5.28	1[illegible]	1[illegible]	17.[illegible]	21.68
28	-24.76	-19.12	-16.39	-13.42	-8.03	.39	8.70	14.10	17.07	19.80	26.44
29	-27.41	-21.25	-18.27	-15.02	-9.12	.02	9.14	15.06	18.30	21.28	27.44
30	-30.36	-23.83	-20.67	-17.29	-10.99	-1.31	8.37	14.61	18.05	21.21	27.73
31	-30.42	-24.01	-20.91	-17.53	-11.90	-1.89	7.62	13.75	17.13	20.23	26.44
32	-32.08	-25.49	-22.30	-18.83	-12.52	-2.79	7.03	13.34	16.81	20.00	26.59
33	-28.14	-30.22	-[illegible]	-22.80	-18.91	-4.19	9.13	14.43	18.44	22.14	29.76
34	-42.98	-34.86	-[illegible].93	-26.65	-18.88	-6.84	5.21	12.98	17.24	21.[illegible]	29.30
35	-47.26	-38.94	-34.07	-30.47	-22.49	-10.10	2.28	10.27	14.66	18.71	27.05
36	-53.31	-44.02	-39.53	-34.63	-25.75	-11.97	1.81	10.70	15.59	20.09	29.37
37	-59.26	-49.15	-44.25	-38.93	-29.25	-14.24	.77	10.45	15.78	20.67	30.79
38	-64.89	-53.99	-48.70	-42.96	-32.52	-14.33	-.14	10.30	15.05	21.33	32.23
39	-71.41	-59.[illegible]	-54.22	-47.[illegible]	-36.[illegible]	-16.[illegible]	-1.16	10.29	16.52	22.29	34.[illegible]
40	-79.03	-66.03	-59.73	-52.88	-40.43	-21.13	-1.83	10.61	17.47	23.76	36.79
41	-83.05	-69.94	-63.02	-55.91	-43.00	-22.97	-2.96	9.96	17.08	23.61	37.10
42	-88.04	-73.88	-67.01	-59.54	-45.98	-24.95	-3.92	9.65	17.11	23.58	38.15
43	-92.64	-78.06	-71.04	-63.41	-49.54	-28.04	-6.54	7.32	14.[illegible]	21.97	36.46
44	-96.05	-81.30	-74.16	-66.39	-52.27	-30.38	-8.50	5.62	13.39	20.43	35.23
45	-100.90	-8[illegible].29	-77.02	-69.74	-55.06	-32.30	-9.80	5.14	13.33	20.48	35.[illegible]
46	-105.07	-87.06	-81.31	-73.88	-57.64	-33.80	-10.05	5.27	13.7	21.46	37.46
47	-109.09	-92.29	-84.81	-75.93	-60.17	-35.73	-11.29	4.47	1[illegible]	21.12	37.99
48	-109.32	-93.09	-85.23	-76.67	-61.14	-37.04	-12.96	2.59	11.14	19.00	35.23
49	-110.12	-93.90	-88.[illegible]	-77.80	-61.97	-37.89	-13.82	1.71	10.26	18.11	34.53
50	-111.38	-95.09	-87.12	-78.51	-62.86	-38.60	-14.34	1.31	9.92	17.[illegible]	34.19
51	-112.80	-96.[illegible]	-87.69	-79.03	-63.32	-39.04	-14.69	1.15	9.80	17.96	34.[illegible]
52	-115.02	-98.14	-89.96	-81.06	-64.90	-39.84	-14.78	1.38	10.28	18.44	35.38
53	-114.91	-97.97	-89.[illegible]	-81.09	-65.02	-40.17	-15.33	.70	9.52	17.63	34.36
54	-116.73	-99.67	-91.40	-82.41	-66.07	-40.74	-15.41	.93	9.92	18.19	35.26
55	-111.41	-98.45	-87.77	-79.30	-64.02	-40.33	-16.63	-1.35	7.06	14.79	33.78
56	-117.56	-100.37	-92.08	-83.05	-66.65	-41.22	-15.80	.60	9.63	17.92	35.05
57	-106.52	-92.39	-86.[illegible]	-78.[illegible]	-64.[illegible]	-43.[illegible]	-22.[illegible]	-9.[illegible]	-1.63	5.21	19.[illegible]
58	-102.52	-90.44	-84.58	-78.21	-66.64	-48.73	-30.74	-19.19	-12.82	-6.96	5.13
59	-104.02	-91.81	-85.[illegible]	-79.[illegible]	-67.77	-49.65	-31.52	-19.84	-13.40	-7.49	5.72
60	-103.29	-91.44	-85.74	-79.54	-66.28	-50.82	-33.36	-22.11	-15.91	-10.21	1.55
61	-118.84	-100.53	-93.40	-86.[illegible]	-71.[illegible]	-49.72	-27.00	-13.79	-6.04	1.09	15.03
62	-115.80	-100.72	-93.42	-86.48	-71.05	-48.67	-26.30	-11.87	-3.92	3.38	18.45
63	-1[illegible]	-101.[illegible]	-93.[illegible]	-86.[illegible]	-70.[illegible]	-49.[illegible]	-24.[illegible]	-9.[illegible]	-1.40	5.[illegible]	21.[illegible]
64	-117.14	-101.28	-93.59	-85.23	-70.04	-46.49	-22.93	-7.74	.62	8.30	24.17
65	-117.70	-101.53	-93.60	-85.10	-69.55	-45.44	-21.32	-5.77	2.79	10.66	26.98
66	-118.34	-101.72	-93.61	-84.92	-69.01	-44.35	-19.69	-3.79	4.97	13.02	29.61
67	-118.98	-101.[illegible]	-93.76	-84.[illegible]	-68.[illegible]	-43.30	-18.08	-1.81	7.15	15.38	32.38
68	-119.59	-102.23	-93.81	-84.64	-68.03	-42.25	-16.47	.15	9.31	17.72	35.09
69	-120.17	-102.41	-93.92	-84.46	-67.[illegible]	-41.12	-14.[illegible]	2.28	11.60	20.10	37.[illegible]
70	-120.79	-102.64	-93.88	-84.33	-66.98	-40.07	-13.14	4.19	13.76	22.53	40.65

TABLE 3.3. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.200	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-13.75	-11.23	-10.01	-6.68	-6.27	-2.53	1.20	3.61	4.94	6.16	8.68
1	-16.81	-13.50	-12.01	-10.31	-7.22	-2.42	2.37	5.46	6.17	8.23	11.96
2	-21.01	-17.00	-15.92	-13.03	10.03	-4.13	1.76	5.56	7.65	9.57	12.54
3	-20.65	-23.79	-21.35	-10.76	-19.04	-6.74	.57	5.28	7.08	10.96	15.19
4	-30.24	-28.90	-25.77	-22.77	-17.31	-8.05	-.38	5.07	8.00	10.09	16.54
5	-40.52	-33.89	-30.67	-27.17	-20.02	-10.97	-1.12	5.23	8.73	11.94	16.50
6	-45.51	-38.10	-34.63	-30.76	-23.74	-12.06	-1.97	5.05	8.91	12.47	19.80
7	-50.88	-42.77	-38.04	-34.57	-26.01	-14.78	-2.74	5.02	9.29	13.21	21.32
8	-56.42	-47.48	-43.15	-38.04	-29.08	-16.61	-3.34	5.22	9.93	14.25	23.20
9	-60.85	-51.29	-46.67	-41.60	-32.49	-18.31	-4.13	5.01	10.05	16.67	24.22
10	-63.68	-53.94	-49.22	-44.09	-34.76	-20.31	-5.05	3.47	8.60	13.32	23.36
11	-64.25	-54.84	-50.28	-45.32	-36.31	-22.35	-6.38	.62	5.50	10.24	19.55
12	-62.65	-53.03	-49.55	-44.90	-35.45	-23.35	-10.26	-1.81	2.84	7.12	15.94
13	-56.73	-49.14	-45.47	-41.47	-30.20	-22.94	-11.67	-4.41	-.41	3.27	10.65
14	-50.87	-43.64	-40.52	-37.13	-30.97	-21.42	-11.87	-5.71	-2.32	.79	7.23
15	-43.24	-37.85	-35.23	-32.38	-27.22	-19.21	-11.20	-6.03	-3.19	-.68	4.42
16	-38.53	-33.68	-31.33	-28.77	-24.12	-16.91	-9.71	-5.06	-2.50	-.15	4.71
17	-35.21	-30.60	-28.37	-25.94	-21.53	-14.69	-7.05	-3.43	-1.01	1.23	5.00
18	-29.33	-25.37	-23.45	-21.36	-17.57	-11.68	-5.40	-2.01	.08	2.00	5.96
19	-25.47	-21.74	-19.94	-17.97	-14.40	-8.06	3 32	.25	2.22	4.03	7.76
20	-23.13	-19.51	-17.77	-15.86	-12.41	-7.05	-1.69	1.77	3.67	5.42	9.33
21	-22.55	-18.74	-16.89	-14.80	-11.23	-5.56	.10	3.75	5.76	7.61	11.43
22	-22.02	-18.04	-15.22	-14.02	-10.22	-4.32	1.59	5.39	7.49	9.41	13.39
23	-22.57	-18.86	-16.48	-14.31	-10.38	-4.29	1.40	5.73	7.90	9.89	13.99
24	-24.58	-20.00	-17.90	-15.53	-11.23	-4.65	2.13	6.44	8.81	10.99	15.49
25	-24.78	-21.89	-19.52	-16.99	-12.25	-4.99	2.28	6.97	9.56	11.92	16.81
26	-24.38	-23.38	-20.84	-18.16	-13.33	-5.76	1.78	6.64	9.31	11.77	16.85
27	-30.55	-25.23	-22.65	-19.89	-14.75	-6.84	1.06	6.16	8.96	11.68	16.87
28	-30.17	-30.65	-27.01	-23.02	-15.46	-4.71	6.45	12.64	17.60	21.24	28.75
29	-41.44	-33.29	-29.49	-25.25	-17.54	-5.59	6.26	14.07	18.31	22.21	30.27
30	-45.59	-37.15	-32.87	-28.[illegible]	-20.75	-6.63	6.70	14.90	15.62	23.90	32.74
31	-47.39	-33.59	-29.08	-23.17	-20.26	-6.05	7.32	15.23	21.79	25.63	35.20
32	-50.84	-41.10	-37.28	-31.25	-22.97	-7.47	6.59	16.21	21.44	26.10	35.50
33	-56.30	-45.72	-40.60	-35.03	-24.90	-9.21	6.43	16.61	22.19	27.31	37.39
34	-61.58	-50.22	-44.83	-38.82	-25.47	-11.32	5.44	16.24	22.19	27.66	38.94
35	-6[illegible] 36	-53.[illegible]	-4[illegible].77	-41.70	-3[illegible].53	-13.60	3.49	14.51	20.58	26.16	37.67
36	-6[illegible].45	-57.46	-53.65	-45.27	-32.84	-16.04	1.37	13.25	19.57	25.88	37.38
37	-75.29	-59.53	-5[illegible].37	-43.63	-32.55	-13.74	.08	13.22	18.30	25.04	37.72
38	-81.05	-67.65	-63.12	-59.02	-41.19	-21.[illegible]	-3.22	11.[illegible]	18.60	25.10	38.52
39	-86.09	-72.01	-67.23	-57.77	-44.23	-23.39	-7.49	10.93	19.41	25.23	39.31
40	-87.76	-73.76	-68.57	-59.55	-45.13	-25.39	-4.60	8.21	16.19	22.94	36.98
41	-89.21	-74.95	-61.06	-60.56	-46.92	-25.78	-4.[illegible]	9.01	16.51	23.41	37.66
42	-87.87	-73.93	-67.22	-59.91	-48.60	-25.96	-5.22	7.55	15.32	22.05	35.95
43	-83.42	-70.87	-59.60	-57.73	-46.73	-26.16	-6.94	5.65	12.23	18.35	31.50
44	-79.66	-67.75	-63.57	-55.68	-44.20	-26.55	-8.84	3.58	8.87	14.05	26.58
45	-77.66	-66.22	-61.68	-54.65	-43.70	-26.72	-9.74	1.21	7.24	12.78	24.22
46	-75.14	-64.30	-5[illegible].1[illegible]	-57.47	-43.14	-27.17	-11.18	-.47	4.81	10.02	21.90
47	-71.43	-61.49	-5[illegible].67	-51.43	-41.91	-27.15	-12.39	-2.38	2.37	7.18	17.13
48	-71.15	-61.23	-5[illegible].57	-51.40	-40.60	-27.43	-12.85	-2.45	1.72	6.48	16.30
49	-74.76	-64.39	-57.36	-53.93	-43.36	-29.56	-13.[illegible]	-3.23	2.24	7.27	17.64
50	-75.36	-64.06	-6[illegible].11	-54.65	-4[illegible].65	-29.66	-14.24	-4.51	.41	5.85	16.16
51	-75.54	-65.43	-5[illegible].53	-55.20	-4[illegible].52	-30.52	-15.51	-5.83	-.50	4.39	14.50
52	-76.63	-6[illegible].66	-6[illegible].80	-56.52	-40.92	-32.04	-17.16	-7.[illegible]	-2.27	2.58	12.61
53	-80.84	-70.13	-6[illegible].24	-59.30	-4[illegible].04	-33.14	-17.24	-6.[illegible]	-1.35	3.84	14.55
54	-84.66	-72.84	-6[illegible].11	-60.87	-4[illegible].[illegible]	-32.[illegible]	-14.[illegible]	-[illegible].12	1.12	8.84	20.67
55	-92.35	-73.73	-7[illegible].1[illegible]	-64.36	-5[illegible].92	-31.71	-11.[illegible]	1.54	8.72	15.32	28.94
56	-100.66	-85.22	-77.74	-69.61	-54.[illegible]	-31.90	-8.58	5.80	13.94	21.42	36.86
57	-98.51	-83.97	-7[illegible].92	-69.26	-5[illegible].33	-33.74	-12.18	1.77	9.43	16.48	31.22
58	-107.52	-92.70	-8[illegible].60	-77.81	-6[illegible].66	-41.73	-15.[illegible]	-5.65	2.14	9.80	24.08
59	-110.05	-95.57	-1[illegible].55	-80.92	-67.06	-45.57	-24.08	-10.22	-2.58	4.43	18.91
60	-112.66	-97.96	-9[illegible].53	-67.08	-6[illegible].60	-4[illegible]	-25.[illegible]	-11.27	-3.62	3.61	18.31
61	-108.07	-92.58	-9[illegible].04	-73.33	-5[illegible].01	-45.33	-25.96	-14.04	-5.93	.81	14.10
62	-105.26	-91.71	-8[illegible].15	-78.01	-65.67	-44.22	-24.61	-11.44	-4.70	1.87	15.42
63	-104.06	-90.51	-4[illegible].35	-76.81	-63.84	-43.72	-23.61	-10.64	-3.50	3.07	16.62
64	-103.25	-35.65	-8[illegible].66	-75.88	-6[illegible].8[illegible]	-42.66	-22.46	-9.44	-2.26	4.83	17.43
65	-102.02	-88.42	-8[illegible].34	-74.67	-61.65	-41.46	-21.27	-8.26	-1.03	5.50	19.19
66	-100.82	-87.22	-5[illegible].04	-73.47	-6[illegible].45	-40.26	-20.[illegible]	-7.06	.11	6.[illegible]	20.[illegible]
67	-100.02	-86.35	-73.74	-72.54	-53.47	-39.20	-18.[illegible]	-5.85	1.14	7.36	21.42
68	-98.02	-85.16	-7[illegible].54	-71.35	-58.27	-38.[illegible]	-17.[illegible]	-4.66	2.54	9.16	22.81
69	-97.98	-84.27	-77.63	-70.41	-57.23	-36.94	-16.58	-3.47	3.75	10.39	24.10
70	-96.78	-83.07	-7[illegible].82	-69.21	-5[illegible].[illegible]	-35.74	-15.39	-2.77	4.95	11.59	25.30

TABLE 3.4. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.200	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-13.94	-11.87	-10.28	-8.96	-6.62	-2.95	.71	3.07	4.37	5.56	8.03
1	-17.29	-14.06	-12.51	-10.83	-7.78	-3.86	1.67	4.72	6.40	7.30	11.13
2	-21.63	-17.67	-15.75	-13.67	-9.80	-4.80	1.87	5.66	7.75	9.66	13.62
3	-26.90	-22.36	-20.13	-17.69	-13.27	-6.92	-.99	4.86	7.30	9.53	14.15
4	-34.05	-28.81	-25.68	-22.74	-17.31	-8.94	-.58	4.82	7.79	10.53	16.16
5	-40.72	-34.12	-30.91	-27.43	-21.11	-11.30	-1.49	4.84	8.32	11.52	18.1[illegible]
6	-47.57	-39.93	-36.23	-32.20	-24.89	-13.55	-2.21	5.11	9.14	12.84	2[illegible].46
7	-52.91	-44.53	-40.47	-36.05	-28.03	-15.59	-3.15	4.87	9.29	13.35	21.[illegible]
8	-57.72	-48.67	-44.29	-39.52	-30.86	-17.43	-3.99	4.67	9.44	13.82	22.87
9	-60.05	-50.81	-46.34	-41.47	-32.62	-18.91	-5.19	3.65	8.52	13.06	22.23
10	-60.92	-51.80	-47.39	-42.58	-33.8[illegible]	-20.32	-6.79	1.94	6.75	11.16	20.28
11	-60.84	-51.93	-47.62	-42.93	-34.41	-21.20	-7.99	.53	5.22	9.53	18.44
12	-56.97	-48.94	-45.04	-40.81	-33.12	-21.70	-9.27	-1.58	2.65	6.54	14.57
13	-48.86	-42.38	-39.24	-35.82	-29.51	-19.99	-10.36	-4.15	-.73	2.41	8.89
14	-41.85	-36.87	-33.87	-31.08	-25.89	-17.91	-5.54	-4.79	-1.96	.64	6.02
15	-35.96	-31.31	-28.20	-26.20	-22.84	-15.69	-8.93	-4.57	-2.17	-.04	4.58
16	-30.71	-26.76	-24.85	-22.76	-18.98	-13.11	-7.24	-3.46	-1.38	.54	4.49
17	-26.97	-23.26	-21.47	-19.51	-15.96	-10.46	-4.35	-1.41	.55	2.35	6.25
18	-22.53	-19.21	-17.60	-15.85	-12.67	-7.74	-2.81	.37	2.12	3.73	7.05
19	-19.70	-15.70	-14.25	-12.67	-9.80	-5.36	-.98	1.34	3.56	5.01	8.31
20	-15.50	-12.81	-11.51	-10.09	-7.51	-3.51	.48	3.06	4.48	5.78	8.48
21	-14.25	-11.58	-10.29	-8.88	-6.32	-2.36	1.61	4.16	5.57	6.87	8.64
22	-13.29	-10.83	-9.34	-7.94	-5.39	-1.44	2.51	5.06	6.47	7.76	10.42
23	-13.23	-10.49	-9.16	-7.71	-5.08	-1.00	3.08	5.71	7.16	8.49	11.24
24	-14.50	-11.68	-10.19	-8.66	-5.88	-1.57	2.75	5.53	7.06	8.46	11.37
25	-16.12	-12.99	-11.47	-9.82	-6.82	-2.17	2.48	5.48	7.13	8.64	11.78
26	-18.02	-14.58	-12.91	-11.10	-7.60	-2.70	2.41	5.70	7.52	9.18	12.62
27	-21.87	-17.81	-15.84	-13.70	-9.81	-3.78	2.25	6.14	8.28	10.24	14.31
28	-19.23	-15.59	-13.83	-11.92	-8.44	-3.05	2.30	5.82	7.74	9.50	13.23
29	-21.96	-18.03	-15.12	-14.04	-11.27	-4.43	1.42	5.19	7.26	9.17	13.11
30	-24.97	-20.72	-18.67	-16.43	-12.38	-6.06	.25	4.37	6.55	8.61	12.85
31	-27.10	-22.67	-23.52	-18.19	-13.94	-7.36	-.78	3.44	5.80	7.95	12.34
32	-30.02	-25.23	-22.91	-20.38	-15.00	-8.69	-1.57	3.01	5.54	7.86	12.65
33	-31.45	-26.64	-24.31	-21.74	-17.17	-10.04	-2.90	1.71	4.24	6.57	11.38
34	-34.11	-29.20	-26.67	-24.02	-19.23	-11.78	-4.34	.46	3.10	5.53	10.55
35	-37.94	-32.48	-29.83	-26.95	-21.72	-13.60	-5.48	-.25	2.63	5.28	10.74
36	-40.05	-34.47	-31.77	-28.83	-23.50	-15.22	-6.35	-1.61	1.33	4.03	9.60
37	-42.66	-37.66	-34.75	-31.59	-25.84	-16.93	-8.02	-2.27	.89	3.00	9.80
38	-48.85	-41.07	-38.64	-35.02	-26.43	-18.22	-8.02	-1.44	2.18	5.52	12.39
39	-52.92	-45.25	-41.53	-37.46	-31.13	-18.74	-7.35	.03	4.05	7.77	15.44
40	-55.91	-47.64	-43.63	-39.28	-31.36	-19.08	-6.94	1.11	5.47	9.48	17.75
41	-50.56	-46.33	-47.43	-38.13	-31.31	-18.19	-6.07	1.74	6.05	10.00	19.17
42	-51.86	-43.89	-40.03	-35.83	-28.21	-16.39	-4.56	3.06	7.26	11.42	19.09
43	-48.34	-40.84	-37.27	-33.33	-26.19	-15.12	-4.04	3.13	7.03	10.65	18.22
44	-45.77	-38.66	-35.21	-31.46	-24.65	-14.09	-3.53	3.24	7.03	10.47	17.59
45	-43.49	-36.68	-33.39	-29.80	-23.29	-13.19	-3.09	3.43	7.01	10.31	17.11
46	-42.83	-36.03	-32.74	-29.16	-22.65	-12.58	-2.46	4.04	7.63	10.92	17.72
47	-43.91	-36.74	-33.27	-29.49	-22.63	-11.99	-1.35	5.51	9.28	1[illegible].72	19.32
48	-42.98	-35.86	-32.41	-28.65	-21.83	-11.25	-.67	6.15	9.91	13.36	20.45
49	-46.33	-38.46	-34.64	-30.49	-22.95	-11.26	.44	7.93	12.13	15.94	23.22
50	-49.58	-41.09	-36.98	-32.56	-24.37	-11.76	.75	8.92	13.46	17.52	26.07
51	-49.14	-40.79	-35.74	-32.34	-24.35	-11.36	.44	8.43	12.83	16.87	25.22
52	-47.98	-39.92	-36.01	-31.76	-24.04	-12.08	-.34	7.61	11.86	15.76	23.83
53	-47.58	-[illegible].30	-35.28	-30.92	-22.98	-10.62	1.62	9.55	13.92	17.92	26.22
54	-48.32	-[illegible].02	-35.86	-31.44	-23.40	-10.95	1.54	9.54	13.96	18.03	26.42
55	-48.78	-39.85	-35.53	-30.83	-22.29	-9.05	4.20	12.74	17.44	21.76	30.68
56	-43.72	-35.34	-31.28	-26.87	-18.85	-6.41	6.03	14.05	16.47	22.52	30.90
57	-45.60	-36.43	-31.99	-27.16	-16.38	-4.76	8.85	17.63	22.46	26.91	36.08
58	-32.33	-25.04	-21.50	-17.66	-10.68	.14	10.96	17.94	21.79	25.32	32.61
59	-34.59	-25.19	-23.63	-15.68	-6.68	7.27	21.22	30.22	35.18	39.72	49.23
60	-41.38	-30.49	-24.78	-18.88	-4.19	8.42	25.02	35.72	41.62	47.03	59.21
61	-36.03	-26.13	-21.34	-16.13	-6.66	8.03	22.72	32.19	37.40	42.19	52.09
62	-35.69	-25.95	-21.24	-16.14	-6.79	7.66	22.10	31.42	36.55	41.27	51.00
63	-35.39	-25.81	-21.18	-16.13	-6.96	7.25	21.46	30.62	35.67	40.31	49.88
64	-35.06	-25.64	-21.08	-16.12	-7.10	6.87	20.85	29.86	34.83	39.39	48.80
65	-34.73	-25.47	-21.99	-16.11	-7.24	6.50	20.24	29.11	33.99	38.47	47.73
66	-34.44	-25.83	-20.92	-16.12	-7.40	6.12	19.65	28.37	38.17	37.59	46.70
67	-34.13	-25.17	-21.83	-16.11	-7.54	5.75	19.09	27.62	32.34	36.68	45.64
68	-33.86	-25.05	-20.79	-16.15	-7.72	5.34	18.41	26.84	31.48	35.74	44.55
69	-33.56	-24.90	-21.71	-16.15	-7.87	4.97	17.61	26.13	30.66	34.85	43.60
70	-33.26	-24.76	-20.64	-16.10	-8.02	4.60	17.22	25.36	29.84	33.95	42.46

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 3.5. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.22	-10.21	-9.23	-8.17	-6.25	-3.26	-.27	1.56	2.72	3.70	5.71
1	-15.12	-12.35	-11.02	-9.55	-6.91	-2.80	1.31	3.56	5.41	6.75	9.52
2	-19.17	-14.61	-12.88	-11.00	-7.53	-2.30	2.99	6.40	8.28	10.00	13.56
3	-25.06	-20.24	-17.51	-15.37	-10.70	-3.66	3.55	8.14	10.76	13.[illegible]	17.[illegible]
4	-30.43	-24.75	-22.01	-19.02	-13.59	-5.17	3.25	9.68	11.67	14.41	20.09
5	-34.11	-27.93	-24.94	-21.66	-15.70	-6.59	2.58	8.50	11.75	14.75	20.93
6	-37.34	-30.73	-27.52	-24.03	-17.70	-7.88	1.94	8.28	11.76	14.97	21.59
7	-41.09	-33.92	-30.44	-26.66	-19.84	-9.16	1.48	8.35	12.13	15.66	22.77
8	-45.00	-37.29	-33.56	-29.43	-22.11	-10.66	.79	8.17	12.24	15.97	23.68
9	-47.29	-39.33	-35.48	-31.26	-23.67	-11.66	-.05	7.57	11.76	15.63	23.58
10	-49.02	-40.95	-37.05	-32.90	-25.08	-13.12	-1.15	6.57	10.82	14.72	22.78
11	-50.24	-42.15	-38.23	-33.97	-26.22	-14.22	-2.21	5.53	9.60	13.72	21.81
12	-47.59	-40.17	-35.60	-32.71	-25.65	-14.71	-3.72	3.23	7.17	10.74	19.11
13	-41.75	-35.55	-32.55	-29.22	-23.36	-14.17	-4.58	.55	4.21	7.21	13.41
14	-35.16	-30.99	-29.33	-25.75	-20.40	-13.11	-5.43	-.48	2.25	4.76	9.54
15	-29.89	-25.74	-23.73	-21.59	-17.56	-11.40	-5.23	-1.25	.93	2.85	7.12
16	-25.01	-21.50	-19.79	-17.94	-14.59	-9.37	-4.15	-.79	1.06	2.76	6.27
17	-20.51	-17.49	-16.03	-14.44	-11.55	-7.07	-2.59	.30	1.89	3.35	6.37
18	-15.30	-12.86	-11.68	-10.40	-8.06	-4.45	-.83	1.50	2.79	3.97	6.41
19	-11.72	-9.54	-8.46	-7.33	-5.24	-2.01	1.23	2.22	4.47	5.52	7.70
20	-9.19	-7.16	-6.18	-5.11	-3.17	-.16	2.65	4.79	5.86	6.84	8.36
21	-7.93	-5.92	-4.54	-3.84	-1.96	1.03	4.02	5.94	7.00	7.98	9.59
22	-7.08	-5.04	-4.11	-3.04	-1.14	1.82	4.79	6.70	7.75	8.72	10.72
23	-7.76	-5.54	-4.47	-3.30	-1.18	2.11	5.40	7.52	8.69	9.76	11.98
24	-9.28	-6.76	-5.54	-4.22	-1.80	1.94	5.68	8.03	9.42	10.64	13.16
25	-9.78	-7.15	-5.88	-4.50	-1.98	1.91	5.68	8.22	9.71	10.98	13.61
26	-11.34	-8.39	-6.96	-5.41	-2.53	1.40	6.13	9.00	10.56	11.99	14.34
27	-13.52	-10.21	-8.60	-6.85	-3.68	1.25	6.17	9.35	11.16	12.76	16.62
28	-14.80	-11.48	-9.38	-7.33	-3.73	1.06	7.03	11.03	13.01	15.83	18.86
29	-16.94	-12.82	-10.83	-8.66	-4.71	1.98	7.52	11.46	13.63	15.63	19.78
30	-18.56	-14.17	-12.98	-9.78	-5.40	.68	7.37	11.85	13.86	15.96	20.34
31	-17.85	-13.78	-11.78	-9.51	-5.55	.60	6.75	10.72	12.90	14.91	19.08
32	-18.49	-14.38	-12.20	-10.07	-6.06	.16	6.34	10.37	12.57	14.40	18.78
33	-19.23	-14.98	-12.81	-10.52	-6.38	.05	6.48	10.62	12.90	15.00	19.33
34	-21.49	-16.83	-14.47	-11.91	-7.26	-.03	7.18	11.85	14.04	16.73	21.03
35	-23.98	-18.23	-15.68	-12.91	-7.88	-.08	7.72	12.75	15.52	16.86	23.32
36	-24.32	-18.83	-16.17	-13.28	-8.03	.12	8.24	13.61	14.98	19.06	24.56
37	-24.91	-19.28	-16.55	-13.59	-8.28	.16	8.52	13.91	14.88	19.61	25.24
38	-26.61	-19.76	-16.92	-13.82	-8.23	.47	9.16	14.77	17.85	20.69	26.66
39	-24.74	-18.91	-16.08	-13.31	-7.42	.29	9.98	15.48	18.56	21.39	27.28
40	-22.68	-17.00	-14.26	-11.26	-5.83	1.41	11.03	16.83	18.86	22.34	27.80
41	-20.67	-15.02	-12.29	-9.31	-3.91	4.47	12.85	18.26	21.23	23.97	29.61
42	-19.53	-13.69	-10.84	-7.78	-2.19	6.48	15.15	20.79	23.02	26.05	32.49
43	-17.82	-11.38	-8.53	-5.51	-.89	8.95	16.94	22.91	25.93	28.28	33.92
44	-13.54	-8.42	-5.79	-2.93	2.26	10.31	18.36	23.65	26.91	29.69	34.46
45	-13.72	-8.03	-5.27	-2.27	3.18	11.13	20.08	25.53	28.53	31.29	36.98
46	-14.23	-8.28	-5.20	-2.10	3.56	12.14	21.64	27.33	30.50	33.48	39.46
47	-15.14	-8.69	-5.56	-2.14	4.81	13.69	23.17	29.34	32.74	35.87	42.32
48	-14.69	-8.08	-4.87	-1.39	4.94	14.71	24.60	30.91	34.39	37.68	44.21
49	-14.34	-7.56	-4.27	-.70	5.88	15.87	25.93	32.43	36.08	39.29	46.07
50	-13.16	-6.35	-3.05	.84	7.07	17.14	27.38	33.82	37.92	40.72	47.03
51	-13.85	-6.06	-2.68	1.81	7.78	18.07	28.44	36.13	38.82	42.28	49.19
52	-12.98	-5.14	-2.24	1.86	8.47	19.19	29.98	36.81	40.61	44.11	51.02
53	-13.77	-6.34	-2.75	1.17	8.27	19.38	30.32	3[illegible].42	41.34	44.93	52.36
54	-14.63	-6.65	-2.89	1.32	8.86	20.51	32.29	39.78	43.99	47.75	54.63
55	-13.82	-5.68	-1.73	2.56	10.36	22.49	34.53	42.33	46.62	50.57	58.71
56	-11.72	-3.69	.20	4.63	12.27	24.26	36.26	43.99	48.25	52.16	60.24
57	-16.81	-7.32	-2.73	2.27	11.35	25.43	37.61	46.59	51.59	56.18	67.64
58	-9.68	-1.09	2.91	6.55	14.26	26.21	38.16	46.87	50.12	54.08	62.08
59	-9.48	2.33	5.50	9.13	15.67	25.56	35.55	41.99	45.53	48.79	55.52
60	-9.60	-1.66	2.23	6.46	14.14	26.06	37.06	46.63	49.84	53.74	61.73
61	-13.67	-5.00	-.80	3.97	12.87	24.99	37.81	44.11	50.68	54.88	63.56
62	-14.06	-5.56	-1.43	3.05	11.19	23.03	34.44	44.56	49.84	53.10	61.06
63	-14.19	-5.91	-1.98	2.47	10.90	22.69	34.98	42.91	47.28	51.29	59.57
64	-14.69	-6.44	-2.53	1.95	9.62	21.84	33.41	41.30	45.64	50.50	59.08
65	-14.72	-6.02	-3.00	1.16	8.72	20.49	32.16	39.71	43.87	47.78	55.89
66	-14.56	-7.27	-3.54	.49	7.83	19.33	30.48	37.84	42.81	46.73	53.40
67	-15.39	-7.83	-4.13	-.24	6.95	18.18	29.25	34.49	40.39	44.83	51.54
68	-15.49	-8.20	-4.67	-.83	6.15	16.97	27.80	34.77	38.42	42.18	49.44
69	-15.89	-8.76	-5.31	-1.55	5.27	15.85	26.93	33.25	37.81	40.46	47.58
70	-14.08	-9.14	-5.79	-2.15	4.43	14.73	25.98	31.54	35.35	39.50	46.49

TABLE 3.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.47	-5.[illegible]	-4.65	-3.70	-1.51	-3.13	-.25	1.45	2.43	3.34	5.21
1	-14.[illegible]	-11.57	-9.57	-9.13	-6.60	-2.62	1.76	3.32	5.30	6.64	9.32
[illegible]	-1[illegible].18	-14.46	-1[illegible].72	-10.82	-7.41	-2.65	3.[illegible]	6.[illegible]	8.55	10.28	13.37
3	-1[illegible]	-1[illegible]	-1[illegible].55	-1[illegible].14	-[illegible].78	-2.32	3.99	3.25	10.71	12.93	17.52
4	-2[illegible].[illegible]	-2[illegible].26	-1[illegible].85	-1[illegible].91	-11.87	-2.56	3.[illegible]	[illegible]	11.78	14.34	19.64
5	-2[illegible].31	-2[illegible].30	-2[illegible].73	-1[illegible].6[illegible]	-1[illegible]	-5.31	3.43	3.[illegible]	12.16	15.01	20.39
6	-2[illegible].[illegible]	-2[illegible].22	-2[illegible].15	-22.70	-1[illegible].47	-4.70	3.[illegible]	5.[illegible]	12.75	15.[illegible]	22.48
7	-3[illegible].[illegible]	-3[illegible].25	-2[illegible].7[illegible]	-2[illegible].3[illegible]	-1[illegible].71	-3.10	2.71	5.63	13.52	17.[illegible]	24.33
8	-3[illegible].[illegible]	-3[illegible].[illegible]	-3[illegible].[illegible]	-2[illegible].5[illegible]	-2[illegible].77	-5.[illegible]	2.62	2[illegible].47	14.79	18.70	26.57
9	-5[illegible].07	-4[illegible].72	-3[illegible].7[illegible]	-3[illegible].57	-2[illegible].2[illegible]	-1[illegible].82	2.46	11.[illegible]	15.75	2[illegible]	29.[illegible]
10	-5[illegible].47	-4[illegible].2[illegible]	-3[illegible].71	-2[illegible].8[illegible]	-2[illegible].[illegible]	-2[illegible].19	1.57	1[illegible].[illegible]	1[illegible].2[illegible]	2[illegible].[illegible]	29.29
11	-5[illegible].5[illegible]	-4[illegible].4[illegible]	-4[illegible].23	-3[illegible].1[illegible]	-3[illegible].2[illegible]	-13.37	.24	3.3[illegible]	13.84	18.31	27.35
12	-5[illegible].[illegible]	-4[illegible].5[illegible]	-4[illegible].2[illegible]	-3[illegible].5[illegible]	-2[illegible].[illegible]	-1[illegible].75	-1.[illegible]	7.[illegible]	11.75	16.67	25.[illegible]
13	-4.[illegible]	-4[illegible].72	-3[illegible].[illegible]	-3[illegible].57	-2[illegible].[illegible]	-14.2[illegible]	-2.42	5.2[illegible]	9.39	13.25	21.21
14	-4[illegible].[illegible]	-3[illegible].9[illegible]	-3[illegible].5[illegible]	-3[illegible].6[illegible]	-2[illegible].[illegible]	-12.[illegible]	-2.[illegible]	3.[illegible]	6.73	9.37	15.[illegible]
15	-3[illegible].[illegible]	-3[illegible].7[illegible]	-3[illegible].[illegible]	-2[illegible].9[illegible]	-2[illegible].3[illegible]	-9.72	-2.13	2.[illegible]	5.25	7.48	12.44
16	-3[illegible].[illegible]	-2[illegible].[illegible]	-2[illegible].15	-2[illegible].1[illegible]	-2[illegible].[illegible]	-6.67	-.[illegible]	2.77	4.81	6.[illegible]	1[illegible].55
17	-17.2[illegible]	-14.71	-1[illegible].1[illegible]	-11.4[illegible]	-1[illegible].3[illegible]	-3.57	1.[illegible]	4.31	6.21	7.57	1[illegible].2[illegible]
18	-2[illegible].[illegible]	-1[illegible].[illegible]	-7.7[illegible]	-6.8[illegible]	-5.[illegible]	-.37	2.2[illegible]	5.[illegible]	8.97	8.17	1[illegible].6[illegible]
19	-7.7[illegible]	-6.[illegible]	-4.5[illegible]	-3.7[illegible]	-2.7[illegible]	1.49	5.[illegible]9	7.[illegible]	9.3[illegible]	9.35	11.51
20	-6.2[illegible]	-5.[illegible]	-4.[illegible]	-1.0[illegible]	.77	2.5[illegible]	6.29	[illegible]	9.2[illegible]	1[illegible].11	12.[illegible]
21	-7.[illegible]	-1.7[illegible]	-.73	.21	2.0[illegible]	4.73	7.55	5.34	1[illegible].3[illegible]	11.24	13.21
22	-2.[illegible]	-.2[illegible]	.62	1.4[illegible]	2.2[illegible]	5.[illegible]	8.[illegible]	1[illegible].[illegible]	11.1[illegible]	12.[illegible]	13.4[illegible]
23	-2.3[illegible]	-.41	.5[illegible]	1.3[illegible]	2.73	5.65	5.[illegible]	11.2[illegible]	12.38	13.31	15.24
24	-1.2[illegible]	.1[illegible]	2.1[illegible]	2.2[illegible]	4.1[illegible]	7.1[illegible]	1[illegible].[illegible]	1[illegible].[illegible]	1[illegible].27	14.26	16.2[illegible]
25	-1.3[illegible]	.2[illegible]	1.2[illegible]	2.5[illegible]	4.[illegible]	7.94	11.[illegible]	17.3[illegible]	14.[illegible]	15.59	17.3[illegible]
26	-1.[illegible]7	.8[illegible]	.6[illegible]	2.8[illegible]	5.6[illegible]	8.[illegible]	1[illegible].[illegible]	14.2[illegible]	1[illegible].47	1[illegible].6[illegible]	18.9[illegible]
27	-1.[illegible]	.[illegible]	2.7[illegible]	3.0[illegible]	5.21	9.5[illegible]	1[illegible].[illegible]	14.2[illegible]	15.47	16.5[illegible]	19.[illegible]
28	-6.91	-3.20	-1.40	.5[illegible]	4.11	9.62	15.1[illegible]	19.68	2[illegible].[illegible]	22.4[illegible]	26.15
29	-7.45	-3.52	-1.63	.44	4.19	10.[illegible]2	15.8[illegible]	19.6[illegible]	21.6[illegible]	23.5[illegible]	27.49
30	-6.84	-2.95	-1.06	.93	4.71	10.48	1[illegible].2[illegible]	19.98	22.03	23.91	27.80
31	-6.68	-2.74	-.84	1.24	5.00	1[illegible].84	16.6[illegible]	2[illegible].4[illegible]	22.52	24.02	28.36
32	-6.11	-2.23	-.35	1.63	5.40	11.15	16.91	20.62	22.46	24.9[illegible]	29.41
33	-5.43	-1.66	.17	2.16	5.77	11.37	1[illegible].57	2[illegible].56	22.57	24.8[illegible]	28.26
34	-4.41	-.76	1.02	2.94	6.44	11.87	17.30	20.[illegible]	22.73	24.3[illegible]	28.26
35	-4.87	-4.87	1.07	3.18	7.01	12.94	18.68	22.71	24.62	2[illegible].7[illegible]	3[illegible].7[illegible]
36	-3.56	.39	2.30	4.38	8.1[illegible]	14.03	19.89	23.67	25.75	27.87	31.67
37	-3.32	.91	2.95	5.28	5.22	15.49	21.7[illegible]	25.8[illegible]	28.C2	3[illegible].C7	34.29
38	-4.28	.47	2.73	5.23	[illegible].84	16.9[illegible]	23.9[illegible]	23.53	31.C4	33.34	38.10
39	2.28	5.83	7.78	9.62	13.12	18.57	23.54	27.43	29.36	31.12	34.77
40	3.28	7.05	8.67	10.86	14.47	20.46	25.66	29.27	31.26	33.08	36.85
41	3.56	7.67	5.66	11.82	15.75	21.84	27.54	31.37	34.C2	36.C2	4C.12
42	2.22	6.97	9.27	11.78	16.42	23.37	30.42	34.97	37.47	39.17	44.52
43	4.03	8.6[illegible]	1[illegible].88	12.25	17.57	24.46	31.25	35.63	38.C4	4C.2[illegible]	44.83
44	4.20	9.24	11.C8	14.34	1[illegible].15	26.64	34.12	38.94	41.59	44.C3	49.C7
45	5.27	10.57	1[illegible].12	1[illegible].92	21.00	28.86	3C.73	41.41	44.59	47.16	52.46
46	7.70	12.90	15.41	14.15	22.13	30.84	38.59	43.53	46.26	48.78	53.93
47	9.76	14.76	17.18	19.87	24.61	32.43	39.46	44.7[illegible]	46.89	49.31	54.31
48	[illegible].91	15.96	19.40	21.06	25.69	33.36	40.87	45.69	48.35	50.8[illegible]	55.84
49	11.75	16.88	1[illegible].36	22.07	2[illegible].98	34.59	42.2[illegible]	47.11	49.81	52.3[illegible]	57.42
50	10.06	15.88	18.70	21.77	27.34	35.98	44.62	50.[illegible]	53.26	56.08	61.9[illegible]
51	9.37	15.85	18.99	22.4[illegible]	28.[illegible]	38.22	47.88	54.[illegible]	57.46	6[illegible].6[illegible]	67.68
52	5.33	13.17	1[illegible].97	21.10	23.61	40.25	51.89	59.39	63.53	67.32	75.16
53	1.00	1[illegible].11	14.52	19.32	26.04	41.5[illegible]	55.24	63.80	68.6[illegible]	73.61	82.12
54	4.11	12.54	16.62	21.07	29.14	41.65	54.1[illegible]	62.24	66.68	7[illegible].76	79.20
55	3.98	12.53	16.67	21.17	25.35	42.04	54.72	62.90	67.41	71.55	8[illegible].C9
56	2.64	11.61	15.25	20.68	23.26	42.57	55.87	64.46	59.18	73.92	82.49
57	7.87	15.97	17.38	24.15	31.90	47.91	55.[illegible]	63.66	67.93	71.8[illegible]	79.94
58	16.02	22.82	3[illegible].21	29.69	36.20	46.29	56.38	62.88	66.47	69.76	76.56
59	17.26	23.57	26.63	29.85	35.99	45.3[illegible]	54.72	6[illegible].77	64.C9	67.15	73.46
60	14.92	22.24	25.79	24.69	36.66	47.52	58.39	65.40	69.26	72.8[illegible]	80.13
61	11.61	19.36	27.11	27.20	34.62	46.12	57.63	65.0[illegible]	69.14	72.89	8[illegible].64
62	10.49	18.17	21.89	25.94	33.38	44.70	56.11	63.40	67.51	71.24	78.92
63	9.54	17.11	2[illegible].78	24.78	32.03	43.28	54.5[illegible]	61.78	65.78	69.85	77.03
64	8.41	15.92	19.56	23.92	30.71	41.86	53.01	60.20	64.16	67.79	75.30
65	7.18	14.63	18.25	22.16	2[illegible].32	4[illegible].35	51.46	58.6[illegible]	62.53	66.14	73.[illegible]
66	6.05	13.44	17.02	20.92	27.99	38.96	49.93	57.01	6[illegible].9[illegible]	64.48	71.87
67	4.87	12.20	15.76	19.63	26.65	37.54	48.43	55.46	59.33	62.88	7[illegible].22
68	3.98	11.20	14.69	18.50	25.41	36.12	46.83	53.74	57.55	61.[illegible]	68.26
69	2.79	9.96	13.43	17.20	24.[illegible]	34.7[illegible]	45.[illegible]	52.19	55.87	59.44	66.[illegible]
70	1.67	8.77	12.20	15.94	22.74	33.27	43.81	50.61	54.35	57.28	64.88

TABLE 3.7. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.25	-7.71	-6.98	-6.20	-4.77	-2.59	-.34	1.09	1.98	2.80	4.18
1	-10.0[illegible]	-8.69	-7.63	-6.47	-4.38	-1.13	2.13	4.22	5.38	6.44	8.63
2	-10.[illegible]6	-7.07	-6.71	-5.45	-3.16	.39	3.94	6.22	7.49	8.60	11.03
3	-12.31	-9.45	-8.07	-6.57	-3.85	.37	4.60	7.32	8.82	10.20	13.04
4	-1[illegible].48	-10.39	-8.89	-7.26	-4.30	.29	4.88	7.84	9.47	10.97	14.06
5	-1[illegible].49	-11.16	-9.57	-7.84	-4.70	.18	5.05	8.19	9.93	11.52	14.88
6	-1[illegible].29	-12.00	-10.83	-8.91	-5.42	-.01	5.40	8.88	10.81	12.67	16.21
7	17.79	-13.81	-11.96	-9.82	-6.05	-.20	5.65	9.43	11.50	13.91	17.36
8	-20.25	-15.82	-13.67	-11.39	-7.10	-.53	6.05	10.29	12.42	14.77	19.20
9	-23.00	-18.29	-15.61	-12.96	-8.16	-.72	6.73	11.53	13.18	16.61	21.63
10	-25.44	-20.09	-17.33	-14.38	-9.03	-.72	7.58	12.94	15.89	18.40	24.19
11	-27.57	-21.87	-18.67	-15.50	-9.76	-.46	8.09	13.78	16.94	19.85	25.86
12	-28.16	-22.03	-19.07	-15.83	-9.97	-.87	8.23	14.09	17.32	20.29	26.42
13	-26.81	-21.09	-18.25	-15.21	-9.68	-1.12	7.49	12.97	16.01	18.80	24.57
14	-23.54	-18.48	-16.03	-13.37	-8.53	-1.02	6.48	11.32	13.99	16.53	21.49
15	-18.37	-14.49	-12.51	-10.36	-6.95	-.39	5.67	9.58	11.73	13.71	17.80
16	-12.66	-9.50	-8.02	-6.91	-3.48	1.05	5.59	8.52	10.13	11.61	14.66
17	-7.34	-5.16	-4.02	-2.89	-.69	2.63	5.96	8.18	9.28	10.37	12.41
18	-4.15	-2.29	-1.39	-.41	1.36	4.12	6.87	8.65	9.63	10.53	12.38
19	-1.29	-.27	1.03	1.89	3.31	5.59	7.86	9.33	10.19	10.88	12.42
20	.39	1.43	2.53	3.29	4.67	6.81	8.95	10.33	11.09	11.79	13.23
21	1.13	2.69	3.45	4.27	5.77	8.09	10.41	11.91	12.74	13.49	15.06
22	2.48	4.00	4.73	5.53	6.99	9.24	11.49	12.95	13.75	14.48	16.00
23	2.88	4.54	5.34	6.22	7.81	10.27	12.73	15.32	15.20	16.00	17.66
24	3.83	5.51	6.33	7.22	8.83	11.33	13.83	15.45	16.34	17.15	18.84
25	4.45	6.24	7.10	8.09	9.76	12.40	15.05	16.76	17.70	18.57	20.35
26	5.16	6.99	7.80	8.79	10.44	13.08	15.72	17.42	18.36	19.22	21.08
27	5.24	7.12	8.01	8.98	10.74	13.47	16.20	17.96	18.93	19.82	21.66
28	6.12	8.13	9.10	10.13	12.06	15.03	18.00	19.91	20.96	21.93	23.93
29	5.34	7.73	8.89	10.14	12.43	15.97	19.51	21.79	23.05	24.21	26.59
30	5.46	8.06	9.32	10.69	13.18	17.05	20.91	23.40	24.78	26.04	28.64
31	7.70	10.06	11.20	12.44	14.70	18.20	21.70	23.96	25.20	26.34	28.70
32	8.25	10.64	11.80	13.08	15.34	18.89	22.43	24.72	25.98	27.23	29.52
33	8.58	10.90	12.11	13.35	15.64	19.17	22.70	24.97	26.23	27.88	29.76
34	7.63	10.31	11.61	13.02	15.59	19.56	23.53	26.10	27.51	28.81	31.48
35	7.84	10.87	12.06	13.57	16.32	20.58	24.63	27.58	29.09	30.48	33.35
36	9.73	12.39	13.66	15.03	17.53	21.41	25.29	27.79	29.16	30.43	33.04
37	10.19	13.01	14.37	15.85	18.56	22.75	26.94	29.64	31.12	32.45	35.31
38	10.97	13.94	15.38	16.95	19.80	24.22	28.63	31.48	33.05	34.49	37.47
39	13.06	15.90	17.28	18.77	21.69	25.71	29.53	32.65	34.14	35.52	38.36
40	15.14	17.76	19.07	20.40	23.90	26.77	30.65	33.19	34.52	35.79	38.40
41	16.55	19.21	20.49	21.85	24.44	28.38	32.33	34.87	36.27	37.56	40.22
42	17.43	20.35	21.77	23.31	26.11	30.45	34.79	37.59	39.13	40.55	43.47
43	18.17	21.52	22.15	24.91	28.12	33.10	38.07	41.28	43.04	44.67	48.62
44	20.09	23.64	25.39	27.29	30.73	36.08	41.42	44.87	46.76	48.51	52.11
45	20.72	24.62	26.51	28.58	32.29	38.06	43.87	47.60	49.66	51.55	55.45
46	22.07	26.08	28.02	30.14	33.98	39.94	45.90	49.74	51.85	53.80	57.81
47	25.41	29.08	31.85	32.79	36.30	41.74	47.18	50.65	52.63	54.40	58.07
48	28.29	31.66	33.30	35.08	38.32	43.33	48.34	51.58	53.36	55.00	58.37
49	29.14	32.63	34.32	36.16	39.50	44.61	49.86	53.20	55.04	56.73	60.22
50	28.63	32.45	34.31	36.33	39.99	45.67	51.75	55.02	57.04	58.89	62.72
51	28.81	32.99	35.01	37.21	41.20	47.39	53.59	57.58	59.78	61.80	65.98
52	28.66	32.43	34.75	37.29	41.83	48.32	56.00	60.57	63.09	65.40	70.18
53	28.12	33.02	35.40	37.99	42.69	49.98	57.29	61.97	64.55	66.93	71.84
54	28.95	33.88	36.27	38.87	43.59	50.90	58.22	62.94	65.54	67.93	72.86
55	29.09	34.35	36.90	39.68	44.71	52.53	60.34	65.38	68.15	70.70	75.96
56	26.37	32.63	35.73	39.05	45.09	54.43	63.79	69.92	73.14	76.19	82.49
57	27.14	33.53	36.62	40.00	46.12	55.61	65.11	71.23	74.60	77.70	84.09
58	31.40	37.01	39.73	42.69	48.07	56.40	64.73	70.11	73.07	75.79	81.40
59	30.64	36.87	39.89	43.18	49.74	58.39	67.65	73.61	76.90	79.92	86.15
60	32.78	38.20	40.83	43.69	49.48	56.93	64.98	70.17	73.03	75.86	81.08
61	29.85	35.60	38.29	41.42	46.93	55.47	64.01	69.52	72.55	75.33	81.09
62	28.69	34.36	37.11	40.10	45.53	53.95	62.32	67.80	70.78	73.83	79.20
63	27.68	33.25	35.95	38.88	44.21	52.47	60.74	66.07	69.00	71.70	77.27
64	26.56	32.05	34.71	37.60	42.86	51.00	59.15	64.40	67.30	69.95	75.44
65	25.43	30.85	33.47	36.32	41.50	49.53	57.56	62.74	65.59	68.21	73.63
66	24.42	29.72	32.26	35.07	40.14	48.01	55.87	60.94	63.73	66.30	71.60
67	23.27	28.50	31.03	33.78	38.78	46.54	54.29	59.29	62.04	64.57	69.80
68	22.20	27.37	29.85	32.55	37.46	45.06	52.67	57.58	60.28	62.76	67.89
69	21.04	26.05	28.54	31.26	36.04	43.54	51.04	55.88	58.55	60.92	66.05
70	19.87	24.86	27.27	29.90	34.67	42.07	49.42	54.24	56.87	59.28	64.27

TABLE 3.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.84	-8.19	-7.39	-6.52	-4.99	-2.49	-.09	1.54	2.91	3.21	4.86
1	-12.19	-9.75	-8.60	-7.34	-5.05	-1.60	2.05	4.34	5.60	6.76	9.15
2	-12.21	-9.69	-8.29	-6.83	-4.27	-.30	3.47	6.29	7.65	8.99	11.62
3	-14.09	-10.98	-7.60	-7.08	-4.95	-.41	4.13	7.06	8.67	10.14	13.22
4	-15.20	-11.88	-10.27	-8.52	-5.35	-.42	4.61	7.69	9.44	11.05	14.37
5	-17.70	-13.99	-12.15	-10.15	-6.52	-.80	4.73	8.36	10.36	12.20	15.99
6	-20.67	-16.92	-14.36	-12.12	-8.05	-1.79	4.67	8.64	10.80	12.94	17.19
7	-23.16	-18.48	-16.24	-13.61	-9.39	-2.59	4.32	8.74	11.17	13.41	18.03
8	-25.66	-20.66	-18.23	-15.59	-10.80	-3.37	4.07	8.86	11.50	13.92	18.93
9	-28.90	-23.35	-20.46	-17.73	-12.41	-4.16	4.08	9.40	12.33	15.02	20.58
10	-29.31	-23.79	-21.12	-18.21	-12.92	-4.73	3.46	9.24	11.65	14.32	19.84
11	-31.86	-25.89	-23.01	-19.86	-14.16	-5.30	3.65	9.26	12.40	15.28	21.25
12	-32.60	-26.52	-23.58	-20.38	-14.56	-5.59	3.48	9.19	12.50	15.44	21.61
13	-30.19	-24.37	-21.57	-18.53	-13.00	-4.42	4.16	9.65	12.74	15.54	21.32
14	-26.92	-21.92	-19.49	-16.66	-12.07	-4.49	2.79	7.58	10.24	12.65	17.66
15	-21.46	-17.37	-15.37	-13.21	-9.29	-3.22	2.86	6.78	8.94	10.92	15.01
16	-16.37	-12.93	-11.27	-9.46	-6.17	-1.67	4.03	7.32	9.13	10.79	14.23
17	-10.42	-7.77	-6.49	-5.09	-2.58	1.37	5.31	7.64	9.24	10.52	13.17
18	-6.26	-4.06	-3.02	-1.69	.16	3.34	6.53	8.58	9.71	10.75	12.89
19	-3.90	-1.95	-.97	.10	2.04	5.05	8.05	9.99	11.06	12.04	14.07
20	-1.89	.00	.92	1.91	3.72	6.63	9.33	11.14	12.14	13.05	14.94
21	-.49	1.32	2.20	3.16	4.90	7.59	10.29	12.02	12.[illegible]	13.86	15.68
22	.53	2.41	3.31	4.30	6.09	8.88	11.66	13.45	14.44	15.35	17.22
23	1.86	3.65	4.46	5.46	7.27	10.08	12.89	14.70	15.70	16.61	18.51
24	2.14	4.13	5.09	6.13	8.03	10.97	13.92	15.82	16.86	17.82	19.81
25	3.14	5.12	6.08	7.13	9.03	11.97	14.92	16.82	17.86	18.82	20.81
26	3.64	5.66	6.61	7.65	9.63	12.45	15.37	17.25	18.20	19.24	21.28
27	3.64	5.77	6.77	7.87	9.86	12.99	16.02	18.01	19.11	20.11	22.19
28	3.84	6.22	7.37	8.62	11.91	14.42	17.25	20.22	21.48	22.63	25.01
29	3.36	6.34	7.55	9.05	11.24	14.32	18.61	20.99	22.[illegible]	23.[illegible]	25.39
30	5.61	7.85	8.94	10.12	12.26	15.59	18.51	21.06	22.29	23.32	25.57
31	5.51	7.95	9.17	10.47	12.93	16.49	20.15	22.51	23.91	25.01	27.47
32	5.53	8.24	9.41	10.78	13.28	17.15	21.13	23.52	24.90	26.16	28.77
33	4.61	7.55	8.97	10.52	13.34	17.70	22.02	24.38	25.43	27.36	30.80
34	3.53	6.63	8.13	9.76	12.72	17.32	21.51	24.87	26.51	29.00	31.10
35	3.78	6.78	8.24	9.82	12.70	17.16	21.63	24.50	26.09	27.94	30.55
36	3.31	6.55	8.13	9.84	12.95	17.77	22.60	25.71	27.42	28.95	32.24
37	3.30	6.75	8.47	10.24	13.54	18.66	23.78	27.03	28.90	30.97	34.[illegible]
38	3.62	7.22	8.97	10.87	14.32	19.67	25.02	28.47	30.37	32.12	35.72
39	3.90	7.67	9.49	11.48	15.03	20.68	26.22	29.98	31.96	33.69	37.46
40	5.16	8.92	10.74	12.72	16.32	21.90	27.48	31.67	33.05	34.87	38.03
41	5.75	9.66	11.56	13.62	17.35	23.17	28.97	33.72	35.78	36.87	40.58
42	5.87	10.12	12.17	14.41	18.48	24.78	31.09	35.15	37.39	35.45	43.70
43	5.36	10.12	12.43	14.94	19.50	26.57	33.64	34.20	40.71	43.02	47.78
44	4.96	10.27	12.84	15.64	20.71	28.55	36.47	41.54	44.34	46.91	52.22
45	3.62	9.57	12.45	15.58	21.23	30.10	38.93	44.62	47.76	50.84	56.59
46	3.95	10.17	13.19	16.47	22.42	31.66	40.49	46.65	50.13	53.44	59.36
47	3.52	10.04	13.20	16.64	22.88	32.56	42.24	48.49	51.93	55.09	61.61
48	3.74	10.43	13.68	17.21	23.62	33.57	43.51	49.92	53.45	56.70	63.40
49	5.25	11.86	15.06	18.54	24.97	34.68	44.49	50.91	54.30	57.90	64.11
50	7.21	13.63	16.74	20.12	26.27	35.79	45.32	51.46	54.85	57.95	64.37
51	9.74	15.89	19.87	22.11	28.00	37.13	46.25	52.14	55.38	58.36	64.51
52	7.21	14.02	17.33	20.92	27.44	37.55	47.66	54.19	57.78	61.68	67.89
53	4.16	11.59	15.13	19.10	26.23	37.24	48.27	55.38	59.29	62.83	70.32
54	-1.54	7.28	11.55	16.20	24.64	37.72	50.82	55.76	63.91	68.18	77.00
55	.93	9.45	13.57	18.06	26.22	38.07	51.51	59.62	64.16	68.28	76.90
56	-1.34	7.47	11.73	16.34	24.80	37.86	50.52	59.26	64.00	68.26	77.07
57	-2.61	6.37	10.72	15.45	24.04	37.37	50.70	53.29	64.02	68.37	77.35
58	-11.18	-.87	4.12	8.56	19.42	34.72	50.12	59.89	65.32	70.82	80.62
59	-14.23	-3.51	1.64	7.33	17.58	33.49	49.39	59.65	65.30	70.49	81.20
60	-23.86	-11.58	-5.64	.82	12.58	30.81	49.12	60.77	67.23	73.18	85.45
61	-27.29	-14.56	-9.40	-1.69	10.49	29.38	48.17	60.45	67.15	73.32	86.04
62	-24.22	-12.50	-6.83	-.65	11.86	27.56	45.35	58.56	62.74	68.82	80.13
63	-21.23	-10.52	-5.34	.71	10.55	26.45	42.34	52.59	58.23	63.42	74.12
64	-18.49	-8.72	-3.58	1.17	11.52	25.62	39.53	48.88	54.03	58.77	68.54
65	-15.56	-6.77	-2.51	2.13	10.55	23.60	36.66	45.08	49.71	53.97	62.76
66	-12.67	-4.83	-1.63	3.10	11.60	22.23	33.86	41.34	45.49	49.29	57.13
67	-9.94	-3.04	.31	3.95	10.56	20.81	31.06	37.67	41.31	44.85	51.56
68	-7.61	-1.57	1.36	4.54	11.32	19.30	28.37	34.05	37.24	40.17	46.21
69	-5.30	-.09	2.43	5.17	10.15	17.88	25.60	30.58	33.33	35.85	41.05
70	-3.39	1.07	3.23	5.54	9.84	16.45	22.67	27.33	29.68	31.84	36.30

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 3.9. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.56	-8.67	-7.76	-6.77	-5.97	-2.10	.81	2.91	3.90	4.31	6.19
1	-11.77	-9.20	-7.95	-6.59	-5.13	-.30	3.52	5.99	7.35	8.60	11.17
2	-14.31	-10.98	-9.36	-7.61	-4.42	.52	5.96	8.65	10.91	12.02	15.35
3	-18.81	-14.75	-12.78	-10.69	-6.75	-.72	5.31	9.19	11.34	13.30	17.36
4	-22.62	-17.96	-15.70	-13.25	-8.79	-1.87	5.05	9.51	11.96	14.22	18.88
5	-26.57	-21.39	-18.80	-16.03	-11.00	-3.20	4.60	9.62	12.39	14.94	20.19
6	-30.03	-24.27	-21.40	-18.45	-12.94	-4.39	4.15	9.64	12.70	15.49	21.24
7	-33.29	-27.07	-24.05	-20.77	-14.61	-5.56	3.60	9.64	12.92	15.94	22.16
8	-36.56	-29.92	-26.71	-23.21	-16.24	-7.02	2.83	9.18	12.67	15.89	22.52
9	-39.06	-32.96	-29.52	-25.78	-18.94	-8.49	2.10	8.90	12.63	16.08	23.18
10	-43.48	-35.97	-32.34	-28.38	-21.19	-10.09	1.11	8.38	12.26	15.90	23.91
11	-46.29	-38.75	-35.05	-30.68	-23.27	-11.79	-.31	7.13	11.18	15.92	22.64
12	-46.94	-39.31	-35.61	-31.59	-24.29	-12.97	-1.65	5.66	9.68	13.37	21.00
13	-45.29	-38.11	-34.64	-30.86	-23.99	-13.39	-2.70	4.17	7.95	11.93	18.08
14	-39.19	-33.14	-30.25	-27.07	-21.31	-12.37	-3.43	2.33	5.50	8.42	14.44
15	-32.91	-27.41	-24.99	-22.34	-17.58	-10.14	-2.75	2.03	4.66	7.08	12.08
16	-26.81	-22.47	-20.37	-18.08	-13.93	-7.49	-1.05	3.11	5.39	7.49	11.03
17	-20.57	-16.99	-15.25	-13.34	-9.93	-4.61	.71	4.15	6.03	7.77	11.35
18	-15.59	-12.54	-11.08	-9.48	-6.57	-2.06	2.45	5.35	6.96	8.43	11.47
19	-11.74	-9.15	-7.90	-6.59	-4.44	-.22	3.62	6.10	7.46	8.71	11.30
20	-9.48	-7.08	-5.92	-4.64	-2.36	1.20	4.76	7.04	8.32	9.48	11.48
21	-7.97	-5.44	-4.54	-3.32	-1.11	2.31	5.79	7.95	9.17	10.28	12.59
22	-5.83	-3.79	-2.85	-1.72	.23	3.27	6.39	8.25	9.33	10.32	12.34
23	-5.01	-3.57	-2.48	-1.30	.84	4.16	7.48	9.63	10.81	11.89	14.13
24	-5.73	-3.34	-2.21	-.94	1.31	4.63	8.36	10.63	11.80	13.03	15.40
25	-5.64	-3.18	-1.96	-.68	1.47	5.33	8.99	11.35	12.64	13.84	16.30
26	-6.13	-3.45	-2.15	-.74	1.83	5.81	9.79	12.36	13.77	15.07	17.78
27	-7.11	-4.14	-2.73	-1.17	1.65	6.03	10.92	13.24	14.83	16.23	19.19
28	-6.59	-3.6.	-2.19	-.65	2.15	6.49	10.83	13.64	15.10	16.59	19.52
29	-6.96	-4.02	-2.59	-1.04	1.77	6.13	10.49	13.31	14.86	16.28	19.22
30	-8.40	-6.16	-3.58	-1.86	1.25	6.07	10.90	14.01	15.72	17.30	20.55
31	-10.01	-6.30	-4.50	-2.59	1.01	6.52	12.03	15.59	17.59	19.34	23.05
32	-9.87	-6.13	-4.33	-2.36	1.22	6.76	12.30	15.07	17.84	19.65	23.38
33	-10.13	-6.44	-4.46	-2.70	.84	6.32	11.81	15.35	17.30	19.07	22.78
34	-11.20	-7.37	-5.51	-3.49	.18	5.87	11.55	15.22	17.24	19.10	22.93
35	-11.97	-8.15	-6.31	-4.38	-.65	5.01	10.66	14.31	16.32	18.17	21.98
36	-14.07	-10.04	-8.09	-5.97	-2.11	3.68	9.86	13.72	15.84	17.80	21.83
37	-15.90	-11.55	-9.44	-7.14	-2.98	3.49	9.95	14.12	16.42	18.53	22.08
38	-17.18	-12.92	-10.11	-7.61	-3.05	4.01	11.07	15.62	18.13	20.43	25.19
39	-17.30	-12.28	-9.84	-7.20	-2.39	5.04	12.51	17.31	19.94	22.39	27.41
40	-17.58	-12.46	-9.97	-7.27	-2.37	5.29	12.85	17.76	20.46	22.95	28.07
41	-20.13	-14.98	-11.74	-8.77	-3.36	5.03	13.41	18.82	21.80	24.53	30.18
42	-23.46	-17.09	-14.00	-10.64	-4.53	4.94	14.40	20.51	23.87	26.94	33.34
43	-22.99	-16.53	-13.41	-10.00	-3.83	5.76	15.39	21.51	24.92	28.04	34.50
44	-21.81	-15.40	-12.29	-8.91	-2.77	6.75	16.27	22.41	25.79	28.90	35.31
45	-21.98	-15.35	-12.14	-8.65	-2.30	7.53	17.37	23.71	27.21	30.42	37.04
46	-21.79	-15.13	-11.98	-8.39	-2.01	7.88	17.74	24.14	27.65	30.88	37.54
47	-22.93	-15.99	-12.63	-8.97	-2.33	7.97	18.28	24.92	28.58	31.94	38.88
48	-25.12	-17.67	-14.06	-10.13	-3.00	8.06	19.12	26.26	30.19	33.80	41.25
49	-28.39	-20.22	-16.27	-11.97	-4.15	7.97	20.00	27.98	32.20	36.18	44.32
50	-30.89	-21.54	-17.43	-12.98	-4.81	7.80	20.42	28.56	33.03	37.15	45.64
51	-30.34	-21.70	-17.52	-12.97	-4.71	8.11	20.93	29.19	33.74	37.92	46.56
52	-31.23	-22.27	-17.94	-13.22	-4.66	8.64	21.93	30.50	35.22	39.55	48.61
53	-33.20	-23.99	-19.53	-14.67	-5.86	7.82	21.49	30.31	35.16	39.63	48.84
54	-35.56	-26.14	-21.58	-16.61	-7.60	6.38	20.55	29.38	34.34	38.91	48.32
55	-37.58	-28.02	-23.40	-18.36	-9.22	4.96	19.14	28.29	33.32	37.95	47.60
56	-37.31	-27.97	-23.45	-18.53	-9.59	4.27	18.13	27.06	31.98	36.51	45.84
57	-36.92	-28.05	-23.76	-19.08	-10.59	2.57	15.79	24.23	28.90	33.20	42.07
58	-37.77	-29.46	-25.71	-21.42	-13.64	-1.50	10.49	18.27	22.55	26.49	34.62
59	-42.11	-33.18	-28.85	-24.14	-15.60	-2.34	10.92	19.47	24.17	28.50	37.43
60	-44.00	-44.95	-39.31	-33.17	-22.02	-4.74	12.55	23.70	29.84	35.48	47.13
61	-44.80	-45.05	-39.35	-33.16	-21.91	-4.46	12.99	24.24	30.43	36.13	47.88
62	-45.19	-43.73	-38.18	-32.15	-21.18	-4.18	12.82	23.79	29.82	35.37	46.83
63	-43.79	-42.59	-37.16	-31.25	-20.53	-3.90	12.79	23.46	29.37	34.88	46.88
64	-42.16	-41.27	-36.99	-30.24	-19.80	-3.41	12.56	23.02	28.76	34.05	44.95
65	-40.53	-39.93	-34.80	-29.21	-19.06	-3.23	12.40	22.55	28.19	33.27	43.87
66	-40.94	-38.69	-33.66	-28.23	-18.38	-3.18	12.18	22.04	27.48	32.45	42.74
67	-47.32	-37.22	-32.48	-27.22	-17.66	-2.81	12.02	21.59	26.86	31.78	41.49
68	-45.93	-36.18	-31.46	-26.33	-17.08	-2.53	11.94	21.27	26.40	31.12	40.87
69	-44.31	-34.87	-30.29	-25.31	-16.27	-2.25	11.78	20.82	25.88	30.37	39.82
70	-42.67	-33.63	-29.18	-24.28	-15.63	-1.96	11.60	20.36	25.17	29.60	38.74

TABLE 3.10. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.26	-9.12	-8.09	-6.97	-4.93	-1.77	1.40	3.44	4.56	5.59	7.72
1	-12.40	-10.09	-8.80	-7.44	-4.99	-1.19	2.62	5.07	6.42	7.66	10.22
2	-17.76	-14.15	-12.90	-10.50	-7.05	-1.69	3.66	7.11	9.02	10.76	14.37
3	-24.07	-19.41	-17.15	-14.69	-10.23	-3.31	3.62	8.08	10.59	12.80	17.46
4	-28.31	-23.01	-20.99	-17.74	-12.76	-5.09	2.69	7.97	10.94	12.94	18.19
5	-33.02	-27.08	-24.21	-21.08	-15.90	-6.58	2.23	7.92	11.05	13.92	19.06
6	-36.93	-30.39	-27.22	-23.77	-17.50	-7.78	1.93	8.20	11.46	14.02	21.37
7	-41.69	-34.35	-30.81	-26.97	-19.99	-[illegible].16	1.66	8.44	12.98	16.02	23.31
8	-46.67	-37.72	-33.66	-29.[illegible]	-22.[illegible]	-10.79	1.51	9.11	13.36	17.15	25.09
9	-48.85	-40.47	-36.91	-31.99	-23.97	-11.53	.70	8.93	13.34	17.90	25.78
10	-51.15	-42.68	-38.99	-33.95	-26.70	-13.07	-.37	7.81	12.32	16.94	25.01
11	-52.61	-44.08	-39.96	-35.46	-27.31	-14.65	-2.00	6.15	10.66	14.78	23.30
12	-52.66	-44.46	-40.50	-36.18	-28.35	-16.20	-4.05	3.79	8.16	12.07	20.25
13	-48.84	-41.50	-37.94	-34.67	-27.05	-16.15	-5.25	1.78	5.45	9.21	16.55
14	-44.59	-38.30	-34.80	-31.33	-25.02	-15.23	-5.45	.87	4.34	7.53	14.13
15	-38.17	-32.65	-29.99	-27.10	-21.85	-13.70	-5.15	-.29	2.60	5.26	10.75
16	-32.48	-27.70	-25.43	-22.95	-18.95	-11.47	-4.49	.41	2.47	4.76	9.46
17	-26.25	-22.31	-20.41	-18.34	-14.57	-8.73	-2.69	.88	2.95	4.66	8.79
18	-20.24	-17.04	-15.49	-13.80	-10.73	-5.98	-1.22	1.04	3.53	5.08	8.28
19	-15.99	-13.28	-11.97	-10.54	-7.95	-3.92	.10	2.69	4.12	5.43	8.14
20	-14.32	-11.70	-10.43	-9.04	-6.62	-2.62	1.29	3.41	5.19	6.47	9.10
21	-13.94	-11.28	-9.98	-8.58	-6.04	-2.06	1.90	4.45	5.86	7.15	9.82
22	-13.47	-10.85	-9.67	-8.19	-5.67	-1.77	2.13	4.93	6.04	7.30	9.93
23	-14.00	-11.20	-9.85	-8.37	-5.69	-1.53	2.63	5.32	6.77	8.15	10.95
24	-15.43	-12.37	-10.89	-9.28	-6.36	-1.83	2.71	5.63	7.24	8.72	11.77
25	-16.94	-13.58	-11.96	-10.19	-6.99	-2.03	2.93	6.13	7.90	9.52	12.86
26	-18.73	-15.10	-13.34	-11.43	-7.96	-2.57	2.82	6.29	8.26	9.96	13.59
27	-20.94	-16.99	-15.07	-12.99	-9.21	-3.35	2.51	6.24	8.37	10.28	14.23
28	-23.00	-18.81	-16.78	-14.67	-10.56	-4.33	1.87	5.90	8.11	10.14	14.34
29	-25.34	-20.80	-18.60	-16.20	-11.86	-5.11	1.63	5.98	8.37	10.57	15.11
30	-27.00	-22.31	-20.03	-17.55	-13.06	-6.09	.88	5.38	7.85	10.13	14.83
31	-29.38	-24.29	-21.82	-19.14	-14.24	-6.70	.86	5.74	8.42	10.89	15.98
32	-32.28	-26.74	-24.09	-21.18	-15.90	-7.71	.47	5.75	8.44	11.33	16.85
33	-34.36	-28.60	-25.79	-22.75	-17.23	-8.67	-.11	5.41	8.95	11.25	17.02
34	-36.17	-31.94	-28.94	-25.69	-19.75	-10.54	-1.33	4.61	7.88	10.89	17.10
35	-40.67	-34.48	-31.48	-28.21	-22.29	-13.09	-3.90	2.03	5.29	8.29	14.48
36	-44.26	-37.78	-34.65	-31.24	-25.04	-15.43	-5.82	.37	3.74	6.92	13.39
37	-51.89	-43.62	-40.00	-36.07	-28.91	-17.83	-6.79	.41	4.35	7.97	15.44
38	-55.80	-47.65	-43.70	-39.41	-31.61	-19.62	-7.42	.37	4.67	8.61	16.76
39	-59.84	-51.20	-47.01	-42.45	-34.17	-21.33	-8.48	-.20	4.36	8.55	17.20
40	-64.35	-55.13	-50.67	-45.81	-36.98	-23.30	-9.62	-.79	4.07	8.63	17.76
41	-67.89	-57.44	-52.81	-47.76	-38.50	-24.35	-10.12	-.94	4.11	8.76	18.34
42	-68.53	-58.75	-54.02	-48.86	-39.50	-24.49	-10.47	-1.11	4.09	8.78	18.56
43	-66.38	-57.18	-52.61	-47.72	-38.84	-26.07	-11.30	-2.42	2.47	6.96	16.24
44	-67.26	-57.91	-53.38	-48.45	-39.50	-25.61	-11.73	-2.77	2.16	6.69	16.09
45	-68.20	-58.88	-54.46	-49.45	-40.52	-26.68	-12.84	-3.91	1.00	5.52	14.84
46	-68.66	-59.35	-54.84	-49.93	-41.02	-27.19	-13.37	-4.45	.45	4.97	14.28
47	-69.36	-60.07	-55.57	-50.68	-41.78	-28.00	-14.21	-5.32	-.42	4.07	13.34
48	-70.48	-61.12	-56.59	-51.67	-42.73	-28.87	-15.01	-6.07	-1.15	3.37	12.71
49	-70.84	-61.57	-57.09	-52.20	-43.34	-29.57	-15.84	-6.97	-2.09	2.40	11.64
50	-69.38	-60.49	-56.18	-51.58	-42.98	-29.78	-16.59	-8.07	-3.39	.92	9.81
51	-69.94	-61.13	-56.86	-52.22	-43.78	-30.70	-17.63	-9.19	-4.55	-.28	8.53
52	-70.89	-61.95	-57.27	-52.71	-44.44	-31.62	-18.86	-10.54	-5.98	-1.80	6.84
53	-70.97	-62.34	-58.17	-53.62	-45.34	-32.56	-19.76	-11.50	-6.96	-2.78	5.84
54	-70.74	-62.24	-58.12	-53.64	-45.50	-32.80	-20.26	-12.12	-7.64	-3.52	4.98
55	-72.75	-64.12	-59.94	-55.39	-47.14	-34.33	-21.63	-13.27	-8.72	-4.54	4.08
56	-76.73	-67.67	-63.28	-58.58	-49.82	-36.36	-22.91	-14.23	-9.45	-5.06	4.00
57	-77.62	-68.58	-64.07	-59.28	-50.55	-37.01	-23.47	-14.74	-9.91	-5.51	3.61
58	-80.74	-71.28	-66.65	-61.44	-52.55	-38.46	-24.37	-15.28	-10.27	-5.67	3.02
59	-83.81	-73.67	-68.48	-63.21	-53.90	-38.19	-22.99	-13.18	-7.74	-2.82	7.42
60	-90.18	-76.77	-73.24	-67.22	-56.29	-39.38	-22.40	-11.48	-5.46	.07	11.49
61	-92.19	-80.89	-74.23	-67.85	-56.27	-38.31	-20.34	-8.76	-2.38	3.48	15.50
62	-98.40	-78.45	-72.66	-66.36	-54.92	-37.18	-19.45	-8.01	-1.71	4.08	16.83
63	-88.70	-76.89	-71.17	-64.91	-53.64	-36.11	-18.58	-7.28	-1.06	4.67	16.48
64	-86.91	-75.28	-69.60	-63.46	-52.38	-34.99	-17.68	-6.52	-.38	5.27	16.93
65	-85.30	-73.78	-68.20	-62.13	-51.10	-34.08	-16.91	-5.88	.19	5.77	17.29
66	-83.36	-72.03	-66.55	-60.58	-49.74	-32.93	-15.12	-5.28	.68	6.17	17.49
67	-81.58	-70.40	-64.99	-59.18	-48.40	-31.81	-15.22	-4.62	1.37	6.78	17.96
68	-79.89	-68.85	-63.50	-57.69	-47.12	-30.79	-14.35	-3.79	2.03	7.37	18.41
69	-78.11	-67.22	-61.95	-56.21	-45.78	-29.62	-13.46	-3.03	2.71	7.99	18.88
70	-76.43	-65.67	-60.46	-54.80	-44.58	-28.54	-12.58	-2.29	3.36	8.59	19.34

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 3.11. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.09	-8.78	-7.67	-6.85	-4.24	-.82	2.60	4.60	6.02	7.13	9.44
1	-15.52	-12.16	-10.53	-8.76	-5.55	-.57	4.42	7.63	9.40	11.03	14.38
2	-19.60	-15.77	-13.82	-11.60	-7.83	-1.84	4.15	8.01	10.14	12.09	16.12
3	-25.04	-20.96	-18.59	-16.02	-11.34	-4.09	3.16	7.80	10.81	12.38	17.66
4	-31.26	-25.52	-22.79	-19.82	-14.42	-6.06	2.31	7.71	10.68	13.41	19.05
5	-37.43	-30.80	-27.59	-24.10	-17.76	-7.32	1.91	8.26	11.75	14.96	21.58
6	-42.65	-35.31	-31.76	-27.89	-20.86	-9.97	.93	7.96	11.83	15.38	22.72
7	-47.79	-39.68	-35.76	-32.43	-23.73	-11.71	.32	8.08	12.35	16.27	24.38
8	-52.41	-43.61	-39.34	-34.70	-26.27	-13.20	-.13	8.30	12.95	17.21	26.02
9	-55.74	-46.48	-41.29	-37.11	-28.24	-14.49	-.74	9.12	13.61	17.49	26.76
10	-59.43	-49.72	-45.02	-39.90	-30.60	-16.18	-1.77	7.53	12.63	17.36	27.07
11	-60.56	-50.86	-46.16	-41.05	-31.76	-17.36	-2.96	6.33	11.45	16.15	25.85
12	-60.42	-50.88	-46.41	-41.43	-32.39	-18.37	-4.35	4.65	9.66	14.24	23.68
13	-55.93	-47.42	-43.30	-38.82	-30.68	-18.05	-5.43	2.72	7.20	11.32	19.83
14	-47.64	-40.64	-37.25	-33.57	-26.87	-16.48	-6.09	.60	4.29	7.68	14.68
15	-40.10	-34.35	-31.57	-28.53	-23.03	-14.43	-5.96	-.65	2.58	5.37	11.12
16	-34.12	-29.19	-26.81	-24.21	-19.49	-12.18	-4.67	-.16	2.44	4.83	9.75
17	-29.12	-24.88	-22.83	-20.53	-16.53	-10.23	-3.94	.12	2.36	4.42	8.66
18	-24.44	-20.70	-18.89	-16.92	-13.34	-7.79	-2.24	1.23	3.30	5.12	8.85
19	-21.35	-17.90	-15.24	-14.42	-11.12	-6.01	-.89	2.41	4.22	5.89	9.34
20	-19.56	-16.21	-14.58	-12.81	-9.60	-4.62	.36	3.58	5.35	6.97	10.33
21	-18.21	-15.76	-13.09	-12.28	-9.98	-3.86	1.26	4.56	6.38	8.65	11.49
22	-20.15	-16.43	-14.63	-12.67	-9.11	-3.60	1.92	5.42	7.44	9.24	12.96
23	-20.95	-17.00	-15.08	-13.00	-9.22	-3.35	2.51	6.30	8.38	10.29	14.24
24	-22.96	-18.61	-16.50	-14.20	-10.03	-3.56	2.91	7.08	9.37	11.48	15.84
25	-24.79	-20.11	-17.84	-15.37	-13.89	-3.94	3.01	7.49	9.96	12.22	16.91
26	-27.76	-22.62	-20.12	-17.44	-12.49	-4.86	2.78	7.70	10.41	12.90	18.05
27	-31.44	-25.71	-22.93	-19.92	-14.42	-5.90	2.61	8.10	11.12	13.90	19.68
28	-37.81	-31.64	-28.66	-25.40	-19.49	-10.33	-1.14	4.73	7.98	10.97	17.14
29	-38.24	-32.28	-29.49	-26.26	-20.54	-11.69	-2.63	2.88	6.02	8.91	14.87
30	-40.07	-34.09	-31.11	-27.93	-22.14	-13.14	-4.18	1.41	4.80	7.73	13.78
31	-42.72	-36.38	-33.32	-29.78	-23.71	-14.61	-5.11	.79	4.29	7.36	13.67
32	-45.08	-38.49	-35.29	-31.82	-25.61	-15.72	-5.93	.38	3.65	7.05	13.44
33	-48.83	-41.67	-38.85	-35.23	-27.28	-16.58	-5.72	1.23	3.85	6.67	13.83
34	-51.83	-44.32	-40.68	-36.79	-29.54	-18.39	-7.26	-.85	3.91	7.54	15.85
35	-54.92	-46.92	-40.95	-42.12	-33.98	-21.11	-8.38	-.11	4.93	8.48	17.20
36	-61.38	-52.72	-48.82	-44.36	-36.26	-23.68	-11.11	-3.08	1.46	5.54	14.03
37	-65.00	-56.98	-52.21	-47.65	-37.36	-24.51	-13.47	-5.18	-.62	3.37	12.83
38	-70.31	-61.12	-56.67	-51.82	-41.83	-27.39	-15.74	-6.96	-2.10	2.35	11.54
39	-74.47	-65.92	-60.29	-55.25	-44.11	-31.92	-17.78	-8.57	-3.54	1.07	10.61
40	-78.15	-68.33	-63.67	-58.39	-48.99	-34.41	-19.84	-10.44	-5.26	-.60	9.32
41	-82.30	-72.15	-67.20	-61.81	-52.83	-36.87	-21.76	-11.92	-6.54	-1.59	8.43
42	-87.23	-76.46	-71.45	-66.57	-56.27	-39.98	-23.38	-12.97	-7.32	-2.18	8.46
43	-88.66	-77.92	-72.72	-67.04	-56.78	-40.84	-24.88	-14.41	-8.95	-3.78	7.06
44	-90.36	-79.67	-74.36	-68.66	-58.34	-42.33	-26.31	-16.00	-10.32	-5.10	6.67
45	-92.01	-81.67	-76.17	-70.41	-60.13	-43.98	-27.66	-17.19	-11.43	-6.13	5.84
46	-93.96	-83.95	-77.62	-71.83	-61.38	-44.98	-28.66	-18.12	-12.33	-7.00	4.88
47	-95.37	-85.28	-78.79	-72.91	-62.22	-45.65	-29.08	-18.29	-12.51	-7.10	3.84
48	-98.52	-86.96	-81.37	-75.28	-64.22	-47.87	-29.79	-18.66	-12.77	-7.17	4.38
49	-95.86	-84.95	-79.67	-73.93	-63.48	-47.29	-31.09	-20.45	-14.78	-9.41	1.36
50	-97.29	-86.23	-80.87	-75.04	-64.46	-48.69	-31.63	-21.85	-16.22	-9.86	1.20
51	-99.43	-88.19	-82.75	-76.83	-66.08	-49.48	-32.73	-21.97	-16.46	-10.41	.43
52	-100.53	-93.57	-88.78	-80.48	-69.83	-51.39	-33.54	-22.10	-15.80	-10.01	1.95
53	-100.49	-94.82	-89.98	-81.41	-71.48	-52.97	-34.43	-22.54	-16.24	-9.93	2.54
54	-103.82	-92.32	-86.75	-80.69	-69.68	-52.68	-35.53	-24.52	-18.46	-12.07	-1.30
55	-107.29	-95.42	-89.67	-83.41	-72.05	-54.23	-36.81	-25.43	-19.18	-13.88	-1.54
56	-110.26	-97.79	-91.76	-85.20	-73.27	-54.78	-36.29	-24.37	-17.81	-11.77	.68
57	-111.55	-98.88	-92.75	-86.07	-73.95	-55.15	-36.36	-24.22	-17.56	-11.81	1.25
58	-108.94	-95.13	-89.41	-83.18	-71.87	-54.34	-36.84	-25.49	-19.26	-13.84	-1.73
59	-107.63	-95.47	-89.58	-83.17	-71.59	-53.47	-35.94	-23.81	-17.58	-11.81	.85
60	-103.98	-92.64	-86.33	-80.09	-68.76	-51.19	-33.69	-22.29	-16.05	-10.32	1.53
61	-112.07	-98.72	-91.87	-86.41	-70.84	-49.88	-36.84	-16.38	-7.84	-.98	13.17
62	-110.93	-96.51	-89.77	-82.43	-69.11	-48.44	-27.78	-14.45	-7.12	-.37	13.56
63	-107.68	-94.17	-87.67	-80.19	-67.35	-47.12	-26.89	-13.84	-6.47	-.07	13.54
64	-105.34	-91.95	-85.46	-78.48	-66.59	-45.71	-25.84	-13.02	-5.96	.52	14.71
65	-103.09	-89.87	-83.49	-76.55	-63.94	-44.39	-24.98	-12.23	-5.29	1.09	15.24
66	-100.71	-87.77	-81.58	-74.67	-62.28	-43.07	-23.84	-11.46	-4.64	1.63	14.80
67	-98.32	-85.48	-79.49	-72.73	-60.46	-41.46	-22.73	-10.67	-3.88	2.28	14.81
68	-95.88	-83.36	-77.31	-70.76	-58.82	-40.34	-21.64	-9.92	-3.36	2.67	15.13
69	-93.51	-81.25	-75.32	-68.86	-57.12	-38.92	-20.71	-9.08	-2.54	3.48	15.06
70	-91.29	-79.24	-73.46	-67.04	-55.58	-37.61	-19.71	-8.17	-1.81	4.03	16.00

TABLE 3.12. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

30-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.25	-8.85	-7.75	-6.51	-4.26	-.77	2.73	4.98	6.22	7.36	9.71
1	-18.59	-14.94	-13.18	-11.26	-7.77	-2.37	3.04	6.52	8.44	10.20	13.83
2	-24.31	-19.99	-17.89	-15.61	-11.46	-5.04	1.39	5.53	7.81	9.91	14.20
3	-31.59	-26.23	-23.70	-20.90	-15.81	-7.92	-.03	5.06	7.86	10.44	15.76
4	-39.84	-33.30	-30.14	-26.65	-20.44	-10.74	-1.04	5.22	8.66	11.83	18.36
5	-45.72	-38.40	-34.86	-31.00	-23.99	-13.13	-2.27	4.72	8.59	12.83	19.45
6	-50.63	-42.69	-38.84	-34.65	-27.05	-15.25	-3.46	4.14	8.33	12.18	20.12
7	-56.08	-47.40	-43.19	-38.61	-30.30	-17.41	-4.52	3.73	8.37	12.58	21.26
8	-60.59	-51.32	-46.82	-41.94	-33.06	-19.30	-5.53	3.34	8.23	12.72	21.99
9	-65.16	-55.29	-50.51	-45.30	-35.85	-21.19	-6.54	2.92	8.12	13.00	22.78
10	-67.69	-57.61	-52.73	-47.42	-37.78	-22.62	-7.66	1.75	7.10	11.98	22.05
11	-68.59	-58.57	-53.72	-48.44	-38.86	-23.33	-9.13	.46	5.73	10.58	20.60
12	-63.87	-54.86	-50.50	-45.75	-37.13	-23.75	-10.38	-1.76	2.99	7.36	16.36
13	-55.40	-50.41	-45.51	-42.26	-34.56	-22.61	-10.66	-2.95	1.23	3.19	13.24
14	-50.35	-43.68	-40.45	-36.94	-30.55	-20.65	-10.75	-4.30	-.84	2.39	9.06
15	-43.73	-38.06	-35.31	-32.32	-26.49	-18.87	-10.05	-4.63	-1.64	1.34	6.78
16	-37.28	-32.72	-30.32	-27.71	-22.97	-15.61	-8.76	-3.52	-.90	1.43	6.45
17	-31.37	-27.58	-25.50	-23.24	-19.14	-12.77	-6.40	-2.30	-.04	2.04	6.33
18	-25.26	-21.76	-20.06	-18.22	-14.87	-9.67	-4.48	-1.13	.72	2.41	5.91
19	-20.98	-17.86	-16.35	-14.70	-11.71	-7.03	-2.45	.54	2.19	3.70	6.42
20	-18.52	-16.31	-14.75	-13.05	-10.07	-5.26	-.42	2.66	4.36	5.91	9.13
21	-19.37	-15.05	-13.39	-11.69	-8.52	-3.59	1.33	4.51	6.26	7.85	11.18
22	-17.50	-14.04	-12.43	-10.57	-7.30	-2.29	2.78	6.05	7.65	9.51	12.92
23	-13.31	-15.01	-13.13	-11.07	-7.34	-1.56	4.72	7.35	10.00	11.89	15.78
24	-19.72	-15.63	-13.65	-11.45	-7.58	-1.51	4.56	8.48	10.63	12.61	16.70
25	-20.32	-16.01	-13.92	-11.65	-7.53	-1.13	5.27	9.39	11.66	13.35	18.06
26	-23.02	-18.14	-15.78	-13.21	-8.[illegible]	-1.36	5.54	10.61	13.18	15.54	20.42
27	-27.64	-21.89	-19.11	-16.07	-10.[illegible]	-2.03	6.51	12.02	15.05	17.88	23.59
28	-41.87	-34.46	-31.02	-27.27	-20.97	-9.93	.67	7.94	11.17	14.61	21.71
29	-45.59	-37.99	-34.30	-30.30	-23.02	-11.73	-.44	6.83	10.84	14.52	22.13
30	-51.50	-42.82	-38.88	-34.38	-26.17	-13.50	-.81	7.38	11.89	16.03	24.50
31	-56.24	-46.92	-42.98	-37.48	-28.56	-14.71	-.87	8.05	12.97	17.49	26.81
32	-60.24	-50.63	-45.98	-40.92	-31.73	-17.08	-3.23	8.99	14.02	19.67	26.27
33	-67.13	-56.60	-51.62	-46.11	-36.11	-20.61	-5.10	9.98	16.91	15.97	25.92
34	-74.05	-63.61	-58.17	-52.25	-41.47	-25.62	-8.16	2.61	8.53	13.98	25.21
35	-78.22	-67.09	-61.78	-55.83	-45.18	-28.66	-12.14	-1.48	4.38	9.78	20.71
36	-80.94	-70.05	-64.77	-59.02	-48.61	-32.49	-15.28	-5.05	-.11	5.16	16.84
37	-85.78	-74.75	-69.40	-63.59	-53.03	-36.66	-20.29	-9.73	-3.92	1.43	12.46
38	-89.63	-78.37	-72.91	-66.98	-56.19	-39.97	-22.78	-11.97	-6.89	-.50	10.68
39	-97.84	-84.95	-79.09	-72.72	-61.14	-43.19	-25.24	-13.67	-7.29	-1.43	10.66
40	-100.63	-88.03	-82.51	-76.08	-64.50	-46.50	-28.14	-16.08	-10.00	-4.13	8.97
41	-103.78	-91.28	-85.26	-78.71	-66.83	-48.37	-29.93	-18.89	-11.49	-5.47	6.95
42	-108.46	-95.47	-89.19	-82.38	-69.92	-50.65	-31.38	-18.95	-12.11	-5.82	7.14
43	-113.46	-99.89	-93.32	-86.10	-73.20	-53.06	-32.96	-19.98	-12.83	-6.27	7.29
44	-115.81	-102.17	-95.57	-88.43	-75.38	-55.17	-34.94	-21.92	-14.76	-8.16	5.97
45	-118.09	-104.83	-98.02	-90.61	-77.15	-56.27	-35.49	-21.99	-14.63	-7.72	6.34
46	-122.39	-107.49	-100.50	-92.72	-78.40	-56.71	-35.85	-20.78	-12.72	-5.38	8.97
47	-120.98	-111.27	-103.94	-95.94	-81.47	-57.01	-36.54	-22.05	-14.07	-6.74	8.39
48	-124.36	-113.07	-106.37	-98.26	-83.38	-60.37	-37.54	-22.58	-13.54	-4.54	8.57
49	-120.66	-115.63	-108.20	-100.23	-85.76	-63.31	-40.86	-26.39	-16.92	-11.09	4.03
50	-122.72	-117.27	-109.72	-101.58	-86.52	-63.32	-40.19	-25.16	-16.72	-9.35	4.28
51	-126.27	-118.82	-110.85	-102.18	-86.43	-62.01	-37.68	-21.85	-13.18	-5.21	11.24
52	-124.63	-118.57	-107.82	-99.34	-84.81	-60.33	-36.54	-21.65	-12.59	-6.82	11.22
53	-123.14	-116.70	-108.74	-100.08	-84.34	-59.94	-35.54	-19.88	-11.14	-3.17	13.27
54	-124.50	-117.88	-109.26	-100.30	-84.83	-60.88	-33.84	-17.27	-8.33	-.89	14.91
55	-124.78	-117.63	-109.37	-100.37	-84.83	-58.69	-33.36	-17.81	-8.81	.25	17.32
56	-123.53	-116.52	-108.20	-99.21	-83.83	-57.78	-32.52	-16.29	-7.27	.97	17.98
57	-123.17	-115.89	-107.62	-98.41	-81.87	-56.22	-30.57	-14.83	-9.92	3.45	20.73
58	-120.18	-113.25	-106.07	-97.21	-80.97	-55.08	-30.08	-13.75	-8.87	3.09	19.96
59	-123.81	-116.42	-108.38	-99.64	-83.75	-57.12	-34.49	-18.61	-9.86	-1.82	14.77
60	-117.40	-107.54	-101.78	-95.97	-84.45	-66.32	-49.68	-37.17	-30.98	-25.18	-12.16
61	-119.66	-107.42	-101.49	-95.86	-83.34	-65.[illegible]	-47.03	-35.32	-28.87	-22.95	-10.71
62	-118.80	-104.62	-100.67	-95.80	-82.36	-64.11	-46.86	-34.12	-27.66	-21.38	-9.62
63	-110.17	-106.76	-99.76	-93.21	-81.22	-62.98	-44.48	-33.69	-26.06	-20.09	-7.63
64	-117.07	-105.13	-97.88	-92.46	-80.45	-61.63	-43.21	-31.21	-25.60	-18.53	-5.99
65	-117.26	-104.66	-98.41	-91.71	-79.56	-60.71	-41.86	-29.70	-23.81	-16.85	-4.15
66	-114.08	-103.88	-97.68	-90.78	-78.49	-59.43	-40.43	-28.37	-21.83	-15.42	-2.81
67	-116.36	-103.37	-97.00	-90.23	-77.79	-58.61	-39.23	-26.79	-19.96	-13.66	-.66
68	-114.82	-102.84	-96.46	-89.58	-76.91	-57.38	-37.84	-25.18	-18.24	-11.86	1.32
69	-115.68	-102.26	-95.81	-88.78	-76.02	-56.23	-36.44	-23.68	-16.66	-10.20	3.14
70	-115.96	-101.71	-95.35	-88.22	-75.26	-55.14	-35.84	-22.18	-14.74	-8.38	5.18

TABLE 4.1. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.21	-5.61	-4.84	-4.00	-2.48	-.11	2.25	3.78	4.62	5.39	6.96
1	-18.50	-14.46	-12.51	-10.38	-6.52	-.53	5.46	9.32	11.45	13.40	17.44
2	-21.06	-16.29	-13.91	-11.37	-6.76	.38	7.53	12.14	14.67	17.01	21.82
3	-24.62	-18.78	-15.88	-12.65	-6.94	1.93	10.80	16.51	19.46	22.16	28.53
4	-27.51	-20.55	-17.18	-13.51	-6.85	3.48	13.81	20.47	24.14	27.51	34.47
5	-31.17	-23.01	-19.06	-14.76	-6.96	5.15	17.25	25.06	29.36	33.31	41.46
6	-34.61	-25.43	-20.98	-16.14	-7.35	6.28	19.91	28.70	33.54	37.99	47.17
7	-38.17	-27.99	-23.05	-17.69	-7.94	7.18	22.29	32.89	37.41	42.34	52.52
8	-42.16	-30.84	-25.35	-19.39	-8.55	8.24	25.04	35.88	41.84	47.33	58.64
9	-45.29	-33.03	-27.07	-20.62	-8.88	9.33	27.54	39.29	45.75	51.87	63.94
10	-48.17	-34.99	-28.53	-21.54	-8.69	10.75	30.39	43.05	50.03	56.44	69.67
11	-48.52	-34.77	-28.11	-20.86	-7.70	12.71	33.11	46.27	53.52	60.18	73.93
12	-43.92	-30.94	-24.69	-17.06	-5.45	13.78	33.02	45.42	52.25	58.53	71.49
13	-35.47	-24.41	-19.05	-13.22	-2.63	13.79	30.21	40.80	46.63	51.99	63.06
14	-30.38	-20.65	-15.94	-10.82	-1.51	12.92	27.35	36.66	41.78	46.49	56.21
15	-25.34	-17.13	-13.15	-8.83	-.97	11.21	23.90	31.26	35.58	39.66	47.79
16	-22.63	-15.43	-11.94	-8.19	-1.25	9.49	20.13	27.02	30.02	3[illegible] 31	41.81
17	-19.74	-13.64	-10.72	-7.51	-1.70	7.33	16.35	22.16	25.37	28.31	34.39
18	-17.77	-12.68	-10.22	-7.53	-2.66	4.89	12.95	17.32	20.00	22.47	27.56
19	-18.48	-13.73	-11.43	-8.92	-4.37	2.68	9.73	14.28	16.79	19.09	23.84
20	-19.40	-14.91	-12.74	-10.37	-6.07	.65	7.24	11.66	13.92	16.10	20.59
21	-20.15	-15.77	-13.68	-11.39	-7.22	-.75	5.72	9.89	12.18	14.29	18.68
22	-22.27	-17.70	-15.49	-13.08	-8.70	-1.92	4.82	9.23	11.64	13.85	18.42
23	-24.84	-19.85	-17.44	-14.81	-10.09	-2.69	4.76	9.59	12.16	14.58	19.57
24	-27.94	-22.30	-19.54	-16.55	-11.11	-2.67	5.74	11.20	14.20	16.95	22.63
25	-30.90	-24.13	-21.10	-17.80	-11.8[illegible]	-2.50	6.80	12.79	16.09	19.13	25.39
26	-32.64	-25.05	-22.56	-18.99	-12.[illegible]	-2.91	7.66	14.16	17.74	21.03	27.82
27	-34.22	-28.52	-24.79	-20.73	-13.3[illegible]	-1.94	9.49	16.86	20.92	24.65	32.35
28	-40.41	-31.35	-31.99	-26.16	-15.58	.84	17.26	27.84	33.67	39.03	50.09
29	-51.12	-39.31	-33.89	-27.37	-16.04	1.47	19.00	30.38	36.53	42.25	54.86
30	-53.08	-40.74	-34.77	-28.26	-16.46	1.85	20.16	31.97	38.47	44.45	56.78
31	-54.47	-41.60	-35.36	-28.58	-16.26	2.84	21.94	34.76	41.84	47.27	60.14
32	-55.09	-42.58	-36.05	-28.91	-15.97	4.10	24.16	37.18	44.22	50.77	64.29
33	-58.10	-43.87	-36.98	-29.48	-15.86	5.27	26.39	40.01	47.51	54.40	68.63
34	-61.61	-46.26	-38.82	-30.73	-16.04	6.74	29.52	44.22	52.31	59.74	75.09
35	-63.25	-47.24	-39.49	-31.05	-15.73	8.03	31.79	47.11	55.55	63.38	79.31
36	-67.67	-50.39	-42.02	-32.91	-16.37	9.28	34.93	51.47	60.58	68.95	86.23
37	-70.25	-51.86	-42.95	-33.25	-15.[illegible]5	11.65	38.95	56.55	66.25	75.14	93.55
38	-71.67	-52.45	-43.14	-33.01	-14.68	13.93	42.46	60.86	71.00	80.31	99.53
39	-73.73	-53.47	-43.65	-32.98	-13.58	16.49	46.56	65.96	76.63	86.95	106.7[illegible]
40	-75.40	-54.09	-43.69	-32.43	-11.98	19.73	51.44	7[illegible].89	83.16	93.50	113.86
41	-71.98	-50.74	-39.74	-28.29	-7.50	24.75	53.99	77.79	89.24	99.76	121.48
42	-67.05	-45.38	-34.88	-23.45	-2.70	29.48	61.66	82.41	93.84	104.34	124.02
43	-62.99	-41.33	-30.84	-19.42	1.32	33.47	65.62	86.35	97.77	108.26	129.92
44	-60.74	-38.89	-28.31	-16.79	4.12	36.55	68.99	89.90	101.42	112.00	133.86
45	-59.03	-36.89	-26.18	-14.49	6.70	39.86	72.43	93.62	105.39	116.02	138.16
46	-58.51	-35.75	-24.72	-12.72	9.07	42.86	76.66	98.45	110.45	121.47	144.24
47	-54.67	-32.49	-21.08	-9.18	12.82	46.11	79.70	101.36	113.29	124.28	146.89
48	-52.54	-29.82	-18.82	-6.85	14.90	48.62	82.34	104.08	116.06	127.06	149.78
49	-49.53	-26.58	-15.46	-3.46	18.61	52.68	86.74	108.72	120.81	131.93	154.80
50	-46.32	-23.54	-12.51	-.50	21.31	55.12	89.94	110.74	122.75	133.78	156.57
51	-45.85	-23.08	-12.05	-.05	21.74	55.54	89.34	111.13	123.13	134.16	156.93
52	-31.29	-10.83	-.92	9.87	29.46	59.02	98.19	109.78	120.54	130.47	152.93
53	-27.74	-7.86	1.76	12.29	31.27	60.77	98.27	109.30	119.78	129.48	149.28
54	-26.16	-6.67	2.78	13.05	31.71	60.65	97.58	108.14	118.52	127.96	147.45
55	-23.23	-4.49	4.65	14.56	32.54	60.42	96.31	106.20	116.19	125.29	144.08
56	-7.25	9.25	17.29	26.01	41.04	66.39	98.93	106.76	115.08	123.49	140.82
57	-10.98	6.34	14.75	23.89	40.49	66.22	91.98	108.56	117.49	126.08	143.92
58	-10.52	7.68	16.58	26.10	43.52	70.15	97.57	114.99	124.59	133.91	151.61
59	-13.39	5.02	15.13	25.26	43.65	72.17	100.70	119.09	129.22	138.52	157.70
60	-19.33	1.50	11.59	22.57	42.50	73.42	104.34	124.28	135.26	146.35	166.17
61	-5.29	12.03	20.92	29.55	46.13	71.84	97.55	114.13	123.26	131.65	148.97
62	-6.32	10.85	19.17	28.22	44.66	70.14	99.63	112.07	121.12	129.40	146.61
63	-7.38	9.66	17.92	26.98	43.22	68.52	93.82	110.13	119.12	127.37	144.42
64	-8.42	8.48	16.66	25.87	41.74	66.82	91.98	108.07	116.98	125.16	142.86
65	-9.29	7.44	15.54	24.35	40.37	65.20	90.02	106.09	114.85	122.95	139.68
66	-10.32	6.25	14.28	23.02	38.89	63.50	88.11	103.98	112.71	120.74	137.32
67	-11.32	5.13	13.18	21.77	37.52	61.94	86.36	102.11	110.76	118.75	135.28
68	-12.35	3.95	11.85	20.44	36.05	60.25	84.45	100.05	108.54	116.84	133.88
69	-13.23	2.90	10.72	19.22	34.67	58.62	82.57	98.02	106.42	114.34	130.97
70	-14.27	1.72	9.46	17.89	33.19	56.92	80.65	95.96	104.38	112.13	128.11

TABLE 4.2. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.61	-5.16	-4.46	-3.7[illegible]	-2.32	-.18	1.97	3.35	4.11	4.81	6.25
1	-17.58	-13.86	-12.16	-10.15	-6.78	-1.36	4.16	7.58	9.50	11.26	14.89
2	-19.77	-15.37	-13.43	-10.91	-6.69	-.16	6.38	10.04	12.92	15.05	19.46
3	-22.06	-17.91	-15.79	-11.95	-6.78	1.23	9.29	13.51	17.25	19.87	25.24
4	-24.69	-18.63	-16.06	-12.58	-6.51	2.79	12.88	15.87	21.37	24.40	30.04
5	-27.59	-20.46	-16.94	-13.1[illegible]	-6.35	4.29	15.84	21.67	25.43	28.89	36.02
6	-30.39	-22.31	-18.39	-14.15	-6.39	5.61	17.61	25.35	29.61	33.62	41.61
7	-33.87	-24.48	-20.23	-15.19	-6.48	7.08	20.45	28.84	34.16	38.36	47.96
8	-36.19	-27.73	-22.07	-17.16	-7.14	8.30	23.98	33.91	37.43	44.47	54.95
9	-42.20	-26.62	-24.98	-18.84	-7.87	9.57	26.87	38.82	44.15	48.29	61.44
10	-46.45	-33.[illegible]	-27.22	-20.52	-8.18	10.95	30.09	42.43	47.24	55.47	68.36
11	-46.62	-34.19	-28.06	-19.81	-8.88	12.06	32.93	46.74	52.78	59.26	72.64
12	-46.37	-27.49	-31.19	-15.97	-3.61	14.76	33.14	44.97	51.5[illegible]	57.52	69.90
13	-31.98	-41.51	-19.44	-16.92	-.90	15.49	30.18	46.21	53.21	50.84	61.27
14	-20.11	-17.16	-12.81	-8.09	.49	13.79	27.09	35.66	46.37	44.73	53.69
15	-21.22	-13.27	-16.17	-6.28	.85	11.29	23.00	30.11	35.46	37.66	45.11
16	-18.66	-12.18	-9.62	-5.59	.69	10.36	19.96	26.18	27.61	32.77	39.27
17	-18.08	-10.86	-7.98	-5.69	.13	8.33	18.13	24.58	25.53	27.08	34.53
18	-19.67	-16.69	-7.87	-5.46	-1.27	5.73	12.53	16.71	17.33	21.55	26.13
19	-19.51	-18.98	-8.50	-6.37	-2.56	3.51	9.51	11.17	15.53	17.68	3.53
20	-19.37	-11.47	-9.52	-7.67	-3.84	1.49	7.64	11.35	13.49	15.27	19.15
21	-18.14	-12.38	-16.58	-8.58	-4.97	.58	6.16	9.27	11.23	13.45	17.23
22	-17.34	-13.69	-11.49	-9.69	-6.09	-.19	5.24	8.71	10.71	12.76	16.57
23	-18.19	-19.26	-12.36	-10.22	-6.45	-.41	5.24	9.30	11.08	13.99	16.92
24	-19.18	-19.96	-14.92	-10.71	-6.69	-.47	5.76	9.79	11.99	14.02	18.22
25	-20.58	-16.63	-13.83	-11.98	-7.29	-.35	6.44	10.76	11.16	15.34	19.90
26	-23.66	-17.62	-15.29	-12.53	-7.61	.26	8.64	13.65	15.81	18.38	23.50
27	-25.46	-19.67	-16.85	-13.96	-7.67	1.37	10.23	16.06	17.17	22.10	28.13
28	-27.64	-21.76	-18.92	-15.82	-10.20	-1.48	7.24	12.86	15.96	18.81	24.68
29	-27.57	-21.93	-18.40	-15.42	-9.64	-.67	8.29	14.67	17.25	20.18	26.22
30	-29.83	-22.98	-19.62	-15.99	-9.41	.80	11.02	17.60	21.23	24.56	31.44
31	-32.60	-28.00	-21.48	-17.48	-10.29	.88	12.00	19.19	23.19	26.70	34.29
32	-31.86	-24.31	-20.65	-16.67	-9.45	1.76	12.97	20.20	24.17	27.83	35.38
33	-32.81	-24.69	-20.88	-18.37	-8.89	3.60	15.79	23.56	27.87	31.83	40.01
34	-34.38	-25.48	-21.17	-16.48	-7.96	5.24	18.45	26.97	31.66	35.97	44.87
35	-37.12	-27.26	-22.46	-17.26	-7.81	6.84	21.49	30.94	36.15	40.93	50.80
36	-41.06	-29.92	-24.52	-18.65	-7.98	8.55	25.09	35.76	41.03	47.02	56.17
37	-43.34	-31.38	-26.64	-19.19	-7.68	10.19	28.04	39.85	45.70	51.72	63.76
38	-44.91	-32.28	-26.16	-19.51	-7.42	11.33	30.07	42.16	48.81	54.93	67.56
39	-48.38	-33.13	-26.72	-19.79	-7.08	12.67	32.21	44.07	51.85	58.26	71.49
40	-45.99	-32.42	-25.85	-18.70	-5.72	14.42	34.55	47.53	54.68	61.25	74.82
41	-48.84	-33.44	-26.39	-18.69	-4.72	16.95	38.61	52.58	60.27	67.34	81.93
42	-48.60	-33.31	-25.90	-17.85	-3.21	19.49	42.18	56.82	64.88	72.29	87.58
43	-49.90	-32.73	-24.86	-18.33	-.81	23.26	47.33	62.86	71.40	79.26	96.49
44	-50.07	-32.91	-24.59	-15.59	.90	26.38	51.87	68.30	77.35	86.67	102.86
45	-51.46	-33.26	-24.44	-14.84	2.59	29.61	56.63	74.06	83.66	92.48	110.68
46	-51.10	-32.19	-23.32	-13.45	4.47	32.25	60.04	77.96	87.82	96.89	115.61
47	-48.64	-28.09	-19.82	-9.22	8.59	36.21	63.83	81.64	91.45	100.44	119.09
48	-43.39	-25.05	-16.14	-6.50	11.66	38.29	65.51	83.07	92.74	101.62	119.96
49	-41.81	-23.24	-14.39	-4.76	12.93	39.05	66.97	84.46	94.09	102.94	121.81
50	-39.96	-21.68	-12.24	-3.21	14.20	41.39	68.50	85.98	95.61	104.46	122.72
51	-37.43	-19.42	-10.70	-1.21	16.03	42.76	69.48	86.72	96.21	104.93	122.94
52	-36.40	-18.41	-7.70	-.22	17.00	43.70	70.40	87.62	97.10	105.81	123.80
53	-38.29	-17.34	-8.95	.81	17.99	44.63	71.27	88.45	97.92	106.61	124.56
54	-35.29	-17.22	-8.46	1.07	18.17	45.20	72.03	89.34	98.87	107.62	125.70
55	-24.09	-8.77	-4.96	7.64	22.40	46.41	74.00	94.20	94.70	102.50	110.72
56	-23.42	-7.50	.21	8.41	23.85	47.48	71.11	86.36	94.75	102.94	116.38
57	-23.48	-7.86	-.38	7.93	22.88	48.08	69.23	84.18	92.41	99.97	115.50
58	-17.47	-2.49	4.84	12.76	27.15	49.47	71.78	86.17	94.09	101.37	116.41
59	-21.31	-4.41	2.38	10.88	29.40	47.60	73.10	88.32	96.70	104.40	120.30
60	-20.24	-4.35	3.35	11.73	26.94	50.53	74.12	89.34	97.72	105.41	121.31
61	-10.71	2.72	9.22	16.20	29.18	49.07	69.00	81.09	88.93	96.43	100.00
62	-13.19	.51	7.12	14.32	27.39	47.66	67.93	81.00	88.19	94.81	108.46
63	-13.09	-1.44	4.02	12.17	29.53	46.29	69.96	80.31	87.67	94.43	108.38
64	-18.44	-4.25	2.63	10.11	23.69	44.76	65.83	79.41	86.89	93.77	107.96
65	-21.09	-6.00	1.42	8.04	21.88	43.36	64.81	76.65	86.27	93.27	107.73
66	-23.70	-8.49	-1.87	5.88	19.96	41.79	63.62	77.70	85.45	92.57	107.28
67	-26.32	-11.28	-4.07	3.00	18.14	40.30	62.61	75.45	84.04	92.18	107.00
68	-28.87	-13.44	-6.26	1.77	16.35	38.46	61.57	76.15	84.18	91.56	106.79
69	-31.69	-16.08	-8.87	-.39	14.48	37.48	60.50	75.35	83.62	91.09	106.56
70	-34.17	-18.39	-10.76	-2.44	12.65	36.06	59.47	74.57	82.88	90.52	106.29

TABLE 4.3. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.31	-4.90	-4.22	-3.48	-2.12	-.03	2.07	3.42	4.16	4.85	6.26
1	-16.89	-13.53	-11.91	-10.19	-6.93	-1.96	3.02	6.23	7.99	9.62	12.97
2	-18.55	-14.48	-12.51	-10.37	-6.48	-.44	5.60	9.49	11.64	13.61	17.67
3	-20.73	-15.74	-13.28	-10.63	-5.83	1.62	9.07	13.87	16.52	18.95	23.97
4	-23.73	-17.61	-14.64	-11.42	-5.56	3.52	12.60	18.46	21.69	24.68	30.77
5	-26.52	-19.40	-15.54	-12.19	-5.37	5.21	15.79	22.61	26.37	29.82	36.90
6	-29.70	-21.57	-17.63	-13.35	-5.56	6.51	18.58	26.36	30.65	34.58	42.72
7	-33.49	-24.21	-19.71	-14.82	-5.94	7.93	21.60	30.48	35.37	39.86	49.19
8	-37.74	-27.23	-22.13	-16.59	-6.53	9.08	24.69	34.75	40.29	45.38	55.90
9	-40.97	-29.46	-23.88	-17.81	-6.80	10.29	27.37	38.39	44.46	50.03	61.54
10	-41.64	-29.61	-23.77	-17.48	-5.91	11.96	29.85	41.36	47.70	53.53	65.57
11	-38.40	-26.67	-20.99	-14.81	-3.58	13.83	31.24	42.47	48.65	54.33	66.06
12	-31.72	-21.13	-16.01	-10.43	-.29	15.42	31.14	41.27	46.85	51.98	62.56
13	-23.88	-14.95	-10.62	-5.92	2.64	15.90	29.16	37.71	42.42	46.78	55.68
14	-18.79	-11.05	-7.30	-3.22	4.19	15.68	27.18	34.59	38.67	42.42	50.16
15	-13.50	-7.27	-4.26	-.98	4.98	14.21	23.45	29.41	32.69	35.70	41.92
16	-11.47	-6.09	-3.48	-.65	4.51	12.49	20.48	25.63	28.47	31.08	36.46
17	-10.99	-6.18	-3.85	-1.32	3.29	10.43	17.57	22.18	24.71	27.04	31.85
18	-9.41	-5.50	-3.60	-1.58	2.20	8.01	13.82	17.56	19.63	21.52	25.43
19	-9.60	-6.15	-4.48	-2.66	.63	5.75	10.86	14.16	15.98	17.65	21.09
20	-10.68	-7.37	-5.76	-4.01	-.84	4.08	9.00	12.17	13.92	15.53	18.84
21	-11.49	-8.25	-6.69	-4.98	-1.89	2.91	7.71	10.81	12.51	14.08	17.31
22	-12.35	-9.09	-7.51	-5.79	-2.66	2.18	7.03	10.16	11.88	13.46	16.72
23	-13.75	-10.11	-8.35	-6.43	-2.95	2.45	7.86	11.34	13.26	15.02	18.66
24	-15.60	-11.39	-9.35	-7.19	-3.11	3.13	9.38	13.40	15.62	17.65	21.86
25	-16.79	-12.16	-9.92	-7.38	-3.04	3.83	10.70	15.13	17.57	19.81	24.44
26	-17.94	-12.89	-10.44	-7.70	-2.93	4.58	12.09	16.93	19.60	22.05	27.11
27	-19.50	-13.83	-11.08	-8.08	-2.65	5.78	14.20	19.64	22.63	25.38	31.06
28	-23.02	-21.39	-17.69	-13.62	-6.34	5.01	16.35	23.67	27.70	31.40	39.04
29	-23.29	-23.08	-19.65	-14.67	-5.77	5.62	17.25	25.51	30.25	34.81	42.62
30	-34.42	-25.26	-20.86	-16.05	-7.71	6.25	19.20	28.54	33.35	37.78	46.31
31	-36.34	-26.58	-21.85	-16.71	-7.37	7.12	21.60	30.54	36.08	40.81	50.57
32	-38.03	-27.49	-22.38	-16.33	-6.74	8.31	24.55	34.54	40.20	45.31	55.85
33	-37.89	-28.95	-21.66	-15.82	-5.47	10.60	27.64	37.50	43.27	48.56	59.50
34	-38.57	-27.00	-21.39	-15.23	-4.70	12.98	30.17	41.25	47.35	52.96	64.54
35	-39.40	-27.75	-21.51	-15.13	-3.67	14.26	32.35	43.66	50.03	55.87	67.32
36	-40.38	-28.30	-22.15	-15.48	-3.34	15.48	34.29	46.43	53.11	59.25	71.33
37	-41.18	-28.19	-21.60	-14.92	-2.52	16.76	36.14	48.48	55.32	61.61	74.60
38	-41.22	-28.01	-21.61	-14.64	-2.00	17.61	37.23	49.87	56.84	63.24	76.45
39	-40.24	-27.17	-21.79	-17.84	-1.23	18.32	37.87	51.48	57.43	63.81	76.98
40	-34.95	-22.78	-18.33	-10.47	1.13	19.24	37.31	49.38	55.37	61.27	73.44
41	-32.72	-20.93	-15.22	-9.01	2.20	19.78	37.28	48.56	54.78	60.84	72.27
42	-31.22	-19.56	-13.31	-7.72	3.40	20.71	38.02	49.13	55.33	60.98	72.54
43	-29.26	-17.76	-12.29	-6.12	4.89	21.50	39.13	50.04	56.11	61.68	73.18
44	-27.38	-15.97	-10.44	-4.42	6.50	23.44	40.78	51.30	57.32	62.84	74.26
45	-25.02	-13.86	-8.45	-2.56	8.12	24.71	41.29	51.98	57.87	63.28	74.45
46	-21.87	-11.13	-5.93	-.27	10.01	25.95	41.39	52.17	57.33	63.03	73.77
47	-18.69	-8.28	-3.24	2.24	12.21	27.66	42.11	53.17	58.56	63.86	74.61
48	-16.65	-6.38	-1.40	4.01	13.97	29.10	44.35	54.18	59.59	64.57	74.84
49	-14.88	-4.53	.48	5.93	15.84	31.20	46.56	56.47	61.92	66.94	77.29
50	-14.20	-3.73	1.34	6.86	16.83	32.42	47.98	57.98	63.50	68.97	79.24
51	-14.61	-3.95	1.21	6.82	17.13	32.84	48.65	58.85	64.46	69.62	80.28
52	-15.66	-4.76	.51	6.26	16.69	32.86	49.03	59.48	65.21	70.49	81.38
53	-16.40	-5.14	.32	6.26	17.04	33.76	50.48	61.27	67.20	72.66	83.92
54	-16.14	-4.94	.49	6.39	17.11	33.73	50.29	61.07	66.93	72.40	83.60
55	-14.50	-3.92	-1.21	4.79	15.88	33.47	50.26	61.24	67.45	73.06	84.64
56	-23.33	-11.15	-4.94	1.81	14.09	33.12	52.15	64.43	71.19	77.40	90.22
57	-9.24	.85	5.85	11.24	21.04	36.23	51.42	61.22	66.61	71.57	81.80
58	3.01	11.38	16.17	20.95	23.34	42.50	55.66	64.15	68.93	73.12	81.39
59	8.04	16.51	20.60	25.03	27.16	45.72	58.38	66.24	70.85	74.95	83.41
60	1.62	11.27	15.94	21.02	30.25	44.58	58.90	68.14	73.22	77.89	87.54
61	-7.87	3.63	6.70	15.26	26.27	43.35	60.42	71.42	77.49	83.06	94.57
62	-9.23	2.27	7.86	13.95	25.00	42.14	59.28	70.34	76.42	82.02	93.56
63	-10.48	1.07	6.66	12.75	23.80	40.94	58.08	69.13	75.22	80.81	92.36
64	-11.88	-.29	5.33	11.44	22.53	39.74	56.95	68.04	74.15	79.77	91.36
65	-13.01	-1.43	4.17	10.28	21.36	38.58	55.72	66.80	72.90	78.51	90.08
66	-14.21	-2.63	2.97	9.07	20.15	37.34	54.52	65.60	71.70	77.30	88.88
67	-15.61	-3.99	1.64	7.76	18.89	36.13	53.28	64.50	70.63	76.26	87.88
68	-16.81	-5.19	.44	6.56	17.69	34.93	52.18	63.30	69.43	75.05	86.67
69	-18.14	-6.49	-.85	5.29	16.44	33.73	51.02	62.17	68.31	73.95	85.60
70	-19.34	-7.69	-2.05	4.09	15.24	32.53	49.82	60.97	67.11	72.25	84.40

TABLE 4.4. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.77	-4.48	-3.86	-3.13	-1.96	-.06	1.84	3.06	3.74	4.35	5.54
1	-15.54	-12.52	-11.01	-9.36	-6.37	-1.73	2.30	5.89	7.54	9.05	12.18
2	-17.07	-13.29	-11.45	-9.46	-5.83	-.21	5.41	9.03	11.03	12.85	16.65
3	-20.34	-15.38	-12.98	-10.37	-5.63	1.73	9.08	13.82	16.43	18.83	23.79
4	-23.89	-17.66	-14.64	-11.35	-5.39	3.87	13.12	19.09	22.37	25.39	31.63
5	-28.05	-20.81	-16.70	-12.67	-5.36	5.99	17.34	24.65	28.68	32.38	40.03
6	-32.38	-23.37	-19.00	-14.25	-5.61	7.77	21.4[illegible]	29.79	34.54	38.91	47.93
7	-35.90	-25.67	-20.71	-15.32	-5.52	9.67	24.27	34.66	40.06	45.01	55.25
8	-39.98	-28.52	-22.97	-16.93	-5.97	11.04	28.04	39.01	45.05	50.60	62.35
9	-4[illegible]	-30.15	-24.19	-17.71	-5.94	12.30	30.55	42.32	48.82	54.75	67.05
10	-[illegible]	-29.[illegible]	-23.37	-16.79	-4.96	13.65	32.15	44.09	[illegible]0.66	56.70	69.17
11	-38.99	-26.88	-[illegible]1.02	-14.63	-3.04	14.93	32.91	44.50	50.89	56.75	68.86
12	-32.84	-21.84	-15.52	-10.72	-.19	16.14	32.46	42.93	48.79	54.32	65.12
13	-23.68	-14.64	-10.26	-5.60	2.16	16.57	29.39	38.65	43.41	47.29	56.83
14	-17.03	-9.59	-5.98	-2.06	5.07	16.12	27.17	34.30	38.23	41.83	49.28
15	-14.10	-7.61	-4.47	-1.05	5.16	14.79	24.42	30.63	34.05	37.20	43.68
16	-11.74	-6.24	-3.58	-.68	4.59	12.73	20.89	26.15	29.05	31.71	37.21
17	-9.81	-5.27	-3.08	-.68	3.66	10.40	17.14	21.49	23.88	26.08	30.62
18	-9.28	-4.60	-2.82	-.88	2.64	8.10	13.57	17.09	19.03	20.81	24.49
19	-7.77	-4.70	-3.21	-1.58	1.35	5.90	10.46	13.40	15.02	16.51	19.58
20	-8.73	-5.91	-4.54	-3.05	-.35	3.84	8.03	10.73	12.22	13.58	16.41
21	-10.45	-7.51	-6.09	-4.55	-1.74	2.62	6.57	9.78	11.32	12.75	15.68
22	-11.23	-8.37	-6.98	-5.47	-2.73	1.52	5.73	8.[illegible]	10.02	11.41	14.27
23	-11.79	-8.89	-7.49	-5.96	-3.19	1.12	5.42	8.[illegible]	9.72	11.13	14.03
24	-12.14	-9.10	-7.63	-6.03	-3.13	1.38	5.89	8.79	10.39	11.86	14.90
25	-13.44	-10.03	-8.38	-6.58	-3.32	1.74	6.80	10.06	11.46	11.51	16.92
26	-14.19	-10.54	-8.78	-6.86	-3.37	2.04	7.44	10.93	12.85	14.62	18.26
27	-12.89	-9.32	-7.60	-5.72	-2.31	2.98	8.[illegible]6	11.67	13.55	15.28	18.84
28	-14.11	-9.95	-7.94	-5.74	-1.76	4.42	10.59	14.58	16.77	18.78	22.35
29	-12.56	-8.44	-6.45	-4.27	-.33	5.78	11.90	15.84	18.01	20.01	24.13
30	-11.68	-7.50	-5.48	-3.28	.7[illegible]	6.43	13.13	17.13	19.33	21.30	25.54
31	-10.73	-6.51	-4.46	-2.24	1.60	8.08	14.38	18.37	20.59	22.63	26.85
32	-11.84	-7.08	-4.77	-2.27	1.29	9.35	16.4[illegible]	20.96	23.47	25.77	30.52
33	-11.20	-6.23	-3.82	-1.19	3.57	10.96	18.35	23.[illegible]2	25.74	28.15	33.13
34	-10.83	-5.48	-2.89	-.07	5.06	13.00	20.94	26.0[illegible]	28.88	31.47	36.32
35	-12.71	-6.54	-3.55	-.30	5.61	14.76	23.94	29.8[illegible]	33.[illegible]	36.08	42.26
36	-13.23	-6.[illegible]	-3.68	-.27	5.92	15.53	25.13	31.32	34.73	37.85	44.33
37	-14.59	-7.75	-4.44	-.84	5.71	15.86	26.11	32.55	36.16	39.47	46.31
38	-15.97	-8.[illegible]	-5.41	-1.66	5.[illegible]5	15.71	26.28	33.03	36.84	40.28	47.40
39	-16.00	-9.08	-5.73	-2.08	4.54	14.81	25.68	31.71	35.36	38.71	45.63
40	-15.19	-8.61	-5.42	-1.96	4.34	14.11	23.88	30.18	33.64	36.83	43.41
41	-13.93	-7.68	-4.65	-1.36	4.62	13.90	23.18	29.17	32.46	35.49	41.[illegible]4
42	-13.04	-7.05	-4.15	-.[illegible]9	4.74	13.63	22.52	28.25	31.41	34.31	40.30
43	-13.50	-7.36	-4.39	-1.1[illegible]	4.71	13.81	22.97	28.76	32.01	34.98	41.11
44	-14.99	-8.42	-5.24	-1.77	4.51	14.26	24.04	30.33	33.76	36.94	43.51
45	-16.80	-9.84	-6.47	-2.80	3.87	14.21	24.55	31.21	34.89	38.26	45.22
46	-15.93	-9.05	-5.72	-2.09	4.50	14.71	24.93	31.51	35.14	38.47	45.35
47	-14.19	-7.55	-4.33	-.82	5.54	15.40	25.27	31.63	35.13	38.35	45.00
48	-15.76	-8.74	-5.34	-1.65	5.07	15.49	25.30	32.62	36.32	39.72	46.74
49	-17.81	-10.31	-6.68	-2.73	4.45	15.58	26.71	33.48	37.83	41.46	48.96
50	-19.85	-11.[illegible]	-8.00	-3.79	3.56	15.71	27.57	35.21	39.42	43.29	51.2[illegible]
51	-21.31	-13.02	-9.01	-4.64	3.29	15.59	27.69	35.82	40.20	44.21	52.50
52	-21.26	-13.34	-9.50	-5.33	3.25	14.01	25.77	33.15	37.53	41.36	49.28
53	-22.27	-14.53	-10.74	-6.70	.71	12.20	23.69	31.10	35.14	38.83	46.67
54	-23.38	-15.69	-11.96	-7.90	-.33	10.89	22.32	29.63	33.74	37.47	45.17
55	-24.82	-15.68	-15.74	-11.45	-2.67	8.41	20.49	28.26	32.57	36.51	44.64
56	-30.00	-22.09	-13.25	-14.03	-5.50	5.25	17.00	24.58	28.75	32.58	40.50
57	-36.50	-2[illegible].52	-27.17	-18.44	-9.85	3.48	16.80	25.35	30.13	34.47	43.48
58	-46.43	-35.92	-33.79	-25.22	-15.10	.60	16.30	26.43	32.00	37.13	47.70
59	-30.01	-23.17	-19.85	-16.24	-9.69	.47	10.64	17.15	20.80	24.11	30.96
60	-27.67	-21.05	-17.84	-14.35	-8.01	1.82	11.66	15.03	21.49	24.70	31.32
61	-38.34	-27.03	-23.00	-18.61	-10.65	1.70	14.04	22.01	26.39	30.42	38.74
62	-35.91	-26.80	-22.82	-18.43	-13.63	1.56	13.74	21.63	25.93	29.21	39.12
63	-34.64	-26.43	-22.51	-18.23	-10.47	1.56	13.59	21.34	25.62	29.54	37.65
64	-34.22	-26.22	-22.34	-18.12	-13.46	1.41	13.29	20.95	25.17	29.04	37.05
65	-33.91	-26.01	-22.18	-18.02	-10.45	1.27	13.00	20.56	24.73	28.55	36.45
66	-33.69	-25.87	-22.08	-17.96	-13.48	1.13	12.74	20.22	24.35	28.13	35.95
67	-33.41	-25.69	-21.94	-17.80	-10.48	.99	12.46	19.85	23.92	27.66	35.39
68	-33.00	-25.37	-21.67	-17.69	-13.34	.99	12.32	19.63	23.65	27.35	34.98
69	-32.74	-25.20	-21.54	-17.57	-10.35	.85	12.05	19.27	23.24	26.90	34.44
70	-32.50	-25.04	-21.43	-17.50	-13.36	.71	11.78	18.91	22.84	26.45	33.91

TABLE 4-5. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.28	-3.27	-2.78	-2.25	-1.29	.21	1.70	2.66	3.19	3.58	4.69
1	-12.83	-10.99	-9.26	-7.99	-5.62	-1.72	1.65	3.99	5.28	6.07	8.32
2	-13.30	-10.53	-9.34	-7.93	.38	-1.42	2.54	5.05	6.50	7.79	10.46
3	-14.44	-11.15	-9.56	-7.83	-4.68	.20	5.08	8.23	9.96	11.55	14.84
4	-16.28	-12.22	-10.26	-8.13	-4.25	1.77	7.78	11.66	13.80	15.76	19.91
5	-19.09	-14.20	-11.68	-9.05	-4.27	3.14	10.55	15.31	17.96	20.38	25.37
6	-22.23	-16.32	-13.45	-10.34	-4.68	4.10	12.68	18.54	21.66	24.52	30.43
7	-25.90	-18.99	-15.64	-12.00	-5.38	4.88	15.19	21.76	25.80	28.75	35.66
8	-30.22	-22.16	-18.25	-14.00	-6.28	5.69	17.65	25.39	29.64	33.54	41.61
9	-33.13	-24.15	-19.80	-15.06	-6.47	6.86	20.19	23.78	33.52	37.86	46.84
10	-35.18	-25.46	-20.75	-15.63	-6.32	8.11	22.54	31.85	36.97	41.60	51.41
11	-35.91	-26.55	-21.53	-16.07	-5.15	9.22	24.60	34.51	39.97	44.99	55.15
12	-31.87	-22.35	-17.73	-12.72	-3.10	10.53	24.66	33.77	38.79	43.40	52.92
13	-23.31	-15.[illegible]	[illegible]	-7.60	-.12	11.97	23.06	30.58	34.66	38.84	46.25
14	-15.56	-9.46	[illegible]	-3.28	2.55	11.61	20.67	26.51	28.73	32.68	38.78
15	-10.51	-5.[illegible]	-3.42	-.90	3.57	10.76	17.34	22.41	24.93	27.24	32.32
16	-8.60	-4.74	-2.77	-.63	3.26	9.30	15.32	19.22	21.37	23.53	27.40
17	-7.19	-3.94	-2.37	-.66	3.44	7.25	12.07	15.17	16.88	18.45	21.69
18	-6.55	-4.00	-2.76	-1.42	1.02	4.80	8.58	11.02	12.37	13.60	16.15
19	-7.52	-5.29	-4.22	-3.04	-.91	2.40	5.70	7.94	9.01	10.09	12.32
20	-5.23	-7.12	-6.10	-4.99	-2.97	.16	3.28	5.30	6.41	7.43	9.54
21	-11.03	-8.85	-7.40	-6.65	-4.57	-1.34	1.89	3.97	5.11	6.17	9.34
22	-10.81	-8.65	-7.91	-6.84	-5.00	-2.16	.60	2.66	3.71	4.65	6.61
23	-12.09	-9.94	-8.90	-7.77	-5.71	-2.52	.66	2.72	3.85	4.89	7.04
24	-12.79	-10.46	-9.33	-8.11	-5.85	-2.42	1.04	3.27	4.50	5.62	7.95
25	-13.15	-10.72	-9.55	-8.27	-5.95	-2.35	1.24	3.56	4.88	6.02	8.48
26	-13.85	-11.23	-9.96	-8.56	-6.07	-2.17	1.72	4.24	5.62	6.89	9.51
27	-14.88	-11.94	-10.52	-8.97	-6.15	-1.79	2.58	5.39	6.94	8.36	11.30
28	-16.38	-14.44	-12.63	-10.46	-6.68	-.83	5.82	8.79	10.87	12.78	16.72
29	-17.22	-13.45	-11.62	-9.64	-6.03	-.43	5.17	8.78	10.77	12.60	16.39
30	-16.16	-12.68	-10.87	-9.00	-5.60	-.29	5.00	8.44	10.24	12.01	15.60
31	-15.43	-11.99	-10.30	-8.48	-5.17	-.09	5.09	8.40	10.22	11.89	15.38
32	-16.84	-12.43	-10.87	-8.56	-4.89	.00	4.99	8.16	10.10	11.83	15.84
33	-17.1[illegible]	-12.99	-10.91	-8.71	-4.78	1.52	7.73	11.74	13.95	15.97	20.16
34	-19.04	-14.40	-12.15	-9.78	-5.26	1.63	8.82	13.49	15.41	17.46	22.30
35	-19.66	-14.98	-12.61	-10.11	-5.57	1.47	8.61	13.05	15.56	17.89	22.59
36	-20.45	-15.71	-13.32	-10.72	-5.99	1.35	8.60	13.41	16.01	18.41	23.38
37	-20.86	-15.93	-13.54	-10.99	-6.22	1.16	8.43	13.15	15.75	18.14	23.07
38	-21.67	-16.02	-14.46	-11.09	-7.24	-.02	7.19	11.84	14.41	16.96	21.02
39	-22.84	-17.91	-15.16	-12.72	-8.27	-1.38	5.51	9.95	12.48	14.65	19.29
40	-22.16	-17.04	-15.78	-13.40	-9.34	-2.93	3.40	7.61	9.89	11.90	16.30
41	-23.79	-19.36	-17.24	-14.92	-10.72	-4.20	2.31	6.51	8.83	10.96	15.3[illegible]
42	-26.01	-21.08	-19.47	-16.93	-12.33	-5.10	1.94	6.67	9.11	11.44	16.28
43	-28.67	-23.64	-21.68	-18.38	-13.48	-5.68	1.72	6.62	9.32	11.88	16.92
44	-29.[illegible]	-23.[illegible]	-20.[illegible]	-18.30	-13.40	-5.88	1.40	6.30	8.95	11.89	16.43
45	-23.61	-23.59	-21.89	-18.42	-13.56	-6.09	1.48	6.33	9.00	11.46	16.53
46	-28.93	-23.42	-21.34	-18.65	-13.74	-6.17	1.41	6.30	9.00	11.47	16.58
47	-30.23	-24.67	-22.27	-19.49	-14.31	-6.35	1.63	6.74	9.56	12.16	17.58
48	-30.40	-25.14	-22.59	-19.81	-14.77	-6.94	.86	5.90	8.6[illegible]	11.82	16.40
49	-31.27	-26.92	-23.33	-20.52	-15.48	-7.47	.46	5.57	8.29	10.98	16.32
50	-30.87	-27.60	-24.02	-21.02	-16.34	-7.71	.30	5.38	8.00	11.38	17.06
51	-34.77	-28.86	-26.00	-22.88	-17.22	-8.45	.32	5.97	9.07	11.95	17.86
52	-34.02	-29.20	-26.61	-23.79	-18.41	-10.20	-1.00	3.30	6.21	8.09	14.42
53	-35.87	-30.39	-27.74	-24.85	-19.61	-11.48	-3.35	1.09	4.76	7.43	12.91
54	-36.24	-32.62	-29.89	-26.92	-21.33	-13.16	-4.83	-.86	3.53	6.36	11.86
55	-41.36	-35.39	-32.58	-29.36	-23.65	-14.79	-5.93	-.22	2.92	5.81	11.70
56	-40.[illegible]	-3[illegible]	-35.[illegible]	-32.17	-24.92	-14.61	-4.70	-.[illegible]	3.[illegible]	5.[illegible]	10.0[illegible]
57	-40.41	-43.81	-39.42	-36.52	-28.43	-17.45	-6.46	.63	4.53	8.11	15.81
58	-44.58	-44.63	-42.00	-36.63	-31.06	-19.30	-7.56	.03	4.49	6.82	15.04
59	-42.98	-45.78	-42.18	-36.39	-31.38	-20.58	-9.70	-2.01	1.02	4.55	11.02
60	-40.76	-51.09	-47.60	-42.92	-34.48	-21.83	-8.10	.30	5.87	9.36	18.20
61	-54.53	-46.86	-43.14	-39.10	-31.75	-20.36	-8.98	-1.63	2.91	6.13	13.80
62	-50.08	-45.50	-41.00	-37.07	-30.40	-19.46	-8.84	-1.00	3.06	6.61	14.66
63	-51.39	-44.01	-40.44	-36.55	-29.48	-18.53	-7.57	-.51	3.30	6.94	14.34
64	-49.08	-47.64	-39.15	-36.32	-28.38	-17.61	-6.84	-.11	3.95	7.46	14.70
65	-48.27	-41.17	-37.70	-34.00	-27.21	-16.69	-6.16	.63	4.36	7.88	14.89
66	-46.56	-39.62	-36.27	-32.61	-26.04	-15.70	-5.41	-1.02	4.07	8.08	15.45
67	-45.09	-38.28	-34.99	-31.40	-24.88	-14.78	-4.67	1.04	5.43	8.73	16.83
68	-43.94	-36.81	-33.64	-30.08	-23.78	-13.86	-3.88	2.33	6.87	9.60	16.34
69	-42.08	-35.48	-32.32	-28.88	-22.63	-12.99	-3.25	3.00	6.44	9.60	16.18
70	-40.38	-34.01	-30.73	-27.67	-21.43	-12.08	-2.67	3.63	6.80	9.97	16.86

TABLE 4.6. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.300	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-4.03	-3.02	-2.55	-2.02	-1.06	.42	1.31	2.27	3.40	3.83	4.38
1	-11.44	-5.46	-3.47	-7.25	-3.20	-1.22	1.32	3.42	4.56	5.61	7.00
2	-11.61	-9.32	-8.21	-7.09	-4.81	-1.41	1.39	4.13	5.40	6.50	8.90
3	-11.75	-5.33	-4.74	-4.36	-3.25	.44	4.47	7.65	9.21	10.64	13.60
4	-20.13	-19.48	-18.89	-6.75	-3.26	2.17	7.60	11.10	13.03	14.80	18.46
5	-21.51	-21.27	-20.27	-6.97	-3.74	3.58	5.40	14.14	16.35	19.36	22.67
6	-17.35	-12.27	-8.96	-7.38	-2.59	4.80	12.18	15.35	19.57	21.93	26.35
7	-1 .41	-17.67	-16.57	-7.90	-3.47	6.17	14.56	17.14	22.05	25.82	31.55
8	-27.45	-16.54	-17.25	-9.87	-4.09	7.19	17.39	23.38	27.60	30.93	37.32
9	-27.75	-27.51	-19.71	-20.57	-3.67	8.54	20.77	27.72	34.24	35.66	43.51
10	-25.27	-20.45	-15.17	-11.52	-3.05	10.04	23.19	31.50	36.25	40.53	43.33
11	-27.41	-20.12	-15.13	-19.74	-2.40	11.91	25.65	34.57	39.40	42.95	53.22
12	-27.15	-27.31	-17.46	-3.61	.74	13.85	27.51	36.31	41.16	45.62	50.31
13	-21.67	-17.50	-5.61	-5.72	1.47	14.55	26.67	34.42	36.70	42.85	50.78
14	-15.51	-14.07	-4.73	-4.13	3.74	13.47	23.60	29.13	33.73	37.03	43.15
15	-17.21	-7.52	-4.46	-1.71	5.75	11.62	18.77	27.77	26.51	25.63	34.25
16	-3.27	-5.29	-3.53	-1.52	5.15	7.83	13.52	17.13	19.20	21.05	24.38
17	-5.50	-7.54	-4.18	-2.61	.70	4.55	6.11	11.77	13.27	14.65	17.13
18	-4.37	-5.99	-4.35	-3.37	-1.75	2.42	4.71	5.85	7.79	9.83	12.97
19	-6.59	-7.12	-4.22	-3.22	-2.67	-.16	1.05	2.16	4.25	5.15	6.22
20	-10.27	-3.53	-7.22	-4.91	-3.23	-2.76	-.23	1.40	2.23	3.12	4.32
21	-11.15	-7.52	-7.47	-7.65	-4.27	-3.51	-1.50	.18	.51	1.70	2.23
22	-17.37	-10.70	-7.79	-3.07	-3.07	-4.35	-2.48	-.82	-.51	.80	2.47
23	-13.47	-11.52	-11.61	-10.17	-5.85	-5.54	-3.57	-1.55	-.62	.22	1.88
24	-19.27	-17.47	-11.61	-10.60	-5.27	-5.29	-3.47	-1.51	-.37	-.10	1.69
25	-15.20	-17.71	-17.22	-11.41	-7.50	-6.60	-4.11	-2.24	-1.21	-.30	1.58
26	-15.57	-13.69	-17.75	-11.77	-9.95	-7.16	-4.95	-2.78	-1.55	-.63	1.26
27	-15.20	-24.72	-17.24	-10.26	-10.72	-7.25	-4.37	-2.57	-1.24	-.26	1.78
28	-20.63	-17.73	-16.32	-14.75	-12.04	-7.69	-3.27	-.95	.94	2.35	5.26
29	-21.53	-18.39	-16.87	-15.21	-12.20	-7.53	-2.83	.14	2.90	3.32	6.46
30	-21.76	-18.63	-17.11	-15.46	-12.47	-7.82	-2.18	-.16	2.47	2.98	6.11
31	-21.94	-18.86	-17.33	-15.73	-12.78	-8.20	-3.62	-.67	.96	2.45	5.54
32	-22.74	-19.50	-17.94	-16.23	-13.10	-8.33	-3.23	-.44	1.27	2.84	6.07
33	-23.13	-19.89	-19.18	-16.42	-13.22	-8.26	-3.31	-.11	1.65	3.27	6.61
34	-23.50	-20.10	-18.46	-16.67	-13.82	-8.39	-3.35	-.10	1.69	3.33	6.72
35	-25.80	-22.20	-20.46	-18.52	-15.17	-9.80	-4.42	-1.63	.86	2.80	6.19
36	-28.06	-24.24	-22.39	-20.37	-16.71	-11.04	-5.37	-1.71	.31	2.16	5.98
37	-28.23	-24.70	-22.96	-21.07	-17.64	-12.32	-7.00	-3.56	-1.67	.06	3.65
38	-29.23	-25.67	-23.59	-22.06	-18.65	-13.36	-8.07	-4.65	-2.78	-1.05	2.52
39	-30.45	-26.89	-25.16	-23.29	-19.83	-14.59	-9.30	-5.99	-4.01	-2.29	1.27
40	-32.84	-28.97	-27.10	-25.06	-21.35	-15.61	-9.27	-6.17	-4.13	-2.25	1.61
41	-33.90	-30.42	-28.84	-26.69	-22.79	-16.74	-10.68	-6.78	-4.63	-2.85	1.0[illegible]
42	-38.75	-34.10	-31.84	-29.39	-24.94	-18.03	-11.12	-6.67	-4.22	-1.96	[illegible]
43	-37.86	-33.30	-31.69	-29.50	-25.52	-19.34	-13.17	-9.19	-6.99	-4.98	-.32
44	-39.39	-35.77	-33.73	-31.50	-27.46	-21.20	-14.54	-10.90	-8.67	-6.63	-2.41
45	-40.56	-36.36	-34.33	-32.11	-28.09	-21.46	-15.63	-11.61	-9.40	-7.36	-3.17
46	-40.84	-36.62	-34.57	-32.35	-28.31	-22.04	-15.77	-11.73	-9.51	-7.46	-3.24
47	-40.83	-36.58	-34.52	-32.27	-28.20	-21.89	-15.57	-11.50	-9.26	-7.19	-2.34
48	-42.42	-37.83	-35.61	-33.15	-28.80	-21.99	-15.18	-10.75	-8.38	-6.15	-1.57
49	-45.06	-39.97	-37.50	-34.82	-29.95	-22.40	-14.34	-9.97	-7.29	-4.82	.27
50	-47.92	-42.38	-39.70	-36.74	-31.48	-23.23	-13.65	-9.75	-6.84	-4.16	1.38
51	-51.80	-45.60	-42.60	-39.39	-33.41	-24.22	-15.03	-9.10	-5.83	-2.83	3.36
52	-54.94	-48.18	-44.91	-41.35	-34.87	-24.84	-14.81	-8.23	-4.77	-1.50	5.26
53	-57.11	-50.02	-46.58	-42.84	-35.05	-25.53	-15.00	-8.21	-4.47	-1.04	6.06
54	-58.32	-51.26	-47.65	-44.14	-37.38	-26.92	-16.45	-9.[illegible]	-5.98	-2.57	4.48
55	-58.03	-51.40	-48.19	-44.69	-38.35	-28.50	-18.66	-12.32	-8.82	-5.41	1.02
56	-60.23	-53.55	-50.32	-46.80	-40.41	-30.49	-20.58	-14.15	-10.67	-7.43	-.75
57	-62.12	-55.50	-52.30	-48.81	-42.47	-32.64	-22.82	-16.48	-12.99	-9.78	-3.16
58	-70.79	-62.87	-59.63	-54.80	-47.27	-35.51	-23.75	-16.16	-14.99	-8.15	-.22
59	-72.45	-64.32	-60.97	-56.90	-49.50	-38.02	-26.54	-19.14	-15.07	-11.32	-1.53
60	-76.23	-68.31	-64.48	-60.30	-52.72	-40.57	-29.21	-21.62	-17.46	-13.63	-5.71
61	-72.30	-64.97	-61.42	-57.56	-50.55	-39.67	-28.79	-21.78	-17.91	-14.36	-7.03
62	-70.73	-63.47	-59.95	-56.13	-49.17	-38.40	-27.62	-20.67	-16.84	-13.32	-6.06
63	-69.13	-61.94	-58.46	-54.67	-47.79	-37.12	-26.46	-19.58	-15.79	-12.31	-5.12
64	-67.56	-60.44	-56.99	-53.23	-46.42	-35.85	-25.28	-18.47	-14.71	-11.27	-4.18
65	-66.19	-59.10	-55.67	-51.94	-45.16	-34.65	-24.14	-17.38	-13.62	-10.19	-3.11
66	-64.62	-57.50	-54.20	-50.50	-43.79	-33.38	-22.96	-16.25	-12.55	-9.15	-2.13
67	-63.18	-56.20	-52.82	-49.14	-42.46	-32.10	-21.74	-15.08	-11.39	-8.01	-1.03
68	-61.44	-54.57	-51.24	-47.61	-41.03	-30.83	-20.53	-14.05	-10.42	-7.09	-.22
69	-60.01	-53.17	-49.86	-46.28	-39.71	-29.56	-19.41	-12.88	-9.26	-5.95	.89
70	-58.43	-51.66	-48.38	-44.82	-38.33	-28.28	-18.23	-11.75	-8.10	-4.91	1.47

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 4.7. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.300	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.1[illegible]	-2.35	-1.97	-1.59	-.78	.41	1.62	2.37	2.79	3.17	3.98
1	-10.62	-8.62	-7.65	-5.99	-4.07	-1.09	1.89	3.81	4.87	5.04	7.06
2	-9.64	-7.62	-6.56	-5.38	-3.35	-.21	2.94	4.97	6.09	7.11	9.23
3	-9.61	-7.22	-5.94	-4.58	-2.09	1.78	5.65	8.15	9.52	10.79	13.39
4	-11.07	-7.86	-6.36	-4.60	-1.62	3.27	8.05	11.19	12.84	14.90	17.62
5	-11.58	-8.06	-6.35	-4.49	-.12	4.12	9.35	12.72	14.58	16.29	19.61
6	-12.34	-8.43	-6.54	-4.49	-.75	5.04	10.83	14.57	16.63	18.52	22.48
7	-13.39	-8.99	-6.85	-4.53	-.31	6.23	12.77	16.99	19.31	21.95	25.86
8	-14.79	-9.70	-7.23	-4.55	.33	7.89	15.45	20.33	23.01	24.98	30.57
9	-15.14	-9.56	-6.85	-3.91	1.49	9.73	18.02	23.37	26.31	29.02	34.48
10	-15.59	-9.49	-6.47	-3.23	2.65	11.77	20.80	24.76	30.00	32.98	39.12
11	-14.70	-8.21	-5.67	-1.65	4.56	14.20	23.83	30.05	33.97	36.41	43.10
12	-13.84	-7.17	-3.93	-.41	5.99	15.92	25.45	32.26	35.78	39.02	45.71
13	-13.07	-6.56	-3.31	.15	6.45	16.21	25.97	32.26	35.73	38.91	45.49
14	-12.45	-6.38	-3.44	-.29	5.58	14.59	23.60	29.41	32.61	35.55	41.42
15	-10.75	-5.91	-3.57	-1.01	3.62	10.61	18.00	22.69	25.19	27.53	32.38
16	-9.24	-5.76	-4.08	-2.25	1.08	6.24	11.91	14.73	16.57	18.25	21.73
17	-9.90	-7.15	-5.82	-4.37	-1.[illegible]	2.33	6.91	9.09	10.49	11.82	14.54
18	-10.80	-8.54	-7.47	-6.79	-4.15	-.82	2.50	4.45	5.83	6.92	9.16
19	-11.53	-8.83	-8.01	-7.11	-5.46	-2.96	-.93	1.20	2.09	2.92	4.62
20	-11.07	-10.09	-9.32	-8.49	-6.97	-4.62	-2.28	-.76	.07	.84	2.42
21	-13.07	-11.51	-10.75	-9.93	-8.93	-6.12	-3.80	-2.31	-1.48	-.73	.81
22	-14.34	-12.80	-12.06	-11.25	-9.77	-7.49	-5.20	-3.73	-2.92	-2.17	-.63
23	-15.57	-14.01	-13.25	-12.42	-10.92	-8.60	-6.27	-4.77	-3.95	-3.19	-1.48
24	-16.48	-15.06	-14.27	-13.42	-11.86	-9.45	-7.09	-5.49	-4.63	-3.85	-2.22
25	-17.21	-15.69	-14.91	-14.05	-12.51	-10.10	-7.76	-6.10	-5.30	-4.52	-2.90
26	-17.85	-16.21	-15.41	-14.59	-13.07	-10.52	-8.08	-6.56	-5.63	-4.84	-3.19
27	-18.26	-17.01	-16.15	-15.23	-13.57	-10.93	-8.32	-6.69	-5.71	-4.86	-3.10
28	-20.22	-18.47	-17.62	-16.70	-15.07	-12.42	-9.82	-8.14	-7.22	-6.37	-4.62
29	-22.65	-20.53	-19.50	-18.39	-16.36	-13.21	-10.06	-8.03	-6.92	-5.89	-3.77
30	-22.11	-20.21	-19.29	-18.20	-16.48	-13.67	-10.86	-9.01	-8.05	-7.13	-5.24
31	-21.72	-19.87	-18.98	-17.91	-16.24	-13.51	-10.77	-9.01	-8.03	-7.14	-5.30
32	-23.23	-21.13	-20.16	-18.90	-16.80	-13.52	-10.27	-8.16	-7.22	-5.94	-3.74
33	-24.68	-22.27	-21.11	-19.84	-17.53	-13.96	-10.38	-8.04	-6.91	-5.64	-3.24
34	-25.67	-23.17	-22.07	-20.65	-18.22	-14.56	-10.85	-8.48	-7.12	-5.34	-3.44
35	-24.23	-25.47	-24.13	-22.67	-20.03	-15.93	-11.82	-9.13	-7.72	-6.38	-3.62
36	-28.25	-26.50	-25.18	-23.73	-21.11	-17.04	-12.57	-10.24	-8.90	-7.57	-4.83
37	-29.15	-26.67	-25.47	-24.18	-21.79	-18.11	-14.43	-12.08	-10.75	-9.55	-7.07
38	-30.58	-27.91	-26.61	-25.20	-22.63	-18.65	-14.68	-12.11	-10.70	-9.40	-6.72
39	-30.83	-28.28	-27.05	-25.70	-23.26	-19.47	-15.69	-13.24	-11.90	-10.65	-8.11
40	-32.20	-29.75	-28.56	-27.27	-24.92	-21.28	-17.64	-15.30	-14.01	-12.82	-10.37
41	-35.85	-33.09	-31.76	-30.31	-27.67	-23.58	-19.50	-16.86	-15.41	-14.07	-11.32
42	-39.53	-36.32	-34.88	-33.23	-30.23	-25.57	-20.32	-17.92	-16.27	-14.75	-11.62
43	-41.75	-38.39	-36.77	-35.00	-31.79	-26.81	-21.93	-18.67	-16.85	-15.22	-11.87
44	-42.72	-39.36	-37.73	-35.96	-32.74	-27.35	-22.77	-19.55	-17.78	-16.15	-12.79
45	-43.83	-40.28	-38.57	-36.70	-33.30	-28.04	-22.77	-19.38	-17.51	-15.79	-12.24
46	-43.75	-40.26	-38.57	-36.73	-33.39	-28.21	-22.63	-19.69	-17.85	-16.16	-12.67
47	-42.62	-39.46	-37.93	-36.27	-33.25	-28.56	-23.93	-20.85	-19.19	-17.85	-14.50
48	-42.68	-39.62	-38.14	-36.53	-33.60	-29.06	-24.57	-21.60	-19.98	-18.50	-15.45
49	-43.70	-40.57	-39.05	-37.39	-34.39	-29.74	-25.09	-22.08	-20.43	-18.91	-15.77
50	-46.98	-43.26	-41.46	-39.51	-35.95	-30.44	-24.53	-21.37	-19.41	-17.82	-13.90
51	-49.91	-45.83	-43.90	-41.81	-39.00	-32.10	-26.19	-22.39	-20.29	-18.36	-14.39
52	-55.45	-50.61	-48.27	-45.72	-41.10	-33.92	-26.79	-22.11	-19.56	-17.22	-12.39
[illegible]	-55.63	-50.89	-49.60	-46.10	-41.57	-34.54	-27.51	-22.97	-20.48	-18.18	-13.45
54	-57.47	-52.60	-50.24	-47.67	-43.01	-35.78	-28.55	-23.89	-24.33	-18.97	-14.10
55	-58.97	-54.17	-51.84	-49.30	-44.70	-37.57	-30.43	-25.83	-23.30	-20.97	-16.16
56	-64.25	-58.81	-56.17	-53.30	-48.09	-40.02	-31.54	-26.73	-23.86	-21.22	-15.78
57	-70.62	-64.44	-61.45	-58.19	-52.27	-43.10	-33.93	-28.01	-24.75	-21.76	-15.58
58	-82.35	-74.16	-71.10	-65.75	-57.84	-45.59	-33.33	-25.43	-21.68	-17.68	-8.82
59	-90.64	-80.87	-75.84	-70.58	-61.04	-46.24	-31.43	-21.89	-16.63	-11.80	-1.83
60	-78.66	-69.55	-66.11	-62.37	-55.57	-45.02	-34.48	-27.67	-22.93	-20.45	-13.38
61	-73.47	-66.90	-63.66	-60.14	-53.75	-43.84	-33.93	-27.54	-24.02	-20.79	-14.11
62	-72.24	-65.60	-62.39	-58.90	-52.55	-42.71	-32.87	-26.52	-22.03	-19.81	-13.18
63	-70.64	-64.10	-60.93	-57.48	-51.22	-41.51	-31.79	-25.53	-22.08	-18.91	-12.37
64	-68.24	-62.75	-59.60	-56.17	-49.95	-40.31	-30.66	-24.44	-21.01	-17.67	-11.37
65	-67.85	-61.39	-58.27	-54.88	-48.68	-39.10	-29.52	-23.34	-19.94	-16.41	-10.36
66	-66.44	-60.04	-56.95	-53.58	-47.46	-37.97	-28.48	-22.36	-19.00	-15.90	-9.11
67	-65.05	-58.70	-55.63	-52.28	-46.20	-36.77	-27.34	-21.28	-17.91	-14.84	-8.49
68	-63.48	-57.21	-54.18	-50.87	-44.87	-35.57	-26.36	-20.26	-16.96	-13.92	-7.68
69	-62.18	-55.95	-52.93	-49.65	-43.68	-34.44	-25.18	-19.22	-15.94	-12.92	-6.69
70	-60.81	-54.62	-51.62	-48.35	-42.43	-33.23	-24.04	-18.11	-13.85	-11.85	-5.66

TABLE 4.8. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.250	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.19	-2.39	-2.01	-1.59	-.02	.34	1.69	2.31	2.73	3.11	3.91
1	-9.39	-7.92	-6.76	-5.92	-4.03	-1.10	1.89	3.73	4.77	6.72	7.70
2	-9.80	-7.70	-6.64	-5.49	-3.41	-.17	3.07	5.15	6.36	7.36	[illegible]
3	-9.15	-6.71	-5.53	-4.25	-1.92	1.70	5.31	7.54	8.93	10.11	[illegible]
4	-9.62	-6.69	-5.50	-4.03	-1.37	2.75	6.67	9.53	11.00	12.39	[illegible]
5	-11.99	-8.11	-6.45	-4.79	-1.59	3.41	7.30	11.56	13.31	14.93	18.2[illegible]
6	-13.16	-9.21	-7.31	-5.23	-1.96	4.38	10.22	13.99	16.00	17.97	21.90
7	-14.69	-10.05	-7.85	-5.46	-1.11	5.63	12.37	16.72	19.11	21.31	25.85
8	-15.29	-10.21	-7.77	-5.11	-.29	7.18	15.65	19.97	22.12	24.64	29.69
9	-14.55	-9.24	-6.69	-3.68	1.19	9.07	18.94	22.01	24.81	27.37	32.88
10	-11.79	-6.66	-4.20	-1.53	3.33	10.87	18.96	23.26	25.94	28.40	33.47
11	-12.72	-7.01	-4.45	-1.29	4.22	12.69	21.15	26.41	29.62	32.38	38.09
12	-14.07	-7.79	-4.75	-1.44	4.67	13.89	23.24	29.23	32.[illegible]	35.58	41.86
13	-13.46	-7.44	-4.54	-1.38	4.35	13.29	22.19	27.47	31.[illegible]	33.93	39.92
14	-11.39	-5.99	-3.41	-.59	4.52	12.46	20.38	25.50	28.31	30.90	36.29
15	-9.82	-5.42	-3.29	-.97	3.24	9.77	16.29	20.50	22.82	25.05	29.35
16	-9.43	-5.95	-4.27	-2.44	.86	4.04	11.19	1[illegible]	16.35	18.03	21.50
17	-10.65	-7.75	-6.34	[illegible]	-2.02	2.29	6.61	9.39	10.[illegible]	12.33	15.29
18	-10.9[illegible]	-8.65	-7.53	-6.32	-4.12	-.70	2.72	4.92	[illegible]	7.25	9.55
19	-11.29	-9.40	-8.48	-7.49	-5.68	-4.67	-.08	1.[illegible]	2.79	3.66	5.56
20	-11.74	-10.13	-9.35	-8.51	-6.97	-4.56	-2.20	-.66	.19	.97	2.57
21	-13.06	-11.41	-10.62	-9.76	-8.19	-5.76	-3.34	-1.23	-.91	-.12	1.52
22	-14.50	-12.65	-12.06	-11.20	-9.63	-7.19	-4.76	-3.4[illegible]	-2.36	-1.53	-.11
23	-15.19	-13.61	-12.85	-12.02	-10.51	-8.17	-5.89	-4.33	-3.50	-2.79	-1.16
24	-15.7[illegible]	-14.21	-13.46	-12.64	-11.16	-8.86	-6.50	-5.08	-4.26	-3.51	-1.96
25	-16.74	-15.20	-14.43	-13.60	-12.08	-9.73	-7.38	-5.64	-5.03	-4.26	-2.60
26	-17.93	-15.80	-15.02	-14.16	-12.61	-10.26	-7.79	-6.43	-5.36	[illegible]	-2.77
27	-18.72	-16.91	-16.04	-15.09	-13.36	-10.68	-8.00	-6.47	-5.32	[illegible]	-2.54
28	-21.70	-19.47	-1[illegible]	-17.22	-15.10	-11.79	-8.89	-6.[illegible]	-5.19	-4.12	-1.[illegible]
29	-21.35	-19.26	-1[illegible]	-17.14	-1[illegible]	-12.[illegible]	-8.51	[illegible]	-5.80	-4.78	-2.69
30	-21.48	-19.91	-1[illegible].40	-17.31	-15.32	-12.24	-9.16	-7.18	-6.08	-5.08	-3.00
31	-22.57	-20.23	-1[illegible].17	-17.5[illegible]	-15.77	-12.37	-8.97	[illegible].77	-5.[illegible]	-4.[illegible]	-2.27
32	-23.03	-20.63	-19.47	-18.20	-1[illegible].91	-12.34	-7.78	-6.45	-5.22	-4.[illegible]	-1.66
33	-23.86	-21.24	-19.[illegible]	-18.6[illegible]	-16.09	-12.21	-6.3[illegible]	-5.82	[illegible]	-3.[illegible]	-.56
34	-24.45	-21.71	-20.28	-18.94	-16.31	-12.24	-6.17	-5.54	-4.29	-2.77	-.02
35	-24.15	-21.62	-20.27	-19.02	-16.55	-12.72	-6.51	-6.4[illegible]	-5.[illegible]	-3.85	-1.28
36	-26.30	-23.42	-22.02	-20.50	-17.75	-13.47	-9.19	-6.43	-4.31	-3.[illegible]	-.63
37	-28.91	-25.[illegible]	-24.22	-22.55	-19.5[illegible]	-14.64	-10.14	-7.17	-5.45	-3.92	-.76
38	-30.73	-27.46	-25.35	-24.10	-20.92	-15.38	-11.05	-7.36	-6.11	-4.5[illegible]	-1.[illegible]
39	-31.81	-28.47	-26.85	-25.09	-21.88	-16.52	-11.55	-8.75	-5.[illegible]	-5.37	-2.[illegible]
40	-33.17	-29.62	-27.50	-26.04	-22.64	-17.38	-12.12	-3.73	-6.66	-5.15	-1.00
41	-34.64	-31.03	-29.29	-27.39	-23.94	-15.[illegible]	-13.25	-9.50	-7.90	-6.10	-2.56
42	-37.47	-33.66	-32.62	-29.92	-26.18	-20.54	-14.63	-11.25	-9.25	-7.41	-3.51
43	-40.42	-36.52	-34.45	-32.19	-28.02	-21.71	-15.74	-11.13	-8.97	-6.89	-2.60
44	-43.55	-38.79	-36.43	-33.98	-29.43	-22.37	-15.21	-10.76	-8.26	-5.95	-1.20
45	-44.58	-39.64	-37.24	-34.64	-29.91	-22.57	-15.24	-10.51	-7.91	-5.51	-.57
46	-45.74	-40.63	-38.15	-35.46	-30.56	-22.98	-15.19	-10.50	-7.80	-5.33	-.2[illegible]
47	-44.45	-39.61	-37.27	-34.77	-30.10	-22.93	-15.36	-11.[illegible]	-8.59	-6.24	-1.9[illegible]
48	-44.12	-39.30	-36.97	-34.43	-29.82	-22.67	-15.57	-10.91	-8.37	-6.04	-1.22
49	-44.18	-39.33	-36.99	-34.43	-29.79	-22.55	-15.4[illegible]	-10.76	-8.20	-5.86	-1.01
50	-46.69	-41.25	-38.61	-35.74	-30.54	-22.46	-14.38	-9.18	-6.31	-3.67	1.37
51	-49.37	-43.28	-40.33	-37.12	-31.28	-22.25	-13.[illegible]1	-7.20	-4.17	-1.24	[illegible]
52	-53.42	-46.62	-43.32	-39.73	-33.22	-23.12	-13.12	-6.50	-2.91	.30	7.19
53	-58.66	-49.29	-45.72	-41.83	-34.78	-23.83	-12.69	-5.63	-1.24	1.63	9.00
54	-53.58	-50.90	-47.18	-43.13	-35.77	-24.38	-12.56	-5.60	-.55	2.17	9.85
55	-63.22	-54.83	-50.76	-46.34	-36.30	-25.84	-13.18	-5.[illegible]	-.92	3.15	11.54
56	-65.63	-56.79	-52.48	-47.78	-38.26	-26.05	-12.64	-4.32	.38	4.69	13.59
57	-67.69	-58.41	-53.[illegible]	-49.03	-40.14	-26.37	-12.[illegible]	-2.71	1.18	5.67	14.95
58	-66.45	-57.00	-52.43	-47.45	-39.41	-24.39	-10.37	-1.32	3.66	8.21	17.68
59	-74.30	-63.27	-59.07	-52.3[illegible]	-41.82	-25.59	-9.3[illegible]	1.12	4.[illegible]	12.18	23.12
60	-86.86	-73.28	-56.70	-59.59	-49.54	-26.37	-6.23	5.79	13.45	23.[illegible]	34.12
61	-74.62	-67.31	-58.12	-52.26	-41.61	-25.1[illegible]	-4.59	7.05	7.91	13.7[illegible]	24.42
62	-69.95	-59.[illegible]	-54.58	-49.12	-39.20	-23.83	-4.46	1.46	6.92	11.93	22.23
63	-65.16	-55.58	-5[illegible].94	-45.89	-36.71	-22.49	-4.1[illegible]	.91	5.97	1[illegible].81	20.19
64	-60.81	-51.92	-47.61	-42.93	-34.41	-21.21	-6.01	.50	5.19	9.[illegible]	18.39
65	-56.79	-48.20	-44.24	-39.97	-3[illegible].09	-19.94	-7.79	.04	4.[illegible]	8.32	16.51
66	-52.03	-44.52	-40.69	-36.93	-29.74	-18.60	-7.45	-.26	3.69	7.3[illegible]	14.3[illegible]
67	-47.93	-41.05	-37.73	-34.1[illegible]	-27.52	-17.32	-7.[illegible]2	-.55	3.08	6.[illegible]1	13.20
68	-43.96	-37.88	-34.63	-31.32	-25.31	-15.94	-6.65	-.64	2.67	5.12	12.00
69	-40.36	-34.60	-31.81	-28.77	-23.26	-14.71	-6.[illegible]	-.64	2.39	5.1[illegible]	10.3[illegible]
70	-37.15	-31.83	-29.25	-26.44	-21.34	-13.44	-5.53	-.43	2.38	4.96	10.21

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 4.1 VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.289	5.000	15.866	50.000	84.100	95.000	97.729	99.000	99.865
0	-3.49	-2.96	-2.51	-2.02	-1.12	.29	1.61	2.58	2.99	3.99	4.36
1	-10.49	-6.91	-7.41	-6.31	-4.32	-1.29	1.85	3.14	4.93	5.94	8.01
2	-11.94	-9.34	-8.69	-6.72	-4.23	-1.38	3.47	5.95	7.32	8.50	11.17
3	-13.98	-11.97	-8.82	-7.23	-3.78	1.20	6.30	9.55	1.34	12.98	16.38
4	-14.94	-12.21	-1[illegible]	-3.81	-3.84	2.97	5.79	12.84	15.10	17.16	21.41
5	-16.35	-13.50	-11.15	-6.66	-3.96	3.29	10.93	15.07	1[illegible]	19.98	24.82
6	-21.32	-15.65	-12.90	[illegible]	-4.47	3.97	12.40	17.84	20.83	23.59	29.27
7	-27.49	-17.89	-14.62	-11.12	-4.76	5.13	15.30	21.35	24.06	28.07	34.72
8	-28.77	-21.67	-17.67	-12.92	-5.37	6.32	13.[illegible]	25.56	29.71	[illegible]	41.41
9	-33.76	-23.63	-19.21	-14.93	-4.66	7.88	21.53	30.17	34.98	[illegible]	48.53
10	-35.49	-25.47	-20.54	-15.18	-5.[illegible]	9.6[illegible]	24.77	34.51	39.87	[illegible]	54.97
11	-37.02	-26.[illegible]7	-20.75	[illegible]	-4.51	11.75	28.00	38.48	44.25	47.84	60.51
12	-33.34	-27.62	-17.72	-12.17	[illegible]	13.[illegible]	29.16	39.24	44.79	49.88	60.41
13	-28.08	-1[illegible].56	-13.9[illegible]	[illegible]	.19	14.[illegible]	28.48	37.57	42.58	47.19	56.72
14	-21.23	-1[illegible]	-9.74	-5.31	1.27	13.[illegible]	24.58	31.96	36.63	39.74	47.48
15	-17.33	-11.[illegible]	-8.65	-4.75	1.23	12.5[illegible]	19.79	25.27	29.67	32.10	38.38
16	-5.18	-10.[illegible]	-7.59	-4.89	[illegible]	[illegible]	15.21	20.[illegible]	23.[illegible]	26.28	35.40
17	-12.31	-9.37	-7.45	-5.38	-1.61	4.29	10.09	13.47	15.9[illegible]	17.86	21.79
18	-12.33	-[illegible]	-7.7[illegible]	-4.25	-3.07	1.56	4.1[illegible]	9.[illegible]	10.82	12.34	15.46
19	-[illegible].07	-9.[illegible]	-9.15	-4.[illegible]	-[illegible].13	-.16	3.82	6.38	7.29	9.00	11.74
20	-[illegible].93	-[illegible].59	-[illegible]	-2.20	[illegible]	-1.45	2.09	-.30	5.54	6.40	9.03
21	-12.97	-1[illegible].19	-7.18	-3.26	[illegible]	-2.[illegible]	1.07	3.25	4.96	5.54	7.84
22	-12.[illegible]	-1[illegible]	-[illegible].47	-2.[illegible]	[illegible]	-3.22	-.05	[illegible]	3.12	4.15	6.29
23	-13.73	-11.53	-10.[illegible]	-9.25	[illegible]	-3.75	-.41	1.74	2.93	4.02	6.28
24	-12.93	-11.75	-10.69	-9.5[illegible]	[illegible]	-4.21	-.73	1.11	2.26	3.32	5.43
25	-1[illegible]	-1[illegible]	-11.29	-10.38	-7.[illegible]	-4.50	-1.10	1.09	2.29	3.[illegible]	5.69
26	-15.41	-13.31	-12.[illegible]	-8.39	-8.39	-4.69	-.98	1.41	2.73	3.93	6.43
27	-16.48	-15.03	-12.75	-11.35	-8.42	-5.87	-.27	1.57	2.96	4.24	6.89
28	-17.90	-15.05	-13.46	-12.[illegible]	-9.93	-5.19	-.95	1.78	3.28	4.67	7.82
29	-19.42	-16.25	-14.72	-13.05	-10.01	-5.31	-.61	2.43	4.10	5.63	8.80
30	-20.03	-16.67	-15.03	-13.26	-10.09	-5.09	-.[illegible]	3.18	4.95	6.58	9.95
31	-20.75	-17.18	-15.95	-13.58	-10.16	-4.87	[illegible]	3.83	5.71	7.44	11.00
32	-20.90	-16.71	-14.92	-12.98	-9.45	-3.98	[illegible]	4.43	6.97	8.[illegible]	12.44
33	-20.62	-16.68	-14.77	-12.69	-8.92	-3.04	2.[illegible]	4.66	8.69	10.[illegible]	14.49
34	-19.78	-15.78	-13.84	-11.79	-7.91	-1.98	2.[illegible]	5.77	9.88	11.[illegible]	15.81
35	-19.38	-15.41	-13.49	-11.50	-7.46	-1.71	4.1[illegible]	7.98	10.07	12.[illegible]	15.96
36	-20.91	-16.35	-14.38	-12.29	-8.35	-2.32	3.71	7.49	9.74	1[illegible].70	15.76
37	-22.51	-18.07	-15.92	-13.58	-9.32	-2.73	3.84	8.12	10.96	12.[illegible]	17.05
38	-23.77	-19.20	-16.98	-14.57	-10.20	-3.41	3.37	7.76	10.14	12.[illegible]	16.9[illegible]
39	-26.94	-21.78	-19.29	-16.57	-11.69	-3.49	3.66	8.60	11.31	13.81	18.5[illegible]
40	-26.77	-21.61	-19.11	-16.39	-11.95	-3.79	3.87	8.81	11.53	14.03	19.20
41	-28.40	-22.95	-20.31	-17.49	-12.22	-4.13	3.96	9.18	12.05	14.69	20.19
42	-28.86	-22.75	-20.18	-17.38	-12.30	-4.41	3.47	8.56	11.34	13.92	19.29
43	-26.81	-21.87	-19.49	-16.88	-12.14	-4.69	2.49	7.21	9.81	12.20	17.13
44	-27.26	-22.34	-19.95	-17.36	-12.66	-5.35	1.96	6.67	9.26	11.46	16.57
45	-29.93	-24.42	-21.74	-18.84	-13.56	-5.37	2.82	8.10	11.01	13.68	19.20
46	-31.06	-25.18	-22.33	-19.53	-13.60	-4.87	3.86	9.49	12.59	15.44	21.32
47	-31.13	-24.96	-21.98	-18.73	-12.83	-3.68	5.47	11.36	14.61	17.60	23.76
48	-32.40	-25.74	-22.51	-19.00	-12.62	-2.73	7.16	13.43	17.05	20.27	26.43
49	-34.77	-27.37	-23.78	-19.88	-12.79	-1.80	9.19	16.28	20.18	23.77	31.18
50	-36.02	-28.21	-24.43	-20.32	-12.84	-1.26	10.33	17.81	21.92	25.70	33.61
51	-35.09	-27.38	-23.65	-19.69	-12.21	-.77	10.60	18.06	22.12	25.85	33.56
52	-34.36	-26.71	-23.01	-18.98	-11.66	-.32	11.02	18.33	22.36	26.06	33.70
53	-32.70	-25.12	-21.44	-17.45	-10.19	1.07	12.33	19.59	23.59	27.26	34.85
54	-30.90	-23.42	-19.79	-16.04	-8.67	2.44	13.56	20.73	24.67	28.30	35.79
55	-32.19	-24.22	-20.39	-16.22	-8.64	3.11	14.84	22.93	26.61	30.44	38.35
56	-35.69	-27.04	-22.85	-18.29	-10.00	2.84	15.66	23.96	28.52	32.71	41.36
57	-35.65	-26.97	-22.76	-18.19	-9.88	3.00	15.80	24.19	28.77	32.97	41.66
58	-36.10	-26.66	-22.69	-17.11	-8.87	5.64	17.06	26.90	33.97	38.64	47.99
59	-32.90	-23.37	-18.76	-13.79	-4.63	9.61	23.69	32.76	37.78	42.39	51.91
60	-37.60	-26.77	-21.52	-15.81	-5.74	10.64	24.73	37.10	42.81	48.85	58.09
61	-39.46	-24.45	-19.40	-14.32	-4.74	10.11	29.97	34.56	39.82	44.67	54.60
62	-33.80	-24.13	-19.40	-14.26	-4.93	9.65	29.02	33.24	38.60	43.22	52.77
63	-33.93	-23.91	-19.29	-14.27	-5.16	8.98	23.12	32.23	37.25	41.87	51.39
64	-32.85	-23.69	-19.10	-14.21	-5.39	8.41	22.17	31.04	35.93	40.41	49.63
65	-32.21	-23.21	-18.85	-14.11	-5.80	7.85	21.20	29.81	34.56	38.91	47.98
66	-31.63	-22.91	-18.60	-14.09	-5.74	7.21	20.46	28.51	33.11	37.33	45.86
67	-31.04	-22.69	-18.49	-14.03	-5.92	6.65	19.21	27.32	31.70	35.88	44.35
68	-30.61	-22.37	-18.30	-14.04	-6.15	6.08	18.31	26.20	30.54	34.63	42.78
69	-30.09	-22.05	-18.19	-13.98	-6.34	5.52	17.37	25.01	29.22	33.08	41.07
70	-29.40	-21.68	-17.95	-13.88	-6.56	4.95	16.40	23.78	27.85	31.58	39.30

TABLE 4.10. VANDENBERG HEAD- AND TAILWIND COMPONENTS

48-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-9.99	-3.81	-3.36	-2.66	-1.58	.89	1.77	2.85	3.49	3.99	5.12
1	-13.83	-11.09	-9.69	-8.23	-5.56	-1.43	2.70	5.37	6.89	8.19	10.97
2	-15.12	-11.93	-10.39	-8.71	-5.66	-.93	3.80	6.85	8.53	10.00	13.26
3	-18.93	-14.29	-12.29	-10.12	-6.19	-.08	6.03	9.97	12.19	14.13	18.25
4	-24.66	-18.92	-16.19	-13.12	-7.63	.88	9.38	14.67	17.89	20.67	26.98
5	-27.11	-20.58	-17.91	-13.97	-7.71	1.99	11.70	17.96	21.90	24.67	31.10
6	-31.09	-23.93	-19.74	-15.73	-8.99	2.86	14.17	21.95	25.97	29.15	36.77
7	-35.60	-26.76	-22.98	-17.82	-9.35	3.77	16.89	25.35	30.01	34.30	43.14
8	-38.29	-30.19	-25.25	-19.93	-10.26	4.73	19.74	29.39	35.71	39.60	49.78
9	-44.10	-32.98	-27.97	-21.57	-10.85	5.77	22.39	33.11	39.01	44.44	55.64
10	-45.87	-34.09	-28.32	-22.08	-10.76	6.79	24.39	35.66	41.89	47.62	59.44
11	-45.30	-33.29	-27.47	-21.13	-9.64	8.28	26.03	37.53	43.86	49.68	61.69
12	-41.89	-30.32	-24.73	-18.66	-7.62	9.49	26.66	37.64	43.71	49.29	60.82
13	-34.79	-24.77	-19.93	-14.65	-5.07	9.79	25.65	34.24	39.51	44.36	54.37
14	-29.39	-20.62	-16.38	-11.75	-3.36	9.46	22.60	31.67	33.69	39.94	48.71
15	-23.02	-15.89	-12.93	-8.67	-1.85	8.79	19.33	26.15	29.91	33.37	40.50
16	-18.32	-12.59	-9.81	-6.79	-1.30	7.21	15.72	21.41	24.29	27.01	32.75
17	-14.82	-10.31	-8.13	-5.75	-1.44	5.25	11.94	16.26	18.63	20.82	25.33
18	-12.49	-9.11	-7.38	-5.49	-2.06	3.25	8.57	11.99	13.88	15.62	19.20
19	-12.21	-9.11	-7.60	-5.97	-3.00	1.40	6.20	9.17	10.80	12.30	15.40
20	-12.91	-9.45	-8.34	-6.75	-3.82	.72	5.26	8.19	9.81	11.29	14.35
21	-12.73	-9.82	-8.90	-6.86	-4.06	.27	4.80	7.40	8.93	10.35	13.27
22	-12.37	-9.52	-8.19	-6.69	-3.90	.33	4.57	7.30	8.80	10.19	13.09
23	-12.03	-9.32	-7.86	-6.38	-3.69	.49	4.66	7.35	8.89	10.20	13.01
24	-12.18	-9.29	-7.81	-6.26	-3.49	.93	5.30	8.12	9.68	11.10	14.05
25	-12.33	-9.26	-7.76	-6.19	-3.19	1.38	5.95	8.90	10.54	12.01	15.09
26	-13.80	-10.22	-8.99	-6.61	-3.18	2.12	7.43	10.85	12.73	14.96	18.04
27	-14.91	-10.92	-8.99	-6.69	-3.07	2.85	8.77	12.59	14.69	16.62	20.61
28	-14.92	-10.23	-8.21	-6.00	-1.99	4.22	10.49	14.56	16.65	18.68	22.87
29	-13.89	-9.70	-7.68	-5.47	-1.46	4.75	10.96	14.96	17.17	19.20	23.38
30	-13.93	-9.55	-7.43	-5.12	-.93	5.57	12.07	16.27	18.50	20.70	25.00
31	-15.12	-10.17	-7.78	-5.17	-.43	6.41	14.26	18.99	21.59	23.99	28.93
32	-15.26	-9.85	-7.24	-4.39	.77	8.79	16.80	21.94	24.81	27.42	32.82
33	-15.81	-9.85	-6.96	-3.81	1.98	10.74	19.62	25.33	28.48	31.37	37.33
34	-15.93	-9.31	-6.11	-2.62	3.72	13.59	23.36	29.69	33.18	36.38	43.80
35	-14.92	-7.99	-4.63	-.97	5.66	15.94	26.25	32.89	36.54	39.98	46.83
36	-16.36	-8.83	-5.19	-1.22	5.99	17.16	28.34	35.54	39.51	43.15	50.68
37	-19.70	-11.34	-7.29	-2.88	5.12	17.59	29.95	37.94	42.37	46.42	54.78
38	-19.88	-11.31	-7.16	-2.64	5.57	18.29	31.01	39.22	43.74	47.89	56.46
39	-19.59	-10.92	-6.73	-2.16	6.13	19.00	31.86	40.15	44.72	48.91	57.58
40	-20.60	-11.66	-7.28	-2.52	6.12	19.52	32.92	41.56	46.32	50.69	59.72
41	-20.26	-11.20	-6.81	-2.05	6.64	20.08	33.63	42.20	46.98	51.36	60.42
42	-20.96	-11.68	-7.07	-2.19	6.82	20.70	34.58	43.54	48.47	53.00	62.35
43	-20.77	-11.46	-6.94	-2.03	6.88	20.71	34.59	43.46	48.37	52.88	62.20
44	-20.67	-10.96	-6.25	-1.13	8.18	22.60	37.03	46.33	51.45	56.16	65.48
45	-20.35	-10.21	-5.30	.09	9.74	24.79	39.84	49.66	54.27	59.08	[illegible]
46	-18.95	-8.72	-3.77	1.62	11.41	26.60	41.78	51.57	56.96	61.91	[illegible]
47	-18.23	-7.49	-2.58	2.97	13.86	28.71	44.36	54.45	60.00	65.11	76.35
48	-17.86	-6.97	-1.69	4.05	14.48	30.65	46.83	57.26	63.00	68.28	79.17
49	-15.49	-4.76	.93	6.07	16.36	32.28	48.20	58.47	64.13	69.32	80.65
50	-12.88	-2.41	2.64	8.18	18.28	33.79	49.28	59.31	64.83	69.98	80.37
51	-13.94	-3.07	2.28	7.94	18.37	34.63	50.69	61.11	66.85	72.13	83.81
52	-13.88	-2.92	2.39	8.16	18.85	35.92	51.18	61.67	67.45	72.75	83.71
53	-14.82	-2.77	2.68	8.61	19.38	36.68	52.74	63.55	69.48	74.93	86.18
54	-12.94	-1.80	3.61	9.49	20.18	36.75	53.32	64.01	69.89	75.30	86.46
55	-11.30	-.18	5.20	11.06	21.70	38.19	54.69	65.33	71.19	76.57	87.68
56	-10.20	.89	6.27	12.12	22.79	39.21	55.66	66.30	72.15	77.52	88.62
57	-13.07	-2.02	3.73	9.98	21.33	38.93	56.53	67.88	74.13	79.87	91.73
58	-15.63	-2.89	3.31	10.00	22.16	41.06	57.86	72.00	78.69	84.84	97.54
59	-8.13	3.92	9.76	16.11	27.64	45.63	63.42	74.95	81.30	87.14	99.19
60	-4.51	7.38	13.14	19.41	30.88	48.45	66.10	77.49	83.76	89.52	101.41
61	-1.07	9.65	14.84	20.99	32.75	46.67	62.58	72.85	78.58	83.69	94.41
62	-2.00	8.55	13.66	19.22	29.32	44.97	60.63	70.73	76.28	81.39	91.94
63	-3.10	7.38	12.34	17.82	27.77	43.20	58.64	68.59	74.07	79.11	89.58
64	-4.83	6.28	11.15	16.54	26.35	41.61	56.69	66.47	71.87	76.82	87.04
65	-5.96	5.01	9.89	15.21	24.85	39.81	54.77	64.41	69.73	74.61	84.68
66	-5.98	3.90	8.69	13.98	23.37	38.04	52.72	62.18	67.39	72.18	82.07
67	-6.93	2.79	7.49	12.62	21.92	36.35	50.77	60.07	65.28	69.98	79.62
68	-6.86	1.62	6.16	11.21	20.37	34.68	48.79	57.95	63.08	67.63	77.20
69	-9.81	.39	4.96	9.91	18.92	32.88	46.86	55.86	60.81	65.37	74.77
70	-10.14	-.88	3.61	8.49	17.36	31.11	44.86	53.73	58.61	63.18	72.37

TABLE 4.11. VANDENBERG HEAD- AND TAILWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.65	-4.39	-3.79	-3.13	-1.93	-.06	1.80	3.00	3.66	4.27	5.52
1	-16.21	-12.69	-10.91	-9.03	-5.62	-.32	4.28	8.39	10.28	12.00	15.57
2	-19.25	-14.72	-12.52	-10.18	-5.79	.93	7.65	12.00	14.39	16.58	21.12
3	-22.88	-17.20	-14.45	-11.46	-6.03	2.39	10.81	16.29	19.23	21.98	27.66
4	-25.92	-19.20	-15.94	-12.38	-5.95	4.03	14.01	20.45	24.00	27.26	33.90
5	-30.75	-22.59	-18.64	-14.39	-6.59	5.56	17.67	25.47	29.77	33.82	41.88
6	-38.78	-26.96	-22.20	-17.03	-7.63	6.94	21.52	30.92	36.09	40.85	50.66
7	-42.44	-31.83	-25.50	-19.98	-8.56	8.19	25.33	36.25	42.27	47.40	59.21
8	-48.21	-35.20	-28.90	-22.04	-9.59	9.72	29.02	41.47	48.33	54.63	67.64
9	-53.22	-38.78	-31.76	-24.17	-10.35	11.03	32.52	46.35	53.96	60.95	75.39
10	-58.01	-42.23	-34.59	-26.27	-11.17	12.25	35.68	50.78	59.10	66.74	82.52
11	-59.39	-42.20	-34.36	-25.83	-10.33	13.70	37.73	53.23	61.77	69.61	85.80
12	-53.23	-37.94	-30.53	-22.47	-7.83	14.88	37.58	52.22	60.28	67.69	82.99
13	-44.49	-31.16	-25.23	-17.23	-5.02	14.63	36.41	47.12	54.12	60.55	73.83
14	-35.22	-24.21	-18.88	-13.08	-2.54	13.80	30.14	40.68	46.48	51.82	62.82
15	-27.62	-18.76	-14.46	-9.73	-1.31	11.84	25.00	33.48	38.15	42.44	51.31
16	-21.55	-14.55	-11.16	-7.47	-.77	9.62	20.01	26.77	30.40	33.80	40.80
17	-17.19	-11.61	-8.90	-5.95	-.61	7.69	15.98	21.33	24.27	26.98	32.56
18	-14.97	-10.42	-8.21	-5.81	-1.45	5.30	12.06	16.42	18.82	21.02	25.57
19	-14.04	-10.10	-8.19	-6.12	-2.33	3.52	9.38	13.15	15.23	17.14	21.03
20	-14.82	-11.06	-9.23	-7.25	-3.64	1.95	7.50	11.15	13.13	14.96	18.73
21	-14.91	-11.29	-9.54	-7.64	-4.14	1.19	6.55	10.01	11.92	13.67	17.28
22	-16.44	-12.57	-10.69	-8.65	-4.94	.81	6.56	10.26	12.31	14.18	18.05
23	-16.83	-12.87	-10.96	-8.87	-5.09	.78	6.66	10.44	12.53	14.44	18.40
24	-17.29	-13.12	-11.10	-8.90	-4.91	1.24	7.47	11.46	13.66	15.68	19.88
25	-18.93	-14.27	-12.01	-9.56	-5.09	1.42	8.74	13.20	15.66	17.92	22.58
26	-20.84	-15.55	-12.99	-10.20	-5.14	2.72	10.57	15.65	18.42	20.98	26.27
27	-23.45	-17.36	-14.42	-11.28	-5.34	3.65	12.68	18.51	21.71	24.66	30.74
28	-18.46	-12.39	-9.46	-6.26	-.45	8.46	17.67	23.30	26.60	29.62	35.69
29	-18.05	-11.78	-8.74	-5.49	.46	9.87	19.17	25.18	28.98	31.62	37.79
30	-19.09	-12.35	-9.08	-5.57	.93	10.95	20.94	27.92	30.96	34.25	40.99
31	-19.72	-12.56	-9.09	-5.22	1.65	12.17	22.79	29.65	33.42	36.89	44.88
32	-20.98	-13.89	-9.19	-5.00	2.60	14.37	26.18	33.74	37.97	41.82	49.74
33	-22.32	-13.66	-9.30	-4.67	3.73	16.76	29.79	38.17	42.81	47.84	56.84
34	-21.66	-13.88	-8.88	-3.30	5.48	18.88	32.36	41.85	46.84	50.23	59.32
35	-20.64	-10.99	-6.17	-1.34	7.79	21.96	36.11	46.23	51.26	55.88	65.92
36	-20.12	-10.23	-6.94	-.23	9.24	23.92	38.08	48.84	53.28	58.07	67.96
37	-18.11	-8.22	-4.73	1.78	11.25	25.93	40.40	50.87	54.28	58.07	69.94
38	-18.79	-8.35	-4.38	2.28	13.19	27.69	43.18	53.17	56.67	63.73	74.16
39	-19.98	-8.84	-4.51	2.31	12.88	29.27	45.84	56.23	62.05	67.17	78.95
40	-20.02	-8.68	-3.67	2.94	13.88	30.83	47.78	58.71	64.73	70.27	81.69
41	-19.97	-8.24	-3.56	3.62	14.85	32.28	49.84	60.89	67.87	72.75	84.48
42	-20.26	-8.27	-2.97	3.86	15.32	33.11	50.98	62.37	68.69	74.49	86.48
43	-18.59	-6.72	-.97	5.39	16.66	34.29	51.92	63.29	69.54	75.38	87.18
44	-18.21	-4.62	1.14	7.38	18.68	35.45	53.21	64.98	71.56	76.23	87.92
45	-16.31	-3.49	2.31	8.57	19.93	37.65	55.17	66.59	72.88	78.55	90.92
46	-16.27	-3.73	2.34	8.96	20.95	39.65	58.16	70.16	76.76	82.83	96.37
47	-17.76	-4.66	1.83	8.79	21.93	41.82	60.41	73.29	80.26	86.57	99.79
48	-18.71	-4.76	1.99	9.34	22.69	43.39	64.80	77.43	84.78	91.54	105.48
49	-19.24	-.77	5.75	12.86	26.74	46.72	65.72	78.62	86.72	92.29	105.71
50	-19.19	-.25	6.60	13.84	27.28	47.98	68.60	81.95	89.30	96.85	110.00
51	-13.67	.09	7.34	14.98	28.35	49.37	70.28	83.74	91.29	98.29	112.58
52	-12.95	1.36	8.29	16.03	29.62	50.70	72.00	85.69	93.23	100.16	114.47
53	-15.96	-.46	7.05	15.28	30.82	53.81	76.99	90.82	99.98	108.98	121.97
54	-12.84	2.37	9.36	16.96	30.79	52.12	73.51	87.38	94.98	101.87	116.28
55	-13.98	1.97	8.95	17.16	31.89	55.03	77.74	92.55	100.78	108.19	123.63
56	-12.99	2.24	9.62	17.65	32.23	54.05	77.46	92.84	100.07	107.45	122.69
57	-20.35	-3.57	4.54	13.90	29.46	59.37	79.27	95.33	109.17	112.38	129.80
58	-19.81	1.07	8.02	16.03	31.76	54.68	78.81	93.94	101.14	108.69	124.27
59	-22.51	-4.21	1.09	10.28	25.87	58.47	74.29	89.98	96.99	100.39	122.69
60	-26.57	-10.31	-2.28	6.34	22.00	46.39	70.68	86.29	94.86	103.79	119.15
61	-15.07	-1.62	4.98	11.99	24.86	44.83	69.98	77.67	84.76	91.28	104.73
62	-15.84	-1.93	4.92	11.33	23.88	43.35	62.81	76.30	82.27	88.62	101.73
63	-14.67	-1.94	4.28	10.98	23.84	41.93	60.48	72.94	79.44	85.82	98.83
64	-14.57	-2.22	3.77	10.28	22.11	40.46	58.79	70.61	77.13	83.11	95.47
65	-14.57	-2.53	2.28	9.84	21.17	39.83	56.98	68.92	74.77	80.68	92.83
66	-14.48	-2.78	2.84	9.84	20.35	37.62	54.94	66.18	72.36	78.02	89.72
67	-14.52	-3.19	2.37	8.34	19.26	36.13	53.82	63.98	69.98	75.41	86.78
68	-14.36	-3.33	2.01	7.89	18.36	34.72	51.87	61.62	67.43	72.77	83.78
69	-14.60	-3.09	1.36	7.82	17.48	33.22	49.17	59.54	64.11	78.31	81.08
70	-14.70	-4.24	.08	6.31	16.31	31.82	47.33	57.34	62.84	67.96	78.34

TABLE 4.12. VANDENBERG HEAD- AND TAILWIND COMPONENTS

46-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.03	-5.55	-4.63	-4.06	-2.60	-.45	1.75	3.16	3.90	4.66	6.14
1	-17.97	-14.08	-12.20	-10.15	-6.93	-.66	5.10	8.82	10.87	12.75	16.60
2	-21.37	-16.43	-14.04	-11.44	-6.72	.60	7.32	12.65	15.25	17.64	22.57
3	-25.20	-19.01	-16.01	-12.75	-6.83	2.36	11.55	17.47	20.34	23.84	29.83
4	-28.68	-22.12	-18.46	-14.47	-7.24	3.94	15.20	22.43	26.42	30.08	37.64
5	-30.19	-25.29	-20.58	-16.28	-7.76	5.46	18.68	27.20	31.89	36.21	45.11
6	-35.90	-29.44	-24.37	-18.86	-8.84	6.63	22.22	32.23	37.75	42.82	53.28
7	-46.35	-34.20	-28.29	-21.85	-10.19	7.91	26.01	37.69	44.13	50.03	62.22
8	-51.42	-37.77	-31.15	-23.96	-11.89	9.38	29.64	42.71	49.91	56.52	70.17
9	-55.60	-40.71	-33.50	-25.65	-11.[illegible]	10.71	32.62	47.07	54.82	62.13	77.03
10	-57.63	-41.94	-34.34	-26.07	-12.05	12.24	35.53	50.55	58.82	66.42	82.11
11	-54.38	-39.12	-32.72	-23.66	-5.07	13.59	36.25	50.86	58.90	66.30	81.56
12	-47.73	-33.80	-27.02	-19.64	-6.24	14.52	35.31	48.70	56.08	62.86	76.95
13	-39.62	-27.39	-21.46	-15.01	-3.38	14.66	33.62	44.78	51.10	57.10	69.33
14	-32.35	-21.87	-15.30	-11.27	-1.25	14.30	29.66	39.98	45.41	50.48	60.96
15	-26.64	-17.76	-12.45	-8.77	-.27	12.52	26.10	34.61	39.29	43.5[illegible]	52.48
16	-23.16	-15.53	-11.34	-7.81	-.51	10.52	22.15	29.45	33.47	37.17	44.50
17	-21.10	-14.91	-11.17	-7.69	-1.24	8.70	18.63	25.04	28.66	31.86	38.52
18	-19.33	-12.85	-10.24	-7.34	-2.09	6.05	14.19	19.44	22.33	24.98	30.47
19	-16.71	-12.17	-9.28	-7.53	-3.25	3.47	10.26	14.24	16.42	18.12	23.65
20	-16.78	-12.66	-10.65	-8.43	-4.54	1.58	7.70	11.54	13.82	15.82	19.94
21	-17.37	-13.47	-11.58	-8.52	-5.79	.00	5.79	9.52	11.68	13.47	17.37
22	-18.33	-14.34	-12.33	-10.85	-6.98	-.93	5.03	7.30	11.03	12.99	17.03
23	-20.06	-15.91	-13.50	-11.72	-7.75	-1.55	4.52	8.54	10.72	12.73	16.80
24	-20.61	-16.40	-14.37	-12.15	-8.12	-1.88	4.26	8.32	10.61	12.64	16.95
25	-22.08	-17.56	-15.28	-12.29	-6.67	-1.87	4.74	9.06	11.48	13.53	18.15
26	-24.33	-19.75	-17.24	-14.52	-3.55	-1.36	5.83	10.79	13.52	16.03	21.21
27	-29.10	-22.88	-19.87	-16.55	-10.63	-1.41	7.13	13.75	17.07	20.08	26.30
28	-30.74	-19.16	-16.97	-11.94	-4.18	7.11	18.94	26.46	29.69	33.37	40.98
29	-29.41	-20.72	-16.81	-12.34	-4.21	8.39	20.99	29.11	33.59	37.78	46.19
30	-33.63	-23.89	-19.18	-14.86	-4.73	9.71	24.14	33.47	38.42	43.12	53.08
31	-35.66	-25.16	-20.87	-14.59	-4.48	11.11	26.78	36.75	42.29	47.38	57.88
32	-35.29	-29.25	-18.91	-13.18	-2.59	13.83	30.20	40.75	46.56	51.91	62.93
33	-36.14	-23.38	-17.69	-11.49	-.24	17.38	34.66	45.98	52.18	57.79	69.54
34	-33.18	-21.81	-16.11	-8.78	2.[illegible]	21.83	39.18	50.76	57.17	63.87	76.29
35	-29.91	-17.63	-11.63	-5.80	6.08	25.22	43.04	55.45	61.98	67.97	80.36
36	-20.81	-13.62	-7.62	-1.89	10.77	29.17	47.54	59.62	65.76	71.76	82.15
37	-22.79	-10.29	-4.16	2.46	14.48	33.11	51.74	63.75	70.37	76.45	87.86
38	-21.34	-8.46	-2.21	4.59	16.78	36.07	55.24	67.57	74.32	80.48	91.56
39	-19.64	-6.58	-.15	6.84	19.66	39.36	58.74	71.67	78.66	85.07	96.37
40	-16.39	-3.22	3.15	10.88	22.47	42.19	61.74	74.38	81.23	87.46	100.74
41	-12.33	.58	6.72	13.48	26.77	44.81	63.86	76.19	82.91	89.12	101.96
42	-9.48	3.38	9.59	16.94	28.87	48.15	67.49	79.84	84.78	92.22	105.98
43	-8.31	5.16	11.68	18.78	31.67	51.66	71.66	84.54	91.03	98.16	111.02
44	-8.78	5.54	12.97	19.98	33.43	54.00	75.97	89.63	97.13	104.08	118.38
45	-7.46	6.99	14.08	21.02	35.48	56.00	78.43	93.29	99.91	106.92	121.39
46	-3.38	10.33	16.76	24.17	37.24	57.57	77.88	90.97	98.18	104.81	118.49
47	-3.04	10.80	17.62	24.95	38.24	58.91	79.54	92.00	100.21	106.98	120.06
48	-1.97	12.11	18.93	26.34	39.82	60.75	81.44	95.19	102.52	109.39	123.08
49	-2.01	12.83	19.13	26.05	40.87	62.61	84.36	98.37	104.89	113.18	127.03
50	-2.38	12.39	19.61	27.25	41.21	63.11	85.75	98.98	104.72	113.88	128.83
51	-2.31	12.48	19.64	27.43	41.60	63.63	86.48	99.63	107.93	114.87	129.37
52	.84	15.29	22.21	29.80	43.88	65.95	86.32	100.18	107.49	115.44	129.84
53	1.31	15.76	22.76	30.38	44.21	66.66	87.10	100.93	108.55	115.55	130.00
54	1.00	15.10	22.06	29.52	43.49	65.19	85.19	98.74	104.23	113.18	127.28
55	.42	14.64	21.41	28.86	42.39	63.38	84.36	97.98	105.36	112.19	126.33
56	-.84	13.31	21.26	28.84	42.52	63.92	85.26	99.08	104.57	113.63	127.88
57	-.16	13.99	20.86	28.37	41.68	62.92	83.96	97.51	104.98	111.64	126.81
58	-3.08	11.63	18.76	26.84	40.69	62.42	84.28	98.33	104.97	113.21	127.93
59	-3.42	11.20	18.38	26.28	40.37	62.40	84.41	98.60	106.41	113.69	128.42
60	6.63	20.11	24.69	32.84	46.89	66.97	87.15	100.19	107.36	113.88	127.96
61	6.25	19.50	24.93	32.91	46.69	66.37	84.96	97.63	104.01	111.83	129.20
62	5.34	18.91	24.79	31.62	46.12	63.88	82.80	96.18	102.74	108.58	121.66
63	4.89	17.84	23.31	30.13	42.62	61.73	80.94	93.33	100.16	106.42	119.37
64	2.91	15.72	21.93	28.68	40.78	59.98	78.98	91.29	98.80	104.30	117.81
65	1.64	14.30	20.47	27.18	39.37	58.37	77.17	89.36	96.87	102.23	114.97
66	.37	12.97	19.80	26.72	37.79	56.80	75.21	87.27	93.72	100.02	112.63
67	-1.14	11.43	17.81	24.13	36.16	54.60	73.45	85.47	92.89	98.18	110.7[illegible]
68	-2.73	9.78	15.49	22.93	34.90	52.24	71.63	83.50	90.89	96.15	108.64
69	-4.23	8.33	14.27	20.84	32.77	51.37	69.76	81.67	88.24	94.34	104.74
70	-5.72	6.82	12.56	19.11	31.02	47.40	67.93	79.87	84.96	92.08	104.72

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 5.1. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.12	-9.55	-8.31	-6.96	-4.50	-1.59	2.12	5.97	8.92	9.17	10.93
1	-18.26	-14.57	-12.78	-10.84	-7.38	-1.82	3.67	7.20	9.15	10.94	14.63
2	-22.91	-18.69	-16.69	-14.42	-10.38	-4.12	2.15	6.19	8.91	10.46	14.68
3	-27.45	-22.72	-20.43	-17.94	-13.41	-6.40	.62	5.14	7.63	9.92	14.65
4	-32.90	-26.95	-24.30	-21.43	-16.20	-8.10	-.80	5.22	8.10	10.74	16.28
5	-37.37	-31.15	-28.12	-24.84	-18.88	-9.63	-3.38	5.58	8.86	11.88	19.11
6	-41.79	-34.87	-31.52	-27.88	-21.24	-11.00	-4.74	5.88	9.62	12.87	19.78
7	-46.50	-38.87	-35.17	-31.15	-23.85	-12.52	-1.20	6.11	10.13	13.02	21.45
8	-52.20	-43.63	-39.48	-34.96	-26.75	-14.03	-1.30	6.90	11.42	15.57	24.14
9	-58.51	-48.94	-44.30	-39.25	-30.08	-15.87	-1.65	7.51	12.54	17.20	26.78
10	-64.44	-53.95	-48.87	-43.34	-33.29	-17.72	-2.15	7.90	13.93	18.61	29.00
11	-69.40	-58.24	-52.86	-46.98	-36.31	-19.26	-3.22	7.95	13.33	19.73	29.88
12	-68.95	-58.18	-52.97	-47.29	-36.99	-21.01	-5.03	5.28	10.75	16.17	26.93
13	-59.11	-50.35	-46.10	-41.48	-33.09	-20.08	-7.07	1.32	5.94	10.18	18.95
14	-50.81	-43.57	-38.07	-36.26	-29.33	-18.59	-7.85	-.92	2.89	6.48	13.63
15	-43.13	-37.13	-34.22	-31.06	-25.32	-16.42	-7.52	-1.78	1.39	4.29	10.29
16	-36.85	-31.76	-29.30	-26.41	-21.74	-14.9	-6.64	-1.77	.91	3.38	8.47
17	-30.96	-26.69	-24.59	-22.26	-18.13	-11.71	-5.24	-1.15	1.12	3.22	7.54
18	-25.59	-21.93	-20.15	-18.22	-14.72	-9.28	-3.84	-.33	1.60	3.37	7.04
19	-21.77	-18.47	-16.87	-15.12	-11.96	-7.05	-2.14	1.02	2.77	4.37	7.68
20	-20.09	-16.69	-15.09	-13.29	-9.99	-4.94	.12	3.37	5.17	6.81	10.22
21	-19.02	-15.59	-13.85	-12.01	-8.68	-3.51	1.64	5.00	6.83	8.52	12.00
22	-17.91	-14.43	-12.75	-10.91	-7.58	-2.42	2.75	6.08	7.91	9.60	13.08
23	-16.37	-13.62	-12.06	-10.02	-7.23	-1.66	3.91	7.50	9.48	11.38	15.05
24	-15.77	-13.00	-11.79	-11.59	-7.60	-1.91	4.77	8.76	10.96	12.99	17.14
25	-21.88	-17.20	-14.94	-12.47	-7.99	-1.05	5.90	10.38	12.84	15.11	19.79
26	-23.84	-18.80	-16.36	-13.70	-8.87	-1.38	6.11	10.99	13.60	16.09	21.09
27	-24.17	-20.77	-18.16	-15.31	-10.15	-2.14	5.84	11.09	13.89	16.50	21.98
28	-29.91	-23.96	-20.58	-17.44	-11.75	-2.92	5.92	11.61	14.75	17.63	23.88
29	-30.86	-24.67	-21.68	-18.92	-12.50	-3.33	5.85	11.76	15.02	18.01	24.28
30	-31.68	-25.49	-22.92	-19.13	-13.15	-3.89	5.37	11.35	14.84	17.66	23.98
31	-31.63	-25.49	-22.52	-19.78	-13.90	-4.28	4.83	10.71	13.96	16.92	23.07
32	-32.93	-26.61	-23.54	-20.21	-14.15	-4.75	4.64	10.78	14.03	17.10	23.43
33	-32.70	-26.39	-23.34	-20.81	-13.98	-4.61	4.75	10.79	14.11	17.17	23.48
34	-35.52	-28.49	-25.37	-21.77	-15.22	-5.07	5.08	11.62	15.23	18.64	25.38
35	-42.25	-34.14	-30.21	-25.93	-18.14	-6.11	5.94	13.71	17.99	21.92	30.03
36	-47.98	-38.80	-34.46	-29.60	-20.90	-7.40	6.10	14.81	19.60	24.01	33.10
37	-55.27	-44.88	-39.85	-34.38	-24.44	-9.02	6.39	16.34	21.41	26.84	37.23
38	-63.01	-51.32	-45.64	-39.50	-28.31	-10.94	6.39	17.58	23.76	29.41	41.10
39	-69.01	-56.28	-50.12	-43.41	-31.23	-12.34	6.55	18.74	25.45	31.61	44.34
40	-72.92	-59.73	-53.34	-46.39	-33.74	-14.18	5.40	18.83	24.98	31.37	44.67
41	-80.38	-66.06	-59.12	-51.58	-37.87	-16.61	4.64	18.35	25.90	32.83	47.15
42	-87.41	-72.08	-64.65	-56.57	-41.89	-19.13	3.63	18.31	26.40	33.82	49.16
43	-93.24	-77.14	-69.34	-60.84	-45.45	-21.55	2.35	17.76	26.25	34.09	50.14
44	-95.85	-79.47	-71.54	-62.93	-47.27	-22.47	1.32	16.99	25.41	33.54	49.91
45	-96.74	-80.37	-72.44	-63.81	-48.13	-23.03	.48	16.15	24.78	32.71	47.49
46	-95.72	-79.95	-72.31	-64.00	-48.90	-25.50	-2.09	13.00	21.32	28.95	44.72
47	-93.47	-78.56	-71.34	-63.48	-49.28	-27.04	-4.92	9.35	17.21	24.44	39.35
48	-92.78	-78.19	-71.14	-63.52	-49.63	-28.09	-6.56	7.33	14.98	22.01	36.52
49	-93.62	-79.31	-72.38	-64.49	-51.14	-29.90	-8.66	5.89	12.58	19.61	33.02
50	-94.67	-80.42	-73.52	-66.00	-52.36	-31.21	-10.06	3.58	11.10	18.00	32.26
51	-95.38	-81.23	-74.42	-67.08	-53.93	-32.65	-11.77	1.70	9.12	15.93	30.08
52	-95.23	-81.91	-75.46	-68.44	-55.69	-35.92	-14.14	-3.39	3.63	10.08	23.46
53	-92.59	-80.04	-73.99	-67.38	-55.39	-36.79	-18.19	-6.19	.92	6.99	19.82
54	-91.64	-79.48	-73.59	-67.18	-55.54	-37.49	-19.43	-7.79	-1.38	4.61	16.67
55	-91.38	-79.18	-73.31	-66.93	-55.33	-37.35	-19.37	-7.77	-1.39	4.46	16.59
56	-90.80	-79.22	-73.62	-67.52	-56.45	-39.27	-22.10	-11.02	-4.92	.68	12.25
57	-91.82	-80.42	-74.98	-68.98	-57.99	-41.87	-24.16	-13.25	-7.24	-1.72	9.68
58	-95.58	-84.32	-78.86	-72.93	-62.14	-45.43	-28.71	-17.93	-11.99	-6.53	4.73
59	-100.91	-88.72	-82.81	-76.39	-64.72	-46.62	-28.63	-16.84	-10.43	-4.6	7.66
60	-104.00	-92.70	-86.26	-79.25	-66.52	-46.79	-27.08	-14.32	-7.31	-.87	12.43
61	-123.37	-106.85	-97.66	-88.54	-71.95	-46.24	-28.53	-3.96	5.18	13.84	30.09
62	-122.15	-104.97	-94.66	-87.41	-71.17	-45.68	-28.19	-3.75	5.38	15.62	30.74
63	-121.08	-105.09	-95.78	-88.88	-70.48	-45.18	-19.88	-1.67	5.92	13.67	30.72
64	-119.86	-102.96	-94.78	-85.87	-69.70	-44.62	-19.64	-3.37	5.84	13.72	30.63
65	-118.61	-101.88	-93.78	-84.96	-68.96	-44.12	-19.30	-3.28	5.63	13.63	30.36
66	-117.38	-100.80	-92.77	-84.04	-68.17	-43.66	-18.96	-3.08	5.66	13.69	30.27
67	-116.26	-99.80	-91.83	-83.16	-67.41	-42.99	-18.57	-2.82	5.85	13.82	30.27
68	-115.03	-98.72	-90.83	-82.23	-66.63	-42.43	-18.23	-2.62	5.97	13.87	30.17
69	-113.78	-97.65	-89.83	-81.33	-65.88	-41.93	-17.98	-2.54	5.97	13.70	29.93
70	-112.54	-96.57	-88.83	-80.48	-65.10	-41.37	-17.64	-2.33	6.09	13.85	29.85

TABLE 5.2. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

44-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.99	-18.36	-9.[illegible]	-7.69	-5.17	-1.27	2.64	5.16	6.55	7.82	10.96
1	-26.91	-16.59	-15.[illegible]	-12.28	-8.86	-1.63	9.80	8.95	11.23	13.32	17.85
2	-25.92	-20.62	-16.36	-15.67	-16.80	-3.29	9.39	9.28	11.88	14.35	19.44
3	-31.23	-25.97	-21.7[illegible]	-19.69	-16.20	-5.47	2.85	8.32	11.35	16.[illegible]	[illegible]
4	-36.34	-29.66	-26.76	-23.34	-17.17	-7.58	2.81	8.19	11.89	16.72	21.18
5	-40.69	-32.59	-31.15	-26.41	-19.83	-9.12	1.39	8.17	11.70	15.33	22.92
6	-44.47	-36.85	-32.16	-29.15	-21.85	-10.59	.77	8.86	12.08	15.77	23.39
7	-48.66	-38.61	-38.93	-32.29	-23.98	-12.18	.86	7.92	12.26	16.35	24.98
8	-53.59	-44.73	-40.93	-35.76	-27.28	-14.12	-.97	7.62	12.19	16.48	25.35
9	-57.47	-47.77	-45.7	-39.75	-30.66	-16.35	-1.86	7.85	12.57	17.37	26.78
10	-64.92	-54.83	-48.79	-43.51	-33.86	-18.19	-2.71	7.29	12.72	17.75	28.19
11	-65.99	-55.93	-56.93	-46.18	-36.28	-19.93	-3.58	6.34	12.73	18.38	26.12
12	-63.28	-63.82	-47.[illegible]	-49.25	-38.28	-21.16	-7.19	1.99	6.72	11.58	28.96
13	-69.94	-58.78	-54.[illegible]	-38.84	-39.43	-19.84	-8.44	[illegible]	[illegible]	6.83	19.63
14	-98.60	-91.39	-38.12	-49.01	-28.24	-18.36	-8.98	-2.16	1.91	9.63	11.29
15	-91.50	-35.85	[illegible]	-40.13	-30.71	-18.34	-7.85	[illegible]	[illegible]	[illegible]	[illegible]
16	-36.38	-36.29	-28.27	-26.88	-21.28	-14.97	-7.24	-2.79	-.25	2.09	6.76
17	-29.94	-25.92	-23.98	-21.84	-16.92	-12.88	-6.18	-2.28	-.15	1.86	5.81
18	-24.93	-21.48	-19.76	-17.94	-14.69	-9.66	-4.36	-1.85	.78	2.46	5.92
19	-20.37	-17.94	-16.97	-14.99	-11.42	-7.29	-2.87	-.69	1.51	2.99	5.88
20	-18.84	-16.18	-1.[illegible]	-12.29	-9.55	-5.31	-1.07	1.67	4.18	4.56	7.42
21	-16.96	-13.81	-12.[illegible]	-10.73	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	-17.00	-13.87	-12.36	-10.71	-3.72	-3.08	1.54	4.54	6.20	7.72	10.84
23	-16.91	-13.67	-12.18	-10.96	-2.38	-2.49	2.33	5.42	7.12	8.42	11.93
24	-18.87	-14.53	-12.51	-10.94	-3.54	-2.31	2.94	6.39	8.28	9.92	13.46
25	-19.49	-15.09	-14.77	-11.74	-8.89	-2.32	3.91	7.10	9.13	11.06	14.84
26	-22.11	-17.76	-15.68	-13.46	-9.25	-2.82	3.61	7.75	10.09	12.13	16.46
27	-20.39	-21.25	-16.[illegible]	-16.16	-11.23	-3.47	3.99	8.70	11.55	13.91	17.00
28	-20.62	-16.00	-13.76	-11.33	-6.98	-.85	6.81	11.23	13.67	15.91	20.58
29	-23.71	-18.42	-15.84	-13.07	-8.04	-.16	7.69	12.75	15.53	18.09	23.34
30	-25.83	-20.29	-17.6[illegible]	-14.68	-9.37	-1.19	7.09	12.39	15.31	18.00	23.54
31	-26.94	-20.61	-17.67	-15.01	-9.80	-1.73	6.34	11.55	14.92	17.05	22.60
32	-27.58	-21.92	-19.18	-16.19	-10.77	-2.37	6.03	11.45	14.44	17.18	22.84
33	-28.66	-24.00	-20.63	-19.37	-13.10	-3.37	6.36	10.63	14.08	18.25	26.81
34	-35.85	-29.07	-25.79	-22.22	-15.73	-5.67	9.38	10.87	14.44	17.72	24.50
35	-37.24	-30.63	-27.71	-24.32	-18.13	-8.63	.91	7.06	10.45	13.64	19.90
36	-41.79	-34.68	-31.23	-27.48	-20.66	-10.10	.47	7.29	11.04	14.49	21.60
37	-46.86	-39.63	-35.24	-31.11	-23.62	-12.01	-.40	7.09	11.21	15.00	22.02
38	-52.06	-43.48	-39.33	-34.71	-26.60	-13.87	-1.14	7.07	11.59	15.74	24.32
39	-56.22	-46.46	-43.27	-38.29	-30.21	-16.15	-2.09	6.90	11.77	16.96	26.03
40	-64.81	-54.30	-49.21	-43.47	-33.61	-18.01	-2.42	7.64	13.18	18.27	28.78
41	-67.33	-56.83	-51.37	-45.81	-36.27	-19.29	-3.21	7.12	13.02	18.09	28.98
42	-71.36	-59.96	-54.44	-48.43	-37.52	-20.61	-3.69	7.22	13.23	18.75	30.14
43	-74.40	-62.87	-57.29	-51.19	-40.03	-22.00	-4.57	5.80	11.66	17.20	28.09
44	-76.40	-64.72	-59.06	-52.90	-41.72	-24.37	-7.06	4.13	10.29	15.94	27.62
45	-77.27	-67.48	-61.88	-55.18	-43.83	-25.88	-5.47	4.18	10.88	16.44	28.04
46	-82.79	-70.12	-63.98	-57.30	-45.17	-26.35	-7.54	4.59	11.27	17.41	30.00
47	-85.25	-72.24	-65.93	-59.07	-46.61	-27.27	-7.97	4.49	11.36	17.66	30.50
48	-86.89	-73.06	-66.75	-59.89	-47.42	-28.07	-8.76	3.70	10.57	16.48	29.90
49	-87.40	-74.18	-67.78	-60.82	-48.17	-28.85	-8.94	3.71	10.60	17.00	30.27
50	-89.13	-75.60	-69.09	-61.91	-48.96	-28.87	-8.79	4.17	11.30	17.88	31.39
51	-89.64	-76.41	-69.91	-62.13	-49.60	-30.06	-8.63	4.41	11.69	18.14	31.82
52	-92.05	-78.01	-71.21	-63.81	-50.37	-29.54	-8.70	4.74	12.14	18.94	32.98
53	-93.30	-77.51	-70.00	-63.49	-50.21	-29.63	-9.04	4.23	11.64	18.84	30.12
54	-94.41	-79.96	-72.96	-65.34	-51.51	-30.04	-8.62	5.22	12.83	19.83	34.28
55	-93.82	-77.96	-70.90	-64.52	-50.06	-29.18	-8.38	5.16	12.58	19.39	33.96
56	-97.03	-81.96	-74.67	-66.73	-52.31	-29.96	-7.60	6.02	14.76	22.05	37.11
57	-94.68	-73.93	-67.38	-61.24	-50.08	-33.38	-15.48	-5.33	1.81	7.46	18.41
58	-79.58	-73.05	-65.44	-60.92	-51.30	-37.16	-23.02	-13.90	-8.28	-4.27	5.26
59	-81.39	-74.68	-66.97	-61.06	-52.06	-38.13	-23.72	-14.42	-9.38	-4.60	5.12
60	-82.61	-72.83	-68.13	-62.99	-53.69	-39.08	-24.56	-15.21	-10.05	-5.32	4.96
61	-98.18	-84.68	-78.18	-71.18	-58.06	-38.33	-16.40	-6.56	1.83	8.83	34.85
62	-98.42	-84.77	-78.15	-70.94	-57.89	-37.62	-17.35	-4.28	2.92	9.53	23.18
63	-98.95	-86.98	-78.80	-73.98	-63.48	-36.84	-4.30	-3.08	4.61	11.37	38.38
64	-99.33	-85.14	-78.27	-70.77	-57.28	-36.13	-15.07	-1.48	6.08	12.88	27.07
65	-99.81	-85.38	-78.38	-70.73	-56.89	-36.43	-13.96	-.12	7.68	14.58	28.46
66	-100.21	-85.58	-78.38	-70.63	-56.55	-34.72	-12.89	1.19	8.94	16.06	30.77
67	-100.71	-85.73	-78.48	-70.50	-56.26	-34.81	-11.78	2.56	10.46	17.71	32.40
68	-101.19	-85.98	-78.53	-70.50	-55.92	-33.38	-10.69	3.80	11.92	19.29	34.83
69	-101.48	-86.48	-78.47	-70.48	-56.58	-32.53	-9.60	5.54	13.64	21.00	36.96
70	-102.05	-86.28	-78.64	-70.33	-55.23	-31.82	-8.91	6.60	15.00	22.69	38.91

TABLE 5.3. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-14.86	-11.88	-10.58	-9.17	-6.61	-2.63	1.35	3.91	5.32	6.62	9.30
1	-18.45	-15.77	-13.98	-12.04	-8.51	-3.03	2.44	5.97	7.91	9.[illegible]	13.39
2	-24.24	-19.78	-17.63	-15.28	-11.01	-4.40	2.22	6.48	8.83	10.89	15.04
3	-30.00	-29.73	-22.18	-19.91	-14.36	-6.59	1.28	6.32	9.10	11.65	16.92
4	-34.48	-28.59	-25.73	-22.62	-16.97	-8.22	.54	6.19	9.30	12.15	18.05
5	-39.92	-33.19	-29.93	-26.39	-19.95	-9.96	.02	6.46	10.01	13.27	19.99
6	-44.35	-36.99	-33.42	-29.58	-22.49	-11.57	-.64	6.40	10.28	13.85	21.21
7	-49.27	-41.17	-37.25	-32.98	-25.22	-13.20	-1.18	6.58	10.89	14.77	22.87
8	-54.15	-45.30	-41.02	-36.36	-27.89	-14.76	-1.64	6.83	11.49	15.77	24.62
9	-58.25	-49.[illegible]	-44.23	-39.25	-30.22	-16.20	-2.18	6.85	11.83	16.60	25.85
10	-61.14	-51.41	-46.70	-41.57	-32.26	-17.62	-3.38	5.93	11.06	15.77	25.50
11	-61.25	-51.[illegible]	-47.31	-42.36	-33.37	-19.43	-5.49	3.50	8.45	12.99	22.39
12	-59.37	-50.54	-46.26	-41.61	-33.15	-20.05	-6.94	1.51	6.17	10.45	19.28
13	-53.61	-45.95	-42.24	-38.20	-30.86	-19.49	-8.11	-.78	3.26	6.97	14.64
14	-46.46	-40.07	-36.97	-33.60	-27.47	-17.97	-8.48	-2.35	1.02	4.12	10.52
15	-40.02	-34.[illegible]	-32.04	-29.20	-24.06	-16.08	-8.10	-2.95	-.12	2.88	7.86
16	-35.39	-30.62	-28.32	-25.80	-21.24	-14.16	-7.09	-2.52	-.01	2.30	7.07
17	-32.26	-27.01	-25.65	-23.30	-19.03	-12.41	-5.79	-1.52	.83	2.99	7.45
18	-26.60	-22.86	-21.05	-19.08	-15.50	-9.95	-4.40	-.82	1.15	2.96	6.30
19	-23.01	-19.55	-17.88	-16.06	-12.76	-7.63	-2.58	.80	2.62	4.28	7.75
20	-20.85	-17.56	-15.97	-14.28	-11.08	-6.20	-1.32	1.83	3.56	5.16	8.45
21	-20.19	-16.77	-15.12	-13.32	-10.05	-5.98	.09	3.36	5.16	6.82	10.23
22	-19.45	-15.95	-14.26	-12.42	-9.07	-3.88	1.31	4.65	6.50	8.19	11.69
23	-19.58	-16.03	-14.32	-12.45	-9.05	-3.78	1.48	4.88	6.75	8.47	12.32
24	-20.78	-16.98	-15.14	-13.18	-9.51	-3.87	1.77	5.41	7.41	9.25	13.05
25	-22.21	-18.15	-16.19	-14.09	-10.16	-4.14	1.89	5.78	7.92	9.88	13.90
26	-23.09	-18.97	-16.97	-14.80	-10.65	-4.74	1.38	5.32	7.50	9.49	13.61
27	-24.35	-20.12	-18.08	-15.85	-11.81	-5.58	.73	4.78	7.00	9.05	13.27
28	-30.35	-24.33	-21.41	-18.24	-12.87	-3.53	5.41	11.18	14.35	17.27	23.29
29	-33.83	-26.42	-23.31	-19.92	-12.91	-4.28	5.24	11.28	14.75	17.86	24.27
30	-36.71	-29.63	-27.20	-22.47	-13.63	-5.19	5.32	12.10	15.83	19.26	26.33
31	-38.05	-30.31	-28.58	-23.09	-15.87	-4.77	6.24	13.51	17.85	21.57	28.56
32	-40.15	-32.33	-27.55	-24.43	-16.95	-5.35	6.25	13.71	17.85	21.[illegible]	29.[illegible]
33	-44.21	-35.77	-31.69	-27.24	-19.16	-6.64	5.[illegible]	13.97	18.41	22.50	30.[illegible]
34	-43.37	-39.35	-34.39	-30.24	-21.67	-8.24	5.14	13.78	18.51	22.[illegible]	31.39
35	-50.86	-41.76	-37.24	-32.53	-22.80	-10.26	3.29	12.02	16.83	21.25	[illegible]
36	-54.64	-45.17	-40.53	-35.53	-22.[illegible]	-12.46	1.60	10.67	15.66	20.25	[illegible]
37	-59.83	-49.74	-44.65	-39.54	-23.28	-14.51	.17	9.74	15.[illegible]	19.93	30.02
38	-65.43	-54.62	-49.32	-43.57	-32.34	-17.29	-1.25	3.10	14.80	20.03	[illegible]
39	-70.24	-58.80	-53.26	-47.23	-36.78	-19.31	-2.23	8.62	14.65	20.15	1.63
40	-72.39	-61.35	-55.70	-43.57	-38.42	-21.13	-3.84	7.31	13.45	19.09	30.73
41	-74.36	-62.85	-57.13	-51.70	-39.72	-21.39	-3.56	7.23	14.26	20.08	32.09
42	-73.61	-61.86	-56.18	-49.99	-39.75	-21.32	-3.90	7.34	13.53	19.22	30.36
43	-69.44	-58.61	-53.26	-47.65	-38.28	-21.20	-5.32	5.72	10.96	16.21	27.04
44	-65.28	-55.38	-50.59	-45.37	-35.90	-21.21	-6.52	2.90	8.17	12.97	22.86
45	-63.37	-53.86	-49.26	-44.25	-35.15	-21.64	-6.[illegible]	2.17	7.17	11.78	21.28
46	-61.25	-52.25	-47.63	-43.15	-34.23	-21.17	-7.82	.90	5.54	9.90	18.90
47	-57.29	-49.07	-45.[illegible]	-40.76	-32.80	-20.76	-8.50	-.64	3.69	7.67	15.89
48	-56.63	-48.54	-44.62	-40.32	-32.61	-20.60	-8.59	-.84	3.42	7.34	15.43
49	-60.01	-51.30	-47.[illegible]	-42.88	-34.14	-21.21	-8.27	.07	4.66	8.88	17.60
50	-60.32	-51.70	-47.53	-42.93	-34.74	-21.95	-9.12	-.92	3.62	7.79	16.41
51	-60.30	-51.86	-47.80	-43.28	-35.30	-22.79	-10.29	-2.[illegible]	2.21	6.29	14.71
52	-60.81	-52.63	-48.66	-44.35	-37.51	-24.36	-12.22	-4.36	-.07	3.90	12.08
53	-64.01	-55.21	-51.10	-46.51	-38.18	-25.27	-12.35	-4.02	.57	4.78	13.48
54	-68.12	-58.23	-53.44	-48.23	-39.76	-24.09	-9.41	.08	5.27	10.06	19.94
55	-75.80	-64.16	-58.52	-52.35	-41.24	-23.27	-6.68	4.45	10.59	16.23	27.87
56	-32.50	-69.40	-63.05	-56.14	-43.60	-24.15	-4.71	7.44	14.74	21.03	34.19
57	-82.49	-69.83	-63.41	-56.63	-44.37	-25.23	-6.[illegible]	6.17	12.95	19.68	32.04
58	-91.02	-77.72	-71.28	-64.27	-51.55	-31.81	-12.08	.65	7.66	14.10	27.39
59	-93.57	-80.40	-74.02	-67.06	-54.47	-34.93	-15.28	-2.77	4.17	10.[illegible]	23.71
60	-35.29	-82.18	-75.83	-68.91	-56.[illegible]	-36.89	-17.43	-4.87	2.04	8.39	21.50
61	-87.21	-75.71	-71.19	-64.04	-53.[illegible]	-35.95	-18.92	-7.51	-1.04	3.73	15.23
62	-86.63	-75.09	-69.49	-63.41	-52.35	-35.21	-18.07	-7.02	-.93	4.05	16.21
63	-85.71	-74.17	-68.57	-62.45	-51.43	-34.29	-17.15	-6.10	-.02	5.50	17.12
64	-85.13	-73.54	-67.93	-61.82	-50.77	-33.52	-16.31	-5.21	.90	6.[illegible]	18.10
65	-84.14	-72.57	-66.56	-60.86	-49.78	-32.60	-15.42	-4.24	1.77	7.87	18.95
66	-83.22	-71.65	-65.04	-59.94	-48.96	-31.68	-14.50	-3.42	2.68	8.29	19.87
67	-82.64	-71.02	-64.40	-59.27	-48.15	-30.50	-13.15	-2.53	3.59	9.42	20.94
68	-81.72	-70.10	-64.43	-58.35	-47.23	-29.58	-12.73	-1.61	4.51	10.34	21.76
69	-81.07	-69.83	-63.78	-57.64	-46.49	-29.20	-11.51	-.76	5.38	11.02	22.67
70	-80.15	-68.51	-62.46	-56.72	-45.57	-28.28	-10.59	.10	6.30	11.94	23.59

TABLE 7.4. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-14.61	-12.02	-10.76	-9.40	-6.92	-3.88	.77	3.25	4.61	5.87	8.45
1	-19.00	-15.55	-13.87	-12.06	-8.75	-3.63	1.50	4.80	6.62	8.29	11.78
2	-23.23	-18.96	-16.89	-14.64	-10.54	-4.20	2.14	6.24	8.49	10.56	14.83
3	-28.03	-23.12	-20.75	-18.16	-13.46	-6.18	1.10	5.80	8.39	10.76	15.67
4	-30.38	-25.51	-25.66	-22.57	-16.94	-8.22	.50	6.12	9.22	12.06	17.94
5	-40.28	-33.35	-30.09	-26.58	-20.89	-10.49	-.09	6.35	9.90	13.17	19.80
6	-46.43	-38.69	-34.94	-30.85	-23.94	-11.94	-.45	6.97	11.05	14.80	22.55
7	-51.41	-42.91	-38.79	-34.36	-26.17	-13.55	-.93	7.21	11.70	15.81	24.32
8	-55.69	-46.57	-42.15	-37.35	-28.62	-15.08	-1.55	7.28	11.99	16.91	25.52
9	-57.34	-48.12	-43.65	-38.78	-29.86	-16.28	-2.59	6.29	11.10	15.56	24.78
10	-57.83	-48.74	-44.34	-39.56	-30.86	-17.38	-3.50	4.80	9.58	13.88	23.06
11	-57.36	-48.51	-44.22	-39.55	-31.28	-17.95	-4.01	3.66	8.33	12.61	21.46
12	-53.44	-45.40	-41.50	-37.28	-29.56	-17.62	-5.68	2.02	6.26	10.16	18.20
13	-45.47	-38.91	-35.73	-32.27	-25.29	-16.25	-6.51	-.23	3.23	6.41	12.97
14	-38.71	-33.71	-30.55	-27.65	-22.39	-14.23	-6.07	-.80	2.09	4.76	10.26
15	-32.63	-28.06	-25.85	-23.44	-19.06	-12.28	-5.49	-1.11	1.30	3.51	8.08
16	-27.65	-23.72	-21.82	-19.75	-15.99	-10.16	-4.33	-.57	1.50	3.40	7.33
17	-24.37	-20.70	-18.93	-16.99	-13.48	-8.04	-2.60	.91	2.85	4.62	8.28
18	-20.16	-16.94	-15.39	-13.69	-10.61	-5.84	-1.07	2.01	3.70	5.26	8.48
19	-16.55	-13.72	-12.35	-10.86	-8.15	-3.95	.25	2.96	4.45	5.82	8.65
20	-13.54	-11.08	-9.85	-8.60	-6.25	-2.61	1.03	3.38	4.67	5.86	8.32
21	-12.30	-9.93	-8.78	-7.53	-5.26	-1.74	1.78	4.05	5.30	6.45	8.83
22	-11.36	-9.05	-7.94	-6.72	-4.51	-1.08	2.35	4.56	5.77	6.89	9.20
23	-11.11	-8.78	-7.65	-6.42	-4.19	-.74	2.72	4.95	6.18	7.31	9.54
24	-12.17	-9.72	-8.53	-7.24	-4.89	-1.25	2.39	4.73	6.03	7.71	9.66
25	-13.39	-10.78	-9.52	-8.15	-5.65	-1.78	2.09	4.58	5.96	7.22	9.83
26	-14.96	-12.11	-10.72	-9.22	-6.49	-2.25	1.99	4.72	6.23	7.61	10.46
27	-18.98	-15.02	-13.69	-11.82	-8.81	-3.12	2.17	5.58	7.46	9.18	12.78
28	-14.91	-12.03	-10.53	-9.06	-6.28	-1.97	2.34	5.12	6.65	8.06	10.96
29	-17.50	-14.25	-12.67	-10.96	-7.85	-3.03	1.79	4.90	6.61	8.18	11.43
30	-20.54	-16.92	-15.16	-13.26	-9.79	-4.42	.96	4.42	6.33	8.08	11.70
31	-22.34	-18.86	-16.88	-14.94	-11.22	-5.46	.30	4.01	6.06	7.94	11.82
32	-24.73	-20.63	-18.65	-16.39	-12.57	-6.49	-.42	3.51	5.67	7.66	11.75
33	-25.80	-21.45	-19.49	-17.35	-13.47	-7.45	-1.44	2.45	4.58	6.55	10.66
34	-27.57	-23.34	-21.23	-19.09	-15.00	-8.72	-2.43	1.62	3.85	5.90	10.14
35	-29.58	-25.21	-23.09	-20.78	-16.61	-10.12	-3.63	.55	2.86	4.97	9.34
36	-30.99	-26.63	-24.52	-22.23	-18.06	-11.60	-5.14	-.97	1.33	3.44	7.79
37	-33.69	-29.88	-27.55	-25.02	-20.42	-13.28	-6.14	-1.54	1.00	3.33	8.14
38	-39.30	-34.23	-31.43	-28.50	-23.07	-14.66	-6.25	-.82	2.16	4.91	10.57
39	-44.31	-37.83	-34.68	-31.27	-25.06	-15.42	-5.81	.40	3.82	6.96	13.45
40	-47.76	-40.62	-37.16	-33.40	-26.57	-15.97	-5.38	1.49	5.21	8.67	15.81
41	-46.95	-39.80	-36.34	-32.57	-25.72	-15.11	-4.90	2.35	6.12	9.58	16.73
42	-45.15	-39.00	-34.54	-30.77	-23.92	-13.31	-2.70	4.15	7.92	11.38	18.53
43	-42.01	-35.26	-31.88	-28.43	-21.97	-11.95	-1.53	4.53	8.60	11.36	18.11
44	-39.23	-32.84	-29.74	-26.37	-20.26	-10.77	-1.28	4.84	8.21	11.30	17.59
45	-36.51	-30.52	-27.62	-24.40	-18.73	-9.85	-.96	4.76	7.93	10.83	16.82
46	-35.07	-29.23	-26.40	-23.32	-17.73	-9.06	-.39	5.23	8.28	11.11	16.95
47	-35.50	-29.39	-26.43	-23.21	-17.36	-8.29	.78	6.63	9.85	12.81	18.92
48	-34.42	-28.37	-25.44	-22.26	-16.47	-7.49	1.48	7.27	10.46	13.38	19.43
49	-35.10	-30.45	-27.23	-23.92	-17.38	-7.48	2.40	8.76	12.27	16.49	22.14
50	-39.48	-32.40	-29.38	-25.24	-19.47	-7.96	2.55	9.32	13.05	16.48	23.56
51	-38.48	-31.65	-28.36	-24.78	-18.28	-8.20	1.88	8.38	11.96	15.25	22.64
52	-38.52	-31.88	-29.60	-25.07	-16.67	-8.75	1.10	7.58	11.10	14.34	21.02
53	-38.60	-31.60	-28.26	-24.63	-18.03	-7.79	2.48	9.05	12.68	16.07	22.92
54	-39.41	-32.45	-29.38	-25.41	-18.75	-8.42	1.92	8.58	12.24	15.61	22.57
55	-40.24	-32.80	-29.20	-25.28	-18.16	-7.11	3.93	11.05	14.88	18.58	26.02
56	-36.61	-29.56	-25.15	-22.49	-15.69	-5.23	5.23	11.98	15.69	19.10	26.14
57	-38.86	-31.03	-27.24	-23.11	-15.62	-4.00	7.62	15.11	19.24	23.63	30.86
58	-28.55	-22.07	-19.93	-15.52	-9.51	.31	9.93	16.13	19.55	22.69	29.17
59	-29.77	-21.86	-17.29	-12.85	-4.82	7.65	20.13	28.17	32.60	36.67	45.08
60	-35.00	-25.07	-21.27	-15.03	-5.53	9.20	23.94	33.44	38.67	43.48	53.41
61	-28.27	-19.95	-15.93	-12.54	-3.58	8.71	21.12	29.08	33.46	37.48	45.81
62	-28.22	-20.01	-15.03	-11.70	-3.04	8.34	20.53	28.39	32.72	36.69	44.91
63	-28.17	-20.07	-16.14	-11.87	-4.11	7.92	19.95	27.71	31.98	35.91	44.01
64	-28.14	-20.13	-15.26	-12.04	-4.38	7.50	19.37	27.03	31.25	35.12	43.13
65	-28.11	-20.21	-16.38	-12.22	-4.66	7.07	18.80	26.36	30.53	34.35	42.26
66	-28.18	-20.36	-15.57	-12.45	-4.96	6.65	18.25	25.74	29.86	33.65	41.47
67	-28.18	-20.45	-16.71	-12.68	-5.28	6.22	17.69	25.06	29.16	32.86	40.62
68	-28.19	-20.56	-15.86	-12.94	-5.53	5.80	17.13	24.43	28.46	32.15	39.79
69	-28.22	-20.67	-17.02	-13.04	-5.82	5.37	16.57	23.79	27.77	31.42	38.96
70	-28.25	-20.80	-17.19	-13.26	-6.12	4.95	16.02	23.16	27.09	30.70	38.15

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 5.5. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.63	-10.54	-5.53	-8.42	-6.42	-3.32	-.21	1.79	2.89	3.92	6.00
1	-16.67	-13.69	-12.25	-10.69	-7.94	-3.43	.98	3.83	5.39	6.43	9.81
2	-15.90	-16.05	-14.19	-12.16	-8.48	-2.76	2.95	6.63	8.66	10.52	14.37
3	-26.14	-21.10	-13.65	-15.93	-11.16	-3.64	3.81	8.04	11.30	13.70	18.79
4	-30.93	-25.08	-22.15	-19.18	-13.56	-4.88	3.80	9.40	12.49	15.32	21.17
5	-33.73	-27.54	-24.51	-21.22	-15.25	-5.98	3.28	9.26	12.55	15.57	21.82
6	-36.40	-29.81	-26.82	-23.14	-16.84	-7.06	2.72	9.02	12.50	15.70	22.28
7	-33.91	-32.79	-23.33	-25.53	-13.75	-8.17	2.41	9.23	12.99	16.44	23.57
8	-43.99	-36.25	-32.50	-28.42	-21.01	-9.51	1.98	9.40	13.48	17.23	24.97
9	-45.93	-37.96	-33.10	-29.30	-22.27	-10.44	1.80	9.03	13.21	17.08	26.06
10	-47.36	-39.29	-35.38	-31.12	-23.39	-11.41	.58	8.31	12.50	16.48	24.55
11	-48.02	-39.99	-35.10	-31.88	-24.17	-12.25	-.32	7.37	11.60	15.49	23.53
12	-44.63	-37.39	-33.89	-30.07	-23.15	-12.41	-1.67	5.25	9.07	12.57	19.31
13	-36.37	-32.36	-29.44	-26.28	-20.52	-11.60	-2.67	3.08	6.25	9.16	15.18
14	-33.16	-28.07	-25.60	-22.91	-15.03	-10.47	-2.90	1.96	4.67	7.14	12.23
15	-27.34	-23.20	-21.20	-19.02	-15.00	-8.92	-2.78	1.13	3.36	5.37	9.50
16	-22.79	-19.29	-17.60	-15.75	-12.40	-7.21	-2.01	1.34	3.19	4.88	8.38
17	-13.40	-15.48	-14.06	-12.52	-3.72	-5.37	-1.03	1.77	3.31	4.73	7.[illegible]
18	-13.62	-11.31	-10.19	-8.97	-6.75	-3.32	.12	2.73	3.55	4.68	6.[illegible]
19	-10.41	-8.39	-7.42	-6.35	-4.43	-1.44	1.55	3.48	4.55	5.52	7.[illegible]
20	-8.27	-6.44	-5.56	-4.58	-2.84	-.13	2.59	4.34	5.30	6.19	8.[illegible]
21	-7.45	-5.51	-4.73	-3.76	-2.01	.21	3.42	5.14	6.14	7.03	8.86
22	-6.76	-4.85	-4.07	-3.14	-1.37	1.32	4.02	5.75	6.71	7.59	9.41
23	-7.26	-4.29	-4.34	-3.30	-1.42	1.51	4.43	6.31	7.35	8.31	10.28
24	-6.57	-6.34	-5.26	-4.08	-1.95	1.36	4.67	6.80	7.98	9.06	11.29
25	-8.92	-6.62	-5.50	-4.23	-2.07	1.35	4.77	6.98	8.20	9.32	11.62
26	-10.28	-7.69	-6.43	-5.06	-2.57	1.28	5.13	7.62	8.59	10.25	12.84
27	-12.19	-9.27	-7.85	-6.31	-3.52	.81	5.15	7.38	8.48	10.89	13.81
28	-14.88	-8.83	-7.34	-5.75	-2.83	1.47	6.22	9.13	10.74	12.22	15.24
29	-14.02	-10.57	-8.90	-7.04	-3.78	1.39	6.46	9.76	11.57	13.24	16.69
30	-16.23	-12.47	-10.61	-8.57	-4.88	.84	6.56	10.36	12.28	14.16	18.00
31	-15.72	-12.05	-10.28	-8.34	-4.83	.61	6.06	9.57	11.50	13.28	16.98
32	-15.76	-12.19	-10.39	-8.48	-5.01	.37	5.74	9.21	11.12	12.87	16.50
33	-15.78	-12.13	-10.37	-8.45	-4.96	.46	5.87	9.36	11.28	13.05	16.78
34	-17.02	-13.93	-11.75	-9.59	-5.67	.40	6.48	10.40	12.54	14.54	18.63
35	-17.35	-14.93	-12.79	-10.47	-5.24	.31	6.86	11.08	13.41	15.55	19.96
36	-19.95	-15.36	-13.19	-10.72	-6.33	.48	7.29	11.68	14.10	16.32	20.91
37	-20.93	-16.12	-13.80	-11.26	-6.67	.46	7.60	12.19	14.73	17.05	21.86
38	-22.21	-17.11	-14.64	-11.96	-7.08	.40	8.09	12.91	15.60	18.07	23.16
39	-21.73	-16.65	-14.18	-11.50	-6.64	.91	8.46	13.33	16.01	18.47	23.55
40	-20.11	-18.17	-12.77	-10.16	-5.43	1.91	9.29	13.93	16.54	18.94	23.94
41	-18.47	-13.53	-11.19	-8.84	-3.82	3.50	10.83	15.55	18.15	20.54	25.40
42	-17.18	-12.13	-9.68	-7.02	-2.18	5.32	12.02	17.06	20.32	22.79	27.02
43	-14.55	-9.67	-7.31	-5.74	-.07	7.17	14.42	19.89	21.66	24.02	28.98
44	-11.76	-7.08	-4.82	-2.35	2.12	9.00	16.01	20.40	22.95	25.21	29.09
45	-11.68	-6.72	-4.32	-1.78	3.05	10.42	17.79	22.54	25.16	27.54	32.53
46	-11.08	-6.65	-4.12	-1.37	3.84	11.40	19.10	24.17	26.92	29.40	34.04
47	-12.57	-6.97	-4.25	-1.30	4.06	12.37	22.60	26.09	28.99	31.70	37.38
48	-12.59	-6.75	-3.92	-.84	4.78	13.42	22.09	27.60	30.75	33.50	39.42
49	-12.50	-6.45	-3.52	-.34	5.45	14.42	23.40	29.10	32.37	35.38	41.34
50	-11.94	-5.38	-2.48	.01	6.63	15.67	24.91	30.53	33.74	36.69	42.70
51	-11.20	-5.06	-2.09	1.24	7.28	16.44	25.68	31.64	34.93	37.94	44.17
52	-11.01	-5.19	-2.03	1.37	7.59	17.18	26.71	32.46	36.09	39.41	45.86
53	-12.51	-5.98	-2.78	.78	7.10	16.98	26.70	33.02	36.50	39.78	46.31
54	-13.77	-6.78	-3.27	.46	7.24	17.74	28.25	35.02	38.76	42.18	49.86
55	-13.00	-5.75	-2.24	1.58	8.52	19.27	30.03	36.97	40.79	44.30	51.54
56	-11.32	-4.13	-.65	3.19	10.03	20.70	31.37	38.26	42.04	45.52	52.31
57	-14.89	-6.69	-2.71	1.61	9.47	21.65	33.03	41.69	46.01	49.99	58.19
58	-8.15	-1.28	1.04	5.46	11.93	24.46	35.00	43.43	48.04	45.84	60.05
59	-3.84	1.72	5.42	9.36	12.60	28.95	39.81	34.54	37.47	40.17	45.74
60	-8.44	-1.77	1.46	4.98	11.36	21.27	31.17	39.66	41.07	44.36	50.50
61	-13.08	-6.13	-2.41	1.63	8.98	28.36	31.79	39.10	43.14	46.86	54.53
62	-14.16	-6.61	-2.96	1.02	8.24	19.45	30.65	37.07	41.06	45.50	53.05
63	-14.34	-6.96	-3.38	.61	7.67	18.53	29.48	36.55	40.44	44.01	51.39
64	-14.78	-7.40	-3.93	-.11	6.84	17.61	28.00	35.00	38.18	42.44	49.50
65	-14.89	-7.88	-4.36	-.63	6.16	16.67	27.21	34.08	37.74	41.17	48.27
66	-15.15	-8.23	-4.87	-1.22	5.41	15.78	26.98	32.01	34.87	38.02	46.50
67	-15.53	-8.73	-5.43	-1.84	4.67	14.78	25.88	31.48	34.99	38.23	45.89
68	-15.74	-9.09	-5.87	-2.37	3.99	13.86	23.72	30.09	33.59	36.81	43.46
69	-16.12	-9.68	-6.44	-3.08	3.25	12.99	22.63	28.08	32.32	35.14	42.08
70	-15.34	-9.97	-6.89	-3.93	2.97	12.02	21.47	27.60	30.72	34.01	40.80

TABLE 5.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.69	-9.76	[illegible]	-7.32	-5.88	-3.13	[illegible]	1.57	2.58	3.51	5.43
1	-16.17	-12.73	[illegible]	[illegible]	-1.82	-3.23	1.[illegible]	3.85	5.38	6.78	9.68
2	-13.42	-15.64	[illegible]	[illegible]	-6.17	-2.34	3.[illegible]	6.72	9.72	10.56	14.36
3	-23.90	-15.24	[illegible]	-14.40	-5.93	-2.93	4.30	8.02	11.12	13.41	18.14
4	-27.33	-21.93	[illegible]	[illegible]	-11.49	-3.51	4.43	9.55	12.36	14.96	20.30
5	-31.94	-25.61	[illegible]	-19.02	-13.32	-4.53	4.[illegible]	9.[illegible]	12.08	15.96	21.89
[illegible]	-35.12	-29.51	[illegible]	[illegible]	-15.49	-5.65	4.19	10.51	14.00	17.21	23.33
7	-39.62	-32.24	[illegible]	-24.77	-17.71	-6.76	4.19	11.25	15.14	18.72	26.20
8	-45.07	-36.74	[illegible]	[illegible]	-20.34	-7.37	4.40	12.37	16.76	20.80	29.13
9	-49.79	-41.65	[illegible]	[illegible]	-22.57	-8.90	4.72	13.51	18.35	22.80	31.98
10	-52.02	-43.03	[illegible]	[illegible]	-24.10	-9.93	4.30	13.43	18.53	[illegible]	32.76
11	-53.56	-43.97	[illegible]	-24.27	-25.09	-10.85	3.[illegible]	13.56	17.02	[illegible]	31.85
12	-52.33	-42.17	[illegible]	[illegible]	-23.15	-11.56	2.43	10.79	15.62	20.05	29.2[illegible]
13	-47.17	-39.41	[illegible]	[illegible]	[illegible]	-11.84	1.[illegible]	[illegible]	[illegible]	17.32	25.45
14	-37.35	-31.40	[illegible]	-14.37	-13.69	-9.11	[illegible]	[illegible]	10.04	13.17	19.62
15	-29.52	-24.47	[illegible]	-15.41	14.58	-7.11	[illegible]	[illegible]	7.64	10.27	15.21
16	-27.02	-18.16	[illegible]	-14.25	-10.55	-4.91	[illegible]	4.63	6.57	9.94	12.41
17	-14.52	-13.42	[illegible]	[illegible]	-3.17	-2.43	[illegible]	[illegible]	6.92	8.45	11.[illegible]
18	-10.53	-9.21	[illegible]	[illegible]	-1.53	-1.01	2.[illegible]	5.79	7.04	8.19	10.77
19	-7.45	-5.41	[illegible]	[illegible]	[illegible]	1.[illegible]	4.74	[illegible]	7.78	8.78	10.23
20	-4.37	-3.11	[illegible]	-1.23	.35	2.37	5.58	7.27	8.20	9.05	10.31
21	-3.34	-2.10	[illegible]	-.35	1.32	3.91	6.47	8.14	9.05	[illegible]	11.03
22	-2.79	-1.07	[illegible]	.62	2.27	4.71	7.19	8.80	9.6[illegible]	10.49	12.16
23	-2.40	-.07	.[illegible]	1.[illegible]	3.75	5.32	7.69	9.[illegible]	10.[illegible]	11.80	13.13
24	-2.41	-.58	.[illegible]	1.22	3.79	5.70	8.49	10.24	11.[illegible]	12.10	13.34
25	-2.51	-.51	.40	1.6	[illegible]	6.22	9.[illegible]	11.27	12.33	13.30	15.30
26	-2.07	-.89	.[illegible]	1.53	[illegible]	6.32	10.10	12.15	13.23	14.30	15.46
27	-2.12	-.13	.[illegible]	1.[illegible]	.92	6.58	10.14	12.61	13.[illegible]	14.[illegible]	16.15
28	-6.47	-3.24	-1.60	.02	3.11	7.91	12.65	15.76	17.46	19.04	22.27
29	-6.83	-3.42	-1.77	.03	3.29	8.35	13.41	16.67	18.47	20.12	23.53
30	-6.15	-2.80	-1.18	.58	3.79	8.75	13.72	16.93	18.69	20.31	23.66
31	-6.07	-2.63	-1.04	.75	3.99	9.02	14.06	17.30	19.09	20.73	24.12
32	-5.56	-2.22	-.60	1.16	4.35	9.31	14.27	17.47	19.23	20.85	24.19
33	-4.77	-1.55	.11	1.70	4.78	9.56	14.33	17.41	19.10	20.66	23.88
34	-3.85	-.73	.74	2.43	5.41	10.04	14.67	17.66	19.30	20.81	23.93
35	-4.3[illegible]	-.97	.63	2.47	5.72	10.77	15.82	19.08	20.37	22.52	25.32
36	-3.15	.16	1.76	3.51	[illegible].66	11.56	16.47	19.63	24.37	22.97	26.27
37	-3.29	.31	[illegible].05	3.95	7.39	12.73	18.07	21.51	23.41	25.15	29.75
38	-4.67	-.55	1.53	3.73	[illegible].73	13.93	20.13	23.12	26.32	28.35	32.52
39	1.31	4.44	5.96	7.61	10.62	15.27	19.93	22.93	24.58	26.10	29.24
40	2.53	5.69	7.22	8.83	11.80	16.59	21.27	24.30	25.96	27.49	30.64
41	2.53	6.03	7.73	9.57	12.93	18.13	23.33	28.68	28.53	30.23	33.73
42	1.31	5.36	7.33	9.46	13.35	19.36	25.38	29.[illegible]	31.40	33.37	37.42
43	2.41	6.47	8.39	10.47	14.28	20.14	26.02	29.81	31.89	33.81	37.77
44	2.12	6.56	8.71	11.05	15.30	21.90	28.49	32.74	35.08	37.24	41.68
45	2.97	7.70	9.39	12.43	17.01	24.02	31.04	35.58	38.06	40.35	45.07
46	5.09	9.73	11.07	14.54	19.04	26.02	33.00	37.50	39.98	42.25	46.96
47	7.22	11.73	13.91	16.29	20.61	27.30	33.99	38.31	40.68	42.87	47.38
48	8.55	13.07	15.25	17.63	21.96	28.66	35.36	39.69	42.07	44.26	48.77
49	9.90	14.37	16.54	18.89	23.17	29.81	36.44	40.72	43.08	45.24	49.71
50	8.94	13.90	16.30	18.91	23.66	31.01	38.27	43.10	45.73	48.13	53.08
51	8.92	14.34	16.97	19.83	23.03	33.08	41.14	46.33	49.19	51.82	57.25
52	5.44	12.08	15.30	18.80	25.16	35.01	44.87	51.23	54.73	57.94	64.58
53	1.27	9.11	12.91	17.04	24.55	36.19	47.83	55.34	59.47	63.27	71.11
54	3.81	11.0[illegible]	14.51	18.31	25.21	35.91	46.61	53.51	57.31	60.80	68.01
55	2.43	9.94	13.54	17.54	24.73	35.88	47.03	54.22	58.18	61.82	69.33
56	.88	8.75	12.56	16.70	24.23	35.90	47.57	55.10	58.24	63.05	70.41
57	4.73	11.95	15.43	19.20	26.07	36.71	47.35	54.21	57.99	61.46	68.63
58	12.76	18.52	21.31	24.34	29.86	38.41	46.55	52.47	55.50	58.29	64.05
59	11.15	16.91	19.69	22.73	28.23	36.77	45.31	50.82	53.85	56.64	62.39
60	8.03	14.81	18.10	21.67	28.16	38.22	48.[illegible]	54.78	58.3[illegible]	61.63	68.41
61	4.49	11.82	15.37	19.29	26.25	37.12	48.00	55.02	[illegible].88	62.43	69.76
62	3.66	10.92	14.43	18.20	25.21	35.99	46.7[illegible]	53.[illegible]2	57.55	61.07	68.33
63	2.86	10.04	13.52	17.31	24.19	34.86	45.53	52.41	56.20	59.[illegible]	66.26
64	2.02	9.14	12.59	16.35	23.16	33.72	44.30	51.11	54.87	5[illegible].31	65.43
65	.99	8.07	11.50	15.23	22.01	32.52	43.04	49.82	53.55	56.98	64.07
66	.15	7.17	10.57	14.27	20.98	31.40	41.81	48.53	52.22	55.62	62.64
67	-.81	6.17	9.55	13.23	19.91	30.26	40.62	47.30	50.98	54.36	61.34
68	-1.48	5.35	8.72	12.35	18.92	29.12	39.34	45.92	48.54	52.87	59.75
69	-2.45	4.39	7.70	11.31	17.85	28.00	38.19	44.70	48.30	51.81	58.45
70	-3.28	3.49	6.77	10.34	16.82	26.87	36.92	43.40	46.97	50.25	57.02

TABLE 5.7. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.300	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.25	-7.74	-7.91	-6.21	-4.77	-2.53	-.29	1.15	1.99	3.67	4.18
1	-12.28	-9.85	-8.47	-7.35	-5.07	-1.46	.15	2.48	3.76	4.94	5.37
2	-11.01	-4.46	-7.22	-5.48	-3.44	.35	4.13	6.57	7.92	9.15	11.78
3	-12.17	-9.29	-7.83	-6.98	-3.98	.88	5.21	8.81	9.66	10.97	13.98
4	-12.51	-9.44	-7.95	-6.33	-3.39	1.17	5.79	8.68	10.30	11.79	14.86
5	-12.87	-9.70	-8.18	-6.48	-3.49	1.29	6.81	9.06	10.74	12.28	15.96
6	-13.13	-10.46	-8.94	-7.15	-3.82	1.35	6.49	9.82	11.65	13.39	16.81
7	-15.38	-11.87	-9.63	-7.83	-4.18	1.46	7.11	10.75	12.76	14.60	18.91
8	-17.56	-13.20	-11.18	-8.92	-4.81	1.67	7.95	12.06	14.32	16.40	20.70
9	-19.77	-15.07	-12.69	-10.11	-5.41	1.67	9.16	13.84	16.43	18.80	23.71
10	-21.81	-16.37	-13.74	-11.07	-5.67	2.40	10.48	15.60	18.55	21.18	26.62
11	-23.07	-17.19	-14.37	-11.35	-5.73	2.91	11.56	17.13	20.20	23.02	28.84
12	-23.92	-17.90	-14.99	-11.32	-5.[illegible]	3.37	12.29	18.25	21.22	24.13	30.15
13	-21.99	-16.39	-13.46	-10.62	-4.21	3.18	11.57	16.78	19.96	22.70	28.35
14	-19.15	-14.21	-11.82	-9.21	-4.44	2.65	10.16	14.91	17.51	19.91	24.85
15	-16.85	-16.80	-9.74	-8.91	-3.22	2.50	8.21	11.78	13.93	15.79	19.48
16	-13.38	-7.37	-5.95	-4.42	-1.59	2.76	7.17	9.93	11.48	12.90	15.83
17	-8.17	-3.03	-3.00	-1.47	.18	3.35	6.63	8.57	9.70	10.73	12.87
18	-3.71	-1.94	-1.12	-.20	1.46	4.05	6.43	8.29	9.21	10.05	11.79
19	-1.50	.69	.73	1.49	2.66	4.49	7.12	8.50	9.25	9.95	11.38
20	-.21	1.19	1.85	2.51	3.80	5.81	7.82	9.12	9.83	10.48	11.84
21	.17	1.85	2.36	3.19	4.55	6.79	8.93	10.39	11.12	11.83	13.31
22	1.11	2.54	3.26	4.02	5.11	7.56	9.71	11.09	11.84	12.46	13.01
23	1.39	2.71	3.47	4.50	6.[illegible]	8.33	10.66	12.16	12.99	13.75	15.31
24	2.09	3.47	4.[illegible]	5.[illegible]	6.43	9.20	11.57	13.10	13.94	14.71	16.31
25	2.60	4.34	5.17	6.[illegible]	7.65	10.13	12.62	14.22	15.10	15.91	17.58
26	3.30	5.0[illegible]	5.83	6.73	8.27	10.72	13.17	14.74	15.61	16.41	18.06
27	3.92	5.13	[illegible]	6.85	8.49	11.02	13.55	15.18	16.00	16.91	18.61
28	3.82	5.16	[illegible]	7.62	9.45	12.23	15.61	16.61	17.39	18.77	20.58
29	3.05	5.28	6.36	7.54	9.58	12.39	16.31	18.44	19.62	20.70	22.93
30	3.18	5.61	6.78	8.06	10.35	13.95	17.58	19.91	21.19	22.37	24.79
31	5.16	7.42	9.51	3.70	11.87	15.22	18.59	20.74	22.93	23.23	25.29
32	5.47	7.82	8.96	10.15	12.44	15.92	19.41	21.66	22.30	24.04	26.39
33	6.50	8.50	9.57	10.71	12.83	16.10	19.37	21.48	22.54	23.71	25.93
34	5.38	7.24	9.04	10.32	11.69	16.25	20.01	22.36	23.66	24.86	27.32
35	4.35	7.57	4.90	10.31	12.97	17.26	21.11	23.73	25.18	26.36	29.25
36	6.16	8.73	9.57	11.33	13.79	17.66	21.41	23.67	25.23	26.47	29.04
37	6.16	8.97	10.34	11.82	14.52	18.70	22.68	25.57	27.06	28.42	31.24
38	7.02	9.96	11.77	12.92	15.72	20.67	24.62	27.23	28.77	30.19	33.12
39	8.38	11.89	13.02	14.53	17.27	23.40	25.57	28.20	29.74	31.11	33.32
40	10.44	13.04	14.30	15.67	18.16	22.01	27.67	28.36	29.73	30.9[illegible]	33.59
41	11.25	13.90	15.13	16.50	19.13	23.07	27.01	29.55	30.95	32.23	34.89
42	11.88	14.75	16.14	17.66	21.41	24.6[illegible]	28.93	31.66	33.20	34.59	37.46
43	13.02	16.18	17.71	19.32	22.33	27.0[illegible]	31.77	34.79	36.45	37.98	41.14
44	14.79	18.19	19.83	21.62	24.37	29.91	34.56	38.20	39.09	41.43	45.23
45	15.36	19.07	20.84	22.64	26.39	31.71	37.63	40.99	42.95	44.75	48.47
46	16.63	20.46	22.35	24.28	28.07	33.7[illegible]	39.51	43.20	45.23	47.09	50.95
47	19.13	22.82	24.61	26.55	30.09	35.56	41.04	44.52	46.51	48.30	51.99
48	21.70	25.15	26.82	28.64	31.95	37.03	42.20	45.50	47.32	48.99	52.44
49	22.57	26.10	27.81	29.67	33.05	38.29	43.57	46.90	48.76	50.47	54.00
50	22.58	26.25	28.09	30.05	33.61	39.13	44.64	48.20	50.16	51.46	55.68
51	22.29	26.37	28.35	30.50	34.01	40.47	46.52	50.43	52.50	54.35	58.64
52	21.27	25.82	28.03	30.43	34.79	41.56	44.32	52.65	55.08	57.25	61.84
53	21.65	26.33	28.60	31.08	35.54	42.69	49.93	53.91	56.38	58.84	63.32
54	22.49	27.12	29.37	31.81	36.24	43.11	49.58	54.42	56.86	59.10	63.73
55	21.46	26.59	29.08	31.78	36.70	44.31	51.93	56.84	59.55	62.03	67.17
56	18.65	24.71	27.69	30.84	36.68	45.63	54.62	60.92	63.62	66.55	72.61
57	18.14	24.40	27.44	30.74	36.73	46.03	55.22	61.32	64.62	67.[illegible]	73.91
58	20.23	26.06	28.88	31.95	37.53	46.17	54.82	60.40	63.47	66.[illegible]	72.11
59	21.86	27.75	30.60	33.70	39.33	48.07	56.80	62.43	65.54	68.39	74.27
60	18.68	25.02	28.68	31.42	37.48	46.83	56.27	62.73	65.67	68.74	75.07
61	15.95	22.82	25.86	29.39	35.77	45.66	55.59	61.[illegible]	65.50	68.73	75.41
62	14.88	21.51	24.72	28.22	34.56	44.41	54.25	60.60	64.09	67.3[illegible]	73.93
63	14.07	20.61	23.78	27.23	33.49	43.20	52.92	59.18	62.6[illegible]	[illegible]	72.34
64	13.06	19.56	22.71	26.14	32.36	42.01	51.65	57.87	61.[illegible]	64.[illegible]	70.94
65	12.05	18.51	21.64	25.04	31.22	40.80	50.38	56.58	59.96	63.09	69.55
66	11.06	17.45	20.55	23.92	30.04	39.53	49.02	55.13	58.50	61.50	67.99
67	10.04	16.33	19.47	22.82	28.90	38.33	47.75	53.83	57.18	60.26	66.62
68	9.71	15.48	18.51	21.82	27.82	37.12	46.43	52.43	55.73	58.77	65.04
69	8.51	14.34	17.35	20.64	26.60	35.85	45.10	51.06	54.35	57.3[illegible]	63.59
70	7.07	13.26	16.26	19.53	25.46	34.65	43.89	49.77	53.03	56.03	62.23

TABLE 5.8. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	3.200	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.86	-8.22	-7.41	-6.59	-4.95	-2.48	-.02	1.67	2.46	3.28	4.91
1	-13.66	-11.00	-9.71	-8.32	-6.70	-1.85	2.09	4.63	6.02	7.31	9.96
2	-13.29	-12.35	-8.94	-7.42	-4.66	-.35	3.94	6.71	8.29	9.64	12.63
3	-14.16	-10.97	-9.43	-7.75	-4.70	.03	4.76	7.81	9.46	11.03	14.21
4	-14.52	-11.17	-9.68	-7.62	-4.64	.30	5.34	8.43	10.17	11.80	15.13
5	-14.49	-12.79	-11.08	-9.05	-6.50	-.01	5.46	9.02	10.97	12.76	16.46
6	-19.13	-15.01	-12.99	-10.80	-6.81	-.43	5.55	9.54	11.73	13.76	17.91
7	-21.23	-16.79	-14.59	-12.20	-7.85	-1.12	5.62	9.99	12.34	14.56	19.10
8	-23.79	-18.80	-16.38	-13.75	-8.97	-1.56	5.85	10.62	13.25	15.67	20.66
9	-26.66	-21.08	-18.39	-15.46	-10.14	-1.88	6.37	11.70	14.63	17.32	22.88
10	-29.87	-19.73	-17.29	-14.53	-9.61	-1.99	5.65	10.64	13.27	15.76	20.89
11	-27.32	-21.65	-16.91	-15.92	-10.50	-2.07	6.32	11.79	14.72	17.97	23.13
12	-29.03	-22.96	-20.03	-16.03	-11.02	-2.02	6.99	12.00	15.99	18.93	25.00
13	-26.81	-21.02	-18.22	-15.16	-9.62	-1.03	7.67	13.11	16.17	18.97	24.76
14	-24.63	-18.96	-16.51	-13.09	-8.99	-1.46	6.06	10.91	13.56	16.04	21.10
15	-18.09	-14.77	-12.40	-10.65	-6.76	-.71	5.23	9.23	11.37	13.34	17.41
16	-15.28	-10.96	-9.36	-7.60	-4.42	.51	5.44	8.62	10.35	12.98	16.30
17	-9.17	-6.65	-5.99	-4.11	-1.70	2.04	5.37	6.18	9.51	10.73	13.24
18	-6.72	-3.70	-2.72	-1.66	.28	2.27	6.27	8.21	9.27	10.25	12.27
19	-3.93	-2.06	-1.13	-.19	1.64	4.45	7.26	9.06	10.04	10.96	12.84
20	-2.96	-.67	.20	1.15	2.87	5.53	8.19	9.91	10.86	11.73	13.62
21	-1.16	.63	1.49	2.22	3.83	6.31	8.66	10.91	11.29	12.10	13.77
22	-.39	1.37	2.40	3.10	4.73	7.24	9.79	11.93	12.33	13.15	14.86
23	.46	2.21	3.04	3.98	5.68	8.29	10.64	12.51	13.43	14.26	16.03
24	.76	2.61	3.50	4.48	6.25	8.99	11.76	13.50	14.97	15.37	17.21
25	1.69	3.43	4.22	5.29	7.04	9.79	12.52	14.28	15.25	16.14	17.98
26	2.09	3.90	4.78	5.73	7.47	10.15	12.89	14.57	15.53	16.40	18.21
27	2.09	3.99	4.91	5.91	7.72	10.59	13.26	15.17	16.17	17.00	18.98
28	2.13	4.30	5.35	6.43	8.56	11.77	14.35	17.06	18.20	19.25	21.41
29	1.98	4.28	5.47	6.61	8.81	12.22	15.15	17.85	19.06	20.18	22.48
30	3.41	5.53	6.56	7.68	9.71	12.86	16.41	18.04	19.16	20.13	[illegible].31
31	3.54	5.84	6.95	8.16	10.35	13.76	17.37	19.27	20.57	21.59	2[illegible].98
32	4.00	6.35	7.42	8.72	10.97	14.45	17.94	20.18	21.42	22.96	24.90
33	3.39	6.01	7.28	8.64	11.17	15.16	18.54	21.45	22.93	24.10	26.72
34	2.17	4.97	6.33	7.81	10.49	14.65	18.31	21.49	22.96	24.32	27.12
35	2.01	4.78	6.12	7.59	10.24	14.36	18.47	21.13	22.59	23.[illegible]	26.71
36	1.85	4.25	5.16	7.63	10.48	14.79	19.10	21.89	23.42	24.83	27.73
37	1.83	4.67	6.24	7.94	10.84	15.35	19.65	22.75	24.35	25.82	28.86
38	1.98	5.15	5.83	8.35	11.38	16.08	20.78	23.81	25.48	27.02	30.18
39	1.84	5.22	6.85	8.62	11.86	16.87	21.69	25.17	26.90	28.53	31.91
40	3.13	6.47	8.09	9.85	13.05	18.01	22.37	26.17	27.93	29.96	32.30
41	3.71	7.19	8.84	10.65	13.92	19.00	24.18	27.35	29.16	30.82	34.24
42	3.42	7.17	9.00	10.98	14.57	20.15	25.73	29.33	31.31	33.13	36.89
43	3.02	7.22	9.25	11.46	15.47	21.65	27.51	31.52	34.13	36.16	40.35
44	3.03	7.65	9.83	12.32	16.75	23.64	30.46	34.48	37.32	39.96	44.18
45	1.84	7.07	9.66	12.35	17.36	25.12	32.48	37.28	42.64	43.17	48.[illegible]
46	2.04	7.56	10.23	13.14	18.42	26.62	34.41	40.09	43.00	45.88	51.20
47	1.24	7.15	10.01	13.17	18.79	27.57	36.74	42.60	45.12	47.90	53.90
48	.85	7.10	10.13	13.42	19.40	28.68	37.98	43.93	47.23	50.25	56.30
49	2.17	8.38	11.29	14.67	21.62	29.84	39.17	45.62	48.30	51.31	57.52
50	4.42	10.40	13.29	16.44	22.16	31.04	39.91	45.63	48.78	51.88	57.66
51	7.85	13.78	15.06	18.97	24.27	32.47	40.68	45.57	48.88	51.56	57.09
52	5.50	11.60	14.56	17.78	23.62	32.68	41.74	47.59	50.80	53.76	59.46
53	2.49	9.15	12.28	15.89	22.27	32.17	42.18	48.44	51.95	55.18	61.8[illegible]
54	-3.12	4.89	7.77	12.94	20.65	32.53	44.41	52.08	56.30	60.17	68.18
55	-.46	7.12	10.80	14.81	22.06	33.31	44.57	51.62	55.83	59.50	67.08
56	-3.19	4.26	3.61	12.80	20.42	32.22	44.02	51.64	55.83	59.08	67.63
57	-4.83	3.26	7.22	11.64	19.47	31.62	43.77	51.61	55.92	59.85	68.07
58	-11.55	-2.25	2.11	6.96	15.76	29.41	43.67	51.07	56.72	61.38	70.38
59	-13.08	-3.90	.25	5.39	14.18	27.81	41.44	50.23	55.07	59.52	68.70
60	-19.26	-9.36	-4.57	.65	10.12	24.82	39.51	43.99	50.20	59.00	68.30
61	-25.84	-14.71	-7.33	-3.47	7.18	23.65	40.70	50.84	56.70	62.09	73.21
62	-23.56	-13.21	-4.19	-2.73	7.18	22.56	37.93	47.84	53.30	58.32	68.68
63	-21.32	-11.74	-7.10	-2.05	7.13	21.35	35.58	44.76	49.81	54.85	64.03
64	-19.38	-10.48	-5.18	-1.43	7.02	20.22	33.42	41.94	46.62	50.93	59.82
65	-17.36	-9.77	-5.21	-.89	6.94	19.69	31.24	39.08	43.39	47.30	55.94
66	-15.40	-7.90	-4.26	-.30	6.89	18.03	29.18	36.38	40.32	43.96	51.47
67	-13.70	-6.83	-3.50	.12	6.70	16.90	27.10	33.68	37.30	41.63	47.50
68	-12.29	-6.00	-2.95	.36	6.37	15.70	25.02	31.04	34.35	37.39	43.68
69	-11.05	-5.33	-2.54	.54	6.02	14.57	23.32	28.63	31.67	34.86	40.22
70	-10.28	-4.96	-2.38	.43	5.53	13.44	21.34	26.44	29.25	31.83	37.15

TABLE 5.9. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-16.71	-8.82	-7.87	-6.86	-5.63	-2.19	.65	2.48	3.49	4.41	5.93
1	-13.32	-10.47	-9.69	-7.59	-4.87	-.69	3.58	6.31	7.81	9.19	12.83
2	-15.29	-11.76	-10.65	-8.19	-4.61	.49	5.60	9.06	10.93	12.69	16.19
3	-16.45	-14.71	-12.70	-10.52	-6.56	-.41	5.74	9.70	11.88	13.69	18.83
4	-22.13	-17.49	-15.18	-12.71	-8.22	-1.27	5.60	10.16	12.43	14.90	19.58
5	-25.84	-21.62	-18.67	-15.30	-10.26	-2.45	5.37	10.98	13.10	15.73	20.99
6	-29.15	-23.37	-20.60	-17.56	-12.09	-3.49	5.87	10.59	13.43	16.42	22.10
7	-31.93	-25.79	-22.75	-19.49	-13.57	-4.39	6.79	10.71	13.97	16.96	23.15
	-34.78	-28.22	-25.09	-21.50	-15.31	-5.57	6.16	10.99	13.92	17.07	23.63
9	-37.50	-30.56	-27.21	-23.55	-16.92	-6.63	3.66	10.30	13.96	17.31	24.25
10	-39.75	-32.58	-29.10	-25.32	-18.45	-7.80	2.85	9.72	13.60	16.98	24.15
11	-41.43	-34.16	-30.44	-26.81	-19.65	-9.06	1.73	8.49	12.52	16.09	23.31
12	-41.59	-34.45	-30.99	-27.23	-20.90	-9.80	.80	7.63	11.39	14.85	21.99
13	-39.86	-33.15	-29.90	-26.30	-19.94	-9.98	-.62	6.41	9.94	13.19	19.90
14	-39.96	-29.20	-26.41	-23.37	-17.65	-9.29	-.73	4.70	7.82	10.62	16.38
15	-29.24	-24.41	-22.26	-19.52	-14.69	-7.71	-.53	4.10	6.65	8.99	13.83
16	-23.74	-19.69	-17.73	-15.60	-11.72	-5.71	.30	4.17	6.30	8.24	12.31
17	-18.55	-15.20	-13.58	-11.81	-8.60	-3.63	1.34	4.59	6.31	7.93	11.28
18	-14.12	-11.33	-9.98	-8.52	-5.65	-1.72	2.41	5.08	6.55	7.90	10.68
19	-10.66	-8.32	-7.19	-5.96	-3.73	-.27	3.19	5.42	6.65	7.78	10.11
20	-8.10	-6.46	-5.45	-4.33	-2.35	.86	4.01	6.09	7.16	8.19	10.31
21	-7.40	-5.35	-4.34	-3.26	-1.28	1.77	4.83	6.80	7.89	8.89	10.95
22	-5.47	-3.66	-2.41	-1.86	-.19	2.52	5.18	6.90	7.84	8.71	10.50
23	-5.35	-3.40	-2.46	-1.49	.42	3.30	6.18	8.69	9.87	10.01	11.95
24	-5.48	-3.38	-2.36	-1.25	.76	3.67	6.99	9.00	10.11	11.13	13.23
25	-5.20	-3.07	-2.03	-.90	1.19	4.31	7.49	9.53	10.66	11.69	13.83
26	-5.46	-3.16	-2.05	-.84	1.35	4.76	8.16	10.36	11.55	12.60	14.98
27	-6.26	-3.75	-2.53	-1.21	1.25	4.98	8.47	11.08	12.90	13.62	16.19
28	-6.61	-3.16	-1.96	-.67	1.69	5.33	8.98	11.33	12.62	13.81	16.27
29	-6.18	-3.62	-2.42	-1.12	1.25	4.92	8.66	10.97	12.27	13.47	15.95
30	-7.29	-4.50	-3.18	-1.79	.88	4.49	8.99	11.61	13.05	14.38	17.11
31	-8.58	-5.43	-3.90	-2.29	.77	5.45	10.12	13.19	14.80	16.32	19.97
32	-7.99	-4.86	-3.35	-1.70	1.29	5.93	10.57	13.56	15.21	16.72	19.85
33	-7.70	-4.68	-3.22	-1.49	1.25	5.73	10.20	13.09	14.68	16.19	19.15
34	-8.59	-5.41	-3.88	-2.21	.83	5.59	10.26	13.29	14.96	16.50	19.47
35	-9.18	-6.05	-4.54	-2.90	.89	5.72	9.36	12.35	13.99	15.50	18.62
36	-11.93	-8.10	-6.49	-4.74	-1.55	3.39	8.33	11.52	13.27	14.89	18.21
37	-13.26	-9.64	-7.88	-5.97	-2.50	2.88	8.26	11.73	13.64	15.40	19.02
38	-14.76	-10.71	-8.76	-6.63	-2.76	3.29	9.24	13.18	15.23	17.18	21.22
39	-14.58	-10.37	-8.33	-6.11	-2.08	4.17	10.41	14.44	16.66	18.70	22.71
40	-14.81	-10.49	-8.40	-6.12	-1.99	4.41	10.82	14.96	17.23	19.32	23.63
41	-17.32	-12.51	-10.18	-7.64	-3.04	4.10	11.23	15.84	18.37	20.78	25.61
42	-20.66	-15.13	-12.44	-9.65	-4.26	3.03	12.12	17.40	20.31	22.98	28.50
43	-20.64	-14.96	-12.21	-9.21	-3.77	4.64	13.10	18.54	21.53	24.28	29.96
44	-19.70	-14.03	-11.28	-8.29	-2.86	5.56	13.98	19.41	22.40	25.14	30.82
45	-19.10	-13.38	-10.61	-7.60	-2.13	6.36	14.85	20.32	23.33	26.18	31.82
46	-18.29	-12.65	-9.91	-6.94	-1.53	6.85	15.23	20.63	23.61	26.34	31.99
47	-18.94	-13.05	-10.20	-7.10	-1.47	7.27	16.00	21.64	24.74	27.59	33.47
48	-20.83	-14.44	-11.35	-7.98	-1.87	7.62	17.10	23.21	26.30	29.67	36.06
49	-23.71	-16.69	-13.22	-9.49	-2.73	7.74	18.26	25.02	28.74	32.17	39.23
50	-24.90	-17.18	-13.69	-9.88	-2.97	7.79	18.46	25.36	29.17	32.67	39.88
51	-24.22	-16.94	-13.41	-9.58	-2.61	8.19	18.99	25.94	29.80	33.32	40.60
52	-25.19	-17.61	-13.91	-9.78	-2.47	8.86	20.19	27.50	31.53	35.22	42.86
53	-26.73	-18.85	-15.13	-10.67	-3.32	8.38	20.89	27.63	31.79	35.61	43.49
54	-29.01	-20.86	-16.72	-12.62	-4.83	7.24	19.35	27.15	31.45	35.39	43.54
55	-31.06	-22.74	-18.72	-14.33	-6.37	6.97	18.32	26.26	30.66	34.69	43.00
56	-30.29	-22.29	-18.43	-14.24	-6.63	6.18	14.98	24.60	28.79	32.64	40.60
57	-29.75	-22.29	-18.68	-14.74	-7.60	3.47	14.59	21.68	25.61	29.23	36.69
58	-28.57	-22.16	-19.04	-15.48	-9.59	-.09	9.47	15.60	18.98	22.08	28.49
59	-32.84	-25.49	-21.85	-17.95	-10.86	.13	11.12	18.20	22.16	25.62	33.09
60	-45.31	-35.60	-30.69	-25.77	-16.97	-2.05	12.37	21.67	26.79	31.49	41.21
61	-46.48	-36.47	-31.62	-26.35	-16.76	-1.91	12.95	22.53	27.80	32.65	42.66
62	-45.19	-35.49	-30.72	-25.56	-16.24	-1.77	12.71	22.04	27.18	31.91	41.64
63	-44.04	-34.61	-29.90	-24.88	-15.76	-1.63	12.51	21.63	26.65	31.26	40.78
64	-42.76	-33.49	-29.00	-24.11	-15.24	-1.48	12.27	21.19	26.03	30.52	39.78
65	-41.40	-32.40	-28.05	-23.31	-14.70	-1.34	12.01	20.62	25.36	29.72	38.71
66	-40.12	-31.39	-27.17	-22.57	-14.22	-1.27	11.67	20.03	24.62	28.85	37.57
67	-38.83	-30.37	-26.27	-21.80	-13.70	-1.13	11.44	19.54	24.00	28.18	36.57
68	-37.68	-29.44	-25.46	-21.11	-13.22	-.97	11.24	19.13	23.47	27.46	35.78
69	-36.40	-28.[illegible]	-24.55	-20.34	-12.70	-.85	11.30	18.65	22.86	26.72	34.78
70	-35.05	-27.39	-23.61	-19.54	-12.16	-.71	10.79	18.13	22.19	25.93	33.64

TABLE 5.10. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

46-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-11.55	-9.34	-8.30	-7.15	-5.05	-1.02	1.95	3.54	4.69	5.76	7.94
1	-14.84	-11.87	-10.43	-8.66	-6.02	-1.61	2.00	5.60	7.21	8.69	11.61
2	-19.60	-15.65	-13.79	-11.65	-7.82	-2.00	3.87	7.65	9.73	11.65	15.60
3	-25.39	-20.46	-18.06	-15.58	-10.76	-3.49	3.87	8.59	11.19	13.58	18.50
4	-28.80	-23.95	-20.66	-18.09	-12.92	-3.98	2.96	8.68	10.94	13.49	18.89
5	-33.19	-27.19	-24.22	-21.03	-15.26	-6.28	2.69	8.97	11.66	14.59	20.63
6	-36.87	-30.23	-27.01	-23.51	-17.15	-7.29	2.57	8.93	12.93	15.69	22.29
7	-41.07	-33.75	-30.25	-26.35	-19.39	-8.48	2.30	9.39	13.26	16.79	24.11
8	-45.00	-37.00	-33.12	-28.91	-21.25	-9.38	2.49	10.14	14.36	18.23	26.23
9	-47.59	-39.29	-35.19	-30.79	-22.79	-10.39	2.00	10.00	14.40	18.95	26.00
10	-49.51	-41.02	-36.91	-32.59	-24.31	-11.71	.89	9.42	13.99	17.88	26.09
11	-50.30	-41.92	-37.86	-33.99	-25.92	-12.98	-.53	7.49	11.91	15.97	24.35
12	-49.97	-41.99	-38.05	-33.62	-26.19	-13.23	-2.31	5.37	9.66	13.99	21.51
13	-46.11	-38.92	-35.99	-31.65	-24.76	-13.09	-3.42	3.46	7.26	10.73	17.92
14	-41.90	-35.95	-32.33	-28.93	-22.75	-13.18	-3.61	2.57	5.96	7.89	15.54
15	-36.04	-30.64	-26.00	-25.13	-19.92	-11.69	-3.76	1.46	4.33	6.76	12.41
16	-30.62	-25.98	-23.73	-21.26	-16.85	-9.99	-3.05	1.90	3.89	6.09	10.79
17	-24.71	-20.87	-19.01	-16.99	-13.32	-7.63	-1.99	1.73	3.76	5.61	9.45
18	-18.92	-15.86	-14.39	-12.78	-9.85	-5.32	-.70	2.19	3.75	5.23	8.28
19	-14.61	-12.14	-10.95	-9.65	-7.29	-3.63	.02	2.38	3.60	4.87	7.34
20	-13.15	-10.77	-9.61	-8.35	-6.06	-2.52	1.03	3.31	4.57	5.73	8.12
21	-12.73	-10.33	-9.17	-7.91	-5.62	-2.06	1.49	3.78	5.04	6.20	8.68
22	-11.99	-9.69	-8.57	-7.36	-5.16	-1.75	1.67	3.87	5.08	6.19	8.99
23	-12.41	-9.95	-8.75	-7.46	-5.10	-1.45	2.20	4.46	5.86	7.05	9.51
24	-13.98	-10.82	-9.53	-8.13	-5.59	-1.69	2.30	4.85	6.25	7.59	10.19
25	-15.59	-11.66	-10.27	-8.75	-6.00	-1.73	2.59	5.29	6.80	8.20	11.97
26	-15.53	-12.51	-11.05	-9.46	-6.57	-2.09	2.34	5.27	6.86	8.32	11.39
27	-17.25	-13.98	-12.40	-10.68	-7.55	-2.71	2.19	5.26	6.90	8.57	11.83
28	-19.01	-15.50	-13.79	-11.99	-8.57	-3.35	1.87	5.23	7.08	8.79	12.38
29	-21.13	-17.29	-15.93	-13.90	-9.73	-3.82	1.68	5.36	7.32	9.29	13.09
30	-22.98	-18.51	-16.59	-14.50	-10.70	-4.81	1.09	4.88	6.97	8.89	12.86
31	-24.20	-19.90	-17.83	-15.56	-11.46	-5.09	1.28	5.39	7.65	9.73	14.82
32	-26.99	-21.77	-19.50	-17.09	-12.57	-5.63	1.30	5.78	8.24	10.50	15.18
33	-27.[illegible]1	-22.39	-20.10	-17.62	-13.18	-6.09	.92	5.94	7.92	10.21	14.93
34	-29.70	-24.66	-22.22	-19.67	-14.75	-7.28	.19	5.01	7.66	10.10	15.13
35	-31.15	-26.29	-23.86	-21.27	-16.57	-9.28	-1.99	2.71	5.30	7.68	12.59
36	-33.88	-28.93	-26.38	-23.72	-18.88	-11.38	-3.28	.96	3.62	6.07	11.13
37	-39.56	-33.75	-30.95	-27.90	-22.35	-13.75	-5.15	.39	3.95	6.25	12.06
38	-44.07	-37.61	-34.48	-31.08	-24.89	-15.38	-5.72	.97	3.87	7.00	13.46
39	-47.86	-40.92	-37.56	-33.91	-27.28	-16.99	-6.76	-.07	3.59	6.95	13.88
40	-52.07	-44.62	-41.01	-37.08	-29.95	-18.89	-7.83	-.70	[illegible]3	6.83	14.29
41	-54.84	-46.98	-43.17	-39.03	-31.50	-19.83	-8.15	-.63	[illegible]	7.33	15.19
42	-56.26	-48.21	-44.30	-40.09	-32.31	-20.32	-8.39	-.61		7.56	15.64
43	-56.66	-46.96	-43.29	-39.18	-31.82	-20.40	-8.99	-1.63		6.15	13.86
44	-54.44	-46.81	-43.11	-39.09	-31.79	-20.44	-9.13	-1.83	[illegible]	5.89	13.52
45	-54.36	-46.86	-43.23	-39.28	-32.11	-20.98	-9.85	-2.67	1.27	4.91	12.4[illegible]
46	-54.45	-[illegible].95	-43.31	-39.35	-32.17	-21.02	-9.80	-2.70	1.26	4.90	12.48
47	-54.28	-46.88	-43.29	-39.38	-32.29	-21.29	-10.30	-3.20	.70	4.29	11.78
48	-54.13	-46.84	-43.31	-39.47	-32.49	-21.68	-10.86	-3.89	-.05	3.48	10.77
49	-54.36	-47.08	-43.56	-39.73	-32.77	-21.98	-11.17	-4.23	-.44	3.12	10.39
50	-53.44	-46.33	-42.89	-39.14	-32.34	-21.79	-11.25	-4.44	-.70	2.74	9.85
51	-54.21	-47.10	-43.65	-39.90	-33.09	-22.54	-11.98	-5.17	-1.42	2.03	9.14
52	-55.30	-48.13	-44.64	-40.88	-34.02	-23.38	-12.75	-5.88	-2.11	1.36	8.53
53	-55.50	-48.44	-45.02	-41.29	-34.53	-24.09	-13.56	-6.79	-3.07	.35	7.42
54	-55.84	-48.12	-44.76	-41.11	-34.48	-24.17	-13.91	-7.28	-3.62	-.27	6.66
55	-56.37	-49.40	-46.02	-42.34	-35.66	-25.31	-14.95	-8.28	-4.60	-1.22	5.75
56	-60.49	-53.16	-49.61	-45.54	-38.32	-27.14	-15.96	-8.75	-4.78	-1.13	6.48
57	-61.09	-53.63	-50.02	-46.09	-38.95	-27.68	-16.81	-9.68	-5.75	-2.13	5.32
58	-62.47	-54.92	-51.26	-47.28	-40.04	-28.83	-17.62	-10.38	-6.40	-2.74	4.81
59	-68.16	-56.67	-52.55	-48.08	-39.95	-27.34	-19.74	-6.61	-2.13	1.78	10.47
60	-71.24	-61.47	-56.74	-51.68	-42.25	-27.76	-13.26	-5.91	1.23	5.96	15.73
61	-74.90	-64.17	-58.98	-53.33	-43.07	-27.15	-11.29	-.98	4.68	9.87	20.59
62	-73.42	-62.87	-57.76	-52.28	-42.10	-26.45	-10.79	-.69	4.87	9.98	20.52
63	-72.11	-61.71	-56.68	-51.28	-41.24	-26.81	-10.38	-.42	5.00	10.09	20.49
64	-70.64	-60.41	-55.46	-50.07	-40.28	-25.10	-9.92	-.13	5.26	10.21	20.43
65	-69.41	-59.33	-54.35	-49.14	-39.49	-24.59	-9.58	.07	5.38	10.26	20.34
66	-67.92	-58.04	-53.25	-48.04	-38.57	-23.98	-9.23	.24	5.46	10.24	20.12
67	-66.47	-56.75	-52.04	-46.92	-37.62	-23.19	-8.77	.54	5.66	10.37	20.08
68	-65.18	-55.61	-50.97	-45.93	-36.77	-22.56	-8.36	.82	5.86	10.50	20.07
69	-63.74	-54.34	-49.78	-44.62	-35.81	-21.85	-7.88	1.12	6.08	10.64	20.09
70	-62.47	-53.20	-48.71	-43.63	-34.96	-21.21	-7.46	1.41	6.29	10.78	20.[illegible]

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 5.11. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-11.62	-5.2[illegible]	-8.04	-6.76	-4.45	-.87	2.71	5.03	6.30	7.47	9.88
1	-17.98	-14.10	-12.21	-10.10	-6.44	-.67	5.10	8.82	10.87	12.25	15.64
2	-21.62	-17.14	-14.96	-12.60	-8.31	-1.65	5.00	9.29	11.66	13.83	18.31
3	-25.75	-21.55	-19.03	-16.23	-11.31	-3.59	4.13	9.11	11.85	14.37	19.57
4	-31.14	-25.31	-22.45	-19.42	-13.84	-5.19	3.46	9.04	12.11	14.83	20.76
5	-36.57	-29.87	-25.62	-23.08	-15.67	-6.71	3.24	9.66	13.20	16.45	23.15
6	-41.54	-34.19	-30.58	-26.65	-19.52	-8.46	2.40	9.74	13.66	17.27	24.72
7	-46.52	-38.29	-34.31	-29.97	-22.09	-9.87	2.35	10.23	14.56	18.55	26.78
8	-50.98	-42.02	-37.68	-32.95	-24.77	-11.06	2.25	10.83	15.56	19.60	28.87
9	-53.96	-44.59	-39.98	-35.02	-27.01	-12.03	1.98	10.95	15.91	20.47	29.89
10	-57.18	-47.36	-42.61	-37.44	-28.04	-13.47	1.10	10.20	15.67	20.42	30.24
11	-57.13	-47.51	-42.85	-37.78	-29.57	-14.30	-.02	9.18	14.25	18.91	28.53
12	-55.56	-46.46	-42.05	-37.25	-28.54	-15.03	-1.52	7.19	11.98	16.39	25.49
13	-50.80	-42.71	-38.73	-34.52	-26.77	-14.75	-2.73	5.02	9.29	13.21	21.30
14	-43.07	-36.40	-33.17	-29.65	-22.27	-13.36	-3.46	2.92	6.44	9.57	16.34
15	-36.31	-30.81	-28.15	-25.25	-13.99	-11.43	-3.67	1.53	4.48	7.46	13.68
16	-31.08	-26.35	-24.66	-21.58	-17.05	-10.03	-3.02	1.51	4.00	6.29	11.01
17	-26.47	-22.44	-20.43	-18.37	-14.51	-8.53	-2.56	1.30	3.42	5.37	9.00
18	-22.22	-18.72	-17.03	-15.19	-11.84	-6.65	-1.46	1.89	3.74	5.43	8.93
19	-18.43	-16.25	-14.71	-13.04	-9.99	-5.28	-.56	2.49	4.16	5.70	8.88
20	-17.64	-14.64	-13.18	-11.60	-8.72	-4.26	.21	3.08	4.67	6.12	9.13
21	-17.23	-14.18	-12.71	-11.11	-7.19	-3.68	.84	3.75	5.36	6.83	8.87
22	-17.83	-14.61	-13.06	-11.36	-8.28	-3.51	1.27	4.35	6.04	7.60	10.82
23	-18.21	-14.86	-13.23	-11.46	-8.24	-3.26	1.72	4.94	6.71	8.34	11.69
24	-19.65	-15.99	-14.22	-12.28	-8.78	-3.34	2.19	5.60	7.53	9.30	12.96
25	-20.79	-16.93	-15.06	-13.02	-9.32	-3.53	2.14	5.84	7.87	9.78	13.60
26	-22.76	-18.61	-16.61	-14.47	-10.45	-4.30	1.85	5.87	8.01	10.01	14.36
27	-25.45	-20.82	-18.68	-16.27	-11.91	-5.13	1.69	6.01	8.41	10.62	15.18
28	-28.86	-23.64	-21.14	-20.22	-15.77	-8.40	-1.00	3.71	6.33	8.73	13.69
29	-30.73	-25.96	-23.04	-21.12	-16.55	-9.46	-2.36	2.21	4.73	7.06	11.02
30	-31.71	-26.99	-24.76	-22.21	-17.69	-10.49	-3.68	.84	3.31	5.62	10.34
31	-33.43	-28.54	-26.21	-23.49	-18.99	-11.77	-4.56	.11	2.68	5.03	9.98
32	-34.60	-29.64	-27.26	-24.63	-19.84	-12.42	-5.00	-.21	2.42	4.86	9.86
33	-37.76	-32.11	-29.37	-26.39	-20.98	-12.59	-4.28	1.21	4.19	6.93	12.50
34	-39.08	-34.00	-31.19	-28.14	-22.59	-13.48	-5.37	.18	3.23	6.04	11.84
35	-40.35	-37.53	-34.22	-32.03	-26.18	-15.97	-5.06	.60	4.27	7.58	14.50
36	-47.49	-40.89	-37.47	-34.71	-27.90	-16.10	-3.31	-1.99	1.49	4.66	11.28
37	-51.18	-44.29	-40.76	-37.32	-30.73	-20.50	-18.24	-3.48	-.04	3.29	10.17
38	-54.19	-48.74	-45.13	-41.28	-34.47	-23.06	-11.94	-4.61	-.84	2.73	10.18
39	-56.96	-51.38	-47.71	-43.71	-36.48	-25.31	-13.94	-4.78	-2.78	.97	8.55
40	-61.89	-54.14	-50.34	-46.30	-38.67	-27.37	-15.64	-8.44	-4.35	-.60	7.15
41	-65.74	-57.39	-53.98	-49.23	-41.58	-29.64	-17.54	-9.82	-6.52	-1.66	6.94
42	-70.26	-61.63	-57.44	-52.89	-44.62	-31.80	-18.94	-10.71	-6.15	-1.97	6.67
43	-71.74	-63.87	-59.04	-54.38	-46.79	-33.80	-20.19	-11.87	-7.29	-3.08	5.61
44	-73.67	-64.73	-63.95	-56.79	-47.34	-34.24	-21.10	-12.64	-7.99	-3.71	5.13
45	-75.78	-66.64	-62.24	-57.49	-48.82	-35.19	-21.95	-13.20	-8.81	-4.13	4.52
46	-76.84	-67.84	-62.84	-57.94	-49.32	-35.66	-22.61	-13.97	-9.25	-4.65	4.11
47	-76.44	-67.58	-63.19	-58.41	-49.73	-36.27	-22.81	-14.19	-9.36	-4.97	4.18
48	-79.56	-70.26	-65.41	-60.54	-51.35	-37.10	-22.86	-13.66	-8.68	-3.96	5.66
49	-78.62	-66.88	-62.04	-58.05	-49.67	-36.78	-23.72	-15.35	-10.75	-6.51	2.23
50	-75.98	-67.14	-63.98	-58.29	-49.98	-36.46	-23.91	-15.52	-10.91	-6.66	2.09
51	-77.66	-68.73	-64.91	-59.71	-51.16	-37.92	-25.47	-16.13	-11.93	-7.18	1.82
52	-81.73	-72.29	-67.65	-62.64	-53.57	-37.60	-25.49	-16.39	-11.34	-6.75	2.73
53	-84.93	-74.98	-70.16	-64.72	-55.98	-38.49	-25.88	-16.20	-11.11	-6.38	2.68
54	-83.41	-73.77	-69.11	-64.03	-54.88	-40.47	-26.10	-16.96	-11.88	-7.21	2.93
55	-87.26	-77.82	-72.96	-66.66	-54.86	-41.49	-26.45	-16.45	-11.75	-6.29	3.95
56	-90.69	-79.29	-74.56	-68.47	-58.04	-42.82	-26.08	-15.67	-9.96	-4.75	4.84
57	-91.23	-80.29	-75.60	-69.23	-58.76	-42.43	-26.29	-15.64	-10.86	-4.76	4.10
58	-86.47	-76.38	-71.50	-66.18	-56.52	-41.65	-26.57	-16.72	-11.48	-6.71	3.37
59	-89.87	-79.11	-73.96	-68.23	-57.93	-41.96	-25.96	-15.49	-10.81	-4.88	5.96
60	-88.06	-77.40	-72.24	-66.67	-56.41	-40.59	-24.77	-14.56	-8.94	-3.78	6.88
61	-99.58	-86.06	-79.63	-72.49	-59.56	-39.68	-19.63	-6.74	.33	4.86	20.30
62	-96.92	-83.81	-77.96	-70.56	-58.68	-38.49	-19.08	-6.63	.39	4.74	19.86
63	-99.15	-81.04	-75.22	-68.58	-56.91	-37.66	-18.68	-6.61	.19	4.39	19.99
64	-91.51	[illegible].15	-73.17	-66.66	-56.83	-36.97	-18.14	-6.32	.19	4.18	18.53
65	-89.18	[illegible].06	-71.23	-64.89	-53.36	-36.50	-17.63	-6.11	.29	4.07	18.18
66	-86.01	[illegible].91	-69.24	-63.07	-51.87	-34.61	-17.14	-5.99	.23	5.09	17.59
67	-84.18	-7[illegible].72	-67.21	-61.22	-50.33	-33.65	-16.56	-5.67	.32	5.03	17.28
68	-81.52	-78.58	-66.17	-59.36	-48.81	-32.66	-16.18	-5.55	.26	5.59	16.61
69	-79.31	-68.47	-63.37	-57.61	-47.33	-31.98	-15.96	-5.18	.98	5.40	16.92
70	-76.93	-66.48	-61.42	-55.91	-46.91	-30.61	-14.98	-4.98	.61	5.67	16.13

TABLE 5.12. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

45-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-11.77	-9.33	-9.15	-6.36	-4.53	-.91	2.71	5.09	6.32	7.50	9.90
1	-20.60	-16.62	-14.66	-12.53	-8.65	-2.62	3.29	7.26	9.40	11.36	15.42
2	-26.01	-21.31	-19.03	-16.55	-12.09	-5.06	1.93	6.99	8.92	11.20	15.30
3	-32.72	-27.07	-29.31	-21.86	-15.95	-7.57	.02	6.22	9.20	11.96	17.30
4	-40.52	-33.68	-30.15	-26.76	-23.21	-10.05	.11	6.66	10.27	13.58	20.42
5	-45.88	-38.30	-34.63	-30.64	-23.38	-12.13	-.08	6.37	10.36	14.03	21.61
6	-50.58	-42.36	-38.39	-34.06	-26.17	-14.00	-1.01	6.05	10.38	14.36	22.50
7	-55.67	-46.74	-42.41	-37.70	-29.16	-15.50	-2.65	5.90	10.61	14.93	23.06
8	-59.51	-50.07	-45.52	-40.52	-31.48	-17.07	-3.95	5.53	10.57	15.14	24.58
9	-63.90	-53.82	-48.56	-43.65	-34.01	-19.47	-4.13	5.51	10.82	15.69	25.76
10	-66.22	-55.92	-50.33	-45.50	-35.64	-20.34	-5.05	4.31	10.24	15.23	25.54
11	-67.09	-56.78	-51.79	-46.36	-36.50	-21.20	-5.50	3.56	9.40	14.39	24.69
12	-61.82	-52.59	-49.11	-43.25	-34.41	-20.70	-6.39	1.35	6.72	11.19	23.43
13	-55.47	-47.37	-43.45	-39.19	-31.44	-22.42	-7.41	.34	4.61	8.53	16.62
14	-47.50	-40.79	-37.52	-33.97	-27.53	-27.59	-7.50	-1.12	2.43	5.69	12.42
15	-41.02	-35.33	-32.57	-23.57	-29.12	-25.66	-7.21	-1.76	1.25	4.00	9.72
16	-34.30	-30.04	-27.63	-25.12	-23.49	-17.27	-6.65	-1.90	1.16	3.51	8.37
17	-29.18	-25.07	-23.68	-20.92	-18.98	-10.69	-4.79	-.86	1.30	3.29	7.40
18	-22.56	-19.38	-17.54	-16.14	-13.12	-8.39	-3.67	-.62	1.05	2.60	5.78
19	-18.65	-15.80	-14.57	-13.12	-10.48	-6.36	-2.31	.32	1.77	3.10	5.85
20	-17.39	-14.60	-13.24	-11.77	-9.10	-4.92	-.32	1.80	3.33	4.68	7.47
21	-16.68	-13.77	-12.36	-10.83	-8.08	-3.72	.60	3.35	4.92	6.33	9.20
22	-15.60	-12.69	-11.25	-9.79	-6.96	-2.62	1.69	4.48	6.02	7.43	10.30
23	-16.75	-13.45	-11.65	-10.11	-6.95	-2.49	2.66	6.02	7.76	9.36	12.67
24	-17.46	-14.00	-12.33	-10.53	-7.20	-2.06	3.67	6.38	8.20	9.87	13.33
25	-17.57	-14.00	-12.78	-10.46	-6.99	-1.70	3.19	7.61	8.88	10.61	14.18
26	-19.63	-15.63	-13.70	-11.59	-7.77	-1.85	4.03	7.90	10.01	11.94	15.33
27	-23.25	-18.59	-16.32	-13.87	-9.80	-2.47	4.15	8.92	11.38	13.64	18.20
28	-33.13	-27.67	-24.80	-21.95	-16.62	-8.37	-.19	5.28	8.13	10.83	16.39
29	-35.92	-30.08	-27.26	-24.17	-18.67	-9.98	-1.29	4.37	7.96	10.28	16.13
30	-38.43	-34.04	-30.88	-27.91	-21.12	-11.37	-1.62	4.97	8.12	11.22	17.09
31	-44.68	-37.34	-33.82	-29.99	-23.04	-12.36	-1.98	5.48	9.38	12.82	20.09
32	-48.16	-40.67	-36.89	-32.98	-25.49	-13.39	-3.18	4.12	8.11	11.78	19.36
33	-54.84	-46.06	-41.93	-37.46	-29.33	-16.72	-4.19	4.81	8.49	12.68	21.18
34	-61.94	-52.54	-47.78	-43.82	-34.82	-20.00	-6.16	2.91	7.86	12.82	21.83
35	-64.74	-55.34	-50.79	-46.84	-36.46	-22.01	-8.97	.82	4.97	9.62	18.91
36	-66.91	-57.67	-53.20	-48.33	-39.48	-25.77	-12.94	-3.21	1.64	6.13	15.37
37	-71.11	-61.67	-57.10	-52.13	-43.89	-29.08	-15.07	-4.89	-1.06	3.61	12.96
38	-76.08	-65.22	-60.95	-55.26	-46.82	-31.28	-16.57	-7.19	-1.92	2.83	12.08
39	-82.20	-71.48	-66.26	-60.64	-50.23	-34.20	-18.17	-7.83	-2.14	3.09	13.09
40	-85.95	-74.49	-69.30	-63.58	-52.74	-36.41	-20.26	-9.72	-3.71	1.92	12.99
41	-88.78	-77.39	-71.88	-65.87	-53.97	-38.87	-21.17	-10.27	-4.27	1.29	12.63
42	-93.52	-81.98	-75.52	-69.13	-57.63	-39.83	-21.56	-9.93	-3.54	2.33	14.95
43	-97.96	-85.19	-79.00	-72.28	-60.06	-41.11	-22.16	-9.99	-3.22	2.97	15.73
44	-99.90	-87.06	-80.80	-73.78	-61.61	-42.61	-23.26	-10.88	-4.87	2.49	15.13
45	-102.92	-89.47	-82.95	-75.84	-63.97	-43.00	-23.89	-10.19	-3.06	3.47	16.93
46	-104.84	-92.57	-85.85	-78.13	-66.47	-43.27	-22.16	-8.49	-.92	5.80	20.27
47	-108.50	-94.38	-87.43	-79.96	-66.37	-45.38	-29.20	-10.66	-3.17	3.78	17.89
48	-110.51	-96.08	-89.09	-81.49	-67.66	-46.29	-29.82	-11.88	-3.98	3.57	19.83
49	-111.38	-97.32	-90.51	-83.10	-69.64	-48.77	-27.00	-14.93	-7.02	-.21	13.06
50	-113.28	-98.78	-91.48	-84.84	-70.14	-48.49	-27.12	-13.25	-5.81	1.61	16.71
51	-114.86	-99.65	-92.29	-84.20	-69.74	-47.18	-29.69	-18.07	-2.84	6.38	20.49
52	-111.98	-96.48	-87.25	-81.38	-67.89	-45.93	-22.72	-8.57	-.61	6.63	21.55
53	-112.68	-97.36	-89.94	-81.87	-67.28	-44.46	-21.79	-7.60	1.82	8.49	23.76
54	-115.89	-99.85	-91.29	-83.83	-67.48	-43.48	-19.88	-4.53	3.72	11.67	27.72
55	-114.71	-98.78	-91.87	-83.67	-67.42	-43.78	-20.13	-4.89	3.51	11.22	27.15
56	-115.37	-99.86	-91.19	-82.54	-66.72	-42.67	-18.94	-2.85	5.77	13.67	29.99
57	-114.37	-97.98	-89.97	-81.33	-65.66	-41.36	-17.06	-1.36	7.27	15.20	31.56
58	-113.71	-97.38	-89.38	-80.66	-66.45	-40.18	-15.74	.86	8.76	16.79	33.32
59	-119.00	-102.97	-94.16	-85.30	-69.33	-44.47	-17.66	-2.63	6.17	13.29	30.83
60	-109.64	-96.33	-89.93	-82.97	-70.12	-48.71	-31.18	-18.95	-11.99	-5.89	8.12
61	-109.01	-95.76	-89.24	-82.36	-69.66	-47.09	-28.39	-17.63	-10.45	-4.23	9.02
62	-107.68	-94.44	-88.12	-81.29	-68.74	-47.30	-29.97	-17.98	-10.59	-4.27	8.79
63	-106.22	-93.27	-87.00	-80.18	-67.79	-46.68	-29.37	-16.98	-10.15	-3.88	9.06
64	-104.99	-92.18	-86.98	-79.22	-66.96	-47.49	-28.92	-16.46	-9.91	-3.78	9.11
65	-103.94	-91.28	-85.84	-78.39	-66.13	-47.23	-28.23	-16.16	-9.43	-3.27	9.47
66	-102.73	-90.12	-84.82	-77.37	-65.31	-46.68	-27.89	-15.82	-9.18	-3.07	9.63
67	-101.03	-89.27	-83.18	-76.56	-64.84	-45.89	-27.26	-15.22	-8.66	-2.62	10.04
68	-100.07	-88.37	-82.31	-75.72	-63.75	-45.18	-26.62	-14.65	-8.06	-2.00	10.81
69	-99.97	-87.61	-81.47	-74.98	-63.98	-44.46	-25.98	-14.06	-7.48	-1.44	11.82
70	-99.27	-86.82	-80.79	-74.23	-63.22	-43.89	-25.19	-13.96	-6.89	-.86	11.68

TABLE 6.1. VANDENBURG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.90	-5.33	-4.58	-3.75	-2.25	.87	2.39	3.89	4.72	5.47	7.00
1	-15.96	-12.39	-10.66	-8.77	-5.35	-.84	5.24	8.69	10.57	12.30	15.88
2	-18.60	-14.18	-11.92	-9.55	-5.24	1.93	8.11	12.42	14.79	16.97	21.96
3	-22.37	-16.56	-13.79	-13.68	-5.11	3.52	12.15	17.72	20.78	23.60	29.41
4	-25.39	-18.46	-15.18	-11.45	-4.82	5.46	15.79	22.37	26.82	29.38	34.30
5	-28.98	-20.83	-16.83	-12.52	-4.48	7.46	19.61	27.45	31.76	35.73	43.91
6	-32.26	-23.32	-18.54	-13.66	-4.81	8.91	22.64	31.49	36.36	40.84	50.09
7	-35.49	-25.29	-20.27	-14.87	-5.05	10.17	25.40	35.21	40.62	45.58	55.84
8	-39.27	-27.85	-22.32	-16.29	-5.36	11.59	28.55	39.48	45.51	51.09	62.46
9	-42.11	-29.71	-23.70	-17.16	-5.29	13.12	31.53	43.91	49.94	56.95	68.36
10	-44.70	-31.30	-25.81	-17.75	-4.92	14.97	34.86	47.69	54.75	61.29	74.66
11	-45.11	-31.07	-25.27	-16.88	-3.44	17.39	38.22	51.65	59.05	65.85	79.88
12	-40.14	-27.16	-20.72	-13.71	-.99	18.75	38.49	51.21	58.22	64.64	77.94
13	-32.09	-23.73	-15.22	-9.23	1.45	18.52	35.39	46.26	52.25	57.76	69.18
14	-27.16	-17.18	-12.35	-7.08	2.47	17.29	32.11	41.66	46.93	51.76	61.74
15	-22.63	-13.69	-9.66	-5.26	2.71	15.08	27.45	35.43	39.82	43.86	52.19
16	-19.77	-12.46	-6.92	-5.06	1.94	12.79	23.64	30.49	34.50	38.09	45.38
17	-17.82	-11.55	-4.51	-5.21	.80	10.11	19.42	25.42	28.73	31.77	38.09
18	-16.91	-11.12	-8.56	-5.78	-.72	7.13	15.97	20.83	22.82	25.38	30.66
19	-17.74	-12.78	-10.37	-7.75	-2.98	4.41	11.80	16.57	19.20	21.61	26.59
20	-19.73	-14.88	-12.53	-9.48	-5.14	1.85	9.04	13.60	16.25	18.58	23.43
21	-21.03	-16.27	-13.96	-11.45	-6.89	-.18	7.26	11.82	14.33	16.64	21.40
22	-23.53	-18.52	-16.18	-13.46	-8.67	-1.23	6.20	11.00	13.64	16.04	21.07
23	-24.60	-21.10	-18.49	-15.59	-10.28	-2.17	6.09	11.31	14.20	16.87	22.36
24	-30.21	-23.93	-20.88	-17.67	-11.55	-2.22	7.12	13.14	16.95	19.50	25.78
25	-33.26	-26.28	-22.89	-19.21	-12.57	-2.15	8.22	14.91	18.60	21.98	28.97
26	-35.70	-28.12	-24.45	-20.46	-13.21	-1.97	9.27	16.52	20.51	24.18	31.78
27	-39.21	-30.70	-26.58	-22.09	-13.95	-1.32	11.31	19.45	23.94	28.06	36.89
28	-41.55	-33.62	-33.85	-27.56	-16.14	1.56	15.27	30.87	36.97	42.75	54.88
29	-44.14	-41.48	-35.34	-28.66	-16.53	2.28	2.09	33.22	39.90	46.04	60.72
30	-55.07	-42.76	-36.31	-29.37	-16.76	2.80	22.36	34.97	41.91	48.29	61.49
31	-56.70	-43.18	-36.51	-29.35	-16.33	3.05	29.03	37.05	44.22	50.80	64.90
32	-57.89	-43.73	-36.87	-29.40	-15.84	5.19	26.22	39.78	47.24	54.10	68.22
33	-59.52	-44.74	-37.59	-29.80	-15.65	6.28	28.22	42.36	50.15	57.31	72.08
34	-62.90	-47.02	-39.32	-30.95	-15.75	7.83	31.40	46.60	54.97	62.67	78.55
35	-64.89	-48.22	-40.15	-31.36	-15.41	9.34	34.08	50.04	58.82	66.90	83.02
36	-69.94	-51.79	-43.00	-33.44	-14.64	10.88	37.82	55.19	64.76	73.65	91.70
37	-73.35	-53.81	-44.37	-34.08	-15.39	12.59	42.57	61.26	71.55	81.08	100.53
38	-75.56	-54.94	-44.95	-34.07	-14.33	14.29	46.91	66.65	77.53	87.62	108.14
39	-78.27	-56.40	-45.81	-34.28	-13.34	15.12	51.59	72.62	84.05	95.64	114.01
40	-79.78	-56.78	-45.61	-33.48	-11.44	22.73	56.70	78.93	91.07	102.22	125.29
41	-77.25	-53.57	-42.18	-29.62	-6.95	26.21	63.26	86.83	98.51	109.98	133.64
42	-72.89	-49.31	-37.45	-24.86	-2.01	33.43	68.87	91.72	104.30	115.87	139.74
43	-69.51	-45.19	-33.78	-20.99	2.10	37.98	73.71	96.88	109.51	121.19	145.31
44	-67.49	-43.07	-31.24	-18.37	5.01	41.25	77.50	100.88	113.75	125.58	150.08
45	-65.04	-40.47	-28.57	-15.61	7.91	44.38	80.86	104.38	117.33	129.23	153.61
46	-63.78	-38.68	-26.52	-13.29	10.74	46.00	85.26	109.29	122.52	134.68	159.78
47	-58.91	-34.11	-22.09	-9.02	14.72	51.54	88.34	112.18	125.18	137.19	162.88
48	-55.82	-31.11	-19.14	-6.11	17.55	54.23	90.92	114.58	127.60	139.67	164.29
49	-51.25	-26.65	-14.67	-1.67	21.94	58.62	95.27	118.91	131.93	143.89	168.38
50	-48.14	-23.56	-11.65	1.30	24.83	61.32	97.81	121.34	134.29	146.28	170.78
51	-47.54	-22.92	-10.99	1.98	25.55	62.10	98.64	122.21	135.19	147.11	171.73
52	-31.21	-9.14	1.55	13.19	34.32	67.08	99.84	120.97	132.60	143.29	165.36
53	-26.23	-5.02	5.25	16.97	36.74	69.22	99.71	120.81	131.19	141.46	162.00
54	-24.07	-3.33	6.71	19.64	37.50	68.28	99.07	118.92	129.85	139.98	160.64
55	-21.74	-1.75	8.05	18.69	38.81	68.03	98.83	117.37	128.02	137.81	158.88
56	-5.68	12.28	20.97	30.44	47.63	74.29	100.95	118.14	127.60	136.58	154.26
57	-8.31	18.21	19.23	29.14	46.94	74.57	102.23	120.85	129.95	139.88	157.99
58	-7.74	11.94	21.47	31.84	50.68	77.98	104.11	127.95	138.33	147.86	167.64
59	-11.51	9.99	19.58	38.43	58.68	81.78	112.88	132.93	143.98	154.12	174.87
60	-17.29	5.29	16.15	28.83	49.54	83.83	114.47	134.83	144.91	154.82	173.34
61	-6.38	13.33	22.87	33.25	52.12	81.36	118.61	139.47	149.84	159.98	169.18
62	-7.37	12.15	21.41	31.98	50.69	79.58	108.66	127.25	137.54	147.00	166.83
63	-8.32	11.03	20.41	30.61	49.19	77.88	106.61	126.19	136.35	146.72	164.00
64	-9.32	9.86	19.15	29.26	47.57	76.09	104.66	122.93	133.84	142.33	161.81
65	-10.02	8.93	18.11	28.11	46.25	74.39	102.53	120.68	130.67	139.88	158.01
66	-11.82	7.76	16.86	26.75	43.73	72.61	100.48	118.46	128.36	137.46	154.28
67	-11.92	6.67	15.78	25.51	43.33	70.96	98.59	116.98	126.21	135.23	153.84
68	-12.92	5.51	14.49	24.16	41.81	69.17	96.54	114.18	123.96	132.83	151.27
69	-13.63	4.59	13.41	23.01	40.44	67.47	94.61	111.94	121.64	130.36	148.66
70	-14.62	3.41	12.15	21.66	38.92	65.69	92.46	109.72	119.23	127.97	146.00

TABLE 5.2. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.230	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-8.57	-5.86	-4.33	-3.63	-2.08	.16	2.48	3.84	4.64	5.37	6.88
1	-13.76	-11.62	-10.11	-8.96	-6.97	-.89	1.80	4.27	5.95	7.95	11.08
2	-16.98	-12.62	-10.75	-8.79	-6.63	.69	8.41	18.13	12.13	19.08	17.86
3	-19.22	-15.3	-11.93	-9.34	-5.63	2.46	9.96	15.86	17.25	19.83	24.59
4	-21.36	-16.62	-12.69	-9.41	-4.82	4.46	13.39	18.92	21.99	24.82	30.67
5	-23.69	-18.72	-13.99	-10.07	-3.59	6.48	16.54	22.29	26.36	29.83	36.41
6	-26.11	-18.42	-15.65	-10.64	-3.27	8.16	19.66	26.93	36.98	39.71	42.90
7	-29.26	-20.66	-16.19	-11.56	-3.12	9.88	23.43	31.88	36.88	48.46	53.16
8	-33.41	-23.11	-19.62	-12.98	-3.29	11.75	26.73	36.96	41.72	46.61	56.71
9	-37.84	-25.87	-22.43	-14.22	-3.32	13.87	30.36	41.46	47.13	53.63	63.92
10	-41.29	-28.56	-22.95	-15.71	-3.56	15.97	35.11	46.26	52.95	59.09	71.78
11	-45.58	-28.23	-31.77	-16.76	-3.38	17.22	37.66	50.36	57.33	64.77	77.40
12	-35.33	-22.96	-16.97	-15.96	1.38	19.79	38.69	49.93	56.95	62.44	74.80
13	-26.97	-16.58	-11.55	-8.67	3.88	19.33	38.78	46.67	56.16	56.18	66.67
14	-21.91	-12.59	-8.25	-3.57	4.91	18.87	31.23	39.71	44.39	48.68	57.55
15	-18.96	-9.67	-6.21	-2.15	4.87	15.78	28.64	33.68	37.53	41.98	48.03
16	-14.87	-8.46	-5.38	-2.60	4.13	13.45	23.15	29.28	32.66	35.76	42.17
17	-13.11	-7.48	-5.65	-2.19	3.34	11.67	19.43	24.34	27.28	28.83	36.26
18	-14.69	-6.81	-5.16	-3.32	1.11	7.99	15.87	19.33	21.75	23.99	28.02
19	-13.35	-9.36	-7.17	-4.53	0.36	5.38	11.88	13.97	15.76	18.34	22.84
20	-15.17	-11.09	-9.15	-6.47	-2.92	3.26	9.32	13.27	15.99	17.99	21.57
21	-16.97	-12.93	-10.97	-8.39	-4.97	1.63	7.88	11.81	14.38	15.80	18.55
22	-18.33	-14.12	-12.28	-9.86	-5.83	.42	6.67	10.72	12.92	14.96	19.17
23	-19.96	-15.85	-12.93	-10.02	-6.99	-.80	4.56	10.79	12.65	15.18	17.83
24	-20.78	-16.66	-13.45	-11.29	-6.80	-.15	7.18	11.50	14.05	16.31	21.00
25	-22.61	-17.39	-14.91	-12.22	-7.32	.27	7.87	12.79	15.76	17.99	21.05
26	-25.24	-19.39	-16.99	-13.39	-7.75	.96	9.73	15.35	18.95	21.36	27.19
27	-28.38	-21.62	-18.4	-14.56	-8.51	2.17	12.36	18.74	22.55	25.80	32.73
28	-30.67	-24.10	-22.97	-17.46	-11.17	-1.42	8.33	14.62	18.09	21.27	27.84
29	-30.56	-23.65	-20.59	-17.69	-10.60	-.61	9.38	15.83	19.37	22.63	29.36
30	-32.52	-24.98	-21.32	-17.35	-10.13	1.07	12.27	19.49	23.47	27.12	34.67
31	-34.93	-26.91	-22.93	-18.38	-10.03	1.27	13.19	20.84	25.07	28.98	36.99
32	-33.59	-25.53	-21.62	-17.37	-9.65	2.31	14.28	22.80	26.25	30.15	38.22
33	-35.19	-26.31	-22.21	-17.33	-8.03	4.35	17.53	26.03	30.71	35.01	43.80
34	-36.79	-27.06	-22.35	-17.22	-7.91	6.53	20.98	30.29	35.42	40.13	49.86
35	-39.50	-28.71	-23.99	-17.71	-9.30	8.09	24.78	35.39	41.12	46.39	59.26
36	-43.63	-31.39	-25.46	-19.01	-7.29	10.88	27.09	40.76	47.21	53.14	65.38
37	-45.00	-32.60	-26.30	-19.38	-6.47	12.44	32.55	45.20	52.19	60.67	71.70
38	-47.39	-33.48	-26.75	-19.42	-6.11	14.53	35.17	48.48	55.81	62.54	76.45
39	-49.12	-34.92	-27.31	-19.56	-5.49	16.32	38.13	52.19	59.94	67.05	81.79
40	-49.35	-34.59	-26.70	-18.66	-4.06	18.57	41.23	55.89	63.88	71.27	86.53
41	-51.28	-34.91	-27.02	-18.43	-2.03	21.35	45.53	61.13	69.71	77.60	93.09
42	-51.77	-34.72	-26.46	-17.48	-1.15	24.16	49.47	65.79	74.78	83.09	100.09
43	-51.39	-32.40	-24.81	-15.36	1.90	28.37	54.96	72.11	81.66	90.82	108.14
44	-52.06	-33.23	-25.11	-14.18	3.84	31.79	59.74	77.77	87.69	96.82	115.65
45	-53.23	-33.37	-23.74	-13.29	5.72	35.20	64.68	83.69	94.16	103.78	123.44
46	-53.34	-32.83	-22.92	-12.09	7.54	37.97	68.41	88.04	98.85	108.78	129.29
47	-49.67	-29.08	-19.10	-8.84	11.47	42.04	72.61	93.33	103.19	113.16	133.76
48	-45.69	-25.49	-15.71	-5.06	14.27	44.25	79.23	93.56	104.21	113.99	134.19
49	-43.20	-23.20	-13.56	-3.01	16.16	45.88	78.60	94.33	105.83	114.88	134.88
50	-41.33	-21.48	-11.74	-.73	17.85	47.45	77.04	96.13	106.64	116.29	134.23
51	-39.13	-19.39	-9.83	.48	19.49	48.97	78.87	96.96	107.37	116.93	136.60
52	-38.60	-18.74	-9.12	1.35	20.37	49.85	79.34	98.35	108.82	118.44	138.31
53	-37.95	-17.64	-8.48	2.48	21.37	50.74	80.19	99.16	109.60	119.20	139.01
54	-36.88	-17.04	-7.44	3.02	22.38	51.49	80.89	99.87	110.33	119.93	139.77
55	-29.36	-9.40	-.91	4.03	26.94	54.03	78.04	96.74	106.02	111.56	134.10
56	-26.40	-7.81	.80	10.18	27.21	53.62	80.02	97.85	106.93	115.05	132.04
57	-23.28	-4.14	2.19	11.14	27.56	52.97	78.39	94.78	103.80	112.10	128.22
58	-14.85	1.38	9.29	17.79	33.32	57.40	81.94	97.81	105.56	113.42	129.65
59	-17.67	-.95	7.49	16.57	32.57	57.40	82.84	99.00	107.91	116.11	133.03
60	-14.83	1.73	9.75	18.48	34.34	58.92	83.51	99.37	108.10	116.12	132.60
61	-8.20	4.51	13.44	21.34	35.40	57.28	78.16	93.36	101.80	108.13	123.84
62	-11.35	3.72	11.82	18.97	33.46	55.77	78.15	92.58	100.52	107.82	122.98
63	-14.84	.69	8.20	16.37	31.84	54.28	77.23	92.07	100.24	107.76	123.26
64	-18.07	-2.28	5.48	13.84	29.03	52.59	76.14	91.33	99.69	107.28	123.29
65	-21.38	-5.06	2.81	11.37	26.98	51.84	75.16	90.70	99.26	107.13	123.38
66	-24.43	-8.02	.03	8.79	24.69	49.35	74.81	89.92	98.67	106.72	123.34
67	-23.86	-10.88	-2.48	6.31	23.66	47.88	73.83	89.38	98.34	106.48	123.48
68	-31.89	-13.72	-5.31	3.85	20.47	46.25	72.83	88.66	97.81	106.23	123.69
69	-34.43	-16.68	-8.00	1.38	18.23	44.63	70.97	87.96	97.32	105.91	123.67
70	-37.65	-19.53	-10.76	-1.19	16.16	43.07	69.98	87.33	96.88	105.66	123.79

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 6.3. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.41	-4.05	-3.39	-2.67	-1.37	.65	2.67	3.98	4.69	5.35	6.71
1	-10.81	-11.11	-9.71	-9.18	-5.91	-1.11	3.19	5.57	6.50	8.50	11.00
2	-15.27	-11.60	-9.94	-8.05	-4.61	.71	6.04	9.48	11.37	13.11	16.70
3	-17.63	-12.94	-10.67	-8.20	-3.71	3.26	10.22	14.71	17.18	19.46	24.15
4	-20.74	-14.04	-11.99	-6.08	-3.23	5.53	14.28	19.93	23.04	25.90	31.00
5	-23.50	-16.52	-13.13	-9.45	-2.76	7.61	17.98	24.67	28.36	31.74	38.73
6	-26.38	-18.37	-14.49	-10.27	-2.61	9.28	21.16	28.83	33.05	36.93	44.94
7	-29.70	-20.56	-16.14	-11.31	-2.58	10.98	24.58	33.28	38.10	42.62	51.66
8	-33.67	-23.28	-18.25	-12.77	-2.83	12.59	28.01	37.96	43.43	48.46	58.85
9	-36.40	-25.05	-19.56	-13.67	-2.71	14.13	30.97	41.84	47.82	53.31	64.66
10	-36.22	-24.45	-19.76	-12.55	-1.29	16.17	33.63	44.89	51.09	56.79	68.55
11	-32.64	-21.18	-15.63	-9.59	1.38	18.39	35.48	46.37	52.41	57.96	69.41
12	-26.06	-15.70	-10.60	-5.22	4.70	20.04	35.47	45.39	50.85	55.87	66.23
13	-18.38	-9.67	-5.86	-.87	7.87	20.48	33.32	41.66	46.25	50.47	59.18
14	-14.07	-6.46	-2.78	1.23	8.51	19.80	31.09	38.37	42.38	46.06	53.67
15	-9.43	-3.29	-.32	2.98	8.78	17.89	27.08	32.87	36.10	39.07	45.21
16	-6.23	-2.05	-.24	2.59	7.74	15.73	23.72	28.88	31.71	34.32	39.78
17	-6.56	-3.65	-1.28	1.31	6.00	13.29	20.57	25.26	27.88	30.23	35.13
18	-7.96	-5.06	-1.87	.29	4.22	10.31	16.41	20.33	22.50	24.49	28.59
19	-9.06	-5.34	-3.53	-1.52	2.00	7.53	13.06	16.62	18.59	20.38	24.12
20	-10.62	-6.99	-5.23	-3.32	.16	5.55	10.94	14.41	16.33	18.08	21.72
21	-12.26	-8.59	-6.81	-4.87	-1.35	4.10	9.56	13.06	15.01	16.79	20.47
22	-13.82	-10.01	-8.17	-6.17	-2.53	3.12	8.76	12.40	14.40	16.24	20.05
23	-15.24	-11.06	-9.04	-6.80	-2.85	3.35	9.55	13.54	15.74	17.76	21.94
24	-17.36	-12.56	-10.23	-7.70	-3.10	4.03	11.16	15.75	18.29	20.61	25.42
25	-18.90	-13.59	-11.01	-8.21	-3.12	4.77	12.65	17.74	20.54	21.12	28.43
26	-20.02	-14.26	-11.46	-8.43	-2.91	5.65	14.21	19.73	22.77	25.56	31.33
27	-21.43	-15.05	-11.95	-8.58	-2.47	7.01	16.50	22.61	25.98	29.07	35.46
28	-22.58	-16.26	-12.67	-15.45	-2.16	8.75	18.16	26.78	31.57	35.78	44.48
29	-25.41	-18.05	-14.43	-16.56	-2.47	9.22	20.49	29.57	34.54	39.11	48.55
30	-28.68	-23.74	-17.72	-17.66	-1.56	7.28	22.37	32.02	38.08	43.05	53.42
31	-30.79	-25.21	-19.43	-18.71	-3.29	4.11	24.41	34.32	40.71	46.03	57.11
32	-32.28	-26.68	-20.11	-18.72	-7.67	9.55	27.44	38.67	44.58	50.58	62.33
33	-33.05	-30.65	-24.05	-13.12	-5.27	12.15	30.16	42.42	48.36	54.97	67.37
34	-32.52	-28.77	-24.29	-17.41	-8.28	14.67	34.20	46.46	52.74	60.11	73.27
35	-34.34	-30.69	-24.18	-16.33	-3.17	15.93	35.18	48.72	56.34	63.38	77.13
36	-37.44	-31.71	-24.27	-18.82	-3.28	18.17	35.44	52.28	60.12	67.68	81.99
37	-45.31	-31.02	-22.16	-16.02	-1.31	20.05	42.00	56.18	63.35	71.12	85.31
38	-46.18	-28.50	-22.56	-15.55	-1.07	21.45	44.21	58.54	66.24	73.88	89.26
39	-45.61	-30.27	-22.4	-14.76	-.07	22.62	45.46	60.16	58.23	75.85	90.33
40	-47.61	-25.62	-1.66	-12.07	1.78	24.05	47.41	59.16	68.77	73.72	88.12
41	-33.03	-24.00	-17.13	-3.75	3.77	24.64	45.55	53.03	56.45	73.28	87.36
42	-28.14	-22.22	-17.12	-2.23	4.37	25.52	46.18	59.73	68.62	73.34	87.18
43	-31.21	-23.71	-17.20	-6.12	5.75	26.70	46.65	59.51	56.60	73.10	86.54
44	-25.58	-16.53	-16.61	-3.77	5.76	28.13	47.77	55.55	66.67	73.19	86.24
45	-27.13	-14.45	-.31	-1.63	10.50	29.32	44.13	60.28	66.94	73.08	85.76
46	-23.21	-11.14	-7.29	1.07	12.27	31.55	46.47	61.12	66.29	77.24	84.21
47	-19.57	-7.93	-7.32	3.79	14.45	32.04	49.22	60.38	66.47	72.08	83.07
48	-17.55	-6.10	-.56	5.46	16.44	33.44	51.42	61.29	67.43	72.97	84.43
49	-16.04	-4.44	1.14	7.30	18.47	34.63	52.85	63.98	70.67	75.89	87.30
50	-14.98	-3.51	2.35	8.50	19.67	37.60	54.23	67.50	71.65	77.30	88.98
51	-14.30	-3.11	2.61	9.92	20.11	37.62	55.12	66.41	72.53	78.39	90.13
52	-15.63	-3.58	2.26	8.61	21.15	38.15	55.54	67.44	73.84	79.67	91.73
53	-17.01	-4.90	1.71	9.36	20.97	39.15	57.87	69.39	76.39	82.30	95.31
54	-16.18	-5.88	.87	7.56	19.97	38.82	57.81	70.67	76.41	83.61	95.81
55	-22.30	-9.73	-2.15	5.00	17.93	39.14	58.29	71.29	78.44	85.62	98.59
56	-29.61	-14.27	-6.59	1.04	15.67	38.24	61.86	72.45	82.48	90.86	106.05
57	-14.63	-2.02	4.03	10.74	22.41	41.52	60.74	72.31	78.96	85.07	97.68
58	-2.15	5.41	13.60	21.05	32.14	47.28	66.43	77.48	83.57	89.17	100.72
59	4.12	15.14	20.43	26.23	37.94	53.30	69.57	80.12	85.33	91.27	102.29
60	-1.55	11.61	16.50	22.91	34.56	52.61	70.66	82.71	88.72	94.61	106.77
61	-3.90	4.59	11.13	18.78	31.15	51.18	71.21	84.13	91.24	97.78	111.27
62	-10.52	2.02	5.87	16.74	25.71	49.82	69.57	87.51	90.05	96.61	110.16
63	-11.92	1.63	3.20	15.34	24.32	48.42	68.54	81.51	98.65	95.21	108.76
64	-13.53	.07	6.66	17.84	28.88	47.66	67.26	80.24	87.46	94.05	107.45
65	-14.70	-1.30	5.73	17.46	25.67	45.66	65.85	78.32	86.04	92.82	106.22
66	-18.30	-2.76	3.69	11.86	24.67	46.27	64.49	77.47	84.24	91.52	104.82
67	-17.92	-4.26	3.36	9.55	22.65	47.30	63.12	75.24	82.44	90.06	103.72
68	-19.21	-5.66	.50	8.16	21.23	41.50	61.77	74.55	82.04	88.66	102.32
69	-20.90	-7.19	-.55	6.67	18.73	40.14	60.48	73.61	80.83	87.47	101.18
70	-22.20	-8.85	-1.95	5.27	16.29	38.74	59.69	72.21	79.43	86.07	99.78

TABLE 6.4. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.126	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-[illegible].07	-3.76	-3.13	-2.05	-1.28	.73	2.67	3.92	4.40	5.23	6.94
1	-[illegible].85	-10.67	-9.28	-7.76	-5.01	-.73	3.56	6.29	7.81	9.20	12.08
2	-14.71	-11.21	-9.51	-7.67	-4.32	.88	6.08	9.43	11.28	12.97	16.47
3	-17.50	-12.83	-10.58	-8.12	-3.66	3.27	10.13	14.65	17.11	19.37	20.83
4	-20.69	-14.73	-11.84	-8.70	-2.99	5.86	14.72	20.42	23.87	26.46	32.42
5	-20.62	-17.21	-13.62	-9.71	-2.61	8.40	19.40	26.50	30.41	34.00	41.42
6	-28.44	-19.68	-15.43	-10.81	-2.42	10.60	23.61	32.00	36.62	40.87	49.64
7	-31.31	-21.39	-16.59	-11.36	-1.87	12.85	27.67	37.06	42.23	47.09	57.81
8	-34.93	-23.81	-18.43	-12.57	-1.93	14.57	31.06	41.70	47.56	52.94	64.06
9	-37.88	-25.1'	-19.35	-13.06	-1.63	16.10	33.82	45.25	51.85	57.33	69.28
10	-36.18	-24.09	-18.23	-11.85	-.27	17.68	35.63	47.21	53.59	59.45	71.54
11	-33.32	-21.95	-15.86	-9.65	1.61	19.07	36.53	47.79	54.00	59.65	71.46
12	-27.24	-18.60	-11.45	-5.88	4.35	20.15	35.94	46.13	51.74	56.80	67.54
13	-19.49	-9.80	-5.59	-1.01	7.31	20.22	33.12	41.44	46.02	50.21	58.92
14	-12.46	-5.34	-1.89	1.87	8.68	19.25	29.83	36.64	40.40	43.85	50.97
15	-10.37	-4.12	-1.09	2.20	8.19	17.47	26.75	32.73	36.03	39.05	45.31
16	-8.81	-3.08	-.90	1.91	7.02	14.93	22.84	27.95	30.76	33.34	38.67
17	-7.76	-3.29	-1.13	1.22	5.50	12.13	18.76	23.03	25.39	27.55	32.02
18	-7.21	-3.09	-1.69	.29	3.82	9.34	14.85	18.41	20.37	22.17	25.88
19	-7.52	-4.32	-2.77	-1.04	1.98	6.73	11.47	14.53	16.22	17.77	20.97
20	-8.93	-5.94	-4.49	-2.91	-.05	4.38	8.42	11.68	13.26	14.70	17.69
21	-10.90	-7.78	-5.27	-4.63	-1.65	2.98	7.60	10.53	12.23	13.74	16.85
22	-12.03	-8.94	-7.44	-5.81	-2.84	1.75	6.34	9.30	10.94	12.43	15.53
23	-12.90	-9.72	-8.18	-6.50	-3.46	1.27	5.99	9.04	10.72	12.26	15.44
24	-13.26	-9.81	-8.29	-6.52	-3.31	1.66	6.63	9.83	11.60	13.22	16.57
25	-14.51	-10.77	-8.96	-6.99	-3.41	2.14	7.69	11.27	13.20	15.05	18.79
26	-15.41	-11.38	-9.42	-7.30	-3.44	2.55	8.54	12.40	14.52	16.48	20.51
27	-14.41	-10.34	-8.38	-6.24	-2.35	3.68	9.71	13.60	15.74	17.71	21.77
28	-15.58	-11.01	-8.79	-6.36	-2.01	4.76	11.56	15.94	18.35	20.56	25.13
29	-14.07	-9.88	-7.26	-4.84	-.44	6.37	13.19	17.58	20.00	22.22	26.41
30	-12.96	-8.29	-6.03	-3.57	.90	7.82	14.77	19.24	21.70	23.96	28.63
31	-11.70	-7.01	-4.73	-2.26	2.24	9.20	16.17	20.66	23.14	25.41	30.10
32	-12.87	-7.57	-5.01	-2.22	2.85	10.71	18.56	23.67	26.42	28.89	34.28
33	-12.02	-6.51	-3.84	-.94	4.34	12.52	20.70	25.97	28.87	31.54	37.05
34	-11.31	-5.45	-2.60	.48	6.10	14.81	23.52	29.13	32.22	35.06	40.92
35	-13.42	-6.82	-3.32	.27	6.79	16.89	27.00	33.51	37.10	40.40	47.21
36	-13.77	-6.64	-3.18	.58	7.41	18.00	28.59	35.42	39.18	42.64	49.77
37	-14.72	-7.20	-3.56	.40	7.68	18.75	29.31	37.11	41.07	44.71	52.22
38	-16.46	-8.50	-4.65	-.46	7.16	18.97	30.78	38.40	42.60	46.85	54.41
39	-17.31	-9.31	-5.44	-1.22	6.43	18.30	30.12	37.83	42.58	45.92	53.92
40	-17.24	-9.38	-5.57	-1.43	6.10	17.76	29.43	36.95	41.10	44.50	52.77
41	-16.08	-8.66	-4.92	-.92	6.24	17.34	28.47	35.69	39.61	43.24	50.74
42	-18.95	-7.86	-4.43	-.68	6.09	16.61	27.13	33.52	37.65	41.08	48.17
43	-14.66	-7.68	-4.33	-.62	6.07	16.43	26.79	33.48	37.16	40.54	47.52
44	-15.73	-8.48	-4.97	-1.14	5.88	16.56	27.33	34.27	38.10	41.61	48.86
45	-17.42	-9.85	-6.19	-2.20	5.04	16.27	27.50	34.75	38.73	42.40	49.97
46	-17.27	-9.67	-5.99	-1.98	5.28	16.55	27.63	35.10	39.10	42.88	50.38
47	-16.68	-9.11	-5.45	-1.44	5.78	17.02	28.26	35.53	39.49	43.16	50.73
48	-18.1[illegible]	-10.24	-6.43	-2.25	5.23	16.90	28.57	36.09	40.23	44.04	51.90
49	-20.91	-12.40	-8.28	-3.79	4.35	16.98	29.61	37.78	42.24	46.36	54.87
50	-23.58	-14.41	-9.97	-5.14	3.67	17.24	30.88	39.62	44.45	48.89	58.05
51	-24.83	-15.44	-13.85	-5.88	3.16	17.18	31.21	40.25	45.23	49.80	59.25
52	-23.1[illegible]	-15.21	-10.86	-6.13	2.47	15.80	29.13	37.72	42.45	46.80	55.78
53	-25.47	-16.96	-12.65	-7.95	.58	13.80	27.03	35.59	40.25	44.57	53.48
54	-27.07	-18.14	-13.82	-9.14	-.56	12.70	25.96	34.51	39.22	43.54	52.48
55	-32.04	-22.61	-19.04	-13.07	-4.04	9.97	23.37	33.03	37.97	42.54	51.97
56	-33.77	-24.75	-20.38	-15.62	-6.98	6.42	19.82	28.46	33.22	37.59	46.62
57	-40.32	-30.28	-25.42	-20.13	-11.51	4.39	19.30	28.21	34.20	39.07	49.11
58	-45.97	-36.31	-31.15	-25.53	-15.32	.50	16.33	26.54	32.15	37.32	47.98
59	-48.13	-39.96	-35.57	-21.63	-13.75	-1.52	10.78	18.56	22.92	26.91	35.14
60	-39.88	-31.06	-26.75	-22.14	-13.71	-.62	12.46	20.90	25.55	29.82	38.63
61	-44.63	-34.79	-31.30	-24.79	-15.32	-.63	14.08	23.53	28.74	33.53	43.43
62	-44.00	-34.27	-29.55	-24.42	-15.10	-.66	13.79	23.11	28.24	32.95	42.69
63	-43.18	-33.61	-29.97	-23.92	-14.76	-.55	13.66	22.83	27.88	32.51	42.09
64	-42.50	-33.09	-29.53	-23.56	-14.55	-.57	13.40	22.42	27.38	31.94	41.36
65	-41.43	-32.47	-28.93	-23.25	-14.38	-.60	13.16	22.01	26.89	31.37	40.63
66	-41.20	-32.09	-27.67	-22.87	-14.15	-.63	12.90	21.62	26.42	30.83	39.94
67	-40.54	-31.50	-27.24	-22.52	-13.95	-.65	12.64	21.21	25.93	30.27	39.23
68	-39.75	-30.54	-26.68	-22.04	-13.61	-.54	12.52	20.95	25.59	29.85	38.66
69	-39.10	-30.05	-26.26	-21.70	-13.41	-.57	12.27	20.58	25.11	29.36	37.96
70	-38.46	-29.95	-25.84	-21.36	-13.22	-.60	12.02	20.16	24.64	28.76	37.26

TABLE 6.5. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.71	-2.64	-2.12	-1.50	-.73	1.06	2.64	3.67	4.23	4.75	5.82
1	-11.18	-8.90	-7.60	-6.60	-4.41	-1.03	2.25	4.57	5.73	6.88	9.17
2	-11.60	-9.24	-7.95	-6.66	-4.30	-.66	2.99	5.34	6.64	7.83	10.29
3	-13.32	-10.07	-8.50	-6.78	-3.88	1.14	5.96	9.07	10.78	12.36	15.60
4	-15.25	-11.16	-9.18	-7.02	-3.10	2.97	9.04	12.36	15.12	17.10	21.29
5	-19.13	-13.03	-10.56	-7.87	-2.19	4.56	12.15	17.04	19.72	22.19	27.30
6	-21.10	-15.06	-12.14	-8.95	-2.13	5.79	14.75	20.53	23.71	26.64	32.68
7	-24.27	-17.89	-13.91	-10.28	-2.54	6.82	17.26	23.08	27.56	30.85	37.93
8	-27.63	-19.69	-15.77	-11.56	-3.30	7.96	19.82	27.48	31.69	35.56	43.55
9	-30.03	-21.29	-16.91	-12.25	-3.79	9.33	22.44	30.91	35.56	39.84	48.68
10	-31.55	-22.04	-17.44	-12.43	-3.33	10.79	24.90	34.00	39.01	43.62	53.12
11	-33.00	-22.88	-17.97	-12.64	-2.25	12.08	27.10	36.79	42.13	47.03	57.15
12	-23.27	-18.92	-14.39	-9.46	-.70	13.34	27.27	36.22	41.15	45.68	55.04
13	-20.38	-12.64	-8.89	-4.81	2.59	18.08	25.57	32.97	33.08	46.86	48.54
14	-12.99	-6.95	-4.02	-.83	4.95	13.92	22.90	28.68	31.87	34.80	40.84
15	-8.27	-3.56	-1.28	1.20	5.71	12.70	19.69	24.19	26.68	28.96	33.66
16	-6.98	-2.98	-1.04	1.07	4.90	10.85	16.79	20.62	22.73	24.67	28.68
17	-6.24	-2.95	-1.36	.37	3.52	8.40	13.28	16.42	18.15	19.71	23.03
18	-6.22	-3.59	-2.32	-.93	1.59	5.50	9.40	11.92	13.31	14.58	17.21
19	-7.79	-5.49	-4.30	-2.06	-.81	2.65	6.18	8.43	9.63	10.83	13.17
20	-9.83	-7.58	-6.49	-5.32	-3.15	.18	3.52	5.68	6.86	7.95	10.20
21	-11.68	-9.39	-8.28	-7.07	-4.88	-1.48	1.92	4.11	5.32	6.43	8.71
22	-11.77	-9.66	-8.63	-7.52	-5.50	-2.37	.76	2.74	3.89	4.91	7.02
23	-13.32	-10.96	-9.62	-8.56	-6.72	-2.83	.67	2.92	4.16	5.30	7.66
24	-14.25	-11.65	-10.40	-9.03	-6.74	-2.69	1.17	3.65	5.02	6.28	8.87
25	-14.71	-12.06	-10.68	-9.25	-6.65	-2.62	1.41	4.01	5.48	6.75	9.47
26	-15.66	-12.69	-11.25	-9.68	-6.94	-2.43	1.58	4.83	6.39	7.83	10.80
27	-16.78	-13.45	-11.83	-10.08	-6.99	-1.94	3.01	6.26	7.96	9.57	12.90
28	-18.93	-14.61	-14.37	-13.09	-7.80	-1.29	5.32	9.56	11.88	14.02	18.98
29	-20.17	-15.81	-13.78	-11.48	-7.23	-.76	5.71	9.88	12.18	14.29	18.68
30	-18.97	-14.82	-12.06	-10.43	-6.66	-.50	5.66	9.63	11.81	13.88	17.97
31	-17.93	-13.95	-12.82	-9.92	-6.11	-.28	5.71	9.52	11.62	13.69	17.84
32	-18.87	-14.32	-12.22	-9.93	-6.77	.40	5.13	11.20	13.67	15.60	20.02
33	-19.74	-15.08	-12.71	-10.21	-5.68	1.35	8.37	15.91	15.98	17.69	22.93
34	-22.02	-16.74	-14.14	-11.91	-6.36	1.47	9.38	14.36	17.13	19.68	24.96
35	-23.19	-17.49	-14.98	-12.08	-6.82	1.39	9.68	14.74	17.46	20.32	25.82
36	-24.91	-18.66	-15.80	-13.05	-7.35	1.18	9.71	15.81	18.23	21.02	26.76
37	-24.56	-18.83	-16.06	-13.69	-7.55	.98	9.98	14.93	17.95	20.72	26.98
38	-25.48	-19.97	-17.02	-14.02	-8.60	-.10	8.29	13.79	16.92	19.90	25.10
39	-26.09	-20.58	-17.92	-15.81	-9.74	-1.67	6.60	11.87	14.78	17.49	22.95
40	-24.64	-21.39	-18.01	-16.04	-11.07	-3.33	4.42	9.41	12.16	14.69	19.90
41	-28.31	-23.07	-20.53	-17.77	-12.76	-4.07	2.01	7.03	10.59	13.13	18.37
42	-31.60	-25.93	-23.19	-20.21	-14.79	-4.38	2.02	7.44	10.93	13.19	18.05
43	-33.08	-27.98	-25.69	-21.94	-16.29	-7.69	1.22	6.06	9.97	12.03	18.73
44	-33.01	-27.01	-25.05	-22.05	-16.40	-8.19	.01	5.99	8.99	11.03	17.00
45	-34.23	-28.46	-25.67	-22.62	-17.10	-8.53	.03	5.56	8.68	11.48	17.17
46	-35.36	-29.42	-26.59	-23.91	-17.73	-8.91	-.18	5.50	8.71	11.69	17.85
47	-37.27	-31.08	-27.96	-24.66	-18.65	-9.39	-.03	5.98	9.29	12.33	18.40
48	-37.71	-31.83	-28.84	-26.28	-19.37	-10.19	-1.08	4.90	8.16	11.16	17.33
49	-38.79	-32.89	-29.51	-26.22	-20.23	-10.95	1.67	4.31	7.61	10.69	16.89
50	-40.71	-34.19	-31.00	-27.40	-21.37	-11.90	-3.00	4.31	5.40	10.00	15.34
51	-42.46	-35.72	-32.45	-28.07	-22.44	-12.42	-2.91	4.05	7.41	10.07	17.42
52	-43.31	-36.79	-33.64	-30.20	-23.96	-14.29	-4.41	1.43	6.07	8.22	14.74
53	-44.78	-38.19	-35.81	-31.69	-25.23	-15.46	-5.69	.61	4.08	7.27	13.84
54	-47.04	-40.77	-37.48	-33.90	-27.48	-17.32	-7.24	-.74	2.04	6.12	12.91
55	-51.28	-44.18	-40.61	-36.83	-29.94	-19.27	-8.61	-1.72	2.06	5.55	12.73
56	-54.40	-47.10	-43.50	-39.00	-32.49	-21.00	-10.19	-3.00	.90	4.60	10.06
57	-62.06	-53.16	-48.06	-44.17	-35.66	-22.46	-9.26	-.74	3.94	8.25	17.4
58	-64.03	-56.12	-50.00	-46.10	-37.67	-24.32	-11.10	-2.66	2.14	6.46	16.57
59	-61.00	-52.90	-49.10	-44.87	-37.20	-25.38	-13.48	-6.72	-1.80	2.39	10.48
60	-69.78	-59.61	-54.02	-48.91	-40.43	-26.06	-11.66	-2.68	2.78	7.42	17.41
61	-63.56	-54.68	-50.68	-46.11	-37.81	-29.94	-12.87	-3.77	.00	5.00	13.67
62	-71.07	-63.10	-59.06	-54.50	-46.44	-30.00	-11.40	-3.05	1.96	5.86	14.00
63	-69.67	-61.29	-57.20	-52.91	-34.98	-22.69	-10.48	-2.47	1.78	5.91	14.19
64	-67.78	-49.69	-45.66	-41.38	-32.61	-21.64	-8.88	-1.36	2.53	6.44	14.06
65	-55.69	-47.78	-43.87	-39.71	-32.16	-20.49	-8.72	-1.16	3.00	6.82	15.72
66	-53.40	-45.73	-42.01	-37.94	-30.62	-19.23	-7.03	-.40	3.64	7.27	14.06
67	-51.84	-44.03	-40.39	-36.49	-29.25	-18.18	-6.95	.24	4.19	7.83	15.38
68	-45.44	-40.16	-36.42	-34.77	-27.80	-16.57	-6.18	.83	4.67	8.38	15.53
69	-47.58	-40.46	-37.01	-33.25	-26.43	-15.85	-5.27	1.55	5.31	8.76	15.09
70	-45.49	-38.58	-35.23	-31.69	-24.98	-14.78	-4.49	2.16	5.99	9.14	16.08

TABLE 6.6. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.61	-[illegible]2.53	[illegible]	-1.02	-.30	1.22	2.83	3.37	4.00	4.97	6.05
1	-9.97	-7.95	[illegible]	-5.93	-4.01	-1.02	1.06	1.85	4.90	5.92	7.93
2	-10.50	-9.70	[illegible]	[illegible]	[illegible]	-.70	2.59	4.72	5.88	6.95	9.17
3	-12.40	-9.32	[illegible]	-6.27	-3.35	1.18	5.70	8.62	10.23	11.71	14.76
4	-14.18	[illegible]	[illegible]	[illegible]	-2.72	3.01	8.70	12.42	14.47	16.34	20.20
5	-15.30	-10.83	[illegible]	-6.30	-[illegible]02	4.63	11.77	15.55	17.91	20.08	24.56
6	-16.78	-11.65	[illegible]	[illegible]	-1.53	6.10	13.77	18.05	21.36	23.85	28.98
7	-13.45	-12.60	[illegible]	-6.63	-1.08	7.61	16.70	21.30	24.98	27.81	33.57
8	-21.90	-14.96	-11.[illegible]	-7.95	-1.38	9.00	19.59	25.24	29.52	32.96	39.49
9	-24.01	-16.24	-[illegible]	-8.38	-.94	10.59	22.12	28.56	33.66	37.42	45.19
10	-25.95	-17.41	-[illegible]	-8.71	-.89	12.27	25.42	32.[illegible]	37.70	41.94	50.53
11	-25.54	-15.53	-[illegible]	-7.54	1.03	14.32	27.61	36.17	40.89	45.23	54.18
12	-27.55	-14.55	-[illegible]	[illegible]	2.06	16.27	29.18	38.22	42.99	47.83	56.30
13	-13.51	-10.57	[illegible]	-2.57	5.07	15.96	28.04	36.29	40.43	44.28	52.22
14	-14.03	-7.42	-6.[illegible]	-.75	5.57	15.37	25.27	31.45	34.57	38.17	44.77
15	-10.38	-5.25	[illegible]	-.05	4.35	12.43	20.11	25.02	27.73	30.22	35.36
16	-8.20	-4.42	[illegible]	-.55	3.12	8.81	14.10	17.17	20.19	22.05	25.28
17	-5.45	-5.43	[illegible]	-2.36	.54	5.04	9.54	12.44	14.04	15.51	18.54
18	-4.80	-6.51	-7.41	-4.20	-2.02	1.27	4.37	5.[illegible]	6.16	9.26	11.55
19	-10.01	-3.09	[illegible]	-6.12	-4.75	-1.39	1.49	3.74	4.36	5.30	7.24
20	-11.64	-9.80	[illegible]	-7.97	-6.17	-3.41	-.30	1.[illegible]7	2.04	2.93	4.78
21	-17.77	-10.44	[illegible]	-9.17	-7.43	-4.79	-2.14	-.44	.50	1.37	3.15
22	-14.00	-12.20	[illegible]	[illegible]	-8.67	-6.01	[illegible]	-1.02	-.67	.20	2.00
23	-15.70	-13.75	[illegible]	-11.74	-9.91	-7.02	-4.12	-2.20	-1.23	-.29	1.65
24	-16.52	-14.51	[illegible]	[illegible]	-11.55	-7.56	-4.58	[illegible]	-1.59	-.62	1.40
25	-17.63	-15.56	-14.[illegible]	-13.41	-11.39	-8.23	-5.17	-3.04	-1.91	-.89	1.24
26	-14.72	-16.08	[illegible]	-13.92	-12.88	-8.70	[illegible]	-3.48	-2.36	-1.32	.32
27	-17.03	-16.77	[illegible]	-14.43	-13.74	-8.85	-5.45	-3.28	-2.06	-.95	1.14
28	-20.95	-21.48	[illegible]	-17.95	-14.63	-9.47	-4.31	-.38	.85	2.53	6.01
29	-26.03	-22.30	[illegible]	-18.54	-14.97	-9.44	-3.51	-.24	1.62	3.43	7.15
30	-26.43	-22.70	[illegible]	-18.92	-15.36	-9.82	-4.29	-.72	0.25	3.05	6.78
31	-28.78	-23.07	[illegible]	-19.21	-15.76	-10.26	-4.75	-1.20	.75	2.55	6.26
32	-27.37	-23.57	-21.73	-19.73	-16.10	-10.46	-4.82	-1.19	.81	2.85	6.45
33	-207.66	-23.79	[illegible]	-19.89	-16.19	-10.45	-4.77	-1.02	4.01	2.89	6.75
34	-27.90	-24.04	-22.17	-20.13	-16.43	-10.70	-4.97	-1.17	.77	2.84	6.50
35	-30.70	-26.56	-24.55	-22.37	-18.40	-12.26	-6.11	-2.24	.04	2.04	6.19
36	-32.97	-28.63	-26.53	-24.25	-20.09	-13.66	-7.22	-3.02	-.78	1.32	5.65
37	-33.96	-29.74	-27.70	-25.46	-21.45	-15.19	-8.54	-4.01	-2.68	-.64	3.57
38	-35.69	-31.38	-29.29	-27.02	-22.90	-16.51	-10.11	-5.99	-3.72	-1.64	2.67
39	-35.73	-31.76	-[illegible]	-27.74	-23.94	-18.64	-12.15	-8.35	-6.25	-4.33	-.36
40	-38.55	-34.24	-32.16	-29.89	-25.77	-13.37	-12.98	-8.80	-6.59	-4.50	-.20
41	-41.08	-36.54	-34.34	-31.95	-27.60	-20.86	-14.12	-9.77	-7.38	-5.18	-.63
42	-45.59	-40.39	-37.87	-35.13	-30.15	-22.43	-14.70	-9.72	-6.98	-4.46	.74
43	-44.94	-40.21	-37.92	-35.43	-30.91	-22.90	-16.88	-12.76	-9.87	-7.58	-2.85
44	-47.83	-42.36	-40.60	-38.04	-33.37	-26.15	-18.92	-14.28	-11.69	-9.33	-4.46
45	-49.14	-44.25	-41.87	-39.29	-34.60	-27.32	-20.05	-15.38	-12.79	-10.42	-5.52
46	-45.52	-44.69	-42.35	-39.81	-35.19	-28.02	-20.86	-16.24	-13.69	-11.36	-6.53
47	-49.61	-44.80	-47.47	-39.94	-35.34	-28.21	-21.17	-16.47	-13.94	-11.61	-6.80
48	-51.37	-46.27	-43.80	-41.11	-36.23	-28.66	-21.09	-16.21	-13.52	[illegible]	-5.35
49	-54.31	-48.70	-45.99	-43.03	-37.67	-29.35	-21.03	-15.66	-12.71	[illegible]	-4.39
50	-58.36	-52.11	-49.08	-45.78	-39.73	-30.50	-21.22	-15.23	-11.93	-8.80	-2.64
51	-63.35	-56.30	-53.89	-49.17	-42.42	-31.56	-21.49	-14.74	-11.03	-7.61	-.56
52	-69.37	-60.44	-56.60	-52.42	-44.83	-33.06	-21.29	-13.69	-9.52	-5.87	2.25
53	-72.14	-63.58	-59.43	-54.92	-46.79	[illegible]	-21.22	-13.12	-8.61	-4.47	4.09
54	-72.32	-64.00	-59.98	-55.59	-47.53	[illegible]	-22.95	-14.99	-10.61	-6.58	1.73
55	-71.95	-64.06	-61.24	-56.08	-48.53	-36.02	-25.11	-17.56	-13.40	-9.58	-1.69
56	-74.77	-66.68	-62.76	-58.50	-50.75	-38.74	-26.73	-14.99	-14.73	-10.88	-2.72
57	-75.21	-67.54	-63.82	-59.77	-51.43	-41.03	-29.64	-22.29	-18.24	-14.53	-6.05
58	-81.94	-73.51	-69.43	-64.93	-56.82	-44.24	-31.68	-23.54	-19.07	-14.97	-6.49
59	-81.56	-73.63	-69.79	-65.61	-58.02	-46.25	-34.47	-26.88	-22.70	-18.85	-10.92
60	-86.21	-77.96	-73.96	-69.61	-61.71	-49.46	-37.22	-29.32	-24.97	-20.97	-12.72
61	-87.44	-74.69	-71.94	-66.85	-59.43	-47.53	-35.42	-29.[illegible]	-24.91	-21.16	-13.41
62	-80.62	-72.34	-69.21	-65.16	-57.81	-46.40	-35.00	-27.64	-23.59	-19.87	-12.19
63	-78.63	-71.05	-67.38	-63.38	-56.13	-44.68	-33.63	-26.18	-22.38	-18.71	-11.14
64	-76.80	-69.29	-65.66	-61.70	-54.51	-43.36	-32.21	-25.02	-21.06	-17.42	-9.91
65	-75.10	-67.64	-64.02	-60.10	-52.96	-41.89	-30.82	-23.66	-19.75	-16.13	-8.60
66	-73.27	-65.88	-62.30	-58.41	-51.31	-40.36	-29.39	-22.32	-18.42	-14.84	-7.45
67	-71.82	-64.18	-60.63	-56.76	-49.73	-38.84	-27.95	-20.93	-17.06	-13.50	-6.17
68	-69.96	-62.29	-58.75	-54.94	-48.01	-37.32	-26.61	-19.70	-15.89	-12.40	-5.18
69	-67.70	-60.54	-57.07	-53.29	-46.43	-35.84	-25.36	-18.71	-14.53	-11.06	-3.89
70	-65.88	-58.70	-55.35	-51.61	-44.81	-34.27	-23.74	-16.94	-13.20	-9.77	-2.67

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 6.7. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-2.97	-2.07	-1.63	-1.15	-.29	1.05	2.39	3.24	3.73	4.17	5.07
1	-8.40	-6.92	-5.96	-5.02	-3.32	-.47	1.37	2.67	4.61	5.47	7.25
2	-9.17	-7.17	-6.21	-5.16	-3.25	-.29	2.67	4.58	5.63	6.60	8.59
3	-9.91	-7.35	-6.11	-5.74	-2.33	1.50	5.30	7.75	9.10	10.34	12.71
4	-11.50	-8.27	-6.71	-5.02	-1.93	2.85	7.63	10.72	12.42	13.98	17.20
5	-12.27	-8.70	-6.97	-5.08	-1.46	3.69	8.95	12.37	14.25	15.98	19.66
6	-13.29	-9.29	-7.35	-5.25	-1.42	4.52	10.46	14.29	16.40	18.34	22.34
7	-14.19	-9.74	-7.68	-5.23	-.97	5.69	12.25	16.51	18.86	21.01	25.97
8	-15.54	-10.43	-7.95	-5.26	-.37	7.22	14.80	19.69	22.39	24.86	29.97
9	-16.62	-11.42	-7.71	-5.74	.40	9.92	17.21	22.59	25.84	28.25	33.85
10	-16.84	-13.65	-7.66	-4.35	1.55	13.74	19.94	25.87	29.13	32.13	38.33
11	-16.27	-9.71	-6.53	-3.07	3.22	12.94	22.71	28.99	32.48	35.63	42.19
12	-15.36	-8.65	-5.42	-1.87	4.55	14.51	24.47	30.89	34.42	37.67	44.38
13	-14.39	-7.83	-5.66	-1.19	5.9	14.83	25.87	30.85	34.31	37.49	44.05
14	-13.49	-7.46	-5.54	-1.37	4.43	13.35	22.35	28.07	31.25	34.17	40.20
15	-12.38	-7.17	-5.29	-2.23	2.50	9.80	17.09	21.79	24.38	26.76	31.68
16	-10.34	-6.82	-5.12	-3.27	.12	5.32	10.53	13.90	15.75	17.45	20.97
17	-10.88	-8.13	-6.79	-5.34	-2.79	1.19	5.48	8.11	9.57	10.90	13.46
18	-11.96	-9.69	-8.69	-7.39	-5.21	-1.84	1.54	3.71	4.91	6.01	8.38
19	-11.96	-10.28	-9.35	-8.43	-6.75	-4.15	-1.34	-.13	1.06	1.91	3.66
20	-13.23	-11.60	-10.81	-9.95	-8.39	-5.97	-3.55	-1.99	-1.13	-.34	1.29
21	-14.91	-11.30	-12.51	-11.65	-10.28	-7.65	-5.21	-3.14	-2.80	-2.01	-.37
22	-16.29	-14.70	-13.92	-13.08	-11.54	-9.19	-6.82	-5.39	-4.46	-3.68	-2.09
23	-17.84	-16.19	-15.38	-14.51	-12.92	-10.40	-8.00	-6.91	-5.54	-4.79	-3.08
24	-19.12	-17.41	-16.58	-15.68	-14.15	-11.51	-8.98	-7.34	-6.44	-5.62	-3.91
25	-20.13	-18.39	-17.55	-16.63	-14.97	-12.38	-9.80	-8.13	-7.22	-6.37	-4.3
26	-20.85	-19.08	-18.21	-17.28	-15.28	-12.94	-10.30	-8.60	-7.66	-6.80	-5.02
27	-21.79	-19.91	-19.03	-18.01	-16.23	-13.41	-10.62	-8.82	-7.82	-6.91	-5.03
28	-23.62	-21.82	-20.80	-19.80	-17.98	-15.16	-12.34	-10.52	-9.52	-8.[illegible]	-6.70
29	-26.34	-24.05	-22.53	-21.72	-19.57	-16.12	-12.72	-10.52	-9.31	-8.20	-5.90
30	-26.57	-24.38	-22.32	-22.17	-20.07	-16.83	-13.58	-11.49	-10.33	-9.27	-7.09
31	-25.98	-23.36	-22.98	-21.92	-19.58	-16.59	-13.58	-12.06	-10.99	-10.01	-7.99
32	-27.25	-25.00	-23.31	-22.72	-20.55	-17.19	-13.89	-11.67	-10.48	-9.38	-7.12
33	-28.99	-26.44	-25.21	-23.87	-21.47	-17.65	-13.87	-11.44	-10.09	-8.86	-6.32
34	-30.33	-27.63	-26.32	-24.89	-22.30	-18.29	-14.28	-11.69	-10.26	-8.95	-6.25
35	-32.64	-29.76	-28.36	-26.84	-24.08	-19.79	-15.51	-12.74	-14.22	-9.83	-6.94
36	-33.30	-30.54	-29.20	-27.75	-25.11	-21.01	-16.91	-14.27	-12.82	-11.48	-9.72
37	-33.61	-31.08	-29.85	-28.51	-26.09	-22.33	-18.57	-16.15	-14.81	-13.59	-11.05
38	-35.52	-32.75	-31.42	-29.96	-27.31	-23.21	-19.11	-16.47	-15.01	-13.67	-10.31
39	-36.01	-33.39	-32.22	-30.74	-28.24	-24.35	-20.46	-17.95	-16.57	-15.30	-12.68
40	-37.32	-34.83	-33.63	-32.32	-29.94	-26.26	-22.57	-20.19	-18.88	-17.88	-15.19
41	-40.97	-38.22	-36.90	-35.45	-32.82	-28.75	-24.68	-22.05	-20.60	-19.27	-16.53
42	-45.11	-41.96	-40.43	-38.78	-35.75	-31.09	-26.41	-23.40	-21.74	-20.22	-17.07
43	-48.55	-45.04	-43.23	-41.46	-38.17	-32.90	-27.68	-24.32	-22.47	-20.77	-17.26
44	-50.46	-46.89	-45.16	-43.27	-39.85	-34.55	-29.25	-25.83	-23.94	-22.21	-18.64
45	-52.68	-48.32	-46.50	-44.52	-40.92	-35.34	-29.76	-26.16	-24.18	-22.36	-18.60
46	-52.54	-48.82	-47.02	-45.06	-41.51	-35.99	-30.48	-26.93	-24.97	-23.17	-19.45
47	-51.08	-47.87	-46.31	-44.62	-41.55	-36.79	-32.03	-28.96	-27.27	-25.71	-22.90
48	-51.17	-48.13	-46.67	-45.07	-42.17	-37.67	-33.17	-30.20	-28.67	-27.20	-2[illegible].7
49	-52.65	-45.50	-47.98	-46.32	-43.31	-38.63	-33.96	-30.94	-29.29	-27.76	-24.61
50	-56.56	-52.70	-50.69	-48.82	-45.21	-39.53	-33.65	-30.19	-28.17	-26.32	-22.49
51	-59.67	-55.58	-53.60	-51.05	-47.54	-41.48	-35.41	-31.50	-29.35	-27.37	-23.29
52	-65.81	-60.80	-58.38	-55.7[illegible]	-53.95	-43.52	-36.09	-31.29	-28.66	-26.23	-21.23
53	-66.43	-61.48	-59.07	-56.46	-51.72	-44.36	-37.00	-32.25	-28.[illegible]	-27.24	-22.28
54	-68.55	-63.42	-60.94	-58.24	-53.33	-45.72	-38.12	-33.21	-30.60	-28.02	-22.90
55	-69.98	-64.99	-62.57	-59.94	-55.16	-47.76	-40.35	-35.57	-32.94	-30.52	-25.53
56	-76.26	-70.47	-67.66	-64.61	-55.05	-50.46	-41.86	-36.32	-33.26	-30.46	-24.66
57	-81.71	-75.39	-72.32	-68.99	-62.93	-53.54	-44.16	-38.10	-34.77	-31.70	-25.38
58	-90.81	-82.99	-79.20	-75.08	-67.59	-55.59	-46.38	-36.89	-32.77	-28.98	-21.16
59	-100.50	-90.75	-86.03	-80.90	-71.57	-57.10	-42.63	-33.51	-28.17	-23.[illegible]	-13.70
60	-83.22	-77.02	-74.02	-70.75	-64.82	-55.62	-46.42	-40.49	-37.22	-34.22	-28.02
61	-79.75	-74.03	-71.25	-68.22	-62.71	-54.17	-45.63	-40.12	-37.09	-34.30	-28.55
62	-79.00	-72.35	-69.58	-65.60	-61.17	-52.75	-44.33	-38.40	-35.91	-33.16	-27.49
63	-78.07	-70.50	-67.80	-64.87	-59.54	-51.27	-43.11	-37.64	-35.75	-32.05	-26.48
64	-74.24	-68.75	-66.10	-63.20	-57.95	-49.80	-41.64	-36.40	-33.51	-30.85	-25.36
65	-72.43	-67.01	-64.29	-61.54	-56.36	-48.32	-40.30	-35.12	-32.27	-29.65	-24.24
66	-70.50	-65.20	-62.63	-59.84	-54.77	-46.91	-39.04	-33.97	-31.18	-28.62	-23.32
67	-68.70	-63.47	-61.34	-58.18	-53.19	-45.44	-37.68	-32.68	-29.93	-27.40	-22.17
68	-66.79	-61.85	-59.18	-56.49	-51.57	-43.96	-36.38	-31.48	-28.75	-26.27	-21.14
69	-65.05	-59.99	-57.55	-54.88	-50.04	-42.54	-35.04	-30.20	-27.54	-25.[illegible]	-20.04
70	-63.27	-58.28	-5[illegible].87	-53.24	-48.47	-41.07	-33.62	-28.90	-26.27	-23.86	-18.87

TABLE 6.8. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.290	5.000	15.900	50.000	84.100	93.000	97.720	99.000	99.865
0	-3.19	-2.26	-1.80	-1.30	-.40	.99	2.39	3.29	3.78	4.29	5.18
1	-6.30	-4.67	-5.73	-4.82	-3.16	-.63	1.99	3.55	4.97	5.41	7.19
2	-9.70	-7.00	-6.03	-4.97	-3.06	-.07	2.90	4.43	5.86	6.85	8.86
3	-9.01	-4.62	-5.47	-4.21	-1.72	1.63	5.16	7.47	8.73	9.89	12.28
4	-10.10	-7.25	-5.87	-4.37	-1.65	2.58	6.80	9.53	11.03	12.41	15.26
5	-12.23	-8.75	-7.06	-5.22	-1.88	4.30	8.47	11.81	13.66	15.34	18.82
6	-13.68	-9.62	-7.66	-5.62	-1.63	5.39	10.41	13.30	16.49	18.40	22.46
7	-14.84	-10.22	-7.99	-5.66	-1.13	6.73	12.58	15.30	19.44	21.68	26.30
8	-15.13	-10.08	-7.64	-4.98	-.15	7.39	14.82	19.65	22.31	24.76	29.80
9	-14.60	-9.17	-6.69	-3.78	1.33	9.24	17.16	2.26	25.07	27.66	32.99
10	-13.34	-7.87	-6.22	-2.39	2.89	11.01	19.13	24.36	27.25	29.90	35.36
11	-13.90	-7.91	-5.00	-1.64	3.90	12.79	21.69	27.43	30.59	33.5	39.49
12	-13.97	-7.60	-4.65	-1.34	4.66	13.94	23.24	29.23	32.53	35.56	41.82
13	-13.95	-7.50	-4.61	-1.18	4.22	13.06	21.89	27.59	30.73	33.61	39.[illegible]
14	-10.96	-5.71	-5.17	-.90	4.62	12.41	20.19	25.22	27.98	30.52	35.77
15	-9.87	-5.60	-3.38	-1.07	3.1[illegible]	9.62	16.11	20.30	22.[illegible]1	24.93	29.11
16	-10.16	-4.60	-4.67	-3.00	.41	6.70	10.99	14.40	16.[illegible]	18.00	21.56
17	-[illegible]1.56	-8.68	-7.14	-5.58	-2.7[illegible]	1.69	4.[illegible]	8.95	10.52	11.96	14.93
18	-12.11	-9.73	-8.56	-7.33	-5.05	-1.52	2.00	4.28	5.53	6.66	9.06
19	-12.96	-10.95	-9.96	-8.89	-6.94	-3.93	-.91	1.04	2.11	3.09	5.13
20	-13.59	-11.85	-11.01	-10.10	-8.44	-5.86	-3.28	-1.62	-.70	.14	1.88
21	-15.15	-13.36	-12.50	-11.56	-9.85	-7.20	-4.65	-2.45	-1.90	-1.09	.74
22	-16.94	-15.12	-14.24	-13.27	-11.53	-8.83	-6.12	-4.38	-3.42	-2.53	-.71
23	-17.85	-16.09	-15.24	-14.32	-12.49	-10.03	-7.42	-5.74	-4.8[illegible]	-3.97	-2.21
24	-18.67	-16.92	-16.07	-15.15	-13.48	-10.88	-8.29	-6.62	-5.69	-4.85	-3.10
25	-19.87	-18.09	-17.22	-16.28	-14.58	-11.93	-9.29	-7.68	-6.64	-5.78	-3.99
26	-20.58	-18.76	-17.88	-16.92	-15.14	-12.48	-9.74	-8.03	-7.07	-6.19	-4.37
27	-21.97	-19.97	-19.00	-17.94	-16.02	-13.0[illegible]	-10.06	-8.14	-7.09	-6.11	-4.11
28	-25.2[illegible]	-22.81	-2[illegible]	-20.3[illegible]	-18.09	-14.44	-1[illegible].84	-8.52	-7.24	-6.07	-3.65
29	-25.12	-22.90	-21.67	-20.45	-19.22	-14.78	-11.33	-9.11	-7.88	-6.76	-4.44
30	-24.96	-22.76	-22.69	-20.53	-18.42	-15.15	-11.88	-9.76	-8.07	-7.55	-5.35
31	-29.47	-24.01	-2[illegible].82	-21.52	-19.16	-15.51	-11.85	-9.49	-8.20	-7.00	-4.54
32	-27.96	-24.81	22.62	-22.13	19.60	-15.66	-11.77	-9.15	-7.80	-6.51	-3.86
33	-28.77	-25.83	-24.41	-22.86	-20.05	-15.69	-11.33	-8.52	-6.97	-5.55	2.61
34	-29.13	-2[illegible].14	-24.67	-23.66	-21.18	-15.61	-11.09	-8.17	-6.56	-5.08	-2.03
35	-28.70	-25.95	-24.47	-22.27	-20.24	-16.02	-11.79	-9.06	-7.56	-6.18	-3.33
36	-31.22	-27.95	-26.43	-24.72	-21.63	-16.24	-12.64	-8.95	-7.25	-5.68	2.4[illegible]
37	-34.09	-30.55	-29.63	-26.96	23.57	-18.30	-13.04	-9.64	-7.77	-6.05	-2.51
38	-35.19	-32.47	-2[illegible].66	-28.70	25.13	-19.60	-14.07	-10.50	-8.54	-6.72	-3.00
39	-37.38	-33.64	-31.32	-29.85	-26.27	-20.71	-15.19	-11.57	-9.52	-7.78	-4.[illegible]3
40	-38.89	-34.97	-32.17	-31.01	-27.26	-21.45	-15.64	-11.89	-9.83	-7.93	-4.62
41	-40.91	-36.86	-34.90	-32.77	-28.89	-22.88	-16.67	-12.99	-10.86	-8.90	-4.55
42	-44.11	-39.83	-37.78	-35.50	-31.41	-25.0[illegible]	-18.70	-14.00	-12.35	-10.27	-5.99
43	-48.14	-43.30	-40.96	-38.40	-32.77	-26.58	-19.40	-14.77	-12.21	-9.87	-5.03
44	-51.80	-46.40	-42.78	-40.92	-35.75	-27.72	-19.69	-14.11	-11.66	-9.04	-3.63
45	-53.83	-48.20	-45.32	-42.[illegible]0	-36.81	-28.31	-19.80	-14.31	-11.29	-8.52	-2.79
46	-55.41	-49.50	-46.[illegible]	-43.52	-37.86	-29.08	-20.21	-14.65	-11.53	-8.67	-2.76
47	-54.67	-48.97	-46.21	-43.20	-37.74	-29.28	-20.82	-15.36	-12.36	-9.80	-3.[illegible]
48	-54.18	-48.60	-45.[illegible]9	-42.95	-37.61	-29.32	-21.13	-15.69	-12.75	-10.04	-4.[illegible]
49	-54.17	-43.84	-45.96	-43.05	-37.76	-29.55	-21.34	-16.05	-13.13	-10.46	-4.93
50	-56.40	-50.41	-47.[illegible]1	-44.35	-38.62	-29.72	-20.88	-15.10	-11.95	-9.05	-3.06
51	-59.26	-52.67	-4[illegible].47	-46.00	-39.69	-29.90	-20.11	-13.80	-10.33	-7.13	-.54
52	-63.59	-56.82	-52.65	-48.77	-41.72	-30.7[illegible]	-19.86	-12.80	-8.92	-5.35	2.01
53	-66.91	-58.93	-55.06	-50.85	-43.20	-31.35	-19.4[illegible]	-11.44	-7.63	-3.76	4.22
54	-70.11	-62.54	-57.29	-52.87	-44.67	-31.9[illegible]	-19.24	-11.03	-6.52	-2.37	6.20
55	-74.35	-65.19	-59.76	-55.93	-47.17	-33.58	-19.39	-11.23	-6.40	-1.97	7.39
56	-76.06	-66.50	-61.88	-56.84	-47.69	-33.50	-19.31	-10.16	-5.13	-.50	9.[illegible]
57	-77.55	-67.89	-62.92	-57.72	-48.29	-33.66	-19.03	-9.59	-4.40	.38	10.24
58	-77.92	-67.42	-62.34	-56.80	-46.75	-31.17	-15.58	-5.53	.00	5.09	15.59
59	-85.62	-73.56	-67.72	-61.38	-4[illegible].92	-31.92	-14.07	-2.48	3.88	9.22	21.78
60	-98.78	-83.76	-76.49	-68.57	-54.19	-31.90	-9.61	4.77	17.69	19.96	34.98
61	-87.04	-74.32	-69.15	-61.45	-49.[illegible]7	-30.38	-11.49	.69	7.40	13.56	26.29
62	-81.03	-69.32	-63.64	-57.46	-46.25	-28.86	-11.[illegible]	-.25	5.93	11.60	23.32
63	-74.92	-64.22	-5[illegible].03	-53.33	-43.14	-27.25	-11.35	-1.11	4.54	9.72	20.43
64	-69.24	-59.47	-54.73	-48.58	-4[illegible].23	-25.72	-11.22	-1.87	3.28	8.02	17.79
65	-63.36	-54.57	-50.31	-45.68	-37.26	-24.[illegible]0	-11.15	2.73	1.[illegible]1	6.17	14.96
66	-57.53	-49.69	-4[illegible].89	-41.76	-34.26	-27.[illegible]3	-11.10	-3.50	.63	4.43	12.27
67	-51.86	-44.95	-41.61	-37.97	-31.36	-2[illegible]1	-10.86	-4.25	-.61	2.[illegible]	9.64
68	-46.41	-40.37	-37.44	-34.25	-28.47	-19.50	-10.[illegible]	-4.74	-1.56	1.37	7.41
69	-41.15	-35.95	-33.43	-30.68	-25.70	-17.98	-10.25	-5.27	-2.53	-.[illegible]	5.20
70	-3[illegible]	-31.84	-2[illegible].68	-27.33	-22.07	-16.45	-9.8[illegible]	-5.57	-3.23	-1.07	3.39

TABLE 6.9. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.66	-2.83	-2.32	-1.77	-.76	.80	2.36	3.37	3.92	4.43	5.48
1	-9.19	-7.36	-6.47	-5.51	-3.75	-1.03	[illegible]	3.95	4.91	5.38	7.14
2	-11.49	-9.02	-7.62	-6.52	-4.15	-.48	3.19	5.55	6.06	8.05	10.53
3	-13.06	-12.45	-8.32	-7.00	-3.79	1.27	4.38	9.65	11.99	13.18	16.07
4	-16.37	-13.48	-16.61	-7.75	-3.64	2.72	9.08	13.19	15.96	17.52	21.81
5	-16.03	-13.19	-10.77	-8.19	-3.56	3.76	11.05	15.71	18.29	20.66	25.55
6	-20.58	-14.97	-12.19	-9.15	-3.71	4.73	13.17	18.62	21.61	24.37	30.06
7	-23.99	-16.81	-13.42	-10.11	-3.76	6.07	15.91	22.24	25.75	28.94	35.59
8	-27.69	-19.31	-15.58	-11.45	-4.03	7.55	19.18	26.59	30.64	34.41	42.19
9	-30.73	-21.79	-17.38	-12.64	-4.02	9.33	22.69	31.33	36.09	40.50	49.39
10	-33.50	-23.43	-19.55	-13.29	-3.60	11.36	26.31	35.95	41.26	46.14	56.21
11	-34.67	-23.9[illegible]	-[illegible].55	-12.83	-2.43	13.69	29.81	40.20	45.93	51.19	62.05
12	-31.10	-21.61	-15.53	-12.33	.09	15.61	31.18	41.22	46.75	51.83	62.32
13	-26.26	-16.52	-11.92	-6.87	2.26	16.41	30.57	39.76	44.73	49.25	58.92
14	-19.13	-11.45	-7.73	-3.68	3.68	15.68	26.49	33.84	37.49	41.61	49.29
15	-15.53	-9.27	-6.[illegible]	-3.01	2.73	12.1[illegible]	21.36	27.30	30.57	33.58	39.79
16	-14.46	-9.22	-6.69	-3.93	1.67	8.83	16.59	21.59	24.35	26.88	32.10
17	-13.10	-9.33	-7.05	-4.91	-1.61	5.09	11.88	14.98	17.13	19.10	23.18
18	-12.[illegible]	-9.47	-7.[illegible]7	-6.12	-2.96	1.95	6.97	10.03	11.78	13.38	16.69
19	-12.82	-9.96	-8.58	-7.07	-4.33	-.08	2.17	4.91	6.52	7.80	12.66
20	-13.15	-10.52	-9.27	-7.91	-5.45	-1.4[illegible]	2.20	4.67	6.03	7.20	9.86
21	-13.7[illegible]	-11.2[illegible]	-10.26	-8.75	-6.30	-2.49	.99	3.36	4.67	5.87	8.35
22	-14.36	-11.75	-1[illegible].63	-9.91	-7.20	-3.77	-.34	1.88	3.09	4.21	6.52
23	-15.51	-13.39	-11.44	-11.53	-8.16	-4.48	-.80	1.57	2.87	4.07	6.55
24	-15.92	-13.[illegible]	-12.3[illegible]	-11.02	-8.69	-5.07	-1.46	.87	2.16	3.34	5.77
25	-16.74	-14.36	-1[illegible]	-11.74	-9.29	-5.46	-1.[illegible]	.83	2.[illegible]	3.44	6.02
26	-16.36	-15.55	-1[illegible].1[illegible]	-12.68	-9.97	-5.76	-1.55	1.[illegible]	2.46	4.03	6.26
27	-19.54	-16.53	-15.[illegible]	-13.45	-10.53	-6.00	-1.48	1.44	3.05	4.53	7.57
28	-20.76	-17.53	-15.96	-14.27	-11.18	-6.17	-1.61	1.48	3.18	4.74	7.74
29	-21.86	-18.38	-1[illegible] 0	-14.87	-11.56	-6.40	-1.26	2.06	3.89	5.57	9.04
30	-22.75	-19.07	-17.22	-15.25	-11.68	-6.15	-.61	2.96	4.93	6.73	10.46
31	-24.09	-20.01	-18.06	-15.99	-12.09	-6.12	-.19	3.71	5.83	7.70	11.81
32	-23.87	-1[illegible].72	-17.71	-15.62	-11.59	-5.38	.79	4.77	6.96	8.97	13.12
33	-23.98	-19.69	-17.47	-15.15	-10.95	-4.49	2.07	6.27	8.59	10.71	15.10
34	-23.16	-18.71	-16.56	-14.21	-9.95	-3.35	3.25	7.51	9.86	12.01	16.96
35	-22.65	-18.21	-1[illegible]6.06	-13.72	-9.47	-2.87	3.72	7.97	10.31	12.46	16.91
36	-23.50	-18.92	-16.70	-14.2[illegible]	-9.91	-3.12	3.67	8.05	10.46	12.60	17.26
37	-25.50	-20.65	-18.13	-15.51	-10.76	-3.38	3.99	8.75	11.36	13.77	18.74
38	-27.10	-21.99	-19.44	-16.73	-11.79	-3.13	3.52	8.96	11.18	13.60	18.83
39	-30.96	-24.72	-21.95	-18.93	-13.44	-3.93	3.50	9.06	12.09	14.86	20.59
40	-30.97	-24.70	-21.91	-18.87	-13.36	-3.80	3.75	9.27	12.31	15.10	20.84
41	-32.36	-26.23	-23.25	-20.02	-14.15	-5.05	3.[illegible]	9.92	13.16	16.13	22.26
42	-32.99	-26.77	-23.75	-20.47	-14.52	-5.28	3.94	9.91	13.19	16.21	22.43
43	-32.19	-26.25	-23.[illegible]	-20.20	-14.63	-5.68	2.87	8.52	11.43	14.48	20.38
44	-32.66	-26.81	-23.98	-20.89	-15.29	-6.60	2.09	7.69	10.77	13.61	19.96
45	-35.68	-29.20	-26.06	-22.46	-16.95	-6.83	2.78	8.98	12.40	15.59	22.01
46	-36.92	-30.08	-26.77	-23.17	-16.62	-6.48	3.67	[illegible].22	13.82	17.13	23.97
47	-37.26	-30.11	-26.65	-22.89	-16.05	-5.79	5.17	14.01	15.70	19.29	26.38
48	-38.71	-31.05	-27.39	-23.30	-16.97	-4.61	6.76	14.08	18.12	21.83	29.49
49	-41.2[illegible]	-33.82	-28.79	-24.30	-16.24	-3.75	6.76	16.81	21.25	25.32	33.74
50	-43.01	-34.08	-29.75	-25.09	-16.98	-3.22	10.05	18.61	23.32	27.64	36.58
51	-42.72	-33.77	-29.44	-24.72	-16.15	-2.36	10.93	19.00	23.72	28.05	37.00
52	-42.49	-33.63	-29.19	-24.47	-15.70	-2.61	10.49	19.26	23.98	28.32	37.28
53	-41.17	-32.10	-27.82	-23.08	-14.98	-1.13	14.21	20.82	25.56	29.91	38.90
54	-39.30	-30.37	-26.09	-21.33	-12.78	.48	13.74	22.29	27.00	31.33	40.26
55	-39.76	-30.69	-26.01	-21.13	-12.28	1.46	15.19	24.06	28.73	33.41	42.66
56	-42.50	-32.49	-27.87	-22.67	-13.72	1.40	16.83	25.41	30.67	35.79	45.30
57	-41.66	-31.78	-27.09	-21.89	-12.52	2.00	16.62	25.89	31.09	35.73	45.56
58	-40.97	-30.[illegible]9	-25.06	-19.59	-9.66	5.75	21.16	31.09	36.56	41.59	51.97
59	-37.3[illegible]	-27.20	-21.10	-16.55	-6.47	9.15	24.78	34.86	40.40	45.50	54.03
[illegible]	-44.73	-[illegible].26	-26.22	[illegible].70	10.81	29.33	41.27	47.84	53.88	46.36
61	-42.85	-36.33	-29.63	-18.44	-7.19	10.34	27.71	38.96	45.15	50.85	62.60
62	-41.33	-29.87	-29.33	-19.29	-7.32	9.58	26.68	37.66	43.68	49.23	60.69
63	-40.80	-29.60	-29.17	-16.26	-7.54	9.10	25.73	36.95	42.36	47.79	58.99
64	-40.05	-29.15	-23.84	-18.12	-7.68	8.51	24.78	35.14	40.89	46.17	57.08
65	-39.27	-28.67	-23.50	-17.95	-7.80	7.93	23.63	33.81	39.40	44.63	55.13
66	-38.54	-28.25	-23.26	-17.84	-7.98	7.38	22.58	32.43	37.86	42.84	53.14
67	-37.79	-27.80	-22.96	-17.69	-8.12	6.71	21.66	31.12	36.38	41.22	51.22
68	-37.[illegible]	-27.62	-22.80	-17.67	-8.39	6.13	20.66	29.93	35.06	38.78	49.53
69	-36.[illegible]	-27.07	-22.58	-17.52	-8.40	5.55	19.67	28.61	33.59	36.17	47.61
70	-38.74	-26.60	-22.17	-17.34	-8.60	4.94	18.53	27.28	32.18	34.63	45.69

TABLE 6.10. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.89	-3.66	-3.07	-2.43	-1.26	.56	2.37	3.69	4.18	4.77	6.00
1	-11.59	-9.17	-8.01	-6.76	-4.49	-.96	2.56	4.04	6.09	7.29	9.62
2	-13.18	-10.31	-8.92	-7.50	-4.68	-.38	3.87	6.06	8.14	9.55	12.43
3	-16.69	-12.[illegible]2	-10.82	-8.76	-5.00	.82	6.69	10.39	12.95	14.35	18.27
4	-22.56	-17.02	-14.33	-11.91	-6.18	2.19	10.37	15.68	18.60	21.29	29.83
5	-24.89	-18.46	-15.37	-12.01	-5.71	3.55	13.01	19.12	22.98	25.66	31.94
6	-28.53	-20.[illegible]2	-17.33	-13.93	-6.39	4.65	15.65	22.79	26.69	30.23	37.63
7	-32.60	-23.47	-19.79	-15.29	-6.96	5.83	18.65	26.91	31.96	35.69	44.27
8	-36.65	-26.85	-22.10	-16.93	-7.55	7.00	21.55	30.93	36.10	40.85	50.65
9	-40.19	-29.31	-24.04	-18.20	-7.89	8.26	24.41	34.83	40.56	45.83	56.71
10	-41.59	-30.06	-24.60	-18.95	-7.96	9.59	26.63	37.62	43.67	49.23	60.71
11	-40.80	-29.11	-23.99	-17.28	-6.08	11.27	28.63	39.43	46.99	51.66	63.35
12	-37.17	-25.96	-20.51	-14.57	-3.83	12.85	29.53	40.29	46.21	51.65	62.89
13	-30.51	-20.71	-15.97	-10.41	-1.43	13.11	27.65	37.02	42.19	46.93	56.72
14	-25.58	-16.97	-12.80	-8.27	-.03	12.79	25.51	33.75	38.29	42.46	51.06
15	-19.51	-12.55	-9.17	-5.50	1.17	11.51	21.85	28.51	32.19	35.56	42.53
16	-15.61	-9.96	-7.23	-4.25	1.16	9.59	17.92	23.33	26.31	29.09	34.69
17	-13.03	-8.52	-6.34	-3.76	.36	7.05	13.79	18.06	20.99	22.62	27.13
18	-11.71	-8.07	-6.30	-3.38	-.87	4.52	9.93	13.42	15.39	17.10	20.76
19	-11.88	-8.65	-7.09	-5.39	-2.30	2.48	7.27	10.36	12.06	13.62	16.85
20	-12.80	-9.62	-8.08	-6.91	-3.37	1.35	6.00	9.10	10.78	12.32	15.39
21	-12.75	-9.87	-8.37	-6.79	-3.79	.79	5.30	8.33	9.96	11.55	14.54
22	-12.86	-9.80	-8.32	-6.70	-3.77	.77	5.32	8.25	9.86	11.35	14.91
23	-12.85	-9.77	-8.26	-6.66	-3.72	.65	5.41	8.35	9.96	11.46	14.54
24	-13.25	-9.98	-8.39	-6.67	-3.53	1.33	6.19	9.32	11.05	12.63	15.91
25	-13.80	-10.30	-8.60	-6.76	-3.41	1.78	6.97	10.32	12.16	13.86	17.36
26	-15.92	-11.37	-9.92	-7.28	-3.91	2.59	8.57	12.47	15.64	16.54	20.60
27	-16.65	-12.09	-9.87	-7.50	-3.21	3.45	10.11	14.41	15.77	18.95	23.4[illegible]
28	-15.96	-11.27	-8.99	-6.62	-2.02	4.95	11.92	16.41	18.09	21.16	25.86
29	-15.79	-10.94	-8.62	-6.09	-1.49	5.63	12.75	17.14	19.87	22.19	26.99
30	-15.66	-10.65	-8.23	-5.59	-.80	6.63	14.05	18.64	21.98	23.91	26.91
31	-16.88	-11.29	-8.59	-5.65	-.30	7.99	16.28	21.62	24.57	27.27	32.86
32	-17.05	-10.99	-8.05	-4.84	.95	9.99	18.94	24.75	27.94	30.88	36.94
33	-17.84	-11.14	-7.90	-4.37	2.03	11.97	21.91	28.31	31.84	35.00	41.78
34	-17.91	-10.53	-6.95	-3.06	4.00	14.96	25.92	32.98	36.87	40.95	47.83
35	-16.92	-8.73	-5.01	-.76	6.90	17.82	29.23	36.69	40.64	44.36	52.05
36	-17.43	-9.13	-5.11	-.74	7.28	19.62	31.84	39.78	44.16	48.18	56.47
37	-21.11	-11.77	-7.24	-2.31	6.63	20.50	34.37	43.32	48.24	52.77	62.11
38	-21.61	-11.83	-7.13	-2.03	7.25	21.63	36.81	45.28	50.39	55.08	64.77
39	-21.90	-11.48	-6.68	-1.46	8.03	22.79	37.46	46.95	52.17	56.97	66.89
40	-22.42	-12.05	-7.03	-1.57	8.36	23.79	39.13	49.06	54.52	59.54	69.91
41	-22.05	-11.59	-6.52	-1.01	9.08	24.53	40.06	50.07	55.69	60.65	71.12
42	-22.46	-11.76	-6.67	-.92	9.34	25.25	41.17	51.43	57.08	62.27	72.99
43	-21.41	-[illegible]	-5.85	-.37	9.72	25.29	40.85	50.69	56.42	61.50	71.99
44	-21.42	[illegible]	-5.24	.61	10.94	27.13	43.31	53.74	59.97	64.77	75.67
45	-20.86	[illegible]	-4.12	1.83	12.63	29.34	46.12	56.92	62.87	68.34	79.67
46	-19.35	-6.01	-2.52	3.46	14.30	31.13	47.96	58.61	64.79	70.28	81.61
47	-18.49	-6.87	-1.25	4.88	16.00	33.29	50.49	61.61	67.73	73.36	84.97
48	-18.22	-6.22	-.41	5.92	17.41	35.22	53.03	64.52	70.86	76.66	87.66
49	-15.77	-3.95	1.78	8.01	19.32	36.67	54.41	65.73	71.96	77.68	89.50
50	-12.59	-1.18	4.35	10.37	21.29	38.23	55.18	66.10	72.12	77.65	89.06
51	-12.84	-1.16	4.60	10.66	21.84	39.18	56.52	67.71	73.87	79.52	91.21
52	-11.79	-.21	5.40	11.60	22.59	39.78	56.97	68.05	74.16	79.76	91.35
53	-11.76	.11	5.85	12.11	23.46	41.07	58.69	70.04	76.30	82.09	93.91
54	-10.67	1.10	6.80	13.01	24.28	41.76	59.25	70.61	76.72	82.42	94.19
55	-9.[illegible]	2.69	8.41	14.63	25.93	43.49	60.96	72.25	78.47	84.19	95.99
56	-7.73	4.09	9.81	16.04	27.36	44.90	62.44	73.76	79.98	85.70	97.52
57	-10.94	1.88	7.44	14.29	26.23	44.82	63.40	75.39	81.99	88.05	100.58
58	-12.73	.70	7.20	14.28	27.13	47.07	67.00	79.85	86.93	93.44	106.07
59	-6.71	6.27	12.55	19.38	31.80	51.05	70.31	82.72	89.54	96.84	108.81
60	-4.12	8.93	15.25	22.12	34.61	53.98	73.35	85.84	92.72	99.64	112.07
61	-1.78	10.32	16.18	22.66	34.14	52.11	70.07	81.65	88.03	93.89	105.99
62	-2.93	9.32	14.81	21.11	32.86	50.28	68.02	79.46	85.76	91.55	103.50
63	-4.14	7.63	13.36	19.60	30.88	48.41	65.94	77.25	83.47	89.19	101.00
64	-5.35	6.35	11.98	18.12	29.28	46.59	63.98	75.06	81.20	86.85	98.51
65	-6.49	5.03	10.61	16.68	27.71	44.80	61.90	72.93	79.00	84.58	96.13
66	-7.49	3.83	9.32	15.28	26.12	42.93	59.74	70.58	76.55	82.03	93.36
67	-8.64	2.52	7.93	13.82	24.52	41.11	57.70	68.48	74.29	79.78	90.88
68	-9.91	1.13	6.47	12.29	22.85	39.29	55.62	66.19	72.00	77.35	88.39
69	-11.08	-.19	5.09	10.83	21.25	37.42	53.56	64.01	69.76	74.82	85.91
70	-12.34	-1.69	3.62	9.29	19.58	35.69	51.58	61.88	67.46	72.67	83.43

ORIGINAL PAGE IS OF POOR QUALITY

TABLE 6.11. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-5.51	-4.29	-3.62	-2.95	-1.73	.16	2.06	3.28	3.95	4.57	5.89
1	-13.65	-10.61	-9.19	-7.59	-4.69	-.13	4.37	7.28	8.88	10.38	13.38
2	-16.84	-12.76	-10.79	-8.63	-4.73	1.33	7.39	11.29	13.45	15.42	19.58
3	-20.46	-15.14	-17.56	-9.75	-4.66	3.24	11.14	16.22	15.04	21.61	26.93
4	-23.47	-17.02	-13.30	-10.50	-4.33	5.24	14.88	20.97	24.37	27.42	33.94
5	-28.10	-20.19	-16.36	-12.20	-4.62	7.11	18.85	26.[illegible]2	30.59	34.82	42.33
6	-33.18	-23.73	-19.16	-13.18	-5.13	8.90	22.92	31.97	36.95	41.52	50.97
7	-38.08	-27.14	-21.84	-16.07	-5.59	10.66	26.58	37.38	43.15	48.45	59.39
8	-43.10	-30.67	-24.65	-18.10	-6.20	12.25	30.69	43.59	49.14	55.16	67.59
9	-47.50	-33.73	-27.06	-19.88	-6.62	13.82	34.27	47.45	58.71	61.38	75.15
10	-51.70	-36.65	-29.36	-21.42	-7.02	15.32	37.56	52.07	50.60	67.29	82.34
11	-52.20	-38.67	-29.15	-20.97	-6.11	16.94	39.58	54.84	45.03	70.55	86.67
12	-47.73	-32.96	-25.78	-17.90	-3.76	18.26	40.28	54.48	62.30	65.48	84.32
13	-39.76	-26.72	-20.50	-13.67	-1.25	18.01	37.27	49.69	55.53	63.83	75.78
14	-31.09	-20.30	-15.10	-9.43	.85	16.79	32.74	43.02	48.68	53.88	64.62
15	-24.04	-15.89	-11.19	-6.63	1.65	14.50	27.25	35.64	40.20	44.39	53.65
16	-18.75	-11.87	-9.54	-4.91	1.69	11.89	22.11	28.59	32.32	35.66	42.54
17	-15.15	-9.59	-6.85	-3.96	1.37	9.63	17.90	23.22	26.16	28.88	34.42
18	-13.72	-9.10	-6.87	-4.43	-.01	6.84	13.70	18.12	20.55	22.79	27.41
19	-13.38	-9.30	-7.33	-5.18	-1.28	4.77	10.41	14.71	16.86	18.83	22.91
20	-14.67	-10.71	-9.79	-6.70	-2.90	2.99	8.47	12.67	14.76	16.68	20.64
21	-15.25	-11.86	-9.47	-7.41	-3.68	2.16	7.44	11.61	13.67	15.55	19.45
22	-17.13	-12.90	-10.86	-8.63	-4.59	1.69	7.36	12.00	14.23	16.28	20.50
23	-18.01	-13.60	-11.47	-9.15	-4.93	2.60	8.14	12.35	14.67	16.81	21.21
24	-18.59	-14.25	-11.96	-9.46	-4.93	2.10	9.13	13.66	16.16	18.45	23.19
25	-20.79	-15.52	-12.97	-10.15	-5.19	2.69	10.52	15.57	18.35	20.90	26.18
26	-22.91	-16.93	-14.03	-10.88	-5.15	3.74	12.62	18.35	21.50	24.40	30.38
27	-25.65	-18.80	-15.48	-11.87	-5.32	4.85	15.02	21.58	25.19	28.51	35.36
28	-28.61	-21.33	-18.24	-14.58	-6.39	10.45	20.42	27.47	31.16	34.53	41.50
29	-31.46	-23.98	-20.78	-15.24	-1.58	11.98	22.94	29.22	32.99	36.36	43.42
30	-28.19	-23.44	-19.61	-15.84	2.16	13.39	24.59	31.73	35.70	39.36	46.88
31	-28.83	-23.83	-20.76	-16.74	2.92	14.80	26.47	34.33	38.65	42.42	50.42
32	-21.82	-13.88	-8.88	-4.24	4.13	17.11	30.89	38.46	43.67	47.31	56.05
33	-23.28	-13.43	-8.99	-3.94	6.23	19.46	33.1[illegible]	42.83	47.88	52.52	62.18
34	-24.39	-12.40	-7.44	-2.41	7.10	21.86	36.[illegible]	46.11	51.35	56.16	66.89
35	-21.98	-11.29	-6.16	-1.64	9.59	25.39	41.88	51.23	56.93	61.94	72.57
36	-20.72	-9.83	-4.55	1.19	11.62	27.79	43.94	54.39	60.13	65.41	76.30
37	-18.13	-7.39	-1.97	3.77	14.19	30.36	46.51	56.93	62.47	67.94	79.83
38	-16.21	-6.78	-1.24	4.76	16.73	32.76	49.67	60.61	66.64	72.18	83.61
39	-17.24	-7.85	-1.22	5.10	16.79	34.79	52.88	64.91	70.96	76.48	88.91
40	-19.08	-6.46	-.38	6.24	18.24	36.66	55.48	67.49	74.16	80.18	92.72
41	-18.77	-4.89	.42	7.24	19.81	38.86	57.92	70.38	77.17	83.88	96.34
42	-16.81	-3.56	.84	7.84	20.54	40.21	59.89	72.57	79.56	85.71	99.24
43	-16.74	-1.42	2.74	9.64	22.21	41.67	61.14	73.72	86.43	84.99	100.11
44	-14.07	-1.15	5.12	11.93	24.38	43.67	62.67	76.85	81.86	88.12	101.85
45	-14.76	.31	6.04	13.53	26.84	45.43	64.83	77.33	84.22	90.55	103.62
46	-13.26	.31	5.73	14.14	27.22	47.61	67.80	80.87	86.89	94.71	108.38
47	-14.46	-.26	6.57	14.11	27.79	49.81	70.22	83.91	91.55	98.36	112.66
48	-14.00	.46	7.27	16.13	29.39	51.61	73.61	87.89	95.76	102.97	117.87
49	-10.46	3.09	10.49	19.29	32.10	54.47	76.10	89.85	9[illegible]	103.71	118.19
50	-14.[illegible]	4.11	11.30	19.24	33.69	56.[illegible]	[illegible]	92.30	100.28	107.53	122.51
51	-10.[illegible]6	5.04	12.98	20.41	34.75	57.60	80.86	94.57	102.69	109.96	125.14
52	-10.10	5.60	13.09	21.25	36.15	59.36	82.34	97.20	106.47	113.00	128.87
53	-12.46	4.71	12.27	21.85	37.90	61.72	86.49	102.17	111.17	117.22	135.89
54	-6.[illegible]4	6.26	15.05	23.67	38.2[illegible]	60.83	83.4[illegible]	97.99	100.81	113.38	128.60
55	-7.03	6.48	16.16	24.61	39.95	63.74	87.53	102.87	111.32	119.08	136.18
56	-7.19	4.69	14.92	24.04	40.14	63.85	87.67	102.86	111.28	119.02	135.00
57	-13.69	3.46	12.05	21.19	37.78	63.62	89.24	106.85	114.99	123.39	140.73
58	-8.38	7.98	16.74	24.26	39.76	63.76	87.78	103.20	111.79	119.63	136.80
59	-14.97	1.69	9.77	18.54	34.58	59.39	83.98	99.93	108.72	116.79	133.95
60	-16.43	-1.89	4.12	14.84	30.67	55.32	79.79	95.48	104.32	112.33	128.86
61	-9.47	4.40	11.64	[illegible]	32.54	53.55	74.54	88.11	96.57	102.82	116.57
62	-18.16	3.77	16.62	[illegible]	31.18	51.84	72.61	86.03	93.17	99.91	113.83
63	-18.46	3.17	9.77	[illegible]	29.99	48.22	70.95	83.49	90.67	97.27	110.98
64	-11.11	2.28	8.76	15.83	28.64	46.61	68.39	81.28	88.26	94.75	108.14
65	-11.76	1.91	7.79	14.73	27.34	46.69	66.94	79.86	86.99	93.37	106.54
66	-12.38	.87	6.84	13.66	26.85	45.37	64.48	76.87	83.78	89.97	102.91
67	-13.11	-.38	5.70	12.49	23.67	43.59	62.95	74.63	81.38	87.58	100.22
68	-13.63	-1.87	4.76	11.63	23.4[illegible]	41.49	60.49	72.35	78.91	84.95	97.48
69	-14.36	-2.18	3.84	10.38	22.63	40.23	58.93	70.14	76.62	82.55	94.81
70	-15.00	-3.03	2.81	9.17	20.71	38.61	56.56	68.09	74.40	80.20	92.29

TABLE 6.12. VANDENBERG HEAD- AND TAILWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.93	-5.82	-4.69	-3.85	-2.44	-.19	2.15	3.50	4.30	5.63	6.54
1	-15.46	-11.90	-10.23	-8.86	-5.13	.89	5.20	8.54	10.37	12.56	15.54
2	-18.34	-13.79	-11.55	-9.20	-4.85	1.89	8.63	12.58	15.37	17.57	22.12
3	-21.66	-15.84	-13.03	-9.96	-4.39	4.24	12.87	18.44	21.50	24.32	30.14
4	-25.55	-18.36	-14.89	-11.10	-4.22	6.45	17.11	27.55	27.78	31.26	38.44
5	-29.50	-20.93	-15.65	-12.37	-4.22	9.41	21.05	33.20	33.69	37.81	46.32
6	-34.33	-24.66	-18.52	-14.27	-4.72	10.06	24.89	38.44	39.69	44.53	54.50
7	-40.01	-28.38	-22.75	-16.63	-5.58	11.76	29.02	40.14	46.22	51.90	63.53
8	-44.51	-31.47	-25.15	-18.27	-5.79	13.58	32.54	45.43	52.31	58.52	71.67
9	-47.37	-33.77	-25.39	-19.40	-5.80	15.28	36.37	49.37	57.45	64.33	78.54
10	-48.39	-34.46	-27.23	-19.36	-5.07	17.09	39.25	53.54	61.40	68.64	83.56
11	-45.93	-31.43	-24.41	-16.72	-2.90	18.61	40.13	54.00	61.64	68.66	83.16
12	-39.84	-26.54	-20.10	-13.08	-.35	13.35	35.14	51.67	58.88	65.32	78.62
13	-32.67	-21.14	-15.45	-9.27	1.98	19.38	36.79	48.02	54.21	59.90	71.63
14	-26.25	-16.23	-11.34	-6.10	3.49	18.36	33.22	42.82	46.10	52.95	62.97
15	-21.36	-12.85	-9.73	-4.24	2.90	15.52	29.16	37.31	41.79	45.92	54.43
16	-19.00	-11.62	-8.65	-4.15	2.92	13.48	24.65	31.51	35.81	39.38	46.77
17	-17.84	-11.31	-8.15	-4.71	1.53	11.22	20.90	27.15	30.59	33.75	40.27
18	-16.18	-10.75	-6.22	-5.25	-.05	8.01	16.19	21.28	24.14	26.77	32.71
19	-15.38	-10.80	-8.53	-6.17	-1.79	5.01	11.31	16.19	18.52	20.42	25.40
20	-16.26	-11.98	-9.56	-7.65	-3.55	2.81	5.16	12.26	15.52	17.59	21.87
21	-17.31	-13.22	-11.22	-9.06	-5.13	.95	7.05	10.92	13.15	15.13	19.24
22	-18.42	-15.11	-13.03	-10.78	-6.64	-.26	6.12	10.24	12.50	14.58	18.28
23	-21.23	-16.69	-14.43	-12.10	-7.75	-1.01	5.73	10.08	12.47	14.67	19.21
24	-22.02	-17.37	-15.12	-12.65	-8.20	-1.26	5.63	10.09	12.59	14.80	19.46
25	-23.83	-18.81	-15.27	-13.73	-8.92	-1.46	6.00	10.31	13.46	15.89	20.91
26	-26.59	-21.22	-18.43	-15.39	-9.88	-1.32	7.24	12.76	15.79	18.59	24.35
27	-31.44	-24.57	-21.23	-17.53	-10.97	-.71	9.55	15.16	19.80	23.15	30.06
28	-29.22	-28.63	-16.97	-11.94	-3.72	9.03	21.70	30.8.	34.54	38.70	47.29
29	-31.73	-22.24	-17.08	-12.60	-3.47	10.44	24.70	33.91	38.52	43.54	53.06
30	-34.09	-26.15	-19.89	-14.17	-3.70	12.32	28.93	38.81	44.54	47.79	60.06
31	-38.10	-26.47	-20.82	-14.46	-3.46	13.90	31.24	42.40	48.63	54.29	65.97
32	-37.89	-29.08	-19.88	-12.89	-.94	17.00	35.12	46.75	53.16	57.06	71.20
33	-36.48	-23.67	-17.34	-10.54	1.00	20.95	40.89	52.41	59.23	65.48	78.37
34	-33.90	-23.54	-14.10	-7.87	5.78	25.50	45.30	58.87	65.11	71.57	84.91
35	-29.47	-14.04	-9.54	-2.48	10.37	30.27	50.27	63.87	70.16	76.65	90.08
36	-29.51	-11.18	-4.73	2.30	15.66	35.84	59.63	67.39	74.92	80.87	99.20
37	-20.40	-4.94	-.43	6.44	19.54	39.51	59.47	72.35	79.44	85.95	99.41
38	-17.95	-4.27	2.35	9.55	22.45	42.94	63.23	74.32	83.53	90.15	101.82
39	-16.87	-1.81	5.81	12.42	25.69	46.77	67.46	81.11	88.53	95.34	107.91
40	-11.76	2.17	6.91	14.24	29.57	50.22	70.48	84.24	91.54	98.28	112.20
41	-7.38	6.21	12.80	19.96	32.97	53.19	73.31	86.32	93.48	100.07	113.66
42	-5.21	9.98	16.11	23.32	34.42	56.29	77.06	90.16	97.32	105.00	117.68
43	-2.39	11.74	18.56	24.93	39.56	60.54	81.51	96.05	102.49	107.39	123.47
44	-1.66	13.04	20.19	27.74	43.06	63.91	85.72	99.47	107.63	113.77	129.49
45	-.24	14.67	21.89	29.74	44.42	66.19	88.27	102.54	110.40	117.62	132.53
46	2.32	17.57	24.97	32.00	46.46	68.81	87.97	101.62	107.13	116.04	130.29
47	2.29	17.15	24.37	32.23	46.50	68.43	90.74	105.03	112.89	120.11	135.02
48	2.93	18.19	25.50	33.53	48.08	70.45	93.22	107.70	116.98	123.10	138.37
49	3.46	19.25	26.60	35.03	49.95	73.10	96.26	111.17	119.39	126.95	142.54
50	3.26	19.85	26.69	35.81	50.17	73.55	96.92	112.07	120.91	128.00	143.85
51	1.76	17.91	25.72	34.21	49.66	73.50	97.61	112.99	121.44	129.25	145.37
52	0.86	20.40	28.32	36.26	51.19	74.36	97.55	112.90	120.71	128.27	143.88
53	0.63	20.67	28.19	36.49	51.56	74.93	98.39	113.34	121.66	129.28	145.02
54	0.11	19.72	27.23	35.90	50.25	72.24	96.28	111.12	119.29	126.80	142.31
55	2.30	18.63	26.11	34.36	49.33	72.65	95.77	110.76	118.99	126.57	142.21
56	0.17	19.68	27.04	35.16	49.91	72.79	95.66	110.91	118.53	126.00	141.91
57	2.46	17.96	26.47	33.63	48.47	71.47	94.48	109.31	117.48	124.99	140.48
58	2.63	17.05	25.24	33.39	47.99	70.72	93.95	108.11	116.18	123.68	138.91
59	5.35	20.19	27.93	35.31	49.61	71.79	93.94	108.27	116.19	123.38	138.32
60	23.11	35.48	41.35	47.63	59.60	77.04	96.87	107.03	114.72	120.27	132.96
61	21.51	33.75	39.67	46.13	57.83	75.98	99.14	105.65	112.29	118.22	130.95
62	19.42	31.78	37.66	44.13	56.08	74.11	92.34	105.87	113.57	116.52	128.80
63	16.53	29.34	35.35	41.89	53.70	72.20	90.62	102.61	109.86	115.66	127.47
64	14.49	27.03	33.10	39.71	51.71	70.33	88.94	100.99	107.66	113.63	126.17
65	11.96	24.68	30.61	37.60	49.66	68.51	87.34	99.51	106.21	112.36	125.06
66	9.41	22.42	28.42	35.37	47.63	66.63	85.66	97.98	104.65	110.85	123.95
67	6.96	19.95	26.25	33.09	45.53	64.81	83.99	96.53	103.18	109.67	122.66
68	4.18	17.35	23.74	30.30	43.30	62.85	82.41	95.02	101.78	108.14	121.52
69	1.66	15.00	21.45	28.48	41.29	61.03	80.87	93.60	100.41	107.06	120.98
70	-1.19	12.98	18.74	26.18	39.03	57.18	79.24	92.22	99.35	106.71	119.55

TABLE 7.1. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-12.26	-9.62	-8.37	-7.01	-4.53	-.28	3.14	5.61	6.97	8.22	10.80
1	-20.33	-16.19	-14.18	-12.00	-8.04	-1.09	4.25	8.22	10.40	12.40	16.54
2	-24.16	-19.61	-17.40	-15.00	-10.64	-3.82	2.09	7.25	9.65	11.66	16.41
3	-27.59	-22.67	-20.29	-17.78	-12.99	-5.68	1.02	6.33	8.93	11.31	16.28
4	-31.41	-25.91	-23.25	-20.35	-15.69	-6.93	1.23	6.58	9.40	12.06	17.86
5	-35.53	-29.39	-26.35	-23.08	-17.16	-7.97	1.22	7.19	10.91	13.40	19.87
6	-39.90	-32.57	-29.27	-25.67	-19.13	-9.00	1.13	7.66	11.26	14.57	21.39
7	-43.79	-36.25	-32.63	-28.63	-21.42	-10.29	.94	8.16	12.13	15.77	23.31
8	-48.96	-43.53	-36.95	-32.00	-23.93	-11.42	1.10	9.17	14.61	17.78	26.13
9	-54.77	-45.37	-40.82	-35.86	-26.86	-12.91	1.09	13.04	14.99	19.55	28.95
10	-60.16	-49.82	-44.84	-39.43	-29.59	-14.33	.92	10.76	16.17	21.18	31.43
11	-63.83	-53.09	-47.82	-42.14	-31.81	-15.80	.21	10.53	16.22	21.44	32.23
12	-62.80	-52.45	-47.44	-41.99	-32.08	-16.73	-1.37	8.54	13.99	19.00	29.36
13	-53.09	-44.73	-40.67	-36.26	-28.15	-15.83	-3.41	4.40	9.81	13.07	21.44
14	-45.22	-38.39	-35.22	-31.39	-24.81	-14.61	-4.41	2.17	5.70	9.12	15.99
15	-38.88	-33.06	-30.24	-27.17	-21.40	-12.96	-4.31	1.26	4.33	7.15	12.97
16	[illegible]	-28.28	-25.89	-23.30	-18.58	-11.26	-3.95	.77	3.36	5.76	10.66
17	-27.38	-23.35	-21.39	-19.27	-15.90	-9.41	-3.42	.44	2.56	4.52	8.65
18	-22.72	-19.35	-17.71	-15.94	-12.70	-7.69	-2.68	.55	2.33	3.96	7.33
19	-19.24	-16.31	-14.88	-13.33	-10.50	-6.12	-1.73	1.09	2.66	4.00	7.03
20	-17.91	-14.59	-13.15	-11.63	-8.88	-4.61	-.35	2.48	3.92	5.31	8.18
21	-16.50	-13.60	-12.19	-10.66	-7.89	-3.58	.72	3.50	5.03	6.43	9.33
22	-15.35	-12.54	-11.18	-9.73	-7.01	-2.83	1.34	4.03	5.51	6.87	9.68
23	-15.44	-12.48	-11.05	-9.50	-6.67	-2.29	2.09	4.92	6.48	7.91	10.84
24	-16.23	-13.05	-11.51	-9.83	-6.78	-2.04	2.67	5.71	7.30	8.93	12.11
25	-17.28	-13.77	-12.07	-10.22	-6.87	-1.66	3.55	6.91	8.75	10.45	13.96
26	-18.72	-14.96	-13.13	-11.15	-7.55	-1.46	3.63	7.29	9.22	11.05	14.81
27	-20.39	-16.38	-14.45	-12.34	-8.53	-2.56	3.38	7.21	9.32	11.26	15.26
28	-20.09	-16.16	-14.24	-12.19	-8.43	-2.60	3.23	6.99	9.06	10.97	14.98
29	-21.23	-17.10	-15.18	-12.92	-8.97	-2.84	3.30	7.26	9.43	11.43	15.86
30	-21.92	-17.73	-15.71	-13.50	-9.44	-3.28	2.94	6.94	9.15	11.18	15.34
31	-22.53	-18.23	-16.15	-13.89	-9.78	-3.48	2.97	7.09	9.38	11.43	15.73
32	-23.46	-19.76	-17.48	-15.01	-10.51	-3.53	3.44	7.94	10.42	12.69	17.30
33	-24.88	-19.99	-17.62	-15.04	-10.36	-3.69	4.17	8.86	11.43	13.80	18.69
34	-27.58	-22.10	-19.44	-16.55	-11.30	-3.16	4.44	10.24	13.13	15.78	21.27
35	-33.44	-24.79	-23.57	-20.04	-13.69	-3.82	6.05	12.41	15.92	19.14	26.74
36	-36.82	-29.62	-26.13	-22.33	-15.43	-4.74	5.95	12.84	16.44	20.13	27.33
37	-41.58	-33.53	-31.62	-25.37	-17.66	-5.70	6.26	13.98	18.23	22.13	30.19
38	-46.98	-38.00	-35.65	-28.91	-20.31	-6.98	6.35	14.95	19.69	24.05	33.09
39	-50.85	-41.15	-36.95	-31.33	-22.05	-7.65	6.75	16.08	21.15	25.06	36.66
40	-53.23	-43.20	-39.35	-33.04	-23.47	-8.59	6.29	15.68	21.17	26.02	36.05
41	-57.63	-46.85	-43.63	-35.95	-25.64	-9.64	6.35	16.67	22.35	27.57	38.34
42	-62.41	-50.[illegible]	-45.36	-39.23	-28.10	-10.85	6.41	17.54	23.47	29.30	40.92
43	-66.04	-53.96	-48.69	-41.71	-30.12	-12.15	5.82	17.41	23.79	29.68	41.74
44	-67.07	-54.47	-48.96	-42.53	-30.64	-12.73	5.39	17.07	23.50	29.41	41.62
45	-68.13	-55.[illegible]	-49.68	-43.12	-31.23	-12.77	5.60	17.67	24.13	30.15	42.58
46	-65.41	-53.92	-48.25	-42.09	-30.89	-13.53	3.82	15.82	21.18	26.85	38.56
47	-62.86	-51.93	-46.44	-40.88	-30.42	-14.21	2.01	12.47	18.23	23.52	34.44
48	-62.96	-51.70	-46.47	-40.82	-30.52	-14.55	1.92	11.72	17.39	22.68	33.36
49	-64.38	-53.35	-48.00	-42.19	-31.62	-15.25	1.13	11.69	17.51	22.86	33.80
50	-64.22	-53.36	-48.11	-42.38	-31.99	-15.88	.23	10.62	16.34	21.60	32.46
51	-63.91	-53.41	-48.32	-42.79	-32.74	-17.16	-1.58	8.47	14.00	19.00	29.58
52	-65.68	-55.29	-50.19	-44.69	-34.70	-19.21	-3.72	6.27	11.77	16.82	27.26
53	-69.82	-59.71	-54.62	-48.49	-38.01	-19.81	-4.80	4.98	10.21	15.10	26.21
54	-64.55	-54.66	-49.87	-44.66	-35.19	-20.51	-5.83	3.63	8.86	13.64	23.53
55	-62.98	-53.43	-48.06	-43.76	-34.62	-20.44	-6.24	2.88	7.92	12.56	22.18
56	-61.74	-52.55	-48.09	-43.24	-34.42	-20.75	-7.08	1.73	6.58	11.04	20.26
57	-63.[illegible]	-54.16	-49.72	-44.89	-36.13	-22.63	-8.94	-.18	4.65	9.08	18.24
58	-63.12	-54.70	-50.62	-46.18	-38.12	-25.62	-13.12	-5.86	-.82	3.46	11.88
59	-65.91	-57.63	-52.73	-48.64	-39.54	-26.35	-13.17	-4.64	.02	4.32	13.21
60	-71.92	-61.27	-56.35	-50.99	-41.27	-26.19	-11.11	-1.39	3.99	8.89	19.05
61	-70.88	-76.33	-69.28	-61.61	-47.68	-26.07	-4.97	9.46	17.13	24.18	38.73
62	-70.26	-75.82	-68.83	-61.22	-47.40	-25.97	-4.64	9.20	15.70	23.89	38.33
63	-69.67	-75.41	-68.55	-60.98	-47.23	-25.91	-4.59	9.16	16.73	23.69	38.05
64	-69.26	-75.01	-68.10	-60.57	-46.95	-25.80	-4.66	8.99	16.56	23.40	37.65
65	-68.75	-74.60	-67.75	-60.29	-46.75	-25.75	-4.74	8.80	16.26	23.11	37.26
66	-68.19	-74.10	-67.38	-59.91	-46.47	-25.64	-4.81	8.63	16.03	22.82	36.84
67	-67.66	-73.70	-66.95	-59.58	-46.22	-25.58	-4.77	8.69	15.95	22.71	36.67
68	-67.05	-73.20	-66.49	-59.20	-45.94	-25.39	-4.84	8.42	15.72	22.42	36.29
69	-66.55	-72.80	-66.14	-58.78	-45.79	-25.33	-4.92	8.29	15.48	22.14	36.00
70	-65.94	-72.20	-65.70	-58.51	-45.46	-25.22	-4.99	8.07	15.26	21.86	35.60

TABLE 7.2. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.82	-10.23	-8.77	-7.48	-4.12	-1.27	2.68	5.87	6.94	7.69	10.29
1	-22.98	-18.10	-15.98	-13.92	-8.98	-1.91	5.89	9.85	12.88	15.17	19.88
2	-27.76	-22.23	-19.66	-16.04	-11.36	-3.17	5.33	10.31	13.22	15.96	21.92
3	-34.59	-26.93	-23.95	-20.20	-13.31	-5.17	4.74	9.88	14.10	16.68	22.38
4	-37.60	-30.22	-26.96	-23.38	-16.76	-6.40	3.66	10.10	13.78	17.02	23.05
5	-46.62	-33.38	-29.76	-25.84	-18.78	-7.71	3.32	10.44	14.34	17.94	24.19
6	-49.94	-36.41	-32.53	-28.38	-20.43	-8.73	3.14	10.69	15.84	18.99	26.74
7	-50.92	-39.70	-35.06	-31.89	-22.77	-9.95	2.88	11.15	15.78	19.88	28.[illegible]
8	-62.77	-43.49	-37.62	-34.11	-26.29	-11.47	2.29	11.17	16.86	20.55	29.02
9	-69.81	-47.95	-40.[illegible]	-37.27	-28.19	-13.31	1.75	11.15	16.86	21.63	31.58
10	-62.90	-51.92	-44.27	-40.64	-30.[illegible]	-15.46	1.11	11.29	16.98	22.85	32.69
11	-62.24	-51.89	-46.80	-41.31	-[illegible].24	-15.87	-.51	9.56	15.85	20.16	30.51
12	-60.82	-49.39	-44.76	-39.76	-30.48	-16.41	-2.64	6.[illegible]	11.52	16.12	25.59
13	-60.97	-47.48	-39.[illegible]	-35.95	-27.12	-15.45	-3.78	3.75	7.69	11.26	19.63
14	-49.37	-37.60	-34.[illegible]	-30.77	-24.23	-14.16	-4.89	2.46	5.97	9.26	16.09
15	-30.50	-32.70	-27.07	-24.83	-21.28	-12.47	-5.05	1.[illegible]	3.34	7.37	13.17
16	-32.76	-27.[illegible]	-25.55	-22.96	-18.33	-11.12	-3.91	.75	3.31	5.66	10.52
17	-27.64	-23.49	-21.53	-19.[illegible]	-15.53	-9.62	-3.63	.18	2.49	4.45	8.29
18	-22.81	-19.42	-17.77	-15.96	-13.73	-7.70	-2.64	.57	2.38	4.02	7.92
19	-18.29	-15.56	-14.42	-12.78	-10.14	-5.47	-2.03	.81	2.05	3.38	6.13
20	-15.71	-13.23	-12.[illegible]	-10.71	-8.33	-4.49	-1.46	1.93	2.74	3.49	6.93
21	-13.26	-11.89	-10.97	-9.50	-7.09	-3.63	[illegible]	2.[illegible]	3.68	4.45	7.37
22	-13.96	-11.96	-11.[illegible]	-9.21	-6.87	-2.67	.79	3.17	4.52	5.76	8.21
23	-13.22	-11.96	-10.[illegible]	-8.96	-6.55	-2.50	1.33	3.84	5.21	6.48	9.10
24	-11.11	-12.29	-11.[illegible]	-9.34	-6.69	-2.55	1.91	4.46	6.16	7.55	10.91
25	-11.78	-12.95	-11.52	-9.86	-6.87	-2.33	2.25	5.12	6.74	8.38	11.38
26	-17.77	-14.37	-12.75	-10.97	-7.78	-2.46	2.39	5.64	7.43	9.08	12.98
27	-20.08	-16.75	-14.61	-12.75	-9.61	-3.24	2.58	6.11	8.17	10.14	14.17
28	-16.29	-12.73	-11.[illegible]	-9.12	-5.71	-.43	4.86	8.27	10.15	11.87	15.94
29	-19.00	-15.43	-13.31	-11.21	-6.02	-.33	6.16	10.39	12.65	14.76	19.14
30	-21.38	-16.78	-14.55	-12.13	-7.78	-.90	5.93	10.33	12.76	14.98	19.58
31	-22.19	-17.93	-15.28	-12.92	-8.20	-1.45	5.47	9.93	12.38	14.60	19.29
32	-23.67	-18.77	-16.39	-13.81	-9.11	-1.83	5.45	10.19	12.73	15.18	20.01
33	-27.11	-21.44	-19.05	-16.71	-10.57	-2.33	5.93	11.28	14.19	16.89	22.98
34	-28.68	-23.17	-20.49	-17.59	-12.31	-4.12	4.04	9.34	12.25	14.92	20.43
35	-26.73	-22.28	-20.01	-17.47	-13.27	-6.86	.16	4.50	6.88	9.08	13.41
36	-29.80	-24.80	-22.38	-19.[illegible]5	-14.96	-7.54	-.12	4.67	7.31	9.73	14.73
37	-33.90	-28.31	-25.59	-22.49	-17.28	-8.97	-.66	4.79	7.64	10.37	16.97
38	-38.51	-32.21	-29.16	-25.89	-19.81	-10.47	-1.17	4.91	8.23	11.28	17.57
39	-43.48	-36.49	-33.12	-29.42	-22.72	-12.39	-1.97	4.73	8.41	11.98	18.79
40	-48.63	-40.78	-36.98	-32.84	-25.32	-13.67	-2.02	5.50	9.44	13.44	21.20
41	-49.07	-41.88	-37.94	-33.78	-26.09	-14.20	-2.31	5.36	9.58	13.46	21.57
42	-52.89	-44.35	-40.22	-35.71	-27.54	-14.86	-2.19	5.99	10.49	14.63	23.17
43	-55.03	-46.20	-42.02	-37.40	-29.01	-15.60	-2.99	5.43	10.02	14.26	23.03
44	-55.71	-46.95	-42.71	-38.10	-29.72	-16.73	-3.79	4.64	9.26	13.50	22.25
45	-57.93	-48.73	-44.28	-39.43	-30.82	-16.97	-2.32	5.47	10.34	14.99	23.99
46	-59.48	-49.97	-45.36	-40.39	-31.23	-17.11	-2.98	6.13	11.14	15.75	25.27
47	-59.67	-50.01	-45.38	-40.39	-31.18	-16.99	-2.79	6.36	11.41	16.04	25.60
48	-61.33	-51.42	-46.63	-41.41	-31.93	-17.22	-2.52	6.96	12.18	16.97	26.88
49	-63.93	-53.07	-48.00	-42.58	-32.66	-17.27	-1.88	8.05	13.51	18.53	28.90
50	-65.80	-54.88	-49.59	-43.83	-33.38	-17.18	-.97	9.48	15.24	20.53	31.45
51	-66.42	-54.10	-49.37	-43.59	-33.09	-16.81	-.63	9.47	15.79	21.00	32.00
52	-67.22	-55.97	-50.55	-44.43	-33.69	-17.22	-.55	10.20	16.11	21.55	32.78
53	-66.22	-55.11	-49.84	-44.02	-33.45	-17.07	-.69	9.88	15.78	21.05	32.09
54	-70.93	-58.51	-52.73	-46.45	-35.09	-17.39	.36	11.77	18.05	23.83	35.75
55	-70.44	-60.22	-52.31	-48.07	-34.10	-16.89	2.09	13.78	20.22	26.19	38.36
56	-73.65	-63.85	-54.65	-47.98	-35.65	-16.65	2.35	14.61	21.35	27.55	40.35
57	-71.19	-61.80	-49.39	-42.43	-33.00	-14.95	-6.95	2.45	9.65	12.39	21.60
58	-55.66	-48.35	-44.81	-40.95	-33.95	-23.09	-12.24	-5.24	-1.38	2.14	9.48
59	-60.70	-50.44	-47.18	-43.07	-35.08	-24.02	-12.44	-4.90	-.87	2.91	10.71
60	-62.93	-54.39	-50.17	-46.64	-37.42	-24.66	-11.91	-3.69	.84	5.01	13.60
61	-77.74	-65.79	-59.93	-53.81	-42.13	-24.32	-6.81	4.97	11.30	17.11	29.10
62	-77.74	-65.67	-59.83	-53.47	-41.91	-24.00	-6.09	5.47	11.83	17.67	29.74
63	-78.00	-66.00	-59.93	-53.50	-41.91	-23.98	-5.98	6.12	12.97	18.98	30.00
64	-78.06	-65.76	-59.81	-53.33	-41.56	-23.32	-6.87	6.70	13.17	19.13	31.42
65	-78.30	-65.89	-59.87	-53.32	-41.44	-23.00	-4.67	7.32	13.87	19.88	32.30
66	-78.93	-65.92	-59.86	-53.27	-41.29	-22.72	-4.15	7.83	14.42	20.48	32.99
67	-78.97	-66.07	-59.94	-53.20	-41.17	-22.48	-3.63	8.47	15.19	21.24	33.91
68	-78.84	-66.07	-59.92	-53.20	-41.08	-22.07	-3.17	9.83	15.75	21.92	34.69
69	-79.10	-66.21	-59.97	-53.10	-40.86	-21.92	-2.60	9.94	16.64	22.98	36.00
70	-79.26	-66.27	-59.98	-53.13	-40.69	-21.40	-2.11	10.32	17.17	23.47	36.96

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 7.3. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-14.59	-11.83	-10.58	-9.19	-6.56	-2.99	1.47	4.06	5.40	6.79	9.60
1	-21.49	-17.44	-15.47	-13.38	-9.46	-3.00	2.58	6.46	8.68	10.66	14.62
2	-25.95	-21.40	-19.75	-16.20	-11.56	-4.36	2.03	7.48	10.03	12.38	17.23
3	-30.67	-25.11	-22.91	-19.88	-14.16	-5.20	2.36	7.68	10.61	13.31	18.57
4	-34.27	-28.15	-25.19	-21.96	-16.11	-7.03	2.06	7.91	10.14	14.10	20.22
5	-38.07	-32.08	-28.67	-25.85	-18.97	-8.27	1.32	8.58	12.12	15.05	22.32
6	-42.07	-35.37	-31.74	-27.79	-20.62	-9.09	1.64	8.81	12.76	16.39	23.89
7	-47.51	-39.25	-35.25	-30.90	-22.99	-10.73	1.54	9.44	13.80	17.88	26.06
8	-51.95	-42.96	-38.68	-33.86	-25.26	-11.91	1.43	10.04	14.78	19.13	28.13
9	-55.90	-46.26	-41.59	-36.51	-27.29	-12.98	1.32	10.59	15.62	20.29	29.91
10	-58.91	-48.85	-43.98	-38.64	-29.05	-14.12	.02	13.44	15.79	20.62	30.68
11	-58.47	-48.75	-44.04	-38.92	-29.62	-15.19	-.36	8.24	13.66	18.37	28.09
12	-55.86	-46.77	-42.36	-37.57	-28.87	-15.37	-1.88	6.83	11.62	16.02	25.11
13	-49.97	-42.05	-38.21	-34.88	-26.46	-14.71	-2.96	4.62	8.79	12.63	20.55
14	-42.51	-35.95	-32.77	-29.32	-23.04	-13.30	-3.57	2.71	6.17	9.39	15.90
15	-36.24	-30.76	-28.11	-25.22	-19.98	-11.85	-3.72	1.52	4.48	7.86	12.53
16	-31.67	-26.98	-24.60	-22.08	-17.52	-10.45	-3.37	1.19	3.70	6.01	10.78
17	-28.68	-24.32	-22.21	-19.92	-15.75	-9.29	-2.62	1.34	3.64	5.77	10.10
18	-23.25	-19.72	-18.01	-16.19	-12.77	-7.54	-2.30	1.08	2.94	4.65	8.17
19	-19.91	-16.76	-15.23	-13.57	-10.56	-6.08	-1.21	1.01	3.47	4.89	8.14
20	-18.01	-15.07	-13.65	-12.10	-9.29	-4.93	-.58	2.23	3.78	5.28	8.14
21	-17.13	-14.29	-12.77	-11.22	-8.42	-4.05	.38	3.11	4.66	6.04	9.07
22	-16.11	-13.21	-11.80	-10.27	-7.49	-3.18	1.12	3.90	5.43	6.84	9.74
23	-15.93	-13.03	-11.65	-10.18	-7.32	-3.02	1.29	4.06	5.59	6.99	9.89
24	-16.32	-13.31	-11.85	-10.27	-7.39	-2.93	1.54	4.42	6.00	7.46	10.47
25	-16.85	-13.74	-12.23	-10.59	-7.62	-3.01	1.61	4.58	6.22	7.73	10.83
26	-16.99	-13.94	-12.46	-10.85	-7.92	-3.39	1.14	4.87	5.68	7.16	10.21
27	-17.40	-14.36	-12.89	-11.28	-8.37	-3.85	.66	3.58	5.18	6.66	9.38
28	-21.50	-17.15	-15.[illegible]	-13.[illegible]	-8.59	-2.11	4.37	8.05	10.85	12.96	17.33
29	-23.15	-18.50	-16.33	-13.91	-9.50	-2.68	4.14	9.25	10.97	13.20	17.79
30	-24.22	-21.17	-18.67	-15.96	-11.[illegible]	-3.39	4.[illegible]	9.18	12.89	14.38	19.53
31	-27.41	-21.87	-19.13	-16.28	-11.23	-2.76	5.85	10.75	13.67	16.35	21.88
32	-28.82	-22.99	-21.17	-17.14	-11.52	-2.80	5.10	11.74	14.45	17.28	23.11
33	-30.72	-24.63	-21.68	-18.41	-12.65	-3.61	5.42	[illegible].25	14.45	17.[illegible]	23.49
34	-32.49	-27.00	-23.66	-20.44	-14.77	-4.60	5.17	1[illegible].24	14.66	17.83	24.29
35	-35.15	-28.66	-25.51	-22.08	-15.[illegible]	-6.21	3.42	3.69	11.08	16.23	22.73
36	-37.92	-31.21	-27.96	-24.42	-17.99	-8.02	1.54	8.37	11.51	15.86	21.88
37	-42.10	-34.30	-31.42	-27.63	-20.74	-10.06	.62	7.51	11.10	14.78	21.38
38	-44.98	-35.16	-[illegible]	-31.25	-22.76	-12.12	-.59	6.55	11.08	14.87	22.69
39	-50.92	-42.61	-39.58	-34.20	-25.27	-13.31	-1.53	6.33	10.77	14.80	23.11
40	-54.45	-45.[illegible]	-42.44	-36.82	-28.44	-15.42	-2.42	5.58	10.58	14.83	23.59
41	-56.54	-47.33	-43.37	-38.02	-29.70	-15.54	-1.82	6.34	11.30	16.25	25.46
42	-55.59	-46.[illegible]	-42.24	-37.36	-28.69	-15.24	-1.79	6.85	11.66	16.05	25.12
43	-51.79	-43.49	-39.46	-35.03	-27.17	-14.73	-2.48	5.93	9.87	13.30	22.21
44	-44.29	-41.[illegible]	-37.[illegible]	-32.99	-25.71	-14.42	-3.13	4.15	8.16	11.85	19.46
45	-46.74	-33.41	-35.83	-31.94	-24.53	-13.92	-2.38	4.09	7.97	11.55	18.93
46	-45.33	-38.28	-34.64	-31.05	-24.29	-13.74	-3.15	3.67	7.36	10.81	17.91
47	-41.56	-35.11	-31.99	-28.53	-22.41	-12.94	-3.28	3.91	6.31	9.44	15.89
48	-40.49	-34.18	-31.17	-27.75	-21.74	-12.37	-2.59	3.[illegible]	6.39	9.04	15.76
49	-43.33	-36.43	-33.06	-29.40	-22.74	-12.41	-2.08	3.56	6.25	11.82	18.57
50	-43.53	-38.63	-37.29	-29.65	-27.[illegible]	-13.81	-2.58	4.[illegible]	7.66	11.[illegible]	17.9[illegible]
51	-43.51	-36.78	-37.52	-29.96	-22.57	-13.52	-3.52	2.33	6.48	9.74	16.47
52	-43.33	-38.97	-37.[illegible]	-29.55	-24.46	-15.[illegible]	-5.[illegible]	.45	3.84	6.91	13.27
53	-45.06	-33.4[illegible]	-35.26	-31.78	-25.46	-15.67	-5.47	.43	3.93	7.12	13.72
54	-48.64	-41.14	-37.41	-33.25	-25.[illegible]	-14.54	-3.1[illegible]	4.27	8.3[illegible]	12.07	19.77
55	-55.71	-46.49	-47.01	-37.14	-23.10	-14.59	-.48	7.50	12.83	17.31	26.54
56	-60.15	-49.46	-45.[illegible]	-29.65	-25.8[illegible]	-14.76	.37	10.13	15.50	20.64	30.64
57	-61.93	-51.39	-45.38	-40.73	-30.64	-14.39	.65	10.74	16.30	21.43	32.95
58	-60.92	-57.87	-57.52	-46.70	-34.1[illegible]	-19.7[illegible]	-2.37	7.24	13.06	18.81	29.46
59	-71.33	-60.28	-54.30	-45.04	-33.40	-21.90	-5.40	5.28	11.09	16.48	27.59
60	-72.29	-6[illegible]47	-5[illegible].22	-50.52	-40.18	-24.1[illegible]	-8.64	2.32	8.03	13.27	24.09
61	-64.01	-58.92	-54.52	-45.73	-37.03	-23.55	-10.08	-1.38	1.43	7.83	16.21
62	-63.69	-54.58	-51.16	-45.36	-36.63	-23.11	-9.58	-.65	3.95	8.36	17.40
63	-63.11	-54.[illegible]	-47.57	-43.78	-36.06	-22.53	-9.00	-.28	4.53	8.94	18.65
64	-62.80	-53.66	-49.23	-44.41	-35.68	-22.65	-8.52	.23	5.05	9.48	18.62
65	-62.08	-52.97	-47.56	-43.76	-35.04	-21.51	-7.39	.73	5.53	9.95	19.06
66	-61.51	-52.[illegible]	-47.58	-43.16	-34.46	-20.94	-7.41	[illegible]	6.11	10.52	19.63
67	-61.13	-52.05	-47.63	-42.81	-34.06	-20.50	-6.93	1.47	6.69	11.06	20.20
68	-61.6[illegible]	-51.48	-47.[illegible]	-42.23	-33.48	-19.9[illegible]	-6.[illegible]	2.33	7.21	11.64	20.78
69	-60.16	-51.03	-46.60	-41.79	-33.04	-19.48	-5.92	2.83	7.69	12.07	21.21
70	-59.69	-50.[illegible]	-4[illegible].03	-41.21	-32.46	-18.90	-5.34	3.41	8.22	12.65	21.78

TABLE 7.4. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-14.07	-11.89	-10.64	-9.26	-6.01	-2.99	.04	3.31	4.67	5.92	8.40
1	-20.25	-16.59	-14.82	-12.09	-9.38	-3.96	1.48	4.90	6.91	8.68	12.30
2	-24.20	-19.69	-17.50	-15.13	-10.81	-4.11	2.50	6.90	9.28	11.46	15.97
3	-29.61	-21.92	-20.91	-18.18	-13.22	-5.52	2.17	7.11	9.87	12.38	17.56
4	-34.32	-28.10	-25.20	-21.96	-16.07	-6.94	2.19	8.07	11.31	14.29	20.44
5	-39.31	-32.32	-29.94	-25.25	-18.57	-8.28	2.17	8.86	12.50	15.43	22.91
6	-43.27	-37.24	-33.36	-29.12	-21.44	-9.52	2.39	10.08	14.31	18.19	26.22
7	-50.09	-41.22	-36.92	-32.25	-23.75	-10.58	2.59	11.08	15.76	20.08	28.93
8	-54.16	-44.83	-40.81	-36.99	-25.06	-11.71	2.44	11.56	16.59	21.20	30.74
9	-55.61	-45.94	-41.25	-36.13	-26.38	-12.54	1.82	11.88	16.18	20.86	30.13
10	-55.88	-46.31	-41.68	-36.63	-27.47	-13.26	.98	10.12	15.16	19.08	29.37
11	-54.98	-45.60	-41.09	-36.19	-27.28	-13.47	.34	9.25	14.11	18.66	27.97
12	-50.75	-42.23	-38.11	-33.63	-25.40	-12.84	-.21	7.94	12.42	16.55	25.06
13	-42.65	-35.63	-32.24	-28.54	-21.82	-11.41	-.39	5.73	9.42	12.82	19.84
14	-35.90	-29.98	-27.12	-24.00	-18.34	-9.57	-.79	4.26	7.98	10.84	16.76
15	-29.80	-25.31	-22.59	-19.97	-15.79	-8.03	-.27	3.98	6.83	8.86	13.28
16	-24.99	-20.84	-18.83	-16.64	-12.67	-6.52	-.36	3.61	5.79	7.80	11.95
17	-21.00	-18.04	-15.22	-14.24	-10.65	-5.87	.50	4.18	6.08	7.30	11.65
18	-17.68	-14.51	-12.97	-11.29	-8.26	-3.54	1.17	4.21	5.53	7.42	10.59
19	-14.25	-11.56	-10.26	-8.85	-6.28	-2.29	1.70	4.27	5.68	6.98	9.67
20	-11.53	-9.29	-8.20	-7.01	-4.86	-1.53	1.61	3.96	5.15	6.23	8.48
21	-10.47	-8.38	-7.32	-6.13	-4.16	-1.00	2.15	4.19	5.31	6.38	8.63
22	-9.51	-7.52	-6.56	-5.51	-3.68	-.65	2.30	4.21	5.25	6.22	8.21
23	-8.99	-7.06	-6.13	-5.12	-3.28	-.42	2.43	4.28	5.23	6.22	8.18
24	-9.77	-7.77	-6.80	-5.78	-3.82	-.85	2.12	4.04	5.09	6.06	8.07
25	-10.64	-8.53	-7.51	-6.42	-4.39	-1.27	1.85	3.86	4.97	5.39	8.09
26	-11.75	-9.08	-8.38	-7.19	-5.01	-1.64	1.72	3.90	5.09	6.19	8.46
27	-15.51	-12.53	-11.09	-9.52	-6.66	-2.28	2.18	5.03	6.60	8.05	11.02
28	-10.58	-8.87	-7.71	-6.14	-4.03	-.76	2.56	4.62	5.78	6.85	9.55
29	-12.74	-10.20	-9.97	-7.63	-5.20	-1.43	2.34	4.77	6.10	7.33	9.87
30	-15.65	-12.69	-11.26	-9.70	-6.87	-2.47	1.92	4.75	6.31	7.75	10.71
31	-17.84	-14.55	-12.96	-11.22	-8.07	-3.19	1.70	4.85	6.58	8.17	11.46
32	-18.87	-15.50	-13.66	-12.08	-8.85	-3.85	1.16	4.35	6.17	7.80	11.18
33	-19.03	-15.74	-14.14	-12.40	-9.75	-4.36	.53	3.68	5.42	7.01	10.31
34	20.57	-17.09	-15.40	-13.56	-10.23	-5.06	.12	3.45	5.29	6.97	10.46
35	-20.63	-17.33	-15.73	-14.00	-11.04	-5.95	-1.06	2.13	3.83	5.43	8.73
36	-21.19	-18.05	-16.52	-14.87	-11.85	-7.18	-2.51	.50	2.16	3.68	6.82
37	-25.01	-21.35	-13.58	-17.65	-14.16	-8.72	-3.29	.21	2.14	3.91	7.57
38	-29.72	-25.52	-23.18	-20.86	-16.04	-10.09	-3.55	.67	2.99	5.83	9.54
39	-33.77	-28.67	-25.20	-23.51	-18.64	-11.07	-3.51	1.37	4.06	6.53	11.62
40	-37.15	-31.85	-28.69	-25.69	-20.23	-11.78	-3.32	2.13	5.13	7.89	13.59
41	-36.95	-31.17	-29.30	-25.23	-19.65	-11.00	-2.34	3.24	6.31	9.13	14.36
42	-36.33	-30.7[illegible]	-27.33	-24.13	-18.33	-9.33	-.33	5.47	8.67	11.62	17.67
43	-34.03	-28.23	-26.33	-22.23	-16.66	-7.97	.74	6.38	9.45	12.29	18.16
44	-31.66	-26.06	-23.34	-20.38	-15.03	-6.71	1.61	6.97	9.93	12.64	18.24
45	-29.02	-23.[illegible]	-21.23	-18.55	-13.56	-5.83	1.90	6.38	9.63	12.15	17.36
46	-26.66	-21.[illegible]8	-19.42	-16.85	-12.18	-4.94	2.30	6.97	9.54	11.90	16.78
47	-25.93	-21.01	-19.63	-16.03	-11.32	-4.02	3.28	7.99	10.59	12.97	17.29
48	-25.06	-20.15	-17.78	-15.20	-10.51	-3.23	4.08	8.74	11.32	13.69	18.59
49	-26.78	-21.88	-13.92	-16.12	-11.05	-3.19	4.67	9.74	12.63	15.10	20.40
50	-27.97	-22.50	-19.85	-16.97	-11.74	-3.62	4.49	9.73	12.61	15.26	20.72
51	-26.39	-21.34	-18.89	-16.23	-11.38	-3.09	3.62	8.48	11.12	13.57	18.62
52	-29.09	-22.71	-20.20	-17.47	-12.51	-4.82	2.86	7.82	10.55	13.06	18.24
53	-27.98	-22.64	-23.11	-17.31	-12.24	-4.37	3.50	8.58	11.37	13.94	19.24
54	-28.83	-23.55	-20.99	-18.20	-13.15	-5.31	2.53	7.59	10.37	12.93	18.21
55	-30.11	-24.48	-21.64	-18.63	-13.16	-4.69	3.78	9.24	12.38	15.02	20.72
56	-28.42	-22.87	-20.18	-17.25	-11.93	-3.69	4.55	9.87	12.79	15.48	21.04
57	-31.48	-25.08	-21.28	-18.60	-12.47	-2.96	6.54	12.67	16.05	19.15	25.56
58	-27.78	-21.44	-18.37	-15.03	-8.96	.45	9.27	15.94	19.28	22.35	28.65
59	-23.87	-16.85	-13.41	-9.70	-2.95	7.52	17.98	24.73	28.44	31.86	38.31
60	-26.46	-18.41	-14.52	-10.28	-2.58	9.36	21.30	29.06	33.24	37.14	45.18
61	-19.63	-13.87	-1.38	-6.63	-.58	8.91	18.39	24.48	27.80	30.88	37.25
62	-19.73	-13.40	-10.33	-7.00	-.94	8.46	17.86	23.92	28.26	30.32	36.65
63	-20.01	-13.71	-13.45	-7.33	-1.30	8.05	17.41	23.44	26.76	29.81	35.11
64	-20.34	-14.06	-11.02	-7.72	-1.71	7.61	16.92	22.93	26.24	29.20	35.55
65	-20.69	-14.43	-11.41	-8.11	-2.12	7.16	16.44	22.43	25.73	28.75	35.01
66	-21.20	-14.93	-11.90	-8.58	-2.59	6.71	16.02	22.02	25.32	28.36	34.63
67	-21.59	-15.33	-12.30	-9.01	-3.02	6.27	15.55	21.54	24.84	27.87	34.12
68	-21.96	-15.71	-12.69	-9.39	-3.41	5.88	15.13	21.11	24.40	27.43	33.67
69	-22.38	-16.14	-13.12	-9.83	-3.85	5.41	14.67	20.65	23.94	26.96	33.20
70	-22.82	-16.58	-13.56	-10.27	-4.30	4.96	14.22	20.20	23.48	26.51	32.74

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 7.5. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-17.32	-10.26	-9.27	-6.13	-6.21	-3.15	-.09	1.84	2.97	3.96	6.02
1	-17.65	-14.55	-13.04	-11.41	-6.43	-3.83	.78	3.75	5.39	6.88	10.00
2	-20.78	-15.80	-14.37	-12.77	-8.95	-3.04	2.48	6.63	8.79	10.72	14.70
3	-26.08	-21.01	-19.55	-15.88	-11.03	-3.50	4.03	8.68	11.55	14.41	18.68
4	-30.13	-24.16	-21.54	-18.47	-12.90	-4.26	4.39	9.96	13.03	15.85	21.67
5	-32.37	-26.22	-22.24	-19.99	-14.10	-4.97	4.17	10.06	13.31	16.29	22.44
6	-34.59	-29.11	-24.98	-21.36	-15.37	-5.75	3.66	10.05	13.47	16.60	23.08
7	-38.66	-31.00	-27.58	-23.86	-17.11	-6.63	3.04	10.60	14.32	17.73	24.79
8	-42.33	-34.71	-30.93	-26.80	-18.32	-7.71	3.09	11.38	15.50	19.29	27.10
9	-44.50	-38.37	-32.43	-28.12	-24.37	-8.31	3.76	11.54	15.82	19.24	27.88
10	-46.00	-37.67	-33.04	-29.75	-21.29	-9.92	3.44	11.41	15.80	19.83	28.16
11	-46.53	-38.20	-34.17	-29.78	-21.81	-9.44	2.52	10.69	15.28	19.32	27.64
12	-42.43	-34.48	-31.37	-27.45	-21.32	-9.26	1.79	9.92	12.85	16.46	21.31
13	-35.42	-29.31	-26.36	-23.14	-17.29	-8.23	.83	7.67	9.89	12.85	18.95
14	-30.10	-24.34	-22.44	-19.71	-14.77	-7.10	.56	5.51	8.23	10.73	15.90
15	-24.58	-20.37	-18.33	-16.31	-12.08	-5.81	[illegible]	4.65	6.67	8.31	12.82
16	-20.45	-16.88	-15.15	-13.27	-9.85	-4.55	.75	4.16	6.05	7.77	11.34
17	16.13	-13.25	-11.85	-10.34	-7.58	-3.31	.96	3.71	5.23	6.62	9.50
18	-11.44	-9.62	-8.55	-7.39	-5.26	-1.96	1.33	3.46	4.63	5.70	7.92
19	-9.08	-7.21	-6.31	-5.32	-3.54	-.77	2.00	3.75	4.77	5.68	7.54
20	-7.43	-5.78	-4.98	-4.11	-2.53	-.08	2.37	3.95	4.82	5.62	7.27
21	-7.17	-5.89	-4.67	-3.78	-2.17	.34	2.84	4.45	5.34	6.16	7.80
22	-6.54	-4.91	-4.12	-3.26	-1.59	.73	3.16	4.72	5.58	6.27	8.03
23	-6.84	-5.12	-4.29	-3.35	-1.74	.80	3.25	4.99	5.89	6.72	8.44
24	-7.83	-5.92	-4.99	-3.94	-2.15	.69	3.22	5.35	6.36	7.29	9.20
25	-8.61	-6.06	-5.11	-4.04	-2.21	.76	3.60	5.47	6.50	7.45	9.40
26	-9.03	-6.89	-5.43	-4.67	-2.59	.67	3.93	6.02	7.18	8.24	10.43
27	-10.64	-8.17	-6.93	-5.63	-3.33	.32	3.98	6.33	7.63	8.82	11.28
28	-8.80	-6.81	-5.46	-4.19	-1.99	1.02	5.83	7.82	8.23	9.35	11.88
29	-10.71	-8.09	-6.74	-5.34	-2.78	1.18	5.14	7.78	9.11	10.48	13.07
30	-12.68	-10.38	-8.82	-7.12	-4.09	.73	5.61	8.59	10.29	11.85	15.04
31	-13.18	-10.09	-8.59	-6.94	-4.01	.50	5.17	8.12	9.75	11.25	14.34
32	-12.74	-9.76	-8.31	-6.73	-3.87	.64	5.00	7.86	9.43	10.88	13.89
33	-12.88	-9.18	-7.78	-6.25	-3.47	.83	5.19	7.92	9.44	10.85	13.76
34	-13.00	-10.37	-8.88	-7.09	-3.99	.81	5.02	8.38	10.48	11.99	15.00
35	-14.58	-11.16	-9.58	-7.69	-4.41	.68	5.76	9.04	10.85	12.51	15.94
36	-14.98	-11.37	-9.66	-7.88	-4.42	.81	6.05	9.43	11.29	13.00	16.52
37	-16.29	-12.47	-10.61	-8.68	-4.94	.73	6.41	10.07	12.65	13.94	17.76
38	-18.06	-13.98	-11.89	-9.69	-5.72	.45	6.62	10.68	12.79	14.81	18.94
39	-17.89	-13.75	-11.75	-9.57	-5.61	.62	6.66	10.62	12.88	14.88	18.93
40	-13.07	-12.68	-10.78	-8.65	-4.83	1.07	7.07	10.92	12.92	14.88	18.84
41	-15.66	-11.58	-9.63	-7.51	-3.67	2.30	8.26	12.11	14.22	16.17	20.19
42	-14.37	-10.29	-8.31	-6.14	-2.26	3.00	9.08	13.76	15.91	17.88	21.96
43	-11.77	-8.87	-6.18	-4.12	-.38	5.41	11.20	14.94	16.99	18.88	22.79
44	-9.92	-6.87	-4.21	-2.19	1.50	7.20	12.91	16.59	18.62	20.40	24.38
45	-9.87	-5.74	-3.74	-1.57	2.38	8.50	14.63	18.57	20.76	22.75	26.87
46	-9.50	-5.32	-3.28	-1.00	3.00	9.42	15.70	19.83	22.00	24.10	28.41
47	-9.98	-5.42	-3.22	-.82	3.54	10.30	17.04	21.42	23.82	26.03	30.58
48	-10.40	-5.62	-3.27	-.71	3.94	11.16	18.37	23.03	25.69	27.94	32.80
49	-10.71	-5.61	-3.14	-.45	4.43	12.00	19.57	24.45	27.14	29.61	34.70
50	-10.87	-4.87	-2.35	.39	5.37	13.09	20.81	25.79	28.63	31.09	36.24
51	-9.94	-4.63	-2.06	.74	5.82	13.69	21.57	26.66	29.45	32.05	37.33
52	-10.36	-4.91	-2.27	.40	5.82	13.61	23.00	27.24	30.00	32.78	38.40
53	-11.19	-5.49	-2.98	-.08	5.19	13.35	21.82	26.79	29.69	32.35	37.86
54	-12.07	-6.09	-4.08	-.85	4.86	13.73	22.69	28.31	31.46	34.36	40.32
55	-12.09	-6.66	-3.13	.05	5.83	14.79	23.75	29.63	32.71	35.63	41.67
56	-11.26	-5.19	-2.26	.93	6.73	15.72	24.71	30.60	33.69	36.63	42.68
57	-12.02	-6.24	-3.08	.38	6.66	16.48	26.14	32.42	35.98	39.05	45.61
58	-7.70	-2.33	-.87	3.10	8.24	16.28	24.40	29.03	30.17	34.38	40.44
59	-4.83	-.48	1.75	4.08	8.33	14.91	21.49	25.73	28.07	30.21	34.66
60	-9.05	-3.69	-1.82	1.03	7.01	15.04	23.07	28.24	31.04	33.71	39.10
61	-14.64	-8.12	-4.96	-1.52	4.72	14.40	24.05	30.32	33.76	36.92	43.44
62	-14.97	-8.52	-5.39	-1.99	4.10	13.96	23.32	29.49	32.84	36.02	42.42
63	-15.18	-8.83	-5.74	-2.41	3.67	13.18	22.53	28.61	31.96	35.03	41.38
64	-10.01	-4.22	-2.19	-2.00	5.12	14.46	24.37	29.30	31.97	34.10	40.41
65	-15.74	-9.66	-6.56	-3.38	2.62	11.80	20.98	26.98	30.16	33.16	39.36
66	-16.63	-9.93	-6.98	-3.77	2.06	11.10	20.14	26.07	29.18	32.18	38.23
67	-16.37	-10.35	-7.43	-3.26	1.51	10.45	19.39	25.16	28.33	31.28	37.27
68	-16.62	-10.68	-7.81	-4.68	.99	9.88	18.61	24.28	27.41	30.36	36.28
69	-16.97	-11.18	-8.24	-5.17	.44	9.15	17.86	23.47	26.56	29.48	35.27
70	-13.33	-11.48	-8.68	-6.61	-.08	8.60	17.08	22.64	25.46	28.48	34.08

TABLE 7.8. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.000	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.26	-5.35	-[illegible]	-7.41	-5.68	-2.91	-.02	1.67	2.66	3.57	5.45
1	-17.06	-14.09	-13.73	-10.92	-3.09	-3.61	.37	3.76	5.35	6.81	9.33
2	-19.50	16.17	-16.72	-13.15	-6.68	-2.82	2.28	6.55	8.58	10.43	14.27
3	-23.41	-13.92	-1[illegible]	-.10	-5.63	-2.70	4.22	9.69	11.15	13.41	18.08
4	-28.[illegible]	-20.81	-[illegible]	-15.59	-10.89	-2.87	4.65	9.68	12.62	15.14	20.35
	-33.[illegible]	-23.99	-[illegible]	-17.53	-12.04	-3.45	5.15	10.63	13.75	16.55	22.34
6	-37.13	-25.[illegible]	-[illegible]	-20.[illegible]	-13.[illegible]	-4.21	5.42	11.64	15.06	18.20	24.69
7	-37.32	-30.13	-[illegible]	-22.72	-13.[illegible]	-4.35	5.34	12.31	15.64	20.17	27.44
8	-47.72	-34.44	-[illegible]	-26.[illegible]	-14.[illegible]	-5.84	6.[illegible]	14.26	18.75	22.76	31.24
9	-47.54	-33.29	-[illegible]	-26.37	-20.10	-6.38	7.14	15.29	21.06	25.93	34.73
10	-51.[illegible]	-4[illegible]	-[illegible]	-30.[illegible]	-21.[illegible]	-7.[illegible]	7.[illegible]	16.74	22.10	26.85	36.65
11	-51.47	-41.57	-3[illegible]	-33.[illegible]	-22.[illegible]	-7.44	7.[illegible]	17.74	21.99	26.77	36.67
12	-4[illegible].76	-39.44	-[illegible]	-37.45	-22.[illegible]	-7.58	6.[illegible]	15.[illegible]	20.27	24.82	34.20
13	-4[illegible].31	-35.52	-[illegible]	-37.[illegible]	-19.10	-6.71	5.69	13.53	18.08	22.12	30.47
14	-3[illegible].6	-28.28	-[illegible]	-31.[illegible]	-15.[illegible]	-5.32	4.[illegible]	10.[illegible]	14.51	17.75	24.43
15	-2[illegible].73	-21.67	-[illegible]	-1[illegible]	-11.50	-4.02	3.[illegible]	3.49	11.17	13.[illegible]	18.77
16	-1[illegible].81	-17.[illegible]	-[illegible]	-1[illegible]	-[illegible]	-2.62	3.11	5.81	8.84	10.71	14.57
17	-14.30	-11.32	-[illegible]	-8.72	-[illegible]	-1.21	3.[illegible]	5.[illegible]	7.91	9.4[illegible]	12.47
18	-[illegible]	-7.28	-[illegible]	-[illegible]	-[illegible]	.26	3.[illegible]	.[illegible]	7.62	8.10	10.34
19	-7.[illegible]	-5.19	-[illegible]	-3.97	-1.45	1.33	4.20	5.02	7.23	7.95	9.35
20	-[illegible].02	-3.[illegible]	-[illegible]	-1.78	-.74	2.15	4.[illegible]	6.[illegible]	6.94	7.72	9.33
21	-4.27	-2.[illegible]	-[illegible]	-1.1[illegible]	.41	2.75	5.[illegible]	5.[illegible]	7.43	9.20	9.77
22	-3.[illegible]	-[illegible]	-[illegible]	-.4[illegible]	.99	3.27	5.[illegible]	7.11	7.62	8.50	10.29
23	-3.12	-1.[illegible]	-.37	-.03	1.39	3.62	5.[illegible]	7.32	9.22	8.96	10.37
24	-2.[illegible]	-1.[illegible]	-.[illegible]	.09	2.[illegible]	3.[illegible]	6.[illegible]	7.[illegible]	8.66	9.44	11.23
25	-2.23	-1.[illegible]	-.[illegible]	.17	2.[illegible]	4.41	7.[illegible]	8.[illegible]	9.59	10.42	12.16
26	-2.41	-1.27	-.[illegible]	.21	2.[illegible]	4.[illegible]	7.14	9.46	10.46	11.37	13.27
27	-2.[illegible]	-1.[illegible]	-.[illegible]	.32	2.[illegible]	4.35	7.49	9.19	10.13	10.99	12.76
28	-5.35	-3.35	-2.63	-.72	1.78	5.64	9.50	11.93	13.37	14.63	17.23
29	-6.27	-3.41	-2.[illegible]	-.62	2.02	6.12	10.21	12.66	14.31	15.65	18.41
30	-5.43	-2.76	-2.47	-.07	2.44	5.43	10.38	12.33	14.34	15.63	18.23
31	-5.40	-2.71	-2.46	.02	2.60	6.59	10.09	13.17	14.59	15.90	18.59
32	-5.12	-2.43	-2.13	.23	2.95	6.84	10.83	13.40	14.81	16.11	19.80
33	-4.33	-1.76	-.52	.83	3.28	7.45	10.50	13.25	14.70	15.95	18.51
34	-3.67	-1.15	.06	1.39	3.40	7.53	11.26	13.62	15.00	16.21	18.73
35	-4.18	-1.47	-.16	1.20	3.85	7.87	11.88	14.47	15.90	17.21	19.92
36	-3.23	-.63	.67	1.93	4.47	8.31	12.16	14.64	16.01	17.26	19.35
37	-3.51	-.68	.71	2.15	4.90	9.11	13.22	16.02	17.53	18.90	21.73
38	-5.17	-1.77	-.12	1.67	4.94	9.39	15.05	18.31	20.11	21.76	25.16
39	-.52	2.11	3.26	4.63	7.12	10.58	14.82	17.22	18.69	19.94	22.54
40	.74	3.26	4.48	5.32	8.23	11.38	15.73	13.15	19.48	20.71	23.23
41	.37	3.24	4.64	6.15	8.91	13.18	17.45	20.20	21.72	23.11	25.99
42	-.75	2.57	4.13	5.93	9.11	14.04	18.97	22.15	23.90	25.51	28.33
43	-.68	3.18	4.76	6.48	9.67	14.42	19.29	22.42	24.14	25.42	28.98
44	-.33	2.82	4.63	5.59	10.15	15.66	21.18	24.74	26.70	28.50	32.22
45	-.26	3.74	5.68	7.78	11.61	17.55	22.48	27.31	29.42	31.35	35.35
46	1.27	5.35	7.33	9.48	13.39	19.43	25.48	29.39	31.54	33.51	37.59
47	3.27	7.18	9.08	11.14	14.85	20.71	26.52	30.27	32.33	34.23	38.14
48	4.50	8.43	10.33	12.40	16.15	21.99	27.82	31.58	33.65	35.65	39.48
49	6.06	9.80	1[illegible].70	13.71	17.35	23.00	28.64	32.78	34.29	36.12	39.92
50	6.09	10.10	12.04	14.15	17.99	23.94	29.88	33.72	35.83	37.27	41.70
51	6.74	11.00	13.06	15.31	19.37	25.69	32.10	36.07	38.32	40.30	44.63
52	9.29	9.97	11.93	14.72	19.69	27.39	35.09	40.08	42.79	45.31	50.49
53	.71	6.92	9.52	13.19	19.14	28.35	37.[illegible]	43.51	46.78	49.78	55.99
54	2.31	8.01	10.73	13.79	19.25	27.72	36.19	41.69	44.66	47.42	53.13
55	-.22	5.96	6.95	12.20	18.11	27.26	36.95	42.36	45.62	48.61	54.78
56	-1.72	4.68	7.74	11.15	17.28	26.78	36.29	42.41	45.79	48.89	55.29
57	.18	6.21	9.12	12.30	18.07	27.61	35.95	41.72	44.89	47.81	53.84
58	6.04	10.95	13.33	15.92	20.62	27.31	35.20	39.30	42.48	44.86	49.77
59	1.30	6.78	9.43	12.31	17.55	25.68	33.60	39.04	41.93	44.58	50.06
60	-2.04	4.32	7.41	10.77	16.96	26.32	35.77	41.87	45.22	48.31	54.68
61	-5.05	1.83	5.17	8.79	15.38	25.55	35.60	42.79	46.02	49.35	56.23
62	-5.51	1.30	4.60	8.15	14.71	24.83	34.94	41.48	45.05	48.35	55.17
63	-8.10	.68	3.56	7.53	14.01	24.04	34.12	40.60	44.17	47.65	54.23
64	-6.56	.14	3.39	6.93	13.35	23.30	33.26	39.62	43.21	46.46	53.16
65	-7.32	-.64	2.60	6.12	12.53	22.45	32.38	38.78	42.30	45.54	52.23
66	-7.79	-1.17	2.04	5.53	11.95	21.69	31.51	37.85	41.34	44.54	51.16
67	-8.47	-1.87	1.33	4.81	11.13	20.92	30.72	37.04	40.52	43.71	50.31
68	-8.84	-2.33	.83	4.26	10.44	20.16	29.83	36.08	39.50	42.65	49.16
69	-9.52	-3.03	.12	3.54	9.70	19.40	29.04	35.25	38.68	41.87	48.31
70	-9.98	-3.56	-.40	2.94	9.09	18.63	28.17	34.33	37.71	40.83	47.25

TABLE 7.7. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.20	1.96	2.88	4.71
1	-13.28	-10.67	-7.91	-6.09	-5.55	-1.69	2.17	4.66	6.04	7.30	9.90
2	-11.51	-8.47	-7.60	-6.19	-3.65	.28	4.21	6.75	8.15	9.43	12.08
3	-11.72	-9.45	-7.51	-5.95	-3.11	1.29	5.70	8.54	10.18	11.54	14.51
4	-11.72	-8.64	-7.15	-5.53	-2.69	1.98	6.54	9.49	11.11	12.68	15.67
5	-11.62	-8.49	-6.98	-5.32	-2.39	2.31	6.95	9.95	11.59	13.11	16.19
6	-12.37	-9.01	-7.38	-5.61	-2.39	2.60	7.50	10.00	12.57	14.20	17.56
7	-13.48	-9.93	-8.11	-6.13	-2.54	3.03	8.59	12.19	14.16	15.98	19.73
8	-15.48	-11.21	-9.14	-6.88	-2.79	3.66	9.91	14.00	16.25	18.32	22.60
9	-17.46	-12.56	-10.19	-7.61	-2.93	4.32	11.50	16.26	18.83	21.20	26.09
10	-14.58	-13.20	-10.65	-7.76	-2.82	5.37	13.35	18.50	21.33	23.99	29.32
11	-19.67	-13.33	-10.55	-7.52	-2.03	6.49	15.01	20.50	23.53	26.21	32.05
12	-19.32	-13.33	-10.92	-7.26	-1.53	7.37	16.27	22.01	25.17	28.07	34.07
13	-17.97	-12.32	-9.56	-6.57	-1.15	7.27	15.68	21.11	24.10	26.84	32.51
14	-15.73	-10.71	-8.29	-5.66	-.60	6.52	13.94	18.72	21.36	23.77	28.76
15	-11.55	-7.78	-5.96	-3.97	-.37	5.21	10.79	14.39	16.37	18.20	21.96
16	-8.58	-5.69	-4.29	-2.77	-.05	4.29	8.67	11.29	12.86	14.26	17.16
17	-5.63	-3.50	-2.47	-1.35	.68	3.69	7.00	9.02	10.15	11.10	13.31
18	-3.66	-2.14	-1.34	-.45	1.19	3.69	6.21	7.84	8.73	9.55	11.26
19	-2.05	-.68	-.01	.71	2.22	4.04	6.09	7.40	8.13	8.79	10.16
20	-1.34	-.25	.58	1.26	2.53	4.42	6.34	7.58	8.26	8.88	10.10
21	-1.27	.12	.79	1.53	2.66	4.93	6.99	8.33	9.06	9.73	11.13
22	-.41	.57	1.26	1.98	3.30	5.36	7.42	8.76	9.48	10.15	11.64
23	-.23	.74	1.45	2.23	3.84	5.82	8.0[illegible]	9.51	10.19	10.90	12.38
24	-.27	1.29	1.97	2.76	4.23	6.44	8.67	10.12	10.91	11.64	13.18
25	.29	1.84	2.59	3.40	4.68	7.17	9.47	10.94	11.76	12.51	14.08
26	.93	2.43	3.16	3.94	5.40	7.63	9.87	11.31	12.10	12.83	14.33
27	.83	2.43	3.16	3.98	5.48	7.81	10.19	11.69	12.47	13.23	14.0[illegible]
28	.93	2.85	3.43	4.33	6.04	8.60	11.16	12.81	13.72	14.95	16.27
29	-.01	2.04	3.04	4.12	6.08	9.13	12.18	14.14	15.22	16.22	18.27
30	.33	2.49	3.54	4.68	6.76	9.97	13.15	15.28	16.40	17.45	19.61
31	1.84	3.94	4.56	6.07	8.08	11.21	14.37	16.35	17.46	18.48	20.58
32	1.69	3.98	5.09	6.29	8.49	11.88	15.28	17.47	18.48	19.79	22.07
33	2.85	4.89	5.88	6.96	8.91	11.94	14.57	16.93	18.00	18.95	21.03
34	2.03	4.31	5.39	6.57	8.71	12.02	15.34	17.48	18.65	19.74	21.97
35	.70	3.31	4.58	5.96	8.46	12.33	16.21	18.71	20.09	21.38	23.96
36	1.23	3.78	5.02	6.36	8.81	12.59	16.38	18.82	20.16	21.40	23.95
37	1.05	3.82	5.16	6.62	9.77	13.37	17.48	20.13	21.59	22.93	25.70
38	1.86	4.71	6.10	7.60	10.33	14.56	18.80	21.52	23.03	24.41	27.26
39	3.40	6.14	7.47	8.92	11.55	15.63	19.71	22.34	23.79	25.12	27.86
40	4.32	6.89	8.13	9.49	11.94	15.75	19.53	22.02	23.38	24.62	27.19
41	4.31	6.98	8.27	9.67	12.22	16.18	20.13	22.68	24.09	25.38	28.04
42	4.49	7.35	8.73	10.24	12.97	17.21	21.45	24.18	25.69	27.07	29.93
43	5.95	8.93	10.37	11.94	14.80	19.22	23.64	26.49	28.06	29.51	32.48
44	7.59	10.76	12.29	13.97	17.00	21.71	26.42	29.45	31.12	32.86	35.83
45	7.97	11.47	13.17	15.01	18.37	23.57	28.77	32.13	33.97	35.67	39.17
46	9.14	12.77	14.54	16.45	19.94	25.34	30.74	34.22	36.13	37.90	41.53
47	10.72	14.37	16.13	18.05	21.54	26.96	32.37	35.86	37.78	39.65	43.19
48	12.81	16.29	17.97	19.80	23.13	28.29	33.44	36.77	38.60	40.29	43.76
49	13.62	17.14	18.84	20.70	24.06	29.29	34.51	37.87	39.73	41.83	44.95
50	13.59	17.48	19.23	21.12	24.57	29.92	35.28	38.71	40.61	42.35	45.95
51	13.09	17.06	18.99	21.08	24.88	30.78	36.68	40.48	42.57	44.50	48.47
52	11.91	16.28	18.40	20.70	24.89	31.36	37.84	42.03	44.33	46.44	50.61
53	12.31	16.76	18.91	21.25	25.50	32.10	38.70	42.95	45.29	47.44	51.89
54	13.03	17.38	19.48	21.72	25.93	32.38	38.83	42.99	45.28	47.38	51.73
55	11.02	15.58	18.27	20.99	25.71	33.08	40.43	45.17	47.79	50.18	55.14
56	8.23	13.95	16.73	19.74	25.22	33.72	42.22	47.69	50.71	53.48	59.21
57	6.07	12.19	15.15	18.37	24.23	33.30	42.38	48.23	54.46	54.87	60.53
58	4.31	10.71	13.81	17.18	23.30	32.40	42.30	48.42	51.79	54.89	61.29
59	6.62	12.87	15.90	19.20	25.18	34.46	43.74	49.73	53.02	56.05	62.3[illegible]
60	1.47	9.69	12.19	16.00	22.91	33.63	44.35	51.28	55.06	58.56	65.78
61	-.57	6.92	10.55	14.69	21.66	32.78	43.89	51.06	55.00	58.53	66.12
62	-1.41	6.05	9.67	13.61	20.76	31.84	42.92	50.07	54.01	57.82	65.09
63	-1.42	5.47	9.05	12.94	20.02	30.99	41.86	49.04	52.93	56.51	[illegible]5[illegible]
64	-2.69	4.68	8.25	12.14	19.20	30.14	41.08	48.14	52.02	55.99	[illegible]37
65	-3.45	3.90	7.46	11.34	18.38	29.29	40.20	47.24	54.12	54.68	2.63
66	-4.27	3.06	6.61	10.47	17.48	28.35	39.23	46.24	50.10	53.05	60.97
67	-5.04	2.27	5.81	9.66	16.66	27.50	38.35	45.34	49.20	52.73	60.04
68	-5.56	1.67	5.18	8.	15.92	26.65	37.38	44.31	48.13	51.63	58.86
69	-6.42	.80	4.29	8.0	15.00	25.72	36.43	43.34	47.14	50.64	57.85
70	-7.20	.00	3.49	7.2[illegible]	14.18	24.87	35.59	42.45	46.24	49.73	56.93

TABLE 7.8. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.36	-7.78	-7.01	-6.17	-4.66	-2.10	.06	1.66	2.40	3.17	4.6
1	-14.60	-11.78	-10.42	-8.94	-6.29	-2.87	2.11	4.80	6.29	7.65	10.46
2	-13.82	-10.80	-9.34	-7.78	-4.86	-.39	4.09	6.98	8.57	10.03	13.05
3	-13.87	-10.65	-9.39	-7.39	-4.31	.47	5.24	8.42	10.02	11.58	14.08
4	-13.65	-10.29	-8.70	-6.98	-3.86	1.01	5.66	8.99	10.71	12.30	15.57
5	-16.97	-11.41	-9.29	-7.81	-4.41	.87	5.15	9.55	11.43	13.15	16.78
6	-17.48	-13.49	-11.44	-9.35	-5.48	.62	6.53	10.90	12.63	14.49	18.53
7	-19.48	-15.02	-12.66	-10.51	-6.24	.38	7.00	11.27	13.02	15.78	20.24
8	-21.03	-16.85	-14.44	-11.61	-7.04	.35	7.74	12.61	15.13	17.54	22.52
9	-24.11	-18.68	-15.90	-12.98	-7.68	.63	8.74	14.04	16.95	19.63	25.17
10	-20.12	-18.40	-13.12	-10.63	-6.11	.89	7.90	12.42	14.90	17.19	21.91
11	-22.59	-17.24	-14.69	-11.82	-6.69	1.36	9.21	14.34	17.16	19.76	25.12
12	-26.46	-19.17	-16.42	-13.21	-7.38	1.65	10.68	16.61	19.72	22.67	28.76
13	-23.52	-17.69	-14.87	-11.80	-6.22	2.49	11.09	16.67	19.75	22.57	28.40
14	-21.20	-16.03	-13.63	-10.81	-5.86	1.81	9.48	14.92	17.16	19.66	24.92
15	-16.39	-12.30	-10.32	-8.16	-4.24	1.64	7.91	11.83	13.99	16.97	20.07
16	-12.31	-9.08	-7.52	-5.82	-2.73	2.05	6.84	9.93	11.63	13.19	16.42
17	-8.28	-5.85	-4.67	-3.39	-1.06	2.58	5.16	8.61	9.79	10.97	13.41
18	-5.61	-3.68	-2.76	-1.73	.12	2.98	5.86	7.69	8.71	9.66	11.58
19	-4.14	-2.41	-1.67	-.66	.99	3.56	6.13	7.78	8.69	9.53	11.26
20	-3.28	-1.61	-.80	.08	1.68	4.16	6.64	8.23	9.11	9.92	11.59
21	-2.19	-.63	.11	.91	2.36	4.61	6.86	8.31	9.11	9.84	11.36
22	-1.57	-.06	.67	1.47	2.91	5.15	7.39	8.84	9.64	10.37	11.86
23	-1.18	.44	1.20	2.02	3.52	5.85	8.17	9.67	10.50	11.26	12.82
24	-1.00	.66	1.46	2.34	3.92	6.39	8.86	10.44	11.31	12.12	13.70
25	-.40	1.24	2.04	2.91	4.49	6.93	9.36	10.96	11.83	12.63	14.27
26	-.01	1.60	2.46	3.23	4.76	7.17	9.66	11.11	11.96	12.74	14.36
27	-.04	1.60	2.42	3.30	4.92	7.41	9.91	11.42	12.41	13.22	14.91
28	-.22	1.62	2.56	3.55	5.44	8.32	11.20	13.05	14.08	15.02	16.96
29	-.53	1.54	2.55	3.64	5.62	8.70	11.78	13.76	14.85	15.86	17.93
30	.39	2.38	3.24	4.35	6.30	9.25	12.21	14.11	15.16	16.12	18.12
31	.70	2.91	3.83	4.94	6.96	10.09	13.22	15.24	16.36	17.38	19.49
32	1.59	3.65	4.65	5.73	7.71	10.76	13.8[illegible]	15.79	16.88	17.88	19.94
33	1.35	3.60	4.63	5.98	8.09	11.34	14.73	16.89	18.07	19.16	21.42
34	.01	2.47	3.67	4.96	7.32	10.98	14.64	17.00	18.29	19.49	21.95
35	-.51	1.97	3.1[illegible]	4.49	6.88	10.57	14.27	16.65	17.96	19.17	21.66
36	-.39	2.12	3.34	4.65	7.07	10.80	14.57	16.59	[illegible]	19.44	21.95
37	-.47	2.10	3.35	4.70	7.16	10.98	14.30	17.26	[illegible]	19.87	22.44
38	-.55	2.13	3.42	4.85	7.41	11.40	15.16	17.25	[illegible]	20.86	23.34
39	-1.11	1.82	3.23	4.78	7.58	11.92	16.27	19.07		22.03	25.95
40	-.01	3.89	4.29	5.82	8.59	12.90	17.20	19.48		22.91	25.61
41	.73	3.60	5.00	6.51	[illegible]	13.54	17.81	20.57		23.48	26.36
42	-.11	3.09	4.64	6.33	9.40	14.1[illegible]	18.51	21.57		[illegible]	28.41
43	-.43	3.11	4.32	6.69	10.03	15.[illegible]	20.59	23.39	[illegible]	[illegible]	31.10
44	-.06	3.77	5.63	7.65	11.32	[illegible]	22.70	26.37	6.39	[illegible]	34.08
45	-.94	3.41	5.51	7.80	11.97	1[illegible].42	24.67	29.03	[illegible]	[illegible]	37.78
46	-.95	3.70	5.95	8.41	12.86	19.76	26.67	31.12	33.[illegible]	[illegible]	40.48
47	-1.93	3.15	5.61	8.29	13.15	20.69	28.24	33.10	[illegible]	[illegible]	43.32
48	-2.59	2.58	5.28	8.22	13.56	21.83	30.11	35.44	[illegible]	[illegible]	46.66
49	-2.03	3.58	6.30	9.27	14.64	22.98	31.27	36.69	[illegible]	[illegible]	47.94
50	-.00	5.42	8.05	10.91	16.11	24.17	32.22	37.42	[illegible]	2.[illegible]	48.34
51	3.71	8.63	11.01	13.60	18.31	25.61	32.90	37.61	[illegible]	[illegible]	47.50
52	1.47	6.89	[illegible].51	12.36	17.55	25.59	33.62	38.81	[illegible]	44.28	47.70
53	-1.43	4.48	7.35	10.46	16.12	24.30	33.68	39.34	42.46	45.32	[illegible]
54	-[illegible].28	.77	4.18	7.90	14.65	25.12	35.58	42.33	46.05	49.46	56.52
55	-4.10	2.54	5.76	9.26	15.67	25.49	35.38	41.72	45.22	48.49	55.09
56	-7.46	-.31	3.15	6.92	13.77	24.38	34.59	41.84	45.61	49.07	56.22
57	-9.59	-2.11	1.51	5.46	12.62	23.72	34.82	41.98	45.93	49.95	57.03
58	-13.41	-5.44	-1.57	2.63	10.26	22.10	33.54	41.57	45.78	49.64	57.61
59	-13.84	-6.19	-2.48	1.55	8.88	20.24	31.60	38.93	42.96	46.87	54.32
60	-16.45	-8.91	-4.25	-1.28	5.95	17.15	28.74	35.57	39.54	43.21	50.74
61	-24.78	-15.54	-11.06	-6.13	2.56	16.38	30.11	39.98	43.83	48.30	57.55
62	-23.52	-14.73	-10.47	-5.84	2.57	15.62	28.67	37.08	44.71	42.97	50.76
63	-22.20	-13.8[illegible]	-9.87	-5.49	2.47	14.81	27.14	35.10	39.48	43.51	51.82
64	-21.21	-13.30	-5.46	-5.20	2.29	14.04	25.60	33.38	37.85	41.38	49.30
65	-20.24	-12.71	-9.06	-5.10	2.11	13.28	24.45	31.60	35.62	39.27	46.80
66	-19.30	-12.14	-8.67	-4.83	1.97	12.60	23.24	30.10	33.87	37.34	44.51
67	-18.61	-11.77	-8.46	-4.86	1.69	11.84	21.53	29.54	32.14	35.45	42.29
68	-17.98	-11.47	-8.31	-4.88	1.36	11.03	20.70	26.53	30.36	33.52	40.03
69	-17.55	-11.38	-8.34	-5.04	.96	10.26	19.57	25.57	28.37	31.91	38.17
70	-17.54	-11.47	-8.53	-5.33	.49	9.50	18.51	24.33	27.53	30.87	36.54

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 7.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative [illegible] Probability										
Alt (km)	0.135	1.000	2.280	5.000	[illegible]	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.28	-8.43	-7.55	-6.56	-4.8[illegible]	-2.06	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	-14.34	-11.33	-9.88	-8.29	-5.91	-.44	3.53	6.41	7.99	9.45	12.46
2	-15.79	-12.17	-10.42	-8.51	-5.05	.32	5.70	9.16	11.07	12.82	16.44
3	-18.46	-14.33	-12.33	-10.15	-6.20	-.07	6.06	10.01	12.19	14.19	18.32
4	-21.31	-16.65	-14.40	-11.95	-7.49	-.69	6.32	10.77	13.22	15.48	20.13
5	-24.77	-19.55	-17.02	-14.27	-9.27	-1.53	6.22	11.22	13.97	16.50	21.72
6	-27.99	-22.23	-19.44	-16.40	[illegible]	-2.34	6.21	11.72	14.76	17.55	23.31
7	-30.55	-24.35	-21.34	-18.07	-12.[illegible]	-2.98	6.29	12.23	15.50	18.5[illegible]	24.72
8	-33.40	-26.40	-23.57	-20.35	-13.66	-3.[illegible]	6.17	12.56	16.08	19.31	25.99
9	-35.98	-28.48	-25.44	-21.73	-14.9[illegible]	[illegible]	6.18	12.98	16.72	20.16	27.26
10	-37.01	-30.29	-26.75	-22.89	-15.49	-3.03	5.83	12.83	16.69	20.23	27.54
11	-38.68	-31.28	-27.69	-23.79	-16.70	-3.71	5.28	12.37	16.27	19.86	27.27
12	-38.[illegible]	-3[illegible]	-27.32	-23.53	-16.44	-3.96	4.72	11.60	15.40	18.88	26.08
13	-35.70	-29.[illegible]	-25.78	-22.25	-15.85	-3.93	3.99	10.39	13.92	17.16	23.04
14	-31.[illegible]	-25.63	-22.82	-19.70	-14.20	-3.58	3.04	8.60	11.67	14.46	20.29
15	-26.53	-21.42	-19.25	-16.67	-11.99	-3.73	2.54	7.22	9.80	12.17	17.26
16	-20.95	-17.[illegible]	-15.15	-13.[illegible]	-9.35	-3.55	2.25	5.99	8.05	9.94	13.85
17	-16.60	-13.42	-11.87	-10.19	-7.14	-2.91	2.32	5.37	7.05	8.59	11.78
18	-12.64	-1[illegible]	-8.64	-7.50	-5.05	-1.24	2.54	4.99	6.33	7.57	10.15
19	-9.64	-7.54	-6.53	-5.42	-3.41	-.30	2.81	4.82	5.93	6.94	9.0[illegible]
20	-7.77	-5.[illegible]	-5.03	-4.36	-2.29	.45	3.19	4.96	5.93	6.83	8.47
21	-6.96	-5.1[illegible]	-4.27	-3.31	-1.58	1.12	3.81	5.54	6.50	7.38	9.19
22	-5.36	-3.[illegible]	-3.[illegible]	-2.22	-.72	1.60	3.92	5.41	6.23	6.99	8.55
23	-5.11	-3.46	-2.67	-1.80	-.22	2.22	4.66	6.23	7.10	7.91	9.54
24	-5.36	-3.56	-2.69	-1.74	-.12	2.65	5.32	7.05	8.00	8.8[illegible]	10.47
25	-5.[illegible]	-3.13	-2.27	-1.33	.37	3.00	5.64	7.34	8.27	9.1[illegible]	10.91
26	-4.91	-3.1[illegible]	-2.14	-1.16	.62	3.38	6.15	7.93	8.91	9.81	11.67
27	-5.44	-3.43	-2.46	-1.43	.52	3.50	6.48	8.40	9.46	10.[illegible]	12.44
28	-4.86	-3.91	-1.97	-.94	.92	3.81	6.69	8.55	9.58	10.62	12.45
29	-4.68	-3.65	-2.66	-1.59	.36	3.38	6.40	8.35	9.43	10.41	12.45
30	-4.39	-4.18	-3.11	-1.94	.18	3.46	6.75	8.87	10.04	11.11	13.32
31	-7.20	-4.76	-3.53	-2.19	.24	4.00	7.76	10.19	11.53	12.75	15.29
32	-6.31	-3.84	-2.64	-1.34	1.03	4.70	8.37	10.74	12.04	13.24	15.71
33	-6.60	-3.28	-2.15	-.93	1.29	4.79	8.15	10.40	11.63	12.95	15.07
34	-6.29	-3.79	-2.58	-1.[illegible]	1.13	4.84	8.55	10.94	12.26	13.47	15.97
35	-6.57	-4.17	-3.01	-1.74	.56	4.12	7.69	9.98	11.26	12.41	14.82
36	-8.00	-6.22	-4.98	-3.62	-1.15	2.67	6.50	8.97	10.32	11.57	14.15
37	-10.68	-7.82	-6.43	-4.92	-2.18	2.08	6.[illegible]	9.07	10.[illegible]	11.97	1[illegible].83
38	-12.27	-9.01	-7.43	-5.71	-2.59	2.[illegible]	7.08	10.20	11.91	13.49	16.76
39	-12.06	-8.68	-7.0[illegible]	-5.26	-2.02	2.99	8.01	11.24	13.02	14.66	18.04
40	-12.14	-8.70	-7.52	-5.19	-1.87	3.28	8.49	11.76	13.59	15.27	18.74
41	-14.48	-10.58	-8.69	-6.63	-2.90	2.89	8.68	12.41	14.47	16.36	20.26
42	-17.23	-12.76	-10.60	-8.25	-3.9[illegible]	2.65	9.28	13.55	[illegible].90	18.07	22.53
43	-17.57	-12.89	-10.63	-8.[illegible]	-3.6[illegible]	3.25	10.19	14.66	[illegible].13	19.39	24.07
44	-16.97	-12.26	-9.99	-7.61	-3.00	3.98	10.97	15.47	17.95	20.23	24.94
45	-15.73	-11.13	-8.90	-6.48	-2.07	4.75	11.58	15.99	18.41	20.64	25.24
46	-14.42	-9.98	-7.83	-5.49	-1.24	5.35	11.95	16.20	18.54	20.69	25.13
47	-14.60	-9.96	-7.71	-5.27	-.82	6.07	12.96	17.40	19.85	22.10	26.74
48	-16.30	-11.15	-8.65	-6.93	-1.00	6.65	14.30	19.23	21.95	24.45	29.60
49	-18.89	-13.07	-10.25	-7.18	-1.61	7.03	15.48	21.25	24.32	27.13	32.96
50	-18.50	-12.74	-9.95	-6.91	-1.40	7.15	15.70	21.22	24.25	27.04	32.80
51	-17.57	-11.90	-9.15	-6.15	-.72	7.71	16.19	21.58	24.57	27.32	33.00
52	-18.41	-12.37	-9.45	-6.27	-.49	8.47	17.44	23.22	26.40	29.32	35.36
53	-19.39	-13.16	-10.14	-6.85	-.88	8.37	17.63	23.60	26.88	29.90	36.14
54	-21.42	-14.90	-11.73	-8.29	-2.04	7.65	17.34	23.59	27.03	30.19	36.7[illegible]
55	-23.69	-16.89	-13.60	-10.02	-3.51	6.57	16.66	23.17	26.75	30.04	36.83
56	-22.76	-16.35	-13.25	-9.88	-3.7[illegible]	5.79	15.23	21.35	24.72	27.82	34.22
57	-22.31	-16.[illegible]8	-13.50	-10.37	-4.69	4.13	12.94	18.63	21.75	24.63	30.57
58	-19.61	-14.87	-12.57	-10.07	-5.54	1.50	8.53	13.07	15.57	17.86	22.60
59	-23.63	-17.74	-14.89	-11.79	-6.15	2.68	1.32	16.96	20.06	22.91	28.80
60	-32.60	-25.10	-21.47	-17.62	-10.35	.77	11.90	19.07	23.0[illegible]	26.65	34.14
61	-34.34	-26.45	-22.64	-18.48	-10.43	.77	12.48	20.03	24.16	28.00	35.89
62	-33.44	-25.76	-22.04	-17.99	-10.44	.75	12.16	19.62	23.56	27.28	34.96
63	-32.52	-25.05	-21.43	-17.49	-10.34	.75	11.85	19.00	22.94	26.56	34.02
64	-31.62	-24.35	-20.83	-17.00	-10.05	.74	11.53	18.49	22.32	25.84	33.11
65	-30.58	-23.55	-20.14	-16.44	-9.71	.73	11.17	17.91	21.61	25.02	32.05
66	-29.63	-22.84	-19.54	-15.96	-9.45	.69	10.73	17.24	20.82	24.11	30.91
67	-28.73	-22.14	-18.95	-15.47	-9.16	.63	10.41	16.73	20.20	23.40	29.99
68	-27.83	-21.44	-18.35	-14.98	-8.87	.62	10.10	16.22	19.58	22.68	29.67
69	-26.93	-20.75	-17.75	-14.49	-8.57	.61	9.79	15.71	18.97	2[illegible]	28.15
70	-25.90	-19.95	-17.07	-13.93	-8.24	.60	9.43	15.13	18.27	2[illegible]	27.18

TABLE 7.10. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	16.000	50.000	84.100	95.000	97.720	98.000	99.865
0	-11.29	-9.10	-8.07	-6.99	-4.89	-1.72	1.46	3.50	4.63	5.67	7.80
1	-16.65	-13.39	-11.79	-10.00	-6.83	-1.93	2.98	6.15	7.89	9.49	12.80
2	-20.81	-16.62	-14.60	-12.39	-8.38	-2.17	4.09	8.04	10.25	12.29	16.16
3	-25.99	-20.90	-18.44	-15.76	-10.89	-3.35	4.20	9.07	11.75	14.21	19.30
4	-29.29	-23.72	-21.03	-18.11	-12.81	-4.50	3.69	8.95	11.87	14.55	20.10
5	-33.22	-27.00	-23.99	-20.72	-14.77	-5.55	3.67	9.02	12.90	15.9.	22.12
6	-36.90	-31.03	-26.70	-23.08	-16.50	-6.30	3.90	10.46	14.16	17.43	24.30
7	-40.90	-33.39	-29.67	-25.68	-18.44	-7.21	4.01	11.26	15.25	18.91	26.47
8	-45.06	-36.70	-32.66	-28.25	-20.28	-7.69	4.57	14.57	16.9.	21.03	29.38
9	-47.87	-38.81	-34.56	-29.94	-21.50	-8.55	5.46	12.65	17.47	2.71	30.48
10	-49.90	-40.48	-36.12	-31.40	-22.84	-9.55	3.73	12.49	17.01	21.34	30.29
11	-49.69	-40.87	-36.40	-31.95	-23.30	-10.41	2.68	11.12	15.77	20.05	28.87
12	-48.81	-40.38	-36.30	-31.82	-23.79	-11.29	1.24	9.29	13.73	17.81	26.29
13	-44.39	-36.91	-33.29	-29.34	-22.18	-11.08	.03	7.19	11.13	14.75	22.29
14	-39.94	-33.25	-30.02	-26.51	-20.13	-10.23	-.39	6.05	9.56	12.79	19.46
15	-34.36	-28.70	-25.96	-22.98	-17.57	-9.17	-.76	4.64	7.62	10.6	16.01
16	-28.89	-25.15	-21.84	-19.33	-14.79	-7.5.	-.69	3.96	6.36	[illegible]	13.41
17	-23.08	-19.29	-17.39	-15.37	-11.70	-6.01	-.34	3.35	5.37	7.22	11.06
18	-17.54	-14.58	-13.14	-11.57	-8.72	-4.29	.13	2.98	4.55	5.99	8.97
19	-13.33	-11.03	-9.92	-8.71	-6.51	-3.10	.31	2.51	3.73	4.84	7.14
20	-12.14	-9.95	-8.87	-7.69	-5.54	-2.29	1.02	3.20	4.34	5.46	7.69
21	-11.60	-9.43	-8.38	-7.23	-5.15	-1.92	1.30	3.38	4.53	5.58	7.75
22	-10.57	-8.56	-7.58	-6.52	-4.57	-1.60	1.19	3.22	4.39	5.42	7.37
23	-10.73	-8.60	-7.58	-6.46	-4.42	-1.27	1.86	3.91	5.03	6.06	8.18
24	-11.32	-9.08	-7.99	-6.8.	-4.67	-1.39	1.96	4.13	5.31	6.39	8.63
25	-11.78	-9.43	-8.29	-7.05	-4.90	-1.32	2.17	4.42	5.66	6.79	9.19
26	-11.93	-9.58	-8.45	-7.21	-4.76	-1.47	2.01	4.26	5.50	6.64	8.99
27	-13.14	-10.69	-9.	-8.07	-5.64	-1.87	1.6.	4.32	5.65	6.68	9.42
28	-14.63	-11.82	-10.46	-8.98	-6.30	-2.15	2.01	4.69	6.17	7.57	10.32
29	-16.21	-13.17	-11.69	-10.09	-7.17	-2.66	1.86	4.77	6.38	7.85	10.89
30	-17.21	-14.07	-12.54	-10.88	-7.87	-3.2.	1.47	4.48	6.13	7.66	10.80
31	-16.35	-14.93	-13.28	-11.97	-8.20	-3.12	1.95	5.23	7.03	8.68	12.10
32	-19.96	-16.19	-14.36	-12.37	-8.76	-3.17	2.43	6.04	8.03	9.85	13.62
33	-19.21	-15.59	-13.84	-11.93	-8.47	-3.10	2.27	5.74	7.69	9.40	13.01
34	-20.56	-16.74	-14.89	-12.87	-9.21	-3.63	2.15	5.61	7.82	9.68	13.50
35	-20.96	-17.33	-15.58	-13.67	-10.23	-4.83	.59	4.00	5.91	7.44	11.28
36	-22.82	-19.16	-17.46	-15.47	-11.9.	-4.55	-1.13	2.37	4.30	6.07	9.72
37	-26.67	-22.65	-20.70	-18.57	-14.72	-8.75	-2.77	1.08	3.20	5.15	9.18
38	-30.62	-26.00	-23.76	-21.33	-16.91	-10.05	-3.19	1.73	3.66	5.90	10.52
39	-33.69	-28.71	-26.29	-23.67	-18.89	-11.49	-4.09	.68	3.31	5.72	10.71
40	-37.39	-31.96	-29.32	-26.96	-21.2.	-13.20	-5.1.	.07	2.93	5.56	11.00
41	-40.0.	-34.22	-31.38	-28.29	-22.67	-13.95	-5.29	.38	3.47	6.32	12.19
42	-41.65	-35.50	-32.52	-29.28	-23.40	-14.27	-5.15	.74	3.98	6.95	13.10
43	-41.06	-35.06	-32.15	-28.99	-23.25	-14.35	-5.46	.30	3.46	6.34	12.36
44	-39.81	-34.00	-31.18	-3.11	-22.55	-13.91	-5.26	.29	3.35	6.17	11.99
45	-38.92	-33.29	-30.56	-27.59	-22.20	-13.65	-5.49	-.10	2.87	5.79	11.22
46	-38.79	-33.09	-30.33	-27.33	-21.88	-13.42	-4.97	.18	3.49	4.29	11.94
47	-37.95	-32.38	-29.68	-26.79	-21.41	-13.19	-4.87	.47	3.90	6.10	11.67
48	-36.98	-31.21	-28.66	-25.48	-20.83	-13.01	-5.18	-.13	2.65	5.20	10.47
49	-36.53	-31.2.	-28.65	-25.85	-20.76	-12.88	-4.99	.09	2.89	5.46	10.78
50	-36.65	-31.18	-28.59	-25.66	-20.43	-12.32	-4.21	1.02	3.90	6.55	12.01
51	-38.29	-32.57	-29.80	-2.	-21.32	-12.83	-4.35	1.12	4.19	6.91	12.42
52	-40.76	-34.65	-31.69	-28.	-22.67	-13.55	-4.48	1.37	4.59	7.55	13.66
53	-40.49	-34.52	-31.42	-28.47	-22.75	-13.89	-5.02	.70	3.85	6.76	12.72
54	-39.82	-33.49	-31.16	-26.09	-22.51	-13.84	-5.20	.38	3.45	6.28	12.11
55	-40.11	-34.26	-31.40	-28.57	-23.08	-14.54	-6.09	-.55	2.47	5.25	10.99
56	-44.31	-37.97	-34.90	-31.56	-25.48	-16.07	-6.66	-.58	2.76	5.83	12.17
57	-44.81	-38.53	-35.49	-32.18	-26.17	-16.86	-7.54	-1.53	1.78	4.82	11.09
58	-44.67	-38.51	-35.52	-32.28	-26.38	-17.23	-8.09	-2.19	1.05	4.04	10.20
59	-45.82	-38.62	-35.43	-31.73	-25.03	-14.63	-4.23	2.48	6.17	9.57	16.57
60	-50.60	-42.44	-38.49	-34.19	-26.36	-14.27	-2.16	[illegible]	9.5.	13.90	22.05
61	-54.83	-45.69	-41.27	-36.45	-27.71	-14.15	-.59	8.	12.97	17.40	26.53
62	-53.66	-44.73	-40.41	-35.70	-27.14	-13.41	-.65	7.	12.40	16.92	25.85
63	-52.76	-44.00	-39.75	-35.14	-26.75	-13.75	-.79	7.	12.24	16.50	25.26
64	-51.60	-43.05	-38.90	-34.39	-26.20	-13.60	-.80	7.39	11.90	16.04	24.59
65	-50.76	-42.37	-38.31	-33.88	-25.85	-13.40	-.99	7.09	11.51	15.58	23.97
66	-49.76	-41.56	-37.68	-33.26	-25.41	-13.24	-1.07	6.78	11.11	15.08	23.28
67	-48.62	-40.62	-36.75	-32.53	-24.87	-13.00	-1.12	6.44	10.76	14.63	22.63
68	-47.76	-39.91	-36.11	-31.98	-24.47	-12.85	-1.20	6.30	10.43	14.23	22.07
69	-46.63	-38.99	-35.29	-31.26	-23.94	-12.59	-1.26	6.07	10.10	13.80	21.44
70	-45.77	-38.28	-34.66	-30.71	-23.55	-12.45	-1.33	5.84	9.78	13.41	20.89

TABLE 7.11. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	[illegible].280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.50	-9.16	-7.99	-6.[illegible]	-4.92	-.86	2.7[illegible]	5.01	6.28	7.44	9.35
1	-19.96	-15.64	-13.55	-11.[illegible]	-7.14	-.73	5.68	9.81	12.09	14.18	18.50
2	-23.1[illegible]	-18.27	-15.90	-13.32	-9.65	-1.36	5.91	10.60	13.18	15.56	20.45
3	-27.61	-22.05	-19.36	-16.[illegible]	-11.11	-2.[illegible]	5.90	10.7[illegible]	13.66	16.35	21.91
4	-31.29	-25.16	-22.19	-18.95	-13.09	-3.07	5.19	11.01	14.25	17.22	23.35
5	-36.19	-29.80	-25.31	-22.12	-15.42	-5.09	5.39	12.09	15.72	19.11	26.11
6	-41.61	-33.70	-29.86	-25.63	-18.12	-6.37	5.37	12.95	17.12	20.95	28.[illegible]7
7	-45.75	-37.91	-33.62	-28.96	-20.49	-7.36	5.76	14.23	18.89	23.18	32.62
8	-51.60	-4[illegible].84	-37.12	-31.94	-22.59	-8.17	6.31	15.64	20.79	25.51	35.26
9	-54.93	-48.56	-39.59	-34.07	-24.15	-8.76	6.69	16.56	22.03	27.65	37.42
10	-58.33	-47.48	-42.20	-36.45	-25.02	-9.84	6.34	16.77	22.52	27.80	38.70
11	-57.72	-47.06	-41.90	-36.28	-26.08	-10.26	5.56	15.76	21.37	26.54	37.19
12	-54.46	-44.63	-39.87	-34.63	-25.27	-10.67	3.33	13.34	18.53	23.29	33.12
13	-48.65	-40.07	-35.91	-31.39	-22.18	-10.44	2.29	10.50	15.02	19.18	27.76
14	-40.92	-33.83	-30.39	-26.66	-13.97	-9.34	1.19	7.98	11.72	15.16	22.25
15	-34.26	-28.84	-25.63	-22.56	-16.99	-8.36	.27	5.84	8.90	11.72	17.54
16	-29.01	-24.11	-21.74	-19.16	-14.47	-7.20	.07	4.76	7.34	9.71	14.61
17	-24.32	-20.26	-18.30	-16.16	-12.28	-6.25	-.23	3.65	5.79	7.75	11.81
18	-20.23	-16.82	-15.17	-13.37	-10.11	-5.05	.01	3.28	5.08	6.73	10.14
19	-17.59	-14.58	-13.12	-11.54	-8.65	-4.18	.29	3.17	4.75	6.21	9.22
20	-15.80	-13.07	-11.74	-10.29	-7.[illegible]	-3.61	.46	3.08	4.53	5.85	8.59
21	-15.14	-12.47	-11.18	-9.77	-7.21	-3.29	.72	3.28	4.69	5.98	8.66
22	-15.37	-12.63	-11.31	-9.66	-7.29	-3.18	.88	3.50	4.95	6.27	9.01
23	-15.16	-12.42	-11.09	-9.64	-7.02	-2.95	1.13	3.75	5.20	6.53	9.27
24	-15.79	-12.89	-11.49	-9.97	-7.20	-2.90	1.40	4.17	5.69	7.09	9.99
25	-16.22	-13.25	-11.81	-10.25	-7.41	-3.00	1.41	4.25	5.82	7.26	10.23
26	-17.09	-14.02	-12.53	-10.92	-7.99	-3.45	1.[illegible]9	4.02	5.63	7.12	10.18
27	-18.72	-15.42	-13.82	-12.08	-8.92	-4.01	.89	4.05	5.79	7.39	10.69
28	-21.65	-18.27	-16.53	-14.64	-11.22	-5.06	-.50	2.89	4.73	6.46	10.09
29	-22.19	-18.69	-16.99	-15.14	-11.78	-6.54	-1.37	1.94	3.83	5.63	9.09
30	-22.43	-18.99	-17.38	-15.[illegible]	-12.43	-7.49	-2.50	.65	2.90	4.02	7.35
31	-22.93	-19.[illegible]	-18.01	-16.[illegible]	-13.[illegible]	-8.32	-3.[illegible]	-.15	1.59	3.19	6.60
32	-23.46	-20.05	-18.39	-16.40	-13.33	-8.27	-3.21	.05	1.86	3.50	6.91
33	-24.31	-22.16	-20.15	-17.94	-13.95	-7.84	-1.66	2.31	4.50	6.51	10.66
34	-27.18	-23.01	-20.99	-18.79	-14.80	-8.62	-2.44	1.56	3.76	5.77	9.94
35	-34.01	-27.01	-24.69	-21.94	-17.17	-9.75	-2.33	2.94	6.09	7.51	12.51
36	-32.49	-27.73	-25.42	-22.97	-18.34	-11.30	-4.24	.32	2.83	5.19	9.90
37	-36.12	-30.95	-28.45	-25.72	-20.77	-13.04	-5.52	-.47	2.24	4.74	9.93
38	-40.73	-35.12	-32.30	-29.24	-23.68	-15.81	-6.44	-.67	2.19	5.01	10.82
39	-42.07	-36.39	-33.44	-30.44	-26.20	-16.77	-8.34	-2.90	.09	2.84	8.52
40	-44.10	-38.[illegible]	-35.56	-32.57	-27.30	-18.46	-9.91	-4.39	-1.36	1.43	7.19
41	-46.73	-40.76	-37.88	-34.73	-29.62	-20.17	-11.33	-5.41	-2.47	.52	6.39
42	-51.19	-44.07	-41.51	-38.07	-31.83	-22.15	-12.46	-6.22	-2.74	.38	6.90
43	-52.76	-46.10	-43.07	-39.34	-32.98	-23.08	-13.19	-6.81	-3.29	-.07	6.60
44	-54.54	-47.63	-44.26	-40.64	-34.03	-23.77	-13.59	-6.91	-3.27	.08	6.99
45	-56.02	-49.40	-46.70	-42.09	-35.1[illegible]	-24.46	-13.74	-6.83	-3.02	.48	7.70
46	-56.38	-49.22	-46.74	-41.98	-36.13	-24.60	-13.88	-7.02	-3.25	.22	7.38
47	-56.56	-49.34	-46.84	-42.04	-36.13	-24.[illegible]2	-13.71	-6.88	-3.00	.40	7.22
48	-60.40	-52.36	-48.47	-44.23	-36.54	-24.[illegible]	-12.68	-4.94	-.76	3.16	11.18
49	-54.41	-47.49	-44.14	-40.60	-33.88	-23.41	-13.38	-6.72	-3.07	.28	7.19
50	-53.74	-46.89	-43.57	-39.97	-33.41	-23.26	-13.09	-6.63	-2.92	.39	7.24
51	-55.10	-48.08	-44.68	-40.98	-34.27	-23.85	-13.44	-6.72	-3.02	.38	7.40
52	-57.22	-49.99	-46.48	-42.67	-35.75	-25.01	-14.24	-7.35	-3.54	-.04	7.20
53	-60.40	-52.57	-48.78	-44.65	-37.16	-26.53	-13.91	-6.42	-2.29	1.50	9.73
54	-62.67	-54.27	-50.26	-45.88	-37.94	-26.42	-13.31	-5.36	-.99	3.03	11.33
55	-67.63	-56.22	-53.71	-48.79	-39.88	-26.06	-12.23	-3.30	1.61	6.12	15.54
56	-67.42	-59.76	-55.08	-49.98	-40.73	-26.39	-12.04	-2.80	2.29	6.97	16.63
57	-71.65	-61.63	-56.77	-51.49	-41.49	-27.01	-12.13	-2.53	2.76	7.61	17.69
58	-66.46	-57.30	-52.95	-48.16	-39.44	-26.93	-12.47	-3.70	1.09	5.50	14.61
59	-72.94	-62.76	-57.81	-52.44	-42.69	-27.56	-12.44	-2.60	2.69	7.42	17.81
60	-73.40	-63.08	-58.05	-52.58	-42.64	-27.23	-11.89	-1.88	3.60	7.63	19.01
61	-83.25	-70.54	-64.38	-57.48	-45.51	-26.45	-7.78	4.39	11.09	17.24	29.76
62	-80.54	-68.30	-62.36	-55.91	-44.18	-26.81	-7.83	3.98	10.36	16.29	28.53
63	-77.62	-65.90	-60.22	-54.04	-42.82	-25.42	-8.01	3.21	9.39	15.06	26.79
64	-79.77	-63.54	-58.10	-52.19	-41.44	-24.78	-8.11	2.64	8.55	13.99	25.22
65	-72.20	-61.97	-56.26	-50.51	-40.19	-24.18	-8.18	2.19	7.83	[illegible]	23.83
66	-69.49	-59.14	-54.19	-48.74	-38.89	-23.67	-8.30	1.67	7.00	11.99	22.30
67	-66.77	-56.93	-52.17	-46.98	-37.54	-22.95	-8.[illegible]	1.07	6.26	11.02	20.84
68	-64.06	-54.69	-50.16	-45.27	-36.26	-22.36	-8.[illegible]	.80	5.43	9.97	19.33
69	-61.49	-52.27	-48.33	-43.61	-35.03	-21.72	-8.[illegible]	.19	5.08	9.23	18.19
70	-59.17	-50.63	-46.49	-41.99	-33.81	-21.13	-8.46	-.28	4.22	8.36	16.90

C-2

TABLE 7.12. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

60-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.76	-9.84	-8.17	-6.90	-4.58	-1.00	2.59	4.90	6.18	7.35	9.76
1	-22.33	-17.93	-15.79	-13.47	-9.25	-2.71	3.83	8.05	10.37	12.50	16.91
2	-27.37	-22.29	-19.82	-17.18	-12.28	-4.73	2.82	7.65	10.37	12.83	17.92
3	-31.56	-27.53	-24.61	-21.43	-15.65	-6.70	2.26	8.03	11.21	14.13	20.17
4	-40.89	-33.65	-30.15	-26.34	-15.41	-8.68	2.06	8.99	12.80	16.30	23.54
5	-46.00	-37.99	-34.10	-29.84	-22.21	-10.31	1.59	3.26	13.49	17.37	25.39
6	-50.98	-42.18	-37.92	-33.28	-24.86	-11.79	1.27	9.70	14.33	18.60	27.40
7	-56.32	-46.67	-41.39	-36.90	-27.65	-13.31	1.02	10.27	15.36	20.04	29.70
8	-60.16	-49.89	-44.52	-39.51	-29.68	-14.44	.79	10.62	16.03	21.00	31.27
9	-64.70	-53.68	-49.35	-42.58	-32.00	-15.65	.70	11.25	17.05	22.34	33.40
10	-67.16	-55.78	-50.27	-44.27	-33.38	-16.48	.41	11.31	17.31	22.82	34.20
11	-67.56	-56.20	-50.69	-44.70	-33.83	-16.96	-.09	10.79	16.77	22.28	33.64
12	-61.70	-51.83	-46.54	-41.16	-31.39	-16.23	-1.68	8.70	14.08	19.03	29.24
13	-54.12	-45.32	-41.05	-36.41	-27.99	-14.92	-1.45	6.58	13.22	15.48	24.29
14	-46.17	-38.78	-35.20	-31.30	-24.22	-13.24	-2.27	4.81	8.71	12.29	19.68
15	-39.57	-33.33	-30.31	-27.02	-21.05	-11.79	-2.52	3.45	6.74	9.76	16.00
16	-33.28	-28.06	-25.53	-22.77	-17.77	-10.01	-2.26	2.75	5.50	8.03	13.26
17	-27.71	-23.35	-21.23	-18.93	-14.75	-8.27	-1.79	2.39	4.70	6.81	11.18
18	-21.09	-17.83	-16.24	-14.52	-11.39	-6.54	-1.68	1.44	3.26	4.74	8.01
19	-17.18	-14.51	-13.21	-11.80	-9.25	-5.28	-1.37	1.24	2.65	3.94	6.61
20	-15.70	-13.16	-11.92	-10.59	-8.15	-4.36	-.61	1.83	3.17	4.40	6.94
21	-15.24	-12.62	-11.35	-9.93	-7.47	-3.59	.29	2.73	4.17	5.44	8.05
22	-14.03	-11.50	-10.26	-8.95	-6.54	-2.79	.55	3.37	4.69	5.92	8.44
23	-14.58	-11.84	-10.51	-9.07	-6.45	-2.39	1.68	4.30	5.74	7.07	9.81
24	-15.03	-12.22	-10.85	-9.36	-6.67	-2.48	1.70	4.40	5.89	7.25	10.07
25	-14.64	-11.83	-10.43	-9.00	-6.31	-2.15	2.02	4.70	6.18	7.54	10.34
26	-16.03	-12.94	-11.44	-9.81	-6.85	-2.26	2.32	5.26	6.91	8.41	11.50
27	-18.63	-15.07	-13.39	-11.46	-8.05	-2.75	2.54	5.95	7.83	9.56	13.13
28	-23.46	-19.68	-17.72	-15.60	-11.98	-4.26	-.51	3.19	6.23	7.10	10.97
29	-24.97	-21.82	-19.11	-17.03	-13.26	-7.34	-1.63	2.25	4.33	6.24	10.19
30	-28.45	-23.97	-21.79	-19.43	-15.13	-8.47	-1.81	2.49	4.85	7.02	11.51
31	-31.74	-26.66	-24.18	-21.48	-16.67	-8.07	-1.36	3.55	6.25	8.73	13.86
32	-35.24	-29.66	-26.95	-24.00	-18.63	-10.32	-2.01	3.25	6.30	9.02	14.62
33	-41.22	-34.69	-31.38	-27.89	-21.64	-11.70	-1.86	4.47	7.98	11.19	17.82
34	-48.06	-40.37	-36.68	-32.49	-25.31	-13.93	-2.54	4.78	8.82	12.63	20.19
35	-50.96	-42.63	-38.84	-34.71	-27.22	-15.60	-3.98	3.61	7.64	11.43	19.25
36	-52.19	-44.16	-40.57	-36.95	-28.94	-17.34	-5.73	1.79	5.89	9.68	17.50
37	-55.41	-47.61	-43.68	-39.31	-31.65	-19.82	-7.49	.27	4.54	8.47	16.57
38	-59.78	-51.82	-46.78	-42.17	-33.79	-20.79	-7.48	.50	3.20	7.45	16.19
39	-66.26	-56.52	-51.80	-46.46	-37.34	-22.87	-8.41	.92	4.05	10.77	20.52
40	-69.07	-59.07	-54.21	-48.92	-39.33	-24.[illegible]	-9.[illegible]	.85	4.31	10.18	20.21
41	-71.80	-61.33	-56.26	-50.74	-40.72	-25.18	-9.64	.39	5.91	10.98	21.45
42	-74.17	-63.84	-59.36	-53.38	-42.54	-25.72	-8.91	1.99	7.91	13.39	24.72
43	-79.80	-67.86	-62.83	-55.76	-44.19	-26.34	-8.49	3.82	9.35	15.18	27.20
44	-81.97	-69.58	-63.58	-57.05	-45.19	-26.80	-8.41	3.99	9.97	15.97	28.36
45	-84.66	-71.58	-65.30	-58.46	-46.05	-26.79	-7.56	4.88	11.72	18.08	30.97
46	-87.91	-74.21	-67.57	-60.35	-47.28	-26.91	-6.58	4.63	13.75	20.39	33.09
47	-87.82	-73.68	-67.52	-60.59	-48.01	-28.61	-9.01	3.57	10.59	16.86	30.00
48	-87.72	-74.68	-68.24	-61.28	-48.60	-28.94	-9.28	3.98	10.28	16.29	30.08
49	-88.80	-75.80	-69.50	-62.64	-50.28	-30.90	-11.60	.84	7.70	13.99	27.00
50	-89.85	-76.48	-70.12	-63.11	-50.38	-30.48	-10.92	1.81	8.82	15.34	28.55
51	-90.45	-76.48	-70.81	-62.76	-49.57	-29.13	-8.69	4.49	11.76	18.42	32.19
52	-87.39	-73.73	-67.13	-59.92	-46.85	-26.68	-6.39	6.76	13.95	20.64	[illegible]
53	-88.24	-74.26	-67.48	-60.11	-46.72	-25.95	-5.19	8.28	15.57	22.35	34.34
54	-91.30	-74.[illegible]	-69.90	-61.03	-47.50	-25.67	-3.49	10.43	18.21	25.34	40.12
55	-90.29	-75.[illegible]	-68.78	-61.17	-47.33	-25.88	-4.44	9.40	17.02	24.02	38.47
56	-92.81	-77.47	-70.23	-62.15	-47.44	-24.67	-1.92	12.77	20.05	28.28	43.62
57	-91.81	-76.64	-[illegible]	-60.50	-46.11	-23.[illegible]	-1.28	13.28	21.25	28.57	43.70
58	-92.78	-77.93	-70.19	-61.77	-46.48	-22.7[illegible]	.98	14.23	24.05	32.39	48.16
59	-100.83	-84.35	-76.19	-67.43	-51.51	-24.82	-2.16	13.78	22.55	30.60	47.24
60	-96.[illegible]	-81.43	-74.44	-66.[illegible]	-51.89	-31.45	-10.24	3.50	11.14	18.14	32.54
61	-94.64	-80.44	-73.56	-66.07	-52.48	-31.40	-10.39	3.20	10.76	17.64	31.84
62	-92.64	-78.85	-72.18	-64.91	-51.71	-31.25	-10.77	2.53	9.70	16.37	30.14
63	-90.86	-77.40	-70.89	-63.79	-50.92	-30.95	-10.94	1.98	8.99	15.51	28.96
64	-89.03	-75.96	-69.61	-62.72	-50.28	-30.79	-11.18	1.19	8.05	14.37	27.95
65	-87.49	-74.63	-68.45	-61.72	-49.68	-30.59	-11.59	.63	7.36	13.59	26.31
66	-85.61	-73.21	-67.20	-60.67	-48.88	-30.39	-11.98	-.11	6.53	12.93	25.83
67	-84.18	-71.98	-66.11	-59.73	-48.13	-30.19	-12.16	-.56	5.83	11.78	23.81
68	-82.[illegible]	-70.64	-64.97	-58.76	-47.48	-29.99	-12.42	-1.14	5.07	10.81	22.61
69	-81.82	-69.[illegible]	-63.91	-57.84	-46.80	-29.69	-12.68	-1.56	4.53	10.11	21.64
70	-79.42	-68.27	-62.92	-57.00	-46.23	-29.69	-12.86	-2.08	3.88	9.30	20.88

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 8.1. VANDENBERG HEAD- AND TAILWIND COMPONENTS

76-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.37	-5.66	-4.83	-3.93	-2.29	.25	2.79	4.93	5.33	6.14	7.87
1	-13.59	-10.90	-8.87	-7.22	-4.21	.45	5.11	8.12	9.77	11.29	14.44
2	-14.16	-12.00	-9.98	-7.78	-3.80	2.39	8.57	12.56	14.74	16.77	20.94
3	-19.78	-14.29	-11.56	-8.65	-3.35	4.87	13.09	18.39	21.31	23.49	29.52
4	-22.86	-16.19	-12.88	-9.39	-2.91	7.06	17.04	23.97	27.01	30.27	33.99
5	-24.25	-18.27	-14.41	-10.20	-2.57	9.27	21.11	28.75	32.96	36.82	44.80
6	-29.26	-20.23	-15.86	-11.10	-2.46	10.94	24.39	32.94	37.74	42.11	51.13
7	-32.08	-22.08	-17.23	-11.96	-2.38	12.48	27.33	36.91	42.18	47.03	57.04
8	-35.41	-24.44	-19.02	-13.13	-2.43	14.15	30.74	41.44	47.33	52.75	63.92
9	-38.23	-26.05	-20.15	-13.73	-2.07	16.02	34.10	45.76	52.18	58.09	70.27
10	-40.59	-27.40	-21.01	-14.05	-1.42	18.17	37.76	50.39	57.34	63.73	76.93
11	-41.15	-27.22	-20.97	-13.13	.21	20.89	41.57	54.90	62.24	68.99	82.92
12	-36.69	-23.41	-16.98	-9.98	2.73	22.44	42.15	54.84	61.86	68.29	81.57
13	-28.70	-17.09	-11.61	-5.69	5.19	21.98	38.78	49.61	55.57	61.05	72.37
14	-23.54	-13.46	-8.87	-3.66	5.61	20.48	35.16	44.62	49.83	54.62	64.51
15	-18.46	-10.29	-6.33	-2.03	5.79	17.92	30.05	37.87	42.10	46.13	54.30
16	-16.58	-9.43	-5.76	-2.19	4.65	15.27	25.89	32.74	36.51	39.97	47.12
17	-15.49	-9.27	-6.24	-2.98	2.97	12.20	21.43	27.38	30.46	33.67	39.89
18	-14.58	-9.31	-6.76	-3.98	1.06	8.88	16.70	21.74	24.51	27.07	32.33
19	-14.36	-11.37	-8.93	-6.33	-1.56	5.85	13.25	18.02	20.65	23.04	28.05
20	-19.18	-14.20	-11.79	-9.17	-4.40	2.98	10.37	15.13	17.75	20.17	25.14
21	-20.94	-15.99	-13.59	-10.98	-6.29	1.10	8.45	13.19	15.80	18.20	23.15
22	-23.59	-18.39	-15.88	-13.14	-8.17	-.46	7.25	12.23	14.94	17.48	22.68
23	-24.92	-21.20	-18.43	-15.42	-9.94	-1.45	7.09	12.51	15.53	18.30	24.01
24	-30.75	-24.21	-21.09	-17.59	-11.32	-1.61	8.11	14.37	17.82	20.99	27.54
25	-34.22	-26.91	-23.36	-19.51	-12.50	-1.49	9.21	16.22	20.07	23.62	30.93
26	-36.70	-28.77	-24.93	-20.75	-13.17	-1.40	10.37	17.94	22.13	25.97	33.90
27	-39.93	-31.10	-26.82	-22.17	-13.72	-.61	12.50	20.95	25.60	29.88	38.71
28	-51.48	-39.43	-33.59	-27.24	-15.71	2.18	20.07	31.61	37.96	43.80	55.85
29	-53.83	-41.08	-34.91	-28.19	-15.99	2.94	21.86	34.04	40.78	46.96	59.71
30	-55.20	-42.01	-35.62	-28.66	-16.03	3.55	23.14	35.77	42.72	49.11	62.31
31	-55.45	-41.94	-35.43	-28.32	-15.42	4.60	24.62	37.53	44.63	51.16	64.65
32	-56.21	-42.26	-35.50	-28.15	-14.79	5.93	26.64	40.00	47.35	54.11	68.07
33	-57.38	-42.95	-35.96	-28.34	-14.55	6.87	28.28	42.09	49.70	56.69	71.11
34	-60.49	-45.02	-37.53	-29.38	-14.58	8.38	31.33	46.13	54.29	61.78	77.24
35	-62.92	-46.59	-38.61	-29.98	-14.30	10.01	34.32	50.00	58.63	66.56	82.94
36	-68.30	-50.33	-41.62	-32.15	-14.94	11.74	38.42	55.62	65.10	73.80	91.78
37	-72.90	-52.86	-43.40	-33.10	-14.90	14.60	43.60	62.30	72.60	82.06	101.60
38	-75.36	-54.50	-44.39	-33.90	-13.93	17.54	48.51	68.48	79.48	89.58	110.44
39	-78.20	-56.35	-45.58	-33.86	-12.57	20.45	53.46	74.74	86.48	97.25	119.50
40	-79.87	-56.51	-45.19	-32.87	-10.51	24.18	58.86	81.23	93.54	104.86	128.22
41	-78.44	-54.15	-42.38	-29.58	-5.32	29.74	65.60	89.06	101.86	113.63	137.97
42	-75.04	-50.31	-38.53	-25.29	-1.62	35.10	71.81	95.43	108.52	120.50	145.2.
43	-72.55	-47.33	-35.12	-21.82	2.32	39.76	77.20	101.34	114.63	126.85	152.07
44	-70.86	-45.25	-32.85	-19.36	5.14	43.14	81.1.	105.65	119.14	131.54	157.14
45	-67.98	-42.35	-29.93	-16.92	8.12	46.18	84.23	108.77	122.28	134.70	160.34
46	-65.91	-39.91	-27.31	-13.61	11.28	49.87	88.46	113.35	127.05	139.64	165.64
47	-60.24	-34.70	-22.34	-8.88	15.54	53.46	91.36	115.60	129.24	141.63	167.16
48	-56.44	-31.15	-18.91	-5.58	18.62	56.15	93.68	117.88	131.21	143.46	168.74
49	-50.98	-26.43	-13.79	-.59	23.39	60.57	97.75	121.73	134.93	147.06	172.11
50	-47.92	-22.94	-10.84	2.33	26.25	63.34	100.43	124.35	137.52	149.62	174.61
51	-37.12	-22.07	-9.94	3.24	27.24	64.42	101.61	125.58	138.79	150.92	175.97
52	-30.31	-7.84	3.65	14.89	36.41	69.76	103.12	124.43	136.98	147.36	1.9.84
53	-25.29	-2.89	7.48	18.74	39.25	71.02	102.06	123.29	134.57	144.94	166.38
54	-21.69	-.81	9.30	20.30	40.28	71.26	102.25	122.23	133.23	143.34	164.22
55	-20.91	.12	10.04	20.88	40.53	71.00	101.47	121.12	131.94	141.89	162.91
56	-4.95	13.48	22.41	32.12	49.77	77.13	109.49	122.13	131.85	140.78	159.21
57	-6.30	12.60	21.74	31.73	49.82	77.88	105.95	124.04	134.01	143.14	162.07
58	-5.36	14.47	24.36	34.92	54.09	83.81	113.63	132.70	143.25	152.96	172.97
59	-4.73	11.72	22.12	33.43	53.97	85.61	117.66	138.20	149.61	159.90	181.36
60	-15.24	7.71	18.83	30.93	52.90	86.98	121.05	143.83	155.13	166.24	189.20
61	-4.42	11.86	22.17	33.38	53.75	85.34	114.93	137.30	148.51	158.82	180.10
62	-10.30	10.78	21.00	32.11	52.24	83.54	114.88	135.06	146.18	156.34	177.47
63	-11.09	9.80	19.91	30.93	50.92	81.43	112.94	132.94	143.95	154.07	174.96
64	-11.97	8.72	18.74	29.65	49.46	80.18	110.90	130.71	141.61	151.64	172.33
65	-12.48	7.96	17.85	28.62	48.19	78.62	108.84	128.42	139.19	149.09	169.63
66	-13.34	6.88	16.68	27.35	46.73	76.77	106.81	126.19	136.86	146.66	166.90
67	-14.13	5.91	15.62	26.19	45.38	75.14	104.90	124.09	134.66	144.36	164.41
68	-15.01	4.84	14.45	24.92	43.92	73.39	102.85	121.86	132.32	141.94	161.79
69	-15.52	4.07	13.56	23.89	42.65	71.73	100.82	119.57	129.90	139.39	158.99
70	-16.90	3.00	12.29	22.42	41.18	69.98	98.77	117.34	127.57	136.96	156.36

TABLE 8.2. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.33	-5.67	-4.72	-3.86	-2.12	.00	3.08	4.76	5.66	6.63	8.29
1	-12.88	-10.06	-8.69	-7.28	-4.58	-.31	3.83	4.58	5.04	5.43	13.38
2	-14.28	-10.68	-8.47	-7.11	-3.74	1.46	6.71	10.08	11.94	13.66	17.17
3	-14.50	-11.92	-9.76	-7.28	-2.98	3.91	10.71	15.14	17.52	19.74	24.32
4	-14.56	-12.95	-12.28	-7.34	-2.03	6.26	14.94	19.75	22.67	25.38	30.90
5	-26.02	-14.14	-11.06	-7.59	-1.38	8.29	17.66	24.68	27.57	30.41	37.09
6	-22.58	-15.17	-11.62	-7.76	-.78	10.13	21.08	26.62	31.88	35.43	42.75
7	-25.15	-16.76	-14.76	-8.28	-.24	12.18	25.43	32.43	37.07	41.13	48.53
8	-24.48	-18.67	-14.41	-9.16	.05	14.32	28.58	37.70	42.85	47.50	57.11
9	-31.94	-21.08	-18.62	-10.69	.31	16.83	32.56	43.75	48.67	53.94	64.80
10	-36.89	-23.66	-17.74	-11.30	.91	18.65	36.78	48.46	54.85	60.77	73.00
11	-34.21	-24.37	-17.58	-11.24	3.11	21.38	40.46	53.83	59.60	65.86	78.74
12	-30.09	-19.08	-12.47	-5.94	5.56	23.36	41.18	62.67	69.00	69.81	76.82
13	-21.94	-11.91	-7.68	-1.79	7.79	24.67	37.49	47.67	54.35	57.19	67.20
14	-16.80	-6.29	-4.16	.33	8.48	21.12	33.74	41.91	46.90	50.53	59.04
15	-14.80	-4.77	-2.37	1.34	8.67	18.56	28.93	35.48	39.37	42.77	49.80
16	-11.16	-5.07	-2.11	1.17	6.97	16.65	25.13	30.98	34.21	37.17	43.29
17	-10.19	-5.99	-2.92	.36	5.38	13.18	20.94	25.98	28.73	31.26	36.50
18	-16.60	-5.96	-3.76	-1.37	2.97	9.71	16.96	20.60	23.19	25.39	29.93
19	-11.90	-7.79	-6.72	-3.52	.97	8.68	12.88	16.83	17.63	21.05	25.27
20	-14.37	-10.18	-8.15	-5.94	-1.93	4.27	10.51	14.52	16.73	18.76	22.95
21	-16.67	-11.54	-9.43	-7.78	-3.72	2.37	8.56	12.26	14.71	16.73	20.87
22	-18.45	-14.03	-11.4	-9.57	-5.35	1.26	7.76	11.97	14.30	16.44	20.85
23	-17.74	-15.18	-14.72	-10.58	-6.18	.72	7.56	11.35	13.36	14.69	18.18
24	-21.25	-16.31	-13.92	-11.31	-6.58	.75	6.08	12.01	15.91	17.01	22.75
25	-23.27	-17.87	-15.43	-12.18	-7.19	.87	8.93	14.11	16.77	19.46	25.07
26	-26.06	-19.86	-16.64	-13.56	-7.60	1.65	10.08	16.59	20.12	23.13	29.36
27	-29.69	-22.32	-19.78	-14.93	-7.93	2.93	13.78	20.77	24.48	28.19	35.50
28	-32.03	-25.12	-21.77	-16.13	-11.51	-1.26	9.00	15.61	19.25	22.60	29.51
29	-32.19	-26.08	-21.63	-19.08	-11.07	-.50	10.06	16.87	20.42	24.07	31.19
30	-33.71	-25.84	-22.05	-17.91	-10.39	1.27	12.93	20.45	24.59	28.39	36.28
31	-34.67	-26.57	-22.57	-18.30	-10.50	1.80	13.70	21.93	25.80	29.75	37.90
32	-33.88	-25.66	-21.68	-17.35	-9.49	2.71	14.91	22.77	27.10	31.08	39.30
33	-36.11	-26.92	-22.47	-17.63	-8.83	4.00	18.44	27.23	32.08	36.52	45.71
34	-37.50	-27.42	-22.54	-17.23	-7.58	7.38	22.34	31.98	37.30	42.18	52.25
35	-39.73	-28.51	-23.08	-17.14	-6.92	11.29	26.89	37.64	43.55	48.99	60.21
36	-43.65	-31.05	-24.95	-18.31	-6.25	12.94	31.16	43.22	49.86	55.96	68.56
37	-45.78	-32.17	-25.58	-18.41	-5.39	14.82	35.02	48.63	55.23	61.82	75.43
38	-47.27	-32.89	-25.93	-18.35	-4.59	16.79	38.08	51.84	59.42	66.36	80.74
39	-49.21	-33.90	-26.49	-18.42	-3.77	18.98	41.68	56.33	64.90	71.82	87.12
40	-50.12	-34.09	-26.25	-17.77	-2.38	21.49	45.36	60.76	69.23	77.02	93.10
41	-51.05	-34.80	-26.34	-17.35	-1.02	24.30	49.61	65.94	74.93	83.19	100.25
42	-52.29	-34.45	-25.83	-16.39	.69	27.18	53.67	70.76	80.16	88.81	106.65
43	-51.27	-32.87	-23.88	-13.80	3.93	31.55	58.18	76.97	86.77	95.78	114.34
44	-51.34	-32.02	-22.61	-12.38	6.21	35.09	63.87	82.46	92.49	102.10	121.52
45	-52.41	-32.02	-22.14	-11.39	8.13	38.39	68.46	88.18	98.93	108.81	129.20
46	-52.97	-31.84	-21.61	-10.48	9.75	41.1	72.47	92.69	103.83	114.06	135.19
47	-50.25	-28.96	-18.90	-7.22	13.25	45.01	76.76	97.29	108.51	118.87	140.26
48	-45.78	-25.06	-14.92	-3.89	16.14	47.20	78.26	98.33	109.33	119.46	140.39
49	-43.42	-22.71	-12.00	-1.77	18.03	48.77	79.82	99.39	110.26	120.27	140.99
50	-41.43	-20.83	-10.86	-.00	19.71	50.28	80.85	100.66	111.41	121.39	141.98
51	-39.68	-19.22	-9.30	1.99	21.08	51.46	81.84	101.43	112.22	122.13	142.60
52	-39.69	-18.96	-8.92	2.00	21.85	52.61	83.38	103.22	114.14	124.18	144.91
53	-38.53	-17.87	-7.86	3.03	22.80	53.47	84.13	103.91	114.80	124.80	145.46
54	-37.77	-17.12	-7.12	3.74	23.53	54.14	84.83	104.60	115.48	125.48	146.13
55	-36.70	-16.07	-6.1	10.97	23.01	55.22	85.42	99.97	109.63	110.51	136.85
56	-24.28	-9.33	-.15	9.83	27.97	56.10	84.22	102.36	112.35	121.53	140.48
57	-22.76	-6.08	3.54	12.95	29.93	56.38	82.62	99.61	108.96	117.65	135.30
58	-12.07	4.43	12.43	21.13	36.92	61.42	85.92	101.72	110.41	118.41	134.91
59	-13.85	3.7	11.41	20.38	36.67	61.83	87.19	103.48	112.45	120.70	137.71
60	-9.74	6.65	14.59	23.29	38.95	63.30	87.66	103.36	112.01	119.96	136.36
61	-7.74	-7.03	15.30	23.62	38.62	61.66	84.80	99.73	107.94	115.50	131.00
62	-11.32	4.72	12.48	20.99	36.28	60.08	83.88	99.23	107.68	115.45	131.48
63	-15.17	1.38	8.20	18.11	33.85	58.50	83.86	98.98	107.62	115.63	132.18
64	-18.82	-1.83	4.39	15.35	31.61	56.83	82.05	98.31	107.26	115.49	132.48
65	-22.39	-4.96	3.49	12.60	29.37	55.25	81.13	97.82	107.02	115.46	132.90
66	-26.08	-8.20	.46	9.89	27.01	53.55	80.09	97.21	106.64	115.30	133.18
67	-29.60	-11.31	-2.48	7.22	24.76	51.97	79.18	96.72	106.39	115.27	133.60
68	-33.22	-14.45	-5.35	4.55	22.52	50.39	78.27	96.24	106.14	115.23	134.01
69	-36.90	-17.67	-8.38	1.77	20.18	48.72	77.26	95.66	105.80	115.11	134.84
70	-40.47	-20.80	-11.27	-.90	17.94	47.14	76.34	95.18	105.55	115.08	134.75

TABLE 8.3. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.67	-4.11	-3.35	-2.53	-1.03	1.29	3.61	5.11	5.93	6.69	8.25
1	-11.65	-9.07	-7.82	-6.47	-4.00	-.18	3.69	6.11	7.47	8.71	11.29
2	-12.72	-9.86	-7.88	-6.15	-3.03	1.82	6.67	9.79	11.51	13.10	16.36
3	-15.25	-10.78	-9.61	-6.25	-1.97	4.67	11.32	15.60	17.96	20.13	24.60
4	-18.23	-12.43	-9.77	-6.76	-1.31	7.16	15.62	21.08	24.09	26.85	32.55
5	-20.92	-14.9	-10.78	-7.18	-.69	9.49	19.63	26.17	29.77	33.08	39.91
6	-23.38	-15.6	-11.78	-7.66	-.18	11.42	23.02	30.50	34.61	38.40	46.21
7	-26.14	-17.27	-12.97	-8.29	.21	13.38	26.55	35.05	39.73	44.03	52.90
8	-28.66	-19.57	-14.69	-9.37	.28	15.25	30.21	39.86	45.18	50.06	60.15
9	-31.82	-20.85	-15.54	-9.76	.73	17.01	33.29	43.78	49.56	54.87	65.84
10	-30.89	-19.62	-14.17	-8.28	2.55	19.27	35.99	46.77	52.71	58.16	69.43
11	-27.10	-16.15	-10.84	-5.06	5.43	21.69	37.96	48.45	54.23	59.53	70.49
12	-21.02	-11.05	-6.22	-.96	8.58	23.38	38.18	47.72	52.98	57.81	67.78
13	-13.78	-5.90	-1.35	3.06	11.08	23.51	35.94	43.96	48.37	52.82	60.80
14	-10.09	-2.75	.80	4.66	11.68	22.57	33.45	40.47	44.34	47.89	55.22
15	-6.19	-.23	2.66	5.80	11.50	20.35	29.19	34.90	38.04	40.93	46.89
16	-5.72	-.82	2.15	4.95	10.03	17.90	25.78	30.86	33.65	36.22	41.53
17	-6.71	-1.78	.60	3.20	7.92	15.24	22.55	27.27	29.87	32.26	37.19
18	-6.87	-2.65	-.61	1.61	5.65	11.91	18.17	22.21	24.44	26.48	30.70
19	-9.66	-4.74	-2.84	-.77	2.98	8.79	14.61	18.36	20.43	22.33	26.24
20	-10.48	-6.64	-4.78	-2.75	.93	6.63	12.34	16.02	18.04	19.91	23.75
21	-12.75	-8.76	-6.83	-4.72	-.97	5.01	10.93	14.75	16.85	18.78	22.77
22	-14.77	-10.59	-8.57	-6.36	-2.37	3.83	10.03	14.03	16.23	18.26	22.43
23	-16.09	-11.58	-9.39	-7.01	-2.69	4.02	10.72	15.04	17.42	19.61	24.13
24	-18.31	-13.15	-10.66	-7.98	-3.01	4.65	12.30	17.23	19.95	22.85	27.60
25	-20.03	-14.33	-11.56	-8.55	-3.09	5.38	13.85	19.32	22.33	25.09	30.80
26	-21.00	-14.86	-11.89	-8.65	-2.78	6.34	15.45	21.33	24.56	27.54	33.68
27	-22.16	-15.43	-12.18	-8.64	-2.20	7.77	17.75	24.18	27.72	30.98	37.70
28	-25.07	-25.79	-21.31	-16.45	-7.61	6.10	19.41	23.65	33.51	37.99	47.22
29	-27.51	-27.51	-22.67	-17.41	-7.27	7.00	21.24	31.41	38.06	41.52	51.51
30	-30.74	-23.79	-19.43	-13.77	-5.98	9.00	24.25	34.72	40.50	45.80	56.74
31	-47.99	-31.41	-27.81	-15.72	-6.67	8.55	25.72	36.81	42.50	48.50	60.08
32	-49.33	-32.03	-27.13	-19.54	-7.17	10.39	28.64	40.42	46.30	52.86	65.16
33	-45.77	-27.64	-22.29	-19.27	-6.61	12.68	32.[illegible]	44.72	51.64	57.95	71.12
34	-46.77	-32.32	-27.05	-19.71	-6.37	15.36	36.02	43.43	56.79	63.95	77.50
35	-46.73	-32.71	-27.33	-17.73	-5.97	17.48	38.68	50.66	60.28	67.57	81.69
36	-47.63	-32.97	-27.75	-17.23	-3.81	19.63	42.02	56.54	64.51	71.83	86.35
37	-47.52	-32.23	-24.82	-16.36	-1.37	21.87	45.27	60.22	66.57	76.17	91.86
38	-49.35	-32.13	-24.27	-15.71	-.13	23.90	47.39	63.22	72.07	79.93	96.15
39	-48.29	-31.71	-23.69	-14.95	.72	25.52	50.17	65.09	74.72	82.75	99.33
40	-42.36	-27.20	-19.36	-11.25	1.33	27.23	50.62	65.71	74.02	81.85	97.41
41	-41.54	-25.96	-18.42	-10.21	4.70	27.85	50.94	65.65	74.06	81.56	97.18
42	-39.34	-24.08	-17.59	-9.65	5.95	28.60	51.24	65.39	73.39	81.28	96.53
43	-35.57	-20.85	-15.81	-8.16	7.56	29.62	51.23	65.22	72.04	80.13	95.76
44	-31.33	-17.36	-10.59	-3.22	10.15	30.90	51.05	65.02	72.39	79.36	93.14
45	-28.21	-14.70	-8.16	-1.05	11.89	31.52	51.17	64.85	72.01	78.55	92.05
46	-23.37	-11.09	-4.83	1.35	14.03	33.08	52.[illegible]	64.29	71.02	77.21	89.39
47	-19.82	-7.67	-1.78	4.67	15.20	34.36	52.25	63.66	70.39	76.28	88.43
48	-19.07	-5.01	-.19	5.15	17.65	35.40	53.34	64.34	71.13	77.00	89.02
49	-17.02	-4.75	1.19	7.66	19.41	37.63	55.64	67.55	74.06	80.00	92.27
50	-15.67	-3.39	2.57	9.05	20.41	39.06	57.20	69.06	75.54	81.49	93.78
51	-15.09	-2.75	3.22	9.72	21.57	39.82	58.34	69.95	76.45	82.82	94.75
52	-15.31	-2.75	3.34	9.96	22.99	40.64	59.29	71.32	77.94	84.03	96.59
53	-17.16	-3.50	2.57	9.51	22.19	41.87	61.25	74.64	81.23	87.65	100.90
54	-19.84	-6.12	.02	7.76	20.93	41.25	61.62	74.79	81.39	88.03	102.35
55	-25.61	-10.73	-3.57	4.31	16.55	40.62	62.70	76.93	84.77	91.97	106.45
56	-34.11	-17.30	-8.16	-.29	15.90	40.76	65.72	81.32	90.68	98.82	115.64
57	-20.00	-5.68	3.29	8.87	22.64	43.69	65.74	79.21	86.69	93.66	108.04
58	-9.12	5.54	12.16	19.36	32.43	52.71	72.59	86.07	93.27	99.88	113.55
59	-1.28	12.82	19.17	25.07	37.61	57.16	76.51	90.55	95.85	102.30	115.46
60	-5.71	9.39	15.21	22.64	36.13	57.05	77.99	91.47	98.90	105.73	119.82
61	-10.29	4.45	11.65	19.44	33.59	55.51	77.47	91.62	99.42	106.57	121.26
62	-12.01	2.84	10.07	17.80	32.07	54.10	76.14	90.39	98.18	105.37	120.21
63	-13.51	1.34	8.53	16.36	31.57	52.60	74.64	88.85	96.68	103.87	118.71
64	-15.22	-.31	6.91	14.77	29.04	51.17	73.71	87.58	95.44	102.86	117.57
65	-16.72	-1.81	5.41	13.27	27.54	49.67	71.80	86.08	93.93	101.15	116.06
66	-19.22	-3.31	3.91	11.77	25.04	48.17	70.30	84.58	92.43	99.65	114.56
67	-19.94	-4.96	2.29	10.16	24.52	46.74	68.67	83.30	91.20	98.45	113.42
68	-21.44	-6.46	.79	8.68	23.02	45.24	67.42	81.90	89.69	96.95	111.92
69	-23.15	-8.11	-.87	7.10	21.49	43.51	66.13	80.53	88.45	95.73	110.77
70	-24.65	-9.81	-2.33	5.60	19.99	42.31	64.63	79.03	86.95	94.23	109.27

TABLE 8.4. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.44	-3.49	-3.13	-2.31	-.63	1.48	3.79	5.28	6.10	6.85	8.41
1	-11.07	-9.19	-7.81	-6.27	-3.75	.21	4.38	6.55	8.09	9.76	12.90
2	-13.03	-9.67	-8.05	-6.28	-3.07	1.92	6.90	10.11	11.88	13.51	16.55
3	-15.14	-10.71	-8.57	-6.28	-1.99	4.58	11.16	15.40	17.74	19.88	24.31
4	-17.95	-12.24	-9.48	-6.47	-1.01	7.46	15.93	21.39	24.40	27.17	32.07
5	-21.48	-14.36	-10.91	-7.16	-.34	10.23	20.80	27.62	31.37	34.82	41.94
6	-24.75	-16.34	-12.27	-7.83	.22	12.70	25.19	33.24	37.67	41.74	50.15
7	-26.93	-17.88	-13.30	-7.92	1.11	15.15	29.18	38.27	43.20	47.78	57.23
8	-29.31	-19.35	-14.24	-8.67	1.43	17.10	32.77	42.87	48.44	53.55	64.11
9	-31.49	-20.20	-14.73	-8.76	2.03	18.79	35.56	46.36	52.32	57.79	69.08
10	-30.23	-18.84	-13.32	-7.31	3.60	20.51	37.42	48.33	54.34	59.85	71.25
11	-27.52	-16.92	-11.05	-5.20	5.43	21.91	38.38	49.01	58.86	60.23	71.33
12	-21.76	-11.76	-5.91	-1.64	7.94	22.78	37.63	47.21	52.08	57.33	67.33
13	-13.66	-5.58	-1.61	2.67	10.43	22.48	34.52	42.29	46.67	50.60	58.61
14	-9.42	-1.80	1.41	4.90	11.74	21.08	30.91	37.25	40.74	43.95	50.57
15	-7.04	-1.20	1.63	4.70	10.29	18.95	27.61	33.20	36.27	39.10	44.93
16	-6.22	-1.20	1.22	3.87	8.67	16.11	23.55	29.35	30.99	33.42	38.44
17	-6.13	-1.83	.26	2.52	6.64	13.03	19.41	23.53	25.80	27.88	32.18
18	-6.46	-2.78	-1.00	.94	4.47	9.94	15.41	19.93	20.87	22.66	26.34
19	-7.62	-4.16	-2.58	-.87	2.25	7.09	11.93	15.05	16.76	18.34	21.60
20	-9.01	-5.95	-4.46	-2.85	.08	4.63	9.18	12.11	13.72	15.21	18.27
21	-11.03	-7.85	-6.31	-4.65	-1.59	3.14	7.06	10.90	12.58	14.12	17.30
22	-12.36	-9.17	-7.62	-5.94	-2.88	1.86	6.60	9.65	11.34	12.88	16.08
23	-13.43	-10.11	-8.51	-6.76	-3.59	1.34	6.26	9.43	11.18	12.73	16.10
24	-13.76	-10.26	-8.57	-6.72	-3.37	1.82	7.01	10.36	12.21	13.90	17.40
25	-14.29	-11.03	-9.13	-7.08	-3.37	2.40	8.16	11.88	13.92	15.80	19.69
26	-15.85	-11.67	-9.62	-7.48	-3.37	2.89	9.15	13.18	15.40	17.45	21.66
27	-15.42	-11.03	-8.90	-6.59	-2.38	4.14	10.66	14.86	17.18	19.30	23.70
28	-16.23	-11.50	-9.21	-6.72	-2.20	4.81	11.92	16.35	18.84	21.12	25.85
29	-14.97	-10.11	-7.78	-5.24	-.63	6.53	13.68	18.23	20.83	23.16	27.98
30	-13.79	-8.85	-6.46	-3.86	.87	9.21	15.54	20.27	22.88	25.27	30.22
31	-12.44	-7.47	-5.06	-2.43	2.33	9.71	17.10	21.86	24.49	26.90	31.87
32	-13.53	-7.95	-5.24	-2.30	3.05	11.34	19.63	24.97	27.92	30.62	36.21
33	-12.49	-6.71	-3.92	-.88	4.65	13.22	21.79	27.31	30.36	33.15	38.33
34	-11.55	-5.45	-2.50	.72	6.56	15.61	24.67	30.51	33.72	36.68	42.78
35	-13.58	-6.52	-3.10	.62	7.38	17.86	28.33	35.09	38.81	42.23	49.29
36	-13.62	-6.24	-2.56	1.23	8.29	19.25	30.20	37.27	41.16	44.73	52.11
37	-14.25	-6.48	-2.71	1.38	8.83	20.37	31.91	39.36	43.46	47.22	55.00
38	-16.35	-7.58	-3.92	.49	8.51	20.94	33.37	41.38	45.80	49.85	58.23
39	-18.01	-9.85	-5.16	-.59	7.69	20.55	33.40	41.66	46.25	50.44	59.10
40	-18.70	-9.96	-5.73	-1.13	7.24	20.21	33.18	41.54	46.14	50.38	59.11
41	-17.77	-9.38	-5.32	-.89	7.14	19.60	32.65	40.05	44.51	46.57	56.96
42	-16.83	-8.42	-5.06	-.89	6.70	18.46	30.22	37.31	41.99	45.82	53.75
43	-15.98	-8.36	-4.68	-.66	6.63	17.92	29.24	36.53	40.54	44.23	51.84
44	-16.53	-8.83	-5.11	-1.09	5.31	17.74	29.18	36.53	40.58	44.31	52.00
45	-17.62	-9.95	-6.14	-1.98	5.55	17.22	28.91	36.45	40.59	44.41	52.28
46	-18.21	-10.24	-5.38	-2.13	5.44	17.27	29.10	36.72	40.92	44.78	52.75
47	-18.69	-10.57	-6.60	-2.35	5.43	17.48	29.54	37.32	41.60	45.53	53.66
48	-19.90	-11.58	-7.55	-3.16	4.81	17.16	29.51	37.48	41.87	45.90	54.22
49	-23.25	-14.16	-9.76	-4.97	3.74	17.22	30.72	39.43	44.22	48.62	57.71
50	-26.25	-16.42	-11.65	-6.46	2.97	17.59	32.21	41.63	46.82	51.59	61.44
51	-27.21	-17.15	-12.27	-6.97	2.67	17.60	32.54	42.16	47.48	52.35	62.42
52	-26.04	-16.49	-11.86	-6.82	2.32	16.51	30.69	39.34	44.47	49.50	59.06
53	-28.24	-18.65	-14.01	-8.95	.23	14.46	26.70	37.87	42.95	47.57	57.16
54	-29.39	-19.72	-15.24	-9.95	-.70	13.64	27.19	37.23	42.33	47.01	56.67
55	-34.62	-24.41	-19.46	-14.08	-4.31	10.84	25.59	35.77	41.15	46.09	56.30
56	-35.90	-26.23	-21.55	-16.45	-7.19	7.16	21.51	30.77	35.87	40.55	50.22
57	-42.34	-31.71	-26.56	-20.95	-10.77	5.01	20.79	30.97	36.58	41.73	52.36
58	-45.39	-35.12	-30.14	-24.72	-14.99	.37	15.62	25.46	30.88	35.86	46.13
59	-48.78	-35.69	-31.00	-26.10	-17.21	-3.42	10.37	19.26	24.16	28.66	37.95
60	-49.68	-39.21	-34.13	-23.61	-16.58	-3.02	12.53	22.56	28.08	33.16	43.64
61	-51.47	-40.57	-35.28	-29.54	-19.10	-2.91	12.27	23.71	29.46	34.74	45.64
62	-50.53	-39.81	-34.63	-28.98	-13.73	-2.32	13.08	23.32	28.98	34.16	44.88
63	-49.46	-38.94	-33.85	-28.30	-18.23	-2.61	13.00	23.07	28.62	33.72	44.24
64	-48.52	-38.19	-33.19	-27.74	-17.86	-2.52	12.81	22.70	28.14	33.15	43.48
65	-47.58	-37.44	-32.53	-27.18	-17.48	-2.42	12.62	22.32	27.67	32.58	42.72
66	-46.65	-36.70	-31.86	-26.64	-17.11	-2.34	12.43	21.95	27.20	32.01	41.96
67	-45.72	-35.96	-31.23	-26.08	-16.74	-2.25	12.23	21.58	26.72	31.45	41.21
68	-44.66	-35.09	-30.45	-25.41	-16.25	-2.04	12.16	21.32	26.37	31.00	40.57
69	-43.73	-34.34	-29.80	-24.85	-15.88	-1.95	11.97	20.95	25.90	30.44	39.82
70	-42.79	-33.60	-29.15	-24.31	-15.51	-1.86	11.78	20.58	25.43	29.88	39.07

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 8.5. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.95	-2.66	-2.03	-1.34	-.09	1.84	3.77	5.01	5.70	6.33	7.53
1	-9.95	-7.72	-6.64	-5.46	-3.22	-.01	3.21	5.45	6.62	7.71	9.94
2	-11.01	-8.50	-7.29	-5.97	-3.57	.15	3.67	6.27	7.59	8.81	11.31
3	-13.62	-10.11	-8.41	-6.58	-3.20	2.01	7.22	10.58	12.43	14.12	17.64
4	-15.63	-11.23	-9.10	-6.78	-2.56	3.37	10.50	14.72	17.04	19.17	23.57
5	-18.15	-12.79	-10.19	-7.37	-2.24	5.71	13.66	18.79	21.61	24.21	29.57
6	-20.62	-14.40	-11.38	-8.11	-2.15	7.08	16.31	22.27	25.55	28.56	34.78
7	-22.15	-16.09	-12.66	-8.94	-2.18	8.31	18.80	25.54	29.28	32.71	39.78
8	-25.48	-17.58	-13.76	-9.60	-2.04	9.63	21.41	29.37	33.13	36.95	44.35
9	-27.14	-18.54	-14.38	-9.84	-1.61	12.16	23.33	32.16	36.69	40.86	49.46
10	-27.95	-18.82	-14.39	-9.58	-.83	12.73	25.29	35.03	39.84	44.27	53.40
11	-28.88	-19.23	-14.55	-9.46	-.22	14.11	28.44	37.66	42.77	47.44	57.10
12	-24.53	-15.58	-11.24	-6.53	2.04	15.32	29.61	37.17	41.89	46.22	55.17
13	-17.51	-10.05	-6.43	-2.50	4.65	15.72	26.61	33.54	37.83	41.61	48.97
14	-10.87	-5.00	-2.15	.94	5.57	15.29	24.01	29.63	32.73	35.53	41.45
15	-6.21	-2.04	.18	2.60	6.98	13.77	20.57	24.55	27.36	29.58	34.16
16	-5.65	-1.76	.12	2.17	5.93	11.66	17.42	21.14	23.19	25.07	28.36
17	-5.53	-2.35	-.76	.97	4.10	8.97	13.64	16.97	18.70	20.29	23.57
18	-6.04	-3.38	-2.03	-.68	1.46	5.32	9.77	12.32	13.72	15.01	17.67
19	-7.97	-5.55	-4.24	-3.11	-.79	2.75	6.38	8.65	9.97	11.14	13.55
20	-10.12	-7.80	-6.68	-5.46	-3.24	.20	3.04	5.95	7.08	8.20	10.51
21	-11.69	-9.56	-8.44	-7.21	-4.98	-1.52	1.54	4.17	5.40	6.53	8.86
22	-12.27	-10.03	-8.61	-7.85	-5.74	-2.48	.79	2.83	4.05	5.12	7.31
23	-13.97	-11.49	-10.25	-8.96	-6.62	-3.54	.74	2.11	[illegible]	5.61	8.09
24	-15.09	-12.32	-10.98	-9.57	-7.38	-3.77	1.33	3.98	5.43	6.77	9.54
25	-15.62	-12.72	-11.32	-9.79	-7.02	-2.71	1.59	4.36	5.89	7.28	10.18
26	-16.76	-13.57	-12.02	-10.33	-7.27	-2.52	2.23	5.29	6.98	8.53	11.72
27	-17.95	-14.36	-12.62	-10.72	-7.29	-1.96	3.28	6.81	8.71	10.45	14.04
28	-22.39	-17.63	-15.38	-12.93	-8.47	-1.67	5.34	9.80	12.25	14.50	19.14
29	-22.00	-17.30	-15.02	-12.53	-8.03	-1.04	5.95	10.46	12.94	15.22	19.93
30	-20.97	-16.41	-14.21	-11.80	-7.44	-.67	6.08	10.44	12.86	15.07	19.48
31	-19.72	-15.36	-13.26	-10.96	-6.80	-.34	6.11	10.28	12.57	14.68	19.03
32	-20.25	-15.99	-13.93	-10.87	-6.41	-.61	7.43	11.88	14.36	16.61	21.47
33	-21.37	-16.33	-13.88	-11.23	-6.40	1.08	8.57	13.90	16.85	18.80	23.54
34	-23.89	-18.25	-15.62	-12.55	-7.16	1.21	9.68	14.97	17.94	20.47	26.31
35	-25.90	-19.45	-16.54	-13.42	-7.72	1.12	9.94	15.66	18.80	21.69	27.44
36	-26.83	-20.60	-17.58	-14.29	-8.33	.93	10.10	16.15	19.43	22.95	28.69
37	-27.02	-20.79	-17.77	-14.49	-8.53	.72	9.97	15.94	19.22	22.24	28.47
38	-28.05	-21.61	-18.79	-15.50	-9.62	-.26	8.90	14.98	18.27	21.20	27.62
39	-28.85	-22.74	-19.79	-16.57	-10.72	-1.65	7.42	13.26	16.48	19.44	25.55
40	-29.56	-23.71	-20.87	-17.79	-12.18	-3.58	5.19	10.80	13.88	16.72	22.57
41	-31.42	-25.57	-22.74	-19.66	-14.07	-5.39	3.28	8.88	11.96	14.79	20.61
42	-34.92	-28.68	-25.66	-22.37	-16.40	-7.15	2.11	6.08	11.37	14.39	20.62
43	-37.10	-30.72	-27.63	-24.26	-18.15	-8.68	.80	4.91	10.27	13.36	19.74
44	-38.87	-30.78	-27.83	-24.61	-18.78	-9.73	-.48	3.16	8.37	11.32	17.92
45	-38.16	-31.44	-28.92	-25.64	-19.68	-10.44	-1.20	4.76	8.04	11.05	17.28
46	-39.95	-33.46	-30.31	-26.87	-20.68	-11.05	-1.41	4.40	8.22	11.36	17.85
47	-42.37	-35.48	-32.14	-28.51	-21.91	-11.69	-1.46	5.14	8.77	12.11	19.00
48	-43.17	-36.34	-33.03	-29.42	-22.88	-12.73	-2.69	3.96	7.56	10.87	17.71
49	-44.49	-37.57	-34.22	-30.58	-23.95	-13.68	-3.41	3.21	6.86	10.21	17.13
50	-46.30	-39.20	-35.76	-32.02	-25.22	-14.69	-4.18	2.44	6.30	9.62	16.98
51	-48.20	-40.87	-37.31	-33.45	-26.43	-15.54	-4.66	2.36	6.23	9.70	17.12
52	-49.73	-42.47	-38.95	-35.12	-28.17	-17.40	-6.42	-.32	4.16	7.67	14.95
53	-51.39	-43.98	-40.39	-36.49	-29.39	-18.39	-7.39	-.38	3.61	7.20	14.61
54	-54.53	-46.84	-43.12	-39.06	-31.70	-20.29	-8.87	-1.51	2.54	6.27	13.96
55	-57.54	-50.44	-46.51	-42.29	-34.48	-22.45	-10.41	-2.45	1.62	5.54	13.65
56	-61.52	-53.24	-49.23	-44.86	-36.83	-24.69	-11.35	-4.42	-.06	3.96	13.04
57	-70.14	-60.21	-55.41	-50.17	-40.67	-25.93	-11.20	-1.70	3.54	8.35	18.27
58	-69.84	-60.38	-55.80	-50.81	-41.75	-27.78	-13.65	-4.59	.48	4.78	14.44
59	-65.45	-57.11	-53.07	-48.67	-40.68	-28.29	-15.91	-7.92	-3.52	.52	8.87
60	-73.78	-63.67	-58.81	-53.53	-43.93	-29.65	-14.17	-4.47	.71	5.87	15.60
61	-69.39	-60.05	-55.53	-50.61	-41.68	-27.82	-13.96	-5.03	-.11	4.92	13.75
62	-67.27	-58.13	-53.70	-48.88	-40.13	-26.64	-13.98	-5.38	.58	5.00	14.15
63	-64.87	-55.99	-51.68	-47.00	-38.49	-25.31	-12.12	-3.42	1.87	5.37	14.26
64	-68.76	-54.64	-49.85	-45.27	-36.95	-24.65	-11.15	-3.83	1.76	5.96	14.46
65	-60.35	-51.92	-47.83	-43.39	-35.32	-22.80	-10.28	-2.28	2.29	6.33	14.76
66	-57.86	-49.68	-45.72	-41.41	-33.58	-21.44	-9.31	-1.48	2.83	6.79	14.89
67	-55.74	-47.76	-43.87	-39.48	-32.04	-20.19	-8.34	-.69	3.52	7.38	15.37
68	-53.38	-45.62	-41.87	-37.88	-30.40	-18.93	-7.46	-.06	4.01	7.78	15.90
69	-51.23	-43.78	-40.05	-36.08	-28.84	-17.68	-6.49	.72	4.70	8.35	16.88
70	-48.84	-41.66	-38.03	-34.28	-27.23	-16.42	-5.62	1.35	5.19	8.72	16.90

TABLE 8.6. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.42	-2.53	-1.90	-1.27	.01	1.93	3.89	5.08	5.76	6.39	7.68
1	-8.96	-6.86	-5.99	-4.99	-3.02	-.05	2.91	4.82	5.88	6.85	8.85
2	-10.76	-8.30	-7.16	-5.35	-3.55	.05	3.66	5.38	7.26	8.44	10.87
3	-13.29	-9.89	-8.25	-6.46	-3.21	1.84	6.88	10.13	11.92	13.57	16.96
4	-15.28	-11.03	-9.47	-6.74	-2.67	3.64	9.34	14.01	16.25	18.31	22.55
5	-16.22	-11.37	-9.03	-6.47	-1.83	5.36	12.55	17.19	19.75	22.10	26.94
6	-17.43	-11.99	-7.33	-6.43	-1.17	6.98	15.14	20.40	23.29	25.96	31.45
7	-18.20	-12.72	-9.72	-6.46	-.55	8.67	17.81	23.73	26.99	29.99	36.17
8	-21.02	-14.63	-11.14	-7.30	-.47	10.20	20.67	27.76	31.55	35.03	42.22
9	-23.35	-15.84	-11.61	-7.44	.14	11.48	23.62	31.19	35.36	39.20	47.11
10	-24.31	-15.78	-11.65	-7.18	1.00	13.66	26.31	34.48	38.97	43.10	51.63
11	-23.22	-14.87	-10.23	-5.62	2.76	15.75	28.73	37.11	41.72	45.96	54.71
12	-21.35	-12.56	-8.31	-3.68	4.74	17.78	30.82	39.23	43.86	48.12	56.30
13	-16.70	-8.91	-6.11	-1.02	6.48	18.02	29.59	37.0[illegible]	41.[illegible]	44.84	52.74
14	-12.21	-5.82	-2.73	.63	6.75	16.22	25.70	31.81	35.18	38.27	44.65
15	-8.39	-4.34	-1.69	.77	5.60	13.10	20.60	25.43	28.09	30.64	35.59
16	-7.32	-4.08	-2.22	-.10	3.48	9.13	14.03	16.57	20.60	22.46	26.30
17	-8.76	-5.63	-4.11	-2.46	.53	5.18	9.03	12.83	14.48	16.39	19.12
18	-9.50	-7.09	-5.92	-4.65	-2.39	1.23	4.81	7.12	8.39	9.56	11.97
19	-10.96	-8.88	-7.87	-6.78	-4.79	-1.10	1.39	3.38	4.43	5.49	7.57
20	-12.55	-10.60	-9.66	-8.63	-6.76	-3.87	-.98	.88	1.91	2.85	4.80
21	-13.80	-11.80	-10.58	-9.98	-8.16	-5.33	-2.51	-.65	.31	1.23	3.13
22	-15.04	-13.16	-12.24	-11.25	-9.44	-6.64	-3.84	-2.03	-1.04	-.13	1.76
23	-18.96	-14.88	-13.68	-12.78	-10.80	-7.72	-4.69	-2.65	-1.50	-.55	1.52
24	-17.96	-15.80	-14.75	-13.69	-11.59	-8.33	-5.11	-3.04	-1.90	-.85	1.31
25	-19.33	-17.03	-15.92	-14.71	-12.50	-9.09	-5.67	-3.47	-2.26	-1.14	1.16
26	-20.04	-17.71	-15.58	-15.35	-13.12	-9.65	-6.29	-3.30	-2.73	-1.60	.73
27	-20.74	-18.29	-17.10	-15.80	-13.45	-9.80	-6.16	-3.81	-2.51	-1.32	1.14
28	-27.00	-23.59	-22.11	-20.07	-18.76	-18.61	-4.[illegible]	-1.15	.85	2.77	6.65
29	-23.03	-24.90	-22.[illegible]	-20.73	-18.83	-10.70	-4.52	-.62	1.56	3.56	7.68
30	-25.57	-25.43	-22.42	-21.25	-17.[illegible]	-11.15	-5.11	-1.[illegible]	1.12	3.13	7.26
31	-30.04	-25.31	-22.[illegible]	-21.72	-17.76	-11.62	-5.47	-1.51	.67	2.88	6.81
32	-30.45	-26.28	-24.[illegible]	-22.06	-18.07	-11.57	-5.68	-1.65	.51	2.53	6.70
33	-30.60	-26.41	-24.23	-22.17	-1[illegible].16	-11.33	-5.71	-1.70	.51	2.54	6.74
34	-30.74	-26.59	-24.59	-22.40	-18.44	-12.28	-6.13	-2.17	.02	2.02	6.17
35	-33.33	-29.35	-27.13	-24.82	-20.53	-13.98	-7.22	-2.37	-.57	1.60	6.08
36	-35.53	-31.71	-29.67	-26.67	-22.21	-15.34	-8.48	-4.15	-1.62	.62	5.25
37	-37.61	-32.93	-30.75	-28.32	-23.39	-17.03	-10.17	-5.75	-3.31	-1.07	3.55
38	-41.10	-35.26	-32.51	-30.30	-25.72	-18.52	-11.24	-6.71	-4.15	-1.81	3.04
39	-38.96	-34.78	-32.74	-30.53	-26.51	-20.27	-14.[illegible]	-10.01	-7.30	-5.76	-1.56
40	-41.98	-37.45	-35.20	-32.87	-29.54	-21.82	-15.30	-11.76	-8.38	-6.18	-1.65
41	-44.90	-40.11	-37.73	-35.26	-31.67	-23.56	-16.45	-11.98	-9.32	-7.01	-2.22
42	-42.82	-44.31	-41.65	-38.74	-32.47	-25.21	-17.12	-11.85	-8.35	-6.28	-.77
43	-49.44	-44.36	-41.80	-39.22	-34.36	-26.82	-19.28	-14.42	-11.74	-9.28	-4.21
44	-53.10	-47.68	-45.11	-42.31	-37.21	-29.31	-21.41	-16.32	-13.52	-10.94	-5.12
45	-55.04	-49.63	-47.[illegible]	-44.18	-39.99	-30.34	-22.31	-17.73	-14.88	-12.26	-6.85
46	-55.61	-51.33	-47.77	-44.95	-39.83	-32.11	-24.26	-19.21	-16.42	-13.67	-8.59
47	-55.76	-50.56	-44.[illegible]	-45.30	-40.32	-32.60	-24.38	-13.90	-17.16	-14.64	-9.44
48	-57.59	-52.15	-45.52	-40.65	-41.45	-33.38	-25.21	-21.10	-17.24	-14.00	-9.16
49	-60.52	-54.63	-51.74	-49.63	-43.[illegible]	-34.30	-25.56	-19.32	-15.82	-13.97	-9.08
50	-65.38	-58.71	-55.47	-51.96	-46.57	-35.66	-25.75	-19.26	-15.84	-12.61	-5.94
51	-71.08	-63.54	-59.89	-55.92	-49.70	-37.52	-26.33	-19.11	-15.14	-11.49	-3.95
52	-77.64	-68.97	-64.77	-60.26	-51.89	-39.62	-26.14	-17.84	-13.27	-9.07	-.39
53	-82.31	-73.24	-69.51	-63.57	-54.40	-40.20	-26.00	-16.84	-11.79	-7.16	2.41
54	-81.29	-72.84	-69.41	-63.59	-54.84	-41.2[illegible]	-27.69	-19.[illegible]	-14.11	-9.68	-.54
55	-81.73	-72.98	-69.73	-64.09	-55.69	-42.63	-29.08	-21.10	-16.53	-12.27	-3.48
56	-84.93	-75.82	-72.41	-66.60	-57.88	-44.30	-30.63	-22.11	-17.30	-12.85	-3.78
57	-84.14	-75.77	-71.64	-67.20	-59.13	-46.62	-34.12	-26.09	-21.61	-17.53	-9.11
58	-88.39	-79.76	-77.58	-71.07	-61.77	-49.95	-37.34	-28.88	-24.33	-20.15	-11.51
59	-96.27	-78.42	-74.62	-70.48	-62.37	-51.31	-39.66	-32.19	-28.01	-24.21	-16.35
60	-91.80	-83.44	-79.[illegible]	-74.95	-66.89	-54.59	-42.20	-34.19	-29.79	-25.74	-17.38
61	-88.75	-80.70	-77.30	-72.58	-64.86	-52.32	-40.92	-33.27	-29.03	-25.13	-17.09
62	-88.78	-78.80	-74.54	-70.73	-62.09	-51.25	-39.40	-31.77	-27.56	-23.70	-15.72
63	-84.54	-76.69	-77.09	-68.75	-61.[illegible]3	-49.58	-37.93	-30.41	-26.27	-22.47	-14.62
64	-82.58	-74.79	-71.[illegible]	-66.92	-59.47	-47.51	-36.26	-28.[illegible]1	-24.80	-21.03	-13.25
65	-80.65	-72.93	-69.13	-65.12	-57.73	-46.27	-34.91	-27.47	-23.35	-19.61	-11.39
66	-78.68	-71.03	-67.22	-63.29	-55.96	-44.61	-33.24	-25.91	-21.88	-18.17	-10.62
67	-76.73	-69.14	-65.47	-61.47	-54.20	-42.93	-31.67	-24.40	-20.40	-15.73	-9.14
68	-74.48	-67.02	-63.41	-59.46	-52.34	-41.27	-30.39	-23.05	-19.12	-15.51	-8.05
69	-72.53	-65.13	-61.55	-57.69	-51.58	-39.60	-28.62	-21.54	-17.64	-14.06	-6.67
70	-70.56	-63.23	-59.68	-55.82	-48.81	-37.53	-27.65	-20.04	-16.17	-12.63	-5.30

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 8.7. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.14	-2.10	-1.54	-1.01	.02	1.62	3.22	4.25	4.82	5.34	6.42
1	-7.65	-5.98	-5.17	-4.29	-2.69	-.21	2.26	3.86	4.74	5.55	7.22
2	-9.11	-7.19	-6.19	-5.15	-3.27	-.35	2.57	4.45	5.49	6.44	8.41
3	-11.35	-7.78	-6.53	-5.17	-2.71	1.11	4.93	7.40	8.75	10.00	12.58
4	-12.01	-8.81	-7.26	-5.57	-2.51	2.29	6.99	10.06	11.75	13.30	16.50
5	-12.96	-9.39	-7.66	-5.79	-2.37	2.92	8.21	11.63	13.51	15.23	18.80
6	-14.28	-10.18	-8.24	-6.12	-2.27	3.70	9.67	13.51	15.63	17.58	21.60
7	-14.96	-12.57	-8.43	-6.11	-1.88	4.66	11.21	15.43	17.76	19.89	24.31
8	-16.32	-11.29	-8.66	-6.21	-1.41	6.05	13.50	18.31	20.94	23.39	28.41
9	-17.11	-11.58	-8.91	-6.03	-.71	7.49	15.69	20.98	23.89	26.57	32.09
10	-18.37	-12.23	-9.25	-6.01	-.13	8.99	18.11	23.99	27.23	30.20	36.35
11	-18.26	-11.72	-8.56	-5.11	1.19	10.89	20.64	26.79	30.24	33.40	39.94
12	-17.44	-13.80	-7.59	-4.09	2.26	12.11	21.96	29.31	31.80	35.02	41.45
13	-16.21	-9.70	-6.66	-3.27	2.89	12.44	22.00	28.14	31.55	34.67	41.10
14	-14.87	-9.21	-6.18	-3.09	2.52	11.21	19.98	25.51	28.59	31.43	37.29
15	-13.47	-8.62	-6.27	-3.72	.92	8.12	15.31	19.95	22.50	24.85	29.70
16	-11.45	-7.98	-6.29	-4.46	-1.14	4.02	9.18	12.51	14.34	16.03	19.50
17	-11.03	-6.94	-7.04	-4.22	-3.65	.34	4.34	6.91	8.33	9.43	12.32
18	-12.70	-10.46	-9.38	-6.20	-6.06	-2.73	.59	2.73	3.91	5.00	7.24
19	-12.89	-11.13	-10.28	-9.35	-7.67	-5.06	-2.44	-.76	.17	1.02	2.78
20	-14.21	-12.57	-11.78	-10.91	-9.34	-6.91	-4.48	-2.91	-2.05	-1.25	.38
21	-16.13	-14.46	-13.64	-12.76	-11.16	-8.67	-6.14	-4.57	-3.69	-2.88	-1.20
22	-17.49	-15.47	-15.04	-14.23	-12.67	-10.26	-7.80	-6.30	-5.45	-4.46	-3.04
23	-19.26	-17.56	-16.72	-15.92	-14.17	-11.61	-9.06	-7.91	-6.50	-5.47	-3.94
24	-20.69	-18.88	-18.02	-17.29	-15.40	-13.79	-10.17	-8.48	-7.55	-6.70	-4.94
25	-21.97	-20.19	-19.25	-18.29	-16.54	-13.82	-11.10	-9.35	-8.38	-7.49	-5.66
26	-22.79	-21.92	-20.82	-19.03	-17.24	-14.47	-11.70	-9.91	-8.93	-8.02	-6.15
27	-23.71	-21.75	-20.86	-19.76	-17.89	-14.98	-12.06	-10.19	-9.15	-8.20	-6.24
28	-25.05	-23.83	-22.80	-21.79	-19.86	-16.87	-13.88	-11.05	-10.09	-9.91	-7.89
29	-25.75	-26.32	-25.15	-23.87	-21.54	-17.34	-14.32	-12.01	-10.73	-9.95	-7.12
30	-28.71	-27.27	-26.09	-24.80	-22.48	-18.82	-15.21	-12.87	-11.58	-10.40	-7.95
31	-29.07	-26.88	-25.82	-24.68	-22.56	-19.31	-16.05	-13.98	-12.80	-11.74	-9.55
32	-30.04	-27.71	-26.59	-25.38	-23.14	-19.68	-16.27	-14.00	-12.78	-11.65	-9.32
33	-31.73	-29.18	-27.91	-26.53	-24.07	-20.14	-16.28	-13.75	-12.37	-11.10	-9.49
34	-33.44	-30.60	-29.22	-27.72	-25.00	-20.78	-16.56	-13.64	-12.34	-10.96	-8.12
35	-35.54	-32.57	-31.13	-29.56	-26.77	-22.31	-17.90	-15.06	-13.49	-12.05	-9.78
36	-35.80	-33.05	-31.72	-30.27	-27.64	-23.55	-19.47	-16.84	-15.39	-14.06	-11.21
37	-36.63	-34.07	-32.30	-31.42	-28.92	-25.03	-21.15	-18.64	-17.26	-16.00	-13.38
38	-38.91	-36.15	-34.67	-33.16	-30.43	-26.19	-21.55	-19.22	-17.71	-16.33	-13.48
39	-39.60	-36.90	-35.59	-34.18	-31.59	-27.56	-23.55	-20.98	-19.54	-18.23	-15.52
40	-40.69	-38.17	-36.94	-35.61	-33.19	-29.44	-25.69	-23.27	-21.53	-20.71	-18.18
41	-44.09	-41.36	-40.04	-38.61	-36.00	-31.96	-27.91	-25.31	-23.87	-22.95	-19.83
42	-48.40	-45.26	-43.76	-42.11	-39.12	-34.48	-29.64	-26.65	-25.20	-23.69	-20.56
43	-52.73	-49.19	-47.45	-45.55	-42.10	-36.76	-31.41	-27.98	-26.06	-24.32	-20.72
44	-55.58	-51.85	-50.15	-48.08	-44.52	-38.99	-33.46	-29.90	-27.94	-26.13	-22.41
45	-57.73	-53.90	-51.90	-49.83	-46.07	-40.24	-34.41	-30.65	-28.58	-26.67	-22.75
46	-55.77	-54.85	-52.55	50.89	-47.14	-41.32	-35.51	-31.76	-29.70	-27.80	-23.88
47	-57.23	-53.97	-52.37	-50.62	-47.44	-42.51	-37.59	-34.41	-32.66	-31.05	-27.73
48	-57.37	-54.30	-52.81	-51.26	-48.20	-43.70	-39.15	-36.21	-34.59	-33.11	-30.04
49	-59.20	-55.99	-54.43	-52.74	-49.66	-44.30	-40.13	-37.09	-35.36	-33.80	-30.59
50	-62.32	-59.41	-57.52	-55.46	-51.72	-45.92	-40.12	-36.33	-34.33	-32.44	-28.53
51	-66.67	-62.45	-60.43	-58.22	-54.23	-48.03	-41.83	-37.80	-35.63	-33.81	-29.44
52	-72.83	-67.74	-65.27	-62.52	-57.71	-50.15	-42.59	-37.72	-35.03	-32.56	-27.47
53	-73.83	-68.73	-66.31	-63.62	-58.73	-51.15	-43.57	-38.69	-36.00	-33.92	-29.42
54	-76.04	-70.76	-68.21	-65.42	-60.28	-52.54	-44.71	-39.66	-36.88	-34.32	-29.65
55	-77.68	-72.52	-70.02	-67.30	-62.35	-54.69	-47.03	-42.08	-39.36	-36.86	-31.70
56	-84.71	-78.59	-75.63	-72.81	-66.55	-57.47	-48.29	-42.54	-39.32	-36.35	-30.24
57	-89.02	-82.59	-79.46	-76.09	-69.90	-60.34	-50.78	-44.62	-41.22	-38.10	-31.66
58	-94.51	-87.34	-83.80	-80.06	-73.22	-62.57	-51.52	-45.05	-41.27	-37.80	-30.62
59	-104.65	-95.59	-91.12	-86.32	-77.60	-64.07	-50.55	-41.43	37.02	-32.81	-27.50
60	-86.06	-80.77	-77.19	-75.39	-70.31	-62.43	-54.55	-49.46	-46.66	-44.09	-38.78
61	-87.93	-77.96	-75.55	-72.94	-68.18	-60.81	-53.43	-48.69	-46.06	-43.85	-39.68
62	-80.79	-75.94	-72.59	-71.04	-66.39	-59.19	-51.59	-47.25	-44.79	-42.44	-37.59
63	-78.60	-73.97	-71.58	-69.03	-64.56	-57.55	-50.53	-46.01	-43.52	-41.23	-36.50
64	-78.44	-73.82	-69.55	-67.16	-62.79	-55.91	-49.16	-44.65	-42.72	-39.95	-35.37
65	-74.29	-69.79	-67.61	-65.24	-60.94	-54.26	-47.59	-43.29	-40.32	-38.74	-34.25
66	-71.90	-67.56	-65.48	-63.21	-55.67	-52.65	-46.23	-42.09	-39.81	-37.72	-33.39
67	-69.76	-65.55	-63.51	-61.29	-57.26	-51.01	-44.76	-40.72	-38.51	-36.47	-32.25
68	-67.58	-63.49	-61.51	-59.35	-55.42	-49.38	-43.29	-39.38	-37.22	-35.24	-31.15
69	-65.46	-61.49	-59.56	-57.46	-53.65	-47.75	-41.84	-38.03	-35.94	-34.01	-30.03
70	-63.33	-59.46	-57.59	-55.55	-51.85	-46.11	-40.30	-36.66	-34.62	-32.75	-28.88

TABLE 8.8. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75- DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.32	-2.46	-1.89	-1.28	-.17	1.55	3.28	4.39	5.00	5.56	6.72
1	-7.49	-5.78	-4.97	-4.09	-2.50	-.03	2.46	4.04	4.92	5.72	7.39
2	-8.86	-6.85	-5.69	-4.84	-2.93	.03	2.99	4.90	5.96	6.91	8.91
3	-9.56	-7.09	-5.89	-4.59	-2.22	1.46	5.13	7.50	8.80	10.00	12.98
4	-11.01	-8.04	-6.60	-5.03	-2.18	2.23	6.44	9.49	11.06	12.50	15.47
5	-13.26	-9.62	-7.85	-5.93	-2.95	2.96	8.36	11.85	13.77	15.53	19.17
6	-14.49	-10.31	-8.29	-6.09	-2.09	4.11	10.30	14.30	16.50	18.52	22.70
7	-16.39	-10.71	-8.45	-5.98	-1.51	5.43	12.37	16.65	19.31	21.58	26.25
8	-16.97	-10.43	-7.98	-5.32	-.49	7.00	14.49	19.32	21.98	24.42	29.47
9	-15.21	-9.82	-7.21	-4.37	.78	8.79	16.79	21.95	24.79	27.40	32.79
10	-15.18	-9.49	-6.65	-3.62	1.88	10.41	18.94	24.94	27.46	30.25	35.99
11	-15.55	-9.36	-6.36	-3.09	2.84	12.03	21.23	27.16	30.42	33.42	39.61
12	-14.65	-8.43	-5.42	-2.14	3.81	13.09	22.27	28.42	31.50	34.51	40.73
13	-14.28	-8.38	-5.53	-2.42	3.23	11.98	20.74	26.38	29.49	32.35	38.25
14	-11.36	-6.25	-3.74	-1.03	3.89	11.52	19.14	24.06	26.77	29.26	34.39
15	-10.42	-6.10	-4.01	-1.73	2.40	8.81	15.22	19.36	21.83	23.73	28.09
16	-11.09	-7.48	-5.73	-3.83	-.38	4.98	10.33	13.78	15.66	17.43	21.09
17	-12.28	-9.31	-7.87	-6.30	-3.45	.97	5.38	8.23	9.80	11.24	14.22
18	-12.92	-10.52	-9.36	-8.10	-5.80	-2.24	1.32	3.81	4.87	6.03	8.43
19	-14.28	-12.07	-11.05	-9.91	-7.87	-4.71	-1.56	.49	1.61	2.64	4.77
20	-14.97	-13.12	-12.22	-11.25	-9.48	-6.73	-3.99	-2.22	-1.24	-.35	1.50
21	-16.56	-14.67	-13.76	-12.76	-10.95	-8.15	-5.34	-3.53	-2.54	-1.62	.27
22	-18.56	-16.60	-15.65	-14.63	-12.76	-9.86	-6.96	-5.09	-4.06	-3.12	-1.17
23	-19.65	-17.75	-16.84	-15.83	-14.02	-11.20	-8.38	-6.57	-5.57	-4.65	-2.76
24	-20.70	-18.79	-17.86	-16.85	-15.01	-12.17	-9.32	-7.49	-6.48	-5.55	-3.63
25	-21.98	-20.09	-19.09	-18.07	-16.21	-13.32	-10.43	-8.57	-7.54	-6.60	-4.66
26	-22.69	-20.72	-19.76	-18.72	-16.84	-13.91	-10.98	-9.09	-8.05	-7.09	-5.12
27	-24.10	-21.94	-20.90	-19.77	-17.71	-14.51	-11.32	-9.26	-8.13	-7.08	-4.91
28	-27.47	-24.91	-23.65	-22.33	-19.89	-16.10	-12.31	-9.87	-8.52	-7.29	-4.73
29	-27.66	-25.16	-23.95	-22.63	-20.24	-16.23	-12.02	-10.42	-9.11	-7.90	-5.40
30	-27.26	-24.96	-23.35	-22.64	-20.44	-17.03	-13.63	-11.43	-10.22	-9.11	-6.91
31	-29.03	-26.50	-25.25	-23.85	-21.42	-17.59	-13.76	-11.25	-9.93	-8.68	-6.10
32	-30.45	-27.63	-26.27	-24.73	-22.09	-17.92	-13.74	-11.05	-9.56	-8.20	-5.39
33	-32.4	-29.9	-27.46	-25.80	-22.78	-18.10	-13.42	-10.40	-8.74	-7.21	-4.06
34	-32.45	-29.33	-27.61	-25.83	-22.77	-17.32	-13.08	-9.38	-8.24	-6.66	-3.39
35	-31.82	-28.77	-27.28	-25.67	-22.74	-18.21	-13.67	-10.74	-9.13	-7.85	-4.59
36	-34.49	-31.03	-29.25	-27.52	-24.20	-19.06	-14.31	-10.60	-8.77	-7.09	-3.63
37	-37.40	-33.62	-31.77	-29.77	-26.15	-20.52	-15.89	-11.77	-9.27	-7.43	-3.64
38	-39.60	-35.62	-33.69	-31.59	-27.79	-21.88	-15.98	-12.17	-10.07	-8.25	-4.17
39	-40.97	-36.95	-35.01	-32.89	-29.05	-23.09	-17.23	-13.28	-11.17	-9.22	-5.21
40	-42.51	-38.37	-35.25	-34.15	-30.21	-24.06	-17.31	-13.34	-11.76	-9.75	-5.61
41	-44.88	-40.55	-38.46	-36.17	-32.03	-25.61	-19.38	-15.04	-12.76	-10.66	-6.33
42	-48.32	-43.73	-41.50	-39.09	-34.68	-27.86	-21.04	-15.64	-14.22	-12.00	-7.40
43	-52.78	-47.58	-45.67	-42.32	-37.36	-29.65	-21.59	-16.96	-14.22	-11.71	-6.51
44	-57.12	-51.23	-48.47	-45.40	-33.82	-31.18	-22.53	-18.35	-13.88	-11.06	-5.23
45	-60.06	-53.78	-50.74	-47.48	-41.42	-32.11	-22.79	-16.78	-13.47	-10.43	-4.16
46	-62.06	-55.50	-52.45	-49.03	-42.33	-33.21	-22.59	-17.39	-13.97	-10.83	-4.35
47	-62.06	-55.68	-52.59	-49.23	-42.12	-33.64	-24.17	-18.06	-14.69	-11.60	-5.22
48	-61.82	-55.57	-52.54	-49.24	-43.25	-33.37	-24.69	-18.70	-15.40	-12.39	-6.12
49	-61.86	-55.71	-52.74	-49.50	-43.61	-34.49	-25.27	-19.48	-16.24	-13.26	-7.12
50	-63.59	-57.16	-54.05	-50.66	-44.51	-34.97	-25.43	-19.28	-15.89	-12.78	-6.36
51	-65.12	-59.25	-55.52	-52.30	-45.71	-35.51	-25.20	-18.72	-15.10	-11.77	-4.89
52	-70.52	-62.85	-59.14	-55.09	-47.75	-36.36	-24.37	-17.63	-13.59	-9.87	-2.20
53	-73.61	-65.48	-61.45	-57.06	-49.09	-36.72	-24.38	-16.25	-12.00	-7.96	.37
54	-78.32	-69.13	-64.67	-59.82	-51.02	-37.37	-23.71	-14.31	-10.06	-5.60	3.59
55	-81.71	-72.12	-67.48	-62.43	-53.26	-39.03	-24.61	-15.64	-10.58	-5.94	3.64
56	-82.77	-72.87	-68.07	-62.85	-52.37	-38.67	-23.97	-14.49	-9.27	-4.47	5.43
57	-83.77	-73.64	-68.73	-63.39	-53.69	-38.25	-23.61	-13.51	-8.57	-3.66	6.47
58	-85.61	-74.43	-69.02	-63.12	-52.42	-35.83	-19.23	-8.53	-2.63	2.78	13.96
59	-92.31	-79.68	-73.57	-66.91	-54.82	-36.07	-17.32	-5.23	1.43	7.54	20.17
60	-104.82	-89.19	-81.63	-73.33	-58.44	-35.25	-12.06	2.89	11.13	18.89	34.32
61	-94.95	-81.17	-74.49	-67.23	-54.04	-33.58	-13.13	.06	7.33	14.00	27.78
62	-88.11	-75.49	-69.38	-62.73	-50.65	-31.92	-13.18	-1.10	5.55	11.66	24.28
63	-81.18	-69.72	-64.17	-58.13	-47.16	-30.15	-13.24	-2.17	3.87	9.82	20.88
64	-74.65	-64.28	-59.26	-53.80	-43.87	-28.48	-13.09	-3.17	2.29	7.32	17.68
65	-67.85	-58.64	-54.14	-49.31	-40.49	-26.81	-13.24	-4.32	.54	5.01	14.22
66	-61.05	-52.98	-49.07	-44.82	-37.10	-25.12	-13.14	-5.42	-1.17	2.74	10.91
67	-54.31	-47.38	-44.03	-40.37	-33.74	-23.45	-13.17	-6.53	-2.88	.48	7.41
68	-47.73	-41.93	-39.09	-36.00	-30.39	-21.69	-12.95	-7.38	-4.29	-1.45	4.41
69	-41.20	-36.44	-34.14	-31.63	-27.08	-20.02	-12.56	-8.41	-5.90	-3.60	1.16
70	-34.73	-31.10	-29.31	-27.37	-23.93	-18.35	-12.37	-9.34	-7.39	-5.61	-1.91

TABLE 8.9. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-4.44	-3.15	-2.52	-1.84	-.61	1.30	3.22	4.45	5.13	5.76	7.05
1	-6.66	-6.90	-6.63	-5.10	-3.39	-.75	1.89	3.60	4.53	5.40	7.18
2	-11.84	-9.30	-8.58	-6.74	-4.31	-.55	3.21	5.64	6.98	8.20	10.74
3	-14.42	-12.89	-9.18	-7.32	-3.94	1.30	6.53	9.91	11.77	13.48	17.01
4	-16.64	-12.31	-10.22	-7.89	-3.71	2.78	9.27	13.45	15.75	17.87	22.24
5	-18.17	-13.18	-10.77	-8.14	-3.37	4.03	11.43	16.20	18.82	21.24	26.22
6	-20.20	-14.56	-11.74	-8.74	-3.28	5.18	13.44	19.09	22.10	24.84	30.56
7	-22.56	-16.00	-12.83	-9.38	-3.10	6.62	16.35	22.62	26.08	29.25	35.80
8	-25.30	-17.77	-14.12	-10.14	-2.93	8.26	19.45	26.66	30.64	34.29	41.82
9	-28.29	-19.66	-15.98	-10.93	-2.67	10.14	22.95	31.21	35.74	39.94	48.58
10	-30.68	-21.03	-16.36	-11.28	-2.05	12.77	26.59	35.82	40.90	45.57	55.22
11	-31.47	-21.70	-16.08	-10.61	-.69	15.70	30.09	40.01	45.48	50.60	60.87
12	-28.22	-16.15	-13.28	-7.97	1.67	16.62	31.57	41.21	46.52	51.40	61.47
13	-23.69	-14.46	-10.02	-5.13	3.70	17.39	31.08	39.91	44.77	49.24	58.47
14	-17.05	-9.63	-6.03	-2.12	4.99	16.61	27.03	34.14	38.05	41.55	49.06
15	-13.78	-7.78	-4.87	-1.70	4.64	12.95	21.84	27.61	30.78	33.68	39.69
16	-13.62	-8.44	-5.93	-3.20	1.76	9.45	17.13	22.09	24.82	27.33	32.51
17	-12.75	-8.66	-6.67	-4.51	-.59	5.49	11.67	15.50	17.65	19.64	23.74
18	-12.94	-9.53	-7.89	-6.09	-2.84	2.21	7.26	10.52	12.31	13.96	17.36
19	-13.14	-10.19	-8.76	-7.21	-4.38	-.00	4.38	7.21	8.76	10.19	13.14
20	-13.73	-11.02	-9.71	-8.29	-5.70	-1.68	2.33	4.92	6.35	7.64	10.36
21	-14.44	-11.85	-10.59	-9.22	-6.74	-2.89	.94	3.44	4.81	6.07	8.66
22	-14.71	-12.32	-11.16	-9.89	-7.60	-4.05	-.50	.79	3.05	4.21	6.61
23	-14.47	-13.87	-12.41	-11.29	-8.76	-4.90	-1.05	1.44	2.81	4.06	6.66
24	-17.15	-14.55	-13.30	-11.93	-9.44	-5.59	-1.73	.75	2.12	3.38	5.97
25	-19.32	-15.57	-14.23	-12.78	-10.14	-6.05	-1.96	.68	2.13	3.46	6.22
26	-19.96	-16.93	-15.45	-13.85	-10.95	-6.44	-1.93	.98	2.58	4.05	7.08
27	-21.40	-18.10	-16.50	-14.76	-11.60	-6.71	-1.81	1.35	3.09	4.69	7.99
28	-22.43	-19.00	-17.34	-15.53	-12.25	-7.16	-2.07	1.21	3.02	4.68	8.11
29	-23.09	-19.49	-17.75	-15.85	-12.40	-7.06	-1.72	1.73	3.62	5.37	8.97
30	-24.24	-20.33	-18.44	-16.38	-12.64	-6.83	-1.03	2.71	4.77	6.66	10.57
31	-26.03	-21.75	-19.67	-17.41	-13.31	-6.94	-.58	3.52	5.78	7.84	12.15
32	-26.03	-21.62	-19.49	-17.17	-12.95	-6.41	.13	4.35	6.67	8.81	13.21
33	-25.97	-21.38	-19.15	-16.73	-12.33	-5.52	1.30	5.70	8.12	10.39	14.94
34	-25.28	-20.61	-18.35	-15.89	-11.42	-4.49	2.44	6.91	9.37	11.63	16.30
35	-24.65	-19.98	-17.71	-15.25	-10.78	-3.84	3.09	7.67	10.03	12.29	16.97
36	-25.28	-20.43	-18.09	-15.53	-10.90	-3.71	3.48	8.12	10.67	13.02	17.86
37	-27.12	-21.88	-19.35	-16.59	-11.58	-3.80	3.97	8.98	11.74	14.27	19.51
38	-29.03	-23.54	-20.88	-17.98	-12.72	-4.67	3.58	8.84	11.73	14.19	19.88
39	-32.36	-26.34	-23.52	-20.24	-14.48	-5.54	3.40	9.17	12.34	14.26	21.29
40	-32.56	-26.48	-23.54	-20.33	-14.51	-5.49	3.54	9.36	12.56	15.51	21.58
41	-34.66	-28.14	-24.98	-21.55	-15.30	-5.62	4.05	10.30	13.73	16.89	23.41
42	-36.23	-29.39	-26.08	-22.48	-15.93	-5.79	4.36	10.90	14.51	17.82	24.66
43	-35.88	-29.29	-26.10	-22.62	-16.31	-6.62	3.27	9.58	13.06	16.25	22.84
44	-36.49	-29.96	-26.80	-23.36	-17.10	-7.41	2.29	8.54	11.98	15.15	21.68
45	-39.54	-32.42	-28.97	-25.22	-18.40	-7.83	2.74	9.56	13.31	16.76	23.88
46	-40.75	-33.31	-29.71	-25.79	-18.68	-7.64	3.39	10.51	14.43	18.03	25.47
47	-41.37	-33.61	-29.86	-25.77	-18.34	-6.82	4.69	12.12	16.21	19.97	27.72
48	-43.05	-34.77	-30.76	-26.39	-18.47	-6.17	6.12	14.05	18.41	22.42	30.70
49	-45.74	-36.70	-32.32	-27.55	-18.88	-5.49	8.00	16.67	21.44	25.82	34.88
50	-47.80	-38.18	-33.52	-28.45	-19.24	-4.94	9.32	18.53	23.60	28.26	37.48
51	-48.03	-38.32	-33.61	-28.49	-19.18	-4.74	9.67	18.97	24.09	28.80	38.51
52	-48.39	-38.58	-33.85	-28.66	-19.27	-4.71	9.85	19.24	24.41	29.14	38.97
53	-47.46	-37.53	-32.73	-27.49	-17.99	-3.26	11.47	20.97	26.20	31.01	40.94
54	-45.72	-35.80	-30.99	-25.75	-16.25	-1.52	13.22	22.72	27.95	32.76	42.69
55	-45.55	-35.39	-30.47	-25.11	-15.38	-.29	14.79	24.52	29.88	34.80	44.97
56	-47.24	-36.68	-31.55	-25.97	-15.84	-.13	15.58	25.71	31.29	36.41	47.00
57	-45.41	-35.02	-29.99	-24.51	-14.56	.86	16.29	26.24	31.72	36.75	47.14
58	-42.54	-31.84	-26.65	-21.00	-10.74	5.17	21.05	31.34	36.99	42.18	52.90
59	-40.77	-29.78	-24.45	-18.66	-8.14	8.17	24.48	35.00	40.80	46.12	57.11
60	-49.58	-36.14	-29.64	-22.56	-9.70	10.24	30.18	43.04	50.12	56.63	70.07
61	-47.66	-34.77	-28.53	-21.74	-9.41	9.71	28.83	41.17	47.96	54.20	67.08
62	-46.76	-34.20	-28.12	-21.50	-9.49	9.15	27.79	39.61	46.42	52.51	65.06
63	-46.14	-33.85	-27.90	-21.42	-9.65	8.69	26.83	38.60	45.08	51.03	63.32
64	-45.25	-33.28	-27.49	-21.18	-9.73	8.03	25.79	37.24	43.55	49.34	61.31
65	-44.34	-32.71	-27.07	-20.94	-9.80	7.47	24.74	35.88	42.01	47.65	59.28
66	-43.46	-32.16	-26.68	-20.72	-9.90	6.88	23.67	34.49	40.46	45.92	57.23
67	-42.57	-31.59	-26.27	-20.48	-9.97	6.32	22.62	33.13	38.92	44.23	55.21
68	-41.95	-31.24	-26.05	-20.40	-10.14	5.76	21.67	31.92	37.57	42.76	53.48
69	-41.06	-30.67	-25.64	-20.16	-10.22	5.20	20.62	30.56	36.09	41.07	51.46
70	-40.15	-30.09	-25.22	-19.92	-10.27	4.64	19.57	29.20	34.60	39.38	49.43

TABLE 8.10. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.51	-4.05	-3.34	-2.58	-1.18	.98	3.14	4.64	5.31	6.01	7.47
1	-9.60	-7.54	-6.54	-5.46	-3.49	-.43	2.63	4.60	5.68	6.68	8.74
2	-12.10	-9.24	-8.00	-6.54	-3.90	.20	4.30	6.94	8.40	9.73	12.50
3	-15.71	-11.81	-9.92	-7.87	-4.14	1.65	7.44	11.18	13.23	15.12	19.02
4	-20.59	-15.24	-12.65	-9.82	-4.70	3.25	11.20	16.32	19.14	21.74	27.09
5	-22.68	-16.50	-13.50	-10.24	-4.32	4.87	14.05	19.97	23.23	26.23	32.42
6	-25.59	-18.47	-15.02	-11.26	-4.45	6.13	16.70	23.51	27.27	30.72	37.84
7	-29.35	-21.08	-17.07	-12.71	-4.78	7.60	19.79	27.71	32.07	36.08	44.36
8	-32.66	-23.35	-18.85	-13.94	-5.03	8.79	22.61	31.52	36.42	40.93	50.29
9	-35.61	-25.32	-20.34	-14.92	-5.07	10.19	25.46	35.31	40.73	45.71	54.00
10	-36.41	-25.30	-20.36	-14.66	-4.31	11.73	27.70	38.13	43.83	49.07	59.88
11	-35.44	-24.45	-19.11	-13.31	-2.76	13.59	29.93	40.48	46.28	51.62	62.63
12	-31.86	-21.26	-16.13	-10.54	-.40	15.33	31.06	41.20	46.79	51.92	62.52
13	-25.84	-16.55	-12.05	-7.16	1.74	15.53	29.32	38.21	43.11	47.61	56.90
14	-21.56	-13.36	-9.39	-5.06	2.79	14.96	27.13	34.27	39.30	43.27	51.97
15	-16.04	-9.41	-6.20	-2.70	3.66	13.49	23.33	29.68	33.17	36.38	43.01
16	-13.04	-7.59	-4.95	-2.08	3.13	11.22	19.30	24.51	27.39	30.02	35.47
17	-11.35	-6.92	-4.78	-2.44	1.79	8.36	14.99	19.17	21.51	23.65	28.08
18	-10.67	-7.05	-5.29	-3.38	.09	5.48	10.86	14.33	16.24	18.00	21.62
19	-11.23	-7.99	-6.42	-4.71	-1.41	3.20	8.01	11.12	12.82	14.39	17.64
20	-12.29	-9.11	-7.57	-5.89	-2.84	1.88	6.41	9.66	11.33	12.88	16.06
21	-12.74	-9.60	-8.07	-6.42	-3.40	1.27	5.93	8.95	10.40	12.13	15.27
22	-12.85	-9.70	-8.18	-6.52	-3.51	1.14	5.83	8.64	10.50	12.02	15.17
23	-13.17	-9.96	-8.40	-6.70	-3.43	1.15	5.92	9.00	10.49	12.25	15.47
24	-13.80	-10.33	-8.66	-6.83	-3.51	1.43	6.77	10.09	11.91	13.59	17.06
25	-14.65	-10.90	-9.08	-7.10	-3.51	2.06	7.63	11.22	13.20	15.02	18.77
26	-14.26	-11.96	-9.88	-7.61	-3.50	2.88	9.27	13.28	15.65	17.73	22.03
27	-17.31	-12.56	-10.27	-7.74	-3.22	3.82	10.87	15.41	17.91	20.21	24.95
28	-16.78	-11.82	-9.41	-6.79	-2.04	5.34	12.71	17.46	20.08	22.49	27.45
29	-16.88	-11.71	-9.21	-6.49	-1.54	6.12	13.79	18.73	21.45	23.96	29.12
30	-16.69	-11.32	-8.72	-5.89	-.74	7.23	15.20	20.36	23.18	25.78	31.17
31	-17.93	-11.99	-9.11	-5.98	-.29	8.63	17.34	23.03	26.16	29.04	34.98
32	-18.21	-11.78	-8.67	-5.28	.88	10.42	19.97	26.13	29.51	32.63	39.04
33	-15.05	-11.99	-8.58	-4.86	1.89	12.36	22.83	29.59	33.30	36.72	43.7[illegible]
34	-19.08	-11.35	-7.60	-3.52	3.88	15.36	26.86	34.25	38.33	42.08	49.81
35	-17.15	-9.16	-5.28	-1.07	6.59	18.46	30.33	37.99	42.20	46.07	54.07
36	-17.65	-9.07	-4.92	-.40	7.82	20.55	33.29	41.50	46.04	50.18	58.76
37	-21.37	-11.62	-6.89	-1.75	7.59	22.07	34.55	45.88	51.03	55.75	65.51
38	-22.04	-11.81	-6.86	-1.47	8.32	23.49	38.67	48.46	53.85	58.80	69.02
39	-22.10	-11.54	-6.42	-.86	9.26	25.99	40.63	50.74	56.31	61.42	71.99
40	-23.04	-11.96	-6.58	-.73	9.84	26.35	42.82	53.43	59.28	64.65	75.74
41	-22.83	-11.57	-6.12	-.18	10.59	27.31	44.02	54.80	60.73	66.18	77.44
42	-23.07	-11.59	-6.02	.04	11.03	28.09	45.14	56.14	62.20	67.76	79.25
43	-21.30	-10.19	-4.82	1.[illegible]	11.66	28.14	44.62	55.25	61.10	66.47	77.58
44	-21.33	-9.85	-4.29	1.[illegible]	12.76	29.80	46.86	57.84	63.89	69.45	80.94
45	-20.54	-8.75	-3.04	3.18	13.46	31.96	49.46	60.75	66.96	72.67	84.46
46	-19.06	-7.25	-1.53	4.70	16.01	33.55	51.04	62.39	68.62	74.34	86.15
47	-18.09	-6.05	-.22	6.12	17.64	35.51	53.36	64.90	71.24	77.07	89.11
48	-17.83	-5.43	.68	7.11	18.98	37.39	55.79	67.66	74.20	80.20	92.60
49	-15.48	-3.26	2.66	9.10	20.80	38.95	57.09	68.79	75.23	81.15	93.38
50	-12.09	-.37	5.31	11.99	22.72	40.12	57.52	68.75	74.93	80.40	[illegible]2.33
51	-11.61	.24	5.98	12.23	23.58	41.17	58.76	70.11	76.36	82.10	93.95
52	-9.84	1.78	7.42	13.54	24.67	41.93	59.19	70.32	76.54	82.08	93.70
53	-9.59	2.28	8.03	14.29	25.65	43.27	60.89	72.25	78.51	84.24	96.13
54	-8.51	3.27	8.97	15.17	26.45	43.92	61.40	72.67	78.88	84.58	96.35
55	-7.10	4.77	10.51	16.77	28.12	45.73	63.34	74.64	80.96	86.69	98.56
56	-5.70	6.25	12.04	18.34	29.78	47.53	65.27	76.71	83.01	88.80	100.75
57	-4.19	4.35	10.42	17.03	29.04	47.65	66.27	78.27	84.88	90.96	103.50
58	-4.88	3.55	10.05	17.13	29.99	49.92	69.66	82.72	89.80	96.30	109.73
59	-5.86	7.38	13.79	20.77	33.45	53.10	72.75	85.43	92.41	98.82	112.04
60	-4.76	8.85	15.44	22.41	35.64	55.84	76.03	89.06	96.23	102.82	116.43
-	-3.98	9.04	15.34	22.21	34.67	53.99	73.32	85.78	92.64	98.95	111.97
62	-5.19	7.69	13.93	20.77	33.05	52.17	71.29	83.62	90.41	96.65	109.53
63	-6.43	6.31	12.49	19.20	31.40	50.22	69.24	81.44	88.15	94.33	107.07
64	-7.64	4.97	11.07	17.72	29.79	48.50	67.21	79.28	85.92	92.03	104.63
65	-8.78	3.69	9.73	16.30	28.24	46.74	65.26	77.19	83.76	89.80	102.27
66	-9.74	2.53	8.47	14.94	26.68	44.90	63.11	74.85	81.32	87.26	99.53
67	-10.95	1.18	7.06	13.45	25.06	43.07	61.08	72.69	79.09	84.96	97.18
68	-12.20	-.20	5.61	11.93	23.42	41.22	59.03	70.61	76.84	82.65	94.64
69	-13.41	-1.55	4.20	10.45	21.80	39.40	57.00	68.35	74.60	80.35	92.21
70	-14.66	-2.93	2.75	8.93	20.15	37.55	54.95	66.17	72.35	78.03	89.76

TABLE 8.11. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probs!										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.28	-4.78	-4.06	-3.27	-1.84	.38	2.60	4.03	4.82	5.54	7.04
1	-11.68	-9.04	-7.76	-6.37	-3.85	.06	3.37	6.50	7.88	9.16	11.60
2	-14.88	-11.17	-9.37	-7.42	-3.87	1.64	7.14	10.09	12.64	14.44	16.15
3	-19.31	-13.33	-10.92	-8.29	-3.52	3.87	11.26	16.02	18.65	21.06	26.04
4	-21.12	-15.01	-12.05	-8.80	-2.98	6.09	15.16	21.00	24.22	27.18	33.29
5	-25.37	-17.84	-14.19	-10.22	-3.01	8.17	19.36	26.57	30.54	34.19	41.72
6	-29.24	-20.37	-16.08	-11.41	-2.92	10.24	23.40	31.89	36.56	40.86	49.72
7	-33.16	-22.97	-19.04	-12.67	-2.92	12.20	27.32	37.07	42.44	47.37	57.56
8	-37.17	-25.69	-20.83	-14.08	-3.10	13.94	30.98	41.97	48.02	53.58	65.06
9	-40.67	-28.03	-21.90	-15.24	-3.14	15.62	34.38	46.48	53.14	59.27	71.91
10	-43.57	-30.20	-23.53	-16.26	-3.09	17.35	37.79	50.97	58.23	64.90	78.67
11	-44.41	-30.17	-23.27	-15.76	-2.13	19.02	40.16	53.79	61.30	68.20	82.44
12	-40.92	-27.15	-20.48	-13.22	-.04	20.40	40.84	54.02	61.28	67.35	81.72
13	-34.00	-21.85	-15.96	-9.56	2.07	20.10	38.13	49.76	56.16	62.05	74.20
14	-26.08	-16.04	-11.18	-5.88	3.73	18.64	33.54	43.11	48.45	53.31	63.35
15	-19.95	-11.84	-7.91	-3.63	4.13	16.17	28.21	35.98	40.25	44.18	52.30
16	-15.71	-9.18	-6.02	-2.58	3.67	13.35	23.04	29.28	32.72	35.88	42.41
17	-12.97	-7.61	-5.01	-2.18	2.96	10.92	18.39	24.03	26.96	29.45	34.82
18	-12.31	-7.77	-5.57	-3.17	1.17	7.92	14.66	19.01	21.40	23.60	28.14
19	-12.47	-8.39	-5.42	-4.27	-.37	5.69	11.74	15.64	17.75	19.77	23.35
20	-14.08	-10.06	-8.11	-6.00	-2.15	3.82	9.79	13.63	15.75	17.70	21.72
21	-15.07	-11.04	-9.09	-6.97	-3.11	2.87	8.65	12.76	14.82	16.77	20.80
22	-17.12	-12.72	-10.60	-8.28	-4.07	2.45	8.98	13.18	15.50	17.63	22.02
23	-18.36	-13.72	-11.47	-9.03	-4.55	2.31	9.20	13.64	16.09	18.34	22.38
24	-19.74	-14.68	-12.23	-9.57	-4.73	2.78	10.29	15.12	17.80	20.25	25.30
25	-21.56	-15.96	-13.25	-10.30	-4.94	3.38	11.69	17.05	20.00	22.71	28.32
26	-23.69	-17.36	-14.30	-10.96	-5.90	4.50	13.50	19.90	23.30	26.36	32.70
27	-26.39	-19.18	-15.68	-11.88	-6.99	5.73	16.43	23.33	27.14	30.63	37.84
28	-21.60	-14.19	-10.53	-6.59	-.55	11.62	22.60	27.03	32.76	37.38	44.84
29	-19.66	-12.42	-8.81	-4.89	2.23	13.27	24.43	31.49	35.36	38.96	46.70
30	-20.18	-12.52	-8.51	-4.37	3.16	14.83	26.44	34.62	38.16	41.97	49.83
31	-20.74	-12.90	-8.36	-3.94	4.03	16.42	28.41	36.79	41.19	45.29	53.50
32	-21.44	-12.43	-8.67	-3.39	5.30	18.67	32.04	40.66	45.41	49.78	58.78
33	-22.93	-13.11	-8.35	-3.17	6.23	20.81	35.39	44.79	49.97	54.73	64.55
34	-22.69	-11.89	-6.96	-1.67	8.19	23.39	[illegible]	48.29	53.62	58.56	68.76
35	-22.25	-11.19	-5.84	-.01	10.58	27.04	[illegible]	52.03	57.83	63.19	74.35
36	-20.30	-9.18	-3.46	2.28	13.04	29.77	46.47	57.25	63.18	68.64	79.69
37	-17.97	-6.26	-.74	5.20	15.98	32.70	49.93	60.21	66.15	71.61	82.87
38	-17.11	-5.30	.92	6.44	17.95	35.44	53.61	64.32	70.54	76.26	88.07
39	-17.84	-5.31	.76	7.36	19.35	37.95	56.54	68.53	75.14	81.21	93.73
40	-17.27	-4.33	1.96	8.77	21.16	40.38	59.60	72.06	78.82	85.09	98.04
41	-16.89	-3.51	2.97	10.63	23.69	42.70	62.54	75.17	82.43	88.90	102.24
42	-16.60	-3.01	3.66	12.92	26.12	44.47	65.03	78.22	85.91	92.16	105.94
43	-15.61	-.87	5.74	15.93	28.99	46.24	66.99	79.56	86.74	93.34	106.99
44	-11.62	1.65	8.17	15.27	28.16	48.16	68.16	81.06	88.15	94.67	108.14
45	-16.29	3.29	9.88	17.04	30.04	50.21	70.38	83.39	90.55	97.13	110.72
46	-10.49	3.59	16.42	17.84	31.32	52.23	73.14	86.63	94.06	100.88	114.96
47	-11.49	3.19	16.43	17.94	31.99	53.49	75.32	89.38	97.29	105.18	118.81
48	-11.19	3.42	11.26	19.21	33.69	56.13	78.64	93.09	101.00	108.33	123.44
49	-7.61	7.11	14.24	22.00	36.10	57.95	79.81	93.93	101.66	108.29	123.52
50	-7.64	7.63	14.88	22.88	37.41	59.94	82.46	96.99	104.99	112.34	127.51
51	-6.84	8.67	16.02	24.14	38.87	61.71	84.56	99.29	107.48	114.85	130.24
52	-7.33	8.62	16.35	24.76	40.83	63.71	87.39	102.66	111.07	118.79	134.74
53	-9.05	7.82	16.41	24.93	41.12	64.34	91.33	107.54	116.94	125.63	141.54
54	-2.71	12.66	19.94	28.04	42.69	65.39	88.09	102.73	110.79	118.19	133.99
55	-4.40	13.48	21.17	29.68	44.74	68.1	91.88	107.04	115.45	123.14	139.02
56	-2.84	13.18	20.94	29.39	44.73	68.61	92.29	107.63	116.07	123.83	139.86
57	-7.67	9.26	17.54	26.56	43.74	68.35	93.76	110.13	119.15	127.44	144.54
58	-4.64	12.98	20.74	29.19	44.52	68.30	92.06	107.42	115.86	123.62	139.64
59	-8.32	8.80	16.71	25.51	40.13	65.38	88.08	103.21	112.61	120.71	137.05
60	-11.04	5.81	12.78	21.23	36.68	60.38	84.19	99.64	107.99	115.76	131.79
61	-8.59	8.06	15.16	22.87	36.88	58.62	80.34	94.34	102.18	109.19	123.88
62	-7.76	6.79	13.80	21.44	35.31	56.81	78.31	92.17	99.81	106.83	121.31
63	-8.41	5.86	12.76	20.27	33.92	55.07	76.24	89.96	97.42	104.33	118.59
64	-9.61	4.69	11.42	18.86	32.34	53.97	74.20	87.76	95.13	101.96	116.06
65	-10.63	3.41	10.16	17.61	30.84	51.56	72.26	84.67	92.76	99.76	113.68
66	-11.66	2.23	8.91	16.17	29.37	49.83	70.29	83.49	90.76	97.43	111.22
67	-12.88	.95	7.56	14.74	27.78	48.02	68.25	81.29	88.96	95.88	108.71
68	-13.42	-.01	6.48	13.56	26.39	46.30	66.20	79.09	86.11	92.60	106.01
69	-14.67	-1.31	5.11	12.18	24.86	44.58	64.16	76.86	83.84	90.27	103.53
70	-16.62	-2.61	3.44	10.76	23.38	42.76	62.29	74.77	81.68	88.03	101.13

TABLE 8.12. VANDENBERG HEAD- AND TAILWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-7.47	-5.78	-4.96	-4.96	-2.44	.07	2.58	4.20	5.10	5.92	7.61
1	-13.41	-10.23	-8.69	-7.07	-3.98	.79	5.46	8.30	10.17	11.71	14.89
2	-15.65	-11.45	-9.41	-7.20	-3.18	3.05	9.28	13.30	15.51	17.54	21.74
3	-18.43	-12.98	-10.34	-7.47	-2.26	5.83	13.91	19.13	22.00	24.64	30.08
4	-21.30	-15.00	-11.71	-8.13	-1.62	8.47	18.56	25.07	28.65	31.95	38.74
5	-24.98	-16.95	-13.06	-8.82	-1.13	10.79	22.72	30.41	34.65	38.54	46.57
6	-27.63	-19.33	-14.82	-9.92	-1.02	12.79	26.68	35.51	40.41	44.92	54.27
7	-33.15	-22.38	-17.17	-11.45	-1.18	14.60	30.79	41.10	46.28	51.88	62.76
8	-36.87	-24.72	-19.43	-12.54	-1.04	16.85	34.74	46.28	52.64	58.47	70.53
9	-39.42	-26.34	-20.01	-13.12	-.60	18.81	38.22	50.74	57.64	63.97	77.05
10	-40.12	-26.44	-19.52	-12.61	.48	20.77	41.07	54.16	61.36	67.99	81.56
11	-36.76	-23.48	-17.05	-10.05	2.66	22.37	42.68	54.79	61.79	68.22	81.57
12	-31.24	-19.11	-13.21	-6.79	4.86	22.93	41.01	52.66	59.08	64.97	77.15
13	-25.72	-14.87	-9.62	-3.80	6.48	22.58	38.68	49.06	54.38	60.03	70.86
14	-19.85	-10.64	-5.13	-1.33	7.49	21.16	34.33	43.65	48.50	52.96	62.17
15	-15.38	-8.04	-4.25	-.12	7.39	19.02	30.65	38.16	42.29	46.08	53.92
16	-14.53	-7.72	-4.23	-.77	5.80	16.00	26.20	32.77	36.40	39.72	46.59
17	-14.19	-8.03	-5.13	-1.92	3.92	12.98	22.43	27.87	31.08	34.04	40.14
18	-13.47	-6.33	-5.33	-3.12	1.80	9.43	17.07	21.99	24.70	27.19	32.33
19	-13.43	-5.06	-6.92	-4.58	-.36	5.21	12.27	17.00	19.34	21.48	26.90
20	-15.08	-10.87	-8.77	-6.53	-2.47	3.84	10.15	14.22	16.46	18.52	22.77
21	-16.58	-12.	-10.45	-8.25	-4.29	1.86	8.00	11.37	14.15	16.16	20.32
22	-18.33	-14.54	-12.47	-10.17	-6.00	.47	6.94	11.11	13.41	15.52	19.5
23	-21.37	-16.65	-14.37	-11.88	-7.36	-.36	6.65	11.17	13.66	15.94	20.66
24	-22.35	-17.46	-15.10	-12.52	-7.85	-.60	6.65	11.32	13.90	16.27	21.15
25	-24.31	-19.04	-16.49	-13.72	-8.67	-.65	6.97	12.01	14.79	17.38	22.60
26	-27.57	-21.53	-18.61	-15.43	-9.55	-.69	8.27	14.05	17.23	20.16	26.20
27	-32.12	-24.90	-21.42	-17.60	-10.69	.02	10.74	17.65	21.46	24.95	32.17
28	-29.95	-23.98	-20.52	-17.76	-3.69	10.39	23.78	32.99	37.21	41.69	50.64
29	-32.13	-22.17	-17.35	-12.10	-2.87	12.91	26.90	36.62	41.77	46.40	56.66
30	-30.23	-24.93	-19.96	-13.60	-2.68	14.10	30.87	41.49	47.05	52.12	63.92
31	-38.52	-26.33	-20.93	-14.00	-2.34	15.75	33.84	45.58	51.93	57.83	70.81
32	-36.89	-25.26	-18.17	-11.58	.50	17.17	37.86	49.88	56.51	62.60	76.18
33	-34.17	-22.02	-16.36	-9.32	3.45	23.36	43.07	55.84	62.68	69.34	83.69
34	-33.42	-19.67	-12.07	-5.67	7.49	28.24	48.78	62.85	69.36	76.26	89.98
35	-28.26	-14.45	-7.75	-.47	12.77	33.30	53.84	67.87	74.36	81.05	94.88
36	-22.42	-8.97	-2.34	4.83	17.89	38.15	58.40	71.86	78.46	85.36	98.94
37	-17.99	-4.25	2.41	9.66	22.81	43.21	63.61	76.77	84.81	90.67	104.92
38	-15.96	-1.87	5.06	12.97	24.26	46.86	67.46	80.70	88.06	94.78	108.46
39	-12.78	1.54	8.51	16.87	29.80	51.09	72.39	86.12	93.46	100.43	114.97
40	-8.95	5.74	12.05	20.14	33.79	55.89	76.93	89.59	97.03	103.91	118.13
41	-4.28	9.67	16.43	23.78	37.14	57.86	78.86	91.91	99.26	106.82	119.97
42	-1.28	12.87	19.68	27.18	40.57	61.86	82.36	95.82	103.28	110.84	124.13
43	.66	15.17	22.20	29.86	43.76	65.29	86.84	100.73	108.38	115.42	129.93
44	2.34	17.23	24.95	32.30	46.56	68.47	90.78	105.06	112.78	120.11	135.01
45	3.41	18.78	26.81	33.97	48.42	70.82	93.23	107.40	115.63	122.94	138.04
46	4.07	20.41	27.75	35.63	49.62	71.50	93.38	107.49	115.26	122.37	137.13
47	4.06	19.69	27.24	35.60	50.47	73.67	96.47	111.64	120.08	127.66	143.20
48	4.39	20.91	28.17	36.43	51.98	75.73	99.55	114.85	123.29	131.06	147.08
49	6.83	22.71	30.55	39.09	54.58	78.60	102.43	118.12	126.65	134.49	150.68
50	5.92	21.94	29.94	38.88	54.64	78.98	103.30	119.31	128.03	136.02	152.54
51	2.84	19.62	27.90	36.90	53.25	78.61	103.97	120.32	129.32	137.60	154.68
52	5.20	21.71	29.71	38.91	54.21	78.71	103.21	119.02	127.73	135.71	152.22
53	4.60	21.33	29.43	38.26	54.26	79.09	103.94	119.93	128.78	136.88	153.58
54	3.31	19.99	28.00	36.77	52.49	77.39	102.08	118.81	126.78	134.89	151.97
55	1.42	18.50	26.47	35.57	51.73	76.78	101.83	117.98	126.08	135.05	151.93
56	3.77	20.15	28.08	36.71	52.39	76.78	101.01	116.48	125.32	133.25	149.61
57	.98	17.56	25.66	34.45	50.41	75.14	99.91	115.60	124.66	132.74	149.92
58	3.84	17.62	26.74	35.19	50.49	74.31	97.91	113.23	121.65	129.39	145.37
59	8.19	23.48	30.89	38.95	53.59	76.28	98.98	113.62	121.68	129.08	144.37
60	33.53	44.72	46.19	46.84	64.76	83.37	99.98	118.70	118.46	122.02	133.22
61	38.44	42.07	47.68	53.63	64.86	81.82	98.48	109.41	115.94	120.97	132.98
62	27.66	39.39	45.99	51.18	62.73	79.47	97.81	108.19	114.35	120.00	131.68
63	29.28	36.28	42.18	48.43	59.92	77.75	95.57	107.07	113.98	119.21	131.22
64	28.77	33.38	39.28	45.78	57.59	75.90	95.21	104.82	112.52	118.58	130.83
65	17.69	30.31	36.95	43.13	55.36	74.68	92.89	105.82	111.78	117.84	130.52
66	19.56	27.61	33.78	40.61	53.81	72.33	91.46	103.55	110.47	116.94	129.83
67	11.19	24.49	30.93	37.94	50.67	70.40	90.14	102.67	109.68	116.32	129.61
68	7.78	21.[illegible]	27.96	35.15	48.21	68.84	88.71	101.27	108.74	115.87	129.21
69	4.69	18.[illegible]	25.27	32.67	45.95	66.69	87.39	100.66	108.00	114.70	128.68
70	1.16	15.49	22.37	29.90	43.50	64.79	85.99	99.67	107.20	114.12	128.51

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 9.1. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-11.79	-9.25	-8.09	-6.73	-4.35	-.66	3.84	5.42	6.73	7.99	10.93
1	-21.78	-17.30	-15.13	-12.77	-8.49	-1.89	4.81	9.10	11.46	13.63	18.10
2	-25.02	-20.16	-17.80	-15.29	-10.59	-3.37	3.84	8.50	11.06	13.41	18.27
3	-27.87	-22.69	-20.11	-17.35	-12.34	-4.58	3.19	8.20	10.95	13.45	18.72
4	-30.88	-25.13	-22.35	-19.32	-13.81	-5.28	3.26	8.74	11.79	14.57	20.32
5	-34.51	-28.94	-25.93	-21.53	-15.35	-5.77	3.81	9.99	13.40	16.52	22.98
6	-38.07	-30.96	-27.51	-23.76	-16.95	-6.39	4.17	10.98	14.73	18.18	25.29
7	-42.26	-34.40	-30.59	-26.45	-18.92	-7.26	4.41	11.93	16.08	19.88	27.74
8	-47.02	-38.26	-34.02	-29.41	-21.02	-8.03	4.97	13.35	17.97	22.21	30.96
9	-52.20	-42.51	-37.82	-32.72	-23.45	-8.07	5.30	14.57	19.67	24.34	34.05
10	-56.89	-46.34	-41.25	-35.70	-25.61	-9.97	5.67	15.76	21.31	26.41	36.95
11	-59.38	-48.44	-43.17	-37.42	-26.97	-10.76	5.44	15.89	21.65	26.94	37.85
12	-57.48	-47.11	-42.09	-36.62	-26.49	-11.30	4.09	14.01	19.48	24.50	34.87
13	-48.04	-39.63	-35.54	-31.09	-23.02	-10.50	2.03	10.10	14.55	18.63	27.07
14	-40.85	-33.84	-30.45	-26.75	-20.04	-9.64	.76	7.47	11.17	14.56	21.57
15	-36.55	-29.50	-26.57	-23.38	-17.59	-8.41	.37	6.16	9.35	12.28	18.32
16	-30.53	-25.37	-22.88	-20.16	-15.22	-7.57	.09	5.02	7.74	10.23	15.39
17	-24.82	-20.70	-18.71	-16.54	-12.59	-6.48	-.34	3.58	5.76	7.75	11.84
18	-20.74	-17.34	-15.69	-13.90	-10.44	-5.59	-.54	2.72	-.51	6.16	9.56
19	-17.87	-14.92	-13.50	-11.95	-9.13	-4.77	-.40	2.42	3.97	5.39	8.34
20	-15.74	-13.10	-11.82	-10.43	-7.90	-3.98	-.04	2.47	3.87	5.15	7.79
21	-14.45	-12.28	-11.09	-9.68	-7.23	-3.41	.40	2.86	4.21	5.46	8.03
22	-13.94	-11.51	-10.33	-9.09	-6.69	-3.04	.58	2.92	4.21	5.40	7.85
23	-13.48	-11.38	-10.17	-8.85	-6.46	-2.74	.95	3.34	4.65	5.86	8.36
24	-14.20	-11.58	-10.32	-8.99	-6.44	-2.54	1.32	3.82	5.20	6.46	9.08
25	-14.44	-11.68	-10.35	-8.89	-6.25	-2.14	1.94	4.58	6.03	7.37	10.13
26	-15.53	-12.58	-11.15	-9.60	-6.78	-2.40	1.98	4.80	6.35	7.78	10.73
27	-17.21	-13.98	-12.42	-10.71	-7.62	-2.82	1.98	5.08	6.78	8.35	11.58
28	-17.83	-14.3[illegible]	-12.59	-10.73	-7.35	-2.11	3.13	6.51	8.37	10.08	13.81
29	-19.46	-15.59	-13.71	-11.65	-7.93	-2.15	3.63	7.35	9.41	11.29	15.18
30	-20.81	-16.[illegible]9	-14.69	-12.51	-8.57	-2.49	3.68	7.63	9.80	11.80	15.93
31	-22.93	-18.29	-16.05	-13.60	-9.17	-2.29	4.59	9.03	11.47	13.71	18.38
32	-25.65	-20.35	-17.[illegible]9	-15.00	-9.93	-2.07	5.79	10.86	13.65	16.21	21.51
33	-27.38	-21.59	-18.71	-15.63	-10.03	-1.34	7.31	12.70	15.98	18.81	24.65
34	-30.29	-23.72	-20.53	-17.07	-10.78	-1.02	8.73	15.02	18.49	21.67	28.24
35	-33.94	-24.62	-23.64	-19.20	-12.17	-1.28	9.42	16.44	20.51	24.04	31.40
36	-35.75	-28.12	-24.42	-20.40	-13.09	-1.77	9.84	17.87	20.89	24.58	32.21
37	-37.72	-29.70	-25.81	-21.58	-13.90	-1.99	9.92	17.61	21.03	25.72	33.75
38	-40.03	-31.61	-27.53	-23.09	-15.03	-2.53	9.97	18.09	22.47	26.55	34.98
39	-41.69	-32.19	-28.41	-23.96	-15.57	-2.49	10.65	19.08	23.73	28.00	36.82
40	-43.34	-34.15	-29.70	-24.85	-16.04	-2.41	11.23	20.02	24.87	29.32	38.51
41	-43.49	-34.17	-29.66	-24.75	-15.89	-2.01	11.81	20.73	25.44	30.15	39.46
42	-44.86	-35.19	-30.51	-25.42	-16.17	-1.82	12.52	21.77	26.06	31.54	41.21
43	-44.70	-35.09	-30.44	-25.38	-16.18	-1.93	12.33	21.52	26.59	31.24	40.84
44	-43.85	-34.37	-29.77	-24.77	-15.69	-1.62	12.46	21.54	26.54	31.13	40.62
45	-45.62	-35.57	-30.70	-25.40	-15.78	-.85	13.07	23.69	28.99	33.86	43.92
46	-43.13	-33.59	-29.97	-23.94	-14.81	-.65	13.51	22.64	27.67	32.29	41.83
47	-40.87	-31.78	-27.38	-22.58	-13.88	-.38	13.12	21.82	26.61	31.02	40.11
48	-41.63	-32.29	-27.76	-22.83	-13.89	-.02	13.85	22.80	27.72	32.25	41.59
49	-44.29	-34.79	-29.65	-24.47	-14.70	.45	15.59	25.36	30.74	35.68	45.88
50	-43.49	-33.61	-28.82	-23.61	-14.14	.53	14.21	24.57	29.88	34.67	44.56
51	-42.49	-33.06	-28.49	-23.52	-14.50	-.51	13.49	22.51	27.48	32.05	41.48
52	-43.6	-34.14	-29.52	-24.49	-15.35	-1.14	12.97	22.10	27.13	31.75	41.29
53	-44.6	-34.94	-30.25	-25.14	-15.86	-1.47	12.91	22.14	27.30	31.99	41.69
54	-44.90	-35.30	-30.65	-25.58	-16.39	-2.14	12.11	21.31	26.37	31.02	40.62
55	-41.53	-32.68	-28.40	-23.74	-15.27	-2.14	11.00	19.46	24.13	28.41	37.26
56	-37.42	-29.20	-25.22	-21.89	-13.02	-.82	11.38	19.25	23.89	27.57	35.79
57	-40.51	-31.97	-27.83	-23.32	-15.14	-2.46	10.22	18.48	22.91	27.05	35.59
58	-37.79	-30.22	-26.55	-22.64	-15.31	-4.07	7.17	14.42	18.41	22.08	29.65
59	-38.04	-30.46	-26.79	-22.80	-15.64	-4.29	6.96	14.22	18.21	21.88	29.46
60	-44.55	-35.40	-30.97	-26.15	-17.39	-3.81	9.78	18.63	23.36	27.79	36.98
61	-58.14	-46.02	-40.15	-33.75	-22.14	-4.13	13.88	25.60	31.89	37.77	47.90
62	-58.15	-46.10	-40.24	-33.91	-22.37	-4.49	13.40	24.94	31.29	37.13	49.18
63	-58.93	-46.[illegible]	-40.67	-34.24	-22.72	-4.87	12.98	24.49	30.83	36.66	48.68
64	-58.42	-46.48	-40.69	-34.39	-22.96	-5.73	12.50	23.93	30.23	36.02	47.96
65	-58.66	-46.75	-40.98	-34.70	-23.30	-5.61	12.07	23.47	29.[illegible]	35.62	47.43
66	-58.64	-46.43	-41.10	-34.84	-23.53	-5.97	11.59	22.91	29.15	34.88	46.71
67	-58.84	-47.03	-41.31	-35.09	-23.79	-6.24	11.27	22.57	28.79	34.51	46.32
68	-58.84	-47.11	-41.43	-35.25	-24.02	-6.62	10.79	22.01	28.19	33.87	45.60
69	-59.08	-47.39	-41.72	-35.54	-24.36	-7.00	10.35	21.55	27.71	33.38	45.07
70	-59.06	-47.46	-41.84	-35.72	-24.60	-7.34	9.88	20.99	27.11	32.74	44.35

TABLE 9.2. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.84	-9.60	-8.42	-7.14	-4.60	-1.16	2.93	4.77	6.85	7.23	9.67
1	-23.88	-18.98	-16.61	-14.02	-9.33	-2.80	5.21	9.71	12.59	14.84	18.74
2	-28.49	-22.76	-19.92	-16.49	-11.98	-2.80	5.64	11.13	14.15	16.93	22.67
3	-32.83	-26.43	-23.32	-19.95	-13.82	-5.31	5.20	11.33	15.74	17.81	22.21
4	-36.70	-29.62	-26.19	-22.96	-16.68	-6.17	5.36	12.12	16.05	19.28	26.36
5	-40.91	-32.33	-28.64	-24.55	-17.19	-5.78	5.83	12.99	17.85	20.77	28.96
6	-43.51	-35.16	-31.12	-26.72	-18.72	-6.33	6.07	14.60	18.47	22.51	30.86
7	-47.33	-38.28	-33.54	-29.13	-20.94	-7.03	6.50	15.88	19.83	25.21	33.24
8	-51.57	-41.86	-37.64	-31.91	-22.65	-8.09	6.47	15.83	20.98	25.72	36.49
9	-56.16	-45.27	-41.07	-35.18	-24.97	-9.58	6.45	16.53	22.11	27.23	37.81
10	-59.97	-48.60	-43.39	-37.50	-26.81	-10.73	6.36	17.84	22.73	28.39	39.51
11	-59.38	-50.45	-44.18	-37.90	-26.95	-10.71	5.88	15.99	21.78	26.99	37.91
12	-55.17	-45.29	-40.43	-35.19	-25.68	-10.99	3.86	13.31	16.55	23.36	33.29
13	-47.10	-38.75	-34.71	-30.31	-22.32	-9.93	2.46	10.95	15.85	18.90	27.25
14	-41.13	-33.92	-30.42	-26.62	-19.71	-7.00	1.71	8.61	12.92	15.91	23.13
15	-38.62	-29.55	-26.57	-23.23	-17.31	-5.14	1.00	6.86	10.15	13.49	18.31
16	-38.46	-25.29	-22.71	-19.96	-14.95	-3.71	.54	5.59	8.29	10.82	16.09
17	-25.92	-21.13	-18.66	-16.86	-12.69	-2.33	.03	4.48	6.39	8.67	13.76
18	-21.03	-17.51	-15.81	-13.96	-10.59	-1.37	-.14	3.22	5.08	6.78	10.30
19	-16.84	-14.67	-12.75	-11.28	-8.43	-0.63	-.40	2.45	3.74	5.05	7.83
20	-14.23	-11.85	-10.71	-9.45	-7.18	-0.45	-.13	2.19	3.39	4.54	6.92
21	-12.91	-10.69	-9.80	-8.53	-6.29	-0.98	.33	2.57	3.48	4.72	6.95
22	-12.02	-10.93	-9.36	-8.21	-6.11	-2.06	.39	2.97	3.65	4.71	6.90
23	-12.29	-10.80	-9.61	-7.85	-5.79	-2.49	.82	2.93	4.09	5.16	7.37
24	-12.89	-10.52	-9.34	-8.68	-5.78	-2.73	1.39	3.62	4.84	6.04	8.93
25	-13.19	-10.72	-9.52	-8.23	-5.85	-2.18	1.98	3.80	5.14	6.34	8.83
26	-14.46	-11.73	-10.41	-8.97	-6.36	-2.31	1.76	4.35	5.78	7.16	9.83
27	-15.77	-12.85	-11.38	-9.86	-6.95	-2.65	1.84	4.71	6.27	7.71	10.68
28	-13.94	-10.62	-9.24	-7.73	-5.01	-.78	3.45	6.18	7.68	9.06	11.91
29	-17.01	-13.30	-11.50	-9.54	-5.49	-.48	5.03	8.59	10.54	12.34	16.05
30	-18.40	-14.56	-12.60	-10.46	-6.59	-.59	5.91	9.29	11.42	13.38	17.42
31	-20.74	-16.33	-14.19	-11.46	-7.63	-1.07	5.49	9.72	12.05	14.19	18.61
32	-21.84	-17.20	-14.95	-12.50	-8.06	-1.17	5.72	10.16	12.61	14.85	19.49
33	-23.56	-18.55	-16.08	-13.43	-8.68	-1.12	6.34	11.18	13.84	16.28	21.82
34	-23.87	-19.07	-16.49	-14.13	-9.49	-2.29	6.91	9.55	12	14.45	19.30
35	-20.00	-16.42	-14.60	-12.79	-9.39	-4.05	1.26	4.69	4	8.31	11.90
36	-22.31	-18.30	-16.36	-14.25	-10.91	-4.47	1.48	5.32	7.	9.37	13.38
37	-25.50	-21.03	-18.82	-16.42	-12.09	-5.31	1.44	5.80	8.1	10.40	14.95
38	-29.21	-24.08	-21.59	-18.48	-13.97	-6.35	1.27	6.19	8.89	11.38	16.51
39	-32.20	-26.76	-24.09	-21.18	-15.89	-7.70	.99	5.77	9.60	11.38	18.00
40	-31.03	-29.05	-26.15	-23.06	-17.27	-8.39	.48	6.21	9.36	12.26	18.24
41	-35.69	-29.87	-26.84	-23.38	-17.42	-8.19	1.08	6.99	10.27	13.28	19.50
42	-38.03	-31.31	-28.05	-24.51	-18.08	-8.10	1.87	8.31	11.85	15.10	21.82
43	-40.10	-32.92	-29.44	-25.65	-18.77	-8.11	2.55	9.43	13.22	16.49	23.00
44	-40.67	-33.32	-29.76	-25.88	-18.84	-7.93	2.98	10.02	13.90	17.46	24.81
45	-42.67	-34.72	-30.87	-26.69	-19.08	-7.80	3.62	10.12	14.81	20.16	26.11
46	-42.51	-34.47	-30.57	-26.33	-18.63	-6.70	5.24	12.94	17.18	21.07	29.11
47	-39.46	-31.84	-28.45	-24.13	-16.84	-5.53	6.70	13.00	17.10	20.79	28.41
48	-41.93	-33.68	-29.68	-25.33	-17.43	-5.18	7.06	14.96	19.31	23.31	31.56
49	-44.55	-35.62	-31.30	-28.59	-18.85	-4.80	8.45	16.99	21.49	26.02	34.94
50	-47.16	-37.59	-32.88	-27.41	-18.59	-4.31	9.97	19.19	24.26	28.92	38.54
51	-48.09	-38.55	-33.93	-28.98	-19.97	-3.68	10.64	19.67	24.70	29.32	38.86
52	-46.21	-36.67	-32.05	-27.02	-17.89	-3.73	10.43	19.57	24.59	29.21	38.76
53	-45.03	-35.63	-31.19	-26.20	-17.24	-3.34	10.66	19.82	24.86	28.99	38.35
54	-49.96	-39.51	-34.45	-28.94	-18.94	-3.43	12.07	22.07	27.58	32.64	43.09
55	-50.99	-39.94	-34.83	-28.78	-18.20	-1.81	14.88	25.15	30.97	36.32	47.38
56	-51.25	-40.23	-34.90	-29.09	-18.55	-2.20	14.15	24.69	30.49	35.83	46.84
57	-51.19	-39.16	-34.25	-29.01	-17.81	-5.87	4.57	14.83	18.51	22.41	30.46
58	-37.10	-30.49	-27.22	-23.71	-17.33	-7.45	2.43	8.81	12.32	15.54	22.20
59	-42.06	-34.40	-30.00	-28.40	-19.54	-6.26	2.99	10.25	14.25	17.92	25.51
60	-48.14	-39.26	-34.95	-30.27	-21.76	-8.57	4.62	13.12	17.81	22.11	31.00
61	-56.90	-44.04	-40.81	-35.10	-24.73	-8.65	3.43	17.00	23.51	28.75	38.80
62	-56.47	-45.91	-40.69	-35.02	-24.72	-8.75	7.22	17.52	23.20	28.41	39.17
63	-56.74	-45.98	-40.70	-35.11	-24.81	-9.14	7.42	17.43	23.09	28.30	38.06
64	-56.51	-45.82	-40.64	-35.01	-24.78	-8.91	6.95	17.19	22.82	28.00	38.69
65	-56.67	-45.89	-40.72	-35.09	-24.86	-8.81	6.85	17.07	22.70	27.88	38.56
66	-56.96	-45.89	-40.70	-35.10	-24.93	-9.17	6.59	16.75	22.35	27.49	38.11
67	-56.64	-45.92	-40.70	-35.19	-25.08	-9.27	6.49	16.65	22.25	27.39	38.01
68	-56.38	-45.82	-40.70	-35.19	-25.03	-9.36	6.31	16.42	21.98	27.09	37.65
69	-56.45	-45.89	-40.70	-35.21	-25.10	-9.43	6.24	16.35	21.92	27.03	37.58
70	-56.31	-45.80	-40.71	-35.18	-25.12	-9.53	6.07	16.12	21.66	26.75	37.26

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 9.3. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-13.84	-11.25	-9.99	-8.62	-6.14	-2.29	1.56	4.04	5.41	6.66	9.26
1	-22.60	-18.34	-16.27	-14.02	-9.94	-3.61	2.73	6.81	9.06	11.13	15.39
2	-26.62	-21.54	-19.09	-16.41	-11.56	-4.03	3.50	8.36	11.03	13.49	18.56
3	-30.41	-24.67	-21.89	-18.86	-13.37	-4.85	3.66	9.15	12.18	14.96	20.20
4	-33.42	-27.17	-24.07	-20.74	-14.71	-5.36	4.00	10.03	13.36	16.41	22.71
5	-37.32	-30.29	-26.88	-23.10	-16.45	-6.02	4.41	11.14	14.84	18.24	25.27
6	-41.04	-33.34	-29.62	-25.56	-18.19	-6.77	4.66	12.03	16.09	19.81	27.51
7	-45.54	-37.00	-32.87	-28.37	-20.19	-7.52	5.16	13.33	17.83	21.97	30.50
8	-49.80	-40.47	-35.95	-31.08	-22.10	-8.25	5.61	14.54	19.46	23.98	33.31
9	-53.73	-43.66	-38.78	-33.47	-23.83	-8.89	6.06	15.70	21.01	25.89	35.95
10	-56.72	-46.11	-40.97	-35.37	-25.21	-9.45	6.31	16.47	22.07	27.21	37.82
11	-55.69	-45.41	-40.43	-35.01	-25.17	-9.91	5.35	15.19	20.61	25.54	35.86
12	-52.03	-42.53	-37.92	-32.90	-23.78	-9.65	4.48	13.60	18.62	23.23	32.75
13	-45.76	-37.49	-33.48	-29.12	-21.21	-8.93	3.35	11.27	15.62	19.63	27.90
14	-38.28	-31.42	-28.10	-24.48	-17.91	-7.72	2.46	9.03	12.65	15.97	22.83
15	-32.05	-26.38	-23.68	-20.65	-15.23	-6.82	1.58	7.31	10.00	12.79	18.41
16	-27.63	-22.77	-20.42	-17.87	-13.22	-6.02	1.18	5.83	8.39	10.74	15.59
17	-24.80	-20.47	-18.38	-16.10	-11.96	-5.53	.89	5.03	7.31	9.41	13.74
18	-19.71	-16.32	-14.68	-12.89	-9.64	-4.61	.42	3.67	5.46	7.10	10.49
19	-16.67	-13.77	-12.36	-10.83	-8.05	-3.73	.58	3.36	4.89	6.38	9.21
20	-15.14	-12.89	-11.20	-9.84	-7.27	-3.33	.61	2.15	4.54	5.83	8.48
21	-13.96	-11.47	-10.26	-8.90	-6.56	-2.85	.85	3.24	4.55	5.76	8.26
22	-12.65	-10.32	-9.19	-7.96	-5.73	-2.27	1.19	3.42	4.65	5.78	8.11
23	-12.44	-10.10	-8.97	-7.74	-5.51	-2.05	1.41	3.65	4.88	6.00	8.34
24	-12.26	-9.91	-8.77	-7.58	-5.28	-1.78	1.71	3.96	5.20	6.34	8.70
25	-11.95	-9.64	-8.52	-7.31	-5.10	-1.67	1.76	3.97	5.18	6.30	8.61
26	-11.65	-9.84	-8.37	-7.20	-5.09	-1.81	1.47	3.56	4.74	5.81	8.02
27	-11.77	-9.56	-8.48	-7.32	-5.19	-1.91	1.38	3.50	4.67	5.74	7.96
28	-14.23	-11.16	-9.67	-8.05	-5.11	-.55	4.00	5.54	3.56	10.05	13.12
29	-15.16	-11.98	-10.41	-8.73	-5.65	-.90	3.08	6.22	8.61	10.16	13.37
30	-17.54	-14.14	-12.35	-10.40	-6.45	-1.37	4.12	7.68	9.61	11.40	15.10
31	-15.10	-14.84	-12.92	-10.77	-6.75	-.57	5.61	9.59	11.76	13.80	17.50
32	-20.53	-15.36	-13.75	-11.38	-5.95	-.18	6.61	10.33	13.40	15.61	20.1
33	-19.51	-15.21	-13.12	-10.85	-6.72	-.35	6.14	10.16	12.43	14.52	18.8
34	-20.33	-16.30	-14.10	-11.71	-7.37	-.64	6.08	10.42	12.31	15.01	19.54
35	-22.93	-17.40	-15.20	-12.81	-8.48	-1.75	4.97	9.21	11.70	13.85	18.42
36	-23.90	-19.22	-16.35	-14.43	-10.00	-3.05	3.30	8.13	10.35	13.12	17.90
37	-23.40	-21.49	-19.11	-16.52	-11.82	-4.57	2.36	7.48	10.05	12.83	17.35
38	-22.50	-24.50	-21.93	-19.13	-14.05	-6.17	1.71	6.79	9.59	12.36	17.46
39	-21.60	-26.36	-23.72	-20.85	-15.64	-7.56	.52	5.75	8.00	11.24	16.68
40	-25.15	-29.21	-25.33	-23.15	-17.50	-8.68	.15	5.84	8.37	11.85	17.30
41	-27.00	-30.63	-27.54	-24.18	-16.09	-8.63	.82	6.92	10.28	13.86	19.73
42	-36.66	-30.25	-27.24	-23.78	-17.57	-8.11	1.40	7.54	10.92	14.02	20.43
43	-33.96	-28.00	-25.11	-21.96	-16.25	-7.38	1.48	7.21	10.35	13.24	19.22
44	-32.17	-26.44	-23.66	-20.64	-15.10	-6.65	1.86	7.39	10.37	13.15	19.98
45	-31.36	-25.63	-22.86	-19.84	-14.30	-5.87	2.63	8.11	11.13	13.90	19.62
46	-30.87	-25.14	-22.37	-19.35	-13.87	-5.36	3.14	8.62	11.65	14.42	20.15
47	-29.71	-22.41	-19.84	-17.04	-11.97	-4.10	3.77	8.65	11.64	14.21	19.52
48	-26.23	-21.08	-18.53	-15.82	-10.94	-3.29	4.38	9.29	12.00	14.50	19.65
49	-24.12	-22.43	-19.67	-16.67	-11.22	-2.77	5.68	11.14	14.14	16.90	22.59
50	-23.31	-22.98	-19.30	-16.73	-11.70	-2.80	5.70	11.18	14.20	16.37	22.70
51	-28.65	-22.98	-20.21	-17.21	-11.77	-3.32	5.12	10.56	13.56	16.32	22.01
52	-26.16	-22.89	-20.33	-17.55	-12.50	-4.67	3.16	8.21	10.99	13.95	18.83
53	-28.09	-22.81	-20.39	-17.66	-12.70	-5.00	2.70	7.66	10.39	12.90	18.09
54	-30.32	-24.40	-21.54	-18.43	-12.77	-3.39	4.78	10.44	13.55	16.42	22.33
55	-35.21	-28.27	-24.88	-21.21	-14.57	-4.22	6.11	12.77	16.44	19.81	26.77
56	-33.33	-29.53	-25.84	-22.13	-15.20	-4.36	6.48	13.48	17.33	20.86	28.17
57	-25.14	-31.19	-27.34	-23.15	-15.54	-3.72	8.17	15.68	19.87	23.73	31.68
58	-43.23	-34.94	-30.92	-26.55	-18.61	-8.30	6.01	13.95	18.32	22.34	30.63
59	-45.53	-36.97	-32.42	-28.30	-21.10	-7.38	5.73	13.53	18.05	22.20	30.76
60	-45.94	-37.79	-33.25	-29.55	-21.75	-9.66	2.43	10.23	14.52	18.47	26.62
61	-39.74	-32.95	-29.66	-26.08	-19.58	-9.51	.58	7.15	10.66	13.95	20.75
62	-39.71	-32.91	-29.67	-26.03	-19.52	-9.42	.67	7.18	10.77	14.06	20.96
63	-39.52	-32.72	-29.42	-25.84	-19.37	-9.23	.67	7.18	10.96	14.26	21.06
64	-39.43	-32.68	-29.38	-25.73	-19.27	-9.16	.95	7.47	11.07	14.36	21.18
65	-39.06	-32.30	-29.03	-25.48	-18.99	-8.96	1.17	7.54	11.10	14.38	21.14
66	-38.36	-32.11	-28.83	-25.27	-19.30	-9.77	1.27	7.74	11.30	14.57	21.33
67	-38.84	-32.07	-28.79	-25.21	-19.74	-8.69	1.25	7.33	11.40	14.68	21.45
68	-39.64	-31.87	-28.60	-25.03	-19.55	-9.50	1.35	8.03	11.60	14.88	21.64
69	-38.38	-31.66	-28.40	-24.85	-18.41	-8.43	1.56	8.00	11.54	14.80	21.53
70	-38.19	-31.46	-28.20	-24.68	-18.22	-9.23	1.75	8.19	11.74	15.00	21.73

TABLE 9.4. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	[illegible].000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-13.54	-11.10	-9.92	-8.54	-6.31	-2.70	.92	3.25	4.53	5.71	8.14
1	-20.78	-17.01	-15.19	-13.20	-9.60	-4.01	1.58	5.19	7.17	9.00	12.76
2	-24.32	-19.70	-17.46	-15.02	-10.60	-3.74	3.11	7.54	9.97	12.21	16.83
3	-28.47	-23.08	-20.47	-17.60	-12.48	-4.49	3.50	8.66	11.49	14.10	19.49
4	-33.64	-27.25	-24.15	-20.79	-14.67	-5.19	4.29	10.41	13.78	16.87	23.26
5	-38.19	-30.90	-27.37	-23.53	-16.56	-5.79	5.07	12.04	15.88	19.43	26.70
6	-43.86	-35.46	-31.39	-26.97	-18.93	-6.46	6.01	14.05	18.48	22.55	30.95
7	-48.61	-39.25	-34.71	-29.77	-20.88	-6.90	7.01	15.58	20.91	25.45	34.82
8	-52.73	-42.58	-37.67	-32.32	-22.60	-7.54	7.52	17.23	22.58	27.50	37.64
9	-56.36	-45.94	-38.89	-33.40	-23.42	-7.94	7.53	17.51	23.00	28.05	38.97
10	-54.53	-44.13	-39.10	-33.62	-23.66	-8.23	7.21	17.16	22.64	27.67	38.37
11	-58.00	-42.91	-38.02	-32.71	-23.05	-8.07	6.90	16.56	21.87	26.76	36.85
12	-48.40	-39.15	-34.66	-29.79	-20.93	-7.19	6.54	15.40	20.28	24.76	34.02
13	-39.97	-32.29	-28.57	-24.53	-17.18	-5.79	5.61	12.96	17.00	20.72	28.40
14	-33.05	-26.58	-23.45	-20.04	-13.86	-4.26	5.34	11.52	14.93	18.06	24.53
15	-27.19	-21.81	-19.21	-16.37	-11.22	-3.23	4.75	9.80	12.79	15.34	20.72
16	-22.58	-18.06	-15.87	-13.48	-9.15	-2.43	4.29	8.62	11.00	13.19	17.72
17	-19.32	-15.38	-13.47	-11.38	-7.62	-1.76	4.09	7.87	9.95	11.86	15.80
18	-15.31	-12.10	-10.59	-8.85	-5.77	-1.01	3.76	6.83	8.53	10.08	13.29
19	-12.10	-9.45	-8.22	-6.85	-4.35	-.47	3.41	5.91	7.28	8.55	11.16
20	-9.89	-7.75	-6.71	-5.58	-3.52	-.34	2.84	4.90	6.03	7.07	9.21
21	-9.23	-7.20	-6.22	-5.15	-3.21	-.20	2.81	4.75	5.82	6.80	8.81
22	-9.31	-6.48	-5.60	-4.64	-2.89	-.18	2.53	4.23	5.25	6.13	7.96
23	-7.58	-5.90	-5.08	-4.19	-2.58	-.08	2.42	4.04	4.92	5.74	7.42
24	-8.00	-6.35	-5.52	-4.61	-2.96	-.39	2.17	3.82	4.73	5.56	7.29
25	-8.80	-6.98	-6.05	-5.13	-3.38	-.67	2.04	3.78	4.75	5.63	7.46
26	-9.43	-7.52	-6.60	-5.59	-3.76	-.93	1.90	3.73	4.74	5.66	7.57
27	-12.20	-9.73	-8.54	-7.24	-4.87	-1.21	2.45	4.81	6.11	7.31	9.77
28	-7.75	-5.90	-5.03	-4.02	-2.25	.50	3.29	5.02	6.00	6.90	8.75
29	-8.98	-6.90	-5.90	-4.80	-2.82	.26	3.35	5.33	6.43	7.43	9.51
30	-11.41	-8.93	-7.73	-6.42	-4.05	-.30	3.32	5.70	7.01	8.21	10.69
31	-13.37	-10.53	-9.15	-7.65	-4.92	-.70	3.53	6.25	7.78	9.13	11.98
32	-11.71	-10.04	-9.45	-7.94	-5.20	-.94	3.31	6.05	7.56	8.95	11.82
33	-11.08	-10.6[illegible]	-9.31	-7.83	-5.14	-.97	3.20	5.88	7.36	8.72	11.53
34	-14.65	-11[illegible]	-11.12	-8.51	-5.59	-1.05	3.48	6.41	8.02	9.50	12.55
35	-13.47	-10.45	-9.44	-8.01	-5.41	-1.38	2.66	5.26	6.69	8.00	10.72
36	13.49	-10.97	-9.75	-8.43	-5.02	-2.28	1.45	3.86	5.19	6.41	8.33
37	-11.23	-14.46	-12.68	-11.06	-6.12	-3.57	.98	3.92	5.54	7.02	10.09
38	-20.66	-17.11	-15.29	-13.52	-11.11	-4.84	.44	3.84	5.71	7.43	10.38
39	-23.19	-19.32	-17.45	-15.41	-11.70	-5.96	-.21	3.49	5.53	7.40	11.27
40	-25.62	-21.39	-19.34	-17.11	-13.00	-6.78	-.50	3.59	5.78	7.83	12.06
41	-25.95	-21.60	-19.34	-17.00	-12.74	-6.12	.47	4.73	7.08	9.23	13.68
42	-25.62	-21.70	-19.31	-16.72	-12.01	-4.71	2.59	7.33	9.89	12.27	17.15
43	-25.[illegible]	-20.73	-18.34	-15.70	-10.89	-3.44	4.00	8.81	11.45	13.88	18.90
44	-24.36	-19.38	-15.97	-14.35	-9.58	-2.19	5.20	9.[illegible]	12.59	15.00	19.97
45	-22.50	-17.77	-15.48	-12.98	-8.45	-1.42	5.61	10.14	12.63	14.93	19.66
46	-19.[illegible]	-1[illegible].13	-1[illegible].28	-10.84	-5.78	-.49	5.82	9.87	12.10	14.16	18.40
47	-17.42	-13.08	-11.[illegible]7	-9.10	-5.33	.52	6.27	10.14	12.22	14.13	18.07
48	-16.[illegible]	-12.7[illegible]	-10.82	-8.68	-4.78	1.25	7.29	11.18	13.33	15.30	19.37
49	-1[illegible].48	-13.8[illegible]	-11.21	-8.88	-4.55	1.31	7.58	11.61	13.84	16.08	20.30
50	-17.15	-13.24	-11.25	-9.08	-5.14	.96	7.07	11.00	13.17	15.17	19.28
51	-15.63	-1[illegible].00	-10.22	-8.28	-4.76	.69	6.15	9.67	11.61	13.39	17.07
52	-18.45	[illegible]45	-12.50	-10.38	-6.54	-.57	5.39	9.24	11.36	13.30	17.32
53	-18.20	-1[illegible].26	-12.35	-10.27	-6.50	-.65	[illegible]	[illegible].38	11.05	12.96	16.90
54	-18.69	-14.90	-13.07	-11.08	-7.46	-1.04	3.77	7.39	9.39	11.22	15.00
55	-20.50	-16.38	-14.32	-12.12	-8.10	-1.35	4.23	8.22	10.61	12.43	16.59
56	-21[illegible]	-16.88	-14.78	-12.49	-8.34	-1.90	4.53	8.68	10.97	13.07	17.41
57	-25.61	-20.25	-17.65	-14.82	-9.69	-1.73	6.29	11.37	14.20	16.80	22.16
58	-[illegible].36	-23.42	-23.05	-16.39	-9.74	.57	10.88	17.53	21.19	24.55	31.50
59	-18.00	-12.42	-9.71	-6.77	-1.42	5.87	15.16	20.50	23.45	26.65	31.74
60	-16.55	-10.84	-9.07	-5.06	.41	8.88	17.36	22.63	25.84	28.60	34.31
61	-13.22	-6.80	-4.67	-2.34	1.89	8.44	15.00	19.22	21.55	23.69	28.10
62	-11.95	-7.47	-5.30	-2.94	1.35	8.00	14.65	18.94	21.30	23.47	27.95
[illegible]	-12.62	-8.07	-5.87	-3.47	.88	7.64	14.39	18.74	21.14	23.34	27.89
64	-13.38	-8.76	-5.52	-4.08	.34	7.20	14.06	18.48	20.91	23.15	27.77
65	-18.15	-9.47	-7.18	-4.70	-.21	6.76	13.73	18.22	20.70	22.97	27.67
66	-15.17	-10.35	-8.01	-5.46	-.84	6.32	13.49	18.11	20.65	22.99	27.82
67	-15.87	-11.87	-8.69	-6.10	-1.40	5.88	13.17	17.87	20.46	22.83	27.74
68	-16.72	-11.72	-9.31	-6.67	-1.89	5.52	12.93	17.71	20.34	22.76	27.75
69	-17.54	-12.46	-10.00	-7.32	-2.46	5.08	12.62	17.48	20.16	22.62	27.70
70	-[illegible].31	-13.21	-13.70	-7.98	-3.03	4.64	12.39	17.26	19.98	22.49	27.65

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 9.5. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.33	-9.41	-8.48	-7.46	-5.62	-2.77	.08	1.93	2.94	3.87	5.79
1	-17.93	-14.80	-13.28	-11.62	-8.62	-3.96	.49	3.70	5.35	6.87	10.01
2	-20.71	-16.76	-14.84	-12.76	-8.97	-3.11	2.76	6.55	8.63	10.55	14.50
3	-24.87	-19.98	-17.61	-15.08	-10.35	-3.03	4.18	8.86	11.44	13.81	18.70
4	-29.24	-22.65	-19.94	-16.99	-11.64	-3.34	4.96	10.31	13.26	15.97	21.56
5	-30.03	-24.10	-21.22	-18.10	-12.42	-3.61	5.20	10.87	14.00	16.87	22.81
6	-32.12	-25.82	-22.77	-19.44	-13.41	-4.06	5.29	11.32	14.64	17.70	24.00
7	-35.70	-28.73	-25.35	-21.67	-14.99	-4.64	5.71	12.35	16.07	19.45	26.42
8	-40.64	-32.73	-28.39	-24.72	-17.14	-5.39	6.36	13.94	18.11	21.95	29.36
9	-42.92	-34.54	-30.48	-26.05	-18.04	-5.61	6.83	14.85	19.26	23.32	31.70
10	-44.71	-35.98	-31.75	-27.10	-18.79	-5.82	7.14	15.50	20.11	24.34	33.07
11	-45.48	-36.62	-32.32	-27.65	-19.16	-6.00	7.17	15.66	20.33	24.62	33.49
12	-40.80	-32.87	-29.03	-24.85	-17.26	-5.49	6.25	13.88	18.06	21.90	23.83
13	-32.97	-26.53	-23.42	-20.02	-13.86	-4.31	5.25	11.41	14.80	17.92	24.35
14	-27.11	-21.76	-19.16	-16.34	-11.21	-3.26	4.69	9.32	12.65	15.24	20.60
15	-23.73	-17.38	-15.27	-12.97	-8.81	-2.38	4.12	8.28	10.58	12.60	17.04
16	-19.06	-14.36	-12.57	-10.62	-7.08	-1.59	3.30	7.44	9.39	11.18	14.88
17	-13.88	-10.99	-9.60	-8.07	-5.31	-1.03	3.26	6.02	7.54	8.84	11.83
18	-10.19	-8.01	-6.95	-5.80	-3.71	-.47	2.77	4.86	6.01	7.07	9.25
19	-7.39	-6.20	-5.34	-4.40	-2.69	-.04	2.60	4.31	5.25	6.11	7.90
20	-6.96	-5.40	-4.65	-3.83	-2.34	-.03	2.28	3.76	4.58	5.34	6.89
21	-7.31	-5.68	-4.89	-4.08	-2.48	-.06	2.26	3.92	4.78	5.56	7.19
22	-6.63	-5.12	-4.39	-3.59	-2.15	.10	2.34	3.78	4.58	5.31	6.82
23	-6.79	-5.26	-4.52	-3.71	-2.24	.04	2.22	3.79	4.60	5.34	6.88
24	-7.42	-5.76	-4.96	-4.09	-2.50	-.03	2.43	4.02	4.89	5.70	7.36
25	-7.46	-5.79	-4.98	-4.09	-2.49	-.01	2.48	4.08	4.96	5.77	7.45
26	-6.19	-6.34	-5.45	-4.47	-2.71	.02	2.76	4.52	5.49	6.38	8.23
27	-8.39	-7.32	-6.32	-5.23	-3.26	-.19	2.88	4.85	5.94	6.98	9.01
28	-6.83	-5.89	-5.33	-4.38	-2.68	-.05	3.49	5.39	6.33	7.19	8.92
29	-7.91	-6.92	-5.96	-3.91	-2.01	.94	3.89	5.00	6.04	7.01	9.79
30	-11.01	-8.41	-7.15	-5.78	-3.29	.58	4.44	6.93	8.31	9.69	12.17
31	-10.03	-8.28	-7.05	-5.71	-3.27	.51	4.29	6.73	8.07	9.30	11.85
32	-10.25	-7.79	-6.68	-5.38	-2.94	.72	4.38	6.74	8.03	9.23	11.69
33	-9.20	-6.87	-5.78	-4.62	-2.38	1.15	4.68	6.83	8.05	9.10	11.58
34	-10.22	-7.64	-6.42	-5.00	-2.63	1.17	4.74	7.41	8.76	9.99	12.68
35	-10.34	-7.79	-6.56	-5.22	-2.78	1.00	4.78	7.22	8.46	9.80	12.34
36	-10.35	-7.78	-6.54	-5.18	-2.72	1.09	4.98	7.36	8.72	9.96	12.53
37	-12.10	-9.17	-7.78	-6.20	-3.48	.95	5.38	8.11	9.66	11.07	14.01
38	-14.11	-10.85	-9.28	-7.56	-4.44	.40	5.29	8.36	10.08	11.66	14.92
39	-14.05	-10.87	-9.33	-7.66	-4.62	.18	5.02	7.86	9.53	11.07	14.25
40	-13.06	-10.00	-8.54	-7.07	-4.23	.17	4.81	7.48	9.02	10.46	13.44
41	-12.76	-9.69	-8.20	-6.68	-3.63	.93	5.50	8.44	10.06	11.55	14.63
42	-11.93	-8.88	-7.26	-5.63	-2.63	2.01	6.66	9.66	11.31	12.83	15.96
43	-10.29	-7.29	-5.77	-4.14	-1.28	3.27	7.79	10.71	12.31	13.79	16.83
44	-9.28	-6.11	-4.57	-2.98	.19	4.03	9.56	12.40	14.27	15.81	18.96
45	-9.15	-5.79	-4.18	-2.38	.95	6.00	11.85	14.31	16.10	17.75	21.16
46	-8.21	-4.84	-3.21	-1.44	1.79	6.79	11.99	15.81	16.34	18.48	21.36
47	-8.28	-4.73	-3.01	-1.19	2.16	7.83	12.81	16.21	18.88	19.80	23.35
48	-9.14	-5.27	-3.39	-1.34	2.37	8.14	13.41	17.43	19.47	21.64	25.44
49	-9.72	-5.57	-3.56	-1.38	2.40	8.75	14.91	18.89	21.07	23.08	27.23
50	-9.84	-5.47	-3.36	-1.05	3.13	9.61	16.10	20.20	22.69	24.70	29.07
51	-9.85	-5.39	-3.23	-.86	3.39	10.01	16.43	20.70	23.25	25.42	29.88
52	-9.92	-5.01	-3.37	-1.04	3.10	9.73	16.07	20.51	23.64	25.88	29.30
53	-10.35	-6.03	-3.73	-1.65	2.48	8.90	15.31	19.45	21.73	23.82	28.14
54	-12.91	-7.65	-5.35	-2.89	1.71	8.70	16.04	20.39	22.90	25.20	29.94
55	-11.78	-7.05	-4.76	-2.26	2.27	9.30	16.32	20.85	23.35	25.64	30.38
56	-12.27	-7.39	-4.96	-2.34	2.36	9.67	16.90	21.70	24.30	26.68	31.41
57	-11.60	-6.79	-4.39	-1.83	2.02	10.03	17.23	21.88	24.49	26.79	31.65
58	-9.93	-5.88	-3.58	-1.21	2.93	9.39	16.00	19.95	22.24	24.58	28.60
59	-8.98	-5.28	-3.37	-1.38	2.24	7.65	13.46	17.88	19.87	20.91	24.69
60	-13.92	-8.65	-6.35	-3.84	.72	7.74	14.86	19.31	21.92	24.22	28.50
61	-17.17	-11.64	-8.97	-6.05	-.74	7.45	15.66	20.76	23.87	26.55	32.08
62	-17.91	-11.98	-9.23	-6.33	-1.06	7.12	16.29	22.56	25.97	28.14	34.00
63	-17.61	-12.13	-9.48	-6.69	-1.35	6.78	16.91	20.15	23.64	25.69	31.17
64	-17.88	-12.39	-9.79	-6.87	-1.65	6.44	16.64	18.36	22.44	24.88	30.34
65	-18.85	-12.63	-10.08	-7.19	-1.95	6.11	16.16	19.36	22.22	24.84	30.27
66	-18.29	-12.89	-10.28	-7.43	-2.27	5.78	15.76	18.92	21.77	24.38	29.78
67	-18.53	-13.16	-10.55	-7.72	-2.57	5.41	15.39	18.64	21.37	23.98	29.35
68	-18.75	-13.48	-10.81	-7.99	-2.87	5.07	15.01	18.44	20.96	23.55	28.90
69	-19.00	-13.67	-11.09	-8.28	-3.18	4.74	12.65	17.75	20.56	23.14	28.47
70	-18.82	-13.92	-11.36	-8.55	-3.47	4.40	12.37	17.25	20.15	22.73	28.03

TABLE 9.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.380	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.25	-8.51	-7.66	-6.75	-5.08	-2.49	.09	1.76	2.67	3.52	5.26
1	-17.23	-14.20	-12.74	-11.18	-8.25	-3.75	.74	3.63	5.23	6.20	9.72
2	-19.41	-15.70	-13.91	-11.99	-8.41	-2.90	2.60	6.15	8.10	9.90	13.61
3	-21.99	-17.57	-15.43	-13.10	-8.87	-2.30	4.26	8.49	10.82	12.96	17.38
4	-23.75	-18.86	-15.49	-13.91	-9.22	-1.96	5.31	9.99	12.57	14.94	19.83
5	-28.55	-21.07	-18.41	-15.52	-10.27	-2.13	6.01	11.20	14.15	16.81	22.29
6	-30.07	-23.88	-20.98	-17.62	-11.69	-2.49	6.70	12.63	15.90	18.90	25.09
7	-33.97	-26.98	-23.59	-19.90	-13.20	-2.82	7.56	14.26	17.95	21.83	28.33
8	-35.23	-31.16	-27.28	-23.01	-15.28	-3.31	8.66	16.38	20.63	24.54	31.60
9	-44.04	-34.92	-30.50	-25.66	-16.96	-3.62	10.12	18.85	23.66	28.08	37.20
10	-47.47	-37.62	-32.84	-27.63	-18.21	-3.58	11.05	20.45	25.69	30.46	40.32
11	-48.30	-38.23	-33.35	-28.04	-18.40	-3.44	11.51	21.15	26.46	31.34	41.42
12	-45.62	-36.07	-31.44	-26.41	-17.26	-3.09	11.09	20.29	25.27	29.90	39.45
13	-38.89	-31.41	-27.30	-22.83	-19.71	-2.12	10.48	18.63	23.07	27.18	35.66
14	-31.83	-24.94	-21.61	-17.98	-11.38	-1.16	9.07	15.66	19.29	22.63	29.51
15	-23.79	-18.59	-16.08	-13.34	-8.36	-.64	7.07	12.05	14.79	17.32	22.51
16	-17.39	-13.58	-11.68	-9.65	-5.96	-.25	5.47	9.15	11.18	13.05	16.90
17	-13.10	-10.13	-8.69	-7.12	-4.28	.13	4.25	7.39	9.96	10.40	13.37
18	-8.67	-6.57	-5.55	-4.44	-2.42	.70	3.83	5.85	6.96	7.98	10.08
19	-6.79	-5.05	-4.20	-3.26	-1.62	.97	3.26	5.23	6.15	6.99	8.74
20	-5.42	-3.93	-3.21	-2.43	-1.01	1.19	3.40	4.92	5.60	6.32	7.80
21	-4.95	-3.52	-2.83	-2.07	-.70	1.42	3.59	4.91	5.66	6.36	7.79
22	-4.72	-3.30	-2.61	-1.88	-.50	1.60	3.71	5.07	5.82	6.51	7.93
23	-4.27	-2.94	-2.29	-1.58	-.30	1.68	3.67	4.95	5.66	6.30	7.64
24	-4.29	-2.91	-2.24	-1.52	-.20	1.85	3.89	5.21	5.94	6.61	7.38
25	-4.55	-3.05	-2.32	-1.58	-.09	2.13	4.26	5.80	6.59	7.32	8.82
26	-4.34	-3.29	-2.49	-1.62	-.04	2.41	4.56	6.44	7.31	8.11	9.76
27	-4.43	-2.90	-2.15	-1.39	.12	2.40	4.67	6.14	6.95	7.69	9.23
28	-5.74	-3.78	-2.83	-1.79	.08	2.66	5.51	7.75	8.82	9.77	11.73
29	-5.33	-3.82	-2.90	-1.69	.33	3.47	6.60	8.62	9.73	10.75	12.86
30	-5.12	-3.14	-2.19	-1.25	.74	3.67	6.00	8.49	9.53	10.48	12.45
31	-5.07	-3.09	-2.14	-1.10	.79	3.71	6.04	8.53	9.57	10.52	12.49
32	-5.25	-3.20	-2.20	-1.12	.85	3.91	6.55	8.97	10.00	10.95	13.05
33	-4.63	-2.69	-1.79	-.69	1.20	4.14	7.08	8.98	10.02	10.98	12.36
34	-4.48	-2.46	-1.49	-.42	1.51	4.50	7.50	9.43	10.49	11.47	13.49
35	-4.83	-2.80	-1.73	-.63	1.32	4.43	7.54	9.54	10.64	11.66	13.75
36	-4.50	-2.53	-1.54	-.47	1.48	4.50	7.51	9.40	10.53	11.52	13.55
37	-4.51	-2.40	1.33	-.22	1.74	4.87	7.39	10.01	11.12	12.14	14.24
38	-4.14	-3.55	-2.20	-.94	1.54	5.38	9.22	11.76	13.06	14.31	16.90
39	-3.89	-1.63	-.62	.55	2.66	5.93	9.21	11.32	12.48	13.55	15.75
40	-2.81	-.71	.21	1.42	3.44	6.56	9.68	11.70	12.81	13.83	15.93
41	-3.52	-1.08	.20	1.38	3.71	7.33	10.35	13.23	14.56	15.74	19.10
42	-4.65	-1.87	-.52	.95	3.62	7.76	11.69	14.56	16.03	17.38	20.16
43	-4.17	-1.49	-.13	1.22	3.79	7.77	11.75	14.32	15.73	17.03	19.71
44	-5.17	-2.13	-.66	.94	3.85	8.36	12.67	15.76	17.39	18.86	21.90
45	-4.63	-1.42	.16	1.93	5.02	9.87	14.73	17.88	19.58	21.17	24.44
46	-3.54	-.47	1.21	3.04	6.36	11.52	16.07	19.59	21.82	23.50	26.97
47	-2.32	1.05	2.63	4.46	7.69	12.70	17.71	20.93	22.71	24.35	27.72
48	-1.52	1.93	3.60	5.42	8.71	13.82	18.94	22.24	24.05	25.72	29.17
49	-.30	3.05	4.67	6.44	9.65	14.62	19.59	22.79	24.56	26.18	29.53
50	.69	3.96	5.54	7.26	10.38	15.22	20.17	23.19	24.91	26.45	29.76
51	1.78	5.10	6.70	8.45	11.62	16.54	21.46	24.63	26.38	27.98	31.30
52	.91	4.72	6.57	8.52	12.24	17.91	23.57	27.22	29.23	31.08	34.90
53	-1.45	3.05	5.23	7.60	12.90	18.58	25.25	29.50	31.93	34.10	38.60
54	-1.28	2.97	5.13	7.27	11.33	17.64	23.95	28.01	30.25	32.31	36.56
55	-4.57	.23	2.56	5.09	9.69	16.82	23.46	28.50	31.09	33.42	38.22
56	-5.70	-.86	1.48	4.03	8.66	15.84	23.02	27.66	30.21	32.55	37.39
57	-6.45	-1.53	.85	3.45	8.16	15.47	22.78	27.43	30.08	32.47	37.39
58	-5.12	-4.49	1.76	4.20	8.63	15.51	22.26	26.81	29.25	31.50	36.13
59	-12.06	-6.47	-3.76	-.81	4.54	12.94	21.13	26.48	29.43	32.14	37.73
60	-15.14	-8.91	-5.89	-2.61	3.36	12.62	21.67	27.64	31.12	34.14	40.37
61	-18.77	-10.24	-7.03	-3.63	2.62	12.32	22.41	28.20	31.71	34.87	41.40
62	-16.82	-10.35	-7.22	-3.51	2.38	11.97	21.57	27.76	31.16	34.30	40.76
63	-17.11	-10.66	-7.53	-4.12	2.05	11.63	21.21	27.39	30.79	33.91	40.37
64	-17.15	-10.77	-7.67	-4.31	1.81	11.29	20.76	26.88	30.24	33.34	39.72
65	-17.57	-11.19	-8.10	-4.73	1.37	10.55	20.32	26.42	29.79	32.88	39.26
66	-18.61	-11.30	-8.24	-4.91	1.13	10.50	19.67	25.92	29.25	32.30	38.62
67	-17.93	-11.62	-8.57	-5.24	.79	10.16	19.52	25.58	28.89	31.94	38.25
68	-17.95	-11.72	-8.70	-5.41	.56	9.81	19.17	25.09	28.33	31.35	37.68
69	-18.27	-12.04	-9.02	-5.74	.22	9.47	18.72	24.68	27.97	30.98	37.21
70	-18.31	-12.15	-9.17	-5.92	-.02	9.13	18.28	24.17	27.42	30.41	36.87

TABLE 9.7. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.88	-6.56	-5.92	-5.22	-3.95	-1.99	-.02	1.25	1.94	2.58	3.91
1	-13.71	-11.04	-9.24	-8.33	-5.77	-1.81	2.16	4.72	6.13	7.92	10.10
2	-11.69	-9.12	-7.73	-6.32	-3.76	.20	4.16	6.72	8.12	9.92	12.08
3	-11.51	-8.57	-7.18	-5.58	-2.75	1.69	6.03	8.66	10.91	11.85	14.80
4	-11.14	-8.59	-6.59	-4.91	-1.95	2.65	7.25	10.21	11.84	13.34	16.44
5	-10.80	-7.66	-6.19	-4.49	-1.48	3.17	7.83	10.83	12.99	14.01	17.19
6	-11.19	-7.85	-6.23	-4.47	-1.28	3.68	8.63	11.83	13.59	15.21	18.54
7	-12.55	-8.79	-6.90	-4.90	-1.26	5.18	10.02	13.66	15.66	17.50	21.30
8	-14.19	-9.81	-7.69	-5.38	-1.19	5.31	11.80	15.99	18.30	20.42	24.60
9	-15.67	-10.69	-8.28	-5.66	-.90	6.48	13.86	18.63	21.25	23.66	28.63
10	-16.29	-10.80	-8.17	-5.31	-.10	7.97	16.03	21.29	24.10	26.73	32.19
11	-16.09	-10.32	-7.62	-4.48	1.05	9.62	18.19	23.72	26.76	29.56	35.33
12	-16.18	-10.10	-7.16	-3.96	1.86	10.88	19.89	25.71	28.91	31.86	37.93
13	-15.62	-9.21	-6.19	-3.33	2.23	10.86	19.48	25.05	28.11	31.93	36.74
14	-13.36	-8.17	-5.66	-2.92	2.05	9.76	17.47	22.49	25.18	27.69	32.89
15	-9.56	-5.71	-3.85	-1.82	1.86	7.57	13.28	16.96	18.99	20.85	24.70
16	-7.56	-4.62	-3.20	-1.65	1.16	5.52	9.87	12.68	14.23	15.66	18.59
17	-5.77	-3.56	-2.49	-1.33	.77	4.07	7.35	9.47	10.63	11.20	13.91
18	-4.67	-2.92	-2.08	-1.14	.51	3.09	5.68	7.35	8.27	9.11	10.85
19	-3.23	-1.88	-1.20	-.48	.62	2.85	4.87	6.17	6.89	7.55	8.91
20	-2.99	-1.71	-1.09	-.41	.82	2.72	4.63	5.86	6.53	7.15	8.44
21	-3.20	-1.88	-1.21	-.52	.79	2.78	4.77	6.05	6.76	7.41	8.78
22	-3.23	-1.87	-1.22	-.50	.79	2.80	4.81	6.11	6.82	7.48	8.85
23	-3.30	-1.91	-1.23	-.50	.85	2.91	4.99	6.32	7.06	7.79	9.13
24	-3.17	-1.73	-1.04	-.28	1.10	3.24	5.39	6.76	7.52	8.21	9.65
25	-2.67	-1.23	-.69	.22	1.59	3.72	5.85	7.23	7.98	8.68	10.11
26	-2.17	-.78	-.11	.63	1.96	4.02	6.09	7.42	8.15	8.83	10.22
27	-2.46	-1.06	-.28	.49	1.90	4.07	6.25	7.66	8.43	9.19	10.61
28	-2.68	-1.09	-.32	.51	2.03	4.38	6.74	8.25	9.09	9.86	11.44
29	-3.73	-1.89	-.97	.03	1.84	4.65	7.48	9.22	10.26	11.18	13.07
30	-3.06	-1.19	-.28	.71	2.50	5.28	8.05	9.85	10.83	11.74	13.61
31	-2.14	-.21	.72	1.79	3.57	6.43	9.29	11.13	12.14	13.07	15.00
32	-2.87	-.65	.43	1.60	3.73	7.03	10.22	12.46	13.63	14.70	16.93
33	-1.71	.24	1.18	2.21	4.07	6.97	9.86	11.72	12.75	13.80	15.65
34	-2.26	-.21	.78	1.87	3.83	6.88	9.83	11.50	12.98	13.97	16.03
35	-4.41	-1.90	-.64	.65	3.06	6.79	10.52	12.93	14.26	15.48	17.99
36	-4.68	-2.12	-.88	.47	2.92	6.72	10.53	12.98	14.33	15.57	18.13
37	-4.83	-2.15	-.84	.57	3.15	7.14	11.13	13.70	15.12	16.42	19.11
38	-4.23	-1.47	-.13	1.32	3.96	8.06	12.15	14.75	16.25	17.58	20.34
39	-3.07	-.41	.88	2.29	4.84	8.80	12.75	15.30	16.71	18.00	20.66
40	-2.82	-.29	.93	2.26	4.68	8.42	12.17	14.59	15.92	17.14	19.66
41	-3.77	-1.09	.21	1.63	4.20	8.18	12.17	14.74	16.16	17.46	20.14
42	-4.25	-1.37	.03	1.55	4.30	8.58	12.85	15.61	17.13	18.52	21.40
43	-2.74	.13	1.52	3.03	5.75	10.05	14.31	17.08	18.58	19.97	22.84
44	-1.30	1.69	3.14	4.72	7.58	12.03	16.47	19.33	20.9[illegible]	22.36	25.35
45	-1.13	2.18	3.78	5.53	8.70	13.62	18.54	21.71	23.46	25.06	28.37
46	-.07	3.35	5.01	6.81	10.08	15.16	20.23	23.50	25.31	26.96	30.8[illegible]
47	.73	4.27	5.99	7.86	11.25	16.52	21.78	25.12	27.04	28.76	32.30
48	2.25	5.69	7.36	9.12	12.46	17.57	22.68	25.98	27.79	29.46	32.90
49	2.88	6.34	8.02	9.84	13.15	18.29	23.42	26.74	28.56	30.24	33.70
50	3.02	6.53	8.23	10.09	13.45	18.67	23.68	27.25	29.10	30.80	34.21
51	1.73	5.61	7.48	9.53	13.24	19.00	24.75	28.46	30.51	32.39	36.26
52	.03	4.30	6.27	8.61	12.70	19.02	25.36	29.45	31.69	33.76	38.03
53	.50	4.78	6.84	9.10	13.19	19.53	25.87	29.98	32.21	34.28	38.55
54	.92	5.08	7.09	9.29	13.27	19.44	25.62	29.60	31.79	33.81	37.97
55	-1.66	3.11	5.42	7.94	12.51	19.59	26.68	31.25	33.76	36.08	40.85
56	-4.44	.94	3.54	6.36	11.53	19.51	27.49	32.68	35.48	38.08	43.46
57	-8.38	-2.39	.52	3.68	9.41	18.31	27.21	32.99	36.10	39.01	45.00
58	-14.49	-7.38	-3.93	-.18	6.63	17.19	27.76	34.57	38.32	41.77	48.88
59	-13.31	-6.16	-2.70	1.06	7.90	18.51	29.11	35.99	39.72	43.13	50.32
60	-17.08	-9.18	-5.36	-1.19	6.36	18.09	29.81	37.37	41.53	45.35	53.25
61	-18.12	-10.09	-6.20	-1.97	5.72	17.64	29.56	37.24	41.48	45.37	53.40
62	-18.63	-10.61	-6.72	-2.49	5.19	17.10	29.01	36.70	40.92	44.81	52.84
63	-18.76	-10.81	-6.95	-2.76	4.85	16.66	28.47	36.09	40.2[illegible]	44.13	52.09
64	-19.12	-11.23	-7.38	-3.19	4.42	16.22	28.02	35.63	39.82	43.57	51.63
65	-19.60	-11.65	-7.81	-3.62	3.99	15.78	27.58	35.18	39.37	43.22	51.16
66	-20.11	-12.17	-8.32	-4.14	3.46	15.25	27.02	34.63	38.81	42.66	50.60
67	-20.53	-12.59	-8.75	-4.57	3.03	14.81	26.58	34.18	38.36	42.20	50.14
68	-20.66	-12.79	-8.98	-4.84	2.69	14.37	26.04	33.57	37.72	41.53	49.39
69	-21.18	-13.32	-9.51	-5.37	2.16	13.83	25.50	33.02	37.17	40.97	48.84
70	-21.60	-13.74	-9.94	-5.80	1.73	13.39	25.05	32.57	36.72	40.52	48.38

TABLE 9.8. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-8.34	-6.91	-6.22	-5.46	-4.09	-1.97	.15	1.52	2.26	2.97	4.40
1	-14.86	-12.01	-10.42	-9.12	-6.38	-2.15	2.09	4.83	6.33	7.71	10.57
2	-13.86	-10.84	-9.37	-7.78	-4.88	-.39	4.10	7.00	8.59	10.06	13.08
3	-13.17	-10.02	-8.49	-6.63	-3.81	.87	5.56	8.57	10.29	11.76	14.92
4	-12.91	-9.26	-7.73	-6.06	-3.09	1.69	6.34	9.44	11.01	12.53	15.69
5	-13.49	-10.09	-8.40	-6.60	-3.35	1.69	6.74	9.99	11.76	13.43	16.82
6	-15.62	-11.90	-10.09	-7.93	-4.18	1.69	7.47	11.22	13.29	15.19	19.11
7	-17.75	-13.35	-11.22	-8.90	-4.69	1.85	8.38	12.69	14.91	17.04	21.49
8	-19.93	-14.95	-12.54	-9.92	-5.15	2.29	9.62	14.39	17.01	19.42	24.40
9	-21.49	-16.01	-13.36	-10.47	-5.23	2.90	11.03	16.28	19.16	21.62	27.30
10	-16.78	-11.40	-9.26	-6.97	-2.78	3.71	10.21	15.90	16.71	18.83	23.20
11	-18.29	-13.17	-10.69	-7.98	-3.08	4.65	12.14	17.04	19.75	22.23	27.36
12	-22.09	-15.96	-12.99	-9.76	-3.90	5.20	14.30	20.17	23.40	26.37	32.50
13	-20.47	-14.59	-11.74	-8.64	-3.00	5.73	14.47	20.10	23.21	26.06	31.94
14	-18.53	-13.26	-10.70	-7.92	-2.87	4.96	12.79	17.84	20.42	23.17	28.45
15	-14.24	-10.08	-8.07	-5.88	-1.90	4.26	10.43	14.41	16.60	18.61	22.77
16	-10.60	-7.60	-5.97	-4.29	-1.25	3.46	8.17	11.21	12.89	14.43	17.60
17	-7.93	-5.60	-4.32	-3.04	-.71	2.91	6.52	8.65	10.14	11.32	13.75
18	-6.00	-4.09	-3.17	-2.17	-.34	2.49	5.31	7.14	8.14	9.06	10.97
19	-4.74	-3.13	-2.35	-1.50	.04	2.02	4.81	6.35	7.26	7.97	9.58
20	-4.36	-2.83	-2.06	-1.27	.21	2.60	4.79	6.27	7.08	7.83	9.37
21	-3.57	-2.19	-1.52	-.79	.54	2.69	4.64	5.76	6.49	7.36	8.74
22	-3.26	-1.93	-1.26	-.57	.72	2.69	4.68	5.96	6.67	7.31	8.65
23	-3.14	-1.75	-1.07	-.34	.99	3.05	5.12	6.45	7.16	7.85	9.26
24	-3.16	-1.69	-.99	-.22	1.18	3.35	5.54	6.92	7.69	8.40	9.86
25	-2.86	-1.40	-.70	.06	1.45	3.61	5.77	7.16	7.92	8.62	10.08
26	-2.62	-1.21	-.52	.22	1.59	3.70	5.81	7.17	7.94	8.60	10.07
27	-2.86	-1.37	-.65	.14	1.57	3.79	6.00	7.43	8.22	8.94	10.43
28	-3.57	-1.80	-.34	-.01	1.68	4.30	6.92	8.61	9.54	10.40	12.16
29	-3.68	-1.83	-.93	.05	1.83	4.58	7.22	9.11	10.05	10.95	12.84
30	-3.36	-1.48	-.37	.42	2.22	5.01	7.81	9.61	10.60	11.51	13.39
31	-3.01	-1.04	-.19	.94	2.82	5.73	8.65	10.52	11.56	12.51	14.47
32	-1.81	.02	.31	1.82	3.63	6.34	9.06	10.81	11.78	12.66	14.49
33	-1.71	.23	1.17	2.19	4.05	6.53	9.82	11.67	12.70	13.64	15.58
34	-3.12	-.94	.11	1.26	3.34	6.57	9.79	11.82	13.02	14.07	16.25
35	-3.85	-1.63	-.55	.62	2.76	6.07	9.27	11.51	12.68	13.76	15.99
36	-3.62	-1.49	-.39	.76	2.94	6.07	9.31	11.39	12.54	13.59	15.77
37	-3.92	-1.72	-.65	.51	2.61	5.67	9.22	11.24	12.40	13.46	15.66
38	-4.28	-1.93	-.37	.34	2.53	5.94	9.34	11.54	12.75	13.86	16.15
39	-5.17	-2.62	-1.22	-.05	2.28	6.16	9.53	12.26	13.70	14.93	17.48
40	-4.51	-1.94	-.70	.65	3.10	6.91	10.71	13.19	14.51	15.76	18.32
41	-3.70	-1.26	-.18	1.21	3.54	7.16	10.78	13.11	14.40	15.58	18.01
42	-4.98	-2.25	-.93	.51	3.13	7.18	11.24	13.38	15.30	16.62	19.35
43	-5.41	-2.42	-.96	.61	3.48	7.93	12.27	15.24	16.82	18.27	21.27
44	-4.83	-1.67	-.14	1.53	4.56	9.26	13.95	16.38	18.65	20.18	23.34
45	-5.18	-1.67	.14	1.85	5.25	10.46	15.68	19.04	20.89	22.60	26.11
46	-5.45	-1.63	.22	2.23	5.89	11.56	17.23	20.89	22.90	24.76	28.58
47	-6.25	-2.06	-.03	2.16	6.19	12.41	18.03	22.64	24.85	26.88	31.07
48	-7.32	-3.11	-.78	1.75	6.36	13.50	20.64	25.24	27.78	30.11	34.92
49	-7.42	-2.45	-.10	2.51	7.22	14.55	21.87	26.60	29.20	31.59	36.52
50	-6.19	-1.28	1.03	3.68	8.37	15.65	22.93	27.62	30.21	32.58	37.45
51	-3.11	1.41	3.59	5.97	10.29	16.59	23.69	28.02	30.40	32.58	37.10
52	-5.40	-.43	1.98	4.60	9.36	16.74	24.13	29.89	31.51	33.91	38.99
53	-8.20	-2.78	-.15	2.71	7.89	15.94	23.58	29.18	32.04	34.66	40.09
54	-11.65	-5.49	-2.44	.83	6.78	15.99	25.20	31.15	34.42	37.42	43.63
55	-10.84	-4.83	-1.92	1.25	7.01	15.92	24.65	30.61	33.78	36.59	42.70
56	-14.80	-8.13	-4.91	-1.33	4.99	14.89	24.77	31.19	34.66	37.89	44.55
57	-17.42	-10.32	-6.88	-2.14	3.68	14.20	24.74	31.54	35.28	38.72	45.82
58	-17.84	-10.85	-7.46	-3.78	2.91	13.28	23.65	30.34	34.03	37.41	44.40
59	-18.40	-11.73	-8.50	-4.95	1.39	11.29	22.38	27.57	31.08	34.31	40.38
60	-19.31	-13.11	-10.10	-6.84	-.90	8.31	17.51	23.45	26.71	29.72	35.92
61	-25.79	-18.21	-14.54	-10.55	-3.29	7.96	19.22	26.47	30.47	34.14	41.72
62	-25.48	-18.05	-14.45	-10.53	-3.41	7.62	18.65	25.77	29.69	33.29	40.72
63	-24.98	-17.75	-14.24	-10.42	-3.49	7.25	18.10	24.52	28.74	32.25	39.49
64	-24.80	-17.68	-14.23	-10.43	-3.66	6.91	17.48	24.29	28.04	31.49	38.61
65	-24.63	-17.63	-14.23	-10.54	-3.83	6.56	16.96	23.67	27.36	30.75	37.76
66	-24.42	-17.52	-14.18	-10.54	-3.93	6.32	16.56	23.17	26.81	30.15	37.06
67	-24.37	-17.55	-14.25	-10.66	-4.14	5.97	16.08	22.61	26.20	29.50	36.31
68	-24.13	-17.45	-14.22	-10.70	-4.31	5.60	15.52	21.91	25.43	28.66	35.34
69	-24.19	-17.58	-14.38	-10.89	-4.56	5.26	15.18	21.41	24.90	28.10	34.72
70	-24.32	-17.75	-14.57	-11.11	-4.83	4.92	14.66	20.95	24.41	27.59	34.15

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 9.9. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.30	-7.61	-6.79	-5.95	-4.29	-1.78	.73	2.35	3.24	4.06	5.75
1	-14.72	-11.69	-10.20	-8.65	-5.69	-1.16	3.34	6.25	7.85	9.13	12.37
2	-15.73	-12.16	-10.43	-8.54	-5.12	.19	5.58	8.92	10.80	12.54	16.11
3	-17.67	-13.69	-11.69	-9.56	-5.71	.77	6.25	10.11	12.23	14.19	18.27
4	-20.23	-15.66	-13.49	-11.03	-6.05	.19	6.92	11.30	13.71	15.93	20.58
5	-23.36	-18.23	-15.74	-13.23	-8.12	-.50	7.12	12.09	14.74	17.23	22.36
6	-24.03	-25.88	-18.15	-15.27	-9.57	-1.09	7.49	13.02	16.02	18.81	24.55
7	-29.24	-22.95	-19.91	-17.59	-10.58	-1.25	8.08	14.15	17.91	20.44	26.74
8	-32.41	-25.66	-22.29	-18.63	-11.98	-1.66	8.65	15.32	18.96	22.33	29.24
9	-35.38	-27.89	-24.18	-20.21	-12.99	-1.80	9.40	16.62	20.59	24.24	31.79
10	-36.98	-29.11	-25.29	-21.19	-13.61	-1.92	9.74	17.30	21.45	25.26	33.14
11	-37.95	-29.87	-25.96	-21.75	-13.96	-1.97	10.02	17.75	22.01	25.93	34.01
12	-36.32	-28.55	-24.79	-20.69	-13.25	-1.72	9.81	17.25	21.35	25.11	32.88
13	-33.15	-26.29	-22.59	-18.84	-12.24	-1.48	9.07	15.86	19.63	23.07	30.19
14	-28.82	-22.66	-19.69	-16.46	-10.59	-1.48	7.62	13.49	16.72	19.70	25.83
15	-24.32	-19.17	-16.68	-13.97	-9.15	-1.42	6.21	11.13	13.84	16.33	21.47
16	-18.82	-14.85	-12.93	-11.05	-7.09	-1.19	4.79	8.55	10.64	12.56	16.53
17	-15.08	-11.97	-10.39	-8.73	-5.71	-1.03	3.66	6.68	8.34	9.87	13.03
18	-11.53	-9.17	-7.93	-6.84	-4.32	-.71	2.98	5.23	6.51	7.69	10.12
19	-9.23	-7.11	-6.16	-5.12	-3.23	-.31	2.41	4.50	5.54	6.49	8.46
20	-7.35	-5.71	-4.90	-4.02	-2.44	.12	2.47	4.04	4.93	5.73	7.38
21	-6.96	-5.31	-4.51	-3.69	-2.06	.38	2.83	4.41	5.27	6.07	7.72
22	-5.81	-4.38	-3.68	-2.93	-1.56	.57	2.69	4.07	4.82	5.51	6.95
23	-5.47	-4.12	-3.32	-2.54	-1.17	.98	3.13	4.52	5.29	5.99	7.44
24	-5.69	-4.13	-3.38	-2.56	-1.06	1.25	3.54	5.05	5.84	6.63	8.19
25	-5.13	-3.69	-2.92	-2.19	-.77	1.49	3.69	5.11	5.90	6.62	8.10
26	-4.94	-3.43	-2.76	-1.91	-.46	1.74	4.07	5.46	6.26	6.99	8.50
27	-5.13	-3.57	-2.81	-1.99	-.49	1.83	4.15	5.69	6.47	7.22	8.78
28	-4.91	-3.35	-2.60	-1.78	-.29	2.02	4.33	5.82	6.64	7.40	8.95
29	-4.38	-4.58	-3.71	-2.77	-1.05	1.61	4.27	5.99	6.93	7.80	9.60
30	-6.61	-4.73	-3.82	-2.83	-1.03	1.76	4.56	6.34	7.33	8.24	10.12
31	-6.90	-4.84	-3.84	-2.75	-.78	2.28	5.34	7.31	8.40	9.40	11.46
32	-5.70	-3.71	-2.75	-1.70	.20	3.15	6.10	8.00	9.05	10.01	12.00
33	-4.96	-3.07	-2.16	-1.17	.64	3.43	6.22	8.02	9.01	9.92	11.80
34	-5.36	-3.30	-2.30	-1.22	.76	3.81	6.86	8.83	9.92	10.91	12.97
35	-5.28	-3.37	-2.44	-1.44	.90	3.29	6.09	7.91	8.92	9.84	11.76
36	-7.46	-5.23	-4.25	-3.18	-1.23	1.78	4.79	6.73	7.80	8.78	10.81
37	-9.29	-6.95	-5.82	-4.58	-2.34	1.13	4.60	6.84	8.07	9.21	11.55
38	-10.73	-8.08	-6.79	-5.39	-2.85	1.10	5.04	7.58	8.98	10.27	12.92
39	-10.98	-8.15	-6.78	-5.29	-2.58	1.61	5.81	8.52	10.01	11.38	14.20
40	-10.91	-8.03	-6.63	-5.11	-2.35	1.93	6.21	8.97	10.49	11.88	14.76
41	-12.81	-9.60	-8.04	-6.35	-3.28	1.48	6.25	9.32	11.01	12.57	15.78
42	-14.18	-10.73	-9.06	-7.24	-3.93	1.19	6.34	9.63	11.45	13.12	16.57
43	-14.53	-10.90	-9.15	-7.24	-3.76	1.62	7.00	10.47	12.38	14.14	17.77
44	-14.36	-10.66	-8.66	-6.91	-3.36	2.19	7.64	11.19	13.19	14.93	18.64
45	-12.87	-9.34	-7.64	-5.78	-2.41	2.82	8.05	11.93	13.29	14.99	18.52
46	-11.40	-8.05	-6.43	-4.67	-1.47	3.60	8.46	11.66	13.42	15.09	18.39
47	-11.24	-7.72	-6.01	-4.15	-.78	4.45	9.69	13.06	14.92	16.62	20.15
48	-12.92	-8.85	-6.87	-4.72	-.82	5.23	11.20	15.18	17.33	19.31	23.38
49	-15.44	-10.66	-8.35	-5.83	-1.26	5.83	12.91	17.98	20.00	22.31	27.09
50	-14.09	-9.66	-7.37	-4.98	-.65	6.08	12.80	17.13	19.52	21.71	26.24
51	-12.16	-7.92	-6.07	-3.63	.92	6.71	13.00	17.06	19.29	21.34	25.68
52	-12.64	-8.11	-6.92	-3.54	.79	7.61	14.23	18.56	20.94	23.14	27.66
53	-12.71	-8.10	-6.87	-3.45	.96	7.79	14.63	19.04	21.46	23.69	28.30
54	-14.26	-9.36	-6.99	-4.42	.26	7.51	14.76	19.44	22.02	24.38	29.27
55	-17.04	-11.71	-9.12	-6.31	-1.20	6.73	14.66	19.76	22.57	25.16	30.50
56	-16.86	-11.74	-9.26	-6.57	-1.68	5.90	13.48	18.37	21.07	23.54	28.65
57	-16.84	-12.04	-9.72	-7.20	-2.61	4.50	11.62	16.21	18.73	21.05	25.85
58	-14.48	-10.57	-8.68	-6.62	-2.07	2.94	8.74	12.49	14.55	16.44	20.36
59	-17.27	-12.30	-9.89	-7.27	-2.51	4.86	12.24	17.00	19.62	22.03	27.00
60	-21.36	-15.77	-13.06	-10.11	-4.76	3.54	11.85	17.20	20.14	22.86	28.48
61	-22.70	-16.84	-14.00	-10.91	-5.30	3.40	12.10	17.72	20.41	23.64	29.51
62	-22.17	-16.44	-13.70	-10.69	-5.23	3.24	11.71	17.17	20.18	22.94	28.65
63	-21.44	-15.93	-13.27	-10.36	-5.09	3.08	11.26	16.53	19.43	22.10	27.60
64	-20.90	-15.58	-12.96	-10.14	-5.02	2.92	10.86	15.99	18.81	21.40	26.76
65	-20.14	-14.99	-12.40	-9.79	-4.87	2.76	10.39	15.32	17.93	20.51	25.64
66	-19.47	-14.53	-12.14	-9.54	-4.82	2.60	9.83	14.55	17.16	19.54	24.48
67	-18.93	-14.15	-11.84	-9.32	-4.75	2.39	9.44	14.01	16.53	18.84	23.62
68	-18.22	-13.64	-11.42	-9.00	-4.62	2.18	8.98	13.37	15.78	18.00	22.58
69	-17.68	-13.26	-11.11	-8.78	-4.55	2.02	8.59	12.83	15.14	17.30	21.73
70	-16.92	-12.70	-10.66	-8.44	-4.40	1.86	8.14	12.16	14.39	16.43	20.66

TABLE 9.10. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.36	-8.37	-7.41	-6.36	-4.46	-1.52	1.43	3.43	4.38	5.34	7.33
1	-17.76	-14.29	-12.54	-10.69	-7.32	-2.11	3.16	6.96	8.32	10.02	13.53
2	-21.17	-16.91	-14.85	-12.60	-8.52	-2.20	4.13	8.21	10.45	12.52	16.78
3	-25.73	-20.63	-18.16	-15.47	-10.59	-3.02	4.56	9.43	12.12	14.59	19.69
4	-29.38	-23.45	-20.88	-17.84	-12.37	-3.67	4.63	10.11	13.13	15.91	21.63
5	-32.94	-26.59	-23.49	-20.07	-13.94	-4.49	5.06	11.19	14.56	17.66	24.06
6	-36.80	-29.63	-26.16	-22.38	-15.52	-4.88	5.76	12.62	16.40	19.87	27.03
7	-40.86	-32.91	-29.06	-24.87	-17.26	-5.46	6.34	13.95	18.14	22.00	29.95
8	-45.42	-36.51	-32.20	-27.50	-18.98	-5.76	7.44	15.98	20.68	24.99	33.90
9	-48.22	-38.76	-34.18	-29.20	-20.15	-6.12	7.92	16.97	21.95	26.53	35.98
10	-50.15	-40.40	-35.68	-30.55	-21.21	-6.75	7.72	17.08	22.19	26.91	38.66
11	-50.19	-40.48	-35.81	-30.72	-21.47	-7.19	7.19	16.44	21.53	26.20	35.86
12	-48.63	-39.41	-34.95	-30.09	-21.26	-7.58	6.11	14.94	19.80	24.26	33.48
13	-43.37	-35.28	-31.35	-27.08	-19.33	-7.31	4.71	12.47	16.74	20.66	28.76
14	-38.47	-31.31	-27.84	-24.07	-17.21	-6.59	4.04	10.90	14.67	18.14	25.30
15	-32.80	-26.75	-23.83	-20.64	-14.85	-5.88	3.09	8.88	12.06	14.99	21.04
16	-27.18	-22.20	-19.29	-17.16	-12.39	-5.00	2.39	7.15	9.78	12.19	17.17
17	-21.97	-17.69	-15.64	-13.57	-9.81	-3.98	1.85	5.61	7.68	9.58	13.51
18	-16.39	-13.39	-11.89	-10.30	-7.93	-2.98	1.47	4.35	5.93	7.38	10.38
19	-12.96	-10.20	-9.10	-7.90	-5.73	-2.35	1.03	3.21	4.41	5.51	7.78
20	-11.71	-9.49	-8.42	-7.24	-5.12	-1.82	1.48	3.61	4.78	5.85	8.08
21	-10.96	-8.86	-7.85	-6.75	-4.75	-1.65	1.45	3.49	4.54	5.56	7.64
22	-9.72	-7.89	-6.93	-5.99	-4.19	-1.35	1.49	3.25	4.24	5.15	7.03
23	-9.48	-7.58	-6.66	-5.66	-3.84	-1.01	1.81	3.63	4.64	5.56	7.46
24	-9.56	-7.63	-6.69	-5.67	-3.82	-.95	1.91	3.74	4.78	5.72	7.65
25	-9.34	-7.42	-6.50	-5.49	-3.65	-.81	2.03	3.84	4.87	5.30	7.72
26	-9.95	-7.11	-6.22	-5.25	-3.49	-.75	1.98	3.74	4.71	5.61	7.55
27	-9.88	-7.07	-6.90	-5.64	-3.91	-.92	2.07	3.99	5.06	6.03	8.04
28	-10.97	-8.69	-7.58	-6.37	-4.19	-.79	2.60	4.75	5.99	7.10	9.39
29	-11.65	-9.28	-8.14	-6.89	-4.62	-1.11	2.46	4.67	5.92	7.06	9.43
30	-12.36	-9.89	-8.70	-7.40	-5.04	-1.38	2.28	4.64	5.94	7.13	9.69
31	-13.21	-10.44	-9.13	-7.67	-5.04	-.95	3.19	5.77	7.23	8.56	11.31
32	-14.30	-11.19	-9.69	-8.06	-5.09	-.48	4.12	7.09	8.72	10.23	13.33
33	-12.60	-9.75	-8.37	-6.86	-4.13	.11	4.39	7.07	8.58	9.96	12.81
34	-13.09	-10.05	-8.57	-6.97	-4.36	.46	4.98	7.89	9.50	10.97	14.02
35	-12.84	-9.97	-8.58	-7.07	-4.32	-.06	4.20	6.95	8.46	9.81	12.72
36	-14.33	-11.42	-9.98	-8.43	-5.62	-1.27	3.08	5.88	7.43	8.85	11.78
37	-16.02	-13.13	-11.73	-10.20	-7.44	-3.14	1.15	3.92	5.44	6.84	9.74
38	-18.65	-15.38	-13.80	-12.08	-8.95	-4.11	.74	3.06	5.56	7.16	10.43
39	-20.32	-16.92	-15.28	-13.49	-10.26	-5.21	-.18	3.07	4.85	6.49	9.89
40	-23.24	-19.60	-17.69	-15.72	-12.15	-6.60	-1.05	2.62	4.49	6.30	10.04
41	-25.56	-21.52	-19.41	-17.23	-13.27	-7.13	-.99	2.98	5.16	7.16	11.30
42	-27.51	-22.94	-20.76	-18.36	-14.00	-7.25	-.50	3.06	6.24	8.46	13.01
43	-28.53	-23.77	-21.46	-18.95	-14.39	-7.31	-.29	4.32	6.84	9.14	13.90
44	-26.73	-22.17	-19.96	-17.66	-13.19	-6.42	.35	4.72	7.13	9.34	13.90
45	-25.68	-21.21	-19.05	-16.69	-12.41	-5.77	.87	5.15	7.50	9.67	14.14
46	-25.51	-20.89	-18.64	-16.21	-11.78	-4.91	1.96	6.39	8.83	11.07	15.69
47	-24.55	-19.95	-17.73	-15.31	-10.91	-4.09	2.74	7.13	9.56	11.78	16.38
48	-22.37	-18.12	-16.06	-12.82	-9.76	-3.48	2.66	6.93	9.17	11.23	15.48
49	-22.06	-17.76	-15.67	-13.40	-9.28	-2.90	3.49	7.61	9.88	11.97	16.27
50	-23.20	-18.44	-16.13	-13.62	-9.07	-2.00	5.06	9.62	12.13	14.43	19.19
51	-26.09	-20.74	-18.15	-15.32	-10.20	-2.25	5.69	10.82	13.64	16.23	21.59
52	-29.61	-23.59	-20.47	-17.50	-11.73	-2.79	6.16	11.91	15.09	18.08	24.02
53	-29.34	-23.38	-20.49	-17.34	-11.63	-2.78	6.07	11.78	14.92	17.81	23.78
54	-28.54	-22.71	-19.89	-16.81	-11.23	-2.58	6.08	11.66	14.73	17.56	23.39
55	-27.79	-22.18	-19.47	-16.51	-11.14	-2.82	5.50	10.87	13.82	16.54	22.15
56	-30.99	-24.91	-21.96	-18.76	-12.93	-3.90	5.13	10.95	14.16	17.11	23.19
57	-32.46	-26.23	-23.20	-19.92	-13.94	-4.68	4.68	10.55	13.84	16.86	23.10
58	-31.88	-25.72	-22.74	-19.50	-13.60	-4.47	4.67	10.57	13.81	16.79	22.95
59	-29.78	-23.30	-20.16	-16.74	-10.54	-.91	8.71	14.91	18.33	21.47	27.95
60	-31.81	-24.63	-21.15	-17.36	-10.45	.19	10.66	17.73	21.52	25.00	32.19
61	-34.79	-27.02	-23.25	-19.16	-11.72	-.18	11.36	18.80	22.89	26.66	34.43
62	-33.92	-26.40	-22.75	-18.79	-11.58	-.42	10.76	17.95	21.92	25.56	33.09
63	-33.41	-26.07	-22.52	-18.66	-11.64	-.75	10.19	17.16	21.02	24.68	31.91
64	-32.56	-25.46	-22.03	-18.29	-11.51	-.99	9.53	16.32	20.06	23.49	30.58
65	-32.07	-25.17	-21.83	-18.19	-11.59	-1.34	8.90	15.50	19.14	22.48	29.38
66	-31.53	-24.82	-21.58	-18.04	-11.63	-1.68	8.27	14.69	18.22	21.47	28.17
67	-30.68	-24.22	-21.09	-17.68	-11.50	-1.91	7.67	13.86	17.26	20.39	26.85
68	-30.18	-23.91	-20.87	-17.56	-11.56	-2.25	7.07	13.07	16.38	19.42	25.69
69	-29.34	-23.31	-20.39	-17.21	-11.44	-2.48	6.47	12.26	15.43	18.35	24.38
70	-28.86	-23.01	-20.18	-17.09	-11.50	-2.81	5.87	11.46	14.55	17.38	23.23

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 9.11. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

75-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.91	-8.64	-7.53	-6.34	-4.16	-.79	2.59	4.77	5.96	7.07	9.34
1	-21.10	-16.53	-14.31	-11.90	-7.53	-.79	6.05	10.42	12.83	15.05	19.62
2	-24.06	-18.87	-16.36	-13.63	-8.66	-.97	6.73	11.70	14.43	16.94	22.13
3	-29.05	-22.18	-19.38	-16.25	-10.63	-1.92	6.80	12.41	15.51	18.35	24.22
4	-31.29	-24.82	-21.69	-18.28	-12.08	-2.48	7.13	13.32	16.73	9.86	26.33
5	-35.36	-28.57	-24.99	-21.09	-14.01	-3.03	7.55	15.03	18.93	22.51	29.91
6	-41.98	-33.82	-29.27	-24.76	-16.56	-3.85	8.66	17.05	21.56	25.71	34.27
7	-47.59	-37.88	-33.18	-28.06	-19.77	-4.36	10.06	19.35	24.47	29.17	38.88
8	-53.05	-42.20	-36.94	-31.22	-20.83	-4.72	11.39	21.78	27.50	32.86	43.61
9	-57.03	-45.35	-39.68	-33.50	-22.28	-5.88	12.52	23.79	29.92	35.60	47.12
10	-61.10	-48.62	-42.58	-36.00	-24.06	-5.54	12.58	24.93	31.50	37.55	50.02
11	-60.38	-48.06	-42.10	-35.61	-23.81	-5.53	12.75	24.55	31.04	37.00	49.32
12	-55.79	-44.51	-39.05	-33.11	-22.32	-5.58	11.16	21.95	27.89	33.35	44.63
13	-43.68	-38.97	-34.26	-29.14	-19.85	-5.43	8.99	18.29	23.41	28.11	37.83
14	-40.53	-32.48	-28.58	-24.33	-16.67	-4.67	7.28	14.99	19.23	23.13	31.19
15	-33.50	-26.95	-23.78	-20.32	-14.05	-3.32	5.40	11.68	15.13	18.30	24.86
16	-27.76	-22.40	-19.80	-16.97	-11.84	-3.88	4.08	9.22	12.04	14.64	20.00
17	-22.77	-18.45	-16.36	-14.09	-9.96	-3.55	2.66	6.99	9.27	11.36	15.67
18	-18.74	-15.23	-13.53	-11.68	-8.32	-3.10	2.11	5.47	7.32	9.02	12.53
19	-15.19	-13.19	-11.73	-10.15	-7.27	-2.81	1.65	4.53	6.12	7.57	10.58
20	-14.55	-11.89	-10.60	-9.20	-6.66	-2.71	1.24	3.76	5.18	6.47	9.13
21	-13.59	-11.12	-9.92	-8.62	-6.26	-2.59	1.08	3.44	4.74	5.94	8.41
22	-13.57	-11.11	-9.93	-8.63	-6.28	-2.63	1.61	3.36	4.66	5.85	8.30
23	-12.74	-10.43	-9.31	-8.09	-5.87	-2.43	1.01	3.22	4.44	5.57	7.88
24	-12.43	-10.15	-9.04	-7.88	-5.65	-2.26	1.19	3.32	4.53	5.63	7.92
25	-12.42	-10.12	-9.01	-7.80	-5.61	-2.20	1.21	3.41	4.62	5.73	8.02
26	-12.41	-10.15	-9.06	-7.87	-5.71	-2.37	.58	3.14	4.33	5.42	7.68
27	-13.37	-10.96	-9.79	-8.52	-6.21	-2.62	.96	3.27	4.55	5.72	8.13
28	-13.73	-11.32	-10.15	-8.88	-6.58	-3.00	.98	2.87	4.14	5.33	7.74
29	-14.86	-12.25	-10.99	-9.62	-7.12	-3.24	.62	3.11	4.49	5.76	8.36
30	-14.71	-12.24	-11.07	-9.77	-7.42	-3.78	-.14	2.21	3.51	4.70	7.16
31	-14.36	-12.05	-10.93	-9.72	-7.62	-4.11	-.49	1.51	2.72	3.83	6.13
32	-15.49	-12.66	-11.34	-9.99	-7.47	-3.66	.34	2.87	4.26	5.54	8.17
33	-18.27	-14.79	-13.02	-11.16	-7.77	-2.52	2.72	6.11	7.77	9.69	13.22
34	-18.11	-14.65	-12.97	-11.14	-7.82	-2.67	2.48	5.80	7.03	9.31	12.78
35	-20.21	-16.32	-14.43	-12.37	-8.64	-2.86	2.92	6.65	8.71	10.59	14.49
36	-20.75	-16.92	-15.07	-13.04	-9.40	-3.72	1.94	5.62	7.63	9.49	13.31
37	-23.85	-19.57	-17.50	-15.24	-11.15	-4.79	1.56	5.04	7.91	9.98	14.26
38	-28.33	-23.33	-20.91	-18.28	-13.60	-6.08	1.34	6.12	8.76	11.18	16.17
39	-28.40	-23.56	-21.27	-18.77	-14.23	-7.20	-.14	4.37	6.82	9.12	13.91
40	-29.69	-24.40	-22.49	-19.94	-15.39	-8.39	-1.19	3.39	5.92	8.23	13.02
41	-31.69	-26.23	-23.67	-21.31	-16.46	-9.54	-2.23	2.93	4.	7.35	12.21
42	-34.66	-29.36	-26.75	-23.98	-18.88	-10.98	-3.08	2.81	4.82	7.39	12.72
43	-36.08	-30.56	-27.69	-25.98	-19.70	-11.61	-3.31	1.97	4.88	7.55	13.07
44	-37.43	-31.65	-28.46	-25.81	-20.28	-11.71	-3.14	2.39	6.44	8.23	14.01
45	-39.41	-33.23	-30.23	-26.97	-21.05	-11.87	-2.69	3.23	6.49	9.49	15.67
46	-39.42	-33.12	-30.07	-26.76	-20.72	-11.37	-2.09	4.81	7.33	10.38	16.68
47	-39.49	-33.38	-30.23	-26.79	-20.56	-10.90	-1.20	4.97	8.42	11.57	18.08
48	-44.38	-36.76	-33.07	-29.04	-21.76	-10.44	.88	8.17	12.19	15.86	21.51
49	-37.43	-31.03	-27.93	-25.55	-18.42	-8.91	.58	6.72	10.10	13.20	19.61
50	-36.46	-30.07	-26.98	-23.61	-17.49	-8.01	1.48	7.57	10.96	14.06	20.44
51	-37.91	-30.44	-27.06	-24.20	-17.91	-8.14	1.88	7.87	11.35	14.53	21.10
52	-37.45	-30.70	-27.63	-24.29	-17.23	-8.82	.58	6.65	9.99	13.06	19.39
53	-41.00	-33.74	-30.23	-26.48	-19.46	-9.49	2.08	7.82	12.85	16.34	23.63
54	-46.35	-37.19	-33.23	-28.93	-21.12	-9.01	3.11	10.92	15.22	19.18	27.34
55	-51.24	-41.49	-37.04	-32.02	-22.84	-8.48	5.43	14.49	19.73	24.34	33.93
56	-51.65	-42.07	-37.42	-32.37	-23.28	-8.07	6.24	14.44	19.99	24.13	33.72
57	-55.97	-45.57	-40.53	-35.05	-25.07	-9.45	5.79	15.75	21.24	26.27	36.68
58	-50.29	-40.92	-36.38	-31.43	-23.46	-8.64	5.38	14.36	19.29	23.83	33.21
59	-[illegible]	-48.36	-43.16	-37.68	-27.22	-11.29	4.44	14.72	24.57	25.77	36.50
60	-61.63	-50.49	-45.09	-39.22	-28.55	-12.01	4.63	15.20	21.07	26.47	37.61
61	-65.44	-53.46	-47.42	-41.52	-29.98	-11.88	6.16	17.74	24.16	30.05	42.18
62	-63.29	-51.67	-46.06	-39.96	-28.88	-11.70	5.48	16.66	22.66	28.27	39.84
63	-60.28	-49.34	-44.44	-38.27	-27.80	-11.65	4.69	15.17	20.94	26.24	37.18
64	-57.34	-47.02	-42.02	-36.58	-26.78	-11.38	3.94	13.84	19.27	24.27	34.69
65	-54.71	-44.94	-40.21	-35.07	-25.72	-11.22	3.27	12.62	17.76	22.49	32.24
66	-61.53	-47.08	-34.24	-33.49	-24.66	-11.07	2.51	11.27	16.09	20.53	29.68
67	-48.94	-40.40	-36.26	-31.76	-23.58	-10.90	1.78	9.96	14.96	18.68	27.15
68	-46.68	-38.15	-34.21	-30.12	-22.53	-10.75	1.03	8.63	12.81	16.66	24.59
69	-43.62	-36.12	-32.54	-28.44	-21.64	-10.57	.41	7.49	11.39	15.98	22.34
70	-40.76	-33.46	-30.66	-27.06	-20.54	-10.43	-.36	6.22	9.81	13.11	19.7[illegible]

TABLE 9.12. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

78-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.23	-8.93	-7.82	-6.61	-4.42	-1.01	2.39	4.59	5.80	6.91	9.20
1	-23.22	-18.39	-16.35	-13.91	-5.48	-2.61	4.26	8.69	11.13	13.37	18.00
2	-28.00	-22.83	-20.03	-17.20	-12.05	-4.08	3.90	9.04	11.87	14.47	19.35
3	-33.73	-27.86	-24.27	-20.92	-14.82	-5.37	4.08	10.17	13.53	16.61	23.98
4	-40.55	-32.95	-29.27	-25.26	-17.99	-6.71	4.57	11.34	15.85	19.53	27.12
5	-45.61	-37.12	-33.00	-28.52	-20.39	-7.78	4.63	12.96	17.44	21.56	30.05
6	-51.12	-41.61	-37.00	-31.93	-22.89	-8.78	5.33	14.42	19.44	24.05	33.55
7	-57.04	-46.42	-41.30	-35.71	-25.56	-9.62	5.92	16.06	21.67	26.80	37.41
8	-61.26	-49.85	-44.32	-38.31	-27.38	-10.44	6.50	17.43	23.45	28.98	40.39
9	-66.08	-53.74	-47.77	-41.27	-29.46	-11.16	7.15	18.55	25.05	31.07	43.26
10	-68.77	-55.91	-49.53	-42.30	-30.59	-11.50	7.59	19.90	26.68	32.91	45.77
11	-68.40	-55.63	-49.45	-42.72	-30.51	-11.56	7.38	19.60	26.32	32.51	45.27
12	-62.00	-50.47	-44.33	-38.41	-27.77	-10.66	6.46	17.49	23.57	29.15	40.58
13	-53.38	-43.50	-38.72	-33.51	-24.05	-9.39	5.27	14.72	18.93	24.71	34.59
14	-45.35	-36.97	-32.32	-28.50	-20.48	-8.04	4.40	12.42	16.83	20.89	29.27
15	-38.57	-31.50	-28.00	-24.36	-17.52	-7.14	3.38	10.15	13.87	17.29	24.36
16	-32.29	-26.41	-23.55	-20.45	-14.82	-6.08	2.66	8.23	11.40	14.25	20.13
17	-27.09	-22.15	-19.75	-17.15	-12.42	-5.08	2.25	6.98	9.59	11.98	16.93
18	-20.76	-17.05	-15.23	-13.30	-9.75	-4.25	1.26	4.81	6.76	8.56	12.27
19	-18.83	-13.80	-12.49	-10.94	-6.15	-3.81	.53	3.33	4.87	6.29	9.21
20	-15.05	-12.46	-11.20	-9.84	-7.35	-3.50	.35	2.93	4.20	5.45	8.05
21	-14.61	-12.05	-10.61	-9.47	-7.02	-3.22	.58	3.02	4.37	5.61	8.17
22	-13.55	-11.13	-9.95	-8.63	-6.36	-2.77	.83	3.14	4.42	5.59	8.01
23	-13.32	-10.91	-9.74	-8.46	-6.15	-2.57	1.02	3.33	4.61	5.78	8.19
24	-13.44	-11.03	-9.87	-8.60	-6.30	-2.73	.34	3.14	4.41	5.58	7.98
25	-12.76	-10.45	-9.32	-8.10	-5.89	-2.45	.98	3.20	4.42	5.54	7.86
26	-13.74	-11.22	-10.00	-8.67	-6.26	-2.53	1.21	3.52	4.94	6.16	8.68
27	-15.71	-12.82	-11.42	-9.90	-7.13	-2.84	1.45	4.21	5.78	7.14	10.03
28	-16.36	-12.74	-11.47	-10.09	-7.58	-3.49	.19	2.70	4.08	5.34	7.97
29	-16.21	-13.55	-12.27	-10.86	-8.32	-4.38	-.44	2.11	3.51	4.79	7.46
30	-19.28	-16.01	-14.46	-12.78	-9.73	-4.99	-.24	2.80	4.48	6.02	9.21
31	-22.04	-18.26	-16.48	-14.38	-10.73	-5.06	.61	4.26	6.27	8.12	11.94
32	-25.08	-21.22	-19.18	-16.78	-12.33	-5.55	1.23	5.48	8.01	10.22	14.78
33	-31.14	-25.47	-22.72	-19.73	-14.38	-5.88	2.54	7.97	10.96	13.71	19.38
34	-36.72	-30.01	-26.76	-23.23	-16.81	-6.86	3.16	9.61	13.05	16.38	23.00
35	-38.86	-31.71	-28.27	-24.54	-17.75	-7.23	3.29	10.08	13.82	17.25	24.34
36	-40.87	-32.81	-29.29	-25.44	-18.51	-7.73	3.04	9.97	13.82	17.14	24.60
37	-42.47	-34.87	-31.19	-27.18	-19.91	-8.63	2.66	9.92	13.93	17.61	25.20
38	-46.48	-38.04	-33.98	-29.54	-21.48	-9.97	3.53	11.68	16.04	20.12	28.54
39	-51.54	-42.21	-37.69	-32.77	-23.84	-9.99	3.86	12.88	17.71	22.23	31.57
40	-52.38	-43.78	-39.13	-34.04	-25.87	-10.61	3.68	12.84	17.91	22.54	32.16
41	-55.82	-45.04	-40.20	-34.94	-25.38	-10.67	4.26	13.81	19.07	23.91	33.09
42	-58.45	-47.61	-42.34	-36.44	-26.26	-10.16	5.93	16.31	22.03	27.28	38.13
43	-61.24	-49.68	-44.08	-37.99	-26.93	-9.77	7.38	18.49	24.54	30.13	41.69
44	-63.68	-51.41	-45.51	-39.09	-27.43	-9.35	8.74	20.40	26.83	32.73	44.90
45	-65.55	-52.60	-46.42	-39.90	-27.69	-8.76	10.17	22.38	29.10	35.28	44.03
46	-67.38	-54.28	-47.82	-40.88	-28.24	-8.70	10.85	23.47	30.52	36.80	49.78
47	-64.41	-52.19	-46.20	-39.73	-27.99	-9.78	8.44	20.18	26.65	32.59	44.06
48	-49.22	-51.97	-46.89	-39.58	-27.85	-9.67	8.51	20.24	26.67	32.63	44.88
49	-65.52	-53.24	-47.32	-40.86	-29.12	-10.93	7.27	19.88	26.46	31.40	43.66
50	-65.66	-53.29	-47.29	-40.77	-28.93	-10.67	7.79	19.49	26.16	32.18	45.52
51	-65.02	-52.46	-46.38	-39.76	-27.74	-9.89	9.68	21.57	28.19	34.28	46.84
52	-62.34	-49.79	-43.71	-37.49	-26.47	-8.92	12.21	24.23	30.84	36.93	49.18
53	-62.64	-49.85	-43.65	-36.91	-24.66	-8.68	13.31	25.84	32.38	38.58	51.29
54	-65.74	-52.27	-45.74	-38.44	-25.75	-8.76	14.23	27.12	34.22	40.75	54.21
55	-64.87	-51.88	-44.79	-37.94	-26.51	-8.92	13.84	26.49	32.34	38.63	51.63
56	-68.71	-54.48	-47.47	-35.94	-26.29	-8.81	16.23	29.91	37.45	44.18	58.68
57	-68.87	-52.86	-46.36	-38.88	-24.86	-9.35	16.14	29.38	36.66	43.36	57.17
58	-71.64	-56.54	-49.13	-41.84	-24.91	-8.47	17.83	33.48	41.75	49.14	64.97
59	-79.96	-63.65	-55.76	-47.15	-31.54	-7.33	16.88	32.97	41.09	49.99	65.30
60	-78.48	-63.19	-55.79	-47.73	-32.18	-10.42	12.27	26.98	34.96	42.30	57.64
61	-76.82	-61.97	-54.77	-46.94	-32.72	-10.66	11.39	25.42	32.45	40.64	55.58
62	-74.68	-60.38	-53.48	-45.91	-32.22	-10.97	10.23	23.92	31.94	38.39	52.49
63	-72.73	-58.91	-52.22	-44.94	-31.71	-11.28	9.40	22.53	29.81	36.58	50.32
64	-70.63	-57.36	-50.93	-43.94	-31.23	-11.59	8.14	20.88	27.86	35.28	47.86
65	-68.73	-55.94	-49.76	-43.00	-30.76	-11.77	7.21	19.46	26.20	32.40	45.19
66	-66.66	-54.41	-48.47	-42.02	-30.27	-12.11	6.00	17.88	24.26	30.19	42.44
67	-64.88	-53.02	-47.32	-41.11	-29.82	-12.39	5.14	16.42	22.63	28.39	40.12
68	-63.77	-51.51	-46.06	-40.13	-29.36	-12.65	4.04	14.82	20.76	26.21	37.47
69	-60.94	-50.15	-44.92	-39.23	-28.98	-12.89	3.13	13.46	19.15	24.38	35.17
70	-59.00	-48.72	-43.74	-38.32	-28.48	-13.22	2.08	11.88	17.38	22.28	32.54

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 10.1. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-8.32	-6.36	-5.91	-4.38	-2.50	.41	3.[illegible]	5.20	6.23	7.18	9.14
1	-11.93	-9.05	-7.65	-6.13	-3.37	.91	5.19	7.95	9.47	10.87	13.75
2	-14.25	-10.39	-8.44	-6.38	-2.63	3.18	8.99	12.74	14.80	16.70	20.61
3	-17.27	-12.07	-9.55	-6.81	-1.83	5.89	13.61	18.59	21.33	23.85	29.05
4	-20.22	-13.84	-10.75	-7.39	-1.28	8.19	17.66	23.77	27.13	30.22	36.60
5	-23.27	-15.70	-[illegible].03	-8.04	-.79	10.45	21.69	28.94	32.[illegible]	36.60	44.17
6	-25.91	-17.35	-13.20	-8.69	-.49	12.22	24.93	33.13	37.[illegible]	41.79	50.35
7	-28.31	-18.82	-14.23	-9.23	-.15	13.93	28.01	37.09	42.09	46.48	56.17
8	-31.56	-20.94	-15.79	-10.19	-.02	15.75	31.52	41.69	47.2[illegible]	52.44	63.06
9	-34.05	-22.40	-16.76	-10.62	.53	17.82	35.11	46.26	52.40	58.04	69.69
10	-36.29	-23.58	-17.45	-10.78	1.34	20.13	38.92	51.04	57.71	63.84	76.50
11	-36.98	-23.52	-17.00	-9.91	2.98	22.96	42.94	55.83	62.92	69.4[illegible]	82.90
12	-37.88	-19.97	-13.72	-6.92	5.44	24.60	43.74	56.12	62.92	69.17	82.08
13	[illegible]	-13.76	-8.47	-2.71	7.79	23.95	40.16	50.61	56.37	61.66	72.58
14	[illegible]	-10.34	-5.78	-.80	8.25	22.28	36.31	45.36	50.34	54.92	64.37
15	-14.96	-7.21	-3.46	.62	8.04	19.54	31.04	38.46	42.54	46.29	54.04
16	-13.35	-4.60	-3.33	.23	6.69	16.71	2[illegible].73	33.19	36.75	40.02	46.77
17	-12.9	-4.99	-4.12	-1.00	4.67	13.46	12.[illegible]5	27.92	31.04	33.91	39.83
18	-12.42	-7.38	-4.94	-2.28	2.54	10.02	[illegible].50	22.32	2[illegible].98	27.42	32.46
19	-14.3[illegible]	-9.57	-7.28	-4.77	-.20	6.88	13.96	18.53	[illegible].04	23.35	28.12
20	-17.75	-12.89	-10.53	-7.97	-3.31	3.91	11.13	15.79	[illegible].35	20.71	25.57
21	-19.83	-14.94	-12.57	-9.99	-5.31	1.95	9.21	13.89	16.47	18.84	23.73
22	-22.39	-17.28	-14.81	-12.12	-7.23	.35	7.93	12.82	15.51	17.98	23.09
23	-25.74	-20.11	-17.39	-14.52	-9.04	-.69	7.46	13.04	15.01	18.73	24.36
24	-29.51	-23.08	-19.97	-16.58	-10.43	-.89	8.65	14.80	18.19	2[illegible].30	27.73
25	-33.16	-25.94	-22.46	-18.46	-11.74	-1.03	9.68	16.59	20.39	23.88	31.10
26	-35.53	-27.72	-23.93	-19.81	-12.33	-.73	10.87	18.35	22.47	26.26	34.07
27	-38.29	-29.44	-25.48	-20.93	-12.67	.14	12.94	21.21	25.76	29.94	38.57
28	-48.20	-36.7[illegible]	-31.25	-25.23	-14.30	2.65	19.61	30.54	36.56	42.09	53.51
29	-50.17	-38.1[illegible]	-32.32	-25.98	-14.96	3.39	21.25	32.76	39.10	44.93	56.96
30	-51.12	-38.73	-32.73	-26.19	-14.33	4.06	22.46	34.32	40.85	46.85	59.25
31	-50.82	-38.28	-32.20	-25.59	-13.58	5.09	23.65	35.66	42.27	48.35	60.89
32	-51.19	-38.29	-32.04	-25.24	-12.89	6.26	25.41	37.76	44.56	50.81	63.71
33	-51.86	-38.65	-32.25	-25.28	-12.63	6.99	26.60	39.25	46.22	52.62	65.84
34	-54.59	-40.45	-33.61	-26.16	-12.63	8.36	29.34	42.87	50.32	57.16	71.30
35	-57.51	-42.35	-35.[illegible]	-27.02	-12.51	10.00	32.50	47.02	55.01	62.35	77.51
36	-62.89	-46.12	-37.99	-29.15	-13.10	11.79	36.69	52.74	61.58	69.70	86.47
37	-67.46	-49.03	-40.10	-30.39	-12.74	14.62	41.98	59.62	69.34	78.26	96.70
38	-71.04	-51.13	-41.49	-31.00	-11.95	17.60	47.14	66.20	76.69	86.33	106.24
39	-74.63	-53.27	-42.96	-31.71	-11.29	20.38	52.05	72.48	83.73	94.06	115.40
40	-75.41	-53.25	-42.41	-30.63	-9.22	23.98	57.17	78.58	90.37	101.20	123.56
41	-75.39	-51.89	-40.51	-28.12	-5.63	29.25	64.13	86.62	99.00	110.39	133.80
42	-73.24	-49.08	-37.37	-24.63	-1.50	34.37	70.24	93.38	106.12	117.82	141.99
43	-71.74	-46.91	-34.87	-21.77	2.01	38.90	75.79	99.58	112.68	124.71	149.56
44	-70.44	-45.17	-32.93	-19.61	4.58	42.09	79.60	103.79	117.11	129.35	154.62
45	-67.49	-42.27	-30.05	-16.76	7.39	45.82	82.76	106.41	119.70	131.92	157.14
46	-64.61	-39.25	-26.96	-13.59	10.69	48.34	85.99	110.27	123.64	135.92	161.28
47	-58.45	-33.71	-21.72	-8.48	15.01	51.74	88.47	112.16	125.20	137.18	161.93
48	-54.24	-29.90	-18.09	-5.25	18.07	54.24	90.41	113.74	126.58	138.38	162.75
49	-48.39	-24.41	-12.80	-.16	22.80	58.39	93.98	116.93	129.57	141.19	165.17
50	-45.65	-21.67	-10.07	2.56	25.49	61.05	96.60	119.53	132.16	143.76	167.72
51	-44.57	-20.56	-8.93	3.73	26.72	62.26	98.03	120.99	133.65	145.28	169.29
52	-28.58	-4.96	3.51	14.91	35.60	67.70	99.79	120.48	131.88	142.25	163.97
53	-22.02	-1.58	8.32	19.09	38.65	68.98	99.32	118.88	129.65	139.55	159.99
54	-19.15	.74	10.37	20.85	39.88	69.39	98.90	117.93	128.41	138.04	157.93
55	-18.62	1.09	10.63	21.02	39.88	69.19	98.39	117.26	127.64	137.19	156.90
56	-6.01	12.89	21.66	31.00	48.14	74.71	101.29	118.42	127.86	136.53	154.43
57	-5.04	13.13	21.93	31.50	48.90	75.87	102.84	120.23	129.61	138.61	156.78
58	-3.47	15.72	25.02	35.14	53.51	82.00	110.50	128.87	138.94	148.29	167.48
59	-8.11	12.57	22.59	33.50	53.30	84.00	119.70	134.50	145.41	155.43	176.11
60	-13.27	8.80	19.48	31.12	52.24	85.00	117.76	138.88	150.52	161.20	183.27
61	-13.70	8.13	18.70	30.21	51.10	83.50	115.90	136.79	148.30	158.87	180.70
2	-14.40	7.23	17.70	29.10	49.80	81.90	114.00	134.70	146.10	156.57	176.20
63	-15.00	6.42	16.80	[illegible].09	48.60	80.40	112.20	132.71	144.00	154.38	175.80
64	-15.70	5.52	15.80	26.99	47.30	78.80	110.30	130.61	141.70	152.08	173.30
65	-16.00	4.95	15.10	26.19	46.20	77.30	108.40	128.46	139.53	149.65	170.40
66	-16.70	4.05	14.10	25.09	44.90	75.70	106.50	126.36	137.30	147.35	168.10
67	-17.30	3.25	13.2[illegible]	24.03	43.70	74.20	104.70	124.37	135.20	145.15	165.70
68	-18.00	2.35	12.20	22.92	42.40	72.60	102.80	122.28	133.00	142.86	163.30
69	-18.30	1.78	11.50	22.08	41.30	71.10	100.90	120.12	130.70	140.42	160.90
70	-19.00	.87	10.50	20.98	40.00	69.50	99.00	118.02	128.50	138.13	158.00

TABLE 10.2. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-8.41	-6.36	-5.36	-4.24	-2.29	.77	3.83	5.88	6.89	7.89	9.95
1	-16.01	-9.73	-8.23	-6.81	-3.88	.93	5.51	7.27	8.79	10.19	13.07
2	-13.07	-10.13	-8.90	-6.67	-3.11	2.18	7.47	10.68	12.76	14.49	18.06
3	-15.30	-13.77	-8.67	-6.18	-1.84	5.89	11.63	15.70	18.35	20.55	25.08
4	-17.06	-11.60	-8.93	-6.00	-.80	7.33	15.46	20.76	23.69	26.29	31.72
5	-19.47	-12.51	-9.93	-6.08	.81	9.25	18.88	24.78	28.33	31.41	37.22
6	-20.17	-13.05	-9.69	-6.90	.89	11.42	21.94	28.79	32.98	35.92	43.01
7	-22.26	-15.18	-10.27	-6.83	1.46	13.87	25.60	33.21	37.85	41.38	48.38
8	-24.71	-15.69	-11.17	-6.36	2.37	15.91	29.95	38.18	42.99	47.41	54.53
9	-27.69	-17.37	-12.37	-6.73	3.96	18.97	33.68	43.47	48.91	53.41	60.33
10	-31.09	-19.49	-13.67	-7.76	5.35	20.67	37.79	48.96	55.01	60.63	72.23
11	-31.12	-19.89	-13.92	-6.53	6.18	21.31	41.48	53.18	57.63	65.56	73.78
12	-25.21	-13.49	-8.34	-2.35	8.53	25.48	42.27	53.15	59.14	64.64	76.01
13	-17.38	-7.99	-3.59	1.61	10.56	29.09	38.38	47.11	53.33	56.87	66.26
14	-12.84	-4.89	-.77	3.24	16.84	22.74	34.58	42.22	46.43	50.30	58.28
15	-9.39	-2.29	.96	3.88	16.19	19.98	29.23	36.58	37.66	43.75	49.35
16	-7.[illegible]	-2.29	.47	3.47	8.92	17.37	25.89	31.27	34.27	37.03	42.72
17	-7.38	-2.88	-.67	2.33	7.88	13.35	21.66	24.37	28.97	31.34	36.28
18	-8.96	-4.19	-2.65	.23	4.36	16.77	17.[illegible]	21.31	23.59	25.68	30.00
19	-10.16	-6.17	-5.25	-2.15	1.88	7.66	13.[illegible]	17.33	19.98	21.37	25.36
20	-13.08	-8.44	-6.77	-4.63	-.94	5.07	11.19	15.01	17.15	19.12	23.18
21	-14.96	-10.92	-8.70	-6.02	-2.25	3.60	9.18	13.[illegible]	16.12	17.68	21.19
22	-17.03	-13.29	-11.12	-8.01	-4.61	1.46	6.91	12.61	14.92	17.09	21.93
23	-19.89	-14.97	-12.25	-9.84	-6.94	1.33	8.13	13.45	15.93	17.13	21.78
24	-26.69	-16.76	-13.36	-10.76	-6.83	1.36	8.62	13.30	15.96	18.35	23.29
25	-22.81	-17.37	-14.74	-11.67	-6.67	1.48	9.97	14.67	17.59	20.17	25.61
26	-25.61	-19.29	-16.16	-13.64	-7.65	2.10	11.41	17.36	20.64	23.65	29.67
27	-29.2[illegible]	-21.67	-18.21	-14.94	-7.41	3.07	13.39	21.46	25.29	28.85	36.19
28	-31.54	-24.69	-21.37	-17.75	-11.19	-1.01	9.16	15.72	19.34	22.66	29.51
29	-33.17	-25.03	-21.63	-17.80	-10.93	-.34	10.29	17.08	20.85	24.31	31.45
30	-33.29	-25.94	-21.73	-17.63	-10.16	1.38	12.91	20.36	24.95	28.22	35.99
31	-33.38	-26.93	-21.61	-17.45	-9.89	1.88	13.54	21.18	25.86	29.80	36.90
32	-32.[illegible]	-24.68	-20.81	-16.59	-8.94	2.92	14.78	22.93	26.65	30.52	38.51
33	-36.[illegible]	-26.36	-21.96	-17.19	-8.52	4.93	18.34	27.05	31.02	36.21	45.27
34	-36.36	-26.46	-21.67	-16.45	-6.97	7.72	22.91	31.89	37.11	41.90	51.06
35	-37.62	-26.66	-21.37	-15.69	-6.28	10.94	27.09	37.61	43.25	48.52	59.40
36	-41.09	-28.90	-23.00	-16.57	-4.91	13.19	31.28	42.95	49.37	55.28	67.47
37	-43.02	-29.03	-23.[illegible]	-16.50	-3.00	15.38	36.24	47.80	54.43	61.82	74.[illegible]
38	-44.49	-30.50	-23.72	-16.35	-2.95	17.82	38.59	51.98	59.36	66.13	80.12
39	-46.56	-31.55	-24.27	-16.34	-1.99	20.30	42.89	56.97	64.88	72.15	87.17
40	-48.12	-32.17	-24.49	-16.03	-.75	22.93	46.62	61.89	70.30	78.03	93.99
41	-49.27	-32.46	-24.32	-15.48	.89	25.89	50.54	66.63	75.50	83.49	100.48
42	-50.01	-32.41	-23.89	-14.61	2.23	28.35	54.47	71.32	80.59	89.12	105.71
43	-49.55	-32.33	-23.31	-13.71	3.93	32.87	59.61	77.05	86.05	95.47	112.07
44	-48.17	-29.29	-20.15	-10.20	7.88	35.90	63.92	81.99	91.94	101.09	119.97
45	-48.97	-29.22	-19.66	-9.25	9.88	38.97	68.29	87.19	97.60	107.17	126.92
46	-49.94	-29.42	-19.48	-8.66	10.98	41.49	71.90	91.54	102.34	112.30	132.82
47	-48.24	-27.32	-17.19	-6.17	13.66	44.90	75.95	95.97	107.00	117.13	138.04
48	-44.15	-23.69	-13.79	-3.00	16.58	46.94	77.30	96.68	107.26	117.56	138.02
49	-41.74	-21.63	-11.73	-1.06	18.28	48.37	78.42	97.63	108.47	118.27	138.82
50	-40.08	-19.92	-10.14	.46	19.76	49.68	79.60	98.90	109.52	119.28	139.44
51	-38.90	-18.39	-8.65	1.55	20.39	50.64	80.49	99.73	110.33	120.07	140.18
52	-39.40	-18.92	-9.01	1.79	21.39	51.78	82.18	101.78	112.57	122.49	142.97
53	-38.26	-17.86	-8.01	2.74	22.25	52.51	83.77	102.28	113.03	122.90	143.29
54	-37.78	-17.28	-7.39	3.37	22.9[illegible]	53.22	83.53	103.07	113.84	123.72	144.14
55	-37.44	-16.36	-6.49	4.15	24.44	53.81	84.45	104.44	115.10	124.94	145.85
56	-38.67	-11.69	-2.33	7.81	24.22	54.76	83.30	101.71	111.84	121.15	140.38
57	-31.37	-14.37	-4.06	13.24	5.94	55.75	81.59	98.26	107.93	116.87	133.80
58	-9.2	6.55	14.23	22.58	7.74	61.24	84.77	99.94	108.29	115.94	131.80
59	-10.0[illegible]	6.10	13.93	22.46	33.94	63.97	86.98	101.47	110.00	117.84	134.02
60	-5.92	10.03	17.51	25.65	30.44	63.36	86.27	101.08	109.22	116.70	132.15
61	-9.00	6.70	14.60	22.90	34.05	64.00	85.40	100.63	108.00	114.70	133.40
62	-12.40	3.77	11.70	20.33	36.00	60.30	85.40	100.27	108.90	116.83	133.20
63	-14.90	-.91	8.60	17.51	33.90	60.00	82.90	100.07	109.08	117.19	134.10
64	-20.20	-2.82	5.60	14.74	31.90	57.20	83.00	99.6[illegible]	108.80	117.22	134.40
65	-23.00	-6.95	2.70	12.11	24.20	56.70	82.20	99.29	108.70	117.35	136.80
66	-27.50	-9.18	-.30	9.36	20.90	54.10	81.30	98.84	108.60	117.38	135.70
67	-31.10	-12.30	-3.20	6.71	24.70	53.60	80.60	98.48	108.40	117.60	136.30
68	-34.70	-15.43	-6.10	4.06	22.50	51.10	79.70	98.19	108.30	117.43	136.70
69	-38.40	-18.66	-9.10	1.30	20.20	49.50	78.80	97.70	108.10	117.66	137.40
70	-42.00	-21.79	-12.00	-1.35	18.00	48.00	78.00	97.35	108.00	117.79	138.00

TABLE 10.3. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	.. 060	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.62	-4.72	-3.80	-2.80	-.98	1.04	4.66	6.48	7.48	8.40	10.30
1	-10.52	-7.99	-6.76	-5.42	-3.88	.76	3.52	6.94	8.28	9.51	12.04
2	-12.60	-8.37	-6.80	-5.10	-2.80	2.00	7.60	10.70	12.40	13.97	17.20
3	-14.03	-9.58	-7.43	-5.08	-.03	5.77	12.37	16.63	18.97	21.12	25.57
4	-16.57	-10.99	-8.28	-5.36	.01	8.30	16.59	21.94	24.88	27.59	33.17
5	-19.09	-12.39	-9.15	-5.62	.79	10.73	20.67	27.08	30.61	33.85	40.55
6	-21.06	-13.46	-9.78	-5.77	1.50	12.78	24.06	31.33	35.39	39.02	46.62
7	-23.26	-14.70	-10.55	-6.08	2.16	14.87	27.58	35.78	40.29	44.44	53.02
8	-25.19	-15.52	-11.84	-6.74	2.51	16.86	31.21	40.46	45.56	50.24	59.91
9	-27.80	-17.35	-12.29	-6.78	3.22	18.73	34.24	44.24	49.75	54.81	65.26
10	-26.37	-15.72	-10.56	-4.95	5.25	21.06	36.87	47.07	52.60	57.84	68.49
11	-22.53	-12.19	-7.18	-1.78	8.17	23.52	38.87	48.77	54.22	59.23	69.57
12	-17.22	-7.72	-3.12	1.89	10.98	25.08	39.18	48.27	53.28	57.88	67.38
13	-10.65	-2.64	1.24	5.26	13.13	25.82	36.91	44.58	44.80	52.68	60.69
14	-7.31	-.32	3.06	6.74	13.43	23.80	34.17	40.86	44.54	47.92	54.91
15	-4.14	1.50	4.38	7.41	12.90	21.42	29.98	35.43	38.46	41.24	46.98
16	-4.16	1.01	3.51	6.23	11.18	18.85	26.52	31.47	34.19	36.69	41.86
17	-5.57	-.69	1.67	4.24	8.91	16.15	23.39	28.06	30.63	32.99	37.87
18	-6.14	-1.91	.14	2.37	6.42	12.70	18.98	23.63	25.26	27.31	31.54
19	-8.30	-4.31	-2.38	-.28	3.54	9.46	15.38	19.20	21.30	23.23	27.22
20	-10.16	-6.25	-4.35	-2.29	1.46	7.27	13.08	16.83	18.89	20.79	24.70
21	-12.78	-8.66	-6.66	-4.49	-.54	5.58	11.70	15.65	17.62	19.82	23.94
22	-15.03	-10.69	-8.59	-6.30	-2.15	4.29	10.73	14.88	17.17	19.27	23.61
23	-16.17	-11.55	-9.31	-6.88	-2.45	4.41	11.27	15.69	18.13	20.37	24.98
24	-18.30	-13.08	-10.55	-7.80	-2.80	4.95	12.70	17.70	20.45	22.98	28.20
25	-20.05	-14.28	-11.49	-8.45	-2.93	5.63	14.19	19.71	22.75	25.58	31.31
26	-20.77	-14.63	-11.65	-8.41	-2.53	6.59	15.71	21.59	24.83	27.81	33.95
27	-21.58	-14.94	-11.72	-8.22	-1.86	8.00	17.86	24.22	27.72	30.94	37.58
28	-34.50	-25.75	-22.29	-16.44	-7.67	6.04	19.70	22.41	33.37	37.82	47.03
29	-37.25	-27.32	-23.51	-17.22	-7.75	7.00	21.75	31.20	36.50	41.32	51.25
30	-40.37	-29.45	-24.22	-18.42	-8.07	8.06	24.24	34.05	40.39	45.66	56.54
31	-42.63	-31.21	-25.66	-19.61	-3.63	9.40	25.42	36.41	42.46	48.02	59.49
32	-43.50	-31.79	-27.96	-19.52	-7.91	10.66	26.07	35.67	46.26	51.93	64.05
33	-45.76	-32.71	-28.39	-19.52	-7.02	12.33	31.70	44.18	51.06	57.34	70.42
34	-46.85	-33.96	-28.23	-18.91	-5.61	15.01	35.02	46.70	56.24	62.97	76.86
35	-45.35	-32.05	-25.12	-17.53	-2.59	17.34	38.36	52.29	59.79	66.72	81.22
36	-48.50	-31.82	-24.68	-16.75	-2.46	15.75	42.97	56.20	64.18	71.43	86.40
37	-47.20	-31.57	-24.00	-15.73	-.91	22.39	45.59	60.55	68.79	76.36	91.38
38	-47.78	-31.51	-22.62	-15.05	.57	24.66	48.24	64.41	72.99	80.87	97.15
39	-43.09	-31.32	-22.13	-14.35	1.71	26.61	51.50	67.56	76.40	84.53	101.20
40	-47.43	-27.27	-19.64	-10.82	4.55	28.55	55.54	68.02	76.53	84.30	100.53
41	-42.65	-26.54	-13.74	-10.24	2.13	29.11	53.03	68.48	76.35	84.76	100.37
42	-40.42	-24.87	-17.14	-8.74	6.74	29.72	53.30	68.22	70.48	84.11	99.86
43	-36.05	-21.10	-13.86	-5.93	8.33	30.52	52.71	67.02	74.30	82.14	97.04
44	-31.19	-17.05	-11.26	-2.83	10.65	31.57	52.45	65.67	73.40	80.23	94.32
45	-29.04	-14.48	-7.91	-.76	12.22	32.35	52.49	65.47	72.62	79.19	92.75
46	-27.64	-10.85	-4.65	2.05	14.77	33.22	52.21	64.50	71.30	77.50	90.29
47	-19.45	-7.41	-1.53	4.70	15.31	34.20	52.68	63.62	69.97	75.60	87.35
48	-10.85	-6.01	-.24	6.04	17.45	35.14	55.63	64.24	70.52	76.25	88.21
49	-17.62	-5.34	.51	7.08	19.45	37.06	55.28	67.04	73.51	79.46	91.73
50	-16.08	-3.82	2.10	8.55	20.27	38.45	56.02	68.35	74.80	80.73	92.98
51	-15.03	-2.82	2.89	9.53	21.21	39.34	57.48	69.19	75.58	81.50	93.71
52	-14.62	-2.05	3.74	10.26	22.10	40.47	58.67	70.67	77.19	83.18	95.55
53	-15.74	-3.01	2.75	9.67	22.25	41.74	61.23	73.30	80.73	87.09	100.22
54	-20.24	-6.55	-.27	7.04	21.31	40.88	61.46	74.72	82.03	88.75	102.61
55	-27.33	-12.00	-5.17	2.90	17.53	40.33	63.09	77.79	85.33	93.26	108.58
56	-38.96	-19.00	-11.14	-1.97	14.68	40.51	66.22	82.37	92.14	100.56	117.56
57	-24.53	-9.93	-2.10	5.99	20.69	43.46	66.24	80.33	89.01	96.45	111.73
58	-14.11	.80	5.21	10.00	31.23	52.55	74.37	89.05	96.98	104.24	119.20
59	-7.23	7.15	14.15	21.76	35.59	57.43	78.42	92.29	99.91	106.90	121.35
60	-11.17	5.05	12.42	20.45	35.00	57.61	80.21	94.76	102.80	110.17	125.39
61	-11.70	3.53	10.30	18.93	33.50	56.10	78.70	93.27	101.30	108.67	123.30
62	-12.40	1.85	7.30	17.30	32.00	54.74	77.40	92.04	100.10	107.51	122.80
63	-14.90	.39	3.30	15.86	30.50	53.20	75.90	90.54	98.60	106.01	121.30
64	-18.00	-1.24	1.20	14.30	29.00	51.80	74.00	88.30	97.40	104.84	120.20
65	-19.10	-2.24	4.70	12.80	27.50	50.30	72.10	87.30	95.90	103.34	118.70
66	-15.00	-4.24	7.20	11.30	26.00	48.00	71.00	86.31	94.40	101.84	117.20
67	-21.30	-5.87	1.60	3.73	24.50	47.40	70.30	85.02	93.20	100.67	116.10
68	-22.80	-7.27	.10	2.22	22.00	45.90	68.70	82.57	91.70	99.17	114.60
69	-24.50	-9.00	-1.50	6.32	21.50	44.50	67.50	82.73	90.50	98.00	113.50
70	-26.00	-10.00	-2.00	5.17	20.00	43.00	66.00	80.23	89.00	96.50	112.00

TABLE 10.4. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.33	-4.83	-3.51	-2.51	-.69	2.13	4.95	6.77	7.77	8.59	10.59
1	-10.93	-8.17	-6.84	-5.35	-2.78	1.34	5.93	8.07	9.52	10.85	13.61
2	-12.36	-8.95	-7.30	-5.50	-2.24	2.82	7.88	11.14	12.94	14.59	18.08
3	-13.70	-9.37	-7.27	-4.99	-.89	5.53	12.02	16.17	18.45	20.55	24.88
4	-16.11	-10.57	-7.89	-4.97	.33	8.55	16.77	22.07	24.99	27.67	33.21
5	-19.08	-12.24	-8.93	-5.33	1.22	11.37	21.52	28.07	31.67	34.98	41.82
6	-21.85	-13.81	-9.92	-5.64	2.01	13.94	25.87	33.56	37.80	41.69	49.73
7	-23.92	-15.47	-10.14	-5.92	3.14	16.42	29.70	38.26	42.98	47.31	56.26
8	-25.66	-15.75	-10.95	-5.75	3.76	18.47	33.18	42.67	47.85	52.69	62.60
9	-26.47	-15.99	-10.91	-5.38	4.65	20.21	35.77	45.80	51.33	56.41	66.89
10	-24.86	-14.35	-9.26	-3.72	6.34	21.94	37.54	47.60	53.14	58.23	68.74
11	-22.41	-12.16	-7.19	-1.73	8.03	23.25	38.47	48.29	53.59	58.66	68.91
12	-17.17	-7.95	-3.49	1.37	10.19	23.87	37.55	46.37	51.23	55.69	64.91
13	-9.88	-2.95	1.15	5.07	12.18	23.21	34.24	41.35	45.27	48.87	56.30
14	-5.54	.52	3.45	6.66	12.46	21.46	30.46	36.26	39.46	42.40	48.46
15	-4.56	.76	3.34	6.15	11.24	19.14	27.04	32.13	34.94	37.52	42.84
16	-4.33	.28	2.51	4.94	9.35	16.19	23.03	27.44	29.87	32.20	36.71
17	-5.14	-1.06	.92	3.07	6.98	13.04	19.10	23.01	25.16	27.14	31.22
18	-6.12	-2.54	-.80	1.08	4.53	9.86	15.19	18.63	20.52	22.26	25.85
19	-7.46	-4.22	-2.65	-.94	2.16	6.97	11.78	14.88	16.59	18.16	21.40
20	-8.94	-5.91	-4.44	-2.84	.06	4.56	9.06	11.96	13.56	15.03	18.06
21	-10.81	-7.69	-6.18	-4.54	-1.55	3.08	7.71	10.70	12.34	13.85	16.97
22	-12.17	-9.02	-7.50	-5.84	-2.83	1.84	6.51	9.52	11.18	12.70	15.85
23	-13.30	-10.02	-8.43	-6.70	-3.56	1.31	6.18	9.32	11.05	12.64	15.92
24	-13.59	-10.12	-8.44	-6.61	-3.29	1.86	7.01	10.33	12.16	13.84	17.31
25	-14.52	-10.70	-9.05	-6.84	-3.18	2.49	8.16	11.82	13.83	15.68	19.50
26	-15.54	-11.87	-9.35	-7.15	-3.16	3.03	9.22	13.21	15.41	17.43	21.60
27	-15.76	-11.25	-9.07	-6.69	-2.38	4.31	11.00	15.31	17.69	19.87	24.38
28	-15.99	-11.39	-9.14	-6.76	-2.32	4.52	11.35	15.76	18.19	20.42	25.03
29	-15.08	-10.26	-7.95	-5.43	-.86	6.24	13.33	17.90	20.42	22.73	27.51
30	-14.05	-9.09	-6.69	-4.02	.66	8.02	15.38	20.12	22.73	25.14	30.09
31	-12.41	-7.78	-5.35	-2.71	2.10	9.56	17.02	21.83	24.48	26.92	31.94
32	-13.71	-8.12	-5.41	-2.46	2.89	11.20	19.50	24.85	27.80	30.51	36.10
33	-12.52	-6.78	-4.00	-.38	4.51	13.02	21.53	27.02	30.05	32.82	38.56
34	-11.47	-5.45	-2.53	.65	6.41	15.35	24.29	30.06	33.23	36.05	42.18
35	-13.13	-6.23	-2.88	.75	7.36	17.60	27.85	34.45	38.09	41.43	48.34
36	-12.80	-5.62	-2.14	1.64	8.52	19.18	29.84	36.72	40.50	43.98	51.16
37	-13.19	-5.60	-1.93	2.07	9.34	20.60	31.87	39.13	43.13	46.81	54.40
38	-15.57	-7.25	-3.22	1.10	9.13	21.45	33.43	41.75	46.17	50.71	58.53
39	-17.92	-9.09	-4.82	-.17	8.28	21.39	34.49	42.94	47.59	51.87	60.69
40	-19.31	-10.20	-5.78	-.98	7.74	21.27	34.60	43.53	48.33	52.74	61.86
41	-18.76	-9.48	-5.67	-1.02	7.42	20.52	33.61	42.05	46.70	50.98	59.80
42	-18.26	-9.88	-5.82	-1.40	6.62	19.05	31.49	39.51	43.92	47.98	56.36
43	-17.09	-9.16	-5.32	-1.14	6.45	18.22	29.98	37.57	41.75	45.59	53.51
44	-18.14	-9.32	-5.53	-1.40	6.09	17.70	29.31	36.80	40.93	44.72	52.54
45	-17.87	-10.04	-6.25	-2.12	5.38	17.01	28.64	36.13	40.26	44.06	51.89
46	-18.59	-10.64	-6.79	-2.60	5.01	16.81	28.61	36.21	40.40	44.25	52.20
47	-19.38	-11.70	-7.21	-3.37	4.52	16.75	28.99	36.87	41.22	45.21	53.45
48	-20.92	-12.57	-8.53	-4.13	3.86	16.25	28.64	36.63	41.03	45.07	53.42
49	-24.56	-15.39	-13.94	-6.10	2.68	16.30	29.92	38.71	43.55	47.99	57.17
50	-27.62	-17.66	-12.83	-7.58	1.95	16.74	31.53	41.06	46.31	51.14	61.10
51	-28.05	-17.97	-13.09	-7.78	1.87	16.82	31.78	41.43	46.74	51.62	61.70
52	-26.60	-17.01	-12.37	-7.31	1.88	16.09	30.32	39.50	44.55	49.20	58.78
53	-23.11	-14.40	-10.58	-5.57	-.28	14.14	28.59	37.29	42.06	47.67	57.38
54	-30.06	-20.24	-15.49	-10.31	-.92	13.65	28.22	37.62	42.80	47.55	57.37
55	-33.26	-24.87	-19.85	-14.37	-4.43	10.98	26.39	36.33	41.80	46.83	57.21
56	-36.12	-26.34	-21.61	-16.46	-7.10	7.41	21.92	31.27	36.42	41.16	50.93
57	-42.27	-31.59	-25.42	-20.79	-13.56	5.29	21.14	31.36	36.99	42.16	52.84
58	-42.01	-32.53	-27.94	-22.94	-13.86	.21	14.28	23.36	28.36	32.95	42.43
59	-49.03	-39.16	-34.38	-29.18	-19.73	-5.06	9.57	19.02	24.22	29.00	38.87
60	-50.29	-44.02	-39.27	-33.22	-22.24	-5.22	11.81	22.78	28.83	34.39	45.85
61	-55.10	-43.85	-38.40	-32.47	-21.70	-5.00	11.70	22.47	28.40	33.85	45.10
62	-58.00	-42.95	-37.60	-31.78	-21.20	-4.80	11.60	22.18	28.00	33.35	44.40
63	-52.60	-41.95	-35.70	-30.94	-20.60	-4.50	11.60	21.94	27.70	32.95	43.30
64	-51.70	-41.06	-35.90	-30.29	-20.10	-4.30	11.50	21.69	27.30	32.46	43.10
65	-50.60	-40.16	-35.10	-29.60	-19.60	-4.10	11.40	21.43	26.80	31.96	42.[illegible]0
66	-49.50	-39.26	-34.30	-28.90	-19.10	-3.90	11.30	21.10	26.50	31.46	41.70
67	-48.40	-38.36	-33.50	-28.21	-18.60	-3.70	11.20	20.81	26.10	30.96	41.00
68	-47.20	-37.36	-32.60	-27.42	-18.00	-3.40	11.20	20.62	25.80	30.56	40.40
69	-46.10	-36.47	-31.80	-26.72	-17.50	-3.20	11.10	20.32	25.40	30.07	39.70
70	-45.00	-35.57	-31.00	-26.03	-17.00	-3.00	11.00	20.03	25.00	29.57	39.00

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 10.5. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-4.56	-2.98	-2.21	-1.38	.14	2.49	4.84	6.36	7.19	7.96	9.54
1	-9.36	-7.03	-5.90	-4.67	-2.44	1.02	4.48	6.71	7.90	9.07	11.40
2	-11.47	-8.68	-7.33	-5.86	-3.19	.95	5.09	7.76	9.23	10.58	13.37
3	-14.87	-10.92	-9.00	-6.92	-3.13	2.74	8.61	12.40	14.48	16.40	20.35
4	-16.93	-12.07	-9.72	-7.16	-2.51	4.70	11.51	16.56	19.12	21.47	26.33
5	-19.84	-13.16	-10.41	-7.42	-1.93	6.45	14.88	20.32	23.31	26.06	31.74
6	-20.54	-14.23	-11.13	-7.75	-1.62	7.89	17.40	23.53	26.91	30.01	36.42
7	-22.54	-15.41	-11.95	-8.19	-1.36	9.23	19.82	26.65	30.41	33.87	41.00
8	-23.99	-16.19	-12.41	-8.30	-.83	10.75	22.33	29.80	33.91	37.69	45.49
9	-24.85	-16.52	-12.43	-8.10	-.13	12.23	24.59	32.56	36.95	40.98	49.31
10	-24.90	-16.21	-12.00	-7.42	.90	13.80	26.70	35.02	39.60	43.81	52.50
11	-25.14	-16.09	-11.70	-6.93	1.74	15.18	28.62	37.29	42.06	46.45	55.50
12	-23.13	-12.74	-8.68	-4.26	3.77	16.22	28.67	36.70	41.12	45.18	53.57
13	-15.07	-5.02	-4.61	-.90	5.85	16.31	26.77	33.52	37.23	40.64	47.69
14	-5.47	-3.84	-1.11	1.86	7.25	15.61	23.57	29.36	32.33	35.06	40.69
15	-5.74	-1.33	.81	3.14	7.36	13.91	20.46	24.68	27.01	29.15	33.56
16	-4.98	-1.24	.57	2.59	6.12	11.67	17.22	20.80	22.77	24.58	28.32
17	-5.41	-2.19	-.63	1.07	4.15	8.93	13.71	16.79	18.49	20.06	23.27
18	-5.29	-3.36	-2.08	-.68	1.83	5.74	9.65	12.17	13.56	14.84	17.47
19	-4.00	-5.59	-4.43	-3.16	-.86	2.71	6.28	8.58	9.85	11.01	13.42
20	-10.03	-7.73	-6.62	-5.41	-3.21	.20	3.61	5.81	7.02	8.13	10.4
21	-11.65	-9.36	-8.25	-7.04	-4.85	-1.45	1.35	4.14	5.35	6.46	9.75
22	-12.26	-10.05	-8.98	-7.82	-5.70	-2.42	.66	2.58	4.14	5.21	7.42
23	-13.95	-11.46	-10.25	-8.94	-6.55	-2.85	.45	3.24	4.55	5.76	8.25
24	-15.18	-12.37	-11.01	-9.53	-6.84	-2.67	1.50	4.15	5.67	7.03	9.34
25	-15.73	-12.79	-11.36	-9.81	-6.95	-2.62	1.75	4.57	6.12	7.55	10.49
26	-17.02	-13.75	-12.16	-10.43	-7.30	-2.44	2.42	5.55	7.28	8.87	12.14
27	-19.22	-14.54	-12.76	-10.82	-7.30	-1.84	3.62	7.14	9.08	10.46	14.54
28	-22.33	-17.71	-15.48	-13.05	-8.43	-1.70	5.86	9.48	11.91	14.15	18.76
29	-22.56	-17.77	-15.46	-12.93	-8.35	-1.25	6.06	10.44	12.96	15.28	20.06
30	-21.92	-17.17	-14.60	-12.30	-7.84	-.80	6.24	10.70	13.28	15.88	20.22
31	-20.54	-16.03	-13.85	-11.47	-7.15	-.46	6.23	10.54	12.92	15.10	19.61
32	-20.01	-14.97	-13.79	-11.27	-6.73	-.01	7.35	11.60	14.30	16.40	21.42
33	-21.85	-16.77	-14.32	-11.49	-6.78	.75	6.20	13.14	15.81	18.27	23.36
34	-24.45	-18.77	-16.01	-13.02	-7.57	.87	9.31	14.76	17.76	20.58	26.19
35	-26.21	-20.14	-17.20	-14.00	-8.19	.62	9.83	15.64	18.84	21.78	27.85
36	-27.69	-21.33	-18.26	-14.98	-8.82	.01	10.09	16.13	19.40	22.54	28.91
37	-27.99	-21.60	-18.51	-15.14	-9.03	.45	9.93	16.05	19.41	22.51	28.90
38	-29.19	-22.60	-19.90	-16.14	-9.98	-.30	9.24	15.42	18.84	21.97	28.44
39	-30.02	-23.64	-20.55	-17.19	-11.09	-1.62	7.84	13.95	17.31	20.40	26.77
40	-30.04	-24.68	-21.78	-18.46	-12.56	-3.43	5.71	11.61	14.85	17.83	23.44
41	-32.73	-26.61	-23.64	-20.41	-14.54	-5.45	3.64	9.51	12.74	15.71	21.83
42	-34.22	-29.76	-26.42	-23.22	-17.02	-7.43	2.17	8.37	11.77	14.91	21.37
43	-38.25	-31.74	-28.58	-25.14	-18.78	-9.23	.44	6.48	10.12	13.28	19.79
44	-38.19	-32.81	-29.81	-26.75	-19.83	-10.60	-1.47	4.48	9.91	10.70	18.04
45	-40.00	-33.63	-30.55	-27.19	-21.09	-11.64	-2.19	3.91	7.24	10.35	16.72
46	-42.29	-35.85	-32.31	-28.70	-22.37	-12.43	-2.49	3.92	7.44	10.70	17.40
47	-45.82	-37.88	-34.42	-30.66	-23.83	-13.24	-2.64	4.19	7.75	11.40	18.54
48	-46.21	-39.87	-35.61	-31.85	-25.01	-14.41	-3.79	3.03	6.80	10.86	17.40
49	-47.74	-40.51	-37.00	-33.18	-26.24	-15.48	-4.22	2.22	6.04	9.55	16.80
50	-49.44	-42.60	-38.02	-34.64	-27.60	-16.67	-5.75	1.00	5.17	8.70	16.00
51	-51.38	-43.79	-40.12	-36.12	-28.86	-17.60	-6.35	.91	4.91	8.58	16.17
52	-53.38	-45.73	-42.03	-38.00	-30.68	-19.32	-7.99	-.46	3.38	7.06	14.73
53	-55.53	-47.18	-43.30	-39.24	-31.72	-20.07	-8.41	-.89	3.25	7.05	14.90
54	-58.39	-50.19	-46.22	-41.89	-34.04	-21.67	-9.69	-1.84	2.49	6.46	14.66
55	-62.38	-53.78	-49.61	-45.08	-36.85	-24.07	-11.32	-3.07	1.44	5.68	14.20
56	-64.00	-56.28	-52.02	-47.74	-38.16	-26.51	-13.46	-5.15	-.60	3.41	10.83
57	-73.92	-63.53	-58.49	-53.82	-43.07	-27.65	-12.22	-2.27	3.28	8.24	18.63
58	-71.46	-61.97	-57.37	-52.36	-43.27	-29.10	-16.09	-4.00	-.04	3.61	13.10
59	-65.97	-57.75	-53.77	-49.43	-41.36	-29.36	-17.16	-9.29	-4.76	-.97	7.25
60	-73.06	-64.03	-59.27	-54.00	-44.67	-30.06	-16.40	-6.07	-.06	3.00	13.71
61	-71.48	-61.83	-57.28	-52.16	-43.00	-28.88	-19.60	-5.44	-.40	4.23	13.00
62	-69.20	-59.04	-55.30	-50.36	-41.40	-27.60	-13.60	-4.63	.30	4.84	14.00
63	-66.70	-57.61	-53.20	-48.41	-39.70	-26.20	-12.70	-3.99	.80	5.21	14.30
64	-64.60	-55.61	-51.30	-46.61	-38.10	-24.90	-11.70	-3.19	1.60	5.81	14.70
65	-62.00	-53.38	-49.20	-44.65	-36.40	-23.60	-10.80	-2.55	2.00	6.10	14.80
66	-59.40	-51.05	-47.00	-42.66	-34.60	-22.20	-9.00	-1.00	2.60	6.66	15.00
67	-57.20	-49.05	-45.10	-40.80	-33.00	-20.90	-6.80	-1.00	3.30	7.25	15.40
68	-54.70	-46.82	-43.00	-38.85	-31.30	-19.00	-7.70	-.30	3.60	7.62	16.00
69	-52.50	-44.82	-41.10	-37.05	-29.70	-18.30	-6.90	.45	4.50	8.22	16.90
70	-50.00	-42.59	-39.00	-35.09	-28.00	-17.00	-4.00	1.09	5.00	8.59	16.00

TABLE 10.6. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
AF (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
1	-4.[illegible]	-[illegible].77	-[illegible]	-1.22	.29	2.51	4.38	6.24	7.05	7.75	9.32
2	-[illegible].53	-[illegible].62	-[illegible]	-4.34	-3.29	.92	4.12	6.13	7.32	8.36	10.52
3	-11.79	-8.[illegible]	-7.[illegible]	-6.[illegible]	-3.38	.80	4.50	7.68	9.[illegible]	10.52	
4	-13.72	-[illegible]	-[illegible]	-5.04	-3.35	1.37	3.69	11.79	13.51	15.89	19.53
5	-23.80	-[illegible]	-[illegible]	-7.47	-5.99	4.12	10.28	15.47	17.99	20.21	24.90
6	-17.7[illegible]	-12.43	-[illegible]	-7.[illegible]	-2.10	5.73	13.56	18.61	[illegible].39	23.94	29.22
7	-26.[illegible]	-12.[illegible]	-[illegible]	-7.07	-2.40	7.35	16.38	21.85	24.97	27.84	33.76
8	-[illegible]	-13.75	-[illegible]	-7.[illegible]	-.74	9.07	15.33	25.21	28.69	31.89	38.50
9	-[illegible]	-15.[illegible]	-[illegible]	-7.72	-.50	10.71	21.02	25.15	32.13	36.74	44.38
10	-[illegible]	-1[illegible]	-[illegible]	-7.72	.15	12.36	24.56	32.43	35.76	40.74	49.26
11	-26.[illegible]	-25.[illegible]	-[illegible]	-7.[illegible]	1.28	14.12	26.[illegible]	35.20	38.80	[illegible].95	52.64
12	-[illegible]	-1[illegible]	-[illegible]	-[illegible]	2.17	15.19	32.[illegible]7	37.43	42.04	46.27	55.01
13	-[illegible]	-27.22	-[illegible]	-[illegible]	3.08	17.97	31.[illegible]	39.24	43.83	48.05	50.76
14	-13.[illegible]	-3.[illegible]	-[illegible]	-[illegible]	4.[illegible]	17.95	23.45	36.87	40.95	44.70	52.45
15	-[illegible]	-[illegible]	-[illegible]	.77	6.[illegible]	25.57	25.[illegible]	31.15	34.47	37.85	43.72
16	-[illegible]	-[illegible]	-[illegible]	.53	5.42	22.32	20.22	24.99	27.62	30.03	35.22
17	-[illegible]	-[illegible]	-[illegible]	-.87	2.[illegible]	8.34	14.[illegible]	19.35	20.38	22.25	26.10
18	-7.[illegible]	-[illegible]	-[illegible]	-[illegible]	-.21	4.37	3.72	12.30	14.49	16.24	19.75
19	-10.[illegible]	-7.[illegible]	-[illegible]	-5.[illegible]	-[illegible]	1.[illegible]	4.71	7.31	8.42	9.62	12.11
20	-[illegible]	-3.[illegible]	-[illegible]	-[illegible]	-1.17	-1.39	1.74	3.42	4.57	5.62	7.30
21	-[illegible]	-[illegible]	-[illegible]	-[illegible]	-3.01	-4.[illegible]	-1.[illegible]	.82	1.87	2.84	4.23
22	-[illegible]	-12.[illegible]	-[illegible]	-[illegible]	-[illegible]	-5.52	-2.[illegible]	-.73	.30	1.25	3.21
23	-15.28	-1[illegible]	-[illegible]	-21.[illegible]	-[illegible]	-6.82	-3.58	-2.24	-1.13	-.20	1.72
24	-17.32	-1[illegible]	-[illegible]	-23.05	-[illegible]	-7.33	-4.79	-2.72	-1.61	-.99	1.53
25	-1[illegible]	-1[illegible]	-[illegible]	-[illegible]	-[illegible]	-8.52	-5.[illegible]	-3.[illegible]	-1.[illegible]	-.44	1.38
26	-13.22	-1[illegible]	-[illegible]	-15.14	-12.45	-9.33	-5.20	-3.02	-2.27	-1.12	1.26
27	-2[illegible]	-18.27	-[illegible]	-[illegible]	-[illegible]	-9.[illegible]	-6.[illegible]	-4.[illegible]	-2.71	-1.53	.91
28	-21.21	-1[illegible]	-[illegible]	-16.24	-[illegible]	-10.03	-6.[illegible]	-3.34	-2.61	-1.39	1.13
29	-29.08	-25.02	-[illegible]	-20.32	-17.09	-11.02	-5.00	-1.12	1.02	2.93	7.03
30	-30.40	-26.[illegible]	-[illegible]	-21.74	-17.62	-11.23	-4.64	-.72	1.54	3.63	7.93
31	-30.33	-26.59	-[illegible]	-22.23	-1[illegible].11	-11.72	-5.33	-1.21	1.06	3.14	7.45
32	-31.45	-27.1[illegible]	-[illegible]	-22.75	-18.60	-12.18	-5.76	-1.62	.66	2.76	7.09
33	-31.70	-27.36	-26.23	-23.02	-18.89	-12.48	-6.02	-1.94	.33	2.42	6.74
34	-31.70	-27.43	-25.[illegible]	-23.07	-18.97	-12.60	-6.[illegible]	-2.13	.14	2.21	6.50
35	-31.75	-27.55	-25.51	-23.30	-19.27	-13.02	-6.79	-2.72	-.55	1.42	5.69
36	-34.91	-31.34	-2[illegible].1[illegible]	-25.72	-21.74	-14.55	-7.7[illegible]	-3.28	-.57	1.24	5.02
37	-36.70	-32.05	-2[illegible].60	-27.34	-22.39	-15.93	-8.[illegible]	-4.62	-2.17	.08	4.74
38	-38.52	-34.16	-[illegible].85	-[illegible].34	-24.78	-17.71	-10.64	-6.08	-3.57	-1.26	3.50
39	-42.05	-36.94	-34.47	-31.77	-2[illegible].88	-19.29	-11.71	-6.31	-4.12	-1.64	3.47
40	-39.91	-35.62	-[illegible].65	-21.42	-27.38	-21.11	-14.65	-10.31	-8.58	-6.54	-2.31
41	-42.33	-38.33	-3[illegible].24	-33.77	-23.46	-22.77	-16.09	-11.77	-9.40	-7.21	-2.71
42	-46.02	-41.23	-3[illegible].90	-36.37	-31.78	-24.65	-17.53	-12.94	-10.41	-8.08	-3.28
43	-51.06	-45.54	-42.36	-39.94	-34.65	-26.44	-18.23	-12.34	-10.03	-7.35	-1.82
44	-50.55	-45.78	-42.28	-40.55	-35.60	-27.92	-20.24	-15.25	-12.56	-10.06	-4.88
45	-55.00	-49.49	-46.32	-43.92	-33.65	-30.47	-22.30	-17.02	-14.13	-11.46	-5.95
46	-57.67	-52.00	-4[illegible].26	-46.27	-40.85	-32.45	-24.14	-19.02	-15.63	-12.45	-7.22
47	-59.51	-53.00	-50.33	-47.43	-42.16	-33.38	-25.82	-20.54	-17.63	-14.97	-9.46
48	-58.72	-53.35	-50.74	-47.91	-42.76	-34.78	-26.80	-21.65	-18.82	-16.21	-10.84
49	-60.51	-54.96	-52.23	-49.36	-44.05	-35.82	-27.59	-22.28	-19.36	-16.67	-11.13
50	-63.17	-57.28	-54.42	-51.31	-45.67	-36.91	-28.16	-22.58	-19.41	-16.55	-10.65
51	-68.39	-61.66	-53.39	-54.34	-48.39	-38.38	-28.38	-21.93	-18.38	-15.11	-8.37
52	-74.37	-66.77	-63.09	-59.08	-51.80	-40.52	-29.23	-21.26	-17.95	-14.27	-6.66
53	-82.02	-73.10	-6[illegible].78	-64.03	-55.55	-42.32	-29.09	-20.58	-15.86	-11.54	-2.63
54	-88.24	-78.22	-7[illegible].37	-68.09	-58.51	-43.64	-28.77	-19.18	-13.90	-9.05	.96
55	-86.52	-77.07	-72.49	-67.51	-59.46	-44.42	-30.39	-21.34	-16.36	-11.28	-2.33
56	-86.60	-77.38	-72.51	-68.05	-59.22	-45.53	-31.84	-23.01	-18.14	-13.68	-4.45
57	-89.80	-80.13	-75.51	-70.44	-51.23	-46.35	-32.68	-23.45	-18.38	-13.21	-4.09
58	-88.06	-79.30	-75.[illegible]5	-70.43	-6[illegible].05	-49.64	-36.03	-27.64	-23.03	-18.78	-10.02
59	-89.54	-81.17	-77.12	-72.70	-64.69	-52.26	-39.84	-31.83	-27.41	-23.36	-14.99
60	-86.29	-78.79	-75.16	-71.20	-64.02	-52.89	-41.75	-34.57	-30.62	-26.98	-19.48
61	-92.55	-84.34	-80.26	-76.04	-68.13	-56.00	-43.81	-35.99	-31.63	-27.65	-19.44
62	-90.60	-82.45	-78.51	-74.20	-66.40	-54.30	-42.20	-34.40	-30.10	-26.15	-18.00
63	-93.60	-80.52	-76.60	-72.34	-64.60	-52.60	-40.60	-32.86	-28.60	-24.68	-16.60
64	-86.30	-78.35	-74.30	-70.31	-62.74	-50.90	-39.10	-31.49	-27.30	-23.45	-15.50
65	-84.30	-76.42	-72.60	-68.45	-60.90	-49.20	-37.50	-29.95	-25.80	-21.94	-14.10
66	-82.30	-74.49	-7[illegible].70	-66.58	-59.10	-47.50	-35.50	-28.42	-24.30	-20.51	-12.70
67	-80.30	-72.55	-68.80	-64.72	-57.30	-45.80	-34.30	-26.88	-22.80	-19.05	-11.30
68	-78.30	-70.62	-6[illegible].90	-62.85	-55.50	-44.10	-32.70	-25.35	-21.30	-17.58	-9.90
69	-76.00	-68.45	-5[illegible].80	-60.82	-53.60	-42.40	-31.20	-23.98	-20.00	-16.35	-8.80
70	-74.60	-66.52	-5[illegible].90	-58.96	-51.80	-40.70	-29.60	-22.44	-18.50	-14.88	-7.40
71	-72.00	-64.53	-61.00	-57.09	-50.00	-39.00	-28.00	-20.91	-17.00	-13.41	-6.00

ORIGINAL PAGE IS OF POOR QUALITY

TABLE 10.7. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.53	-2.27	-1.46	-1.00	.21	2.08	3.95	5.16	5.82	6.43	7.69
1	-7.95	-6.72	-5.88	-3.97	-2.31	.26	2.83	4.49	5.90	6.24	7.97
2	-9.51	-7.46	-6.47	-5.39	-3.43	-.39	2.65	4.61	5.69	6.48	8.73
3	-11.11	-8.97	-7.19	-5.86	-3.27	.45	3.57	7.10	8.59	9.72	12.91
4	-12.67	-9.45	-7.92	-6.28	-3.22	1.48	6.18	9.21	10.88	12.41	15.58
5	-13.08	-10.10	-8.98	-6.55	-3.20	2.00	7.28	10.55	12.90	14.10	17.00
6	-14.99	-11.09	-9.12	-7.09	-3.25	2.42	8.49	12.28	14.36	16.28	20.23
7	-15.75	-11.95	-9.37	-7.11	-3.00	3.37	9.79	13.85	16.11	18.19	22.98
8	-17.13	-12.28	-9.93	-7.37	-2.73	4.47	11.67	16.31	18.87	21.22	26.07
9	-18.38	-13.00	-10.96	-7.57	-2.52	5.56	13.54	18.67	21.52	24.12	29.50
10	-20.11	-14.11	-11.20	-8.09	-2.29	6.62	15.53	21.28	24.44	27.35	33.35
11	-20.55	-15.19	-11.69	-7.66	-1.53	7.98	17.49	23.62	27.00	30.10	36.91
12	-20.01	-13.52	-12.38	-6.96	-.75	8.88	18.51	24.72	28.14	31.28	37.77
13	-18.54	-12.29	-9.27	-5.99	+.03	9.21	18.95	24.91	27.79	30.71	36.93
14	-14.60	-11.01	-8.30	-5.35	.60	8.30	16.40	21.95	24.70	27.41	33.20
15	-15.85	-10.17	-7.94	-5.47	-1.03	5.88	12.79	17.25	19.70	21.95	26.41
16	-12.54	-9.17	-7.54	-5.76	-2.54	2.46	7.46	10.60	12.46	14.09	17.46
17	-12.12	-9.54	-8.32	-6.97	-3.52	-.72	3.68	5.53	6.88	8.12	10.68
18	-12.94	-10.89	-9.80	-8.67	-4.42	-3.49	-.24	1.79	2.92	3.96	6.10
19	-13.27	-11.55	-10.72	-9.81	-6.17	-5.62	-3.07	-1.93	-.52	.31	2.03
20	-14.52	-12.92	-12.14	-11.29	-9.76	-7.38	-5.00	-3.47	-2.62	-1.84	-.24
21	-14.54	-14.68	-13.67	-13.19	-11.58	-9.09	-6.60	-5.99	-5.11	-3.30	-1.62
22	-17.84	-16.22	-15.44	-14.59	-13.04	-10.49	-8.23	-6.69	-5.84	-5.06	-3.44
23	-19.79	-18.00	-17.15	-16.23	-14.56	-11.97	-9.38	-7.71	-6.79	-5.94	-4.28
24	-21.11	-19.33	-18.47	-17.53	-15.83	-13.19	-10.55	-8.85	-7.91	-7.05	-5.27
25	-22.65	-20.28	-19.07	-18.08	-17.09	-14.31	-11.53	-9.74	-8.75	-7.84	-6.97
26	-23.98	-21.58	-20.46	-19.46	-17.84	-15.02	-12.20	-10.38	-9.38	-8.46	-6.56
27	-25.39	-22.39	-21.42	-20.34	-18.94	-15.52	-12.58	-10.68	-9.64	-8.68	-6.72
28	-26.69	-24.60	-23.60	-22.50	-20.51	-17.03	-14.35	-12.30	-11.27	-10.26	-8.18
29	-29.63	-27.14	-25.93	-24.62	-22.23	-18.53	-14.83	-12.54	-11.12	-9.92	-7.42
30	-31.13	-28.58	-27.31	-25.94	-23.44	-19.56	-15.68	-13.18	-11.80	-10.94	-7.92
31	-30.65	-28.33	-27.21	-25.98	-23.76	-20.32	-16.87	-14.65	-13.42	-12.30	-9.98
32	-31.41	-29.03	-27.88	-26.63	-24.36	-20.83	-17.30	-15.03	-13.78	-12.63	-10.25
33	-32.88	-30.27	-29.00	-27.63	-25.13	-21.26	-17.38	-14.88	-13.51	-12.25	-9.64
34	-34.71	-31.82	-30.42	-28.90	-26.14	-21.85	-17.52	-14.81	-13.28	-11.89	-9.00
35	-35.65	-33.66	-32.20	-30.62	-27.76	-23.31	-18.86	-15.99	-14.41	-12.95	-9.96
36	-36.59	-33.87	-32.56	-31.12	-28.52	-24.49	-19.16	-17.88	-16.43	-15.11	-12.40
37	-38.08	-35.38	-34.07	-32.64	-30.05	-26.03	-22.01	-19.42	-17.99	-16.68	-13.97
38	-40.45	-37.91	-36.09	-34.55	-31.74	-27.38	-23.03	-20.22	-18.68	-17.26	-14.32
39	-41.28	-38.50	-37.15	-35.69	-33.03	-28.90	-24.77	-22.11	-20.65	-19.30	-16.52
40	-42.06	-39.49	-38.25	-36.89	-34.43	-30.62	-26.80	-24.34	-22.98	-21.74	-19.17
41	-45.00	-42.30	-41.00	-39.57	-36.99	-32.99	-28.98	-26.40	-24.98	-23.67	-20.97
42	-49.20	-46.13	-44.64	-43.03	-40.09	-35.53	-30.97	-28.03	-26.41	-24.92	-21.85
43	-54.14	-50.54	-48.79	-46.90	-43.45	-38.10	-32.76	-29.31	-27.41	-25.67	-22.07
44	-57.62	-53.84	-52.01	-50.01	-46.39	-40.78	-35.18	-31.54	-29.54	-27.71	-23.93
45	-60.28	-56.26	-54.32	-52.20	-48.35	-42.39	-36.43	-32.58	-30.47	-28.52	-24.50
46	-61.87	-57.82	-55.86	-53.73	-49.85	-43.84	-37.83	-33.99	-31.82	-29.86	-25.81
47	-60.73	-57.78	-55.60	-53.78	-50.47	-45.34	-40.21	-36.90	-35.08	-33.40	-29.95
48	-60.82	-57.67	-56.14	-54.47	-51.45	-46.76	-42.08	-39.09	-37.39	-35.86	-32.70
49	-62.83	-59.52	-57.92	-56.18	-53.01	-48.10	-43.19	-40.02	-38.28	-36.58	-33.37
50	-66.71	-62.78	-60.87	-58.80	-55.03	-49.19	-43.35	-39.58	-37.51	-35.60	-31.67
51	-70.13	-65.90	-63.86	-61.63	-57.58	-51.31	-45.04	-40.29	-38.76	-36.72	-32.49
52	-75.98	-70.90	-68.44	-65.72	-60.90	-53.37	-45.83	-40.97	-38.29	-35.84	-30.76
53	-77.40	-72.25	-69.75	-67.04	-62.11	-54.47	-46.82	-41.89	-39.18	-36.60	-31.53
54	-79.35	-74.06	-71.50	-68.71	-63.64	-55.79	-47.93	-42.82	-40.08	-37.51	-32.22
55	-81.41	-76.13	-73.58	-70.79	-65.74	-57.90	-50.06	-45.00	-42.22	-39.66	-34.38
56	-84.76	-82.43	-79.36	-76.02	-69.96	-60.56	-51.16	-45.10	-41.76	-38.69	-32.36
57	-91.95	-85.45	-82.31	-78.88	-72.67	-63.02	-53.38	-47.16	-43.74	-40.69	-34.10
58	-93.62	-87.17	-84.04	-80.64	-74.46	-64.89	-55.31	-49.13	-45.73	-42.60	-36.15
59	-103.07	-94.50	-91.94	-86.64	-78.01	-66.60	-54.55	-46.73	-42.42	-38.46	-30.29
60	-96.13	-91.38	-79.08	-76.58	-72.03	-64.98	-57.93	-53.39	-50.88	-48.38	-41.53
61	-84.00	-79.35	-77.10	-74.65	-70.20	-63.30	-56.40	-51.95	-49.50	-47.25	-42.60
62	-81.70	-77.19	-75.00	-72.62	-68.30	-61.60	-54.90	-50.58	-48.20	-46.01	-41.50
63	-78.40	-75.02	-72.90	-70.59	-66.40	-59.90	-53.40	-49.21	-46.90	-44.78	-40.40
64	-77.10	-72.86	-70.80	-68.50	-64.50	-58.20	-51.90	-47.84	-45.60	-43.54	-39.30
65	-74.80	-70.69	-68.70	-66.53	-62.60	-56.50	-50.40	-46.47	-44.30	-42.31	-38.20
66	-72.20	-68.29	-66.40	-64.34	-60.60	-54.80	-49.00	-45.26	-43.20	-41.31	-37.40
67	-69.90	-66.13	-64.30	-62.31	-58.70	-53.10	-47.50	-43.89	-41.90	-40.07	-36.30
68	-67.60	-63.96	-62.20	-60.28	-56.80	-51.40	-46.00	-42.52	-40.60	-38.84	-35.20
69	-65.30	-61.80	-60.10	-58.25	-54.90	-49.70	-44.50	-41.15	-39.30	-37.60	-34.10
70	-63.00	-59.63	-58.00	-56.22	-53.00	-48.00	-43.00	-39.78	-38.00	-36.37	-33.00

TABLE 10.8. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.19	-2.76	-2.09	-1.36	-.09	2.01	5.06	5.38	6.11	6.76	8.16
1	-7.61	-5.70	-4.03	-3.60	-2.18	.63	3.21	4.94	5.89	6.76	8.67
2	-9.44	-7.29	-6.25	-5.12	-3.06	.13	3.32	5.38	6.61	7.65	9.70
3	-10.69	-7.99	-6.70	-5.30	-2.76	1.18	5.12	7.66	9.06	10.35	13.00
4	-12.16	-9.09	-7.53	-5.69	-2.90	1.73	6.36	9.35	10.99	12.50	15.62
5	-14.32	-10.86	-8.74	-6.76	-3.16	2.42	8.06	11.60	13.58	15.40	17.16
6	-15.92	-11.16	-9.10	-6.66	-2.78	3.59	9.86	13.94	16.18	18.24	22.50
7	-16.19	-11.44	-9.17	-6.69	-2.20	4.77	11.79	16.23	18.71	20.98	25.68
8	-16.26	-11.22	-8.78	-6.12	-1.30	6.18	13.66	18.43	21.19	23.58	28.62
9	-16.56	-11.10	-8.46	-5.58	-.36	7.74	15.84	21.06	23.94	26.58	32.04
10	-16.98	-11.13	-8.29	-5.20	.40	9.09	17.78	23.38	26.47	29.31	35.16
11	-17.42	-11.16	-8.13	-4.63	1.16	10.45	19.79	25.73	29.03	32.06	38.32
12	-16.20	-10.09	-7.05	-3.80	2.10	11.25	20.90	26.30	29.55	32.54	38.70
13	-15.92	-10.08	-7.25	-4.17	1.42	10.09	19.76	24.36	27.43	30.26	36.10
14	-12.63	-7.68	-5.19	-2.48	2.35	9.89	17.33	22.16	24.82	27.26	32.31
15	-11.46	-7.22	-5.17	-2.94	1.12	7.41	13.70	17.76	19.99	22.04	25.78
16	-12.11	-8.51	-6.77	-4.87	-1.43	3.91	9.26	12.69	14.59	16.33	19.53
17	-12.78	-9.87	-8.46	-6.93	-4.19	.18	4.56	7.29	8.82	10.23	13.19
18	-13.31	-10.95	-9.81	-8.57	-6.31	-2.81	.69	2.45	4.19	5.33	7.69
19	-14.81	-12.55	-11.60	-10.46	-8.39	-5.18	-1.97	.10	1.29	2.29	4.45
20	-15.79	-13.78	-12.65	-11.09	-10.00	-7.15	-4.30	-2.46	-1.45	-.62	1.90
21	-17.16	-15.22	-14.26	-13.26	-11.91	-8.64	-5.67	-3.82	-2.80	-1.66	.07
22	-19.16	-17.15	-16.18	-15.12	-13.26	-10.22	-7.29	-5.32	-4.26	-3.29	-1.28
23	-20.90	-18.43	-17.47	-16.43	-14.54	-11.61	-8.66	-6.79	-5.76	-4.79	-2.82
24	-21.62	-19.60	-18.62	-17.65	-15.62	-12.62	-9.62	-7.69	-6.62	-5.64	-3.62
25	-22.89	-20.85	-19.86	-18.78	-16.83	-13.80	-10.77	-8.82	-7.74	-6.75	-4.71
26	-23.59	-21.49	-20.49	-19.41	-17.49	-14.39	-11.39	-9.37	-8.29	-7.29	-5.24
27	-24.87	-22.65	-21.58	-20.41	-18.29	-15.00	-11.71	-9.59	-8.42	-7.35	-5.13
28	-24.15	-25.60	-24.25	-22.99	-20.51	-16.66	-12.62	-10.34	-8.98	-7.72	-5.13
29	-28.70	-26.10	-24.85	-23.48	-21.00	-17.15	-13.20	-10.82	-9.45	-8.19	-5.60
30	-28.16	-25.82	-24.69	-23.46	-21.22	-17.75	-14.28	-12.04	-10.81	-9.68	-7.34
31	-30.15	-27.54	-26.27	-24.98	-22.37	-18.47	-14.58	-12.07	-10.68	-9.41	-6.79
32	-31.70	-28.83	-27.45	-25.94	-22.26	-18.55	-14.70	-11.56	-10.45	-9.06	-6.20
33	-33.66	-30.43	-28.86	-27.16	-24.07	-19.29	-14.49	-11.40	-9.69	-9.23	-4.30
34	-33.91	-30.57	-28.95	-27.18	-23.98	-19.11	-14.14	-10.94	-9.08	-7.46	-4.11
35	-33.23	-30.07	-28.54	-26.88	-23.35	-19.16	-14.46	-11.44	-9.77	-8.24	-5.08
36	-35.80	-32.25	-30.52	-28.65	-25.25	-19.58	-14.71	-11.31	-9.44	-7.72	-4.27
37	-38.52	-34.66	-32.73	-30.76	-27.07	-21.34	-15.62	-11.92	-9.89	-8.02	-4.17
38	-40.67	-36.63	-34.67	-32.54	-28.67	-22.67	-16.67	-12.80	-10.67	-8.71	-4.67
39	-42.22	-38.10	-36.11	-33.94	-30.00	-23.69	-17.79	-13.35	-11.68	-9.69	-5.57
40	-43.70	-39.51	-37.48	-35.27	-31.25	-25.13	-18.60	-14.75	-12.58	-10.55	-6.36
41	-46.18	-41.73	-39.65	-37.33	-33.12	-26.59	-20.06	-15.84	-13.52	-11.39	-6.99
42	-49.69	-44.99	-42.72	-40.24	-35.75	-28.77	-21.60	-17.20	-14.82	-12.55	-7.85
43	-54.31	-49.01	-46.44	-43.64	-38.55	-30.69	-22.82	-17.74	-14.94	-12.37	-7.07
44	-59.02	-53.06	-50.18	-47.04	-41.35	-32.51	-23.67	-17.96	-14.84	-11.96	-6.00
45	-62.70	-56.19	-53.04	-49.61	-43.38	-33.72	-24.06	-17.84	-14.41	-11.25	-4.75
46	-65.06	-58.33	-55.06	-51.51	-45.07	-35.07	-25.07	-18.62	-15.07	-11.81	-5.08
47	-65.87	-59.10	-55.62	-52.25	-45.76	-35.71	-25.65	-19.17	-15.60	-12.31	-5.54
48	-66.15	-59.45	-56.20	-52.67	-46.26	-36.31	-26.36	-19.54	-16.41	-13.16	-6.46
49	-66.34	-59.77	-56.59	-53.13	-46.93	-37.08	-27.33	-21.03	-17.57	-14.39	-7.32
50	-67.50	-60.84	-57.61	-54.10	-47.72	-37.83	-27.54	-21.56	-18.05	-14.82	-8.16
51	-69.38	-62.49	-59.15	-55.52	-48.92	-38.70	-28.47	-21.92	-18.24	-14.91	-8.02
52	-73.63	-65.95	-62.24	-58.15	-50.85	-39.46	-28.67	-20.72	-16.68	-12.96	-5.29
53	-76.75	-69.40	-64.36	-59.97	-51.98	-39.60	-27.21	-19.23	-14.83	-10.79	-2.45
54	-82.39	-72.92	-66.33	-62.35	-54.28	-40.22	-26.18	-17.12	-12.13	-7.54	1.92
55	-84.63	-75.02	-70.35	-65.30	-56.10	-41.83	-27.56	-18.38	-13.29	-8.03	.98
56	-85.20	-75.32	-70.55	-65.33	-55.87	-41.21	-26.54	-17.08	-14.07	-7.09	2.79
57	-85.80	-75.74	-70.47	-65.52	-55.94	-41.31	-26.07	-16.44	-11.14	-6.27	3.79
58	-88.73	-77.35	-72.83	-65.84	-56.94	-38.54	-21.15	-10.25	-4.25	1.26	[illegible]
59	-93.78	-81.20	-75.10	-69.47	-56.43	-37.76	-19.09	-7.05	-.42	5.67	[illegible]
60	-104.46	-85.13	-83.70	-73.62	-58.95	-36.26	-13.44	1.23	8.31	16.73	[illegible]
61	-97.50	-83.35	-76.50	-69.04	-55.50	-34.50	-13.50	.04	7.50	14.35	28.50
62	-90.40	-77.46	-71.20	-64.38	-52.00	-32.80	-13.00	-1.22	5.60	11.86	24.80
63	-83.20	-71.48	-65.80	-59.62	-48.40	-31.00	-13.60	-2.38	3.80	9.49	21.20
64	-76.40	-65.82	-61.70	-55.12	-45.00	-29.30	-13.60	-3.48	2.10	7.22	17.80
65	-69.30	-59.94	-55.40	-50.48	-41.50	-27.60	-13.70	-4.74	.20	4.74	14.10
66	-62.20	-54.05	-50.20	-45.80	-38.00	-25.90	-13.60	-6.00	-1.70	2.25	10.40
67	-55.10	-48.16	-44.80	-41.14	-34.50	-24.20	-13.90	-7.28	-3.60	-.24	6.70
68	-48.20	-42.41	-39.60	-36.58	-31.00	-22.40	-13.80	-8.25	-5.20	-2.39	3.40
69	-41.10	-36.52	-34.30	-31.89	-27.50	-20.70	-13.90	-9.51	-7.10	-4.88	-.30
70	-34.00	-30.63	-29.00	-27.22	-24.00	-19.00	-14.00	-10.78	-9.00	-7.37	-4.00

TABLE 10.9. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.15	-3.61	-2.86	-2.05	-.57	1.72	4.01	5.49	6.30	7.05	8.59
1	-9.39	-7.19	-6.23	-5.17	-3.31	-.42	2.47	4.33	5.34	6.30	8.25
2	-12.85	-10.09	-8.76	-7.31	-4.67	-.58	3.51	6.15	7.40	8.93	11.69
3	-15.35	-11.69	-9.84	-7.88	-4.33	1.18	6.69	8.25	12.20	14.00	17.71
4	-17.33	-12.82	-13.65	-8.29	-4.00	2.65	9.30	13.59	15.95	18.12	22.40
5	-18.66	-13.57	-11.13	-8.42	-3.59	4.02	11.58	16.46	19.14	21.61	26.70
6	-20.20	-14.44	-11.71	[illegible]	-3.22	5.27	13.76	19.24	22.25	25.02	30.74
7	-21.96	-15.52	-12.40	[illegible]	-2.84	6.72	16.28	22.45	25.84	28.96	35.40
8	-23.49	-16.48	-12.99	-9.19	-2.29	8.41	19.11	26.01	29.81	33.30	40.51
9	-25.93	-17.73	-13.83	-9.53	-1.77	10.26	22.29	30.65	34.32	38.25	46.35
10	-27.58	-18.61	-14.27	-9.59	-.96	12.35	25.66	34.29	38.97	43.31	52.28
11	-27.86	-19.30	-13.67	-9.63	.52	14.71	28.90	38.05	43.09	47.72	57.28
12	-25.11	-15.77	-11.29	-6.31	2.63	16.50	30.37	39.31	44.24	48.77	58.11
13	-21.24	-12.69	-8.46	-3.91	4.36	17.18	30.02	38.27	42.82	47.00	55.64
14	-15.29	-8.33	-4.91	-1.22	5.47	15.85	26.23	32.92	36.61	40.00	46.99
15	-12.91	-6.73	-3.98	-.99	4.45	12.88	21.31	26.75	29.74	32.49	38.17
16	-12.78	-7.79	-5.38	-2.75	2.02	9.42	16.82	21.59	24.22	26.63	31.62
17	-12.28	-8.27	-6.33	-4.22	-.38	5.57	11.52	15.36	17.47	19.41	23.42
18	-12.74	-9.36	-7.72	-5.99	-2.73	2.32	7.39	10.58	12.36	14.00	17.38
19	-12.97	-10.79	-8.62	-7.08	-4.27	.08	4.43	7.24	8.78	10.20	13.13
20	-13.72	-11.30	-9.49	-8.26	-5.66	-1.63	2.49	5.00	6.43	7.74	10.46
21	-14.47	-11.47	-12.61	-9.24	-6.75	-2.49	.97	3.46	4.83	6.09	8.69
22	-14.62	-14.25	-11.12	-9.45	-7.58	-4.06	-.54	1.73	2.98	4.13	6.50
23	-16.54	-13.95	-12.67	-11.32	-9.84	-4.99	-1.14	1.34	2.71	3.97	6.56
24	-17.98	-14.84	-13.56	-12.17	-9.64	-5.72	-1.80	.73	2.12	3.40	6.04
25	-18.66	-15.39	-14.53	-13.06	-10.38	-6.23	-2.78	[illegible]	[illegible]	3.42	6.22
26	-20.39	-17.31	-15.42	-14.20	-11.25	-6.48	-2.11	.85	2.46	3.95	7.03
27	-21.95	-14.54	-14.95	-15.17	-11.95	-6.95	-1.95	1.27	3.05	4.68	8.05
28	-22.78	-19.33	-17.67	-15.85	-12.55	-7.49	-2.33	.97	2.79	4.46	7.98
29	-23.03	-19.48	-17.77	-15.90	-12.50	-7.29	-1.97	1.42	3.29	5.01	8.56
30	-24.34	-20.46	-18.58	-16.53	-12.82	-7.06	-1.29	2.42	4.47	6.35	10.23
31	-26.53	-22.21	-20.12	-17.89	-13.71	-7.30	-.88	3.26	5.53	7.62	11.94
32	-26.67	-22.24	-20.12	-17.79	-13.56	-7.00	-.45	3.78	6.11	8.25	12.66
33	-26.42	-21.88	-19.69	-17.29	-12.95	-6.21	.82	4.86	7.26	9.45	13.99
34	-25.95	-21.31	-19.07	-16.63	-12.20	-5.32	1.56	5.99	8.43	10.67	15.31
35	-25.20	-20.56	-18.32	-15.87	-11.43	-4.65	2.33	6.77	9.22	11.46	16.10
36	-25.56	-20.74	-18.40	-15.85	-11.22	-4.09	3.19	7.77	10.32	12.66	17.50
37	-27.19	-21.98	-19.45	-16.70	-11.71	-3.97	3.77	8.77	11.52	14.09	19.24
38	-29.34	-23.81	-21.13	-18.21	-12.91	-4.70	3.51	8.81	11.73	14.41	19.94
39	-22.96	-24.46	-23.56	-20.90	-14.66	-5.77	3.13	8.87	12.02	14.93	20.92
40	-32.84	-26.77	-23.82	-20.62	-14.81	-5.80	3.21	9.02	12.22	15.17	21.29
41	[illegible]	-28.49	-25.31	-21.85	-15.56	-5.82	3.93	10.21	13.68	16.86	23.42
42	-37.91	-30.33	-26.91	-23.18	-16.90	-5.90	4.61	11.38	15.11	18.54	25.41
43	-37.61	-30.67	-27.31	-23.65	-17.01	-6.72	3.58	10.22	13.88	17.24	24.17
44	-38.30	-31.43	-28.10	-24.42	-17.91	-7.71	2.49	9.07	12.69	16.01	22.78
45	-41.11	-33.79	-30.17	-26.29	-19.23	-8.29	2.65	9.70	13.59	17.15	24.62
46	-42.17	-34.56	-30.88	-26.86	-19.58	-8.29	3.01	10.29	14.30	17.99	26.60
47	-43.06	-35.13	-31.29	-27.11	-19.52	-7.79	4.03	11.62	15.30	19.64	27.58
48	-44.99	-36.53	-32.43	-27.97	-19.87	-7.32	5.24	13.34	17.80	21.89	30.35
49	-47.85	-38.62	-34.15	-29.29	-20.46	-6.76	6.93	15.77	20.63	25.10	34.33
50	-49.89	-40.12	-35.38	-30.23	-20.87	-6.36	8.15	17.61	22.66	27.39	37.17
51	-50.53	-40.60	-35.80	-30.56	-21.06	-6.33	8.40	17.90	23.13	27.93	37.86
52	-51.47	-41.37	-36.48	-31.16	-21.49	-6.49	8.50	18.17	23.49	28.39	38.47
53	-50.94	-40.69	-35.71	-30.28	-20.49	-6.17	10.10	19.95	25.37	30.36	40.49
54	-49.53	-39.18	-34.16	-28.70	-18.78	-3.41	11.97	21.88	27.34	32.36	42.72
55	-48.93	-38.40	-33.30	-27.74	-17.66	-2.02	13.61	23.70	29.25	34.35	44.89
56	-49.47	-38.74	-33.53	-27.87	-17.59	-1.66	14.28	24.54	30.22	35.43	46.16
57	-46.80	-36.36	-31.31	-25.81	-15.82	-.33	15.16	25.15	30.65	35.70	46.14
58	-42.20	-31.77	-26.72	-21.22	-11.24	4.23	19.71	29.69	35.18	40.23	50.66
59	-41.71	-30.85	-25.59	-19.87	-9.48	6.63	22.75	33.14	38.86	44.12	54.98
60	-51.65	-38.09	-31.44	-24.27	-11.23	8.98	29.19	42.22	49.40	56.99	69.60
61	-50.60	-37.33	-30.90	-23.90	-11.20	8.50	28.20	40.90	47.90	54.33	67.60
62	-49.60	-36.66	-30.40	-23.50	-11.20	8.00	27.20	39.58	46.40	52.66	65.60
63	-48.90	-36.23	-30.10	-23.42	-11.30	7.50	26.30	38.42	45.10	51.23	62.90
64	-47.90	-35.67	-29.60	-23.10	-11.30	7.00	25.30	37.10	43.60	49.67	61.90
65	-46.90	-34.91	-29.10	-22.78	-11.30	6.50	24.30	35.78	42.10	47.91	59.90
66	-45.90	-34.24	-28.60	-22.46	-11.30	6.00	23.30	34.46	40.60	46.24	57.90
67	-44.90	-33.58	-28.10	-22.13	-11.30	5.50	22.30	33.13	39.10	44.58	55.90
68	-44.20	-33.15	-27.80	-21.98	-11.40	5.00	21.40	31.98	37.80	43.15	54.20
69	-43.20	-32.49	-27.30	-21.65	-11.40	4.50	20.40	30.65	36.30	41.49	52.20
70	-42.20	-31.83	-26.80	-21.33	-11.40	4.00	19.40	29.33	34.80	39.83	50.20

TABLE 10.10. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.37	-4.69	-3.40	-2.49	-1.23	1.39	3.91	5.57	6.98	7.32	9.05
1	-8.69	-6.71	-5.75	-4.71	-2.81	.13	3.07	4.97	6.01	6.97	8.95
2	-12.19	-9.29	-7.89	-6.31	-3.59	.24	5.04	7.43	9.36	10.76	13.46
3	-15.71	-11.65	-9.68	-7.54	-3.65	2.38	8.41	12.30	14.99	16.91	20.97
4	-19.05	-13.89	-11.32	-8.58	-3.59	4.19	11.87	16.86	19.60	22.12	27.33
5	-20.97	-14.95	-12.03	-8.66	-3.09	5.85	14.79	20.56	23.73	26.65	32.67
6	-23.29	-16.41	-13.10	-9.50	-2.96	7.18	17.32	23.86	27.96	30.77	37.60
7	-26.35	-18.47	-14.68	-10.59	-3.01	8.66	20.33	27.86	32.00	35.81	43.67
8	-28.90	-20.17	-15.99	-11.39	-2.98	9.98	22.99	31.30	35.90	40.13	48.86
9	-31.05	-21.51	-16.89	-11.66	-2.73	11.43	25.59	34.72	39.75	44.37	53.91
10	-31.23	-21.28	-16.96	-11.22	-1.69	13.08	27.85	37.38	42.62	47.99	57.39
11	-30.03	-19.92	-15.03	-9.70	-.03	14.97	29.97	39.64	44.97	49.86	59.97
12	-26.56	-16.82	-12.11	-6.98	2.33	16.77	31.21	40.52	45.66	50.34	60.09
13	-21.39	-12.79	-8.63	-4.10	4.13	18.89	29.65	37.68	42.91	46.57	55.17
14	-17.89	-10.21	-6.51	-2.49	5.42	18.15	27.59	34.79	38.81	42.51	50.14
15	-13.05	-6.85	-3.85	-.58	5.35	19.53	23.75	29.68	32.95	35.95	42.15
16	-10.91	-5.74	-3.23	-.50	4.45	12.13	19.81	24.76	27.99	30.00	35.17
17	-9.94	-5.66	-3.59	-1.34	2.76	9.11	15.46	19.56	21.81	23.88	28.16
18	-9.66	-6.13	-4.42	-2.56	.82	6.06	11.30	14.68	16.59	18.25	21.78
19	-10.31	-7.16	-5.69	-3.96	-.97	3.70	8.37	11.38	13.04	14.56	17.71
20	-11.92	-8.35	-6.85	-5.23	-2.29	2.29	6.86	9.41	11.93	12.92	16.00
21	-12.09	-9.00	-7.51	-5.68	-2.93	1.65	6.23	9.18	10.81	12.30	15.39
22	-12.30	-9.21	-7.71	-6.06	-3.12	1.47	6.08	9.02	10.65	12.15	15.29
23	-12.94	-9.73	-8.17	-6.48	-3.40	1.37	6.19	9.22	10.91	12.47	15.68
24	-13.72	-10.23	-8.59	-6.70	-3.36	1.82	7.00	10.39	12.16	13.87	17.36
25	-14.74	-10.97	-9.12	-7.11	-3.96	2.20	7.86	11.51	13.52	15.37	19.18
26	-16.22	-11.91	-9.92	-7.55	-3.92	2.98	9.38	13.51	15.79	17.87	22.16
27	-17.16	-12.42	-10.13	-7.63	-3.10	3.93	10.96	15.49	17.99	20.28	25.02
28	-16.77	-11.80	-9.49	-6.77	-2.02	5.36	12.73	17.99	20.11	22.51	27.48
29	-17.16	-11.91	-9.37	-6.41	-1.58	6.20	13.97	19.31	21.77	24.31	29.56
30	-16.90	-11.45	-8.82	-5.95	-.74	7.39	15.42	20.63	23.50	26.19	31.58
31	-18.12	-12.15	-9.26	-6.11	-.39	8.48	17.35	23.07	26.22	29.11	35.09
32	-18.56	-12.10	-8.97	-5.67	.61	10.20	19.78	25.96	29.36	32.49	38.95
33	-19.30	-12.29	-8.89	-5.20	1.51	11.91	22.32	29.03	32.72	36.12	43.13
34	-19.32	-11.67	-7.97	-3.99	3.37	14.72	26.07	33.39	37.41	41.12	48.76
35	-17.03	-9.20	-5.41	-1.28	6.22	17.85	29.47	36.97	41.10	44.89	52.72
36	-16.96	-8.49	-4.40	-.20	7.79	20.18	32.57	40.56	44.96	49.00	57.35
37	-20.49	-10.88	-6.25	-1.21	7.99	22.13	36.32	45.47	50.50	55.13	64.69
38	-21.36	-11.23	-6.32	-.98	8.72	23.76	38.79	48.49	53.83	58.74	68.[illegible]7
39	-21.59	-11.03	-5.91	-.34	9.77	25.49	41.12	51.23	56.80	61.91	72.48
40	-22.42	-11.28	-5.89	-.02	10.63	27.16	43.69	54.35	60.22	65.61	76.79
41	-22.49	-11.06	-5.55	.45	11.39	28.22	45.11	56.00	61.99	67.50	78.88
42	-22.58	-10.99	-5.38	.72	11.81	29.01	46.20	57.29	63.40	69.01	80.59
43	-20.32	-9.23	-3.86	1.99	12.61	29.07	45.59	56.16	62.00	67.38	78.47
44	-20.32	-8.92	-3.40	2.61	13.52	30.45	47.37	58.29	64.30	69.82	81.22
45	-19.33	-7.72	-2.10	4.02	15.13	32.36	49.6[illegible]	60.71	66.83	72.45	84.06
46	-18.02	-6.41	-.79	5.33	16.49	33.67	50.90	62.02	68.19	73.76	85.37
47	-17.00	-5.24	.45	6.65	17.91	35.36	52.81	64.06	70.26	75.95	87.71
48	-16.67	-4.62	1.22	7.57	19.11	37.00	54.90	66.44	72.77	78.63	90.68
49	-14.61	-2.72	3.05	9.32	20.71	38.37	56.03	67.42	73.69	79.45	91.35
50	-11.36	.01	5.52	11.51	22.39	39.27	56.[illegible]5	67.03	73.02	78.53	89.90
51	-10.33	1.05	6.56	12.56	23.46	40.35	57.29	68.14	74.14	79.65	91.03
52	-8.[illegible]6	2.93	8.30	14.15	24.76	41.22	57.69	68.30	74.15	79.52	90.61
53	-7.66	3.61	9.07	15.01	25.79	42.51	59.24	70.02	75.96	81.42	92.68
54	-6.61	4.55	9.95	15.89	26.52	43.09	59.66	70.35	76.23	81.64	92.80
55	-5.90	5.90	11.37	17.32	28.14	44.90	61.67	72.48	78.43	83.98	95.20
56	-4.22	7.26	12.82	18.88	29.87	46.92	63.96	74.96	81.01	86.57	98.06
57	-3.80	6.11	11.88	18.16	29.56	47.29	64.92	76.33	82.60	88.37	100.29
58	-7.18	5.52	11.47	18.37	30.53	49.38	68.23	80.39	87.09	93.24	105.94
59	-6.59	7.29	13.45	20.21	32.99	51.53	70.57	82.84	89.60	96.82	108.64
60	-6.22	7.28	13.82	20.93	33.85	53.89	73.92	86.89	93.95	100.49	113.99
61	-7.20	6.19	12.60	19.63	32.90	52.20	72.00	84.77	91.80	98.26	111.60
62	-8.30	4.90	11.30	18.26	30.90	50.50	70.10	82.74	89.70	96.10	109.30
63	-9.40	3.67	10.00	16.89	29.40	48.80	68.20	80.71	87.60	93.93	107.00
64	-10.60	2.49	8.70	15.62	27.90	47.10	66.30	78.68	85.50	91.76	104.70
65	-11.80	1.30	7.50	14.26	26.50	45.60	64.50	76.75	83.50	89.70	102.50
66	-12.30	.30	6.40	13.04	25.10	43.80	62.50	74.64	81.20	87.30	99.90
67	-13.70	-.94	5.10	11.67	23.60	42.10	60.60	72.53	79.10	85.14	97.60
68	-14.50	-2.17	3.80	10.30	22.10	40.40	58.70	70.50	77.00	82.97	95.30
69	-15.60	-3.41	2.50	8.93	20.60	38.[illegible]0	56.80	68.47	74.90	80.8[illegible]	93.00
70	-16.70	-4.64	1.20	7.66	19.10	37.00	54.90	66.44	72.80	78.64	90.70

TABLE 10.11. VANDENBERG HEAD- AND TAIL-WIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.49	-5.69	-4.77	-3.82	-2.10	.57	3.24	4.96	5.91	6.78	8.58
1	-11.15	-8.59	-7.35	-6.00	-3.55	.25	4.05	6.50	7.85	9.09	11.65
2	-13.98	-10.43	-9.71	-6.84	-3.44	1.83	7.10	10.50	12.37	14.09	17.64
3	-16.92	-12.17	-9.67	-7.37	-2.82	4.23	11.28	15.83	18.33	20.63	25.38
4	-19.34	-13.53	-10.72	-7.66	-2.10	6.52	15.14	20.70	23.76	26.57	32.38
5	-23.03	-15.91	-12.46	-8.74	-1.89	8.68	19.25	26.07	29.82	33.27	40.39
6	-25.62	-17.42	-13.45	-9.13	-1.29	10.89	23.06	30.91	35.23	39.20	47.40
7	-28.49	-19.19	-14.63	-9.79	-.89	12.91	26.71	35.61	40.51	45.01	54.32
8	-31.42	-21.07	-15.05	-10.59	-.69	14.69	30.06	39.97	45.43	50.45	60.80
9	-33.81	-22.55	-17.09	-11.15	-.37	16.35	33.07	43.85	49.79	55.25	66.51
10	-36.02	-23.85	-17.95	-11.53	.12	18.19	36.26	47.91	54.33	60.23	72.40
11	-36.15	-23.59	-17.50	-10.88	1.15	19.80	38.45	50.46	57.10	63.19	75.75
12	-33.54	-21.26	-15.31	-8.84	2.32	21.15	39.38	51.14	57.61	63.56	75.94
13	-27.90	-16.96	-11.66	-5.88	4.58	20.82	37.66	47.53	53.30	58.60	69.54
14	-20.99	-11.96	-7.53	-2.83	5.41	19.21	32.61	41.25	46.01	50.38	59.41
15	-15.87	-8.55	-5.00	-1.18	5.87	16.74	27.61	34.62	38.48	42.03	49.35
16	-12.80	-6.80	-3.90	-.74	5.00	13.90	22.80	28.54	31.70	34.60	40.60
17	-10.91	-5.88	-3.45	-.80	4.01	11.47	18.53	23.70	26.39	28.82	33.85
18	-10.87	-6.53	-4.43	-2.14	2.01	8.45	14.89	19.04	21.33	23.43	27.77
19	-11.39	-7.44	-5.52	-3.44	.35	6.22	12.09	15.88	17.96	19.88	23.63
20	-13.07	-9.15	-7.25	-5.18	-1.43	4.39	10.21	13.96	16.03	17.93	21.85
21	-14.32	-10.33	-8.40	-6.30	-2.48	3.44	9.36	13.18	15.28	17.21	21.20
22	-16.36	-12.00	-9.83	-7.59	-3.42	3.05	9.52	13.69	15.99	18.10	22.47
23	-17.81	-13.17	-10.92	-8.47	-4.03	2.86	9.75	14.19	16.64	18.89	23.53
24	-19.44	-14.34	-11.87	-9.18	-4.30	3.27	10.84	15.72	18.41	20.88	25.38
25	-21.13	-15.52	-12.81	-9.86	-4.45	3.83	12.15	17.52	20.47	23.18	28.79
26	-23.09	-16.79	-13.74	-10.42	-4.39	4.96	14.31	20.34	23.66	26.71	33.01
27	-25.56	-18.43	-14.97	-11.21	-4.38	6.21	16.80	23.03	27.39	30.85	37.98
28	-21.32	-13.64	-10.21	-6.27	.89	12.06	23.10	30.27	34.21	37.83	45.31
29	-19.14	-11.79	-8.22	-4.34	2.72	13.46	25.46	31.69	35.55	39.12	46.57
30	-19.02	-11.31	-7.68	-3.52	3.86	15.36	26.76	34.12	38.18	41.91	49.62
31	-19.43	-11.27	-7.32	-3.01	4.90	16.92	29.04	36.86	41.16	45.11	53.28
32	-19.64	-11.13	-6.91	-2.31	6.03	18.96	31.40	40.23	44.82	49.04	57.75
33	-21.90	-12.06	-7.90	-2.90	6.68	20.75	34.81	43.91	48.91	53.60	62.99
34	-20.64	-10.79	-6.62	-1.82	8.61	23.53	37.46	47.29	52.48	57.25	67.10
35	-21.51	-10.46	-5.98	.12	10.71	24.82	42.92	53.31	59.03	64.29	75.16
36	-19.01	-8.07	-2.77	3.00	13.47	29.71	45.94	56.43	62.28	67.60	78.44
37	-16.12	-5.12	.20	5.98	16.51	32.83	49.14	59.67	65.46	70.78	81.22
38	-15.60	-3.97	1.62	7.69	18.73	35.45	52.96	64.00	70.07	75.66	87.19
39	-15.74	-3.49	2.31	8.74	20.92	38.52	56.42	68.29	74.72	80.63	92.82
40	-14.94	-2.33	3.77	10.41	22.46	41.15	59.84	71.69	78.53	84.63	97.22
41	-14.40	-1.34	4.94	11.84	24.32	43.49	63.05	75.63	82.51	88.73	101.77
42	-14.26	-.75	6.79	12.91	26.64	45.90	65.96	78.88	86.00	92.64	106.05
43	-11.97	1.42	7.93	14.96	27.77	47.44	67.61	80.33	87.38	93.87	107.25
44	-9.62	3.74	10.17	17.16	29.86	49.65	69.24	81.99	88.93	95.35	108.62
45	-7.44	5.39	11.84	18.93	31.72	51.57	71.93	84.24	91.29	97.76	111.14
46	-7.78	5.96	12.61	19.85	33.01	53.40	73.79	86.94	94.18	100.84	114.58
47	-8.44	5.73	12.59	20.06	33.62	54.45	75.48	89.25	96.71	103.48	117.74
48	-7.96	6.61	13.67	21.36	35.27	56.91	78.54	92.48	100.16	107.22	121.78
49	-4.76	9.44	16.48	23.74	37.29	60.29	79.28	92.82	100.18	107.13	121.27
50	-4.71	9.81	16.85	24.56	38.41	59.97	81.63	95.43	103.09	110.12	124.66
51	-3.67	10.86	17.99	26.74	39.86	61.72	83.58	97.68	106.45	112.58	127.31
52	-4.67	10.56	18.03	26.16	40.93	63.42	86.79	101.48	107.61	117.08	132.51
53	-4.04	10.17	18.03	26.59	42.12	66.22	90.31	105.85	113.90	122.27	138.50
54	.37	15.01	22.09	29.80	43.79	65.49	87.19	101.18	108.89	116.97	132.59
55	1.49	16.32	23.66	31.53	45.91	68.22	90.54	104.72	112.85	120.13	136.16
56	.07	15.49	22.84	30.98	45.69	68.47	91.30	106.81	114.11	121.65	136.92
57	-3.25	12.74	20.60	29.11	44.56	68.51	92.47	107.92	116.92	124.29	140.28
58	.08	15.93	23.26	31.24	45.72	68.19	90.66	105.13	113.11	120.44	135.67
59	-3.19	12.18	19.66	27.68	42.34	65.09	87.53	102.56	110.57	117.99	133.31
60	-5.06	9.87	17.11	24.94	39.27	61.43	83.68	97.89	105.76	112.99	127.93
61	-6.13	8.52	15.70	23.51	37.78	59.74	81.70	95.89	103.70	110.88	125.70
62	-7.58	7.19	14.30	22.04	36.10	57.90	79.70	93.76	101.56	108.61	123.30
63	-8.30	6.18	13.20	20.83	34.78	56.20	77.70	91.67	99.30	106.22	120.70
64	-9.50	4.85	11.85	19.34	33.16	54.40	75.70	89.44	97.00	103.95	118.30
65	-10.40	3.93	10.89	17.99	31.40	52.70	73.80	87.41	94.70	101.78	116.00
66	-11.70	2.38	9.23	16.42	30.10	51.00	71.90	85.38	92.06	99.62	113.70
67	-12.90	1.05	7.91	15.15	28.50	49.24	69.90	83.25	90.06	97.35	111.30
68	-13.70	.09	6.70	13.94	27.10	47.60	67.90	81.06	88.30	94.96	108.70
69	-14.90	-1.29	5.33	12.47	25.50	45.70	65.90	78.94	86.18	92.69	106.30
70	-16.00	-2.53	4.08	11.10	24.00	44.00	64.00	76.98	84.00	90.53	104.00

TABLE 10.12. VANDENBERG HEAD- AND TAILWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-8.31	-6.37	-5.43	-4.41	-2.55	.32	3.21	5.07	6.09	7.03	8.97
1	-12.41	-9.31	-7.91	-6.18	-3.21	1.39	5.99	8.96	10.53	12.09	15.19
2	-13.88	-9.86	-7.52	-5.80	-1.96	4.00	9.96	13.80	15.92	17.86	21.88
3	-16.11	-10.92	-8.40	-5.66	-.69	7.02	14.73	19.70	22.44	24.96	30.15
4	-18.06	-12.55	-9.40	-5.97	.26	9.92	19.58	25.81	29.24	32.39	38.92
5	-21.37	-13.78	-10.20	-6.10	1.17	12.44	23.71	30.98	34.98	38.66	46.25
6	-23.71	-15.10	-11.02	-6.36	1.85	14.62	27.41	35.65	40.19	44.36	52.97
7	-26.87	-17.05	-12.30	-7.12	2.27	16.84	31.41	40.81	45.98	50.73	60.55
8	-29.47	-18.59	-13.32	-7.58	2.83	18.98	35.13	45.55	51.28	56.55	67.43
9	-31.20	-19.46	-13.73	-7.59	3.64	21.06	38.48	49.71	55.90	61.58	73.32
10	-31.17	-19.00	-13.10	-6.68	4.97	23.04	41.11	52.76	59.10	65.08	77.75
11	-23.23	-16.37	-10.62	-4.37	6.95	24.60	42.21	53.57	59.82	66.57	77.43
12	-23.36	-12.52	-7.27	-1.50	8.82	24.91	41.00	51.38	57.09	62.34	73.18
13	-15.14	-9.40	-4.63	.45	9.78	24.24	38.70	48.03	53.16	57.88	67.62
14	-14.02	-5.81	-1.64	2.49	10.34	22.52	34.70	42.55	46.88	50.85	59.16
15	-10.93	-3.94	-.55	3.14	9.83	20.21	30.59	37.28	40.97	44.36	51.35
16	-10.48	-4.30	-1.31	1.95	7.86	17.03	26.20	32.11	35.37	38.36	44.54
17	-10.60	-5.11	-2.45	.44	5.70	13.85	22.00	27.26	30.15	32.81	38.30
18	-10.52	-5.86	-3.61	-1.16	3.30	10.21	17.12	21.58	24.03	26.28	30.54
19	-11.20	-7.12	-5.14	-2.92	-.92	6.98	13.04	16.95	19.10	21.08	25.16
20	-13.35	-9.31	-7.36	-5.23	-1.37	4.62	10.41	14.47	16.60	18.55	22.59
21	-15.19	-11.19	-8.25	-7.14	-3.31	2.63	8.57	12.40	14.51	16.45	20.45
22	-17.58	-13.37	-11.33	-9.11	-5.08	1.17	7.42	11.45	13.67	15.71	19.92
23	-20.44	-15.78	-13.52	-11.06	-6.60	.32	7.24	11.70	14.16	16.42	21.08
24	-21.50	-16.64	-14.29	-11.73	-7.08	.12	7.24	11.99	14.55	16.90	21.70
25	-23.44	-18.22	-15.62	-12.34	-7.99	-.19	7.56	12.56	15.31	17.84	23.06
26	-26.59	-20.62	-17.73	-14.56	-8.87	-.01	8.85	14.56	17.71	20.60	26.57
27	-30.92	-23.81	-20.36	-16.61	-3.90	.75	11.32	18.13	21.88	25.33	32.44
28	-28.06	-19.92	-16.69	-10.88	-2.32	10.95	24.27	32.77	37.49	41.82	50.76
29	-30.55	-20.79	-16.06	-10.91	-1.56	12.93	27.47	36.77	41.92	46.65	56.41
30	-29.26	-23.22	-17.87	-12.85	-1.48	14.91	31.38	41.87	47.49	53.09	64.88
31	-34.69	-24.66	-18.88	-12.60	-1.18	16.62	34.21	45.69	51.93	57.70	69.63
32	-34.49	-22.38	-16.55	-9.78	1.76	19.95	38.18	49.87	56.35	62.39	74.56
33	-34.13	-21.08	-14.76	-7.88	4.62	23.99	43.36	55.06	62.73	69.05	82.11
34	-31.68	-18.02	-11.93	-4.23	8.82	29.06	49.29	62.29	69.52	76.12	89.76
35	-26.26	-12.72	-6.16	.97	13.94	34.89	54.16	67.10	74.24	80.80	94.34
36	-28.37	-7.87	-.63	6.38	19.11	38.86	58.59	71.31	78.32	85.76	98.64
37	-15.65	-2.26	4.22	11.28	24.18	43.97	63.85	76.67	83.72	90.21	103.60
38	-12.59	1.88	7.63	14.68	27.56	47.58	67.60	80.62	87.63	93.16	107.66
39	-10.68	3.38	10.28	17.61	31.87	51.94	72.01	86.27	93.68	100.47	114.55
40	-4.64	7.93	14.28	21.57	34.94	55.72	76.43	89.84	97.23	104.08	117.99
41	-3.08	10.74	17.49	24.79	38.05	58.61	79.17	92.44	99.73	106.49	120.29
42	-.66	13.61	20.22	27.66	41.11	62.00	82.88	96.34	103.27	110.52	124.66
43	.86	15.48	22.49	30.18	44.82	65.60	87.18	101.09	108.76	115.80	130.34
44	3.14	17.87	25.01	32.78	46.88	68.75	90.63	104.73	112.58	119.63	135.17
45	3.93	18.92	26.18	34.08	48.43	70.48	92.93	107.28	115.18	122.44	137.43
46	4.47	19.48	26.76	34.86	49.83	71.31	93.60	107.97	115.88	123.15	138.16
47	2.74	18.67	26.39	34.79	50.04	73.49	97.30	112.68	120.99	128.71	144.65
48	2.79	19.15	27.88	36.78	51.37	75.66	99.98	115.61	124.21	132.16	148.52
49	6.16	22.44	30.36	38.95	54.56	78.75	102.94	118.56	127.15	135.05	151.36
50	4.44	21.19	29.38	38.13	54.18	79.62	103.82	119.92	128.75	136.88	153.61
51	.42	17.90	26.37	36.69	52.33	78.98	104.26	120.90	130.19	138.66	156.15
52	2.48	19.21	27.58	36.91	52.68	77.67	102.79	118.98	127.89	136.88	152.97
53	1.21	18.43	26.76	35.84	52.31	77.66	103.41	119.89	128.97	137.58	154.52
54	-.93	16.48	24.79	33.93	50.52	74.24	101.97	118.58	127.69	136.09	152.52
55	-2.55	15.84	23.56	32.83	49.66	75.77	101.48	118.71	127.99	136.50	154.09
56	-.51	16.52	24.79	33.77	50.48	76.38	100.68	116.99	125.98	135.23	151.27
57	-3.95	13.49	21.94	31.13	47.83	73.73	99.65	116.32	126.51	133.96	151.40
58	-1.01	15.53	23.54	32.26	48.87	72.62	97.18	112.81	121.73	129.79	150.27
59	6.36	21.13	28.77	37.08	52.17	75.56	98.96	114.08	122.39	130.03	145.80
60	36.46	46.35	51.52	57.15	67.37	83.23	99.80	109.21	115.94	120.11	130.29
61	32.00	43.12	48.58	54.36	65.00	81.60	98.00	108.49	114.50	117.00	131.00
62	28.00	38.25	45.00	51.84	62.00	79.40	96.00	107.70	113.00	117.15	130.00
63	25.20	37.04	42.00	49.05	60.40	78.00	95.00	106.95	113.20	118.94	130.00
64	21.70	33.96	39.70	45.36	58.10	76.30	94.50	106.24	112.70	118.49	130.70
65	18.20	30.87	37.00	43.60	56.00	74.40	93.40	105.52	112.20	118.33	131.00
66	15.00	28.00	34.30	41.15	53.40	72.90	92.20	104.66	111.50	117.00	130.00
67	11.50	24.91	31.40	38.47	51.30	71.20	91.10	103.93	111.00	117.47	130.70
68	7.70	21.71	28.40	35.40	48.70	69.00	89.70	103.12	110.40	117.87	130.70
69	4.70	18.85	25.70	33.16	46.70	67.70	88.70	102.29	109.70	116.55	130.70
70	1.20	15.75	22.80	30.47	44.40	66.00	87.00	101.53	109.20	116.25	130.00

ORIGINAL PAGE IS OF POOR QUALITY

TABLE 11.1. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.80	-8.50	-7.39	-6.18	-3.98	-.57	2.84	5.09	6.25	7.38	9.66
1	-22.36	-17.71	-15.46	-13.01	-8.56	-1.66	5.24	9.69	12.14	14.39	19.04
2	-25.20	-20.13	-17.68	-15.01	-10.16	-2.69	4.88	9.73	12.90	14.85	19.92
3	-27.94	-22.38	-19.68	-16.75	-11.42	-3.16	5.10	10.93	13.36	16.06	21.62
4	-30.54	-24.42	-21.45	-18.22	-12.36	-3.27	5.82	11.68	14.91	17.88	24.00
5	-34.01	-27.08	-23.73	-20.08	-13.45	-3.17	7.11	13.74	17.39	20.74	27.67
6	-37.48	-29.81	-26.13	-22.06	-14.72	-3.39	8.84	15.38	19.42	22.13	30.80
7	-41.55	-33.07	-28.96	-24.49	-16.37	-3.78	8.81	16.93	21.90	25.51	33.99
8	-46.03	-36.61	-32.05	-27.09	-18.07	-4.09	9.89	18.91	23.87	28.43	37.85
9	-50.58	-40.26	-35.24	-29.82	-19.99	-4.62	10.70	20.58	26.02	31.02	41.34
10	-54.70	-43.62	-38.11	-32.22	-21.52	-4.93	11.6	22.36	28.25	33.66	44.84
11	-56.17	-44.68	-39.11	-33.05	-22.05	-4.99	12.07	23.07	29.13	34.78	46.19
12	-53.32	-42.49	-37.25	-31.59	-21.18	-5.11	10.96	21.32	27.03	32.27	43.10
13	-44.26	-35.32	-30.99	-26.28	-17.72	-4.45	8.82	17.38	22.09	26.42	35.34
14	-37.79	-30.20	-26.53	-22.53	-15.27	-4.01	7.25	14.51	18.51	22.18	29.77
15	-32.99	-26.41	-23.22	-19.75	-13.45	-3.68	6.09	12.39	15.86	19.05	25.63
16	-28.62	-22.95	-20.20	-17.21	-11.78	-3.36	5.06	10.49	13.48	16.23	21.90
17	-23.29	-18.76	-16.56	-14.17	-9.83	-3.10	3.63	7.97	10.34	12.56	17.09
18	-19.72	-15.99	-14.18	-12.21	-8.69	-3.10	2.44	6.01	7.98	9.79	13.52
19	-17.70	-14.42	-12.83	-11.10	-7.96	-3.09	1.78	4.92	6.65	8.24	11.52
20	-15.73	-12.89	-11.51	-10.01	-7.29	-3.07	1.15	3.87	5.37	6.75	9.59
21	-14.95	-12.27	-10.97	-9.54	-6.99	-3.01	.97	3.54	4.95	6.25	8.93
22	-14.77	-12.19	-10.87	-9.49	-6.97	-3.07	.83	3.35	4.73	6.00	8.63
23	-15.07	-12.37	-11.06	-9.64	-7.05	-3.09	.97	3.56	4.98	6.29	8.99
24	-15.76	-12.87	-11.47	-9.95	-7.18	-2.89	1.40	4.17	5.69	7.09	9.98
25	-15.92	-12.91	-11.45	-9.86	-6.98	-2.51	1.96	4.84	6.43	7.87	10.90
26	-17.08	-13.85	-12.28	-10.58	-7.48	-2.68	2.12	5.22	6.92	8.49	11.72
27	-19.50	-15.77	-13.96	-11.99	-8.42	-2.88	2.66	6.23	8.20	10.01	13.74
28	-24.73	-19.50	-16.97	-14.22	-9.22	-1.47	6.28	11.28	14.09	16.57	21.79
29	-26.89	-21.15	-18.37	-15.39	-9.84	-1.32	7.21	12.71	15.73	18.52	24.26
30	-28.73	-22.60	-19.63	-16.40	-10.54	-1.44	7.66	13.52	16.75	19.72	25.85
31	-31.22	-24.44	-21.15	-17.58	-11.09	-1.02	9.05	15.54	19.11	22.40	29.18
32	-33.88	-26.38	-22.74	-18.79	-11.60	-.46	10.67	17.86	21.81	25.45	32.95
33	-36.16	-27.94	-23.95	-19.62	-11.75	.46	12.67	20.54	24.88	28.86	37.09
34	-39.28	-30.19	-25.79	-21.00	-12.31	1.18	14.66	23.36	28.15	32.55	41.63
35	-41.41	-31.80	-27.15	-22.09	-12.90	1.36	15.61	24.80	29.87	34.52	44.12
36	-43.21	-33.21	-28.36	-23.09	-13.52	1.33	16.18	25.76	31.03	35.87	45.88
37	-44.04	-33.75	-28.76	-23.32	-13.45	1.86	17.17	27.04	32.47	37.47	47.78
38	-44.40	-34.11	-29.03	-23.50	-13.47	2.10	17.67	27.70	33.23	38.31	48.80
39	-45.27	-34.49	-29.20	-23.49	-13.13	2.94	19.00	29.37	35.07	40.32	51.14
40	-46.70	-35.49	-29.96	-23.99	-13.02	3.93	20.87	31.79	37.81	43.34	54.75
41	-44.00	-32.83	-27.42	-21.53	-10.83	5.75	22.34	33.03	38.92	44.33	56.51
42	-41.68	-30.67	-25.34	-19.54	-9.01	7.32	23.65	34.19	39.99	45.32	58.32
43	-38.95	-27.92	-22.82	-17.27	-7.20	8.43	24.85	34.13	39.48	44.78	55.30
44	-36.40	-26.07	-21.06	-15.62	-5.73	9.60	24.94	34.83	40.27	45.27	55.60
45	-38.07	-27.09	-21.69	-15.84	-5.28	11.13	27.53	38.11	43.94	49.29	60.35
46	-37.22	-26.11	-20.72	-14.86	-4.22	12.28	28.78	39.42	45.28	50.67	61.78
47	-35.78	-24.72	-19.36	-13.53	-2.95	13.47	29.88	40.47	46.30	51.65	62.71
48	-36.81	-25.28	-19.70	-13.62	-2.59	14.51	31.62	42.65	48.73	54.31	65.84
49	-39.62	-27.10	-21.09	-14.95	-2.47	16.11	34.68	46.66	53.25	59.32	71.83
50	-37.30	-25.13	-19.23	-12.82	-1.[illegible]	16.91	34.98	46.63	53.05	58.94	71.12
51	-34.95	-24.63	-18.91	-12.48	-1.34	16.19	33.73	45.05	51.28	57.00	68.82
52	-33.40	-22.26	-16.76	-10.79	.07	16.90	33.74	44.65	50.57	56.06	67.90
53	-34.40	-23.08	-17.47	-11.35	-.25	16.94	34.17	45.27	51.38	57.00	68.60
54	-34.91	-23.39	-17.81	-11.79	-.72	16.38	33.47	44.60	50.57	56.15	67.66
55	-30.65	-20.10	-15.00	-9.44	.44	16.31	31.97	42.06	47.42	52.73	63.28
56	-22.32	-13.00	-8.49	-3.58	5.34	19.17	33.00	41.92	46.83	51.35	60.66
57	-24.81	-16.80	-11.95	-6.47	2.92	17.78	32.65	42.23	47.51	52.36	62.38
58	-24.44	-14.96	-10.37	-5.38	3.69	17.76	31.83	40.90	45.90	50.49	59.96
59	-24.17	-14.68	-10.09	-5.09	3.99	18.07	32.15	41.23	46.23	50.82	60.31
60	-30.68	-19.56	-14.17	-8.31	2.33	18.84	35.34	45.98	51.84	57.23	68.35
61	-31.90	-20.28	-14.90	-9.04	1.60	18.10	34.60	45.24	51.10	56.48	67.60
62	-31.90	-20.85	-15.50	-9.68	.90	17.30	33.70	44.28	50.10	55.45	66.50
63	-32.70	-21.65	-16.32	-10.48	.10	16.50	32.90	43.48	49.30	54.65	65.70
64	-33.20	-22.22	-16.90	-11.11	-.60	15.70	32.00	42.61	48.38	53.62	64.60
65	-34.00	-23.02	-17.78	-11.91	-1.40	14.90	31.20	41.71	47.50	52.82	63.80
66	-34.50	-23.59	-18.38	-12.65	-2.10	14.10	30.30	40.75	46.50	51.79	62.70
67	-35.20	-24.29	-19.00	-13.25	-2.40	13.40	29.60	40.05	45.60	51.09	62.00
68	-35.70	-24.85	-19.60	-13.88	-3.50	12.60	28.70	39.08	44.80	50.05	60.90
69	-34.50	-25.65	-20.10	-14.48	-4.30	11.80	27.90	38.28	44.00	49.25	60.10
70	-37.00	-26.22	-21.00	-15.32	-5.00	11.00	27.00	37.32	43.00	48.22	59.00

TABLE 11.2. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.74	-8.56	-7.50	-6.35	-4.26	-1.02	2.22	4.31	5.46	6.52	8.70
1	-24.73	-18.67	-16.91	-13.95	-9.29	-2.07	5.18	9.81	12.37	15.73	19.89
2	-27.09	-22.13	-19.30	-16.34	-10.88	-2.46	6.08	11.56	14.66	17.33	23.04
3	-31.83	-26.39	-23.27	-18.88	-13.71	-3.15	6.84	13.58	16.93	19.08	26.83
4	-35.16	-28.03	-24.57	-20.81	-13.98	-3.35	7.20	14.63	17.79	21.26	28.38
5	-36.13	-30.34	-26.57	-22.97	-15.01	-3.45	8.11	15.57	19.67	23.99	31.23
6	-41.56	-33.01	-26.87	-24.36	-16.18	-3.47	9.20	17.30	21.89	26.03	34.58
7	-46.31	-35.95	-31.92	-26.49	-17.53	-3.49	10.25	19.21	24.14	28.47	38.03
8	-49.63	-39.46	-34.44	-29.64	-19.26	-4.06	11.13	20.93	26.32	31.28	41.51
9	-53.16	-43.26	-37.67	-31.19	-21.19	-4.71	11.73	23.00	28.26	33.43	44.73
10	-57.70	-46.68	-40.16	-33.93	-22.02	-5.06	12.56	23.77	30.00	35.72	47.54
11	-60.84	-48.26	-39.54	-33.36	-22.20	-5.28	12.98	23.66	29.83	35.88	47.16
12	-51.96	-41.32	-36.16	-30.54	-20.34	-4.52	11.30	21.90	27.12	32.28	42.94
13	-44.76	-34.93	-31.55	-26.79	-17.14	-3.73	9.68	18.31	23.69	27.87	36.50
14	-37.97	-30.17	-26.39	-22.24	-14.81	-3.23	8.36	15.82	19.93	23.71	31.51
15	-34.61	-25.48	-22.77	-19.28	-13.43	-3.09	8.25	13.13	16.58	19.80	26.33
16	-29.10	-22.42	-19.67	-16.68	-11.29	-2.81	5.63	11.08	14.05	16.80	22.98
17	-24.91	-18.76	-16.51	-14.08	-9.81	-2.71	4.18	8.65	11.09	13.38	17.99
18	-19.63	-15.79	-13.51	-11.71	-8.29	-2.47	2.96	6.57	8.57	10.40	14.19
19	-18.11	-13.67	-11.82	-10.63	-7.13	-2.24	1.86	4.75	6.34	7.81	10.83
20	-13.74	-11.36	-10.1[illegible]	-8.74	-6.26	-2.42	1.49	3.76	5.26	6.51	9.10
21	-12.74	-10.69	-9.28	-8.13	-5.82	-2.38	1.16	3.26	4.86	6.03	8.43
22	-12.09	-10.20	-9.11	-7.93	-5.76	-2.45	.88	3.03	4.21	5.30	7.54
23	-12.21	-9.96	-8.67	-7.88	-5.63	-2.37	1.16	2.86	4.19	5.68	7.83
24	-12.04	-10.24	-9.18	-7.87	-5.52	-1.96	1.40	3.75	5.16	6.32	8.72
25	-12.77	-10.32	-9.14	-7.85	-5.51	-1.89	1.76	4.07	5.48	6.58	9.01
26	-13.62	-11.28	-9.75	-8.52	-5.88	-1.81	2.24	4.88	6.33	7.66	10.50
27	-13.80	-11.72	-1.[illegible]	-8.77	-6.20	-1.71	2.68	5.37	6.70	8.10	11.20
28	-14.33	-11.35	-9.91	-8.34	-5.49	-1.08	3.34	6.19	7.75	9.19	12.17
29	-16.89	-13.23	-11.95	-9.53	-6.02	-.59	4.84	8.34	10.27	12.04	15.70
30	-18.95	-14.75	-12.71	-10.50	-6.48	-.29	5.99	10.01	12.23	14.26	18.96
31	-22.27	-17.90	-15.05	-12.49	-7.03	-.62	6.69	11.25	13.81	16.17	21.03
32	-22.78	-17.76	-15.33	-12.68	-7.88	-.93	7.02	11.82	14.47	16.90	21.92
33	-23.29	-18.03	-15.48	-12.70	-7.88	-.18	7.98	13.02	15.79	18.34	23.81
34	-23.48	-18.27	-15.75	-13.01	-8.03	-.30	7.42	12.90	15.15	17.67	22.87
35	-21.32	-16.81	-14.63	-12.26	-7.95	-1.26	5.92	9.73	12.11	14.29	18.79
36	-23.89	-18.77	-16.29	-13.59	-8.69	-1.09	6.51	11.41	14.11	16.59	21.71
37	-26.52	-20.84	-18.11	-15.13	-9.71	-1.30	7.11	12.54	15.52	18.27	23.93
38	-28.77	-22.86	-19.91	-16.69	-10.85	-1.80	7.26	13.10	16.31	19.27	25.37
39	-30.78	-24.19	-21.15	-17.89	-11.84	-2.53	8.70	12.78	16.09	19.12	25.40
40	-30.63	-24.32	-21.27	-17.94	-11.91	-2.54	[illegible].82	12.85	16.18	19.73	25.54
41	-32.18	-25.29	-21.97	-18.30	-11.80	-1.62	8.54	15.11	18.72	22.04	28.90
42	-33.52	-26.17	-22.61	-18.74	-11.70	-.79	10.12	17.15	21.03	24.59	31.94
43	-35.01	-27.49	-23.76	-19.48	-11.72	.33	12.38	20.14	24.42	28.35	36.47
44	-37.10	-28.45	-24.26	-19.71	-11.43	1.41	14.25	22.53	27.08	31.27	39.92
45	-39.10	-29.87	-25.16	-20.13	-11.10	2.91	16.91	25.94	30.41	35.40	44.91
46	-38.06	-28.58	-23.98	-18.98	-9.91	4.17	18.25	27.33	32.32	36.92	46.90
47	-33.06	-24.22	-19.94	-15.28	-6.81	5.31	19.44	27.90	32.56	36.84	45.69
48	-34.48	-25.12	-20.58	-15.65	-6.69	7.21	21.10	30.07	35.00	39.53	48.90
49	-36.23	-26.30	-21.49	-16.24	-6.75	7.99	22.73	32.23	37.47	42.28	52.21
50	-37.94	-27.43	-22.34	-16.81	-6.75	8.85	24.45	34.51	40.04	45.13	55.44
51	-39.43	-28.66	-23.66	-19.26	-8.43	9.83	25.00	34.92	40.33	45.31	55.99
52	-34.81	-24.74	-19.87	-14.56	-4.93	10.01	24.96	34.59	39.90	44.77	54.84
53	-33.68	-23.73	-18.91	-13.67	-4.15	10.61	25.37	34.89	40.13	44.95	54.89
54	-37.80	-26.91	-21.63	-15.89	-5.46	10.71	26.87	37.30	43.04	48.32	59.21
55	-38.91	-28.81	-23.93	-19.50	-3.94	12.44	29.02	39.65	45.51	50.89	61.99
56	-34.44	-23.92	-18.83	-13.29	-3.22	12.39	28.00	38.07	43.61	48.71	59.23
57	-29.97	-20.43	-16.39	-11.98	-3.00	9.38	22.37	30.74	35.35	39.99	48.54
58	-27.41	-19.30	-15.37	-11.10	-3.33	8.70	20.74	28.50	32.77	36.70	44.81
59	-33.11	-23.87	-19.39	-14.52	-5.60	8.03	21.75	30.59	35.46	39.94	49.18
60	-38.51	-28.09	-22.97	-17.46	-7.44	8.10	23.64	33.66	39.18	44.25	54.72
61	-39.60	-28.23	-23.20	-17.73	-7.80	7.60	23.00	32.93	38.40	43.43	53.80
62	-38.50	-28.26	-23.30	-17.90	-8.10	7.10	22.30	32.10	37.50	42.44	52.70
63	-38.70	-28.53	-23.60	-18.24	-8.50	6.60	21.70	31.44	36.80	41.72	51.90
64	-38.40	-28.54	-23.70	-18.41	-8.80	6.10	21.00	30.61	35.90	40.76	50.80
65	-38.00	-28.83	-24.00	-18.74	-9.20	5.60	20.40	29.94	35.20	40.03	50.00
66	-38.80	-28.96	-24.20	-19.02	-9.60	5.00	19.60	29.02	34.20	38.96	48.80
67	-39.00	-29.23	-24.60	-19.39	-10.00	4.50	19.00	28.35	33.50	38.23	48.00
68	-38.90	-29.27	-24.60	-19.52	-10.30	4.00	18.30	27.52	32.60	37.27	46.90
69	-39.10	-29.53	-24.90	-19.86	-10.70	3.50	17.70	26.86	31.90	36.52	46.10
70	-39.00	-29.57	-25.00	-20.03	-11.00	3.00	17.00	26.03	31.00	35.57	45.00

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 11.C. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-12.38	-10.02	-9.88	-7.64	-5.38	-1.88	1.62	3.88	5.12	6.26	8.62
1	-22.64	-18.35	-16.27	-14.01	-9.90	-3.53	2.84	6.95	9.21	11.29	15.59
2	-26.10	-21.01	-19.54	-15.86	-10.98	-3.82	4.14	9.02	11.70	14.17	19.26
3	-29.13	-23.37	-20.56	-17.58	-12.03	-3.48	5.07	10.58	13.62	16.41	22.17
4	-31.85	-25.44	-22.34	-18.96	-12.83	-3.32	6.19	12.32	15.70	18.80	25.21
5	-33.22	-28.07	-24.60	-20.83	-13.98	-3.76	7.26	14.11	17.88	21.35	28.50
6	-38.80	-30.89	-27.06	-22.89	-15.32	-3.58	8.16	15.73	19.90	23.73	31.64
7	-43.22	-34.37	-30.08	-25.44	-16.94	-3.80	9.34	17.81	22.48	26.77	35.62
8	-47.49	-37.73	-33.00	-27.85	-18.51	-4.02	10.47	19.81	24.96	29.69	39.45
9	-51.40	-40.80	-35.66	-30.07	-19.92	-4.18	11.56	21.71	27.30	32.44	43.00
10	-54.15	-42.92	-37.48	-31.58	-20.81	-4.14	12.53	23.28	29.20	34.64	45.67
11	-52.50	-41.60	-36.32	-30.57	-20.14	-3.96	12.22	22.65	28.40	33.66	44.58
12	-47.76	-37.77	-32.93	-27.66	-18.10	-3.27	11.56	21.12	26.3[illegible]	31.23	41.22
13	-40.94	-32.32	-28.14	-23.58	-15.34	-2.54	10.26	18.51	23.06	27.24	35.86
14	-33.75	-26.53	-23.04	-19.24	-12.33	-1.62	9.09	16.00	19.80	23.29	30.51
15	-27.54	-21.65	-18.80	-15.70	-10.06	-1.32	7.42	13.06	16.16	19.61	24.90
16	-23.44	-18.44	-15.02	-13.39	-8.60	-1.18	6.24	11.03	13.66	16.08	21.08
17	-20.93	-16.54	-14.42	-12.11	-7.91	-1.40	5.11	9.31	11.62	13.7	18.13
18	-16.40	-13.02	-11.39	-9.62	-6.38	-1.37	3.64	6.87	8.65	10.24	13.66
19	-13.84	-11.03	-9.67	-8.18	-5.50	-1.33	2.84	5.53	7.01	8.37	11.18
20	-12.84	-10.29	-9.06	-7.72	-5.28	-1.50	2.28	4.72	6.06	7.29	9.84
21	-11.54	-9.28	-8.10	-6.98	-4.82	-1.46	1.90	4.07	5.26	6.36	8.62
22	-10.17	-8.16	-7.18	-6.12	-4.19	-1.20	1.79	3.72	4.78	5.76	7.77
23	-10.36	-8.24	-7.22	-6.10	-4.08	-.94	2.20	4.22	5.34	6.36	8.48
24	-10.33	-8.13	-7.06	-5.90	-3.79	-.52	2.75	4.86	6.02	7.09	9.29
25	-9.82	-7.66	-6.62	-5.48	-3.42	-.22	2.98	5.04	6.18	7.22	9.38
26	-9.89	-7.69	-6.63	-5.47	-3.37	-.11	3.15	5.25	6.41	7.41	9.67
27	-10.69	-8.25	-7.07	-5.78	-3.45	.17	3.79	6.12	7.41	8.59	11.03
28	-13.01	-9.85	-8.30	-6.63	-3.64	1.14	5.[illegible]	8.15	10.41	11.94	15.09
29	-14.03	-10.72	-9.07	-7.30	-4.05	.35	5.36	9.19	10.97	12.80	15.98
30	-14.54	-12.66	-10.78	-8.72	-5.61	.75	6.51	10.[illegible]	12.28	14.16	18.54
31	-15.06	-13.63	-11.43	-9.15	-4.[illegible]	1.69	8.24	12.48	14.31	16.96	21.38
32	-15.66	-14.83	-12.40	-9.75	-4.94	2.52	9.58	14.75	17.44	19.87	24.90
33	-17.26	-12.72	-10.52	-8.13	-3.73	2.35	9.68	14.03	16.42	18.82	23.15
34	-17.69	-12.96	-11.87	-8.18	-3.66	3.35	10.[illegible]7	14.85	17.38	19.67	24.40
35	-18.95	-14.06	-11.[illegible]3	9.11	-4.[illegible]	3.83	10.09	14.77	17.35	19.72	24.61
36	-21.76	-15.82	-13.13	-10.42	-5.51	2.12	9.77	14.61	17.40	19.[illegible]	25.03
37	-21.51	-15.39	-13.1	-11.20	-[illegible].30	1.31	8.92	13.83	16.53	19.01	24.14
38	-22.76	-17.61	-15.11	-12.38	-7.47	.22	7.65	12.62	15.55	18.05	23.21
39	-22.05	-17.26	-14.24	-12.41	-7.37	-.70	5.42	11.01	13.54	15.86	20.66
40	-22.44	-17.70	-15.41	-12.81	-6.77	-1.32	5.70	10.24	12.74	15.03	19.77
41	-22.70	-17.85	-15.51	-12.85	-3.37	-1.14	6.05	10.68	13.24	15.93	20.42
42	-22.03	-17.55	-15.50	-12.82	-7.97	-.42	7.10	11.[illegible]	14.63	17.08	22.16
43	-22.25	-17.14	-14.65	-11.95	-7.05	.34	9.23	13.[illegible]	15.73	18.21	23.33
44	-22.05	-17.[illegible]	-14.56	-11.71	-6.50	1.52	9.65	14.86	17.73	20.37	25.31
45	-22.[illegible]	[illegible]	-13.37	-11.03	-5.63	2.60	10.33	16.22	19.16	21.86	27.44
46	-22.06	-16.25	-13.58	-10.57	-5.10	3.38	11.86	17.[illegible]	20.34	23.10	28.81
47	-19.74	-14.20	-11.57	-8.60	-3.70	4.32	13.24	13.44	21.36	24.04	29.58
48	-17.57	-12.58	-[illegible]	-7.14	-1.98	6.01	14.10	19.16	21.09	24.[illegible]	29.99
49	-13.24	-12.55	-[illegible]	-5.31	-1.27	7.07	15.50	20.34	23.34	26.[illegible]	32.37
50	-14.51	-12.69	-[illegible]	-6.81	-1.24	7.40	16.04	21.61	24.68	27.51	33.32
51	-19.33	-13.44	-10.56	-7.42	-1.77	7.20	15.33	21.62	24.76	27.64	33.59
52	-19.46	-13.74	-11.57	-7.91	-2.48	6.11	14.50	19.27	22.99	25.76	31.48
53	-18.44	-12.95	-10.23	-7.40	-2.14	6.01	14.16	19.41	22.31	24.97	30.46
54	-16.00	-12.42	-9.73	-6.79	-1.87	6.82	15.19	20.43	23.36	26.06	31.04
55	-19.78	-13.43	-11.04	-7.34	-2.30	5.49	15.17	20.31	23.31	26.76	32.65
56	-15.44	-13.65	-11.84	-7.75	-2.25	6.34	14.23	20.46	22.53	26.03	32.12
57	-13.42	-12.[illegible]3	-3.09	-6.53	-.37	7.78	16.71	22.14	25.25	28.09	33.38
58	-10.37	-11.77	-9.[illegible]	-6.1[illegible]	-.75	7.56	15.87	21.22	24.17	26.88	32.48
59	-19.23	-13.20	-11.28	-7.30	-1.37	7.63	16.59	22.27	25.35	28.47	34.50
60	-20.28	-14.61	-11.71	-8.67	-2.14	5.44	14.11	19.[illegible]	22.58	25.38	31.15
61	-20.30	-14.57	-11.50	-8.78	-2.30	5.20	13.70	19.13	22.20	24.97	30.70
62	-20.60	-14.87	-12.11	-9.08	-3.60	4.90	12.40	18.[illegible]	21.90	24.67	30.40
63	-20.80	-15.07	-12.30	-9.23	-3.50	4.70	13.20	18.69	21.70	24.47	30.20
64	-21.10	-15.37	-12.61	-9.50	-4.10	4.40	12.90	18.38	21.40	24.17	29.90
65	-21.00	-15.34	-12.60	-9.62	-4.20	4.20	12.80	18.02	21.00	23.74	29.40
66	-21.20	-15.54	-12.80	-9.82	-4.40	4.00	12.40	17.82	20.80	23.54	29.20
67	-21.50	-15.94	-13.10	-10.12	-4.70	3.70	12.10	17.52	20.50	23.24	28.90
68	-21.70	-16.14	-13.30	-10.32	-4.90	3.50	11.90	17.32	20.30	23.04	28.70
69	-21.70	-15.11	-12.40	-10.45	-5.10	3.20	11.60	16.35	19.90	22.91	28.10
70	-21.90	-16.71	-13.81	-10.65	-5.31	3.00	11.20	16.85	19.60	22.31	27.90

TABLE 11.4. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

: 0-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-11.91	-9.73	-8.68	-7.53	-5.45	-2.22	1.01	3.09	4.24	5.29	7.47
1	-20.50	-16.75	-14.93	-12.95	-9.36	-4.79	1.78	5.37	7.35	9.17	12.92
2	-23.52	-18.94	-16.72	-14.31	-9.92	-3.22	3.68	8.07	10.48	12.70	17.28
3	-27.90	-22.02	-19.37	-16.35	-11.26	-3.15	5.56	10.19	13.07	15.72	21.18
4	-32.18	-25.55	-22.48	-19.04	-12.78	-3.08	6.62	12.88	16.32	19.49	26.02
5	-36.53	-28.98	-25.32	-21.34	-14.11	-2.90	8.21	15.54	19.52	23.18	30.73
6	-41.95	-33.19	-28.95	-24.33	-15.95	-2.95	10.05	18.43	23.05	27.29	36.05
7	-46.60	-36.75	-31.98	-26.79	-17.36	-2.74	11.88	21.31	26.50	31.27	41.12
8	-50.86	-40.08	-34.86	-29.18	-18.86	-2.86	13.14	23.46	29.14	34.36	45.14
9	-52.85	-41.61	-36.17	-30.25	-19.49	-2.81	13.87	24.63	30.55	35.99	47.23
10	-52.92	-41.53	-36.16	-30.21	-19.40	-2.64	14.12	24.93	30.88	36.35	47.64
11	-50.88	-39.93	-34.63	-28.86	-18.38	-2.13	14.12	24.60	30.37	35.67	46.62
12	-45.75	-35.71	-30.85	-25.56	-15.95	-1.05	13.45	23.46	28.75	33.61	43.65
13	-36.91	-28.57	-24.53	-20.13	-12.15	.23	12.61	20.59	24.99	29.03	37.37
14	-29.80	-22.81	-19.42	-15.73	-9.04	1.34	11.72	18.41	22.10	25.49	32.48
15	-24.45	-18.55	-15.70	-12.60	-6.46	1.78	10.52	16.16	19.26	22.11	28.00
16	-20.17	-15.23	-12.84	-10.20	-5.51	1.82	9.15	13.88	16.48	18.87	23.81
17	-16.90	-12.73	-10.71	-8.51	-4.52	1.67	7.86	11.85	14.05	16.07	20.24
18	-13.16	-9.85	-8.24	-6.48	-3.32	1.60	6.52	9.69	11.44	13.05	16.36
19	-10.35	-7.72	-6.44	-5.05	-2.53	1.38	5.29	7.81	9.20	10.48	13.11
20	-8.88	-6.69	-5.63	-4.46	-2.38	.67	4.12	6.22	7.37	8.43	10.62
21	-8.83	-6.71	-5.68	-4.56	-2.53	.42	3.22	5.00	6.02	7.06	10.07
22	-8.18	-6.27	-5.35	-4.35	-2.52	.31	3.14	4.97	5.97	6.89	8.80
23	-7.53	-5.78	-4.93	-4.01	-2.33	.27	2.87	4.55	5.47	6.32	8.07
24	-7.86	-6.07	-5.21	-4.27	-2.56	.09	2.74	4.45	5.39	6.25	8.04
25	-8.73	-6.78	-5.83	-4.80	-2.93	-.03	2.87	4.74	5.77	6.72	8.67
26	-9.09	-7.08	-6.11	-5.05	-3.13	-.15	2.83	4.75	5.81	6.78	8.79
27	-10.12	-7.97	-6.78	-5.52	-3.49	-.10	3.24	5.39	6.58	7.67	9.92
28	-7.75	-5.62	-4.59	-3.47	-1.43	1.73	4.29	6.93	8.05	9.08	11.21
29	-7.71	-5.54	-4.49	-3.35	-1.27	1.94	5.16	7.24	8.38	9.43	11.60
30	-3.14	-6.69	-5.50	-4.21	-1.86	1.78	5.41	7.76	9.05	10.24	12.69
31	-10.44	-7.68	-6.35	-4.89	-2.25	1.84	5.53	8.52	10.03	11.36	14.12
32	-10.57	-7.82	-6.44	-4.94	-2.21	2.02	6.25	8.98	10.48	11.87	14.72
33	-10.37	-7.48	-6.08	-4.56	-1.80	2.48	6.76	9.53	11.05	12.45	15.33
34	-14.24	-8.04	-6.48	-4.80	-1.73	3.02	7.78	10.85	12.54	14.09	17.29
35	-10.49	-7.39	-5.89	-4.28	-1.30	3.29	7.89	10.85	12.48	13.98	17.07
36	-10.74	-7.71	-6.24	-4.63	-1.73	2.78	7.28	10.19	11.79	13.26	16.30
37	-13.73	-10.24	-8.52	-6.73	-3.38	1.83	7.03	10.38	12.23	13.93	17.43
38	-15.[illegible]	-11.95	-10.17	-8.22	-4.71	.74	6.20	9.72	11.66	13.64	17.12
39	-15.[illegible]	-12.41	-10.73	-8.90	-5.58	-.44	4.73	8.03	9.85	11.53	15.00
40	-16.20	-12.86	-11.24	-9.48	-6.28	-1.32	3.68	6.84	8.60	10.22	13.57
41	-16.54	-13.01	-11.31	-9.45	-6.08	-.85	4.38	7.75	9.60	11.31	14.83
42	-18.03	-13.93	-11.94	-9.78	-5.86	.22	6.31	10.24	12.40	14.38	18.48
43	-18.22	-14.26	-12.37	-9.70	-5.38	1.31	8.01	12.32	14.70	16.89	21.40
44	-18.78	-14.01	-11.70	-9.18	-4.61	2.47	9.56	14.13	16.64	18.95	23.72
45	-18.27	-13.48	-11.15	-8.63	-4.03	3.09	10.21	14.80	17.33	19.65	24.45
46	-15.05	-10.77	-8.70	-6.45	-2.35	4.00	10.35	14.44	16.70	18.77	23.04
47	-11.33	-7.70	-5.32	-3.97	-.44	5.03	10.50	14.03	15.98	17.76	21.45
48	-12.23	-8.22	-6.27	-4.15	-.31	5.65	11.41	15.46	17.57	19.52	23.54
49	-12.22	-8.19	-6.29	-4.11	-.25	5.73	11.71	15.57	17.69	19.64	23.67
50	-11.57	-7.74	-5.89	-3.87	-.20	5.48	11.17	14.83	16.85	18.71	22.54
51	-10.98	-7.34	-5.58	-3.66	-.17	5.23	10.63	14.11	16.03	17.79	21.43
52	-13.83	-9.89	-7.28	-5.90	-2.13	3.72	9.57	13.35	15.42	17.33	21.26
53	-13.06	-9.43	-7.67	-5.75	-2.28	3.12	8.51	11.99	13.90	15.66	19.29
54	-13.23	-9.86	-8.23	-6.46	-3.24	1.75	6.75	9.97	11.74	13.37	16.43
55	-15.60	-11.88	-13.09	-8.14	-4.59	.92	6.42	9.97	11.93	13.73	17.43
56	-18.23	-14.13	-12.15	-9.58	-6.07	.01	6.10	10.02	12.18	14.16	18.26
57	-23.86	-18.59	-15.33	-13.25	-4.20	-.37	7.46	12.51	15.29	17.85	23.13
58	-38.97	-26.98	-23.10	-18.68	-11.23	.65	12.52	20.18	24.39	28.27	36.26
59	-14.20	-9.72	-7.55	-5.19	-.90	5.75	12.40	16.69	19.05	21.22	25.70
60	-6.88	-3.59	-1.99	-.25	2.90	7.80	12.69	15.85	17.58	19.18	22.48
61	-7.30	-4.46	-2.80	-.99	2.30	7.40	12.50	15.73	17.60	19.26	22.70
62	-8.90	-5.33	-3.60	-1.72	1.70	7.00	12.30	15.72	17.60	19.33	22.90
63	-9.80	-6.09	-4.30	-2.35	1.20	6.70	12.20	15.79	17.70	19.49	23.20
64	-10.80	-6.96	-5.10	-3.08	.60	6.30	12.00	15.68	17.70	19.56	23.40
65	-11.80	-7.83	-5.90	-3.80	.00	5.90	11.80	15.60	17.70	19.63	23.60
66	-13.10	-8.92	-6.90	-4.70	-.70	5.50	11.70	15.70	17.90	19.92	24.40
67	-14.18	-9.79	-7.78	-5.48	-1.30	5.10	11.50	15.63	17.90	19.99	24.30
68	-15.00	-10.55	-8.40	-6.06	-1.80	4.80	11.40	15.66	18.00	20.15	24.60
69	-16.00	-11.42	-9.20	-6.79	-2.40	4.40	11.20	15.59	18.00	20.22	24.80
70	-17.00	-12.28	-10.00	-7.51	-3.00	4.00	11.00	15.51	18.00	20.28	25.00

TABLE 11.5. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.70	-8.06	-7.24	-6.35	-4.72	-2.20	.32	1.55	2.84	3.66	5.36
1	-17.48	-14.41	-12.33	-11.31	-3.33	-3.83	.72	3.65	5.27	6.75	8.82
2	-19.70	-15.94	-14.12	-12.19	-3.54	-2.96	2.62	6.22	8.20	10.02	13.78
3	-22.68	-19.14	-16.39	-13.55	-3.20	-2.96	4.28	8.63	11.02	13.22	17.76
4	-25.36	-20.16	-17.64	-14.95	-3.92	-2.70	5.52	10.56	13.24	15.76	20.96
5	-27.06	-21.43	-19.71	-15.74	-10.75	-2.01	6.34	11.72	14.69	17.01	23.24
6	-29.30	-23.19	-20.23	-17.01	-11.10	-2.09	6.98	12.83	16.05	19.01	25.12
7	-33.38	-26.17	-22.43	-19.19	-12.59	-2.33	7.32	14.53	18.17	21.51	28.42
8	-36.37	-30.36	-26.48	-22.26	-14.59	-2.70	9.19	16.86	21.08	24.96	32.97
9	-41.05	-32.90	-28.21	-23.65	-15.37	-2.53	10.31	18.59	23.15	27.38	35.39
10	-43.19	-34.01	-29.57	-24.73	-15.95	-2.37	11.29	20.07	24.91	29.35	38.53
11	-44.35	-34.87	-30.28	-25.29	-16.22	-2.14	11.93	21.00	26.00	30.59	40.27
12	-39.28	-30.76	-26.63	-22.14	-13.98	-1.33	11.32	19.46	22.97	28.10	36.82
13	-30.78	-23.09	-20.55	-16.92	-12.22	-.03	10.14	16.74	20.37	23.71	30.60
14	-24.18	-18.57	-15.65	-12.89	-7.57	.81	9.14	14.51	17.47	20.19	25.50
15	-19.83	-14.31	-12.12	-9.74	-5.41	1.30	8.01	12.34	14.72	16.81	21.63
16	-15.65	-11.80	-9.94	-7.91	-4.23	1.48	7.29	10.87	12.90	14.76	18.61
17	-11.81	-9.86	-7.43	-5.87	-3.05	1.33	5.71	8.53	10.09	11.52	14.47
18	-8.82	-6.60	-5.53	-4.35	-2.24	1.05	5.34	6.46	7.63	8.70	10.92
19	-7.33	-5.53	-4.66	-3.71	-1.99	.68	3.25	5.07	6.02	6.89	8.69
20	-7.03	-5.45	-4.68	-3.85	-2.23	.02	2.27	3.85	4.72	5.49	7.07
21	-7.45	-6.27	-5.45	-4.56	-2.95	-.45	2.05	3.66	4.55	5.37	7.25
22	-7.21	-5.71	-4.99	-4.20	-2.77	-.55	1.67	3.11	3.89	4.61	6.11
23	-7.49	-5.93	-5.20	-4.40	-2.95	-.72	1.52	2.95	3.76	4.49	6.00
24	-7.60	-6.22	-5.45	-4.62	-3.10	-.75	1.60	3.12	3.95	4.72	6.30
25	-7.79	-6.20	-5.43	-4.59	-3.07	-.71	1.45	3.17	4.01	4.78	6.37
26	-8.22	-6.52	-5.69	-4.79	-3.16	-.63	1.50	3.53	4.43	5.26	6.96
27	-9.18	-7.27	-6.35	-5.32	-3.52	-.69	2.19	3.37	4.37	5.89	7.80
28	-7.22	-5.89	-4.98	-3.98	-2.18	-.41	1.48	5.20	6.19	7.10	8.98
29	-7.39	-5.55	-4.68	-3.73	-2.02	.49	3.30	5.82	6.97	8.03	8.63
30	-9.64	-7.39	-6.38	-5.11	-2.96	.39	3.73	5.88	7.07	8.16	10.91
31	-9.64	-7.38	-6.29	-5.10	-2.94	.40	3.75	5.91	7.10	8.19	10.94
32	-9.44	-7.13	-6.02	-4.80	-2.60	.03	4.25	6.46	7.67	8.78	11.09
33	-8.64	-6.38	-5.29	-4.10	-1.95	1.40	4.74	6.90	8.08	9.17	11.43
34	-8.44	-7.00	-5.81	-4.52	-2.19	1.44	5.03	7.40	8.60	9.88	12.32
35	-8.81	-6.55	-5.45	-4.24	-2.10	1.26	4.61	6.78	7.97	9.06	11.32
36	-8.74	-6.48	-5.39	-4.21	-2.06	1.29	4.63	6.79	7.98	9.07	11.32
37	-10.39	-7.77	-6.53	-5.17	-2.71	1.11	4.93	7.39	8.74	9.99	12.56
38	-12.09	-9.38	-7.95	-6.58	-3.82	.32	4.46	7.12	8.59	9.94	12.73
39	-11.93	-9.38	-8.04	-6.68	-4.19	-.33	3.62	6.81	7.38	8.44	11.24
40	-10.88	-8.60	-7.50	-6.29	-4.11	-.72	3.67	6.86	6.05	7.16	9.44
41	-11.98	-9.01	-7.82	-6.52	-4.16	-.50	3.17	5.53	6.83	8.02	10.49
42	-11.68	-8.96	-7.69	-6.31	-3.80	.10	3.99	6.50	7.88	9.15	11.77
43	-11.30	-8.64	-7.23	-5.78	-3.16	.92	4.99	7.62	9.06	10.39	13.14
44	-11.18	-8.18	-6.73	-5.15	-2.28	2.17	6.62	9.49	11.07	12.52	16.62
45	-10.83	-7.78	-6.18	-4.54	-1.54	3.10	7.74	10.73	12.38	13.89	17.02
46	-9.97	-6.43	-5.01	-3.47	-.66	3.70	8.00	10.86	12.41	13.83	16.76
47	-9.23	-6.20	-4.73	-3.14	-.24	4.25	8.75	11.69	13.24	14.71	17.73
48	-10.07	-6.78	-5.19	-3.44	-.21	4.57	9.46	12.59	14.32	15.92	19.20
49	-10.85	-7.31	-5.60	-3.73	-.34	4.92	10.17	13.56	15.43	17.14	20.68
50	-11.95	-8.04	-6.14	-4.08	-.33	5.49	11.30	15.35	17.11	19.01	22.93
51	-12.25	-8.23	-6.29	-4.17	-.32	5.65	11.62	15.97	17.58	19.53	23.55
52	-11.99	-7.69	-6.10	-4.14	-.60	4.90	10.40	13.94	15.90	17.60	21.39
53	-11.55	-8.10	-6.42	-4.60	-1.30	3.83	8.96	12.27	14.09	15.77	19.22
54	-13.73	-9.92	-8.07	-6.07	-2.42	3.23	8.00	12.52	14.53	16.37	20.10
55	-13.60	-9	-8.01	-6.02	-2.42	3.17	8.76	12.36	14.35	16.17	19.94
56	-15.83	-11.6.	-9.67	-7.34	-3.30	2.96	9.23	13.27	15.49	17.64	21.76
57	-13.78	-10.02	-8.20	-6.21	-2.61	2.97	8.56	12.16	14.14	15.96	19.73
58	-17.12	-12.05	-10.70	-8.64	-4.45	1.68	8.21	12.30	14.54	16.41	20.40
59	-17.74	-13.78	-11.74	-9.61	-5.74	.24	6.26	10.13	12.26	14.22	18.26
60	-22.92	-17.78	-15.20	-12.57	-7.64	.06	7.64	12.57	15.20	17.78	22.92
61	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
62	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
63	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
64	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
65	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
66	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
67	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
68	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
69	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80
70	-22.80	-17.68	-15.20	-12.50	-7.60	.00	7.60	12.50	15.20	17.68	22.80

TABLE 11.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.70	-7.21	-6.63	-5.62	-4.18	-1.31	.27	1.04	2.65	3.35	4.93
1	-12.[illegible]	-11.71	-11.[illegible]	-10.73	-7.97	-3.64	.65	3.43	5.02	6.43	9.35
2	-14.[illegible]	-14.62	-13.[illegible]	-12.61	-9.87	-2.75	-.05	2.57	7.37	9.03	12.45
3	-15.[illegible]	-15.65	-15.71	-11.55	-7.77	-1.75	[illegible]	8.09	10.21	12.16	16.19
4	-21.37	-18.44	-18.[illegible]	-11.47	-3.65	-.51	5.08	8.07	12.33	14.50	18.87
5	-19.95	-16.13	-17.[illegible]	-13.[illegible]	-4.30	-.87	6.38	11.72	14.39	16.85	21.32
6	-18.37	-20.50	-19.[illegible]	-14.77	-5.19	-.61	7.58	13.[illegible]	16.58	19.88	25.17
7	-24.[illegible]	-22.[illegible]	-21.[illegible]	-15.53	-10.79	-.49	9.20	15.01	19.09	22.23	28.18
8	-26.67	-27.24	-27.[illegible]	-19.47	-17.13	-.56	10.[illegible]	15.21	22.38	26.12	33.85
9	-23.[illegible]	-21.77	-21.[illegible]	-21.[illegible]	-11.[illegible]	-.23	12.90	21.37	25.03	30.31	39.16
10	-[illegible]	-27.[illegible]	-27.[illegible]	-27.[illegible]	-14.[illegible]	.16	14.[illegible]	22.[illegible]	29.02	33.74	43.49
11	-44.[illegible]	-24.[illegible]	-27.[illegible]	-27.37	-14.22	.75	15.72	25.22	30.69	35.57	45.06
12	-42.[illegible]	-31.[illegible]	-31.[illegible]	-22.87	-10.[illegible]	1.62	15.[illegible]	25.11	30.18	34.84	44.46
13	-29.[illegible]	-28.[illegible]	-27.[illegible]	-13.[illegible]	-1.[illegible]	2.62	15.23	22.44	27.94	32.07	40.60
14	-21.[illegible]	-21.17	-17.[illegible]	-16.[illegible]	-2.[illegible]	3.16	12.51	20.[illegible]	23.54	27.34	34.37
15	-20.[illegible]	-[illegible]	-17.[illegible]	-10.[illegible]	-2.[illegible]	2.77	10.[illegible]	15.[illegible]	18.39	20.94	26.20
16	-26.[illegible]	-11.[illegible]	[illegible]	-7.24	-2.[illegible]	2.14	7.14	11.[illegible]	12.54	15.40	19.24
17	-13.[illegible]	-3.61	-7.[illegible]	-6.[illegible]	-2.[illegible]	1.47	5.76	8.52	10.05	11.45	14.24
18	-7.58	-9.[illegible]	-7.[illegible]	-7.[illegible]	-2.58	1.11	2.58	5.[illegible]	6.96	7.92	9.54
19	-7.77	-5.[illegible]	-6.[illegible]	-3.[illegible]	-2.91	.50	2.41	4.49	5.32	6.11	7.73
20	-8.93	-4.[illegible]	-6.[illegible]	-3.[illegible]	-1.[illegible]	.15	2.[illegible]	3.[illegible]	4.37	5.06	6.48
21	-5.[illegible]	-6.[illegible]	-5.[illegible]	-3.[illegible]	-2.01	-.01	1.39	2.23	3.39	4.24	5.39
22	-8.[illegible]	-6.[illegible]	-6.[illegible]	-2.82	-2.71	-.13	1.47	2.31	2.91	4.58	5.85
23	-5.14	-4.[illegible]	-6.[illegible]	-3.87	-2.25	-.37	1.[illegible]	2.74	3.41	4.[illegible]	5.20
24	-8.07	-4.[illegible]	-6.[illegible]	-3.50	-2.97	-.37	1.[illegible]	2.70	3.43	4.05	5.23
25	-5.42	-5.04	-4.[illegible]	-3.82	-2.73	-.23	1.75	2.07	3.79	4.46	5.23
26	-8.[illegible]	-5.[illegible]	-4.[illegible]	-2.82	-2.78	-.17	1.14	2.47	4.25	4.57	6.46
27	-5.[illegible]	-5.[illegible]	-4.[illegible]	-3.71	-2.34	-.22	1.20	2.27	4.02	4.71	6.24
28	-6.73	-5.22	-4.47	-3.65	-2.16	.15	2.46	3.35	4.77	5.52	7.27
29	-7.11	-5.38	-4.54	-3.64	-1.98	.56	3.14	4.73	5.70	6.54	8.26
30	-6.33	-4.76	-4.00	-3.17	-1.67	.66	2.99	4.49	5.32	6.08	7.65
31	-6.16	-4.65	-3.51	-3.11	-1.67	.58	2.82	4.26	5.08	5.81	7.32
32	-7.02	-5.29	-4.45	-3.50	-1.88	.65	3.28	4.92	5.84	6.67	8.41
33	-6.92	-5.16	-4.22	-3.26	-1.70	.91	3.52	5.21	6.14	6.95	8.75
34	-7.25	-5.36	-4.44	-3.44	-1.63	1.17	3.98	5.79	6.78	7.70	9.59
35	-7.71	-5.82	-4.51	-2.92	-2.11	.65	3.48	5.75	6.28	7.20	9.08
36	-8.39	-6.42	-5.47	-4.43	-2.55	.37	3.29	5.17	6.21	7.16	9.23
37	-7.55	-5.78	-4.52	-4.10	-2.22	.29	2.51	4.59	5.52	6.37	8.13
38	-8.54	-6.53	-5.56	-4.50	-2.59	.40	2.38	5.30	6.36	7.33	9.34
39	-9.17	-7.06	-5.55	-4.81	-2.73	.48	3.70	5.78	6.92	7.57	10.14
40	-8.43	-6.74	-5.70	-4.53	-2.50	.69	3.68	5.94	7.08	8.12	10.27
41	-5.01	-7.29	-4.21	-4.93	-2.61	.96	4.58	6.90	8.18	9.35	11.78
42	-11.27	-8.53	-7.20	-5.75	3.13	.94	5.01	7.64	9.09	10.41	13.16
43	-11.54	-8.05	-6.84	-5.52	-3.14	.56	4.77	6.65	7.97	9.18	11.67
44	-11.46	-8.78	-7.48	-6.05	-3.49	.49	4.43	7.05	8.46	9.76	12.45
45	-10.99	-8.18	-6.81	-5.22	-2.64	1.53	5.70	5.38	9.87	11.23	14.04
46	-10.97	-7.68	-6.38	-4.74	-1.73	2.92	7.41	10.33	12.01	13.51	16.60
47	-9.91	-6.83	-5.22	-3.71	-.75	3.82	8.41	11.26	12.99	14.48	17.57
48	-9.84	-6.57	-4.93	-3.27	-.14	4.71	9.57	12.70	14.42	16.00	19.27
49	-9.60	-6.27	-4.65	-2.91	.29	5.24	10.19	13.38	15.14	16.75	20.08
50	-8.45	-5.32	-3.81	-2.15	.83	5.49	10.12	13.11	14.76	16.28	19.40
51	-7.82	-4.66	-3.12	-1.46	1.57	6.27	10.56	13.59	15.66	17.12	20.36
52	-7.12	-3.91	-2.35	-.66	2.42	7.19	11.97	15.04	16.74	18.29	21.51
53	-7.54	-4.15	-2.51	-.73	2.51	7.54	12.57	15.81	17.55	19.23	22.62
54	-5.24	-5.77	-4.06	-2.2	1.15	6.36	11.57	14.93	16.78	18.48	21.99
55	-12.20	-3.29	-1.39	-4.33	-.59	5.22	11.12	14.77	16.83	18.72	22.43
56	-12.73	-9.01	-7.21	-5.25	-1.70	3.8[illegible]	9.34	12.90	14.86	16.66	20.38
57	-16.25	-11.95	-5.87	-7.61	-3.50	2.87	9.75	13.26	15.62	17.40	21.99
58	-20.61	-15.52	-13.06	-10.39	-5.51	2.05	9.60	14.92	17.15	19.62	24.71
59	-24.62	-21.77	-18.84	-15.65	-1.66	-.08	8.30	13.82	17.08	20.01	26.06
60	-30.56	-24.13	-21.02	-17.69	-11.44	-1.94	7.60	13.75	17.13	20.25	26.67
61	-30.20	-23.90	-20.80	-17.42	-11.70	-1.81	7.70	13.82	17.20	20.30	26.70
62	-29.90	-23.57	-20.50	-17.10	-11.10	-1.70	7.70	13.70	17.10	20.17	26.50
63	-29.80	-23.47	-20.40	-17.06	-11.00	-1.61	7.80	13.86	17.20	20.27	26.60
64	-29.40	-23.13	-20.10	-16.80	-10.90	-1.50	7.80	13.80	17.10	20.13	26.40
65	-29.40	-23.13	-20.10	-16.81	-10.80	-1.50	7.80	13.80	17.10	20.13	26.40
66	-29.00	-22.80	-19.80	-16.53	-10.60	-1.40	7.40	13.73	17.00	20.00	26.20
67	-28.90	-22.70	-19.70	-16.42	-10.50	-1.30	7.50	13.82	17.10	20.10	26.30
68	-28.50	-22.37	-19.40	-16.17	-10.30	-1.20	7.90	13.72	17.00	19.97	26.10
69	-28.40	-22.27	-19.30	-16.07	-10.20	-1.10	8.00	13.87	17.10	20.07	26.20
70	-29.00	-21.90	-19.00	-15.80	-10.00	-1.00	8.00	13.90	17.00	19.94	26.00

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 11.7. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.000	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.63	-5.48	-4.72	-4.31	-3.21	-1.50	.21	1.31	1.92	2.48	3.63
1	-13.53	-10.90	-9.62	-8.23	-5.71	-1.80	2.11	4.63	6.02	7.30	9.93
2	-11.51	-8.90	-7.64	-6.27	-3.77	.10	3.97	6.47	7.84	9.10	11.71
3	-11.03	-8.13	-6.73	-5.20	-2.43	1.87	6.17	8.94	10.47	11.87	14.77
4	-10.81	-7.68	-6.16	-4.51	-1.51	3.19	7.79	10.79	12.44	13.96	17.09
5	-10.96	-7.25	-5.72	-4.01	-.94	3.82	8.58	11.65	13.34	14.89	18.10
6	-10.70	-7.28	-5.63	-3.83	-.56	4.51	9.58	12.85	14.65	16.30	19.72
7	-12.08	-8.15	-6.24	-4.17	-.40	5.44	11.28	15.05	17.12	19.03	22.96
8	-13.65	-9.28	-6.87	-4.46	-.09	6.69	13.47	17.84	20.25	22.46	27.03
9	-14.66	-9.53	-7.04	-4.33	.58	8.20	15.82	20.73	23.44	25.93	31.06
10	-14.68	-9.29	-6.58	-3.63	1.72	10.02	18.32	23.67	26.02	29.33	34.92
11	-14.29	-8.32	-5.46	-2.34	3.32	12.10	20.88	26.54	29.66	32.52	38.44
12	-14.11	-7.08	-4.86	-1.58	4.39	13.61	22.89	28.66	32.14	35.16	41.39
13	-13.17	-7.13	-4.21	-1.03	4.75	13.71	22.67	28.45	31.63	34.55	40.83
14	-12.06	-6.58	-3.93	-1.09	4.25	12.33	20.46	25.70	28.59	31.24	36.72
15	-8.74	-5.64	-2.49	-.54	3.36	9.41	15.46	19.36	21.51	23.48	27.36
16	-7.25	-4.19	-2.71	-1.10	1.63	6.37	10.91	13.84	15.45	16.93	19.94
17	-6.48	-4.12	-2.98	-1.74	.52	4.02	7.52	9.78	11.02	12.14	14.52
18	-6.00	-4.19	-3.24	-2.26	-.48	2.28	5.04	6.82	7.80	8.70	10.56
19	-5.86	-3.45	-2.76	-2.01	-.66	1.44	3.54	4.89	5.64	6.33	7.74
20	-5.07	-3.74	-3.12	-2.40	-1.13	.84	2.81	4.28	4.78	5.42	6.75
21	-5.53	-4.19	-3.54	-2.83	-1.55	.44	2.43	3.71	4.42	5.07	6.41
22	-6.01	-4.45	-3.49	-3.27	-1.97	.05	2.07	3.37	4.09	4.75	6.11
23	-6.28	-4.91	-4.25	-3.53	-2.22	-.19	1.84	3.15	3.87	4.53	5.90
24	-6.51	-5.29	-4.40	-3.65	-2.29	-.18	1.93	3.29	4.04	4.73	6.15
25	-6.13	-4.75	-4.08	-3.35	-2.03	.02	2.07	3.39	4.12	4.79	6.17
26	-5.86	-4.51	-3.86	-3.15	-1.86	.19	2.14	3.43	4.14	4.79	6.14
27	-6.36	-4.92	-4.22	-3.46	-2.08	.06	2.26	3.58	4.34	5.04	6.48
28	-6.84	-5.33	-4.60	-3.81	-2.37	-.13	2.10	3.54	4.34	5.07	6.57
29	-6.20	-5.39	-4.52	-4.56	-2.83	-.15	2.53	4.26	5.21	6.08	7.89
30	-7.02	-5.40	-4.61	-3.75	-2.19	.22	2.64	4.20	5.05	5.84	7.47
31	-6.65	-4.89	-4.03	-3.10	-1.41	1.21	3.84	5.53	6.46	7.31	9.08
32	-7.37	-5.80	-4.75	-3.60	-1.53	1.69	4.92	6.39	8.14	9.19	11.36
33	-7.21	-5.25	-4.30	-3.27	-1.39	1.52	4.42	6.30	7.33	8.28	10.24
34	-7.60	-5.61	-4.64	-3.59	-1.69	1.27	4.22	5.13	7.18	8.14	10.14
35	-10.28	-7.79	-6.59	-5.28	-2.90	.78	4.47	6.85	8.16	9.36	11.85
36	-11.17	-8.57	-7.31	-5.94	-3.45	.40	4.25	6.74	8.11	9.37	11.96
37	-11.15	-8.55	-7.29	-5.92	-3.44	.42	4.27	6.76	8.13	9.39	11.98
38	-10.91	-8.24	-6.94	-5.53	-2.97	1.00	4.98	7.54	9.95	10.25	12.32
39	-10.15	-7.56	-6.31	-4.95	-2.48	1.38	5.20	7.67	9.04	10.29	12.87
40	-10.53	-8.05	-6.35	-5.54	-3.17	.52	4.20	6.52	7.68	9.08	11.56
41	-12.44	-9.73	-8.41	-6.98	-4.39	-.37	3.06	6.25	7.68	8.99	11.71
42	-13.73	-10.79	-9.36	-7.81	-5.00	-.64	3.72	6.54	8.09	9.51	12.45
43	-12.60	-9.73	-8.34	-6.82	-4.07	.19	4.46	7.21	8.72	10.11	12.99
44	-11.47	-8.55	-7.14	-5.60	-2.81	1.53	5.36	8.65	10.19	11.60	14.52
45	-11.53	-8.33	-6.77	-5.08	-2.02	2.74	7.50	10.57	12.26	13.81	17.02
46	-10.58	-7.32	-5.74	-4.02	-.90	3.34	8.79	11.91	13.63	15.21	18.47
47	-10.24	-6.83	-5.18	-3.34	-.11	4.95	10.01	13.28	15.08	16.73	20.14
48	-9.30	-5.94	-4.31	-2.54	.63	5.66	10.65	13.87	15.64	17.27	20.63
49	-8.95	-5.58	-3.95	-2.18	1.05	6.05	11.05	14.27	16.04	17.68	21.04
50	-9.36	-5.88	-4.19	-2.36	.98	6.14	11.31	14.64	16.48	18.16	21.64
51	-11.10	-7.28	-5.43	-3.41	.24	5.92	11.58	15.25	17.27	19.12	22.94
52	-13.68	-9.39	-7.32	-5.06	-.95	5.40	11.76	15.88	18.12	20.20	24.48
53	-13.17	-8.95	-6.90	-4.68	-.64	5.62	11.88	15.92	18.15	20.19	24.41
54	-13.26	-9.12	-7.11	-4.93	-.96	5.18	11.33	15.29	17.48	19.48	23.62
55	-15.50	-11.26	-9.01	-6.57	-2.12	4.77	11.66	16.11	18.55	20.80	25.44
56	-19.33	-13.71	-11.23	-8.53	-3.63	3.97	11.52	16.42	19.17	21.65	26.77
57	-24.35	-18.42	-15.54	-12.42	-6.74	2.07	10.88	16.56	19.68	22.56	28.49
58	-34.21	-26.43	-22.67	-18.57	-11.13	.41	11.56	19.40	23.50	27.26	35.04
59	-35.23	-27.03	-23.06	-18.72	-10.88	1.25	13.47	21.32	25.64	29.62	37.82
60	-35.41	-27.16	-23.17	-18.82	-10.93	1.31	13.55	21.45	25.79	29.79	38.03
61	-35.20	-27.08	-23.10	-18.77	-10.90	1.30	13.50	21.37	25.70	29.68	37.90
62	-35.40	-27.18	-23.20	-18.87	-11.00	1.20	13.40	21.22	25.60	29.98	37.80
63	-35.10	-26.95	-23.00	-18.70	-10.90	1.20	13.30	21.10	25.40	29.35	37.50
64	-35.10	-26.95	-23.00	-18.70	-10.90	1.20	13.30	21.10	25.40	29.35	37.50
65	-35.10	-26.95	-23.00	-18.70	-10.90	1.20	13.30	21.10	25.40	29.35	37.50
66	-35.20	-27.05	-23.10	-18.80	-11.00	1.10	13.20	21.00	25.30	29.25	37.40
67	-35.20	-27.05	-23.10	-18.80	-11.00	1.10	13.20	21.00	25.30	29.25	37.40
68	-34.90	-26.82	-22.90	-18.64	-10.90	1.10	13.10	20.84	25.10	29.02	37.10
69	-35.00	-26.92	-23.00	-18.74	-11.00	1.00	13.00	20.74	25.00	28.92	37.00
70	-35.00	-26.92	-23.00	-18.74	-11.00	1.00	13.00	20.74	25.00	28.92	37.00

TABLE 11.8. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.93	-5.71	-5.12	-4.49	-3.31	-1.60	.31	1.98	2.12	2.71	3.93
1	-14.41	-11.69	-10.30	-8.69	-6.19	-2.08	2.03	4.68	6.14	7.48	10.25
2	-13.36	-10.49	-9.03	-7.49	-4.70	-.37	3.96	6.75	8.29	9.70	12.62
3	-12.14	-9.16	-7.70	-6.12	-3.24	1.22	5.66	8.56	10.14	11.60	14.60
4	-11.25	-8.29	-6.78	-5.19	-2.31	2.16	6.63	9.51	11.10	12.54	15.57
5	-12.15	-8.88	-7.30	-5.58	-2.45	2.40	7.25	10.38	12.10	13.68	16.95
6	-14.92	-10.59	-8.73	-6.71	-3.04	2.65	8.39	12.01	14.03	15.89	19.72
7	-16.31	-11.93	-9.81	-7.50	-3.31	3.19	9.69	13.88	16.19	18.31	22.69
8	-18.23	-13.29	-10.83	-8.20	-3.93	3.97	11.37	16.14	18.77	21.18	26.17
9	-19.01	-13.60	-10.98	-8.13	-2.95	5.08	13.11	18.49	21.14	23.74	29.17
10	-12.56	-8.33	-6.28	-4.05	.00	6.28	12.56	16.61	18.84	20.89	25.12
11	-19.98	-9.93	-7.49	-4.63	.00	7.49	14.98	19.61	22.47	24.91	29.96
12	-19.19	-12.96	-9.96	-6.70	-.78	6.40	17.58	23.50	26.76	29.74	35.94
13	-17.82	-11.88	-9.00	-5.67	-.18	8.69	17.46	23.15	26.26	29.16	35.10
14	-16.11	-10.75	-8.15	-5.32	-.19	7.77	15.73	20.86	23.69	26.23	31.65
15	-12.97	-8.23	-6.18	-3.95	.11	6.40	12.69	16.76	18.98	21.03	25.27
16	-9.56	-6.37	-4.83	-3.15	-.10	4.63	9.36	12.41	14.09	15.63	18.82
17	-8.13	-5.62	-4.40	-3.08	-.67	3.06	6.79	9.20	10.52	11.74	14.25
18	-6.88	-4.93	-3.98	-2.75	-1.08	1.82	4.74	6.59	7.62	8.57	10.52
19	-6.84	-4.28	-3.52	-2.70	-1.20	1.12	3.49	4.94	5.76	6.52	8.08
20	-6.81	-4.35	-3.65	-2.68	-1.49	.67	2.83	4.22	4.99	5.69	7.15
21	-6.49	-4.17	-3.53	-2.43	-1.57	.39	2.35	3.61	4.31	4.95	6.27
22	-6.53	-4.28	-3.67	-3.01	-1.81	.05	1.91	3.11	3.77	4.38	5.63
23	-6.65	-4.37	-3.75	-3.08	-1.85	.05	1.95	3.18	3.85	4.47	5.75
24	-6.76	-4.46	-3.81	-3.12	-1.86	.09	2.09	3.30	3.99	4.63	5.94
25	-6.81	-4.50	-3.86	-3.17	-1.91	.09	1.99	3.25	3.94	4.58	5.89
26	-6.82	-4.52	-3.49	-3.20	-1.96	-.03	1.90	3.14	3.83	4.46	5.74
27	-6.21	-4.92	-4.24	-3.50	-2.17	-.10	1.97	3.20	4.04	4.72	6.11
28	-7.64	-5.93	-5.16	-4.26	-2.56	-.02	2.53	4.17	5.07	5.90	7.61
29	-7.52	-5.90	-4.96	-4.09	-2.41	.15	2.70	4.39	5.26	6.09	7.91
30	-7.71	-5.88	-5.00	-4.03	-2.28	.43	2.15	4.90	5.87	6.75	8.58
31	-7.50	-5.59	-4.67	-3.67	-1.94	.99	3.81	5.64	6.64	7.56	9.47
32	-6.31	-4.56	-3.71	-2.79	-1.11	1.49	4.18	5.77	6.69	7.54	9.29
33	-6.06	-4.25	-3.37	-2.41	-.68	2.01	4.70	5.44	6.39	8.27	10.09
34	-7.40	-5.35	-4.36	-3.29	-1.33	1.70	4.74	6.69	7.77	8.76	10.80
35	-8.10	-6.03	-5.02	-3.92	-1.94	1.15	4.23	6.22	7.32	8.32	10.40
36	-8.12	-6.09	-5.10	-4.03	-2.08	.94	3.55	5.30	6.37	7.96	9.99
37	-8.90	-6.82	-5.81	-4.71	-2.72	.36	3.45	5.44	6.53	7.94	9.62
38	-9.63	-7.45	-6.39	-5.25	-3.16	.67	3.20	5.35	6.53	7.59	9.77
39	-10.62	-8.24	-7.09	-5.84	-3.56	-.03	3.50	5.78	7.03	8.18	10.56
40	-10.60	-8.12	-6.92	-5.61	-3.24	.44	4.12	6.50	7.81	9.01	11.49
41	-9.99	-7.68	-6.56	-5.35	-3.14	.29	3.71	5.92	7.13	8.25	10.56
42	-11.63	-9.08	-7.84	-6.51	-4.06	-.27	3.52	5.96	7.30	8.34	11.09
43	-12.47	-9.68	-8.37	-6.85	-4.17	-.02	4.24	6.82	8.29	9.65	12.44
44	-12.13	-9.21	-7.80	-6.26	-3.46	.87	5.21	8.00	9.54	10.95	13.87
45	-11.86	-8.79	-7.31	-5.69	-2.75	1.80	6.35	9.29	10.90	12.39	15.46
46	-12.34	-8.99	-7.27	-5.61	-2.40	2.57	7.55	10.75	12.52	14.14	17.49
47	-12.41	-8.89	-7.18	-5.33	-1.95	3.29	8.51	11.89	13.74	15.45	18.97
48	-14.29	-11.12	-8.11	-5.91	-1.93	4.25	10.43	14.41	16.60	18.62	22.78
49	-14.25	-9.90	-7.73	-5.50	-1.32	5.13	11.59	15.75	18.05	20.15	24.51
50	-14.31	-9.74	-7.52	-5.11	-.72	6.06	12.86	17.24	19.65	21.87	26.44
51	-12.78	-8.29	-6.11	-3.74	.56	7.23	13.29	18.19	20.56	22.74	27.23
52	-15.27	-11.40	-7.59	-5.33	-.61	6.7[illegible]	14.14	18.50	21.52	23.92	28.89
53	-18.16	-12.76	-10.14	-7.29	-2.12	5.89	13.31	19.08	21.93	24.54	29.95
54	-20.01	-14.22	-11.41	-8.36	-2.82	5.77	14.37	19.91	22.96	25.77	31.55
55	-21.28	-15.31	-12.42	-9.28	-3.57	5.29	14.14	19.85	22.99	25.88	31.85
56	-25.47	-18.77	-15.52	-11.99	-5.58	4.36	14.31	20.72	24.25	27.50	34.19
57	-28.37	-21.16	-17.67	-13.87	-6.98	3.71	14.41	21.30	25.10	28.59	35.79
58	-28.07	-19.42	-16.20	-12.69	-6.32	3.56	13.43	18.80	23.31	26.53	33.18
59	-28.55	-21.79	-18.51	-14.95	-8.47	1.57	11.61	18.09	23.65	24.93	31.69
60	-31.80	-24.91	-21.17	-17.93	-11.33	-1.10	9.17	15.72	19.37	22.71	29.60
61	-31.60	-24.73	-21.40	-17.78	-11.20	-1.00	9.20	15.78	19.40	22.73	29.60
62	-31.50	-24.63	-21.30	-17.68	-11.10	-.90	9.30	15.88	19.50	22.63	29.70
63	-31.10	-24.30	-21.00	-17.41	-10.90	-.80	9.30	15.81	19.40	22.70	29.50
64	-31.00	-24.20	-20.90	-17.31	-10.80	-.70	9.40	15.91	19.50	22.80	29.60
65	-30.90	-24.10	-20.40	-17.21	-10.70	-.60	9.50	16.01	19.60	22.90	29.70
66	-30.70	-23.90	-20.60	-17.01	-10.50	-.40	9.70	16.21	19.80	23.10	29.90
67	-30.60	-23.80	-20.50	-16.91	-10.40	-.30	9.80	16.31	19.90	23.20	30.00
68	-30.20	-23.46	-20.20	-16.65	-10.20	-.20	9.80	16.25	19.80	23.06	29.80
69	-30.10	-23.36	-20.10	-16.55	-10.10	-.10	9.90	16.35	19.90	23.16	29.90
70	-30.00	-23.26	-20.00	-16.45	-10.00	.00	10.00	16.45	20.00	23.26	30.00

TABLE 11.9. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.49	-6.43	-5.72	-4.95	-3.65	-1.38	.79	7.19	2.96	3.67	5.13
1	-14.91	-11.47	-13.35	-4.53	-5.69	-1.33	3.03	5.84	7.39	8.81	11.75
2	-15.14	-11.73	-13.98	-4.28	-5.02	.99	5.10	8.36	10.16	11.81	15.22
3	-16.39	-12.73	-13.66	-4.83	-5.13	.62	6.33	10.03	12.06	13.93	17.79
4	-19.34	-14.57	-12.91	-11.36	-5.78	.45	7.48	11.76	14.11	16.27	20.74
5	-21.82	-16.79	-19.36	-11.71	-6.97	.56	8.02	12.83	15.48	17.91	22.94
6	-25.16	-19.93	-14.66	-13.69	-8.16	.39	8.84	14.32	17.34	20.11	25.84
7	-27.94	-21.59	-18.49	-13.12	-8.99	.51	10.01	16.14	19.61	22.61	29.01
8	-31.93	-24.69	-21.11	-17.27	-13.29	.53	11.35	18.33	22.17	25.70	32.99
9	-35.22	-27.12	-23.17	-14.93	-11.14	.39	12.92	20.66	24.95	28.88	36.98
10	-37.14	-28.5[illegible]	-24.32	-19.77	-11.57	1.32	14.14	22.91	26.96	31.14	39.78
11	-34.27	-27.25	-24.88	-23.13	-11.39	1.90	15.29	23.93	28.68	33.05	42.07
12	-35.77	-27.14	-22.98	-13.93	-13.17	2.04	15.45	23.71	28.26	32.44	41.07
13	-31.73	-23.92	-23.13	-16.31	-8.53	3.07	14.67	22.15	26.27	30.04	37.87
14	-26.74	-22.16	-16.95	-13.46	-7.12	2.71	12.54	18.88	22.37	25.54	32.20
15	-22.53	-17.02	-14.34	-11.44	-6.14	1.98	10.14	15.40	16.30	20.94	26.96
16	-17.91	-13.23	-11.16	-9.94	-4.91	1.34	7.59	11.62	13.84	15.88	20.09
17	-14.12	-12.85	-9.27	-7.55	-4.52	.93	5.29	8.91	10.13	11.71	14.98
18	-11.04	-8.40	-7.41	-6.11	-3.76	-.11	3.54	5.89	7.19	8.30	10.84
19	-9.21	-7.21	-6.24	-5.19	-3.27	-.30	2.47	4.59	5.64	6.61	8.61
20	-7.71	-6.07	-5.24	-4.42	-2.85	-.42	2.01	3.58	4.44	5.23	6.87
21	-7.67	-6.23	-5.24	-4.38	-2.81	-.38	2.05	3.62	4.48	5.27	6.91
22	-7.04	-5.57	-4.84	-4.09	-2.68	-.50	1.68	3.09	3.86	4.57	6.04
23	-6.83	-5.34	-4.64	-3.87	-2.44	-.32	1.84	3.23	4.00	4.70	6.16
24	-6.84	-5.34	-4.64	-3.86	-2.44	-.24	1.94	3.38	4.14	4.88	6.36
25	-6.94	-4.99	-4.31	-3.57	-2.22	-.13	1.94	3.31	4.05	4.73	6.14
26	-6.24	-4.86	-4.17	-3.42	-2.06	.05	2.16	3.52	4.27	4.96	6.38
27	-6.24	-4.43	-4.15	-3.41	-2.06	.03	2.12	3.47	4.21	4.89	6.30
28	-6.67	-5.15	-4.42	-3.61	-2.16	.10	2.34	3.81	4.61	5.35	6.87
29	-8.71	-6.82	-5.90	-4.90	-3.09	-.27	2.59	4.36	5.35	6.27	8.17
30	-8.68	-6.75	-5.81	-4.79	-2.94	-.07	2.80	4.65	5.67	6.60	8.54
31	-8.46	-6.47	-5.50	-4.45	-2.55	.41	3.34	5.24	6.31	7.28	9.27
32	-7.34	-5.40	-4.45	-3.41	-1.53	1.38	4.34	6.18	7.21	8.16	10.13
33	-7.07	-5.04	-4.09	-3.03	-1.10	1.88	4.87	6.79	7.85	8.83	10.84
34	-7.01	-4.87	-3.84	-2.71	-.66	2.52	5.69	7.74	8.87	9.90	12.04
35	-6.76	-4.77	-3.80	-2.75	-.83	2.13	5.10	7.01	8.04	9.03	11.83
36	-8.36	-6.30	-5.31	-4.24	-2.28	.76	3.79	5.75	6.82	7.81	9.84
37	-10.51	-8.12	-6.97	-5.71	-3.43	.11	.69	5.93	7.18	8.34	10.72
38	-11.56	-8.99	-7.75	-6.39	-3.99	-.13	3.69	6.14	7.50	8.74	11.31
39	-12.75	-9.86	-8.46	-6.93	-4.17	.13	4.42	7.19	8.71	10.11	13.00
40	-12.47	-9.57	-8.17	-6.64	-3.86	.49	4.75	7.52	9.05	10.45	13.35
41	-13.90	-10.78	-9.27	-7.63	-4.65	-.02	4.40	7.68	9.23	10.74	13.85
42	-13.39	-10.46	-9.04	-7.50	-4.69	-.39	4.01	6.81	8.36	9.77	12.70
43	-13.12	-10.20	-8.79	-7.25	-4.45	-.12	4.21	7.00	8.54	9.95	12.87
44	-13.36	-10.32	-8.85	-7.25	-4.35	.15	4.65	7.56	9.15	10.42	13.66
45	-12.51	-9.64	-8.11	-6.54	-3.70	.70	5.11	7.96	9.51	10.95	13.91
46	-11.43	-8.70	-7.29	-5.[illegible]	-2.94	1.40	5.74	8.64	10.08	11.50	14.43
47	-11.33	-8.22	-6.71	-5.07	-2.09	2.54	7.16	10.14	11.78	13.29	16.40
48	-12.99	-9.29	-7.61	-5.56	-2.03	3.45	8.93	12.47	14.41	16.20	19.89
49	-15.51	-11.08	-8.94	-6.60	-2.36	4.22	10.80	15.04	17.37	19.52	23.95
50	-14.04	-9.85	-7.83	-5.62	-1.62	4.57	10.79	14.80	17.00	19.03	23.21
51	-11.36	-7.62	-5.82	-3.85	-.28	5.25	10.74	14.35	16.32	18.12	21.85
52	-11.00	-7.18	-5.32	-3.31	.34	6.04	11.72	15.38	17.40	19.25	23.08
53	-9.90	-6.14	-4.37	-2.41	1.14	6.69	12.21	15.78	17.74	19.55	23.27
54	-10.46	-6.57	-4.69	-2.63	1.07	6.84	12.64	16.36	18.41	20.30	24.19
55	-13.90	-9.34	-7.13	-4.72	-.36	6.42	13.19	17.56	19.97	22.18	26.74
56	-15.59	-10.82	-8.61	-5.99	-1.92	5.67	12.76	17.32	19.84	22.15	26.93
57	-16.36	-11.65	-9.37	-6.90	-2.90	4.57	11.55	16.06	18.52	20.80	25.50
58	-16.97	-11.83	-9.59	-7.14	-2.71	4.17	11.05	15.49	17.93	20.18	24.81
59	-16.60	-11.34	-8.79	-6.02	-.99	4.81	14.62	19.66	22.42	24.97	30.22
60	-16.80	-11.66	-9.17	-6.47	-1.55	4.07	13.70	18.62	21.32	23.81	28.95
61	-16.10	-11.18	-8.80	-6.21	-1.50	3.80	13.10	17.81	20.40	22.78	27.70
62	-15.80	-11.02	-8.70	-6.18	-1.60	3.50	12.60	17.18	19.78	22.02	26.80
63	-15.20	-10.62	-8.40	-5.99	-1.60	3.20	12.00	16.39	18.80	21.02	25.60
64	-14.70	-10.45	-8.30	-5.96	-1.70	4.90	11.60	15.76	18.10	20.25	24.70
65	-14.30	-10.04	-8.00	-5.74	-1.70	4.60	10.90	14.96	17.20	19.26	23.50
66	-13.80	-9.74	-7.80	-5.67	-1.80	4.20	10.20	14.07	16.20	18.14	22.20
67	-13.50	-9.59	-7.70	-5.64	-1.90	3.90	9.70	13.44	15.50	17.39	21.30
68	-12.93	-9.19	-7.40	-5.45	-1.90	3.60	9.10	12.65	14.60	16.39	20.10
69	-12.60	-9.03	-7.30	-5.42	-2.00	3.30	8.60	12.02	13.90	15.63	19.20
70	-12.00	-8.63	-7.00	-5.22	-2.00	3.00	8.00	11.22	13.00	14.63	18.00

TABLE 11.10. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.01	-7.24	-6.91	-5.49	-3.81	-1.21	1.39	3.07	4.99	6.84	8.59
1	-17.99	-14.43	-12.71	-10.84	-7.43	-2.15	3.14	6.54	8.91	10.13	13.69
2	-20.49	-16.97	-14.95	-12.25	-8.26	-2.07	4.12	8.11	10.31	12.33	16.50
3	-24.63	-19.66	-17.25	-14.63	-9.87	-2.49	4.89	9.65	12.27	14.68	19.66
4	-29.04	-23.14	-20.30	-17.21	-11.60	-2.90	5.84	11.41	14.54	17.39	23.20
5	-32.22	-25.66	-22.49	-19.03	-12.76	-3.03	6.70	12.97	16.53	19.60	26.16
6	-36.28	-28.84	-25.23	-21.31	-14.18	-3.13	7.92	15.05	18.97	22.58	30.02
7	-40.56	-32.20	-28.15	-23.74	-15.74	-3.33	9.08	17.08	21.49	25.64	33.90
8	-45.47	-36.00	-31.41	-26.42	-17.35	-3.29	10.77	19.64	24.83	29.42	38.89
9	-48.72	-38.51	-33.57	-28.19	-18.42	-3.27	11.88	21.65	27.03	31.97	42.18
10	-50.79	-40.17	-35.02	-29.42	-19.25	-3.48	12.29	22.94	28.04	33.21	43.03
11	-50.40	-40.00	-34.86	-29.27	-19.12	-3.38	12.36	22.51	28.10	33.24	43.84
12	-48.47	-38.34	-33.43	-28.09	-18.39	-3.35	11.69	21.39	24.73	31.64	41.77
13	-42.37	-33.54	-29.24	-24.60	-16.15	-3.09	10.07	18.52	23.18	27.46	36.29
14	-37.06	-29.29	-25.53	-21.44	-14.01	-2.49	9.03	16.46	20.55	24.31	32.07
15	-31.08	-24.59	-21.45	-18.03	-11.82	-2.19	7.44	13.65	17.07	20.21	26.70
16	-25.26	-20.18	-17.55	-14.78	-9.74	-1.93	5.88	10.92	13.67	16.24	21.50
17	-19.89	-15.80	-13.82	-11.66	-7.75	-1.68	4.39	8.30	10.46	12.44	16.53
18	-15.32	-12.21	-10.70	-9.04	-6.08	-1.46	3.16	6.14	7.76	9.29	12.40
19	-12.15	-9.74	-8.58	-7.31	-5.01	-1.44	2.13	4.43	5.70	6.86	9.27
20	-11.06	-9.44	-8.29	-7.04	-4.78	-1.27	2.24	4.50	5.75	6.90	9.26
21	-10.96	-8.78	-7.73	-6.58	-4.50	-1.27	1.96	4.04	5.19	6.24	8.42
22	-9.76	-7.79	-6.89	-5.80	-3.92	-1.00	1.94	3.80	4.84	5.79	7.76
23	-9.17	-7.26	-6.34	-5.34	-3.51	-.68	2.15	3.98	4.96	5.90	7.81
24	-8.90	-7.01	-6.10	-5.11	-3.30	-.50	2.30	4.11	5.10	6.01	7.90
25	-8.23	-6.44	-5.57	-4.63	-2.91	-.25	2.41	4.13	5.07	5.94	7.73
26	-8.05	-6.24	-5.36	-4.40	-2.67	.02	2.71	4.44	5.40	6.28	8.09
27	-8.96	-6.93	-5.94	-4.87	-2.92	.10	3.12	5.07	6.19	7.13	9.16
28	-9.55	-7.27	-6.16	-4.96	-2.77	.62	4.00	6.19	7.39	8.50	10.78
29	-9.24	-7.02	-5.97	-4.82	-2.73	.51	3.76	5.84	6.99	8.05	10.23
30	-9.72	-7.41	-6.30	-5.08	-2.68	.59	3.94	6.16	7.38	8.49	10.79
31	-10.65	-7.97	-6.67	-5.24	-2.49	1.29	5.27	7.83	9.26	10.54	13.23
32	-11.33	-8.29	-6.81	-5.21	-2.29	2.23	6.76	9.67	11.27	12.75	15.79
33	-9.89	-6.93	-5.49	-3.93	-1.09	3.30	7.70	10.53	12.10	13.53	16.49
34	-10.13	-6.86	-5.28	-3.56	-.43	4.42	9.27	12.40	14.12	15.71	18.97
35	-9.94	-6.65	-5.05	-3.32	-.17	4.72	9.61	12.76	14.50	16.09	19.39
36	-11.69	-8.19	-6.43	-4.56	-1.17	4.69	9.35	12.74	14.61	16.32	19.86
37	-12.85	-9.36	-7.67	-5.84	-2.50	2.48	7.85	11.19	13.03	14.71	18.20
38	-13.67	-10.13	-8.41	-6.54	-3.15	2.11	7.37	10.74	12.63	14.35	17.89
39	-13.72	-10.32	-8.67	-6.88	-3.63	1.42	6.47	9.72	11.51	13.16	16.56
40	-15.63	-12.02	-10.27	-8.37	-4.91	.49	5.80	9.26	11.16	12.91	16.51
41	-16.76	-12.96	-11.12	-9.11	-5.47	.18	5.83	9.47	11.48	13.32	17.13
42	-18.90	-14.60	-12.51	-10.24	-6.12	.27	6.65	10.77	13.09	15.13	19.43
43	-21.09	-16.31	-13.99	-11.47	-6.89	.22	7.32	11.90	14.43	16.74	21.53
44	-19.69	-14.93	-12.42	-10.11	-5.55	1.51	8.58	13.14	15.65	17.96	22.72
45	-19.22	-14.30	-11.92	-9.32	-4.61	2.70	10.01	14.72	17.31	19.70	24.62
46	-18.85	-13.73	-11.26	-8.56	-3.66	3.44	11.54	16.44	19.14	21.61	26.73
47	-18.22	-12.95	-10.40	-7.62	-2.55	5.24	13.07	18.11	20.89	23.44	28.71
48	-16.58	-11.43	-8.94	-6.22	-1.30	6.35	13.99	18.92	21.63	24.13	29.28
49	-15.56	-10.45	-7.96	-5.26	-.34	7.38	14.91	19.82	22.53	25.02	30.15
50	-16.74	-10.73	-8.04	-5.11	.21	8.45	16.49	22.01	24.94	27.63	33.18
51	-19.26	-13.26	-10.21	-6.89	-.87	8.48	17.82	23.85	27.17	30.22	36.51
52	-22.84	-15.88	-12.51	-8.84	-2.18	8.15	18.49	25.15	28.82	32.19	39.15
53	-22.83	-15.79	-12.38	-8.67	-1.94	8.51	18.94	25.70	29.41	32.82	39.86
54	-21.98	-15.05	-11.69	-8.04	-1.41	8.88	19.17	25.80	29.45	32.81	39.74
55	-20.43	-13.95	-10.71	-7.19	-.80	9.11	19.02	25.41	28.93	32.17	38.85
56	-22.32	-15.39	-12.03	-8.38	-1.76	8.53	18.81	25.44	29.10	32.45	39.38
57	-25.00	-17.44	-14.07	-10.16	-3.13	7.81	18.76	25.88	29.68	33.25	40.62
58	-24.99	-17.45	-13.79	-9.82	-2.59	8.61	19.81	27.03	31.01	34.66	42.21
59	-19.50	-12.23	-8.71	-4.88	2.07	12.86	23.65	30.60	34.43	37.95	45.22
60	-18.28	-10.89	-7.31	-3.41	3.66	14.63	25.60	32.68	36.57	40.15	47.65
61	-18.30	-11.09	-7.60	-3.80	3.10	13.80	24.50	31.40	35.20	38.69	45.90
62	-17.80	-10.84	-7.50	-3.84	2.88	13.10	23.40	30.04	33.70	37.06	44.00
63	-17.70	-10.96	-7.70	-4.15	2.30	12.30	22.30	28.75	32.30	35.56	42.30
64	-17.20	-10.73	-7.60	-4.19	2.00	11.60	21.20	27.39	30.80	33.93	40.40
65	-17.10	-10.83	-7.80	-4.50	1.50	10.80	20.10	26.10	29.40	32.43	38.70
66	-17.00	-10.94	-8.00	-4.80	1.00	10.00	19.00	24.80	28.00	30.94	37.00
67	-16.50	-10.71	-7.90	-4.85	.70	9.30	17.90	23.45	26.50	29.31	35.10
68	-16.40	-10.81	-8.10	-5.15	.20	8.50	16.80	22.15	25.10	27.81	33.40
69	-15.90	-10.58	-8.00	-5.19	-.10	7.80	15.70	20.79	23.60	26.18	31.50
70	-15.80	-10.48	-8.20	-5.50	-.40	7.00	14.60	19.50	22.20	24.68	29.60

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 11.11. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.75	-7.71	-5.72	-5.60	-3.69	-.66	2.37	4.32	5.40	6.39	8.43
1	-21.25	-16.64	-14.40	-11.97	-7.55	-.70	6.15	10.57	13.00	15.24	19.85
2	-24.09	-19.79	-15.23	-13.46	-9.37	-.51	7.35	12.42	15.21	17.77	23.07
3	-27.82	-21.76	-18.83	-15.68	-5.84	-.85	8.14	17.94	17.13	20.05	26.12
4	-30.85	-24.11	-20.84	-17.29	-10.97	-.82	9.19	15.65	19.20	22.47	29.21
5	-35.52	-27.73	-23.95	-19.84	-12.38	-.81	10.76	18.22	22.33	26.11	33.90
6	-42.05	-32.85	-29.33	-23.56	-14.72	-1.07	12.59	21.40	26.29	30.71	39.91
7	-48.09	-37.53	-32.41	-26.84	-16.72	-1.05	14.63	24.74	30.31	35.83	45.99
8	-54.08	-42.15	-35.37	-30.08	-19.66	-.95	16.76	28.18	34.47	40.25	52.18
9	-58.78	-45.73	-39.81	-32.53	-20.04	-.67	18.70	31.19	38.07	44.35	57.44
10	-63.38	-45.34	-42.54	-35.14	-21.70	-.86	19.98	33.42	40.82	47.62	61.66
11	-62.88	-48.85	-42.06	-34.67	-21.24	-.42	20.40	33.83	41.22	48.01	62.04
12	-57.47	-44.59	-39.35	-31.55	-19.23	-.11	19.01	31.34	38.13	44.37	57.25
13	-49.27	-38.21	-32.86	-27.03	-16.45	-.04	16.27	26.95	32.78	38.13	49.19
14	-40.55	-31.37	-26.93	-22.09	-13.31	.31	13.93	22.71	27.55	31.99	41.17
15	-33.05	-25.63	-22.03	-18.12	-11.01	.01	11.02	18.14	22.05	25.65	33.07
16	-26.78	-20.83	-17.95	-14.82	-9.12	-.29	8.54	14.23	17.37	20.25	26.20
17	-21.57	-16.86	-14.56	-12.10	-7.59	-.60	6.39	10.90	13.38	15.66	20.37
18	-17.69	-13.93	-12.11	-10.13	-6.53	-.95	4.63	8.23	10.21	12.03	15.79
19	-15.34	-12.17	-10.64	-8.97	-5.94	-1.24	3.46	6.45	8.16	9.69	12.46
20	-14.11	-11.31	-9.95	-8.47	-5.79	-1.63	2.53	5.21	6.69	8.05	10.85
21	-13.04	-10.51	-9.28	-7.94	-5.52	-1.76	2.00	4.42	5.76	6.99	9.52
22	-13.13	-10.61	-9.39	-8.06	-5.65	-1.91	1.83	4.24	5.57	6.79	9.31
23	-12.07	-9.75	-8.63	-7.44	-5.19	-1.75	1.69	3.51	5.13	6.25	8.57
24	-11.21	-9.02	-7.96	-6.81	-4.71	-1.46	1.79	3.89	5.04	6.10	8.29
25	-11.42	-9.14	-8.03	-6.83	-4.64	-1.25	2.14	4.33	5.53	6.64	8.92
26	-11.56	-9.22	-8.04	-6.84	-4.60	-1.12	2.36	4.60	5.84	6.98	9.32
27	-12.78	-10.15	-8.87	-7.48	-4.96	-1.45	2.66	5.38	6.77	8.05	10.68
28	-10.31	-7.97	-6.64	-5.60	-3.36	.11	3.54	6.83	7.66	8.26	10.54
29	-14.19	-9.35	-8.08	-6.52	-3.85	.29	4.94	7.11	8.54	9.94	12.73
30	-12.73	-9.83	-8.43	-6.96	-4.12	.19	4.49	7.27	8.80	10.20	13.11
31	-14.53	-9.65	-8.24	-6.74	-3.99	.38	4.56	7.31	8.82	10.22	13.10
32	-14.16	-10.67	-8.97	-7.11	-3.79	1.39	6.56	9.92	11.76	13.45	16.94
33	-14.97	-12.31	-10.46	-7.70	-3.53	2.05	9.42	13.60	15.89	18.01	22.37
34	-15.96	-11.60	-9.46	-7.19	-3.21	3.46	9.94	14.11	16.91	18.52	22.88
35	-15.65	-11.11	-8.96	-6.67	-2.37	4.22	10.82	15.07	17.41	19.56	24.00
36	-16.59	-11.94	-9.69	-7.24	-2.79	4.11	11.01	15.46	17.91	20.17	24.82
37	-18.18	-13.24	-10.84	-8.24	-3.50	3.83	11.17	15.70	18.51	20.71	25.65
38	-21.69	-16.08	-13.36	-10.40	-6.02	3.31	11.66	17.02	19.98	22.70	28.31
39	-21.79	-16.25	-13.57	-10.65	-6.35	2.87	11.09	16.37	19.31	21.99	27.53
40	-24.74	-17.09	-14.34	-11.36	-6.95	2.46	10.44	16.20	19.24	21.98	27.63
41	-23.90	-17.76	-15.00	-11.99	-6.53	1.93	10.98	15.86	18.86	21.62	27.33
42	-25.70	-19.72	-16.82	-13.67	-7.95	.93	9.46	15.53	18.68	21.67	27.55
43	-26.36	-20.25	-17.29	-14.07	-8.22	.45	9.92	15.77	19.00	21.94	28.07
44	-26.59	-20.36	-17.34	-14.06	-8.09	1.14	10.46	16.37	19.65	22.67	28.90
45	-27.99	-21.36	-18.15	-14.86	-8.31	1.53	11.32	17.72	21.22	24.93	31.06
46	-28.76	-21.72	-18.32	-14.87	-7.87	2.49	12.94	19.67	23.37	26.80	33.82
47	-29.86	-22.98	-18.79	-14.84	-7.72	3.35	13.53	21.57	25.50	29.11	36.57
48	-33.97	-25.35	-21.17	-16.67	-8.36	4.49	17.25	25.51	30.06	34.29	42.86
49	-27.49	-19.86	-16.17	-12.16	-4.87	6.39	17.62	24.99	28.95	32.61	40.22
50	-26.76	-19.81	-16.45	-11.16	-3.74	7.78	19.29	26.71	30.80	34.56	42.32
51	-27.26	-19.32	-15.98	-11.29	-3.69	8.49	19.88	27.49	31.46	35.51	43.45
52	-25.56	-18.03	-14.39	-10.42	-3.21	7.07	19.14	26.35	30.32	33.97	41.50
53	-29.46	-21.21	-17.01	-12.93	-4.13	6.76	21.42	29.93	34.50	38.74	47.38
54	-33.26	-23.94	-19.43	-14.62	-6.00	6.52	22.04	30.97	35.88	40.39	49.71
55	-37.00	-28.15	-22.69	-17.18	-6.79	7.31	25.42	35.68	41.52	46.27	57.62
56	-38.16	-27.55	-22.52	-16.83	-6.67	9.67	29.01	39.96	46.56	51.69	66.30
57	-44.44	-32.58	-26.64	-20.59	-9.23	6.37	26.98	37.33	43.58	49.32	61.18
58	-38.46	-27.70	-22.49	-16.89	-6.53	9.43	26.38	35.60	41.34	46.55	57.30
59	-44.21	-34.09	-29.42	-23.83	-12.23	6.76	23.74	35.23	41.72	47.67	59.71
60	-62.01	-39.43	-33.33	-26.70	-14.65	4.03	22.71	34.76	41.39	47.44	60.07
61	-49.40	-37.48	-31.70	-25.41	-14.08	3.70	21.46	32.81	39.16	45.86	56.80
62	-47.00	-36.68	-30.20	-24.23	-13.48	3.40	20.26	31.83	37.00	42.48	53.86
63	-44.40	-33.68	-29.53	-22.87	-12.76	3.10	19.46	29.87	34.76	39.86	50.50
64	-41.00	-31.63	-26.80	-21.54	-12.08	2.80	17.46	27.14	32.40	37.23	47.20
65	-39.20	-29.04	-25.30	-20.34	-11.48	2.56	16.46	25.30	30.30	35.83	44.20
66	-36.63	-27.81	-23.60	-19.07	-10.70	2.70	15.10	23.42	28.60	32.21	40.70
67	-33.80	-25.76	-21.70	-17.67	-10.00	1.90	13.80	21.97	25.70	29.58	37.60
68	-31.18	-23.76	-20.20	-16.33	-9.30	1.60	12.50	19.63	23.48	26.96	34.30
69	-28.70	-21.96	-18.76	-15.15	-8.70	1.30	11.30	17.75	21.30	24.64	31.30
70	-26.00	-19.99	-17.06	-13.80	-8.00	1.00	10.00	16.00	19.00	21.99	28.00

TABLE 11.12. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

90-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.26	-8.17	-7.16	-6.06	-4.06	-.96	2.14	4.14	5.24	6.25	8.34
1	-23.18	-18.50	-16.23	-13.76	-9.28	-2.33	4.62	9.10	11.57	13.84	18.52
2	-27.69	-22.18	-19.51	-16.61	-11.33	-3.15	5.03	10.31	13.21	15.88	21.39
3	-32.96	-26.38	-23.20	-19.73	-13.49	-3.68	6.08	12.37	15.84	19.02	25.60
4	-38.24	-31.39	-27.55	-23.45	-15.94	-4.29	7.36	14.87	19.01	22.81	30.66
5	-44.32	-35.43	-31.12	-26.43	-17.92	-4.72	8.48	16.99	21.68	25.99	34.58
6	-50.32	-40.18	-35.27	-29.93	-20.22	-5.17	9.88	19.59	24.53	29.84	39.98
7	-56.83	-45.34	-39.77	-33.71	-22.71	-5.65	11.41	22.41	28.47	34.04	45.53
8	-61.55	-49.01	-42.54	-36.33	-24.33	-5.72	12.89	24.89	31.50	37.57	50.11
9	-66.54	-52.92	-45.33	-38.15	-25.12	-5.91	14.30	27.33	34.51	41.10	54.72
10	-68.36	-55.07	-48.15	-40.62	-26.94	-5.73	15.48	29.16	36.69	43.61	57.90
11	-68.11	-54.02	-47.20	-39.77	-25.29	-5.38	15.53	29.01	36.44	43.26	57.35
12	-61.23	-48.54	-42.34	-35.60	-23.35	-4.36	14.[illegible]	26.88	33.62	39.82	52.61
13	-52.07	-41.20	-35.73	-30.01	-13.51	-3.23	13.05	23.52	29.33	34.64	45.51
14	-43.99	-34.63	-30.09	-25.15	-16.19	-2.29	11.41	20.57	25.51	30.05	39.41
15	-37.13	-29.23	-25.40	-21.23	-13.67	-1.94	9.79	17.35	21.62	25.46	33.25
16	-31.16	-24.55	-21.35	-17.87	-11.54	-1.73	8.69	14.41	17.89	21.09	27.70
17	-26.54	-20.93	-18.21	-15.25	-9.88	-1.55	6.78	12.15	15.11	17.83	23.44
18	-20.83	-16.53	-14.44	-12.17	-8.05	-1.66	4.73	8.85	11.12	13.21	17.51
19	-17.13	-13.75	-12.11	-10.33	-7.09	-2.07	2.35	6.19	7.97	9.61	12.99
20	-15.38	-12.46	-11.05	-9.51	-6.72	-2.39	1.54	4.73	6.27	7.68	10.60
21	-14.36	-12.19	-10.35	-8.39	-6.74	-2.63	1.42	4.13	5.59	6.83	9.70
22	-14.43	-11.76	-10.47	-9.06	-6.51	-2.55	1.41	3.96	5.37	6.66	9.33
23	-13.82	-11.29	-10.07	-8.74	-6.32	-2.57	1.18	3.60	4.93	6.15	8.68
24	-13.74	-11.28	-10.09	-8.78	-6.44	-2.79	.86	3.21	4.51	5.70	8.16
25	-13.36	-10.94	-9.77	-8.50	-6.18	-2.59	1.00	3.32	4.59	5.76	8.18
26	-14.53	-11.86	-10.56	-9.15	-6.59	-2.62	1.35	3.91	5.32	6.62	9.29
27	-16.72	-13.58	-12.05	-10.41	-7.40	-2.79	1.32	4.93	6.58	8.10	11.24
28	-14.13	-11.16	-9.72	-8.15	-5.31	-.89	3.65	6.37	7.93	9.37	12.36
29	-15.76	-12.45	-10.86	-9.13	-6.96	-1.07	3.83	6.98	8.72	10.32	13.41
30	-18.97	-14.97	-13.84	-10.93	-7.18	-1.17	4.76	8.50	10.69	12.62	16.02
31	-21.14	-16.68	-14.36	-11.96	-7.89	-.81	5.96	10.33	12.74	14.95	19.61
32	-24.27	-18.91	-16.31	-13.49	-8.36	-.90	7.56	12.69	15.52	18.11	23.97
33	-27.80	-21.48	-18.42	-15.09	-9.84	.34	9.72	15.77	19.10	22.14	28.48
34	-31.07	-23.94	-20.98	-16.73	-9.96	.49	11.27	18.10	21.86	25.31	32.54
35	-32.32	-24.69	-21.80	-16.98	-9.68	1.49	12.96	20.25	24.27	27.96	35.59
36	-32.68	-24.81	-20.99	-16.84	-9.29	2.90	14.10	21.69	26.79	29.61	37.49
37	-33.70	-25.49	-21.82	-17.19	-9.34	2.85	15.03	22.88	27.21	31.19	39.39
38	-34.74	-27.73	-23.35	-18.69	-9.95	3.54	16.87	25.31	30.27	34.45	43.68
39	-39.48	-30.18	-25.38	-20.24	-10.98	3.68	18.05	27.39	32.63	37.25	47.00
40	-40.29	-30.34	-25.55	-20.31	-10.88	3.86	18.44	28.28	33.44	38.26	48.18
41	-40.38	-30.18	-25.28	-19.94	-10.26	4.77	19.74	29.46	34.81	39.71	49.83
42	-42.28	-31.36	-26.11	-20.39	-10.81	4.97	22.10	32.57	38.29	43.54	54.39
43	-43.68	-32.35	-26.77	-20.69	-9.65	7.46	24.57	35.41	41.68	47.27	58.80
44	-46.38	-34.88	-28.80	-21.98	-9.63	8.75	27.13	38.97	45.49	51.97	63.87
45	-47.47	-34.59	-28.36	-21.57	-9.24	9.87	28.98	41.31	48.09	54.33	67.21
46	-47.19	-34.32	-28.07	-21.31	-9.88	10.10	29.28	41.61	48.29	54.62	67.39
47	-43.25	-31.38	-25.63	-19.37	-9.00	9.42	27.25	38.62	44.88	50.63	62.50
48	-42.23	-30.44	-25.73	-18.52	-7.29	10.28	27.74	39.04	45.25	50.96	62.75
49	-44.11	-32.00	-26.14	-19.76	-8.18	9.79	27.76	39.39	45.72	51.58	63.68
50	-43.46	-31.48	-25.84	-19.21	-7.44	10.93	28.13	39.67	46.03	51.83	63.93
51	-41.84	-29.86	-24.84	-17.72	-6.24	11.84	29.34	40.84	47.16	52.97	64.97
52	-39.33	-27.32	-23.88	-16.17	-3.47	13.14	31.92	43.49	49.83	55.[illegible]	67.46
53	-39.83	-26.98	-21.83	-14.63	-3.82	14.99	32.99	44.61	51.00	56.88	69.01
54	-41.98	-28.91	-22.83	-16.21	-4.18	14.97	33.11	45.15	51.74	57.85	70.41
55	-39.62	-27.61	-21.80	-15.46	-3.97	15.06	31.69	43.18	49.51	55.33	67.34
56	-45.12	-31.62	-25.88	-17.94	-5.03	15.81	35.05	47.90	55.10	61.49	75.19
57	-41.87	-29.06	-23.84	-16.88	-3.88	15.95	34.36	46.58	53.34	59.66	72.39
58	-39.83	-26.13	-23.81	-20.24	-4.18	15.48	37.47	51.68	59.28	66.41	81.12
59	-67.90	-42.06	-34.38	-24.83	-10.86	12.66	36.19	51.36	59.71	67.39	83.23
60	-58.16	-42.51	-34.93	-24.49	-11.71	11.62	35.74	49.72	57.74	65.59	81.19
61	-64.90	-41.31	-34.80	-24.85	-11.40	10.80	33.28	47.65	55.48	62.91	78.00
62	-59.58	-40.82	-33.80	-24.17	-11.58	10.00	31.56	45.17	53.00	60.82	74.58
63	-62.80	-38.85	-32.18	-24.76	-11.49	9.30	30.80	43.35	50.78	57.45	71.40
64	-60.78	-37.56	-31.18	-22.87	-11.38	8.50	28.36	41.07	48.18	54.56	67.78
65	-49.28	-36.40	-30.28	-23.46	-11.28	7.60	26.89	39.95	46.88	52.00	64.88
66	-47.38	-35.11	-29.28	-22.77	-11.18	7.00	25.18	36.77	43.28	47.11	61.36
67	-46.40	-33.94	-28.30	-22.16	-11.08	6.38	23.68	34.76	40.98	46.54	58.28
68	-43.78	-32.65	-27.38	-21.58	-13.78	5.58	21.98	32.59	38.28	43.45	54.78
69	-42.08	-31.47	-26.48	-20.84	-10.68	4.88	20.48	30.46	36.08	41.07	51.68
70	-38.18	-30.28	-25.58	-20.18	-10.78	4.08	19.78	28.18	33.58	38.26	48.18

TABLE 12.1. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.32	-7.14	-6.56	-4.89	-2.76	.59	3.85	5.98	7.15	8.23	10.95
1	-11.71	-8.78	-7.37	-5.83	-3.03	1.31	5.65	8.45	9.99	11.90	14.33
2	-13.30	-9.47	-7.62	-5.60	-1.93	3.75	9.44	13.11	15.13	16.98	20.81
3	-15.30	-10.90	-8.33	-5.95	-.76	6.51	13.78	18.46	21.09	23.92	29.31
4	-17.90	-11.91	-9.01	-5.86	-.13	8.76	17.64	23.37	26.53	29.93	35.91
5	-20.51	-13.95	-10.03	-6.31	.49	10.91	21.39	28.19	31.86	35.28	42.34
6	-22.74	-14.79	-10.94	-6.79	.87	12.67	24.47	32.08	36.27	40.12	48.07
7	-24.74	-15.99	-11.68	-7.05	1.38	14.43	27.49	35.91	40.55	44.81	53.61
8	-27.72	-17.84	-13.06	-7.85	1.61	16.27	30.94	40.39	45.60	50.39	60.26
9	-30.17	-19.26	-13.98	-8.23	2.21	18.41	34.40	45.65	50.80	56.08	66.99
10	-32.27	-20.37	-15.01	-9.39	3.36	20.72	38.38	49.78	56.05	61.81	73.71
11	-33.16	-20.49	-15.28	-7.58	4.59	23.47	42.34	54.52	61.22	67.38	80.10
12	-29.51	-17.25	-11.31	-4.85	6.49	25.08	43.24	55.02	61.48	67.42	79.68
13	-21.90	-11.19	-6.17	-.76	9.36	24.29	39.51	49.33	54.74	59.71	69.97
14	-16.43	-7.68	-3.43	1.18	9.56	22.56	35.56	43.94	48.55	52.79	61.55
15	-11.99	-4.85	-1.39	2.38	9.22	19.83	30.43	37.27	41.04	44.50	51.44
16	-10.50	-4.33	-1.33	1.92	7.84	17.01	26.18	32.10	35.35	38.35	44.53
17	-10.90	-4.94	-2.33	.53	5.74	13.80	21.87	27.07	29.94	32.57	38.00
18	-10.17	-5.53	-3.29	-.94	3.60	10.48	17.36	21.80	24.25	26.49	31.13
19	-11.98	-7.62	-5.51	-3.21	.97	7.45	13.92	18.10	20.40	22.51	26.87
20	-15.56	-11.05	-8.86	-6.48	-2.14	4.57	11.29	15.62	18.00	20.19	24.72
21	-17.79	-13.20	-10.97	-8.55	-4.15	2.66	9.44	13.88	16.30	18.52	23.11
22	-20.09	-15.28	-12.98	-10.48	-5.92	1.13	8.19	12.74	15.25	17.55	22.30
23	-23.15	-17.93	-15.46	-12.69	-7.64	-.12	7.08	12.08	15.44	18.17	23.48
24	-26.59	-20.65	-17.77	-14.63	-8.94	-.11	8.72	14.41	17.54	20.42	26.37
25	-30.16	-23.47	-20.22	-16.70	-10.29	-.35	9.59	16.00	19.53	22.78	29.47
26	-32.28	-25.09	-21.50	-17.71	-10.77	-.01	10.75	17.68	21.50	25.01	32.26
27	-34.93	-26.50	-22.66	-18.48	-10.89	.88	12.45	20.29	24.92	28.26	34.19
28	-41.98	-31.89	-27.01	-21.69	-12.0	2.99	17.92	27.58	32.90	37.78	47.07
29	-43.49	-32.91	-27.79	-22.21	-12.08	3.62	19.32	29.45	35.02	40.14	50.72
30	-43.97	-33.13	-27.88	-22.17	-11.79	4.30	20.39	30.76	36.48	41.73	52.57
31	-43.22	-32.57	-27.11	-21.38	-10.99	5.13	21.25	31.64	37.36	42.62	53.48
32	-43.30	-32.19	-26.81	-20.96	-10.32	6.17	22.65	33.29	39.14	44.52	55.63
33	-43.52	-32.26	-26.80	-20.87	-10.09	6.63	23.34	34.12	40.06	45.51	56.7
34	-45.81	-33.78	-27.95	-21.61	-10.09	7.77	25.62	37.14	43.48	49.31	61.34
35	-49.27	-36.12	-29.75	-22.81	-10.22	9.31	28.83	41.43	48.36	54.73	67.09
36	-54.27	-39.60	-32.50	-24.77	-10.73	11.05	32.82	46.84	54.69	61.69	76.36
37	-59.06	-42.73	-35.83	-26.22	-10.59	13.49	37.87	53.50	62.10	70.01	86.33
38	-63.06	-45.20	-36.55	-27.14	-10.05	16.45	42.96	60.05	69.46	78.11	95.97
39	-66.78	-47.53	-38.21	-28.07	-9.44	18.93	47.50	65.93	76.07	85.39	104.64
40	-67.45	-47.33	-37.58	-26.98	-7.72	22.1	52.01	71.27	81.87	91.62	111.74
41	-68.41	-47.04	-36.69	-25.42	-4.96	26.76	58.49	78.45	90.21	100.56	121.94
42	-67.70	-45.47	-34.70	-22.98	-1.70	31.31	64.31	85.59	97.31	108.08	130.31
43	-67.23	-44.18	-33.02	-20.87	1.19	35.40	69.60	91.66	103.81	114.97	138.02
44	-66.31	-42.85	-31.49	-19.12	3.34	38.17	73.00	95.46	107.83	119.19	142.66
45	-63.66	-40.28	-28.96	-16.65	5.73	40.42	75.11	97.40	109.80	121.12	144.49
46	-60.07	-36.81	-25.55	-13.28	8.98	43.51	78.04	100.31	112.57	123.84	147.10
47	-53.78	-31.26	-20.36	-8.49	13.07	46.49	79.91	101.47	113.34	124.24	146.76
48	-49.58	-27.32	-16.84	-5.21	15.90	48.64	81.38	102.49	114.12	124.80	146.86
49	-43.94	-22.39	-11.88	-.50	20.17	52.23	84.29	104.96	116.35	126.81	148.40
50	-41.58	-19.98	-9.52	1.86	22.53	54.59	86.64	107.32	118.70	129.16	150.76
51	-40.21	-18.60	-8.13	3.27	23.96	56.04	88.13	108.82	120.22	130.69	152.30
52	-26.30	-4.69	2.81	13.14	31.91	61.01	90.12	108.89	119.22	128.72	148.33
53	-19.76	-1.35	7.57	17.28	34.91	62.24	89.58	107.21	116.92	125.84	144.25
54	-16.83	1.05	9.71	19.13	36.25	62.79	89.33	106.44	115.87	124.53	142.41
55	-16.89	.95	9.59	19.00	36.08	62.56	89.09	106.12	115.52	124.17	142.01
56	-5.96	10.47	18.43	27.09	42.82	67.20	91.59	107.32	115.98	123.94	140.37
57	-4.77	11.72	19.71	28.41	44.20	68.68	93.16	108.95	117.65	126.64	142.13
58	-2.34	14.44	23.31	32.42	48.96	74.61	100.26	116.81	125.92	134.29	151.57
59	-6.86	11.85	20.92	30.78	48.69	76.46	104.23	122.14	132.01	141.07	159.70
60	-11.64	8.30	17.97	28.49	47.60	77.23	106.84	125.97	136.49	146.5	166.12
61	-18.79	2.49	12.80	24.01	44.38	75.97	107.56	127.93	139.14	145.45	170.73
62	-19.25	1.83	12.04	23.15	43.34	74.63	105.93	126.11	137.22	147.43	168.52
63	-19.44	1.26	11.37	22.38	42.38	72.39	104.40	124.40	135.41	145.52	166.41
64	-20.10	.59	10.62	21.52	41.33	71.05	102.77	122.58	133.49	143.51	164.20
65	-20.20	.24	10.14	20.91	40.47	70.81	101.14	120.71	131.48	141.38	161.81
66	-20.66	-.42	9.38	20.05	39.43	69.47	99.53	118.89	129.56	139.36	159.68
67	-21.07	-1.02	8.69	19.24	38.45	68.20	97.96	117.15	127.72	[illegible]	157.48
68	-21.54	-1.68	7.83	18.39	37.40	66.87	96.31	115.34	125.80	135.41	155.27
69	-21.63	-2.04	7.45	17.78	36.54	65.62	94.71	113.46	123.79	133.28	152.88
70	-22.10	-2.70	6.70	16.92	35.49	64.26	93.08	111.65	121.87	131.27	150.67

TABLE 12.2. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.93	-7.09	-6.95	-4.72	-2.47	1.01	4.49	6.73	7.97	9.16	11.95
1	-13.82	-10.55	-8.78	-7.24	-4.18	.74	5.43	8.75	10.48	13.04	15.38
2	-14.90	-10.94	-9.62	-6.94	-3.15	2.73	8.00	12.39	14.48	16.40	20.35
3	-15.77	-10.97	-8.07	-6.15	-1.57	5.59	12.68	17.22	19.76	22.08	26.83
4	-17.25	-11.59	-8.84	-5.86	-.44	7.96	16.36	21.78	24.74	27.60	33.[illegible]4
5	-18.70	-12.26	-9.13	-5.73	.45	10.02	19.60	26.77	29.17	32.39	38.72
6	-19.56	-12.49	-9.06	-5.39	1.44	11.93	22.44	29.20	32.93	36.36	43.43
7	-20.99	-13.12	-9.[illegible]	-5.15	3.38	14.67	25.74	33.37	37.88	41.34	48.13
8	-22.64	-13.87	-9.62	-5.00	3.40	16.42	29.44	37.69	42.46	46.71	55.48
9	-24.60	-15.20	-10.42	-5.22	4.22	18.47	33.54	43.95	48.15	52.93	63.79
10	-27.67	-16.70	-11.39	-5.60	4.90	21.18	37.47	47.97	53.76	59.07	70.04
11	-27.16	-15.67	-10.14	-4.11	6.83	23.79	40.74	51.70	57.72	63.34	74.69
12	-21.46	-10.67	-6.74	-1.14	9.98	25.76	41.49	51.56	57.15	62.28	72.07
13	-19.67	-5.51	-1.27	3.37	11.68	24.57	37.84	45.77	50.35	54.55	63.24
14	-16.10	-2.71	.67	4.74	11.63	22.79	33.76	40.82	44.72	48.36	55.68
15	-7.23	-1.09	1.[illegible]9	5.12	10.99	20.16	29.21	35.08	38.32	41.37	47.93
16	-6.80	-.67	1.97	4.73	9.74	17.41	25.27	30.28	33.04	35.58	40.81
17	-6.89	-1.19	1.67	3.46	7.81	14.66	21.31	25.44	28.04	30.26	34.81
18	-6.76	-2.77	-.62	1.29	5.14	11.09	17.05	20.89	23.01	24.95	28.97
19	-6.48	-5.68	-3.70	-.94	2.54	8.04	13.48	17.01	18.95	20.71	24.41
20	-11.50	-7.44	-5.62	-3.64	-.09	5.64	11.17	14.72	16.70	18.53	22.28
21	-14.49	-9.47	-7.04	-5.65	-2.49	3.58	9.14	12.77	14.74	16.57	20.36
22	-16.95	-11.61	-9.81	-7.63	-3.67	2.47	8.61	12.67	14.76	16.75	20.88
23	-17.36	-13.04	-11.95	-8.68	-4.55	1.85	8.26	13.48	15.66	16.76	21.04
24	-19.06	-14.36	-12.12	-9.66	-5.18	1.76	8.70	13.18	15.65	17.91	22.59
25	-21.16	-15.95	-13.45	-10.74	-5.81	1.83	9.48	14.42	17.13	19.63	24.78
26	-23.55	-17.68	-14.84	-11.75	-6.13	2.57	11.28	16.90	19.99	22.63	28.70
27	-27.12	-20.18	-16.81	-13.15	-6.58	3.81	14.13	20.77	24.93	27.80	34.78
28	-29.27	-22.05	-19.75	-16.36	[illegible]	-.70	8.82	14.96	18.34	21.45	27.87
29	-30.62	-23.71	-20.91	-18.02	[illegible]	-.28	9.91	16.93	20.02	23.32	30.13
30	-31.15	-23.84	-20.30	-16.45	-9.45	1.39	12.24	19.23	23.09	26.63	33.93
31	-30.90	-23.22	-19.72	-15.88	-8.89	1.92	12.73	19.70	23.54	27.07	34.38
32	-30.11	-22.69	-19.09	-15.18	-8.00	2.93	13.94	21.05	24.96	28.55	35.97
33	-33.10	-24.67	-22.95	-18.06	-7.91	4.72	17.35	25.50	29.99	34.11	42.62
34	-33.50	-24.29	-19.82	-14.97	-6.14	7.54	21.21	30.09	34.89	39.36	48.57
35	-33.18	-23.27	-18.47	-13.28	-3.79	10.89	25.57	35.09	40.24	45.05	54.94
36	-36.17	-25.12	-19.77	-13.95	-3.38	13.02	29.42	39.99	45.81	51.16	62.21
37	-37.84	-25.88	-20.26	-13.75	-2.24	15.49	33.27	44.74	51.05	57.15	68.93
38	-39.29	-26.50	-20.32	-13.54	-1.31	17.68	36.67	48.91	55.66	61.85	74.65
39	-41.38	-27.54	-20.83	-13.53	-.28	20.27	40.82	54.07	61.37	68.07	81.91
40	-43.51	-28.42	-21.41	-13.56	.70	22.81	44.92	59.17	67.03	74.24	89.13
41	-44.24	-28.68	-21.11	-12.90	2.01	25.19	48.26	63.18	71.39	78.94	94.92
42	-45.11	-28.79	-20.88	-12.27	3.36	27.59	51.83	67.45	76.06	83.77	100.29
43	-43.40	-28.81	-19.47	-11.82	4.49	31.37	56.30	72.37	81.22	89.36	106.18
44	-42.56	-25.29	-14.93	-7.84	6.69	34.31	59.93	76.96	85.55	93.91	111.17
45	-43.29	-29.29	-16.99	-7.09	10.10	38.89	63.60	80.83	90.32	99.04	117.03
46	-44.53	-25.79	-16.71	-6.83	11.12	38.95	66.74	84.72	94.60	103.68	122.43
47	-43.83	-29.61	-15.30	-5.18	13.22	41.79	70.26	88.66	98.78	108.09	127.31
48	-40.37	-21.54	-12.42	-2.50	15.52	43.47	71.42	89.44	99.37	108.49	127.31
49	-38.66	-19.47	-10.82	-.97	16.94	44.65	72.39	90.28	100.13	109.18	127.86
50	-37.48	-18.80	-9.75	.09	17.97	45.70	73.42	91.30	101.14	110.19	128.87
51	-38.09	-18.19	-9.19	.72	18.62	46.37	74.13	92.03	101.88	110.94	129.64
52	-37.81	-18.67	-9.40	.69	19.01	47.43	75.84	94.16	104.25	113.52	132.67
53	-38.73	-1[illegible].71	-8.90	1.43	19.74	47.98	76.21	94.42	104.45	113.66	132.69
54	-3[illegible].72	-17.65	-8.27	1.84	20.19	48.64	77.09	95.44	105.54	114.82	133.99
55	-39.02	-11.16	-3.11	4.10	22.01	50.73	79.64	98.36	108.56	117.02	136.48
56	-33.11	-14.42	-5.51	4.29	22.08	49.68	77.28	95.08	104.88	113.89	132.48
57	-20.51	-9.36	-3.48	11.90	27.44	51.42	75.40	90.86	97.38	107.20	123.35
58	-6.50	7.51	14.44	21.98	35.68	56.92	78.16	91.85	99.40	106.33	120.64
59	-0.81	9.69	14.72	22.30	30.29	57.77	79.30	93.19	100.83	107.86	122.26
60	-2.38	11.42	18.11	25.39	38.61	5[illegible].11	79.60	92.82	100.10	106.79	120.60
61	-11.70	3.49	11.44	19.62	34.81	57.93	80.07	95.49	104.01	111.86	124.12
62	-14.99	1.09	8.81	17.24	32.61	54.41	80.21	95.56	104.01	111.77	127.81
63	-10.50	-2.09	5.97	14.89	30.53	55.09	79.68	95.48	104.20	112.22	128.26
64	-21.98	-4.99	3.24	12.19	28.45	53.67	78.89	95.15	104.11	112.34	129.32
65	-28.27	-7.06	.59	9.78	26.47	52.35	78.23	94.93	104.12	112.86	130.00
66	-28.67	-10.79	-2.12	7.30	24.42	50.96	77.51	94.62	104.05	112.71	130.59
67	-31.99	-13.05	-4.78	4.67	22.43	49.04	76.05	94.40	104.06	112.94	131.08
68	-35.29	-16.52	-7.42	2.48	20.45	48.32	76.20	94.17	104.07	113.16	131.96
69	-38.71	-19.48	-10.19	-.04	18.39	46.41	76.45	93.66	103.99	113.30	132.63
70	-42.02	-22.35	-12.82	-2.45	16.38	45.69	74.79	93.62	103.99	113.52	133.20

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 12.3. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

MARCH

Alt (km)	Cumulative Percentage Probability										
	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.73	-5.88	-4.40	-3.22	-1.07	2.26	5.59	7.74	8.93	10.01	12.26
1	-10.80	-8.00	-5.65	-5.18	-2.50	1.65	5.80	8.47	9.99	11.30	14.09
2	-12.04	-8.53	-6.83	-4.98	-4.62	3.59	8.80	12.16	14.01	15.71	19.22
3	-14.08	-9.47	-7.23	-4.80	-.38	6.47	13.33	17.75	20.18	22.41	27.03
4	-15.99	-10.61	-7.70	-4.76	.59	8.88	17.17	22.51	25.46	28.16	33.75
5	-18.27	-11.64	-8.43	-4.94	1.40	11.23	21.07	27.41	30.90	34.11	40.73
6	-19.78	-12.36	-8.76	-4.85	2.25	13.27	24.29	31.39	35.30	38.90	46.32
7	-21.52	-13.24	-9.23	-4.87	3.06	15.35	27.64	35.56	39.92	43.93	52.21
8	-23.85	-14.50	-10.12	-5.25	3.60	17.33	31.05	39.90	44.78	49.26	58.80
9	-25.04	-15.11	-10.30	-5.07	4.44	19.17	33.91	43.41	48.65	53.46	63.38
10	-23.50	-13.41	-8.53	-3.21	6.44	21.41	36.38	46.04	51.36	56.24	66.33
11	-19.75	-9.98	-5.25	-.10	9.25	23.74	38.24	47.59	52.74	57.87	67.23
12	-15.34	-6.26	-1.87	2.91	11.60	25.07	38.54	47.23	52.01	56.41	65.48
13	-9.55	-1.83	1.31	5.98	13.37	24.82	36.28	43.67	47.74	51.88	59.20
14	-6.22	.03	3.65	7.16	13.53	23.41	33.29	39.65	43.16	46.38	53.04
15	-3.60	1.93	4.61	7.52	12.82	21.03	29.24	34.54	37.46	40.14	45.67
16	-3.76	1.24	3.66	6.30	11.09	18.51	25.94	30.73	33.36	35.79	40.79
17	-5.24	-.48	1.83	4.34	8.89	15.96	23.03	27.59	30.10	32.40	37.16
18	-5.81	-1.67	.33	2.52	6.48	12.62	18.77	22.73	24.91	26.92	31.05
19	-7.98	-4.06	-2.16	-.09	3.66	9.48	15.30	19.06	21.13	23.02	26.95
20	-9.65	-5.82	-3.97	-1.95	1.72	7.41	13.10	16.77	18.79	20.64	24.48
21	-12.32	-8.26	-6.29	-4.15	-.26	5.77	11.30	15.69	17.83	19.80	23.86
22	-14.56	-10.29	-8.22	-5.93	-1.88	4.45	10.79	14.88	17.13	19.20	23.46
23	-15.44	-10.96	-9.79	-6.43	-2.15	4.50	11.15	15.44	17.80	19.97	24.45
24	-17.32	-12.33	-9.91	-7.26	-2.50	4.92	12.33	17.11	19.74	22.16	27.16
25	-18.94	-13.95	-10.79	-7.90	-2.65	5.50	13.64	18.89	21.78	24.49	29.93
26	-19.34	-13.56	-10.76	-7.72	-2.18	6.39	14.97	20.50	23.55	26.33	32.13
27	-19.76	-13.59	-10.61	-7.36	-1.46	7.68	16.83	22.73	25.98	28.96	35.12
28	-32.30	-24.13	[illegible]	-17.47	-7.[illegible]	5.[illegible]	16.[illegible]	20.[illegible]	31.13	35.30	43.92
29	-34.76	-25.40	[illegible]	-18.1[illegible]	-7.74	6.51	20.27	[illegible]	34.03	38.52	47.79
30	-37.61	-27.46	[illegible]	-17.1[illegible]	-7.45	7.01	22.[illegible]	32.41	37.77	42.69	52.34
31	-39.52	-29.23	[illegible]	-18.4[illegible]	[illegible]	7.05	23.56	33.7[illegible]	39.42	44.60	55.29
32	-40.35	-29.72	[illegible]	-18.3[illegible]	[illegible]	8.03	25.76	35.5[illegible]	42.44	47.88	59.12
33	-42.14	-31.87	[illegible]	-18.5[illegible]	[illegible]	11.15	29.71	40.[illegible]	47.27	[illegible]3.17	65.34
34	-44.14	-31.17	[illegible]	-1[illegible]	-5.6[illegible]	13.62	32.[illegible]	45.30	52.14	53.42	71.39
35	-42.22	-29.52	[illegible]	-1[illegible]	[illegible]	16.41	36.76	49.46	55.50	61.94	75.24
36	-43.34	-29.45	[illegible]	-15.4[illegible]	[illegible]	18.[illegible]	39.19	52.45	63.77	66.50	80.40
37	-47.68	-29.09	[illegible]	-14.[illegible]	[illegible]	21.[illegible]	42.[illegible]	56.51	64.60	71.67	86.26
38	-44.33	-29.[illegible]	[illegible]	-13.60	[illegible]	23.73	45.51	61.17	69.24	76.65	91.36
39	-45.00	-29.[illegible]	[illegible]	-12.9[illegible]	[illegible]	25.[illegible]	49.51	64.74	72.13	80.84	96.76
40	-41.33	-25.82	[illegible]	-10.[illegible]	4.[illegible]	27.[illegible]	51.[illegible]	65.92	74.12	81.66	97.22
41	-41.32	-25.60	[illegible]	-9.8[illegible]	[illegible]	25.91	51.65	66.64	74.50	82.48	98.14
42	-33.25	-23.9[illegible]	[illegible]	-3.50	[illegible]	23.32	51.51	56.19	74.20	81.81	96.99
43	-34.65	-20.[illegible]	[illegible]	-1.75	[illegible]	19.24	50.67	64.42	72.00	78.96	93.33
44	-29.52	-19.13	[illegible]	[illegible]	[illegible]	20.03	49.35	62.77	69.92	76.31	89.69
45	-26.64	-12.79	-7.57	-.81	[illegible]	20.[illegible]	46.65	61.95	66.73	74.95	87.80
46	-22.55	-10.85	-4.[illegible]	1.7[illegible]	13.[illegible]	31.31	49.22	60.34	67.22	73.08	85.17
47	-14.49	-7.20	[illegible]	3.21	[illegible]	31.76	48.51	58.[illegible]	65.25	70.72	82.00
48	-17.23	-5.13	[illegible]	5.15	[illegible]	32.39	43.34	54.32	65.50	70.90	82.06
49	-10.78	-6.16	[illegible]	5.6[illegible]	[illegible]	32.[illegible]7	51.[illegible]	[illegible]	68.46	74.09	85.71
50	-10.13	-4.85	.95	7.03	[illegible]	35.22	52.28	67.42	69.50	75.10	86.64
51	-14.77	-2.34	[illegible]	8.7[illegible]	[illegible]	36.16	53.14	64.64	70.11	75.65	87.09
52	-17.63	-2.14	[illegible]	3.43	[illegible]	37.[illegible]	54.59	65.54	71.64	77.20	83.69
53	-15.60	-3.[illegible]	[illegible]	8.84	[illegible]	38.76	56.[illegible]	68.64	75.14	81.[illegible]	93.33
54	-21.09	-7.83	[illegible]	5.43	[illegible]	37.73	57.23	69.32	78.33	33.33	96.54
55	-28.04	-14.15	[illegible]	.92	[illegible]	37.2[illegible]	58.40	73.83	81.51	88.72	103.62
56	-37.37	-20.35	[illegible]	-3.34	[illegible]	37.49	62.60	73.30	87.71	95.91	112.93
57	-28.62	-13.22	[illegible]	2.36	17.1[illegible]	[illegible]	62.[illegible]	77.[illegible]	85.69	93.14	108.55
58	-19.57	-4.21	[illegible]	11.32	[illegible]	43.36	71.[illegible]	86.29	94.38	101.81	117.16
59	-13.32	1.[illegible]	[illegible]	16.6[illegible]	[illegible]	[illegible]	75.[illegible]	89.[illegible]	97.39	104.62	119.54
60	-14.48	.95	[illegible]	16.5[illegible]	[illegible]	54.24	77.15	91.3[illegible]	100.05	107.93	122.96
61	-12.98	1.0[illegible]	[illegible]	16.75	[illegible]	52.64	74.7[illegible]	88.[illegible]	96.72	103.88	118.66
62	-14.54	.30	[illegible]	15.32	[illegible]	51.57	73.[illegible]	87.32	95.64	102.83	117.68
63	-15.94	-1.0[illegible]	[illegible]	13.5[illegible]	[illegible]	50.17	72.[illegible]	86.4[illegible]	94.24	101.83	116.28
64	-17.50	-2.59	4.63	12.49	[illegible]	48.30	71.[illegible]	85.30	93.16	100.38	115.29
65	-14.89	-7.88	[illegible]	11.11	[illegible]	47.5[illegible]	69.[illegible]	[illegible]	91.76	98.98	113.89
66	-20.29	-5.38	[illegible]	9.70	[illegible]	46.10	69.23	8[illegible].50	90.36	97.58	112.49
67	-21.85	-6.86	.37	8.27	[illegible]	44.83	67.[illegible]	81.[illegible]	89.28	96.53	111.51
68	-23.25	-9.27	-1.02	6.87	[illegible]	43.43	65.66	79.59	87.38	95.14	110.11
69	-24.80	-9.77	[illegible]	5.44	[illegible]	42.1[illegible]	64.48	78.37	86.80	94.03	109.12
70	-26.20	-11.16	[illegible]	4.04	[illegible]	40.75	63.0[illegible]	77.47	85.40	92.88	107.72

TABLE 12.4. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.28	-5.05	-3.97	-2.80	-.67	2.63	5.93	8.06	9.24	10.32	12.54
1	-10.76	-7.83	-6.41	-4.87	-2.07	2.28	6.62	9.42	10.96	12.38	15.31
2	-12.67	-9.03	-7.27	-5.35	-1.87	3.53	8.93	12.41	14.33	16.09	19.73
3	-13.39	-8.99	-6.86	-4.58	-.32	6.21	12.75	16.97	19.29	21.42	25.82
4	-15.49	-9.98	-7.31	-4.40	.87	9.06	17.24	22.51	25.42	28.09	33.60
5	-17.87	-11.22	-8.00	-4.50	1.87	11.73	21.60	27.96	31.47	34.68	41.33
6	-20.29	-12.54	-8.78	-4.70	2.72	14.23	25.73	33.15	37.24	40.19	48.74
7	-21.49	-12.95	-8.81	-4.30	3.88	16.57	29.26	37.44	41.95	46.19	54.63
8	-23.05	-13.70	-9.17	-4.24	4.70	18.58	32.46	41.41	46.33	50.86	60.21
9	-23.03	-13.31	-8.60	-3.48	5.82	20.25	34.67	43.98	49.10	53.81	63.53
10	-21.15	-11.49	-6.81	-1.72	7.53	21.88	36.22	45.47	50.56	55.24	64.90
11	-19.01	-9.57	-5.00	-.03	9.00	23.01	37.02	46.05	51.02	55.59	65.03
12	-14.44	-5.96	-1.85	2.62	10.74	23.33	35.92	44.04	48.51	52.61	61.10
13	-8.01	-1.19	2.11	5.71	12.24	22.16	32.48	39.01	42.61	45.91	52.71
14	-4.52	1.07	3.78	6.73	12.08	20.38	28.68	34.04	36.38	39.69	45.28
15	-3.54	1.30	3.65	6.20	10.84	18.03	25.22	29.85	32.40	34.75	39.59
16	-3.59	.62	2.66	4.88	8.91	15.17	21.42	25.45	27.68	29.72	33.93
17	-5.04	-1.18	.69	2.73	6.43	12.16	17.90	21.60	23.63	25.80	29.37
18	-6.29	-2.83	-1.16	.66	3.98	9.11	14.24	17.56	19.38	21.05	24.51
19	-7.64	-4.89	-2.87	-1.34	1.70	6.38	11.05	14.06	15.72	17.24	20.39
20	-9.73	-5.83	-4.43	-2.90	-.13	4.18	8.48	11.26	12.79	14.19	17.09
21	-10.27	-7.33	-5.91	-4.36	-1.55	2.81	7.18	9.99	11.54	12.96	15.90
22	-11.48	-8.52	-7.09	-5.53	-2.70	1.70	6.09	8.92	10.48	11.92	14.88
23	-12.53	-9.45	-7.96	-6.33	-3.38	1.20	5.77	8.72	10.35	11.84	14.92
24	-12.75	-9.49	-7.91	-6.13	-3.07	1.77	6.62	9.74	11.46	13.04	16.30
25	-13.43	-9.88	-8.15	-6.28	-2.87	2.41	7.70	11.10	12.98	14.70	18.26
26	-14.40	-10.50	-8.61	-6.56	-2.82	2.97	8.76	12.49	14.55	16.43	20.34
27	-15.37	-10.96	-8.85	-6.54	-2.33	4.19	10.71	14.91	17.73	19.36	23.75
28	-14.91	-10.68	-8.64	-6.41	-2.36	3.92	10.19	14.24	16.47	18.52	22.75
29	-14.40	-9.92	-7.76	-5.40	-1.12	5.52	12.16	16.48	18.80	20.96	25.43
30	-13.71	-8.99	-7.71	-4.22	.29	7.29	14.29	18.30	21.29	23.57	28.28
31	-12.77	-7.94	-5.29	-3.05	1.58	6.76	15.98	20.57	23.12	25.46	30.30
32	-13.38	-8.07	-5.49	-2.69	2.40	10.29	18.18	23.27	26.07	28.65	33.37
33	-12.11	-6.71	-4.09	-1.25	3.92	11.92	19.55	25.12	27.96	30.58	35.98
34	-11.09	-5.45	-2.71	.26	5.67	14.05	22.43	27.83	30.80	33.54	39.18
35	-12.13	-5.88	-2.70	.65	6.73	16.15	25.58	31.66	35.60	38.68	44.43
36	-11.40	-4.84	-1.66	1.73	8.07	17.81	27.54	33.82	37.28	40.46	47.02
37	-11.63	-4.66	-1.28	2.40	9.07	19.42	29.78	36.46	40.13	43.51	50.49
38	-14.13	-6.39	-2.61	1.51	8.97	20.55	32.13	39.60	43.71	47.49	55.29
39	-17.03	-8.54	-4.43	.05	8.17	20.77	33.27	41.50	45.97	50.08	58.57
40	-18.93	-10.03	-5.69	-.97	7.60	20.89	34.18	42.75	47.47	51.80	50.70
41	-18.90	-10.15	-5.82	-1.31	7.06	20.04	33.02	41.36	45.99	50.23	58.97
42	-19.03	-10.04	-5.57	-2.15	5.89	19.34	30.80	39.83	43.26	47.32	55.71
43	-18.81	-9.93	-6.12	-1.97	5.57	17.25	28.98	36.48	40.63	44.44	52.31
44	-17.43	-9.86	-5.17	-2.15	5.15	16.46	27.77	35.06	39.08	42.77	50.39
45	-17.58	-10.12	-6.51	-2.58	4.56	15.62	26.70	33.08	37.77	41.38	48.84
46	-18.38	-10.84	-7.19	-3.21	4.01	15.20	25.39	31.81	37.59	41.24	48.78
47	-20.34	-12.83	-8.60	-4.43	3.14	14.88	26.67	34.13	38.36	42.19	50.10
48	-21.03	-13.15	-9.31	-5.13	2.96	14.22	26.0.	33.60	37.78	41.62	49.56
49	-24.73	-15.97	-11.73	-7.11	1.27	14.27	27.26	35.65	40.26	44.50	53.26
50	-27.53	-18.03	-13.43	-9.43	.66	14.75	28.84	37.93	42.94	47.53	57.03
51	-27.35	-17.86	-13.27	-8.27	.82	14.90	28.98	38.06	43.06	47.66	57.14
52	-25.81	-16.78	-12.35	-7.57	1.12	14.58	28.05	36.73	41.51	45.90	54.97
53	-28.39	-19.13	-18.65	-9.76	-.90	12.85	26.59	35.46	40.34	44.83	54.09
54	-29.03	-19.85	-15.11	-10.18	-1.19	12.74	26.66	35.63	40.58	45.12	54.50
55	-38.90	-23.86	-19.14	-13.90	-4.39	10.37	25.12	34.63	39.87	44.69	54.63
56	-34.38	-25.06	-20.54	-15.62	-6.69	7.15	21.00	29.93	34.84	39.36	48.69
57	-40.09	-29.82	-24.99	-19.63	-9.89	5.20	20.30	30.03	35.39	40.32	50.49
58	-37.40	-29.00	-24.92	-20.49	-12.44	.04	12.52	20.58	29.00	29.07	37.48
59	-50.51	-40.61	-35.81	-30.58	-21.10	-6.39	8.31	17.80	28.07	27.42	37.73
60	-59.20	-47.49	-41.82	-35.65	-24.44	-7.06	10.32	21.53	27.70	33.38	45.09
61	-55.30	-44.40	-39.11	-33.37	-22.93	-6.74	9.48	19.86	25.62	30.91	41.81
62	-54.15	-43.44	-38.25	-32.60	-22.35	-6.45	9.45	19.71	25.35	30.54	41.25
63	-52.93	-42.41	-37.31	-31.70	-21.70	-6.08	9.54	19.61	25.15	30.25	40.77
64	-51.73	-41.45	-36.45	-31.00	-21.12	-5.78	9.55	19.44	24.88	29.88	40.21
65	-50.64	-40.50	-35.59	-30.24	-20.54	-5.49	9.56	19.27	24.61	29.52	39.66
66	-49.50	-39.85	-34.73	-29.48	-19.96	-5.19	9.58	19.10	24.35	29.17	39.12
67	-48.36	-38.60	-33.87	-28.72	-19.38	-4.89	9.59	18.94	28.08	28.81	38.57
68	-47.14	-37.57	-32.94	-27.85	-18.73	-4.53	9.68	18.84	23.88	28.52	38.09
69	-40.00	-36.62	-32.08	-27.13	-18.15	-4.23	9.09	18.67	23.62	28.16	37.54
70	-44.86	-35.67	-31.22	-26.38	-17.58	-3.93	9.71	18.51	23.35	27.81	37.00

TABLE 12.5. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.009	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.20	-3.37	-2.49	-1.51	.25	2.97	5.70	7.46	8.43	9.32	11.15
1	-9.30	-6.77	-5.54	-4.20	-2.78	1.98	5.72	8.16	9.49	10.72	13.25
2	-12.43	-9.30	-7.76	-6.03	-3.04	1.68	6.41	9.45	11.13	12.67	15.35
3	-16.45	-12.02	-9.87	-7.53	-3.29	3.28	9.66	14.10	16.44	18.58	23.01
4	-18.57	-13.25	-10.63	-7.87	-2.72	5.11	13.00	18.39	20.90	23.47	28.79
5	-19.87	-13.89	-10.99	-7.84	-2.12	6.75	15.42	21.34	24.49	27.39	33.37
6	-21.01	-14.46	-11.28	-7.83	-1.55	8.16	17.89	24.16	27.61	30.78	37.33
7	-22.42	-15.25	-11.77	-7.99	-1.13	9.52	20.16	27.03	30.81	34.28	41.46
8	-23.36	-15.82	-11.83	-7.80	-.40	11.08	22.56	29.97	34.04	37.79	45.52
9	-23.55	-15.86	-11.55	-7.22	.46	12.47	24.48	32.22	36.48	40.40	48.49
10	-23.00	-14.70	-10.69	-6.32	1.67	13.93	26.24	34.22	38.55	42.57	50.96
11	-22.52	-14.05	-9.94	-5.46	2.64	15.22	27.60	35.42	40.38	44.48	52.95
12	-19.75	-10.94	-7.16	-3.05	4.43	16.01	27.60	35.67	39.19	42.96	50.77
13	-13.52	-6.94	-3.76	-.25	6.01	15.78	25.54	31.84	35.31	38.50	45.08
14	-9.07	-3.89	-1.03	1.74	5.89	14.87	22.85	27.93	30.83	33.63	39.80
15	-5.85	-1.60	.46	2.71	6.78	13.10	19.42	23.49	25.74	27.80	32.05
16	-5.15	-1.55	.20	2.10	5.54	10.89	16.23	19.68	21.58	23.32	26.93
17	-5.84	-2.51	-1.00	.65	3.84	8.28	12.52	15.51	17.56	19.08	22.20
18	-6.10	-3.54	-2.31	-.96	1.49	5.27	9.06	11.51	12.85	14.03	16.64
19	-7.89	-5.57	-4.45	-3.23	-1.00	2.44	5.69	8.11	9.33	10.46	12.78
20	-9.59	-7.39	-6.33	-5.17	-3.07	.19	3.45	5.55	6.70	7.77	9.36
21	-10.58	-8.80	-7.75	-6.60	-4.52	-1.28	1.55	4.03	5.18	6.23	8.41
22	-11.72	-9.58	-8.54	-7.42	-5.37	-2.20	.38	3.03	4.15	5.15	7.33
23	-13.26	-10.86	-9.70	-8.43	-6.13	-2.57	1.00	3.30	4.56	5.73	8.13
24	-14.51	-11.79	-10.47	-9.04	-6.43	-2.38	1.66	4.27	5.70	7.02	9.74
25	-15.03	-12.19	-10.81	-9.30	-6.58	-2.35	1.88	4.61	6.11	7.49	10.34
26	-15.39	-12.20	-11.66	-9.98	-6.93	-2.19	2.54	5.59	7.27	8.81	12.00
27	-17.55	-13.97	-12.24	-10.75	-6.92	-1.60	3.72	7.15	9.04	10.77	14.36
28	-21.05	-16.75	-14.44	-12.39	-8.27	-1.88	4.51	8.63	10.70	12.98	17.29
29	-21.78	-17.20	-14.98	-12.56	-8.17	-1.57	5.43	9.82	12.23	14.95	19.03
30	-21.69	-17.02	-14.75	-12.29	-7.81	-.37	6.07	10.64	13.01	15.27	19.95
31	-20.31	-15.87	-13.72	-11.38	-7.14	-.55	6.03	10.28	12.62	14.77	19.20
32	-20.30	-15.72	-13.91	-11.09	-6.71	.08	6.80	11.26	13.67	15.80	20.46
33	-21.14	-16.31	-13.97	-11.43	-6.80	.36	7.53	12.15	14.69	17.03	21.86
34	-23.67	-18.25	-15.42	-12.77	-7.58	.47	8.51	13.70	16.55	19.14	24.60
35	-25.49	-19.66	-16.83	-13.76	-8.18	.47	9.12	14.70	17.77	20.60	26.42
36	-26.98	-20.80	-17.85	-14.63	-8.79	.26	9.31	15.18	18.36	21.31	27.41
37	-27.37	-21.19	-18.20	-14.94	-9.02	.15	9.32	15.24	18.50	21.49	27.67
38	-28.83	-22.29	-19.23	-15.89	-9.83	-.43	8.97	15.04	18.38	21.44	27.78
39	-29.45	-23.17	-20.13	-16.82	-10.80	-1.48	7.84	13.86	17.17	20.21	26.49
40	-30.27	-24.17	-21.22	-18.01	-12.17	-3.12	5.93	11.76	14.94	17.93	24.03
41	-32.11	-26.05	-23.12	-19.93	-14.13	-5.14	3.86	9.65	12.85	15.78	21.84
42	-35.39	-29.06	-25.99	-22.65	-16.59	-7.20	2.20	8.26	11.40	14.66	20.99
43	-37.15	-30.87	-27.82	-24.51	-18.49	-9.15	.18	6.20	9.52	12.56	18.85
44	-37.36	-31.40	-28.52	-25.38	-19.68	-10.85	-1.02	3.68	6.82	9.70	15.65
45	-39.58	-33.40	-30.40	-27.19	-21.22	-12.05	+2.87	3.05	6.31	9.30	15.49
46	-42.07	-35.53	-32.37	-28.92	-22.46	-12.96	-3.26	3.60	6.95	9.61	16.15
47	-44.99	-38.01	-34.62	-30.94	-24.26	-13.89	-3.52	3.17	6.85	10.23	17.22
48	-46.56	-39.50	-36.07	-32.35	-25.59	-15.10	-4.61	2.15	5.88	9.30	16.37
49	-48.30	-41.10	-37.61	-33.81	-26.72	-16.23	-5.54	1.36	5.15	8.54	15.85
50	-49.86	-42.59	-39.04	-35.25	-28.30	-17.63	-6.75	-.20	4.02	7.54	14.80
51	-51.70	-44.24	-40.62	-36.69	-29.55	-18.47	+7.39	-.24	3.69	7.31	14.77
52	-53.92	-46.29	-42.59	-38.57	-31.26	-19.93	-8.60	-1.30	2.72	6.42	14.05
53	-55.36	-47.51	-43.70	-39.56	-32.04	-20.38	-8.7[illegible]	-1.19	2.95	6.76	14.61
54	-58.77	-50.58	-46.50	-42.19	-34.23	-21.96	-9.68	-1.77	2.59	6.59	14.84
55	-62.43	-53.82	-49.65	-45.11	-36.87	-24.09	+11.30	+3.06	1.98	5.65	14.26
56	-64.44	-55.85	-51.68	-47.16	-38.93	-26.18	-13.48	-5.30	-.47	3.58	13.08
57	-73.07	-62.83	-57.87	-52.47	-42.67	-27.47	-12.28	-2.47	2.92	7.88	18.12
58	-68.78	-59.77	-55.41	-50.66	-42.04	-28.67	-15.30	-4.66	-1.94	2.43	11.43
59	-62.54	-54.88	-51.17	-47.13	-39.80	-28.43	-17.0[illegible]	-9.73	-5.69	-1.98	5.40
60	-69.73	-60.59	-56.17	-51.35	-42.41	-29.05	-15.49	-6.75	-1.93	2.49	11.63
61	-69.39	-60.05	-55.53	-50.61	-41.68	-27.82	-13.94	-5.03	-.11	4.42	13.75
62	-67.27	-58.13	-53.70	-48.88	-40.13	-26.54	-13.99	-4.24	.84	5.00	14.15
63	-64.87	-55.99	-51.68	-47.00	-38.49	-25.31	-12.12	-3.62	1.07	5.37	14.26
64	-62.75	-54.06	-49.85	-45.27	-36.95	-24.05	-11.15	-2.83	1.75	5.96	14.66
65	-60.35	-51.92	-47.83	-43.39	-35.32	-22.80	-10.28	-2.20	2.24	6.33	14.76
66	-57.86	-49.68	-45.72	-41.41	-33.58	-21.44	-9.31	-1.48	2.83	6.79	14.89
67	-55.74	-47.76	-43.89	-39.68	-32.09	-20.19	-8.33	-.69	3.52	7.38	15.37
68	-53.36	-45.63	-41.87	-37.80	-30.40	-18.83	-7.46	-.06	4.01	7.75	15.40
69	-51.23	-43.70	-40.05	-36.08	-28.86	-17.68	-6.49	.72	4.70	8.35	15.88
70	-48.84	-41.54	-38.03	-34.20	-27.23	-16.42	-5.62	1.36	5.19	8.72	16.80

TABLE 12.6. VANDENBERG HEAD- AND TAILWIND COMPONENTS

180-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
[illegible]	-8.31	-5.09	[illegible]	-1.[illegible]	.34	2.32	5.50	7.10	8.07	8.91	10.65
[illegible]	-8.[illegible]	-5.[illegible]	[illegible]	-4.[illegible]	-2.75	1.83	5.41	7.72	8.99	10.16	12.57
[illegible]	-[illegible]	-4.[illegible]	[illegible]	-6.41	-3.31	1.49	6.70	9.39	11.10	12.07	15.90
[illegible]	-[illegible]	-1[illegible]	[illegible]	-7.72	-2.[illegible]	2.74	9.10	13.20	15.46	17.[illegible]	21.02
4	-[illegible]	-23.[illegible]	-[illegible]	-8.[illegible]	-[illegible]	4.13	12.65	15.50	19.17	21.02	26.69
[illegible]	-[illegible]	-17.[illegible]	[illegible]	-[illegible]	[illegible]	5.71	14.19	19.[illegible]	22.47	25.21	30.85
[illegible]	-[illegible]	-19.97	-[illegible]	-[illegible]	-[illegible]	7.39	16.65	22.59	26.01	29.06	35.36
7	-[illegible]	-[illegible]	[illegible]	-[illegible]	-1.51	8.69	15.79	27.55	29.69	33.68	40.09
[illegible]	-[illegible]	-15.[illegible]	[illegible]	-3.[illegible]	-1.[illegible]	10.63	22.[illegible]	29.93	34.00	37.84	45.76
[illegible]	-[illegible]	-17.71	[illegible]	-5.[illegible]	[illegible]	12.[illegible]	24.76	31.[illegible]	37.53	41.[illegible]	50.29
10	-[illegible]	-[illegible]	[illegible]	-9.19	[illegible]	13.62	26.97	35.91	40.12	44.44	53.37
11	-[illegible]	-[illegible]	-[illegible]	-6.[illegible]	[illegible]	15.[illegible]	26.59	37.1[illegible]	41.83	46.15	55.67
12	-[illegible]	-[illegible]	[illegible]	-4.[illegible]	1.[illegible]	16.39	29.35	33.32	42.95	47.30	55.36
13	-[illegible]	-[illegible]	[illegible]	-[illegible]	[illegible]	16.[illegible]	28.[illegible]	35.72	35.84	43.62	51.43
14	-[illegible]	-6.[illegible]	[illegible]	[illegible]	7.44	18.63	23.32	29.74	33.00	36.30	[illegible]
15	-[illegible]	-5.[illegible]	[illegible]	[illegible]	4.71	11.67	15.[illegible]	22.77	26.38	28.78	33.74
[illegible]	[illegible]	[illegible]	[illegible]	-1.[illegible]	[illegible]	8.08	12.21	17.51	19.55	21.42	25.28
17	-1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.42	[illegible]	[illegible]	14.04	15.61	18.65
18	-1[illegible]	-7.37	[illegible]	[illegible]	[illegible]	.72	4.43	5.96	6.18	9.[illegible]	11.32
19	-[illegible]	[illegible]	[illegible]	-7.[illegible]	[illegible]	-1.20	1.[illegible]	2.42	4.59	5.66	7.26
[illegible]	-[illegible]	-20.[illegible]	[illegible]	-4.77	[illegible]	-3.35	-1.[illegible]	.37	1.91	2.37	4.34
21	-[illegible]	-1[illegible]	[illegible]	[illegible]	[illegible]	-5.[illegible]	-2.44	-.[illegible]	.46	1.[illegible]	3.25
22	-[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-6.55	-2.75	-1.34	-.94	-.03	1.36
23	-[illegible]	[illegible]	[illegible]	-1[illegible]	-2[illegible]	-7.[illegible]	-4.[illegible]	[illegible]	-2.[illegible]	-.4[illegible]	1.47
24	-[illegible]	-15.47	[illegible]	[illegible]	-11.77	-3.[illegible]	-4.30	-2.31	-1.66	-.[illegible]	1.59
25	[illegible]	-1[illegible]	[illegible]	-19.[illegible]	[illegible]	-5.24	-5.45	[illegible]	-1.56	-.63	1.52
26	-[illegible]	-[illegible]	[illegible]	[illegible]	[illegible]	-3.57	-5.34	-3.71	-2.32	-1.14	1.30
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-3.[illegible]	-2.37	-1.17	1.29
28	-28.49	-24.45	-27.56	-20.45	-20.62	-20.62	-4.7[illegible]	-.92	4.19	3.12	7.12
29	-29.85	-25.62	-23.57	-22.39	-18.28	-11.00	-4.72	-.62	3.57	3.6	7.85
30	-30.28	-26.06	-24.[illegible]	-21.80	-17.76	-11.45	-5.[illegible]	-1.25	2.03	3.04	7.30
31	-30.87	-25.61	-24.55	-22.31	-13.23	-11.92	-5.60	-1.52	.72	2.28	7.04
32	-31.00	-26.[illegible]	-24.74	-22.5[illegible]	-18.49	-12.22	-5.58	-1.55	.28	2.32	6.53
33	-30.46	-26.72	-24.71	-22.52	-13.56	-12.41	-6.25	-2.29	-.10	1.90	6.05
34	-30.[illegible]	-26.82	-24.87	-22.74	-18.88	-12.85	-6.90	-2.[illegible]	-.91	1.54	5.28
35	-32.86	-29.45	-27.21	-24.93	-20.77	-14.23	-7.[illegible]	-3.47	-1.15	.99	5.39
36	-35.[illegible]	-30.80	-28.66	-26.33	-22.10	-15.[illegible]	-8.57	-4.74	-2.41	-.27	4.15
37	-37.[illegible]	-33.16	-3[illegible]	-28.43	-24.[illegible]	-17.18	-10.32	-5.89	-3.45	-1.21	3.42
38	-41.37	-36.29	-33.82	-31.15	-26.28	-18.74	-11.20	-6.23	-3.65	-1.19	3.09
39	-4[illegible].46	-38.43	-37.43	-34.39	-28.50	-20.52	-14.54	-10.69	-8.56	-6.61	-2.[illegible]
40	-44.66	-40.82	-39.77	-32.53	-31.47	-22.17	-15.[illegible]	-11.62	-9.58	-7.52	-3.28
41	-44.37	-39.91	-37.61	-35.20	-3[illegible].84	-24.07	-17.20	-12.94	-10.53	-8.32	-3.76
42	-45.23	-43.97	-41.42	-38.64	-35.60	-25.75	-17.97	-12.97	-10.15	-7.6[illegible]	-2.34
43	-45.37	-44.27	-41.35	-39.32	-34.53	-27.11	-19.69	-14.31	-12.28	-9.86	-4.86
44	-53.65	-48.24	-45.67	-42.77	-37.59	-29.66	-21.52	-16.3[illegible]	-13.51	-10.89	-5.48
45	-56.78	-51.16	-48.45	-45.47	-40.08	-31.73	-23.39	-13.00	-15.04	-12.31	-6.69
46	-57.95	-52.47	-49.[illegible]	-46.93	-41.69	-33.55	-25.42	-20.18	-17.29	-14.64	-9.16
47	-59.22	-52.91	-50.34	-47.54	-42.46	-34.58	-26.71	-21.63	-18.83	-16.26	-10.35
48	-59.30	-54.49	-51.87	-49.02	-42.84	-35.82	-27.72	-22.01	-19.76	-17.15	-11.74
49	-62.09	-56.46	-53.73	-50.76	-45.77	-37.01	-28.65	-23.28	-20.29	-17.57	-11.93
50	-67.13	-60.74	-57.62	-54.2[illegible]	-46.06	-38.45	-28.53	-22.76	-19.37	-16.25	-9.80
51	-72.98	-65.75	-5[illegible].24	-53.93	-51.50	-40.76	-30.02	-23.09	-19.[illegible]	-15.77	-8.53
52	-81.16	-72.51	-6[illegible].25	-63.81	-55.55	-42.74	-29.54	-21.68	-17.13	-12.85	-4.32
53	-83.00	-78.14	-73.37	-68.17	-53.74	-44.16	-29.47	-20.04	-14.84	-10.07	-.21
54	-85.56	-76.35	-71.69	-67.04	-58.22	-44.56	-30.89	-22.06	-17.22	-12.76	-3.56
55	-86.03	-76.89	-77.46	-67.64	-58.35	-45.33	-31.78	-23.01	-18.19	-13.77	-4.63
56	-86.9[illegible]	-79.39	-74.75	-69.71	-6[illegible].54	-46.33	-32.[illegible]	-2[illegible].26	-17.92	-13.28	-3.71
57	-86.62	-77.97	-73.78	-69.22	-6[illegible].35	-48.11	-35.28	-27.00	-22.44	-18.25	-9.61
58	-87.42	-78.70	-73.55	-69.88	-62.40	-51.11	-32.54	-2[illegible].1[illegible]	-28.67	-24.33	-16.60
59	-81.80	-74.05	-71.49	-67.92	-61.17	-50.86	-40.54	-33.89	-30.23	-26.86	-19.91
60	-88.49	-3[illegible].65	-76.86	-72.72	-65.22	-52.59	-41.5[illegible]	-34.45	-3[illegible].31	-26.52	-20.68
61	-87.81	-75.77	-75.67	-71.63	-63.93	-51.98	-40.[illegible]	-32.3[illegible]	-28.10	-24.20	-16.15
62	-85.90	-77.92	-74.16	-69.85	-62.21	-50.37	-38.52	-3[illegible].85	-26.68	-22.82	-14.84
63	-83.72	-75.86	-77.06	-67.92	-60.41	-48.[illegible]	-37.10	-29.58	-25.44	-21.84	-13.79
64	-81.80	-74.02	-72.24	-66.14	-58.69	-47.14	-35.58	-28.13	-24.03	-20.22	-12.97
65	-79.87	-72.15	-93.41	-64.34	-56.95	-45.59	-34.03	-26.64	-22.57	-18.83	-11.11
66	-77.96	-70.20	-68.60	-62.56	-55.24	-43.88	-32.52	-25.25	-21.16	-17.45	-9.00
67	-76.06	-68.47	-64.79	-60.73	-53.53	-42.26	-30.99	-23.73	-19.73	-16.05	-8.46
68	-73.86	-66.46	-6[illegible].79	-58.86	-51.72	-40.64	-29.57	-22.43	-18.50	-14.62	-7.43
69	-71.96	-64.57	-6[illegible].98	-57.09	-50.01	-39.03	-28.65	-20.92	-17.07	-13.49	-6.10
70	-70.04	-62.72	-55.17	-55.30	-48.25	-37.41	-26.53	-19.52	-15.66	-12.11	-4.78

TABLE 12.7. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-3.87	-2.44	-1.78	-1.04	.31	2.40	4.48	5.83	6.57	7.25	8.64
1	-7.09	-4.95	-4.02	-4.02	-2.15	.72	3.50	5.43	6.45	7.39	9.32
2	-10.23	-8.02	-6.95	-5.79	-3.40	-.40	2.07	4.99	6.15	7.22	9.43
3	-12.84	-9.32	-7.99	-6.55	-3.92	.19	3.21	6.05	8.28	9.61	12.38
4	-13.31	-11.18	-8.67	-7.02	-4.42	.62	5.24	8.25	9.90	11.91	14.84
5	-14.20	-14.02	-9.35	-7.36	-4.15	.99	5.99	9.25	11.04	12.69	16.09
6	-15.64	-11.82	-9.97	-7.94	-4.31	1.36	7.03	10.69	12.70	14.55	18.37
7	-16.50	-12.38	-10.39	-8.21	-4.27	1.85	7.94	11.91	14.08	16.00	20.20
8	-18.65	-13.42	-11.17	-8.73	-4.29	2.59	9.44	13.90	16.34	19.59	23.27
9	-19.87	-14.48	-12.14	-9.43	-4.46	3.25	10.94	15.92	18.66	21.17	24.36
10	-22.07	-16.29	-13.93	-10.37	-4.81	3.80	12.41	17.97	21.03	23.84	29.44
11	-23.08	-16.87	-13.84	-10.59	-4.64	4.50	13.80	19.74	23.02	26.03	32.24
12	-23.02	-16.72	-13.66	-10.39	-4.31	5.05	14.90	20.44	23.76	26.81	33.12
13	-21.29	-15.31	-12.91	-9.26	-3.62	5.35	15.23	19.95	23.10	26.00	31.98
14	-18.77	-13.47	-10.95	-8.11	-3.01	4.83	12.69	17.74	20.55	23.12	28.42
15	-16.26	-11.88	-9.76	-7.45	-3.26	3.29	9.29	13.95	16.29	18.37	22.79
16	-13.59	-10.38	-8.82	-7.12	-4.05	.73	5.60	8.58	10.27	11.83	15.06
17	-12.21	-9.64	-8.05	-7.59	-5.29	-1.79	1.02	4.12	5.38	6.54	8.94
18	-12.84	-10.83	-9.86	-8.81	-6.89	-3.91	-.94	.98	2.09	3.01	5.01
19	-13.59	-11.45	-10.46	-9.83	-8.23	-5.08	-3.37	-1.80	-.94	-.15	1.49
20	-14.17	-12.64	-11.90	-11.09	-9.67	-7.35	-5.87	-3.40	-2.00	-2.06	-.62
21	-16.18	-14.55	-13.75	-12.89	-11.32	-8.89	-6.56	-5.90	-4.03	-3.29	-1.80
22	-17.32	-15.79	-14.98	-14.15	-12.63	-10.29	-7.95	-6.43	-5.60	-4.84	-3.24
23	-19.18	-17.56	-16.63	-15.72	-14.67	-11.51	-8.94	-7.31	-6.90	-5.56	-3.84
24	-20.49	-18.79	-17.89	-16.97	-15.29	-12.69	-10.10	-8.42	-7.60	-6.65	-4.90
25	-22.09	-20.29	-19.34	-18.34	-16.58	-13.63	-11.07	-9.30	-8.32	-7.42	-5.56
26	-22.86	-21.00	-20.09	-19.11	-17.32	-14.59	-11.77	-9.98	-9.00	-8.09	-6.23
27	-23.63	-21.70	-20.76	-19.79	-17.88	-15.01	-12.13	-10.28	-9.26	-8.32	-6.38
28	-26.02	-23.95	-22.95	-21.86	-19.88	-16.80	-13.79	-11.75	-10.66	-9.65	-7.50
29	-28.83	-26.41	-25.21	-23.91	-21.52	-17.86	-14.18	-11.80	-10.50	-9.30	-6.82
30	-30.63	-28.16	-26.87	-25.41	-22.91	-18.95	-14.98	-12.43	-11.03	-9.73	-7.07
31	-30.53	-28.15	-27.00	-25.75	-23.47	-19.90	-16.40	-14.13	-12.47	-11.12	-9.30
32	-31.29	-28.84	-27.68	-26.41	-24.12	-20.56	-17.00	-14.70	-13.44	-12.28	-9.88
33	-32.17	-29.64	-28.42	-27.03	-24.67	-20.93	-17.10	-14.78	-13.53	-12.21	-9.68
34	-34.03	-31.20	-29.83	-28.34	-25.63	-21.44	-17.29	-14.53	-13.04	-11.87	-8.84
35	-35.90	-32.94	-31.50	-29.94	-27.11	-22.72	-18.32	-15.49	-13.97	-12.49	-9.53
36	-35.63	-32.97	-31.67	-30.24	-27.72	-23.76	-19.82	-17.25	-15.85	-14.56	-11.89
37	-37.64	-34.85	-33.51	-32.04	-29.30	-25.25	-21.12	-18.40	-16.99	-15.64	-12.36
38	-35.97	-34.99	-35.55	-33.98	-31.13	-26.71	-22.29	-19.44	-17.68	-16.43	-13.46
39	-40.87	-38.04	-36.67	-35.18	-32.47	-28.27	-24.07	-21.38	-19.87	-18.92	-15.67
40	-41.29	-38.69	-37.43	-36.65	-33.67	-29.71	-25.65	-23.16	-21.99	-20.73	-18.12
41	-43.67	-41.00	-39.71	-38.30	-35.74	-31.77	-27.80	-25.24	-23.83	-22.53	-19.86
42	-47.50	-44.50	-43.05	-41.47	-38.60	-34.15	-29.70	-26.83	-25.25	-23.86	-20.80
43	-52.49	-48.96	-47.24	-45.43	-42.07	-36.86	-31.64	-28.28	-26.43	-24.23	-21.22
44	-56.43	-52.69	-50.83	-48.91	-45.33	-39.78	-34.23	-30.65	-28.68	-26.87	-23.13
45	-59.50	-55.49	-53.55	-51.44	-47.60	-41.66	-35.71	-31.87	-29.76	-27.82	-23.82
46	-61.55	-57.47	-55.49	-53.34	-49.63	-43.37	-37.31	-33.40	-34.24	-29.27	-25.18
47	-61.03	-57.45	-55.71	-53.82	-50.39	-45.08	-39.76	-36.33	-34.44	-32.20	-29.12
48	-61.20	-57.92	-56.38	-54.62	-51.49	-46.64	-41.78	-38.65	-36.92	-35.34	-32.07
49	-63.21	-59.90	-58.15	-56.35	-53.09	-48.82	-42.98	-39.70	-37.90	-36.25	-32.84
50	-66.50	-62.60	-60.70	-58.64	-54.90	-49.11	-43.31	-39.57	-37.51	-35.61	-31.71
51	-69.91	-65.68	-63.64	-61.41	-57.37	-51.09	-44.82	-42.78	-38.55	-36.50	-32.28
52	-75.05	-70.08	-67.63	-65.76	-61.31	-52.35	-45.53	-40.83	-38.21	-35.81	-30.85
53	-76.68	-71.60	-69.19	-66.47	-61.60	-54.06	-46.52	-41.68	-38.98	-36.92	-31.44
54	-78.24	-73.07	-70.57	-67.84	-62.90	-55.23	-47.56	-42.61	-39.88	-37.38	-32.21
55	-80.84	-75.52	-72.94	-70.14	-65.05	-57.16	-49.27	-44.18	-41.38	-38.80	-33.48
56	-88.02	-81.67	-78.52	-75.15	-69.02	-59.53	-50.62	-43.90	-40.53	-37.83	-31.63
57	-90.27	-83.79	-80.63	-77.23	-71.03	-61.41	-51.79	-45.59	-42.17	-39.04	-32.56
58	-88.88	-83.02	-81.18	-77.09	-71.48	-62.78	-54.18	-48.47	-45.38	-42.54	-36.68
59	-86.43	-89.31	-85.87	-82.12	-75.30	-64.74	-54.18	-47.37	-43.62	-40.18	-33.00
60	-84.47	-79.67	-77.35	-74.82	-70.29	-63.11	-55.58	-51.40	-48.87	-46.55	-41.75
61	-83.60	-78.64	-76.23	-73.61	-68.85	-61.48	-54.10	-49.39	-46.73	-44.32	-39.35
62	-81.41	-76.56	-74.21	-71.66	-67.01	-59.81	-52.61	-47.57	-45.41	-43.06	-38.21
63	-79.22	-74.49	-72.20	-69.71	-65.19	-58.17	-51.15	-46.63	-44.14	-41.85	-37.12
64	-77.06	-72.45	-71.22	-67.78	-63.37	-56.53	-49.68	-45.27	-42.84	-40.61	-36.00
65	-74.90	-70.41	-69.23	-65.86	-61.56	-54.89	-48.21	-43.91	-41.54	-39.36	-34.87
66	-72.47	-68.15	-66.05	-63.77	-59.64	-53.23	-46.80	-42.66	-40.38	-38.29	-33.96
67	-70.33	-66.12	-64.08	-61.88	-57.83	-51.68	-45.33	-41.29	-39.07	-37.04	-32.22
68	-68.15	-64.06	-62.07	-59.92	-56.00	-49.93	-43.86	-39.92	-37.79	-35.81	-31.72
69	-65.98	-62.00	-60.08	-57.98	-54.17	-48.27	-42.36	-38.59	-36.45	-34.53	-30.58
70	-63.85	-59.98	-58.11	-56.07	-52.37	-46.62	-40.88	-37.18	-35.14	-33.27	-29.46

TABLE 12.8. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.250	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-4.58	-3.03	-2.28	-1.46	.03	2.33	4.63	6.12	6.94	7.49	9.24
1	-8.22	-6.19	-5.13	-4.03	-2.09	1.08	4.19	6.13	7.23	8.29	10.32
2	-10.49	-8.08	-6.92	-5.65	-3.35	.22	3.79	6.09	7.36	8.53	10.93
3	-11.95	-9.88	-7.69	-6.18	-3.43	.82	4.04	7.83	9.34	10.73	13.68
4	-13.34	-10.09	-8.52	-6.81	-3.70	1.11	5.93	9.93	10.79	12.32	15.56
5	-15.26	-11.45	-9.40	-7.59	-3.99	1.72	7.38	11.03	13.09	14.88	18.70
6	-16.35	-12.06	-9.99	-7.73	-3.63	2.73	9.09	13.20	15.94	17.63	21.81
7	-17.03	-12.36	-10.10	-7.63	-3.16	3.78	10.72	15.20	17.64	19.92	24.60
8	-17.43	-12.41	-9.98	-7.33	-2.52	4.99	12.40	17.21	19.86	22.29	27.32
9	-18.41	-11.89	-10.22	-7.31	-2.03	6.16	14.35	19.63	22.59	25.21	29.73
10	-18.56	-12.78	-9.99	-6.99	-1.42	7.15	15.73	21.25	24.30	27.09	32.87
11	-19.35	-13.17	-10.18	-6.92	-1.01	8.14	17.32	23.23	26.49	29.48	35.66
12	-18.62	-12.41	-9.95	-6.23	-.38	8.69	17.76	23.62	26.89	29.80	35.91
13	-18.31	-12.51	-9.70	-6.69	-1.10	7.51	16.12	21.66	24.72	27.53	33.33
14	-19.76	-9.76	-7.34	-4.71	.08	7.49	19.91	19.69	22.33	24.76	29.74
15	-13.00	-8.85	-6.83	-4.64	-.67	5.50	11.67	15.05	17.84	19.85	24.00
16	-13.16	-9.63	-7.92	-6.05	-2.67	2.50	7.83	11.21	13.07	14.79	18.32
17	-13.05	-10.26	-8.91	-7.44	-4.75	-.62	3.53	6.20	7.67	9.02	11.82
18	-13.20	-11.01	-9.92	-8.72	-6.55	-3.19	.14	2.35	3.54	4.64	6.91
19	-14.76	-12.63	-11.60	-10.48	-8.45	-5.29	-2.14	-.10	1.02	2.05	4.17
20	-15.69	-13.76	-12.82	-11.90	-9.95	-7.08	-4.21	-2.34	-1.34	-.40	1.53
21	-16.84	-14.94	-14.01	-13.01	-11.18	-8.35	-5.32	-3.69	-2.69	-1.76	-.14
22	-18.70	-16.72	-15.76	-14.72	-12.82	-9.88	-6.95	-5.05	-4.01	-3.05	-1.07
23	-20.01	-18.04	-17.08	-16.04	-14.16	-11.23	-8.36	-6.41	-5.37	-4.42	-2.45
24	-21.32	-19.27	-18.28	-17.21	-15.26	-14.21	-9.18	-7.22	-6.14	-5.15	-3.11
25	-22.49	-20.44	-19.44	-18.36	-16.39	-13.34	-10.29	-8.32	-7.24	-6.24	-4.19
26	-23.03	-20.98	-19.99	-18.90	-16.94	-13.89	-10.86	-8.88	-7.80	-6.80	-4.75
27	-24.22	-22.53	-20.97	-19.81	-17.71	-15.46	-11.21	-9.11	-7.96	-6.90	-4.71
28	-22.35	-24.82	-22.53	-22.29	-19.84	-16.09	-12.34	-9.92	-8.59	-7.37	-4.34
29	-28.13	-25.54	-24.29	-22.92	-20.44	-16.60	-12.76	-10.28	-8.92	-7.66	-5.08
30	-27.58	-25.26	-24.14	-22.92	-20.70	-17.26	-13.82	-11.60	-10.38	-9.26	-6.34
31	-29.60	-27.02	-25.77	-24.41	-21.94	-18.10	-14.27	-11.79	-10.43	-9.18	-6.60
32	-31.12	-28.33	-25.38	-25.90	-22.93	-18.69	-14.54	-11.87	-10.40	-9.05	-6.26
33	-33.19	-30.04	-26.51	-26.84	-23.63	-19.14	-14.46	-11.44	-9.78	-8.25	-5.10
34	-33.44	-30.16	-23.56	-26.83	-23.68	-19.80	-13.92	-10.78	-9.34	-7.45	-4.16
35	-32.80	-29.66	-28.13	-26.48	-23.47	-18.80	-14.12	-11.12	-9.47	-7.95	-4.80
36	-35.02	-31.55	-29.36	-28.03	-24.70	-19.54	-14.38	-11.08	-9.22	-7.54	-4.06
37	-37.35	-33.61	-31.80	-29.83	-26.26	-20.71	-15.16	-11.58	-9.61	-7.80	-4.06
38	-39.34	-35.43	-33.53	-31.47	-27.73	-21.92	-16.11	-12.38	-10.30	-8.41	-4.49
39	-41.01	-36.98	-35.03	-32.91	-29.05	-23.07	-17.05	-13.24	-11.11	-9.16	-5.13
40	-42.36	-38.30	-36.34	-34.20	-30.31	-24.29	-18.22	-14.38	-12.24	-10.28	-6.22
41	-44.70	-40.44	-38.38	-36.14	-32.07	-25.75	-19.44	-15.37	-13.12	-11.06	-6.81
42	-46.10	-43.53	-41.31	-38.90	-34.52	-27.72	-20.93	-16.55	-14.13	-11.92	-7.34
43	-52.59	-47.44	-44.94	-42.22	-37.29	-29.64	-21.58	-17.06	-14.34	-11.84	-6.69
44	-57.33	-51.56	-48.76	-45.72	-40.19	-31.63	-23.06	-17.54	-14.49	-11.70	-5.93
45	-61.50	-55.11	-52.02	-48.65	-42.53	-33.04	-23.55	-17.42	-14.06	-10.97	-4.57
46	-64.13	-57.49	-54.27	-50.77	-44.40	-34.54	-24.68	-18.31	-14.81	-11.59	-4.95
47	-65.72	-58.90	-55.59	-52.00	-45.47	-35.34	-25.21	-18.68	-15.08	-11.78	-4.96
48	-66.71	-59.85	-56.53	-52.91	-46.35	-36.17	-25.99	-19.43	-15.81	-12.49	-5.63
49	-67.13	-60.40	-57.13	-53.59	-47.14	-37.14	-27.15	-20.70	-17.15	-13.89	-7.16
50	-67.77	-61.11	-57.88	-54.37	-48.00	-38.11	-28.22	-21.85	-18.34	-15.11	-8.45
51	-68.79	-62.16	-58.94	-55.45	-49.10	-39.25	-29.40	-23.05	-19.55	-16.34	-9.71
52	-72.68	-65.31	-61.74	-57.96	-50.90	-39.86	-28.92	-21.82	-17.98	-14.41	-7.04
53	-75.51	-67.48	-63.60	-59.37	-51.69	-39.77	-27.88	-20.13	-15.95	-12.06	-4.04
54	-81.92	-72.58	-68.06	-63.14	-54.21	-40.35	-26.50	-17.57	-12.65	-8.32	1.21
55	-82.91	-73.67	-69.20	-64.33	-55.48	-41.77	-26.06	-15.21	-14.34	-9.87	-.63
56	-83.15	-73.70	-69.10	-64.10	-55.02	-40.93	-26.84	-17.75	-12.75	-8.16	1.34
	-83.54	-73.89	-69.22	-64.13	-54.90	-40.57	-26.25	-17.01	-11.92	-7.25	2.40
58	-86.99	-75.92	-70.55	-64.71	-54.11	-37.67	-21.22	-10.62	-4.78	.58	11.66
59	-89.92	-78.01	-72.24	-65.96	-54.56	-36.88	-19.70	-7.80	-1.52	4.25	16.16
60	-97.78	-83.61	-76.75	-69.28	-55.71	-34.68	-13.65	-.08	7.39	14.25	28.42
61	-94.43	-80.65	-72.98	-66.73	-51.52	-33.07	-12.01	.58	7.85	14.52	28.30
62	-87.65	-75.03	-69.21	-62.28	-50.18	-31.45	-12.72	-.64	6.02	12.13	24.75
63	-80.76	-69.31	-63.76	-57.72	-46.75	-29.74	-12.73	-1.76	4.28	9.83	21.29
64	-74.29	-63.92	-58.30	-53.43	-43.51	-28.12	-12.73	-2.81	2.66	7.68	18.05
65	-67.54	-58.32	-53.86	-49.00	-40.18	-26.50	-12.87	-4.00	.85	5.32	14.53
66	-60.84	-52.77	-48.87	-44.61	-36.89	-24.91	-12.94	-5.21	-.96	2.95	11.02
67	-54.16	-47.23	-42.87	-40.22	-33.58	-23.30	-13.01	-6.38	-2.72	.63	7.56
68	-47.69	-41.83	-38.99	-35.90	-30.29	-21.58	-12.88	-7.22	-4.18	-1.34	4.52
69	-41.15	-36.39	-34.09	-31.58	-27.03	-19.97	-12.51	-8.36	-5.85	-3.55	1.21
70	-34.79	-31.10	-29.31	-27.38	-23.83	-18.35	-12.82	-9.34	-7.39	-5.61	-1.91

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 12.9. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	98.000	99.865
0	-5.76	-4.03	-3.16	-2.76	-.58	2.62	4.62	6.29	7.22	8.06	9.81
1	-10.06	-7.83	-6.74	-5.55	-3.90	-.06	3.28	5.93	6.62	7.71	9.56
2	-14.15	-11.10	-9.62	-6.62	-5.10	-.57	3.94	6.27	8.48	9.96	12.81
3	-16.91	-12.51	-11.81	-6.55	-4.91	.98	6.78	10.52	12.58	14.97	18.38
4	-18.06	-13.49	-11.27	-6.86	-4.47	2.34	9.15	13.54	15.95	18.17	22.76
5	-19.36	-14.19	-11.67	-6.94	-3.97	3.74	11.49	16.91	19.15	21.66	24.85
6	-20.54	-14.82	-12.09	-7.01	-3.52	5.00	13.52	19.02	22.09	24.83	28.57
7	-21.79	-15.47	-12.41	-7.07	-3.02	6.34	15.79	21.79	25.12	28.19	32.51
8	-22.63	-15.76	-12.43	-6.80	-2.22	7.99	18.19	24.77	28.40	31.73	35.60
9	-23.70	-16.36	-12.71	-6.73	-1.51	9.68	20.07	26.09	32.07	35.72	43.26
10	-24.86	-16.68	-12.71	-6.43	-.54	11.59	23.74	31.57	35.49	39.85	48.09
11	-24.58	-15.98	-11.81	-5.28	.95	13.72	26.98	34.71	39.25	43.93	52.81
12	-22.90	-13.99	-9.85	-5.39	2.70	15.25	27.80	35.96	40.36	44.45	52.91
13	-19.34	-11.45	-7.63	-3.47	4.19	15.80	27.51	35.07	39.23	43.05	50.94
14	-14.25	-7.77	-4.63	-1.21	4.99	14.61	24.23	30.43	33.85	36.98	43.46
15	-11.72	-4.51	-3.83	-1.05	4.65	11.93	19.81	24.89	27.69	30.26	35.57
16	-12.10	-7.42	-5.15	-2.63	1.00	8.75	15.70	20.10	22.45	24.92	29.60
17	-11.76	-7.94	-4.58	-4.27	-.41	5.27	10.95	14.61	16.62	18.48	22.70
18	-12.22	-6.96	-7.39	-5.67	-2.56	2.27	7.10	10.21	11.93	13.50	16.78
19	-12.32	-6.52	-8.16	-6.69	-4.00	.15	4.21	7.00	8.47	9.83	12.63
20	-13.06	-10.47	-9.21	-7.03	-5.39	-1.47	2.41	4.90	6.28	7.54	10.15
21	-13.53	-11.33	-10.12	-6.50	-6.90	-2.69	1.82	3.91	5.73	5.95	8.48
22	-13.90	-11.56	-10.47	-9.26	-7.13	-3.79	-.94	1.70	2.88	3.97	6.22
23	-15.73	-13.26	-12.67	-10.76	-8.90	-5.79	-1.07	1.29	2.59	3.29	6.26
24	-16.87	-14.31	-13.67	-11.72	-9.27	-5.46	-1.46	.79	2.14	3.39	5.95
25	-17.96	-15.29	-13.98	-12.56	-9.98	-5.98	-1.78	-.59	2.01	3.32	6.81
26	-19.63	-16.67	-15.24	-13.68	-10.85	-6.47	-2.08	.75	2.31	3.74	6.70
27	-21.18	-17.99	-16.36	-14.65	-11.54	-6.72	-1.90	1.21	2.92	4.59	7.70
28	-21.78	-18.60	-16.92	-15.20	-12.07	-7.21	-2.36	.77	2.60	4.08	7.36
29	-21.69	-18.37	-16.77	-15.02	-11.84	-6.92	-2.00	1.18	2.93	4.63	7.05
30	-23.06	-19.41	-17.64	-15.72	-12.22	-6.80	-1.37	2.12	4.05	5.02	9.47
31	-25.50	-21.38	-19.39	-17.21	-13.27	-7.15	-1.04	2.91	5.08	7.00	11.20
32	-25.75	-21.67	-19.54	-17.39	-13.33	-7.12	-.91	3.09	5.30	7.32	11.51
33	-25.31	-21.09	-19.09	-16.81	-12.77	-6.49	-.22	3.83	6.04	8.11	12.33
34	-25.12	-20.78	-18.60	-16.39	-12.23	-5.79	.65	4.61	7.10	9.28	13.54
35	-24.27	-19.93	-17.83	-15.59	-11.39	-4.95	1.50	5.45	7.94	10.09	14.38
36	-24.34	-19.83	-17.62	-15.22	-10.86	-4.10	2.47	7.03	9.43	11.63	16.19
37	-25.72	-20.91	-18.44	-15.65	-11.15	-3.86	3.43	8.13	10.72	13.10	18.81
38	-28.01	-22.79	-20.18	-17.40	-12.34	-4.51	3.33	8.36	11.14	13.72	19.00
39	-30.79	-25.09	-22.36	-19.38	-13.98	-5.60	2.78	8.18	11.15	13.89	19.53
40	-31.28	-25.59	-22.76	-19.73	-14.29	-5.72	2.60	8.30	11.33	14.11	19.86
41	-33.50	-27.29	-24.21	-20.91	-14.91	-5.61	3.68	9.46	12.98	16.02	22.28
42	-36.91	-29.50	-26.14	-22.58	-15.88	-5.61	4.66	11.28	14.93	18.28	25.20
43	-37.13	-30.24	-26.91	-23.28	-16.68	-6.46	3.77	10.36	13.99	17.33	24.22
44	-37.90	-31.07	-27.76	-24.16	-17.62	-7.48	2.65	9.19	12.79	16.10	22.93
45	-40.26	-33.06	-29.57	-25.77	-18.86	-8.19	2.49	9.39	13.18	16.67	23.87
46	-41.06	-33.72	-30.16	-26.29	-19.26	-8.37	2.63	9.64	13.43	16.99	24.33
47	-42.20	-34.55	-30.89	-26.81	-19.49	-8.19	3.22	10.54	14.57	18.28	25.93
48	-44.35	-36.18	-32.22	-27.92	-20.09	-7.96	4.17	11.99	16.30	20.26	28.43
49	-47.34	-38.42	-34.10	-29.90	-20.86	-7.62	5.61	14.15	18.85	23.17	32.09
50	-49.13	-39.75	-35.20	-30.25	-21.27	-7.33	6.40	15.69	20.54	25.08	34.47
51	-50.00	-40.45	-35.83	-30.79	-21.65	-7.48	6.70	15.86	20.87	25.50	35.35
52	-51.50	-41.69	-36.95	-31.78	-22.39	-7.83	6.72	16.11	21.20	26.03	35.83
53	-51.44	-41.39	-36.53	-31.24	-21.63	-6.72	8.18	17.80	23.07	27.95	37.99
54	-50.91	-40.23	-35.30	-29.93	-20.18	-5.07	10.05	19.79	25.16	30.07	40.27
55	-49.59	-39.26	-34.26	-28.82	-18.94	-3.62	11.71	21.59	27.03	32.03	42.35
56	-48.96	-38.65	-33.66	-28.23	-18.36	-3.07	12.23	22.10	27.53	32.52	42.83
57	-48.62	-38.71	-30.92	-25.69	-16.21	-1.50	13.20	22.69	27.91	32.71	42.61
58	-39.43	-29.90	-25.29	-20.26	-11.14	3.01	17.15	26.28	31.30	35.92	45.45
59	-40.51	-30.37	-25.46	-20.12	-10.41	4.49	19.70	29.40	34.75	39.66	49.80
60	-60.74	-37.79	-31.49	-24.69	-12.20	7.10	26.39	38.04	45.69	51.98	64.98
61	-60.66	-37.78	-31.54	-24.75	-12.41	6.71	25.83	38.16	44.96	51.19	64.88
62	-49.61	-37.05	-30.97	-24.36	-12.33	6.30	24.94	36.96	43.58	49.66	62.21
63	-48.83	-35.54	-30.59	-24.11	-12.36	5.90	24.14	35.91	42.39	48.34	60.63
64	-47.78	-35.82	-30.02	-23.72	-12.27	5.47	23.25	34.78	41.01	46.61	58.77
65	-46.72	-35.09	-29.44	-23.32	-12.18	5.09	22.26	33.50	39.63	45.24	56.78
66	-45.64	-34.33	-28.84	-22.90	-12.07	4.71	21.49	32.31	38.27	43.75	55.06
67	-44.59	-33.41	-28.29	-22.50	-11.99	4.30	20.60	31.11	36.90	42.21	53.19
68	-43.82	-33.18	-27.91	-22.26	-12.01	3.98	19.60	30.06	35.71	40.90	51.61
69	-42.77	-32.38	-27.36	-21.87	-11.93	3.49	18.91	28.86	34.33	39.36	49.76
70	-41.71	-31.65	-26.74	-21.47	-11.84	3.09	18.02	27.66	32.95	37.82	47.88

TABLE 12.10. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.17	-5.26	-4.29	-3.20	-1.32	1.61	5.53	6.92	7.96	8.91	10.38
1	-7.06	-6.84	-5.81	-4.65	-2.56	.68	3.93	6.62	7.17	8.23	10.91
2	-13.07	-9.65	-8.29	-6.59	-3.51	1.27	6.05	9.13	10.83	12.39	15.60
3	-16.91	-12.07	-9.96	-7.67	-3.51	2.99	9.40	13.56	15.85	17.95	22.30
4	-18.19	-13.09	-10.56	-7.83	-2.90	4.75	12.40	17.33	20.09	22.54	27.69
5	-19.97	-14.09	-11.17	-8.09	-2.37	6.43	15.29	20.91	24.09	26.91	32.89
6	-21.72	-15.18	-11.90	-8.41	-2.08	7.75	17.57	23.90	27.39	30.40	37.21
7	-24.16	-16.46	-13.03	-9.08	-1.98	9.23	20.35	27.53	31.98	35.11	42.61
8	-26.13	-17.90	-13.92	-9.59	-1.72	10.49	22.74	30.37	34.90	38.89	47.11
9	-27.99	-18.61	-15.23	-9.67	-1.22	11.89	24.99	33.95	38.10	42.38	51.21
10	-27.63	-17.92	-13.51	-9.71	.01	13.53	27.06	35.78	40.50	44.99	54.10
11	-25.55	-16.37	-11.92	-7.08	1.71	15.33	28.96	37.75	42.59	47.04	56.22
12	-22.26	-13.99	-9.16	-4.51	3.95	17.07	30.16	38.64	43.29	47.57	56.91
13	-17.97	-10.10	-6.28	-2.13	5.91	17.10	28.79	36.33	40.98	44.30	52.18
14	-15.11	-8.07	-4.66	-.95	5.79	16.29	26.69	33.93	37.19	40.55	47.59
15	-11.10	-5.32	-2.52	.52	6.05	15.62	23.19	28.72	31.77	34.56	40.34
16	-9.40	-4.70	-2.13	.45	4.99	12.22	19.49	24.18	26.70	29.13	34.03
17	-9.01	-4.02	-2.93	-.77	3.15	9.23	15.32	19.24	21.40	23.38	27.48
18	-8.81	-5.43	-3.79	-2.61	1.22	6.23	11.29	14.48	16.26	17.89	21.27
19	-9.22	-6.26	-4.83	-3.27	-.44	3.95	8.33	11.16	12.72	14.15	17.11
20	-10.29	-7.41	-4.91	-4.56	-1.74	2.59	6.06	9.58	11.10	12.49	15.37
21	-11.06	-8.15	-6.73	-5.20	-2.41	1.92	6.25	9.04	10.56	11.99	14.91
22	-11.20	-8.37	-6.96	-5.43	-2.69	1.68	6.00	8.78	10.32	11.73	14.69
23	-12.16	-9.10	-7.61	-5.99	-3.06	1.50	6.06	8.99	10.41	12.09	15.16
24	-13.81	-9.67	-8.05	-6.23	-3.08	1.89	6.85	10.06	11.82	13.99	16.79
25	-14.16	-10.49	-8.71	-6.77	-3.26	2.19	7.69	11.15	13.07	14.87	18.54
26	-15.29	-11.21	-9.29	-7.09	-3.18	2.87	8.93	12.83	14.99	16.96	21.09
27	-16.09	-11.63	-9.7	-7.12	-2.85	3.77	10.39	14.66	17.01	19.17	23.63
28	-15.91	-11.21	-8.94	-6.46	-1.96	5.02	11.97	16.99	18.97	21.25	25.95
29	-16.54	-11.51	-9.07	-6.92	-1.41	5.86	13.32	18.14	20.79	23.23	28.26
30	-16.26	-11.09	-8.51	-5.77	-.70	6.95	14.68	19.67	22.42	24.94	30.15
31	-17.44	-11.76	-9.01	-6.01	-.57	7.86	16.29	21.73	24.72	27.58	33.16
32	-18.07	-11.93	-8.96	-5.72	.16	9.77	18.38	24.26	27.50	30.47	36.61
33	-18.58	-12.01	-8.83	-5.37	.91	10.65	20.46	26.68	30.14	33.32	39.89
34	-18.61	-11.49	-8.05	-4.30	2.51	13.07	23.69	30.95	34.20	37.64	44.76
35	-16.09	-8.88	-5.39	-1.59	5.31	16.01	26.72	33.62	37.42	40.91	48.12
36	-15.49	-7.87	-4.18	-.17	7.13	18.44	29.24	37.04	41.05	44.74	52.36
37	-18.39	-9.61	-5.36	-.74	7.66	20.68	33.70	42.10	46.73	50.97	59.75
38	-19.63	-10.12	-5.56	-.59	8.42	22.40	36.38	45.39	50.35	54.91	64.33
39	-19.89	-9.99	-5.19	.03	9.51	24.21	38.91	48.39	53.61	58.41	68.31
40	-20.59	-10.10	-5.02	.51	10.56	26.12	41.69	51.73	57.26	62.34	72.84
41	-20.88	-10.08	-4.85	.84	11.18	27.21	43.24	53.58	59.28	64.51	75.31
42	-21.01	-10.01	-4.69	1.11	11.63	27.95	44.27	54.79	60.59	65.91	76.91
43	-18.56	-8.09	-3.03	2.99	12.50	28.82	43.55	53.57	59.08	64.15	74.61
44	-18.48	-7.81	-2.64	2.98	13.19	29.02	44.85	55.04	60.68	65.85	76.51
45	-17.33	-6.58	-1.37	4.30	14.60	30.56	46.53	56.83	62.50	67.71	78.46
46	-16.34	-5.59	-.39	5.27	15.56	31.51	47.45	57.74	63.40	68.68	79.35
47	-15.32	-4.52	.72	6.41	16.76	32.79	48.83	59.18	64.87	70.11	80.91
48	-14.87	-3.87	1.45	7.25	17.78	34.15	50.42	60.95	66.75	72.07	83.07
49	-13.26	-2.38	2.89	8.62	19.03	35.18	51.32	61.73	67.46	72.73	83.61
50	-10.51	-.12	4.91	10.38	20.33	35.75	51.16	61.11	66.58	71.61	82.00
51	-9.18	1.14	6.14	11.58	21.46	36.78	52.10	61.98	67.42	72.42	82.74
52	-7.00	3.04	7.90	13.19	22.80	37.71	52.61	62.22	67.52	72.38	82.42
53	-6.24	3.89	8.80	14.13	23.83	38.86	53.90	63.57	68.93	73.83	83.97
54	-5.27	4.74	9.59	14.87	24.46	39.33	54.19	63.78	69.06	73.91	83.93
55	-4.26	5.92	10.84	16.20	25.93	41.01	55.10	65.03	71.19	76.11	86.27
56	-3.53	6.95	12.02	17.54	27.56	43.11	58.46	68.00	74.20	79.27	89.74
57	-4.10	6.62	11.80	17.45	27.71	43.61	59.51	69.77	75.42	80.61	91.32
58	-4.97	6.35	11.84	17.61	28.65	45.47	62.28	73.13	79.10	84.58	95.91
59	-6.01	5.77	11.47	17.68	28.94	46.49	63.93	75.20	81.91	87.12	98.98
60	-8.43	4.30	10.46	17.18	29.36	48.26	67.16	79.35	86.06	92.23	104.96
61	-11.12	1.89	8.20	15.06	27.52	46.85	66.17	78.44	85.50	91.88	104.82
62	-11.97	.91	7.15	13.94	26.27	45.39	64.51	76.84	83.63	89.87	102.76
63	-12.80	-.05	6.12	12.84	25.04	43.95	62.87	75.07	81.77	87.96	100.78
64	-13.64	-1.04	5.07	11.71	23.78	42.49	61.20	73.27	79.92	86.02	98.63
65	-14.37	-1.90	4.13	10.71	22.64	41.15	59.66	71.40	78.17	84.21	96.68
66	-14.92	-2.65	3.29	9.76	21.53	39.72	57.93	69.58	76.14	82.09	94.36
67	-15.76	-3.63	2.24	8.64	20.25	38.26	56.27	67.88	74.27	80.15	92.20
68	-16.60	-4.60	1.21	7.52	19.02	36.82	54.63	66.11	72.44	78.25	90.24
69	-17.44	-5.59	.16	6.41	17.76	35.36	52.96	64.32	70.57	76.31	88.17
70	-18.28	-6.56	-.80	5.30	16.53	33.93	51.33	62.55	68.73	74.41	86.13

TABLE 12.11. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-8.58	-6.89	-5.46	-4.38	-2.38	.72	3.82	5.82	6.92	7.83	10.02
1	-12.28	-9.43	-3.05	-6.54	-3.81	.42	4.66	7.39	8.89	10.27	13.13
2	-14.48	-10.80	-9.02	-7.08	-3.56	1.90	7.36	10.88	12.82	14.60	18.28
3	-16.68	-11.97	-9.69	-7.20	-2.69	3.31	11.30	15.81	18.30	20.58	25.30
4	-18.56	-12.93	-10.20	-7.23	-1.85	6.51	14.87	20.25	23.22	25.95	31.58
5	-21.61	-14.83	-11.54	-7.97	-1.47	8.59	18.66	25.15	28.73	32.01	38.80
6	-23.17	-15.54	-11.85	-7.88	-.53	10.80	22.12	29.42	33.44	37.13	44.76
7	-25.17	-16.66	-12.53	-8.09	.10	12.74	25.38	33.53	38.02	42.10	50.66
8	-27.19	-17.84	-13.81	-8.39	.56	14.44	28.31	37.26	42.18	46.71	56.06
9	-28.52	-18.53	-13.69	-8.49	1.14	15.97	30.40	40.36	45.63	50.46	60.45
10	-29.61	-18.97	-13.81	-8.20	1.99	17.75	33.59	43.78	49.39	54.55	65.20
11	-29.15	-18.29	-13.02	-7.30	3.21	19.23	35.36	45.76	51.49	56.75	67.62
12	-27.10	-16.42	-11.25	-5.62	4.60	20.46	36.31	46.53	52.16	57.84	68.02
13	-22.63	-13.03	-8.38	-3.32	5.87	20.12	34.37	43.56	48.62	53.27	62.87
14	-16.73	-8.82	-5.00	-.83	6.74	18.48	30.21	37.74	41.95	45.77	53.68
15	-12.57	-6.12	-2.59	.41	6.59	16.17	25.75	31.92	35.33	38.45	44.90
16	-10.58	-5.17	-2.55	.30	5.47	13.50	21.53	26.71	29.56	32.18	37.58
17	-9.32	-4.70	-2.47	-.04	4.39	11.23	18.09	22.50	24.94	27.17	31.79
18	-9.62	-5.57	-3.61	-1.48	2.40	8.41	14.42	18.29	20.43	22.39	26.43
19	-10.27	-6.54	-4.74	-2.77	.50	6.13	11.66	15.42	17.40	19.26	22.93
20	-11.75	-8.06	-6.28	-4.34	-.81	4.66	10.13	13.66	15.60	17.39	21.07
21	-13.07	-9.23	-7.46	-5.49	-1.94	3.78	9.40	13.02	15.01	16.85	20.63
22	-14.91	-10.79	-8.80	-6.62	-2.68	3.44	9.56	13.50	15.68	17.67	21.79
23	-16.38	-11.98	-9.85	-7.53	-3.32	3.22	9.75	13.96	16.28	18.41	22.81
24	-18.09	-13.24	-10.88	-8.32	-3.67	3.54	10.75	15.40	17.96	20.31	25.17
25	-19.52	-14.24	-11.67	-8.85	-3.93	4.02	11.87	16.93	19.72	22.28	27.37
26	-21.15	-15.26	-12.40	-9.30	-3.66	5.08	13.82	19.46	22.57	25.42	31.31
27	-23.24	-16.61	-13.40	-9.91	-3.56	6.27	16.11	22.45	25.94	29.15	35.78
28	-19.70	-12.74	-9.34	-6.63	1.11	11.64	22.01	28.75	32.46	35.86	42.70
29	-17.44	-10.58	-7.25	-3.48	2.91	13.12	21.34	29.88	33.56	36.83	43.68
30	-16.81	-9.73	-6.30	-2.56	4.22	14.72	25.24	32.02	35.76	39.19	46.27
31	-17.81	-9.63	-5.91	-1.92	5.18	16.27	27.34	34.54	38.54	42.80	49.86
32	-17.19	-9.24	-5.44	-1.27	6.25	17.95	29.44	37.19	41.34	45.16	53.84
33	-17.81	-10.41	-6.29	-1.71	6.52	19.28	32.05	40.29	44.81	48.98	57.57
34	-18.19	-9.37	-4.96	-.34	8.38	21.69	34.70	43.33	46.83	52.30	61.28
35	-17.74	-9.2[illegible]	-4.69	.38	9.94	24.81	37.44	47.25	54.61	59.34	67.34
36	-16.80	-6.62	-1.79	3.27	13.62	27.64	42.46	52.00	57.26	62.16	72.80
37	-14.28	-4.12	.77	6.09	15.74	30.72	45.42	56.35	66.47	65.55	74.64
38	-13.63	-2.91	2.24	7.[illegible]	18.60	3[illegible].77	47.54	59.78	66.29	70.44	81.04
39	-13.24	-2.18	3.31	9.28	19.87	36.46	52.06	62.73	69.61	76.02	86.17
40	-12.14	-.63	4.95	11.01	22.03	39.12	56.28	67.22	73.29	78.86	90.37
41	-11.62	.43	6.22	12.52	23.96	41.78	59.94	70.88	77.18	82.94	94.92
42	-11.42	1.09	7.06	13.06	24.69	44.09	62.64	74.63	81.18	87.14	99.61
43	-9.34	3.09	9.49	15.67	27.42	46.80	65.18	76.83	82.56	88.56	100.94
44	-7.36	4.97	10.96	17.46	29.25	47.66	65.87	77.68	84.18	90.16	102.48
45	-6.09	6.41	12.95	19.21	30.93	49.62	67.91	79.83	86.50	92.83	105.89
46	-5.47	7.19	13.33	20.06	32.12	50.92	69.79	81.89	86.82	94.66	107.32
47	-5.40	7.16	13.49	20.27	32.40	51.92	71.16	83.57	90.90	96.68	107.05
48	-5.49	7.83	14.20	21.30	34.05	53.82	73.60	86.35	93.37	99.82	113.19
49	-2.93	10.39	16.00	23.36	36.62	55.66	73.67	85.99	94.78	98.98	111.72
50	-2.39	10.70	17.64	23.94	36.48	55.91	75.34	87.88	94.78	101.12	114.21
51	-3.63	11.65	18.84	24.89	37.00	57.52	77.[illegible]	89.94	96.94	103.39	116.68
52	-4.94	11.11	17.91	24.31	38.75	59.60	80.49	93.84	101.26	108.04	122.18
53	-3.67	10.99	18.18	24.84	39.98	61.74	82.49	97.44	105.29	112.90	127.09
54	1.97	15.25	21.69	28.69	41.41	61.13	80.84	93.57	100.57	107.81	120.29
55	2.80	16.97	24.08	30.26	43.29	63.49	83.49	96.72	103.99	110.98	124.87
56	1.81	15.11	21.94	29.38	43.00	63.81	84.76	98.25	105.68	112.62	126.62
57	-.82	13.74	20.79	28.96	43.98	64.81	85.42	99.84	107.23	114.27	128.04
58	2.07	16.31	24.72	30.11	43.17	63.42	83.67	96.73	103.72	110.83	124.18
59	-.22	13.41	20.31	27.68	40.85	61.38	81.91	95.15	102.95	107.15	122.98
60	-1.47	11.95	18.95	26.53	38.38	58.30	78.39	91.87	98.14	104.44	118.84
61	-8.61	6.14	13.23	20.95	34.77	56.71	78.95	92.47	100.19	107.28	121.72
62	-9.46	5.83	12.34	19.68	33.66	55.66	78.56	90.41	98.06	105.87	119.55
63	-10.02	4.24	11.16	18.67	32.32	53.48	75.45	88.38	96.82	103.72	116.98
64	-10.96	3.14	9.97	17.40	30.69	51.82	72.76	84.35	93.60	100.91	114.40
65	-11.83	2.11	8.87	16.21	29.54	50.24	70.94	82.38	91.65	98.98	112.38
66	-12.69	1.09	7.77	15.03	28.23	48.67	69.10	82.36	89.62	96.29	110.09
67	-13.66	-.67	6.67	13.76	26.88	47.03	67.26	80.31	87.49	94.09	107.75
68	-14.26	-.84	5.96	12.79	25.56	45.47	65.37	78.21	85.28	91.77	105.[illegible]
69	-15.24	-1.98	4.99	11.93	24.12	43.81	63.47	76.19	83.12	89.49	102.[illegible]
70	-16.13	-3.02	3.33	10.23	22.78	42.34	61.78	74.26	81.16	87.61	100.42

TABLE 12.12. VANDENBERG HEAD- AND TAILWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.13	-6.95	-5.90	-4.75	-2.67	.57	3.80	5.68	7.03	8.09	10.27
1	-12.66	-9.38	-7.75	-6.06	-2.92	1.95	6.61	9.35	11.68	13.27	16.56
2	-13.43	-9.36	-7.33	-5.25	-1.36	4.68	10.71	14.61	16.75	18.72	22.78
3	-15.18	-10.03	-7.54	-4.88	.10	7.23	15.37	20.29	23.01	25.00	30.64
4	-17.34	-11.44	-8.33	-4.35	1.18	10.69	20.20	26.34	29.72	32.82	39.23
5	-19.37	-12.05	-8.50	-4.64	2.37	13.24	24.11	31.12	34.98	38.52	45.04
6	-20.58	-12.49	-8.57	-4.30	3.45	15.47	27.49	35.24	39.51	43.43	51.52
7	-22.47	-13.84	-5.07	-4.11	4.33	17.73	31.13	39.77	44.53	48.80	57.93
8	-23.97	-14.14	-9.37	-4.13	5.22	19.81	34.41	43.92	49.00	53.76	63.60
9	-25.00	-14.48	-9.38	-3.83	6.25	21.87	37.50	47.57	53.12	58.22	68.75
10	-24.42	-13.60	-8.36	-2.66	7.69	23.74	39.79	50.14	55.84	61.08	71.39
11	-22.17	-11.54	-6.39	-.76	9.38	25.15	40.53	51.10	56.70	61.85	72.47
12	-17.74	-8.10	-3.43	1.65	10.89	25.29	39.50	48.73	53.81	58.48	68.12
13	-14.95	-5.77	-1.56	3.03	11.35	24.25	37.15	45.47	50.05	54.27	62.96
14	-9.94	-2.69	.82	4.64	11.58	22.25	33.11	40.05	43.87	47.38	54.63
15	-7.50	-1.32	1.68	4.93	10.85	20.62	29.20	35.11	38.37	41.36	47.54
16	-7.44	-1.98	.67	3.55	8.78	16.90	25.01	30.24	33.12	35.77	41.24
17	-7.70	-2.87	-.54	2.00	6.62	13.78	20.94	25.55	28.10	30.43	35.25
18	-7.74	-3.72	-1.76	.38	4.27	10.29	16.32	20.20	22.34	24.31	28.37
19	-8.83	-5.21	-3.46	-1.55	1.91	7.24	12.65	16.11	18.01	19.77	23.38
20	-11.26	-7.59	-5.61	-3.98	-.36	5.08	10.53	14.04	15.97	17.75	21.42
21	-13.30	-9.59	-7.80	-5.89	-2.29	3.22	8.73	12.24	14.24	16.03	19.75
22	-15.49	-11.61	-9.73	-7.68	-3.97	1.79	7.55	11.26	13.31	15.19	19.07
23	-18.50	-14.13	-12.01	-9.71	-5.52	.37	7.47	11.65	13.96	16.08	20.45
24	-19.55	-14.97	-12.75	-10.34	-5.95	.85	7.65	12.03	14.45	16.66	21.25
25	-21.28	-16.39	-14.03	-11.45	-6.77	.49	7.74	12.42	15.00	17.37	22.26
26	-24.12	-18.56	-15.46	-12.93	-7.60	.67	8.93	14.26	17.20	19.89	25.46
27	-27.98	-21.37	-18.17	-14.69	-8.36	1.44	11.25	17.57	21.06	24.26	30.86
28	-28.83	-17.76	-13.78	-9.39	-1.47	18.80	23.90	31.00	35.34	39.37	47.69
29	-27.12	-18.14	-13.82	-9.18	-.53	12.77	26.84	34.63	39.35	43.69	52.45
30	-28.24	-20.14	-15.27	-9.98	.28	14.78	27.42	39.14	44.68	49.57	59.44
31	-32.55	-21.41	-16.31	-10.56	-.87	16.17	32.41	42.88	48.46	53.95	64.89
32	-28.49	-19.41	-13.77	-8.85	3.71	19.38	36.98	46.40	52.73	58.14	69.39
33	-30.56	-18.51	-12.48	-6.33	6.20	23.06	40.94	52.49	58.84	64.68	76.72
34	-28.77	-16.89	-9.88	-3.18	9.88	27.87	46.72	58.95	65.65	71.82	84.54
35	-23.46	-11.88	-4.95	1.69	13.75	32.45	51.16	63.21	69.85	75.95	88.55
36	-18.81	-5.46	.29	4.79	18.60	36.90	55.21	67.81	73.51	79.49	91.82
37	-13.44	-1.21	4.02	11.37	23.28	41.79	60.20	72.18	78.66	84.68	97.12
38	-10.98	1.67	7.76	14.38	26.51	45.04	63.75	76.75	82.37	88.64	101.02
39	-9.82	3.49	9.07	16.84	29.56	47.24	68.93	81.63	88.62	95.05	108.01
40	-6.31	6.47	13.39	20.19	33.18	52.88	72.54	85.28	92.28	98.63	111.90
41	-3.89	9.42	16.87	22.88	36.42	55.38	76.13	87.87	94.89	101.39	114.45
42	-2.42	11.84	17.69	24.98	38.88	58.31	78.42	91.22	98.93	105.66	119.24
43	-1.78	12.42	19.29	26.77	40.36	61.43	82.60	96.09	103.67	110.45	124.64
44	.58	14.84	21.77	29.29	43.74	64.15	85.34	99.00	106.52	113.48	127.71
45	.62	15.29	22.32	30.07	44.82	65.72	87.41	101.41	109.11	116.19	130.81
46	-.59	14.42	21.69	29.61	43.78	66.27	88.54	103.93	110.85	118.12	133.14
47	-1.98	14.28	21.71	30.22	45.30	68.49	92.08	107.16	115.47	123.10	138.86
48	-1.68	14.67	22.91	30.93	46.81	70.42	94.43	108.91	118.94	126.97	143.65
49	2.63	18.65	26.26	34.66	49.98	73.69	97.17	112.42	120.81	128.52	144.95
50	.58	16.94	25.98	33.56	49.29	73.68	98.08	113.81	122.97	130.63	146.84
51	-4.25	13.82	21.38	30.48	47.00	72.62	98.24	114.77	123.87	132.23	[illegible]
52	-3.17	13.57	21.68	30.58	46.53	71.38	96.23	113.54	121.88	129.19	146.94
53	-4.46	12.25	20.83	29.65	46.93	71.33	96.73	113.11	122.13	130.42	147.53
54	-7.84	9.41	18.87	27.27	43.99	68.98	95.89	113.53	121.73	130.19	147.68
55	-9.82	8.63	17.19	26.49	43.39	67.60	95.81	112.71	122.02	130.57	148.23
56	-7.97	9.38	17.66	26.76	43.29	68.93	96.54	111.89	120.19	128.56	145.83
57	-11.37	6.29	14.84	24.15	41.86	67.27	93.48	110.30	119.69	128.24	145.79
58	-8.93	7.93	16.89	24.97	41.18	66.11	91.12	107.25	116.13	124.29	141.12
59	-2.41	13.63	21.58	30.86	46.61	69.73	93.84	109.37	117.96	126.82	142.86
60	28.66	37.62	44.84	50.62	61.12	77.41	93.78	104.20	109.99	115.30	126.27
61	25.86	36.47	42.81	48.83	58.97	75.93	93.89	103.82	109.86	115.38	126.81
62	22.98	34.16	39.82	45.97	57.15	74.97	91.83	103.81	109.17	114.83	126.51
63	19.94	31.47	37.29	43.62	56.11	72.95	90.74	103.26	108.58	114.48	126.91
64	16.87	28.98	34.88	41.28	53.19	71.58	89.81	101.62	108.12	114.18	126.93
65	13.40	26.27	32.41	39.89	51.23	70.94	88.84	100.99	107.67	113.81	126.98
66	10.94	23.89	30.16	36.79	49.38	69.68	87.83	100.22	107.08	113.32	126.27
67	7.93	21.23	27.67	34.68	47.41	67.19	86.88	99.61	106.62	113.86	126.36
68	4.86	18.58	25.11	32.36	45.36	65.61	85.84	98.92	106.11	112.72	126.32
69	2.18	16.84	22.79	30.14	43.47	64.15	84.81	98.17	105.52	112.26	126.28
70	-.91	13.38	20.30	27.83	41.81	62.72	83.95	97.68	105.13	112.05	126.38

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 13.1. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

108-DEGREE FLIGHT AZIMUTH

JANUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.54	-7.53	-6.61	-5.43	-3.48	0.49	2.57	4.54	5.62	6.81	8.65
1	-21.96	-17.33	-15.39	-12.66	-8.23	-1.37	5.50	9.92	12.36	14.60	19.22
2	-24.57	-19.45	-16.96	-14.25	-9.34	-1.73	5.89	10.80	13.50	15.99	21.12
3	-27.51	-21.67	-18.65	-15.77	-10.19	-1.53	7.13	12.72	15.79	18.62	24.96
4	-30.03	-23.52	-20.36	-16.93	-10.70	-1.09	8.62	14.86	18.29	21.49	27.95
5	-33.54	-26.39	-22.48	-18.65	-11.42	-.36	10.70	17.84	21.74	25.37	32.82
6	-37.02	-29.72	-24.76	-23.33	-12.38	-.04	12.26	20.20	24.58	28.60	36.90
7	-40.99	-31.79	-27.34	-22.49	-13.69	-.05	13.60	22.98	27.25	31.78	40.89
8	-45.20	-35.59	-38.15	-24.77	-15.01	.13	15.26	25.02	30.40	35.34	45.53
9	-49.27	-38.17	-32.89	-26.95	-16.32	.15	16.62	27.25	33.10	38.47	49.57
10	-52.90	-40.92	-35.12	-28.80	-17.34	.45	18.23	29.70	34.01	41.82	53.88
11	-53.73	-41.39	-36.43	-28.99	-17.15	1.12	19.40	31.19	37.67	43.63	55.95
12	-50.02	-38.47	-32.87	-26.78	-15.72	1.43	18.59	29.69	35.73	41.33	52.89
13	-41.26	-31.57	-26.87	-21.77	-12.49	1.90	16.39	25.57	30.67	35.37	45.04
14	-35.42	-27.39	-22.98	-14.57	-10.55	1.89	14.33	22.35	26.77	30.43	39.21
15	-30.73	-23.47	-19.96	-16.15	-9.23	1.50	12.29	19.13	22.97	26.47	33.70
16	-26.93	-20.64	-17.59	-14.28	-8.26	1.08	10.42	16.44	19.75	22.80	[illegible]
17	-22.26	-17.15	-14.67	-11.98	-7.09	.49	8.07	12.94	15.65	18.13	[illegible]
18	-19.23	-14.98	-12.93	-10.71	-6.67	-.40	5.84	9.91	12.13	14.17	18.40
19	-18.15	-14.34	-12.58	[illegible]	-6.65	-1.20	4.44	8.09	10.09	11.44	15.74
20	-16.93	-13.55	-11.92	-10.15	-6.94	-1.95	3.03	6.24	8.01	9.64	13.00
21	-16.53	-13.33	-11.03	-10.13	-7.13	-2.40	2.30	5.33	6.99	8.53	11.69
22	-17.22	-14.00	-12.44	-10.74	-7.66	-2.87	1.91	4.99	6.69	8.26	11.47
23	-18.30	-14.89	-13.29	-11.44	-8.18	-3.11	1.95	5.21	7.01	8.66	12.07
24	-19.86	-16.08	-14.25	-12.25	-8.63	-3.02	2.59	6.21	8.20	10.03	13.81
25	-20.66	-16.63	-15.67	-12.54	-8.68	-2.69	3.30	7.16	9.29	11.24	15.28
26	-22.19	-17.83	-15.72	-13.42	-9.25	-2.78	3.69	7.87	10.16	12.28	16.63
27	-25.24	-20.19	-17.74	-15.08	-10.24	-2.75	4.75	9.59	12.25	14.70	19.75
28	-34.05	-26.55	-22.93	-18.99	-11.83	-.73	10.37	17.53	21.47	25.09	32.57
29	-36.51	-28.90	-24.47	-20.20	-12.93	-.39	11.65	19.41	23.69	27.61	35.72
30	-38.55	-29.97	-25.81	-21.29	-13.08	-.34	12.90	20.61	25.13	29.29	37.47
31	-40.84	-31.60	-27.12	-22.25	-13.40	.32	14.05	22.88	27.75	32.23	41.97
32	-43.22	-33.25	-28.42	-23.17	-13.63	1.17	15.97	25.51	30.76	35.59	45.56
33	-45.60	-34.85	-29.45	-23.98	-13.70	2.25	18.21	28.49	34.16	39.36	50.11
34	-48.93	-37.20	-31.52	-25.34	-14.11	3.30	20.71	31.94	38.12	43.81	55.54
35	-50.94	-38.25	-32.34	-25.91	-14.22	3.90	22.02	33.70	40.14	44.05	58.26
36	-53.06	-40.17	-33.93	-27.13	-14.79	4.34	23.47	35.81	42.41	48.85	61.74
37	-54.10	-40.70	-34.28	-27.14	-14.31	5.58	25.47	38.30	45.36	51.85	65.25
38	-54.37	-40.68	-34.05	-26.84	-13.73	6.58	26.90	42.00	47.22	53.85	67.53
39	-55.17	-42.74	-34.67	-26.58	-12.98	8.11	29.21	42.81	50.30	57.18	71.39
40	-54.89	-41.87	-34.60	-26.68	-12.30	10.00	32.29	46.47	54.59	61.87	76.89
41	-52.75	-38.11	-30.92	-23.10	-8.70	13.13	35.15	49.36	57.18	64.26	79.20
42	-48.68	-34.17	-27.13	-19.48	-5.58	15.97	37.52	51.42	59.07	66.10	80.42
43	-44.33	-30.29	-23.49	-14.08	-2.64	18.21	39.86	52.58	59.90	66.71	80.76
44	-41.97	-28.01	-21.26	-13.90	-.54	20.17	40.88	54.24	61.60	68.36	82.31
45	-42.50	-27.94	-20.89	-13.21	.73	22.35	43.97	57.91	65.59	72.65	87.20
46	-42.54	-27.52	-20.24	-12.32	2.07	24.37	46.68	61.06	68.98	76.76	91.29
47	-40.77	-25.69	-18.18	-10.43	4.01	26.40	48.79	63.23	71.18	78.[illegible]	93.57
48	-40.94	-25.44	-17.94	-9.77	5.06	28.06	51.96	65.89	74.06	81.66	97.06
49	-41.64	-25.55	-17.67	-9.09	6.50	30.67	54.84	70.42	79.01	86.89	103.18
50	-39.07	-23.38	-15.34	-6.91	8.90	32.13	58.07	71.17	79.60	87.35	103.34
51	-38.51	-22.73	-15.08	-6.76	8.35	31.77	59.20	70.31	78.63	86.28	102.06
52	-38.93	-16.38	-9.34	-1.67	12.26	33.85	55.44	69.36	77.03	84.08	98.62
53	-38.75	-16.15	-9.69	-1.39	12.57	34.29	55.90	69.87	77.66	84.63	99.23
54	-38.48	-16.05	-9.86	-1.45	12.36	33.78	55.20	69.81	76.62	83.61	98.04
55	-26.31	-12.85	-6.32	.77	13.66	33.65	53.64	66.53	73.63	80.15	93.62
56	-14.34	-2.62	3.56	9.29	20.96	37.86	55.25	66.47	72.65	78.33	90.05
57	-19.22	-6.45	-.55	4.09	18.13	36.81	55.49	67.54	74.17	80.26	92.85
58	-17.88	-5.24	.87	7.53	19.63	38.38	57.13	69.23	75.89	82.01	94.64
59	-18.98	-5.53	.74	7.57	19.97	39.19	58.42	70.82	77.64	83.92	96.07
60	-24.68	-10.11	-3.06	4.62	18.57	40.19	61.82	75.74	83.44	90.50	105.07
61	-19.93	-2.80	3.88	9.47	21.09	39.09	57.16	68.72	75.11	80.99	93.12
62	-15.74	-3.73	2.13	8.48	20.82	37.91	55.80	67.33	73.68	79.52	91.57
63	-16.81	-4.78	1.25	7.38	18.90	36.75	54.40	66.11	72.45	78.28	90.38
64	-17.63	-5.69	.10	6.48	17.83	35.56	53.29	64.72	71.02	76.81	88.75
65	-18.65	-6.74	-.97	5.31	16.72	34.40	52.08	63.49	69.76	75.53	87.45
66	-19.47	-7.64	-1.91	4.33	15.65	33.21	50.77	62.18	68.34	74.07	85.90
67	-20.43	-8.62	-2.91	3.32	14.42	32.15	49.67	60.98	67.20	72.92	84.73
68	-21.28	-9.53	-3.85	2.33	13.56	30.96	48.37	59.69	65.77	71.45	83.18
69	-22.28	-10.58	-4.92	1.25	12.49	29.80	47.16	58.26	64.52	70.18	81.88
70	-23.10	-11.49	-5.86	.26	11.38	28.61	45.85	56.97	63.09	68.71	80.33

TABLE 13.2. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

FEBRUARY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.14	-7.20	-6.36	-5.37	-3.67	-.79	2.00	3.79	4.78	5.69	7.67
1	-22.97	-17.84	-15.42	-13.20	-8.78	-1.95	4.94	9.12	11.75	13.98	18.59
2	-26.01	-20.56	-17.52	-15.05	-9.64	-1.75	6.33	11.55	14.92	17.05	22.50
3	-29.62	-23.38	-20.35	-17.06	-11.64	-1.38	7.51	13.60	16.78	19.42	24.08
4	-32.51	-25.52	-22.13	-18.96	-11.75	-1.38	9.00	15.69	19.37	22.76	29.75
5	-35.23	-27.62	-23.78	-19.72	-12.38	-.87	10.54	17.94	22.81	25.25	33.94
6	-38.54	-30.80	-25.86	-21.33	-13.13	-.42	12.38	20.60	25.02	29.17	37.73
7	-40.48	-32.79	-28.19	-23.18	-13.89	.01	14.14	23.19	26.18	32.35	42.29
8	-40.72	-34.18	-31.68	-25.53	-15.49	.26	15.83	25.92	31.97	36.67	47.11
9	-41.86	-35.67	-33.59	-27.93	-16.91	.48	17.34	28.38	35.35	39.83	54.83
10	-39.62	-42.41	-36.40	-29.67	-17.99	.42	18.83	30.70	37.24	43.25	55.65
11	-39.16	-41.20	-35.84	-29.09	-17.16	1.35	17.44	31.24	38.36	44.38	54.86
12	-40.64	-37.26	-31.72	-25.69	-15.75	2.21	19.17	30.11	36.13	41.67	53.10
13	-40.55	-38.83	-28.13	-21.00	-11.78	2.72	17.18	26.85	31.57	36.38	45.99
14	-39.51	-26.19	-22.64	-17.47	-9.66	2.76	15.19	23.20	27.41	31.46	40.03
15	-29.24	-22.18	-18.24	-15.08	-8.29	2.19	13.84	19.84	23.13	26.65	33.84
16	-26.91	-19.36	-16.39	-13.13	-7.28	1.70	12.44	16.47	19.91	22.86	28.97
17	-21.26	-16.29	-13.86	-11.16	-6.35	1.16	8.55	13.35	16.00	18.83	23.85
18	-18.88	-13.98	-11.99	-9.82	-5.89	.91	6.31	10.27	12.90	14.39	18.50
19	-15.76	-12.30	-11.06	-8.47	-5.42	-.59	5.94	7.76	9.49	11.14	14.53
20	-14.92	-11.41	-9.96	-8.37	-5.49	-1.02	3.45	6.33	7.92	9.37	12.38
21	-13.95	-11.13	-9.74	-8.27	-5.57	-1.39	2.80	5.15	6.59	8.36	11.18
22	-13.74	-11.12	-9.82	-8.41	-5.85	-1.87	2.18	4.66	6.07	7.37	10.05
23	-13.87	-11.15	-9.93	-8.46	-5.88	-1.77	2.34	4.88	6.29	7.41	10.33
24	-14.36	-11.49	-10.49	-8.56	-5.83	-1.56	2.71	5.46	6.78	8.37	11.25
25	-14.82	-11.82	-10.38	-8.78	-5.91	-1.48	3.08	5.87	7.36	8.91	11.91
26	-16.96	-13.03	-11.37	-9.66	-6.28	-1.18	3.91	7.17	9.00	10.46	14.09
27	-17.99	-13.69	-11.67	-9.69	-6.30	-.79	5.83	8.94	16.39	12.21	15.76
28	-18.38	-14.59	-12.68	-10.66	-6.99	-1.30	4.39	8.06	10.08	11.93	15.77
29	-19.56	-15.33	-13.27	-11.04	-6.93	-.67	5.64	9.70	11.94	14.00	18.25
30	-21.99	-17.02	-14.62	-12.00	-7.25	.12	7.49	12.25	14.87	17.27	22.24
31	-25.68	-19.94	-17.16	-14.14	-8.64	-.12	8.39	13.89	16.91	19.69	25.93
32	-25.63	-19.80	-16.97	-13.90	-8.32	.34	9.00	14.58	17.65	20.98	26.31
33	-26.79	-19.68	-16.72	-13.49	-7.64	1.48	10.50	16.36	19.57	22.52	28.64
34	-26.51	-20.18	-17.11	-13.77	-7.70	1.70	11.11	17.18	20.52	23.58	29.92
35	-26.87	-20.47	-17.37	-14.00	-7.86	1.61	11.10	17.22	20.60	23.69	30.09
36	-27.99	-22.72	-19.21	-15.38	-8.92	2.36	13.14	20.10	23.93	27.95	34.71
37	-32.39	-24.48	-20.66	-16.49	-8.92	2.81	14.54	22.11	26.27	30.10	38.81
38	-34.20	-25.88	-21.84	-17.45	-9.48	2.87	15.23	23.20	27.59	31.62	39.95
39	-36.20	-27.73	-22.50	-18.07	-9.69	2.81	15.50	23.69	28.20	32.24	40.70
40	-34.45	-25.94	-21.81	-17.32	-9.17	3.48	16.12	24.28	28.76	32.89	41.41
41	-36.44	-27.13	-22.81	-17.78	-8.78	4.05	18.89	27.81	32.72	37.23	46.54
42	-37.31	-27.46	-22.68	-17.49	-8.06	4.57	21.20	30.43	35.83	40.40	50.46
43	-39.18	-28.90	-23.19	-17.52	-7.22	5.78	24.72	35.01	40.49	45.90	58.05
44	-40.75	-29.21	-23.62	-17.53	-6.48	10.65	27.79	38.84	44.92	50.51	62.06
45	-42.37	-30.11	-24.09	-17.92	-5.39	12.87	31.39	43.30	49.87	55.90	68.38
46	-41.50	-28.84	-22.75	-16.09	-4.00	14.75	33.50	45.65	52.25	58.37	71.00
47	-38.17	-24.67	-18.21	-11.83	-.25	17.72	38.68	47.28	53.64	59.50	71.61
48	-35.70	-23.39	-17.43	-10.94	.84	19.11	37.38	49.16	55.65	61.61	73.92
49	-35.96	-23.39	-17.23	-10.90	1.90	20.23	38.97	51.05	57.70	63.81	76.43
50	-36.29	-23.33	-17.06	-10.23	2.17	21.41	40.64	53.04	59.87	66.15	79.10
51	-33.77	-21.11	-14.70	-8.31	3.01	22.60	41.39	53.91	60.18	66.31	79.57
52	-32.23	-19.81	-13.79	-7.25	4.64	23.08	41.51	53.40	59.95	65.96	78.38
53	-31.16	-18.91	-12.83	-6.32	5.50	23.04	42.17	54.00	60.51	66.49	78.84
54	-33.63	-20.66	-14.38	-7.54	4.87	24.12	43.36	55.77	62.61	68.89	81.86
55	-29.04	-16.68	-10.68	-4.14	7.60	26.04	44.40	56.24	62.76	68.75	81.12
56	-25.53	-13.92	-8.35	-2.19	8.92	26.14	43.36	54.47	60.59	66.21	77.81
57	-23.02	-12.13	-6.83	-.91	9.32	25.47	39.66	50.04	55.83	61.11	72.00
58	-22.86	-12.28	-7.15	-1.58	8.55	24.26	39.96	50.09	55.67	60.80	71.38
59	-20.27	-10.89	-10.92	-4.74	6.44	23.00	41.10	52.36	58.52	64.19	75.00
60	-31.66	-19.11	-13.03	-6.41	5.60	24.23	42.85	54.86	61.48	67.56	80.11
61	-24.91	-14.07	-8.02	-3.11	7.26	23.34	39.42	49.74	55.80	60.74	71.66
62	-25.95	-14.69	-9.46	-3.81	6.49	22.46	38.44	48.74	54.41	59.62	70.38
63	-20.21	-10.99	-10.34	-4.67	5.02	21.93	37.56	47.86	53.63	58.34	68.95
64	-26.70	-16.21	-11.04	-5.40	4.83	20.70	36.56	46.79	52.43	57.61	68.29
65	-27.74	-17.00	-11.89	-6.26	3.47	19.83	35.68	45.91	51.54	56.71	67.39
66	-28.45	-17.84	-12.69	-7.18	3.87	18.83	34.59	44.76	50.36	55.50	66.12
67	-29.31	-18.70	-13.96	-7.98	2.20	17.96	33.72	43.88	49.48	54.62	65.23
68	-29.92	-19.37	-14.25	-8.69	1.42	17.07	32.76	42.87	48.43	53.55	64.10
69	-30.03	-20.27	-15.15	-9.47	-.62	16.19	31.87	41.97	47.54	52.65	63.21
70	-31.46	-20.95	-15.87	-10.33	-.27	15.32	30.91	40.97	46.51	51.60	62.10

ORIGINAL PAGE IS OF POOR QUALITY

TABLE 13.3. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

106-DEGREE FLIGHT AZIMUTH

MARCH

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-10.39	-8.36	-7.38	-6.30	-4.36	-1.34	1.68	3.62	4.70	5.68	7.71
1	-21.59	-17.46	-15.46	-13.29	-9.34	-3.21	2.91	6.86	9.04	11.03	15.16
2	-24.43	-19.52	-17.14	-14.56	-9.86	-2.58	4.70	9.40	11.99	14.36	19.27
3	-26.92	-21.29	-18.57	-15.60	-10.22	-1.37	6.48	11.87	14.83	17.55	23.18
4	-29.59	-23.18	-20.08	-16.70	-10.57	-1.06	8.45	14.58	17.96	21.06	27.47
5	-32.62	-25.40	-21.91	-18.10	-11.19	-.47	10.25	17.16	20.97	24.47	31.69
6	-36.11	-28.04	-24.12	-19.87	-12.14	-.15	11.84	19.57	23.82	27.74	35.81
7	-40.43	-31.31	-26.89	-22.09	-13.36	.18	13.71	22.44	27.25	31.65	40.78
8	-44.77	-34.61	-29.69	-24.38	-14.60	.48	15.56	25.29	30.65	35.57	45.73
9	-49.59	-37.99	-32.12	-26.27	-15.66	.81	17.28	27.90	33.74	39.11	50.21
10	-50.83	-39.09	-33.40	-27.21	-15.98	1.45	18.88	30.12	36.31	41.89	53.73
11	-48.58	-37.16	-31.63	-25.62	-14.69	2.26	19.21	30.14	36.16	41.69	53.11
12	-42.88	-32.50	-27.48	-22.04	-12.07	3.33	18.74	28.67	34.14	39.17	49.35
13	-35.54	-26.66	-22.36	-17.67	-9.17	4.02	17.21	25.72	30.40	34.70	43.59
14	-28.90	-21.38	-17.74	-13.77	-6.57	4.60	15.76	22.96	26.93	30.57	38.09
15	-22.82	-16.79	-13.79	-10.58	-4.76	4.21	13.30	19.12	22.33	25.28	31.16
16	-19.25	-14.09	-11.59	-8.87	-3.93	3.74	11.40	16.35	19.07	21.57	26.73
17	-17.26	-12.75	-10.57	-8.19	-3.87	2.83	9.52	13.84	16.22	18.41	22.92
18	-13.56	-10.08	-8.39	-6.55	-3.21	1.96	7.10	10.48	12.31	14.00	17.49
19	-11.75	-8.85	-7.45	-5.92	-3.14	1.16	5.47	8.25	9.78	11.18	14.08
20	-11.45	-8.78	-7.49	-6.08	-3.53	.43	4.39	6.95	8.35	9.65	12.31
21	-10.52	-8.15	-7.00	-5.75	-3.48	.03	3.55	5.82	7.07	8.22	10.60
22	-9.66	-7.50	-6.45	-5.32	-3.25	-.05	3.15	5.22	6.36	7.40	9.56
23	-10.46	-8.06	-6.90	-5.63	-3.33	.23	3.60	6.10	7.37	8.53	10.93
24	-11.14	-8.47	-7.17	-5.76	-3.20	.78	4.75	7.32	8.73	10.02	12.70
25	-11.19	-8.40	-7.05	-5.57	-2.90	1.24	5.39	8.06	9.54	10.88	13.68
26	-11.89	-8.86	-7.40	-5.80	-2.90	1.60	6.10	9.00	10.59	12.06	15.09
27	-13.26	-9.78	-8.09	-6.26	-2.93	2.23	7.40	10.73	12.56	14.25	17.23
28	-17.53	-13.05	-10.57	-8.43	-4.15	2.57	9.29	13.63	16.01	18.21	22.73
29	-19.20	-14.27	-11.89	-9.21	-4.58	2.72	10.17	14.74	17.39	19.72	24.65
30	-21.70	-15.20	-17.53	-10.63	-5.35	2.82	10.99	15.28	19.15	21.83	27.34
31	-23.28	-17.21	-14.26	-11.66	-5.24	3.76	12.60	16.62	21.82	24.76	30.84
32	-25.13	-18.35	-15.07	-11.91	-5.07	5.04	15.10	21.52	25.16	28.44	35.22
33	-23.66	-16.53	-17.26	-5.92	-2.66	6.04	15.74	21.29	25.44	28.60	35.14
34	-23.33	-15.54	-17.22	-9.62	-3.05	7.12	17.30	23.90	27.47	30.29	37.64
35	-24.74	-17.56	-19.05	-11.21	-3.42	7.22	17.08	24.75	28.53	32.01	39.18
36	-26.57	-18.95	-15.37	-11.33	-4.07	7.17	18.42	25.67	29.67	33.34	40.32
37	-25.74	-18.15	-17.47	-11.47	-4.20	7.16	18.22	27.59	29.59	33.27	40.66
38	-27.02	-19.47	-17.61	-11.83	-4.60	6.61	17.61	25.04	29.02	32.68	40.23
39	-21.58	-15.44	-19.59	-11.22	-4.79	6.21	16.81	22.65	27.41	30.87	38.01
40	-22.62	-16.17	-17.04	-9.65	-3.47	6.10	15.67	21.34	25.24	28.37	34.81
41	-21.00	-14.64	-13.66	-8.61	-2.71	6.42	15.58	21.42	24.73	27.71	33.87
42	-20.96	-14.62	-13.55	-8.70	-2.14	7.27	16.08	22.75	26.09	29.16	35.50
43	-21.87	-14.25	-13.08	-7.62	-1.33	8.42	18.17	24.45	27.92	31.10	37.67
44	-21.43	-14.48	-11.09	-7.40	-.70	9.69	20.08	26.73	30.47	33.86	40.46
45	-20.60	-13.53	-11.11	-6.32	.29	10.88	21.77	28.14	31.87	35.25	42.34
46	-19.60	-12.53	-9.10	-5.38	1.33	11.33	22.38	29.10	32.39	36.30	43.37
47	-17.42	-10.45	-7.03	-3.41	2.76	13.60	23.85	30.62	34.29	37.66	44.63
48	-15.43	-8.67	-5.36	-1.77	4.77	14.90	25.03	31.58	35.15	38.47	45.29
49	-14.44	-7.51	-4.15	-.50	6.12	16.45	26.70	33.28	36.99	40.34	47.27
50	-14.54	-7.43	-7.33	-.25	5.55	17.10	27.65	34.49	38.20	41.64	48.74
51	-15.57	-5.25	-4.76	-.84	6.17	17.44	27.71	34.07	38.79	42.33	49.65
52	-16.36	-9.03	-5.43	-1.62	5.40	16.28	27.15	34.17	38.23	41.58	48.91
53	-15.65	-8.41	-4.51	-1.04	5.85	16.61	27.76	34.22	38.11	41.62	48.86
54	-13.93	-6.94	-7.56	.12	5.90	17.17	27.53	34.22	37.90	41.28	48.26
55	-14.11	-7.21	-3.85	-.21	6.40	16.65	26.51	33.52	37.16	40.51	47.42
56	-14.73	-7.74	-4.33	-.61	5.14	16.61	27.07	33.32	37.54	40.96	48.01
57	-6.78	-1.05	1.73	4.76	11.25	18.76	27.20	32.77	35.79	38.57	44.31
58	1.13	5.57	7.72	10.08	14.31	20.30	27.43	31.74	34.08	36.23	40.67
59	1.02	5.76	7.66	10.56	15.09	22.13	29.17	33.71	36.21	38.51	43.25
60	-2.34	2.25	4.76	7.49	12.45	20.16	27.36	32.43	35.56	38.07	43.26
61	-11.70	-3.81	-.67	2.91	5.48	19.54	29.67	36.12	39.70	42.99	49.79
62	-11.40	-4.60	-1.30	2.29	4.79	19.83	28.99	35.50	39.09	42.38	49.18
63	-11.58	-5.18	-1.85	1.70	4.21	18.31	26.40	34.02	38.50	41.80	48.60
64	-12.69	-5.86	-2.57	1.03	3.55	17.66	27.77	34.23	37.36	41.18	47.39
65	-12.02	-5.25	-2.09	.57	7.04	17.08	27.11	33.50	37.14	40.41	47.17
66	-13.50	-6.85	-3.57	-.03	6.45	16.49	26.53	33.00	36.56	39.83	46.53
67	-14.30	-7.53	-4.22	-.69	5.79	15.84	25.88	32.27	35.94	39.32	45.99
68	-14.38	-7.11	-4.04	-1.27	5.21	15.26	25.21	31.79	35.36	38.64	45.40
69	-15.35	-8.62	-5.36	-1.82	4.67	14.61	24.50	31.03	34.58	37.84	44.57
70	-15.93	-9.20	-5.94	-2.40	4.04	14.03	24.01	30.45	34.00	37.26	43.98

TABLE 13.4. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

106-DEGREE FLIGHT AZIMUTH

APRIL

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.80	-7.95	-7.06	-6.09	-4.33	-1.59	1.14	2.98	3.88	4.77	6.61
1	-19.44	-15.82	-14.06	-12.15	-8.68	-3.31	2.06	5.53	7.41	9.19	12.81
2	-21.89	-17.48	-15.35	-13.03	-8.82	-2.28	4.25	8.46	10.70	12.92	17.32
3	-23.67	-20.26	-17.65	-14.80	-9.62	-1.60	5.93	11.60	14.05	17.07	22.48
4	-29.94	-23.40	-20.23	-16.77	-10.49	-.76	8.37	15.25	18.70	21.88	28.43
5	-34.24	-26.52	-22.78	-18.71	-11.32	.14	11.68	18.99	23.06	26.80	34.52
6	-39.37	-30.36	-25.00	-21.25	-12.62	.76	14.14	22.76	27.51	31.88	40.89
7	-43.81	-33.61	-28.67	-23.28	-13.53	1.60	16.74	26.58	31.88	36.82	47.01
8	-48.17	-36.90	-31.44	-25.50	-14.71	2.02	18.75	29.53	35.47	40.93	52.20
9	-50.49	-38.69	-32.82	-26.55	-15.15	2.52	20.19	31.58	37.86	43.62	55.51
10	-50.42	-38.39	-32.57	-26.23	-14.72	3.13	20.98	32.49	38.83	44.65	56.67
11	-47.86	-36.38	-30.65	-24.51	-13.35	3.96	21.27	32.43	38.57	44.22	55.88
12	-42.33	-31.67	-26.50	-20.88	-10.67	5.16	21.00	31.21	36.83	41.99	52.66
13	-33.17	-24.32	-20.03	-15.37	-6.90	6.23	19.36	27.83	32.49	36.78	45.63
14	-25.95	-18.62	-15.05	-11.16	-4.10	6.85	17.60	24.86	28.74	32.31	39.69
15	-21.33	-15.89	-11.99	-8.68	-2.66	6.67	16.01	22.03	25.38	28.39	34.68
16	-17.56	-12.28	-9.72	-6.94	-1.89	5.95	13.78	18.84	21.62	24.18	29.46
17	-14.49	-10.12	-8.00	-5.68	-1.50	4.99	11.48	15.67	17.97	20.09	24.47
18	-11.27	-7.82	-6.15	-4.33	-1.03	4.10	9.22	12.53	14.34	16.02	19.47
19	-9.09	-6.34	-5.01	-3.56	-.94	3.14	7.21	9.84	11.29	12.61	15.36
20	-8.49	-6.13	-4.99	-3.74	-1.48	2.02	5.53	7.79	9.03	10.17	12.53
21	-9.14	-6.77	-5.63	-4.34	-2.12	1.40	4.91	7.17	8.42	9.57	11.93
22	-9.95	-6.77	5.71	-4.56	-2.47	.78	4.02	6.11	7.26	8.32	10.50
23	-8.67	-6.58	-5.58	-4.48	-2.49	.60	3.69	5.68	6.78	7.78	9.87
24	-9.96	-6.82	-5.79	-4.66	-2.61	.57	3.75	5.79	6.92	7.96	10.10
25	-10.06	-7.66	-6.50	-5.24	-2.94	.62	4.17	6.47	7.73	8.89	11.29
26	-10.45	-7.96	-6.76	-5.44	-3.06	.64	4.34	6.72	8.03	9.24	11.73
27	-9.97	-7.50	-6.30	-5.00	-2.64	1.02	4.68	7.04	8.39	9.54	12.00
28	-9.65	-6.85	-5.49	-4.01	-1.33	2.84	7.00	9.69	11.17	12.53	15.33
29	-8.72	-5.98	-4.65	-3.20	-.58	3.49	7.56	10.19	11.63	12.96	15.70
30	-9.07	-6.18	-4.78	-3.26	-.50	3.79	8.08	10.84	12.36	13.76	16.65
31	-8.45	-6.38	-4.88	-3.26	-.32	4.25	8.82	11.77	13.38	14.88	17.96
32	-10.01	-6.67	-5.06	-3.30	-.10	4.85	9.80	13.03	14.76	16.38	19.71
33	-9.69	-6.22	-4.54	-2.71	.61	5.77	10.92	14.25	16.08	17.76	21.23
34	-10.16	-6.33	-4.48	-2.48	1.21	6.90	12.58	16.25	18.27	20.13	23.96
35	-10.56	-6.45	-4.46	-2.29	1.64	7.74	13.84	17.77	19.93	21.92	2 03
36	-11.13	-6.91	-4.87	-2.65	1.39	7.65	13.91	17.98	20.16	22.21	26.42
37	-13.42	-8.81	-6.58	-4.15	.26	7.10	13.93	18.34	20.77	23.00	27.61
38	-14.55	-9.88	-7.61	-5.14	-.67	6.28	13.22	17.73	20.17	22.43	.11
39	-13.72	-9.49	-7.44	-5.24	-1.16	5.11	11.39	15.44	17.67	19.72	23.95
40	-12.48	-8.72	-6.91	-4.93	-1.34	4.23	9.80	13.33	15.37	17.19	20.94
41	-12.04	-8.33	-6.53	-4.58	-1.02	4.49	10.00	13.55	15.51	17 [illegible]	21.01
42	-12.97	-8.90	-6.93	-4.79	-.99	5.15	11.19	15.09	17.23	19.2[illegible]	23.27
43	-14.51	-9.81	-7.68	-5.26	-.86	5.94	12.82	17.22	19.65	21.88	26.48
44	-15.71	-10.82	-8.15	-5.46	-.59	6.97	14.53	19.40	22.09	24.55	29.64
45	-16.49	-11.13	-8.53	-5.71	-.57	7.38	15.34	20.47	23.30	25.89	31.26
46	-13.88	-8.92	-6.52	-3.90	.95	8.21	15.58	20.32	22.94	25.34	30.30
47	-10.19	-5.83	-3.73	-1.43	2.73	9.19	15.65	19.82	22.12	24.22	28.58
48	-11.64	-6.85	-4.54	-2.02	2.56	9.67	16.77	21.38	23.87	26.19	30.97
49	-11.46	-7.09	-4.72	-2.15	2.51	9.75	16.99	21.60	24.23	26.69	31.47
50	-12.03	-7.20	-4.84	-2.27	2.39	9.63	16.86	21.53	24.10	26.46	31.33
51	-12.77	-7.79	-5.38	-2.75	2.01	9.40	16.79	21.56	24.19	26.60	31.58
52	-14.58	-9.56	-7.13	-4.49	.31	7.76	15.21	20.01	22.65	25.08	30.10
53	-14.09	-9.42	-7.17	-4.74	-.25	6.67	13.59	18.05	20.51	22.76	27.42
54	-14.55	-10.11	-7.96	-5.62	-1.36	5.23	11.82	16	18.41	20.56	25.00
55	-15.52	-12.28	-10.44	-7.92	-3.36	3.73	10.81	15.36	17.88	20.20	24.98
56	-20.48	-15.44	-13.01	-10.35	-5.54	1.93	9.40	14.22	16.87	19.31	24.34
57	-26.60	-20.40	-17.39	-14.13	-8.19	1.01	10.21	16.15	19.41	22.42	28.62
58	-39.94	-30.82	-25.40	-21.55	-12.86	.68	14.22	22.55	27.75	32.17	41.29
59	-15.34	-10.94	-8.81	-6.48	-2.29	4.24	10.76	14.97	17.29	19.41	23.81
60	-4.06	-1.76	-.64	.57	2.77	6.18	9.59	11.79	13.00	14.12	16.42
61	-13.81	-9.19	-7.25	-4.87	-.70	5.85	12.41	16.62	18.96	21.10	25.51
62	-14.43	-9.95	-7.78	-5.47	-1.13	5.52	12.17	16.46	18.82	20.99	25.47
63	-18.95	-10.80	-8.30	-5.80	-1.44	5.31	12.06	16.41	18.81	21.01	25.56
64	-18.60	-10.98	-8.74	-6.31	-1.69	4.97	11.83	16.25	18.69	20.93	25.55
65	-26.27	-11.57	-9.30	-6.83	-2.33	4.64	11.61	16.10	18.58	20.85	25.55
66	-17.19	-12.37	-13.83	-7.48	-2.86	4.30	11.47	16.09	18.63	20.97	25.80
67	-18.49	-12.98	-10.60	-8.02	-3.32	3.97	11.25	15.95	18.54	20.92	25.63
68	-18.48	-13.48	-11.07	-8.43	-3.65	3.76	11.17	15.95	18.58	21.00	25.39
69	-19.28	-14.12	-11.66	-8.98	-4.12	3.42	10.96	15.82	18.50	20.95	26.04
70	-19.93	-14.76	-12.26	-9.53	-4.58	3.09	10.76	15.71	18.43	20.93	26.10

TABLE 13.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

106-DEGREE FLIGHT AZIMUTH

MAY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	16.000	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.80	-6.38	-5.70	-4.95	-3.59	-1.48	.63	1.99	2.74	3.42	4.84
1	-16.35	-13.86	-12.05	-10.52	-7.74	-3.44	.87	3.65	5.18	6.54	9.49
2	-17.30	-14.47	-12.80	-10.99	-7.71	-2.61	2.48	5.77	7.58	9.24	12.67
3	-18.82	-15.75	-13.77	-11.62	-7.72	-1.67	4.39	8.23	10.44	12.41	16.49
4	-21.97	-17.28	-14.95	-12.46	-7.93	-.91	6.11	10.64	13.13	15.42	20.15
5	-23.91	-18.60	-16.03	-13.23	-8.15	-.27	7.61	12.69	15.49	18.66	23.36
6	-26.50	-20.54	-17.66	-14.52	-8.82	.02	8.86	14.57	17.70	20.59	26.55
7	-30.44	-23.57	-20.25	-16.63	-10.05	.14	10.32	16.90	20.52	23.85	30.71
8	-35.73	-27.71	-23.80	-19.54	-11.81	.17	12.16	19.89	24.15	28.06	36.14
9	-38.79	-29.92	-25.62	-20.94	-12.45	.72	13.89	22.38	27.06	31.36	40.23
10	-41.15	-31.61	-26.93	-21.96	-12.83	1.32	15.48	24.61	29.63	34.25	43.79
11	-42.67	-32.67	-27.83	-22.58	-12.98	1.86	16.71	26.24	31.55	36.39	46.40
12	-37.42	-28.36	-23.98	-19.20	-10.53	2.91	16.36	25.03	29.80	34.19	43.25
13	-28.55	-21.21	-17.65	-13.78	-6.76	4.13	15.03	22.05	25.92	29.48	36.81
14	-21.27	-15.41	-12.57	-9.48	-3.87	4.82	13.52	19.13	22.21	25.05	30.91
15	-15.93	-11.26	-9.00	-6.54	-2.07	4.86	11.78	16.25	18.71	20.83	25.64
16	-13.26	-9.28	-7.35	-5.26	-1.45	4.45	10.35	14.16	16.25	18.18	22.16
17	-9.99	-6.94	-5.46	-3.85	-.93	3.60	8.12	11.04	12.65	14.13	17.18
18	-7.79	-5.47	-4.36	-3.14	-.93	2.50	5.93	8.14	9.36	10.47	12.78
19	-7.13	-5.22	-4.30	-3.30	-1.47	1.36	4.19	6.01	7.02	7.84	9.84
20	-7.60	-5.88	-5.04	-4.13	-2.49	.07	2.63	4.28	5.18	6.02	7.74
21	-8.95	-7.12	-6.24	-5.27	-3.52	-.81	1.90	3.65	4.62	5.60	7.33
22	-9.26	-6.67	-5.90	-5.09	-3.53	-1.16	1.21	2.74	3.58	4.35	5.35
23	-8.78	-7.13	-6.33	-5.46	-3.88	-1.43	1.02	2.60	3.47	4.27	5.92
24	-9.10	-7.38	-6.54	-5.63	-3.99	-1.42	1.15	2.80	3.71	4.55	6.27
25	-9.18	-7.42	-6.57	-5.65	-3.97	-1.36	1.24	2.92	3.84	4.69	6.85
26	-9.53	-7.67	-6.77	-5.78	-4.00	-1.24	1.52	3.30	4.29	5.19	7.05
27	-10.41	-8.33	-7.32	-6.22	-4.23	-1.14	1.55	3.34	4.23	5.08	8.12
28	-11.04	-8.83	-7.33	-6.80	-4.60	.13	1.85	4.25	5.57	6.78	11.29
29	-9.77	-7.51	-6.42	-5.22	-3.86	.30	3.66	5.82	7.01	8.11	10.37
30	-10.47	-8.08	-6.92	-5.66	-3.38	.17	3.74	6.99	7.25	8.41	10.80
31	-10.39	-8.00	-6.84	-5.57	-3.28	.27	3.82	6.11	7.37	8.53	10.93
32	-10.78	-8.16	-6.90	-5.52	-3.01	.68	4.34	7.27	8.65	9.92	13.64
33	-10.67	-7.93	-6.68	-5.15	-2.53	1.54	5.61	8.24	9.68	11.01	13.76
34	-11.69	-8.71	-7.26	-5.60	-2.80	1.68	6.05	8.81	10.48	11.84	14.83
35	-11.16	-8.33	-6.96	-5.47	-2.77	1.43	5.62	8.33	9.82	11.19	14.01
36	-11.48	-8.53	-7.13	-5.62	-2.86	1.41	5.68	8.43	9.96	11.34	14.22
37	-12.33	-9.38	-7.83	-6.23	-3.32	1.19	5.70	8.60	10.20	11.67	14.71
38	-13.48	-10.41	-8.92	-7.29	-4.35	.22	4.70	7.73	9.35	10.84	13.92
39	-13.29	-10.47	-9.11	-7.62	-4.92	-.74	3.44	6.14	7.63	8.99	11.81
40	-12.44	-10.00	-8.82	-7.54	-5.20	-1.50	2.04	4.87	6.48	8.05	9.89
41	-13.60	-10.97	-9.70	-8.31	-5.79	-1.89	2.02	4.53	5.92	7.19	9.82
42	-14.91	-11.97	-10.55	-9.00	-6.19	-1.83	2.53	5.34	6.89	8.31	11.28
43	-15.91	-12.60	-11.11	-9.48	-6.31	-1.58	3.38	6.48	8.10	9.67	12.91
44	-15.98	-12.54	-10.87	-9.00	-5.77	-.69	4.44	7.73	9.54	11.21	14.66
45	-15.51	-12.03	-10.38	-8.51	-5.10	-.02	5.14	8.47	10.38	11.99	15.47
46	-14.23	-10.96	-9.37	-7.64	-4.21	.38	5.22	8.38	10.00	11.67	14.94
47	-14.29	-10.93	-9.38	-7.53	-4.31	.68	5.67	8.89	10.67	12.29	15.66
48	-14.68	-11.23	-9.86	-7.74	-4.44	.60	6.00	9.11	10.92	12.60	16.04
49	-15.45	-11.81	-10.05	-8.14	-4.66	.74	6.14	9.62	11.53	13.38	16.93
50	-17.26	-13.16	-11.18	-9.02	-5.10	.90	7.06	10.99	13.14	15.13	19.23
51	-17.98	-13.74	-11.69	-9.45	-5.39	.90	7.19	11.25	13.49	15.54	19.78
52	-18.90	-13.17	-11.36	-9.39	-5.01	-.27	5.20	9.05	10.38	12.03	16.06
53	-16.83	-13.39	-11.72	-9.98	-6.60	-1.49	3.62	6.92	8.74	10.41	13.85
54	-18.06	-15.19	-13.42	-11.49	-7.98	-2.54	2.90	6.48	8.33	10.11	13.77
55	-19.81	-16.07	-14.26	-12.29	-8.72	-3.17	2.37	5.95	7.92	9.73	13.46
56	-23.37	-19.01	-16.90	-14.60	-10.42	-3.95	2.63	6.70	9.00	11.12	15.40
57	-22.80	-18.65	-16.63	-14.49	-10.46	-4.28	1.89	5.87	8.06	10.08	14.24
58	-20.90	-23.96	-21.23	-18.40	-13.40	-5.34	3.01	7.01	8.36	10.00	13.84
59	-29.73	-24.70	-22.27	-19.62	-14.81	-7.36	.11	4.93	7.57	10.01	15.00
60	-35.84	-29.88	-26.80	-23.18	-17.14	-7.78	1.69	7.61	10.93	13.90	20.20
61	-32.08	-26.85	-23.87	-20.96	-15.66	-7.45	.76	6.05	8.97	11.64	17.17
62	-31.64	-26.14	-23.47	-20.66	-15.29	-7.12	1.04	6.33	8.83	11.90	17.41
63	-31.17	-25.69	-23.04	-20.16	-14.91	-6.78	1.36	6.59	9.48	12.13	17.61
64	-30.94	-25.26	-22.64	-19.76	-14.54	-6.44	1.66	6.87	9.76	12.06	17.86
65	-38.27	-29.89	-22.22	-19.36	-14.16	-6.17	1.95	7.19	10.00	12.63	18.06
66	-29.70	-24.38	-21.77	-18.92	-13.76	-5.98	2.27	7.43	10.28	12.89	18.29
67	-29.35	-23.98	-21.37	-18.54	-13.39	-5.61	2.57	7.72	10.55	13.16	18.53
68	-28.98	-23.55	-20.96	-18.19	-13.01	-5.07	2.87	7.99	10.81	13.40	18.78
69	-28.47	-23.19	-20.56	-17.78	-12.65	-4.79	3.18	8.28	11.09	13.67	19.00
70	-29.02	-22.72	-20.18	-17.38	-12.27	-4.40	3.47	8.49	11.30	13.92	19.22

TABLE 13.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

108-DEGREE FLIGHT AZIMUTH

JUNE

	Cumulative Percentage Probability										
Alt (km)	0.128	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.96	-6.68	-5.[illegible]	-4.36	-3.12	-1.20	.77	1.97	2.66	3.29	4.58
1	-11.34	-10.[illegible]3	-11.[illegible]	-9.85	-7.30	-3.28	.74	3.74	4.77	6.08	8.79
2	-12.73	-12.[illegible]	-11.[illegible]	-9.83	-8.93	-2.49	2.01	4.91	6.50	7.97	11.00
3	-13.57	-13.01	-[illegible]	-9.71	-8.37	-1.08	4.[illegible]	7.04	9.52	11.25	14.81
4	-17.83	-13.83	-[illegible]	-9.75	-8.99	.12	6.12	9.99	12.12	14.05	18.12
5	-15.51	-15.24	-[illegible]	-11.55	-8.[illegible]	.84	7.75	10.2[illegible]	14.66	16.91	21.57
6	-22.57	-17.21	-[illegible]	-11.73	-8.59	1.22	9.70	14.44	17.27	19.87	25.24
7	-25.01	-19.44	-[illegible]	-13.15	-7.2[illegible]	1.87	11.17	16.[illegible]	20.20	23.18	29.36
8	-30.50	-23.15	-[illegible]	-15.71	-3.03	2.2[illegible]	13.14	20.1[illegible]	24.05	27.81	34.36
9	-34.77	-26.2[illegible]	-[illegible]	-17.7[illegible]	-5.[illegible]	2.54	15.76	23.67	28.14	32.25	40.72
10	-33.56	-29.06	-[illegible]	-19.45	-1.[illegible]35	3.73	17.[illegible]	25.[illegible]	31.32	36.[illegible]	46.02
11	-39.21	-28.7[illegible]	-[illegible]	-19.35	-[illegible].84	4.85	19.[illegible]	29.13	34.36	35.17	49.09
12	-35.[illegible]	-25.[illegible]	-[illegible]	-17.10	-7.[illegible]	6.22	20.43	29.59	34.63	39.27	48.84
13	-35.[illegible]	-2[illegible]	-1[illegible]	-17.51	-7.41	7.15	19.70	27.27	31.[illegible]	36.84	44.91
14	-24.75	-17.25	-1[illegible]	-1[illegible].14	-7.73	7.11	17.[illegible]	24.35	23.02	31.90	38.56
15	-17.55	-1[illegible]	-[illegible]	-[illegible]	-5.80	5.[illegible]	12.[illegible]	18.2[illegible]	2[illegible].65	24.25	29.54
16	-12.[illegible]	-9.35	-[illegible]	-4.97	-1.31	4.33	10.[illegible]	13.74	15.75	17.81	21.44
17	-5.59	-7.14	-[illegible]	-4.2[illegible]	-1.52	2.71	6.[illegible]	9.67	11.17	12.55	15.40
18	-7.5[illegible]	-5.61	-[illegible]	-[illegible].50	-1.[illegible]	1.23	4.17	6.02	7.10	8.06	10.24
19	-7.00	-5.[illegible]	-[illegible]	-[illegible]	-[illegible].26	-.11	2.75	[illegible]	4.70	5.47	7.15
20	-7.30	-5.91	-[illegible]	-4.49	-2.05	-.30	1.[illegible]	[illegible]	3.40	4.10	[illegible]
21	-7.51	-6.14	-[illegible]	-4.77	-[illegible].46	-1.44	.58	1.[illegible]	2.61	3.27	[illegible]
22	-4.23	-6.[illegible]	-[illegible]	-5.33	-4.[illegible]	-1.33	.17	1.52	2.27	2.95	
23	-4.42	-7.[illegible]	-[illegible]	-5.71	-4.41	-[illegible].41	-.[illegible]9	.91	1.[illegible]2	2.28	3.[illegible]3
24	-5.57	-7.2[illegible]	-[illegible]	-5.9[illegible]	-4.[illegible]	-2.3[illegible]	-.[illegible]	.77	1.44	2.10	3.45
25	-[illegible].14	-7.[illegible]	-[illegible]	-6.17	-4.92	-2.[illegible]	-.[illegible]	.7[illegible]	1.53	2.22	3.65
26	-9.2[illegible]	-7.27	-[illegible]	-6.[illegible]	-4.[illegible]	-2.74	-.[illegible]	.39	1.07	2.39	3.98
27	-9.[illegible]	-[illegible]	-[illegible]	-[illegible]	-[illegible]	-2.[illegible]	-.[illegible]	.6[illegible]	1.68	2.42	3.34
28	-10.25	-8.[illegible]	-7.74	-6.84	-5.22	-2.71	-.19	1.43	2.32	3.14	4.83
29	-10.78	-8.89	-7.97	-6.97	-5.16	-2.35	.46	2.27	3.27	4.19	6.08
30	-10.35	-8.56	-7.70	-6.76	-5.05	-2.4[illegible]	.25	1.96	2.90	3.77	5.85
31	-10.17	-8.47	-7.65	-6.7[illegible]	-5.12	-2.59	-.06	1.57	2.46	3.29	4.99
32	-11.32	-9.36	-8.40	-7.37	-5.48	-2.5[illegible]	.3[illegible]	2.24	3.28	4.23	6.2[illegible]
33	-11.64	-9.56	-8.55	-7.46	-5.46	-2.38	.71	2.70	3.80	4.8[illegible]	6.88
34	-12.16	-9.93	-8.85	-7.64	-5.55	-2.24	1.16	3.2[illegible]	4.37	5.85	7.68
35	-13.11	-10.86	-9.77	-8.53	-6.34	-3.10	.23	2.38	3.57	4.86	6.30
36	-14.67	-12.23	-11.04	-9.75	-7.41	-3.78	-.1[illegible]	2.20	3.48	4.67	7.12
37	-13.63	-11.59	-10.52	-9.42	-7.41	-4.36	-1.19	.32	2.92	2.93	5.03
38	-13.87	-11.79	-10.76	-9.66	-7.69	-4.61	-1.52	.47	1.57	2.57	4.65
39	-16.17	-13.66	-12.44	-11.12	-8.72	-5.00	-1.28	1.13	2.45	3.66	6.17
40	-18.95	-14.32	-13.04	-11.65	-9.13	-5.27	-1.22	1.2[illegible]	2.59	3.86	6.5[illegible]
41	-18.12	-15.27	-13.89	-12.39	-9.65	-5.4[illegible]	-1.20	1.53	3.03	4.41	7.26
42	-20.27	-17.05	-15.49	-13.79	-11.71	-5.93	-1.1[illegible]	1.93	3.63	5.19	8.41
43	-19.28	-16.45	-15.08	-13.59	-10.98	-5.68	-2.48	.23	1.72	3.09	5.92
44	-20.22	-17.34	-15.95	-14.42	-11.68	-7.41	-3.14	-.39	1.13	2.52	5.4[illegible]
45	-19.78	-16.89	-15.49	-13.97	-11.71	-8.92	-2.64	.13	1.65	3.05	5.94
46	-20.09	-16.94	-15.42	-13.76	-10.75	-6.46	-1.40	1.61	3.27	4.79	7.94
47	-19.57	-16.37	-14.31	-13.13	-10.06	-5.1[illegible]	-.55	2.52	4.23	5.76	8.96
48	-20.27	-18.77	-15.08	-13.24	-9.90	-4.72	.47	3.81	5.65	7.34	10.83
49	-21.26	-17.49	-15.67	-13.69	-10.09	-4.49	1.10	4.70	6.69	8.51	12.27
50	-21.12	-17.42	-15.63	-13.68	-10.14	-4.0[illegible]	.85	4.39	6.34	8.13	11.83
51	-21.93	-18.00	-15.10	-14.03	-10.27	-3.93	1.40	5.18	7.23	9.13	13.06
52	-21.46	-17.54	-15.64	-13.58	-9.83	-4.01	1.61	5.57	7.63	9.53	13.45
53	-21.04	-17.22	-15.36	-13.35	-9.69	-4.01	1.66	5.33	7.34	9.19	13.02
54	-23.68	-19.56	-17.57	-15.40	-11.46	-5.3[illegible]	.75	4.69	6.86	8.85	12.9[illegible]
55	-25.02	-20.92	-19.93	-16.77	-12.84	-6.7[illegible]	-.65	3.28	5.44	7.43	11.54
56	-25.58	-21.74	-19.87	-17.85	-14.17	-8.46	-2.75	.93	2.96	4.82	8.67
57	-30.05	-25.53	-23.34	-20.96	-18.67	-9.92	-3.20	1.13	3.51	5.70	10.22
58	-38.36	-32.34	-29.42	-26.25	-22.49	-11.55	-2.61	3.15	6.33	9.24	15.26
59	-44.28	-37.60	-34.36	-30.84	-24.45	-14.54	-4.63	1.70	5.28	8.52	15.19
60	-46.97	-40.1[illegible]	-3[illegible].77	-33.15	-2[illegible].57	-16.37	-6.17	.41	4.03	7.36	14.23
61	-44.88	-38.35	-35.18	-31.74	-25.49	-15.79	-6.10	.18	3.60	6.76	13.30
62	-44.04	-37.58	-34.45	-31.04	-24.85	-15.26	-5.06	.53	3.94	7.07	13.53
63	-43.46	-37.00	-3[illegible].88	-30.48	-24.30	-14.72	-5.14	1.04	4.44	7.57	14.02
64	-42.62	-36.24	-32.14	-29.74	-23.66	-14.18	-4.70	1.41	4.78	7.87	14.76
65	-42.16	-35.78	-32.69	-29.32	-23.21	-13.74	-4.22	1.94	5.20	8.29	14.67
66	-41.32	-35.01	-31.95	-28.62	-22.58	-13.21	-3.63	2.21	5.54	8.60	14.91
67	-40.76	-34.45	-31.40	-28.07	-22.03	-12.67	-3.31	2.73	6.06	9.11	15.42
68	-39.90	-33.66	-30.64	-27.36	-21.39	-12.12	-2.68	3.09	6.38	9.40	15.63
69	-39.34	-33.11	-30.09	-26.81	-20.84	-11.60	-2.15	3.61	6.90	9.92	16.15
70	-38.50	-32.34	-29.36	-26.11	-20.21	-11.06	-1.91	3.99	7.24	10.22	16.38

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 13.7. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

JULY

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-5.22	-4.25	-3.78	-3.27	-2.35	-.91	.63	1.45	1.96	2.43	3.40
1	-12.26	-10.27	-9.67	-7.76	-5.37	-1.67	2.03	4.41	5.72	6.93	9.42
2	-11.02	-8.55	-7.35	-6.09	-3.68	-.00	3.67	.09	7.34	8.54	11.01
3	-10.51	-7.76	-6.35	-4.87	-2.19	1.97	6.13	8.82	10.29	11.65	14.45
4	-10.71	-7.84	-6.00	-4.33	-1.29	3.42	8.12	11.14	12.83	14.37	17.54
5	-10.54	-7.25	-5.63	-3.89	-.71	4.21	9.13	12.30	14.05	15.66	18.97
6	-10.46	-7.28	-5.55	-3.67	-.26	5.03	10.33	13.74	15.62	17.35	20.92
7	-12.19	-8.67	-6.08	-3.91	.02	6.13	12.23	16.17	18.34	20.33	24.14
8	-13.70	-8.91	-6.59	-4.07	.51	7.62	14.72	19.31	21.83	24.15	28.94
9	-15.33	-9.01	-6.44	-3.43	1.46	9.36	17.26	22.35	25.16	27.73	33.05
10	-14.43	-8.63	-5.82	-2.77	2.78	11.39	20.00	25.55	28.61	31.42	37.21
11	-13.60	-7.38	-4.41	-1.19	4.67	13.75	22.84	28.49	31.92	35.09	41.00
12	-13.11	-6.69	-3.58	-.20	5.95	15.47	25.00	31.14	34.53	37.64	44.05
13	-12.33	-6.05	-3.01	.30	6.31	15.63	24.95	30.96	34.26	37.30	43.58
14	-11.60	-5.84	-3.05	-.01	5.51	14.06	22.61	28.13	31.16	33.95	39.72
15	-8.85	-4.48	-2.37	-.06	4.12	10.61	17.10	21.28	23.59	25.70	30.08
16	-7.54	-4.32	-2.77	-1.07	2.01	6.79	11.57	14.65	16.34	17.90	21.[illegible]
17	-7.54	-5.02	-3.80	-2.47	-.05	3.70	7.[illegible]	9.86	11.19	12.31	14.93
18	-7.63	-5.62	-4.46	-3.59	-1.47	1.31	4.29	6.21	7.27	8.24	10.28
19	-6.78	-5.27	-4.54	-3.75	-2.30	-.06	2.17	3.62	4.41	5.14	6.65
20	-7.37	-5.94	-5.28	-4.54	-3.19	-1.10	.99	2.34	3.08	3.74	5.17
21	-8.12	-6.73	-6.05	-5.32	-3.99	-1.93	.13	1.47	2.20	2.87	4.26
22	-8.94	-7.55	-6.87	-6.13	-4.79	-2.71	-.62	.72	1.46	2.14	3.55
23	-9.50	-8.10	-7.42	-6.69	-5.35	-3.28	-1.21	.13	.86	1.54	2.93
24	-10.07	-8.61	-7.91	-7.14	-5.75	-3.69	-1.43	-.03	.73	1.44	2.90
25	-9.93	-8.63	-7.85	-7.11	-5.77	-3.68	-1.60	-.26	.48	1.16	2.56
26	-9.95	-8.56	-7.88	-7.15	-5.82	-3.75	-1.69	-.36	.38	1.05	2.44
27	-10.49	-9.19	-8.51	-7.62	-6.10	-3.96	-1.73	-.30	.49	1.22	2.72
28	-11.38	-9.87	-9.14	-8.34	-6.89	-4.64	-2.39	-.94	-.14	.59	2.10
29	-13.08	-11.25	-10.37	-9.40	-7.66	-4.94	-2.23	-.48	.48	1.36	3.19
30	-11.68	-10.14	-9.40	-8.59	-7.12	-4.85	-2.57	-1.10	-.25	.45	1.98
31	-11.60	-9.92	-9.09	-8.20	-6.59	-4.09	-2.58	.03	.92	1.74	3.42
32	-13.31	-11.16	-10.12	-8.99	-6.94	-3.76	-.57	1.48	2.61	3.65	5.80
33	-13.24	-11.18	-10.17	-9.09	-7.11	-4.04	-.92	1.01	2.10	3.10	5.17
34	-13.66	-11.59	-10.59	-9.49	-7.51	-4.43	-1.35	.63	1.72	2.73	4.80
35	-15.53	-14.00	-12.78	-11.45	-9.03	-5.27	-1.52	.90	2.23	3.45	5.98
36	-17.75	-15.10	-13.82	-12.42	-9.89	-5.95	-2.02	.51	1.91	3.19	5.84
37	-17.55	-15.03	-13.81	-12.46	-10.07	-6.33	-2.60	-.19	1.14	2.36	4.86
38	-17.62	-15.19	-13.92	-12.53	-10.02	-6.12	-2.22	.30	1.68	2.96	5.50
39	-17.43	-14.90	-13.68	-12.34	-9.92	-6.16	-2.41	.01	1.35	2.57	5.10
40	-18.33	-15.86	-14.70	-13.41	-11.06	-7.43	-3.78	-1.45	-.15	1.03	3.48
41	-21.07	-18.33	-17.01	-15.57	-12.95	-8.89	-4.83	-2.21	-.77	.55	3.29
42	-23.23	-20.22	-18.76	-17.17	-14.29	-9.81	-5.74	-2.45	-.87	.59	3.61
43	-27.96	-19.97	-18.53	-16.96	-14.10	-9.68	-5.[illegible]5	-2.39	-.82	.62	3.60
44	-22.2[illegible]	-19.35	-17.91	-16.34	-13.49	-9.08	-4.67	-1.82	-.25	1.19	4.16
45	-22.65	-19.40	-17.88	-16.18	-13.10	-8.32	-3.55	-.47	1.23	2.79	6.01
46	-21.87	-18.61	-17.09	-15.39	-12.31	-7.54	-2.36	.32	2.02	3.57	6.79
47	-21.55	-18.27	-16.69	-14.96	-11.02	-6.95	-2.09	1.09	2.74	4.37	7.64
48	-21.11	-17.88	-16.28	-14.57	-11.46	-6.63	-1.81	1.30	3.02	4.59	7.84
49	-21.15	-17.88	-16.30	-14.58	-11.46	-6.61	-1.78	1.38	3.08	4.67	7.93
50	-22.44	-18.93	-17.22	-15.37	-12.01	-6.80	-1.58	1.78	3.63	5.13	8.84
51	-24.53	-20.77	-18.91	-16.90	-13.24	-7.56	-1.89	1.72	3.79	5.54	9.46
52	-28.26	-23.85	-21.71	-19.38	-15.15	-8.60	-2.04	2.19	4.52	6.86	11.07
53	-27.83	-23.53	-21.44	-19.12	-15.05	-8.67	-2.28	1.84	4.11	6.19	10.50
54	-28.50	-24.26	-22.18	-19.92	-15.81	-9.43	-3.06	1.05	3.32	5.40	9.69
55	-30.87	-26.27	-24.04	-21.61	-17.21	-10.38	-3.55	.88	3.28	5.51	10.11
56	-34.27	-29.24	-26.80	-24.10	-19.32	-11.44	-4.32	.46	3.12	5.56	10.59
57	-40.31	-34.86	-31.98	-28.84	-23.15	-14.31	-5.48	.22	3.35	6.24	12.19
58	-53.05	-44.82	-41.83	-36.49	-28.61	-16.39	-4.18	2.70	8.04	12.03	20.26
59	-56.69	-47.55	-43.13	-38.31	-29.57	-16.01	-2.45	6.30	11.11	15.53	24.67
60	-52.15	-43.93	-39.95	-35.62	-27.75	-15.55	-3.35	4.52	8.85	12.83	21.05
61	-50.88	-42.85	-38.97	-34.73	-27.05	-15.13	-3.21	4.48	8.71	12.60	20.63
62	-50.52	-42.49	-38.61	-34.38	-26.70	-14.78	-2.87	4.01	8.04	12.92	20.95
63	-49.77	-41.81	-37.96	-33.77	-26.15	-14.34	-2.54	5.08	9.27	13.13	21.08
64	-49.31	-41.36	-37.51	-33.32	-25.71	-13.90	-2.70	5.51	9.70	13.55	21.50
65	-48.84	-40.90	-37.05	-32.88	-25.26	-13.46	-1.[illegible]	5.94	10.12	13.97	21.92
66	-48.47	-40.53	-36.69	-32.50	-24.90	-13.12	-1.34	6.26	10.45	14.29	22.23
67	-48.01	-40.08	-36.24	-32.05	-24.46	-12.68	-.90	6.69	10.87	14.72	22.65
68	-47.27	-39.40	-35.59	-31.45	-23.92	-12.24	-.57	6.96	11.11	14.92	22.78
69	-46.30	-38.04	-35.24	-31.09	-23.57	-11.90	-.23	7.30	11.44	15.25	23.11
70	-46.45	-38.59	-34.78	-30.64	-23.12	-11.46	.21	7.73	11.87	15.67	23.53

TABLE 13.6. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

AUGUST

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.300	5.000	15.900	50.000	84.100	95.000	97.700	98.000	99.865
0	-5.35	-4.35	-3.87	-3.35	-2.40	-.93	.59	1.49	2.02	2.60	3.49
1	-13.38	-10.74	-9.49	-8.19	-5.68	-1.87	1.99	4.48	5.76	6.99	9.56
2	-12.39	-9.68	-8.37	-6.94	-4.38	-.32	3.70	6.29	7.72	9.03	11.74
3	-10.99	-8.19	-6.83	-5.35	-2.67	1.48	5.69	8.32	9.80	11.15	13.95
4	-10.27	-7.58	-6.20	-4.49	-1.73	2.53	6.80	9.56	11.07	12.47	15.39
5	-11.32	-8.12	-6.57	-4.88	-1.81	2.49	7.70	10.77	12.46	14.01	17.21
6	-13.46	-9.66	-7.81	-5.81	-2.17	3.48	9.12	12.76	14.77	16.61	20.41
7	-15.28	-10.88	-8.75	-6.43	-2.22	4.32	10.85	15.06	17.36	19.51	23.92
8	-16.83	-11.83	-9.21	-6.77	-1.99	5.43	12.86	17.69	20.20	22.70	27.70
9	-16.98	-11.86	-8.97	-6.15	-1.63	6.91	14.85	19.97	22.79	25.38	30.72
10	-18.91	-6.87	-4.97	-2.18	1.98	8.92	16.86	19.02	21.36	23.91	27.75
11	-12.98	-7.83	-5.34	-2.63	2.30	9.09	17.50	22.51	25.22	27.71	32.66
12	-16.74	-10.61	-7.49	-4.20	1.77	11.03	20.24	26.25	29.54	32.56	38.00
13	-15.69	-9.71	-6.61	-3.84	2.07	10.96	19.84	25.57	28.72	31.62	37.41
14	-14.03	-8.42	-5.90	-3.15	2.02	10.05	18.08	23.26	26.11	28.73	34.14
15	-11.13	-6.81	-4.72	-2.49	1.69	8.10	15.65	18.64	20.92	23.01	27.33
16	-9.01	-5.76	-4.18	-2.46	.65	5.48	10.32	13.93	15.15	16.73	19.98
17	-8.77	-6.13	-4.85	-3.45	-.92	3.08	6.93	9.46	10.85	12.13	14.77
18	-8.14	-6.08	-5.08	-4.00	-2.02	1.03	4.09	6.06	7.14	8.14	10.20
19	-7.44	-5.83	-5.05	-4.20	-2.46	-.26	2.13	3.68	4.53	5.31	6.92
20	-7.60	-6.16	-5.47	-4.71	-3.39	-1.29	.93	2.30	3.06	3.76	5.19
21	-7.88	-6.47	-5.87	-5.15	-3.85	-1.83	.18	1.48	2.20	2.65	4.21
22	-8.37	-7.07	-6.44	-5.76	-4.52	-2.60	-.67	.57	1.26	1.88	3.17
23	-8.67	-7.37	-6.77	-6.09	-4.86	-2.94	-1.05	-.18	.85	1.47	2.76
24	-8.87	-7.69	-6.97	-6.30	-5.07	-3.18	-1.24	-.06	.41	1.23	2.51
25	-9.29	-8.00	-7.37	-6.69	-5.48	-3.53	-1.61	-.38	.30	.93	2.22
26	-9.56	-8.26	-7.62	-6.99	-5.7[illegible]	-3.75	-1.82	-.57	.12	.76	2.05
27	-10.37	-8.93	-8.24	-7.48	-6.11	-3.48	-1.85	-.47	.24	.98	2.41
28	-12.35	-10.55	-9.64	-8.73	-7.00	-4.33	-1.65	.02	1.02	1.90	3.70
29	-12.00	-10.27	-9.43	-8.52	-6.86	-4.35	-1.73	-.07	.89	1.68	3.40
30	-12.43	-10.58	-9.68	-8.78	-6.93	-4.17	-1.42	.35	1.33	2.23	4.09
31	-12.56	-10.60	-9.65	-8.61	-6.74	-3.82	-1.92	.96	1.99	2.94	4.90
32	-11.76	-9.90	-8.00	-7.81	-6.23	-3.46	-1.70	1.08	2.07	2.97	4.83
33	-11.68	-9.74	-8.80	-7.78	-5.92	-3.05	-.37	1.69	2.71	3.65	5.59
34	-12.79	-10.65	-9.62	-8.49	-6.45	-3.28	-.10	1.94	3.07	4.10	6.24
35	-13.22	-11.12	-10.10	-8.85	-6.97	-3.85	-.73	1.25	2.46	3.42	5.52
36	-13.89	-11.72	-10.68	-9.55	-7.48	-4.27	-1.08	1.01	2.15	3.19	5.35
37	-15.25	-12.87	-11.96	-10.76	-8.27	-5.17	-1.78	.41	1.42	2.72	5.00
38	-16.50	-14.10	-12.93	-11.62	-9.37	-5.80	-2.23	.02	1.33	2.50	4.90
39	-17.44	-14.92	-13.70	-12.37	-9.96	-6.21	-2.47	-.06	1.27	2.50	5.02
40	-18.05	-15.35	-14.05	-12.63	-10.05	-6.05	-2.05	.53	1.95	3.26	5.95
41	-18.03	-15.46	-14.22	-12.87	-10.41	-6.60	-2.80	-.74	0.01	2.25	4.82
42	-20.01	-17.25	-15.91	-14.45	-11.81	-7.71	-3.61	-.98	.49	1.83	4.53
43	-21.61	-18.55	-17.06	-15.44	-12.51	-7.96	-3.41	-.47	1.15	2.63	5.70
44	-22.10	-18.84	-17.26	-15.54	-12.42	-7.57	-2.73	.39	2.11	3.63	6.94
45	-21.68	-18.38	-16.79	-15.05	-11.89	-6.95	-2.69	1.06	2.80	4.40	7.70
46	-22.29	-18.76	-17.05	-15.20	-11.82	-6.59	-1.36	2.02	3.87	5.58	9.11
47	-21.35	-17.92	-16.25	-14.45	-11.16	-6.07	-.58	2.30	4.11	5.77	9.20
48	-22.66	-18.76	-16.87	-14.82	-11.08	-5.29	.58	4.23	6.29	8.18	12.08
49	-22.89	-18.74	-16.81	-14.65	-10.73	-4.64	1.44	5.30	7.52	9.50	13.60
50	-24.33	-19.75	-17.53	-15.12	-10.73	-3.33	3.37	7.29	9.67	11.88	16.46
51	-24.69	-19.83	-17.47	-14.91	-10.25	-3.04	4.18	8.84	11.40	13.75	18.62
52	-27.76	-22.36	-19.74	-16.88	-11.71	-3.64	4.35	9.53	12.38	15.00	20.40
53	-30.66	-24.80	-21.96	-18.87	-13.76	-4.5[illegible]	4.15	9.76	12.85	15.69	21.05
54	-31.56	-25.56	-22.65	-19.49	-13.70	-4.84	4.07	9.82	12.98	15.89	21.83
55	-34.79	-28.27	-25.10	-21.66	-15.41	-5.72	3.47	10.22	13.66	16.82	23.35
56	-38.69	-31.45	-27.9[illegible]	-24.13	-17.20	-6.45	4.30	11.23	15.04	18.55	25.79
57	-41.51	-33.77	-30.02	-25.93	-18.52	-7.03	4.47	11.88	15.96	19.72	27.46
58	-38.25	-31.10	-27.64	-23.82	-17.03	-6.41	4.20	11.05	14.82	18.28	25.83
59	-43.36	-35.48	-31.66	-27.56	-19.96	-8.26	3.44	10.29	15.19	18.96	26.84
60	-50.69	-41.65	-37.27	-32.50	-23.85	-10.43	2.99	11.64	18.40	20.70	29.82
61	-43.65	-36.07	-32.40	-28.40	-21.15	-9.90	1.36	8.61	12.61	16.28	23.8[illegible]
62	-42.46	-35.03	-31.43	-27.51	-20.39	-9.36	1.68	8.79	12.71	16.31	23.75
63	-41.03	-33.79	-30.29	-26.47	-19.54	-8.80	1.95	8.88	12.69	16.20	23.44
64	-39.96	-32.84	-29.40	-25.[illegible]	-18.83	-8.26	2.31	9.12	12.88	16.33	23.45
65	-38.92	-31.91	-28.52	-24.83	-18.12	-7.72	2.68	9.38	13.07	16.47	23.47
66	-37.83	-30.93	-27.58	-23.94	-17.38	-7.09	3.16	9.70	13.40	16.75	23.65
67	-36.89	-30.08	-26.78	-23.19	-16.67	-6.58	3.56	10.08	13.67	16.97	23.79
68	-35.[illegible]3	-29.05	-25.82	-22.30	-15.90	-5.99	3.92	10.31	13.83	17.07	23.75
69	-34.91	-28.29	-25.09	-21.60	-15.27	-5.45	4.36	10.70	14.13	17.39	24.00
70	-34.15	-27.59	-24.41	-20.95	-14.66	-4.92	4.83	11.11	14.57	17.75	24.32

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 13.9. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

SEPTEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.300	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-6.26	-6.05	-4.47	-3.83	-2.68	-.89	.98	2.66	2.89	3.27	4.48
1	-13.47	-1.76	-9.45	-8.82	-5.42	-1.39	2.63	5.23	6.66	7.97	10.69
2	-14.13	-12.98	-9.46	-7.80	-4.79	-.11	4.56	7.58	9.24	10.76	13.91
3	-15.43	-11.77	-9.99	-8.64	-4.55	.88	6.32	9.03	11.76	13.53	17.28
4	-17.92	-13.59	-11.43	-9.13	-4.96	1.61	7.98	12.15	14.45	16.84	20.92
5	-20.35	-15.42	-13.69	-10.99	-5.73	1.68	8.89	13.81	16.20	18.59	23.51
6	-23.71	-14.11	-15.25	-12.29	-6.78	1.67	10.16	15.62	18.63	21.39	27.10
7	-26.79	-25.24	-17.12	-13.60	-7.94	2.23	11.91	18.15	21.58	24.74	31.26
8	-31.17	-23.57	-19.89	-15.88	-8.65	2.69	13.98	21.26	25.26	28.95	36.56
9	-34.92	-26.27	-22.11	-17.56	-9.36	3.62	16.33	24.59	29.19	33.32	41.95
10	-37.33	-27.92	-23.38	-18.43	-9.95	4.47	18.47	27.37	32.32	36.86	46.29
11	-38.[illegible]2	-28.68	-23.87	-18.63	-9.11	5.43	20.50	29.91	35.15	39.97	49.91
12	-35.50	-25.99	-21.39	-16.38	-7.24	6.82	20.93	30.62	35.03	39.63	49.14
13	-30.79	-22.17	-18.62	-13.52	-5.30	7.91	20.13	28.33	32.89	36.99	45.86
14	-25.01	-17.80	-14.[illegible]3	-10.68	-3.86	6.72	17.30	25.12	27.87	31.32	38.45
15	-20.83	-14.97	-12.14	-9.25	-3.44	5.25	13.94	19.54	22.43	25.96	31.32
16	-16.51	-11.96	-9.76	-7.37	-3.61	3.73	10.48	14.83	17.23	19.93	23.97
17	-13.64	-10.14	-8.48	-6.49	-3.31	1.86	7.02	12.36	13.19	15.08	17.36
18	-11.21	-8.58	-7.31	-5.92	-3.41	.49	4.39	6.91	8.29	9.57	12.19
19	-9.97	-7.79	-6.73	-5.59	-3.56	-.27	2.94	5.66	6.20	7.25	9.43
20	-8.66	-7.25	-6.18	-5.23	-3.52	-.63	1.85	3.57	4.63	5.40	7.20
21	-7.[illegible]7	-7.28	-6.42	-5.48	-3.77	-1.12	1.50	3.25	4.19	5.05	6.64
22	-6.99	-7.2[illegible]	-6.44	-5.57	-3.99	-1.53	.92	2.52	3.37	4.17	5.82
23	-6.99	-7.33	-6.53	-5.65	-4.04	-1.68	.86	2.45	3.32	4.13	5.79
24	-6.9[illegible]	-7.28	-6.52	-5.65	-4.11	-1.71	.60	2.23	3.08	3.86	5.47
25	-6.84	-7.29	-6.47	-5.63	-4.10	-1.74	.43	2.15	2.99	3.77	5.3[illegible]
26	-9.18	-7.42	-6.62	-5.79	-4.15	-1.68	.79	2.38	3.25	4.04	5.72
27	-9.19	-7.53	-6.72	-5.89	-4.24	-1.77	.70	2.30	3.18	3.99	5.65
28	-10.19	-8.27	-7.37	-6.39	-4.60	-1.83	.99	2.73	3.71	4.61	6.48
29	-12.26	-9.99	-8.89	-7.69	-5.51	-2.19	1.24	3.42	4.62	5.72	7.97
30	-12.30	-9.97	-8.83	-7.68	-5.37	-1.90	1.67	3.61	5.09	6.17	[illegible]
31	-12.87	-9.70	-8.65	-7.30	-5.02	-1.60	2.03	4.30	5.56	6.71	9.0[illegible]
32	-11.26	-8.84	-7.67	-6.39	-4.87	-.48	3.12	5.43	6.71	7.88	10.38
33	-11.37	-8.77	-7.61	-6.14	-3.65	.21	4.87	6.66	7.93	9.19	11.79
34	-10.44	-8.20	-6.70	-5.49	-2.92	1.05	5.83	7.60	9.01	10.31	12.99
35	-10.62	-8.03	-6.78	-5.42	-2.95	.88	5.71	7.19	8.55	9.69	12.38
36	-11.94	-9.33	-8.07	-6.69	-4.19	-.32	3.56	6.06	7.45	8.70	11.31
37	-14.11	-11.15	-9.72	-8.16	-5.12	-.92	3.47	6.31	7.87	9.20	12.24
38	-14.95	-11.89	-10.41	-8.60	-5.48	-1.39	3.20	6.13	7.74	9.22	12.20
39	-17.04	-13.59	-11.83	-9.97	-6.60	-1.37	3.06	7.23	9.37	10.80	14.32
40	-16.70	-13.19	-11.49	-9.64	-6.28	-1.07	5.14	7.49	9.34	11.04	14.55
41	-17.99	-14.26	-12.47	-10.53	-7.00	-1.63	3.94	7.47	9.42	11.20	14.89
42	-16.49	-13.21	-11.62	-9.08	-6.74	-1.86	3.02	6.17	7.90	9.[illegible]	12.78
43	-15.36	-12.32	-10.85	-9.26	-6.34	-1.84	2.69	5.[illegible]6	7.34	8.49	11.63
44	-15.76	-12.63	-11.12	-9.47	-6.47	-1.85	2.74	5.77	7.42	8.92	12.05
45	-16.43	-13.07	-11.44	-9.67	-6.46	-1.47	3.82	6.72	8.50	10.17	13.4[illegible]
46	-16.56	-13.02	-11.31	-9.44	-6.05	-.79	4.46	7.86	9.72	11.44	15.[illegible]
47	-14.20	-12.52	-10.78	-8.72	-5.13	.45	6.02	9.6[illegible]	11.90	13.41	17.17
48	-17.64	-13.37	-11.29	-9.83	-5.93	1.[illegible]9	7.81	11.92	14.18	16.24	20.86
49	-20.05	-15.03	-12.59	-9.94	-5.13	2.33	9.78	14.59	17.24	19.68	24.76
50	-19.45	-14.46	-12.09	-9.91	-4.63	2.78	10.19	14.97	17.51	20.02	25.22
51	-17.04	-12.44	-10.23	-7.81	-3.90	3.43	12.70	19.[illegible]	17.10	19.32	23.93
52	-14.02	-11.49	-9.30	-6.91	-2.67	4.15	10.37	15.21	17.60	19.79	24.32
53	-14.23	-9.98	-7.78	-5.49	-1.33	5.12	11.57	16.73	18.02	20.12	24.47
54	-13.53	-9.20	-7.18	-4.82	-[illegible]	5.75	12.17	16.[illegible]2	18.60	22.49	25.02
55	-16.69	-11.67	-9.24	-6.69	-1.78	5.68	13.14	17.94	20.59	23.03	28.05
56	-20.10	-14.45	-11.72	-8.74	-3.3[illegible]	5.68	13.43	18.83	21.01	24.54	30.17
57	-21.17	-15.45	-12.67	-9.65	-4.17	4.33	12.05	18.33	21.3[illegible]	24.11	29.84
58	-22.81	-15.54	-13.50	-10.19	-4.[illegible]	5.13	14.44	20.48	23.75	26.79	33.06
59	-20.78	-14.25	-11.97	-9.65	-1.98	6.3[illegible]	17.99	24.24	27.60	30.35	37.38
60	-20.94	-14.40	-11.23	-9.78	-1.62	6.19	17.90	24.16	27.41	30.78	37.32
61	-18.30	-12.44	-9.60	-6.61	-.98	7.60	16.50	22.18	25.21	28.29	33.91
62	-18.02	-12.32	-9.86	-6.55	-1.37	7.30	16.98	21.31	24.32	27.04	32.79
63	-17.56	-12.05	-9.38	-6.48	-1.21	6.94	16.19	20.91	23.31	25.98	31.49
64	-17.28	-11.93	-9.34	-6.52	-1.40	6.59	15.59	19.[illegible]	22.45	25.02	30.37
65	-16.77	-11.63	-9.14	-6.43	-1.51	6.13	13.78	18.66	21.29	23.90	29.02
66	-16.36	-11.43	-9.04	-6.44	-1.71	5.65	12.93	17.66	20.26	22.65	27.68
67	-16.08	-11.31	-8.99	-6.47	-1.90	5.17	12.48	16.53	19.37	21.69	26.47
68	-15.63	-11.03	-8.83	-6.41	-2.03	4.77	11.57	15.76	18.37	20.59	25.17
69	-15.35	-10.93	-8.73	-6.45	-2.27	4.35	10.92	15.16	17.49	19.63	24.04
70	-14.86	-10.63	-8.59	-6.37	-2.33	3.93	10.20	14.23	16.56	18.50	22.72

TABLE 12.10. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

105-DEGREE FLIGHT AZIMUTH

OCTOBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-7.42	-5.93	-5.21	-4.43	-3.02	-.02	1.37	2.79	3.57	4.28	5.74
1	-17.39	-13.91	-12.29	-10.43	-7.19	-2.09	3.06	6.34	8.16	9.42	13.28
2	-19.29	-16.36	-15.46	-11.39	-7.63	-1.80	4.03	7.78	9.85	11.74	15.68
3	-22.03	-18.11	-15.82	-13.33	-8.88	-1.79	5.22	9.75	12.29	14.53	19.25
4	-28.05	-22.19	-19.22	-16.16	-11.50	-1.23	7.05	13.70	15.82	18.58	25.59
5	-30.98	-29.39	-21.12	-17.62	-11.27	-1.41	8.49	14.60	18.30	21.51	28.15
6	-35.16	-27.53	-23.93	-19.81	-12.50	-1.17	10.17	17.48	21.50	25.28	32.83
7	-39.67	-30.98	-26.77	-22.19	-13.87	-.98	11.92	20.29	24.82	29.03	37.72
8	-44.75	-35.89	-30.03	-24.81	-15.31	-.57	14.12	23.62	28.84	33.65	43.54
9	-48.41	-37.58	-32.39	-26.43	-16.27	-.20	15.87	26.23	31.94	37.16	48.01
10	-50.53	-39.18	-33.68	-27.70	-16.83	.07	16.88	27.28	33.75	39.23	50.58
11	-50.21	-38.80	-33.27	-27.26	-16.33	.41	17.55	28.48	34.59	40.02	51.43
12	-47.52	-36.60	-31.31	-25.66	-15.10	1.10	17.31	27.77	33.52	38.81	49.73
13	-40.70	-31.30	-26.71	-21.71	-12.49	1.49	15.61	24.58	29.58	34.17	43.65
14	-35.20	-26.89	-22.87	-18.40	-10.58	1.57	14.10	22.05	26.42	30.44	38.75
15	-28.93	-22.04	-18.73	-15.12	-8.59	1.65	11.87	18.42	22.09	25.36	32.23
16	-23.30	-17.78	-15.11	-12.26	-6.92	1.26	9.47	14.78	17.66	20.33	25.85
17	-18.28	-14.01	-11.94	-9.69	-5.60	.79	7.07	11.16	13.41	15.48	19.75
18	-14.99	-11.16	-9.27	-7.65	-4.71	.14	5.02	8.16	9.89	11.48	14.76
19	-12.17	-9.53	-8.26	-6.87	-4.39	-.43	3.48	6.40	7.39	8.67	11.30
20	-12.22	-9.62	-8.36	-6.99	-4.50	-.63	3.23	5.72	7.07	8.35	10.95
21	-11.48	-9.08	-7.92	-6.66	-4.34	-.80	2.76	5.06	6.32	7.48	9.88
22	-10.51	-8.28	-7.20	-6.43	-3.89	-.59	2.74	4.85	6.03	7.11	9.39
23	-9.80	-7.66	-6.63	-5.51	-3.47	-.30	2.86	4.90	6.03	7.06	9.19
24	-9.50	-7.37	-6.39	-5.21	-3.17	-.01	3.15	5.19	6.31	7.39	9.47
25	-8.88	-6.81	-5.81	-4.72	-2.79	.33	3.40	5.18	6.47	7.47	9.53
26	-9.39	-7.11	-6.00	-4.79	-2.68	.79	4.14	6.37	7.58	8.69	10.97
27	-10.39	-7.81	-6.56	-5.20	-2.72	1.11	4.95	7.42	8.78	10.24	12.62
28	-10.46	-7.67	-6.31	-4.84	-2.17	1.98	6.13	8.80	10.28	11.63	14.92
29	-9.66	-7.02	-5.74	-4.36	-1.82	2.10	6.02	8.55	9.94	11.22	13.84
30	-10.01	-7.22	-5.87	-4.40	-1.72	2.42	6.56	9.24	10.71	12.04	14.85
31	-11.04	-7.81	-6.23	-4.51	-1.39	3.49	8.27	11.39	13.11	14.69	17.94
32	-11.43	-7.79	-6.02	-4.10	-.61	4.79	10.20	13.69	15.61	17.37	21.01
33	-10.86	-7.02	-5.16	-3.12	.56	6.27	11.99	15.67	17.70	19.66	23.91
34	-11.86	-6.74	-4.68	-2.42	1.78	8.08	14.46	18.58	20.85	22.93	27.23
35	-10.84	-6.35	-4.17	-1.40	2.61	9.18	15.85	20.16	22.53	24.71	29.20
36	-12.71	-7.88	-5.42	-2.03	1.85	9.17	16.47	21.17	23.76	26.14	31.86
37	-14.69	-9.48	-6.99	-4.27	.44	8.31	15.96	20.89	23.61	26.11	31.26
38	-14.76	-9.60	-7.10	-4.39	.54	8.19	15.83	20.76	23.48	25.97	31.12
39	-14.32	-9.31	-6.89	-4.26	.53	7.94	15.36	20.17	22.80	25.23	30.23
40	-16.66	-10.47	-7.95	-5.22	-.26	7.44	15.14	20.13	22.87	25.38	30.58
41	-16.76	-10.59	-8.01	-5.26	-.27	7.48	15.23	20.22	22.97	25.50	30.72
42	-17.36	-11.72	-8.99	-6.01	-.61	7.14	14.54	21.54	24.52	27.25	32.89
43	-19.18	-13.13	-10.21	-7.02	-1.23	7.79	15.71	22.49	25.68	28.60	34.65
44	-18.44	-12.20	-9.18	-6.89	.48	9.34	18.64	24.57	27.86	30.88	37.12
45	-18.31	-11.73	-8.55	-5.08	1.22	10.98	20.76	27.05	30.51	33.70	40.26
46	-17.63	-10.78	-7.51	-3.96	2.50	12.62	22.59	29.00	32.55	35.82	42.57
47	-17.03	-10.01	-6.61	-2.91	3.80	14.22	24.63	31.35	35.05	38.44	45.44
48	-14.05	-8.92	-5.47	-1.71	5.12	15.71	26.30	33.12	36.88	40.34	47.47
49	-14.91	-7.37	-3.95	-.29	6.51	16.97	27.42	34.17	37.88	41.38	48.34
50	-13.86	-6.63	-3.13	.68	7.60	18.32	29.05	36.97	39.78	43.29	50.50
51	-16.41	-8.70	-4.86	-.69	6.89	18.63	30.38	37.96	42.13	46.96	53.88
52	-18.85	-10.47	-6.40	-1.97	6.87	18.65	31.02	39.06	43.79	47.54	54.97
53	-19.05	-10.46	-6.29	-1.76	6.97	19.23	31.99	40.21	44.74	48.91	57.50
54	-18.14	-9.63	-5.51	-1.03	7.11	19.73	32.36	40.49	44.98	49.09	57.60
55	-16.53	-8.23	-4.21	.14	8.10	20.42	33.79	40.68	45.06	49.06	57.37
56	-16.93	-8.55	-4.49	-.07	7.96	20.38	32.82	40.84	45.26	49.31	57.69
57	-20.91	-11.39	-7.02	-2.26	6.38	19.77	33.16	41.40	46.56	50.93	59.95
58	-21.14	-11.66	-7.06	-2.06	7.02	21.09	35.17	44.26	49.25	53.85	63.33
59	-13.71	-4.85	-.66	4.12	12.05	26.74	38.92	47.40	52.07	56.37	65.23
60	-10.41	-1.74	2.42	6.98	16.26	28.08	40.91	49.18	53.74	57.92	66.57
61	-7.77	.00	3.77	7.86	15.30	26.89	38.38	45.82	49.91	53.68	61.45
62	-7.78	-.26	3.39	7.35	14.56	25.72	36.89	44.09	48.06	51.70	59.23
63	-8.15	-.81	2.74	6.40	13.42	24.51	35.40	42.42	46.28	49.84	57.17
64	-8.17	-1.05	2.35	6.09	12.87	23.40	33.92	40.70	44.44	47.87	54.96
65	-8.51	-1.62	1.73	5.36	11.97	22.21	32.46	39.45	42.69	46.03	52.93
66	-8.86	-2.16	1.10	4.63	11.05	21.00	30.95	37.36	40.90	44.14	50.84
67	-8.88	-2.43	.70	4.11	10.29	19.88	29.47	35.66	39.06	42.18	48.64
68	-9.27	-3.00	.04	3.35	9.38	18.67	27.98	33.98	37.27	40.33	46.68
69	-9.31	-3.28	-.36	2.82	8.43	17.55	26.50	32.28	35.48	38.38	44.41
70	-9.70	-3.86	-1.02	2.06	7.66	16.39	25.02	30.62	33.70	36.43	42.38

TABLE 13.11. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

196-DEGREE FLIGHT AZIMUTH

NOVEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.900	50.000	84.100	95.000	97.720	99.000	99.865
0	-8.25	-6.51	-5.67	-4.75	-3.88	-.49	2.10	3.77	4.69	5.53	7.27
1	-20.38	-15.94	-13.79	-11.45	-7.20	-.61	5.98	10.23	12.57	14.72	19.16
2	-23.21	-18.00	-15.48	-12.73	-7.75	-.82	7.71	12.70	15.44	17.96	23.17
3	-26.82	-20.79	-17.79	-14.58	-8.76	.27	9.31	15.13	18.30	21.28	27.37
4	-29.80	-22.91	-19.57	-15.93	-9.34	.90	11.13	17.73	21.36	24.70	31.59
5	-30.56	-26.47	-22.56	-18.29	-10.55	1.46	13.47	21.22	25.48	29.90	37.49
6	-41.33	-31.65	-26.96	-21.85	-12.59	1.78	16.16	25.42	30.53	35.22	44.90
7	-47.57	-36.36	-30.93	-25.03	-14.30	2.33	18.96	29.68	35.59	41.62	52.22
8	-53.83	-41.89	-34.92	-28.24	-16.02	2.88	21.79	33.98	40.69	46.86	59.60
9	-58.97	-44.93	-38.12	-30.72	-17.27	3.58	24.84	37.83	45.29	52.09	66.18
10	-68.95	-49.72	-41.34	-33.34	-18.72	3.88	26.49	41.07	49.09	56.47	71.70
11	-63.77	-48.39	-40.34	-32.83	-18.11	4.72	27.55	42.27	50.38	57.83	73.21
12	-58.03	-43.79	-36.90	-29.39	-15.76	5.37	26.50	40.13	47.63	54.53	68.77
13	-48.14	-36.91	-30.98	-24.53	-12.91	5.35	23.51	35.23	41.68	47.61	59.84
14	-39.56	-29.80	-24.88	-19.53	-9.81	5.27	20.35	30.07	35.43	40.25	50.51
15	-32.13	-23.58	-19.58	-15.60	-7.82	4.34	16.50	24.34	28.66	32.63	40.82
16	-25.57	-19.09	-15.94	-12.59	-5.71	3.32	12.55	19.16	22.58	25.72	32.21
17	-20.37	-15.26	-12.79	-10.08	-5.20	2.39	9.98	14.87	17.56	20.04	25.15
18	-16.86	-12.79	-10.81	-8.67	-4.77	1.27	7.31	11.21	13.35	15.32	19.40
19	-14.86	-11.43	-9.77	-7.90	-4.68	.91	5.50	8.79	10.60	12.26	15.69
20	-14.27	-11.16	-9.66	-8.02	-5.05	-.44	4.17	7.14	8.78	10.29	13.39
21	-13.41	-10.58	-9.21	-7.72	-5.01	-.41	3.39	6.10	7.59	8.96	11.79
22	-13.93	-11.04	-9.64	-8.12	-5.35	-1.06	3.28	6.00	7.53	8.93	11.62
23	-13.18	-10.44	-9.10	-7.68	-5.03	-.95	3.13	5.76	7.20	8.53	11.28
24	-12.52	-9.84	-8.53	-7.12	-4.55	-.56	3.42	5.33	7.43	8.71	11.29
25	-13.33	-10.33	-9.36	-7.42	-4.59	-.22	4.16	6.37	8.53	9.95	12.90
26	-14.22	-10.98	-9.41	-7.71	-4.61	.26	5.01	8.11	9.82	11.38	14.62
27	-16.03	-12.30	-10.49	-8.52	-4.95	.59	6.13	9.71	11.68	13.94	17.22
28	-12.16	-8.71	-7.63	-5.21	-1.91	3.21	8.34	11.64	13.96	15.13	18.68
29	-13.96	-9.67	-7.09	-5.05	-1.94	3.82	9.67	13.27	15.41	17.21	21.09
30	-14.64	-10.36	-8.33	-6.17	-2.16	4.14	10.37	14.39	16.41	18.69	22.84
31	-14.86	-10.44	-8.22	-6.02	-1.83	4.45	11.14	15.32	17.62	19.74	24.11
32	-14.45	-11.36	-8.88	-6.19	-1.31	4.96	13.09	18.76	21.38	23.85	28.96
33	-18.14	-12.22	-9.36	-6.24	-.87	5.22	17.08	22.67	25.79	28.66	34.58
34	-17.53	-11.47	-8.57	-6.39	.39	9.36	18.37	24.10	27.26	30.21	36.25
35	-14.22	-10.12	-7.14	-3.91	1.59	11.82	20.18	25.79	29.18	32.19	38.24
36	-17.11	-10.65	-7.52	-4.11	2.07	11.44	21.26	27.49	30.84	33.97	40.49
37	-17.16	-10.57	-7.27	-3.98	2.91	12.98	21.98	28.10	31.78	38.97	41.54
38	-19.53	-12.36	-8.86	-5.08	1.81	12.44	23.15	30.83	33.87	37.30	44.99
39	-20.19	-12.79	-9.21	-5.21	1.74	12.79	23.73	30.88	34.70	35.28	45.67
40	-20.91	-13.29	-9.68	-5.59	1.71	13.82	24.33	31.62	3	39.32	46.94
41	-21.28	-13.53	-9.79	-5.73	1.49	13.17	25.44	32.08	3	39.89	47.42
42	-22.62	-14.40	-10.76	-6.50	1.81	12.77	24.64	32.13	-	40.14	48.07
43	-22.25	-14.36	-10.48	-6.24	1.35	13.14	24.94	32.57	3	40.61	48.53
44	-21.31	-13.46	-9.86	-5.39	2.17	13.44	25.69	33.27	37.	41.28	49.19
45	-21.63	-13.67	-9.41	-5.27	2.81	14.83	27.05	34.93	37.24	42.35	51.98
46	-22.79	-14.17	-9.78	-5.26	3.18	16.97	29.35	37.80	42.44	46.71	55.63
47	-24.97	-15.07	-10.52	-5.57	3.93	17.39	31.34	40.35	45.29	49.84	59.28
48	-27.62	-17.86	-12.80	-6.49	3.61	19.02	34.54	44.54	50.05	55.11	65.54
49	-21.40	-13.13	-7.45	-2.35	6.98	21.24	35.41	44.67	49.77	53.48	64.32
50	-21.43	-11.45	-6.41	-1.36	8.21	23.03	37.06	47.41	52.07	57.51	67.60
51	-21.64	-11.34	-6.41	-1.06	8.49	22.79	38.78	48.69	54.80	58.93	69.10
52	-19.76	-9.89	-5.10	.10	9.56	24.31	38.87	48.32	53.53	58.31	68.19
53	-23.82	-12.72	-6.35	-1.58	9.12	26.89	42.04	52.69	58.82	63.96	74.92
54	-24.08	-13.65	-8.18	-2.29	8.37	24.69	41.4	52.60	57.96	63.34	74.47
55	-27.39	-16.81	-10.71	-4.88	7.97	20.65	43.33	57.38	63.02	76.11	82.70
56	-27.99	-15.76	-9.83	-3.38	8.33	28.49	44.64	56.36	62.01	68.73	80.97
57	-35.43	-21.67	-15.81	-7.76	4.48	25.82	46.23	59.4	66.65	73.31	87.04
58	-29.38	-16.71	-10.81	-3.98	8.87	26.76	45.44	57.49	64.12	70.22	82.80
59	-39.82	-26.22	-18.64	-11.27	1.93	22.40	47.07	56.80	63.36	70.83	83.82
60	-43.37	-29.19	-22.32	-14.84	-1.26	19.79	46.44	54.43	61.90	68.77	82.96
61	-35.43	-22.69	-17.61	-10.62	1.81	19.83	37.05	48.67	56.07	66.95	71.97
62	-33.27	-21.76	-16.89	-9.99	1.89	18.37	35.45	46.53	54.03	58.24	69.81
63	-31.19	-23.26	-14.96	-9.18	1.38	17.54	32.78	44.26	50.13	56.33	66.27
64	-29.14	-18.86	-13.86	-8.47	1.46	16.78	32.11	41.99	47.43	52.43	62.75
65	-27.43	-17.46	-12.93	-7.79	1.56	16.85	30.54	39.93	45.64	49.77	59.54
66	-26.43	-16.28	-11.86	-7.07	1.74	15.32	28.91	37.67	42.49	46.93	56.88
67	-23.46	-14.93	-13.79	-6.29	1.89	14.67	27.36	35.43	39.93	44.07	52.61
68	-21.60	-13.66	-9.72	-5.53	2.86	13.87	25.69	33.21	37.48	41.24	49.17
69	-19.87	-12.47	-8.88	-4.98	2.18	13.08	24.07	31.18	35.05	38.63	46.03
70	-18.00	-11.18	-7.88	-4.29	2.24	12.35	22.47	29.08	32.59	35.87	42.71

TABLE 13.12. VANDENBERG RIGHT AND LEFT CROSSWIND COMPONENTS

106-DEGREE FLIGHT AZIMUTH

DECEMBER

	Cumulative Percentage Probability										
Alt (km)	0.135	1.000	2.280	5.000	15.866	50.000	84.100	95.000	97.720	99.000	99.865
0	-9.03	-7.19	-6.30	-5.33	-3.57	-.65	1.89	3.65	4.62	5.51	7.35
1	-22.18	-17.03	-15.42	-13.02	-8.66	-1.89	4.67	9.24	11.64	13.85	18.40
2	-26.38	-20.91	-18.25	-15.37	-13.13	-2.01	6.12	11.30	14.24	16.89	22.37
3	-31.19	-24.58	-21.37	-17.89	-13.56	-1.74	6.76	14.91	17.90	21.10	27.72
4	-35.39	-28.96	-25.12	-20.94	-15.35	-1.58	10.19	17.79	21.97	25.81	33.74
5	-41.94	-32.82	-28.40	-23.60	-16.87	-1.34	12.19	20.52	25.72	30.14	39.26
6	-43.20	-37.65	-32.54	-26.93	-16.37	-1.21	14.46	24.56	30.12	35.23	45.79
7	-55.08	-42.86	-37.09	-30.70	-15.09	-1.16	16.69	28.50	34.49	40.76	52.88
8	-60.17	-46.80	-40.22	-33.27	-20.47	-.61	19.24	32.04	39.09	45.57	58.95
9	-65.14	-50.57	-43.51	-35.87	-21.03	-.28	21.37	35.22	43.00	50.25	64.42
10	-67.30	-52.56	-45.12	-37.04	-22.35	.43	23.20	37.99	45.98	53.41	68.76
11	-65.81	-50.77	-43.49	-35.56	-21.16	1.17	23.50	37.30	45.83	53.11	68.15
12	-59.36	-45.14	-33.49	-31.20	-18.13	2.24	22.00	35.73	42.96	49.61	63.33
13	-48.47	-37.65	-31.93	-25.70	-14.37	3.15	20.49	32.00	38.23	43.96	55.77
14	-41.46	-31.33	-25.43	-21.10	-11.[illegible]	3.62	18.64	29.32	33.66	38.57	48.69
15	-34.73	-26.18	-22.04	-17.53	-5.34	3.36	16.65	24.24	28.75	32.48	41.45
16	-29.36	-22.36	-18.65	-14.46	-3.96	2.74	13.44	20.34	24.14	27.63	34.34
17	-25.50	-19.31	-16.30	-13.04	-7.11	2.05	11.28	17.21	20.48	23.48	29.68
18	-20.65	-15.78	-13.42	-10.85	-6.19	1.04	9.27	12.92	15.50	17.86	22.73
19	-17.46	-13.54	-11.70	-9.66	-5.55	-.19	5.56	9.27	11.32	13.19	17.67
20	-16.10	-12.74	-11.21	-9.33	-5.11	-1.11	3.83	7.11	8.88	10.51	13.98
21	-15.68	-12.73	-11.21	-9.55	-6.53	-1.46	2.81	5.83	7.49	9.21	12.16
22	-16.10	-12.97	-11.45	-9.80	-6.91	-2.16	2.49	5.48	7.13	8.65	11.78
23	-15.75	-12.75	-11.30	-9.72	-6.85	-2.40	2.05	4.92	6.50	7.95	10.95
24	-15.76	-12.82	-11.40	-9.85	-7.03	-2.66	1.71	4.52	6.07	7.50	10.44
25	-16.06	-13.03	-11.54	-9.96	-7.06	-2.55	2.55	4.86	6.46	7.93	10.96
26	-17.32	-14.39	-12.72	-10.92	-7.62	-2.53	2.56	5.35	7.66	9.32	12.75
27	-20.73	-16.61	-14.62	-12.96	-8.59	-2.45	2.44	7.56	9.72	11.71	15.82
28	-18.11	-13.68	-11.92	-9.84	-4.72	1.97	8.67	12.98	15.36	17.64	22.08
29	-20.39	-15.29	-12.82	-10.14	-6.24	2.31	9.68	14.76	17.46	19.92	25.02
30	-23.97	-17.98	-15.87	-11.91	-6.18	2.72	11.62	17.24	20.52	23.43	29.42
31	-26.83	-19.26	-16.86	-12.69	-6.20	3.47	13.27	19.67	23.04	26.23	32.81
32	-27.61	-20.39	-16.82	-12.98	-6.82	4.70	15.58	22.54	26.38	29.90	37.17
33	-29.42	-21.39	-17.93	-13.18	-6.45	6.64	18.57	26.25	30.51	34.42	42.49
34	-28.39	-21.67	-17.58	-12.94	-5.66	8.18	21.82	29.30	33.86	38.05	46.70
35	-30.13	-21.83	-16.62	-11.83	-3.12	10.37	23.80	32.00	37.40	41.81	50.91
36	-29.12	-19.80	-15.29	-10.38	-1.66	12.38	26.21	35.13	40.04	44.55	53.87
37	-28.67	-18.98	-14.34	-9.28	-.10	14.13	28.37	37.55	42.60	47.26	56.84
38	-30.11	-19.83	-14.85	-8.44	.48	15.66	30.91	40.26	44.17	51.15	61.93
39	-31.26	-20.44	-15.28	-9.56	.85	16.90	32.96	43.29	48.99	54.23	65.09
40	-30.16	-19.27	-14.83	-8.30	3.18	18.33	35.16	46.74	50.49	55.74	66.62
41	-28.43	-17.61	-12.36	-6.66	3.71	19.77	36.66	46.26	51.91	57.15	67.98
42	-28.53	-17.28	-11.71	-6.74	5.11	21.93	38.76	49.46	55.57	61.06	72.39
43	-29.82	-17.08	-11.29	-4.99	6.45	24.18	41.99	53.30	59.45	65.99	77.39
44	-31.23	-18.33	-12.87	-5.27	7.08	26.29	45.90	57.70	64.56	70.81	83.72
45	-31.39	-18.69	-13.65	-4.64	8.09	27.83	47.64	60.29	67.30	73.74	87.04
46	-29.88	-16.19	-9.94	-3.19	9.12	28.21	47.30	59.41	66.39	72.62	85.48
47	-28.56	-13.49	-7.58	-1.19	10.98	28.37	46.34	57.73	64.32	70.18	82.29
48	-29.15	-12.18	-6.27	.08	11.81	29.49	47.37	58.98	65.25	71.09	83.13
49	-26.28	-13.66	-7.56	-.92	11.14	29.84	48.53	60.67	67.23	73.33	85.93
50	-29.26	-12.77	-6.72	-.14	11.81	30.39	48.87	60.82	67.98	73.49	86.92
51	-23.39	-11.88	-5.12	1.37	13.16	31.43	49.71	61.49	67.92	73.94	86.26
52	-28.73	-8.48	-2.54	3.78	15.62	33.29	51.74	[illegible]	74.13	79.04	88.30
53	-28.03	-7.76	-1.81	4.64	16.41	34.63	[illegible]	64.60	71.07	77.01	89.29
54	-21.44	-9.85	-3.84	3.97	16.32	33.21	52.00	63.99	70.92	76.97	88.85
55	-28.09	-8.13	-2.36	3.92	15.32	[illegible]	50.60	62.98	68.35	74.12	86.03
56	-29.03	-11.42	-5.22	1.74	14.39	34.81	53.69	66.27	73.24	79.44	92.86
57	-22.81	-9.47	-3.48	3.21	16.[illegible]	33.81	52.49	64.42	71.03	77.10	89.63
58	-29.77	-15.42	-8.88	-1.12	[illegible].62	33.91	55.26	68.94	76.92	83.44	97.79
59	-36.68	-21.29	-13.80	-6.71	9.00	34.79	54.60	69.30	77.39	84.83	100.19
60	-30.18	-20.66	-13.18	-5.84	9.74	32.46	56.52	70.37	78.51	86.99	101.93
61	-34.64	-19.78	-12.53	-4.75	9.47	31.63	53.56	67.88	76.63	82.83	97.69
62	-33.37	-19.87	-12.19	-4.61	9.88	30.31	51.54	65.23	72.77	79.78	94.00
63	-32.36	-18.53	-11.84	-4.56	8.66	29.17	49.68	62.98	70.18	76.88	90.69
64	-31.13	-17.66	-11.59	-4.44	8.24	27.94	47.66	60.38	67.35	73.78	87.06
65	-30.12	-17.33	-11.13	-4.39	7.86	26.84	45.83	58.07	64.82	71.01	83.80
66	-30.93	-16.67	-10.74	-4.28	7.45	25.63	43.81	55.59	62.00	67.93	80.18
67	-27.98	-16.17	-10.46	-4.25	7.03	24.51	42.00	53.20	59.49	65.19	76.97
68	-26.84	-15.59	-10.14	-4.21	6.57	23.27	39.94	50.76	56.69	62.19	73.39
69	-25.98	-15.11	-9.88	-4.19	6.14	22.16	38.18	48.51	54.20	59.42	70.21
70	-24.83	-14.55	-9.57	-4.16	5.47	20.95	36.21	46.05	51.47	56.45	66.73

ORIGINAL PAGE IS
OF POOR QUALITY

APPROVAL

NORMAL PROBABILITIES FOR VANDENBERG AFB WIND COMPONENTS – MONTHLY REFERENCE PERIODS FOR ALL FLIGHT AZIMUTHS, 0- TO 70-km ALTITUDES

By L. W. Falls

The information in this report has been reviewed for security classification. Review of any information concerning Department of Defense or Atomic Energy Commission programs has been made by the MSFC Security Classification Officer. This report, in its entirety, has been determined to be unclassified.

This document has also been reviewed and approved for technical accuracy.

O. E. SMITH
Chief, Terrestrial Environment Branch

W.W. VAUGHAN
Chief, Aerospace Environment Division

C.A. LUNDQUIST
Director, Space Sciences Laboratory

☆U.S. GOVERMENT PRINTING OFFICE 1975–640-451/206 REGION NO. 4