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SURFACE CLIMATOLOGICAL INFORMATION
FOR TWELVE SELECTED STATIONS
FOR RE-ENTRY VEHICLES

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16. ABSTRACT <p>Space vehicle re-entry requires climatological and meteorological information for advanced planning as well as operational activity. This short study presents selected climatological summaries for twelve specified locations, any one of which may be needed as an alternate at one time or another. A short narrative precedes the tabular summaries. Monthly and annual temperature-precipitation summaries are presented on one page. The monthly and annual summaries of specified weather conditions are also shown. Simultaneous conditions are not shown. The last summaries are wind rose tabulations.</p> <p>This report was prepared to provide background information for use in trade-off studies on the NASA Space Shuttle operational and abort landing requirements relative to atmospheric conditions at several selected locations. At least one station was selected for each continent. Each station included in this study has an airport runway \geq 8000 feet.</p>					
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I. Introduction

The need for climatological summaries of weather data has increased with the development of the space program. Re-entry vehicles now may require ground-based landing areas rather than marine landing areas. It is imperative, therefore, that climatological summaries be made available for potential landing areas.

Twelve potential landing areas were selected for this first study. Monthly and annual summaries of data were presented. The only figure shown is an equal-area projection of a global chart showing the station locations. These locations are:

North America - Edwards A.F.B., California; Langley A.F.B., Hampton, Virginia; Patrick A.F.B., Cocoa Beach, Florida,
South America - Moron, Argentina,
Europe - Moron De La Frontera, Spain,
Asia - Ambala, India; Dhahran, Saudi Arabia,
Africa - Bloemfontein (Hertzog), South Africa; Reggan(e), Algeria,
Australia - Alice Springs; Perth (Guildford),
Pacific Ocean - Honolulu (International Airport), Hawaii.

II. Data

A. Source

The data used for this study have been obtained from the archives of the National Weather Records Center at Asheville, N. C.

B. Format

The information and data presented are those of:

1. Narrative summary

2. Temperature and precipitation tabulations
3. Tables of selected present weather categories
4. Wind rose tabulations

C. Presentation

1. A short narrative description of the climatology precedes the tabular summaries. The period of record is included in the narrative

2. Temperatures are given in degrees Fahrenheit, precipitation in inches.

3. In the percentage frequencies of occurrence of specified weather conditions, the following elements are summarized

where data were available:

- a. Number of observations
- b. Ceilings less than 2,000 feet and/or visibilities less than 3 statute miles
- c. Ceilings less than 4,000 feet and/or visibilities less than 6 statute miles
- d. Total cloud cover equal to or less than 3/10
- e. Thunder, with or without precipitation
- f. Rain and/or drizzle
- g. Freezing rain and/or freezing drizzle
- h. Snow and/or sleet
- i. Hail
- j. Total occurrences of precipitation
- k. Fog
- l. Smoke and/or haze

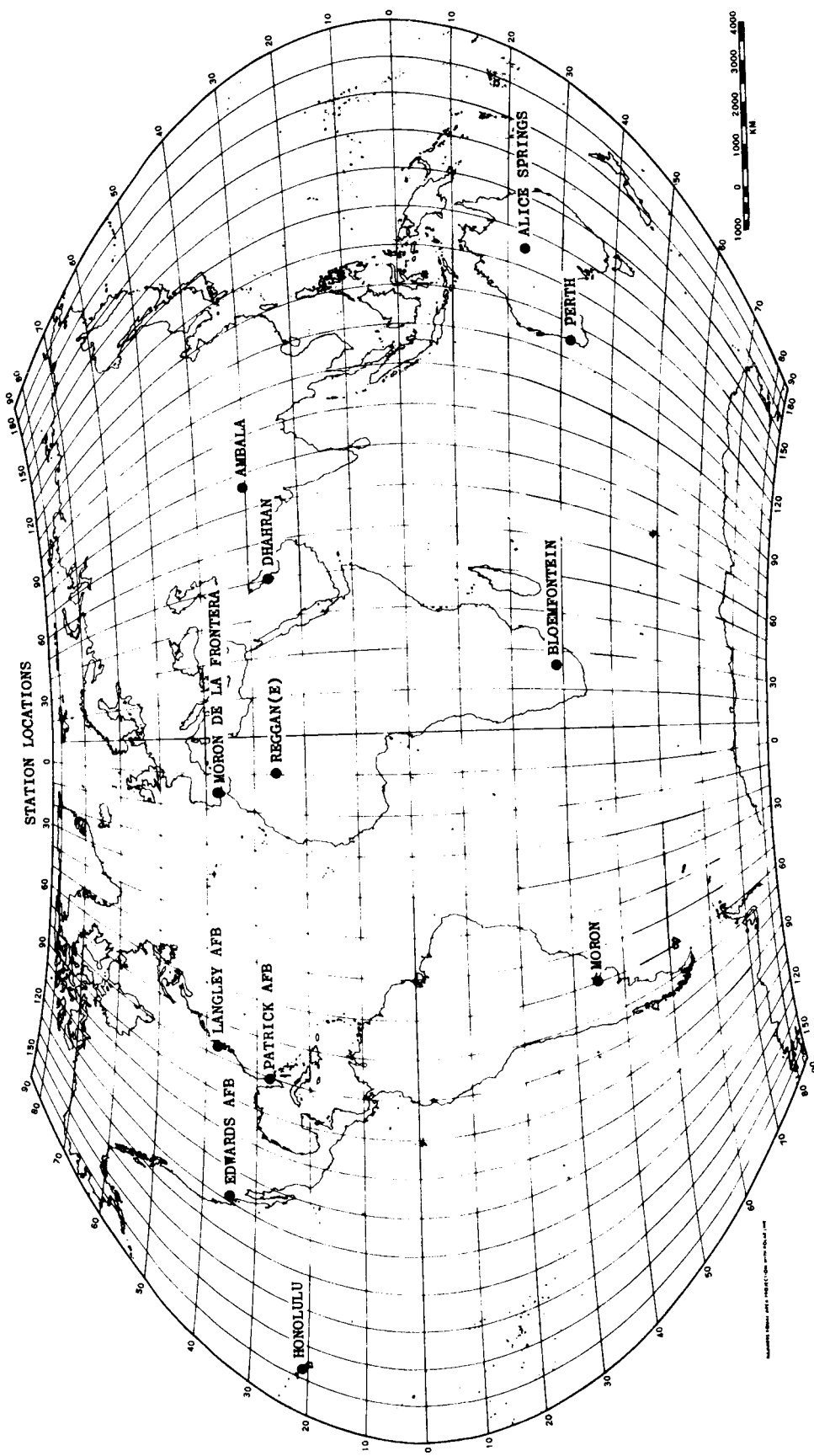
- m. Blowing snow
- n. Dust (blowing and/or suspended)
- o. Total occurrences of obstructions to vision.

4. In the wind presentations, wind directions to sixteen points of the compass and calm are shown arrayed against the selected categories of wind speeds. Marginal distributions by wind direction and by wind speed categories are included.

III. Discussion

The information presented in this study in both narrative and tabular forms for the surface data has been compiled in such form as to provide a preliminary planning guide for those engaged in the operation of space vehicle re-entry.

Future work will increase the number of stations and will include some important features of the upper air.



EDWARDS AFB, CALIFORNIA
(Lat. 34°55'N, Long. 117°54'W, Elev. 2316 ft)

Edwards Air Force Base is located in the south central part of California on the Mojave Desert adjacent to Rogers Dry Lake. The climate is typical of the desert regions. The mean annual precipitation is only four inches. Most of this, about 2.3 inches, falls during the winter months of December, January, and February. Although some snow falls during the winter months, the total for the season seldom exceeds a few inches.

The annual average daily temperature range is large, amounting to 30.3° between the mean daily maximum of 77.0° and the mean daily minimum of 46.7°.

The following data, except for the Temperature and Precipitation Summary, are based on twenty-four hourly observations per day from January 1942 through March 1965.

EDWARDS AFB, CALIFORNIA
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	56.8	61.2	65.1	74.2	80.7	90.2	99.0	97.1	92.1	79.9	66.3	58.4	77.0
Monthly Mean Minimum Temperature	29.9	34.1	38.3	45.2	51.4	58.5	65.7	63.6	57.5	47.4	35.5	30.3	46.7
Monthly Mean Temperature	43.4	47.8	51.8	59.8	66.2	74.5	82.5	80.5	74.9	63.7	51.0	44.5	62.0

Period of Record: 1942 - 1964

Absolute Maximum Temperature: +113°F

Absolute Minimum Temperature: +4°F

Period of Record: Jan. 42 - Oct. 64

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	.84	.81	.56	.23	.04	.02	.02	.06	.12	.26	.37	.65	3.99
Monthly Mean Snowfall	1.1	T	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	1.3

Period of Record: (Precip.) Jan. 42 - Oct. 64; (Snowfall) 1946-64

Wind (Knots)

Peak Gust: W + WNW 65 Knots (September 1957 and October 1954)

Period of Record: 1946 - 1964

EDWARDS AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

FEBRUARY												
Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 Mi	Callings <4000 Ft and/or Visibility <6 Mi	Cloud Cover 1/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of	Total Occurrences of	
										Blowing Snow	Dust (Blowing and/or Suspended)	
00-00	2,000	0.3	2.9	72.5	---	1.8	---	---	---	---	---	1.7
00-05	2,033	0.7	3.7	71.0	---	2.8	---	---	---	---	---	2.2
05-10	2,031	1.2	5.5	96.0	---	3.3	---	---	---	---	---	3.5
10-15	2,059	0.9	6.9	53.5	---	3.1	---	---	---	---	---	3.5
15-20	2,034	1.6	7.4	56.5	---	4.0	---	---	---	---	---	3.2
20-25	2,033	1.2	7.2	51.2	---	3.6	---	---	---	---	---	3.4
25-30	2,032	0.8	5.3	61.8	---	2.9	---	---	---	---	---	2.1
30-35	2,032	0.4	3.6	70.0	---	2.3	---	---	---	---	---	1.6
All Hours	16,897	9	5.2	69.9	---	3.0	---	---	---	---	---	3.4

MARCH												
Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 Mi	Callings <4000 Ft and/or Visibility <6 Mi	Cloud Cover 1/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of	Total Occurrences of	
										Blowing Snow	Dust (Blowing and/or Suspended)	
00-00	2,211	1.0	3.6	73.1	---	2.4	---	---	---	---	---	3.7
00-05	2,200	1.0	2.9	71.6	---	2.0	---	---	---	---	---	3.2
05-10	2,226	1.2	5.0	57.2	---	2.2	---	---	---	---	---	3.7
10-15	2,222	1.5	5.4	55.1	---	2.5	---	---	---	---	---	3.3
15-20	2,222	1.4	7.5	49.9	---	2.5	---	---	---	---	---	3.6
20-25	2,224	1.0	8.0	47.2	---	2.7	---	---	---	---	---	3.0
25-30	2,211	1.0	5.7	56.7	---	2.7	---	---	---	---	---	3.4
30-35	2,206	0.8	3.4	66.0	---	2.3	---	---	---	---	---	2.7
All Hours	17,377	1.1	5.8	59.7	---	2.4	---	---	---	---	---	3.4

APRIL												
Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 Mi	Callings <4000 Ft and/or Visibility <6 Mi	Cloud Cover 1/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of	Total Occurrences of	
										Blowing Snow	Dust (Blowing and/or Suspended)	
00-00	1,979	0.2	1.2	77.4	---	1.0	---	---	---	---	---	1.9
00-05	2,000	1.2	2.2	73.5	---	1.0	---	---	---	---	---	2.6
05-10	2,066	2.2	2.8	62.0	---	1.2	---	---	---	---	---	3.3
10-15	2,068	3.3	3.4	61.2	---	1.3	---	---	---	---	---	3.7
15-20	2,067	1.3	5.4	57.1	---	1.6	---	---	---	---	---	2.9
20-25	2,067	1.4	5.3	56.6	---	2.0	---	---	---	---	---	3.6
25-30	2,006	3.3	2.9	63.7	---	1.7	---	---	---	---	---	2.8
30-35	1,979	1.1	1.6	76.6	---	1.4	---	---	---	---	---	1.9
All Hours	16,272	5	3.1	66.3	---	1.4	---	---	---	---	---	3.4

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

EDWARDS AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

JUNE														
Hours	Number of Observations	Visibility <2000 Ft and/or Ceilings <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Precipitation (Thunder (With or Without Precipitation))	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-00	2,062	1.0	86.4	—	.4	—	—	—	.4	—	.7	—	.4	1.1
03-05	2,113	.8	82.1	—	.4	—	—	—	.4	.0	.6	—	.2	.8
06-08	2,135	1.1	72.5	—	.3	—	—	—	.3	—	.7	—	.2	1.0
09-11	2,139	1.1	71.5	—	.1	—	—	—	.1	.3	.3	—	.4	.7
12-14	2,138	1.5	68.4	—	.5	—	—	—	.5	.1	.1	—	.7	1.8
15-17	2,139	1.9	69.0	—	.5	—	—	—	.5	.9	.9	—	1.0	3.8
18-20	2,090	2.1	74.2	—	.2	—	—	—	.2	1.0	1.0	—	1.1	2.1
21-23	2,065	1.1	83.1	—	.4	—	—	—	.4	—	.4	—	.5	1.0
All Hours	16,881	1.7	75.5	.0	.4	—	—	—	.4	.0	.6	—	.9	1.5

MAY														
Hours	Number of Observations	Visibility <2000 Ft and/or Ceilings <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Precipitation (Thunder (With or Without Precipitation))	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-00	2,062	1.0	86.4	—	.4	—	—	—	.4	—	.7	—	.4	1.1
03-05	2,113	.8	82.1	—	.4	—	—	—	.4	.0	.6	—	.2	.8
06-08	2,135	1.1	72.5	—	.3	—	—	—	.3	—	.7	—	.2	1.0
09-11	2,139	1.1	71.5	—	.1	—	—	—	.1	.3	.3	—	.4	.7
12-14	2,138	1.5	68.4	—	.5	—	—	—	.5	.1	.1	—	.7	1.8
15-17	2,139	1.9	69.0	—	.5	—	—	—	.5	.9	.9	—	1.0	3.8
18-20	2,090	2.1	74.2	—	.2	—	—	—	.2	1.0	1.0	—	1.1	2.1
21-23	2,065	1.1	83.1	—	.4	—	—	—	.4	—	.4	—	.5	1.0
All Hours	16,881	1.7	75.5	.0	.4	—	—	—	.4	.0	.6	—	.9	1.5

AUGUST														
Hours	Number of Observations	Visibility <2000 Ft and/or Ceilings <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Precipitation (Thunder (With or Without Precipitation))	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-00	2,112	1.1	93.1	—	.2	—	—	—	.2	—	.1	—	—	.2
03-05	2,130	1.1	89.0	—	.1	—	—	—	.1	.2	.2	—	—	.4
06-08	2,136	1.4	81.0	—	.2	—	—	—	.2	.1	.5	—	—	.6
09-11	2,138	1.1	84.9	—	.2	—	—	—	.2	.5	.1	—	—	.7
12-14	2,139	1.1	83.5	—	.4	—	—	—	.4	.7	.7	—	—	1.1
15-17	2,137	1.3	82.1	—	.5	—	—	—	.5	.5	.5	—	—	.8
18-20	2,138	1.1	86.3	—	.3	—	—	—	.3	.2	.2	—	—	.7
21-23	2,110	1.1	91.4	—	.1	—	—	—	.1	—	.4	—	—	.4
All Hours	17,040	1.2	86.7	.2	.4	—	—	—	.4	.0	.3	—	—	1.4

JULY														
Hours	Number of Observations	Visibility <2000 Ft and/or Ceilings <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Precipitation (Thunder (With or Without Precipitation))	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-00	2,123	1.2	91.0	—	.2	—	—	—	.2	—	.2	—	—	.2
03-05	2,139	1.4	87.0	—	.1	—	—	—	.1	.5	.5	—	—	.5
06-08	2,137	1.3	82.7	—	.1	—	—	—	.1	.3	.3	—	—	.3
09-11	2,136	1.1	83.1	—	.1	—	—	—	.1	.1	.1	—	—	.1
12-14	2,136	1.2	79.3	—	.3	—	—	—	.3	.7	.7	—	—	.7
15-17	2,138	1.4	77.9	—	.6	—	—	—	.6	.5	.5	—	—	.6
18-20	2,130	1.3	84.7	—	.1	—	—	—	.1	.3	.3	—	—	.3
21-23	2,126	1.1	91.2	—	.1	—	—	—	.1	—	.1	—	—	.1
All Hours	17,056	1.3	84.5	.1	.3	—	—	—	.3	.3	.3	—	—	.3

0.0 indicates that the condition has occurred less than 0.06 percent of the time, but more than 0.00 percent of the time.
 — indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

EDWARDS AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

OCTOBER															
Hours	Number of Observations	Observations < 2000 Ft. msl/or Visibility < 3 MI.	Observations < 4000 Ft. msl/or Visibility < 6 MI.	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Deposited)	Total Occurrences of Disturbances to Vision
00-00	1,979	3	4	8	6	9	6	1	1	6	2	1	1	1	3
00-05	2,040	3	5	9	6	9	6	1	1	6	2	1	1	1	3
05-10	2,067	3	5	9	6	9	6	1	1	6	2	1	1	1	3
10-15	2,070	3	5	9	6	9	6	1	1	6	2	1	1	1	3
15-20	2,068	3	5	9	6	9	6	1	1	6	2	1	1	1	3
20-25	2,070	3	5	9	6	9	6	1	1	6	2	1	1	1	3
25-30	2,067	3	5	9	6	9	6	1	1	6	2	1	1	1	3
30-35	1,977	3	4	8	6	9	6	1	1	6	2	1	1	1	3
All Hours	16,340	3	5	9	6	9	6	1	1	6	2	1	1	1	3

SEPTEMBER															
Hours	Number of Observations	Observations < 2000 Ft. msl/or Visibility < 3 MI.	Observations < 4000 Ft. msl/or Visibility < 6 MI.	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Deposited)	Total Occurrences of Disturbances to Vision
00-00	1,979	3	4	8	6	9	6	1	1	6	2	1	1	1	3
00-05	2,040	3	5	9	6	9	6	1	1	6	2	1	1	1	3
05-10	2,067	3	5	9	6	9	6	1	1	6	2	1	1	1	3
10-15	2,070	3	5	9	6	9	6	1	1	6	2	1	1	1	3
15-20	2,068	3	5	9	6	9	6	1	1	6	2	1	1	1	3
20-25	2,070	3	5	9	6	9	6	1	1	6	2	1	1	1	3
25-30	2,067	3	5	9	6	9	6	1	1	6	2	1	1	1	3
30-35	1,977	3	4	8	6	9	6	1	1	6	2	1	1	1	3
All Hours	16,340	3	5	9	6	9	6	1	1	6	2	1	1	1	3

DECEMBER															
Hours	Number of Observations	Observations < 2000 Ft. msl/or Visibility < 3 MI.	Observations < 4000 Ft. msl/or Visibility < 6 MI.	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Deposited)	Total Occurrences of Disturbances to Vision
00-00	2,172	14	18	21	11	15	12	1	1	11	10	7	1	2	20
00-05	2,136	15	19	22	12	16	13	1	1	12	11	7	1	2	25
05-10	2,139	15	19	22	12	16	13	1	1	12	11	7	1	2	25
10-15	2,139	15	19	22	12	16	13	1	1	12	11	7	1	2	25
15-20	2,139	15	19	22	12	16	13	1	1	12	11	7	1	2	25
20-25	2,139	15	19	22	12	16	13	1	1	12	11	7	1	2	25
25-30	2,136	14	18	21	11	15	12	1	1	11	10	7	1	2	20
All Hours	17,097	12	15	18	11	14	11	1	1	11	10	7	1	2	20

NOVEMBER															
Hours	Number of Observations	Observations < 2000 Ft. msl/or Visibility < 3 MI.	Observations < 4000 Ft. msl/or Visibility < 6 MI.	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Deposited)	Total Occurrences of Disturbances to Vision
00-00	2,070	2	3	6	1	1	1	1	1	1	1	1	1	1	1
00-05	2,067	2	3	6	1	1	1	1	1	1	1	1	1	1	1
05-10	2,070	2	3	6	1	1	1	1	1	1	1	1	1	1	1
10-15	2,068	2	3	6	1	1	1	1	1	1	1	1	1	1	1
15-20	2,068	2	3	6	1	1	1	1	1	1	1	1	1	1	1
20-25	2,069	2	3	6	1	1	1	1	1	1	1	1	1	1	1
25-30	2,068	2	3	6	1	1	1	1	1	1	1	1	1	1	1
All Hours	16,350	2	3	6	1	1	1	1	1	1	1	1	1	1	1

ANNUAL															
Hours	Number of Observations	Observations < 2000 Ft. msl/or Visibility < 3 MI.	Observations < 4000 Ft. msl/or Visibility < 6 MI.	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Deposited)	Total Occurrences of Disturbances to Vision
All Hours	168,371	6	8	13	1	1	1	1	1	1	1	1	1	1	1

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

EDWARDS AFB WIND ROSES

JANUARY

Dir.	Speed in Knots					Total	Mean Wind Speed		
	0-3	4-6	7-10	11-16	17-21				
	2.4	17.7	4	1	1	4.7	2.3		
N	1.5	14.4	3	2	1	5.0	2.5		
NE	1.7	16.4	5	3	1	2.2	7.0		
E	1.2	7.6	4	1	0	3.9	4.3		
SE	1.0	3	1	1	0	1.5	4.0		
S	1.6	2	1	0	0	3.0	4.7		
SW	1.2	11.1	9	15	0	3.8	6.7		
W	2.5	22.2	23	19	1	9.8	13.2		
NW	2.1	19	21	23	11	10.3	10.0		
Wind	1.2	14	9	13	8	4.3	6.7		
WAVEL	1.1	1	3	1	1	2.3	5.0		
CALM	28.1					28.1			
TOT	50.7	17.3	12.9	10.9	5.8	2.1	.3	100.0	5.7
TOTAL NUMBER OF OBSERVATIONS							1783		

FEBRUARY

Dir.	Speed in Knots					Total	Mean Wind Speed		
	0-3	4-6	7-10	11-16	17-21				
	1.3	11.1	4	2	1	3.0	5.2		
N	1.3	11.1	4	2	1	3.0	5.2		
NE	1.3	11.1	4	2	1	3.0	5.2		
E	1.3	11.1	4	2	1	3.0	5.2		
SE	1.3	11.1	4	2	1	3.0	5.2		
S	1.3	11.1	4	2	1	3.0	5.2		
SW	1.3	11.1	4	2	1	3.0	5.2		
W	1.3	11.1	4	2	1	3.0	5.2		
NW	1.3	11.1	4	2	1	3.0	5.2		
Wind	1.3	11.1	4	2	1	3.0	5.2		
WAVEL	1.3	11.1	4	2	1	3.0	5.2		
CALM	23.4					23.4			
TOT	41.1	17.1	17.2	14.9	6.8	2.5	.3	100.0	6.8
TOTAL NUMBER OF OBSERVATIONS							1654		

MARCH

Dir.	Speed in Knots					Total	Mean Wind Speed		
	0-3	4-6	7-10	11-16	17-21				
	1.9	9	5	1	1	2.5	5.5		
N	1.9	9	5	1	1	2.5	5.5		
NE	1.4	16	4	1	0	2.6	6.5		
E	1.6	13	5	1	0	2.6	8.3		
SE	1.8	16	7	3	0	2.5	6.4		
S	1.3	1	1	1	0	1.3	5.4		
SW	1.3	1	1	1	0	1.3	5.4		
W	1.9	19	18	12	2	8.8	5.0		
NW	1.5	2.8	4.9	4.4	2.1	5.6	8.4		
Wind	1.0	1.8	4.3	2.5	3.2	15.8	11.2		
WAVEL	1.6	1.9	1.6	2.7	1.8	11.6	12.8		
WAVEL	1.6	1.9	1.6	2.7	1.8	11.6	12.8		
CALM	12.8					12.8			
TOT	25.3	15.7	21.6	20.6	11.1	4.8	.8	100.0	9.3
TOTAL NUMBER OF OBSERVATIONS							1771		

APRIL

Dir.	Speed in Knots					Total	Mean Wind Speed		
	0-3	4-6	7-10	11-16	17-21				
	7	4	2	1	0	14	4.9		
N	7	4	2	1	0	14	4.9		
NE	7	4	2	1	0	14	4.9		
E	7	4	2	1	0	14	4.9		
SE	7	4	2	1	0	14	4.9		
S	7	4	2	1	0	14	4.9		
SW	7	4	2	1	0	14	4.9		
W	7	4	2	1	0	14	4.9		
NW	7	4	2	1	0	14	4.9		
Wind	7	4	2	1	0	14	4.9		
WAVEL	7	4	2	1	0	14	4.9		
CALM	11.3					11.3			
TOT	21.3	13.4	21.2	21.3	13.2	4.9	.7	100.0	10.0
TOTAL NUMBER OF OBSERVATIONS							1670		

LANGLEY AFB
HAMPTON, VIRGINIA
(Lat. 37°05'N, Long. 76°22'W, Elev. 13 ft)

Langley A.F.B., located five miles north of Hampton, Virginia, is on a peninsula flanked by the James and York Rivers, both of which flow into Chesapeake Bay.

Overall, climatic conditions are quite moderate in the Langley area. Much of this moderation comes as a result of the station's proximity to the waters of Chesapeake Bay and the Atlantic Ocean. Most middle-latitude cyclones move well north of Langley, and most tropical storms and hurricanes move out to sea before reaching the Virginia coast.

Precipitation is distributed quite evenly throughout the year. About half of the average annual total of 42 inches falls in the form of air-mass showers and thundershowers. The remainder of the precipitation occurs in connection with passing frontal systems. During the winter months some of this precipitation falls as snow. Snowfall is generally light and of short duration.

The presence of water, both in the liquid and vapor states, holds temperature variations to a minimal level. Very seldom do temperatures exceed 100°F., and for a 28-year period of record (October 1936 through May 1964, except January 1937) no temperatures below 0°F. were recorded. While the presence of water helps to moderate temperatures, the water vapor adds to the discomfort associated with the temperature extremes.

Ceilings and visibilities at Langley are reduced because of its proximity to industrial areas, population centers, and the ocean. From these come the primary visibility obstructions of smoke, fog, and haze.

The following data, except for the Temperature and Precipitation Summary, are based on twenty-four hourly observations per day from October 1936 through May 1964, except January 1937.

LANGLEY AFB, VIRGINIA
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	48.1	50.4	57.3	67.3	75.8	83.4	86.5	85.1	79.3	70.0	60.1	49.8	67.7
Monthly Mean Minimum Temperature	32.4	33.9	39.9	48.9	58.7	67.1	71.2	70.4	65.1	54.1	42.7	33.9	51.5
Monthly Mean Temperature	40.3	42.2	48.6	58.2	67.3	75.3	78.9	77.8	72.2	62.1	51.5	41.9	59.7

Period of Record: 1936 - 1964

Absolute Maximum Temperature: +103°F

Absolute Minimum Temperature: +5°F

Period of Record: Oct. 36 - May 64; Except Jan. 37

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	3.04	3.46	3.43	2.78	3.46	3.45	4.86	4.94	3.95	3.21	3.02	2.66	42.28
Monthly Mean Snowfall	2.9	2.7	1.7	T	T	0.0	0.0	T	0.0	0.0	.1	2.1	9.5

Period of Record: 1946 - 1964

Wind (Knots)

Peak Gust: S 83 Knots (October 1954)

Period of Record: 1946 - 1964

LANGLEY AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

FEBRUARY

Hours	Number of Observations	Callings <2000 Ft. msl/or Visibility <3 Mi.	Callings <4000 Ft. msl/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mill	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Suspended)	Total Occurrences of Obstructions to Vision
00-00	2,372	19.0	57.7	14.9	.2	11.1	.1	1.9	---	12.9	17.4	14.0	---	---	30.4
01-05	2,070	19.3	57.1	14.5	.1	11.0	.0	2.0	---	12.9	17.7	12.5	---	---	29.2
06-10	2,372	24.0	42.6	34.2	.2	11.6	.3	1.8	---	13.5	20.7	20.8	---	---	36.7
11-15	2,372	20.7	58.5	33.3	.0	11.0	.1	1.3	---	12.3	15.0	22.3	---	---	35.9
16-20	2,372	17.3	58.0	34.0	.1	12.0	.0	1.3	---	13.2	18.0	15.6	---	---	31.5
21-23	2,373	18.0	54.2	36.8	---	13.1	---	2.2	---	14.6	13.4	18.2	---	---	31.4
All Hours	2,371	17.9	55.8	34.2	.1	11.9	.0	1.6	---	12.5	16.9	18.9	.1	---	32.7

JANUARY

Hours	Number of Observations	Callings <2000 Ft. msl/or Visibility <3 Mi.	Callings <4000 Ft. msl/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mill	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Suspended)	Total Occurrences of Obstructions to Vision
00-00	2,597	19.0	57.8	14.4	.0	10.4	.2	2.2	---	12.5	18.3	16.0	.1	---	32.7
01-05	2,597	20.8	57.8	14.2	.0	11.6	.2	2.8	---	14.2	19.1	14.2	.2	---	31.8
06-10	2,599	26.3	54.4	34.5	.1	10.6	.3	2.5	.0	13.2	21.0	21.7	.6	---	41.8
11-15	2,596	24.6	52.9	36.9	---	10.4	.2	2.9	---	13.0	18.0	23.1	.6	---	41.5
16-20	2,599	18.9	55.2	31.3	.0	9.7	.1	2.2	---	11.7	18.9	20.7	.1	---	32.6
21-23	2,599	18.6	53.9	32.2	---	10.4	.2	2.1	---	12.5	18.4	22.2	.1	---	33.7
All Hours	2,597	19.6	56.5	30.8	.0	10.1	.2	2.5	---	12.6	18.7	21.4	.1	---	37.0

APRIL

Hours	Number of Observations	Callings <2000 Ft. msl/or Visibility <3 Mi.	Callings <4000 Ft. msl/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mill	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Suspended)	Total Occurrences of Obstructions to Vision
00-00	2,590	13.2	26.0	48.5	.3	10.2	---	.0	---	10.2	12.1	10.5	---	---	21.9
01-05	2,590	16.3	30.1	46.5	.2	10.2	---	.0	---	10.2	13.4	10.6	---	---	24.4
06-10	2,590	19.0	33.7	33.6	.3	11.0	---	.1	---	11.1	15.0	15.6	---	---	28.8
11-15	2,590	19.1	27.0	33.6	.2	8.5	---	.2	---	8.7	8.7	11.0	---	---	19.2
16-20	2,519	11.9	25.0	31.0	.2	8.6	---	.1	---	8.7	5.6	10.4	---	---	15.9
21-23	2,590	11.5	22.6	29.8	1.3	9.4	---	.1	---	9.4	6.6	10.1	---	---	16.6
All Hours	2,590	11.8	23.5	36.1	1.0	8.9	---	.1	---	8.9	8.7	13.1	---	---	21.5

MARCH

Hours	Number of Observations	Callings <2000 Ft. msl/or Visibility <3 Mi.	Callings <4000 Ft. msl/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain msl/or Drizzle	Freezing Rain msl/or Freezing Drizzle	Snow msl/or Sleet	Mill	Total Occurrences of Precipitation	Fog	Smoke msl/or Haze	Blowing Snow	Dust (Blowing msl/or Suspended)	Total Occurrences of Obstructions to Vision
00-00	2,604	18.0	58.7	17.6	.8	10.0	---	1.1	.0	10.9	13.4	12.0	.0	---	24.0
01-05	2,604	18.2	56.3	16.2	.2	11.4	.1	1.1	---	12.3	14.9	12.1	.1	---	29.7
06-10	2,604	21.4	58.8	36.4	.2	12.1	.1	1.2	---	13.0	17.9	18.6	.0	---	34.8
11-15	2,601	17.2	31.7	33.7	.1	11.3	.1	1.2	.0	12.3	18.1	14.8	.1	---	26.3
16-20	2,597	13.7	27.6	29.0	.0	10.6	---	1.2	.0	11.3	9.2	11.2	.2	.2	20.4
21-23	2,604	13.3	27.1	38.5	.3	11.1	---	1.2	---	12.0	9.9	12.1	---	.3	22.2
All Hours	2,604	13.4	27.9	31.5	.6	11.0	---	1.2	---	12.0	11.3	14.2	---	.1	23.0

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

LANGLEY AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

MAY															
Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,604	18.1	27.6	46.7	1.0	8.8	---	---	---	8.8	12.0	10.6	---	0	22.0
03-05	2,604	17.7	33.8	37.5	7	8.5	---	---	---	8.5	18.7	11.7	---	0	28.6
06-08	2,604	19.4	32.1	30.3	2	7.6	---	---	---	7.6	15.3	13.6	---	0	27.3
09-11	2,604	14.5	25.5	31.2	1	6.2	---	---	---	6.2	6.1	11.7	---	0	17.4
12-14	2,601	10.3	22.9	28.5	5	6.5	---	---	---	6.5	4.3	9.4	---	0	13.6
15-17	2,604	10.1	21.3	31.0	1.7	7.1	---	---	---	7.1	4.6	11.2	---	0	15.7
18-20	2,603	10.7	25.0	32.9	2.5	8.6	---	---	---	8.6	7.1	13.9	---	1	20.8
21-23	2,602	12.6	25.9	33.5	2.6	9.3	---	---	---	9.3	9.1	12.0	---	0	20.8
All Hours	20,826	13.7	26.8	35.1	1.1	7.8	---	---	---	7.8	9.7	11.8	---	0	20.8

JULY															
Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,599	8.5	22.8	51.4	1.5	6.2	---	---	---	6.2	9.2	11.6	---	0	20.1
03-05	2,601	14.2	31.6	42.0	5	5.2	---	---	---	5.2	18.1	12.3	---	0	29.1
06-08	2,601	17.4	34.4	31.5	3	5.3	---	---	---	5.3	12.1	19.3	---	0	29.3
09-11	2,601	13.8	27.9	32.0	5	5.5	---	---	---	5.5	2.6	15.6	---	0	18.1
12-14	2,604	8.9	24.7	26.6	2.3	7.2	---	---	---	7.2	2.2	13.4	---	0	15.6
15-17	2,602	7.6	22.8	29.2	4.6	9.1	---	---	---	9.1	3.1	14.8	---	1	18.0
18-20	2,602	7.1	24.1	30.4	5.0	10.0	---	---	---	10.0	3.8	17.7	---	1	21.6
21-23	2,601	7.0	21.8	44.9	3.3	8.8	---	---	---	8.8	5.3	12.7	---	0	18.0
All Hours	20,811	10.6	26.3	35.9	2.2	7.2	---	---	---	7.2	7.0	14.7	---	0	21.2

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

LANGLEY AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

Hours	SEPTEMBER											OCTOBER										
	Number of Observations	Observations < 3 MI	Observations < 4000 FT and/or Visibility < 3 MI	Cloud Cover < 3/10	Thunder (With or Without Precipitation)	Winds and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	hail	Total Precipitation	Fog	Winds and/or Haze	Blowing Snow	Days (Blowing and/or Drizzle)	Total Occurrences of (Grouped)	Total Occurrences of Observations						
00-00	2,319	18.2	36.3	55.8	.3	9.3	---	---	---	---	---	---	---	---	9.3	17.8						
00-05	2,691	28.6	38.3	58.8	.4	9.6	---	---	---	---	---	---	---	---	9.6	28.4						
05-10	2,693	27.7	46.6	61.7	.0	8.8	---	---	---	---	---	---	---	---	8.8	27.6						
10-15	2,694	19.5	31.6	48.6	.0	9.0	---	---	---	---	---	---	---	---	9.0	19.8						
15-20	2,694	18.6	27.5	41.2	.2	8.5	---	---	---	---	---	---	---	---	8.5	17.1						
20-25	2,694	13.2	26.6	41.5	.1	7.9	---	---	---	---	---	---	---	---	7.9	13.8						
25-30	2,692	13.5	28.3	49.3	.3	8.8	---	---	---	---	---	---	---	---	8.8	13.8						
30-35	2,693	15.3	30.6	52.8	.4	8.9	---	---	---	---	---	---	---	---	8.9	13.8						
All Hours	21,945	18.1	31.2	47.2	.2	8.8	---	---	---	---	---	---	---	---	8.8	18.0						

Hours	NOVEMBER											DECEMBER										
	Number of Observations	Observations < 3 MI	Observations < 4000 FT and/or Visibility < 3 MI	Cloud Cover < 3/10	Thunder (With or Without Precipitation)	Winds and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	hail	Total Precipitation	Fog	Winds and/or Haze	Blowing Snow	Days (Blowing and/or Drizzle)	Total Occurrences of (Grouped)	Total Occurrences of Observations						
00-00	2,696	16.3	30.0	52.5	.0	9.6	---	---	---	---	---	---	---	---	9.6	16.2						
00-05	2,695	17.7	31.2	51.9	---	11.0	---	---	---	---	---	---	---	---	11.0	18.4						
05-10	2,695	28.3	39.7	59.9	---	10.5	---	---	---	---	---	---	---	---	10.5	22.7						
10-15	2,696	19.8	37.3	57.5	.0	10.3	---	---	---	---	---	---	---	---	10.3	16.8						
15-20	2,697	16.3	29.6	46.6	---	10.1	---	---	---	---	---	---	---	---	10.1	12.8						
20-25	2,697	15.9	31.1	57.7	.0	9.8	---	---	---	---	---	---	---	---	9.8	12.3						
25-30	2,695	16.1	30.5	46.5	.0	10.9	---	---	---	---	---	---	---	---	10.9	12.4						
30-35	2,696	16.3	29.9	50.2	---	9.4	---	---	---	---	---	---	---	---	9.4	14.2						
All Hours	21,947	17.6	30.7	45.9	.0	10.2	---	---	---	---	---	---	---	---	10.2	15.6						

Hours	ANNUAL															
	Number of Observations	Observations < 3 MI	Observations < 4000 FT and/or Visibility < 3 MI	Cloud Cover < 3/10	Thunder (With or Without Precipitation)	Winds and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	hail	Total Precipitation	Fog	Winds and/or Haze	Blowing Snow	Days (Blowing and/or Drizzle)	Total Occurrences of (Grouped)	Total Occurrences of Observations
All Hours	246,731	15.3	30.7	39.7	.7	9.0	---	---	---	---	---	---	---	---	9.0	16.2

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

LANGLEY AFB WIND ROSES

JANUARY

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	.6	1.2	3.0	3.6	1.8	12.2	13.6
NNE	.5	1.2	2.2	1.7	.8	7.4	12.0
NE	.5	1.0	1.8	1.3	.5	5.1	11.0
ENE	.4	.6	1.2	1.0	.4	3.9	8.3
E	.4	.6	1.2	1.0	.4	3.9	8.3
ESE	.4	.6	1.2	1.0	.4	3.9	8.3
SE	.4	.6	1.2	1.0	.4	3.9	8.3
SSE	.4	.6	1.2	1.0	.4	3.9	8.3
S	.4	.6	1.2	1.0	.4	3.9	8.3
SSW	.4	.6	1.2	1.0	.4	3.9	8.3
SW	.4	.6	1.2	1.0	.4	3.9	8.3
WSW	.4	.6	1.2	1.0	.4	3.9	8.3
W	.4	.6	1.2	1.0	.4	3.9	8.3
WNW	.4	.6	1.2	1.0	.4	3.9	8.3
NW	.4	.6	1.2	1.0	.4	3.9	8.3
NNW	.4	.6	1.2	1.0	.4	3.9	8.3
WINDY							
CALM							
TOT	18.2	16.3	29.4	23.2	9.0	3.3	6
							100.0
							507L

FEBRUARY

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	.5	1.4	3.0	3.5	1.8	11.0	11.1
NNE	.5	1.3	2.7	2.5	1.0	8.0	11.0
NE	.6	1.0	1.2	1.1	.4	4.3	8.4
ENE	.6	.8	1.0	1.0	.4	3.8	7.0
E	.6	.8	1.0	1.0	.4	3.8	7.5
ESE	.6	.8	1.0	1.0	.4	3.8	8.0
SE	.6	.8	1.0	1.0	.4	3.8	9.0
SSE	.6	.8	1.0	1.0	.4	3.8	10.9
S	.6	.8	1.0	1.0	.4	3.8	13.0
SSW	.6	.8	1.0	1.0	.4	3.8	13.2
SW	.6	.8	1.0	1.0	.4	3.8	13.2
WSW	.6	.8	1.0	1.0	.4	3.8	13.2
W	.6	.8	1.0	1.0	.4	3.8	13.2
WNW	.6	.8	1.0	1.0	.4	3.8	13.2
NW	.6	.8	1.0	1.0	.4	3.8	13.2
NNW	.6	.8	1.0	1.0	.4	3.8	13.2
WINDY							
CALM							
TOT	15.7	16.0	29.0	23.2	10.0	4.6	8
							100.0
							1077B

MARCH

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	.3	.8	2.3	3.0	2.0	9.5	13.6
NNE	.3	.8	2.3	3.0	2.0	9.5	13.6
NE	.3	.8	2.3	3.0	2.0	9.5	13.6
ENE	.3	.8	2.3	3.0	2.0	9.5	13.6
E	.3	.8	2.3	3.0	2.0	9.5	13.6
ESE	.3	.8	2.3	3.0	2.0	9.5	13.6
SE	.3	.8	2.3	3.0	2.0	9.5	13.6
SSE	.3	.8	2.3	3.0	2.0	9.5	13.6
S	.3	.8	2.3	3.0	2.0	9.5	13.6
SSW	.3	.8	2.3	3.0	2.0	9.5	13.6
SW	.3	.8	2.3	3.0	2.0	9.5	13.6
WSW	.3	.8	2.3	3.0	2.0	9.5	13.6
W	.3	.8	2.3	3.0	2.0	9.5	13.6
WNW	.3	.8	2.3	3.0	2.0	9.5	13.6
NW	.3	.8	2.3	3.0	2.0	9.5	13.6
NNW	.3	.8	2.3	3.0	2.0	9.5	13.6
WINDY							
CALM							
TOT	12.0	15.1	30.9	26.4	10.4	4.4	16
							100.0
							505-3

APRIL

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	.4	.6	1.9	6.3	1.6	11.8	11.9
NNE	.4	.6	1.9	6.3	1.6	11.8	11.9
NE	.4	.6	1.9	6.3	1.6	11.8	11.9
ENE	.4	.6	1.9	6.3	1.6	11.8	11.9
E	.4	.6	1.9	6.3	1.6	11.8	11.9
ESE	.4	.6	1.9	6.3	1.6	11.8	11.9
SE	.4	.6	1.9	6.3	1.6	11.8	11.9
SSE	.4	.6	1.9	6.3	1.6	11.8	11.9
S	.4	.6	1.9	6.3	1.6	11.8	11.9
SSW	.4	.6	1.9	6.3	1.6	11.8	11.9
SW	.4	.6	1.9	6.3	1.6	11.8	11.9
WSW	.4	.6	1.9	6.3	1.6	11.8	11.9
W	.4	.6	1.9	6.3	1.6	11.8	11.9
WNW	.4	.6	1.9	6.3	1.6	11.8	11.9
NW	.4	.6	1.9	6.3	1.6	11.8	11.9
NNW	.4	.6	1.9	6.3	1.6	11.8	11.9
WINDY							
CALM							
TOT	12.0	15.0	34.9	46.7	9.1	3.2	16
							100.0
							5057

PATRICK AFB
COCOA BEACH, FLORIDA
(Lat. 28°14'N, Long. 80°36'W, Elev. 9 ft)

Located on a narrow strip of land, Patrick A.F.B. is separated from the central coast of Florida by the Banana River. Fifteen miles to the north and located on the same strip of land is the Cape Kennedy Space Complex.

The climatic characteristics of the station reflect the maritime influences of the nearby Atlantic Ocean. During the summer months, temperatures may reach 90°F. and above by late morning or early afternoon. The diurnal persistence of such temperatures is terminated either by afternoon sea breezes or convective thundershowers. These two phenomena generally return temperatures to the low eighties.

Rainfall amounts are highest during the months from June through October. Most of the rainfall occurs in the form of air-mass thundershowers. Occasionally these thundershowers are accompanied by strong gusty winds. Hail rarely occurs with these heavier storms.

Though Patrick A.F.B. lies in the hurricane belt, it is not plagued with numerous or frequent occurrences of such storms. Hurricanes and tropical storms often pass within several hundred miles of the base. Very seldom, however, does the base experience winds of hurricane force.

In general, ceiling and visibility values are lowest during the winter and early spring. Low ceilings occur with frontal passages, and fog causes poor visibilities. Most fog is of the radiation type. Rarely does sea fog occur, but when it does it is likely to persist for several days. There are few sources of air pollution in the area, therefore, smoke is no real problem as an obstruction to visibility.

The following data, except for the Temperature and Precipitation Summary, are based on twenty-four hourly observations per day from February 1950 through November 1964.

PATRICK AFB
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	68.9	70.7	73.9	77.8	82.1	85.5	86.6	87.4	85.9	81.3	75.2	69.8	78.7
Monthly Mean Minimum Temperature	54.5	57.1	60.4	65.7	71.0	74.2	75.6	76.7	76.5	71.7	63.4	56.1	66.9
Monthly Mean Temperature	61.9	64.1	67.4	72.0	76.8	80.1	81.3	82.3	81.4	76.7	69.5	63.1	73.0

Period of Record: 1950 - 1964

Absolute Maximum Temperature: +97°F

Absolute Minimum Temperature: +27°F

Period of Record: Feb. 1950 - May 1964

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	2.29	2.94	3.82	2.68	2.99	4.48	3.56	4.82	8.36	6.03	2.53	1.61	46.11
Monthly Mean Snowfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Period of Record: Feb. 1950 - May 1964

Wind (Knots)

Peak Gust: SSE 64 Knots (September 1960)

Period of Record: 1958 - 1964

PATRICK AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

JANUARY

Hours	Number of Observations	Callings <2000 Ft. msl./or Visibility <3 M.	Callings <4000 Ft. msl./or Visibility <6 M.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain msl./or Drizzle	Freezing Rain msl./or Freezing Drizzle	Snow msl./or Sleet	Ball	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Data (Blowing msl./or Suspended)	Total Occurrences of Observations to Vision
00-00	1,269	7.5	18.1	37.5	2	5.9	---	---	---	5.9	6.7	1.7	---	---	7.1
00-05	1,269	11.2	23.2	55.5	2	5.8	---	---	---	5.8	10.6	1.6	---	---	11.3
05-10	1,272	13.7	28.3	58.4	2	6.6	---	---	---	6.6	14.2	2.0	---	---	15.8
10-15	1,272	12.4	22.4	56.9	2	6.4	---	---	---	6.4	5.7	2.4	---	---	7.9
15-20	1,272	7.4	17.5	58.0	1	6.1	---	---	---	6.1	1.8	1.3	---	---	5.5
20-25	1,272	6.3	16.1	57.4	4	6.2	---	---	---	6.2	2.0	1.7	---	---	5.7
25-30	1,269	6.1	14.0	49.0	3	6.2	---	---	---	6.2	2.9	2.0	---	---	8.9
30-35	1,271	7.1	15.6	55.8	6	6.9	---	---	---	6.9	3.5	1.6	---	---	8.8
All Hours	10,166	8.9	19.4	46.3	3	6.3	---	---	---	6.3	5.9	1.8	---	---	7.4

FEBRUARY

Hours	Number of Observations	Callings <2000 Ft. msl./or Visibility <3 M.	Callings <4000 Ft. msl./or Visibility <6 M.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain msl./or Drizzle	Freezing Rain msl./or Freezing Drizzle	Snow msl./or Sleet	Ball	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Data (Blowing msl./or Suspended)	Total Occurrences of Observations to Vision
00-02	1,390	1.4	9.3	58.8	2	3.2	---	---	---	3.2	2.3	0	---	---	3.1
02-05	1,390	3.7	9.9	57.6	1	2.7	---	---	---	2.7	4.2	1.5	---	---	6.7
05-08	1,390	6.4	14.5	58.0	3	2.8	---	---	---	2.8	4.8	1.8	---	---	11.4
08-11	1,389	5.5	11.9	41.3	6	2.4	---	---	---	2.4	1.1	1.2	---	---	8.4
11-14	1,390	2.1	11.2	40.3	1.0	4.0	---	---	---	4.0	3	1.3	---	---	11.6
14-17	1,390	2.0	9.6	37.8	1.6	4.7	---	---	---	4.7	5	1.3	---	---	11.9
17-20	1,390	1.6	9.1	39.9	1.6	4.7	---	---	---	4.7	3	1.9	---	---	11.1
20-23	1,390	1.9	7.7	51.5	1.6	4.4	---	---	---	4.4	0	0	---	---	11.6
All Hours	10,799	3.1	10.4	44.1	9	3.6	---	---	---	3.6	1.8	1.8	---	---	10.0

MARCH

Hours	Number of Observations	Callings <2000 Ft. msl./or Visibility <3 M.	Callings <4000 Ft. msl./or Visibility <6 M.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain msl./or Drizzle	Freezing Rain msl./or Freezing Drizzle	Snow msl./or Sleet	Ball	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Data (Blowing msl./or Suspended)	Total Occurrences of Observations to Vision
00-02	1,385	5.2	11.1	57.4	6	5.9	---	---	---	5.9	2.7	1.6	---	---	8.2
02-05	1,385	7.2	16.4	55.5	8	5.0	---	---	---	5.0	5.5	1.7	---	---	11.0
05-08	1,385	11.8	22.2	58.2	4	4.2	---	---	---	4.2	9.2	2.7	---	---	15.1
08-11	1,385	8.7	19.3	56.0	5	4.7	---	---	---	4.7	2.6	1.7	---	---	13.4
11-14	1,385	4.8	10.2	34.9	1.0	5.6	---	---	---	5.6	0	0	---	---	11.4
14-17	1,385	4.1	13.4	34.0	1.3	6.6	---	---	---	6.6	1.5	1.1	---	---	13.0
17-20	1,385	3.3	9.9	42.0	1.9	6.6	---	---	---	6.6	1.6	1.6	---	---	13.5
20-23	1,385	3.7	9.1	50.3	1.3	5.9	---	---	---	5.9	2.0	1.1	---	---	12.1
All Hours	11,160	6.1	14.9	44.3	1.0	5.6	---	---	---	5.6	3.3	1.4	---	---	14.7

APRIL

Hours	Number of Observations	Callings <2000 Ft. msl./or Visibility <3 M.	Callings <4000 Ft. msl./or Visibility <6 M.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain msl./or Drizzle	Freezing Rain msl./or Freezing Drizzle	Snow msl./or Sleet	Ball	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Data (Blowing msl./or Suspended)	Total Occurrences of Observations to Vision
00-02	1,390	1.4	9.3	58.8	2	3.2	---	---	---	3.2	2.3	0	---	---	3.1
02-05	1,390	3.7	9.9	57.6	1	2.7	---	---	---	2.7	4.2	1.5	---	---	6.7
05-08	1,390	6.4	14.5	58.0	3	2.8	---	---	---	2.8	4.8	1.8	---	---	11.4
08-11	1,389	5.5	11.9	41.3	6	2.4	---	---	---	2.4	1.1	1.2	---	---	8.4
11-14	1,390	2.1	11.2	40.3	1.0	4.0	---	---	---	4.0	3	1.3	---	---	11.6
14-17	1,390	2.0	9.6	37.8	1.6	4.7	---	---	---	4.7	5	1.3	---	---	11.9
17-20	1,390	1.6	9.1	39.9	1.6	4.7	---	---	---	4.7	3	1.9	---	---	11.1
20-23	1,390	1.9	7.7	51.5	1.6	4.4	---	---	---	4.4	0	0	---	---	11.6
All Hours	10,799	3.1	10.4	44.1	9	3.6	---	---	---	3.6	1.8	1.8	---	---	10.0

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.

— indicates that the condition has occurred exactly 0.00 percent of the time. A blank indicates that the data are not available.

PATRICK AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

MAY															
Hours	Number of Observations	Ceilings <2000 Ft and/or Visibility <3 MI	Ceilings <1000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-00	1,395	1.6	4.9	6.2	.6	1.9	---	---	---	1.9	.6	.9	---	---	1.4
01-05	1,395	2.2	6.2	64.7	.3	1.6	---	---	---	1.6	.9	1.4	---	---	2.1
06-08	1,395	3.3	10.5	14.9	.3	2.5	---	---	---	2.5	1.4	3.9	---	---	4.9
09-11	1,395	2.2	9.8	39.5	.9	2.2	---	---	---	2.2	.3	3.2	---	---	3.4
12-14	1,395	2.5	10.9	41.2	2.3	3.5	---	---	---	3.5	.2	2.5	---	---	2.7
15-17	1,395	2.2	10.0	37.3	4.0	5.7	---	---	---	5.7	.1	2.7	---	---	2.8
18-20	1,395	1.8	9.5	33.4	4.1	6.4	---	---	---	6.4	.2	2.1	---	---	2.3
21-23	1,395	1.7	7.2	51.5	2.1	4.7	---	---	---	4.7	---	1.6	---	---	1.6
All Hours	11,160	2.2	8.6	47.3	1.8	3.6	---	---	---	3.6	.5	2.3	---	---	2.6

JULY															
Hours	Number of Observations	Ceilings <2000 Ft and/or Visibility <3 MI	Ceilings <1000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-00	1,395	.2	1.3	62.9	.2	.9	---	---	---	.9	.2	.9	---	---	1.1
01-05	1,395	.6	1.8	61.3	.2	.9	---	---	---	.9	.4	1.2	---	---	1.4
06-08	1,395	1.2	1.9	33.7	.1	1.0	---	---	---	1.0	.4	.3	---	---	.7
09-11	1,395	.8	4.2	24.4	.6	2.1	---	---	---	2.1	.1	---	---	---	1.1
12-14	1,395	1.6	10.0	17.9	8.6	6.6	---	---	---	6.6	.1	.2	---	---	3.3
15-17	1,395	2.7	10.6	19.8	12.7	10.1	---	---	---	10.1	.1	.3	---	---	4.4
18-20	1,395	1.3	6.7	23.5	7.2	9.2	---	---	---	9.2	.1	.2	---	---	3.3
21-23	1,395	.4	2.5	46.3	1.6	3.3	---	---	---	3.3	.1	---	---	---	1.1
All Hours	11,160	1.1	4.9	36.1	3.9	4.3	---	---	---	4.3	.2	.4	---	---	5.0

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.

— indicates that the condition has occurred exactly 0.00 percent of the time.

A blank indicates that the data are not available.

PATRICK AFB

Percentage Frequencies of Occurrence of Specified Weather Conditions

SEPTEMBER

Hours	Number of Observations	Observations < 3 MI	Observations < 5 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main and/or Drizzle	Freezing Main and/or Freezing Drizzle	Show and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-02	1,250	2.7	8.1	31.2	6	5.3	---	---	1	5.3	5	1.0	---	---	1.6
03-05	1,350	2.7	8.2	32.8	6	5.7	---	---	---	5.7	1.0	7	---	---	1.7
06-08	1,350	5.2	10.0	27.6	1.2	5.6	---	---	---	5.6	1.3	7	---	---	2.0
09-11	1,350	4.0	9.0	24.7	9	6.4	---	---	---	6.4	8	1.4	---	---	2.2
12-14	1,350	4.4	11.1	21.0	3.2	10.5	---	---	---	10.5	7	1.2	---	---	1.9
15-17	1,350	6.2	14.2	30.8	5.9	14.6	---	---	---	14.6	6	1.9	---	---	2.5
18-20	1,350	4.9	13.0	22.9	4.7	13.6	---	---	---	13.6	4	1.5	---	---	1.9
21-23	1,350	2.7	9.6	28.5	1.5	7.5	---	---	---	7.5	3	1.3	---	---	1.4
All Hours	10,740	4.3	10.8	28.4	2.3	9.6	---	---	0	9.6	7	1.2	---	---	1.9

OCTOBER

Hours	Number of Observations	Observations < 3 MI	Observations < 5 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main and/or Drizzle	Freezing Main and/or Freezing Drizzle	Show and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-02	1,350	4.2	11.7	36.1	3	6.9	---	---	---	6.9	7	5	---	---	1.4
03-05	1,350	4.5	13.0	35.1	3	6.8	---	---	---	6.8	9	6	---	---	1.5
06-08	1,350	7.1	16.9	30.5	2	6.8	---	---	---	6.8	2.9	1.5	---	---	2.2
09-11	1,350	8.2	14.3	36.4	1	5.9	---	---	---	5.9	8	1.4	---	---	2.1
12-14	1,350	5.4	16.3	38.3	9	7.5	---	---	---	7.5	3	1.7	---	---	2.1
15-17	1,350	5.2	14.6	38.6	1.9	9.2	---	---	---	9.2	8	1.7	---	---	1.9
18-20	1,350	4.7	13.5	36.7	1.0	9.0	---	---	---	9.0	4	2.0	---	---	2.4
21-23	1,350	3.0	13.9	36.4	7	7.8	---	---	---	7.8	3	1.1	---	---	1.4
All Hours	11,118	5.0	14.2	34.1	7	7.4	---	---	---	7.4	8	1.3	---	---	2.1

NOVEMBER

Hours	Number of Observations	Observations < 3 MI	Observations < 5 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main and/or Drizzle	Freezing Main and/or Freezing Drizzle	Show and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-02	1,450	7.4	13.6	35.1	5	7.4	---	---	---	7.4	9.2	5	---	---	3.1
03-05	1,450	7.3	16.8	35.1	4	5.0	---	---	---	5.0	5.3	8	---	---	6.1
06-08	1,350	6.1	18.4	30.5	3	3.4	---	---	---	3.4	5.7	1.0	---	---	4.4
09-11	1,350	6.8	15.0	36.4	---	3.2	---	---	---	3.2	2.3	1.2	---	---	1.5
12-14	1,350	5.3	13.6	35.3	3	3.4	---	---	---	3.4	5	7	---	---	1.3
15-17	1,350	5.3	13.2	32.6	4	4.4	---	---	---	4.4	2	1.3	---	---	1.5
18-20	1,350	4.1	11.1	36.7	7	3.7	---	---	---	3.7	4	1.5	---	---	1.9
21-23	1,350	4.1	12.5	34.1	4	3.6	---	---	---	3.6	7	5	---	---	1.2
All Hours	10,740	5.8	14.3	32.1	4	3.9	---	---	---	3.9	2.8	9	---	---	1.1

DECEMBER

Hours	Number of Observations	Observations < 3 MI	Observations < 5 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main and/or Drizzle	Freezing Main and/or Freezing Drizzle	Show and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-02	1,450	6.3	10.7	36.0	1	8.2	---	---	---	8.2	7.5	3.7	---	---	2.2
03-05	1,301	8.1	19.5	37.0	---	4.9	---	---	---	4.9	10.4	1.4	---	---	11.7
06-08	1,300	11.3	24.0	34.7	---	4.1	---	---	---	4.1	12.4	2.6	---	---	14.7
09-11	1,300	8.8	18.9	31.4	---	4.1	---	---	---	4.1	6.2	1.8	---	---	7.0
12-14	1,300	6.1	14.8	39.0	---	4.5	---	---	---	4.5	2.5	1.1	---	---	3.4
15-17	1,300	5.2	12.9	37.9	---	4.8	---	---	---	4.8	2.4	1.0	---	---	3.1
18-20	1,300	3.7	12.4	46.0	2	5.8	---	---	---	5.8	2.5	1.3	---	---	3.4
21-23	1,296	4.7	13.9	34.1	---	5.0	---	---	---	5.0	3.5	1.1	---	---	4.6
All Hours	10,405	6.8	16.9	37.0	0	4.6	---	---	---	4.6	5.9	1.5	---	---	7.2

ANNUAL

Hours	Number of Observations	Observations < 3 MI	Observations < 5 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main and/or Drizzle	Freezing Main and/or Freezing Drizzle	Show and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
All Hours	129,775	4.6	12.2	32.2	1.6	5.3	---	---	0	5.3	2.4	1.3	---	---	3.6

0.0 indicates that the condition has occurred less than 0.08 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

PATRICK AFB WIND ROSES

JANUARY

Dir.	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21		
N	5	2.8	4.4	3.9	1.1	13.2	10.3
NNE	1	1.6	1.8	1.1	1.1	5.7	9.6
NNE	1	1.6	1.8	1.1	1.1	5.7	9.6
E	3	1.0	1.9	1.1	1.1	7.3	8.9
ESE	3	1.4	1.5	1.2	1.0	7.5	8.7
E	3	1.4	1.5	1.2	1.0	7.5	8.7
SE	3	1.6	2.0	1.9	1.1	8.6	10.0
SSE	3	1.3	2.1	2.8	1.1	7.9	9.5
S	4	1.4	2.4	3.1	1.1	8.0	9.4
SSW	4	1.3	2.1	2.8	1.1	7.9	9.5
S	4	1.3	2.1	2.8	1.1	7.9	9.5
WSW	4	1.5	2.2	2.1	1.1	8.0	9.4
W	2	1.9	2.7	2.0	1.1	8.5	10.3
WNW	2	1.9	2.7	2.0	1.1	8.5	10.3
W	2	1.9	2.7	2.0	1.1	8.5	10.3
VARL	2	1.7	3.4	3.8	1.3	11.2	12.9
CALM	4.7					4.7	
TOT	10.4	22.7	34.8	24.6	6.7	84.4	93.3
TOTAL NUMBER OF OBSERVATIONS						10416	

FEBRUARY

Dir.	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21		
N	4	1.4	3.0	3.6	.8	13.6	10.9
NNE	2	1.3	2.1	1.5	.4	7.3	9.1
NNE	2	1.3	2.1	1.5	.4	7.3	9.1
E	5	1.8	1.1	1.2	.4	4.5	9.2
ESE	5	1.8	1.1	1.2	.4	4.5	9.2
E	5	1.8	1.1	1.2	.4	4.5	9.2
SE	4	1.5	3.3	3.1	.8	8.9	10.8
SSE	3	1.3	2.5	1.9	.3	6.0	8.6
S	5	1.9	1.9	1.6	.5	6.0	8.6
SSW	5	1.1	1.8	1.5	.4	5.4	9.0
S	5	1.1	1.8	1.5	.4	5.4	9.0
WSW	5	1.6	2.4	2.7	.9	7.7	10.2
W	2	1.8	1.8	1.8	.5	6.7	9.8
WNW	2	1.1	2.0	2.0	.6	6.3	11.1
W	2	1.1	2.0	2.0	.6	6.3	11.1
VARL	3.6					3.6	
CALM	9.6	18.2	32.9	29.4	7.0	100.0	9.8
TOT	9.6	18.2	32.9	29.4	7.0	100.0	9.8
TOTAL NUMBER OF OBSERVATIONS						10776	

MARCH

Dir.	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21		
N	3	1.2	3.0	3.2	.8	8.9	11.2
NNE	2	1.8	2.8	1.6	.3	6.1	10.9
NNE	2	1.8	2.8	1.6	.3	6.1	10.9
E	1	1.9	1.2	1.7	.2	5.0	9.9
ESE	1	1.9	1.2	1.7	.2	5.0	9.9
E	1	1.9	1.2	1.7	.2	5.0	9.9
SE	3	1.4	2.4	1.5	.2	6.1	9.5
SSE	3	1.1	3.5	4.0	.8	9.4	11.8
S	2	1.9	1.8	2.7	.9	6.6	11.8
SSW	2	1.0	2.4	1.5	.3	5.5	9.5
S	2	1.0	2.4	1.5	.3	5.5	9.5
WSW	4	1.5	2.3	1.9	.4	6.8	10.2
W	2	1.4	2.6	2.8	.6	7.4	11.1
WNW	2	1.0	1.7	1.8	.5	5.5	11.1
W	2	1.0	1.7	1.8	.5	5.5	11.1
VARL	1	1.7	1.8	1.6	.6	4.9	11.6
CALM	2.9					2.9	
TOT	7.1	17.3	33.9	31.5	7.6	100.0	10.1
TOTAL NUMBER OF OBSERVATIONS						11150	

APRIL

Dir.	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21		
N	1	.6	1.2	1.9	.8	4.7	12.2
NNE	1	.5	1.2	2.0	.3	5.7	10.1
NNE	1	.5	1.2	2.0	.3	5.7	10.1
E	1	1.2	2.6	1.9	.3	6.2	10.7
ESE	1	1.2	2.6	1.9	.3	6.2	10.7
E	1	1.2	2.6	1.9	.3	6.2	10.7
SE	2	1.6	4.2	3.9	.8	11.2	9.8
SSE	2	1.1	2.1	2.1	.2	6.0	10.4
S	2	1.1	2.1	2.1	.2	6.0	10.4
SSW	3	1.1	1.7	1.0	.3	5.7	8.2
S	3	1.1	1.7	1.0	.3	5.7	8.2
WSW	3	1.0	1.5	1.5	.3	6.0	9.9
W	2	1.2	2.0	1.6	.5	6.6	10.6
WNW	2	1.2	2.0	1.6	.5	6.6	10.6
W	2	1.2	2.0	1.6	.5	6.6	10.6
VARL	1	.7	.8	1.1	.3	2.8	10.7
CALM	3.0					3.0	
TOT	6.7	17.9	35.1	31.7	6.7	100.0	9.9
TOTAL NUMBER OF OBSERVATIONS						10792	

PATRICK AFB WIND ROSES

JUNE

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	2	4	4	2	1	1.8	7.0
NE	3	12	16	16	11	11.1	10.1
E	15	12	16	16	11	11.1	10.1
SE	13	15	23	15	13	17.3	10.0
S	17	20	18	30	11	10.6	8.3
SW	7	20	18	11	16	10.4	9.3
W	15	10	18	11	16	10.2	8.9
WNW	15	10	23	11	11	10.1	8.7
W	18	21	28	18	11	10.6	8.1
WSW	17	23	36	11	13	11.2	7.7
SW	16	20	18	11	11	11.3	7.3
SSW	12	17	17	11	11	11.3	7.3
SSE	12	17	17	11	11	11.3	7.3
ENE	12	17	17	11	11	11.3	7.3
ESE	12	17	17	11	11	11.3	7.3
WAVE	2	7	7	3	0	1.5	1.3
WIND	1	4	4	3	0	1.0	1.6
WAVE	1	4	4	3	0	1.0	1.6
WIND	1	4	4	3	0	1.0	1.6
TOT	13.6	26.0	37.1	19.7	3.1	100.0	8.0

MAY

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	3	8	10	10	4	3.6	10.1
NE	3	13	10	11	4	3.9	11.3
E	3	13	10	11	4	3.9	11.3
SE	4	13	10	11	4	4.3	10.6
S	4	13	10	11	4	4.3	10.6
SW	4	13	10	11	4	4.3	10.6
W	4	13	10	11	4	4.3	10.6
WNW	4	13	10	11	4	4.3	10.6
W	4	13	10	11	4	4.3	10.6
WSW	4	13	10	11	4	4.3	10.6
SW	4	13	10	11	4	4.3	10.6
SSW	4	13	10	11	4	4.3	10.6
SSE	4	13	10	11	4	4.3	10.6
ENE	4	13	10	11	4	4.3	10.6
ESE	4	13	10	11	4	4.3	10.6
WAVE	1	3	3	1	0	1.5	1.3
WIND	1	3	3	1	0	1.5	1.3
WAVE	1	3	3	1	0	1.5	1.3
WIND	1	3	3	1	0	1.5	1.3
TOT	8.9	19.9	36.8	27.8	1.5	100.0	9.3

AUGUST

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	3	7	6	4	2	2.7	8.9
NE	3	7	6	4	2	2.7	8.9
E	3	7	6	4	2	2.7	8.9
SE	3	7	6	4	2	2.7	8.9
S	3	7	6	4	2	2.7	8.9
SW	3	7	6	4	2	2.7	8.9
W	3	7	6	4	2	2.7	8.9
WNW	3	7	6	4	2	2.7	8.9
W	3	7	6	4	2	2.7	8.9
WSW	3	7	6	4	2	2.7	8.9
SW	3	7	6	4	2	2.7	8.9
SSW	3	7	6	4	2	2.7	8.9
SSE	3	7	6	4	2	2.7	8.9
ENE	3	7	6	4	2	2.7	8.9
ESE	3	7	6	4	2	2.7	8.9
WAVE	1	3	3	1	0	1.5	1.3
WIND	1	3	3	1	0	1.5	1.3
WAVE	1	3	3	1	0	1.5	1.3
WIND	1	3	3	1	0	1.5	1.3
TOT	10.0	20.0	34.1	16.0	2.3	100.0	7.2

JULY

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	2	3	3	2	0	1.0	7.7
NE	2	3	3	2	0	1.1	7.9
E	2	3	3	2	0	1.1	7.9
SE	2	3	3	2	0	1.1	7.9
S	2	3	3	2	0	1.1	7.9
SW	2	3	3	2	0	1.1	7.9
W	2	3	3	2	0	1.1	7.9
WNW	2	3	3	2	0	1.1	7.9
W	2	3	3	2	0	1.1	7.9
WSW	2	3	3	2	0	1.1	7.9
SW	2	3	3	2	0	1.1	7.9
SSW	2	3	3	2	0	1.1	7.9
SSE	2	3	3	2	0	1.1	7.9
ENE	2	3	3	2	0	1.1	7.9
ESE	2	3	3	2	0	1.1	7.9
WAVE	1	3	3	1	0	1.5	1.3
WIND	1	3	3	1	0	1.5	1.3
WAVE	1	3	3	1	0	1.5	1.3
WIND	1	3	3	1	0	1.5	1.3
TOT	17.4	29.7	36.5	15.2	0	100.0	7.0

MORON, ARGENTINA

(Lat. 34°40'S, Long. 58°38'W, Elev. 82 ft)

This airfield lies in the rolling plains or pampas region of north-eastern Argentina, and it is located about fifteen miles southwest of the city of Buenos Aires.

Temperatures are quite moderate the year around with the mean monthly temperatures ranging from 74°F. in January to 49°F. in June. Precipitation occurs in all months of the year with an annual total of about 37 inches. There are no pronounced dry and wet seasons. June has the lowest mean precipitation amount with 2.20 inches, and March has the greatest amount with 4.30 inches. Thunderstorms are predominant in the summer months, but they also occur in all other months of the year. Hail is infrequent and rarely presents any problems to aviation.

Visibilities in this area are generally good throughout the year; however, they may be reduced by precipitation, fog, or haze. Fog provides the principal visibility restriction during the winter months, while dust and haze are more predominant in the summer.

The following data, except for the Temperature and Precipitation Summary, are based on observations made at 0900 and 1300 Local Standard Time from January 1934 through August 1942 and at 1600 Local Standard Time from January 1934 through March 1942.

MORON, ARGENTINA
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	85	83	79	72	64	57	57	60	64	69	76	82	71
Monthly Mean Minimum Temperature	63	63	60	53	47	41	42	43	46	50	56	61	52
Monthly Mean Temperature	74	73	70	63	56	49	50	52	55	60	66	72	63

Period of Record: 75 Years*

Absolute Maximum Temperature: +104°F

Absolute Minimum Temperature: + 22°F

Period of Record: 75 Years*

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	3.10	2.80	4.30	3.50	3.00	2.40	2.20	2.40	3.10	3.40	3.30	3.90	37.40
Monthly Mean Snowfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Period of Record: 75 Years*

*Data recorded at Buenos Aires, Argentina

MORON, ARGENTINA

Percentage Frequencies of Occurrence of Specified Weather Conditions

JANUARY											
Hours	Number of Observations	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Snow and/or Sleet	Freezing Rain and/or Drizzle	Freezing Drizzle	Fog	Smoke and/or Haze	Blowing Snow	Date (Blowing and/or Drizzled)	Total Occurrences of Descriptions to Station
00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00
00-00	695	5.2	10.7	53.2	.1	---	---	---	---	---	---
All Hours	695	5.2	10.7	53.2	.1	---	---	---	---	---	---
01-00	246	6.9	12.0	54.2	---	---	---	---	---	---	---
02-00	246	8.0	10.2	51.9	.3	---	---	---	---	---	---
03-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
04-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
05-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
06-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
07-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
08-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
09-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
10-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
11-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
12-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
13-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
14-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
15-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
16-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
17-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
18-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
19-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
20-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
21-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
22-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---
23-00	207	5.6	9.8	53.5	---	---	---	---	---	---	---

MARCH											
Hours	Number of Observations	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Snow and/or Sleet	Freezing Rain and/or Drizzle	Freezing Drizzle	Fog	Smoke and/or Haze	Blowing Snow	Date (Blowing and/or Drizzled)	Total Occurrences of Descriptions to Station
00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00
00-00	720	10.0	14.6	47.7	.1	---	---	---	---	---	---
All Hours	720	10.0	14.6	47.7	.1	---	---	---	---	---	---
01-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
02-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
03-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
04-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
05-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
06-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
07-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
08-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
09-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
10-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
11-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
12-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
13-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
14-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
15-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
16-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
17-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
18-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
19-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
20-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
21-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
22-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---
23-00	246	12.6	16.8	52.3	.3	---	---	---	---	---	---

APRIL

Hours	Number of Observations	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Snow and/or Sleet	Freezing Rain and/or Drizzle	Freezing Drizzle	Fog	Smoke and/or Haze	Blowing Snow	Date (Blowing and/or Drizzled)	Total Occurrences of Descriptions to Station
00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00	00-00
00-00	695	5.5	10.6	54.6	.1	---	---	---	---	---	---
All Hours	695	5.5	10.6	54.6	.1	---	---	---	---	---	---
01-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
02-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
03-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
04-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
05-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
06-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
07-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
08-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
09-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
10-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
11-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
12-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
13-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
14-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
15-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
16-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
17-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
18-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
19-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
20-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
21-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
22-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---
23-00	247	17.4	21.8	56.7	---	---	---	---	---	---	---

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

MORON, ARGENTINA

Percentage Frequencies of Occurrence of Specified Weather Conditions

JUNE															
Hours	Number of Observations	Cells < 2000 Ft and/or Visibility < 3 MI	Cells < 4000 Ft and/or Visibility < 6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-00															
00-05															
05-10															
10-15	254	36.1	44.9	27.7							11.3				
15-20	239	25.9	22.3	24.7							4.0				
20-25	199	24.3	33.1	27.0	.7						3.7				
25-30															
30-00															
All Hours	692	29.2	33.7	26.5	.2						6.3				

MAY															
Hours	Number of Observations	Cells < 2000 Ft and/or Visibility < 3 MI	Cells < 4000 Ft and/or Visibility < 6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-00															
00-05															
05-10															
10-15	262	22.4	29.9	36.8							7.4				
15-20	242	14.8	22.4	30.3							.6				
20-25	190	18.3	27.3	29.4							2.3	.5			
25-30															
30-00															
All Hours	692	18.6	26.6	32.5							10.4	.2			

JULY															
Hours	Number of Observations	Cells < 2000 Ft and/or Visibility < 3 MI	Cells < 4000 Ft and/or Visibility < 6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-00															
00-05															
05-10															
10-15	261	28.3	35.5	32.3	.3						6.1				
15-20	243	21.9	28.6	30.0							1.9	.3			
20-25	197	22.1	28.8	32.6							1.0				
25-30															
30-00															
All Hours	701	24.3	31.2	31.6	.1						3.0	.1			

AUGUST															
Hours	Number of Observations	Cells < 2000 Ft and/or Visibility < 3 MI	Cells < 4000 Ft and/or Visibility < 6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-00															
00-05															
05-10															
10-15	262	28.4	36.0	40.3	.3						4.2				
15-20	246	19.1	28.0	36.5	.3						1.6				
20-25	197	16.0	23.2	36.1	.6						1.3				
25-30															
30-00															
All Hours	705	21.7	29.6	37.8	.4						2.4				

0.0 indicates that the condition has occurred less than 0.06 percent of the time, but more than 0.00 percent of the time.
 — indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

MORON, ARGENTINA WIND ROSES

JANUARY

Speed in Knots		17-27		28-30		Total		Mean Wind Speed	
Dir.		0-6	7-16	17-27	28-30	241	Total	0-6	7-16
E	8.9	6.8					15.9	7.1	
ENE	13.4	5.1					18.6	6.0	
ESE	8.1	2.6					10.7	2.8	
S	5.9	2.2					8.1	2.0	
SSE	7.5	4.8					12.3	6.5	
SE	6.1	2.7					8.8	3.1	
SSE	3.5	2.5					6.0	1.8	
SW	4.5	2.9					7.4	2.0	
WSW	7.1	6.3					13.4	7.2	
W		1.1					1.1	0.3	
WSW	8.1						8.1	5.1	
W	65.8	33.5					100.0	6.1	
TOT							593		

TOTAL NUMBER OF OBSERVATIONS 593

FEBRUARY

Speed in Knots		17-27		28-30		Total		Mean Wind Speed	
Dir.		0-6	7-16	17-27	28-30	241	Total	0-6	7-16
E	9.7	8.6					18.3	8.6	
ENE	13.4	4.3					17.7	5.0	
ESE	10.4	2.0					12.4	5.0	
S	8.1	2.0					10.1	5.3	
SSE	9.2	3.1					12.9	6.2	
SE	4.1	4.8					9.2	7.7	
SSE	4.8	2.0					6.8	5.6	
SW	4.9	2.3					7.2	6.2	
WSW	5.1						5.1	5.1	
W	69.9	29.0					100.0	5.8	
TOT							593		

TOTAL NUMBER OF OBSERVATIONS 593

MARCH

Speed in Knots		17-27		28-30		Total		Mean Wind Speed	
Dir.		0-6	7-16	17-27	28-30	241	Total	0-6	7-16
E	14.4	4.7					19.1	6.0	
ENE	13.6	2.5					16.0	5.0	
ESE	7.5	1.8					9.3	5.2	
S	5.7	3.5					9.2	6.9	
SSE	9.9	4.0					13.9	6.2	
SE	5.6	2.1					7.6	6.2	
SSE	4.6	1.4					6.0	6.2	
SW	7.2	1.5					8.7	5.5	
WSW	8.3						8.3	7.4	
W	77.2	21.5					100.0	5.4	
TOT							720		

TOTAL NUMBER OF OBSERVATIONS 720

APRIL

Speed in Knots		17-27		28-30		Total		Mean Wind Speed	
Dir.		0-6	7-16	17-27	28-30	241	Total	0-6	7-16
E	12.3	3.2					15.6	5.7	
ENE	11.5	3.2					14.9	5.6	
ESE	6.0	2.0					8.0	5.3	
S	8.6	4.8					13.6	6.2	
SSE	8.0	3.8					12.0	6.4	
SE	6.4	3.4					10.4	7.2	
SSE	5.8	2.9					8.9	6.4	
SW	6.4	2.6					9.1	5.9	
WSW	7.4						7.4	7.4	
W	72.7	26.0					100.0	5.6	
TOT							593		

TOTAL NUMBER OF OBSERVATIONS 593

MORON, ARGENTINA WIND ROSES

MAY

Speed in Knots		Dir.		Mean Wind Speed		Total	
0-4	7-16	17-27	28-30	0-4	7-16	17-27	28-30
18.6	21.9	1.3	.1	11.6	100.0	5.3	
10.1	4.2			10.0	100.0	5.3	
4.3	2.2			11.1	100.0	5.3	
9.0	2.3			11.1	100.0	5.3	
7.2	2.2			11.1	100.0	5.3	
7.5	4.5			11.1	100.0	5.3	
5.1	2.0			11.1	100.0	5.3	
9.1	1.9			11.1	100.0	5.3	
11.6				11.6	100.0	5.3	
16.6	21.9	1.3	.1	11.6	100.0	5.3	
TOTAL NUMBER OF OBSERVATIONS 61							

JUNE

Speed in Knots		Dir.		Mean Wind Speed		Total	
0-4	7-16	17-27	28-30	0-4	7-16	17-27	28-30
18.6	3.9			18.9	100.0	5.0	
10.1	2.2			18.9	100.0	5.0	
3.8	1.4			18.9	100.0	5.0	
8.0	1.9			18.9	100.0	5.0	
7.8	2.7			18.9	100.0	5.0	
7.1	2.1			18.9	100.0	5.0	
7.5	2.1			18.9	100.0	5.0	
8.1	2.7			18.9	100.0	5.0	
18.9				18.9	100.0	5.0	
18.6	3.9			18.9	100.0	5.0	
TOTAL NUMBER OF OBSERVATIONS 61							

JULY

Speed in Knots		Dir.		Mean Wind Speed		Total	
0-4	7-16	17-27	28-30	0-4	7-16	17-27	28-30
10.8	5.1			10.8	100.0	5.9	
10.8	5.6			10.8	100.0	5.9	
5.1	1.4			10.8	100.0	5.9	
7.6	3.7			10.8	100.0	5.9	
6.1	3.1			10.8	100.0	5.9	
6.7	6.4			10.8	100.0	5.9	
4.3	3.1			10.8	100.0	5.9	
7.6	3.3			10.8	100.0	5.9	
9.6				10.8	100.0	5.9	
68.8	30.8	1.0		10.8	100.0	5.9	
TOTAL NUMBER OF OBSERVATIONS 121							

AUGUST

Speed in Knots		Dir.		Mean Wind Speed		Total	
0-4	7-16	17-27	28-30	0-4	7-16	17-27	28-30
8.2	1.1			8.2	100.0	6.9	
7.8	7.1			8.2	100.0	6.9	
5.5	3.1			8.2	100.0	6.9	
8.5	5.4			8.2	100.0	6.9	
7.8	8.2			8.2	100.0	6.9	
5.2	2.1			8.2	100.0	6.9	
4.4	3.3			8.2	100.0	6.9	
5.9	3.7			8.2	100.0	6.9	
6.1				8.2	100.0	6.9	
99.3	37.2	3.1	.4	8.2	100.0	6.9	
TOTAL NUMBER OF OBSERVATIONS 125							

MORON, ARGENTINA WIND ROSES

SEPTEMBER

Speed in Knots		28-40 241	
Dir.	0-6 7-16 17-27	Mean Wind Speed	Total
N	5.9 4.4	13.3	6.8
NNE	9.6 8.3	17.9	6.9
NE	8.6 5.2	13.8	6.4
E	10.9 7.7	16.7	6.9
ESE	4.9 6.4	11.9	8.4
SE	3.9 3.4	3.1	8.7
SSE	3.4 3.1	5.7	7.5
S	4.9 3.4	4.0	6.3
SSW	3.6	3.6	
SW	55.7 41.9	100.0	7.1
WSW			
W			
WNW			
NW			
NNW			
VARBL			
CALM			
TOT			61.4

TOTAL NUMBER OF OBSERVATIONS 61.4

OCTOBER

Speed in Knots		28-40 241	
Dir.	0-6 7-16 17-27	Mean Wind Speed	Total
N	10.2 3.5	13.7	5.7
NNE	12.9 4.3	17.2	5.8
NE	7.8 3.8	11.7	6.7
E	6.1 4.7	11.4	7.5
ESE	6.2	16.7	8.0
SE	6.8 6.5	12.6	9.5
SSE	5.2 5.9	5.9	7.3
S	3.8 1.8	7.0	7.4
SSW	4.0 2.7	5.6	
SW	65.8 33.1	100.0	6.8
WSW			
W			
WNW			
NW			
NNW			
VARBL			
CALM			
TOT			62.7

TOTAL NUMBER OF OBSERVATIONS 62.7

NOVEMBER

Speed in Knots		28-40 241	
Dir.	0-6 7-16 17-27	Mean Wind Speed	Total
N	12.4 3.0	15.7	5.8
NNE	14.3 5.2	19.6	5.7
NE	5.9 2.4	8.3	5.7
E	7.3 3.3	10.8	6.1
ESE	7.9 4.5	12.4	6.5
SE	7.2 5.6	14.0	8.0
SSE	3.8 1.4	5.2	5.8
S	4.6 3.8	8.4	7.4
SSW	5.2	1.2	
SW	68.6 29.4	100.0	6.1
WSW			
W			
WNW			
NW			
NNW			
VARBL			
CALM			
TOT			62.9

TOTAL NUMBER OF OBSERVATIONS 62.9

DECEMBER

Speed in Knots		28-40 241	
Dir.	0-6 7-16 17-27	Mean Wind Speed	Total
N	12.5 5.3	17.9	5.9
NNE	12.8 5.9	18.2	6.0
NE	7.1 2.7	9.8	5.9
E	6.9 3.0	10.0	5.5
ESE	6.3 3.8	10.6	7.0
SE	5.1 3.2	9.0	7.5
SSE	4.1 1.8	6.0	6.3
S	5.9 5.0	10.9	7.3
SSW	6.5	6.5	
SW	61.7 30.6	100.0	5.9
WSW			
W			
WNW			
NW			
NNW			
VARBL			
CALM			
TOT			65.3

TOTAL NUMBER OF OBSERVATIONS 65.3

ANNUAL

Speed in Knots		28-40 241	
Dir.	0-6 7-16 17-27	Mean Wind Speed	Total
N	10.8 4.6	15.7	6.2
NNE	11.5 4.8	16.4	6.0
NE	6.1 2.5	11.1	3.5
E	7.9 3.9	8.9	5.8
ESE	7.0 4.0	11.9	6.4
SE	6.0 4.0	11.0	5.0
SSE	5.6 4.0	11.1	9.5
S	4.7 3.7	13.4	7.8
SSW	6.0 3.3	7.0	6.4
SW	61.1 29.6	100.0	6.0
WSW			
W			
WNW			
NW			
NNW			
VARBL			
CALM			
TOT			61.0

TOTAL NUMBER OF OBSERVATIONS 61.0

MORON DE LA FRONTERA, SPAIN (Lat. 37°11'N, Long. 5°36'W, Elev. 272 ft)

The Moron Airfield is located in the Guadalquivir River Valley of southern Spain. There the Valley is about 25 miles wide and is oriented SW-NE. The terrain in the immediate vicinity of the field is one of very gently rolling hills with some low mountains about eight miles to the southeast.

In general, this station has a Mediterranean type climate or one of hot, dry summers and cool, wet winters. Temperatures range from a mean maximum of 83.8°F. in August to a mean minimum of 44.3°F. in February. Moron's greatest rainfall occurs in the month of December with an average of 5.49 inches. Average monthly amounts gradually decrease from this high until reaching a minimum of .03 inches in August.

Most precipitation occurs in cyclonic disturbances which move inland from the Atlantic Ocean. These disturbances often are accompanied by thunderstorms, most of which are not of violent proportions. Hail very seldom occurs with any of these storms.

Ceilings and visibilities are quite good throughout the year with best conditions existing during the dry months of June through September. Early morning radiation fog is probably the greatest single cause of below minimum visibilities at this airfield. Fog occurs most frequently in December and January. Its development is enhanced both by air-drainage and the presence of the Guadalquivir River.

The following data, except for the Temperature and Precipitation Summary, are based on twenty-four hourly observations per day from October 1936 through May 1964, except for January 1937.

MORON DE LA FRONTERA, SPAIN

Temperature and Precipitation Summary

(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	59.9	62.1	65.1	70.3	79.2	85.4	93.3	93.8	87.4	77.0	65.6	59.5	75.4
Monthly Mean Minimum Temperature	44.4	44.3	47.7	49.9	56.1	61.6	65.3	66.2	63.5	56.6	49.1	45.4	54.5
Monthly Mean Temperature	52.4	53.4	56.7	60.4	67.9	73.7	79.6	80.2	75.8	67.1	57.6	52.8	65.2

Period of Record: Jan. 58 - Aug. 64

Absolute Maximum Temperature: +110°F

Absolute Minimum Temperature: + 23°F

Period of Record: Apr. 58 - Aug. 64

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	2.71	2.88	3.03	1.73	2.08	.43	.10	.03	.33	3.37	3.95	5.49	26.14
Monthly Mean Snowfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T

Period of Record: Jan. 58 - Aug. 64

Wind (Knots)

Peak Gust: W 55 Knots (November 1963)

Period of Record: Aug. 62 - Aug. 64

MORON DE LA FRONTERA, SPAIN

Percentage Frequencies of Occurrence of Specified Weather Conditions

JANUARY															
Hours	Number of Observations	Clearings -2000 P. M. and/or Thundery -3 M.	Clearings -4000 P. M. and/or Thundery -6 M.	Cloud Cover 13/10	Thunder (Vista or Without Precipitation)	Snow and/or Sleet	Freezing Drizzle	Freezing Mist and/or Freezing Drizzle	Mist	Total Occurrence of Precipitation	Fog	Windy and/or Breezy	Blowing Snow	Wet (Blowing and/or Suspended)	Total Occurrence of Observations in Vision
00-02	651	12.0	23.7	14.0	2	10.9	7.7	2.9	10.3	10.6	7.7	2.9	---	---	10.3
03-05	651	10.9	25.5	14.5	5	9.5	8.4	3.4	11.2	9.5	8.4	3.4	---	---	11.2
06-08	651	12.3	27.0	16.0	3	7.7	10.3	5.3	11.0	7.7	10.3	5.3	---	---	11.0
09-11	714	13.6	23.9	13.2	3	8.0	8.1	6.0	13.9	8.0	8.1	6.0	---	---	13.9
12-14	714	12.0	21.0	11.4	5	9.5	2.3	3.2	5.2	9.5	2.3	3.2	---	---	5.2
15-17	478	8.2	18.6	10.3	3	8.9	6	1.8	1.8	8.9	6	1.8	---	---	1.8
18-20	651	7.1	18.3	10.7	8.9	8.9	2.3	1.1	3.4	8.9	2.3	1.1	---	---	3.4
21-23	651	7.5	16.4	14.7	9.5	9.5	4.0	2.2	6.1	9.5	4.0	2.2	---	---	6.1
All Hours	5,377	10.5	21.6	14.6	2	9.1	5.4	3.2	8.4	9.1	5.4	3.2	---	---	8.4

FEBRUARY															
Hours	Number of Observations	Clearings -2000 P. M. and/or Thundery -3 M.	Clearings -4000 P. M. and/or Thundery -6 M.	Cloud Cover 13/10	Thunder (Vista or Without Precipitation)	Snow and/or Sleet	Freezing Drizzle	Freezing Mist and/or Freezing Drizzle	Mist	Total Occurrence of Precipitation	Fog	Windy and/or Breezy	Blowing Snow	Wet (Blowing and/or Suspended)	Total Occurrence of Observations in Vision
00-02	646	8.9	19.4	13.2	2	8.0	---	---	---	8.0	---	---	---	---	8.0
03-05	646	9.4	20.8	14.8	2	8.9	---	---	---	8.9	---	---	---	---	8.9
06-08	618	10.0	17.8	14.4	2	9.5	---	---	---	9.5	---	---	---	---	9.5
09-11	697	10.8	19.2	11.8	2	9.5	---	---	---	9.5	---	---	---	---	9.5
12-14	697	9.9	18.5	12.2	2	9.6	---	---	---	9.6	---	---	---	---	9.6
15-17	614	7.3	19.5	12.2	---	10.1	---	---	---	10.1	---	---	---	---	10.1
18-20	594	6.1	13.6	10.4	8.4	8.4	---	---	---	8.4	---	---	---	---	8.4
21-23	646	6.4	14.5	12.7	2	9.5	---	---	---	9.5	---	---	---	---	9.5
All Hours	4,944	8.7	18.7	13.0	1	9.2	---	---	---	9.2	---	---	---	---	9.2

MARCH															
Hours	Number of Observations	Clearings -2000 P. M. and/or Thundery -3 M.	Clearings -4000 P. M. and/or Thundery -6 M.	Cloud Cover 13/10	Thunder (Vista or Without Precipitation)	Snow and/or Sleet	Freezing Drizzle	Freezing Mist and/or Freezing Drizzle	Mist	Total Occurrence of Precipitation	Fog	Windy and/or Breezy	Blowing Snow	Wet (Blowing and/or Suspended)	Total Occurrence of Observations in Vision
00-02	645	7.6	20.5	13.3	---	8.4	---	---	---	8.4	1.2	5.4	---	---	6.7
03-05	645	11.8	25.6	14.9	5	9.9	---	---	---	9.9	6.7	8.1	---	---	12.7
06-08	645	14.3	24.7	20.3	3	9.5	---	---	---	9.5	9.1	8.8	---	---	16.6
09-11	645	12.2	26.7	24.2	---	7.6	---	---	---	7.6	3.9	7.4	---	---	10.7
12-14	645	11.0	20.7	21.4	2	11.8	---	---	---	11.8	6	1.9	---	---	2.5
15-17	645	7.0	24.3	19.1	2	11.8	---	---	---	11.8	2	1.1	---	---	1.2
18-20	645	6.0	14.6	14.4	3	9.8	---	---	---	9.8	5	2.0	---	---	2.5
21-23	645	6.5	14.9	16.6	---	9.0	---	---	---	9.0	2	2.6	---	---	2.9
All Hours	5,116	9.6	21.0	18.1	2	9.7	---	---	---	9.7	2.5	4.7	---	---	11.0

APRIL															
Hours	Number of Observations	Clearings -2000 P. M. and/or Thundery -3 M.	Clearings -4000 P. M. and/or Thundery -6 M.	Cloud Cover 13/10	Thunder (Vista or Without Precipitation)	Snow and/or Sleet	Freezing Drizzle	Freezing Mist and/or Freezing Drizzle	Mist	Total Occurrence of Precipitation	Fog	Windy and/or Breezy	Blowing Snow	Wet (Blowing and/or Suspended)	Total Occurrence of Observations in Vision
00-02	630	5.1	11.0	13.0	2	8.2	---	---	---	8.2	---	---	---	---	8.2
03-05	630	7.9	16.8	11.5	2	6.8	---	---	---	6.8	2.1	4.4	---	---	6.0
06-08	630	7.1	16.7	11.7	---	4.4	---	---	---	4.4	4.3	9.7	---	---	12.4
09-11	630	8.1	20.6	19.8	---	4.4	---	---	---	4.4	1.4	4.0	---	---	9.1
12-14	630	5.2	24.3	16.7	---	4.4	---	---	---	4.4	---	1.9	---	---	1.9
15-17	630	2.5	17.8	16.8	1.0	5.9	---	---	---	5.9	5	4	---	---	1.1
18-20	630	8.1	7.1	11.9	3	5.4	---	---	---	5.4	5	5	---	---	1.0
21-23	630	3.0	6.7	11.5	3	5.0	---	---	---	5.0	---	5	---	---	3.0
All Hours	5,040	5.1	15.1	13.2	2	6.9	---	---	---	6.9	1.5	3.3	---	---	4.5

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

MORON DE LA FRONTERA, SPAIN

Percentage Frequencies of Occurrence of Specified Weather Conditions

MAY															
Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 Mi	Callings <4000 Ft and/or Visibility <6 Mi	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	651	3.2	8.6	59.7	2	1.1	3.2	---	---	4.3	---	---	---	---	4.3
03-05	651	6.1	18.1	62.2	8	5.1	3.2	6.3	---	8.9	---	---	---	---	8.9
06-08	651	6.9	14.7	49.7	---	3.4	3.1	5.5	---	8.1	---	---	---	---	8.1
09-11	651	5.8	18.0	46.9	6	4.6	2	1.7	---	1.8	---	---	---	---	1.8
12-14	651	3.8	19.2	40.0	9	5.2	2	2	---	3	---	---	---	---	3
15-17	651	2.0	10.1	40.2	14	5.8	---	---	---	3	---	---	---	---	3
18-20	651	1.4	6.1	47.9	6	4.6	---	---	---	9	---	---	---	---	9
21-23	651	3.5	6.8	61.2	3	4.9	2	3.2	---	3.4	---	---	---	---	3.4
All Hours	5,208	3.9	12.2	51.7	6	4.7	1.0	2.7	---	3.5	---	---	---	---	3.5

JUNE															
Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 Mi	Callings <4000 Ft and/or Visibility <6 Mi	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	650	1.0	3.0	73.7	2	0	---	---	---	2	---	2.9	---	---	2.9
03-05	630	2.4	9.0	66.8	---	1.0	---	---	---	1.0	1.4	5.7	---	---	6.5
06-08	630	6.5	13.3	53.2	2	1.9	---	---	---	1.9	2.9	5.7	---	---	7.5
09-11	630	4.4	14.3	51.7	2	3.7	---	---	---	3.7	3	1.7	---	---	2.1
12-14	630	1.4	11.1	50.9	5	3.0	---	---	---	3.0	3	0.3	---	---	0.6
15-17	630	2	4.4	56.1	3	1.7	---	---	---	1.7	---	---	---	---	---
18-20	630	0.6	2.2	65.7	6	1.9	---	---	---	1.9	3	---	---	---	3
21-23	630	0.5	2.1	73.6	8	2	---	---	---	2	---	1.0	---	---	1.0
All Hours	5,040	2.1	7.4	61.7	3	1.8	---	---	---	1.8	1.7	2.2	---	---	2.6

JULY															
Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 Mi	Callings <4000 Ft and/or Visibility <6 Mi	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	651	2.5	2.8	91.7	5	6	---	---	---	6	---	2.5	---	---	2.5
03-05	651	4.1	5.7	88.5	5	6	---	---	---	6	---	5.7	---	---	5.7
06-08	651	4.8	7.5	84.2	---	3	1.1	5.7	---	6.3	---	5.7	---	---	6.3
09-11	651	1.8	4.1	86.0	---	3	2	2.0	---	2.2	---	2.0	---	---	2.2
12-14	651	0	2.2	86.3	---	---	---	---	---	---	---	---	---	---	---
15-17	651	0	6	87.9	2	---	---	---	---	---	---	---	---	---	---
18-20	651	0	3	89.0	3	---	---	---	---	---	---	---	---	---	---
21-23	651	2	6	92.8	2	3	---	---	---	1.2	---	1.2	---	---	1.2
All Hours	5,208	1.7	3.0	88.2	2	3	2	2.1	---	3	2	2.1	---	---	2.2

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

MORON DE LA FRONTERA, SPAIN

Percentage Frequencies of Occurrence of Specified Weather Conditions

OCTOBER

Hours	Number of Observations	Observations <2000 Ft. msl./or Visibility <3 MI.	Observations <4000 Ft. msl./or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main msl./or Drizzle	Freezing Main msl./or Freezing Drizzle	Snow msl./or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Ice (Blowing msl./or Deposited)	Total Occurrences of Disturbances to Vision
All	5,008	4.7	11.5	97.7	.2	5.8	---	---	---	5.8	1.4	1.8	---	---	8.2
00-02	159	5.5	9.8	99.3	---	4.9	---	---	---	4.9	1.5	1.4	---	---	6.9
03-05	161	8.0	14.4	99.4	---	5.7	---	---	---	5.7	3.2	2.9	---	---	9.7
06-08	691	6.5	12.0	99.6	---	5.2	---	---	---	5.2	4.3	1.5	---	---	11.4
09-11	161	4.8	11.7	91.4	0	5.2	---	---	---	5.2	5	---	---	---	11.4
12-14	---	3.2	14.7	97.5	6	5.8	---	---	---	5.8	---	---	---	---	8
15-17	691	2.9	10.8	97.2	5	7.8	---	---	---	7.8	5	---	---	---	12.8
18-20	691	3.2	9.8	96.3	2	6.1	---	---	---	6.1	5	1.2	---	---	11.7
21-23	691	3.5	8.6	99.0	2	5.8	---	---	---	5.8	9	1.7	---	---	11.2

SEPTEMBER

Hours	Number of Observations	Observations <2000 Ft. msl./or Visibility <3 MI.	Observations <4000 Ft. msl./or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main msl./or Drizzle	Freezing Main msl./or Freezing Drizzle	Snow msl./or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Ice (Blowing msl./or Deposited)	Total Occurrences of Disturbances to Vision
All	5,040	1.8	5.8	94.8	.4	1.4	---	---	---	1.4	1.4	2.0	---	---	5.2
00-02	690	2.9	5.6	91.4	5	1.6	---	---	---	1.6	2	1.9	---	---	5.2
03-05	690	3.7	7.5	91.4	3	2.2	---	---	---	2.2	1.0	5.4	---	---	7.7
06-08	690	4.4	9.8	91.6	---	1.6	---	---	---	1.6	2.1	5.6	---	---	6.3
09-11	690	2.7	7.9	94.1	---	3.7	---	---	---	3.7	3	1.9	---	---	1.9
12-14	690	3	8.7	90.4	6	1.8	---	---	---	1.8	---	---	---	---	3
15-17	690	0	3.8	89.6	8	1.0	---	---	---	1.0	---	---	---	---	---
18-20	690	3	1.6	82.4	1.0	1.7	---	---	---	1.7	---	---	---	---	---
21-23	690	3	1.9	86.7	3	1.0	---	---	---	1.0	---	---	---	---	---

DECEMBER

Hours	Number of Observations	Observations <2000 Ft. msl./or Visibility <3 MI.	Observations <4000 Ft. msl./or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main msl./or Drizzle	Freezing Main msl./or Freezing Drizzle	Snow msl./or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Ice (Blowing msl./or Deposited)	Total Occurrences of Disturbances to Vision
All	5,008	11.6	29.2	97.5	.6	13.2	---	---	---	13.2	5.9	2.3	---	---	19.5
00-02	691	10.4	21.8	96.5	9	13.4	---	---	---	13.4	7.2	2.6	---	---	19.7
03-05	691	11.8	29.3	97.8	5	12.6	---	---	---	12.6	9.2	3.2	---	---	18.4
06-08	691	14.7	28.0	96.5	3	14.0	---	---	---	14.0	10.6	2.3	---	---	18.3
09-11	691	13.4	24.9	98.2	6	14.3	---	---	---	14.3	7.5	2.6	---	---	19.7
12-14	691	13.1	29.0	97.2	1.1	14.1	---	---	---	14.1	2.6	1.4	---	---	16.0
15-17	691	10.8	26.9	98.6	6	13.5	---	---	---	13.5	2.8	1.4	---	---	15.5
18-20	691	9.8	24.1	96.2	3	13.8	---	---	---	13.8	2.6	3.2	---	---	15.9
21-23	691	8.6	21.5	95.2	3	10.6	---	---	---	10.6	4.9	1.7	---	---	15.2

NOVEMBER

Hours	Number of Observations	Observations <2000 Ft. msl./or Visibility <3 MI.	Observations <4000 Ft. msl./or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main msl./or Drizzle	Freezing Main msl./or Freezing Drizzle	Snow msl./or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Ice (Blowing msl./or Deposited)	Total Occurrences of Disturbances to Vision
All	5,040	6.8	17.1	94.4	.3	9.3	---	---	---	9.3	4.0	2.4	---	---	11.7
00-02	690	4.4	13.8	94.5	2	7.3	---	---	---	7.3	3.8	2.9	---	---	10.2
03-05	690	7.8	19.7	90.1	---	6.7	---	---	---	6.7	6.7	3.7	---	---	14.4
06-08	690	10.2	21.4	96.9	---	7.3	---	---	---	7.3	9.5	4.1	---	---	16.9
09-11	690	10.3	18.4	93.6	---	8.6	---	---	---	8.6	5.7	2.5	---	---	13.8
12-14	690	6.5	20.2	96.1	8	12.1	---	---	---	12.1	2.1	1.8	---	---	14.7
15-17	690	4.9	16.0	99.6	---	11.9	---	---	---	11.9	6	---	---	---	17.9
18-20	690	5.7	14.8	97.9	2	12.1	---	---	---	12.1	1.4	2.4	---	---	14.9
21-23	690	4.3	12.3	99.8	1.0	8.7	---	---	---	8.7	2.2	1.7	---	---	10.6

ANNUAL

Hours	Number of Observations	Observations <2000 Ft. msl./or Visibility <3 MI.	Observations <4000 Ft. msl./or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Main msl./or Drizzle	Freezing Main msl./or Freezing Drizzle	Snow msl./or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke msl./or Haze	Blowing Snow	Ice (Blowing msl./or Deposited)	Total Occurrences of Disturbances to Vision
All	61,661	5.7	13.7	93.4	.3	5.3	---	---	---	5.3	2.2	2.4	---	---	7.7

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
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MORON DE LA FRONTERA, SPAIN

WIND ROSES

JANUARY

Dir.	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21		
N	1.2	1.9	.8	.2	.0	4.1	6.3
NE	1.2	2.7	2.0	.4	.0	6.3	6.9
E	1.0	3.6	2.6	.8	.0	7.0	7.0
SE	1.4	3.2	1.8	.9	.0	4.9	6.0
S	1.6	1.7	1.0	.4	.1	2.7	5.5
SW	.9	.7	.4	.2	.0	1.8	10.1
W	.7	2.7	3.3	2.7	1.1	8.1	10.6
NW	.2	1.5	2.2	2.2	.7	5.2	10.8
Wind	.3	1.8	1.7	1.7	.5	4.9	8.9
W	.7	1.4	1.3	.3	.1	1.8	7.9
SW	.3	.7	.2	.0	.1	1.0	5.4
W	.3	.4	.2	.1	.1	1.0	5.4
Wind	16.9					16.9	
WIND CALM							
TOT	26.8	27.1	28.5	18.4	3.7	11.2	6.7

TOTAL NUMBER OF OBSERVATIONS 537

FEBRUARY

Dir.	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21		
N	.0	1.5	.6	.1	.0	2.2	3.1
NE	1.2	3.0	3.2	1.4	.3	6.1	5.2
E	1.0	2.2	1.9	.8	.1	5.0	7.5
SE	1.6	1.3	.4	.4	.1	3.8	5.8
S	1.3	.9	.3	.0	.0	2.5	4.7
SW	1.0	3.3	3.0	1.8	.5	9.9	10.9
W	.6	2.4	2.7	2.6	1.6	10.3	11.1
NW	.4	1.4	2.2	1.5	.4	6.3	10.0
Wind	.6	1.5	1.7	.8	.1	3.3	5.8
W	.4	.7	.2	.0	.0	1.3	4.8
SW	.3	.5	.1	.0	.0	1.1	5.1
WIND CALM	18.7					18.7	
TOT	34.9	29.4	23.8	13.3	3.4	1.7	5

TOTAL NUMBER OF OBSERVATIONS 1000

MARCH

Dir.	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21		
N	.6	1.2	.6	.1	.0	2.5	5.6
NE	.7	1.5	1.8	1.1	.1	5.2	7.8
E	.9	1.0	1.7	.5	.1	4.9	7.5
SE	.8	.8	.5	.3	.0	3.3	9.1
S	.5	.8	.5	.3	.0	2.3	6.3
SW	1.5	2.8	3.4	2.3	.8	11.8	8.5
W	.7	2.6	3.4	2.5	.7	10.0	9.4
NW	.7	2.4	2.8	1.9	.3	9.6	10.6
Wind	.3	1.3	.7	.5	.0	2.8	5.2
W	.4	1.0	.8	.2	.1	1.8	6.3
WIND CALM	13.5					13.5	
TOT	23.1	26.5	27.0	18.2	4.6	1.3	3

TOTAL NUMBER OF OBSERVATIONS 5152

APRIL

Dir.	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21		
N	.7	1.6	1.0	.3	.0	3.6	6.4
NE	.8	2.3	2.6	1.5	.8	8.2	9.2
E	.5	1.4	1.3	.7	.1	4.2	5.7
SE	1.0	1.1	.3	.2	.0	2.7	4.5
S	1.1	.8	.4	.1	.0	2.4	5.7
SW	1.5	.8	3.4	1.1	.0	11.5	7.4
W	.7	3.3	3.6	2.3	.9	9.9	8.7
NW	.9	3.2	3.7	2.7	.9	9.1	10.3
Wind	.5	1.2	.9	.4	.1	3.0	8.0
W	.5	.9	.7	.2	.1	2.2	6.4
WIND CALM	13.1					13.1	
TOT	25.3	28.7	25.8	18.9	8.6	9	7.0

TOTAL NUMBER OF OBSERVATIONS 5040

BLOEMFONTEIN (HERTZOG), SOUTH AFRICA **(Lat. 29°08'S, Long. 26°18'E, Elev. 4,459 ft)**

Bloemfontein is situated in a relatively flat portion of South Africa's interior plateau. Hertzog Airport (elevation 4,459 feet) lies about five miles to the east-northeast of the city.

The continental climate of the area is a result of its inland location; however, it is not so far removed from the coasts that it is not effected by cyclonic disturbances which move inland from the South Atlantic. Air-mass thundershowers during the hot months, November through March, are the predominant sources of precipitation. The annual total is about 22 inches.

The station's temperatures reflect the modifying effects of its near 4,500-foot elevation. For example, Bloemfontein's mean annual temperature of 59.4°F. is about ten degrees lower than that of Durban which lies less than 300 miles to the east but is only twenty-five feet above mean sea level.

Such phenomena as snow, hail, fog, dust, and smoke do occur; however, their occurrences very seldom limit the visibility below minimum flying conditions. Low ceilings are even less a problem as a flying weather restriction.

The data for Bloemfontein were derived from observations made at Tempe Airport because of the greater amount of data available from there than from J. B. M. Hertzog Airport. Tempe Airport is located at latitude 29°07' South, longitude 26°11' East, at an elevation of 4,678 feet above mean sea level. This is about ten miles west-southwest of Hertzog Airport.

The following data, except for the Temperature and Precipitation Summary, are based on observations made at 0800 and 1400 Local Standard Time from January 1949 through November 1953. These data should be used with caution because of the short period of record.

BLOEMFONTEIN, SOUTH AFRICA*
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	86.0	84.6	81.5	71.6	67.5	60.6	61.5	67.5	78.3	80.2	80.4	85.1	75.4
Monthly Mean Minimum Temperature	59.7	57.0	54.3	44.2	34.5	28.4	26.8	31.6	41.7	49.1	53.1	56.3	44.8
Monthly Mean Temperature	72.0	70.0	66.9	57.0	50.0	43.3	42.8	48.9	60.1	64.4	66.6	70.3	59.4

Period of Record: 1937 - 1960

Absolute Maximum Temperature: 100.2°F

Absolute Minimum Temperature: 15.4°F

Period of Record: 1937 - 1960

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	3.37	3.22	2.98	2.11	.93	.28	.41	.66	.81	1.99	2.56	2.70	22.02
Monthly Mean Snowfall	No Data												

Period of Record: 1937 - 1960

Wind (Knots)

Peak Gust: WSW 79 Knots (December, year not available)

Period of Record: 1937 - 1960

*Data were recorded at the Tempe Airport, Bloemfontein, which is 10 miles MNW of the J. B. M. Hertzog Airport.

BLOEMFONTEIN, SOUTH AFRICA

Percentage Frequencies of Occurrence of Specified Weather Conditions

JANUARY

Hours	Number of Observations	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Station
00-00													
00-05	135	1.4	6.4	11.5									
05-10													
05-15	135	2.1	5.4	30.3									
10-15													
15-17													
17-20													
20-23													
All Hours	310	1.7	5.9	51.9									

FEBRUARY

Hours	Number of Observations	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Station
00-00													
00-05	141	6.5	12.8	48.2									
05-10													
10-15	141	.8	7.5	21.4									
15-17													
17-20													
20-23													
All Hours	282	3.7	10.2	34.8									

MARCH

Hours	Number of Observations	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Station
00-00													
00-05	135	6.0	19.2	61.3									
05-10													
10-15	135	3.6	14.7	50.9									
15-17													
17-20													
20-23													
All Hours	310	5.8	17.0	47.1									

APRIL

Hours	Number of Observations	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Station
00-00													
00-05	150	11.9	36.9	58.7									
05-10													
10-15	150	5.4	11.5	44.7									
15-17													
17-20													
20-23													
All Hours	300	8.7	24.2	51.7									

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

BLOEMFONTEIN, SOUTH AFRICA

Percentage Frequencies of Occurrence of Specified Weather Conditions

MAY

Hours	Number of Observations	Visibility <2000 Ft and/or Ceilings <2000 Ft and/or Visibility <4000 Ft and/or Ceilings <4000 Ft and/or	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02														
03-05														
06-08	155	19.1	50.0	68.4						1.3	75.5			
09-11														
12-14	154	4.6	8.7	56.1										
15-17														
18-20														
21-23														
All Hours	309	11.9	29.4	68.3						.6	44.9			

JUNE

Hours	Number of Observations	Visibility <2000 Ft and/or Ceilings <2000 Ft and/or Visibility <4000 Ft and/or Ceilings <4000 Ft and/or	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02														
03-05														
06-08	150	21.1	61.3	76.7						.7	86.7			
09-11														
12-14	150	2.2	4.9	79.3										
15-17														
18-20														
21-23														
All Hours	300	11.7	33.1	78.0						.3	69.1			

JULY

Hours	Number of Observations	Visibility <2000 Ft and/or Ceilings <2000 Ft and/or Visibility <4000 Ft and/or Ceilings <4000 Ft and/or	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02														
03-05														
06-08	155	24.8	51.9	76.1							74.2			
09-11														
12-14	155	1.4	5.7	70.3							31.0			
15-17														
18-20														
21-23														
All Hours	310	13.1	28.8	73.2							52.6			

AUGUST

Hours	Number of Observations	Visibility <2000 Ft and/or Ceilings <2000 Ft and/or Visibility <4000 Ft and/or Ceilings <4000 Ft and/or	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02														
03-05														
06-08	153	10.9	31.9	72.0							76.5			
09-11														
12-14	155	3.8	7.2	57.3							29.7			.6
15-17														
18-20														
21-23														
All Hours	308	6.4	19.6	64.7							53.3			.3

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.

--- indicates that the condition has occurred exactly 0.00 percent of the time.

A blank indicates that the data are not available.

BLOEMFONTEIN, SOUTH AFRICA

Percentage Frequencies of Occurrence of Specified Weather Conditions

Hours	OCTOBER											
	Number of Observations	Occurrences <2000 Ft. and/or Visibility <3 Mi.	Occurrences <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Vision
00-00												
00-05	135	1.9	12.3	36.7								
05-10												
10-15	135	2.9	7.9	48.4								
15-20												
20-25												
25-30												
All Hours	330	3.9	10.1	51.6								

Hours	SEPTEMBER											
	Number of Observations	Occurrences <2000 Ft. and/or Visibility <3 Mi.	Occurrences <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Vision
00-00												
00-05	130	6.6	22.0	72.0								
05-10												
10-15	130	3.0	6.9	37.3								
15-20												
20-25												
25-30												
All Hours	300	1.8	18.5	68.7								

Hours	DECEMBER											
	Number of Observations	Occurrences <2000 Ft. and/or Visibility <3 Mi.	Occurrences <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Vision
00-00												
00-05	124	2.5	4.0	62.9								
05-10												
10-15	124	.0	5.3	34.8								
15-20												
20-25												
25-30												
All Hours	248	3.3	4.7	48.9								

Hours	NOVEMBER											
	Number of Observations	Occurrences <2000 Ft. and/or Visibility <3 Mi.	Occurrences <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Vision
00-00												
00-05	150	5.4	6.0	68.0								
05-10												
10-15	150	1.9	8.8	46.0								
15-20												
20-25												
25-30												
All Hours	300	3.7	7.4	54.0								

Hours	ANNUAL											
	Number of Observations	Occurrences <2000 Ft. and/or Visibility <3 Mi.	Occurrences <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Disturbances to Vision
00-00												
00-05	330	6.4	17.1	57.0								
05-10												
10-15	330	3.0	11.3	48.4								
15-20												
20-25												
25-30												
All Hours	3,387	6.4	17.1	57.0								

0.0 indicates that the condition has occurred less than 0.08 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

BLOEMFONTEIN, SOUTH AFRICA WIND ROSES

JANUARY

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	.3	4.2	6.8	8.7	1.0	1.3	12.1
NE	.3	3.3	3.9	3.3	1.3	.3	9.0
E	.3	2.3	1.0	3.3	1.3	.3	3.5
SE	.7	1.3	1.3	1.0	.3	.3	4.6
S	.3	.3	.3	.3	.3	.3	2.2
SW	.3	.3	.3	.3	.3	.3	8.2
W	.3	.3	.3	.3	.3	.3	5.8
NW	.3	.3	.3	.3	.3	.3	1.9
WV	1.0	1.3	6.8	3.2	.3	.3	15.5
NV	.6	1.0	2.9	1.9	.3	.3	10.9
WV	.6	1.0	4.2	1.5	.3	.3	10.4
NV	.3	.3	1.0	1.0	.3	.3	3.2
WV	.3	.3	1.0	1.0	.3	.3	8.9
WV	.3	.3	1.0	1.0	.3	.3	6.1
CALM							100.0
TOT	12.3	14.2	30.6	33.9	4.9	2.0	9.5
TOTAL NUMBER OF OBSERVATIONS							310

FEBRUARY

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	.7	1.6	1.7	1.3	.7	.4	14.9
NE	1.1	2.5	5.7	2.9	.7	.4	10.3
E	.4	.7	2.5	1.1	.7	.4	12.1
SE	.7	1.0	.4	.7	.7	.4	5.0
S	.4	.7	.4	1.1	.4	.4	6.9
SW	.4	.7	.4	1.1	.4	.4	7.6
W	.4	.7	.4	1.1	.4	.4	11.3
NW	.4	.7	.4	1.1	.4	.4	3.2
WV	1.1	.7	3.2	2.2	.7	.4	11.5
NV	1.5	1.8	2.9	2.9	.4	.4	8.2
WV	.7	1.8	2.9	2.9	.4	.4	8.2
NV	.7	1.8	2.9	2.9	.4	.4	8.6
WV	.7	1.8	2.9	2.9	.4	.4	9.1
WV	.7	1.8	2.9	2.9	.4	.4	6.4
CALM							9.3
TOT	16.1	22.4	33.1	22.4	4.3	1.6	100.0
TOTAL NUMBER OF OBSERVATIONS							281

MARCH

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	2.0	3.6	3.2	2.6	.3	.3	11.7
NE	1.3	1.0	4.2	3.2	.3	.3	7.6
E	1.0	2.0	1.6	1.0	.3	.3	4.5
SE	1.6	5.5	3.3	3.3	.3	.3	6.0
S	.6	3.9	1.0	.7	.3	.3	2.9
SW	.3	.6	.6	.3	.3	.3	1.8
W	.3	.3	.3	.3	.3	.3	8.2
NW	.3	.3	.3	.3	.3	.3	6.1
WV	1.3	1.3	5.3	2.0	.3	.3	2.3
NV	1.0	.6	2.6	2.3	.3	.3	10.3
WV	.7	3.9	2.3	2.3	.7	.7	8.7
NV	.7	3.9	2.3	2.3	.7	.7	4.2
WV	.7	3.9	2.3	2.3	.7	.7	8.1
WV	.7	3.9	2.3	2.3	.7	.7	7.8
CALM							100.0
TOT	11.2	34.6	30.0	37.5	1.0	1.0	7.0
TOTAL NUMBER OF OBSERVATIONS							310

APRIL

Dir.	Speed in Knots					Total	Mean Speed
	0-3	4-6	7-10	11-16	17-21		
N	1.4	3.7	3.7	4.0	.7	.7	12.7
NE	1.0	3.3	2.7	1.0	.7	.7	4.7
E	1.4	3.7	3.7	1.3	.7	.7	8.3
SE	1.7	3.3	.3	.3	.7	.7	2.4
S	.4	2.3	.7	.7	.7	.7	2.0
SW	.7	1.0	.7	.7	.7	.7	3.1
W	.7	.7	.7	.7	.7	.7	6.9
NW	.7	.7	.7	.7	.7	.7	3.0
WV	.6	2.7	4.7	3.7	.6	.6	5.1
NV	.6	2.7	4.7	3.7	.6	.6	9.9
WV	.6	2.7	4.7	3.7	.6	.6	8.5
NV	.6	2.7	4.7	3.7	.6	.6	9.7
WV	.6	2.7	4.7	3.7	.6	.6	6.4
WV	.6	2.7	4.7	3.7	.6	.6	11.5
CALM							7.0
TOT	17.1	31.1	28.8	19.5	2.4	1.4	100.0
TOTAL NUMBER OF OBSERVATIONS							292

BLOEMFONTEIN, SOUTH AFRICA

WIND ROSES

		MAY					JUNE																
		Speed in Knots					Speed in Knots					Mean Wind Speed											
		0-3	4-6	7-10	11-16	17-21	22-27	28-31	34-40	41-47	48	0-3	4-6	7-10	11-16	17-21	22-27	28-31	34-40	41-47	48	Total	Mean Wind Speed
Dir.		2.3	4.6	9.5	2.3	3						1.4	2.3	4.2	3.5	3						11.7	9.2
N		1.7	3	1.0	3	3						2.3	2.6	1.0	1.0	1						4.3	5.2
NE		1.9	1.6	1.6	7							2.2	1.5	2.0	3							3.7	4.3
E		3.4	12.9	2.0	3	3						1.7	1.0	1.4	3							11.0	8.2
SE		3	2.0	2.3	3	3						1.3	1.0	1.4	3							1.7	3.6
S		3	7	1.0	3	3						1.3	1.0	1.4	7							2.0	7.2
SW		7	3	1.3	3	3						1.4	1.4	1.4	7							2.0	6.7
W		1.0	1.6	2.6	4	4						1.4	1.4	1.4	6							3.7	10.8
NW		1.4	3.4	3.6	1.0	3						1.2	1.2	1.2	6							3.7	10.8
Wind		2	1.3	2.0	1.7	1.6						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3							1.4	8.6
Wind		1.0	1.3	3.3	1.3	7						1.2	1.2	1.2	3								

BLOEMFONTEIN, SOUTH AFRICA WIND ROSES

SEPTEMBER

Dir.		Speed in Knots					Total		Mean Speed					
		0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	41-47	48	Total		Mean Speed
N	0.3	2.0	3.7	3.4	7	3	.4					10.4	10.9	
NE	1.0	3.0	2.0	1.6	6	3						8.0	8.1	
E	3.3	1.7	2.3	4	6	7.1						4.7	7.1	
ESE	6	3.7	3.3	3	3.7	4.9						3.7	4.9	
SE	7	3.0	4	1.0	7	9.4						6.3	9.4	
SSE	4	3.5	4	3	3	3						4.4	3	
S	4	3	3	3	3	3						4.4	3	
SSW	1.7	1.7	3	3	3	3						1.7	3	
SW	3.0	2.0	4	3	3	3						3.0	2.0	
WSW	1.4	1.4	16.9									1.4	16.9	
W	7	2.4	5.0	6.4	1.0	1.4						16.8	11.6	
WNW	4	1.0	1.7	2.1	4	1.0						4.0	1.0	
WV	4	7	2.0	1.3	3	3.1						8.0	3.1	
VAR												3.7	10.9	
CALM	7.4											7.4		
TOT		12.1	24.8	29.4	21.8	5.4	5.7	7	4			100.0	9.5	
											TOTAL NUMBER OF OBSERVATIONS	229		

OCTOBER

Dir.		Speed in Knots					Total		Mean Speed					
		0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	41-47	48	Total		Mean Speed
N	0.3	2.9	2.6	6.2	3.2							15.2	12.0	
NE	3	1.6	2.3	2.9	7							8.7	11.8	
E	6	1.6	2.3	2.9	7							8.7	11.8	
ESE	3	3.3	3.3	1.6								2.6	31.4	
SE	3	3.3	3.3	1.6								9.7	7.8	
SSE	3	3.3	3.3	1.0								3.2	8.3	
S	3	3.3	3.3	1.3								4.9	8.5	
SSW	3	1.0	1.0	1.3								1.3	10.9	
SW	3	1.0	1.0	1.3								1.3	10.9	
WSW	3	1.0	1.0	1.3								1.3	10.9	
W	1.3	2.2	2.9	6.8	2.5	1.0						16.7	12.1	
WNW	3	1.3	2.2	2.9	6.8	2.5	1.0					16.7	12.1	
WV	3	1.3	2.2	2.9	6.8	2.5	1.0					16.7	12.1	
VAR												15.8	13.3	
CALM	3.9											2.6	12.8	
TOT		7.6	17.1	22.9	34.9	10.6	5.5	1.3				100.0	11.4	
											TOTAL NUMBER OF OBSERVATIONS	310		

NOVEMBER

Dir.		Speed in Knots					Total		Mean Speed					
		0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	41-47	48	Total		Mean Speed
N	0.3	4	4.8	9.1	3.0	4						18.3	13.5	
NE	3	2.7	2.4	1.7	7							8.2	12.2	
E	4	2.7	1.7	1.7	7							3.4	11.7	
ESE	4	1.0	1.4	3.1	2.2							3.1	2.2	
SE	7	3.0	1.0	3	3.0	10.5						3.0	10.5	
SSE	3	3	1.4	1.2	4							3.1	9.4	
S	3	3	1.4	1.2	4							3.1	9.4	
SSW	3	3	1.4	1.2	4							3.1	9.4	
SW	1.4	1.4	1.6	1.7	3							1.4	1.6	
WSW	1.4	1.4	1.6	1.7	3							1.4	1.6	
W	1.4	1.4	1.6	1.7	3							1.4	1.6	
WNW	4	3	2.0	1.0	3.3	1.4						5.4	11.0	
WV	3	1.4	1.4	1.7	2.3	1.4						3.7	11.3	
VAR	3.7											3.7		
CALM	6.8											6.8		
TOT		6.8	9.1	26.7	35.7	14.8	5.4	1.7				100.0	12.2	
											TOTAL NUMBER OF OBSERVATIONS	227		

DECEMBER

Dir.		Speed in Knots					Total		Mean Speed					
		0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	41-47	48	Total		Mean Speed
N	0.3	1.8	3.2	1.9	13.4	1.6	1.2					22.0	11.7	
NE	3	2.4	2.8	3.3	1.4							8.9	10.0	
E	1.6	2.4	8	.4								4.9	11.7	
ESE	4	1.2	8	.8	.4							4.8	8.7	
SE	4	1.2	8	.8	.4							4.8	8.7	
SSE	4	1.2	8	.8	.4							4.8	8.7	
S	4	1.2	8	.8	.4							4.8	8.7	
SSW	8	1.4	1.2	.4	.4							2.4	10.3	
SW	8	1.4	1.2	.4	.4							2.4	10.3	
WSW	4	1.4	1.2	.4	.4							2.4	10.3	
W	2.4	2.3	5.2	2.4	1.2							8.8	14.4	
WNW	4	2.8	2.4	4.4	1.2	.4						11.7	13.2	
WV	4	2.8	2.4	4.4	1.2	.4						11.7	13.2	
VAR	4.5											5.3	11.9	
CALM	8.5											8.5		
TOT		8.1	17.4	23.8	37.5	9.7	3.6					100.0	10.9	
											TOTAL NUMBER OF OBSERVATIONS	248		

ANNUAL

Dir.		Speed in Knots					Total		Mean Speed					
		0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	41-47	48	Total		Mean Speed
N	1.1	3.1	4.2	1.8	1.1	3	.1					15.1	10.5	
NE	1.7	2.6	2.6	2.0	3	2						8.3	10.7	
E	1.6	1.2	1.2	1.7	7							3.0	7.5	
ESE	1.4	1.4	1.4	1.4	1.1	.0						1.8	5.0	
SE	4	1.4	1.4	1.4	1.1	.0						3.2	7.5	
SSE	3	1.4	1.4	1.4	1.1	.0						3.3	8.6	
S	3	1.4	1.4	1.4	1.1	.0						1.3	8.2	
SSW	1.1	1.1	1.1	1.1	1.1	.0						1.3	8.2	
SW	3	1.4	1.4	1.4	1.1	.0						2.5	12.5	
WSW	2.6	2.0	4.3	1.3	1.8	.0						13.2	11.4	
W	3	1.7	1.8	1.7	1.6	2						10.1	11.4	
WNW	2.2	1.7	1.4	1.4	1.5	1						4.2	10.9	
VAR	7.7											7.7		
CALM	15.6											15.6		
TOT		15.6	23.2	26.7	29.2	6.0	3.1	.3	.1	.0		100.0	8.9	
											TOTAL NUMBER OF OBSERVATIONS	355		

REGGAN(E), ALGERIA (Lat. 26°42'N, Long. 0°17'E, Elev. 935 ft)

Reggan is located over 650 miles inland from both the Mediterranean Sea and the Atlantic Ocean. The immediate surroundings of the station are typical of the North African desert - a prevalence of sand.

The major climatic controls of this area are the semipermanent pressure systems, the Intertropical Convergence Zone (I.T.C.), and the migratory cyclonic and anticyclonic systems. The effect of all these controls is either accentuated or diminished by the extensive desert regions surrounding the area and by the Atlas Mountains to the northwest of the station.

In the winter a ridge of high pressure extends into northern Africa from the North Atlantic or Azores high, while at the same time a heat produced low prevails in equatorial Africa. During the summer the high moves north, allowing the Sahara to be dominated by a trough of low pressure that is an extension of the heat low over southwestern Asia. These mean pressure patterns bring about a general northeasterly surface flow over Reggan in the winter months. This flow shifts more to an easterly direction during the summer.

Occasionally the normal pressure patterns are interrupted by the passage of cyclonic systems, the majority of which move to the north of Algeria; however, much of the country still comes under the influence of these systems. Moisture that normally would be drawn inland with these systems generally is precipitated on the windward slopes of the Atlas Mountains.

Ceilings and visibilities generally are good throughout the year except for periods of blowing dust or sand. Such visibility restrictions are predominant from February to September and occur most often during mid day. Seldom lasting more than several hours, these conditions infrequently reduce visibilities below three miles. With maximum convectional overturning occurring during the summer, blowing sand or dust particles may be carried as high as 20,000 feet elevation, thus restricting visibility aloft.

REGGAN(E), ALGERIA (Cont'd)

The average annual precipitation is less than one inch. It is not unusual for a station in this area to go without measurable precipitation for more than a year. Generally, there are fewer than 10 occurrences of thunderstorms each year. Rarely is a thunderstorm accompanied by hail.

The following data, except for the Temperature and Precipitation Summary, are based on the following periods of record:

<u>Hour</u>	<u>Period of Record</u>
0000	Mar. 1959-July 1961, except Aug. and Sept. 1959
0300	Feb. 1966-May 1967
0600	Mar.-Dec. 1959, June-Aug. 1960, Jan.-Dec. 1961, Jan. 1965-May 1967
0900	Jan. 1966-May 1967
1200	Feb.-Nov. 1950, Apr. 1951-Feb. 1952, Apr.-Oct. 1952, Dec. 1952, Apr. 1959-Feb. 1960, Apr. 1960-Dec. 1961, Jan.-Oct. 1965, Dec. 1965-May 1967
1500	Feb. 1966-May 1967
1800	Mar.-Dec. 1959, Jan.-Dec. 1961, Jan. 1965-May 1967

Because of the short period of record, these data should be used with caution. The same is true of the Absolute Maximum Temperature and the Absolute Minimum Temperature quoted in the Temperature and Precipitation Summary.

REGGAN(E), ALGERIA
Temperature and Precipitation Summary
(With peak gust when available)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	71	76	84	94	100	110	114	112	106	95	81	72	93
Monthly Mean Minimum Temperature	46	51	57	66	73	83	87	86	80	70	56	48	67
Monthly Mean Temperature	59	64	71	80	87	97	101	99	93	83	69	60	80

Period of Record: 15 Years

Absolute Maximum Temperature: +119°F

Absolute Minimum Temperature: + 32°F

Period of Record: 4 Years

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	.05	.05	.05	.05	.05	0.0	0.0	.05	0.0	.20	.10	.05	.65
Monthly Mean Snowfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Period of Record: 4 Years

REGGAN(E), ALGERIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

FEBRUARY															
Hours	Number of Observations	Clouds <2000 Ft and/or Visibility <3 M	Clouds <4000 Ft and/or Visibility <6 M	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	15	---	---	93.2	---	---	---	---	---	---	---	---	---	---	---
03-05	23	.6	4.5	78.2	---	---	---	---	---	---	---	---	---	---	4.6
06-08	34	2.9	5.9	61.8	---	---	---	---	---	---	---	---	---	---	5.7
09-11	19	.8	5.3	52.5	---	---	---	---	---	---	---	---	---	---	15.7
12-14	43	3.9	10.8	69.6	---	---	---	---	---	---	---	---	---	---	21.1
15-17	18	12.6	24.4	50.0	---	---	---	---	---	---	---	---	---	---	27.9
18-20	36	6.3	11.1	69.3	---	---	---	---	---	---	---	---	---	---	22.1
21-23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
All Hours	188	4.0	9.0	67.5	---	---	---	---	---	---	---	---	---	---	14.9

JANUARY															
Hours	Number of Observations	Clouds <2000 Ft and/or Visibility <3 M	Clouds <4000 Ft and/or Visibility <6 M	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	19	---	---	87.8	---	---	---	---	---	---	---	---	---	---	---
03-05	21	---	---	90.3	---	---	---	---	---	---	---	---	---	---	---
06-08	38	.4	2.6	84.2	---	---	---	---	---	---	---	---	---	---	---
09-11	20	---	---	85.2	---	---	---	---	---	---	---	---	---	---	---
12-14	48	2.3	2.3	79.0	---	---	---	---	---	---	---	---	---	---	2.3
15-17	24	---	---	87.4	---	---	---	---	---	---	---	---	---	---	---
18-20	43	.3	2.3	67.4	---	---	---	---	---	---	---	---	---	---	---
21-23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
All Hours	210	.6	1.5	80.9	---	---	---	---	---	---	---	---	---	---	.5

APRIL															
Hours	Number of Observations	Clouds <2000 Ft and/or Visibility <3 M	Clouds <4000 Ft and/or Visibility <6 M	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	42	---	---	87.7	---	---	---	---	---	---	---	---	---	---	---
03-05	31	.5	3.2	96.7	---	---	---	---	---	---	---	---	---	---	3.3
06-08	43	1.8	7.7	79.0	---	---	---	---	---	---	---	---	---	---	9.0
09-11	24	1.2	8.3	66.7	---	---	---	---	---	---	---	---	---	---	21.0
12-14	68	3.9	7.5	83.7	---	---	---	---	---	---	---	---	---	---	24.0
15-17	27	1.1	7.7	81.3	---	---	---	---	---	---	---	---	---	---	29.7
18-20	63	5.2	9.5	81.0	---	---	---	---	---	---	---	---	---	---	11.0
21-23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
All Hours	280	3.1	6.9	81.4	---	---	---	---	---	---	---	---	---	---	14.7

MARCH															
Hours	Number of Observations	Clouds <2000 Ft and/or Visibility <3 M	Clouds <4000 Ft and/or Visibility <6 M	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	14	8.1	4.3	85.8	---	---	---	---	---	---	---	---	---	---	14.2
03-05	35	1.2	8.6	88.7	---	---	---	---	---	---	---	---	---	---	2.9
06-08	36	.8	5.3	92.3	---	---	---	---	---	---	---	---	---	---	7.7
09-11	18	0.0	22.2	94.5	---	---	---	---	---	---	---	---	---	---	27.7
12-14	52	6.3	18.8	82.6	---	---	---	---	---	---	---	---	---	---	28.7
15-17	29	14.3	17.2	79.4	---	---	---	---	---	---	---	---	---	---	44.8
18-20	55	5.2	14.5	74.5	---	---	---	---	---	---	---	---	---	---	23.5
21-23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
All Hours	241	5.6	13.9	83.9	---	---	---	---	---	---	---	---	---	---	21.5

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

REGGAN(E), ALGERIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

MAY															
Hours	Number of Observations	Clouds <2000 Ft and/or Visibility <3 MI	Clouds <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Descriptions to Vision
00-00	6	3.7	8.9	25.5	---	---	---	---	---	---	---	2.9	---	3.8	1.0
00-05	12	3.4	3.4	28.7	---	---	---	---	---	---	---	---	---	10.0	---
05-10	62	3.4	3.4	28.7	---	---	---	---	---	---	---	---	---	10.0	5.7
10-15	14	9.1	21.4	50.0	---	---	---	---	---	---	---	---	---	39.8	80.0
15-20	63	13.1	17.5	49.2	---	---	---	---	---	---	---	---	---	28.5	18.7
20-25	9	11.5	22.5	42.2	---	---	---	---	---	---	---	---	---	29.2	50.0
25-30	9	8.5	10.5	41.4	---	---	---	---	---	---	---	---	---	28.8	4.7
All Hours	309	7.5	10.7	58.8	---	---	---	---	---	---	---	---	---	20.7	9.1

JULY															
Hours	Number of Observations	Clouds <2000 Ft and/or Visibility <3 MI	Clouds <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Descriptions to Vision
00-00	92	1.6	11.5	100.0	---	---	---	---	---	---	---	---	---	3.9	4.8
00-05	16	---	---	93.9	---	---	---	---	---	---	---	---	---	---	---
05-10	96	3.6	8.3	77.7	---	---	---	---	---	---	---	---	---	19.4	30.3
10-15	8	3.6	25.0	18.4	---	---	---	---	---	---	---	---	---	50.0	15.8
15-20	43	7.6	21.1	59.5	---	---	---	---	---	---	---	---	---	30.3	14.5
20-25	10	---	---	80.0	---	---	---	---	---	---	---	---	---	20.0	15.2
25-30	26	5	3.6	48.7	---	---	---	---	---	---	---	3.5	---	17.7	18.9
All Hours	167	3.1	10.5	68.1	---	---	---	---	---	---	---	---	---	19.2	16.7

AUGUST

Hours	Number of Observations	Clouds <2000 Ft and/or Visibility <3 MI	Clouds <4000 Ft and/or Visibility <6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Descriptions to Vision
00-00	20	---	---	90.0	---	---	---	---	---	---	---	---	---	---	4.8
00-05	19	8	5.3	94.8	---	---	---	---	---	---	---	---	---	---	---
05-10	45	5.7	16.0	77.7	---	---	---	---	---	---	---	---	---	---	30.3
10-15	18	6.8	11.1	77.8	---	---	---	---	---	---	---	---	---	---	15.8
15-20	55	6.8	6.8	80.0	---	---	---	---	---	---	---	---	---	---	14.5
20-25	20	2.1	15.0	80.0	---	---	---	---	---	---	---	---	---	---	15.2
25-30	94	4.8	11.1	77.7	---	---	---	---	---	---	---	---	---	---	18.9
All Hours	211	4.5	9.7	80.9	---	---	---	---	---	---	---	---	---	---	16.7

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.

--- indicates that the condition has occurred exactly 0.00 percent of the time.

A blank indicates that the data are not available.

REGGAN(E), ALGERIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

OCTOBER

Hours	Number of Observations	Cells <2000 Ft and/or Visibility <3 Mi	Cells <4000 Ft and/or Visibility <6 Mi	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	17	.9	6.2	76.5	---	---	---	---	---	---	---	---	---	9.7	9.7
03-05	21	---	---	85.8	---	---	---	---	---	---	---	---	---	5.8	5.8
06-08	34	6.7	5.9	57.8	---	---	---	---	---	---	---	---	---	30.6	30.6
09-11	19	---	---	94.8	---	---	---	---	---	---	---	---	---	12.9	12.9
12-14	69	6.2	10.7	71.0	---	---	---	---	---	---	---	---	---	11.6	11.6
15-17	26	8.2	11.5	69.4	---	---	---	---	---	---	---	---	---	8.4	8.4
18-20	48	4.8	8.3	62.9	---	---	---	---	---	---	---	---	---	---	---
21-23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
All Hours	227	3.8	7.3	72.4	---	---	---	---	---	---	---	---	---	9.3	9.3

DECEMBER

Hours	Number of Observations	Cells <2000 Ft and/or Visibility <3 Mi	Cells <4000 Ft and/or Visibility <6 Mi	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	42	---	---	83.2	4.2	---	---	---	---	---	---	---	---	---	---
03-05	23	---	---	87.1	---	---	---	---	---	---	---	---	---	---	---
06-08	39	---	---	76.8	---	---	---	---	---	---	---	---	---	---	---
09-11	18	---	---	77.8	---	---	---	---	---	---	---	---	---	---	---
12-14	57	3.8	3.8	70.3	---	---	---	---	---	---	---	---	---	8.7	8.7
15-17	20	---	---	75.2	---	---	---	---	---	---	---	---	---	---	---
18-20	38	---	---	63.2	---	---	---	---	---	---	---	---	---	2.6	2.6
21-23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
All Hours	219	.9	.9	74.5	.4	---	---	---	---	---	---	---	---	.5	2.3

SEPTEMBER

Hours	Number of Observations	Cells <2000 Ft and/or Visibility <3 Mi	Cells <4000 Ft and/or Visibility <6 Mi	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	15	---	---	80.0	---	---	---	---	---	---	---	---	---	---	---
03-05	22	---	---	86.3	---	---	---	---	---	---	---	---	---	4.7	4.7
06-08	39	3.0	2.6	74.3	2.7	---	---	---	---	---	---	---	---	10.3	10.3
09-11	17	7.6	17.6	76.3	---	---	---	---	---	---	---	---	---	35.3	35.3
12-14	60	7.8	16.7	78.3	---	---	---	---	---	---	---	---	---	26.0	26.0
15-17	17	7.6	17.6	53.0	---	---	---	---	---	---	---	---	---	23.7	23.7
18-20	54	2.4	5.6	59.3	2.0	---	---	---	---	---	---	---	---	9.3	9.3
21-23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
All Hours	224	3.6	8.5	71.9	1.0	---	---	---	---	---	---	---	---	14.3	14.3

NOVEMBER

Hours	Number of Observations	Cells <2000 Ft and/or Visibility <3 Mi	Cells <4000 Ft and/or Visibility <6 Mi	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	21	---	---	90.3	---	---	---	---	---	---	---	---	---	---	---
03-05	22	---	---	81.7	---	---	---	---	---	---	---	---	---	3.0	3.0
06-08	41	---	---	65.7	---	---	---	---	---	---	---	---	---	10.0	10.0
09-11	20	---	---	75.0	---	---	---	---	---	---	---	---	---	9.7	9.7
12-14	52	2.0	2.8	69.3	---	---	---	---	---	---	---	---	---	20.0	20.0
15-17	14	1.0	6.7	71.3	---	---	---	---	---	---	---	---	---	5.7	5.7
18-20	35	.4	2.9	60.0	---	---	---	---	---	---	---	---	---	---	---
21-23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
All Hours	196	.7	1.8	71.4	---	---	---	---	---	---	---	---	---	6.5	6.5

ANNUAL

Hours	Number of Observations	Cells <2000 Ft and/or Visibility <3 Mi	Cells <4000 Ft and/or Visibility <6 Mi	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
All Hours	2,544	3.4	7.2	76.0	.1	---	---	---	---	---	---	---	---	3	12.6

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

AMBALA, INDIA (Lat. 30°23'N, Long. 76°46'E, Elev. 892 ft)

Ambala is located about 125 miles north of New Delhi. Its elevation is about 892 feet. Less than 200 miles to the northwest there are several Himalayan peaks in excess of 25,000 feet.

The climate of Ambala strongly reflects the presence of the monsoon conditions. Precipitation is only one of several parameters that are affected by the monsoon. Temperatures, winds, and visibilities also show a marked change at the onset of the monsoon season.

The effects of the summer monsoon are first felt about the last week of June and continue until mid September. About two-thirds of the annual rainfall total of 33 inches falls during this period. Thunderstorms are most numerous during the first month of the monsoon season.

Ceilings and visibilities are reduced during the monsoon because of low clouds and precipitation. At the same time the rains greatly reduce the problem of blowing dust.

Prevailing winds are from the northwest except during the monsoon period when they shift to a southeasterly direction. This is determined by the monsoon low which forms to the southwest of Ambala. Wind speeds are generally light regardless of direction. The mean annual speed is only 3.1 knots.

The following data, except for the Temperature and Precipitation Summary, are based on the following periods of record:

<u>Local Standard Time</u>	<u>Period of Record</u>
0200	Jan.-July 1957, Sept. 1957-May 1959, Dec. 1959, Feb.-May 1960, Jan.-Sept. 1961, Nov. 1961-Jan. 1962, Mar.-Apr. 1962, June 1962, Aug.-Dec. 1962
0500 and 1100	July 1957-Dec. 1958, Jan. 1961-Dec. 1962
0800 and 1700	Jan. 1954-Dec. 1963
2300	Jan. 1957-Dec. 1962

Since the period of record varies from hour to hour, some caution should be exercised when comparing different hours, and when using data for hours for which the period of record is short (0200, 0500, and 1100 Local Standard Time).

AMBALA, INDIA
Temperature and Precipitation Summary
(With peak gust when available)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	69	73	84	96	104	104	96	93	94	92	82	72	88
Monthly Mean Minimum Temperature	43	48	57	66	76	81	79	78	74	62	50	44	63
Monthly Mean Temperature	56	61	71	81	90	93	88	86	84	77	66	58	76

Period of Record: 45 Years

Absolute Maximum Temperature: +118°F

Absolute Minimum Temperature: + 30°F

Period of Record: 45 Years

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	1.32	1.87	.94	.64	.73	3.04	9.61	7.89	5.11	.87	.19	.76	32.97
Monthly Mean Snowfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Period of Record: 45 Years

AMBALA, INDIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

JANUARY															
Hours	Number of Observations	Ceilings <2000 Ft and/or Visibility <3 Mi	Ceilings <4000 Ft and/or Visibility <6 Mi	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	30	17.2	100.0	67.7	---	---	---	---	---	---	---	---	---	---	---
03-05	80	28.8	100.0	67.4	---	---	---	---	---	---	7.7	13.9	---	---	---
06-08	303	23.7	75.1	63.2	---	---	---	---	---	---	1.3	1.9	---	.3	---
09-11	78	19.0	79.5	53.9	1.3	---	---	---	---	---	1.3	10.3	---	1.3	---
12-14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-17	248	24.4	79.4	69.7	---	---	---	---	---	---	---	1.0	---	---	---
18-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-23	148	19.3	98.7	66.8	---	---	---	---	---	---	.6	5.5	---	---	---
All Hours	887	23.0	83.7	65.3	.2	---	---	---	---	---	1.4	4.0	---	.2	---

FEBRUARY															
Hours	Number of Observations	Ceilings <2000 Ft and/or Visibility <3 Mi	Ceilings <4000 Ft and/or Visibility <6 Mi	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	23	12.5	100.0	66.8	---	---	---	---	---	---	---	---	---	---	---
03-05	78	12.8	93.6	71.8	1.4	---	---	---	---	---	---	---	---	---	---
06-08	270	14.8	99.3	72.5	---	---	---	---	---	---	.7	2.5	---	---	---
09-11	73	11.2	71.2	58.9	---	---	---	---	---	---	---	2.9	---	---	---
12-14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-17	241	19.1	77.2	70.0	.4	---	---	---	---	---	---	.7	---	---	---
18-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-23	137	15.4	98.5	76.1	.7	---	---	---	---	---	---	.7	---	---	---
All Hours	822	15.6	89.6	70.9	.4	---	---	---	---	---	.2	1.4	---	.1	---

MARCH															
Hours	Number of Observations	Ceilings <2000 Ft and/or Visibility <3 Mi	Ceilings <4000 Ft and/or Visibility <6 Mi	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	32	12.5	90.6	71.9	---	---	---	---	---	---	---	---	---	---	---
03-05	87	14.0	95.3	64.2	1.3	---	---	---	---	---	---	1.3	---	---	---
06-08	298	13.9	67.2	68.1	---	---	---	---	---	---	.3	1.3	---	.3	---
09-11	84	11.9	76.2	58.4	1.3	---	---	---	---	---	---	2.3	---	2.3	---
12-14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-17	272	18.8	76.5	67.7	3.2	---	---	---	---	---	.3	.6	---	.6	---
18-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-23	160	16.6	97.5	63.9	.6	---	---	---	---	---	.6	1.9	---	1.3	---
All Hours	933	15.6	73.9	66.2	1.3	---	---	---	---	---	.3	1.2	---	.7	---

APRIL															
Hours	Number of Observations	Ceilings <2000 Ft and/or Visibility <3 Mi	Ceilings <4000 Ft and/or Visibility <6 Mi	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	15.6	100.0	99.3	---	---	---	---	---	---	---	---	---	---	---	---
03-05	87	16.3	93.0	64.0	---	---	---	---	---	---	---	---	---	---	---
06-08	281	19.9	70.6	78.3	---	---	---	---	---	---	.3	1.3	---	.7	---
09-11	80	23.4	88.8	64.7	1.3	---	---	---	---	---	---	8.7	---	11.3	---
12-14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-17	267	15.4	70.5	76.3	---	---	---	---	---	---	---	3.3	---	3.0	---
18-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-23	158	17.4	98.0	73.0	.7	---	---	---	---	---	---	4.0	---	3.3	---
All Hours	899	18.5	86.0	73.5	.2	---	---	---	---	---	.1	5.5	---	2.8	---

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

AMBALA, INDIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

MAY															
Hours	Number of Observations	Observations < 2000 Ft. and/or Visibility < 3 MI.	Observations < 4000 Ft. and/or Visibility < 6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrence of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrence of Obscuration to Vision
00-00	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00-05	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05-10	289	25.5	75.0	79.7	0	0	0	0	0	0	0	0	0	0	0
10-15	91	33.6	96.7	78.1	0	0	0	0	0	0	0	0	0	0	0
15-20	173	17.7	73.0	76.1	3.0	0	0	0	0	0	0	0	0	0	0
20-25	159	20.8	98.7	77.8	1.9	0	0	0	0	0	0	0	0	0	0
25-30	137	20.4	98.7	77.8	1.9	0	0	0	0	0	0	0	0	0	0
All Hours	908	24.7	88.8	77.6	1.3	0	0	0	0	0	0	0	0	0	0

JUNE															
Hours	Number of Observations	Observations < 2000 Ft. and/or Visibility < 3 MI.	Observations < 4000 Ft. and/or Visibility < 6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrence of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrence of Obscuration to Vision
00-00	9	22.2	100.0	89.0	0	0	0	0	0	0	0	0	0	0	0
00-05	86	36.5	96.2	50.7	3.7	0	0	0	0	0	0	0	0	0	0
05-10	276	36.6	80.8	78.7	0	0	0	0	0	0	0	0	0	0	0
10-15	88	47.2	98.0	64.7	2.3	0	0	0	0	0	0	0	0	0	0
15-20	265	39.1	85.2	80.0	0	0	0	0	0	0	0	0	0	0	0
20-25	134	31.1	96.2	75.0	2.3	0	0	0	0	0	0	0	0	0	0
25-30	82	34.3	87.3	74.7	0	0	0	0	0	0	0	0	0	0	0
All Hours	852	34.3	87.3	74.7	0	0	0	0	0	0	0	0	0	0	0

JULY															
Hours	Number of Observations	Observations < 2000 Ft. and/or Visibility < 3 MI.	Observations < 4000 Ft. and/or Visibility < 6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrence of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrence of Obscuration to Vision
00-00	6	16.7	100.0	33.2	16.8	0	0	0	0	0	0	0	0	0	0
00-05	121	27.8	79.0	18.2	7.8	0	0	0	0	0	0	0	0	0	0
05-10	290	39.1	88.5	34.8	0	0	0	0	0	0	0	0	0	0	0
10-15	117	32.8	74.6	13.6	5.2	0	0	0	0	0	0	0	0	0	0
15-20	278	34.3	86.3	45.2	3.2	0	0	0	0	0	0	0	0	0	0
20-25	136	19.7	91.7	37.8	1.9	0	0	0	0	0	0	0	0	0	0
25-30	94	38.1	85.6	38.9	2.9	0	0	0	0	0	0	0	0	0	0
All Hours	964	38.1	85.6	38.9	2.9	0	0	0	0	0	0	0	0	0	0

AUGUST															
Hours	Number of Observations	Observations < 2000 Ft. and/or Visibility < 3 MI.	Observations < 4000 Ft. and/or Visibility < 6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrence of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrence of Obscuration to Vision
00-00	9	25.0	100.0	77.7	0	0	0	0	0	0	0	0	0	0	0
00-05	121	24.7	80.7	21.6	3.2	0	0	0	0	0	0	0	0	0	0
05-10	289	31.7	84.7	30.3	0	0	0	0	0	0	0	0	0	0	0
10-15	123	37.3	80.3	5.8	2.6	0	0	0	0	0	0	0	0	0	0
15-20	270	30.4	82.8	15.8	0	0	0	0	0	0	0	0	0	0	0
20-25	158	16.9	90.8	47.1	1.3	0	0	0	0	0	0	0	0	0	0
25-30	94	30.8	84.2	31.6	1.0	0	0	0	0	0	0	0	0	0	0
All Hours	964	30.8	84.2	31.6	1.0	0	0	0	0	0	0	0	0	0	0

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

AMBALA, INDIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

OCTOBER															
Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 1/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	10	18.2	100.0	81.9	---	---	---	---	---	---	---	---	---	---	---
03-05	121	19.7	98.3	86.6	1.6	---	---	---	---	---	---	2.6	---	---	---
06-08	296	14.1	99.3	85.8	.3	---	---	---	---	---	---	1.9	---	---	---
09-11	120	13.2	74.2	89.4	2.6	---	---	---	---	---	---	2.6	---	---	---
12-14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-17	274	13.5	66.3	89.0	---	---	---	---	---	---	---	1.0	---	.3	---
18-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-23	152	15.7	98.7	91.0	.6	---	---	---	---	---	.6	3.2	---	---	---
All Hours	973	14.9	86.7	88.0	.6	---	---	---	---	---	.1	2.0	---	.1	---

SEPTEMBER															
Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 1/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	14	20.0	100.0	50.0	---	---	---	---	---	---	---	---	---	---	---
03-05	106	29.6	97.2	85.0	2.7	---	---	---	---	---	1.0	2.7	---	---	---
06-08	279	25.1	72.9	55.0	---	---	---	---	---	---	---	2.0	---	---	---
09-11	117	30.2	80.2	34.3	2.7	---	---	---	---	---	---	1.0	---	---	---
12-14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-17	263	20.7	74.8	61.3	3.3	---	---	---	---	---	.3	.7	---	---	---
18-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-23	149	21.5	97.3	61.7	2.0	---	---	---	---	---	---	.7	---	.7	---
All Hours	928	24.4	81.5	54.2	1.9	---	---	---	---	---	.7	1.3	---	.1	---

NOVEMBER															
Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 1/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	24	13.6	100.0	91.7	---	---	---	---	---	---	---	---	---	---	---
03-05	115	17.1	99.1	88.7	---	---	---	---	---	---	1.7	3.3	---	1.7	---
06-08	288	10.6	57.1	89.3	---	---	---	---	---	---	.3	1.0	---	---	---
09-11	117	11.0	71.8	78.7	---	---	---	---	---	---	---	3.3	---	---	---
12-14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-17	243	13.2	74.7	90.7	---	---	---	---	---	---	---	.7	---	---	---
18-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-23	148	15.3	98.6	88.0	.7	---	---	---	---	---	---	.0	---	---	---
All Hours	935	12.9	76.3	88.1	.1	---	---	---	---	---	.3	1.9	---	.1	---

ANNUAL															
Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 1/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
All Hours	11,007	22.5	83.1	66.1	.9	---	---	---	---	---	.6	5.0	---	1.7	---

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

AMBALA, INDIA WIND ROSES

SEPTEMBER

Speed in Knots		20-30 (kt)	
Dir.	Total	0-6	7-16
N	1.4	1.2	2
NNE	1.4	1.3	1
NW	1.9	1.5	1
ENE	6.3	4.8	1
E	1.0	1.0	1
ESE	21.9	15.5	1
SE	2.2	2.5	1
SSE	1.8	2.0	1
S	3.7	3.8	1
SSW	1.1	1.1	1
SW	1.1	1.1	1
WSW	2.3	2.3	1
W	17.6	15.1	1
WNW	1.1	1.1	1
WV	1.1	1.1	1
VARIAL	1.1	1.1	1
CALM	1.1	1.1	1
TOT	52.9	36.6	9.8

TOTAL NUMBER OF OBSERVATIONS: 529

OCTOBER

Speed in Knots		20-30 (kt)	
Dir.	Total	0-6	7-16
N	2.0	2.0	1
NNE	1.8	1.8	1
NW	1.8	1.8	1
ENE	1.8	1.8	1
E	1.8	1.8	1
ESE	13.6	13.6	1
SE	2.2	2.2	1
SSE	1.8	1.8	1
S	2.6	2.6	1
SSW	2.2	2.2	1
SW	2.2	2.2	1
WSW	2.2	2.2	1
W	10.7	10.7	1
WNW	1.8	1.8	1
WV	1.8	1.8	1
VARIAL	1.8	1.8	1
CALM	1.8	1.8	1
TOT	40.7	30.1	7.3

TOTAL NUMBER OF OBSERVATIONS: 471

Mean Wind Speed	
Total	2.3
N	1.2
NNE	1.3
NW	1.5
ENE	2.5
E	1.8
ESE	3.0
SE	3.4
SSE	2.2
S	2.7
SSW	2.7
SW	2.7
WSW	2.7
W	3.2
WNW	2.8
WV	2.8
VARIAL	2.8
CALM	2.8
TOT	2.8

NOVEMBER

Speed in Knots		20-30 (kt)	
Dir.	Total	0-6	7-16
N	1.2	1.2	1
NNE	1.2	1.2	1
NW	1.6	1.6	1
ENE	12.5	9	1
E	1.2	1.2	1
ESE	1.2	1.2	1
SE	1.2	1.2	1
SSE	1.2	1.2	1
S	2.5	2.5	1
SSW	1.2	1.2	1
SW	1.2	1.2	1
WSW	1.2	1.2	1
W	20.3	20.3	1
WNW	1.2	1.2	1
WV	1.2	1.2	1
VARIAL	1.2	1.2	1
CALM	1.2	1.2	1
TOT	39.4	30.2	9.5

TOTAL NUMBER OF OBSERVATIONS: 394

DECEMBER

Speed in Knots		20-30 (kt)	
Dir.	Total	0-6	7-16
N	1.0	1.0	1
NNE	1.0	1.0	1
NW	1.0	1.0	1
ENE	1.0	1.0	1
E	1.0	1.0	1
ESE	15.7	15.7	1
SE	3.0	3.0	1
SSE	2.2	2.2	1
S	2.2	2.2	1
SSW	2.2	2.2	1
SW	2.2	2.2	1
WSW	2.2	2.2	1
W	15.7	15.7	1
WNW	2.2	2.2	1
WV	2.2	2.2	1
VARIAL	2.2	2.2	1
CALM	2.2	2.2	1
TOT	39.1	30.2	7.2

TOTAL NUMBER OF OBSERVATIONS: 391

Mean Wind Speed	
Total	2.3
N	1.0
NNE	1.0
NW	1.0
ENE	1.0
E	1.0
ESE	2.8
SE	3.0
SSE	2.2
S	2.2
SSW	2.2
SW	2.2
WSW	2.2
W	3.1
WNW	2.2
WV	2.2
VARIAL	2.2
CALM	2.2
TOT	2.3

ANNUAL

Speed in Knots		20-30 (kt)	
Dir.	Total	0-6	7-16
N	1.6	1.6	1
NNE	1.6	1.6	1
NW	1.6	1.6	1
ENE	1.6	1.6	1
E	1.6	1.6	1
ESE	18.9	18.9	1
SE	3.0	3.0	1
SSE	2.2	2.2	1
S	2.2	2.2	1
SSW	2.2	2.2	1
SW	2.2	2.2	1
WSW	2.2	2.2	1
W	18.9	18.9	1
WNW	2.2	2.2	1
WV	2.2	2.2	1
VARIAL	2.2	2.2	1
CALM	2.2	2.2	1
TOT	30.1	27.8	11.3

TOTAL NUMBER OF OBSERVATIONS: 1029

Mean Wind Speed	
Total	2.3
N	1.0
NNE	1.0
NW	1.0
ENE	1.0
E	1.0
ESE	2.1
SE	3.0
SSE	2.2
S	2.2
SSW	2.2
SW	2.2
WSW	2.2
W	3.1
WNW	2.2
WV	2.2
VARIAL	2.2
CALM	2.2
TOT	2.3

DHAHRAN, SAUDI ARABIA

(Lat. 26°16'N, Long. 50°10'E, Elev. 78 ft)

Dhahran Airfield lies about two miles inland from the western boundary of the Persian Gulf. The surrounding area consists, for the most part, of low lying desert, much of which is uninhabited.

As Dhahran is located on the downwind or southeast side of the Arabian Desert, its climate is greatly affected by the desert's presence. On one hand, the desert reduces potential precipitable atmospheric moisture which in turn reduces the potential rainfall, while on the other hand, it provides a ready source of dust and sand particles. It is these particles, when carried aloft by the shamal or northwesterly winds, that often reduce visibilities below acceptable landing conditions.

In the summer months these shamal winds are created by the semi-permanent low pressure area over northwest India. On the average, these winds vary in speed from 10 to 30 knots.

Shamal winds also occur in the winter months. Unlike those which occur in the summer, these winds are associated with western depressions that move across the Arabian Peninsula from the Mediterranean area. Occasionally these depressions give rise to vigorous shamals which occur without any forewarning, such as a falling barometer or associated frontal cloud development.

Annual precipitation amounts at Dhahran are highly variable, averaging about three inches and usually occurring exclusive of the summer months. Thunderstorms are infrequent in the months from October through May, and they are almost non-existent in the intervening months. The development and occurrence of thunderstorms in this area are coincidental either with the approach or passage of the western depressions and their attending frontal systems. If fog occurs at Dhahran, it is usually of the sea type, occurring mostly in April during the morning hours and clearing by late morning.

The following data, except for the Temperature and Precipitation Summary, are based on twenty-four hourly observations per day from February 1946 through June 1956.

DHAHRAN, SAUDI ARABIA
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	69	72	79	90	99	106	107	108	103	95	83	73	90
Monthly Mean Minimum Temperature	54	56	61	69	77	83	86	85	80	73	65	57	71
Monthly Mean Temperature	62	64	70	80	88	95	97	97	92	84	74	65	81

Period of Record: Feb. 46 - June 56

Absolute Maximum Temperature: +120°F

Absolute Minimum Temperature: + 40°F

Period of Record: 10 Years

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	.45	.55	.58	.07	.05	.00	.00	.00	.00	T	.10	1.20	3.00
Monthly Mean Snowfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Period of Record: Jan. 46 - June 56; Less Feb. 46 and Dec. 48

DHAHRAN, SAUDI ARABIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

JANUARY

FEBRUARY

Hours	Number of Observations	Visibility < 2000 Ft and/or Ceilings < 2000 Ft and/or Visibility < 6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
01-03	88	2.4	6.5	75.7	2.5	---	---	---	2.5	---	---	---	---	---
04-06	98	2.4	7.3	75.5	2.9	---	---	---	2.9	---	---	---	---	---
07-09	80	3.5	9.4	61.3	1.1	2.5	---	---	2.5	---	---	---	---	---
10-12	93	6.7	14.5	60.5	2.3	---	---	---	2.3	---	---	---	---	---
13-15	89	7.2	16.1	58.8	1.9	---	---	---	1.9	---	---	---	---	---
16-18	89	5.4	12.6	61.2	2.6	---	---	---	2.6	---	---	---	---	---
19-21	97	1.7	6.4	68.0	1.1	1.9	---	---	1.9	---	---	---	---	---
22-24	86	2.6	6.5	75.7	2.7	---	---	---	2.7	---	---	---	---	---
All Hours	7,059	4.1	10.0	66.8	1.1	2.1	---	---	2.4	---	---	---	---	---

Hours	Number of Observations	Visibility < 2000 Ft and/or Ceilings < 2000 Ft and/or Visibility < 6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
01-03	787	5.6	10.7	68.4	4	2.0	---	---	2.0	---	---	---	---	---
04-06	792	4.4	9.5	67.3	3.5	---	---	---	3.5	---	---	---	---	---
07-09	887	7.7	15.5	57.9	1.1	2.4	---	---	2.4	---	---	---	---	---
10-12	858	11.2	19.5	55.1	1.1	2.4	---	---	2.4	---	---	---	---	---
13-15	894	11.2	20.7	52.9	1.2	3.4	---	---	3.4	---	---	---	---	---
16-18	858	8.8	19.0	50.9	1.3	3.1	---	---	3.1	---	---	---	---	---
19-21	869	5.1	11.1	59.6	1.2	1.6	---	---	1.6	---	---	---	---	---
22-24	823	5.3	9.3	68.3	2	1.8	---	---	1.8	---	---	---	---	---
All Hours	6,751	7.6	14.6	59.8	1.2	2.5	---	---	2.5	---	---	---	---	---

MARCH

APRIL

Hours	Number of Observations	Visibility < 2000 Ft and/or Ceilings < 2000 Ft and/or Visibility < 6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
01-03	84	5.2	10.3	58.4	5	5.3	---	---	5.3	---	---	---	---	---
04-06	837	5.6	11.2	54.8	1.6	7.4	---	---	7.4	---	---	---	---	---
07-09	901	6.1	14.0	43.3	4	5.9	---	---	5.9	---	---	---	---	---
10-12	993	7.6	15.2	45.0	1	3.2	---	---	3.2	---	---	---	---	---
13-15	1,023	10.1	18.7	42.6	---	2.7	---	---	2.7	---	---	---	---	---
16-18	992	7.6	17.4	44.4	2	3.3	---	---	3.3	---	---	---	---	---
19-21	1,021	3.2	8.5	53.3	1	2.9	---	---	2.9	---	---	---	---	---
22-24	898	2.5	6.7	59.5	3	2.9	---	---	2.9	---	---	---	---	---
All Hours	7,499	6.0	12.9	49.8	4	4.1	---	---	4.1	---	---	---	---	---

Hours	Number of Observations	Visibility < 2000 Ft and/or Ceilings < 2000 Ft and/or Visibility < 6 MI	Cloud Cover 3/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
01-03	800	1.6	3.8	71.6	---	---	---	---	---	---	---	---	---	---
04-06	810	1.6	5.8	67.7	---	---	---	---	---	---	---	---	---	---
07-09	865	6.3	11.3	54.5	1	0	---	---	0	---	---	---	---	---
10-12	947	8.5	15.1	54.8	---	---	---	---	---	---	---	---	---	---
13-15	978	9.6	17.4	51.8	1	0	---	---	0	---	---	---	---	---
16-18	994	6.7	13.9	50.1	---	---	---	---	---	---	---	---	---	---
19-21	978	2.6	7.7	60.2	3	0	---	---	0	---	---	---	---	---
22-24	870	1.7	3.8	69.9	1	1.1	---	---	1.1	---	---	---	---	---
All Hours	7,211	4.9	10.0	59.6	1	0	---	---	0	---	---	---	---	---

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.

--- indicates that the condition has occurred exactly 0.00 percent of the time.

A blank indicates that the data are not available.

DHAHRAN, SAUDI ARABIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

Hours	MAY										JUNE																		
	Number of Observations	Clouds -2000 Ft and/or Visibility < 3 MI	Clouds -4000 Ft and/or Visibility < 6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision	Number of Observations	Clouds -2000 Ft and/or Visibility < 3 MI	Clouds -4000 Ft and/or Visibility < 6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
All Hours	7,300	0.1	17.8	76.3	.1	.5	.....	.....	.....	.....	.....	.....	.....	.....	1,306	16.8	29.5	87.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
01-03	88	3.1	9.5	75.9	4	7	.....	.....	.....	.....	.....	.....	.....	.....	167	13.7	22.1	88.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
04-06	158	6.2	13.4	76.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	310	19.0	30.1	84.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
07-09	158	6.1	19.5	72.6	1	9	.....	.....	.....	.....	.....	.....	.....	.....	343	22.8	36.0	89.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10-12	154	15.7	28.0	72.5	1	5	.....	.....	.....	.....	.....	.....	.....	.....	360	23.2	42.3	86.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13-15	154	14.9	28.6	70.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	360	21.6	31.6	86.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16-18	150	9.0	21.6	74.1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	360	14.8	30.6	86.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19-21	159	13.3	10.8	75.8	1	7	.....	.....	.....	.....	.....	.....	.....	.....	369	8.1	16.2	89.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22-24	89	2.2	6.1	78.6	1	4	.....	.....	.....	.....	.....	.....	.....	.....	148	0.8	8.8	91.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Hours	JULY										AUGUST																		
	Number of Observations	Clouds -2000 Ft and/or Visibility < 3 MI	Clouds -4000 Ft and/or Visibility < 6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision	Number of Observations	Clouds -2000 Ft and/or Visibility < 3 MI	Clouds -4000 Ft and/or Visibility < 6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
All Hours	7,046	13.3	24.6	83.0	.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,056	5.2	12.2	88.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
01-03	117	9.9	15.8	74.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	835	3.2	6.3	89.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
04-06	137	14.3	23.8	80.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	837	7.2	11.7	87.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
07-09	158	17.1	30.3	76.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	869	9.3	15.9	83.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10-12	159	19.4	34.8	83.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	900	8.7	21.2	86.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13-15	158	19.5	37.1	82.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	985	7.0	20.1	87.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16-18	159	12.3	29.5	84.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	899	3.8	8.5	89.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19-21	130	7.1	15.1	84.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	930	1.7	4.8	90.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22-24	108	6.5	13.2	88.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	868	1.5	1.6	91.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 - indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

DHAHRAN, SAUDI ARABIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

SEPTEMBER

Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 MI	Callings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
01-03	869	4.1	8.4	95.4	---	---	---	---	---	---	---	---	---	---	---
04-06	810	8.5	16.2	93.3	---	---	---	---	---	---	---	---	---	---	---
07-09	841	11.1	18.3	92.6	---	---	---	---	---	---	---	---	---	---	---
10-12	870	6.4	16.6	96.2	---	---	---	---	---	---	---	---	---	---	---
13-15	899	5.8	16.6	96.2	---	---	---	---	---	---	---	---	---	---	---
16-18	870	2.9	9.2	96.9	---	---	---	---	---	---	---	---	---	---	---
19-21	900	1.3	3.6	97.8	---	---	---	---	---	---	---	---	---	---	---
22-24	840	1.4	4.6	97.5	---	---	---	---	---	---	---	---	---	---	---
All Hours	6,839	5.2	11.7	95.8	---	---	---	---	---	---	---	---	---	---	---

OCTOBER

Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 MI	Callings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
01-03	835	2.5	4.1	96.9	---	---	---	---	---	---	---	---	---	---	---
04-06	871	3.8	6.9	96.3	---	---	---	---	---	---	---	---	---	---	---
07-09	871	3.9	6.7	96.8	---	---	---	---	---	---	---	---	---	---	---
10-12	869	2.2	4.8	93.2	---	---	---	---	---	---	---	---	---	---	---
13-15	909	2.5	5.5	94.4	---	---	---	---	---	---	---	---	---	---	---
16-18	868	1.2	2.6	95.9	---	---	---	---	---	---	---	---	---	---	---
19-21	928	.2	.8	97.0	---	---	---	---	---	---	---	---	---	---	---
22-24	867	1.2	1.7	97.3	---	---	---	---	---	---	---	---	---	---	---
All Hours	7,064	2.2	4.1	95.4	---	---	---	---	---	---	---	---	---	---	---

NOVEMBER

Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 MI	Callings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
01-03	890	2.2	3.1	82.5	---	---	---	---	---	---	---	---	---	---	---
04-06	810	3.6	5.3	81.7	.2	1.1	---	---	---	---	---	---	---	---	---
07-09	840	4.4	6.3	70.7	---	---	---	---	---	---	---	---	---	---	---
10-12	871	3.7	7.0	70.1	---	---	---	---	---	---	---	---	---	---	---
13-15	899	2.8	6.7	69.9	.3	.7	---	---	---	---	---	---	---	---	---
16-18	870	.7	3.3	70.6	.3	.3	---	---	---	---	---	---	---	---	---
19-21	900	.4	1.1	78.0	.3	.7	---	---	---	---	---	---	---	---	---
22-24	840	1.0	2.1	81.1	---	---	---	---	---	---	---	---	---	---	---
All Hours	6,836	2.4	4.4	75.4	.2	.5	---	---	---	---	---	---	---	---	---

DECEMBER

Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 MI	Callings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
01-03	828	1.7	5.3	68.1	---	---	---	---	---	---	---	---	---	---	---
04-06	814	4.7	9.0	67.6	---	---	---	---	---	---	---	---	---	---	---
07-09	865	5.9	10.1	56.4	---	---	---	---	---	---	---	---	---	---	---
10-12	895	4.6	10.3	59.5	---	---	---	---	---	---	---	---	---	---	---
13-15	923	4.3	11.1	54.9	.3	1.1	---	---	---	---	---	---	---	---	---
16-18	896	3.1	9.1	53.9	.3	1.1	---	---	---	---	---	---	---	---	---
19-21	919	1.6	4.5	62.5	.1	1.1	---	---	---	---	---	---	---	---	---
22-24	863	.7	4.4	68.6	---	---	---	---	---	---	---	---	---	---	---
All Hours	7,025	3.3	8.0	61.3	.1	1.1	---	---	---	---	---	---	---	---	---

ANNUAL

Hours	Number of Observations	Callings <2000 Ft and/or Visibility <3 MI	Callings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
All Hours	95,020	7.2	13.9	74.6	.1	1.3	---	---	---	---	---	---	---	---	---

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.

--- indicates that the condition has occurred exactly 0.00 percent of the time.

A blank indicates that the data are not available.

DHAHRAN, SAUDI ARABIA WIND ROSES

JANUARY

Speed in Knots

Dir.	0-3	4-10	11-21	22-27	28-30	24)	Total	Mean Wind Speed
N	3	2.8	1.3	1	1	1	7.6	10.1
NE	5	1.7	1.1	1	1	1	10.7	8.5
E	5	1.7	1.1	1	1	1	10.7	8.5
SE	1	1.7	1.1	1	1	1	6.6	6.6
S	1	1.7	1.1	1	1	1	6.6	6.6
SW	1	1.7	1.1	1	1	1	6.6	6.6
W	1	1.7	1.1	1	1	1	6.6	6.6
NW	1	1.7	1.1	1	1	1	6.6	6.6
WIND	1	1.7	1.1	1	1	1	6.6	6.6
VARIAL	1	1.7	1.1	1	1	1	6.6	6.6
CALM	6.5	12.9	18.2	6	6	6	66.0	9.3
TOT	12.6	21.9	36.9	17	17	17	100.0	9.3

TOTAL NUMBER OF OBSERVATIONS 1000

FEBRUARY

Speed in Knots

Dir.	0-3	4-10	11-21	22-27	28-30	24)	Total	Mean Wind Speed
N	3	2.8	1.3	1	1	1	7.6	10.1
NE	5	1.7	1.1	1	1	1	10.7	8.5
E	5	1.7	1.1	1	1	1	10.7	8.5
SE	1	1.7	1.1	1	1	1	6.6	6.6
S	1	1.7	1.1	1	1	1	6.6	6.6
SW	1	1.7	1.1	1	1	1	6.6	6.6
W	1	1.7	1.1	1	1	1	6.6	6.6
NW	1	1.7	1.1	1	1	1	6.6	6.6
WIND	1	1.7	1.1	1	1	1	6.6	6.6
VARIAL	1	1.7	1.1	1	1	1	6.6	6.6
CALM	5.9	11.8	16.7	5.6	5.6	5.6	59.0	8.0
TOT	10.6	24.1	33.2	11.7	11.7	11.7	100.0	9.3

TOTAL NUMBER OF OBSERVATIONS 1000

MARCH

Speed in Knots

Dir.	0-3	4-10	11-21	22-27	28-30	24)	Total	Mean Wind Speed
N	4	5.0	8.5	11.1	1	1	29.6	15.2
NE	4	5.0	8.5	11.1	1	1	29.6	15.2
E	4	5.0	8.5	11.1	1	1	29.6	15.2
SE	1	1.7	2.1	1.1	1	1	6.6	6.6
S	1	1.7	2.1	1.1	1	1	6.6	6.6
SW	1	1.7	2.1	1.1	1	1	6.6	6.6
W	1	1.7	2.1	1.1	1	1	6.6	6.6
NW	1	1.7	2.1	1.1	1	1	6.6	6.6
WIND	1	1.7	2.1	1.1	1	1	6.6	6.6
VARIAL	1	1.7	2.1	1.1	1	1	6.6	6.6
CALM	5.7	11.4	16.2	14	14	14	61.0	8.0
TOT	9.8	22.7	32.7	25.1	25.1	25.1	100.0	9.6

TOTAL NUMBER OF OBSERVATIONS 1000

APRIL

Speed in Knots

Dir.	0-3	4-10	11-21	22-27	28-30	24)	Total	Mean Wind Speed
N	3	3.3	6.6	8.8	1	1	22.8	12.2
NE	3	3.3	6.6	8.8	1	1	22.8	12.2
E	3	3.3	6.6	8.8	1	1	22.8	12.2
SE	1	1.7	2.1	1.1	1	1	6.6	6.6
S	1	1.7	2.1	1.1	1	1	6.6	6.6
SW	1	1.7	2.1	1.1	1	1	6.6	6.6
W	1	1.7	2.1	1.1	1	1	6.6	6.6
NW	1	1.7	2.1	1.1	1	1	6.6	6.6
WIND	1	1.7	2.1	1.1	1	1	6.6	6.6
VARIAL	1	1.7	2.1	1.1	1	1	6.6	6.6
CALM	11.0	22.0	33.0	11.0	11.0	11.0	110.0	10.0
TOT	14.1	28.2	42.3	22.1	22.1	22.1	100.0	9.6

TOTAL NUMBER OF OBSERVATIONS 1000

ALICE SPRINGS, AUSTRALIA
(Lat. 23°48'S, Long. 133°53'E, Elev. 1,790 ft)

Alice Springs is located in the center of the continent, which is nearly as large as the United States. It is well over 500 miles from the nearest ocean, its source of moisture. Furthermore, the Australian Continent lies under the influence of the quasi-stationary sub-tropical high pressure system. Combined, these two factors help produce the desert-like climate of this station.

Low humidities restrict precipitation amounts, but increase the frequency of clear skies and good visibilities. The annual rainfall averages just under ten inches with maximum amounts falling during the summer months.

Most precipitation falls from air-mass thunderstorms. Strong winds, heavy rains, and hail sometimes accompany these storms.

Good visibilities are a result not only of low humidities but also of an absence of industrial air pollution. Visibilities are reduced generally by either blowing or suspended dust.

The following data, except for the Temperature and Precipitation Summary, are based on observations made at 0600, 1200, and 1800 Local Standard Time from January 1947 through June 1958.

ALICE SPRINGS, AUSTRALIA
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	97	95	90	81	73	67	67	73	81	88	93	96	83
Monthly Mean Minimum Temperature	70	69	63	54	46	41	39	43	49	58	64	68	55
Monthly Mean Temperature	84	82	77	68	60	54	53	58	65	73	79	82	70

Period of Record: 62 Years

Absolute Maximum Temperature: +111°F - Period of Record: 19 Years

Absolute Minimum Temperature: +19°F - Period of Record: 18 Years

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	1.70	1.30	1.10	.40	.60	.50	.30	.30	.30	.70	1.20	1.50	9.90

Monthly Mean Snowfall
 No Data

Period of Record: 18 Years

ALICE SPRINGS, AUSTRALIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

MAY

Hours	Number of Observations	Observations < 2000 Ft. and/or Visibility < 3 Mi.	Observations < 4000 Ft. and/or Visibility < 6 Mi.	Cloud Cover %/10	Thunder (With or Without Precipitation)	Hail and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Ice (Blowing and/or Drifted)	Total Occurrences of Observations to Station
00-00															
05-05	171	2.0	4.0	66.3											
06-06															
10-10	344	1.8	2.7	50.6											
15-17	170	2.8	3.8	52.3											
21-23	1,085	2.2	3.8	56.5											
All Hours	1,650	2.3	3.9	59.1											

JUNE

Hours	Number of Observations	Observations < 2000 Ft. and/or Visibility < 3 Mi.	Observations < 4000 Ft. and/or Visibility < 6 Mi.	Cloud Cover %/10	Thunder (With or Without Precipitation)	Hail and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Ice (Blowing and/or Drifted)	Total Occurrences of Observations to Station
00-00															
05-05	379	2.6	5.6	69.3											
06-06															
11-11	338	2.8	7.5	69.0											
15-17	379	1.6	4.6	66.0											
21-23	1,050	2.3	5.9	71.1											
All Hours	1,650	2.3	5.9	71.1											

JULY

Hours	Number of Observations	Observations < 2000 Ft. and/or Visibility < 3 Mi.	Observations < 4000 Ft. and/or Visibility < 6 Mi.	Cloud Cover %/10	Thunder (With or Without Precipitation)	Hail and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Ice (Blowing and/or Drifted)	Total Occurrences of Observations to Station
00-00															
05-05	340	3.9	7.3	73.5							1.7				
06-06															
09-11	513	2.4	5.5	66.7											
15-17	340	1.9	3.5	72.3											
21-23	993	2.7	5.8	71.5											
All Hours	1,650	2.7	5.8	71.5											

AUGUST

Hours	Number of Observations	Observations < 2000 Ft. and/or Visibility < 3 Mi.	Observations < 4000 Ft. and/or Visibility < 6 Mi.	Cloud Cover %/10	Thunder (With or Without Precipitation)	Hail and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Ice (Blowing and/or Drifted)	Total Occurrences of Observations to Station
00-00															
05-05	941	1.3	2.4	68.3											
06-06															
09-11	315	1.3	2.6	68.3								1.0			
15-17	941	1.6	3.1	71.7											
21-23	997	1.4	2.7	69.8											
All Hours	1,650	1.4	2.7	69.8											

0.0 indicates that the condition has occurred less than 0.06 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

ALICE SPRINGS, AUSTRALIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

ANNUAL

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05	340	2.0	4.8	65.5	.3							2.6			
06-08															
09-11	322	3.5	6.7	67.7								1.8		1.0	
12-14															
15-17	340	2.2	5.7	59.0	1.6							3.5		1.0	
18-20															
21-23															
All Hours	1,002	2.6	5.7	64.1	.6							3.6		.7	

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05	340	3.9	6.4	52.9	.3							2.3			
06-08															
09-11	321	3.5	7.9	57.1	.3							3.5		1.3	
12-14															
15-17	340	1.9	4.7	44.5	3.2							1.6		1.0	
18-20															
21-23															
All Hours	1,001	3.1	6.3	51.5	1.3							2.5		1.0	

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05	309	2.7	4.6	52.0	.3							2.3		.7	
06-08															
09-11	308	2.8	6.1	59.7	.3							3.0		2.7	
12-14															
15-17	330	1.8	3.8	51.3	1.7							1.7		1.7	
18-20															
21-23															
All Hours	963	2.4	4.8	59.7	.8							2.3		1.7	

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05	12,300	2.4	5.0	64.8	.3							1.8		.6	
06-08															
09-11															
12-14															
15-17															
18-20															
21-23															
All Hours	12,300	2.4	5.0	64.8	.3							1.8		.6	

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

ALICE SPRINGS, AUSTRALIA WIND ROSES

SEPTEMBER

Dir.	Speed in Knots							Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21	22-27	28-33		
N	0	0	0	0	0	0	0	0	0.0
NE	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0.0
SE	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Mean	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Dir.	0	0	0	0	0	0	0	0	0.0
WIND	0	0	0	0	0	0	0	0	0.0
CUML	0	0	0	0	0	0	0	0	0.0
TOT	0	0	0	0	0	0	0	0	0.0
TOTAL NUMBER OF OBSERVATIONS									100

OCTOBER

Dir.	Speed in Knots							Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21	22-27	28-33		
N	0	0	0	0	0	0	0	0	0.0
NE	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0.0
SE	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Mean	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Dir.	0	0	0	0	0	0	0	0	0.0
WIND	0	0	0	0	0	0	0	0	0.0
CUML	0	0	0	0	0	0	0	0	0.0
TOT	0	0	0	0	0	0	0	0	0.0
TOTAL NUMBER OF OBSERVATIONS									100

NOVEMBER

Dir.	Speed in Knots							Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21	22-27	28-33		
N	0	0	0	0	0	0	0	0	0.0
NE	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0.0
SE	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Mean	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Dir.	0	0	0	0	0	0	0	0	0.0
WIND	0	0	0	0	0	0	0	0	0.0
CUML	0	0	0	0	0	0	0	0	0.0
TOT	0	0	0	0	0	0	0	0	0.0
TOTAL NUMBER OF OBSERVATIONS									100

DECEMBER

Dir.	Speed in Knots							Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21	22-27	28-33		
N	0	0	0	0	0	0	0	0	0.0
NE	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0.0
SE	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Mean	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Dir.	0	0	0	0	0	0	0	0	0.0
WIND	0	0	0	0	0	0	0	0	0.0
CUML	0	0	0	0	0	0	0	0	0.0
TOT	0	0	0	0	0	0	0	0	0.0
TOTAL NUMBER OF OBSERVATIONS									100

ANNUAL

Dir.	Speed in Knots							Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21	22-27	28-33		
N	0	0	0	0	0	0	0	0	0.0
NE	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0.0
SE	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Mean	0	0	0	0	0	0	0	0	0.0
Wind	0	0	0	0	0	0	0	0	0.0
Dir.	0	0	0	0	0	0	0	0	0.0
WIND	0	0	0	0	0	0	0	0	0.0
CUML	0	0	0	0	0	0	0	0	0.0
TOT	0	0	0	0	0	0	0	0	0.0
TOTAL NUMBER OF OBSERVATIONS									1200

PERTH (GUILDFORD), AUSTRALIA (Lat. 31°56'S, Long. 115°58'E, Elev. 49 ft)

Perth lies on a narrow coastal plain in the southwest corner of Australia. Inland, the coastal plain gives way to the low mountains of the Darling Range. These mountains average no more than 2,000 feet in elevation, however, they provide sufficient orographic lifting to aid in the condensation and precipitation of moisture brought inland from over the Indian Ocean.

Over half of the annual rainfall total of 34 inches occurs in the three winter months of June, July, and August. Much of this precipitation originates from cyclones or frontal systems. These frontal systems are sometimes accompanied by thundershowers. During the remaining months of the year most thundershowers are of the air-mass type.

Temperatures reflect the modifying effects of the nearby ocean. Both diurnal and seasonal mean temperature ranges are small, the average being about 20°F. With the occurrence of hot, dry winds from the desert regions to the northeast, high temperature extremes are more predominant than low ones. Freezing temperatures rarely occur at Perth.

Due to increased atmospheric moisture and added pollution sources, average ceilings and visibilities at Perth are lower than at Alice Springs. Perth is less troubled than Alice Springs, though, with low visibilities caused by blowing dust.

The following data, except for the Temperature and Precipitation Summary, are based on observations made at 0600, 1200, and 1800 Local Standard Time from 1948 through 1957.

PERTH, AUSTRALIA
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Maximum Temperature	85	85	81	76	69	64	63	64	67	70	76	81	73
Monthly Mean Minimum Temperature	63	63	61	57	53	50	48	48	50	53	57	61	55
Monthly Mean Temperature	74	74	71	67	61	57	56	56	59	62	67	71	64

Period of Record: 44 Years

Absolute Maximum Temperature: 112°F

Absolute Minimum Temperature: 31°F

Period of Record: 47 Years

	Precipitation (Inches)												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Monthly Mean Precipitation	.30	.40	.80	1.70	5.10	7.10	6.70	5.70	3.40	2.20	.80	.50	34.7
Monthly Mean Snowfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Period of Record: 47 Years

PERTH, AUSTRALIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

JANUARY

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05															
06-08	307	1.9	16.1	57.7	.3						1.9	4.5			1.4
09-11															
12-14	309	1.3	6.2	61.6								1.3			3.6
15-17															
18-20	309	1.3	5.1	61.3	.3							1.0			2.1
21-23															
All Hours	925	3.5	9.1	60.2	.2						.6	2.3			5

FEBRUARY

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05															
06-08	283	7.2	16.8	61.4	.4						1.4	5.0			1.4
09-11															
12-14	283	2.0	8.5	63.9								3.6			3.6
15-17															
18-20	279	1.6	7.7	62.1	.4							2.1			2.1
21-23															
All Hours	845	3.6	11.0	62.5	.2						.5	3.6			5

MARCH

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05															
06-08	309	10.9	22.1	59.0							4.5	5.5			1.7
09-11															
12-14	310	3.5	13.4	56.5								6.1			2.3
15-17															
18-20	309	3.5	8.4	62.6	.3							2.6			2.3
21-23															
All Hours	928	6.0	14.6	59.4	.1						1.5	4.7			6

APRIL

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05															
06-08	298	6.1	14.0	52.3	.3						1.7	6.7			1.7
09-11															
12-14	300	2.5	13.5	57.7								2.3			2.3
15-17															
18-20	300	2.1	7.5	51.7	.3							2.3			2.3
21-23															
All Hours	898	3.6	11.7	53.9	.2						.6	3.8			6

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 -- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

PERTH, AUSTRALIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

JUNE															
Hours	Number of Observations	Observations <2000 Ft. and/or Visibility <3 Mi.	Observations <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Thunder and/or Base	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-00															
00-05	310	4.7	15.6	55.2	1.3						1.6	5.5			3.3
05-10															
05-15	310	3.0	15.2	35.7	.5							3.9			3.3
10-15															
15-20	310	2.9	14.2	42.6	1.0							3.5			3.3
20-25															
25-30	300	4.8	17.7	39.3											3.3
All Hours	900	9.0	39.0	35.6	.8				.1		1.8	2.8			3.3

MAY															
Hours	Number of Observations	Observations <2000 Ft. and/or Visibility <3 Mi.	Observations <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Thunder and/or Base	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-00															
00-05	310	4.7	15.6	55.2	1.3						1.6	5.5			3.3
05-10															
05-15	310	3.0	15.2	35.7	.5							3.9			3.3
10-15															
15-20	310	2.9	14.2	42.6	1.0							3.5			3.3
20-25															
25-30	300	4.8	17.7	39.3											3.3
All Hours	930	3.5	19.0	41.2	.9						.5	4.3			3.3

AUGUST															
Hours	Number of Observations	Observations <2000 Ft. and/or Visibility <3 Mi.	Observations <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Thunder and/or Base	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-00															
00-05	310	5.3	17.5	45.5							1.0	5.8			3.3
05-10															
05-15	300	3.3	19.3	38.7								3.3			3.3
10-15															
15-20	300	4.3	16.8	38.7	.3							3.9			3.3
20-25															
25-30	300	4.3	17.9	37.6	.1							3.7			3.3
All Hours	900	4.3	17.9	37.6	.1							3.7			3.3

JULY															
Hours	Number of Observations	Observations <2000 Ft. and/or Visibility <3 Mi.	Observations <4000 Ft. and/or Visibility <6 Mi.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Drizzle	Snow and/or Sleet	Mist	Total Occurrences of Precipitation	Fog	Thunder and/or Base	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
00-00															
00-05	310	6.5	20.2	38.7	.6						2.9	5.5			3.3
05-10															
05-15	300	3.6	19.5	30.0								3.9			3.3
10-15															
15-20	300	4.9	22.1	34.6	.3							4.5			3.3
20-25															
25-30	300	5.0	20.6	34.1	.3						1.0	4.0			3.3
All Hours	900	5.0	20.6	34.1	.3						1.0	4.0			3.3

0.0 indicates that the condition has occurred less than 0.06 percent of the time, but more than 0.00 percent of the time.
 — indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

PERTH, AUSTRALIA

Percentage Frequencies of Occurrence of Specified Weather Conditions

SEPTEMBER

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05															
06-08	300	4.3	20.9	44.3	.3						1.0	7.7			
09-11															
12-14	300	2.7	18.1	31.3								1.7			
15-17															
18-20	300	1.7	9.4	47.7								1.3			
21-23															
All Hours	900	2.9	16.1	41.1	.1						.3	3.6			

OCTOBER

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05															
06-08	310	7.0	26.8	45.5								2.3	8.4		
09-11															
12-14	307	2.1	16.0	28.7									1.3		
15-17															
18-20	308	1.1	10.1	42.6								1.0			
21-23															
All Hours	925	3.4	15.6	38.9							.8	3.6			

NOVEMBER

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05															
06-08	297	7.8	23.0	46.3							3.3	9.0			
09-11															
12-14	300	.5	11.9	37.7								2.7			
15-17															
18-20	300	.8	6.7	50.0	1.3							.3			
21-23															
All Hours	897	3.0	13.9	44.7	.4						1.1	4.0			

DECEMBER

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02															
03-05															
06-08	310	7.4	17.0	57.4	.3							1.6	4.8		
09-11															
12-14	308	2.5	9.6	57.7								1.6			
15-17															
18-20	307	.5	3.2	64.5								1.0			
21-23															
All Hours	925	3.5	9.9	59.9	.1						.5	2.5			

ANNUAL

Hours	Number of Observations	Cellings <2000 Ft and/or Visibility <3 MI	Cellings <4000 Ft and/or Visibility <6 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
All Hours	10,986	4.0	14.5	46.6	.2						.7	3.6			

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 --- indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

PERTH, AUSTRALIA WIND ROSES

JUNE														
Dir.	Speed in Knots					Total	Mean Wind Speed	Speed in Knots					Total	Mean Wind Speed
	0-3	4-6	7-10	11-16	17-21			22-27	28-33	34-40	41-47	48		
N	1.1	2.0	2.6	1.3	2	7.3	8.2							
NNE	1.9	2.4	2.9	2.8	7	10.7	9.5							
NE	3.3	5.6	3.9	2.1	7	7.8	6.6							
NNE	1.5	1.9	2.2	1.6	1.4	7.0	6.6							
ESE	5.5	11.1	5.5	2		11.9	5.4							
SE	4	7	5	3		13.8	2.1							
SSE	1.3	1.9	2.9	3		11.4	6.3							
S	1.9	1.6	1.4	5	6	6.1	8.7							
SSW	1.1	2.0	1.5	5	1	11.8	10.9							
SW	2.1	2.9	1.3	2	1	11.8	10.6							
WSW	1.1	1.1	1.0	2	1	2.8	10.6							
W	1.1	1.2	1.8	2	1	1.4	8.7							
WSW	1.2	1.1	1.2	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W	1.2	1.2	1.4	1	1	1.4	8.7							
WSW	1.2	1.2	1.4	1	1	1.4	8.7							
W														

HONOLULU (INTERNATIONAL AIRPORT), HAWAII (Lat. 21°20'N, Long. 157°55'W, Elev. 15 ft)

Oahu, on which Honolulu is located, is the third largest of the Hawaiian Islands, and is marked by two important mountain systems - the Koolau Range, at an average elevation of 2,000 feet, paralleling the northeast coast, and the Waianae Mountains paralleling the west coast. The business and Waikiki districts of the city of Honolulu lie along the coast leeward of the Koolau Range.

The climate of Honolulu is tropical in nature, with only slight variations of temperature. The January mean differs from the August mean by about 7°F., while the mean daily range is about 6°F. The precipitation, however, is highly variable from year to year and month to month. The mean monthly precipitation varies from 0.5 inches in July to about 4 inches in January, with a mean annual value of about 22 inches. One or two locations in the nearby Koolau Range receive as much as 300 inches per year. Rain falls most frequently at night. Thunderstorms are infrequent and usually of light intensity. Severe storms are rare.

Because of the persistence and moderate humidity of the northeasterly trade winds, August and September, although warm, are usually comfortable. Unpleasant weather is more likely to occur later in the autumn or early winter when the trades may diminish or give way to southerly winds. During these periods, known locally as "Kona Weather," the humidity may become oppressively high.

The following data, except for the Temperature and Precipitation Summary, are based on twenty-four hourly observations per day from June 1939 through July 1949 and November 1949 through May 1967.

HONOLULU, HAWAII
Temperature and Precipitation Summary
(With peak gust when available)

	Temperature (°F)												Annual
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	
Monthly Mean Maximum Temperature	79.6	79.3	79.9	81.1	82.9	84.5	85.3	86.1	86.2	85.0	82.7	80.1	82.7
Monthly Mean Minimum Temperature	65.5	65.6	66.5	68.2	70.0	72.0	73.0	73.7	73.0	71.9	69.8	67.5	69.7
Monthly Mean Temperature	72.8	72.7	73.4	74.9	76.7	78.5	79.4	80.1	79.8	78.6	76.4	74.0	76.4

Period of Record: 1939 - 1967

Absolute Maximum Temperature: +93°F

Absolute Minimum Temperature: +54°F

Period of Record: June 39 - July 49, Nov. 49 - May 67

	Precipitation (Inches)												Annual
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	
Monthly Mean Precipitation	4.04	2.53	3.19	1.31	1.14	.24	.50	.70	.69	1.85	2.83	3.17	22.16
Monthly Mean Snowfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Period of Record: 1939 - 1967

Wind (Knots)

Peak Gust: NE 53 Knots (January 1955)

Period of Record: Jan. 46, Nov. 52 - June 57, Aug. 66 - May 67

HONOLULU, HAWAII

Percentage Frequencies of Occurrences of Specified Weather Conditions

JANUARY

Hours	Number of Observations	Cells < 2000 ft and/or Visibility < 3 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,317	1.8	14.2	48.2	3	8.6	---	---	8.6	---	---	---	---	---
03-05	2,314	2.3	16.7	47.3	2	9.3	---	---	9.3	---	---	---	---	---
06-08	2,409	2.3	15.9	40.3	2	8.1	---	---	8.1	---	---	---	---	---
09-11	2,409	1.8	16.6	36.7	2	7.5	---	---	7.5	---	---	---	---	---
12-14	2,406	2.1	17.4	34.0	---	6.9	---	---	6.9	---	---	---	---	---
15-17	2,406	2.4	18.2	34.7	2	7.9	---	---	7.9	---	---	---	---	---
18-20	2,348	2.0	15.5	40.7	2	7.6	---	---	7.6	---	---	---	---	---
21-23	2,312	2.1	14.3	45.9	2	8.2	---	---	8.2	---	---	---	---	---
All Hours	18,921	2.1	16.1	41.0	2	8.0	---	---	8.0	---	---	---	---	---

FEBRUARY

Hours	Number of Observations	Cells < 2000 ft and/or Visibility < 3 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,117	1.9	13.5	46.8	2	9.2	---	---	9.2	---	---	---	---	---
03-05	2,114	1.5	14.0	48.7	5	10.4	---	---	10.4	---	---	---	---	---
06-08	2,199	1.7	16.5	39.1	1	8.1	---	---	8.1	---	---	---	---	---
09-11	2,203	1.6	18.3	32.1	2	7.7	---	---	7.7	---	---	---	---	---
12-14	2,202	1.1	18.8	26.5	3	8.0	---	---	8.0	---	---	---	---	---
15-17	2,202	1.0	17.2	30.8	4	7.8	---	---	7.8	---	---	---	---	---
18-20	2,136	1.3	17.8	31.2	2	10.0	---	---	10.0	---	---	---	---	---
21-23	2,116	1.1	14.2	45.3	1	9.0	---	---	9.0	---	---	---	---	---
All Hours	17,289	1.3	16.3	38.4	2	8.8	---	---	8.8	---	---	---	---	---

MARCH

Hours	Number of Observations	Cells < 2000 ft and/or Visibility < 3 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,382	1.9	17.5	47.2	2	10.9	---	---	10.9	---	---	---	---	---
03-05	2,382	1.6	15.7	46.9	3	9.8	---	---	9.8	---	---	---	---	---
06-08	2,411	1.5	17.6	38.9	2	8.4	---	---	8.4	---	---	---	---	---
09-11	2,414	1.1	17.5	29.9	2	6.2	---	---	6.2	---	---	---	---	---
12-14	2,413	1.9	19.1	26.9	2	6.7	---	---	6.7	---	---	---	---	---
15-17	2,412	1.1	18.1	28.1	2	6.8	---	---	6.8	---	---	---	---	---
18-20	2,335	1.0	16.8	38.6	4	7.5	---	---	7.5	---	---	---	---	---
21-23	2,320	1.2	16.6	44.7	2	9.9	---	---	9.9	---	---	---	---	---
All Hours	18,969	1.3	17.4	37.6	2	8.2	---	---	8.2	---	---	---	---	---

APRIL

Hours	Number of Observations	Cells < 2000 ft and/or Visibility < 3 MI	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,243	6	13.7	39.7	---	9.2	---	---	9.2	---	---	---	---	---
03-05	2,243	8	16.3	37.8	0	9.9	---	---	9.9	---	---	---	---	---
06-08	2,334	5	16.2	31.9	0	7.3	---	---	7.3	---	---	---	---	---
09-11	2,339	6	22.3	23.6	1	5.9	---	---	5.9	---	---	---	---	---
12-14	2,337	5	21.0	24.3	0	5.3	---	---	5.3	---	---	---	---	---
15-17	2,339	7	19.0	25.1	---	5.9	---	---	5.9	---	---	---	---	---
18-20	2,284	8	18.1	31.6	0	7.6	---	---	7.6	---	---	---	---	---
21-23	2,253	1.0	16.3	38.1	1	9.2	---	---	9.2	---	---	---	---	---
All Hours	18,372	7	18.2	31.5	1	7.5	---	---	7.5	---	---	---	---	---

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 — indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

HONOLULU, HAWAII

Percentage Frequencies of Occurrence of Specified Weather Conditions

Hours	MAY										JUNE									
	Number of Observations	Observations <2000 Ft. and/or Visibility <3 MI.	Observations <4000 Ft. and/or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Winds and/or Haze	Fog	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision	Number of Observations	Observations <2000 Ft. and/or Visibility <3 MI.	Observations <4000 Ft. and/or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Winds and/or Haze	Fog	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
All Hours	18,955	3	14.6	31.8	1	6.0	0	1	1	1	18,775	2	14.8	24.3	0	3.8	0	1	1	1
00-00	2,361	1	11.4	14.1	1	7.5	0	1	1	1	2,899	3	11.4	9.1	1	7.3	0	1	1	1
00-05	2,348	3	11.8	14.8	0	7.1	0	1	1	1	2,307	3	11.9	13.4	1	7.0	0	1	1	1
05-10	2,393	2	12.6	13.5	0	5.8	0	2	2	2	2,377	3	16.8	16.6	0	6.6	0	1	1	1
10-15	2,396	2	16.6	24.1	0	3.2	0	1	1	1	2,397	2	19.3	24.5	0	4.7	0	1	1	1
15-20	2,397	3	18.8	24.9	2	4.2	0	0	0	0	12,131	2,396	17.2	24.3	0	3.0	0	1	1	1
20-25	2,398	3	18.2	24.6	2	5.7	0	1	1	1	15,117	2,396	14.6	20.7	0	3.5	0	1	1	1
25-30	2,350	3	14.6	33.6	1	7.3	0	1	1	1	18,030	2,304	14.3	34.8	0	6.6	0	1	1	1
30-35	2,350	1	12.7	30.5	0	7.2	0	1	1	1	21,213	2,289	12.6	21.2	0	8.0	0	1	1	1

Hours	JULY										AUGUST									
	Number of Observations	Observations <2000 Ft. and/or Visibility <3 MI.	Observations <4000 Ft. and/or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Winds and/or Haze	Fog	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision	Number of Observations	Observations <2000 Ft. and/or Visibility <3 MI.	Observations <4000 Ft. and/or Visibility <6 MI.	Cloud Cover 13/10	Thunder (With or Without Precipitation)	Winds and/or Haze	Fog	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Observations to Vision
All Hours	19,359	8	15.6	37.4	0	6.3	0	0	0	0	19,100	3	13.0	34.9	0	6.0	0	1	1	1
00-00	2,366	2	13.3	14.7	0	8.5	0	0	0	0	2,890	2	12.8	14.1	0	8.5	0	1	1	1
00-05	2,373	3	14.0	15.2	0	8.9	0	0	0	0	2,600	3	13.8	14.5	0	8.3	0	1	1	1
05-10	2,474	3	17.1	37.2	0	7.0	0	1	1	1	2,378	5	15.5	36.3	0	6.8	0	1	1	1
10-15	2,472	2	19.9	30.2	0	4.5	0	0	0	0	2,385	3	20.3	29.0	0	4.9	0	1	1	1
15-20	2,444	3	17.8	49.2	0	3.5	0	0	0	0	12,131	2,397	15.8	48.1	0	3.1	0	1	1	1
20-25	2,472	2	15.2	30.1	0	4.2	0	0	0	0	15,117	2,395	13.9	31.5	0	3.5	0	1	1	1
25-30	2,385	1	14.8	37.4	0	6.8	0	0	0	0	18,030	2,899	13.5	34.5	0	6.1	0	1	1	1
30-35	2,353	1	14.1	44.6	0	7.5	0	0	0	0	21,213	2,286	13.8	43.8	0	7.3	0	1	1	1

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
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 A blank indicates that the data are not available.

HONOLULU, HAWAII

Percentage Frequencies of Occurrence of Specified Weather Conditions

OCTOBER

Hours	Number of Observations	Cells <2000 Ft and/or Visibility <3 MI	Cells <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,286	5	11.3	52.7	0	7.4	---	---	---	7.4	---	---	---	---	---
03-05	2,296	7	10.1	51.1	0	7.0	---	---	---	7.0	---	---	---	---	---
06-08	2,304	1	11.8	40.4	---	6.2	---	---	---	6.2	---	7	---	---	7
09-11	2,385	5	17.0	34.0	---	4.9	---	---	---	4.9	---	2	---	---	2
12-14	2,380	7	18.5	29.4	---	5.1	---	---	---	5.1	---	2	---	---	2
15-17	2,383	5	17.0	27.9	---	6.8	---	---	---	6.8	---	---	---	---	---
18-20	2,304	4	14.5	36.3	0	7.1	---	---	---	7.1	---	---	---	---	---
21-23	2,287	5	11.7	46.7	0	7.5	---	---	---	7.5	---	---	---	---	---
All Hours	18,725	5	14.0	39.9	0	6.5	---	---	---	6.5	---	1	---	---	1

NOVEMBER

Hours	Number of Observations	Cells <2000 Ft and/or Visibility <3 MI	Cells <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,357	1	16.7	43.0	1	9.6	---	---	---	9.6	---	---	---	---	---
03-05	2,369	1	16.8	44.4	0	9.6	---	---	---	9.6	---	---	---	---	---
06-08	2,477	1	18.3	34.2	1	9.1	---	---	---	9.1	---	2	---	---	2
09-11	2,475	1	20.8	31.8	---	7.2	---	---	---	7.2	1	2	---	---	3
12-14	2,473	1	22.4	26.7	0	7.8	---	---	---	7.8	---	2	---	---	2
15-17	2,467	1	21.9	28.5	1	9.2	---	---	---	9.2	---	1	---	---	1
18-20	2,399	1	17.9	37.6	1	9.8	---	---	---	9.8	---	1	---	---	1
21-23	2,369	1	16.5	40.3	1	10.5	---	---	---	10.5	---	0	---	---	0
All Hours	19,496	1	19.0	35.8	1	9.0	---	---	---	9.0	0	1	---	---	1

DECEMBER

Hours	Number of Observations	Cells <2000 Ft and/or Visibility <3 MI	Cells <4000 Ft and/or Visibility <6 MI	Cloud Cover %/10	Thunder (With or Without Precipitation)	Rain and/or Drizzle	Freezing Rain and/or Freezing Drizzle	Snow and/or Sleet	Hail	Total Occurrences of Precipitation	Fog	Smoke and/or Haze	Blowing Snow	Dust (Blowing and/or Suspended)	Total Occurrences of Obstructions to Vision
00-02	2,424	7	13.9	49.0	2	9.6	---	---	---	9.6	---	---	---	---	---
03-05	2,597	8	12.1	40.2	0	9.1	---	---	---	9.1	---	---	---	---	---
06-08	2,368	1	13.7	40.2	0	7.7	---	---	---	7.7	0	6	---	---	7
09-11	2,395	5	16.3	33.3	1	5.5	---	---	---	5.5	---	3	---	---	3
12-14	2,392	6	18.7	26.7	1	6.1	---	---	---	6.1	---	2	---	---	2
15-17	2,394	7	19.6	27.8	2	6.9	---	---	---	6.9	---	0	---	---	0
18-20	2,341	6	16.3	35.6	2	8.0	---	---	---	8.0	---	---	---	---	---
21-23	2,306	6	13.6	42.1	1	8.6	---	---	---	8.6	---	---	---	---	---
All Hours	18,807	7	15.5	37.1	1	7.7	---	---	---	7.7	0	1	---	---	1

0.0 indicates that the condition has occurred less than 0.05 percent of the time, but more than 0.00 percent of the time.
 — indicates that the condition has occurred exactly 0.00 percent of the time.
 A blank indicates that the data are not available.

