

# STATISTICAL ANALYSIS OF METEOROLOGICAL PARAMETERS DURING FOG AT 45 U.S. AIRPORTS

**AD744134**

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16. Abstract Pertinent climatological data are analyzed for fog conditions (prevailing visibility 1/2 mile and less without precipitation) at 45 U. S. airports for the ten year period 1956-1965. These data are considered essential for use in the design of systems to disperse and/or prevent fog at airports.  Tables and statistical values are included for: wind speed vs frequency, wind direction vs frequency, wind direction vs wind speed, visibility vs frequency, temperature vs frequency and cumulative totals for all airports. An additional analysis is included for fog at temperatures less than 33 deg. F. to include wind direction vs frequency, wind direction vs wind speed, wind rose data and temperature vs frequency. Monthly fog frequencies are stated for both cold and warm fog.					
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## STATISTICAL ANALYSIS OF METEOROLOGICAL PARAMETERS DURING FOG AT 45 U. S. AIRPORTS

The systems engineering approach to the development of fog dispersal systems at airports requires quantitative data on the fog environment. These data are considered essential for use in the design of systems to disperse and/or prevent fog at airports.

A computer program was developed to extract pertinent climatological data obtained during fog conditions (prevailing visibility 1/2 mile and less without precipitation) at 45 U. S. airports for the ten year period, 1956 - 1965 inclusive. Data were extracted from duplicates of records received from the National Climatic Center, Asheville, North Carolina.

Included in the fog classification are: fog, ice fog and ground fog with or without haze and/or smoke but without precipitation. The analyzed data includes both hourly and special observations. Each station has a summation of the hourly observations, total observations and the observations with smoke and/or haze. The average number of fog hours per year with visibility 1/2 mile or less can be obtained by dividing the number of hourly observations by ten (the number of years). The fog summation gives the number of observations of fog with liquid and frozen precipitation, although these observations were not included in the analysis.

Wind data is of most importance, particularly for locating ground-based fog dispersal systems, in relation to the runway and approach zones. Since the late 1950's, the F-420 (Series A through C) wind measuring instruments have been used almost exclusively in developing the data base for winds. The threshold speed for this instrument is 1.75 to 2.0 knots depending upon the mechanical condition of the instrument. The speed accuracy is  $\pm 0.5$  knots in the one to ten knot speed range. The consequence of the comparatively high threshold speed is to skew the data toward a greater percentage of calm conditions than actually exist during fogs. The wind direction accuracy is  $\pm 5.0$  degrees. The comments on speed and direction during the ten years of data collection. Normally the wind data are collected approximately 20 feet above the field elevation. It is generally agreed that this is not the most desirable level at which to measure wind speeds if one is trying to determine the speed of movement of the fog. For a detailed discussion on the F-420 we recommend "Notes on Wind Measurement," by H. H. Crouser, August 1967, Technical Memorandum WBTM EDL-2. Temperature data are accurate to  $\pm 0.5^\circ$  F.

Fog parameters are analyzed individually and correlated selectively to each other for each of the 45 airports. A cumulative total for 39 airports is included. The statistical mean, mode, median, standard deviation and skew are computed.

The following airports are included in this study:

1.	Milwaukee, Wi.	MKE	31.	Detroit, Mi.	DTW
2.	Minneapolis, Mn.	MSP	*42.	St. Louis, Mo.	STL
3.	Denver, Co.	DEN	33.	New York (La Guardia), N. Y.	LGA
4.	Burbank, Ca.	BUR	34.	Buffalo, N. Y.	BUF
5.	Los Angeles, Ca.	LAX	35.	Newark, N. J.	EWK
6.	Oakland, Ca.	OAK	36.	Boston, Ma.	BOS
7.	San Francisco, Ca.	SFO	37.	Hartford (Windsor Locks), Ct.	BDL
8.	Salt Lake City, Ut.	SLC	38.	Rochester, N. Y.	ROC
9.	Portland, Or.	PDX	39.	Syracus, N. Y.	SYR
10.	Seattle, Wa.	SEA	40.	Cleveland, Oh.	CLE
11.	Kansas City, Mo.	MCI	41.	Columbus, Oh.	CMH
12.	Miami, Fl.	MIA	42.	Spokane, Wa.	GEG
13.	New Orleans, La.	MSY	*43.	Boise, Id.	BOI
14.	Houston, Tx.	IAH	*44.	Reno, Nv.	RNO
15.	Philadelphia, Pa.	PHL	*45.	Medford, Or.	MFR
16.	Washington (National), D.C.	DCA			
17.	Atlanta, Ga.	ATL			
18.	Birmingham, Al.	BHM			
19.	Nashville, Tn.	BNA			
20.	Dallas, Tx.	DAL			
21.	Anchorage, Ak.	ANC			
22.	Baltimore, Md.	BAL			
23.	Washington (Dulles), D. C.	IAD			
24.	Cincinnati, Oh.	CVG			
25.	Dayton, Oh.	DAY			
26.	Indianapolis, In.	IND			
27.	Louisville, Ky.	SDF			
28.	New York, N. Y.	JFK			
29.	Pittsburgh, Pa.	PIT			
30.	Chicago, Il.	ORD			

\* These airports have only cold fog analysis from hourly observations.

INDEX OF AIRPORTS

<u>PAGE</u>		<u>PAGE</u>
6	MKE	204
12	MSP	210
18	DEN	216
24	BUR	222
30	LAX	228
36	OAK	234
42	SFO	240
48	SLC	246
54	PDX	252
60	SEA	256
66	MCI	258
72	MIA	260
78	MSY	
84	IAH	
90	PHL	
96	DCA	
102	ATL	
108	BHM	
114	BNA	
120	DAL	
126	ANC	
133	BAL	
139	IAD	
145	CVG	
151	DAY	
157	IND	
163	SDF	
169	DFW	
175	PIT	
181	ORD	
187	DTW	
192	STL	
198	LGA	
	BUF	
	EWB	
	BOS	
	BDL	
	ROC	
	SYR	
	CLE	
	CMH	
	GEG	
	BOI	
	RNO	
	MFR	

Cumulative Totals - Page 262



MKE

VISIBILITY VS. FREQUENCY  
.NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	13	186	457	13	567	2	67	0	321
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.78/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.44/16  
 SKEW -0.09

TEMPERATURE VS. FREQUENCY

FREQ.	9	1	0	0	10	10	28	32	48	73	60	87	80	81	90	101	95	144	69	74	55	65	56	41	53	35	3	7		
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 45.99 °F.  
 MODE 47.50 °F.  
 MEDIAN 47.50 °F.  
 STD. DEV. 11.84 °F.  
 SKEW -0.04

HOURLY OBSERVATIONS 826 SPECIAL OBS. 865 TOTAL OBSERVATIONS 3849 FOG WITH SMOKE AND/OR HAZE 503

7

MKE

MKE

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	25	11	29	17	8	8	4	1	14	20	29	19	11	8	4	1	2
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0
NNE	0	1	0	2	3	5	2	2	3	6	3	0	0	0	0	0	2
NE	0	0	0	0	3	6	5	0	0	0	2	1	0	0	0	0	0
NNE	0	0	2	0	1	4	1	0	0	0	0	0	0	0	0	0	0
E	0	0	1	2	2	3	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	4	2	6	2	0	0	0	0	0	0	0	0	0	0	0
S	0	0	1	6	5	2	2	0	0	1	0	1	1	1	1	1	1
SSW	0	0	6	1	2	2	1	0	3	5	6	2	1	1	0	0	0
SW	0	0	1	2	0	2	0	4	2	3	3	1	1	0	0	0	0
WSW	0	0	0	1	2	0	2	3	0	0	2	0	0	0	0	0	0
W	0	0	0	2	0	2	0	2	0	0	0	0	0	0	0	0	0
WNW	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	25	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
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WIND KUST DATA

NKS

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	TOTAL
N	0.0	0.5	0.9	0.5	0.5	0.5	2.4	5.2
NNE	0.5	0.9	3.8	1.9	4.3	1.4	0.9	13.7
NE	0.0	0.0	4.3	2.4	0.0	1.4	0.0	6.1
ENE	0.0	0.9	2.4	0.5	0.0	0.0	0.0	3.8
E	0.0	1.4	2.4	0.0	0.0	0.0	0.0	3.8
ESE	0.0	0.9	0.0	0.9	0.0	0.0	0.0	1.9
SE	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.5
SSE	0.0	2.8	3.8	0.0	0.0	0.0	0.0	6.6
S	0.0	3.3	3.3	0.9	0.5	0.5	0.9	9.5
SSW	0.0	3.3	1.9	0.5	3.8	3.8	0.5	13.7
SW	0.0	1.4	0.9	1.9	2.4	1.9	0.5	9.0
WSW	0.0	0.5	0.9	2.4	0.0	0.9	0.5	5.2
W	0.0	0.9	0.9	0.9	0.9	0.0	0.0	3.8
WNW	0.0	0.5	1.4	0.0	0.0	0.0	0.0	1.9
NW	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5
NNW	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.9
CALM								11.8
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	72	59	40
TEMPERATURE (F)	<28	28 TO 31	32

CHECK COUNT 211  
 FOG WITH LP 33  
 FOG WITH FP 33  
 ALL FOG CASES 275  
 PURE FOG 120  
 RFC OBS. 100

FOG WITH SMOKE AND/OR HAZE 46

MKE

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	11	4	0	0	0	0	0	15
1957	0	0	0	0	0	2	0	0	0	0	0	0	2
1958	0	0	0	0	0	0	5	0	0	0	0	0	5
1959	0	0	0	0	0	1	0	1	16	0	0	0	18
1960	0	0	0	0	0	0	2	0	0	0	0	0	2
1961	0	0	0	0	0	4	0	9	0	0	0	0	13
1962	0	0	0	0	0	0	0	7	12	0	0	0	19
1963	0	0	0	0	0	3	0	0	0	0	0	0	3
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	4	0	0	0	0	0	0	4

TOTAL HRS 0 0 0 0 0 25 11 17 28 0 0 0 0 81  
AVG HRS 0.0 0.0 0.0 0.0 0.0 2.50 1.10 1.70 4.80 0.0 0.0 0.0 0.0 8.10

MKE

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY-FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	11	8	4	24	23	5	0	7	0	4	16	22	124
1957	6	8	0	0	2	0	1	4	0	34	15	10	80
1958	2	7	0	14	16	0	0	1	2	8	1	7	58
1959	0	20	0	0	0	22	5	1	7	6	18	0	79
1960	0	3	3	8	8	0	0	2	12	11	27	0	74
1961	8	5	2	4	2	9	0	4	2	3	1	14	54
1962	1	1	0	8	7	0	0	0	7	21	0	8	53
1963	0	0	0	13	9	0	0	0	2	12	15	3	54
1964	3	0	8	7	12	20	1	0	3	18	0	0	72
1965	3	7	15	2	10	15	12	10	5	6	11	1	97

TOTAL HRS 34 59 32 80 89 71 19 29 40 123 104 65 745  
 AVG HRS 3.60 5.90 3.20 8.00 8.90 7.10 1.90 2.90 4.00 12.30 10.40 6.50 74.50



NSP

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	13	75	141	42	212	1	80	0	173
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 4.34/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.47/16  
 SKEW 0.14

TEMPERATURE VS. FREQUENCY

FREQ.	40	24	25	19	13	17	19	32	61	49	57	16	18	24	10	42	27	12	34	25	31	8	25	18	49	13	3	12	12	2	0
<15	15	17	19	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 36.88°F.  
 MODE 29.50°F.  
 MEDIAN 35.50°F.  
 STD. DEV. 15.50°F.  
 SKEW 0.60

HOURLY OBSERVATIONS 312 SPECIAL OBS. 425 TOTAL OBSERVATIONS 1376 FUG WITH SMOKE AND/OR HAZE 28

MSP

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	34	12	4	4	9	16	21	40	28	34	30	11	9	3	7	7
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW

TRUE WIND DIRECTION

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	1	3	3	1	1	0	0	0	0	0	0	0	0
NNE	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0
NE	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0
ENE	0	0	1	0	2	3	3	0	0	0	0	0	0	0	0	0
E	0	0	1	3	6	2	0	0	1	2	1	0	0	0	0	0
ESE	0	0	0	1	3	4	2	4	2	1	4	0	0	0	0	0
SE	0	0	2	4	5	9	6	3	2	5	0	1	2	1	0	0
SSE	0	0	1	1	4	2	2	5	3	1	1	0	0	0	0	0
S	0	0	3	0	10	5	3	0	9	4	0	0	0	0	0	0
SSW	0	0	1	4	9	5	5	3	2	0	0	0	1	0	0	0
SW	0	0	2	5	10	7	0	1	2	0	3	0	0	0	0	0
WSW	0	0	1	3	1	4	2	0	0	0	0	0	0	0	0	0
W	0	0	3	2	2	1	0	1	0	0	0	0	0	0	0	0
WNW	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	3	2	0	1	0	1	0	0	0	0	0	0	0	0
NNW	0	0	1	1	0	1	2	1	1	0	0	0	0	0	0	0
CALM	34															

CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
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MSP

MSP

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	0.3	2.0	1.3	0.3	0.0	0.0	0.0	4.0
NNE	0.0	0.7	0.3	0.0	0.3	0.0	0.0	0.0	1.3
NE	0.0	0.7	0.3	0.3	0.0	0.0	0.0	0.0	1.3
ENE	0.0	0.3	1.7	1.0	0.0	0.0	0.0	0.0	3.0
E	0.0	1.3	2.7	0.0	1.0	0.3	0.0	0.0	5.4
ESE	0.3	0.3	2.3	2.0	1.0	1.3	0.0	0.0	7.0
SE	0.0	2.0	4.7	3.0	2.3	0.3	1.0	0.0	13.4
SSE	0.0	0.7	2.0	2.3	3.7	0.7	0.0	0.0	9.4
S	0.0	1.0	5.0	1.0	4.3	0.0	0.0	0.0	11.4
SSW	0.0	1.7	4.7	2.7	0.7	0.0	0.0	0.0	10.0
SW	0.0	2.3	5.7	0.3	0.7	1.0	0.0	0.0	10.0
WSW	0.0	1.3	1.7	0.7	0.0	0.0	0.0	0.0	3.7
W	0.0	1.7	1.0	0.3	0.0	0.0	0.0	0.0	3.0
MNW	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
NW	0.0	1.7	0.3	0.3	0.0	0.0	0.0	0.0	2.3
NNW	0.0	0.7	0.3	1.0	0.3	0.0	0.0	0.0	2.3
CALM									11.4
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 175 100 24

28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 299  
 FOG WITH LP 34  
 FOG WITH FP 36  
 ALL FOG CASES 362  
 PURE FOG 215  
 REC-035 128

FOG WITH SMOKE AND/OR HAZE 12

MSP

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	8	2	1	7	0	0	0	18
1957	0	0	0	0	0	14	0	4	0	0	0	0	18
1958	0	0	0	0	0	0	5	0	0	0	0	0	5
1959	0	0	0	0	0	4	3	3	2	0	0	0	12
1960	0	0	0	0	0	0	6	0	1	0	0	0	7
1961	0	0	0	0	0	2	0	6	0	0	0	0	8
1962	0	0	0	0	0	0	0	4	9	0	0	0	13
1963	0	0	0	0	0	3	4	2	0	0	0	0	9
1964	0	0	0	0	4	7	0	0	0	0	0	0	11
1965	0	0	0	0	3	5	0	6	2	2	0	0	18

TOTAL HRS	0	0	0	0	7	43	20	26	21	2	0	0	119
AVG HRS	0.0	0.0	0.0	0.0	0.70	4.30	2.00	2.60	2.10	0.20	0.0	0.0	11.90



MSP

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	2	0	1	2	0	0	0	0	0	0	0	5
1957	5	0	0	0	0	2	0	0	0	0	0	0	7
1958	0	0	0	3	0	0	1	2	0	0	8	3	17
1959	0	0	0	0	0	9	1	0	0	0	0	0	10
1960	5	10	0	4	3	0	0	0	3	0	0	0	25
1961	0	0	0	0	7	4	0	0	0	0	1	3	15
1962	0	7	0	5	6	0	0	0	1	1	0	3	23
1963	2	0	1	16	3	0	0	0	0	3	2	0	27
1964	0	0	2	12	17	0	0	0	0	0	9	0	40
1965	3	0	0	0	7	6	0	0	0	8	0	0	24
TOTAL HRS	15	19	3	41	45	21	2	2	1	15	20	9	193
AVG HRS	1.50	1.90	0.30	4.10	4.50	2.10	0.20	0.20	0.10	1.50	2.00	0.90	19.30

DEN

WIND SPEED VS. FREQUENCY

FREQUENCY	46	0	7	50	99	86	76	43	46	29	12	9	3	3
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13
	WIND SPEED (KNOTS)													

STATISTICAL RESULTS

MEAN 5.55 KNOTS  
 MODE 4.00 KNOTS  
 MEDIAN 5.00 KNOTS  
 STD. DEV. 2.89 KNOTS  
 SKEW 0.54

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	46	46	103	288	407	482	523	535	538
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	46	94	54	29	20	13	9	15	6	41	46	22	11	8	15	59	50
CALM	N	MNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
10-12	0	18	12	6	1	1	0	0	0	0	0	0	0	0	1	3	5
WIND SPEED 7-9	0	32	15	6	7	1	2	0	0	7	11	2	1	0	0	15	19
WIND SPEED 4-6	0	31	25	13	7	9	6	11	6	28	29	16	4	7	12	35	22
WIND SPEED 1-3	0	10	1	4	4	2	1	4	0	6	3	4	6	1	2	6	3
CALM	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	MNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

DEN

DEN

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	22	38	91	13	210	1	47	0	116
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

STATISTICAL RESULTS

MEAN 4.30/16  
MODE 4.00/16  
MEDIAN 4.00/16  
STD. DEV. 2.39/16  
SKEW 0.13

TEMPERATURE VS. FREQUENCY

FREQ.	37	4	19	18	50	41	52	35	49	49	24	10	10	18	10	6	2	20	9	18	9	6	0	0	0	0	0				
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

STATISTICAL RESULTS

MEAN 31.66 °F.  
MODE 25.50 °F.  
MEDIAN 29.50 °F.  
STD. DEV. 12.36 °F.  
SKEW 0.50

HOURLY OBSERVATIONS 194 SPECIAL OBS. 344 TOTAL OBSERVATIONS 1099 FOG WITH SMOKE AND/OR HAZE 10

DEN

DEN

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	33	54	38	20	17	10	7	8	5	37	34	15	6	3	7	34	26	
	CALM		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	TRUE WIND DIRECTION																	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	5	5	7	6	12	3	10	0	0	1
NNE	0	0	1	7	2	5	3	8	0	4	7	0	1	1
NE	0	0	1	3	4	4	1	1	2	2	0	2	0	0
ENE	0	0	4	4	4	2	2	2	2	0	0	0	0	0
E	0	0	2	4	1	0	0	0	1	0	0	0	0	0
ESE	0	0	0	3	2	0	1	0	1	0	0	0	0	0
SE	0	0	0	3	2	3	0	0	0	0	0	0	0	0
SSE	0	0	0	4	1	0	0	0	0	0	0	0	0	0
S	0	0	0	4	7	6	13	2	3	2	0	0	0	0
SSW	0	0	1	2	9	7	3	6	1	2	2	0	1	0
SW	0	0	2	0	6	3	2	2	0	0	0	0	0	0
WSW	0	0	0	4	1	1	0	0	0	0	0	0	0	0
W	0	0	0	1	1	1	0	0	0	0	0	0	0	0
WNW	0	0	0	1	1	2	0	0	0	1	0	0	0	0
NW	0	0	2	1	11	6	5	3	2	1	2	0	1	0
NNW	0	0	0	2	4	6	2	1	3	3	1	1	1	1
CALM	33													

CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
	WIND SPEED												

WIND RUSH DATA

DEN

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	1.4	2.8	4.2	2.8	0.3	15.3	
NNE	0.0	0.3	2.3	2.3	3.1	0.3	10.7	
NE	0.0	1.1	1.4	0.8	0.6	0.6	5.6	
ENE	0.0	1.1	1.1	1.1	0.0	0.0	4.8	
E	0.0	0.8	0.3	0.0	0.3	0.0	2.8	
ESE	0.0	0.0	1.4	0.3	0.0	0.0	2.0	
SE	0.0	0.0	1.4	0.0	0.0	0.0	2.3	
SSE	0.0	0.0	1.4	0.0	0.0	0.0	1.4	
S	0.0	1.1	3.7	1.4	0.0	0.0	10.5	
SSW	0.0	0.8	4.5	0.8	0.6	0.3	9.6	
SW	0.0	0.6	2.5	0.0	0.0	0.0	4.2	
WSW	0.0	1.1	0.6	0.0	0.0	0.0	1.7	
W	0.0	0.3	0.0	0.0	0.0	0.0	0.8	
WNW	0.0	0.3	0.6	0.0	0.3	0.0	2.0	
WW	0.0	0.8	4.8	0.8	0.6	0.3	9.8	
WNW	0.0	0.6	1.7	1.1	1.1	0.6	7.3	
CALM							9.3	
TOTAL							100.0	

TEMPERATURE VS. FREQUENCY

FREQUENCY	234	96	24
TEMPERATURE (F)	28 TO 31	32	

CHECK COUNT 354  
 FOG WITH LP 56  
 FOG WITH FP 111  
 ALL FOG CASES 519  
 PURE FOG 347  
 REC.OBS. 132

FOG WITH SMOKE AND/OR HAZE 2

DEN

OBSERVATIONS MAKE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	1	14	1	0	0	0	0	16
1957	0	0	0	4	0	0	0	4	1	0	0	0	9
1958	0	0	0	2	2	2	0	5	5	0	0	0	16
1959	0	0	0	3	0	0	2	11	0	0	0	0	16
1960	0	0	0	0	0	0	0	5	0	0	0	0	5
1961	0	0	0	0	7	4	0	1	2	0	0	0	14
1962	0	0	0	0	7	5	0	5	0	1	0	0	18
1963	0	0	0	0	2	1	0	5	3	0	0	0	11
1964	0	0	0	0	3	9	4	0	0	0	0	0	16
1965	0	0	0	0	0	0	0	1	3	0	0	0	4

TOTAL HRS 0 0 0 9 21 22 20 38 14 1 0 0 0 125  
 AVG HRS 0.0 0.0 0.0 0.90 2.10 2.20 2.00 3.80 1.40 0.10 0.0 0.0 0.0 12.50

DEN

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	2	0	0	2	0	0	0	0	3	0	0	7
1957	0	2	0	3	0	0	0	0	0	6	0	0	11
1958	2	0	0	3	0	0	0	0	1	0	0	2	8
1959	0	1	5	1	0	0	0	0	0	3	2	0	12
1960	0	0	0	0	0	0	0	0	0	1	2	0	3
1961	0	0	1	0	4	0	0	0	0	0	5	2	12
1962	0	0	2	0	0	0	0	0	0	0	0	0	2
1963	0	3	3	0	0	0	0	0	0	0	0	0	6
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	2	4	0	0	0	0	0	2	0	0	0	8

TOTAL HRS 2 10 15 7 6 0 0 0 3 13 9 4 69  
 AVG HRS 0.20 1.00 1.50 0.70 0.60 0.0 0.0 0.0 0.30 1.30 0.90 0.40 6.90

BUR

WIND SPEED VS. FREQUENCY

FREQUENCY	315	223	167	158	195	147	65	27	10	3	3	0	0	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 2.48 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 2.00 KNOTS  
 STD. DEV. 2.11 KNOTS  
 SKEW 1.18

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	315	538	803	1205	1297	1310	1313	1313	1313
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	75	59	19	18	45	122	157	59	46	69	37	45	26	42	70	89	95
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNW	NNW
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
WIND 7-9	0	0	0	2	9	15	3	1	0	2	1	0	0	0	5	1	1
SPEED 4-6	0	26	7	4	12	49	72	31	25	23	5	10	7	15	31	37	53
KNOTS 1-3	0	33	12	14	31	69	69	25	20	46	30	34	19	27	34	50	40
CALM	315	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNW	NNW
	TRUE WIND DIRECTION																



BUR

VISIBILITY VS. FREQUENCY  
NOTE: 7/10 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	127	170	231	133	260	44	140	0	208
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.65/16  
 MODE 4.00/16  
 MEDIAN 3.00/16  
 STD. DEV. 2.53/16  
 SKEW -0.14

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	0	0	1	6	11	28	56	99	136	175	181	130	136	148	127	63	12	0	0	0	0		
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 51.22 DEGREES(F)  
 MODE 51.50 DEGREES(F)  
 MEDIAN 51.50 DEGREES(F)  
 STD. DEV. 7.61 DEGREES(F)  
 SKEW 0.13

HOURLY OBSERVATIONS 592 SPECIAL OBS. 721 TOTAL OBSERVATIONS 2233 FOG WITH SMOKE AND/OR HAZE 109

BUR

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	0	
	TRUE WIND DIRECTION																	
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	CALM	3	4	5	6	7	8	9	10	11	12 > 12	
	WIND SPEED																										
	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	0

BUR

BUR

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	25.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	0	4	0
TEMPERATURE (F)	28 TO 31		
TEMPERATURE (F)	32		

CHECK COUNT 4  
 FOG WITH LP 0  
 FOG WITH FP 0  
 ALL FOG CASES 4  
 PURE FOG 4  
 REC.OBS. 2

FUG WITH SMOKE AND/OR HAZE 0

6UR

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	2	0	0	0	0	0	2
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 0 0 2 0 0 0 0 0 2  
AVG HRS 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.20 0.0 0.0 0.0 0.0 0.0 0.20

BUR

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
AND SURFACE VISIBILITY 1/2-MILE-OR-LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	4	4	14	12	6	4	13	6	7	8	2	8	88
1957	0	0	1	0	13	0	0	16	0	5	0	2	37
1958	6	3	4	10	11	6	3	13	0	1	3	2	62
1959	0	1	2	23	7	0	18	0	6	3	0	1	61
1960	0	5	1	9	11	2	1	5	7	3	0	2	46
1961	0	2	0	11	4	22	0	3	1	1	0	2	46
1962	0	2	16	25	25	44	0	9	3	0	1	1	126
1963	0	0	0	2	4	0	3	23	0	0	0	0	32
1964	0	0	10	8	0	5	20	0	2	0	2	1	48
1965	0	1	0	5	10	0	2	16	0	1	3	0	44
TOTAL HRS	10	18	48	105	97	83	60	91	26	22	11	19	590
AVG HRS	1.00	1.80	4.80	10.50	9.70	8.30	6.00	9.20	2.60	2.20	1.10	1.90	59.00

LAX

WIND SPEED VS. FREQUENCY

FREQUENCY	760	4	230	534	762	575	370	174	107	33	23	4	6	0	5
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 3.62 KNOTS  
 MODE 4.00 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 2.43 KNOTS  
 SKEN -0.16

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	760	764	1528	2865	3409	3549	3576	3582	3587
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	760	55	50	109	275	486	395	237	112	99	38	67	191	402	160	96	57
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW		
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0
10-12	0	0	0	0	5	1	2	0	0	0	0	2	6	15	2	0	0	0
7-9	0	0	2	6	15	57	49	19	7	4	0	5	37	93	18	1	1	1
4-6	0	26	27	66	188	308	257	153	61	54	25	34	106	226	96	50	30	30
1-3	0	29	21	37	72	116	88	61	44	41	13	26	40	65	44	45	26	26
CALM	760	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW			

LAX

LAX

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	440	576	600	348	699	118	387	0	419
POSITION	0	1	2	3	4	5	6	7	8
VISIBILITY(MILES)	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	2

STATISTICAL RESULTS

MEAN 3.31/16  
 MODE 4.00/16  
 MEDIAN 3.00/16  
 STD. DEV. 2.46/16  
 SKEW -0.28

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	0	0	0	11	62	100	188	337	508	643	515	319	406	269	154	72	3	0	0	0				
TEMPERATURE (F)	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72

STATISTICAL RESULTS

MEAN 56.70 OP.  
 MODE 53.50 P.  
 MEDIAN 53.50 OP.  
 STD. DEV. 4.97 OP.  
 SKEW 0.24

HOURLY OBSERVATIONS 1477 SPECIAL OBS. 2110 TOTAL OBSERVATIONS 7293 FOG WITH SMOKE AND/OR HAZE 1479

LAX

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	hSW	W	hNW	NW	NNW		
	TRUE WIND DIRECTION																		
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12						
	WIND SPEED																			
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
hSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
hW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LAZ  
 AND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS										TOTAL	
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT					
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL												0.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 0 0 0

<26 28 30 31 32  
 TEMPERATURE (F)

CHECK COURT 0  
 FOG WITH LP 0  
 FOG WITH FP 0  
 ALL FOG CASES 0  
 PURE FOG 0  
 RECORDS 0

FOG WITH SMOKE AND/OR HAZE 0

LAX

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
AVG HRS 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 0.0

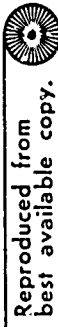
OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

HARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	4	10	9	8	60	18	5	35	14	2	8	173
1957	2	2	18	3	4	15	2	7	11	12	3	14	93
1958	10	0	31	5	39	44	16	33	2	0	2	8	190
1959	1	0	2	15	33	13	54	4	41	3	1	0	167
1960	19	2	19	4	45	15	9	13	27	16	0	0	169
1961	0	1	10	11	19	87	12	20	13	1	2	3	179
1962	0	10	8	26	43	37	26	22	5	70	0	5	252
1963	0	0	4	0	25	27	9	24	0	5	0	0	100
1964	0	0	0	34	1	25	0	0	0	5	2	6	73
1965	10	4	6	43	1	3	7	8	1	16	1	1	81

TOTAL HRS 42 23 108 136 218 326 326 153 136 135 142 13 45 1477  
 AVG HRS 4.20 2.30 10.50 13.00 21.80 32.60 32.60 15.30 13.60 13.50 14.20 1.30 4.50 147.70



OAK

WIND SPEED VS. FREQUENCY

FREQUENCY	634	J	10	150	292	214	91	54	26	5	2	3	0	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 2.66 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 2.53 KNOTS  
 SKEW 1.05

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	634	637	797	1303	1448	1479	1484	1484	1484	1484
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL		
	WIND SPEED (KNOTS)									

WIND DIRECTION VS. FREQUENCY

FREQUENCY	634	84	26	29	23	57	40	74	63	101	30	35	40	70	60	74	44
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1
WIND 7-9	0	7	1	0	0	5	2	14	11	13	2	3	4	11	5	5	2
SPEED 4-6	0	63	17	7	18	39	30	45	43	72	24	26	24	51	46	49	34
KNOTS 1-3	0	12	8	22	5	13	8	11	8	16	4	6	7	9	20	7	
CALM	634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	TRUE WIND DIRECTION																

OAK

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	491	138	186	59	303	8	71	0	228
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	1	1	5	3	7	1
	16				4	16	8	16	2

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 2.82/16  
MODE 0.0 /16  
MEDIAN 2.00/16  
STD. DEV. 2.82/16  
SKEW 1.00

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	0	0	3	4	13	40	63	105	229	283	222	139	128	123	70	51	1	5	0	5	0	0	0	0
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 47.16 °F.  
MODE 45.50 °F.  
MEDIAN 47.50 °F.  
STD. DEV. 5.14 °F.  
SKEW 0.32

HOURLY OBSERVATIONS 771 SPECIAL OBS. 713 TOTAL OBSERVATIONS 3399 FOG WITH SMOKE AND/OR HAZE 275

JAK

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	1	2	3	4	5	6	7	8	9	10	11	12	>12
	WIND SPEED												
N	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	1	0	0	0	0	0	0	0	0	0
NE	0	0	1	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	1												

OAK  
WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILL, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	33.3	0.0	0.0	0.0	0.0	33.3
NE	0.0	33.3	0.0	0.0	0.0	0.0	0.0	33.3
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	0	3	0
TEMPERATURE (F)			
<28	28	31	32

CHECK COUNT 3  
 FOG WITH LP 0  
 FOG WITH FP 0  
 ALL FOG CASES 3  
 PURE FOG 0  
 REC.OBS. 2

FOG WITH SMOKE AND/OR HAZE 2

OAK

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	2	0	0	0	0	0	2
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 0 0 2 0 0 0 0 0 2  
AVG HRS 0.0 0.0 0.0 0.0 0.0 0.0 0.20 0.0 0.0 0.0 0.0 0.0 0.0 0.20

OAK



OAK

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	6	43	28	5	0	0	0	0	62
1957	0	0	0	5	4	3	11	25	3	0	0	0	51
1958	0	0	0	8	16	23	35	3	0	0	0	0	85
1959	0	0	0	0	0	2	20	0	7	0	0	0	29
1960	0	0	0	17	13	36	8	3	5	0	0	0	82
1961	1	0	0	2	5	33	33	1	0	0	0	0	75
1962	0	0	2	47	16	134	19	19	0	0	0	0	237
1963	0	0	0	1	17	11	19	12	0	0	0	0	60
1964	0	0	0	0	0	0	0	8	5	0	0	0	19
1965	0	0	2	3	10	2	25	3	0	4	0	0	49
TOTAL HRS	1	0	4	89	87	287	198	79	20	4	0	0	769
AVG HRS	0.10	0.0	0.40	8.70	8.70	28.70	19.80	7.90	2.00	0.40	0.0	0.0	76.90

SFU

WIND SPEED VS. FREQUENCY

FREQUENCY	525	0	35	355	333	236	86	59	37	13	17	2	7	1	1
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 3.10 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 2.52 KNOTS  
 SKEW 1.23

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	>25	525	915	1484	1629	1679	1698	1706	1707
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	525	76	89	126	87	104	78	89	52	100	52	73	32	41	102	57	24
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	1	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0
7-9	0	4	14	9	4	1	4	8	5	1	0	0	0	13	9	1	1
4-6	0	48	56	75	46	64	46	50	29	65	33	39	16	17	40	19	12
1-3	0	24	18	41	37	39	28	30	18	32	18	33	16	19	19	10	8
CALM	525	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																

SFO

SFO

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	282	188	390	53	416	4	176	0	198
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.19/16  
MODE 4.00/16  
MEDIAN 2.00/16  
STD. DEV. 2.49/16  
SKEW -0.32

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	0	0	0	3	16	43	54	187	336	349	291	173	140	78	30	4	3	0	0	0	0	0	0	0
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 57.99 OF.  
MODE 7.50 OF.  
MEDIAN 7.50 OF.  
STD. DEV. 4.11 OF.  
SKEW 0.1

HOURLY OBSERVATIONS 632 SPECIAL OBS. 1075 TOTAL OBSERVATIONS 3431 FOG WITH SMOKE AND/OR HAZE 244

SFO

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	
							TRUE WIND DIRECTION										
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
	WIND SPEED													
	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SFO WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33-DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	0	0	0
TEMPERATURE (F)	<28	28 TO 31	32

CHECK COUNT 0  
 FOG WITH LP 0  
 FOG WITH FP 2  
 ALL FOG CASES 2  
 PURE FOG 0  
 REC.OBS. 0

FUG WITH SMOKE AND/OR HAZE 0

SFO

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FUG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
AVG HRS 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 0.0

SFO

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	3	2	6	37	24	5	0	0	0	0	77
1957	0	0	0	10	0	6	5	18	8	0	0	0	47
1958	0	0	0	2	15	24	29	4	0	0	0	0	74
1959	0	0	0	2	2	2	8	0	3	1	0	0	18
1960	0	0	0	13	2	28	12	0	4	0	0	0	59
1961	0	0	0	2	6	32	52	3	0	0	0	0	95
1962	0	0	1	26	5	114	7	14	1	0	0	0	168
1963	0	0	0	1	5	6	8	15	0	0	0	0	35
1964	0	0	0	2	4	0	1	10	1	0	0	0	18
1965	0	0	2	0	8	0	25	5	0	1	0	0	41
TOTAL HRS	0	0	6	60	53	249	171	74	17	2	0	0	632
AVG HRS	0.0	0.0	0.00	0.00	0.30	24.90	17.10	7.40	1.70	0.20	0.0	0.0	63.20

SLC

WIND SPEED VS. FREQUENCY

FREQUENCY	307	140	123	216	288	197	93	39	24	12	16	4	2	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	13	>13
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 3.10 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 2.37 KNOTS  
 SKEM 1.31

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	307	447	786	1271	1403	1439	1459	1461	1461
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	307	141	38	35	14	21	23	93	114	178	64	73	54	76	66	77	87
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNM
	TRUE WIND DIRECTION																

FREQUENCY	>12	10-12	7-9	4-6	1-3	CALM											
WIND SPEED	0	5	3	20	21	0	0	0	0	0	0	0	0	0	0	0	0
	WIND DIRECTION VS. WIND SPEED																

CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNM
	TRUE WIND DIRECTION																





SLC

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	299	130	37	34	14	21	22	86	103	170	63	68	54	75	66	75	85
CALM																	
N																	
NNE																	
NE																	
ENE																	
E																	
ESE																	
SE																	
SSE																	
S																	
SSW																	
SW																	
WSW																	
W																	
WNW																	
NW																	
NNW																	
CALM	299																

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	N	21	17	27	26	26	7	4	2	3	3	5	2	0	0	0	0
N	0	21	17	27	26	26	7	4	2	3	3	5	2	0	0	0	0
NNE	0	9	6	6	10	1	2	1	1	0	1	0	0	0	0	0	0
NE	0	2	1	9	11	7	1	2	0	1	0	0	0	0	0	0	0
ENE	0	2	0	6	3	3	0	0	0	0	0	0	0	0	0	0	0
E	0	0	2	8	2	0	1	0	0	0	0	0	0	0	0	0	0
ESE	0	1	5	3	4	2	4	2	1	0	0	0	0	0	0	0	0
SE	0	7	8	9	19	15	6	5	5	1	7	2	2	0	0	0	0
SSE	0	5	4	9	19	24	15	11	10	3	3	0	0	0	0	0	0
S	0	11	11	32	46	34	25	6	4	1	0	0	0	0	0	0	0
SSW	0	7	9	14	21	9	3	0	0	0	0	0	0	0	0	0	0
SW	0	7	7	22	19	10	3	0	0	0	0	0	0	0	0	0	0
WSW	0	9	6	13	16	10	0	0	0	0	0	0	0	0	0	0	0
W	0	15	10	20	19	8	0	3	0	0	0	0	0	0	0	0	0
WNW	0	10	11	13	20	4	7	1	0	0	0	0	0	0	0	0	0
NW	0	9	8	12	19	17	6	1	1	2	0	0	0	0	0	0	0
NNW	0	15	16	10	21	13	7	1	0	0	2	0	0	0	0	0	0
CALM	299																

	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
WIND SPEED														

SLC

Wind Rose Data

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS										TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-17KT	>17KT				
N	1.5	3.1	3.7	0.8	0.4	0.4	0.0	0.0	0.0	0.0	9.8
NNE	0.6	0.9	0.8	0.2	0.1	0.1	0.0	0.0	0.0	0.0	2.6
NE	0.1	0.7	1.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	2.4
ENE	0.1	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
E	0.6	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.5
ESE	0.1	0.6	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	1.6
SE	0.5	1.2	2.4	0.8	0.4	0.6	0.1	0.1	0.1	0.1	6.1
SSE	0.4	0.9	3.0	1.8	0.9	0.2	0.0	0.0	0.0	0.0	7.3
S	0.8	3.0	5.7	2.2	0.4	0.0	0.0	0.0	0.0	0.0	12.1
SSW	0.5	1.0	2.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	4.5
SW	0.5	2.1	2.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	4.8
WSW	0.6	1.3	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8
W	1.1	2.1	1.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	5.3
WNW	0.7	1.7	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	4.7
NW	0.6	1.4	2.6	0.5	0.2	0.0	0.0	0.0	0.0	0.0	5.3
NNW	1.1	1.8	2.4	0.6	0.0	0.1	0.0	0.0	0.0	0.0	6.0
CALM											21.2
TOTAL											100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 1060 310 32

<28 20 TO J1 32

TEMPERATURE (F)

CHECK COUNT 1410  
 FOG WITH LP 6  
 FOG WITH FP 177  
 ALL FOG CASES 1594  
 PUKF FOG 1229  
 REC.DOS. 741

FOG WITH SMOKE AND/OR HAZE 75

SLC

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	1	0	0	0	0	1
1957	0	0	0	0	7	39	8	4	0	0	0	0	58
1958	0	0	0	0	9	5	7	0	0	2	0	0	23
1959	0	0	0	0	0	0	3	0	0	0	0	0	3
1960	0	0	0	0	0	0	36	2	1	0	0	0	39
1961	0	0	0	0	0	8	0	3	0	0	0	0	11
1962	0	0	0	0	0	124	99	108	5	0	0	0	336
1963	0	0	0	0	21	24	1	5	0	0	0	0	51
1964	0	0	0	0	4	0	11	1	1	0	0	0	17
1965	0	0	0	0	0	96	94	0	0	0	0	0	190

TOTAL HRS	0	0	0	0	41	296	259	124	7	2	0	0	729
AVG HRS	0.0	0.0	0.0	0.0	4.10	29.60	25.90	12.40	0.70	0.20	0.0	0.0	72.90

SIC

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2-MILE-OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	1	0	0	1
1957	0	0	0	0	2	0	0	0	0	0	0	0	10
1958	0	0	0	0	0	4	1	3	0	0	0	0	8
1959	0	0	0	0	0	0	3	0	0	0	0	0	3
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	1	0	0	0	0	0	0	1
1963	0	0	0	0	1	0	0	0	0	0	0	0	1
1964	0	0	0	0	0	0	0	0	0	5	0	0	5
1965	0	0	0	0	0	3	1	0	0	0	0	0	4

TOTAL HRS 0 0 0 3 3 8 5 8 0 0 6 0 0 33  
 AVG HRS 0.0 0.0 0.0 0.30 0.30 0.80 0.50 0.80 0.0 0.0 0.60 0.0 0.0 3.30

PDX

WIND SPEED VS. FREQUENCY

FREQUENCY	1415	23	132	427	768	572	278	119	42	18	8	1	0	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 2.78 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 2.43 KNOTS  
 SKEW 1.15

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	1415	1438	1997	3337	3734	3794	3803	3803	3803	3803
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL		
	WIND SPEED (KNOTS)									

WIND DIRECTION VS. FREQUENCY

FREQUENCY	1415	90	43	37	21	112	208	140	90	90	57	121	214	399	352	261	145	
CALM		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																	

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10-12	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	5	0	
WIND 7-9	0	1	2	0	0	8	21	6	3	9	2	2	5	31	49	29	11	
SPEED 4-6	0	72	25	22	12	82	145	91	58	44	29	71	154	284	242	176	111	
KNOTS 1-3	0	24	15	15	9	22	42	43	29	36	26	48	55	83	60	51	23	
CALM	1415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																	

PDX

PDX

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	505	476	916	130	942	31	<2	0	551
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	3	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.30/16  
 MODE 4.00/16  
 MEDIAN 3.00/16  
 STD. DEV. 2.52/16  
 SKEW -0.28

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	17	39	97	252	389	439	360	457	320	303	231	213	209	198	101	84	45	40	8	1	0	0	0	0	0	0
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 38.94 F.  
 MODE 37.50 F.  
 MEDIAN 37.50 F.  
 STD. DEV. 7.31 F.  
 SKEW 0.20

HOURLY OBSERVATIONS 1863 SPECIAL OBS. 1940 TOTAL OBSERVATIONS 5317 FOG WITH SMOKE AND/OR HAZE 597

PDX

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	257	30	14	8	4	21	42	32	18	19	8	36	53	91	65	66	30
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	0	2	0	4	9	12	3	0	0	0	0	0	0	0	0	0	0
NNE	0	0	2	3	3	4	1	1	0	0	0	0	0	0	0	0	0
NE	0	1	3	1	1	0	2	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	2	2	11	5	0	1	0	0	0	0	0	0	0	0	0
ESE	0	0	0	5	13	11	8	5	0	0	0	0	0	0	0	0	0
SE	0	0	5	7	12	5	2	1	0	0	0	0	0	0	0	0	0
SSE	0	0	0	5	8	0	4	1	0	0	0	0	0	0	0	0	0
S	0	0	2	9	6	1	1	0	0	0	0	0	0	0	0	0	0
SSW	0	0	1	4	3	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	1	2	9	13	10	0	1	0	0	0	0	0	0	0	0	0
WSW	0	1	1	13	18	16	4	0	0	0	0	0	0	0	0	0	0
W	0	0	5	10	37	19	16	4	1	2	0	0	0	0	0	0	0
WNW	0	0	2	7	15	9	12	12	4	3	1	0	0	0	0	0	0
NW	0	0	5	3	12	26	11	1	4	0	3	1	0	0	0	0	0
NNW	0	0	0	4	4	11	7	3	1	0	0	0	0	0	0	0	0
CALM	257																

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
	WIND SPEED													
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	257													



PDX

WIND SPEED DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS										TOTAL	
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT					
N	0.3	0.5	2.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8
NNE	0.0	0.6	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8
NE	0.1	0.7	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
ENE	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
E	0.0	0.2	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6
ESE	0.0	0.6	3.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3
SE	0.0	1.5	2.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
SSE	0.0	0.6	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
S	0.0	1.4	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
SSW	0.0	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
SW	0.1	1.4	2.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
MSW	0.1	1.8	4.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7
W	0.0	1.9	6.7	2.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	11.5
WNW	0.0	1.1	3.0	3.0	0.9	0.1	0.0	0.0	0.0	0.0	0.0	8.2
W	0.0	1.0	4.8	1.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	8.3
NNW	0.0	0.5	1.9	1.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	3.8
CALM												32.4
TOTAL												100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 91 466 237

<28 28 31 32  
TEMPERATURE (F)

CHECK COUNT 794  
 FOG WITH LP 1  
 FOG WITH FP 1  
 ALL FOG CASES 796  
 PURE FOG 691  
 RECORDS 413

FOG WITH SMOKE AND/OR HAZE 61

PDX

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	11	27	5	12	0	0	0	0	55
1957	0	0	0	0	23	0	0	11	1	0	0	0	35
1958	0	0	0	0	0	1	0	1	5	0	0	0	7
1959	0	0	0	0	4	13	0	4	0	0	0	0	21
1960	0	0	0	0	2	16	44	2	4	0	0	0	68
1961	0	0	0	0	2	1	2	0	0	0	0	0	5
1962	0	0	0	0	1	4	6	1	6	0	0	0	18
1963	0	0	0	0	1	14	5	0	1	0	0	0	21
1964	0	0	0	0	25	0	3	16	0	0	0	0	44
1965	0	0	0	0	0	16	2	3	0	0	0	0	21

TOTAL HRS	0	0	0	0	69	92	67	50	17	0	0	0	295
AVG HRS	0.0	0.0	0.0	0.0	6.90	9.20	6.70	5.00	1.70	0.0	0.0	0.0	29.50

PDX

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2-MILE-OR-LESS.

WARM FOG

MONTHLY-FOG-FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	3	18	14	28	48	3	12	1	3	0	0	130
1957	0	0	0	32	50	77	0	9	1	12	4	0	185
1958	0	0	0	46	9	41	4	7	9	7	0	0	123
1959	0	0	11	47	41	38	15	2	6	0	0	2	162
1960	0	0	14	32	19	60	23	16	24	11	3	0	202
1961	0	2	13	29	8	26	21	7	6	0	0	0	112
1962	0	0	8	49	17	84	54	16	11	1	0	0	240
1963	1	0	12	24	3	10	30	49	15	0	0	0	144
1964	0	0	14	55	14	19	2	16	0	9	0	0	129
1965	0	0	2	46	24	8	40	21	0	0	0	0	141

TOTAL HRS 1 5 92 374 213 411 192 155 73 43 7 2 1568  
 AVG HRS -0.10 0.50 9.20 37.40 21.30 41.10 19.20 15.50 7.30 4.30 0.70 0.20 156.80

SEA

WIND SPEED VS. FREQUENCY

FREQUENCY	732	48	243	461	502	585	564	391	348	190	175	67	50	30	66
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	13	>13
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 4.91 KNOTS  
 MODE 0-0 KNOTS  
 MEDIAN 5-00 KNOTS  
 STD. DEV. 3.30 KNOTS  
 SKEW 1.49

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	732	780	1484	2571	3526	4064	4306	4386	4452
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	732	634	454	398	150	207	224	313	104	266	229	210	92	115	61	114	144
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NNW	NNH	NNH
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	40	33	4	0	0	4	5	0	2	3	5	0	0	0	0	0
10-12	0	107	65	17	3	4	14	19	2	10	18	16	4	0	1	2	10
WIND 7-9	0	189	130	103	23	38	44	86	28	60	70	60	16	0	7	25	36
SPEED 4-6	0	224	180	202	80	96	97	145	53	130	95	86	45	60	33	56	62
KNOTS 1-3	0	74	46	72	44	69	65	58	21	58	43	43	27	47	20	29	36
CALM	732	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NNW	NNH

60

SEA

SEA

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	250	677	1457	74	1316	8	89	0	575
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.20/16  
 MODE 2.00/16  
 MEDIAN 2.00/16  
 STD. DEV. 2.26/16  
 SKEW 0.53

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	2	19	63	133	364	390	452	454	385	304	224	262	288	276	327	274	152	45	10	21	1	0	0	0	0	0	
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72		
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72			

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 41.62 °F.  
 MODE 37.50 °F.  
 MEDIAN 39.50 °F.  
 STD. DEV. 7.97 °F.  
 SKEW 0.52

HOURLY OBSERVATIONS 2264 SPECIAL OBS. 2188 TOTAL OBSERVATIONS 7071 FOG WITH SMOKE AND/OR HAZE 284

SEA

SEA

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	118	41	68	39	42	55	92	18	15	14	8	3	2	4	14	7
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	3	2	10	4	5	3	4	6	2	1	0	1	0	1
NNE	0	0	2	2	10	3	5	8	5	4	5	2	1	2	1	2
NE	0	0	2	10	12	15	12	13	3	0	1	0	0	0	0	0
ENE	0	0	3	4	13	10	6	2	1	0	0	0	0	0	0	0
E	0	1	3	7	11	5	6	5	3	1	0	0	0	0	0	0
ESE	0	2	5	12	4	13	10	4	2	1	1	1	1	0	0	0
SE	0	0	3	13	15	22	13	8	9	2	4	0	1	2	1	2
SSE	0	1	0	2	1	5	4	2	2	1	0	0	0	0	0	0
S	0	1	2	5	1	1	1	1	3	0	0	0	0	0	0	0
SSW	0	0	2	6	0	3	2	0	1	0	0	0	0	0	0	0
SW	0	0	0	2	2	1	2	0	0	1	0	0	0	0	0	0
WSW	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
W	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0
NNW	0	0	1	1	3	7	0	2	0	0	0	0	0	0	0	0
CALM	118	0	2	0	1	3	0	1	0	0	0	0	0	0	0	0

CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
WIND SPEED													

SEA

WIND ROSE DATA

SEA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS										TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT				
N	0.0	0.9	4.4	1.4	1.7	0.5	0.2	7.1			
NNE	0.0	0.7	0.9	2.2	1.5	1.2	0.5	7.1			
NE	0.0	2.1	4.0	4.3	0.5	0.2	0.0	11.7			
ENE	0.0	1.2	4.0	1.4	0.2	0.0	0.0	6.7			
E	0.2	1.7	7.8	1.9	0.7	0.0	0.0	7.2			
ESE	0.3	2.9	2.9	2.4	0.5	0.3	0.0	9.5			
SE	0.0	2.8	6.4	5.0	1.9	0.7	0.5	19.8			
SSE	0.2	0.3	1.0	1.0	0.5	0.0	0.0	3.1			
S	0.2	1.2	0.3	0.3	0.5	0.0	0.0	2.6			
SSW	0.0	1.4	0.5	0.3	0.2	0.0	0.0	2.4			
SW	0.0	0.3	0.5	0.3	0.2	0.0	0.0	1.4			
WSW	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.5			
W	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3			
WNW	0.0	0.2	0.5	0.0	0.0	0.0	0.0	0.7			
NW	0.0	0.5	1.7	0.3	0.0	0.0	0.0	2.4			
NNW	0.0	0.3	0.7	0.2	0.0	0.0	0.0	1.2			
CALM								20.3			
TOTAL									100.0		

TEMPERATURE VS. FREQUENCY

FREQUENCY	30	329	214
TEMPERATURE (F)	28 TU 31 32		

CHECK COUNT 581  
 FOG WITH LP 7  
 FOG WITH FP 24  
 ALL FOG CASES 612  
 PURE FOG 581  
 RECORDS 303

FOG WITH SMOKE AND/OR HAZE 0

SEA

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	18	1	7	0	0	0	0	32
1957	0	0	0	0	0	0	1	2	0	0	0	0	3
1958	0	0	0	0	2	0	0	0	0	0	0	0	2
1959	0	0	0	0	0	18	0	2	0	0	0	0	20
1960	0	0	0	0	5	22	0	0	0	0	0	0	27
1961	0	0	0	0	15	0	30	0	1	0	0	0	46
1962	0	0	0	0	1	3	0	0	0	0	0	0	4
1963	0	0	0	0	0	17	12	0	0	0	0	0	29
1964	0	0	0	0	0	9	0	2	0	0	0	0	11
1965	0	0	0	0	0	16	0	0	0	0	0	0	16

TOTAL HRS	0	0	0	0	29	103	44	13	1	0	0	0	190
AVG HRS	0.0	0.0	0.0	0.0	2.90	10.30	4.0	1.30	0.10	0.0	0.0	0.0	19.00

SEA



SEA.

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	9	11	55	8	83	78	2	22	4	11	0	0	283
1957	6	16	4	33	59	22	0	30	3	0	4	0	177
1958	6	8	19	48	3	23	18	1	6	1	6	4	143
1959	3	0	17	39	46	74	12	17	0	0	0	1	207
1960	0	3	25	40	7	62	0	0	41	0	3	0	181
1961	5	8	15	34	4	5	39	0	0	1	3	6	120
1962	10	3	27	59	32	41	20	5	9	1	10	4	221
1963	1	14	31	10	1	64	80	40	8	0	0	2	251
1964	1	8	33	50	86	30	3	16	1	0	0	8	242
1965	4	2	37	35	15	10	102	15	0	7	15	7	249
TOTAL HRS	45	73	261	302	336	409	276	146	72	21	41	32	2074
AVG HRS	4.50	7.30	20.10	36.20	33.60	40.90	27.60	14.60	7.20	2.10	4.10	3.20	207.40

MCI

WIND SPEED VS. FREQUENCY

FREQUENCY	47	1	31	57	73	45	60	52	27	18	27	14	4	2	12	
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
		WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 5.25 KNOTS  
 MODE 4.00 KNOTS  
 MEDIAN 5.00 KNOTS  
 STD. DEV. 3.38 KNOTS  
 SKEM 0.37

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	47	48	130	254	326	371	412	418	430	
	CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
		WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	93	39	25	37	31	48	20	10	12	54	21	42	15	10	1	7	3	
	CALM	N	NNE	NE	E	ESE	E	SE	SSE	S	SSW	SW	WSW	W	WNW	WN	W	
		TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	2	3	0	2	1	2	1	1	1	1	0	0	1	0	0	0	0	
10-12	0	10	3	1	2	9	3	1	0	9	3	2	0	0	0	0	0	0	
WIND 7-9	0	6	9	12	8	10	8	0	0	7	4	5	2	3	0	1	1	2	
SPEED 4-6	0	15	5	15	19	16	7	6	7	23	5	22	9	6	1	2	1	1	
KNOTS 1-3	0	6	4	9	1	12	9	10	4	14	9	14	3	1	0	2	0	0	
CALM	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	CALM	N	NNE	NE	E	ESE	E	SE	SSE	S	SSW	SW	WSW	W	WNW	WN	W	W	
		TRUE WIND DIRECTION																	

HICI

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	9	39	140	14	174	3	5	0	46
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.42/16  
MODE 4.00/16  
MEDIAN 4.00/16  
STD. DEV. 1.98/16  
SKEW -0.29

TEMPERATURE VS. FREQUENCY

FREQ.	3	3	2	3	2	2	9	0	9	44	56	52	21	33	17	0	12	24	8	15	11	15	24	5	1	7	10	15	9	11	3	0
<15	10	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	72		
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	16	13	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72			

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 41.42 °F.  
MODE 31.50 °F.  
MEDIAN 37.50 °F.  
STD. DEV. 13.12 °F.  
SKEW 0.76

HOURLY OBSERVATIONS 418 \* SPECIAL OBS. 12 TOTAL OBSERVATIONS 846 FUG WITH SMOKE AND/OR HAZE 0



MCI

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS										TOTAL	
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT					
N	0.0	0.8	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	3.1
NNE	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
NE	0.0	0.0	1.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8
ENE	0.0	0.0	1.5	2.3	0.8	1.5	0.0	0.0	0.0	0.0	0.0	6.1
E	0.0	0.0	2.3	3.1	3.1	3.1	0.0	0.0	0.0	0.0	0.0	11.5
ESE	0.0	0.0	1.5	4.6	0.8	2.3	0.0	0.0	0.0	0.0	0.0	9.2
SE	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
SSE	0.0	0.8	3.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3
S	0.0	4.6	3.1	5.3	1.5	3.8	1.5	0.0	0.0	0.0	1.5	19.8
SSW	0.0	3.1	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1
SW	0.0	6.1	5.3	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.8
WSW	0.0	0.8	2.3	1.5	0.8	0.0	0.0	0.0	0.0	0.0	0.8	6.1
W	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL												100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 26 71 34

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 131  
FOG WITH LP 57  
FOG WITH FP 62  
ALL FOG CASES 249  
PURE FOG 131  
REC.OBS. 128

FOG WITH SMOKE AND/OR HAZE 0

MCI

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	2	15	0	0	0	0	0	17
1959	0	0	0	0	0	0	1	0	0	0	0	0	1
1960	0	0	0	0	0	0	12	0	0	0	0	0	12
1961	0	0	0	0	0	5	0	6	0	0	0	0	11
1962	0	0	0	0	0	0	0	6	0	0	0	0	6
1963	0	0	0	0	0	0	34	5	3	0	0	0	42
1964	0	0	0	0	0	3	0	0	0	0	0	0	3
1965	0	0	0	0	0	0	0	0	2	0	0	0	2
TOTAL HRS	0	0	0	0	0	10	62	17	5	0	0	0	94
AVG HRS	0.0	0.0	0.0	0.0	0.0	1.00	6.20	1.70	0.50	0.0	0.0	0.0	9.40

MCI

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	2	0	0	11	0	0	0	0	0	0	13
1958	0	5	0	0	0	10	2	0	5	1	0	1	24
1959	0	0	2	8	0	10	6	7	0	9	2	0	44
1960	0	0	0	0	0	0	37	21	0	0	0	0	58
1961	0	2	3	5	8	5	0	4	2	10	0	0	39
1962	4	0	2	2	0	11	6	3	0	0	2	7	37
1963	2	1	3	0	3	0	17	1	2	1	0	0	30
1964	0	0	12	11	13	5	1	0	0	5	0	0	47
1965	0	2	8	0	0	0	9	0	0	14	0	0	33
TOTAL HRS	6	10	32	26	24	52	78	36	9	40	4	8	325
AVG HRS	0.60	1.00	3.20	2.60	2.40	5.20	7.80	3.60	0.90	4.00	0.40	0.80	32.50

MIA

WIND SP. '9 VS. FREQUENCY

FREQUENCY	108	0	73	70	89	64	75	28	30	8	12	3	0	0	0
CALM	1	2	3	4	6	7	8	9	10	11	12	13	>13		
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 3.83 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 2.66 KNOTS  
 SKEW 1.44

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	108	108	251	404	507	545	560	560	560
CALM <2	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	216	69	9	0	1	1	2	2	3	10	17	25	71	43	55	64	80	
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WSW	W	NNW	NNW	
	TRUE WIND DIRECTION																	

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10-12	0	9	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	
WIND 7-9	0	13	0	0	0	0	1	0	0	2	2	7	2	4	10	25		
SPEED 4-6	0	29	6	0	0	1	2	5	7	13	13	11	11	30	35	37		
KNOTS 1-3	0	18	3	0	1	0	2	0	1	5	8	10	25	20	18	14		
CALM	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WSW	W	NNW	NNW	
	TRUE WIND DIRECTION																	

MIA





MIA

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12				
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MILS

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL								0.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 0 0 0

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 0  
FOG WITH LP 0  
FOG WITH FP 0  
ALL FOG CASES 0  
PURE FOG 0  
REC-OBS. 0

FOG WITH SMOKE AND/OR HAZE 0

MIA

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG													
MONTHLY FOG FREQUENCY													
	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL HRS	0	0	0	0	0	0	0	0	0	0	0	0	0
AVG HRS	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

MIA

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	1	1	2	0	0	0	0	0	4
1957	0	0	0	0	1	10	17	2	10	0	0	0	40
1958	0	0	0	0	9	3	0	0	0	0	2	0	14
1959	0	0	0	0	0	0	9	0	2	0	0	0	11
1960	0	0	0	0	3	0	0	2	0	0	0	0	5
1961	0	0	3	0	4	0	3	0	0	4	0	0	14
1962	0	0	0	0	3	3	8	30	0	0	1	0	45
1963	0	0	2	0	9	6	20	3	0	3	0	0	43
1964	0	0	0	0	6	5	0	5	0	3	0	0	19
1965	0	0	0	3	0	4	5	0	6	0	0	0	18
TOTAL HRS	0	0	5	3	36	32	64	42	18	10	3	0	213
AVG HRS	0.0	0.0	0.50	0.30	3.60	3.20	6.40	4.20	1.80	1.00	0.30	0.0	21.30



MSY

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	>8	24>	713	56	963	14	59	0	486
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.86/16  
MODE 4.00/16  
MEDIAN 4.00/16  
STD. DEV. 2.32/16  
SKEW -0.06

TEMPERATURE VS. FREQUENCY

FREQ.	1	0	0	0	0	0	0	0	0	3	9	21	7	22	13	43	207	184	318	234	236	314	214	119	43	16				
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
16	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 59.01 OF.  
MODE 59.50 OF.  
MEDIAN 59.50 OF.  
STD. DEV. 7.24 F.  
SKEW -0.07

HOURLY OBSERVATIONS 1154.. SPECIAL OBS. 1458 TOTAL OBSERVATIONS 3829 FLG WITH SKUL AND/OR HAZE 1216

MSY

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12			
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



MSY

WIND ROSI DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 1 0 0

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 1  
 FOG WITH LP 1  
 FOG WITH FP 0  
 ALL FOG CASES 2  
 PURE FOG 0  
 REC.OBS. 0

FOG WITH SMOKE AND/OR HAZE 0

MSY

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 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 0.0  
AVG HRS 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 0.0

MSY

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	1	0	16	58	2	1	36	3	4	0	121
1957	0	0	0	0	17	26	58	29	11	1	1	0	143
1958	0	0	0	0	24	8	0	5	13	2	0	0	52
1959	4	0	0	15	20	0	24	49	1	14	2	0	129
1960	0	0	0	6	4	25	65	6	18	6	2	0	132
1961	0	0	3	6	17	33	13	16	2	5	0	3	98
1962	0	0	0	4	4	62	37	24	5	1	0	0	138
1963	0	0	0	6	19	5	35	7	13	4	0	0	89
1964	0	0	0	5	17	49	49	5	6	1	1	0	133
1965	0	0	0	7	26	27	18	23	11	7	0	0	119

TOTAL HRS 4 0 0 49 164 294 301 165 15 44 10 3 1154  
 AVG HRS 0.40 0.0 0.0 4.90 16.50 29.40 30.10 16.50 11.60 4.40 1.00 0.30 115.60

IAH

WIND SPEED VS. FREQUENCY

FREQUENCY	213	71	258	422	342	441	339	259	244	134	115	51	45	19	16
CALM	1	2	5	4	5	6	7	8	9	10	11	12	13	13	>13
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 5.09 KNOTS  
 MODE 5.00 KNOTS  
 MEDIAN 5.00 KNOTS  
 STD. DEV. 2.94 KNOTS  
 SKEW 0.03

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	213	284	964	1797	2395	2773	2939	3003	3021
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	426	114	103	153	245	264	376	319	324	270	195	100	91	76	89	82	67	
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																	

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	1	5	10	18	2	0	0	0	0	0	0	0	0	
10-12	0	2	3	7	14	39	50	42	24	13	2	0	0	1	5	3	4	84	
WIND 7-9	0	13	33	24	39	63	90	95	96	66	31	17	12	12	22	12	12	12	
SPEED 4-6	0	57	41	66	116	111	166	112	108	101	64	50	43	55	39	31	30	30	
KNOTS 1-3	0	42	27	60	83	75	74	52	60	77	27	31	56	28	23	35	21	21	
CALM	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	TRUE WIND DIRECTION																		
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NW	NNW	

IAH

I:R

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 FILE IS NOT A REPORTABLE VALUE

FREQUENCY	80	325	743	180	990	30	158	0	515
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

STATISTICAL RESULTS

MEAN 3.82/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.31/16  
 SKEW -0.08

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	0	0	2	0	0	14	0	14	177	176	236	315	423	307	263	273	172	117	44					
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

STATISTICAL RESULTS

MEAN 59.92 °F.  
 MODE 61.50 °F.  
 MEDIAN 61.50 °F.  
 STD. DEV. 7.39 °F.  
 SKEW -0.21

HOURLY OBSERVATIONS 1464 SPECIAL OBS. 1557 TOTAL OBSERVATIONS 5143 FOG WITH SMOKE AND/OR HAZE 714

IAH

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NH	NNW	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
	CALM	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	1	1	1	0	0	0	0	0	0	0	0	0	0
MNW	0	0	0	0	0	1	0	0	0	0	0	0	0	0
NH	0	0	1	0	0	1	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	0													

IAH

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	16.7	33.3	0.0	0.0	0.0	0.0	0.0	50.0
WNW	0.0	0.0	16.7	0.0	0.0	0.0	0.0	16.7
NW	0.0	16.7	16.7	0.0	0.0	0.0	0.0	33.3
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM								0.0

TOTAL 100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 0 5 1

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 6  
 FOG WITH LP 1  
 FOG WITH FP 6  
 ALL FOG CASES 12  
 PURE FOG 6  
 REC.OBS. 4

FOG WITH SMOKE AND/OR HAZE 0

IAH

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	3	0	0	0	0	0	3
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 0 0 3 0 0 0 0 0 3  
AVG HRS 0.0 0.0 0.0 0.0 0.0 0.0 0.30 0.0 0.0 0.0 0.0 0.0 0.0 0.30



IAH

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	6	5	29	22	14	26	15	6	0	123
1957	0	0	2	5	13	7	63	42	19	2	0	1	154
1958	0	0	2	1	57	20	8	8	16	18	3	0	133
1959	0	0	5	14	29	9	20	35	17	8	8	0	145
1960	0	0	1	17	13	50	30	3	47	5	1	1	168
1961	0	0	6	4	15	31	18	21	15	3	0	0	113
1962	0	0	1	1	0	56	24	59	14	15	8	3	181
1963	0	0	0	10	13	5	24	8	34	1	0	0	95
1964	0	0	0	18	14	30	47	16	10	12	10	0	166
1965	0	0	3	27	60	17	19	18	25	10	4	0	183
TOTAL HRS	0	0	20	103	219	263	275	224	223	89	40	5	1461
AVG HRS	0.0	0.0	2.00	10.30	21.90	26.50	27.50	22.40	22.30	8.90	4.00	0.50	146.10

PHL

WIND SPEED VS. FREQUENCY

FREQUENCY	267	0	30	224	317	261	185	120	69	29	32	12	5	3	2
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 4.27 KNOTS  
 MODE 4.00 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 2.65 KNOTS  
 SKEW 0.10

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	267	267	521	1099	1604	1502	1546	1554	1556
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	534	34	24	30	115	101	85	74	60	108	93	142	219	66	55	31	11
CALM	N	NNE	NE	E	ESE	E	SSE	S	SSW	SW	WSW	W	WNW	W	WNW	NW	NNW
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	3	0	0	0	0	0	1	0	1	0	0	0	0
10-12	0	0	1	10	12	1	1	1	1	0	3	7	12	1	0	0	0
WIND 7-9	0	1	2	3	26	31	11	6	4	6	14	51	49	11	2	0	0
SPEED 4-6	0	27	16	11	58	48	55	44	43	67	61	103	126	45	33	19	7
KNOTS 1-3	0	6	6	15	18	10	18	23	12	35	14	21	31	9	21	11	4
CALM	267	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	

PHL

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	117	181	304	64	420	6	187	0	277
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

STATISTICAL RESULTS

MEAN 3-87/16  
 MODE 4-00/16  
 MEDIAN 4-00/16  
 STC. DEV. 2-53/16  
 SKEN -0.05

TEMPERATURE VS. FREQUENCY

FREQ.	13	0	0	0	1	0	0	6	37	48	46	52	84	78	89	87	97	120	61	73	72	37	72	45	74	83	44	49	58	70	42	13
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72		
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72			

STATISTICAL RESULTS

MEAN 48.84 °F.  
 MODE 45.50 °F.  
 MEDIAN 47.50 °F.  
 STD. DEV. 12.81 °F.  
 SKEN 0.26

HOURLY OBSERVATIONS 660 SPECIAL OBS. 896 TOTAL OBSERVATIONS 4643 FOG WITH SMOKE AND/OR HAZE 1393

PHL

PHL

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	28	2	4	1	2	12	9	13	2	10	5	19	33	3	4	1
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	1	1	1	2	2	1	1	2	0	0	0	0
	0	0	2	1	1	3	0	1	0	0	0	0	0	0	0	0
	0	0	0	4	3	1	3	1	0	0	0	0	0	0	0	0
	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
	0	0	1	4	4	0	0	1	0	0	0	0	0	0	0	0
	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	0
	0	0	0	2	0	3	6	1	2	2	1	2	0	0	0	0
	0	0	1	2	8	2	6	4	4	2	3	1	0	0	0	0
	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0
	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0
	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
CALM	28															

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	0	0	0	0	1	1	2	2	1	1	2	0	0	0	0	0	0
	0	0	2	1	1	3	0	1	0	0	0	0	0	0	0	0	0
	0	0	0	4	3	1	3	1	0	0	0	0	0	0	0	0	0
	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	1	4	4	0	0	1	0	0	1	0	0	0	0	0	0
	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	0	0
	0	0	0	2	0	3	6	1	2	2	1	2	0	0	0	0	0
	0	0	1	2	8	2	6	4	4	2	3	1	0	0	0	0	0
	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0
	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
CALM	28																

CALM 1 2 3 4 5 6 7 8 9 10 11 12 >12 WIND SPEED

PHL

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	1.3
NNE	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	2.6
NE	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7
ENE	0.0	0.0	0.7	0.0	0.7	0.0	0.0	0.0	1.3
E	0.0	0.0	1.3	2.6	2.0	0.7	0.0	0.0	7.9
ESE	0.0	2.0	1.3	2.0	0.7	0.0	0.0	0.0	6.0
SE	0.0	2.6	2.6	2.6	0.7	0.0	0.0	0.0	8.6
SSE	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	1.3
S	0.0	3.3	2.6	0.7	0.0	0.0	0.0	0.0	6.6
SSW	0.0	2.0	0.0	0.7	0.0	0.7	0.0	0.0	3.3
SW	0.0	1.3	2.0	4.6	2.6	2.0	0.0	0.0	12.6
WSW	0.0	2.0	6.6	6.6	4.0	2.6	0.0	0.0	21.9
W	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.0	2.0
WNW	0.0	0.0	1.3	0.7	0.0	0.0	0.0	0.0	2.0
NW	0.0	1.3	1.3	0.0	0.0	0.0	0.0	0.0	2.6
NNW	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7
CALM	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	18.5
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 40 95 16

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 151  
 FOG WITH LP 20  
 FOG WITH FP 84  
 ALL FOG CASES 253  
 PURE FOG 0  
 REC-OBS. 71

FOG WITH SMOKE AND/OR HAZE 71

PHL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	1	0	0	10	0	0	0	0	11
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	1	3	8	0	0	0	0	9
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	3	5	7	0	0	0	0	15
1962	0	0	0	0	0	0	1	14	0	0	0	0	15
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	1	0	0	0	0	0	1
1965	0	0	0	0	0	3	8	0	0	0	0	0	11
TOTAL HRS	0	0	0	0	1	7	15	39	0	0	0	0	62
AVG HRS	0.0	0.0	0.0	0.0	0.10	0.70	1.50	3.90	0.0	0.0	0.0	0.0	6.20

PHL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	1	5	4	8	36	6	2	2	11	1	7	83
1957	0	0	5	3	2	1	15	14	0	8	2	11	61
1958	0	4	2	4	13	5	0	0	0	1	7	5	41
1959	0	0	10	2	8	22	4	7	8	2	0	0	63
1960	2	2	4	10	11	0	0	0	0	0	5	4	38
1961	4	0	1	16	8	9	12	29	3	0	14	4	100
1962	2	13	0	11	0	6	5	23	0	1	0	1	62
1963	0	2	9	27	2	0	20	3	5	0	0	3	71
1964	2	0	0	0	4	18	8	0	4	4	1	4	45
1965	4	3	4	1	0	3	0	16	0	0	3	0	34

TOTAL HRS 14 25 40 78 56 100 70 94 22 27 33 39 598  
 AVG HRS 1.40 2.50 4.00 7.80 5.60 10.00 7.00 9.40 2.20 2.70 3.30 3.90 59.80

PHL

DCA

WIND SPEED VS. FREQUENCY

FREQUENCY	180	14	19	147	177	153	120	92	43	16	14	0	0	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 4.07 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 2.54 KNOTS  
 SKEW 1.60

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	180	194	360	690	905	964	978	978	978	978
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL		
	WIND SPEED (KNOTS)									

WIND DIRECTION VS. FREQUENCY

FREQUENCY	360	45	44	78	104	24	10	14	38	156	100	79	24	17	13	15	37	
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																	

WIND DIRECTION VS. WIND SPEED

>14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-14	0	3	1	0	0	0	0	0	7	2	0	0	0	0	0	0	0	1
WIND 7-9	7	11	20	26	2	1	0	8	31	22	7	4	0	1	2	9		
SPEED 4-6	0	30	22	47	61	14	4	0	21	97	55	41	13	7	5	9	21	
KNOTS 1-3	0	8	8	10	17	8	5	8	9	21	21	31	7	10	7	4	6	
CALM	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TRUE WIND DIRECTION																	

DCA



DCA.

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	3	58	202	118	259	43	156	0	139
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY (MILES)

STATISTICAL RESULTS

MEAN 4.21/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.11/16  
 SKEW 9.10

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	19	4	20	31	54	83	25	55	54	106	63	80	63	59	38	16	53	40	63	36	4	2	1	4	5
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 46.35 °F.  
 MODE 43.50 °F.  
 MEDIAN 45.50 °F.  
 STD. DEV. 10.15 °F.  
 SKEW 0.28

HOURLY OBSERVATIONS 35? SPECIAL OBS. 626 TOTAL OBSERVATIONS 2526 FOG WITH SMOKE AND/OR HAZE 76

DCA

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	12	0	0	2	0	0	0	0	0	1	5	20	17	11	3	1	1	0	1
CALM																			
		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW		

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	2	0	4	6	1	1	2	1	3	0	0	0	0	0	0	0	0	0
SSW	0	0	0	2	1	4	5	2	3	0	0	0	0	0	0	0	0	0	0
SW	0	0	1	2	2	1	1	4	0	0	0	0	0	0	0	0	0	0	0
WSW	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MNW	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	12								1	0	0	0	0	0	0	0	0	0	0

DCA:

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS						TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	2.7	0.0	0.0	2.7
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	1.4	0.0	0.0	0.0	1.4
SSE	1.4	2.7	2.7	0.0	0.0	0.0	6.8
S	2.7	5.4	9.5	4.1	5.4	0.0	27.0
SSW	0.0	2.7	6.8	9.5	4.1	0.0	23.0
SW	0.0	4.1	4.1	6.8	0.0	0.0	14.9
WSW	1.4	1.4	1.4	0.0	0.0	0.0	4.1
W	0.0	1.4	0.0	0.0	0.0	0.0	1.4
WNW	1.4	0.0	0.0	0.0	0.0	0.0	1.4
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	1.4	0.0	0.0	1.4
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL							100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 23 38 13

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 74  
 FOG WITH LP 7  
 FOG WITH FP 117  
 ALL FOG CASES 198  
 PURE FOG 62  
 REC-OBS. 30

FOG WITH SMOKE AND/OR HAZE 4

DCA

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	1	0	0	0	0	0	1
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	1	0	0	0	0	0	0	1
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	13	0	7	0	0	0	0	20
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	1	0	0	0	0	0	1

TOTAL HRS 0 0 0 0 0 0 14 2 8 0 0 0 0 24  
AVG HRS 0.0 0.0 0.0 0.0 0.0 0.0 1.40 0.20 0.80 0.0 0.0 0.0 0.0 2.40

DCA

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARY FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	1	0	0	3	5	24	0	0	0	6	5	0	44
1957	0	0	0	0	8	0	18	4	0	1	0	0	31
1958	0	0	1	6	7	0	0	0	0	2	0	0	16
1959	0	0	0	1	7	2	0	13	6	2	0	0	31
1960	0	0	0	8	3	1	2	0	0	0	2	0	16
1961	0	0	0	5	0	15	5	3	12	0	3	1	44
1962	0	0	0	0	1	0	4	27	1	0	1	0	34
1963	0	0	5	10	0	0	19	2	4	0	0	0	40
1964	0	0	0	0	1	28	4	0	9	4	1	0	47
1965	0	0	2	4	0	3	2	14	0	0	0	0	25

TOTAL HRS 1 0.0 0.80 3.70 3.20 7.30 5.40 6.30 3.20 1.50 1.20 0.10 1 328

AVG HRS 0.10 0.0 0.80 3.70 3.20 7.30 5.40 6.30 3.20 1.50 1.20 0.10 0.10 32.80

ATL

WIND SPEED VS. FREQUENCY

FREQUENCY	256	1	86	215	294	283	206	221	164	70	112	30	17	8	13
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 5.12 KNOTS  
 MODE 4.00 KNOTS  
 MEDIAN 5.00 KNOTS  
 STD. DEV. 3.03 KNOTS  
 SKEN 0.37

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	246	247	548	1125	1552	1786	1928	1953	1966
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	492	27	15	97	212	376	154	128	77	89	57	82	100	131	74	68	33
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNh	NNh
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	2	5	0	0	0	0	2	0	0	1	0	0	0	0	3
10-12	0	0	4	30	47	14	10	2	4	0	0	9	13	5	11	7	3
7-9	0	5	1	24	59	104	49	25	14	11	22	28	30	18	28	14	
4-6	0	14	11	55	96	167	51	57	39	45	28	39	47	70	33	24	7
1-3	0	8	3	12	25	53	34	13	24	18	11	12	26	12	9	6	
CALM	246	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNh	NNh
	TRUE WIND DIRECTION																

102

ATL

ATL

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	24	74	427	103	604	29	92	0	553
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 4.58/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.41/16  
 SKEM 0.24

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	12	3	20	27	34	45	42	60	59	79	106	118	130	191	141	129	96	86	93	128	224	55	9	
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	TU	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 55.87 °F.  
 MODE 69.50 °F.  
 MEDIAN 55.50 °F.  
 STD. DEV. 10.44 °F.  
 SKEM -1.31

HOURLY OBSERVATIONS 725 SPECIAL OBS. 1241 TOTAL OBSERVATIONS 7962 FOG WITH SMOKE AND/OR HAZL 21





ATL

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	11.4	0.0	0.0	0.0	11.4
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	2.9
SSE	0.0	2.9	5.7	2.9	0.0	0.0	0.0	0.0	11.4
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	8	15	12
TEMPERATURE (F)	28	31	32

CHECK COUNT 35  
 FOG WITH LP 12  
 FOG WITH FP 0  
 ALL FOG CASES 47  
 PURE FOG 35  
 REC-OBS. 13

FOG WITH SMOKE AND/OR HAZE 0

ATL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	4	0	0	0	0	0	4
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	4	0	0	0	0	0	4
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	2	0	0	0	0	2

TOTAL HRS	0	0	0	0	0	0	8	2	0	0	0	0	10
AVG HRS	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.20	0.0	0.0	0.0	0.0	1.00

ATL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	2	1	3	2	2	10	4	28	6	1	1	0	66
1957	1	0	11	0	18	10	12	38	11	1	0	7	109
1958	9	3	4	0	3	6	4	0	1	4	0	0	34
1959	6	5	1	3	6	3	5	10	0	2	7	0	48
1960	1	1	10	4	6	6	24	0	8	3	3	1	67
1961	7	12	4	2	4	7	0	7	6	6	5	0	60
1962	0	1	2	4	2	15	14	10	13	9	3	1	74
1963	6	1	3	0	13	1	16	8	9	0	4	9	70
1964	19	5	0	3	9	35	6	7	9	4	2	0	99
1965	15	3	9	0	11	6	1	12	9	19	0	3	88
TOTAL HRS	66	32	47	18	80	99	86	120	72	49	25	21	715
AVG HRS	6.60	3.20	4.70	1.80	8.00	9.90	8.60	12.00	7.20	4.90	2.50	2.10	71.50

BHM

WIND SPEED VS. FREQUENCY

FREQUENCY	234	0	7	85	56	48	35	25	22	3	6	3	2	1	3
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13

WIND SPEED (KNOTS)

STATISTICAL RESULTS

MEAN 2.80 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 3.02 KNOTS  
 SKEW 0.93

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	234	234	326	430	488	513	522	525	528
	CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL

WIND SPEED (KNOTS)

WIND DIRECTION VS. FREQUENCY

FREQUENCY	468	35	29	25	10	14	6	10	14	4	10	11	8	21	29	36	32
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

TRUE WIND DIRECTION

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
10-12	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	5	3	0
WIND 7-9	0	0	5	3	0	0	1	4	0	1	3	2	6	8	6	5	6	5
SPEED 4-6	0	21	8	13	4	4	2	3	8	1	7	5	2	12	9	17	21	21
KNOTS 1-3	0	7	15	9	6	10	4	6	2	3	2	3	3	3	5	4	6	6
CALM	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	

108

BHM

BHM

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 WILL IS NOT A REPORTABLE VALUE

FREQUENCY	84	46	75	0	137	0	9	0	182
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 4.23/16  
 MODE 8.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 3.07/16  
 SKEW -1.23

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	0	0	0	14	6	7	17	54	16	26	18	24	43	43	36	43	23	22	18	26	22	23	19	34	4
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72		
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72			

TEMPERATURE(F)

STATISTICAL RESULTS

MEAN 53.00 °F.  
 MODE 39.50 °F.  
 MEDIAN 53.50 °F.  
 STD. DEV. 11.03 °F.  
 SKEW 1.22

HOURLY OBSERVATIONS 233 SPECIAL OBS. 295 TOTAL OBSERVATIONS 1127 FOG WITH SMOKE AND/OR HAZE 213



BHM

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	TOTAL	
N	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	14.3
NNE	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	14.3
NE	0.0	0.0	7.1	0.0	0.0	0.0	0.0	0.0	7.1
ENE	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0	7.1
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.1

TOTAL 100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 0 11 3

<29 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 14  
 FOG WITH LP 0  
 FOG WITH FP 0  
 ALL FOG CASES 14  
 PURE FOG 0  
 REC.OBS. 7

FOG WITH SMOKE AND/OR HAZE 7

111

BHM

BHM

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	4	0	0	0	0	0	4
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 0 0 4 0 0 0 0 0 4  
AVG HRS 0.0 0.0 0.0 0.0 0.0 0.0 0.40 0.0 0.0 0.0 0.0 0.0 0.0 0.40



BHM

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	11	10	0	6	0	0	0	0	0	27
1957	0	0	5	2	2	0	2	3	0	0	0	0	14
1958	0	0	0	1	8	1	0	0	0	0	0	3	13
1959	0	0	1	0	0	0	1	0	0	0	0	3	5
1960	0	0	5	6	7	1	2	5	0	0	0	0	26
1961	5	0	0	1	1	2	0	0	3	0	2	4	18
1962	1	2	0	0	0	30	2	0	0	2	0	5	42
1963	0	1	5	0	10	1	4	0	8	0	0	1	30
1964	0	6	0	4	11	7	0	0	1	0	0	0	29
1965	10	0	0	0	2	0	0	6	4	0	3	0	25

TOTAL HRS 16 9 16 25 51 42 17 14 16 2 5 16 229  
 AVG HRS 1.60 0.90 1.60 2.50 5.10 4.20 1.70 1.40 1.60 0.20 0.50 1.60 22.90

BNA

WIND SPEED VS. FREQUENCY

FREQUENCY	357	25	53	111	104	70	20	15	8	4	4	2	2	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 2.12 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 2.00 KNOTS  
 STD. DEV. 2.38 KNOTS  
 SKEW 0.89

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	357	382	546	720	755	767	773	775	775
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	714	45	33	47	23	29	18	39	16	38	14	12	13	14	17	38	22
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW	
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-9	0	2	1	3	0	0	0	1	2	5	1	0	0	1	2	8	1
4-6	0	19	17	19	12	16	11	20	5	18	7	5	6	5	7	16	11
1-3	0	24	15	25	11	13	7	18	8	14	6	7	7	5	5	14	10
CALM	357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW
	TRUE WIND DIRECTION																

BNA

114

BR.

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	78	140	154	11	222	1	34	0	129
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.38/16  
MODE 4.00/16  
MEDIAN 3.00/16  
STD. DEV. 2.56/16  
SKEW -0.24

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	2	7	12	2	15	17	14	16	27	17	22	56	34	23	46	56	47	10	15	36	46	28	51	37	49	47	36	1
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 51.88 °F.  
MODE 41.50 °F.  
MEDIAN 51.50 °F.  
STD. DEV. 13.16 °F.  
SKEW 0.79

HOURLY OBSERVATIONS 411 SPECIAL OBS. 364 TOTAL OBSERVATIONS 1581 FUG WITH SMOKE AND/OR HAZE 127  
DISCARDS 0 DISCARD NO. 39

BVA

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	24	3	4	9	6	10	4	1	1	1	1	0	2	1	2	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW
TRUE WIND DIRECTION																	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0
NE	0	1	1	5	1	1	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	3	1	2	0	0	0	0	0	0	0	0	0	0	0
E	0	0	1	6	1	2	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	24																
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12			

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	1.4	2.9	0.0	0.0	0.0	0.0	4.3
NNE	0.0	2.9	2.9	0.0	0.0	0.0	0.0	5.8
NE	1.4	8.7	2.9	0.0	0.0	0.0	0.0	13.0
ENE	0.0	4.3	4.3	0.0	0.0	0.0	0.0	8.7
E	0.0	10.1	4.3	0.0	0.0	0.0	0.0	14.5
ESE	0.0	1.4	4.3	0.0	0.0	0.0	0.0	5.8
SE	0.0	1.4	0.0	0.0	0.0	0.0	0.0	1.4
SSE	0.0	1.4	0.0	0.0	0.0	0.0	0.0	1.4
S	0.0	1.4	0.0	0.0	0.0	0.0	0.0	1.4
SSW	0.0	0.0	1.4	0.0	0.0	0.0	0.0	1.4
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	2.9	0.0	0.0	0.0	0.0	2.9
W	0.0	0.0	0.0	0.0	0.0	1.4	0.0	1.4
WNW	0.0	0.0	0.0	0.0	0.0	1.4	0.0	1.4
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.8
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	31	35	3
-----			
	<28	28 TO 31	32
	TEMPERATURE (F)		

CHECK COUNT 69  
 FOG WITH LP 8  
 FOG WITH FP 32  
 ALL FOG CASES 107  
 PURE FOG 46  
 REC.OBS. 41

FOG WITH SMOKE AND/OR HAZE 11

BNA

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
 MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	3	0	0	0	0	0	3
1960	0	0	0	0	4	2	0	0	0	0	0	0	6
1961	0	0	0	0	0	0	3	0	0	0	0	0	3
1962	0	0	0	0	0	4	0	0	0	0	0	0	8
1963	0	0	0	0	0	0	1	0	0	0	0	0	1
1964	0	0	0	0	0	0	12	6	0	0	0	0	18
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL HRS	0	0	0	0	4	10	19	6	0	0	0	0	39
AVG HRS	0.0	0.0	0.0	0.0	0.40	1.00	1.90	0.60	0.0	0.0	0.0	0.0	3.90

BN:

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	6	0	8	4	12	0	6	0	0	0	0	36
1957	1	0	0	1	6	1	1	1	0	0	6	2	19
1958	0	1	4	6	8	5	1	0	2	6	2	1	36
1959	4	1	6	5	0	4	3	0	5	3	2	0	33
1960	16	6	4	15	5	0	4	0	0	1	2	3	56
1961	4	12	1	0	2	2	1	0	0	0	0	4	26
1962	3	2	5	0	0	7	0	3	0	1	2	0	23
1963	0	12	0	0	38	0	12	1	1	0	0	0	64
1964	6	7	4	20	0	0	1	0	6	0	1	0	45
1965	1	0	8	1	16	0	0	0	0	0	4	4	34
TOTAL HRS	35	47	32	55	79	31	23	11	14	11	19	14	372
AVG HRS	3.50	4.70	3.20	5.60	7.90	3.10	2.50	1.10	1.40	1.10	1.90	1.40	37.20

CAL

WIND SPEED VS. FREQUENCY

FREQUENCY	36	2	25	62	60	53	21	25	30	11	23	4	9	5	3
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 5.07 KNOTS  
 MODE 3.00 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 3.19 KNOTS  
 SKEW 0.65

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	36	38	125	238	284	325	352	366	369
	CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	72	14	5	18	11	11	10	53	34	41	11	35	18	17	13	24	18
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	2	3	2	0	0	0	0	0	0	0	1
10-12	0	2	0	0	0	0	3	11	10	7	0	0	0	0	0	2	0	1
WIND 7-9	0	1	3	0	1	1	1	10	14	11	4	4	1	1	2	6	0	0
SPEED 4-6	0	5	0	3	6	10	5	14	6	17	6	20	11	6	6	13	6	6
KNOTS 1-3	0	6	2	15	4	0	1	10	1	4	1	11	6	10	3	5	10	0
CALM	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	DAI
	TRUE WIND DIRECTION																	





DAL

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	0	0	0	0	0	
	TRUE WIND DIRECTION																						
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

CALM	1	2	3	4	5	6	7	8	9	10	11	12	12
	WIND SPEED												
N	0	0	0	2	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	1	0	0	0	0	0	0	0	0	0	0
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0

DAL

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	60.7	0.0	0.0	0.0	0.0	0.0	0.0	66.7
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	33.3
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 0 3 0

-----  
<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 3  
FOG WITH LP 5  
FOG WITH FP 0  
ALL FOG CASES 6  
PURE FOG 3  
SMOKE/HAZE 1

FOG WITH SMOKE/HAZE 0

DAL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG													
MONTHLY FOG FREQUENCY													
	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	1	0	0	0	0	1
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL HRS	0	0	0	0	0	0	0	1	0	0	0	0	1
AVG HRS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.0	0.0	0.0	0.0	0.10

DAL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
 MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	8	0	1	0	0	0	0	0	9
1957	0	0	0	2	1	4	4	9	1	0	0	0	21
1958	0	0	0	8	0	9	0	0	3	1	2	0	23
1959	0	0	0	0	0	4	3	7	0	0	0	0	14
1960	0	0	0	8	0	0	8	0	2	0	0	0	18
1961	0	0	0	1	3	14	5	0	0	0	0	0	23
1962	0	0	0	2	0	3	0	4	0	3	0	0	12
1963	0	0	0	0	1	0	0	0	0	0	0	0	1
1964	0	0	0	12	0	5	3	2	0	0	0	0	22
1965	0	0	1	0	14	0	5	0	0	1	0	0	21
TOTAL HRS	0	0	1	33	27	39	29	22	6	5	2	0	164
AVG HRS	0.0	0.0	0.10	3.30	2.70	3.90	2.90	2.20	0.60	0.50	0.20	0.0	16.40

AML

WIND SPEED VS. FREQUENCY

FREQUENCY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	>13
	500	207	443	777	421	212	60	61	29	0	7	0	0	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	

STATISTICAL RESULTS

MEAN 2.33 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 2.00 KNOTS  
 STD. DEV. 2.00 KNOTS  
 SKEW 1.17

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	905	1174	2394	3027	3184	3219	3226	3226	3226	3226	3226
	<2	<4	<6	<8	<10	<12	<14	TOTAL			
CALM	1	2	3	4	5	6	7	8	9	10	11

WIND DIRECTION VS. FREQUENCY

FREQUENCY	965	175	231	256	205	169	217	90	128	62	78	87	139	104	126	91
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNH
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

WIND DIRECTION VS. WIND SPEED

	>12	10-12	7-9	4-6	1-3	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNH	
WIND SPEED KNOTS	0	3	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	11	29	28	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	74	94	76	59	71	33	35	33	15	21	15	47	30	37	36	6	7	4	1	0	0
	0	87	79	125	94	134	116	182	57	92	47	55	72	91	69	82	49	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	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

ANC

126

ANC

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	18	213	844	231	1107	193	197	0	423
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	14	0	16	4	16	0	16	2	
	VISIBILITY(MILES)								

STATISTICAL RESULTS

MEAN 3.69/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.05/16  
 SKEN -0.05

TEMPERATURE VS. FREQUENCY

FREQ.	1300	246	169	215	157	111	146	111	112	104	175	57	39	43	30	35	30	14	9	10	11	19	4	2	0	0	0	0	0	0
	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	72
	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	
	TEMPERATURE (F)																													

STATISTICAL RESULTS

MEAN 20.50 DEGREES(F)  
 MODE 15.00 DEGREES(F)  
 MEDIAN 15.00 DEGREES(F)  
 STD. DEV. 9.60 DEGREES(F)  
 SKEN 0.76

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HOURLY OBSERVATIONS 1092    SPECIAL OBS. 2136    TOTAL OBSERVATIONS 4356    FOG WITH SMOKE AND/OR HAZE 3

ANC VISIBILITY VS. FREQUENCY  
 NOTE 7/16 MILE IS NOT A PROPORTIONAL VALUE

FREQUENCY	18	213	864	231	1107	163	167	0	423
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.89/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.05/16  
 SKEW -0.05

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	0	0	0	0	1	3	5	4	3	0	14	8	10	18	40	68	75	109	146	144	127	163	205	
	-47	-47	-43	-41	-39	-37	-35	-33	-31	-29	-27	-25	-23	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	
	-46	-44	-42	-40	-38	-36	-34	-32	-30	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	
	TEMPERATURE (F)																														
FREQ.	239	244	168	215	157	111	146	111	112	104	175	57	39	43	30	55	30	14	9	10	11	19	4	2	0	0	0	0	0	0	
	13	15	17	19	21	22	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	
	TEMPERATURE (F)																														

STATISTICAL RESULTS

MEAN 17.80 DEGREES(F)  
 MODE 15.50 DEGREES(F)  
 MEDIAN 15.50 DEGREES(F)  
 STD. DEV. 13.12 DEGREES(F)

TOTAL OBSERVATIONS 1092 SPECIAL OBS. 2134 TOTAL OBSERVATIONS 4357 FOG WITH SMOKE AND/OR HAZE 3  
 128



WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	931	122	149	190	135	194	160	204	79	111	50	60	71	113	79	86	63
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	

TRUE WIND DIRECTION

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	11	20	16	20	14	9	3	2	1	0	0	0	0	0	0	0
NNE	0	7	17	37	35	19	12	12	5	1	1	0	0	0	0	0	0
NE	0	23	31	24	27	21	6	8	7	1	2	0	0	0	0	0	0
ENE	0	11	21	55	28	14	3	3	0	0	0	0	0	0	0	0	0
E	0	21	43	20	42	12	6	2	0	0	0	0	0	0	0	0	0
ESE	0	17	39	29	34	13	1	0	0	0	0	0	0	0	0	0	0
SE	0	27	24	26	22	9	0	0	0	0	0	0	0	0	0	0	0
SSE	0	4	15	32	18	10	0	0	0	0	0	0	0	0	0	0	0
S	0	8	20	48	19	4	4	2	0	0	0	0	0	0	0	0	0
SSW	0	0	17	21	7	4	1	0	0	0	0	0	0	0	0	0	0
SW	0	3	16	39	6	2	0	0	0	0	0	0	0	0	0	0	0
WSW	0	3	10	32	10	3	0	0	0	0	0	0	0	0	0	0	0
W	0	13	24	26	23	9	1	1	0	0	0	0	0	0	0	0	0
WNW	0	2	24	22	15	2	2	1	1	0	0	0	0	0	0	0	0
NW	0	19	17	30	10	2	2	2	2	0	0	0	0	0	0	0	0
NNW	0	11	20	10	11	4	4	2	2	0	0	0	0	0	0	0	0
CALM	931																

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CALM 1 2 3 4 5 6 7 8 9 10 11 12 >12  
WIND SPEED

ANC

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 53 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.



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WIND DIRECTION PERCENTAGE OF WINDS

	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	TOTAL
N	0.4	2.2	1.2	0.4	0.1	0.0	0.0	4.4
NNE	0.2	2.1	1.9	0.6	0.2	0.0	0.0	5.3
NE	1.0	3.2	1.7	0.5	0.3	0.1	0.0	6.8
ENE	0.4	2.7	1.5	0.2	0.0	0.0	0.0	4.8
E	0.7	3.6	1.9	0.3	0.0	0.0	0.0	6.6
ESE	0.6	3.4	1.7	0.0	0.0	0.0	0.0	5.7
SE	1.0	5.2	1.1	0.0	0.0	0.0	0.0	7.3
SSE	0.1	1.7	1.0	0.0	0.0	0.0	0.0	2.8
S	0.3	2.0	0.8	0.0	0.0	0.0	0.0	4.0
SSW	0.2	1.4	0.4	0.0	0.0	0.0	0.0	2.0
SW	0.1	1.9	0.4	0.1	0.0	0.0	0.0	2.4
WSW	0.3	2.8	0.5	0.0	0.0	0.0	0.0	4.0
W	0.6	4.2	1.1	0.1	0.0	0.0	0.0	6.0
WNW	0.3	1.0	0.7	0.1	0.0	0.0	0.0	2.8
NW	0.7	1.7	0.5	0.1	0.1	0.0	0.0	3.1
WNW	0.4	1.1	0.5	0.2	0.0	0.0	0.0	2.2
CALM								33.2
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 2525 218 58

628 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 2001  
FOG WITH LP 29  
FOG WITH FP 283  
ALL FOG CASES 3113  
PURE FOG 2798  
REC. OBS. 917

FOG WITH SMOKE AND/OR HAZE 1

ANC

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

GOLO FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	3	1	30	21	10	0	0	0	0	65
1957	0	0	0	0	6	33	82	44	0	0	0	0	165
1958	0	0	0	0	8	29	60	9	3	6	0	0	115
1959	0	0	0	3	2	5	1	35	0	1	0	0	47
1960	0	0	0	0	0	6	12	30	4	0	0	0	52
1961	0	0	0	6	16	12	27	5	0	0	0	0	66
1962	0	0	0	1	12	9	40	16	10	0	0	0	108
1963	0	0	0	0	6	13	112	13	0	0	0	0	151
1964	0	0	0	2	0	0	0	0	9	0	0	0	27
1965	0	0	0	0	5	13	4	27	0	0	0	0	100

TOTAL FOG 112 127 365 214 26 0.70 0.0 0.0 896  
 AVG FOG 1.50 11.20 15.70 16.50 21.50 2.60 0.70 0.0 0.0 89.60

ANC

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	C	1	0	0	0	0	0	0	0	0	0	0	1
1957	C	0	2	0	1	0	6	0	0	0	0	0	9
1958	4	2	11	0	0	0	0	0	1	3	4	0	25
1959	0	1	4	3	2	0	0	0	0	0	0	0	10
1960	1	0	15	6	0	1	0	0	0	0	0	0	23
1961	0	3	0	4	0	4	11	0	0	7	0	0	29
1962	C	0	0	1	0	3	0	0	0	0	0	0	4
1963	C	0	5	0	0	0	47	0	0	0	0	0	52
1964	0	1	3	0	1	0	0	0	0	0	3	0	8
1965	C	5	9	0	5	2	0	0	13	0	1	0	35
TOTAL HRS	5	13	49	14	9	10	64	0	14	10	8	0	195
AVG HRS	0.50	1.30	4.90	1.40	0.90	1.00	6.40	0.0	1.40	1.00	0.80	0.0	19.60

BAL

WIND SPEED VS. FREQUENCY

FREQUENCY	344	0	19	152	254	303	159	120	98	38	41	3	4	2	9
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 4.26 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 5.00 KNOTS  
 STD. DEV. 2.91 KNOTS  
 SKEM 1.46

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	344	344	515	1072	1351	1487	1531	1537	1546
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	344	38	23	87	109	124	70	90	50	61	47	86	101	144	76	64	32
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	1	2	3	0	4	0	1	0	0	0	0	0	0	0
10-12	0	3	0	1	19	9	0	8	1	1	0	3	0	1	1	0	0
7-9	0	5	0	26	22	31	19	12	5	18	15	17	28	29	13	6	4
4-6	0	17	12	45	59	66	42	53	39	31	25	63	63	95	48	36	22
1-3	0	13	5	14	7	15	9	13	5	10	7	3	10	19	14	21	6
CALM	344	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

BAL

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	133	182	337	88	419	13	127	0	247
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.62/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.47/16  
 SKEW -0.15

TEMPERATURE VS. FREQUENCY

FREQ.	2	0	2	5	3	8	8	19	36	49	82	99	83	100	81	110	62	95	68	67	40	62	70	63	62	51	49	70	57	31	12
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 46.36 °F.  
 MODE 43.50 °F.  
 MEDIAN 47.50 °F.  
 STD. DEV. 12.00 °F.  
 SKEW 0.19

HOURLY OBSERVATIONS 787 SPECIAL OBS. 750 TOTAL OBSERVATIONS 4211 FOG WITH SMOKE AND/OR HAZE 116

134

BAL

BAL

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS IN VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	10	9	8	7	6	5	4	3	2	1	0	S	SSW	SW	WSW	W	MNW	NW	NNW
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	21																		

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	10	9	8	7	6	5	4	3	2	1	0	S	SSW	SW	WSW	W	MNW	NW	NNW
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	21																		

B.L.

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	TOTAL	
N	0.0	5.3	2.3	0.0	0.0	0.0	0.0	0.0	7.6
NNE	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.0	2.3
NE	0.0	2.3	1.2	3.0	0.0	0.0	0.0	0.0	6.8
ENE	0.0	0.0	2.3	0.8	0.0	0.0	0.0	0.0	3.0
E	0.0	0.8	3.8	0.0	0.8	2.3	0.0	0.0	7.6
ESE	0.0	2.3	0.8	3.0	0.0	0.0	0.0	0.0	6.1
SE	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.8
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	1.5
SSW	0.0	0.0	2.3	1.5	0.0	0.0	0.0	0.0	3.8
SW	0.0	0.8	3.8	1.5	0.8	0.0	0.0	0.0	6.8
WSW	0.0	0.8	1.5	3.0	1.5	0.0	0.0	0.0	6.8
W	0.0	4.2	0.8	2.3	3.0	0.0	0.0	0.0	10.7
WNW	0.0	2.3	0.8	0.0	1.5	0.0	0.0	0.0	4.5
Nb	0.0	6.8	2.3	0.0	0.0	0.0	0.0	0.0	9.1
NNW	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.8
CALM									15.9
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	32	78	22
TEMPERATURE (F)	28	31	32

CHECK COUNT 132  
 FOG WITH LP 11  
 FOG WITH FP 82  
 ALL FOG CASES 224  
 PURE FOG 114  
 REC-OBS. 67

FOG WITH SMOKE AND/OR HAZE 6



BAL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	1	3	0	0	0	0	4
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	3	2	5	0	0	0	0	10
1960	0	0	0	0	0	1	0	1	0	0	0	0	2
1961	0	0	0	0	0	2	0	0	0	0	0	0	2
1962	0	0	0	0	0	3	0	15	0	0	0	0	18
1963	0	0	0	0	0	0	7	0	0	0	0	0	7
1964	0	0	0	0	0	0	4	0	0	0	0	0	4
1965	0	0	0	0	0	0	7	0	0	0	0	0	7
TOTAL HRS	0	0	0	0	0	9	24	24	0	0	0	0	54
AVG HRS	0.0	0.0	0.0	0.0	0.0	0.90	2.10	2.40	0.0	0.0	0.0	0.0	5.40

OBSERVATIONS ARE FOR FOG; POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1.2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	2	2	10	3	14	46	7	7	15	13	7	1	127
1957	0	0	21	0	8	2	21	11	2	6	4	0	75
1958	1	8	9	8	11	13	1	3	0	4	4	2	64
1959	5	2	4	8	12	14	5	6	6	9	2	0	73
1960	5	1	8	4	8	0	8	0	2	0	0	0	36
1961	4	0	0	6	1	25	2	6	20	0	8	10	84
1962	8	0	0	0	0	0	4	22	0	2	11	0	47
1963	0	0	4	10	8	2	36	0	13	4	5	2	82
1964	1	0	4	1	4	33	11	3	6	13	2	7	85
1965	0	1	12	3	6	16	0	19	2	1	0	0	60

TOTAL HRS 26 14 72 43 72 151 95 79 66 52 41 22 733  
 AVG HRS 2.60 1.40 7.20 4.30 7.20 15.10 9.50 7.90 6.60 5.20 4.10 2.20 73.30

IAD

WIND SPEED VS. FREQUENCY

FREQUENCY	232	0	17	182	144	110	43	33	16	4	12	1	2	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	

STATISTICAL RESULTS

MEAN 3.16 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 2.49 KNOTS  
 SKEW 1.27

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	232	232	431	685	761	781	794	796	796	796
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL		

WIND DIRECTION VS. FREQUENCY

FREQUENCY	232	140	46	22	19	16	15	12	27	65	47	26	13	8	21	32	55
CALM																	

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	3	0	0	0	0	0	0	1	5	4	1	0	0	0	0	1
WIND 7-9	0	11	4	0	0	1	0	0	5	13	8	3	0	1	0	1	6
SPEED 4-6	0	68	31	16	12	7	13	7	13	27	28	16	3	4	16	14	22
KNOTS 1-3	0	58	11	6	7	8	2	5	8	20	7	6	10	3	5	17	26
CALM	232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

139

IAD

L..D

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	18	99	150	124	169	20	141	0	75
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.76/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.14/16  
 SKEW -0.11

TEMPERATURE VS. FREQUENCY

FREQ.	8	0	7	7	9	1	7	0	12	15	47	63	27	33	53	56	75	106	17	7	24	28	8	34	41	15	7	19	31	17	22
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 47.14 °F.  
 MODE 47.50 °F.  
 MEDIAN 45.50 °F.  
 STD. DEV. 13.02 °F.  
 SKEW -0.03

HOURLY OBSERVATIONS 321 SPECIAL OBS. 475 TOTAL OBSERVATIONS 2236 FOG WITH SMOKE AND/OR HAZE 18  
 FIRST CARD 1- 6-63 140

IAD

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	20	7	5	3	2	0	3	2	0	4	5	2	0	1	3	11
CALM	N	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNW	NNW	NNW
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	1	2	3	4	5	6	7	8	9	10	11	12	>12
CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12	
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	1	4	0	0	0	0	0	0	0	0	0
E	0	0	0	0	1	2	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	2	1	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	1	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	1	1	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	20	0	0	0	0	0	0	0	0	0	0	0	0	0

IAD

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FLOW WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.1	4.5	0.0	0.0	0.0	0.0	10.6
NNE	0.0	1.5	6.1	0.0	0.0	0.0	0.0	7.6
NE	0.0	0.0	4.5	0.0	0.0	0.0	0.0	4.5
ENE	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	4.5	0.0	0.0	0.0	0.0	4.5
SE	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
SW	0.0	1.5	0.0	0.0	3.0	3.0	1.5	7.6
WSW	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.5
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	1.5	0.0	0.0	0.0	0.0	0.0	1.5
NNW	0.0	0.1	1.5	1.5	0.0	0.0	0.0	3.1
CALM	0.0	0.1	4.5	0.1	0.0	0.0	0.0	4.7
TOTAL								30.3

TEMPERATURE VS. FREQUENCY

FREQUENCY	39	21	6
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 <28 28 TO 31 32  
 TEMPERATURE (F)

CHECK COUNT 60  
 FOG WITH LP 14  
 FOG WITH FP 26  
 ALL FOG CASES 106  
 PURE FOG 66  
 REC-085 34

FOG WITH SMOKE AND/OR HAZE 0

IAD

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	16	1	0	0	0	0	17
1964	0	0	0	0	0	0	4	1	0	0	0	0	5
1965	0	0	0	0	0	0	4	3	0	0	0	0	7
TOTAL HRS	0	0	0	0	0	0	24	5	0	0	0	0	29
AVG HRS	0.0	0.0	0.0	0.0	0.0	0.0	2.40	0.50	0.0	0.0	0.0	0.0	2.90

143

IAD

IAD OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. IAD OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	4	2	12	26	4	6	35	2	4	0	0	1	96
1964	5	4	1	1	14	33	6	4	14	16	5	3	106
1965	4	3	21	15	0	22	4	16	3	0	1	1	90

TOTAL HRS 13 9 34 42 18 61 45 22 21 16 6 5 292  
 AVG HRS 1.30 0.90 3.40 4.20 1.80 6.10 4.50 2.20 2.10 1.60 0.60 0.50 29.70



CVG

WIND SPEED VS. FREQUENCY

FREQUENCY	188	44	132	189	242	228	127	85	65	29	35	8	5	1	5	
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
		WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 4.12 KNOTS  
 MODE 4.00 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 2.68 KNOTS  
 SKEW 0.05

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	188	232	553	1023	1235	1329	1372	1378	1383
	CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL
		WIND SPEED (KNOTS)							

WIND DIRECTION VS. FREQUENCY

FREQUENCY	188	100	86	123	80	49	35	38	39	84	157	159	51	63	42	44	45	
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNW	
		TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	1	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	
10-12	0	3	4	2	3	3	1	0	1	7	11	6	1	1	4	1	0	
WIND 7-9	0	11	14	11	14	6	3	2	5	20	37	24	7	2	6	6	11	
SPEED 4-6	0	51	45	50	39	25	19	16	27	36	61	81	30	47	20	24	26	
KNOTS 1-3	0	34	23	60	24	15	12	20	6	21	47	44	13	13	12	13	8	
CALM	188	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNW	
		TRUE WIND DIRECTION																

145

CVG

CVG

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	154	100	343	8	429	1	65	0	283
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	16	2

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.75/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.61/16  
 SKEW -0.10

TEMPERATURE VS. FREQUENCY

FREQ.	6	8	2	0	8	10	12	9	46	36	41	89	70	63	80	61	64	38	37	36	86	65	52	47	61	84	91	73	61	36	11
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 50.11 °F.  
 MODE 65.50 °F.  
 MEDIAN 51.50 °F.  
 STD. DEV. 13.60 °F.  
 SKEW -1.13

HOURLY OBSERVATIONS 646 SPECIAL OBS. 737 TOTAL OBSERVATIONS 3045 FOG WITH SMOKE AND/OR HAZE 320  
 146

CVG

CVG

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	11	10	12	3	1	2	3	0	12	17	32	6	8	5	3	1
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	1	3	1	3	2	0	0	1	0	0	0	0	0
NNE	0	0	0	1	3	1	3	2	0	0	1	0	0	0	0	0
NE	0	0	0	1	0	4	0	3	2	0	1	0	0	0	0	0
ENE	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0
E	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
SSE	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
S	0	1	1	2	2	1	1	1	2	1	0	0	0	0	0	0
SSW	0	2	5	2	2	0	3	1	0	0	0	0	0	0	0	0
SW	0	1	10	6	5	8	2	0	0	0	0	0	0	0	0	0
WSW	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0
W	0	0	1	2	4	1	1	0	0	0	0	0	0	0	0	0
WNW	0	0	0	1	1	2	1	0	0	0	0	0	0	0	0	0
NW	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
CALM	11	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12

CVG

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE 1 FSS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 52 68 17

28 31 32  
TEMPERATURE (F)

CHECK COUNT 137  
FOG WITH LP 45  
FOG WITH FP 49  
ALL FOG CASES 230  
PURE FOG 111  
REC-035. 69

FOG WITH SMOKE AND/OR HAZE 15

CVG

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
 MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	3	0	0	0	0	0	3
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	1	0	0	0	0	0	0	0	0	1
1959	0	0	0	3	0	18	5	0	0	0	0	0	26
1960	0	0	0	1	7	0	-9	1	0	0	0	0	18
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	3	1	0	0	0	0	0	4
1963	0	0	0	0	3	0	3	0	0	0	0	0	6
1964	0	0	0	0	0	1	3	0	0	0	0	0	4
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 5 10 22 24 1 0 0 0 0 0 62  
 AVG HRS. 0.0 0.0 0.0 0.50 1.00 2.20 2.40 0.10 0.0 0.0 0.0 0.0 0.0 6.20

CVG OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEP T	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	7	1	12	12	23	2	1	5	0	0	0	0	63
1957	6	0	9	5	2	0	14	27	7	0	0	4	74
1958	19	15	6	7	4	5	3	4	2	3	3	14	85
1959	5	8	0	1	3	4	1	8	4	4	1	0	39
1960	8	21	9	13	16	0	14	0	0	2	10	13	106
1961	4	6	5	0	1	18	0	1	0	0	2	8	45
1962	8	2	5	0	7	4	1	0	4	0	8	3	42
1963	0	9	2	0	17	0	14	0	12	0	4	3	61
1964	6	4	0	4	3	10	0	0	3	1	0	0	31
1965	0	2	18	5	2	0	4	1	4	0	1	1	38

---TOTAL HRS- 63 68 56 47 78 43 52 46 36 10 29 46 584  
 AVG HRS 6.30 6.80 6.40 4.70 7.80 4.30 5.20 4.60 3.60 1.00 2.90 4.60 58.40

DAY

WIND SPEED VS. FREQUENCY

FREQUENCY	66	0	27	108	125	203	172	127	116	55	53	23	29	4	16
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 5.91 KNOTS  
 MODE 5.00 KNOTS  
 MEDIAN 6.00 KNOTS  
 STO. DEV. 2.87 KNOTS  
 SKEW 0.32

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	66	66	201	529	828	999	1075	1108	1124
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	66	106	54	54	35	32	36	106	105	123	85	67	37	35	36	50	98
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	4	0	0	0	0	0	0	0	0	3	2	0	2	1	2	3	3
10-12	0	14	3	0	0	6	15	10	16	16	3	1	3	1	1	3	6	8
WIND 7-9	0	38	21	6	3	5	6	26	42	45	24	21	12	11	12	10	5	23
SPEED 4-6	0	36	26	35	20	21	19	50	42	53	32	39	16	11	19	27	51	
KNOTS 1-3	0	14	4	10	9	6	5	14	11	6	11	4	7	10	2	9	13	
CALM	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TRUE WIND DIRECTION																	

151

DAY

DAY

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	217	140	252	24	263	4	45	0	179
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.10/16  
 MODE 4.00/16  
 MEDIAN 2.00/16  
 STD. DEV. 2.65/16  
 SKEW -0.34

TEMPERATURE VS. FREQUENCY

FREQ.	26	13	11	4	12	8	7	31	55	33	57	124	57	40	77	41	32	17	37	24	68	26	21	37	28	57	86	57	18	17	3
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 45.64 °F.  
 MODE 35.50 °F.  
 MEDIAN 43.50 °F.  
 STD. DEV. 14.96 °F.  
 SKEW 0.68

HOURLY OBSERVATIONS 603 SPECIAL OBS. 521 TOTAL OBSERVATIONS 2675 FOG WITH SMOKE AND/OR HAZE 75  
 152

DAY



DAY

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	3	22	0	20	9	12	6	27	31	27	0	4	3	5	6	7	10
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	MNW

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	3																

DAY

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS										TOTAL	
	1-2KT	3-4KT	5-6KT	7-9KT	9-10KT	11-12KT	>12KT					
N	0.0	0.0	0.0	1.5	2.0	1.5	0.0	0.0	0.0	0.0	0.0	11.0
NNE	0.0	0.0	0.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	4.0
NE	0.0	0.0	0.0	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	10.0
ENE	0.0	1.0	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
E	0.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
ESE	0.0	1.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
SE	0.0	1.0	1.0	4.5	1.0	0.5	0.0	0.0	0.0	0.0	0.0	13.5
SSE	0.0	0.5	1.0	8.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	15.5
S	0.0	0.0	1.0	8.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	13.5
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL												100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	93	100	7
TEMPERATURE (F)	28	31	32

CHECK COUNT 200  
 FOG WITH LP 42  
 FOG WITH FP 37  
 ALL FOG CASES 277  
 PURE FOG 109  
 REC-0BS. 106

FOG WITH SMOKE AND/OR HAZE 11

DAY

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MI. E OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	3	0	0	0	0	0	3
1957	0	0	0	0	0	0	6	7	0	0	0	0	13
1958	0	0	0	0	0	6	2	0	0	0	0	0	8
1959	0	0	0	0	0	2	8	0	1	0	0	0	11
1960	0	0	0	0	4	0	20	3	0	0	0	0	27
1961	0	0	0	0	0	2	0	0	0	0	0	0	2
1962	0	0	0	0	2	4	1	0	0	0	0	0	7
1963	0	0	0	0	0	3	4	4	0	0	0	0	11
1964	0	0	0	0	0	1	13	2	0	0	0	0	16
1965	0	0	0	0	0	0	4	0	0	0	0	0	4
TOTAL HRS	0	0	0	0	6	18	61	16	1	0	0	0	102
AVG HRS	0.0	0.0	0.0	0.0	0.60	1.80	6.10	1.60	0.10	0.0	0.0	0.0	10.20

1956  
OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
AND SURFACE VISIBILITY 1/2 MI. E OR LESS.

WARM FOG  
MONTHLY FOG FREQUENCY

YEAR	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	6	0	5	5	26	11	4	7	6	0	1	5	76
1957	5	0	4	0	0	3	7	6	5	3	1	0	34
1958	16	2	0	5	6	8	2	1	0	2	0	7	49
1959	2	2	0	1	0	0	7	4	5	0	6	5	32
1960	0	12	6	7	13	0	28	0	0	0	5	4	75
1961	4	6	0	2	0	12	0	0	0	3	0	5	32
1962	3	3	4	9	1	0	1	0	22	0	3	0	46
1963	4	7	0	6	32	0	2	1	21	0	0	8	81
1964	9	1	6	5	8	5	2	0	2	0	3	0	41
1965	0	0	9	0	1	0	5	1	13	3	3	0	35

TOTAL HRS 49 33 34 40 87 39 58 20 74 11 22 34 501  
 AVG HRS 4.90 3.30 3.40 4.00 8.70 3.90 5.80 2.00 7.40 1.10 2.20 3.40 50.10

IND

WIND SPEED VS. FREQUENCY

FREQUENCY	183	9	93	192	182	138	114	97	90	36	26	16	10	4	7
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 4.43 KNOTS  
 MODE 3.00 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 2.97 KNOTS  
 SKEM 0.48

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	183	192	477	797	1008	1134	1176	1190	1197
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	183	50	35	40	41	75	78	98	77	68	50	97	73	63	42	67	60
CALM	N	MNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	1	0	0	0	0	0	3	0	1	3	0	1	0	2	0
10-12	0	0	1	1	2	6	16	2	2	4	0	0	0	1	11	6	
WIND 7-9	0	8	12	7	6	17	19	35	18	13	7	27	13	9	5	15	12
SPEED 4-6	0	24	14	20	23	41	34	25	44	31	16	39	35	22	17	22	27
KNOTS 1-3	0	18	8	12	11	15	19	19	13	21	20	31	24	32	19	17	15
CALM	183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	MNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

157

IND

IND

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	68	125	256	14	384	4	68	0	238
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.87/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.50/16  
 SKEW --0.05

TEMPERATURE VS. FREQUENCY

FREQ.	58	1	0	11	8	8	21	33	54	71	60	108	53	73	23	21	34	43	26	48	34	19	24	25	57	65	88	35	53	37	6
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
	16	16	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 45.82 °F.  
 MODE 35.50 °F.  
 MEDIAN 43.50 °F.  
 STD. DEV. 16.13 °F.  
 SKEW 0.64

HOURLY OBSERVATIONS 498 SPECIAL OBS. 699 TOTAL OBSERVATIONS 2578 FOG WITH SMOKE AND/OR HAZE 308  
 158

IND

IND

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	52	19	8	13	12	18	13	15	17	13	12	5	4	10	11	26	17
	CALM	N	NNE	NE	ESE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	2	3	1	2	10	0	1	0	0	0	0	0	0	0	0	0
	N	NNE	NE	ESE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW	CALM

IND

IND

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS IN VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.8	1.5	4.5	0.4	0.0	0.0	0.0	7.2
NNE	0.0	1.9	0.4	0.8	0.0	0.0	0.0	3.0
NE	0.4	2.3	1.5	0.8	0.0	0.0	0.0	4.9
ENE	0.0	1.1	1.5	1.5	0.4	0.0	0.0	4.5
E	0.0	3.0	2.6	1.1	0.0	0.0	0.0	8.8
ESE	0.0	1.9	1.1	0.0	0.0	1.1	0.8	4.9
SE	0.0	0.4	0.4	0.8	2.6	1.1	0.4	5.7
SSE	0.0	0.8	0.6	0.8	1.9	0.4	0.0	6.4
S	0.0	1.1	1.9	1.5	0.0	0.0	0.4	4.9
SSW	0.0	0.8	0.8	0.4	0.4	0.8	1.5	4.5
SW	0.0	1.1	0.8	0.4	0.4	0.0	0.0	1.9
WSW	0.0	0.8	0.0	0.0	0.4	0.0	0.4	1.5
W	0.0	1.9	0.0	0.4	0.0	0.0	0.0	3.8
WNW	0.0	3.0	0.4	0.6	0.0	0.0	0.0	4.2
NW	0.0	3.8	0.8	2.3	0.4	1.9	0.8	9.8
NNW	0.0	2.3	1.5	0.8	1.1	0.8	0.0	6.4
CALM								19.6
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 115 106 42

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 265  
FOG WITH LP 23  
FOG WITH FP 29  
ALL FOG CASES 317  
PURE FOG 175  
REC-UPS. 115

FOG WITH SMOKE AND/OR HAZE 40



IND

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	7	0	6	0	0	0	13
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	7	0	0	0	0	0	0	7
1959	0	0	0	0	0	10	5	0	1	0	0	0	16
1960	0	0	0	0	9	0	15	0	1	0	0	0	25
1961	0	0	0	0	0	0	0	4	0	0	0	0	4
1962	0	0	0	0	3	2	0	1	0	0	0	0	6
1963	0	0	0	0	5	0	2	0	2	0	0	0	9
1964	0	0	0	0	0	5	1	4	0	0	0	0	10
1965	0	0	0	0	0	0	7	0	0	0	0	0	7
TOTAL HRS	0	0	0	0	17	24	37	9	10	0	0	0	97
AVG HRS	0.0	0.0	0.0	0.0	1.70	2.40	3.70	0.90	1.00	0.0	0.0	0.0	9.70

161

IND

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

IND

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	5	4	0	5	10	12	2	5	0	0	2	0	43
1957	3	5	5	0	6	8	4	13	2	1	0	0	47
1958	4	8	5	3	12	1	0	3	0	0	1	0	37
1959	8	12	1	0	0	0	4	6	5	0	6	3	45
1960	0	4	1	6	12	0	7	0	0	0	0	0	30
1961	4	10	0	5	6	13	0	2	2	0	0	11	53
1962	2	3	0	7	0	0	0	0	15	0	2	0	29
1963	1	3	1	3	16	0	0	1	11	4	3	5	48
1964	6	8	0	4	0	4	1	0	1	0	0	0	24
1965	0	0	9	0	13	0	17	9	0	0	0	2	45
TOTAL HRS	33	57	212	31	75	38	30	39	36	5	14	21	401
AVG HRS	3.30	5.70	2.20	3.10	7.50	3.80	3.00	3.90	3.60	0.50	1.40	2.10	40.10

SDF

WIND SPEED VS. FREQUENCY

FREQUENCY	237	12	63	156	81	55	22	7	4	4	4	1	2	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 2.36 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 2.24 KNOTS  
 SKEW 1.05

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	237	249	468	604	633	641	646	648	648
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	237	52	27	22	11	15	24	77	62	45	6	14	9	4	23	11
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION															

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	2	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0
WIND 7-9	0	8	1	0	0	4	0	1	0	1	0	0	0	0	0	0	0
SPEED 4-6	0	18	19	10	3	3	8	24	21	18	5	3	4	1	2	13	6
KNOTS 1-3	0	24	7	12	6	12	16	48	41	26	1	8	5	8	2	10	5
CALM	237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																

SDF

SDF

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	40	154	84	54	180	0	31	0	105
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

STATISTICAL RESULTS

MEAN 3.44/16  
 MODE 4.00/16  
 MEDIAN 3.00/16  
 STD. DEV. 2.49/16  
 SKEW -0.22

TEMPERATURE VS. FREQUENCY

FREQ.	5	3	7	0	0	8	12	10	14	23	36	30	17	22	18	23	17	19	12	27	66	35	51	31	23	57	27	12	20	21	2
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

STATISTICAL RESULTS

MEAN 49.74 °F.  
 MODE 53.50 °F.  
 MEDIAN 53.50 °F.  
 STD. DEV. 13.76 °F.  
 SKEW -0.20

HOURLY OBSERVATIONS 304 SPECIAL OBS. 344 TOTAL OBSERVATIONS 1158 FOG WITH SMOKE AND/OR HAZE 207

SDF

SUF

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	29	9	1	1	0	1	5	9	10	4	0	1	3	1	3	3	2
	CALM	N	MILE	NE	ENE	L	ESE	SE	SSE	S	SSH	SW	WSW	W	WNW	NW	NW
	TRUE WIND DIRECTION																
	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	1	2	3	4	5	6	7	8	9	10	11	12	>12
	WIND SPEED													
N	0	1	2	1	0	0	0	0	1	1	1	0	1	0
NNE	0	0	1	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	1	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	1	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	2	3	0	0	0	0	0	0	0
SE	0	0	3	2	2	0	0	0	0	0	0	0	0	0
SSE	0	0	1	7	2	0	0	0	0	0	0	0	0	0
S	0	1	1	1	1	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	1	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	1	1	1	0	0	0	0	0	0	0	0
W	0	0	1	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	2	0	0	1	0	0	0	0	0	0	0	0
NW	0	0	1	0	0	2	0	0	0	0	0	0	0	0
NNW	0	0	0	1	1	0	0	0	0	0	0	0	0	0
CALM	29													

SDF

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS ON VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	1.2	3.7	0.0	1.2	2.4	1.2	1.2	11.0	
NNE	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	
NE	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
E	1.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S	1.2	2.4	1.2	0.0	0.0	0.0	0.0	5.1	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SW	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	
WSW	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	
W	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	
WNW	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	
NW	0.0	2.4	1.2	0.0	0.0	0.0	0.0	3.7	
NNW	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	
CALM	0.0	1.2	1.2	0.0	0.0	0.0	0.0	2.4	
TOTAL								35.4	

TOTAL

100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 40 7 15

28 28 31 32  
TEMPERATURE (F)

CHECK COUNT 82  
FOG WITH LP 0  
FOG WITH FP 12  
ALL FOG CASES 94  
PURE FOG 22  
REC.OBS. 42

FOG WITH SMOKE AND/OR HAZE 30

SDF

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	13	0	0	0	0	0	13
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	5	0	0	0	0	0	0	5
1960	0	0	0	0	5	0	2	0	0	0	0	0	7
1961	0	0	0	0	0	0	1	5	0	0	0	0	6
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	5	0	0	0	0	0	5
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL HRS	0	0	0	0	5	5	21	5	0	0	0	0	36
AVG HRS	0.0	0.0	0.0	0.0	0.50	0.50	2.10	0.50	0.0	0.0	0.0	0.0	3.60

31DF OBSERVATIONS ARE FOR FOG, PUSSIRLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
 MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FFB	MAR	APR	MAY	JUNE	TOTAL
1956	6	1	13	10	21	8	0	0	0	0	0	0	59
1957	0	3	0	2	3	5	0	2	6	0	0	0	21
1958	1	7	6	2	4	0	0	0	0	0	0	6	26
1959	0	0	0	2	1	0	0	1	3	3	5	0	15
1960	0	15	6	8	15	0	0	0	0	0	7	8	59
1961	0	1	0	0	0	0	0	0	0	0	0	0	9
1962	3	0	3	5	0	0	0	0	0	0	0	0	11
1963	0	11	2	0	23	0	2	0	3	0	0	0	41
1964	3	1	2	7	0	0	3	0	0	0	0	0	16
1965	0	0	7	2	0	0	2	0	0	0	0	0	11

TOTAL HRS 13 39 39 38 67 13 7 3 12 3 12 27 248  
 AVG HRS 1.30 3.90 3.90 3.80 6.70 1.30 0.70 0.30 1.50 0.30 1.20 2.20 26.80



JFK

WIND SPEED VS. FREQUENCY

FREQUENCY	36	4	42	153	269	367	288	272	217	154	149	37	62	48	244	
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
		WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 7.21 KNOTS  
 MGDE 5.00 KNOTS  
 MEDIAN 7.00 KNOTS  
 STD. DEV. 3.43 KNOTS  
 SKEW 0.65

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	36	40	235	871	1431	1802	1988	2098	2342
	CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL
		WIND SPEED (KNOTS)							

WIND DIRECTION VS. FREQUENCY

FREQUENCY	36	91	101	97	138	131	149	178	272	564	210	164	95	34	13	23	46	
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	MSW	WSW	W	MNW	NW	NNW	
		TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	2	0	2	1	4	11	64	177	20	9	1	0	0	1	0	
10-12	0	3	2	3	11	14	11	23	34	83	27	16	14	0	1	2	4	
WIND 7-9	0	28	21	25	26	20	40	60	84	163	69	50	35	4	4	2	12	
SPEED 4-6	0	51	63	54	77	73	77	68	70	123	83	81	37	23	4	13	27	
KNOTS 1-3	0	9	13	15	22	23	17	16	20	18	11	8	8	7	4	5	3	
CALM	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	MSW	WSW	W	MNW	NW	NNW	
		TRUE WIND DIRECTION																

JFK

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	101	168	388	289	658	93	322	0	323
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 4.02/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.22/16  
 SKEM 0.01

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	1	9	21	68	121	80	108	125	154	156	138	90	137	81	138	88	92	84	111	112	114	115	104	95
<15	15	17	19	21	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
16	18	20	22	22	24	26	28	30	32	34	36	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 52.96°F.  
 MODE 45.50°F.  
 MEDIAN 51.50°F.  
 STD. DEV. 11.96°F.  
 SKEM 0.62

HOURLY OBSERVATIONS 877 SPECIAL OBS. 1465 TOTAL OBSERVATIONS 6585 FOG WITH SMOKE AND/OR HAZE 174  
 170

JFK

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS IN VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	1	0	2	7	7	0	1	1	0	1	0	1	0	4	5	0	2	0
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	NNW	NW	NNW		
	TRUE WIND DIRECTION																	

RESULTS ARE FROM OBSERVATIONS IN VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WIND SPEED																				
	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12							

JFK

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS IF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	TOTAL	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	3.2	3.2	0.0	0.0	0.0	6.5
NE	0.0	0.0	12.9	6.5	3.2	0.0	0.0	0.0	22.6
ENE	0.0	0.0	17.9	9.7	0.0	0.0	0.0	0.0	27.6
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	3.2
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	3.2
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM									3.2
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 0 12 19

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28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 31  
FOG WITH LP 0  
FOG WITH FP 77  
ALL FOG CASLS 108  
PURE FOG 31  
REC-OBS. 13

FOG WITH SMOKE AND/OR HAZE 0

JFK

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	1	0	0	0	0	0	1
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	3	0	0	0	0	3
1963	0	0	0	0	0	0	0	2	0	0	0	0	2
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL HRS	0	0	0	0	0	0	1	5	0	0	0	0	6
AVG HRS	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.50	0.0	0.0	0.0	0.0	0.60

JFK

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOG AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	4	3	7	5	6	17	33	1	0	6	0	7	89
1957	0	1	3	0	0	0	21	13	2	13	10	16	79
1958	6	0	2	13	18	0	7	0	0	25	7	6	84
1959	11	1	2	1	0	6	13	19	5	21	5	23	107
1960	0	4	0	5	6	0	1	7	6	7	4	23	63
1961	22	5	6	6	0	6	10	35	6	1	33	13	143
1962	0	8	0	5	5	18	4	25	0	6	1	0	72
1963	0	4	0	13	3	0	9	5	13	2	4	19	72
1964	9	8	0	1	9	35	8	0	19	10	7	3	109
1965	5	3	18	4	3	1	0	16	0	3	0	0	53

TOTAL HRS	57	37	38	53	50	83	106	121	51	94	71	110	871
AVG HRS	5.70	3.70	3.80	5.30	5.00	8.30	10.60	12.10	5.10	9.40	7.10	11.00	87.10

PIT

WIND SPEED VS. FREQUENCY

FREQUENCY	509	0	6	148	248	198	126	71	49	23	15	4	3	0	7
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 3.28 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 2.91 KNOTS  
 SKEW 1.13

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	509	509	663	1109	1306	1378	1397	1400	1407
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	509	81	53	55	51	73	49	65	40	39	33	61	77	54	41	76	41
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	2	0	1	0	0	0	3	0	0	0	1	4	0	3	5	3	
WIND 7-9	0	13	12	7	20	12	7	2	2	7	11	14	14	3	2	9	9	
SPEED 4-6	0	62	29	33	35	40	30	45	28	31	20	41	47	45	20	46	20	
KNOTS 1-3	0	4	8	9	9	12	7	10	10	6	6	8	12	16	12	16	9	
CALM	509	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	TRUE WIND DIRECTION																	

175

PIT

PIT

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	260	111	218	84	362	21	106	0	245
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.52/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.69/16  
 SKEW -0.18

TEMPERATURE VS. FREQUENCY

FREQ.	30	0	2	0	0	11	15	14	19	47	29	51	57	81	88	30	73	52	100	75	43	58	67	85	85	105	103	62	24	1	0
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 49.88 °F.  
 MODE 63.50 °F.  
 MEDIAN 51.50 °F.  
 STD. DEV. 12.88 °F.  
 SKEW -1.06

HOURLY OBSERVATIONS 595 SPECIAL OBS. 812 TOTAL OBSERVATIONS 4460 FOG WITH SMOKE AND/OR HAZE 503



PIT

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS IF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	52	2	3	1	3	11	7	4	2	1	4	0	15	17	2	5	3
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS IF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	52
	1	2	1	4	5	6	7	8	9	10	11	12	>12					
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PIT

PIT

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	1.9	0.0	0.0	0.0	0.0	1.9
NNE	0.0	0.7	0.7	0.7	0.0	0.0	0.0	2.2
NE	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7
ENE	0.0	0.7	1.4	0.0	0.0	0.0	0.0	2.2
E	0.0	0.0	1.4	2.2	1.4	0.0	0.0	5.0
ESE	0.0	0.0	2.2	1.4	1.4	0.0	0.0	5.1
SE	0.0	1.4	0.7	0.7	0.0	0.0	0.0	2.9
SSE	0.0	0.0	1.4	0.0	0.0	0.0	0.0	1.4
S	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.7
SSW	0.0	0.0	0.7	0.7	1.4	0.0	0.0	2.9
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	1.4	0.7	0.0	0.0	2.2
TOTAL								37.7

100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 62 52 44

-----  
 28 28 31 32  
 TEMPERATURE (F)

CHECK COUNT 138  
 FOG WITH LP 24  
 FOG WITH FP 155  
 ALL FOG CASES 314  
 PURE FOG 70  
 REC.OBS. 50

FOG WITH SMOKE AND/OR HAZE 3

PIT

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
 MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	1	0	0	2	0	0	3
1957	0	0	0	0	0	0	0	5	2	0	0	0	7
1958	0	0	0	0	0	2	0	0	0	0	0	0	2
1959	0	0	0	0	0	7	0	0	0	0	0	0	7
1960	0	0	0	0	5	0	0	0	1	0	0	0	6
1961	0	0	0	0	5	0	0	4	0	0	0	0	9
1962	0	0	0	0	0	2	0	0	0	0	0	0	2
1963	0	0	0	0	0	0	4	0	0	0	0	0	4
1964	0	0	0	0	0	0	0	0	0	2	0	0	2
1965	0	0	0	0	0	0	3	0	0	0	0	0	3
TOTAL HRS	0	0	0	0	10	11	8	9	3	4	0	0	45
AVG HRS	0.0	0.0	0.0	0.0	1.00	1.10	0.80	0.90	0.30	0.40	0.0	0.0	4.50

PIT  
 OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	6	0	7	5	15	6	1	0	0	3	7	8	58
1957	0	4	5	3	7	0	2	11	1	9	1	4	47
1958	13	17	8	27	0	5	2	3	0	0	3	0	78
1959	6	11	4	4	0	0	2	6	0	0	10	0	43
1960	8	6	24	0	4	0	16	0	0	3	8	0	69
1961	9	1	15	0	0	13	0	4	0	0	4	6	52
1962	1	3	13	15	8	2	1	3	0	1	0	6	53
1963	0	10	6	0	6	0	16	0	11	0	10	5	64
1964	7	5	5	0	10	3	0	2	0	6	0	6	44
1965	0	0	12	6	9	0	2	2	8	2	1	0	42
TOTAL HRS	50	57	99	60	59	29	42	31	20	24	44	35	550
AVG HRS	5.00	5.70	9.90	6.00	5.90	2.90	4.20	3.10	2.00	2.40	4.40	3.50	55.00

ORD

WIND SPEED VS. FREQUENCY

FREQUENCY	157	0	22	141	181	195	129	119	96	63	55	27	23	11	19
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 5.36 KNOTS  
 MODE 5.00 KNOTS  
 MEDIAN 5.00 KNOTS  
 STD. DEV. 3.23 KNOTS  
 SKEM 0.11

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	157	157	320	696	944	1103	1185	1219	1238
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	157	89	122	71	45	48	27	33	25	119	78	88	61	77	72	69	56
CALM	N	MNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	MSW	W	MNW	NW	NNW	
	TRUE WIND DIRECTION																

	>12	10-12	7-9	4-6	1-3	CALM	181										
WIND SPEED	0	4	7	21	11	8	2	1	2	14	10	21	3	0	0	0	3
KNOTS	0	20	43	23	15	15	10	4	6	39	25	26	15	8	10	10	9
	0	46	44	28	20	17	13	15	17	56	39	30	23	54	43	29	31
	0	12	7	9	7	2	2	7	0	9	3	11	20	15	19	30	10
	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TRUE WIND DIRECTION																

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VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	149	99	245	45	383	5	78	0	234
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.73/16  
MODE 4.00/16  
MEDIAN 4.00/16  
STD. DEV. 2.58/16  
SKEW -0.10

TEMPERATURE VS. FREQUENCY

FREQ.	55	6	8	10	8	4	6	30	49	39	74	95	73	77	58	41	30	51	81	59	79	62	46	33	18	48	54	17	15	8	0
	<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

STATISTICAL RESULTS

MEAN 44.21 °F.  
MODE 35.50 °F.  
MEDIAN 43.50 °F.  
STD. DEV. 13.74 °F.  
SKEW 0.63

HOURLY OBSERVATIONS 552 SPECIAL OBS. 686 TOTAL OBSERVATIONS 3928 FOG WITH SMOKE AND/OR HAZE 407

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WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	12	21	25	8	4	4	2	4	10	29	15	9	5	20	19	14	14
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NM	NNW	
	TRUE WIND DIRECTION																
	0	0	0	0	1	1	4	5	2	3	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	0	0	0	1	1	4	5	2	5	3	0	0	0	0	0	
	0	0	0	0	1	1	6	4	5	0	3	1	2	3	0	0	
	0	0	0	0	1	1	3	1	1	1	0	0	0	0	0	0	
	0	0	0	0	0	0	2	2	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	0	0	1	1	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	
	0	0	0	0	4	9	4	3	2	3	2	0	0	0	0	0	
	0	0	0	0	3	1	3	1	0	2	2	0	0	0	0	0	
	0	0	0	0	1	1	1	1	1	0	0	1	0	0	0	0	
	0	0	0	0	1	2	0	0	0	2	0	0	0	0	0	0	
	0	0	0	0	2	7	2	2	0	0	0	0	0	0	0	0	
	0	0	0	0	2	6	2	1	2	0	0	0	0	0	0	0	
	0	0	0	0	3	2	3	1	1	2	0	0	0	0	0	0	
	0	0	0	0	2	3	5	0	3	1	0	0	0	0	0	0	
	12	1	2	3	4	5	6	7	8	9	10	11	12	>12			
	CALM	WIND SPEED															

ORD

WIND ROUSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	0.0	0.0	4.2	3.3	1.4	0.0	0.0	9.8
NNE	0.0	0.0	0.5	4.7	2.3	1.9	2.3	0.0	11.6
NE	0.0	0.0	0.0	1.9	0.9	0.0	0.0	0.0	3.7
ENE	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	1.9
E	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	1.9
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	1.4	0.5	0.0	0.0	0.0	0.0	1.9
SSE	0.0	0.0	2.8	0.9	0.5	0.0	0.5	0.5	4.7
S	0.0	0.0	0.0	3.3	2.3	0.9	0.5	0.5	13.5
SSW	0.0	0.0	1.9	1.9	0.9	0.9	0.5	0.5	7.0
SW	0.0	0.0	1.7	0.9	0.5	0.5	0.0	0.0	4.2
WSW	0.0	0.0	1.4	0.0	0.9	0.0	0.0	0.0	2.3
W	0.0	0.0	0.5	1.4	0.0	0.0	0.0	0.0	3.3
WNW	0.0	0.0	0.5	1.4	0.9	0.0	0.0	0.0	5.8
W	0.0	0.0	2.3	0.9	0.9	0.0	0.0	0.0	6.5
NNW	0.0	0.0	0.0	1.4	0.5	0.0	0.0	0.0	3.3
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 120 67 28

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<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 215  
FOG WITH LP 19  
FOG WITH FP 57  
ALL FOG CASES 291  
PURE FOG 113  
REC-005. 88

FOG WITH SMOKE AND/OR HAZE 41



ORD

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
 MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	2	0	3	0	0	0	0	5
1957	0	0	0	0	0	3	0	0	0	0	0	0	3
1958	0	0	0	0	0	0	15	0	0	0	0	0	15
1959	0	0	0	0	0	0	0	0	4	0	0	0	4
1960	0	0	0	0	0	0	1	0	2	0	0	0	3
1961	0	0	0	0	1	3	0	14	0	2	0	0	20
1962	0	0	0	0	4	0	0	3	0	0	0	0	7
1963	0	0	0	0	0	0	1	12	2	0	0	0	15
1964	0	0	0	0	0	3	1	0	0	0	0	0	4
1965	0	0	0	0	0	0	7	0	0	0	0	0	0
TOTAL HRS	0	0	0	0	5	11	18	32	8	2	0	0	76
AVG HRS	0.0	0.0	0.0	-0.0	0.50	1.10	1.80	3.20	0.80	0.20	0.0	0.0	7.60

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOG AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

ORD

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	8	0	11	24	41	24	0	4	3	5	7	0	127
1957	1	3	2	0	2	0	2	1	0	27	15	4	57
1958	14	12	0	1	6	9	0	6	0	0	0	1	49
1959	3	9	3	0	0	13	7	3	8	2	5	0	53
1960	0	1	3	0	7	0	0	0	10	3	6	0	30
1961	0	10	0	0	7	1	0	2	1	1	0	5	27
1962	0	2	0	5	4	0	4	0	4	3	1	5	28
1963	0	2	1	10	19	0	0	0	12	4	3	0	51
1964	5	0	0	2	0	12	2	0	4	3	0	4	32
1965	0	0	0	0	13	2	0	4	0	3	0	0	22
TOTAL HRS	31	39	20	42	99	61	15	20	42	51	37	19	476
AVG HRS	3.10	3.90	2.00	4.20	9.90	6.10	1.50	2.00	4.20	5.10	3.70	1.90	47.60

01W

WIND SPEED VS. FREQUENCY

FREQUENCY	200	3	11	191	215	173	126	84	64	16	20	9	16	6	11
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	13	>13

STATISTICAL RESULTS

MEAN 4.10 KNOTS  
 MODE 0-0 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 3.05 KNOTS  
 SKEN 1.34

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	286	289	491	879	1089	1169	1198	1220	1231
CALM	2	<4	<6	<8	<10	<12	<14	TOTAL	

WIND DIRECTION VS. FREQUENCY

FREQUENCY	286	50	71	60	37	43	41	55	46	62	112	123	82	53	45	46	19
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	

WIND DIRECTION VS. WIND SPEED

>12	0	1	3	3	2	0	2	0	0	2	1	3	0	0	0	0	0
10-12	0	2	1	2	1	4	0	1	1	5	11	15	2	0	1	1	0
WIND 7-9	0	4	8	5	6	9	6	9	10	29	29	17	17	3	3	1	0
SPEED 4-6	0	35	50	36	23	22	25	36	27	30	46	53	46	23	25	26	11
KNUTS 1-3	0	8	9	14	5	8	8	9	10	17	25	23	17	13	16	16	7
CALM	286	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

187

DTW

DTW

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	168	173	324	32	311	1	59	0	163
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.11/16  
 MODE 2.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.40/16  
 SKEW 0.40

TEMPERATURE VS. FREQUENCY

FREQ.	25	4	7	18	30	27	16	9	30	30	113	101	73	52	61	30	59	63	32	26	14	14	25	69	61	77	76	36	18	8	6
<10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 14.57 DEGREES(F)  
 MODE 33.50 DEGREES(F)  
 MEDIAN 43.50 DEGREES(F)  
 STD. DEV. 14.72 DEGREES(F)  
 SKEW 0.78

HOURLY OBSERVATIONS 500 SPECIAL OBS. 671 TOTAL OBSERVATIONS 2266 FOG WITH SMOKE AND/OR HAZE 568  
 FIRST CARD 8- 7-58 188

DTW



DTW

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	1	0	3	5	22	0	0	0	0	0	0	31
1959	0	0	0	0	0	1	5	0	3	0	0	0	9
1960	0	0	0	0	1	0	8	3	0	0	0	0	12
1961	0	0	0	0	0	3	3	2	0	0	0	0	8
1962	0	0	0	0	7	17	2	2	0	0	0	0	28
1963	0	0	0	1	0	0	1	0	0	0	0	0	2
1964	0	0	0	0	0	0	0	0	5	0	0	0	5
1965	0	0	0	0	0	0	0	5	0	0	0	0	5
TOTAL HRS	0	1	0	4	13	43	19	12	8	0	0	0	100
AVG HRS	0-0	0-10	0-0	0-40	1-30	4-30	1-90	1-20	0-80	0-0	0-0	0-0	10-00

DTW

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	1	0	0	0	0	0	0	1
1959	1	8	0	5	2	13	7	6	3	6	0	0	51
1960	6	6	21	11	17	0	18	0	0	4	0	0	77
1961	5	10	12	11	0	14	0	14	6	0	3	3	78
1962	4	5	5	7	0	2	0	10	4	0	0	0	37
1963	0	6	0	11	13	0	0	0	16	4	0	10	60
1964	3	11	12	4	10	7	11	0	12	0	3	9	82
1965	0	23	4	5	5	2	5	12	6	1	7	5	75

TOTAL HRS 13 69 54 54 47 39 41 42 47 15 13 27 461  
 AVG HRS 1.30 6.90 5.40 5.40 4.70 3.90 4.10 4.20 4.70 1.50 1.30 2.70 46.10

STL

WIND SPEED VS. FREQUENCY

FREQUENCY	103	2	17	101	99	86	43	53	24	28	9	8	4	7
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13

WIND SPEED (KNOTS)

STATISTICAL RESULTS

MEAN 4.80 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 4.00 KNOTS  
 STD. DEV. 3.22 KNOTS  
 SKEW 1.49

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	103	105	223	408	504	581	618	630	637
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	

WIND SPEED (KNOTS)

WIND DIRECTION VS. FREQUENCY

FREQUENCY	103	13	18	30	20	26	70	45	39	16	26	25	51	49	42	18
CALM		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW

TRUE WIND DIRECTION

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	1	0	0	1	5	1	0	0	0	0	1	2	0
10-12	0	0	1	1	0	4	4	5	7	0	1	1	0	6	1	10	4
7-9	0	5	8	10	5	5	13	16	11	16	4	3	6	6	6	9	5
SPEED 4-6	0	5	8	15	9	11	42	11	18	12	7	15	14	23	21	12	5
KNOTS 1-3	0	3	1	4	5	6	11	12	4	8	4	7	5	16	20	10	4
CALM	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUE WIND DIRECTION

STL

192



STL

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	58	58	97	30	178	10	84	0	122
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	8	2

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 4.06/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.56/16  
 SKEW 0.02

TEMPERATURE VS. FREQUENCY

FREQ.	2	0	2	0	2	0	0	0	6	13	12	60	36	43	26	47	30	33	42	34	56	25	12	23	9	7	28	7	18	14	17	20	15	0
<15	15	17	19	21	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	72					
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72					

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 44.33°F.  
 MODE 29.50°F.  
 MEDIAN 43.50°F.  
 STD. DEV. 12.76°F.  
 SKEW 1.16

HOURLY OBSERVATIONS 267 SPECIAL OBS. 370 TOTAL OBSERVATIONS 1549 FOG WITH SMOKE AND/OR HAZE 219

STL

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	TRUE WIND DIRECTION																	
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW	
14	0	0	2	12	8	9	23	14	13	8	0	4	9	4	6	4	4	1

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	2	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	1	0	3	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	5	8	6	3	0	1	0	0	0	0	0	0	0	0	0	0
SE	0	0	2	2	3	3	0	1	2	1	0	0	0	0	0	0	0	0	0
SSE	0	0	0	1	0	1	1	2	3	0	3	0	1	1	1	1	1	1	1
S	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	4	2	2	1	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0
MNW	0	0	1	0	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STL

STL

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	1.5
NE	0.0	3.1	3.8	2.3	0.0	0.0	0.0	0.0	9.2
ENE	0.0	1.5	4.6	0.0	0.0	0.0	0.0	0.0	6.1
E	0.8	2.3	1.5	2.3	0.0	0.0	0.0	0.0	6.9
ESE	0.0	3.8	10.7	2.3	0.8	0.0	0.0	0.0	17.6
SE	0.0	3.1	4.6	0.8	2.3	0.0	0.0	0.0	10.7
SSE	0.0	3.0	0.8	2.3	2.3	2.3	1.5	0.0	9.9
S	0.0	0.0	0.8	0.8	0.0	0.0	0.8	0.0	6.1
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.8	0.8	0.0	0.8	0.0	0.0	0.0	3.1
WSW	0.0	0.0	3.1	3.1	0.8	0.0	0.0	0.0	6.9
W	0.0	0.0	0.8	1.5	0.8	0.0	0.0	0.0	3.1
WNW	0.0	0.8	3.1	0.0	0.8	0.0	0.0	0.0	4.6
NW	0.0	0.8	0.8	0.8	0.0	0.8	0.8	0.0	5.1
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 34 86 11

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 131  
 FOG WITH LP 20  
 FOG WITH FP 37  
 ALL FOG CASES 187  
 PURE FOG 84  
 REG.OBS. 61

FOG WITH SMOKE AND/OR HAZE 23

195

STL

STL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	5	0	0	0	0	0	0	5
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	3	0	0	0	0	0	0	3
1959	0	0	0	0	0	0	2	0	0	0	0	0	2
1960	0	0	0	0	0	0	11	7	2	0	0	0	20
1961	0	0	0	0	0	0	0	2	0	0	0	0	2
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	16	0	0	0	0	0	16
1964	0	0	0	0	0	5	0	0	0	0	0	0	5
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 13 29 9 2 0 0 0 0 53  
AVG HRS 0.0 0.0 0.0 0.0 0.0 1.30 2.90 0.90 0.20 0.0 0.0 0.0 0.0 5.30

STL

STL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPES, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	5	2	0	6	6	14	0	8	0	5	0	0	46
1957	0	2	0	0	1	12	10	20	0	0	0	0	45
1958	2	3	0	0	0	2	0	0	1	1	0	0	9
1959	0	0	0	0	0	1	8	2	0	0	1	2	14
1960	0	0	3	7	0	0	11	1	0	0	0	0	22
1961	0	2	1	6	2	1	0	0	0	0	3	1	16
1962	2	0	1	2	0	2	8	0	5	0	0	0	20
1963	0	0	4	0	15	0	0	0	1	0	0	0	20
1964	0	0	0	0	0	3	0	0	6	4	3	0	16
1965	0	0	2	1	0	0	0	1	0	2	0	0	6
TOTAL HRS	9	9	11	22	24	35	37	32	13	12	7	3	214
AVG HRS	0.90	0.50	1.10	2.20	2.40	3.50	3.70	3.20	1.30	1.20	0.70	0.30	21.40

LJA

WIND SPEED VS. FREQUENCY

FREQUENCY	75	1	14	63	85	110	114	90	104	66	79	46	52	24	48
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	13	>13
	WIND SPEED (<KNOTS)														

STATISTICAL RESULTS

MEAN 6.95 KNOTS  
 MODE 6.00 <N>KTS  
 MEDIAN 7.00 KNOTS  
 STD. DEV. 3.62 KNOTS  
 SKEW 0.26

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	75	76	153	348	552	722	847	923	971
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	75	48	130	295	130	63	18	16	39	62	25	35	8	0	5	12	10
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	6	16	23	2	0	0	0	10	10	1	4	0	0	0	0	0	0
10-12	0	5	26	81	20	1	2	0	8	12	4	10	1	0	0	0	1	6
7-9	0	11	48	99	35	12	4	7	19	7	6	1	0	0	2	2	0	0
4-6	0	12	30	91	64	40	5	12	18	9	13	6	0	0	3	6	1	0
1-3	0	14	10	11	9	10	3	4	2	3	4	2	0	0	0	0	3	3
CALM	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
	TRUE WIND DIRECTION																	

198

LGA

LC VISIBILITY VS. FREQUENCY  
 NOTE: 7/10 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	36	126	104	93	197	53	160	0	142
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

STATISTICAL RESULTS

MEAN 4.00/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.36/16  
 SKEW -0.00

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	0	21	63	74	37	33	96	56	59	41	75	45	38	44	35	49	29	23	56	22	4	4	
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
15	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
15	18	20	22	24	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	

STATISTICAL RESULTS

MEAN 48.96 °F.  
 MODE 43.50 °F.  
 MEDIAN 47.50 °F.  
 STD. DEV. 10.91 °F.  
 SKEW 0.50

TOTAL OBSERVATIONS 374 SPECIAL OBS. 597 TOTAL OBSERVATIONS 3624 FOG WITH SMOKE AND/JR HAZE 117

LGA

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	0	5	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	1	1	2	0	2	0	0	3	2	3	0	0	0	0	0
ENE	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



LGA

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	4.8	19.0	0.0	0.0	0.0	0.0	23.8
NE	0.0	0.0	9.5	9.5	9.5	14.3	23.8	0.0	66.7
ENE	0.0	0.0	4.8	0.0	0.0	4.8	0.0	0.0	9.5
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 0 2 19

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 21  
 FOG WITH LP 15  
 FOG WITH FP 76  
 ALL FOG CASES 112  
 PURE FOG 21  
 -REC-OBS. 9

FOG WITH SMOKE AND/OR HAZE 0

201

LGA

LGA

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZE ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	2	0	0	0	2
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 0 0 0 0 2 0 0 0 2  
AVG HRS 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.20 0.0 0.0 0.0 0.20

IGA

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	2	10	14	0	0	12	0	1	39
1957	1	1	0	0	0	0	4	3	0	3	1	5	18
1958	2	0	0	12	4	6	4	0	0	16	3	5	46
1959	1	0	0	0	0	4	6	17	12	6	5	9	60
1960	0	0	0	0	1	9	0	0	1	2	0	5	9
1961	7	0	5	0	0	3	17	11	2	0	23	0	73
1962	0	0	0	6	0	16	2	21	3	3	0	0	51
1963	0	0	0	0	1	0	8	0	6	0	2	3	20
1964	7	0	0	1	10	16	0	0	2	0	4	4	44
1965	0	0	0	1	3	0	0	8	0	0	0	0	12

TOTAL HRS	18	1	5	20	21	49	55	60	26	42	43	32	372
AVG HRS	1.80	0.10	0.50	2.00	2.10	4.90	5.50	6.00	2.60	4.20	4.30	3.20	37.20

WIND SPEED VS. FREQUENCY

FREQUENCY	20	0	33	75	119	133	137	69	60	51	56	24	32	25	61
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	13	>13
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 6.74 KNOTS  
 MODE 6.00 KNOTS  
 MEDIAN 6.00 KNOTS  
 STD. DEV. 3.43 KNOTS  
 SKEW 0.21

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	26	26	134	386	612	723	803	860	921
CALM	<2	<4	<6	<6	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	26	39	58	95	32	23	18	19	16	82	140	215	87	12	11	18	30	
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNW	NNW	
	TRUE WIND DIRECTION																	

WIND DIRECTION VS. WIND SPEED

>12	0	1	4	3	0	0	0	0	0	2	8	51	15	2	0	0	0	0
10-12	0	1	8	6	3	0	0	0	0	1	15	38	29	5	0	1	3	0
7-9	0	11	10	21	6	3	1	4	2	10	35	58	18	3	2	6	16	0
SPEED 4-6	0	20	30	50	20	15	15	12	7	52	82	59	20	1	6	8	12	0
KNOTS 1-3	0	6	6	13	3	5	2	3	7	17	20	9	5	1	3	3	5	0
CALM	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNW	NNW	BUF
	TRUE WIND DIRECTION																	

BUF VISIBILITY VS. FREQUENCY  
 NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	27	112	221	66	253	20	73	0	149
POSITION	0	1	2	3	4	5	6	7	8
	C	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS  
 MEAN 3.79/15  
 MODE 4.00/15  
 MEDIAN 4.00/15  
 STD. DEV. 2.34/15  
 SKEM -C.09

TEMPERATURE VS. FREQUENCY

FREQ.	11	0	18	7	2	3	4	6	25	73	64	72	45	30	30	37	24	41	40	51	52	43	48	64	59	27	38	1	0	0	0
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	
	15	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS  
 MEAN 45.58  
 MODE 31.50  
 MEDIAN 47.50  
 STD. DEV. 12.65  
 SKEM 1.11

HOURLY OBSERVATIONS 423 SPECIAL OBS. 498 TOTAL OBSERVATIONS 3130 FOG WITH SMOKE AND/OR HAZE 261

BUF

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	6	11	15	22	6	3	1	1	0	9	24	32	9	3	3	0	-4
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	2	2	1	0	1	1	0	0	0	0	0	0	1
NNE	0	0	1	1	2	2	5	0	1	1	1	0	0	0	0	0	2
NE	0	0	2	0	4	3	4	1	3	4	1	0	0	0	0	0	0
ENE	0	0	0	1	3	0	1	0	0	1	0	0	0	0	0	0	0
E	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	3	1	5	0	0	0	0	0	0	0	0	0	0
SSW	0	0	1	2	5	11	0	3	1	0	0	0	0	0	0	0	0
SW	0	0	1	0	3	4	12	6	4	1	1	0	0	0	0	0	0
WSW	0	0	1	1	1	0	0	0	0	1	1	2	0	0	0	0	2
W	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0
MNW	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0
CALM	6																

CALM : 2 3 4 5 6 7 8 9 10 11 12 >12  
WIND SPEED

BUF

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	2.0	2.7	0.7	0.7	0.7	0.7	0.7	7.4
NNE	0.0	0.7	2.0	4.0	0.7	1.3	1.3	1.3	10.1
NE	0.0	1.3	4.7	3.4	4.7	0.7	0.0	0.0	14.8
ENE	0.0	0.7	2.0	0.7	0.7	0.0	0.0	0.0	4.0
E	0.0	0.7	1.3	0.0	0.0	0.0	0.0	0.0	2.0
ESE	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7
SE	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	2.7	3.4	0.0	0.0	0.0	0.0	6.0
SSW	0.0	2.0	10.7	2.0	0.7	0.0	0.0	0.0	16.1
SW	0.0	0.7	4.7	12.1	3.4	0.7	0.0	0.0	21.5
WSW	0.0	1.3	0.7	0.0	0.7	2.0	1.3	1.3	6.0
W	0.0	0.7	0.0	0.0	0.7	0.7	0.0	0.0	4.0
WNW	0.0	0.7	0.0	0.7	0.7	0.0	0.0	0.0	2.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	1.3	0.0	0.7	0.0	0.0	0.0	0.0	2.7
CALM									4.0
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 45 57 47

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 149  
 FOG WITH LP 27  
 FOG WITH FP 78  
 ALL FOG CASES 251  
 PURE FOG 130  
 REC.Obs. 83

FOG WITH SMOKE AND/OR HAZE 13

BUF

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

CULD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	2	0	0	0	2
1958	0	0	0	0	0	1	0	1	0	1	0	0	3
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	2	0	12	0	0	3	0	0	17
1961	0	0	0	0	1	1	0	17	0	2	0	0	21
1962	0	0	0	0	0	1	1	0	4	6	0	0	12
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	1	0	0	1	0	0	0	2
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 3 4 13 18 7 12 0 0 0 57  
 AVG HRS 0.0 0.0 0.0 0.0 0.30 0.40 1.30 1.80 0.70 1.20 0.0 0.0 0.0 5.70



BUF

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG  
 MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	2	3	3	0	11	3	1	3	4	0	3	13	46
1957	9	4	0	5	7	0	0	0	13	7	14	0	59
1958	2	0	0	0	0	6	3	0	0	1	3	0	15
1959	4	0	0	0	1	9	0	0	0	0	8	0	22
1960	0	1	0	0	3	0	2	0	3	5	22	2	38
1961	6	2	0	3	0	2	0	3	3	9	3	19	52
1962	0	3	0	0	0	3	0	0	0	13	4	6	29
1963	1	2	4	0	0	0	0	0	19	0	7	3	32
1964	0	7	0	0	3	3	0	1	4	4	7	1	30
1965	3	1	0	0	5	0	0	1	4	23	1	5	43
TOTAL HRS	29	23	7	8	30	26	6	8	50	62	68	49	366
AVG HRS	2.91	2.30	0.70	0.80	3.00	2.60	0.60	0.80	5.00	6.20	6.80	4.90	36.60

Ems

WIND SPEED VS. FREQUENCY

FREQUENCY	47	40	120	91	199	211	142	117	92	29	20	9	3	0	0
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
WIND SPEED (KNOTS)															

STATISTICAL RESULTS

MEAN 4.23 KNOTS  
 MODE 5.00 KNOTS  
 MEDIAN 5.00 KNOTS  
 STD. DEV. 2.37 KNOTS  
 SKEW -0.07

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	47	87	298	708	973	1094	1123	1126	1126	1126
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL		
WIND SPEED (KNOTS)										

WIND DIRECTION VS. FREQUENCY

FREQUENCY	47	27	84	121	50	95	73	33	03	97	130	159	73	37	12	10	14
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
TRUE WIND DIRECTION																	

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	0	11	11	1	0	3	0	0	1	0	3	0	1	0	0	0	0
WIND 7-9	0	7	30	42	5	17	19	4	15	20	24	37	12	3	1	0	0	1
SPEED 4-6	0	10	38	52	29	66	32	26	33	54	78	91	32	23	4	2	3	3
KNOTS 1-3	0	10	5	16	15	33	19	3	14	23	28	28	23	10	6	8	10	0
CALM	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRUE WIND DIRECTION																		
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		210

EWR

EWR

VISIBILITY VS. FREQUENCY  
NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	160	86	189	55	268	17	177	0	168
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	
	VISIBILITY(MILES)								

STATISTICAL RESULTS

MEAN 3.72/16  
MODE 4.00/16  
MEDIAN 4.00/16  
STD. DEV. 2.59/16  
SKEW -0.11

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	6	0	16	16	43	43	92	84	104	104	84	51	52	52	43	23	43	47	49	51	53	55	57	59	61	63	65	67	69	71	72			
	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87	89	91	93	
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
	15	18	20	22	24	26	28	30	32	34	36	39	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72												
	TEMPERATURE (F)																																								

STATISTICAL RESULTS

MEAN 48.16 OF.  
MODE 41.50 OF.  
MEDIAN 45.30 OF.  
STD. DEV. 11.04 OF.  
SKEW 0.60

HOURLY OBSERVATIONS 430 SPECIAL OBS. 696 TOTAL OBSERVATIONS 3544 FOG WITH SMOKE AND/OR HAZE 1017

EMR

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	2	1	4	8	0	0	0	0	0	0	6	10	3	0	2	2	0	0	-0
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW			
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	1	3	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	2																		

CALM 1 2 3 4 5 6 7 8 9 10 11 12 >12

WIND SPEED

EWR

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	0.0	2.6	0.0	0.0	2.6
NNE	0.0	0.0	0.0	2.6	2.6	5.3	0.0	10.5
NE	0.0	0.0	2.6	2.6	10.5	5.3	0.0	21.1
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	5.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
S	0.0	5.3	7.9	2.6	0.0	0.0	0.0	15.8
SSW	0.0	10.5	15.8	0.0	0.0	0.0	0.0	26.3
SW	0.0	2.6	2.6	2.6	0.0	0.0	0.0	7.9
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	2.6	0.0	2.6	0.0	0.0	0.0	5.3
WNW	0.0	0.0	0.0	5.3	0.0	0.0	0.0	5.3
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY	6	22	10
TEMPERATURE (F)	28	28 TO 31	32

CHECK COUNT 38  
 FOG WITH LP 9  
 FOG WITH FP 85  
 ALL FOG CASES 132  
 PURE FOG 0  
 REC.OBS. 13

FOG WITH SMOKE AND/OR HAZE 13

FWR

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	4	0	0	0	0	4
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	3	0	0	0	0	0	3
1964	0	0	0	0	0	1	0	0	0	0	0	0	1
1965	0	0	0	0	0	0	1	0	0	0	0	0	1

TOTAL HRS 0 0 0 0 0 0 1 4 4 0 0 0 0 9  
 AVG HRS 0.0 0.0 0.0 0.0 0.0 0.10 0.40 0.40 0.40 0.0 0.0 0.0 0.0 0.90

EXR

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	4	1	5	18	20	1	0	10	1	3	63
1957	0	0	3	0	0	0	18	2	0	5	7	4	39
1958	0	0	0	14	6	0	3	0	0	4	4	3	34
1959	2	1	0	0	0	0	5	6	5	16	0	12	47
1960	0	2	4	5	3	0	0	0	0	2	0	1	17
1961	0	0	0	7	0	2	13	12	2	0	12	1	49
1962	0	0	1	11	0	17	0	22	0	1	0	0	52
1963	0	0	0	6	0	0	14	0	9	0	0	2	31
1964	1	0	0	2	14	32	4	0	7	2	2	4	68
1965	0	0	0	6	5	0	0	10	0	0	0	0	21

TOTAL HRS 3 3 12 52 33 69 77 53 23 40 26 30 421  
 AVG HRS 0.30 0.30 1.20 5.20 3.30 6.90 7.70 5.30 2.30 4.00 2.60 3.00 42.10

WIND SPEED VS. FREQUENCY

FREQUENCY	36	13	43	125	151	185	227	202	164	93	92	47	32	20	28
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	13	>13
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 6.43 KNOTS  
 MODE 6.00 KNOTS  
 MEDIAN 6.00 KNOTS  
 STD. DEV. 2.89 KNOTS  
 SKEW 0.15

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	36	49	217	553	982	1239	1378	1430	1458
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	36	52	71	82	156	270	183	120	72	94	64	43	12	51	45	42	55
CALM	N	NNE	NE	E	ESE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNW	NNW	NNW
	TRUE WIND DIRECTION																

WIND DIRECTION VS. WIND SPEED

>12	0	1	2	4	12	17	1	0	5	3	0	0	0	0	1	0	1
10-12	0	5	2	7	25	53	31	6	10	5	11	1	1	0	7	0	2
WIND 7-9	0	19	25	26	51	92	40	45	18	27	16	14	1	17	20	29	16
SPEED 4-6	0	13	30	36	67	89	73	47	39	34	25	15	10	25	13	9	37
KNOTS 1-3	0	9	12	11	19	24	22	21	9	18	12	3	0	9	4	4	4
CALM	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNW



BOS VISIBILITY VS. FREQUENCY  
 NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	33	168	290	13	513	2	143	0	296
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	0	16	4	16	8	16	2	

STATISTICAL RESULTS

MEAN 4.17/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.41/16  
 SKEW 0.07

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	0	0	0	7	10	42	41	84	68	87	47	54	80	59	63	88	81	91	103	96	176	87	94	42	16	0	0
<15	12	17	19	21	23	25	27	29	31	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72
16	18	20	22	24	26	28	30	32	32	34	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	

STATISTICAL RESULTS

MEAN 51.09 °F.  
 MODE 51.50 °F.  
 MEDIAN 51.50 °F.  
 STD. DEV. 10.76 °F.  
 SKEW -0.39

HOURLY OBSERVATIONS 519 SPECIAL OBS. 939 TOTAL OBSERVATIONS 3066 FOG WITH SMOKE AND/OR HAZE 278



BOS

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	0.0	1.7	1.7	5.1	0.0	0.0	0.0	8.5
NNE	0.0	0.0	3.4	0.0	0.0	0.0	0.0	1.7	5.1
NE	0.0	1.7	3.4	0.0	1.7	0.0	0.0	0.0	6.8
ENE	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0	6.8
E	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	1.7
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	1.7
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.7
SW	0.0	3.4	0.0	1.7	1.7	0.0	0.0	0.0	6.8
WSW	0.0	1.7	0.0	0.0	5.1	5.1	5.1	0.0	16.9
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	3.4	1.7	0.0	8.5	0.0	0.0	0.0	13.6
NW	0.0	0.0	0.0	1.7	6.8	1.7	0.0	0.0	10.2
NNW	0.0	0.0	0.0	5.1	5.1	0.0	0.0	0.0	10.2
CALM	0.0	0.0	1.7	1.7	1.7	0.0	0.0	0.0	5.1
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 0 51 8

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 59  
 FOG WITH LP 22  
 FOG WITH FP 37  
 ALL FOG CASES 118  
 PURE FOG 34  
 REC.OBS. 20

FOG WITH SMOKE AND/OR HAZE 5

605

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	1	2	0	0	0	0	0	3
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	3	5	0	0	0	8
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	4	0	0	0	0	0	4
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS 0 0 0 0 0 0 1 6 3 5 0 0 0 15  
 AVG HRS 0.0 0.0 0.0 0.0 0.0 0.10 0.60 0.30 0.50 0.0 0.0 0.0 0.0 1.50

BOS

OBSERVATIONS ARE FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	2	11	4	18	2	14	5	0	0	1	1	2	60
1957	0	0	8	7	2	0	0	0	0	1	3	2	23
1958	11	0	0	9	1	0	5	0	0	9	0	5	40
1959	3	10	6	6	10	0	7	1	0	6	16	1	66
1960	8	3	4	9	10	0	0	9	1	4	20	8	78
1961	8	14	14	7	0	2	2	30	0	0	11	12	100
1962	3	4	5	0	0	9	1	5	0	3	8	0	38
1963	6	7	10	0	0	2	0	0	4	0	0	1	30
1964	2	2	4	3	10	13	7	0	2	12	4	0	59
1965	0	3	2	0	1	0	2	3	0	1	0	0	12

TOTAL HRS 43 54 57 59 36 40 29 48 7 37 63 31 504  
 AVG HRS 4.30 5.40 5.70 5.90 3.60 4.00 2.90 4.80 0.70 3.70 6.30 3.10 50.40

BOL

WIND SPEED VS. FREQUENCY

FREQUENCY	452	10	250	383	350	224	98	71	35	21	17	9	10	10	17
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	

STATISTICAL RESULTS

MEAN: 3.34 KNOTS  
 MODE: 0.0 KNOTS  
 MEDIAN: 3.00 KNOTS  
 STD. DEV.: 2.74 KNOTS  
 SKEW: 1.22

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	452	462	1095	1659	1838	1894	1920	1946	1963
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL	

WIND DIRECTION VS. FREQUENCY

FREQUENCY	452	262	74	61	20	21	24	66	105	351	81	102	59	63	42	84	76
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	NNW	NNW

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	0	0	0	2	18	2	5	0	0	0	0	0
10-12	0	3	2	0	0	0	0	2	3	23	2	6	0	0	0	0	1
WIND 7-9	0	24	2	6	0	0	0	1	15	57	5	10	2	1	0	0	3
SPEED 4-6	0	140	32	31	6	7	15	36	50	169	42	48	25	21	13	21	18
KNOTS 1-3	0	92	38	44	14	17	11	27	35	84	29	33	32	41	29	63	54
CALM	452	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

BOL

222

BDL VISIBILITY VS. FREQUENCY  
 NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	246	220	393	99	512	2	181	0	310
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.53/16  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.50/16  
 SKEM -0.18

TEMPERATURE VS. FREQUENCY

FREQ.	0	0	0	0	4	15	54	37	69	113	67	118	72	54	72	64	84	63	85	102	70	106	94	67	136	126	127	67	62	28	7	
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72		
	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 49.31 OF.  
 MODE 61.50 OF.  
 MEDIAN 51.50 OF.  
 STD. DEV. 13.35 OF.  
 SKEM -0.91

MONTHLY OBSERVATIONS 3 606 SPECIAL OBS. 1077 TOTAL OBSERVATIONS 4402 FOG WITH SMOKE AND/OR HAZE 2

BUL

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	91	65	14	12	1	4	6	8	9	22	6	8	14	11	3	9	9
CALM																	
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	91																

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

	0	0	8	14	9	17	10	3	1	2	1	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	91																

CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12



BDL

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	7.5	8.9	4.5	1.0	0.3	0.0	22.3
NNE	0.0	3.4	0.7	0.7	0.0	0.0	0.0	4.8
NE	0.0	2.7	1.4	0.0	0.0	0.0	0.0	4.1
ENE	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
E	0.0	0.7	0.7	0.0	0.0	0.0	0.0	1.4
ESE	0.0	0.3	1.7	0.0	0.0	0.0	0.0	2.1
SE	0.0	1.0	1.7	0.0	0.0	0.0	0.0	2.7
SSE	0.0	1.7	1.0	0.3	0.0	0.0	0.0	3.1
S	0.0	4.8	2.1	0.7	0.0	0.0	0.0	7.5
SSM	0.0	1.4	0.3	0.3	0.0	0.0	0.0	2.1
SM	0.0	1.4	0.7	0.3	0.3	0.0	0.0	2.7
WSM	0.0	4.5	0.3	0.0	0.0	0.0	0.0	4.8
W	0.0	1.0	2.4	0.3	0.0	0.0	0.0	3.8
WNW	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0
NW	0.0	2.4	0.3	0.3	0.0	0.0	0.0	3.1
NNW	0.0	2.1	0.7	0.0	0.0	0.3	0.0	3.1
CALM								31.2
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 92 144 56

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 292  
 FOG WITH LP 40  
 FOG WITH FP 40  
 ALL FOG CASES 419  
 PURE FOG 292  
 - REC.003. 159

FOG WITH SMOKE AND/OR HAZE 0

BDL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

CULD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	4	12	9	0	0	3	0	0	28
1957	0	0	0	0	0	0	0	2	0	0	0	0	2
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	10	5	0	0	3	0	0	0	18
1960	0	0	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	1	4	0	1	1	0	0	0	12
1962	0	0	0	0	0	21	0	7	0	0	0	0	28
1963	0	0	0	0	0	17	11	1	0	0	0	0	29
1964	0	0	0	0	0	10	0	0	0	0	0	0	10
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL HRS	0	0	0	0	15	74	20	11	4	3	0	0	127
AVG HRS	0.0	0.0	0.0	0.0	1.50	7.40	2.00	1.10	0.40	0.33	0.0	0.0	12.70

BDL

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	6	11	8	17	11	23	10	2	0	14	0	7	109
1957	1	1	1	7	1	0	20	11	0	8	0	5	55
1958	8	6	1	17	7	1	1	0	0	1	5	0	47
1959	16	8	10	3	4	4	8	0	1	5	3	22	86
1960	13	20	19	11	3	0	1	8	1	0	6	11	93
1961	14	7	20	15	0	3	0	21	1	1	2	7	91
1962	6	21	1	10	0	11	4	6	0	0	0	16	75
1963	2	11	13	17	0	0	1	1	4	0	6	4	59
1964	4	17	2	0	0	21	1	0	0	8	2	11	66
1965	5	13	7	11	16	3	12	6	0	2	0	3	78
TOTAL HRS	77	115	82	108	42	66	58	55	7	39	24	86	759
AVG HRS	7.70	11.50	8.20	10.80	4.20	6.60	5.80	5.50	0.70	3.50	2.40	8.30	75.90



ROC VISIBILITY VS. FREQUENCY  
 NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	35	75	120	22	142	18	55	0	84
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	6	15	8	15	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.70/.5  
 MODE 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.43/16  
 SKEW -0.12

TEMPERATURE VS. FREQUENCY

FREQ.	6	6	5	7	4	3	14	15	23	19	37	29	44	27	16	10	15	16	17	21	13	26	32	32	37	38	22	11	2	5	0
<15	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
16	16	16	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 45.64 °F.  
 MODE 37.50 °F.  
 MEDIAN 45.50 °F.  
 STD. DEV. 14.25 °F.  
 SKEW 0.59

HOURLY OBSERVATIONS 310 SPECIAL OBS. 242 TOTAL OBSERVATIONS 1084 FOG WITH SMOKE AND/OR HAZE 15

ROC

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	26	7	4	1	2	0	1	1	1	1	9	8	11	18	4	2	3	-4
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	MNW	NW	NNW	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	1	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	2	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	1	0	1	2	2	1	0	1	0	0	0	0	0	0	0	0
SW	0	0	3	2	1	3	1	1	0	0	0	0	0	0	0	0	0	0
WSW	0	1	1	5	2	4	4	1	0	0	0	0	0	0	0	0	0	0
W	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
MNW	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
NW	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
CALM	26	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0

CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
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ROC

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 32 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS										TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT				
N	0.0	1.0	1.0	2.0	2.9	0.0	0.0	0.0	0.0	0.0	6.9
NNE	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	3.9
NE	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
ENE	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
SE	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
SSE	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
S	0.0	4.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8
SSW	0.0	1.0	2.9	2.9	1.0	0.0	0.0	0.0	0.0	0.0	7.8
SW	0.0	4.9	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8
WSW	1.0	5.9	5.9	4.9	0.0	0.0	0.0	0.0	0.0	0.0	17.6
W	1.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9
WNW	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0
NW	0.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
NNW	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9
CALM											25.5
TOTAL											100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 51 40 11

TEMPERATURE (F) 28 TO 31 32

CHECK COUNT 102  
FOG WITH LP 25  
FOG WITH FP 27  
ALL FOG CASES 151  
PURE FOG 102  
REC.OBS. 59

FUG WITH SMOKE AND/OR HAZE 0

R JC

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	1	0	0	0	1
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	1	0	0	2	2	0	0	5
1959	0	0	0	0	0	0	0	0	7	0	0	0	7
1960	0	0	0	0	0	0	13	0	0	0	0	0	13
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	1	0	0	2	2	0	0	5
1963	0	0	0	0	0	6	0	0	0	0	0	0	6
1964	0	0	0	0	1	2	0	0	2	0	0	0	5
1965	0	0	0	0	0	0	0	0	2	0	0	0	11

TOTAL MFS 0 0 0 0 0 1 10 13 0 16 13 0 0 53  
 AVG HRS 0.0 0.0 0.0 0.0 0.10 1.00 1.30 0.0 1.60 1.30 0.0 0.0 0.0 5.30



ROC

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG /  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	1	0	7	9	3	0	3	1	1	0	2	24
1957	5	0	0	3	10	0	0	0	0	5	0	0	23
1958	2	0	6	0	0	3	0	0	0	8	1	0	20
1959	5	3	0	0	0	2	0	0	2	0	0	0	12
1960	0	3	0	6	0	0	1	0	0	1	16	0	27
1961	1	13	4	0	0	5	0	2	0	1	0	14	40
1962	0	7	6	1	0	3	2	0	1	3	0	4	32
1963	0	2	4	0	0	0	0	0	2	1	2	0	11
1964	2	11	0	6	4	0	1	0	0	0	4	9	37
1965	1	6	2	1	0	0	0	0	1	16	0	4	31
TOTAL HRS	16	46	22	24	23	16	4	2	7	36	23	38	257
AVG HRS	1.60	4.00	2.20	2.40	2.30	1.60	0.40	0.20	0.70	3.60	2.30	3.80	25.70

SY-

WIND SPEED VS. FREQUENCY

FREQUENCY	51	7	53	60	42	31	32	18	10	3	3	0	2	2	4
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	>13	
	WIND SPEED (KNOTS)														

STATISTICAL RESULTS

MEAN 3.70 KNOTS  
 MODE 3.00 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 2.79 KNOTS  
 SKEW 0.25

WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	51	58	171	244	294	307	310	314	318
CALM	<2	<4	<5	<8	<10	<12	<14	JTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	51	18	7	11	15	53	29	21	6	3	6	5	17	28	22	18	8
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
	TRUE WIND DIRECTION																
	>12	10-12	7-9	4-6	1-3	CALM											
	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	1	0
	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0
	0	0	0	0	2	6	5	3	1	0	0	0	1	4	5	2	2
	0	0	1	5	4	24	14	7	2	1	0	1	8	10	10	9	0
	0	0	6	6	9	18	10	11	3	2	6	4	8	13	4	5	6
	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TRUE WIND DIRECTION																
	CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	

SIR

234

SYR VISIBILITY VS. FREQUENCY  
 NOTE: 7/16 FILE IS NOT A REPORTABLE VALUE

FREQUENCY	34	47	55	20	73	8	31	0	45
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

VISIBILITY(MILES)

STATISTICAL RESULTS

MEAN 3.51/16  
 MOD 4.00/16  
 MEDIAN 4.00/16  
 STD. DEV. 2.50/16  
 SKEW -0.20

TEMPERATURE VS. FREQUENCY

FREQ.	17	0	2	2	0	0	1	5	17	4	26	18	8	14	13	23	12	28	20	18	2	14	8	16	25	10	9	1	5	0	0	
<15	15	17	19	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	>72	
	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	10	10	20	20	22	24	26	26	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72		

TEMPERATURE (F)

STATISTICAL RESULTS

MEAN 44.85 OF.  
 MOD 47.50 OF.  
 MEDIAN 45.50 OF.  
 STD. DEV. 13.47 OF.  
 SKEW -0.20

SYR VISIBILITY VS. FREQUENCY 102 SPECIAL OBS. 150 TOTAL OBSERVATIONS 694 FOG WITH SMOKE AND/OR HAZE 14

SYR

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	9	0	0	0	2	10	3	4	0	1	0	1	0	1	0	0	4	5	6	-3
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNW	NNW	NNW	NNW	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	2	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	1	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	1	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM	9																				

SYR

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NENE	0.0	0.0	2.1	2.1	0.0	0.0	0.0	4.2
E	0.0	4.2	10.4	6.2	0.0	0.0	0.0	20.8
ESE	0.0	6.3	0.0	0.0	0.0	0.0	0.0	6.3
SE	2.1	0.0	2.1	4.2	0.0	0.0	0.0	8.4
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	2.1	0.0	0.0	0.0	0.0	0.0	2.1
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	2.1	6.0	0.0	0.0	0.0	0.0	8.1
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	6.2	2.1	0.0	0.0	0.0	0.0	8.3
WNW	0.0	2.1	2.1	6.2	0.0	0.0	0.0	10.4
NW	0.0	2.1	4.2	4.2	0.0	0.0	2.1	12.5
NNW	4.2	2.1	0.0	0.0	0.0	0.0	0.0	6.3
CALM								16.8
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 22 26 0

28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 48  
 FOG WITH LP 3  
 FOG WITH FP 37 87  
 ALL FOG CASES 87  
 PURE FOG 48  
 REC-OBS. 22

FOG WITH SMOKE AND/OR HAZE 0

SYR

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	10	0	0	0	10
1960	0	0	0	0	0	0	8	0	2	0	0	0	10
1961	0	0	0	0	0	0	0	1	0	0	0	0	1
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	1	0	0	0	0	0	1

TOTAL HRS	0	0	0	0	0	0	9	1	.2	0	0	0	22
AVG HRS	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.10	1.20	0.0	0.0	0.0	2.20

SYR

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES OR LATER THAN 31 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WAPM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	2	0	0	9	11	4	0	0	1	0	0	1	28
1957	0	1	0	0	2	0	0	0	0	4	2	0	9
1958	0	0	0	0	3	0	0	0	0	1	3	0	7
1959	0	0	0	3	0	0	1	0	0	0	1	0	5
1960	0	0	0	0	0	0	0	1	2	2	7	0	12
1961	4	0	5	0	0	10	0	4	0	1	0	5	29
1962	0	0	2	0	0	0	0	0	0	0	0	0	2
1963	0	0	3	0	0	0	0	1	0	0	0	1	5
1964	2	2	8	0	1	1	0	0	0	0	0	7	21
1965	0	2	5	0	6	0	0	3	2	4	0	0	22

TOTAL HRS 8 5 23 12 23 15 14 1 9 5 12 13 14 140  
 AV. HRS 0.80 0.70 2.30 1.20 2.30 1.50 0.10 0.90 0.50 1.20 1.30 1.40 1.40

CLE

WIND SPEED VS. FREQUENCY

FREQUENCY	49	1	13	100	151	127	103	63	57	45	26	12	18
CALC	1	2	3	4	5	6	7	8	9	10	11	12	13
	WIND SPEED (KNOTS)												
	>13												

STATISTICAL RESULTS

MEAN 5.89 KNOTS  
 MODE 4.00 KNOTS  
 MEDIAN 6.00 KNOTS  
 STD. DEV. 3.00 KNOTS  
 SKEW 0.53



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WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	49	50	103	445	675	775	836	874	892
CALC	<2	<4	<6	<8	<10	<12	<14	TOTAL	
	WIND SPEED (KNOTS)								

WIND DIRECTION VS. FREQUENCY

FREQUENCY	4	90	45	28	10	15	18	16	44	107	83	87	41	27	64	58	52	
CALC		N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NN	NNN	
	TRUE WIND DIRECTION																	

WIND DIRECTION VS. WIND SPEED

>12	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10-12	0	22	9	5	2	1	1	0	0	0	0	0	2	2	3	1	3	3	
7-9	0	32	16	14	3	7	4	0	4	25	16	19	5	5	6	13	6	6	
4-6	0	28	12	7	5	8	11	8	30	85	58	43	22	15	32	22	14	14	
1-3	0	5	2	2	0	2	2	8	10	36	9	23	6	0	3	2	2	2	
CALC	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CALC		N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NN	NNN		
	TRUE WIND DIRECTION																		

240

CLE



STATION: VISIBILITY VS. FREQUENCY  
 DATE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
POSITION:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

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STATISTICAL RESULTS  
 MEAN 3.00/16  
 MODE 4.00/16  
 MEDIAN 3.00/16  
 STD. DEV. 2.45/16  
 SKEN -0.421

TEMPERATURE VS. FREQUENCY

TEMPERATURE (F)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
TEMPERATURE (F)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

STATISTICAL RESULTS  
 MEAN 44.64 °F.  
 MODE 41.50 °F.  
 MEDIAN 43.50 °F.  
 STD. DEV. 12.64 °F.  
 SKEN 0.223

STATION: VISIBILITY VS. FREQUENCY  
 DATE: 7/16 MILE IS NOT A REPORTABLE VALUE

CLE

MIND DIRECTION VS. FREQUENCY--

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	5	10	8	1	0	0	1	0	0	1	0	6	38	16	8	6	4	13	14	7
	CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NNW	NNW	NNW	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	0	0	0	2	3	3	0	0	1	1	0	0
NNE	0	0	0	1	0	0	1	0	0	0	0	0	1	1	3
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0
S	0	0	0	13	10	8	0	1	0	0	0	0	1	5	0
SSW	0	0	0	4	0	5	5	2	0	0	0	0	0	0	0
SW	0	0	0	1	2	2	0	1	2	0	0	0	0	0	0
WSW	0	0	0	1	3	2	0	0	0	0	0	0	0	0	0
W	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0
WNW	0	0	0	0	0	4	4	2	1	0	0	0	0	0	0
NW	0	0	0	0	1	1	2	4	1	2	0	0	1	0	0
NNW	0	0	0	0	0	0	0	2	4	0	1	0	0	3	0
CALM	5														

	CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12

WIND ROSE DATA

CLE

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.0	0.0	3.6	2.2	1.5	0.0	7.3
NNE	0.0	0.0	0.7	1.5	0.0	0.7	2.9	5.8
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.7
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	2.2	2.2	0.0	0.0	0.0	4.4
S	0.0	9.5	13.1	0.7	0.0	0.0	4.4	27.7
SSW	0.0	2.9	3.6	5.1	0.0	0.0	0.0	11.7
SW	0.0	0.7	2.9	0.7	1.5	0.0	0.0	5.8
WSW	0.0	0.7	3.6	0.0	0.0	0.0	0.0	4.4
W	0.0	0.0	2.2	0.7	0.0	0.0	0.0	2.9
WNW	0.0	0.0	2.9	4.4	1.5	0.7	0.0	9.5
NW	0.0	0.0	1.5	4.4	2.2	0.0	2.2	10.2
NNW	0.0	0.0	0.0	1.5	2.9	0.7	0.0	5.1
CALM								3.6
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 55 46 36

<28 28 TO 31 32  
TEMPERATURE (F)



CHECK COUNT 137  
FOG WITH LP 61  
FOG WITH FP 85  
ALL FOG CASES 277  
PURE FOG 118  
REC-OBS. 50

FOG WITH SMOKE AND/OR HAZE 9

CLE

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

COLD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	6	0	0	0	0	0	6
1957	0	0	0	0	0	0	0	5	0	0	0	0	5
1958	0	0	0	0	0	0	0	0	2	0	0	0	2
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	8	7	10	0	0	0	25
1961	0	0	0	0	0	0	1	1	2	0	0	0	4
1962	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	1	0	0	0	0	1
1965	0	0	0	0	0	0	3	0	0	0	0	0	3

TOTAL HRS 0 0 0 0 0 0 0 18 14 14 0 0 0 46  
 AVG HRS 0.0 0.0 0.0 0.0 0.0 0.0 1.80 1.40 1.40 0.0 0.0 0.0 0.0 4.60

CLE

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	5	24	11	0	2	4	1	0	9	56
1957	6	9	0	2	1	0	0	0	1	0	4	0	23
1958	8	4	8	1	1	0	0	2	3	6	0	0	33
1959	0	0	0	0	0	0	0	1	0	0	5	0	6
1960	7	2	0	14	0	0	20	0	4	1	1	0	49
1961	0	5	0	3	0	0	0	4	3	1	0	5	22
1962	9	5	0	6	0	0	1	1	11	0	0	10	43
1963	0	0	0	0	1	0	1	0	14	0	4	0	20
1964	0	1	1	2	2	6	0	0	2	4	5	0	23
1965	0	0	6	7	2	0	1	0	9	6	0	0	31

TOTAL HRS 30 26 15 40 31 17 23 10 51 19 19 25 306  
 AVG HRS 3.00 2.60 1.50 4.00 3.10 1.70 2.30 1.00 5.10 1.90 1.90 2.50 30.60

WIND SPEED VS. FREQUENCY

FREQUENCY	453	19	132	169	144	119	74	38	25	16	10	4	1	1	0
-----															
CALM	1	2	3	4	5	6	7	8	9	10	11	12	13	13	>13
WIND SPEED (KNOTS)															

STATISTICAL RESULTS

MEAN 2.68 KNOTS  
 MODE 0.0 KNOTS  
 MEDIAN 3.00 KNOTS  
 STD. DEV. 2.59 KNOTS  
 SKEN 1.03

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WIND SPEED VS. CUMULATIVE WIND FREQUENCY

CUMULATIVE FREQUENCY	453	471	772	1055	1172	1213	1227	1229	1229	1229
-----										
CALM	<2	<4	<6	<8	<10	<12	<14	TOTAL		
WIND SPEED (KNOTS)										

WIND DIRECTION VS. FREQUENCY

FREQUENCY	453	97	34	26	16	55	42	60	95	128	58	14	3	6	18	36	88
-----																	
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	W	WNW	NW	NNW
TRUE WIND DIRECTION																	

WIND DIRECTION VS. WIND SPEED

>12	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
10-12	0	1	0	0	0	3	3	0	0	4	2	7	0	0	0	0	0	2
WIND 7-9	0	11	1	0	0	4	2	0	8	15	17	2	1	0	2	2	2	14
SPEED 4-6	0	61	16	9	6	18	17	20	45	70	20	8	1	1	8	17	45	
KNOTS 1-3	0	24	17	17	10	29	20	40	42	39	19	4	1	5	8	17	27	
CALM	453	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-----																		
CALM	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	W	WNW	NW	NNW	
TRUE WIND DIRECTION																		

246

CMI

CMH VISIBILITY VS. FREQUENCY  
 NOTE: 7/16 MILE IS NOT A REPORTABLE VALUE

FREQUENCY	262	138	264	24	269	14	54	0	184
POSITION	0	1	2	3	4	5	6	7	8
	0	1	1	3	1	5	3	7	1
	16	8	16	4	16	8	16	2	

STATISTICAL RESULTS

MEAN 3.05/16  
 MODE 4.00/16  
 MEDIAN 2.00/16  
 STD. DEV. 1.65/16  
 SKED -0.36

TEMPERATURE VS. FREQUENCY

FREQ.	29	6	9	4	4	4	4	20	22	12	39	79	34	35	35	51	77	42	32	55	31	21	41	49	86	77	74	68	30	28	0
TEMPERATURE (F)	19	17	19	19	20	22	24	26	28	30	32	34	36	39	40	42	44	46	48	50	52	54	56	60	62	64	66	68	70	72	

STATISTICAL RESULTS

MEAN 46.13 OF.  
 MODE 39.50 OF.  
 MEDIAN 47.50 OF.  
 STD. DEV. 14.61 OF.  
 SKED: 0.58

HOURLY OBSERVATIONS 542 SPECIAL OBS. 698 TOTAL OBSERVATIONS 2397 FOG WITH SMOKE AND/OR HAZE 156

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WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

FREQUENCY	70	5	1	0	2	3	6	13	17	24	3	0	0	1	3	4	-17
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

N	0	0	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	7	1	4	1	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	5	2	5	5	0	0	0	0	0	0	0	0	0	0	0
S	0	0	3	7	5	3	1	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0
NNW	0	0	2	7	3	1	2	2	0	0	0	0	0	0	0	0	0
CALM	70																





C:111

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	0.6	2.4	0.0	0.0	0.0	0.0	3.0
NNE	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.6
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2
E	0.0	1.2	0.6	0.0	0.0	0.0	0.0	1.8
ESE	0.0	1.8	1.8	0.0	0.0	0.0	0.0	3.6
SE	0.0	4.7	3.0	0.0	0.0	0.0	0.0	7.7
SSE	0.0	4.1	5.9	0.0	0.0	0.0	0.0	10.1
S	0.0	5.9	5.9	2.4	0.0	0.0	0.0	14.2
SSW	0.0	1.8	0.0	0.0	0.0	0.0	0.0	1.8
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.6
WNW	0.0	1.2	0.6	0.0	0.0	0.0	0.0	1.8
NW	0.0	1.8	0.0	0.6	0.0	0.0	0.0	2.4
NNW	0.0	5.3	2.4	2.4	0.0	0.0	0.0	10.1
CALM								41.4
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 102 44 23

<28 28 TO 31 32  
TEMPERATURE (F)

CHECK COUNT 169  
FOG WITH LP 16  
FOG WITH FP 65  
ALL FOG CASES 248  
PURE FOG 85  
REC-00S. 88

FOG WITH SMOKE AND/OR HAZE 42

CMH

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION. OBSERVATIONS ANALYZED ARE HOUKLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F AND SURFACE VISIBILITY 1/2 MILE OR LESS.

CULD FOG  
MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	2	0	4	0	0	0	0	0	6
1958	0	0	0	0	0	2	0	0	0	0	0	0	2
1959	0	0	0	0	0	6	3	4	4	0	0	0	17
1960	0	0	0	0	11	0	1	9	3	0	0	0	24
1961	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	3	5	4	0	0	0	0	0	0	12
1963	0	0	0	0	3	4	3	0	0	0	0	0	10
1964	0	0	0	0	0	0	4	0	0	0	0	0	4
1965	0	0	0	0	0	0	4	0	0	0	0	0	4
TOTAL HRS	0	0	0	3	21	16	19	13	7	0	0	0	79
AVG HRS	0.0	0.0	0.0	0.30	2.10	1.60	1.90	1.30	0.70	0.0	0.0	0.0	7.90

CNH

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
 OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES GREATER THAN 31 DEGREES F  
 AND SURFACE VISIBILITY 1/2 MILE OR LESS.

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1956	12	1	9	1	18	7	3	3	6	0	0	7	67
1957	3	0	7	7	12	0	4	3	2	3	1	1	43
1958	16	13	4	8	0	6	0	0	0	4	1	3	55
1959	2	8	0	0	0	1	4	1	0	3	4	0	23
1960	7	7	11	7	7	0	15	0	0	7	0	4	65
1961	6	5	1	13	0	0	0	1	1	0	7	6	40
1962	0	5	10	4	1	0	0	0	0	0	0	0	20
1963	3	4	2	4	23	0	10	0	17	0	5	2	70
1964	0	4	12	3	15	0	1	0	0	6	0	5	46
1965	0	3	18	0	4	0	2	3	1	1	1	0	33

TOTAL HRS 49 50 74 47 80 14 39 11 27 24 19 28 462  
 AVG HRS 4.40 5.00 7.60 4.70 8.00 1.40 3.90 1.10 2.70 2.40 1.90 2.80 46.20

GEG

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

FREQUENCY	219	47	124	432	238	84	56	57	46	60	65	85	53	24	12	25	22
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	

WIND DIRECTION VS WIND SPEED

WIND DIRECTION VS WIND SPEED

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

	0	1	2	3	4	5	6	7	8	9	10	11	12	>12
N	0	0	2	20	16	4	3	0	2	0	0	0	0	0
NNE	0	0	7	47	23	23	16	5	2	1	0	0	0	0
NE	0	0	26	106	99	88	59	32	14	1	3	1	1	0
ENE	0	0	6	68	58	42	28	18	15	1	2	0	0	0
E	0	0	7	28	24	12	7	4	1	0	0	1	0	0
ESE	0	0	6	22	17	7	3	1	0	0	0	0	0	0
SE	0	1	1	27	7	6	5	6	4	0	0	0	0	0
SSE	0	0	3	8	6	8	10	6	1	2	1	1	0	0
S	0	0	4	10	13	11	6	8	6	0	1	0	1	0
SSW	0	0	1	12	8	18	9	4	8	2	1	0	0	2
SW	0	1	5	20	18	22	7	5	4	1	0	0	0	2
WSW	0	0	3	14	14	11	7	2	0	2	0	0	0	0
W	0	0	2	14	3	2	2	1	0	0	0	0	0	0
WNW	0	0	2	5	1	4	0	0	0	0	0	0	0	0
NW	0	0	2	12	8	3	0	0	0	0	0	0	0	0
NNW	0	0	0	13	4	2	3	0	0	0	0	0	0	0
CALM	239													

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GHELA COUNT 6718  
 FOG WITH LP 177  
 FOG WITH FP 137  
 ALL FOG CASES 1972  
 PURE FOG 1380  
 FIRST CARD 1- 4-55  
 LAST CARD 12-31-64  
 DISCARDS 0  
 TOTAL CARDS: 8416

252

GEG

DISCARD NO. \*\*\*  
CARDS ANALYZED: 1669

GEG

WIND USE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FLO WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	1.3	1.2	0.2	0.1	0.0	0.0	0.0	4.8
NNE	0.0	3.2	2.8	1.3	0.2	0.0	0.0	0.0	7.4
NW	0.0	8.0	11.2	5.5	0.9	0.2	0.1	0.0	23.9
ESE	0.0	4.4	6.0	4.8	1.6	0.1	0.0	0.0	14.3
E	0.0	2.1	2.2	0.7	0.1	0.1	0.0	0.0	5.0
ESE	0.0	1.7	1.4	0.2	0.0	0.0	0.0	0.0	3.4
SF	0.1	1.7	0.8	0.7	0.2	0.0	0.0	0.0	3.4
SSE	0.0	0.7	0.8	1.0	0.2	0.1	0.0	0.0	2.8
S	0.0	0.8	1.4	0.8	0.4	0.1	0.1	0.0	3.6
SW	0.0	0.8	1.6	0.8	0.8	0.1	0.1	0.0	3.9
SW	0.1	1.5	2.4	0.7	0.3	0.0	0.1	0.0	5.1
WSW	0.0	1.0	1.5	0.5	0.1	0.0	0.0	0.0	3.2
W	0.0	1.0	0.5	0.2	0.0	0.0	0.0	0.0	1.4
WSW	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.7
W	0.0	0.8	0.7	0.0	0.0	0.0	0.0	0.0	1.5
NW	0.0	0.8	0.9	0.2	0.0	0.0	0.0	0.0	1.3
CALM									14.3
TOTAL									100.0



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TEMPERATURE VS. FREQUENCY

FREQUENCY 031 012 1069

TEMPERATURE (F) 20 21 31 32 3

GEG

RESULTS FROM CARD DECK 144  
MONTHLY FOG DISTRIBUTION FOR SPORNAL, WASHINGTON

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.  
OBSERVATIONS ANALYZED ARE HOURLY TYPE, WITH TEMPERATURES LESS THAN 32 DEGREES F  
AND SURFACE VISIBILITY 1/2 MILE OR LESS.

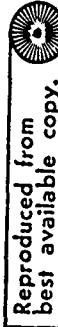
COLD FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1955	0	0	0	0	3	44	97	21	2	2	0	0	169
1956	0	0	0	0	41	120	20	59	0	0	0	0	260
1957	0	0	0	0	16	9	30	56	9	0	0	0	100
1958	0	0	0	0	0	49	76	5	0	3	0	0	133
1959	0	0	0	3	10	93	14	17	0	0	0	0	137
1960	0	0	0	4	11	95	50	19	0	1	0	0	180
1961	0	0	0	26	30	48	45	4	2	0	0	0	155
1962	0	0	0	1	24	37	33	6	5	0	0	0	106
1963	0	0	0	0	0	40	60	42	6	1	0	0	149
1964	0	0	0	0	78	39	3	34	0	0	0	0	154

TOTAL HRS 0 0 0 34 213 574 428 428 243 24 7 0 0 1523  
 AVG HRS 0.0 0.0 0.0 3.40 21.30 57.40 42.80 42.80 24.30 2.40 0.70 0.0 0.0 152.30

OBSERVATIONS ARE FOR FOG, POSSIBLY WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION.



GEG

WARM FOG

MONTHLY FOG FREQUENCY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1955	3	0	0	42	19	0	17	0	0	1	0	0	88
1956	0	3	0	3	25	14	6	3	0	0	2	0	56
1957	0	0	3	33	4	4	1	3	16	0	3	0	67
1958	2	0	0	41	6	62	32	26	5	9	3	4	190
1959	0	0	8	17	3	2	6	2	0	2	2	0	42
1960	0	0	0	4	5	0	3	4	3	0	0	0	24
1961	0	0	0	26	22	17	3	11	0	0	6	0	65
1962	0	0	0	67	23	74	12	41	4	2	4	2	249
1963	0	0	7	7	2	3	0	55	3	8	0	0	85
1964	0	0	0	6	19	5	0	0	6	0	0	0	36

TOTAL HRS 2 3 18 260 128 197 80 150 57 22 20 6 922  
 AVG HRS 0.50 0.30 1.80 26.0 12.80 18.70 8.00 15.00 3.70 2.20 4.00 0.00 0.00 42.20

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WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

FREQUENCY	272	23	13	20	8	15	20	43	25	38	8	25	53	85	87	24
CALM		W	ENE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW

WIND DIRECTION VS WIND SPEED

WIND DIRECTION VS WIND SPEED

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

N	0	3	13	1	3	1	0	1	1	0	0	0	0	0	0
ENE	0	0	3	13	1	3	1	0	0	0	0	0	0	0	0
W	0	0	3	13	1	3	1	0	0	0	0	0	0	0	0
ESE	0	0	4	11	4	6	1	0	0	0	0	0	0	0	0
E	0	0	0	3	3	1	1	0	0	0	0	0	0	0	0
SE	0	0	2	7	5	1	0	0	0	0	0	0	0	0	0
SSE	0	0	1	7	7	2	0	0	1	0	0	0	0	0	1
S	0	0	6	13	10	7	5	2	0	0	0	0	0	0	0
SSW	0	0	1	7	11	3	2	0	1	0	0	0	0	0	0
SW	0	0	1	6	1	0	0	0	0	0	0	0	0	0	0
WSW	0	0	2	13	4	3	1	0	0	2	0	0	0	0	0
W	0	0	2	14	9	1	2	0	0	0	1	0	0	0	0
WNW	0	0	6	17	13	10	6	0	1	0	0	0	0	0	0
NW	0	0	1	16	23	19	11	9	2	2	1	0	0	1	0
NNW	0	0	12	24	15	15	6	5	2	1	1	0	1	0	0
CALM	272	0	2	6	11	4	1	0	0	0	0	0	0	0	0

CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12

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BOI

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMALL AND/OR HAZE BUT NO PRECIPITATION

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.0	2.0	0.0	0.1	0.3	0.0	0.0	2.9
NNE	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.0
NE	0.0	1.0	0.5	0.1	0.0	0.0	0.0	2.5
ENE	0.0	0.4	0.5	0.1	0.0	0.0	0.0	1.0
E	0.0	1.1	0.8	0.0	0.0	0.0	0.0	1.9
ESE	0.1	1.0	1.1	0.0	0.1	0.0	0.1	4.2
SE	0.0	2.4	2.2	0.9	0.0	0.0	0.0	5.4
SSE	0.0	1.0	1.8	0.3	0.1	0.0	0.0	3.2
S	0.0	2.0	1.9	0.4	0.0	0.0	0.0	4.8
SSE	0.0	0.9	0.1	0.0	0.0	0.0	0.0	1.0
SSW	0.0	1.9	0.9	0.1	0.0	0.0	0.0	3.2
SW	0.0	2.0	1.5	0.3	0.0	0.0	0.0	3.7
WSW	0.0	2.0	2.9	0.8	0.1	0.0	0.0	6.7
W	0.0	2.2	5.3	2.5	0.5	0.1	0.1	10.9
WNW	0.0	4.0	4.2	1.6	0.4	0.1	0.1	11.0
W	0.0	1.0	1.9	0.1	0.0	0.0	0.0	3.0
CALM								34.5
TOTAL								100.0

TEMPERATURE vs. FREQUENCY

FREQUENCY 207 216 709

<20 20 10 01 <3 3  
TEMPERATURE (F)



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CHECK COUNT 2947  
FOG with LP 10  
FOG with FP 30  
ALL FOG CASES 441  
PURE FOG 767  
FIRST CARD 1- 1-50  
LAST CARD 0- 0- 0

KIND

WIND DIRECTION VS. FREQUENCY

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

FREQUENCY	164	10	14	23	14	17	17	26	21	28	20	26	14	9	8	13	9
CALM	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WIND DIRECTION VS WIND SPEED

WIND DIRECTION VS WIND SPEED

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

N	0	2	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	2	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	4	3	4	3	0	0	0	0	0	0	0	0	0	0	0	0
E	0	1	7	7	2	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	3	6	5	2	1	0	0	0	0	0	0	0	0	0	0	0
SE	0	5	9	4	6	2	0	0	0	0	0	0	0	0	0	0	0
SSE	0	3	3	9	4	2	0	0	0	0	0	0	0	0	0	0	0
S	0	5	8	6	8	1	0	0	0	0	0	0	0	0	0	0	0
SSW	0	1	4	10	5	0	0	0	0	0	0	0	0	0	0	0	0
SA	0	7	6	7	6	0	0	0	0	0	0	0	0	0	0	0	0
WSA	0	0	6	4	4	0	0	0	0	0	0	0	0	0	0	0	0
W	0	2	1	3	1	2	0	0	0	0	0	0	0	0	0	0	0
WNW	0	1	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	1	2	7	1	1	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	3	5	1	0	0	0	0	0	0	0	0	0	0	0	0
CALM	164																

CALM	1	2	3	4	5	6	7	8	9	10	11	12	>12
WIND SPEED													
	0	0	0	0	0	0	0	0	0	0	0	0	0

RNO

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

WIND DIRECTION	PERCENTAGE OF WINDS							TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT	
N	0.5	1.6	0.2	0.0	0.0	0.0	0.0	2.3
NNE	0.0	2.8	0.5	0.0	0.0	0.0	0.0	3.2
NE	0.5	4.4	0.5	0.0	0.0	0.0	0.0	5.3
ENE	0.9	1.0	0.7	0.0	0.0	0.0	0.0	3.2
E	0.2	3.2	0.5	0.0	0.0	0.0	0.0	3.9
ESE	0.7	2.5	0.7	0.0	0.0	0.0	0.0	3.9
SE	1.2	3.0	1.8	0.0	0.0	0.0	0.0	6.0
SSE	0.7	2.8	1.4	0.0	0.0	0.0	0.0	4.8
S	1.2	3.2	2.1	0.0	0.0	0.0	0.0	6.5
SSW	0.2	3.2	1.2	0.0	0.0	0.0	0.0	4.6
SW	1.5	3.0	1.4	0.0	0.0	0.0	0.0	6.0
WSW	0.0	2.0	0.9	0.0	0.0	0.0	0.0	3.2
W	0.0	0.9	0.7	0.0	0.0	0.0	0.0	2.1
WNW	0.2	0.9	0.7	0.0	0.0	0.0	0.0	1.8
W	0.2	2.1	0.5	0.2	0.0	0.0	0.0	3.0
WNW	0.0	1.0	0.2	0.0	0.0	0.0	0.0	2.1
CALM								37.9
TOTAL								100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 342 75 433

<28 28 TO 31 <33  
TEMPERATURE (F)

CHECK COUNT 968  
FOG WITH LP 17  
FOG WITH FP 21  
ALL FOG CASES 470  
PURE FOG 419  
FIRST CARD 1- 4-55  
LAST CARD 11-17-64



MFR

WIND ROSE DATA

RESULTS ARE FROM OBSERVATIONS OF VISIBILITY LESS THAN 1/2 MILE, TEMPERATURE LESS THAN 33 DEGREES (F) AND FOG WITH SMOKE AND/OR HAZE BUT NO PRECIPITATION

WIND DIRECTION	PERCENTAGE OF WINDS								TOTAL
	1-2KT	3-4KT	5-6KT	7-8KT	9-10KT	11-12KT	>12KT		
N	0.0	1.1	2.7	0.4	0.0	0.0	0.0	0.0	4.3
NNE	0.0	0.7	1.3	0.3	0.0	0.0	0.0	0.0	2.5
NE	0.0	0.5	1.0	0.1	0.0	0.0	0.0	0.0	1.7
ENE	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.8
E	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.5
ESE	0.0	0.4	0.6	0.0	0.0	0.0	0.0	0.0	1.1
SE	0.0	0.6	1.5	0.1	0.0	0.0	0.0	0.0	2.2
SSE	0.0	0.3	1.4	0.2	0.0	0.0	0.0	0.0	2.0
S	0.0	0.4	1.2	0.2	0.0	0.0	0.0	0.0	1.9
SSE	0.0	0.4	0.5	0.0	0.0	0.0	0.0	0.0	1.0
SSW	0.0	0.3	0.9	0.0	0.0	0.0	0.0	0.0	1.5
SW	0.0	0.4	0.5	0.1	0.0	0.0	0.0	0.0	1.1
WSW	0.0	0.4	0.6	0.0	0.0	0.0	0.0	0.0	1.0
W	0.0	0.2	0.8	0.0	0.0	0.0	0.0	0.0	1.3
WNW	0.0	1.0	1.6	0.0	0.1	0.0	0.0	0.0	2.8
W	0.0	0.5	0.8	0.1	0.0	0.0	0.0	0.0	1.7
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM									73.1
TOTAL									100.0

TEMPERATURE VS. FREQUENCY

FREQUENCY 007 1176 2104  
 -----  
 28 28 10 31 43 3  
 TEMPERATURE (F)

CHECK COUNT 9637  
 FOG WITH LP 162  
 FOG WITH FP 01  
 ALL FOG CASES 2323  
 PURE FOG 212  
 FIRST CARD 1- 1-55  
 LAST CARD 1-31-54

CUMULATIVE TOTALS FOR ALL AIRPORTS

Fog with visibility  $\frac{1}{2}$  mile and less  
 No precipitation included

Source: WCC, NOAA, Car. Deck 138  
 10 years of data

39 Airports (Anchorage, Detroit, Spokane, Boise,  
 Reno and Medford not included)

WIND SPEED vs. FREQUENCY															
Frequency	10606	756	3019	7053	8713	7792	5410	3880	2969	1529	1534	560	531	264	700
Caln:	1	2	3	4	5	6	7	8	9	10	11	12	13	Over	13

Wind Speed (knots)

Statistical Results:

Mean: 4.34 knots  
 Mode: 0  
 Std. Dev.: 3.15 knots  
 Skew: 1.38 knots  
 Median: 4.00 knots

VISIBILITY vs. FREQUENCY									
Frequency	5326	6203	12008	2632	15316	653	4120	0	2058
	0	1/16	1/8	3/16	1/4	5/16	3/8	7/16	1/2

Visibility (miles)

Statistical Results:

Mean: 3.61/16  
 Mode: 4.00/16  
 Std. Dev.: 2.50/16  
 Skew: -0.16  
 Median: 4.00/16

CUMULATIVE TOTALS FOR ALL AIRPORTS

TEMPERATURE vs. FREQUENCY

Frequency	517	139	238	217	238	406	605	883	1366	1943	2252	2570	2417	2354	2353	2604
	under	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43
	15	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	

Temperature (F)

TEMPERATURE vs. FREQUENCY

Frequency	2959	2991	30	3252	3194	2832	2401	2547	2561	2228	2122	1676	1351	725	305
	45	47	46	51	53	55	57	59	61	63	65	67	69	71	Over
	to	to	to	to	to	to	to	to	to	to	to	to	to	to	72
	46	48	50	52	54	56	58	60	62	64	66	68	70	72	

Statistical Results:

Mean: 48.22 Degrees (F)  
 Mode: 51.5 Degrees (F)  
 Std. Dev.: 12.82 Degrees (F)  
 Skew: -0.26  
 Median: 49.5 Degrees (F)