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FINAL REPORT

Contract No. FA-67-WAI-129

Project No. 197-641-01R

CLIMATOLOGICAL SUMMARIES

VISIBILITIES BELOW 1/2 MILE
AND CEILINGS BELOW 200 FEET

Volume 33

PORTLAND, OREGON
PORTLAND INTERNATIONAL AIRPORT

June 1969

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by

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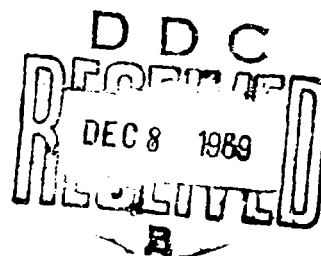
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ENVIRONMENTAL DATA SERVICE
NATIONAL WEATHER RECORDS CENTER

Asheville, N.C.

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JUNE 1969

This report has been prepared by U. S. Department of Commerce, Environmental Science Services Administration, Environmental Data Service, National Weather Records Center, Asheville, N.C. for the Systems Research and Development Service, Federal Aviation Administration, under Contract No. FA-67-WAI-129. The Contents of this report reflect the views of the contractor, who is responsible for the facts and the accuracy of the data presented herein, and do not necessarily reflect the official views or policy of the FAA. This report does not constitute a standard, specification or regulation.

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2. 1400-2159 Local Standard Time
3. 2200-0659 Local Standard Time
4. All Hours

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INTRODUCTION

The tables contained herein have been prepared and organized for use in evaluating the cost/benefits of all weather landing systems and fog dissipation techniques. Thus, the time intervals of duration of the categories of weather are significant in determining the times of the delay, diversion or cancellation of an aircraft flight resulting from a restricted weather category. This information together with the number and types of aircraft affected by the restricted weather and the costs of a delay, diversion or cancellation combine to provide the total costs resulting from the weather restrictions.

Climatological summaries have been prepared for 41 airports. Their location and associated volume numbers are listed in Table A.

ENVIRONMENT AND INSTRUMENTATION

PORTLAND, OREGON

PORTLAND INTERNATIONAL AIRPORT

The airport is located in approximate center of the Columbia River Valley where it is about 5 miles wide. The area surrounding the airport is benched with truck farms. The Cascade Mountains form a continuous north to south chain about 35 miles east except for the Columbia River Gorge. The Coast Range of about 300 feet MSL average height parallel the Cascades about 40 miles west. The weather station is located about 300 feet south of the Columbia River on level diked land.

The tables in this publication are based on the 10-year period January 1, 1956-December 31, 1965. Ceiling heights were measured by ceilometer throughout the period. Transmissometers (500 ft. baseline) commissioned on runway 10R February 27, 1962, and on runway 28R September 25, 1965. Location of the airport weather station, its elevation, and the height of wind instrumentation during the period were as follows:

<u>From</u>	<u>To</u>	<u>Lat. N.</u>	<u>Long. W.</u>	<u>Height of Wind Instrument Feet above ground</u>	<u>Station Elevation Feet above MSL</u>
1- 1-56	8-17-58	45° 36'	122° 36'	33	21
8-17-58	12-31-65	45° 36'	122° 36'	20	21

NATURE OF DATA

The data used in the preparation of the climatological tables were extracted from 10 years of WBAN 10-A forms from January 1956 through December 1965. There were two exceptions: The data for Dulles International covered the period January 1963 through December 1965 and for Kansas City-Mid-Continent the period July 1957 through December 1965. All data (Record, Special, Local, Check observations)* were recorded on punched cards to the hour and minute whenever a change occurred in the ceiling, surface visibility, present weather, runway visual range or runway visibility during the time the ceiling was less than 200 feet and/or the surface visibility was less than 1/2 mile. The observation which ended a category of the above conditions was punched and if this observation was not a Record observation, the next Record observation was punched. The elements transcribed were: the time in hours and minutes, ceiling, surface visibility, tower visibility, present weather, temperature, dew-point, surface wind, altimeter setting and remarks concerning runway visual range and runway visibility.

These data should prove to be a valuable source for additional studies where low visibilities are considered.

Runway visual range (RVR) is the operational weather criteria for airport landing systems. The limits of visibility conditions for categories of aircraft operations are presented in Table B. Only Cat. II criteria are currently operational. Because RVR as such, is not available on a uniform basis for the station and period of record under study, visibilities and ceilings were used for delineating categories of weather minimums for landing and take-off operations. The determination of RVR would require:

1. The light setting of the edge lights,
2. the background lighting,
3. the location with respect to runway,
4. a special analyzer to integrate the transmissiometer readings etc.

This information has not often been recorded with the transmissiometer data.

* Except Kansas City - Mid-Continent. Only Record (hourly) observations were taken during the period of record at this station; 16 hours per day (0700-2200) through November 1957 and 24 hours per day December 1957 through December 1965.

EXPLANATION OF TABLES

All the tables of climatological summaries except Table I are based on the reported visibilities of less than 1/2 mile and/or ceilings less than 200 feet.

The tables of climatological summaries in these publications include:

- (1) reported visibility and ceiling values versus time intervals of duration.
- (2) weather categories of aircraft landing systems based on their relationship to ceiling and visibility as presented in Table C, versus intervals of duration. This is Table X only.
- (3) percentage frequency of wind direction versus wind speed for each category of aircraft landing system using the relationship of Table C for Record observations only. These are presented for 13 stations only. This is Table XI only.*
- (4) weather categories of landing systems based on their relationship to ceilings and visibility as presented in Table E, versus intervals of duration. These tables are also summarized on the basis of wind speed and temperature values.

* These stations are:

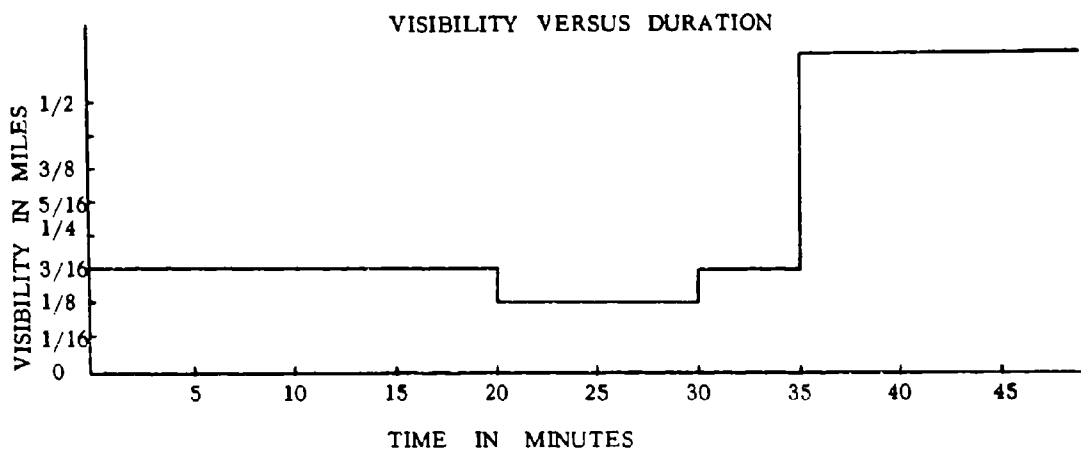
Los Angeles International, Oakland International, Chicago O'Hare, San Francisco International, Greater Buffalo International, Washington National, Washington Dulles International, Atlanta, Newark, New York J. F. K., Philadelphia International, New York La Guardia, Cleveland Hopkins International

REPORTED VISIBILITY AND CEILING VALUES VERSUS INTERVALS OF DURATION

Nine summaries are presented. In Tables I - V the values represent the individual incidents of specified ceiling and visibility. Thus, in Table III 3/8 mile visibility with 100 ft. ceiling occurs with a specific frequency for each interval of duration.

In Tables VI to IX, the frequency of occurrence represents visibilities for specific conditions of ceilings at or below the listed visibility. They are cumulative incidents wherein the total time at or below a certain visibility value for the ceiling value specified is considered as one incident. Thus, if in Table VII there are 172 incidents of 3/8 mile in the interval of 1-15 minutes, it represents 172 times during the 10-year period that visibilities 3/8 mile or less with ceilings 100 feet.

Another example which combines the entries in the individual and the cumulative tables is as follows: If visibility is distributed as shown in the figure, for ceiling 100 feet, if for 20 minutes the visibility was 3/16 then went to 1/8 for 10 minutes, then went to 3/16 for 5 minutes and then to greater than 1/2 mile visibility in Table III there would be 2 counts for 3/16, one under 16-30 minutes and one under 1-15 minutes; and one count for 1/8 under 1-15 minutes; whereas, in the cumulative table for visibilities at or below a given visibility with 100-foot ceilings - Table VII in the 3/8, 5/16, 1/4 and 3/16 mile categories there would be one count under 31-45 minutes (actually 35 minutes) and one count in 1/8 mile category under 1-15 minutes (actually 10 minutes).



To estimate the total time of occurrence for a particular interval of time for the period of record one multiplies the average of time period by the frequency of occurrence of the specified conditions for this time period. Thus, if visibility of 3/8 mile with ceiling 100 feet (Table III) occurred 14 times between 16-30 minutes, the estimated total time would be 14 x 23 or 322 minutes.

WEATHER CATEGORIES OF AIRCRAFT LANDING SYSTEMS VERSUS INTERVALS OF DURATION BASED ON TABLE D

A single table (Table X) based on Table C for the period of record is presented. Table C is based on the current practices relating RVR to meteorological visibilities as shown in Table D.

Table X is in three sections:

Xa. Frequency of occurrence of the landing categories versus the indicated duration intervals:

In this summary Categories II, IIIa, IIIb, and IIIc are represented by the frequency of these conditions occurring during the specified intervals.

In Category II + III the frequency represents the visibilities and ceilings at or below Category II weather, i. e., below 200 feet and/or 1/2 mile for a continuous period of time.

In Category III, the number of occurrences represent the frequency the weather was in in Category IIIa and IIIb/c i.e., observation below 1/4 mile and equal to and above 1/4 mile when the ceiling is reported as zero for a continuous period of time.

Xb. Total time in each duration versus the duration intervals in hours and tenths of hours. The entries in this table are arrived by adding the times in minutes associated with the frequencies above. These totals are converted to hours and tenths. This table also contains the percentage of time for the 10-year period of observations of specified duration intervals, i. e., 1-90, 91-all, 1-all. This table is derived by dividing the total time under each category for the specified duration interval by the total number of hours. Thus the percentage value for Category II + III the 1-all group (last column, 4th value down) represents the frequency of occurrence for the ten-year period in percent of visibility and ceilings below 1/2 mile and/or 200 feet.

Xc. Average time in each duration versus the duration intervals.

This table is derived by dividing the total time in minutes of each item in Table Xb by the frequency of occurrence in Table Xa.

WIND DIRECTION VERSUS SPEED BY PERCENTAGE FREQUENCY (Table XI)

Table XI (for 13 stations) (unnumbered on summaries) show the percentage distribution of the different categories in accordance with Table D by wind direction to 16 points versus specified speed intervals. These categories, II, IIIa and IIIb/c, are divided into 2100-0500 and 0600-2000 hour groups making a total of six sub-tables.

Only the hourly (Record) observations when Category II or below conditions exist are used in these summaries. The percentages are determined by dividing the number of hourly observations which were recorded during the entire period of record for the indicated hour group. The percentage figures can be combined to obtain percentages for the quadrants of different speed intervals.

WEATHER CATEGORIES OF LANDING SYSTEMS VERSUS INTERVALS OF DURATION BASED ON TABLE E

Nine tables XII - XXI are presented for the ten-year period. These tables are presented in three sections:

a. Frequency of occurrences of landing categories versus duration intervals:

Categories II, IIIa, IIIb, and IIIc are represented by the total time for the specified hour group that these conditions occur during the indicated intervals.

In Categories II + III the frequency represents the visibilities and ceilings at or below Category II weather e. g., below 2400 RVR. In Category III the frequency represents the visibilities at or below Category III weather e. g., below 1200 RVR.

b. Total time in each duration versus the duration intervals hours and tenths,

The entries in this table are derived by adding the time in minutes associated with the frequency above and converting them to hours and tenths.

c. Average time in each duration versus the duration intervals.

This table is derived by dividing the total time in minutes of each value in b by the corresponding frequency of occurrence in a.

In these tables, since the period of duration is the important element, each incident of weather is attributed to the hour group during which it began. Thus, if Category IIIa weather began in the 22-06 hour group and continued into the 07-13 hour group the total time is placed in the 22-06 group. It is probable, then, that the incidence of the various categories may be overestimated in the 22-06 group. The totals appearing in the all hour group, however, are correct.

The sum of Categories IIIa, IIIb, and IIIc in the all-hour groups and sometimes in the other hour groups are frequently greater than under Cat. III. This results from the addition of 5% of observations of 3/16 mile or greater with ceiling 100 feet added to Cat. IIIa, whereas, this 5% is not included in the Cat. III totals at the bottom of each table.

The difference between Cat. III totals and the sum of Cat. IIIa, IIIb, and IIIc are subtracted from the Cat. II totals for the all-hour group and appears at the end of the Cat. II line with an asterisk. This value is a better estimate of the occurrence of Cat. II weather for the 10-year period.

EXPLANATION OF TABLE E

The relationship of RVR with light setting 5 for a 500' baseline to the meteorological report of visibility, based on the information in Circular N¹/₁, is given in Table F. This was the basis for establishing the relationships in Table E. The use of the highest setting for the edge lights for approaches in low visibility is the current operational practice. Although the selection of some of the relationships in Table E have been somewhat arbitrary, it can be expected that the observers report of low visibilities and ceilings will be more inexact than the cut off point of these relationships.

¹/ Manual of Surface Observations (WBAN). Circular N, Weather Bureau, Washington, D. C. NAVAIR 501D505, July 1968 (AD672-366)

ACKNOWLEDGEMENTS

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This is one of 41 volumes of Report RD-69-22. The volumes are as follows:

<u>VOL.</u>	<u>CITY</u>	<u>AIRPORT</u>
1.	Anchorage, Alaska	International
2.	Atlanta, Georgia	Atlanta
3.	Baltimore, Maryland	Friendship International
4.	Birmingham, Alabama	International
5.	Boston, Massachusetts	General E. L. Logan International
6.	Buffalo, New York	Greater Buffalo International
7.	Burbank, California	Hollywood-Burbank
8.	Chicago, Illinois	O'Hare International
9.	Cincinnati, Ohio	Greater Cincinnati
10.	Cleveland, Ohio	Cleveland-Hopkins International
11.	Columbus, Ohio	Port Columbus International
12.	Dallas, Texas	Love Field
13.	Dayton, Ohio	James M. Cox Municipal
14.	Denver, Colorado	Stapleton International
15.	Detroit, Michigan	Detroit Metropolitan-Wayne County
16.	Hartford, Connecticut	Bradley International (Windsor Locks)
17.	Houston, Texas	William P. Hobby
18.	Indianapolis, Indiana	Weir Cook
19.	Kansas City, Missouri	Mid-Continent International
20.	Los Angeles, California	International
21.	Louisville, Kentucky	Standiford Field
22.	Miami, Florida	International
23.	Milwaukee, Wisconsin	General Mitchell Field
24.	Minneapolis, Minnesota	Minneapolis-St. Paul International
25.	Nashville, Tennessee	Metropolitan
26.	Newark, New Jersey	Newark
27.	New Orleans, Louisiana	International
28.	New York, New York	John F. Kennedy International
29.	New York, New York	La Guardia
30.	Oakland, California	Metropolitan Oakland International
31.	Philadelphia, Pennsylvania	International
32.	Pittsburgh, Pennsylvania	Greater Pittsburgh International
33.	Portland, Oregon	International
34.	Rochester, New York	Rochester-Monroe County
35.	St. Louis, Missouri	Lambert-St. Louis Municipal
36.	Salt Lake City, Utah	Municipal No. 1
37.	San Francisco, California	International
38.	Seattle, Washington	Seattle-Tacoma International
39.	Syracuse, New York	Clarence E. Hancock
40.	Washington, D. C.	Dulles International
41.	Washington, D. C.	National

TABLE A

LIMITS OF LANDING CATEGORIES

- * CAT. II Operations down to minima below 200 feet decision height and 2400 RVR and to as low as 100 feet decision height and 1200 RVR.
- ** CAT. IIIA Below 100 feet decision height and 1200 RVR and to as low as 50 feet decision height and 700 RVR.
- ** CAT. IIIB Below 700 RVR to 150 RVR.
- ** CAT. IIIC No external visual reference.

TABLE B

- * Current operational criteria
- ** Criteria not firm, used for planning purposes

**CEILING AND VISIBILITY EQUIVALENTS FOR CATEGORIES
OF AIRCRAFT LANDING OPERATIONS CURRENT PRACTICE
CRITERIA for Table X and XI**

Category II:	Visibility = 1/2 and ceiling = 100
	Visibility = 3/8 and ceiling $\neq$ 0
	Visibility = 5/16 and ceiling $\neq$ 0
	Visibility = 1/4 and ceiling $\neq$ 0
Category III-a:	Visibility = 1/4 and ceiling = 0
	Visibility = 3/16 and all ceilings
	Visibility = 1/8 and all ceilings
Category III-b/c:	Visibility = 1/16 and all ceilings
	Visibility = 0 and all ceilings
Category III:	The sum of IIIa, IIIb, and IIIc

TABLE C

RVR VERSUS VISIBILITY (Current Practice)

METEOROLOGICAL VISIBILITY	RVR EQUIVALENT
Statute Miles (feet)	Feet
3/16 (990 feet)	1200
1/4 (1320 feet)	1600
• 1/2 (2640 feet)	2400

TABLE D

- United States Standard for Terminal Instrument
Procedures (TERPs), Federal Aviation Agency, September 1966.

**CEILING AND VISIBILITY EQUIVALENTS FOR
CATEGORIES OF AIRCRAFT LANDING OPERATIONS
Criteria for Tables XII-XXI**

Category II
Below 2400 ft. RVR to
1200 ft. RVR

Equivalent Meteorological Observations

All observations with visibilities greater than 3/8 mile with ceiling 100 feet.

All observations of 3/8 mile with ceiling not equal to zero.

All observations of 5/16 mile with ceiling not equal to zero.

All observations of 1/4 mile with ceiling not equal to zero.

All observations of 3/16 mile with ceiling not equal to zero.

Category III
Category IIIa
Below 1200 ft. RVR to
700 ft. RVR

All observations of 1/8 mile.

All observations of 3/16 mile or greater with zero ceiling.

5% of observations of 3/16 mile or greater with ceiling 100.

Category IIIb
Below 700 ft. RVR to
150 ft. RVR

All observations of 1/16 mile.

50% of all observations of zero miles.

Category IIIc
Below 150 ft. RVR

50% of observations of zero miles.

TABLE E

RVR VERSUS METEOROLOGICAL VISIBILITY

Circular N

Reported Meteorological Visibilities Miles (feet)	RVR (500 ft. baseline) at Setting 5		Category
	Day	Night	
0 (less than 330 feet)	*	*	(IIIc and IIIb)
1/16 (330 feet-650 feet)	*	*	(IIIb)
1/8 (660 feet-980 feet)	1000-1400	*	(IIIb and IIIa)
3/16 (990 feet-1310 feet)	1400-1800	1200-1800	(Cat. II)
1/4 (1320 feet-1640 feet)	1800-2200	1800-2200	(Cat. II)

* No determination of RVR with respect to meteorological visibility.

TABLE F

PORTLAND, INTERNATIONAL
FREQUENCY OF INTERVALS OF DURATION VERSUS CATEGORIES OF VISIBILITIES JANUARY 1948 - DECEMBER 1948

TABLE I. VISIBILITY $\geq 1/2$ MILE WHEN CEILING ≥ 200 FEET.

DURATION IN MINUTES											
1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	
59	41	26	13	7	5	5	3				

TABLE II. (IRRESPECTIVE OF CEILING).

DURATION IN MINUTES											
VISIBILITY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	125	88	29	13	10						
5/16	18	4	4	2							
1/4	347	212	96	46	31	10	13	2	1	3	
3/16	68	43	10	9	6	2	2				
1/8	156	151	77	32	36	29	27	10	0	3	1
1/16	63	65	38	34	27	22	20	4	7	3	1
0	14	18	22	17	21	15	17	17	13	9	10

TABLE III. (CEILING 100 FEET).

DURATION IN MINUTES											
VISIBILITY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	27	13	6	4	3						
5/16	2										
1/4	82	48	23	4	2	3	3	1			
3/16	18	10	2	3	2		1				
1/8	41	35	17	14	10	10	8	4		1	
1/16	13	17	5	17	9	9	2	1	2		1
0	3	5	7	2	2	4					1

TABLE IV. (CEILING ZERO).

DURATION IN MINUTES											
VISIBILITY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	5	2									
5/16											
1/4	20	14	8	3	2	3			1		
3/16	4	3		1	1						
1/8	24	14	9	14	16	9	6	8		1	1
1/16	24	18	13	11	7	6	2	2	2	1	1
0	5	10	11	11	12	10	11	11	10	6	7

TABLE V. (CEILING 100 FEET OR ZERO).

DURATION IN MINUTES											
VISIBILITY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	2	15	4	4	3						
5/16											
1/4	96	63	30	7	5	4	2	1		1	
3/16	22	13	2	6	3		1				
1/8	64	42	26	26	24	21	13	11		1	1
1/16	35	32	15	26	16	10	4	4	4	1	1
0	4	10	15	11	17	10	12	11	11	6	8

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSIFIED AS ONE INCIDENT

TABLE VI. (IRRESPECTIVE OF CEILING).

DURATION IN MINUTES											
VISIBILITY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	85	102	104	64	80	40	78	48	31	41	61
5/16	87	91	96	62	49	46	49	44	49	41	39
1/4	88	88	96	61	66	67	69	43	49	40	39
3/16	38	69	64	34	38	34	47	37	45	32	28
1/8	36	67	61	33	36	32	43	37	46	31	26
1/16	20	31	30	25	29	24	33	14	29	13	15
0	9	12	12	13	18	13	18	16	16	5	10

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSIFIED AS ONE INCIDENT

TABLE VII. (CEILING 100 FEET).

DURATION IN MINUTES											
VISIBILITY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	81	59	38	24	33	17	27	13	6	2	1
5/16	82	66	36	20	28	20	25	10	6	2	1
1/4	82	66	36	20	28	20	25	10	6	2	1
3/16	40	44	22	17	22	14	18	10	3	2	1
1/8	34	44	22	11	22	12	18	9	4	2	1
1/16	14	17	10	9	14	3	4	3	3		
0	3	5	5	2	2	2	2				1

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSIFIED AS ONE INCIDENT

TABLE VIII. (CEILING ZERO).

DURATION IN MINUTES											
VISIBILITY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	13	31	20	26	19	18	20	20	17	13	10
5/16	13	30	20	26	21	16	20	20	17	13	10
1/4	13	30	20	26	21	16	20	20	17	13	10
3/16	10	28	18	20	21	17	18	19	18	11	10
1/8	10	27	18	20	21	19	16	21	16	11	10
1/16	4	23	15	15	15	14	13	12	14	6	9
0	4	16	7	9	13	7	13	9	12	6	7

TOTAL TIME AT OR BELOW EACH VISIBILITY CLASSIFIED AS ONE INCIDENT

TABLE IX. (CEILING 100 FEET OR ZERO).

DURATION IN MINUTES											
VISIBILITY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+
3/8	45	59	44	33	43	23	40	30	29	15	18
5/16	45	59	43	30	39	24	38	27	29	15	18
1/4	45	59	43	30	39	24	38	27	29	15	18
3/16	28	41	25	25	34	23	32	25	29	17	16
1/8	25	40	24	23	35	25	31	25	27	11	16
1/16	17	20	18	21	25	18	14	10	22	8	12
0	5	15	9	9	18	6	13	10	13	6	8

TABLE X

PORTLAND, INTERNATIONAL

ALL SEASONS

ALL HOURS

JANUARY 1966 - DECEMBER 1966

FREQUENCY OF OCCURRENCE

CATEGORY	TIME IN MINUTES														1-90	91-ALL	1-ALL
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+						
II	326	237	124	74	66	21	28	11	3	1		827	44	891			
IIIA	194	198	93	59	63	37	36	22	19	9	1	923	116	1039			
IIIB/C	32	91	46	39	34	27	23	17	30	12	14	100	133	233			
II + III	77	90	97	57	63	47	76	51	58	49	48	404	322	726			
III	68	91	89	43	69	28	61	34	46	23	20	393	233	586			

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY	TIME IN MINUTES												PERCENTAGE					
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL	1-90	91-ALL	1-ALL	
II	58.2	58.2	78.7	65.0	81.3	35.0	66.4	38.1	19.3	6.4		369.2	164.0	533.2	.42	.19	.61	
IIIA	27.9	60.2	59.3	46.2	78.4	66.2	91.3	75.3	74.7	33.2	9.1	274.1	349.9	624.0	.31	.40	.71	
IIIB/C	8.4	20.7	30.5	32.2	42.6	47.3	79.8	60.5	146.2	84.8	149.3	132.9	370.9	703.4	.18	.68	.86	
II + III	14.7	39.8	61.6	50.4	104.3	81.8	186.2	176.4	289.0	215.8	368.7	266.7	1595.9	1860.6	.30	1.82	2.12	
III	11.8	39.1	54.9	37.2	86.3	48.3	180.4	136.2	231.3	230.2	309.7	229.3	1102.1	1327.4	.26	1.26	1.51	

AVERAGE TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY	TIME IN MINUTES												1-90	91-ALL	1-ALL
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+				
II	10.2	22.3	38.1	55.4	73.9	102.7	146.3	207.9	305.3	382.0		26.8	153.8	38.9	
IIIA	10.9	22.8	38.3	52.5	74.8	107.4	192.2	205.3	298.9	398.6	548.0	31.4	181.0	58.4	
IIIB/C	12.1	24.3	39.8	55.2	78.2	109.1	149.1	213.4	298.4	424.0	639.9	40.1	257.6	127.9	
II + III	11.4	22.9	38.1	53.1	76.4	104.4	149.4	207.5	298.9	421.0	731.6	39.1	257.4	153.9	
III	10.9	23.1	38.4	51.8	75.1	103.5	147.9	209.6	301.7	418.3	703.4	38.3	283.8	135.9	

TOTAL OBSERVATION HOURS 17672

PORTLAND, INTERNATIONAL

NO WIND TABLES FOR THIS STATION

TABLE XII - ALL CONDITIONS.

PORTLAND, INTERNATIONAL

0700 - 1300 (23571 OBSERVATION HOURS)

JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	120	89	50	36	21	9	5	3	1			310	18	228
IIIA	35	40	25	17	15	10	8	2				175	20	195
IIIB	19	23	10	12	9	6	2		1			79	9	82
IIIC	1	2	3	2	1	2						9	2	11
II + III	26	28	22	16	23	7	15	4	2	4		115	32	147
III	18	22	20	17	18	6	5	1	1	1	1	105	18	123

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	20.9	33.4	31.2	27.4	24.2	15.9	19.0	10.0	7.7			137.1	45.7	182.8
IIIA	9.9	32.4	16.6	14.7	18.2	17.9	21.0	6.7				81.2	45.3	121.4
IIIB	3.9	10.2	6.9	11.5	11.4	10.5	5.2		4.3			63.0	19.9	83.9
IIIC	.3	.9	2.0	1.9	1.3	3.6						6.6	3.4	7.7
II + III	5.0	10.4	13.4	14.2	28.5	11.8	36.6	15.9	8.6	27.9		71.9	99.0	170.9
III	7.8	12.2	12.9	14.9	22.2	10.7	19.1	3.3	5.2	7.4	11.7	64.9	59.3	123.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.4	22.5	37.5	34.7	29.1	103.0	143.8	212.3	460.0			26.5	152.4	33.4
IIIA	10.8	22.4	30.2	32.0	32.9	107.1	157.1	200.0				28.2	136.4	37.7
IIIB	12.3	26.6	41.2	37.5	36.1	104.5	156.0		255.0			35.8	132.7	46.8
IIIC	15.0	28.0	39.7	37.5	36.0	102.0		49.7				43.9	102.0	52.7
II + III	11.5	22.8	37.1	33.2	34.4	101.1	146.5	208.8	268.0	418.0	700.0	37.1	155.2	69.9
III	9.4	22.9	38.0	32.0	33.9	107.0	143.4	210.0	332.0	465.0		37.1	154.2	60.1

FREQUENCY OF OCCURRENCE

1400 - 2100 (29224 OBSERVATION HOURS)

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	24	30	15	6	8	3	3	1				83	7	90
IIIA	18	20	6	4	5	6	6	1				55	11	66
IIIB	9	12	6	4	4	4	4		2	1	3	37	14	51
IIIC	2	2	1	1	1	1	2	1	2	1	4	6	11	17
II + III	5	15	10	5	4	6	6	4	5	8	15	39	44	83
III	5	9	7	3	5	1	11	4	5	6	9	29	36	65

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	3.8	15.5	7.4	3.1	9.5	3.5	8.0	2.5				38.2	16.4	55.0
IIIA	3.0	7.6	3.9	5.2	6.2	5.2	14.7	3.4		6.3		24.8	30.4	55.0
IIIB	1.7	4.4	5.1	3.7	4.8	7.7	8.9		9.6	7.3	32.2	19.7	69.7	87.5
IIIC	.3	.6	.5	.3	1.3	1.9	4.8		5.1	10.1	7.8	42.9	2.8	71.1
II + III	1.0	2.3	6.4	4.2	4.6	10.8	14.2	14.1	25.8	34.3	201.8	21.4	210.3	261.7
III	.8	3.4	6.7	2.4	6.6	1.7	28.9	14.2	26.7	49.3	120.9	17.9	233.2	251.0

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	9.5	21.1	37.1	50.5	71.3	108.9	159.3	207.0				27.6	144.3	36.7
IIIA	10.0	22.7	38.7	53.2	74.4	104.0	147.2	229.0		380.0		27.1	168.0	48.2
IIIB	11.6	22.1	39.1	54.8	72.5	115.9	133.8		287.0	439.0	643.0	31.9	272.9	102.9
IIIC	12.2	18.7	27.0	36.0	77.0	112.0	145.0	184.0	303.0	469.0	643.0	42.9	349.4	250.9
II + III	12.2	21.1	38.3	50.0	68.5	105.5	141.1	211.0	309.0	407.4	807.0	32.9	436.8	287.0
III	9.8	22.3	40.3	48.0	79.4	100.0	146.5	212.5	320.0	432.8	803.3	37.0	388.6	231.7

FREQUENCY OF OCCURRENCE

2200 - 0600 (32677 OBSERVATION HOURS)

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	176	126	71	44	48	17	19	8	3	1		465	48	513
IIIA	86	82	52	32	41	23	26	17	13	3	1	297	83	380
IIIB	41	38	22	26	24	19	22	12	11	4	2	180	70	250
IIIC	5	6	7	7	9	9	7	2	6	2	2	34	30	64
II + III	46	47	65	36	56	34	35	43	31	33	30	250	240	490
III	41	54	52	28	44	20	46	33	40	25	13	219	177	396

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	30.7	48.0	45.3	39.6	40.2	29.0	47.3	27.9	14.7	8.4		223.9	125.3	349.1
IIIA	14.7	32.9	33.1	29.4	31.1	40.9	65.8	37.8	34.8	20.3	9.1	148.3	257.0	414.5
IIIB	8.2	15.0	20.7	24.0	31.4	38.9	55.6	42.4	53.7	28.1	18.4	99.1	232.2	329.4
IIIC	1.1	2.4	4.8	6.1	11.6	8.8	17.0	27.7	29.4	14.0	10.6	26.1	119.3	141.9
II + III	8.6	17.9	41.6	32.1	71.2	59.8	133.4	148.4	254.5	233.5	347.0	171.4	1176.9	1347.9
III	7.8	21.5	33.5	26.9	55.4	34.7	114.0	111.8	198.2	171.7	125.8	143.1	756.3	899.4

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.5	22.9	38.3	54.0	75.3	102.5	145.5	209.1	293.0	382.0		28.9	156.6	40.8
IIIA	11.2	24.1	36.2	53.8	74.8	106.7	151.7	204.1	298.2	405.0	548.0	33.3	183.7	65.4
IIIB	12.0	23.6	40.1	55.4	78.4	105.4	146.2	213.8	291.8	422.0	552.0	37.2	190.0	85.9
IIIC	13.3	23.9	40.9	52.4	77.1	106.1	144.1	208.3	294.1	439.0	565.0	46.0	227.3	133.0
II + III	11.3	22.8	38.4	51.4	76.3	105.4	145.3	207.1	299.4	424.7	693.9	41.1	287.0	163.1
III	11.5	23.9	38.6	53.3	75.3	104.0	149.3	205.2	297.2	412.0	570.8	39.2	250.4	136.3

FREQUENCY OF OCCURRENCE

ALL (87672 OBSERVATION HOURS)

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	220	245	136	60	77	29	27	12	3	2		898	73	971
IIIA	161	161	88	55	59	34	38	19	13	4	1	519	109	628
IIIB	70	76	49	42	37	29	28	12	14	5	6	272	94	366
IIIC	7	9	11	9	11	8	9	9	8	3	5	47	42	89
II + III	77	90	77	57	63	47	76	31	38	45	43	404	322	726
III	64	95	79	48	67	27	65	33	46	32	23	393	231	584

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	35.4	52.0	35.8	22.1	33.9	49.9	67.3	42.0	14.7	14.0		299.2	187.8	587.0
IIIA	28.4	52.4	32.9	48.9	73.3	60.9	79.2	64.7	44.8	38.6	9.1	266.9	320.2	581.9
IIIB	14.1	29.0	32.7	39.2	47.4	51.6	67.7	42.2	67.4	35.7	60.7	163.4	324.5	491.4
IIIC	1.4	3.6	7.3	8.1	14.1	14.1	21.9	31.1	39.5	22.3	51.7	53.7	181.8	212.1
II + III	14.7	33.0	61.6	50.4	104.3	81.8	184.2	176.4	289.0	315.8	548.7	204.7	1595.9	1860.6
III	11.5	37.1	51.0	42.2	84.1	47.0	160.4	129.4	230.4	222.7	257.8	225.9	1047.7	1273.6

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	14.2	103.2	149.5	72.5	103.2	102.2	145.5	204.5	204.0	421.0		27.9	154.0	37.8
IIIA	11.0	23.2	38.2	53.3	74.6	107.4	151.9	204.5	298.2	398.0	548.0	30.9	178.4	55.6
IIIB	12.1	24.3	40.0	56.0	77.2	106.8	149.1	213.2	294.9	427.8	606.5	36.0	207.2	80.6
IIIC	11.9	23.7	37.7	53.6	77.0	106.1	145.9	206.9	295.7	444.8	619.6	43.4	250.8	142.9
II + III	11.4	22.5	38.1	53.1	75.4	104.4	145.4	207.5	298.9	421.0	731.6	39.3	287.4	155.4
III	10.8	23.4	38.8	52.7	75.3	104.9	148.1	204.3	300.5	417.0	672.5	38.4	272.1	130.8

PORTLAND, INTERNATIONAL
TABLE XIII - TEMPERATURE < 33 DEGREES (F.)
0700 - 1900 (25971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	30	14	18	10	1	2		1				72 3 76
IIIA	14	14	10	6	4	6		1				48 7 55
IIIB	3	4	3	5	4	1	1					19 2 21
IIIC												2 1 4
II + III	9	7	9	7	6	3	6	1		1		38 11 49
III	6	8	9	6	9	4	1					38 5 43

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	5.0	5.4	11.2	9.0	1.2	3.6		3.7				31.8 7.2 39.0
IIIA	3.5	9.0	6.1	5.6	4.0	10.4		3.7				23.9 14.1 38.0
IIIB	.6	1.9	2.0	4.8	3.1	1.7	2.4					14.4 4.1 18.5
IIIC	.5			1.0	1.4	1.8						2.9 1.6 4.5
II + III	1.8	2.6	5.8	6.2	8.0	5.5	18.6	5.7		6.0		24.3 31.3 55.6
III	.8	2.8	5.7	5.6	11.5	7.2	2.9					26.3 10.1 36.4

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	10.0	22.9	37.4	54.0	74.0	104.5		218.0				28.1 14.0 30.8
IIIA	10.6	21.3	36.7	55.8	73.0	104.5		218.0				28.9 12.7 38.7
IIIB	12.0	28.0	40.7	57.8	76.3	101.0	143.0					45.5 122.0 59.0
IIIC	29.0			60.0	82.5	110.0						37.5 110.0 65.0
II + III	11.7	22.6	38.1	52.7	79.8	109.7	155.7	219.0		395.0		38.3 170.9 68.0
III	7.7	20.9	37.1	50.0	76.6	108.0	174.0					41.5 121.2 50.8

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	4	7	3									14 14
IIIA	4	3		3				1				10 1 11
IIIB	1		5	3	1	1						10 2 12
IIIC			1		1	1	1		1			2 4 6
II + III	5	1	1	1	1	1	2	1	1	1	3	7 9 16
III			1	4	1		2	2	2		2	6 8 14

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	.4	2.3	1.8									4.7 4.7
IIIA	.7	1.2		2.7				9.8				4.5 3.8 8.4
IIIB	.3		3.2	2.8	1.1	2.0						7.3 7.9 15.0
IIIC			.5		1.9	2.1	2.1	5.0				9.9 1.8 23.5
II + III	1.8	.8	1.0		1.6	4.3	5.7	5.9	6.0			34.2 3.5 56.3
III		.7	3.6	1.1		4.4	7.0	11.1				21.9 9.4 44.3

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	6.3	21.1	36.0									20.1 20.1
IIIA	10.8	24.0		34.0				229.0				27.2 229.0 45.5
IIIB	19.0		37.8	55.7	88.0	120.0						43.9 236.5 68.8
IIIC			31.0		75.0	116.0	124.0		334.0			595.9 53.0 593.0 267.9
II + III	21.0	45.0	98.0		93.0	128.5	225.0	353.0	398.0			684.3 29.7 375.2 224.1
III		41.0	54.0	68.0			131.5	209.0	333.0			656.5 54.2 332.5 213.2

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	31	25	12	15	5	7	8					88 17 105
IIIA	16	20	13	9	9	4	7	3	2			67 18 85
IIIB	4	7	3	6	4	5	3	2	3	1		24 14 38
IIIC	1	2		2	2	2	3	1	1	1		7 8 13
II + III	9	12	12	14	14	16	12	11	12	10	2	41 43 124
III	9	14	14	9	9	11	8	8	14	2	1	55 44 99

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
TIME IN MIN. ES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	9.5	9.7	8.5	13.7	6.6	12.0	23.2	5.6				43.9 36.8 82.7
IIIA	3.1	7.6	8.1	8.1	10.8	11.0	17.4	10.5	9.9			36.8 47.9 83.1
IIIB	1.0	2.6	2.0	5.7	5.1	8.2	7.8	7.5	16.2	6.1		15.9 46.6 61.7
IIIC				7.7	2.5	3.8	7.9	3.8	5.9	6.7		3.8 27.3 34.0
II + III	1.9	4.5	7.5	13.2	17.1	29.4	30.2	32.0	58.2	69.3	17.4	44.1 242.6 288.6
III		4.9	8.8	8.3	10.7	19.6	19.6	27.1	65.4	13.7	9.3	34.6 154.9 189.5

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	16.5	22.3	42.3	54.8	79.4	102.4	154.9	214.0				29.9 136.8 47.2
IIIA	11.6	22.7	37.5	53.9	71.8	109.5	149.0	209.0	279.5			32.9 159.5 58.7
IIIB	14.5	22.3	39.7	57.3	76.9	109.8	159.0	224.5	324.7	402.0		39.7 200.6 97.9
IIIC	14.0	20.7		52.3	74.3	104.5	157.2	195.0	330.5	431.5		48.2 205.1 136.0
II + III	12.8	22.4	37.4	56.4	73.1	110.1	151.0	207.1	290.8	415.5	528.0	43.4 231.0 178.7
III	12.4	21.1	37.7	55.6	71.1	106.9	148.4	203.3	280.1	410.0	560.0	37.7 211.2 114.6

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	65	46	28	23	6	9	9	2				175 20 195
IIIA	32	33	22	17	13	11	7	5	2			119 25 144
IIIB	8	11	11	14	9	8	5	2	3	1	1	53 20 73
IIIC	1	3	1	3	4	9	3	1	2	1	1	12 11 23
II + III	18	24	22	22	20	20	20	13	13	12	3	104 83 189
III	15	22	24	19	19	15	11	10	16	2	3	99 97 196

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	10.9	17.8	21.5	22.7	7.9	15.5	23.2	7.2				80.4 66.0 126.4
IIIA	8.0	12.9	13.6	15.5	15.8	19.8	17.4	17.9	9.3			62.6 63.1 122.3
IIIB	1.8	4.4	7.2	13.3	11.3	14.7	12.5	7.5	16.3	6.7	9.9	37.0 67.9 109.1
IIIC	2.7	1.2	.5	2.8	.1	5.9	7.8	3.3	11.1	6.7	9.9	10.4 49.5 56.4
II + III	3.7	8.9	14.0	20.3	23.0	36.4	38.1	48.9	84.1	82.5	51.8	71.8 350.1 401.9
III	2.8	7.7	15.1	17.5	23.3	26.8	27.1	30.1	76.3	13.7	31.2	66.3 209.3 275.6

III	2.8	7.7	15.1	17.5	23.3	26.8	27.1	36.1	76.9	13.7	31.2	66.3	209.8	275.9
AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS														
TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.0	22.8	38.1	34.5	78.5	103.8	134.8	216.5				27.6	137.0	38.9
IIIA	11.2	22.1	37.1	54.8	72.2	108.0	149.0	215.0	274.5			31.4	151.5	50.9
IIIB	13.6	24.2	39.1	57.0	75.5	110.8	150.0	228.0	275.0	402.0	586.0	41.8	203.6	96.1
IIIC	14.0	24.0	31.0	53.4	77.0	109.7	151.7	185.0	331.7	401.3	595.5	51.6	287.3	146.7
II + III	12.2	22.2	38.1	55.3	75.1	109.2	150.2	209.2	295.6	412.3	621.8	40.7	238.6	127.2

PORTLAND, INTERNATIONAL
TABLE XIV - TEMPERATURE < 33 DEGREES (F), WITH FOG, NO PRECIPITATION, AND WIND < 9 KNOTS.
0700 - 1900 (25971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	28	12	10	9	1	2		1					68	3	71
IIIA	14	14	9	7	4	3		1					48	6	54
IIIB	3	4	3	5	4	1	1						19	2	21
IIIC	1				1	1							3		4
II + III	6	6	9	8	5	3	4	1		1			36	11	47
III	6	6	6	7	9	3	1						23	4	42

TOTAL TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	4.7	4.6	11.2	8.2	1.2	3.3		3.7					29.9	8.9	38.8
IIIA	2.3	5.0	5.6	6.4	4.9	6.9		9.7					24.2	12.6	36.8
IIIB	.9	1.9	2.0	4.8	5.1	1.7	2.4						14.6	4.1	18.6
IIIC	.9			1.0	1.4	1.8							3.9	1.8	4.3
II + III	1.6	2.2	5.6	7.2	6.3	5.3	15.6	3.7		6.6			23.2	11.3	34.5
III	.6	2.6	5.1	8.4	11.5	5.7	2.9						26.6	8.6	35.1

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	10.0	25.0	37.4	54.7	74.0	97.9		219.0					26.4	138.0	31.1
IIIA	10.6	31.3	37.3	54.7	73.0	106.8		219.0					30.3	135.5	38.0
IIIB	12.0	28.0	40.7	57.6	74.3	101.0	149.0						45.5	122.0	53.9
IIIC													37.5	110.0	49.0
II + III	11.9	22.3	38.3	53.6	76.2	109.7	189.7	219.0		395.0			38.7	170.6	69.6
III	7.7	20.9	38.5	54.9	76.6	113.3	174.0						41.9	118.5	50.2

FREQUENCY OF OCCURRENCE		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	3	4	3					1					10	1	11
IIIA	4	3											10	1	11
IIIB	1		5	3	1	1							10	2	12
IIIC					1	1	1	1	1				1	2	6
II + III	1	3	1	1	1	1	2	1	1	1			3	7	15
III				4	1		2	2	2				2	6	14

TOTAL TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	.6	1.3	1.8					3.8					3.9		3.9
IIIA	.7	1.2		2.7				3.8					4.6	3.8	8.4
IIIB	.3		3.2	2.8	1.1	2.0		9.9					7.3	7.9	13.8
IIIC			.5				2.1	4.3	5.6				1.8	23.5	26.7
II + III	.2	1.2	.8	1.0	1.1	1.9	4.3	5.7	3.9	6.6			34.2	42.2	59.0
III			.7	3.0	1.1		4.4	7.0	11.1				21.9	5.4	44.3

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	7.6	21.8	36.0					229.0					19.4		19.4
IIIA	10.3	24.0		54.0				229.0					27.6	229.0	43.9
IIIB	15.0		37.8	55.7	68.0	120.0		229.0					49.9	236.5	68.8
IIIC					78.0	118.0	124.0	221.0	334.0				59.5	353.0	267.1
II + III	13.0	23.0	37.0	56.0	68.0	118.0	128.5	221.0	334.0	394.0			68.4	410.5	235.0
III			41.0	54.0	68.0		131.5	209.0	334.0				69.5	34.2	213.2

FREQUENCY OF OCCURRENCE		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	29	24	12	14	5	7		1					84	17	101
IIIA	15	20	13	10	9	6		2					67	17	84
IIIB	4	7	3	6	4	5	3	2	9	1			24	14	38
IIIC	1	2		2	2	3	3	1	1	1			7	8	15
II + III	9	10	12	14	16	15	12	6	13	10			21	40	121
III	9	14	14	10	9	11	6	7	14	2			1	56	99

TOTAL TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	5.0	9.0	8.5	12.9	6.6	12.0		28.2					42.3	38.8	81.1
IIIA	2.9	7.6	6.1	9.1	10.0	13.0		15.4	10.3	9.3			37.3	43.6	81.0
IIIB	1.0	2.6	2.0	5.7	3.1	4.2	7.8	7.5	16.2	6.7			15.9	46.8	61.7
IIIC	.2	.7		1.7	2.5	3.0	7.9	3.3	5.5	6.7			5.6	27.3	34.0
II + III	1.9	9.8	7.5	13.3	18.6	27.8	30.9	27.8	61.9	69.3			17.6	219.0	281.3
III	1.9	4.9	6.8	9.3	10.3	19.6	20.7	24.0	65.4	13.7			9.3	35.4	188.1

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	10.3	23.3	42.3	55.1	79.4	102.4	154.9	214.0					30.2	136.8	48.2
IIIA	11.7	22.7	37.5	54.4	70.4	109.5	153.7	209.0	279.9				33.4	161.8	58.3
IIIB	14.5	22.3	29.7	57.3	76.3	108.8	155.0	224.5	324.7	402.0			38.7	200.9	97.3
IIIC	14.0	22.7		52.3	74.3	106.5	157.2	195.0	330.5	401.5			48.2	205.1	136.0
II + III	12.8	22.9	37.4	56.9	79.3	111.1	154.4	208.9	285.6	415.5			65.3	235.2	139.5
III	12.4	21.1	37.7	55.9	69.8	104.9	159.4	205.6	280.1	410.0			58.0	37.9	114.0

FREQUENCY OF OCCURRENCE		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	62	40	33	23	6	9		2					169	20	184
IIIA	31	39	21	19	13	10		5					119	23	142
IIIB	8	11	11	14	4	6	9	2	3	1			93	20	73
IIIC	1	3	1	3	4	3	3	1	2	1			1	12	23
II + III	18	19	22	23	22	18	20	10	14	12			5	104	79
III	15	22	23	21	19	14	11	9	14	2			3	100	155

TOTAL TIME IN EACH DURATION HOURS AND TENTHS		TIME IN MINUTES										481+	1-90	91-ALL	1-ALL
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480					
II	10.2	15.5	21.5	21.1	7.9	15.2		7.2					76.2	45.7	121.8
IIIA	5.8	12.9	12.1	17.3	15.4	18.9		18.4	17.9	9.3			65.4	59.6	115.6
IIIB	1.8	4.4	7.2	13.3	11.3	14.7	12.5	7.5	10.3	6.7			9.9	37.6	67.9
IIIC	.2	1.2	.5	2.8	5.1	5.5	7.6	3.3	11.1	6.7			9.9	10.4	36.4
II + III	3.7	7.2	14.0	21.4	27.2	33.3	30.7	39.2	67.9	82.5			51.3	73.5	121.2
III	2.6	7.7	14.6	19.3	23.1	25.3	28.0	31.0	76.9	13.7			31.2	67.4	272.9

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS											TIME IN MINUTES										
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL							
II	10.0	23.2	39.4	56.9	78.5	101.3	154.8	216.3				27.9	197.0								
IIA	11.2	22.1	37.4	55.5	71.2	100.6	193.7	215.0	279.5			32.0	135.5	50.0							
IIIB	13.6	24.7	39.1	57.0	75.2	110.4	150.0	224.9	329.0	402.0	596.0	42.3	202.8	80.0							
IIIC	14.0	24.0	31.0	59.4	75.0	100.7	131.7	188.0	331.7	401.5		51.8	327.3	148.0							
IIA + IIIB	12.4	22.7	35.7	55.7	73.1	102.1	152.1	211.1	290.4	412.3	611.1	42.2	244.0	129.0							
IIIC + III	13.5	21.0	38.1	55.2	72.9	102.3	132.7	202.9	298.0	410.0	624.3	50.4	242.2	105.0							

PORTLAND, INTERNATIONAL
TABLE XV - TEMPERATURE < 33 DEGREES (F), WITH POC, NO PRECIPITATION, AND WIND 9-12 KNOTS.
0700 - 1300 (23571 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1969

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		2									2	2
IIIA	1										1	1
IIIB												
IIIC												
II + III			1	1							2	2
III	1										1	1

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		.7									.7	.7
IIIA	.2										.2	.2
IIIB												
IIIC												
II + III			.3	.0							.9	.9
III	.2										.2	.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		19.5									19.5	19.5
IIIA	12.0										12.0	12.0
IIIB												
IIIC												
II + III			18.0	33.0							25.5	25.5
III	12.0										12.0	12.0

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		1									1	1
IIIA												
IIIB												
IIIC												
II + III		1									1	1
III												

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		.2									.2	.2
IIIA												
IIIB												
IIIC												
II + III		.2									.2	.2
III												

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		12.0									12.0	12.0
IIIA												
IIIB												
IIIC												
II + III		12.0									12.0	12.0
III												

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		2									2	2
IIIA	1	1									2	2
IIIB												
IIIC												
II + III	1	1									3	3
III	1										2	2

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		.5									.5	.5
IIIA	.2	.5			1.0						1.7	1.7
IIIB												
IIIC												
II + III	.3	.4			1.0						1.7	1.7
III	.2				1.0						1.2	1.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		13.5									13.5	13.5
IIIA	10.0	30.0			62.0						34.0	34.0
IIIB												
IIIC												
II + III	15.0	22.0			62.0						32.0	33.0
III	10.0				62.0						30.0	30.0

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		3	2								5	5
IIIA	2	1			1						4	4
IIIB												
IIIC												
II + III	2	2	1		1						9	9
III	2				1						3	3

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		.7	.7								1.3	1.3
IIIA	.4	.3			1.0						1.9	1.9
IIIB												
IIIC												
II + III	.5	.7	.0		1.0						2.7	2.7
III	.4				1.0						1.4	1.4

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	91-ALL
II		12.0	19.5								15.6	15.6
IIIA	11.0	30.0			62.0						28.5	28.5
IIIB												
IIIC												
II + III	13.5	20.0	33.0		62.0						27.0	27.0
III	11.0				62.0						28.0	28.0

PORTLAND, INTERNATIONAL
TABLE XVI - TEMPERATURE < 29 DEGREES (F).
0700 - 1300 (23971 OBSERVATION HOURS) JANUARY 1950 - DECEMBER 1953

FREQUENCY OF OCCURRENCE												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	13	5	3	1								20 1 19
IIIA	5	0	0	1		1						10 1 9
IIIB	2			2	2	1						6 1 7
IIIC	1	1			1	1						2 1 3
II + III	7	2	1	2	3	1	2					17 3 20
III	2	4	3	1	4	2						16 2 18

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	2.4	1.9	3.1	.8								8.2 1.5 8.2
IIIA	1.1	2.1	3.5	1.0		1.5						7.6 1.5 9.1
IIIB	1.0			2.0	2.2	1.8						5.4 3.7 5.7
IIIC	.5				1.3	1.8						1.5 1.8 3.1
II + III	1.2	.8	.8	1.8	6.7	2.0	4.6					11.0 6.0 17.6
III	.2	1.3	2.9	1.0	5.0	3.4						10.6 3.4 13.9

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	9.4	23.0	37.0	48.0								18.8 18.8 18.8
IIIA	12.6	21.0	35.3	60.0		91.0						25.4 91.0 28.8
IIIB	28.5			59.5	60.0							54.2 56.2 56.2
IIIC	29.0				79.0	110.0						45.7 110.0 61.8
II + III	10.1	22.5	36.0	59.5	80.8	120.0	130.0					38.9 132.0 52.9
III	11.5	20.0	35.0	59.0	74.9	100.9						39.7 100.9 46.4

FREQUENCY OF OCCURRENCE												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	1	1										2 1 1
IIIA		1										1 1 1
IIIB	1											1 1 1
IIIC			1	1								2 1 3
II + III		1		1								1 2 1 4
III			1	1								1 2 1 3

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	.1	.4										.5 .5 .5
IIIA		.4										.4 .4 .4
IIIB	.3			1.0								.3 .3 .3
IIIC			.6	2.0								9.8 1.6 9.8 11.4
II + III	.4	.6	1.0									10.7 2.4 10.7 13.2
III			.6	1.0								10.6 1.6 10.6 12.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	7.0	25.0										16.0 16.0 16.0
IIIA		22.0										22.0 22.0 22.0
IIIB	15.0											15.0 15.0 15.0
IIIC			34.0	60.0								590.0 67.0 590.0 228.0
II + III	25.0		34.0	60.0								644.0 48.3 644.0 197.3
III			34.0	60.0								637.0 67.0 637.0 243.7

FREQUENCY OF OCCURRENCE												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	7	4	3	3	1	2	1	1				18 2 20
IIIA	5	5	4	3	1	1						10 2 7
IIIB	1	1	3	1	1	1						6 1 7
IIIC			1	1	1	1	1					2 2 4
II + III	1	4	3	5	4	1	3	1	1	2		17 10 27
III	2	4	2	6	2	1	4	2				16 7 23

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	.9	1.5	2.1	2.5	1.0	3.4	2.1	1.6				4.5 9.0 13.5
IIIA	1.0	1.8	2.4	2.5	1.2	1.6	6.7					6.7 6.7 15.4
IIIB	.4	.4	.5	2.8	1.2	1.6						5.1 1.6 7.0
IIIC				1.0	1.3	1.7	2.0					2.2 3.8 5.7
II + III	1.1	1.5	2.0	4.6	4.9	1.7	12.3	9.0	4.0	12.2		13.1 39.4 46.2
III	.4	1.3	1.1	5.5	2.8	1.8	6.3	6.7				11.0 17.8 28.7

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	7.9	22.0	41.7			101.5	125.0	214.0				19.1 135.9 45.0
IIIA	11.4	21.8	36.5	49.7	62.0			200.0				29.1 200.0 46.2
IIIB	22.0	32.0	56.3	74.0	98.0							50.7 98.0 60.1
IIIC				59.0	80.0	104.0	122.0					66.0 112.0 84.8
II + III	6.0	22.5	39.7	54.6	74.0	99.0	148.0	182.0	241.0	364.5		46.1 199.1 102.8
III	10.5	19.5	32.0	54.8	83.0	107.0	139.8	200.0				41.1 152.3 75.0

FREQUENCY OF OCCURRENCE												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	28	10	8	1	2	1	1					42 4 46
IIIA	10	11	9	4	1	1						35 3 38
IIIB	1	3	1	5	4	2						14 2 16
IIIC		1	1	2	1	1	1					1 5 9 8
II + III	8	7	4	9	9	2	7	1	1	2		1 37 14 51
III	4	8	8	8	6	3	4	2				1 34 10 44

TOTAL TIME IN EACH DURATION HOURS AND TENTHS												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	2.4	3.4	5.2	.8		3.4	2.1	2.6				13.2 9.0 22.2
IIIA	2.0	3.9	5.3	3.5	1.0	1.5	6.7					15.5 8.2 23.7
IIIB	.9	1.3	.5	4.8	1.8	3.4						11.6 5.5 18.0
IIIC	.3	.3	.4	2.0	1.3	1.8	2.0					9.8 4.5 11.6 15.1
II + III	1.3	2.7	2.6	8.3	11.7	3.7	18.9	2.0	4.0	12.2		10.7 28.5 50.9 77.0
III	.7	2.6	4.6	7.5	7.7	5.1	9.3	6.7				10.6 23.1 31.7 54.9

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90 91-ALL 1-ALL
II	8.8	22.8	38.8	48.0		101.5	123.0	214.0				18.8 135.9 28.9
IIIA	12.0	21.1	35.1	52.3	62.0	91.0						26.5 163.7 37.4
IIIB	15.0	26.3	32.0	57.6	71.5	102.9						49.6 165.0 87.6
IIIC		29.0	34.0	59.3	79.5	107.0	122.0					52.8 211.9 112.9
II + III	9.6	22.9	38.8	55.6	77.7	109.5	149.1	182.0	241.0	364.5		644.0 43.0 644.0 216.5
III	11.0	19.8	34.1	56.0	77.3	102.7	139.8	200.0				627.0 48.8 190.4 74.8

PORTLAND, INTERNATIONAL
TABLE XVII - TEMPERATURE < 29 DEGREES (F), WITH 50% NO PRECIPITATION, AND WIND < 9 KNOTS.
0700 - 1700 (25971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE												
TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	13	4	5								22	22
IIIA	9	6	5	1		1					17	18
IIIB	2			2	2						6	9
IIIC	1	1		2	1	1					2	5
II + III	4	1	1	2	4	1	2				14	17
III	2	4	4	1	4	2					15	17

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	2.0	1.5	3.1								6.6	6.6
IIIA	1.1	2.1	3.0	1.0		1.5					7.1	8.6
IIIB			1.0	2.0	2.2						5.4	5.7
IIIC			1.8		1.3	1.6					4.7	5.1
II + III	1.0	.4	.6	1.8	3.3	2.0	4.6				9.0	15.0
III	.4	1.3	2.4	1.0	3.0	3.4					10.1	13.4

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	9.4	22.8	37.0								18.1	18.1
IIIA	12.6	21.0	36.2	40.0		51.0					25.1	28.7
IIIB			28.5	38.5	48.0						34.2	36.8
IIIC			29.0		39.0	41.0					45.7	61.6
II + III	10.2	21.0	36.0	53.5	78.8	120.0	138.0				98.0	132.0
III	11.5	20.0	36.0	59.0	74.5	100.5					40.9	100.5

FREQUENCY OF OCCURRENCE

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	1	1									2	2
IIIA		1									1	1
IIIB	1										1	1
IIIC											1	1
II + III			1	1	2						3	3
III				1	1						1	2

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	.1	.4									.5	.5
IIIA		.4									.4	.4
IIIB	.3										.3	.3
IIIC											.8	.8
II + III	.4	.4	.8	1.0							10.7	12.2
III			.6	1.0							10.6	12.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	7.0	28.0									16.0	16.0
IIIA		22.0									22.0	22.0
IIIB	15.0										15.0	15.0
IIIC				34.0	60.0						590.0	47.0
II + III			25.0	60.0							644.0	48.3
III				34.0	60.0						637.0	47.0

FREQUENCY OF OCCURRENCE

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	7	2	3			2					13	17
IIIA	5	5	4	3	1			2			18	20
IIIB	1	1	3	1	1						6	7
IIIC					1	1					2	2
II + III	1	3	3	4	2	3	1	1	1	2	10	24
III	2	4	2	0	2	1	4	2			16	23

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	.9	1.1	2.1			4.4					4.1	13.2
IIIA	1.0	1.8	2.4	2.3	1.0						8.7	15.4
IIIB	.4	.5	2.8	1.2	1.6						5.1	7.0
IIIC			1.7	1.3	1.7	2.0					2.2	8.9
II + III	.1	1.2	2.0	4.0	4.9	1.7	12.3	3.0	4.0	12.2	12.7	45.9
III	.4	1.2	1.1	5.5	2.8	1.8	9.3	6.7			11.0	28.7

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	7.9	22.3	41.7			101.5					19.0	155.3
IIIA	11.4	21.8	36.5	49.7	62.0						29.1	200.0
IIIB			22.0	32.0	36.3	74.0					50.7	98.0
IIIC					39.0	60.0	104.0	123.0			66.0	113.0
II + III	6.0	23.0	39.7	54.6	74.0	99.0	146.0	182.0	241.0	384.5	47.7	199.1
III	10.5	19.3	32.0	54.8	83.0	107.0	139.8	200.0			41.1	152.3

FREQUENCY OF OCCURRENCE

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	21	8	8			2					37	41
IIIA	10	11	8	4	1			2			34	57
IIIB	1	3	1	5	4	2					14	16
IIIC			1	1	2	1	1				5	8
II + III	7	5	4	9	8	2	7	1	1	2	53	74
III	4	8	7	8	6	3	4	2			33	43

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	3.1	3.1	5.2			3.4					11.3	20.3
IIIA	2.0	3.9	4.8	3.5	1.0	1.9					15.0	23.2
IIIB	.3	1.3	.5	4.8	4.8	3.4					11.0	18.0
IIIC		.5	.6	2.0	1.3	1.6	2.0				4.5	13.1
II + III	1.1	1.8	2.4	8.3	10.2	5.7	16.9	3.0	4.0	12.2	10.7	50.5
III	.7	2.6	4.0	7.5	7.7	5.1	9.3	6.7			10.6	34.2

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-ALL
II	8.8	22.9	38.8			101.5					18.3	135.8
IIIA	12.0	21.1	35.6	52.3	62.0	91.0					26.4	163.7
IIIB	15.0	26.3	32.0	37.6	71.5	132.5					49.6	165.0
IIIC			29.0	34.0	39.3	79.5	107.0				53.6	231.5
II + III	9.6	23.0	38.8	55.6	76.4	109.5	143.1	132.0	241.0	384.5	44.0	210.5
III	11.0	19.8	34.0	56.0	77.3	102.7	139.8	200.0			43.7	190.4

PORTLAND, INTERNATIONAL
TABLE XVIII - TEMPERATURE < 29 DEGREES (F), WITH PGO, NO PRECIPITATION, AND WIND 8-12 KNOTS.
JANUARY 1956 - DECEMBER 1955

NO OCCURRENCE OF DATA

PORTLAND, INTERNATIONAL
TABLE XIX - TEMPERATURE > 32 DEGREES (F.)
FREQUENCY OF OCCURRENCE 0700 - 1900 (29971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1963

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	96	74	55	21	21	6	4	2	1			243	19	259
IIIA	67	52	17	13	10	6	7	1				139	14	153
IIIB	17	20	7	10	6	4	2					60	6	66
IIIC	1	1	3	1	2	1						8	1	9
II + III	22	25	14	12	18	11	12	3	8	2	1	93	32	128
III	17	28	14	14	11	5	7	1	1	1	1	84	14	100

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	16.8	27.7	22.0	19.4	24.0	10.3	9.0	7.0		7.7		109.8	36.7	146.5
IIIA	9.5	12.7	11.1	11.3	11.9	11.0	10.2	9.0				61.7	32.3	92.4
IIIB	3.5	8.6	4.8	9.7	7.7	6.7	5.0					34.2	12.9	46.4
IIIC	.3	.5	2.0	.9	2.0	1.6						6.3	1.6	9.0
II + III	4.4	9.8	10.0	10.9	21.6	18.1	27.9	10.3	13.1	15.2	11.5	56.6	95.9	151.5
III	3.0	11.0	9.2	12.5	13.2	9.1	16.2	9.5	4.3	7.8	11.7	48.8	32.3	101.3

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.7	22.4	37.7	55.3	48.5	103.3	144.8	209.0		480.0		26.9	160.3	33.0
IIIA	10.8	22.7	39.0	52.1	71.2	110.3	136.3	181.0				26.6	130.4	36.2
IIIB	12.3	25.7	41.4	57.9	76.2	100.3	170.3					34.2	123.2	42.3
IIIC	15.0	27.0	39.7	55.0	70.7	98.0						48.8	98.0	39.1
II + III	11.9	23.6	37.6	54.3	71.8	98.8	139.3	205.3	261.0	454.5	690.0	36.9	179.9	71.2
III	10.4	23.5	39.4	59.6	71.0	108.6	139.0	210.0	237.0	485.0	700.0	34.9	194.8	60.8

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	20	23	12	6	8	3	3					69	7	76
IIIA	15	18	6	4	6	3	3					49	9	58
IIIB	8	12	3	3	3	1	4					29	6	35
IIIC	2	2	1	1	1	1	1					3	8	14
II + III	5	10	9	7	4	5	5					35	30	71
III	5	9	7	2	3	2	8					28	27	55

TOTAL TIME IN EACH DURATION HOURS AND TENTHS														
CATEGORY	TIME IN MINUTES													
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	3.4	8.1	7.5	5.1	9.5	5.4	8.0	3.5				33.5	16.8	50.3
IIIA	2.4	6.7	3.9	3.6	7.0	5.2	12.4					23.2	24.3	45.5
IIIB	1.5	4.4	2.0	2.9	3.7		9.1					14.9	43.4	60.3
IIIC	.3	.6	.5		1.9	1.0	2.6	3.1	4.8	7.8	32.2	2.2	34.1	56.2
II + III	1.0	3.5	5.6	6.2	4.6	8.7	12.2	14.8	35.2	60.4	120.5	20.9	231.8	252.7
III	.8	3.4	4.5	1.8	6.9	3.3	19.6	7.2	15.6	42.9	81.6	17.3	170.1	197.4

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS														
CATEGORY	TIME IN MINUTES													
	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.2	21.0	37.3	50.5	71.3	108.3	139.3	207.0				29.1	144.3	38.7
IIIA	9.7	22.3	38.7	56.3	75.7	104.0	136.9			380.0		38.4	161.7	47.1
IIIB	11.1	22.1	39.0	57.3	74.0		136.5	279.5	439.0	644.0	90.9	302.7	95.2	
IIIC	8.0	18.7	32.0	52.7	79.0	108.0	139.9	184.0	287.5	466.0	644.4	22.1	403.7	241.3
II + III	12.2	21.2	37.8	52.7	68.5	104.4	149.4	222.3	302.0	404.2	803.2	35.8	386.3	111.3
III	9.8	22.3	38.9	53.0	82.2	98.5	147.0	216.0	311.5	428.8	615.5	37.1	378.0	294.4

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	148	106	60	37	42	12	11	4	2	1		393	30	423
IIIA	75	64	40	31	35	19	21	16	9	1	1	245	67	312
IIIB	40	34	29	21	23	19	19	10	6	2	1	147	56	203
IIIC	4	5	8	5	8	5	4	7	5	1	2	32	24	56
II + III	39	38	67	38	53	39	51	32	37	21	25	224	199	423
III	34	43	43	26	40	22	43	29	23	18	10	186	145	331

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	29.8	40.4	37.4	33.7	52.2	20.7	26.8	13.4	9.7	6.4		189.3	76.8	266.2
IIIA	14.0	26.1	25.7	28.2	43.8	33.7	34.4	34.7	44.4	7.0	9.1	137.8	201.9	339.5
IIIB	8.0	13.4	19.4	19.4	29.5	34.2	48.5	35.1	28.9	14.2	9.4	89.8	167.9	257.2
IIIC	.9	2.1	6.2	4.3	11.9	9.1	18.6	24.2	24.0	7.2	18.4	35.1	90.4	113.9
II + III	6.8	14.6	36.8	34.9	67.0	42.0	123.7	112.3	179.8	146.9	267.3	160.0	693.9	1054.0
III	6.5	17.7	26.2	23.3	30.0	38.8	107.6	101.2	115.3	124.5	96.4	125.7	383.8	709.5

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	70.5	22.8	97.4	54.6	74.5	103.3	146.3	201.5	289.5	382.0		28.9	193.8	37.8
IIIA	1.2	24.4	38.5	34.6	75.1	106.3	155.3	203.3	293.7	421.0	548.0	33.7	180.8	66.1
IIIB	12.0	23.8	40.1	55.5	76.9	107.9	145.0	210.4	289.2	428.0	569.0	36.4	175.8	76.6
IIIC	13.3	24.8	41.2	52.4	76.9	108.7	144.3	207.4	287.7	432.0	565.0	46.9	225.9	121.9
II + III	10.8	23.0	38.8	55.0	75.8	106.2	149.3	210.6	291.4	425.4	697.3	42.9	269.5	149.5
III	11.4	24.6	39.4	53.8	75.1	105.7	150.1	209.4	300.8	415.1	578.2	40.5	241.6	129.6

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	136	155	62	46	47	27	31	17	8	2	1	426	87	513
IIIA	65	67	40	34	33	23	24	11	8	3	4	239	73	312
IIIB	7	7	12	6	11	7	3	7	4	2	4	43	31	74
II + III	65	73	82	57	75	91	68	39	47	29	35	352	267	619
III	56	80	64	42	56	29	58	32	27	25	17	298	168	466

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	46.0	78.1	66.8	58.1	85.0	38.4	44.6	23.9	9.7	14.0		332.6	125.5	458.1
IIIA	24.7	52.1	39.9	41.4	61.1	48.3	79.7	57.8	44.4	13.4	9.1	219.6	250.9	464.9
IIIB	13.0	26.7	25.7	32.0	42.1	40.9	50.4	38.4	38.2	21.7	41.0	140.5	238.3	381.7
IIIC	1.4	2.8	8.0	5.3	14.1	12.5	12.3	24.0	28.8	14.8	41.0	31.5	133.6	162.9
II + III	12.2	27.9	32.5	51.9	92.1	88.8	183.7	137.4	126.1	204.5	89.9	237.5	1221.7	1459.2
III	10.2	32.0	42.0	37.6	70.1	51.1	143.4	111.9	135.2	179.2	189.6	191.9	820.3	998.2

CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	10.5	22.5	37.3	54.3	72.4	104.0	148.3	204.4	289.5	421.0		28.2	154.2	30.3
IIIA	10.9	23.5	38.6	54.0	74.8	107.4	134.3	203.8	293.7	400.5	548.0	30.9	173.0	54.4
IIIB	12.0	23.9	40.1	56.4	76.5	108.6	146.0	209.6	286.8	434.3	615.0	35.3	195.8	73.4
IIIC	11.8	23.6	40.4	52.8	77.3	107.0	146.8	205.7	287.8	444.0	614.6	44.2	258.7	131.8
II + III	11.2	22.9	38.4	58.6	74.5	104.4	144.4	211.4	291.2	429.0	725.6	40.5	274.5	141.4
III	11.0	24.6	39.3	53.7	73.1	105.7	140.3	209.9	300.3	420.4	609.1	38.6	257.3	123.2

PORTLAND, INTERNATIONAL
TABLE XX - TEMPERATURE > 32 DEGREES (F), WITH 400, NO PRECIPITATION, AND WIND < 9 KNOTS.
0700 - 1900 (25971 OBSERVATION HOURS) JANUARY 1956 - DECEMBER 1965

FREQUENCY OF OCCURRENCE		TIME IN MINUTES															
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL			
II	90	72	52	18	17	6	3	2				229	11	240			
IIIA	45	50	14	12	10	6	7	1				131	14	145			
IIIB	18	20	6	9	6	4	2					59	6	65			
IIIC	1	1	2	1	2	1						6	1	9			
II + III	26	26	14	5	10	13	10	3	3	1	1	1	91	122			
III	19	27	11	13	12	6	6	1	1	1	1	82	18	98			

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL		
II		16.1	27.0	19.9	18.7	19.7	10.9	7.4	7.0				98.5	24.7	123.2		
IIIA		8.0	18.0	9.1	10.5	11.9	11.0	18.2	3.0				97.2	32.3	141.0		
IIIB		3.7	8.4	4.2	8.7	7.7	4.7	9.8					33.0	12.3	45.4		
IIIC		.3	.5	2.0	.9	2.6	1.6						6.0	1.6	7.8		
II + III		5.0	10.9	8.7	7.9	19.7	21.8	24.1	10.9	13.1	7.5	11.5	91.3	87.9	179.1		
III		3.3	10.3	7.3	11.7	14.4	10.7	14.7	3.9	6.3	7.4	11.7	47.2	52.1	99.2		

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL		
II		10.8	22.3	37.4	35.6	39.3	103.3	148.0	209.0				26.1	134.7	91.0		
IIIA		10.6	22.5	39.1	32.3	31.2	110.3	130.3	181.0				26.2	138.4	90.4		
IIIB		12.4	25.7	41.7	37.7	36.5	100.3	174.5					33.5	125.2	61.9		
IIIC		15.0	37.0	39.6	33.0	38.7	98.0						44.9	98.0	51.3		
II + III		11.4	23.7	37.1	32.9	39.8	98.1	144.5	205.3	261.0	449.0	680.0	33.9	165.6	88.4		
III		10.3	23.4	39.6	34.0	32.0	106.7	141.4	210.0	237.0	488.0	700.0	34.5	195.2	107.7		

1400 - 2100 (32224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE		TIME IN MINUTES															
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL			
II	20	23	11	6	5	2	4					65	6	71			
IIIA	14	17	5	5	6	2	5					47	8	55			
IIIB	9	12	3	2	2	4	4	1	1	1	2	28	9	37			
IIIC	2	2			1	1	1	1	1	1	2	5	7	12			
II + III	3	10	9	7	4	4	5	9	8	5	7	35	34	69			
III	4	9	7	2	3	2	9	2	4	6	4	27	27	54			

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

		TIME IN MINUTES													
CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II		3.4	8.2	6.9	5.1	5.9	3.4	10.2					29.4	12.6	42.0
IIIA		2.3	6.2	3.2	4.6	7.7	3.3	12.7					23.1	24.8	47.9
IIIB		1.7	4.4	2.0	2.0	2.5	9.1	3.4	4.5	7.3	21.8	13.0	43.9	37.2	
IIIC		.3	.6			1.3	1.8	2.6	3.4	5.1	7.8	21.8	1.6	44.7	46.2
II + III		1.0	3.6	5.5	6.2	5.0	6.7	11.9	18.7	39.9	33.5	90.2	21.2	200.9	222.0
III		.7	3.2	4.5	1.8	6.9	3.3	22.0	7.2	20.6	41.9	56.6	17.1	151.6	168.7

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL		
II		10.2	21.3	37.5	30.5	30.6	102.5	131.3					27.1	135.7	86.3		
IIIA		9.9	21.9	38.8	35.4	35.8	104.3	138.0					29.5	148.6	86.9		
IIIB		11.3	22.1	39.0	30.0	35.0	130.5	204.0	271.0	439.0	653.0	653.0	21.9	292.4	92.9		
IIIC		8.0	18.7			39.0	108.0	139.9	204.0	308.0	468.0	652.8	20.9	389.1	230.6		
II + III		12.2	21.6	36.3	32.7	34.3	100.5	149.0	224.4	299.3	401.8	772.7	36.3	354.4	199.1		
III		10.8	21.4	37.9	33.0	32.2	98.3	148.7	216.0	308.5	419.2	649.5	38.0	336.9	187.4		

2200 - 0600 (32677 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE		TIME IN MINUTES															
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL			
II	147	103	54	36	41	14	11	4	1			381	30	411			
IIIA	74	64	41	33	34	18	17	17	8	1		248	62	310			
IIIB	39	33	31	20	24	16	20	6	5	2	2	147	36	203			
IIIC	4	5	9	6	8	5	5	1	1	1	2	32	23	55			
II + III	38	39	58	43	50	36	50	34	37	22	18	228	197	425			
III	33	43	46	28	41	27	37	30	23	17	9	193	143	336			

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL		
II		25.6	39.0	33.7	32.8	30.9	24.7	28.4	13.6	4.7			181.9	69.3	251.2		
IIIA		14.3	26.1	26.4	30.2	42.1	32.0	43.9	58.3	45.3	7.0		139.1	184.4	318.0		
IIIB		7.8	12.1	20.7	18.5	30.9	33.0	48.1	31.4	24.2	13.7	18.6	90.6	169.5	259.9		
IIIC		.9	2.1	6.2	5.3	10.1	9.1	6.5	20.7	24.0	6.7	18.6	24.5	88.2	111.7		
II + III		6.7	14.9	37.4	39.8	62.0	64.4	121.0	119.4	178.8	156.1	210.2	161.5	859.3	1019.7		
III		6.6	17.7	30.2	25.3	30.9	47.8	93.1	104.1	114.2	117.5	87.4	130.6	364.0	694.6		

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY		1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL		
II		10.4	22.7	37.5	34.6	34.5	103.6	143.9	204.3	280.0			28.6	138.6	96.7		
IIIA		11.3	24.4	38.6	34.9	34.4	106.7	129.1	205.9	302.0	411.0		33.6	176.4	61.9		
IIIB		11.9	28.8	40.0	35.4	37.1	110.1	144.3	208.3	290.0	411.0	559.0	37.0	181.8	76.5		
IIIC		19.3	24.6	41.2	33.1	34.4	108.7	149.1	207.1	287.7	402.0	558.8	46.4	229.9	124.3		
II + III		10.6	23.0	38.7	35.6	35.1	107.3	149.2	211.6	289.9	425.6	727.3	42.5	261.4	144.0		
III		11.4	26.7	39.3	34.3	34.4	106.1	151.0	208.2	297.9	414.6	582.4	40.6	236.8	124.0		

ALL (87672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE		TIME IN MINUTES														
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL		
II	257	198	97	60	63	22	18	6	1			675	47	722		
IIIA	135	130	59	48	46	25	27	18	9	2		420	81	501		
IIIB	66	66	41	31	33	22	26	10	7	3	4	237	72	309		
IIIC	7	7	11	7	10	7	9	7	5	2	4	42	30	72		
II + III	64	75	81	59	70	39	63	42	48	28	26	354	282	636		
III	58	79	64	43	58	35	52	32	28	26	64	302	184	486		

PORTLAND, INTERNATIONAL
TABLE XXI - TEMPERATURE > 32 DEGREES (F), WITH PGG, NO PRECIPITATION, AND WIND 9-12 KNOTS.
0700 - 1300 (19971 OBSERVATION HOURS) JANUARY 1986 - DECEMBER 1989

FREQUENCY OF OCCURRENCE		TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1	1										2	4	4
IIIA	1		1									2	2	2
IIIB														
IIIC			1									1	1	1
II + III	2		1	2								3	3	3
III			1	1								2	2	2

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY		TIME IN MINUTES												
II	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA			.4									1.0	1.0	1.0
IIIB												.9		.9
IIIC			.4									.4	.4	.4
II + III			.4	1.2								2.1	2.1	2.1
III			.4	.7								1.1	1.1	1.1

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY		TIME IN MINUTES												
II	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA	11.3	24.0										24.3	14.3	14.3
IIIB	13.0		40.0									27.5	27.5	27.5
IIIC			25.0									25.0	25.0	25.0
II + III	14.0		24.0	35.3								24.0	24.0	24.0
III			25.0	40.0								32.3	32.3	32.3

1400 - 2100 (39224 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE		TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II			1									1	1	1
IIIA														
IIIB														
IIIC			1									1	1	1
II + III			1	1								2	2	2
III			1	1								2	2	2

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY		TIME IN MINUTES												
II	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA			.5									.5	.5	.5
IIIB														
IIIC			.2									.2	.2	.2
II + III			.2	.5								.7	.7	.7
III			.2	.5								.7	.7	.7

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY		TIME IN MINUTES												
II	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA			29.0									29.0	29.0	29.0
IIIB														
IIIC			12.0									12.0	12.0	12.0
II + III			12.0	29.0								20.5	20.5	20.5
III			12.0	29.0								20.5	20.5	20.5

2200 - 0600 (32877 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE		TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	1	1	1									3	3	3
IIIA	1			1								3	3	3
IIIB												1	1	1
IIIC														
II + III	1	1	1	2								5	5	5
III				2								2	2	2

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY		TIME IN MINUTES												
II	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA	.2	.4	.7									1.4	1.4	1.4
IIIB	.2			1.0								1.9	1.9	1.9
IIIC				1.0								1.0	1.0	1.0
II + III	.2	.4	.7	1.9								3.3	3.3	3.3
III				1.9								1.9	1.9	1.9

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY		TIME IN MINUTES												
II	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA	14.0	24.0	48.0									27.0	27.0	27.0
IIIB	14.0		43.0	58.0								58.7	58.7	58.7
IIIC				58.0								58.0	58.0	58.0
II + III	14.0	24.0	43.0	58.0								58.4	58.4	58.4
III				58.0								58.0	58.0	58.0

ALL (67672 OBSERVATION HOURS)

FREQUENCY OF OCCURRENCE		TIME IN MINUTES												
CATEGORY	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
II	4	2	3	1								7	7	7
IIIA	1	1	2	1								5	5	5
IIIB												1	1	1
IIIC	1											2	2	2
II + III	4	3	5	2								12	12	12
III	1	2	1	2								6	6	6

TOTAL TIME IN EACH DURATION HOURS AND TENTHS

CATEGORY		TIME IN MINUTES												
II	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA	.8	.8	.7									2.3	2.3	2.3
IIIB	.3	.5	1.4	1.0								2.9	2.9	2.9
IIIC				1.0								1.0	1.0	1.0
II + III	.2	.4	.7	1.9								4.6	4.6	4.6
III	.2	.4	.7	1.9								3.7	3.7	3.7

AVERAGE TIME IN EACH DURATION MINUTES AND TENTHS

CATEGORY		TIME IN MINUTES												
II	1-15	16-30	31-45	46-60	61-90	91-120	121-180	181-240	241-360	361-480	481+	1-90	91-ALL	1-ALL
IIIA	12.0	24.0	43.0									19.9	19.9	19.9
IIIB	13.0	29.0	41.5	58.0								38.0	38.0	38.0
IIIC				58.0								58.0	58.0	58.0
II + III	12.0	23.0	43.0	58.0								37.7	37.7	37.7
III	12.0	27.0	40.0	58.0								37.0	37.0	37.0

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