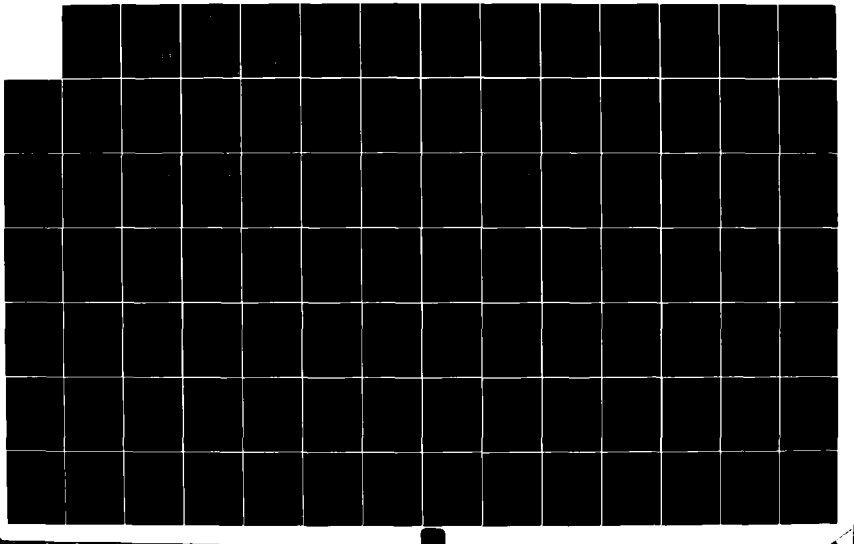
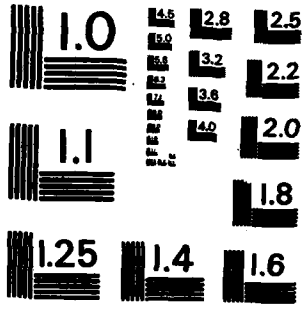
AD-A134 200 DULUTH DULUTH IAP MINNESOTA REVISED UNIFORM SUMMARY OF 1/
SURFACE WEATHER OB..(U) AIR FORCE ENVIRONMENTAL
TECHNICAL APPLICATIONS CENTER SCOTT A.. 01 AUG 83
UNCLASSIFIED USAFETAC/DS-83/030 SBI-AD-E850 418 F/G 4/2 NL





MICROCOPY RESOLUTION TEST CHART
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AD-A134 200

USAF ETAC/DS-83/030

(1)

AOE 950 418
ETAC USMN 727450

DATA PROCESSING DIVISION
USAFETAC
Air Weather Service (MAC)

REVISED UNIFORM SUMMARY OF SURFACE WEATHER OBSERVATIONS

DULUTH IAP MN MSC #727450
N 46 50 W 092 11 1430 FT DLH

PARTS A-F HOURS SUMMARIZED: 0000Z - 2300Z

PERIOD OF RECORD:
HOURLY OBSERVATIONS: JAN 73 - DEC 82
SUMMARY OF DAY DATA: JAN 48 - DEC 70, NOV 71 - DEC 82

TIME CONVERSION GMT TO LST: -6

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ADE 850 4

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: USAFETAC/DS-83/030	2. GOVT ACCESSION NO.: AD-A134 200
3. RECIPIENT'S CATALOG NUMBER:	
4. TITLE (and Subtitle): Revised Uniform Summary of Surface Weather Observations (RUSSWO)- DULUTH, DULUTH IAP, MINNESOTA	5. TYPE OF REPORT & PERIOD COVERED: Final rept
	6. PERFORMING ORG. REPORT NUMBER:
7. AUTHOR(s):	8. CONTRACT OR GRANT NUMBER(s):
9. PERFORMING ORGANIZATION NAME AND ADDRESS: USAFETAC/OL-A, Air Force Environmental Technical Appl. Center, Scott AFB, IL 62225	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS:
11. CONTROLLING OFFICE NAME AND ADDRESS: USAFETAC/CBD, Air Weather Service (MAC), Scott AFB, IL 62225	12. REPORT DATE: AUG 83
	13. NUMBER OF PAGES:
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office):	15. SECURITY CLASS. (of this report): UNCLASSIFIED
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE:

16. DISTRIBUTION STATEMENT (of this Report)

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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

SUPERSEDES REPT NO. USAFETAC/DS-79/120, AD-a078 357

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

*RUSSWO	Daily temperatures	Atmospheric pressure
Snowfall	Extreme snow depth	Extreme surface winds
Climatology	Sea-level pressure	Psychrometric summary
Surface Winds	Extreme temperature	Ceiling versus visibility
Relative Humidity	*Climatological data	(over)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report is a six-part statisitical summary of surface weather observations for DULUTH, DULUTH IAP, MINNESOTA

It contains the following parts: (A) Weather Conditions; Atmospheric Phenomena; (B) Precipitation, Snowfall and Snow Depth (Daily amounts and extreme values); (C) Surface winds; (D) Ceiling versus Visibility; Sky Cover; (E) Psychrometric (cont)

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

19. Percentage frequency of distribution tables
Dry-bulb temperature versus wet-bulb temperature
Cumulative percentage frequency of distribution tables

*MINNESOTA
*DULUTH
*DULUTH IAP

20. Summaries (daily maximum and minimum temperatures, extreme maximum and minimum temperatures, psychrometric summary of wet-bulb temperature depression versus dry-bulb temperature, means and standard deviations of dry-bulb, wet-bulb and dew point temperatures and relative humidity); and (F) Pressure Summary (means, standard, deviations, and observation counts of station pressure and sea-level pressure). Data in this report are presented in tabular form, in most cases in percentage frequency of occurance or cumulative percentage frequency of occuring tables.

Accession For
NTIS GRA&I
DTIC TAB
Unannounced
Justification
By
Distribution/
Availability Codes
Dist | Avail and/or Special
A

The number that identifies the station in this summary is an AWS Master Station Catalog number. This number is comprised of the WMO number with the addition of a suffix zero; or, in cases where there is no designated WMO number, a 5-digit number created in agreement with WMO rules, plus a sixth qualifying digit. These numbers (also referred to as DATSAV or USAFETAC numbers) uniquely identify each of more than 15,000 reporting stations around the world. This is the provenance of the number (e.g., MSC 999999) which will appear on future OL-A standard products.

U S AIR FORCE
ENVIRONMENTAL TECHNICAL
APPLICATIONS CENTER

REVISED UNIFORM SUMMARY
OF SURFACE WEATHER OBSERVATIONS

HOURLY OBSERVATIONS

Hourly observations are defined as those record or record-special observations recorded at scheduled hourly intervals.

DAILY OBSERVATIONS

Daily observations are selected from all data recorded on reporting forms and combined into Summary of the Day observations. (Selected from record-special, local, summary of the day, remarks, etc.)

DESCRIPTION OF SUMMARIES

Preceding each section is a brief description of the data comprising each part of the Revised Uniform Summary of Surface Weather Observations and the manner of presentation. Tabulations are prepared from hourly and daily observations recorded by stations operated by the U. S. Services and some foreign stations using similar reporting practices.

Unless otherwise noted the following summaries are included for this station:

PART A WEATHER CONDITIONS
ATMOSPHERIC PHENOMENA

PART B PRECIPITATION
SNOWFALL
SNOW DEPTH

PART C SURFACE WINDS

PART D CEILING VERSUS VISIBILITY
SKYCOVER

PART E DAILY MAX, MIN, & MEAN TEMP
EXTREME MAX & MIN TEMP
PSYCHROMETRIC-DRY VS WET BULB
MEAN & STD DEV .
(DRY BULB, WET BULB, & DEW POINT)
RELATIVE HUMIDITY

PART F STATION PRESSURE
SEA LEVEL PRESSURE

STANDARD 3-HOUR GROUPS

All summaries requiring diurnal variations are summarized in eight 3-hour periods corresponding to the following sets of hourly observations: 0000-0300, 0300-0600, 0600-0900, 0900-1200, 1200-1500, 1500-1800, 1800-2100, 2100-2400 hours local standard time.

MISSING HOUR GROUPS

Summary sheets are omitted when stations maintaining limited observing schedules did not report certain three-hour periods for any particular month during the available period of record. Such missing sheets are listed below, and are applicable to all summaries prepared from hourly observations.

JANUARY_____	APRIL_____	JULY_____	OCTOBER_____
FEBRUARY_____	MAY_____	AUGUST_____	NOVEMBER_____
MARCH_____	JUNE_____	SEPTEMBER_____	DECEMBER_____

STATION NO ON SUMMA-	STATION NAME	LATITUDE	LONGITUDE	FIELD ELEV (FT)	CALL SIGN	WBO NUMBER
727450	DULUTH IAP, MN	N 46 50	W 092 11	1430	DLH	72745

STATION LOCATION AND INSTRUMENTATION HISTORY

NUMBER OF LOCATION	GEOGRAPHICAL LOCATION & NAME	TYPE OF STATION	AT THIS LOCATION		LATITUDE	LONGITUDE	ELEVATION ABOVE MSL		OBS PER DAY
			FROM	TO			FIELD (FT)	HT. BARO.	
1.	Williamson-Johnson MAP, Duluth MN	WB	Jan 48	Dec 63	N 46 50	W 092 11	1417	1423	24
2.	Duluth IAP, MN	WB	Dec 63	Oct 75	Same	Same	Same	Same	24
3.	Same	WSO	Oct 75	Feb 82	Same	Same	Same	1430	24
4.	Same	WSO	Feb 82	May 83	Same	Same	1430	Same	24

NUMBER OF LOCATION	DATE OF CHANGE	SURFACE WIND EQUIPMENT INFORMATION				REMARKS, ADDITIONAL EQUIPMENT, OR REASON FOR CHANGE
		LOCATION	TYPE OF TRANSMITTER	TYPE OF RECORDER	HT ABOVE GROUND	
1	Jan 48 to 10 Apr 50	Located on the roof of hangar.	Windial	None	55 ft	
2	11 Apr 50 to 21 Jun 61	Same	F005-1 & F102	None	53 ft	
3	22 Hyb 61 to 28 Sep 62	1. Same 2. Mounted on the ground of the field.	Same F420C	None None	Same 21 ft	
4	29 Sep 66 to Dec 71	1. Same 2. Same	Same Same	None F312	Same Same	
5	May 83	1. Same	Same	Same	Same	

(over)

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A

PART A WEATHER CONDITIONS

This summary is a percentage frequency occurrence of various atmospheric phenomena and obstructions to vision, derived from hourly observations, and is presented in two tables as follows:

1. By month and annual, all hours and years combined.

2. By month, all years combined, by standard 3-hour groups.

A percent value of ".0" in these tables indicates less than .05 percent, which is usually only one occurrence. The various phenomena included in each category on the forms are listed below:

Thunderstorms - All reported occurrences of thunderstorm, tornado, and waterspout.

Rain and/or drizzle - All liquid precipitation, falling to the ground, not freezing.

Freezing rain and/or freezing drizzle (glaze) - Precipitation falling in liquid form, but freezing on contact with an unheated surface.

Snow and/or sleet (ice pellets) - Included are snow, snow pellets, sleet, snow grains, ice crystals, and ice pellets from Jan 68 and later. (Snow pellets also known as soft hail)

Hail - Occurrences of hail and small hail are included.

Percentage of observations with precipitation - Included in this category are the observations when one or more of the above phenomena occurred. Since more than one type of precipitation may be reported in the same observation, the sums of the individual categories may exceed the percentages of the observations with precip.

Fog - Included are fog, ice fog, and ground fog.

Smoke and/or haze - Occurrences of smoke, haze, or combinations of smoke and haze are included.

Blowing snow - Occurrences of blowing snow (also drifting snow when reported from non-WBAN sources).

Dust and/or sand - Included are blowing dust, blowing sand, and dust.

Continued on Reverse

Blowing spray - This item if reported, is not shown in a separate category on this form but is included in the computation Percentage of Observations with Obstructions to Vision, below.

Percentage of observations with obstructions to vision - Included in this category are the observations when one or more of the above obstructions to vision occurred. Since more than one type of obstruction may be reported in the same observation, the sums of the individual categories may exceed the percentage total columns. Also, although precipitation may reduce visibility, it is not considered an obstruction to vision for purposes of this summary; therefore, the percentage total of obstructions to vision need not reflect the total observations with reduced visibility.

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72765 DULUTH IAP MN 73-82 JAN

STATION | STATION NAME | YEARS | MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
JAN	00-02		.4	2.1	28.1		29.7	10.6		3.2		13.5	912
	03-05		.3	1.8	30.4		31.9	10.2	.3	2.8		13.0	889
	06-08			2.5	28.6		30.4	12.3	.2	3.6		16.0	913
	09-11			2.9	28.7		30.6	16.3	.9	4.2		21.3	908
	12-14		.1	1.2	28.1		28.3	11.5	1.5	5.1		17.8	904
	15-17		.4	.8	26.7		27.2	10.5	1.4	4.6		16.0	913
	18-20		.5	.7	28.2		29.1	8.5	.5	3.7		12.2	911
	21-23	.1	.2	1.0	29.4		30.2	10.0	.3	4.0		13.8	907
TOTALS		.0	.2	1.8	28.5		29.7	11.3	.6	3.9		15.5	7257

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 FEB

STATION | STATION NAME | YEARS | MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
FEB	00-02		.4	2.2	27.5		29.0	11.2	.4	.6		11.9	829
	03-05		.6	3.1	26.9		29.6	13.0	.2	1.2		14.1	832
	06-08		.6	2.9	28.2		30.4	15.5	.1	1.6		17.2	830
	09-11		.1	2.8	31.5		32.7	18.2	.9	1.8		20.9	819
	12-14			1.8	25.8		26.5	10.0	1.8	1.6		13.2	826
	15-17		.7	1.3	23.4		24.8	7.6	2.3	1.5		11.2	821
	18-20		.8	.7	24.9		26.2	9.6	1.8	1.2		12.3	826
	21-23	.1	.5	1.3	26.9		28.2	8.8	1.3	2.1		11.6	819
TOTALS		.0	.5	2.0	26.9		28.9	11.7	1.1	1.5		14.1	6502

GLOBAL CLIMATOLOGY BRANCH
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AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72795 DULUTH IAP MN 73-82 MAR

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
MAR	00-02	.1	4.8	3.3	17.7		23.6	16.5		2.7		17.8	919
	03-05		5.4	2.3	15.5		22.6	19.4		2.8		21.0	909
	06-08		6.1	2.4	17.4		24.1	21.1	1.0	3.4		24.8	916
	09-11	.1	5.9	1.3	17.4		23.7	19.5	1.4	3.3		23.3	904
	12-14		4.9	.5	16.8		21.4	15.8	2.1	3.8		20.3	917
	15-17	.1	6.3	1.0	16.9		23.2	15.5	2.2	2.9		19.8	909
	18-20	.1	4.4	.9	16.4		20.9	14.7	1.1	2.3		17.5	906
	21-23	.1	5.0	2.2	18.3		23.5	16.0		3.0		18.2	906
TOTALS		.1	5.4	1.7	17.1		22.9	17.3	1.0	3.0		20.3	7286

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GLOBAL CLIMATOLOGY BRANCH
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WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 APR

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
APR	00-02	.2	9.6	.8	5.6		14.6	11.9		.3		12.2	875
	03-05	.6	9.6	.9	7.1		16.2	14.1		.3		14.4	872
	06-08	.4	10.6	.9	7.1		17.0	16.1	1.0	.7	.1	17.8	889
	09-11	.6	8.1	.8	6.6		14.6	12.9	.5	.7	.3	14.3	879
	12-14		7.6	.3	5.4		12.5	9.6	1.6	.8		11.7	882
	15-17	.2	7.3	.7	4.9		11.9	8.8	1.9	1.1		11.9	874
	18-20	.3	8.4	1.0	4.9	.1	12.8	9.2	1.0	.6		10.8	877
	21-23	.1	9.3	.5	5.4		14.6	9.4	.1			9.5	871
TOTALS		.3	8.8	.7	5.9	.0	14.3	11.3	.8	.6	.1	12.8	7019

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 MAY

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
MAY	00-02	.3	10.3		.9		11.1	14.0	.3			14.3	909
	03-05	.7	10.6		.7		11.3	16.3	.6			16.9	906
	06-08	.1	11.8		1.3		12.7	17.2	1.1			18.2	913
	09-11	.3	11.0		1.2	.1	11.7	13.5	2.6			16.2	909
	12-14	.4	11.4		1.2	.1	12.6	10.1	2.4			12.4	909
	15-17	1.0	9.6		1.3		10.2	10.0	1.8			11.8	910
	18-20	.9	11.0		.6		11.6	10.5	1.7			12.0	907
	21-23	1.1	10.7		.7		11.0	11.2	.3			11.5	903
TOTALS		.6	10.8		1.0	.0	11.5	12.9	1.4			14.2	7266

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 JUN

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
JUN	00-02	2.6	9.9			.1	9.9	13.3	.3			13.6	873
	03-05	1.6	11.2				11.2	17.2	.5			17.7	872
	06-08	.8	9.6				9.6	15.0	2.2			16.8	879
	09-11	.7	6.8				6.8	9.3	2.3			11.6	873
	12-14	.9	9.8				9.8	6.9	3.1			9.8	884
	15-17	2.1	11.7			.1	11.7	6.2	2.8			9.0	869
	18-20	2.8	11.9				11.9	8.6	3.0			11.5	872
	21-23	2.1	9.6				9.6	10.0	1.0			11.0	867
TOTALS		1.7	10.1			.0	10.1	10.8	1.9			12.6	6989

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 JUL

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNO	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
JUL	00-02	3.5	7.4				7.4	10.1	1.0			11.1	911
	03-05	3.0	8.1				8.1	12.8	1.2			13.9	912
	06-08	2.2	8.7			.1	8.7	16.4	3.0			18.7	907
	09-11	1.1	6.7				6.7	12.5	2.1			14.6	906
	12-14	.6	6.3				6.3	7.4	3.1			10.5	905
	15-17	1.6	5.9				5.9	5.6	3.9			9.5	914
	18-20	2.5	6.9				6.9	7.7	3.2			10.9	905
	21-23	4.0	6.5				6.5	8.6	1.7			10.3	903
TOTALS		2.3	7.1			.0	7.1	10.1	2.4			12.4	7263

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 AUG

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
AUG	00-02	2.3	7.2				7.2	18.4	2.3			20.7	909
	03-05	2.2	7.6				7.6	22.5	2.2			24.3	906
	06-08	1.1	10.4				10.4	30.0	4.2			32.7	902
	09-11	.7	11.5				11.5	19.8	5.0			23.8	887
	12-14	1.1	9.8				9.8	11.4	6.9			17.8	889
	15-17	2.0	10.1			.1	10.1	10.5	6.3			16.6	894
	18-20	1.9	8.6				8.6	11.2	5.8			16.7	904
	21-23	2.6	8.8				8.8	14.5	4.6			18.9	899
TOTALS		1.7	9.3			.0	9.3	17.3	4.6			21.4	7198

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 SEP

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
SEP	00-02	1.1	13.8		.3		14.2	16.8	.2			17.0	889
	03-05	1.5	14.8		.3		15.1	20.6	.2			20.8	878
	06-08	.7	14.4		.3		14.8	26.0	.5			26.5	880
	09-11	.6	12.8		.3		13.1	18.2	2.5			20.8	877
	12-14	.3	11.6			.1	11.6	12.3	3.6		.1	15.7	889
	15-17	.5	11.9			.1	11.9	9.5	3.5			13.1	888
	18-20	.7	13.0				13.8	11.7	3.1			14.7	883
	21-23	1.4	14.3		.1		14.4	13.3	1.3			14.5	874
TOTALS		.9	13.3		.2	.0	13.5	16.1	1.9		.0	17.9	7050

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

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WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 OCT

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
OCT	00-02	.7	11.5		3.7		14.3	13.4	.1		.2	13.7	908
	03-05	.8	11.9		3.6		15.0	16.4			.1	16.5	916
	06-08	.3	11.1		3.4		13.8	17.6	.7			18.2	910
	09-11		10.3	.1	4.3		13.9	14.9	1.2			16.1	906
	12-14	.1	11.2		5.0		15.6	11.7	2.1			13.8	903
	15-17	.2	11.3		3.2		14.3	11.1	1.5		.1	12.7	904
	18-20	.3	10.9		4.0		14.5	10.9	.8		.3	12.0	911
	21-23	.2	10.7		4.4		14.5	12.5	.4		.3	13.3	895
TOTALS		.3	11.1	.0	4.0		14.5	13.6	.9		.1	14.5	7253

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 NOV

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
NOV	00-02	.1	5.8	.7	19.9		25.7	11.3	.3	1.6		13.3	874
	03-05	.1	4.5	1.8	20.7	.1	26.2	13.8	.3	1.1		15.0	882
	06-08	.2	6.0	1.5	19.2		25.7	16.5	1.4	1.5		18.8	873
	09-11	.1	6.0	1.5	18.3		24.9	17.8	3.2	1.8		22.4	880
	12-14	.1	5.8	.9	17.9		23.6	12.7	3.3	1.0		17.0	877
	15-17		6.2	.5	14.4		20.6	10.2	2.5	1.3		13.9	873
	18-20	.1	6.3	.2	18.3		24.9	11.0	1.5	.7	.1	13.3	882
	21-23		6.1	.2	20.0		25.8	10.9	1.0	.9		12.7	872
TOTALS		.1	5.8	.9	18.6	.0	24.6	13.0	1.7	1.2	.0	15.8	7013

USAFETAC FORM JULY 64 0-10-5(GL A), PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 DEC

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
DEC	00-02		2.0	3.6	24.8		29.3	16.1	.3	1.1		17.5	912
	03-05	.1	1.8	2.6	26.3		30.3	18.5	.1	1.8		20.4	899
	06-08		1.8	3.8	26.6		30.9	19.3	.1	1.8		21.0	913
	09-11		1.2	3.5	28.9	.1	32.7	25.0	1.1	1.4		27.5	907
	12-14		1.4	1.3	27.4		29.6	19.6	2.6	1.4		23.5	912
	15-17		1.4	1.3	24.7		27.0	17.9	1.9	1.0		20.5	906
	18-20		1.4	1.2	23.0		25.2	16.3	1.3	.8		17.9	909
	21-23		2.3	1.6	23.1		26.7	15.1	.4	.6		16.1	899
TOTALS		.0	1.7	2.4	25.6	.0	29.0	18.5	1.0	1.2		20.6	7257

USAFETAC FORM JULY 64 0-10-5(GL A), PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

WEATHER CONDITIONS

72745 DULUTH IAP MN 73-82 ALL

STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE OF WEATHER CONDITIONS FROM HOURLY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
JAN	ALL	.0	.2	1.6	28.5		29.7	11.3	.6	3.9		15.5	7257
FEB		.0	.5	2.0	26.9		28.4	11.7	1.1	1.5		14.1	6602
MAR		.1	5.4	1.7	17.1		22.9	17.3	1.0	3.0		20.3	7286
APR		.3	8.8	.7	5.9	.0	14.3	11.5	.8	.6	.1	12.8	7019
MAY		.6	10.8		1.0	.0	11.5	12.9	1.4			14.2	7266
JUN		1.7	10.1			.0	10.1	10.8	1.9			12.6	6989
JUL		2.3	7.1			.0	7.1	10.1	2.4			12.4	7263
AUG		1.7	9.3			.0	9.3	17.3	4.6			21.4	7190
SEP		.9	13.3		.2	.0	13.5	16.1	1.9		.0	17.9	7050
OCT		.3	11.1	.0	4.0		14.5	13.6	.9		.1	14.5	7253
NOV		.1	5.8	.9	18.6	.0	24.6	13.8	1.7	1.2	.0	15.8	7013
DEC		.0	1.7	2.4	25.6	.0	29.0	16.5	1.0	1.2		20.6	7257
TOTALS		.7	7.0	.8	16.7	.0	17.9	13.7	1.6	1.0	.0	16.0	85443

PART A ATMOSPHERIC PHENOMENA

This summary is a presentation of the percentage of days with occurrence of various atmospheric phenomena. These data are obtained from all recorded information on the reporting forms or from hourly data and combined into a daily observation.

The descriptions of the phenomena in the Weather Conditions Summary above also apply for the categories summarized in these daily tabulations. However, it should be noted that in this summary the columns headed "% OF OBS WITH PRECIP" and "% OF OBS WITH OBST TO VISION" show the percentage of days rather than the percentage of observations. Since more than one type of precipitation or more than one type of obstruction may occur in the same daily observation, the sum of the values in the individual categories may differ from the total columns.

A percent value of ".0" in the table indicates less than .05 percent, which is usually only one occurrence.

This presentation is by month with annual totals, and is prepared with all years combined.

NOTES: (1) A day with rain and/or drizzle was not separately reported in the WBAN data prior to year 1949. Therefore, percentages in this column are restricted to the period Jan 1949 and later.

(2) A day with freezing rain and/or freezing drizzle is also properly reported as a day with rain and/or drizzle.

(3) A day with dust and/or sand is included in this summary only when visibility is reduced to less than 5/8 mile.

GLOBAL CLIMATOLOGY BRANCH
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xxWEATHERxCONDITIONSx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
ATMOSPHERIC PHENOMENA

727450 STATION | DULUTH IAP MN STATION NAME | 48-82 YEARS | ALL MONTH

PERCENTAGE OF DAYS WITH VARIOUS ATMOSPHERIC PHENOMENA FROM DAILY OBSERVATIONS

MONTH	HOURS (L.S.T.)	THUNDER-STORMS	RAIN AND/OR DRIZZLE	FREEZING RAIN & /OR DRIZZLE	SNOW AND/OR SLEET	HAIL	% OF OBS WITH PRECIP.	FOG	SMOKE AND/OR HAZE	BLOWING SNOW	DUST AND/OR SAND	% OF OBS WITH OBST TO VISION	TOTAL NO. OF OBS.
JAN	DAILY	.3	12.2	12.0	73.8	.1	75.1	32.2	7.8	17.3		46.1	1054
FEB		.1	12.3	11.2	68.0		70.9	32.3	8.8	11.1		41.2	961
MAR		2.0	18.9	7.8	55.1	.3	62.5	31.9	6.1	9.7	.2	39.0	1059
APR		5.6	38.1	6.3	33.1	1.4	56.0	30.8	6.6	3.7		33.9	1020
MAY		12.0	54.0	1.0	9.1	1.7	56.7	34.9	6.2	.3		36.8	1054
JUN		22.6	59.0			1.9	59.0	38.8	7.0			40.5	1020
JUL		27.1	54.9			1.5	54.9	36.9	9.4			39.2	1054
AUG		23.4	54.2		.1	1.0	54.2	45.7	11.0			48.5	1059
SEP		11.8	55.6		1.7	1.0	55.8	45.5	8.3			46.8	1020
OCT		4.5	42.9	.3	18.4	.6	52.3	36.7	7.8	.1	.1	38.2	1054
NOV		1.0	26.9	7.1	58.3	.1	68.2	32.7	6.5	5.6		39.0	1050
DEC		.5	18.9	15.9	73.8		76.7	38.9	7.1	12.2		48.0	1085
TOTALS		9.2	37.2	5.1	32.6	.8	61.8	36.9	7.7	5.0	.0	41.9	12980

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APPLICATIONS CENTER

PART B PRECIPITATION, SNOWFALL & SNOW DEPTH

B

This part of the Uniform Summary consists of eight summaries derived from daily observations as follows:

* 1. The first set presents, in three tables, the percentage frequency of various daily amounts of PRECIPITATION, SNOWFALL, and SNOW DEPTH. The daily amount summary is prepared by month and annual, all years combined, and includes percent of days with measurable amounts; percent of days having none, traces, and given amounts; and means, greatest and least monthly amounts. (The last three statistics are omitted from the snow depth summary because of their doubtful and limited value.) A total count of valid observations is given for months and annual. Stations are included in which a portion or all of the period may contain months with missing days. This will be noted on the summary pages. A percent value of ".0" in these daily amount tables indicates less than .05 percent which is usually only one occurrence.

* 2. The second set of three tables presents the extreme daily amounts, by individual year and month, of PRECIPITATION, SNOWFALL, and SNOW DEPTH for the entire period of record available. Also provided are the means and standard deviations for each month and annual (all months) and the total valid observation count. An asterisk (*) is printed in any year-month block when the extreme value is based on an incomplete month (at least one day missing for the month). When a month has valid observations reported but no occurrences, zeros are given in the tables as follows:

EXTREME DAILY PRECIPITATION	".00"	equals none for the month (hundredths)
EXTREME DAILY SNOWFALL	".0"	equals none for the month (tenths)
EXTREME DAILY SNOW DEPTH	"0"	equals none for the month (whole inches)

3. The third set of two tables provides the total monthly amounts of PRECIPITATION and SNOWFALL for each year-month and annual. Also prepared are the means, standard deviations, and total number of valid observations for each month and annual (all months). An asterisk (*) is printed in each data block if one or more days are missing for the month. No occurrences for a month are indicated in the same manner as in the extreme tables above. If a trace becomes the extreme or monthly total in any of these tables it is printed as "TRACE."

Continued on Reverse Side

* Values for means and standard deviations do not include measurements from incomplete months.

NOTES: (1) The above studies may also be prepared for stations operating for less than full months for portions or all of the period of record. This may include stations operating 5 or 6 days a week and those with only random days missing. An asterisk (*) in the data blocks will give an indication that a month is incomplete. Please refer to Station History at front of book and observation counts in each summary to evaluate the amounts of data missing.

(2) Hail was included in snowfall occurrences in the summary of day observations prior to Jan 56, but these occurrences have been removed from snowfall category and counted as Hail in these summaries.

(3) Snow Depth was recorded and punched at various hours during the period available from U. S. operated stations. The hours used by each service for each period are as follows:

Air Force Stations:		U. S. Navy and National Weather Service (USWB)	
Beginning thru 1945	at 0800LST	Beginning thru Jun 52	at 0030GMT
Jan 46-May 57	at 1230GMT	Jul 52-May 57	at 1230GMT
Jun 57-present	at 1200GMT	Jun 57-present	at 1200GMT

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

DAILY AMOUNTS

PERCENTAGE FREQUENCY OF PRECIPITATION (FROM DAILY OBSERVATIONS)

727450 (STATION) DULUTH IAP MN (STATION NAME) 48-82 (YEARS)

	AMOUNTS (INCHES)													PERCENT OF DAYS WITH MEASURABLE AMTS	TOTAL NO. OF OBS.	MONTHLY AMOUNTS (INCHES)		
PRECIP.	NONE	TRACE	.01	.02-.05	.06-.10	.11-.25	.26-.50	.51-1.00	1.01-2.50	2.51-5.00	5.01-10.00	10.01-20.00	OVER 20.00			MEAN	GREATEST	LEAST
SNOWFALL	NONE	TRACE	0.1-0.4	0.5-1.4	1.5-2.4	2.5-3.4	3.5-4.4	4.5-6.4	6.5-10.4	10.5-15.4	15.5-25.4	25.5-50.4	OVER 50.4					
SNOW-DEPTH	NONE	TRACE	1	2	3	4-6	7-12	13-24	25-36	37-48	49-60	61-120	OVER 120					
JAN	25.0	35.8	9.6	12.7	6.5	6.9	2.3	1.0	.3					39.3	1054	1.26	4.70	.14
FEB	29.7	34.8	8.9	11.8	6.2	5.6	2.1	.9						35.6	961	.88	1.89	.22
MAR	37.5	27.0	6.1	10.2	5.1	7.8	3.2	2.7	.5					35.5	1054	1.85	5.12	.22
APR	44.0	20.1	4.6	9.0	4.4	7.6	5.3	3.9	.9	.1				35.9	1020	2.39	5.84	.41
MAY	43.3	17.5	4.2	8.3	5.3	8.9	6.7	4.2	1.6	.1				39.3	1054	3.18	7.67	.15
JUN	41.0	18.8	3.0	7.6	4.3	9.0	7.8	5.0	3.0	.3				40.2	1020	4.02	7.13	1.19
JUL	45.6	16.9	3.8	6.1	5.0	8.1	5.6	5.2	3.6	.1				37.5	1054	4.14	8.48	1.47
AUG	45.8	17.1	4.2	8.6	4.5	6.2	5.9	4.3	3.0	.5				37.1	1054	3.86	10.31	.71
SEP	44.2	17.9	5.9	7.4	4.3	9.0	4.5	4.9	1.7	.2				37.8	1020	3.11	6.61	.19
OCT	47.7	21.7	4.5	7.1	3.8	6.5	4.2	3.3	.9	.3				30.6	1054	2.39	7.53	.35
NOV	31.8	32.5	7.0	10.8	6.1	5.5	3.4	2.0	.9					35.7	1050	1.72	4.19	.19
DEC	23.4	38.6	8.3	12.3	5.7	7.2	3.3	.7	.5					38.0	1085	1.36	3.70	.16
ANNUAL	38.2	24.9	5.8	9.3	5.1	7.4	4.5	3.2	1.4	.1				36.9	12480	30.16		

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

EXTREME VALUES

PRECIPITATION

(FROM DAILY OBSERVATIONS)

727450 (STATION) DULUTH IAP MN (STATION NAME) 48-82 (YEARS)

24 HOUR AMOUNTS IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
48	.35	.70	.61	2.61	.20	1.94	1.27	1.35	.18	.41	1.68	.45	2.61
49	.61	.18	.98	.44	1.52	1.70	2.31	1.24	1.51	2.64	.44	1.33	2.64
50	.58	.20	1.41	1.05	2.25	1.01	1.53	1.57	.55	2.81	.71	1.91	2.81
51	.16	.58	.75	.69	1.03	1.51	1.08	2.89	1.80	.71	.93	.42	2.89
52	.38	.14	.69	.36	.32	3.36	1.33	1.26	.12	.47	.41	.07	3.36
53	.39	.40	.66	.83	1.50	.82	2.09	2.06	.43	.14	1.35	.78	2.09
54	.36	.32	.64	1.85	1.30	1.35	.87	.47	.74	.32	.42	.12	1.85
55	.20	.41	.21	.58	1.76	.76	1.40	1.20	2.16	.41	.40	.83	2.16
56	.28	.24	.46	.66	.98	.31	.46	1.30	.67	.87	.58	.49	1.30
57	.08	.37	.50	.86	.81	2.93	2.47	1.12	.75	.67	.70	.18	2.93
58	.23	.18	.43	.38	.69	3.14	.91	1.12	1.07	.60	.72	.23	3.14
59	.19	.10	.06	.26	1.28	1.54	1.59	2.06	.96	.77	.23	1.10	2.06
60	.21	.18	.08	1.12	1.10	1.27	.85	1.48	.51	.93	2.24	.31	2.24
61	.07	.18	1.69	1.46	1.30	.67	.73	.31	.67	.91	1.22	.52	1.69
62	.23	.54	.75	1.27	2.13	.93	.48	1.56	1.61	.20	.10	.27	2.13
63	.16	.28	.34	.81	.56	1.47	.40	1.32	.95	1.00	1.07	.69	1.47
64	.63	.14	.35	1.54	1.34	1.34	.70	1.75	2.28	.54	.55	.34	2.28
65	.21	.77	1.72	.53	.53	1.48	1.46	1.12	1.32	1.00	1.47	.42	1.72
66	.29	.70	.98	.68	.64	1.30	1.42	1.25	1.26	1.57	.31	.45	1.57
67	1.12	.06	.18	.37	.35	1.82	1.75	.55	.77	.68	.12	.27	1.82
68	.16	.08	.64	1.99	.78	1.76	2.02	.64	.85	1.35	2.16	1.03	2.16
69	1.18	.12	.18	.72	.65	.79	.93	1.00	.89	.32	.40	.74	1.18
70	.08	.20	.51	.92	.63	.44	2.03	.24	.56	1.20	.93	1.11	2.03
71											.85	.41	
72	.95	.63	.69	.60	.73	1.16	1.63	2.95	3.77	.36	.91	.88	3.77
73	.39	.12	.79	.54	1.62	.61	.64	2.29	1.02	2.55	.62	.09	2.55
74	.26	.18	.18	.57	.62	1.26	3.40	1.23	.18	.79	.55	.46	3.40
75	1.14	.26	1.11	.70	.32	1.08	1.02	.61	1.00	.60	1.53	.28	1.53
76	.38	.48	.80	.38	.09	1.42	1.32	.93	.80	.38	.11	.14	1.42
77	.06	.21	2.24	.47	.85	.69	1.26	.80	1.98	1.25	.78	.79	2.24
MEAN													
S.D.													
TOTAL OBS.													

NOTE * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM AA 64 0-88-3 (OLA)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

EXTREME VALUES
PRECIPITATION

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

24 HOUR AMOUNTS IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
78	.22	.17	.35	.83	.92	.94	2.17	3.07	.55	.25	.37	.37	3.07
79	.16	.69	.78	.41	3.00	.71	1.98	.75	.89	.84	.08	.11	3.00
80	.80	.12	.25	.18	.37	.91	1.60	1.40	3.38	.53	.21	.12	3.38
81	.24	.36	.45	.97	.78	1.02	1.13	1.29	.94	.86	.61	.35	1.29
82	.81	.17	.62	.54	1.35	.57	1.41	.74	1.14	2.06	1.38	.25	2.06
MEAN	.399	.308	.679	.829	1.009	1.294	1.481	1.321	1.125	.911	.775	.520	2.289
S.D.	.322	.208	.491	.533	.635	.713	.653	.704	.816	.688	.560	.408	.697
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1085	12460

NOTE * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM 0-88-5 (OL-A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

EXTREME VALUES
MONTHLY PRECIPITATION

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

TOTAL MONTHLY PRECIPITATION IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
48	1.14	1.67	2.01	5.84	.86	4.58	3.77	2.79	.37	.84	2.55	1.69	28.11
49	1.84	.87	2.42	1.08	4.05	5.32	8.48	1.84	2.22	7.53	1.11	1.50	38.26
50	3.12	.80	3.84	4.25	6.45	3.51	4.07	3.17	1.43	3.87	1.88	3.69	40.08
51	.49	1.79	2.30	2.11	2.88	5.04	3.68	6.64	6.25	2.57	1.37	1.71	36.83
52	.88	.25	2.06	.77	.90	7.13	6.44	4.55	.19	.57	1.21	.16	25.11
53	1.24	1.12	1.88	3.57	5.60	4.07	5.68	6.43	.88	.35	1.91	1.90	34.63
54	1.45	1.03	1.83	4.05	4.47	4.10	2.70	1.38	2.92	1.32	.79	.26	26.30
55	.95	1.64	1.26	1.48	2.97	3.98	6.81	3.96	4.83	1.75	1.97	1.89	33.49
56	.93	.46	1.07	1.87	2.08	1.19	1.78	4.72	1.92	2.43	1.47	1.43	21.35
57	.19	1.52	.99	1.84	2.47	6.84	5.56	1.72	2.98	1.75	2.59	.37	28.82
58	1.08	.36	.85	1.26	1.59	5.67	3.82	3.85	4.33	1.22	2.47	.86	27.36
59	.46	.28	.22	.59	5.63	4.06	4.29	4.48	4.83	2.62	.69	2.48	30.63
60	.88	.52	.23	3.80	4.37	2.98	2.81	4.10	1.66	2.19	2.65	.74	26.93
61	.14	.65	2.53	4.72	3.26	1.33	2.47	.71	3.01	1.79	1.61	1.26	23.48
62	.88	1.82	1.08	2.67	7.67	3.01	2.97	4.40	3.03	.86	.28	.90	29.57
63	.32	.87	1.50	2.21	2.28	4.04	1.82	2.96	2.80	1.01	1.51	1.08	22.40
64	1.10	.57	1.10	4.10	5.74	3.50	1.47	6.57	6.58	.59	1.84	1.79	34.95
65	.89	1.73	5.12	1.64	2.96	4.51	3.57	3.76	5.56	3.30	3.33	1.67	38.04
66	.98	1.31	3.84	1.99	1.53	4.14	6.13	6.42	1.52	3.56	1.17	1.56	34.15
67	3.12	.24	.66	1.99	.80	5.21	2.91	2.31	1.34	1.44	.50	.91	21.43
68	.77	.22	1.89	4.83	4.02	5.39	3.60	2.07	3.42	5.28	3.10	3.70	38.29
69	4.70	.26	.39	1.46	2.82	2.18	3.03	2.18	4.13	2.42	1.25	2.67	27.49
70	.51	.43	1.15	3.16	2.81	1.68	3.58	.71	2.01	6.07	3.39	1.97	27.47
71											2.07	1.22	
72	2.28	1.47	1.45	2.17	2.00	3.70	6.71	10.31	5.30	.83	1.37	2.02	39.61
73	.67	.29	1.54	1.35	3.81	2.43	2.36	8.46	4.28	4.56	1.61	.69	32.05
74	.97	.82	.78	2.07	3.09	4.07	4.85	3.79	.98	1.57	1.36	1.15	25.50
75	3.69	.76	2.59	2.21	1.44	5.59	2.26	2.52	2.32	1.20	4.19	.64	29.41
76	1.57	1.05	3.67	.73	.15	6.16	2.60	1.84	1.84	.48	.19	.39	20.67
77	.36	.47	4.43	1.27	3.50	3.97	3.91	3.26	5.97	3.20	2.37	1.31	34.02
MEAN													
S.D.													
TOTAL OBS.													

NOTE * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM 0-80-5 (OL-A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

EXTREME VALUES
MONTHLY PRECIPITATION

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

TOTAL MONTHLY PRECIPITATION IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
78	.52	.35	.47	1.96	3.49	2.96	7.67	7.49	1.52	.77	1.27	1.19	29.66
79	.76	1.89	3.58	1.15	6.01	4.33	5.45	2.10	2.01	3.01	.47	.16	30.92
80	1.55	.56	1.02	.41	.82	2.35	3.94	5.34	6.61	1.64	.70	.63	25.57
81	.32	1.50	1.05	4.48	1.15	5.83	3.26	2.84	2.42	3.59	.96	.97	28.37
82	2.02	.48	2.06	2.06	4.30	1.97	6.21	1.60	4.19	5.07	3.08	1.19	34.23
MEAN	1.258	.884	1.849	2.386	3.176	4.024	4.137	3.861	3.107	2.390	1.722	1.364	30.152
S.D.	1.044	.553	1.245	1.392	1.838	1.506	1.787	2.265	1.829	1.745	.965	.853	5.523
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1085	12480

NOTE * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM 0-80-5 (OL-A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

DAILY AMOUNTS

PERCENTAGE FREQUENCY OF
SNOWFALL
(FROM DAILY OBSERVATIONS)

727450 (STATION) DULUTH IAP MN (STATION NAME) 48-82 (YEARS)

	AMOUNTS (INCHES)													PERCENT OF DAYS WITH MEASURABLE AMTS	TOTAL NO. OF OBS.	MONTHLY AMOUNTS (INCHES)		
PRECIP.	NONE	TRACE	.01	.02-.05	.06-.10	.11-.25	.26-.50	.51-1.00	1.01-2.50	2.51-5.00	5.01-10.00	10.01-20.00	OVER 20.00					
SNOWFALL	NONE	TRACE	0.1-0.4	0.5-1.4	1.5-2.4	2.5-3.4	3.5-4.4	4.5-6.4	6.5-10.4	10.5-15.4	15.5-25.4	25.5-50.4	OVER 50.4			MEAN	GREATEST	LEAST
SNOW-DEPTH	NONE	TRACE	1	2	3	4-6	7-12	13-24	25-36	37-48	49-60	61-120	OVER 120					
JAN	26.2	32.1	18.9	11.5	4.5	2.7	1.4	1.6	.8	.5				41.7	1054	17.2	46.8	2.8
FEB	31.9	30.6	17.5	11.1	3.6	2.9	.6	1.4	.2	.1				37.5	961	11.7	31.5	2.7
MAR	44.7	23.9	12.0	9.1	3.2	3.3	.9	1.8	.8	.1	.1			31.4	1054	14.6	45.5	2.1
APR	66.7	17.3	7.3	4.3	1.6	.9	.6	1.1	.4					16.1	1020	6.7	31.6	.0
MAY	90.7	6.3	1.2	.9	.5	.2	.2							3.0	1054	1.0	8.1	.0
JUN	100.0														1020	.0	.0	.0
JUL	100.0														1054	.0	.0	.0
AUG	99.9	.1													1054	TRACE	TRACE	.0
SEP	98.3	1.5	.2											.2	1020	TRACE	.3	.0
OCT	81.6	13.3	2.8	1.7	.2	.1	.1	.1	.1					5.1	1054	1.3	8.1	.0
NOV	41.6	31.0	12.8	8.7	2.2	1.5	1.0	.5	.3	.5				27.3	1050	9.8	28.9	1.6
DEC	26.5	33.9	19.2	10.3	3.7	2.4	1.5	1.0	1.0	.4	.1			39.5	1085	16.0	44.3	1.8
ANNUAL	67.3	15.8	7.7	4.8	1.6	1.2	.5	.6	.3	.1	.0			16.8	12480	78.3		

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

EXTREME VALUES

SNOWFALL

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

24 HOUR AMOUNTS IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
48	5.9	13.0	4.5	.6	TRACE	.0	.0	.0	.0	TRACE	1.2	4.0	13.0
49	8.0	3.6	7.8	5.4	TRACE	.0	.0	TRACE	TRACE	.6	5.7	3.4	8.0
50	7.3	2.0	5.7	7.5	4.3	.0	.0	.0	.0	.2	3.4	23.2	23.2
51	2.1	5.9	7.3	4.8	.5	.0	.0	.0	TRACE	5.2	.6	4.5	7.3
52	5.6	2.0	5.0	2.4	TRACE	.0	.0	.0	.0	.5	5.1	.7	5.6
53	7.9	4.2	6.0	5.3	TRACE	.0	.0	.0	.0	TRACE	2.0	7.7	7.9
54	6.4	4.7	2.7	.8	3.3	.0	.0	.0	.0	2.6	2.8	2.3	6.4
55	4.5	6.4	3.5	4.4	TRACE	.0	.0	.0	.0	3.7	5.2	9.0	9.0
56	3.6	4.5	8.0	5.5	1.6	.0	.0	.0	.0	.0	11.1	6.4	11.1
57	2.3	4.9	5.1	3.1	.0	.0	.0	.0	.0	.3	4.7	2.2	5.1
58	4.3	1.8	4.3	.1	TRACE	.0	.0	.0	TRACE	.4	1.3	3.9	4.3
59	3.3	2.5	1.6	3.3	TRACE	.0	.0	.0	TRACE	1.2	2.5	11.0	11.0
60	3.2	5.8	1.2	.7	TRACE	.0	.0	.0	.0	TRACE	11.4	3.4	11.4
61	1.9	2.0	2.5	9.7	2.5	.0	.0	.0	TRACE	TRACE	1.8	7.1	9.7
62	4.2	5.7	4.8	2.4	.2	.0	.0	.0	.0	.4	1.0	3.1	5.7
63	1.7	3.4	4.8	.1	.2	.0	.0	.0	.0	.0	1.5	6.9	6.9
64	5.4	1.7	4.5	1.8	.0	.0	.0	.0	TRACE	TRACE	7.1	4.7	7.1
65	3.0	9.2	17.2	.6	.6	.0	.0	.0	TRACE	TRACE	14.7	1.8	17.2
66	4.3	1.7	9.1	3.3	.6	.0	.0	.0	TRACE	7.9	2.2	5.0	9.1
67	13.0	.6	3.3	1.5	.8	.0	.0	.0	.0	.7	1.1	1.4	13.0
68	2.9	1.3	2.2	4.2	3.5	.0	.0	.0	.0	TRACE	13.4	10.8	13.4
69	10.1	1.2	1.1	8.7	TRACE	.0	.0	.0	.0	1.7	4.0	11.9	11.9
70	1.8	6.0	2.6	5.6	1.6	.0	.0	.0	.0	.1	5.5	12.0	12.0
71											1.9	5.7	
72	13.4	6.0	2.8	7.8	TRACE	.0	.0	.0	TRACE	.4	3.8	7.5	13.4
73	4.0	1.1	1.5	1.3	.9	.0	.0	.0	.0	TRACE	3.9	2.7	4.0
74	4.7	3.0	6.4	4.7	1.0	.0	.0	.0	.2	.5	1.1	7.2	7.2
75	6.0	3.4	10.8	.4	TRACE	.0	.0	.0	.0	.1	12.0	3.6	12.0
76	5.3	3.5	6.0	.0	TRACE	.0	.0	.0	.0	.6	1.8	2.4	6.0
77	2.2	1.8	6.5	.1	.0	.0	.0	.0	.0	1.1	6.6	9.1	6.6
MEAN													
S.D.													
TOTAL OBS.													

NOTE * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM AIR 64 0-88-0 (OLA)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

EXTREME VALUES
SNOWFALL

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

24 HOUR AMOUNTS IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
78	4.9	5.0	6.6	3.2	.0	.0	.0	.0	.0	TRACE	2.7	6.4	6.6
79	3.0	7.6	4.6	1.3	1.1	.0	.0	.0	.0	.8	1.2	1.1	7.6
80	11.7	2.7	3.0	.7	TRACE	.0	.0	.0	.0	1.3	1.2	1.4	11.7
81	3.2	3.0	2.9	3.2	TRACE	.0	.0	.0	TRACE	1.2	8.1	7.3	8.1
82	12.0	2.6	6.4	3.6	.0	.0	.0	.0	.0	.7	4.1	6.9	12.0
MEAN	5.38	3.94	5.07	3.18	.67	.00	.00	TRACE	.01	.95	4.49	5.79	9.54
S.D.	3.295	2.601	3.166	2.651	1.136	.000	.000	.000	.033	1.666	3.861	4.367	3.962
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1085	12680

NOTE # (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM 0-8-6 (OL-A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

EXTREME VALUES
MONTHLY SNOWFALL

(FROM DAILY OBSERVATIONS)

72745C STATION | DULUTH IAP MN STATION NAME | 48-82 YEARS

TOTAL MONTHLY SNOWFALL IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT	NOV.	DEC.	ALL MONTHS
48	18.5	24.6	16.3	1.0	TRACE	.0	.0	.0	.0	TRACE	5.3	12.9	78.6
49	26.7	12.1	15.3	6.7	TRACE	.0	.0	TRACE	TRACE	1.1	10.7	6.2	78.8
50	39.3	10.9	26.0	31.6	6.0	.0	.0	.0	.0	.2	10.6	44.3	168.9
51	7.2	16.5	21.8	8.0	.5	.0	.0	.0	TRACE	5.8	2.7	19.0	81.5
52	15.4	4.3	21.6	3.2	TRACE	.0	.0	.0	.0	.5	7.3	1.8	54.1
53	19.8	12.8	11.9	14.2	TRACE	.0	.0	.0	.0	TRACE	4.4	23.0	86.1
54	23.0	11.8	12.4	.9	8.1	.0	.0	.0	.0	2.9	7.4	4.2	70.7
55	16.4	31.5	23.6	5.0	TRACE	.0	.0	.0	.0	6.5	22.4	24.1	129.5
56	12.9	8.4	17.5	9.9	1.8	.0	.0	.0	.0	.0	17.0	21.0	88.5
57	4.6	20.6	10.9	6.7	.0	.0	.0	.0	.0	.3	12.6	5.8	61.5
58	14.8	3.1	11.7	.1	TRACE	.0	.0	.0	TRACE	.4	3.6	13.7	47.4
59	8.6	9.2	3.7	3.5	TRACE	.0	.0	.0	TRACE	3.3	7.4	22.4	58.1
60	20.4	11.8	2.2	1.8	TRACE	.0	.0	.0	.0	TRACE	14.8	7.4	58.4
61	2.8	7.7	8.8	24.4	2.5	.0	.0	.0	TRACE	TRACE	2.8	14.4	63.4
62	14.2	18.3	7.7	5.7	.2	.0	.0	.0	.0	.7	1.8	8.4	57.0
63	3.6	14.4	19.1	.2	.2	.0	.0	.0	.0	.0	1.6	15.9	55.0
64	10.8	6.8	13.5	5.6	.0	.0	.0	.0	TRACE	TRACE	8.6	24.3	69.6
65	10.6	19.3	45.5	1.6	1.0	.0	.0	.0	TRACE	TRACE	25.9	8.6	112.5
66	11.8	4.3	24.5	10.2	1.7	.0	.0	.0	TRACE	8.1	7.6	15.4	83.6
67	36.7	2.7	6.9	1.6	1.3	.0	0	.0	.0	.8	4.2	4.3	58.5
68	10.8	2.7	4.1	8.7	3.7	.0	.0	.0	.0	TRACE	21.8	37.7	89.5
69	46.8	3.0	3.0	8.7	TRACE	.0	.0	.0	.0	4.3	9.1	38.8	113.7
70	7.5	8.9	9.9	14.8	1.6	.0	.0	.0	.0	.2	16.8	20.9	80.6
71											6.4	17.5	
72	30.9	20.7	11.0	20.4	TRACE	.0	.0	.0	TRACE	.5	6.7	20.0	110.2
73	9.2	3.0	2.1	2.8	1.5	.0	.0	.0	.0	TRACE	7.6	15.7	41.9
74	13.4	15.5	15.1	5.2	1.0	.0	.0	.0	.3	.8	4.5	19.1	74.7
75	32.7	12.3	30.3	.4	TRACE	.0	.0	.0	.0	.1	25.7	7.8	109.3
76	20.6	8.8	26.4	.0	TRACE	.0	.0	.0	.0	.8	2.7	7.8	67.1
77	8.8	5.1	15.3	.1	.0	.0	.0	.0	.0	1.7	16.0	12.0	59.0
MEAN													
S.D.													
TOTAL OBS.													

NOTE * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM AM 66 0-80-0 (OEA)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

EXTREME VALUES
MONTHLY SNOWFALL

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

TOTAL MONTHLY SNOWFALL IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
78	13.5	11.4	8.3	6.8	.0	.0	.0	.0	.0	TRACE	10.1	20.8	70.9
79	11.9	23.3	17.0	4.2	1.4	.0	.0	.0	.0	.8	6.0	2.0	66.6
80	21.9	10.3	12.6	1.5	TRACE	.0	.0	.0	.0	1.3	1.6	7.1	56.3
81	4.7	13.3	4.2	4.3	TRACE	.0	.0	.0	TRACE	1.4	12.5	15.5	55.9
82	34.2	8.0	17.8	6.3	.0	.0	.0	.0	.0	.8	16.0	21.4	104.5
MEAN	17.21	11.66	14.65	6.65	.96	.00	.00	TRACE	.01	1.27	9.78	16.03	78.24
S.D.	11.004	7.033	9.270	7.210	1.804	.000	.000	.000	.051	2.033	6.849	10.091	26.763
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1085	12480

NOTE # (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM 0-8-4 (OL-A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

DAILY AMOUNTS

PERCENTAGE FREQUENCY OF
SNOW DEPTH
(FROM DAILY OBSERVATIONS)

7.7450 (STATION) DULUTH IAP MN (STATION NAME) 48-82 (YEARS)

	AMOUNTS (INCHES)													PERCENT OF DAYS WITH MEASURABLE AMTS	TOTAL NO. OF OBS.	MONTHLY AMOUNTS (INCHES)		
PRECIP.	NONE	TRACE	.01	.02-.05	.06-.10	.11-.25	.26-.50	.51-1.00	1.01-2.50	2.51-5.00	5.01-10.00	10.01-20.00	OVER 20.00					
SNOWFALL	NONE	TRACE	0.1-0.4	0.5-1.4	1.5-2.4	2.5-3.4	3.5-4.4	4.5-6.4	6.5-10.4	10.5-15.4	15.5-25.4	25.5-50.4	OVER 50.4			MEAN	GREATEST	LEAST
SNOW-DEPTH	NONE	TRACE	1	2	3	4-6	7-12	13-24	25-36	37-48	49-60	61-120	OVER 120					
JAN		.5		2.2	3.8	9.7	32.0	43.9	7.6	.4				99.5	1054			
FEB		.3	.1		.4	3.9	22.8	51.9	20.5	.1				99.7	961			
MAR	.6	5.8	3.4	1.5	1.5	5.6	18.4	42.5	19.6	1.0				93.6	1054			
APR	35.6	25.3	5.0	4.1	3.8	6.6	7.9	8.5	2.8	.3				39.1	1020			
MAY	93.2	5.5	.6			.4	.4							1.3	1054			
JUN	100.0														1020			
JUL	100.0														1054			
AUG	100.0														1054			
SEP	99.9	.1													1020			
OCT	91.6	7.0	.9		.1	.5								1.4	1054			
NOV	37.0	21.5	13.6	6.3	5.0	10.1	6.1	.5						41.5	1050			
DEC	1.0	6.0	10.8	9.4	7.4	18.1	27.8	16.1	3.4					93.0	1084			
ANNUAL	54.9	6.0	2.9	2.0	1.8	4.6	9.6	13.6	4.5	.1				39.1	12479			

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

EXTREME VALUES

SNOW DEPTH

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

DAILY SNOW DEPTH IN INCHES

MONTH / YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
48	25	35	38	4	0	0	0	0	0	0	3	8	38
49	26	27	23	12	0	0	0	0	0	TRACE	7	5	27
50	30	27	29	30	10	0	0	0	0	0	6	30	30
51	21	25	33	25	TRACE	0	0	0	0	5	5	14	33
52	22	20	28	24	0	0	0	0	0	TRACE	6	4	28
53	18	21	27	6	TRACE	0	0	0	0	0	2	14	27
54	22	21	18	14	4	0	0	0	0	TRACE	3	5	22
55	15	30	28	9	0	0	0	0	0	4	11	27	30
56	31	30	31	27	1	0	0	0	0	0	12	19	31
57	14	26	24	4	0	0	0	0	0	TRACE	8	6	26
58	12	11	13	TRACE	TRACE	0	0	0	0	0	2	13	13
59	12	16	11	2	0	0	0	0	0	1	4	17	17
60	19	22	18	5	0	0	0	0	0	TRACE	12	10	22
61	11	10	9	15	TRACE	0	0	0	0	0	2	12	15
62	16	24	27	8	TRACE	0	0	0	0	TRACE	1	7	27
63	7	15	18	TRACE	TRACE	0	0	0	0	0	2	8	18
64	13	13	14	7	0	0	0	0	0	0	7	24	24
65	20	31	48	41	TRACE	0	0	0	0	0	23	17	48
66	18	18	29	11	1	0	0	0	0	6	3	13	29
67	31	26	25	2	TRACE	0	0	0	0	1	1	2	31
68	8	8	6	5	TRACE	0	0	0	0	TRACE	18	25	25
69	42	38	30	20	0	0	0	0	0	1	4	26	42
70	25	22	20	8	TRACE	0	0	0	0	TRACE	10	15	25
71											4*	12	
72	26	27	29	19	0	0	0	0	0	TRACE	2	18	29
73	22	14	13	1	TRACE	0	0	0	0	0	4	11	22
74	22	28	19	18	TRACE	0	0	0	TRACE	1	2	17	28
75	32	32	40	32	TRACE	0	0	0	0	0	12	10	40
76	20	19	26	4	0	0	0	0	0	TRACE	2	6	26
77	10	9	15	TRACE	0	0	0	0	0	1	10	13	15
MEAN													
S. D.													
TOTAL OBS.													

NOTE * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM 0-80-5 (OLA)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

EXTREME VALUES
SNOW DEPTH

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

DAILY SNOW DEPTH IN INCHES

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
78	10	14	13	3	0	0	0	0	0	0	5	16	16
79	18	29	32	17	TRACE	0	0	0	0	TRACE	1	1	32
80	14	15	18	8	0	0	0	0	0	TRACE	1	2	18
81	3	7	7	3	0	0	0	0	0	1	8	17	17
82	38	31	27	11	0	0	0	0	0	1	6	18	38
MEAN	19.8	21.8	23.1	11.6	.5	.0	.0	.0	TRACE	.6	6.0	13.2	26.7
S.D.	8.906	8.253	9.704	10.459	1.830	.000	.000	.000	.000	1.454	5.044	7.556	8.269
TOTAL OBS.	1054	961	1054	1020	1054	1020	1056	1054	1020	1054	1050	1084	12479

NOTE # (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM AM 64 0-88-6 (OLA)

U S AIR FORCE
ENVIRONMENTAL TECHNICAL
APPLICATIONS CENTER

PART C SURFACE WINDS

Presented in this part are various tabulations of surface winds as follows:

*1. Extreme Values - Peak Gusts: Derived from daily observations and presented by individual year and month for the entire period of record available. Speeds are presented in knots, while directions are given in 16 compass points from the beginning of record through June 1968, and in tens of degrees starting in July 1968. The extreme is selected and printed from available peak gusts for each year-month, however an asterisk (*) is printed in the data block if less than 90% (3 or more missing observations) of the peak gusts are available for the month. An ALL MONTHS value is presented when every month of the year has valid observations. Means and standard deviations are also computed when four or more values are present for any column. A total raw count of valid observations is presented for each month and ALL MONTHS.

NOTE: According to Federal Meteorological Handbook No. 1 specifications (formerly Circular N), "peak gust data are recorded only at stations with continuous instantaneous wind-speed recorders."

*2. Bivariate percentage frequency tabulations: Derived from hourly observations, these tabulations are a percentage frequency of wind directions to 16 compass points and calm by wind speeds (knots) in increments of Beaufort classifications. Percentages are shown by both directions and speed, and in addition the mean wind speed is given for each direction.

A separate category is provided on the form for variable winds, which are reported in some data sources. In these data where light and variable winds are reported with no directions but with speeds given, the speeds will be summarized in the appropriate groups opposite the column headed VRBL.

a. Three tables are prepared for ALL WEATHER surface winds, all years combined, by: (1) Annual - all hours combined, (2) By month - all hours combined, and (3) By month - by standard 3-hour groups.

b. A separate annual table is also presented for surface winds meeting INSTRUMENT CLASS conditions as follows: Ceiling 200 through 1400 feet inclusive with visibility equal to or greater than 1/2 mile, and/or visibility 1/2 through 2-1/2 miles inclusive with ceiling equal to or greater than 200 feet.

NOTE: A percentage frequency of ".0" in these tables represents one or more occurrences amounting to less than ".05" percent.

*Values for means and standard deviations do not include measurements from incomplete months.

C

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

EXTREME VALUES

SURFACE WINDS

(FROM DAILY OBSERVATIONS)

727450 STATION — DULUTH IAP MN STATION NAME — 66-82 YEARS

DAILY PEAK GUSTS IN KNOTS

YEAR \ MONTH	JAN.		FEB.		MAR.		APR.		MAY		JUN.		JUL.		AUG.		SEP.		OCT.		NOV		DEC.		ALL MONTHS	
66																			W	51E	36SW	34				
67	NE	49NW	48SW		35E		51W		39NE		37NW		53W		37NW		35NW		44NW		37SW		47		NW	53
68	E	32NW	43S		39E		41W		35NE		36SW		46W		37E		32NW		39W		32NW		43		SW	46
69	E	32SW	31NW		30NW		45W		34SW		35E		35SW		44NW		31SW		34NW		32NW		35		NW	45
70	NW	28NW	39E		38W		47E		43SW		34NW		34W		36SW		35NW		38NW		46E		43		W	47
71																			SW		37NW		36			
72	NW	50NW	38W		39E		40NE		38NW		34SW		39W		40S		37NW		42NE		31NE		43		NW	50
73	NW	27W	25NE		31S		32NE		38W		30SW		34NW		24E		28W		37NW		29NW		30		NE	38
74	NW	38NW	31E		40NE		36NW		35W		33W		34NW		42NW		37E		46NE		47W		37		NE	47
75	W	45NW	44NE		52NE		46NE		32NW		45NW		40SW		49E		30NE		38NE		39NW		36		NE	52
76	NW	39NW	43E		45SW		42SW		34SW		47W		29W		29SW		34SW		27W		38SW		33		SW	47
77	NW	37NE	47NE		49SW		34SW		38SW		37W		30NW		29SW		50NE		38S		43NE		43		SW	50
78	NW	34NW	26NW		34W		41SW		36SW		32W		46SW		39NE		45W		30SW		34W		32		W	46
79	NW	25E	34NW		33NW		40E		32NW		42NE		32NW		32SW		39NW		30SW		32W		33		NW	42
80	W	40SW	31W		38NW		40NE		35W		37NE		33SE		36NW		40S		37NW		32W		44		W	44
81	NW	35NW	34NE		35W		39W		62S		40W		33N		33W		42NW		40NW		37E		29		W	62
82	E	48W	28W		50NW		44E		35S		*30SW		30SW		29NE		25E		34NW		43NW		37		W	50
MEAN	37.3		36.1		39.2		41.2		37.7		37.1		36.5		35.7		36.0		37.8		36.8		37.4		47.8	
S.D.	8.013		7.596		6.899		4.989		7.294		4.891		6.958		6.606		6.590		6.178		5.403		5.454		5.659	
TOTAL OBS.	464		428		465		450		464		446		463		465		450		495		510		526		5622	

NOTES * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM AM 64 0-88-5 (OLA)

$ (BASED ON LESS THAN FULL MONTHS AND +100 KNOTS)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL WEATHER (CLASS) 0000-0200 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	3.2	3.5	1.1								7.9	7.3
NNE	.2		.4									.7	6.2
NE		.7	.2	.1								1.0	6.7
ENE	.2	.2	.6	.6	.2							1.8	10.8
E	.1	.6	.7	1.8	.1	.2						3.4	12.8
ESE		2.0	1.1	1.7	.1							4.8	8.9
SE		1.9	1.7	.4								3.1	7.8
SSE		.6	.2	.9								1.7	9.9
S	.1	.8	1.2	1.0								3.1	9.1
SSW	.1	.4	1.8	1.9	.3	.1						4.6	10.5
SW	.1	.8	2.4	1.9								5.2	9.6
WSW	.1	.9	2.2	1.2		.3						4.7	9.5
W	.2	2.3	3.7	3.5	.1							9.9	9.0
WNW	.1	2.9	6.1	5.5	.4							15.0	9.7
NW	.1	3.6	6.3	7.9	1.5	.1						19.6	10.5
NNW	.1	3.9	3.5	3.1	.6							11.1	9.1
VARBL													
CALM												2.5	
	1.7	23.7	35.5	32.5	3.4	.8						100.0	9.2

TOTAL NUMBER OF OBSERVATIONS 909

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL WEATHER (CLASS) 0300-0500 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.6	3.2	3.3	1.5								8.5	7.4
NNE		.5	.1									.6	5.8
NE		.1	.2	.2								.6	9.6
ENE	.1	.5	.3	.5								1.4	8.4
E	.3	.5	1.1	1.0	.1							3.0	9.4
ESE	.1	1.0	1.6	2.0	.5							5.2	10.2
SE		.8	1.2	.8								2.8	8.7
SSE		.2	.2	.5								.9	10.0
S	.1	1.0	1.0	.6								2.7	8.0
SSW		.8	1.7	.8	.1							3.4	9.0
SW		.7	1.0	1.1	.3							3.2	10.8
WSW	.1	1.8	1.7	1.4	.2	.1						5.3	8.8
W	.5	2.4	4.6	1.9								9.4	8.4
WNW	.5	2.5	4.6	5.1	.2	.1						13.0	9.9
NW	.5	4.1	7.3	9.3	1.4	.1						22.6	10.4
NNW	.1	4.9	4.0	4.0	.1							13.0	8.5
VARBL													
CALM												4.6	
	2.8	28.7	34.1	30.5	2.9	.3						100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 886

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL WEATHER (CLASS)

0600-0800 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	3.1	4.0	1.0	.3							8.6	7.7
NNE		.4	.4									.9	6.8
NE		.1	.2	.1								.4	7.8
ENE	.1	.2	.6	.4								1.3	8.8
E	.1	.6	.7	2.1	.2	.1						3.7	11.3
ESE	.1	1.0	1.5	1.5	.4							4.6	10.0
SE		1.1	1.2	.6								2.9	7.8
SSE		1.0	.8	.4								2.2	7.3
S		.8	1.7	.3								2.8	8.8
SSW	.1	.3	1.1	.9	.1							2.5	9.6
SW	.2	.7	1.4	.3	.3							3.0	8.7
WSW		.7	2.5	.9	.4							4.5	9.8
W	.4	2.8	4.4	2.9	.2	.2						10.9	8.9
WNW	.2	2.2	5.1	4.5	1.0							13.0	10.0
NW	.7	4.3	7.6	6.6	1.3	.1						20.6	9.8
NNW	.1	5.1	3.9	3.3	.2							12.5	8.9
VARBL													
CALM												5.6	
	2.3	29.2	37.0	25.9	4.6	.4						100.0	8.7

TOTAL NUMBER OF OBSERVATIONS 909

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL WEATHER (CLASS) 0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.4	2.7	3.6	.9	.3							7.9	7.7
NNE		.2	.8	.1								1.1	7.7
NE	.2	.2	.4	.1								1.0	6.6
ENE		.4	.7	.1								1.2	7.6
E		1.0	1.3	1.7	.8							4.8	11.5
ESE		.8	1.7	2.0	.2							4.7	9.9
SE		.8	.9	.4	.2							2.3	9.2
SSE		1.0	1.4	.2								2.7	7.5
S	.2	.9	1.9	1.3								4.3	8.8
SSW	.1	.1	.9	.9	.3							2.3	11.0
SW	.3	1.0	2.0	2.4								5.8	9.1
WSW	.2	.8	2.1	.8	.2							4.1	8.8
W	.1	2.2	4.1	4.2	.4	.4	.1					11.7	10.5
WNW	.1	2.0	5.9	5.7	.9	.1						14.7	10.6
NW	.3	1.8	4.9	7.3	1.2	.1						15.6	11.3
NNW	.4	2.1	3.8	5.4	.8							12.5	10.3
VARBL													
CALM												3.3	
	2.6	18.0	36.3	33.6	5.4	.7	.1					100.0	9.6

TOTAL NUMBER OF OBSERVATIONS 901

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL WEATHER (CLASS)

1200-1800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.8	3.3	.8	.2							6.3	8.4
NNE	.1	.1	.2									.5	6.0
NE		.3	.1	.2								.7	8.3
ENE		.3	.7	.6								1.6	9.8
E	.2	.8	3.0	2.6	.8							7.3	10.7
ESE		.7	1.4	1.1								3.2	9.6
SE		.3	.9	.3								1.6	8.8
SSE	.1	.4	2.3	.2								3.1	8.1
S	.1	.8	1.6	1.3								3.8	9.1
SSW		.9	2.0	1.2	.3							4.5	9.6
SW	.2	.9	2.9	2.6								6.6	9.9
WSW		1.6	3.0	1.9	.1							6.6	9.0
W		2.1	4.1	7.0	.9	.4	.3					18.9	11.6
WNW	.1	1.2	4.3	8.1	1.1	.4						15.4	12.0
NW		1.8	4.6	6.7	1.2							14.2	11.3
NNW		1.7	1.9	3.1	.9							7.6	11.1
VARBL													
CALM												2.3	
	1.1	15.7	36.4	37.7	5.6	.9	.3					100.0	10.3

TOTAL NUMBER OF OBSERVATIONS 899

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.0	1.4	.7	.2							4.5	7.8
NNE	.1	.7	.4									1.2	6.3
NE	.1	.6	.4	.2	.1							1.4	8.0
ENE	.1	.1	.4	.2	.1	.3						1.3	13.3
E		1.0	2.1	3.6	.3	.1						7.2	11.0
ESE		1.0	1.8	1.0	.2							4.0	9.2
SE	.2	1.4	1.3	.7	.1							3.7	8.2
SSE	.1	.7	1.4									2.2	7.1
S		1.1	.9	1.2	.1							3.3	9.2
SSW		.9	3.1	1.0	.1							5.1	9.3
SW	.1	1.2	3.0	1.2								5.5	8.8
WSW	.1	1.3	3.1	3.0	.3							7.8	9.8
W	.2	2.3	6.3	6.4	.8	.6						16.5	10.9
WNW	.6	2.2	5.2	5.2	.8							13.9	9.8
NW		1.9	4.5	5.3	1.4	.2						13.3	11.9
NNW		1.7	2.5	1.7	1.1							6.9	10.3
VARBL													
CALM												2.0	
	1.9	20.0	37.9	31.3	5.7	1.2						100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 907

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

ALL WEATHER CLASS | 1800-2000 HOUR (L.S.T.)

CONDITION

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	2.1	2.4	1.0								5.6	7.8
NNE	.1	.7	.3	.1								1.2	6.8
NE		.3	.3									.7	6.3
ENE	.1	.7	.4	.1	.1	.2						1.7	9.1
E		.4	1.7	2.4	.8		.2					5.5	12.6
ESE	.1	1.1	1.2	1.0								3.8	8.8
SE		.9	1.2	.8	.1							3.0	8.9
SSE		.6	.7	.4								1.7	8.3
S		1.1	.8	2.0	.1							4.0	9.9
SSW		1.2	2.8	1.7	.2							5.8	9.5
SW		.9	3.4	.8								5.1	8.7
WSW		1.4	1.8	1.5								4.7	8.6
W	.3	4.2	6.7	4.6	.2	.2	.1					16.4	9.1
WNW	.1	3.2	5.5	2.9	1.0							12.7	9.4
NW	.2	4.3	4.9	6.3	1.4	.1						17.2	10.3
NNW		2.5	2.8	2.3	.4	.3						8.4	9.9
VARBL													
CALM												3.0	
	1.1	25.6	36.8	27.9	8.8	.9	.3					100.0	9.2

TOTAL NUMBER OF OBSERVATIONS 907

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	3.5	3.1	1.1	.1							8.0	7.7
NNE		.2	.8									1.0	7.9
NE	.1	.3		.1	.2	.1						.9	11.0
ENE	.2	.1	.4	.3								1.1	8.0
E	.1	.2	1.1	1.5	.7		.3					4.0	13.6
ESE		1.1	1.9	1.5	.2							4.8	9.3
SE		.9	1.1	.4								2.4	8.3
SSE		.6	1.2	.2	.2							2.2	8.6
S	.1	.9	1.9	1.1	.1							4.1	9.3
SSW		.8	1.8	1.1	.2							3.9	10.0
SW	.2	1.2	2.8	2.0	.2							6.4	9.7
WSW	.1	1.4	2.2	.7		.2						4.6	8.7
W	.3	2.8	6.3	3.6	.2		.1					13.4	9.0
WNW		1.8	4.4	4.6	.9	.1						11.8	10.7
NW	.1	4.3	4.8	7.1	1.3							17.6	10.5
NNW	.2	3.5	4.2	2.7	.9	.2						11.7	9.3
VARBL													
CALM												2.2	
	1.7	23.6	37.9	28.2	5.3	.7	.4					100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 905

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.7	3.1	1.0	.2							7.2	7.7
NNE	.1	.3	.4	.0								.9	6.8
NE	.1	.3	.2	.1	.0	.0						.8	8.0
ENE	.1	.3	.5	.3	.1	.1						1.4	9.5
E	.1	.6	1.5	2.1	.5	.1	.1					4.9	11.5
ESE	.0	1.1	1.5	1.5	.2							4.3	9.5
SE	.0	.9	1.2	.6	.1							2.7	8.8
SSE	.0	.6	1.0	.4	.0							2.1	8.1
S	.1	.9	1.4	1.1	.0							3.5	9.0
SSW	.0	.7	1.9	1.2	.2	.0						4.0	9.7
SW	.2	.9	2.4	1.5	.1							5.1	9.8
WSW	.1	1.2	2.3	1.4	.2	.1						5.3	9.2
W	.3	2.6	5.0	4.3	.4	.2	.1					12.9	9.8
WNW	.2	2.2	5.1	5.2	.8	.1						13.7	10.3
NW	.2	3.3	5.6	7.0	1.4	.1						17.6	10.6
NNW	.1	3.2	3.3	3.2	.6	.1						10.5	9.5
VARBL													
CALM												3.2	
	1.9	21.9	36.5	30.9	8.7	.7	.2					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 7223

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS)

0000-0200 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.5	4.1	3.5	1.3								9.4	7.3
NNE		.6	.1									.7	5.5
NE		.6	.4	.1								1.1	6.8
ENE		.4	.4	.1	.1	.2						1.2	12.3
E	.4	1.7	3.5	2.9	.4	.1						9.0	9.8
ESE	.1	1.8	3.0	1.2								6.2	8.2
SE	.1	.6	.6	.5								1.8	7.7
SSE		1.1	.6	.2								1.9	7.6
S	.1	1.3	1.5	.8								3.8	8.2
SSW		1.5	1.6	.4	.1	.1						3.6	8.3
SW	.1	1.1	1.3	1.0								3.5	8.4
WSW		1.9	2.2	1.9								6.1	8.7
W	.1	3.0	3.9	2.8	.1							9.9	8.6
WNW	.4	3.3	6.3	1.9	.7							12.6	8.5
NW	.2	5.0	4.6	4.2	.5							14.5	8.7
NNW	.4	3.9	2.2	2.7	.1							9.2	8.2
VARBL													
CALM												5.4	
	2.4	31.8	35.6	22.2	2.1	.5						100.0	8.0

TOTAL NUMBER OF OBSERVATIONS 826

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS) 0300-0500 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	4.5	4.1	.8								9.7	7.1
NNE		1.0	.2	.1								1.3	6.8
NE	.4	.6	.2									1.2	6.9
ENE	.1	.1	1.1	.2	.1							1.7	9.1
E	.2	2.1	3.6	2.2	1.0	.1						9.2	9.8
ESE	.1	1.2	3.1	1.7								6.2	8.9
SE	.4	.5	1.1									1.9	6.0
SSE	.1	.4	.7	.6								1.8	8.9
S		1.1	.7	.1	.1							2.1	7.2
SSW	.1	.5	2.2	1.4								4.2	9.2
SW	.1	.8	1.8	1.3								4.1	8.9
WSW	.1	1.2	1.6	1.0	.1							4.0	8.4
W	.2	3.1	3.6	2.8								9.8	8.0
WNW	.7	3.1	6.2	2.8	.4							13.2	8.6
NW	.5	3.6	5.1	3.4	.5							13.0	9.0
NNW	.7	4.0	3.9	2.3	.1							11.0	8.1
VARBL													
CALM												6.0	
	5.1	27.8	39.3	20.8	2.3	.1						100.0	7.9

TOTAL NUMBER OF OBSERVATIONS 828

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS) 0600-0800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.5	4.0	4.5	.6								9.6	6.8
NNE	.1	.7	.2	.1								1.2	6.1
NE		.2	.4									.6	7.4
ENE	.1	.6	1.1	.7								2.5	9.0
E	.6	1.9	4.4	2.7	1.0	.1						10.7	9.7
ESE	.4	1.8	3.6	1.3								7.2	8.1
SE	.1	.8	1.6	.5								3.0	7.7
SSE		.8	.4	.4								1.6	7.9
S		.5	.2	.2								1.0	7.4
SSW	.1	.7	.8	2.2								3.9	10.4
SW		1.0	2.1	.8	.1							4.0	8.7
WSW		1.3	1.5	1.0								3.8	8.3
W	.4	3.8	3.9	1.5								9.5	7.5
WNW	.7	2.5	4.1	3.4								10.8	8.7
NW	.8	3.8	5.1	4.2	.4	.2						14.6	8.9
NNW	.6	4.4	4.4	2.9								12.3	7.9
VARBL													
CALM												3.9	
	4.5	29.0	38.2	22.6	1.5	.8						100.0	8.0

TOTAL NUMBER OF OBSERVATIONS 824

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS) 0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	2.8	5.0	1.7	.1	.1						10.0	8.3
NNE	.2	.2	.5									1.0	6.0
NE		.2	1.0	.1			.1					1.5	10.1
ENE		.6	1.0	.5	.2	.1						2.5	10.8
E	.2	1.5	2.3	4.9	.6	.5						10.1	11.5
ESE	.1	1.9	2.7	2.1	.1							6.8	9.3
SE	.1	.2	1.1	.7								2.2	9.3
SSE	.1	.7	1.6	1.0								3.4	8.7
S		.5	.5	.5								1.5	8.8
SSW	.1	.5	.7	1.2	.1	.1						2.8	11.3
SW		.7	2.3	2.3	.2	.1						5.8	10.6
WSW		1.0	2.3	1.8	.1							5.3	9.5
W	.2	2.8	5.0	3.2	.1							11.5	8.6
WNW	.2	1.6	3.7	3.9	.4	.4						10.2	10.6
NW	.4	2.2	4.2	4.3	.7							11.8	10.0
NNW	.2	1.5	4.9	3.9	.2							10.8	9.9
VARBL													
CALM												3.2	
	2.2	18.6	39.0	32.9	3.1	1.8	.1					100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 812

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS) 1200-1400 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		1.2	4.2	1.5								6.9	8.8
NNE		.8	.6	.2								1.7	7.1
NE	.1	.2	.7									1.1	7.2
ENE		.2	1.0	1.2	.4	.1	.2					3.2	13.4
E	.4	.8	2.5	5.1	.8							9.7	11.3
ESE	.1	1.2	4.4	2.1	.1							7.9	9.1
SE	.1	1.1	1.5	.4								3.0	7.5
SSE	.5	.8	.5	.4	.1							2.3	7.4
S	.4	.7	1.7	1.0	.4							4.1	9.3
SSW		.5	1.0	1.1								2.5	10.0
SW		1.0	1.9	4.1	.1							7.2	10.9
WSW		1.6	2.1	2.7	.4							6.7	10.0
W	.2	2.3	5.2	5.2	.5	.1						13.6	10.1
WNW		1.2	3.3	5.3	.5	.2	.1					10.7	11.8
NW		.5	3.8	4.9	.8	.2	.1					10.3	12.1
NNW		.6	2.8	3.4	.1							6.9	10.6
VARBL													
CALM												2.2	
	1.8	14.9	37.1	38.5	4.2	.7	.5					100.0	10.1

TOTAL NUMBER OF OBSERVATIONS 829

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		1.3	2.7	1.7								5.8	8.9
NNE	.1	.6	1.0	.1								1.8	6.8
NE		.5	.2	.1								.9	7.3
ENE		.4	.4	1.5	.2		.4					2.8	14.2
E	.4	1.7	3.9	5.2	.4	.1						11.7	10.5
ESE		1.7	4.8	1.5								8.0	8.5
SE		1.3	.9	.2								2.5	7.1
SSE	.2	.7	1.2	.7								2.9	8.2
S	.1	1.2	1.3	1.2	.2							4.2	9.1
SSW	.1	.7	1.7	1.5	.1							4.2	9.2
SW		2.2	2.0	3.7	.1							8.0	9.9
WSW	.2	1.1	2.1	2.5								5.9	9.7
W		1.0	4.7	5.2	.7							11.5	11.0
WNW		.7	5.8	6.4	.4	.4	.1					13.7	11.4
NW		.6	4.2	4.7	.5							9.9	11.0
NNW		.6	1.8	2.9								5.4	10.4
VARBL													
CALM												.9	
	1.2	16.6	38.7	39.0	2.7	.5	.5					100.0	10.0

TOTAL NUMBER OF OBSERVATIONS 815

USAFETAC FORM 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE
JUL 64

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS) 1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.7	2.2	1.1								5.2	7.7
NNE	.1	.5	.6									1.2	6.2
NE		.9	.5									1.3	6.2
ENE	.1	1.6	1.0	.6			.1					3.4	8.3
E	.5	2.8	3.5	3.9	1.9	.1	.2					13.0	10.9
ESE	.1	1.5	2.3	.9								4.7	7.7
SE		1.5	.6	1.1								3.2	7.9
SSE	.1	.9	.2	.4								1.6	6.7
S	.1	1.6	1.8	1.0								4.5	7.9
SSW	.2	1.1	1.7	1.3								4.4	8.9
SW	.2	1.3	1.8	2.2	.2							5.8	9.0
WSW		1.1	3.0	1.9	.1							6.2	9.6
W	.1	4.0	4.1	1.6	.5	.2						10.6	8.5
WNW	.4	3.8	3.9	3.8		.2	.1					12.2	8.9
NW	.2	3.2	4.7	3.6								11.8	8.9
NNW	.2	1.8	1.5	2.1	.2							5.8	9.4
VARBL													
CALM												5.0	
	2.8	29.1	33.6	25.4	3.0	.6	.5					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 822

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.0	3.1	1.4								6.7	8.1
NNE	.2	.6	.2	.2								1.2	6.6
NE	.1	.5	.6	.1								1.3	6.9
ENE	.1	.7	1.1	.4								2.3	7.7
E		2.1	2.8	3.2	.9	.2	.1					9.3	11.1
ESE	.4	1.6	2.1	1.0	.1							5.2	7.9
SE	.2	1.5	1.0	.6								3.3	7.1
SSE	.2	.6	.6	.2								1.7	7.0
S		.6	1.8	.6								3.1	8.7
SSW	.1	1.4	1.4	1.2								4.1	8.8
SW		1.5	1.5	1.8								4.8	9.1
WSW		1.7	2.7	2.2								6.7	9.1
W	.5	4.6	3.9	1.5	.2	.1						10.8	7.9
WNW	.4	3.4	5.9	2.5	.6	.1						12.9	8.9
NW	.5	3.0	3.7	3.1	.6							10.8	9.1
NNW	.6	2.5	3.0	3.0	.4							9.4	9.1
VARBL													
CALM												6.2	
	3.7	28.2	35.5	23.0	2.8	.5	.1					100.0	8.2

TOTAL NUMBER OF OBSERVATIONS 812

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

ALL WEATHER (CLASS)

ALL (HOURS (L.S.T.))

(QUALIFIER)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.7	3.7	1.3	.0	.0						7.9	7.8
NNE	.1	.6	.4	.1								1.3	6.5
NE	.1	.5	.5	.1			.0					1.1	7.1
ENE	.1	.6	.9	.7	.1	.1	.1					2.5	10.5
E	.3	1.8	3.3	3.7	.9	.2	.0					10.3	10.6
ESE	.2	1.5	3.3	1.5	.0							6.5	8.5
SE	.1	.9	1.0	.5								2.6	7.5
SSE	.2	.8	.7	.5	.0							2.2	7.9
S	.1	.9	1.2	.7	.1							3.0	8.5
SSW	.1	.9	1.4	1.3	.0	.0						3.7	9.4
SW	.1	1.2	1.8	2.2	.1	.0						5.4	9.6
WSW	.0	1.4	2.2	1.9	.1							5.6	9.2
W	.2	3.1	4.3	2.9	.3	.1						10.8	8.9
WNW	.4	2.5	4.9	3.7	.4	.2	.0					12.0	9.6
NW	.3	2.7	4.4	4.1	.5	.1	.0					12.1	9.6
NNW	.4	2.4	3.0	2.9	.2							8.9	9.0
VARBL													
CALM												4.1	
	2.8	24.5	37.1	27.9	2.7	.6	.2					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 6563

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

727N5 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS) 0000-0200 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	3.5	2.0	1.3	.2							7.1	7.6
NNE	.2	.8	.8	.7								2.4	8.0
NE		.2	1.1	.2		.2						1.8	10.4
ENE	.1	.7	1.1	1.8	1.0	.2	.3					5.1	13.5
E	.3	2.0	3.0	5.0	.8	.8	.2					12.0	11.7
ESE	.4	1.5	3.1	1.3	.1							6.5	8.5
SE	.4	.7	1.1	.3								2.5	6.8
SSE	.1	1.0	1.4	.3								2.8	7.3
S	.1	1.2	1.4	1.2								3.9	8.8
SSW	.1	.4	1.8	.8	.1							3.2	9.5
SW		1.0	1.9	1.1								3.9	9.1
WSW	.3	.9	1.5	1.6	.2							4.6	9.5
W	.4	3.6	2.5	2.4	.2	.1						9.3	8.5
WNW	.5	2.3	4.2	3.3	.4	.2						10.9	9.5
NW	.2	2.7	4.3	3.6								10.8	8.9
NNW	.8	2.7	2.6	3.0	.1							9.2	8.5
VARBL													
CALM												3.8	
	4.3	25.2	33.6	27.9	3.2	1.5	.5					100.0	9.0

TOTAL NUMBER OF OBSERVATIONS 918

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS) 0300-0600 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥ 56	%	MEAN WIND SPEED
N	.8	3.2	1.5	1.8								7.3	7.6
NNE	.2	.9	.8	.3								2.2	7.2
NE		.3	.2	.6	.2							1.3	11.3
ENE	.1	.8	.9	1.9	.9	.2	.3					5.1	13.7
E	.2	2.1	3.7	4.1	1.0	.9	.2					12.2	11.9
ESE	.1	1.8	3.2	2.1	.1							7.3	8.9
SE		.7	1.1	.8								2.5	8.8
SSE	.1	1.3	.2									1.7	5.3
S		.3	1.3	.8								2.4	9.3
SSW	.1	.8	1.8	1.1								3.7	9.1
SW		.3	2.5	1.3								4.2	9.7
WSW	.1	1.0	1.9	1.2	.1	.1						4.4	9.4
W	.1	3.0	3.1	1.2	.2	.1	.1					7.8	8.6
WNW	.6	2.4	3.0	2.4	.9							9.2	9.7
NW	.8	4.1	5.6	4.3								14.7	8.8
NNW	.4	3.3	2.6	1.8								8.1	7.6
VARBL													
CALM												5.8	
	3.6	26.2	33.9	25.5	3.9	1.3	.7					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 989

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS)

0600-0800 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	3.9	2.8	1.9								8.9	7.6
NNE	.3	.7	.9	.9								1.9	7.1
NE		.3	.3	.5	.1							1.3	10.8
ENE		.2	.9	1.5	1.1	.5	.1	.1				4.5	16.0
E	.1	1.2	4.5	4.6	1.5	.9	.3					13.1	12.7
ESE	.4	1.9	3.6	2.2	.3							8.8	9.0
SE	.1	.9	.9	.8								2.6	8.3
SSE	.2	1.3	1.4	.4								3.8	7.3
S		.8	1.5	.2								2.5	7.7
SSW	.1	.4	2.2	.9								3.6	8.9
SW		.1	1.3	1.8								3.2	10.5
WSW	.2	1.0	.8	.8		.1						2.8	8.9
W	.4	2.4	2.0	2.2	.1	.1						7.2	8.6
WNW	.4	1.8	3.3	3.3	.5	.3						9.6	10.2
NW	.4	3.3	4.4	4.8	.2	.1						13.2	9.3
NNW	.3	2.1	2.5	2.0								6.9	8.2
VARBL													
CALM												6.8	
	3.8	22.2	32.4	28.2	3.9	2.1	.8	.1				100.0	9.0

TOTAL NUMBER OF OBSERVATIONS 918

USAFETAC FORM AM 64 0-8-5 (BL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72765 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS) 0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.6	3.0	2.1	.6							7.3	9.7
NNE	.1	.8	1.1	.2	.1							2.3	7.9
NE	.1	.2	.4	.3	.1	.4	.1					1.8	14.5
ENE		.4	.9	2.0	.4	.1	.2					4.1	13.3
E	.1	1.7	3.7	5.9	2.2	1.9	.1					15.6	13.2
ESE	.2	2.1	4.6	3.2	.4							10.6	9.5
SE	.1	1.2	1.3	.9								3.6	8.3
SSE	.2	.8	1.1	.8								2.9	8.2
S		.8	1.2	.7	.2							2.9	8.8
SSW	.2	1.1	1.2	1.6	.3							4.4	9.9
SW	.1	.9	1.0	2.0	.6							4.6	10.8
WSW	.3	.6	1.6	1.7	.1							4.2	9.3
W	.2	.8	3.8	2.4	.4	.1	.1					7.9	10.9
WNW		.6	2.4	4.4	1.0	.2	.1					8.8	12.5
NW		.7	2.8	4.4	1.2							9.1	12.0
NNW		.8	1.9	3.8	.1							6.6	11.1
VARBL													
CALM												3.3	
	1.9	14.9	32.0	36.5	7.9	2.8	.7					100.0	10.6

TOTAL NUMBER OF OBSERVATIONS 899

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS)

1200-1800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1		1.9	1.6	.2	.1						3.9	11.4
NNE	.1	.3	.9	.1								1.4	7.1
NE	.2	.7	.9	.3	.1	.2						2.4	9.8
ENE		.4	1.6	1.9	.8	.4	.2					5.4	13.8
E		1.1	4.8	6.0	2.4	1.6	.4					16.4	13.4
ESE	.1	2.0	3.5	2.1	.4							8.1	9.2
SE		2.0	1.9	.8								4.6	7.3
SSE	.1	.9	1.5	.8								3.3	8.0
S		1.4	1.4	.9	.2							3.9	8.9
SSW	.2	.5	.9	2.0	.4	.2						4.3	11.9
SW	.2	.4	1.2	3.8	.5	.2						6.5	12.5
WSW	.3	.5	1.0	1.9								3.7	9.4
W		1.4	3.8	5.0	1.0	.3						11.6	11.6
WNW		.7	1.9	4.3	1.8	.1	.3					9.0	13.4
NW		.5	1.8	3.2	.7	.1						6.2	12.1
NNW		.7	1.1	4.4	.3							6.5	11.9
VARBL													
CALM												2.7	
	1.8	13.6	30.0	39.0	8.9	3.8	1.0					100.0	11.2

TOTAL NUMBER OF OBSERVATIONS 913

USAFETAC FORM AIR 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.3	1.1	2.4	.6	.1						4.5	12.2
NNE	.1	.2	.2	.7								1.2	9.4
NE		.1	.1	.2	.2	.1						.8	14.3
ENE	.1	.7	1.1	2.7	1.3	1.0	.1					7.0	14.5
E		1.0	5.5	4.3	2.0	1.3	.1					14.3	12.8
ESE		1.2	7.0	2.1	.1							10.4	8.8
SE	.1	1.7	2.4	1.3								5.5	8.3
SSE	.1	1.3	1.0	.4								2.9	7.2
S	.1	.6	1.2	1.0								2.9	9.4
SSW	.1	.7	1.2	1.6	.3	.1						4.0	10.6
SW	.1	.3	1.7	3.0	.4							5.5	12.0
WSW	.1	.8	1.8	2.2	.2	.3						5.4	11.1
W	.2	1.4	3.5	5.8	1.3							12.3	11.4
WNW		.7	2.4	5.3	1.3	.6						10.3	13.0
NW	.1	.3	1.8	4.5	.4	.1						7.3	12.0
NNW		.4	1.3	2.5	.3							4.7	11.3
VARBL													
CALM												1.0	
	1.2	11.7	33.4	50.1	8.6	3.7	.2					100.0	11.3

TOTAL NUMBER OF OBSERVATIONS 903

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS) 1800-2000 (HOUR (L.S.T.))

(DESCRIPTION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	1.0	1.6	1.8	.3							5.0	9.8
NNE		.2	.1	.1	.1							.6	9.8
NE	.1	.3	.1	.2	.1	.1						1.0	10.8
ENE	.1	1.1	1.3	2.2	.8	.7	.1					6.3	13.0
E		2.7	7.1	4.7	1.8	1.3	.1					17.7	11.7
ESE	.2	2.8	4.3	1.2		.1						8.7	8.0
SE		1.6	1.0	.3								2.9	7.2
SSE		1.6	.8	.3								2.7	7.0
S	.1	.7	1.3	.8								2.9	8.5
SSW	.7	.8	1.4	.9	.2							4.0	8.3
SW	.1	1.2	2.8	2.2	.1							6.4	9.4
WSW	.2	1.7	1.4	1.2	.1							4.7	8.2
W	.7	2.1	3.9	2.8	.3	.2						10.0	9.2
WNW	.7	1.9	3.3	3.6	.9	.3						10.7	10.2
NW	.2	1.4	2.7	2.7								7.0	9.2
NNW	.7	1.0	2.0	3.2	.1							7.0	9.8
VARBL													
CALM												2.6	
	4.1	22.0	35.2	28.2	4.9	2.8	.2					100.0	9.5

TOTAL NUMBER OF OBSERVATIONS 980

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	3.3	1.8	2.2								7.6	8.0
NNE	.4	1.0	.3	.6								2.3	6.8
NE		1.1	.7	.2			.1					2.1	8.4
ENE		1.0	1.0	1.5	.9	1.0	.1					5.5	13.8
E		2.3	5.9	5.2	1.4	.8	.4					16.0	11.8
ESE	.1	2.5	3.0	1.1	.2							7.0	8.1
SE		.8	.9	.4								2.1	8.0
SSE		.7	.7	.4								1.8	8.3
S	.1	1.2	1.8	.4	.1							3.7	7.7
SSW	.3	1.0	2.3	.6								4.2	7.7
SW	.1	1.2	1.8	1.2								4.3	8.7
WSW	.1	1.2	2.5	1.1	.1							5.1	8.6
W	.4	2.5	3.4	2.9	.8							10.1	9.3
WNW	.2	1.8	3.3	3.1	.4	.2						9.1	10.1
NW	.3	2.1	3.8	3.1	.1	.2						9.6	9.4
NNW		1.5	1.8	3.3	.1	.1						6.9	10.2
VARBL													
CALM												2.7	
	2.5	25.3	34.8	27.4	4.2	2.3	.7					100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 908

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	2.1	1.9	1.9	.2	.0						6.5	8.9
NNE	.2	.6	.6	.4	.0							1.8	7.6
NE	.1	.4	.5	.3	.1	.1	.0					1.6	10.9
ENE	.1	.7	1.1	1.9	.9	.5	.2	.0				5.4	13.9
E	.1	1.8	4.8	5.0	1.6	1.2	.2					14.7	12.4
ESE	.2	2.0	4.0	1.9	.2	.0						8.4	8.8
SE	.1	1.2	1.3	.7								3.3	7.9
SSE	.1	1.1	1.0	.4								2.7	7.8
S	.1	.9	1.4	.7	.1							3.1	8.6
SSW	.2	.7	1.6	1.2	.2	.0						3.9	9.5
SW	.1	.7	1.8	2.1	.2	.0						4.8	10.5
WSW	.2	1.0	1.6	1.5	.1	.1						4.4	9.4
W	.3	2.2	3.3	3.1	.6	.1	.0					9.5	9.9
WNW	.3	1.5	3.0	3.7	.9	.2	.1					9.7	11.1
NW	.3	1.9	3.4	3.8	.3	.1						9.8	9.9
NNW	.3	1.6	2.0	3.0	.1	.0						7.0	9.6
VARBL													
CALM												3.6	
	2.9	20.1	33.1	31.6	5.6	2.5	.6	.0				100.0	9.9

TOTAL NUMBER OF OBSERVATIONS 7256

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS) 0000-0200 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	3.5	3.5	1.1								8.8	7.1
NNE	.2	.6	1.1	.2								2.2	6.9
NE	.1	.8	1.7	.9								3.5	8.9
ENE	.3	.8	2.6	2.2	.9	.2						7.1	11.2
E	.2	3.0	8.3	5.4	1.8	.7						19.4	10.9
ESE	.1	1.6	5.0	1.3	.1							8.1	8.6
SE	.2	1.5	.9	.1								2.7	6.3
SSE	.2	1.1	.7									2.1	5.9
S	.1	1.5	1.3	.7								3.5	7.6
SSW		.6	1.5	.7								2.7	8.6
SW		.6	2.2	1.5								4.2	9.3
WSW	.1	.9	.9	1.0								3.0	8.5
W	.6	2.6	2.3	1.3	.2	.1						7.1	8.2
WNW	.3	1.9	1.5	.5	.1							5.4	8.6
NW	.7	2.9	3.0	1.5	.3							8.3	8.0
NNW	.2	4.0	1.1	1.0								6.4	6.9
VARBL													
CALM												5.3	
	4.2	27.9	37.7	20.3	3.5	1.0						100.0	8.3

TOTAL NUMBER OF OBSERVATIONS 875

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS) 0300-0500 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.6	3.9	4.3	1.5								10.2	7.6
NNE		1.5	.7	.3								2.5	7.3
NE	.1	.9	.6	.3								2.0	7.3
ENE	.1	1.4	1.5	2.1	1.3	.1						6.4	11.6
E	.3	2.4	7.4	6.0	2.0	.7	.1					18.9	11.2
ESE	.1	.6	5.2	1.3	.1							7.2	9.0
SE		1.5	1.6									3.1	6.7
SSE	.1	.7	1.3	.2								2.3	7.8
S	.2	.9	1.0	.9								3.1	8.0
SSW	.1	.5	1.4	.2								2.2	7.8
SW	.2	.8	1.7	1.0								3.8	8.5
WSW	.1	1.3	1.3	1.2								3.8	8.2
W	.3	1.7	3.0	1.3								6.3	8.3
WNW	.5	1.5	3.0	2.2	.2	.1						7.5	9.2
NW	.7	2.9	2.1	2.1								7.7	7.7
NNW	.5	3.8	2.1	1.2								7.5	7.3
VARBL													
CALM												5.4	
	4.0	26.2	38.0	21.7	3.6	.9	.1					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 869

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS) 0600-0800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	3.6	4.5	2.6								11.4	8.0
NNE	.1	.3	1.4	.5								2.3	8.6
NE		.8	.7	.7								2.1	8.1
ENE		1.2	2.3	3.5	.6	.3						7.9	11.8
E		1.0	5.4	7.8	2.0	1.1	.1					17.5	12.8
ESE	.1	1.4	4.7	2.4								8.6	9.0
SE	.1	.9	2.1	.5								3.6	7.5
SSE		.7	1.0	.3								2.0	8.1
S		.6	2.1	.6								3.3	8.9
SSW	.2	.2	1.0	1.0								2.5	9.8
SW		.3	1.5	1.2								3.0	10.0
WSW	.3	.5	.8	1.5								3.0	9.7
W		1.7	2.4	1.0								5.1	8.2
WNW	.1	1.5	2.6	1.5	.3							6.0	9.0
NW	.6	2.3	2.7	3.7	.3							9.6	9.5
NNW	.1	2.8	2.7	1.5	.5							7.6	8.4
VARBL													
CALM												4.6	
	2.4	19.7	37.9	30.1	3.7	1.5	.1					100.0	9.3

TOTAL NUMBER OF OBSERVATIONS 887

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS)

0900-1100 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.1	2.8	4.1	.1							8.3	10.1
NNE		.3	1.7	.6								2.6	8.8
NE		.3	.7	.6								1.6	9.4
ENE		.3	.8	2.6	1.6	.3						5.7	14.9
E	.2	1.1	6.7	8.2	3.0	1.5	.1					20.8	13.0
ESE		1.3	4.0	5.0								10.3	10.2
SE		1.0	2.3	.8								4.1	8.6
SSE	.1	.8	1.6	.8	.1							3.4	8.6
S	.1	1.1	2.2	1.6								5.0	9.3
SSW	.1	.6	.6	1.9								3.2	11.0
SW	.1	.1	1.4	2.4								4.0	11.2
WSW		.5	1.3	1.5								3.2	10.3
W		1.3	1.7	3.1	.1							6.2	10.2
WNW		.5	2.4	2.3	.3							5.5	10.8
NW		.8	3.0	4.1	.7	.2						8.8	11.5
NNW		.5	3.5	1.9	.2	.1						6.3	10.1
VARBL													
CALM												1.1	
	.8	11.6	36.6	41.5	6.2	2.2	.1					100.0	10.9

TOTAL NUMBER OF OBSERVATIONS 878

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72765 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS) 1200-1800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.3	3.4	2.5	.5							6.7	10.6
NNE		.2	1.7	.7								2.6	8.9
NE		.2	.7	.2	.2							1.4	10.7
ENE	.1	.1	.6	4.4	1.9	.6						7.7	15.0
E	.1	1.0	6.2	9.0	2.4	1.0						19.8	12.5
ESE	.1	1.1	5.9	4.0	.1							11.2	9.6
SE		.5	3.2	1.4								5.0	9.3
SSE	.1	.3	1.9	1.0								3.4	9.5
S		.6	1.0	1.8	.5	.1						4.0	11.5
SSW		.8	1.2	1.8	.1							4.0	10.2
SW		.5	1.1	2.2	1.1							4.9	12.4
WSW		.5	1.1	1.5	.3							3.4	10.8
W	.1	.5	1.4	4.0	.6							6.5	12.2
WNW		.2	1.8	3.3	.5							5.8	12.0
NW		.7	2.4	3.9	1.5	.2						8.6	12.8
NNW		.2	1.4	2.2	.7	.2						4.7	12.5
VARBL													
CALM												.3	
	.6	7.7	35.1	43.7	10.3	2.2						100.0	11.6

TOTAL NUMBER OF OBSERVATIONS 880

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72765 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.2	1.9	2.6	.1							4.8	11.0
NNE		.1	.8	.6								1.5	10.0
NE		.3	.2	.5								1.0	9.7
ENE		.2	.9	5.3	2.3	.7						9.4	15.0
E		1.0	5.7	11.3	3.0	.5						21.5	12.7
ESE	.1	.8	6.6	6.1	.2							13.9	10.3
SE		1.3	3.1	1.0								5.4	8.6
SSE		.6	1.3	.2								2.1	7.8
S	.2	.3	.7	1.3	.5							3.0	11.2
SSW	.1	.2	.7	2.1	.2							3.3	12.2
SW	.1	.2	1.3	1.5	.8	.2						4.1	12.9
WSW		.2	.5	1.3	.7	.1						2.7	13.7
W		.8	1.9	3.8	.6							7.1	11.3
WNW		.3	2.9	2.6	.9							6.8	11.7
NW	.2	.1	2.2	2.4	.6	.8						6.3	12.9
NNW	.1	.2	2.4	3.6		.1						6.4	11.4
VARBL													
CALM												.6	
	.9	7.1	33.1	46.0	9.9	2.4						100.0	11.8

TOTAL NUMBER OF OBSERVATIONS 873

USAFETAC FORM 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE
JUL 64

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS) 1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.5	2.6	1.3								5.6	8.1
NNE	.2	.5	.1	.6								1.4	8.4
NE		.1	1.1	.5								1.7	9.4
ENE		1.5	3.3	6.1	.7	.1	.2					11.9	11.8
E	.1	2.4	8.7	10.0	2.3	.2						23.7	11.3
ESE	.1	2.6	6.5	2.2								11.4	8.2
SE		2.2	2.9	.2								5.3	7.0
SSE	.1	.9	.5	.1								1.6	6.6
S	.1	.2	.7	1.1	.2							2.4	11.5
SSW		.1	1.4	1.3								2.7	10.5
SW		.3	1.1	.9	.1	.1						2.6	11.0
WSW		.9	1.4	1.0	.1							3.4	9.3
W	.1	2.5	2.1	1.4	.2							6.3	8.1
WNW	.1	1.8	1.8	1.5								5.3	8.4
NW	.1	2.2	3.0	2.1	.7							8.0	9.3
NNW		1.3	2.1	1.5	.1							4.9	9.2
VARBL													
CALM												1.8	
	1.3	21.0	39.2	31.6	6.5	.5	.2					100.0	9.5

TOTAL NUMBER OF OBSERVATIONS 876

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥ 56	%	MEAN WIND SPEED
N	.5	3.4	1.8	1.5								7.2	7.3
NNE	.2	1.5	.6	.6								2.9	7.0
NE		.9	1.7	.5	.1							3.2	8.0
ENE	.3	1.1	2.9	5.2	.6	.2						10.3	11.0
E	.2	3.3	9.4	6.9	1.7	.7						22.3	10.6
ESE	.1	2.1	4.4	.8	.3							7.7	8.3
SE	.2	1.8	1.4	.1								3.6	6.3
SSE	.3	.7	.5									1.5	5.3
S	.1	1.1	1.0	.8	.2							3.3	8.9
SSW	.2	.8	1.0	1.4								3.4	9.2
SW	.1	.6	1.3	1.0								3.0	9.8
WSW		1.5	1.5	.2	.1							3.3	7.7
W	.1	3.8	1.8	.9	.1							6.8	7.3
WNW	.2	2.4	1.0	.8								4.5	7.1
NW	.3	3.0	2.5	1.5	.3							7.7	7.7
NNW	.5	1.6	2.0	1.0	.3							5.4	8.5
VARBL													
CALM												3.8	
	3.6	29.8	34.8	23.2	3.9	.9						100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 870

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	2.2	3.1	2.2	.1							7.9	8.5
NNE	.1	.6	1.0	.5								2.2	8.1
NE	.0	.6	.9	.5	.0							2.1	8.7
ENE	.1	.8	1.9	3.9	1.2	.3	.0					8.3	12.6
E	.2	1.9	7.2	8.1	2.3	.8	.0					20.5	11.9
ESE	.1	1.4	5.3	2.9	.1							9.8	9.2
SE	.1	1.3	2.2	.5								4.1	7.7
SSE	.1	.7	1.1	.3	.0							2.3	7.8
S	.1	.8	1.3	1.1	.2	.0						3.5	9.5
SSW	.1	.5	1.1	1.3	.0							3.0	10.0
SW	.1	.4	1.4	1.5	.3	.0						3.7	10.7
WSW	.1	.8	1.1	1.1	.2	.0						3.2	9.7
W	.2	1.9	2.1	2.1	.2	.0						6.4	9.2
WNW	.2	1.3	2.1	2.0	.3	.0						5.8	9.7
NW	.3	1.8	2.6	2.7	.6	.2						8.1	9.9
NNW	.2	1.8	2.2	1.7	.2	.1						6.1	9.1
VARBL													
CALM												2.9	
	2.2	18.9	36.5	32.3	5.7	1.4	.1					100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 7008

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS) 0000-0200 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	2.5	1.1	.6	.1							5.0	7.0
NNE	.1	1.3	.6	.2								2.2	6.1
NE	.3	1.3	.9	.4								3.0	7.0
ENE	.2	1.9	2.3	1.8	.2							6.4	8.7
E	.2	4.8	10.4	8.1	1.1	.1						28.8	9.6
ESE	.4	3.6	4.3	.7								9.0	6.9
SE	.4	2.4	1.2	.1								4.2	6.0
SSE	.4	.7	.6	.1								1.8	6.1
S	.4	1.0	.7	1.0								3.1	7.8
SSW	.1	.3	.9	.6	.3							2.2	10.0
SW	.2	1.1	2.1	.1								3.5	7.2
WSW		1.3	2.4	.1	.1							4.0	7.8
W	.2	2.5	2.2	.2								5.2	6.5
WNW	.2	2.2	2.2	1.0								5.6	7.5
NW	.7	2.9	3.7	2.0	.1							9.8	7.9
NNW	.7	1.5	1.9	.6								4.6	7.0
VARBL													
CALM												6.2	
	5.4	31.5	37.3	17.5	2.0	.1						100.0	7.4

TOTAL NUMBER OF OBSERVATIONS 988

USAFETAC FORM 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE
JUL 64

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS)

0300-0500 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.4	4.1	1.5	.7								6.7	6.8
NNE	.2	1.2	.6	.1								2.1	6.1
NE	.3	.7	.6	.3								1.9	6.9
ENE	.2	1.0	2.9	1.5								5.6	8.9
E	.3	5.2	9.6	5.7	.4	.2						21.5	9.3
ESE		4.1	5.9	1.0								10.9	7.4
SE	.1	1.5	1.0	.2								2.9	6.3
SSE	.2	.3	.4									1.0	5.9
S	.2	1.2	1.0	.9								3.3	8.4
SSW	.4	.2	.4	.8								1.9	8.4
SW	.1	1.5	1.3	.4								3.4	6.8
WSW		1.8	2.8	.6								5.1	7.6
W	.4	2.4	2.0	.2								5.1	6.2
WNW	.6	2.5	2.8	1.2								7.1	7.6
NW	.4	3.4	3.3	3.0	.2							10.4	8.5
NNW	.7	2.5	2.3	1.1								6.6	7.0
VARBL													
CALM												4.4	
	4.8	33.8	38.3	17.8	.7	.2						100.0	7.5

TOTAL NUMBER OF OBSERVATIONS 905

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS) 0600-0900 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.5	3.4	3.1	1.8	.1							8.9	7.7
NNE		1.0	1.1									2.1	6.8
NE	.1	1.1	.8	.5								2.5	7.9
ENE	.1	.7	2.0	2.1								4.8	9.8
E	.2	3.4	9.1	8.8	1.1	.1						22.7	10.3
ESE		3.0	4.8	3.3								11.1	8.7
SE	.1	1.1	2.5									3.7	7.1
SSE	.1	1.3	1.3	.1								2.8	6.7
S	.1	.7	1.9	.5	.2							3.8	9.3
SSW	.2	.3	.5	.4	.1							1.6	8.5
SW		.5	1.9	.9								3.3	9.2
WSW		.8	2.1	.8								3.6	8.8
W	.2	1.3	2.0	2.0	.1							5.6	9.2
WNW	.4	1.2	1.3	1.8								4.7	8.9
NW	.3	2.2	2.8	2.1	.1							7.6	8.9
NNW	.2	3.4	2.8	2.7	.1							9.3	8.5
VARBL													
CALM												2.3	
	2.7	25.3	40.0	27.7	1.9	.1						100.0	8.7

TOTAL NUMBER OF OBSERVATIONS 913

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS) 0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		1.2	1.9	2.7	.1							5.9	10.0
NNE	.1	.3	1.2	.6								2.2	8.5
NE		.8	.6	.3								1.7	7.9
ENE	.1	.9	1.0	1.8	.6							4.3	11.1
E	.3	1.8	6.0	11.7	2.1							21.9	11.6
ESE	.1	1.5	6.7	5.2	.2							13.8	9.8
SE		2.2	3.3	.9								6.4	7.9
SSE	.1	1.1	1.4	.9								3.5	8.0
S	.1	.9	2.3	.8	.1							4.2	8.5
SSW	.4		1.1	2.3	.2	.1						4.2	11.1
SW	.2	.6	1.8	1.4	.4	.1						4.5	10.5
WSW	.2	.4	1.1	2.3	.2							4.3	11.1
W		1.1	1.3	3.1	.3							5.9	11.2
WNW	.2	.6	2.0	2.1	.1							5.0	10.3
NW		.3	3.3	3.1	.1							6.9	10.7
NNW	.1	.3	2.0	2.1	.1	.1						4.8	10.7
VARBL													
CALM												.7	
	2.1	14.0	37.0	41.2	4.6	.3						100.0	10.2

TOTAL NUMBER OF OBSERVATIONS 905

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS) 1200-1400 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	.2	1.3	2.0	.2							3.9	11.1
NNE		.6	.4	.8								1.8	9.6
NE	.1	.6	.3	.4								1.4	8.2
ENE		.6	1.3	2.6	1.5							6.1	13.0
E	.1	.7	5.5	12.0	2.1	.1						20.5	12.5
ESE		1.2	7.4	5.5	.1							14.2	10.0
SE	.2	1.0	5.5	1.9								8.6	9.1
SSE		.9	1.3	.9		.1						3.2	9.2
S	.1	.7	2.2	1.5	.2							4.7	9.9
SSW		.6	1.3	1.2	.1	.2						3.4	11.0
SW	.1	.3	1.1	1.5	.6		.1					3.7	12.4
WSW		.7	1.2	2.9	1.1	.2						6.1	13.0
W		1.0	1.8	2.8	.7							6.2	11.3
WNW	.1	.3	1.4	2.4	.2							4.5	11.5
NW	.1	.3	2.3	3.9	.3		.1					7.0	11.9
NNW		.4	1.9	1.8	.2							4.3	10.6
VARBL													
CALM												.4	
	1.0	9.9	36.3	44.1	7.4	.7	.2					100.0	11.2

TOTAL NUMBER OF OBSERVATIONS 908

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.6	1.7	2.0	.1							4.3	10.7
NNE		.1	.7	.8								1.5	10.9
NE			.2	.2								.4	10.8
ENE		.1	1.5	3.1	1.3	.1						6.2	13.6
E		.7	6.9	13.6	2.7	.2						24.0	12.4
ESE		.9	8.4	6.0	.2							15.5	10.3
SE		1.3	4.1	1.4								6.9	8.6
SSE		.7	2.3	.9								3.9	8.8
S	.1	.3	1.3	1.0	.2							3.0	10.3
SSW		.4	1.3	1.2	.2							3.2	11.1
SW	.1	.2	1.2	1.3	.7	.2						3.8	12.8
WSW	.1	.1	1.0	2.2	.8	.2						4.4	13.2
W	.1	.7	1.1	3.5	.3	.1						5.9	11.7
WNW	.1	.2	1.5	2.7	.7	.1						5.3	12.3
NW	.1	.2	2.4	4.3	.1							7.2	11.1
NNW		.4	2.0	1.9	.1							4.4	10.4
VARBL													
CALM												.2	
	.7	7.0	37.7	46.1	7.4	1.0						100.0	11.3

TOTAL NUMBER OF OBSERVATIONS 905

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS)

1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.3	2.1	1.2								4.7	8.5
NNE		.6	.3	.3								1.2	7.8
NE	.2		.8	.1								1.1	7.8
ENE		.6	3.6	3.2	.6	.1						8.1	11.1
E		2.9	13.0	12.8	1.4	.1						30.2	10.7
ESE	.1	2.8	7.4	1.2	.2							11.7	8.3
SE	.3	2.2	2.1	.1								4.7	6.6
SSE	.1	1.2	1.5	.4								3.3	7.7
S	.3	.6	.8	.6	.1							2.3	8.1
SSW		.4	.3	.4								1.2	9.2
SW		.6	1.3	1.0	.1							3.0	10.0
WSW	.3	1.0	.6	.9	.2							3.0	9.0
W	.1	1.0	2.5	1.3	.3							5.3	9.6
WNW	.1	1.4	1.8	1.5	.1							5.0	8.9
NW	.2	1.3	3.9	2.5	.1							8.1	9.2
NNW		1.1	2.6	1.9	.1							5.7	9.5
VARBL													
CALM												1.3	
	2.0	18.9	44.7	29.6	3.3	.2						100.0	9.3

TOTAL NUMBER OF OBSERVATIONS 906

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.4	2.1	1.1	.9								4.6	7.3
NNE	.2	1.9	.4									2.6	5.5
NE	.4	1.0	1.0	.2	.1							2.8	7.0
ENE		1.3	3.2	2.6	.2	.1						7.4	9.6
E	.3	5.9	12.7	7.4	1.4	.1						27.9	9.4
ESE	.7	4.0	3.7	1.6								9.9	7.4
SE	.8	2.4	2.0	.1								5.3	6.1
SSE	.2	1.1	.9	.1								2.3	6.3
S	.1	1.1	.8	.4								2.4	7.3
SSW		.8	1.4	.8								3.0	8.6
SW	.1	.6	1.3	.1								2.1	6.9
WSW	.1	1.7	1.7	.4	.1							4.0	7.1
W	1.0	2.7	3.0	.6								7.2	6.3
WNW	.2	2.1	1.7	.6								4.6	7.1
NW	.1	1.9	2.9	1.7								6.6	8.6
NNW	.1	1.0	1.3	.4	.3							3.2	8.8
VARBL													
CALM												4.1	
	4.9	31.6	39.1	17.9	2.2	.2						100.0	7.7

TOTAL NUMBER OF OBSERVATIONS 900

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

ALL WEATHER (CLASS)

ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	1.9	1.7	1.5	.1							5.5	8.4
NNE	.1	.9	.7	.3								2.0	7.8
NE	.2	.7	.6	.3	.0							1.8	7.5
ENE	.1	.9	2.2	2.3	.6	.0						6.1	10.7
E	.2	3.2	9.1	10.0	1.5	.1						24.2	10.7
ESE	.2	2.6	6.1	3.0	.1							12.0	8.8
SE	.2	1.8	2.7	.6								5.3	7.5
SSE	.2	.9	1.2	.4		.0						2.7	7.7
S	.2	.8	1.4	.8	.1							3.3	8.8
SSW	.2	.4	.9	1.0	.1	.0						2.6	10.0
SW	.1	.7	1.5	.9	.2	.0	.0					3.4	9.7
WSW	.1	1.0	1.6	1.3	.3	.1						4.3	9.9
W	.3	1.6	2.0	1.7	.2	.0						5.8	9.0
WNW	.2	1.3	1.8	1.7	.1	.0						5.2	9.2
NW	.2	1.6	3.1	2.8	.1		.0					7.9	9.5
NNW	.2	1.4	2.1	1.6	.1	.0						5.4	8.9
VARBL													
CALM												2.5	
	2.9	21.5	38.8	30.2	3.7	.4	.0					100.0	9.2

TOTAL NUMBER OF OBSERVATIONS 7250

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS) 0000-0200 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.8	1.4	.8								4.3	7.4
NNE	.3	.8	.6									1.7	5.4
NE	.1	1.3	.1									1.5	4.9
ENE		.9	1.1	.2								2.3	7.7
E	.2	3.4	7.8	4.5	.2							16.2	9.1
ESE	.3	3.2	5.6	1.0								10.2	7.4
SE	.3	2.0	1.7	.5								4.5	6.6
SSE	.1	1.0	1.1	.1								2.4	6.6
S	.5	1.5	2.8	.8								5.5	7.6
SSW	.2	1.1	1.3	.3	.1							3.1	7.6
SW	.6	1.1	2.0	.6								4.3	7.5
WSW	.3	1.4	3.0	.7								5.4	7.9
W	.7	7.4	5.2	.5	.2							13.9	6.6
WNW	.3	3.8	3.9	.9								9.0	7.3
NW	.2	2.5	2.4	1.8								7.0	8.4
NNW	.2	2.4	.9	1.0	.1							4.7	7.2
VARBL													
CALM												4.0	
	4.8	35.7	40.9	13.8	.7							100.0	7.2

TOTAL NUMBER OF OBSERVATIONS 870

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS) 0300-0500 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.5	2.5	1.7	.6								5.3	7.0
NNE	.1	.8	.9	.1								2.0	6.7
NE	.2	.5										.7	4.5
ENE		.9	1.7	.6								3.2	8.0
E	.7	2.6	4.8	3.8	.1							12.1	8.8
ESE	.5	2.5	4.1	2.4								9.6	8.2
SE	.6	1.3	2.2	.3								4.8	7.1
SSE	.3	.7	1.0	.3								2.4	7.5
S	.1	.8	2.4	.1								3.5	7.6
SSW	.2	1.2	1.8	.6	.1							3.9	7.9
SW		.9	2.2	1.7								4.8	9.2
WSW	.3	2.0	2.4	.7		.1						5.5	7.5
W	.9	5.6	4.1	1.3	.1							12.1	6.8
WNW	.2	3.6	3.9	1.6	.1							9.4	7.6
NW	.6	3.6	2.5	1.6								8.3	7.4
NNW	.3	3.7	2.0	.5								6.5	6.4
VARBL													
CALM												6.3	
	5.6	33.2	38.0	16.2	.5	.1						100.0	7.1

TOTAL NUMBER OF OBSERVATIONS 868

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS) 0600-0800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.7	2.7	.6								5.1	7.8
NNE	.2	1.1	.7	.2								2.3	6.9
NE		.2	.8									1.0	7.6
ENE	.1	.6	.8	1.5								3.0	9.3
E	.5	1.5	5.7	4.9	.8							13.4	10.1
ESE	.3	1.8	4.2	3.7	.3							10.4	9.4
SE		1.3	1.6	.3								3.2	7.9
SSE	.1	.9	1.7	.9								3.7	8.4
S	.2	1.3	2.1	1.4								4.9	8.6
SSW	.1	.3	1.9	1.0	.1							3.5	9.7
SW		1.7	1.3	.6	.1							3.7	8.2
WSW		.8	4.8	1.9	.3	.2						8.1	10.3
W	.5	2.7	4.3	2.1	.2							9.8	8.4
WNW	.2	1.0	3.9	2.5	.1							7.8	9.2
NW	.2	2.5	2.9	2.3	.1							8.0	8.8
NNW	.5	3.5	3.4	1.8	.1							9.9	8.0
VARBL													
CALM												2.7	
	3.1	23.1	42.9	25.7	2.3	.2						100.0	8.7

TOTAL NUMBER OF OBSERVATIONS 875

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS)

0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.4	2.8	2.1								6.3	9.1
NNE		.3	.9	.3								1.6	8.6
NE		.5	.5	.3								1.3	8.8
ENE		.3	.9	1.7	.2							3.2	11.3
E		1.0	4.6	5.5	.6	.1						11.8	11.0
ESE		1.8	5.7	2.6	.2							10.5	9.3
SE	.1	.7	2.5	.9								4.3	8.9
SSE	.1	.5	1.4	1.1								3.1	9.5
S		1.0	2.3	3.0	.2	.2						6.8	10.8
SSW		1.0	1.4	3.2	.5	.1						6.2	11.3
SW	.2	.8	1.8	2.2	.2							5.3	10.0
WSW	.1	.9	3.0	2.0	.7							6.7	10.2
W		2.1	4.6	4.9	.6	.2						12.4	10.5
WNW		.7	3.8	3.3	.3	.2						8.9	11.8
NW		.9	2.8	2.9	.6							7.1	10.8
NNW		.7	2.0	1.5								4.1	9.5
VARBL													
CALM												.9	
	.7	19.7	40.9	37.7	4.1	.9						100.0	10.2

TOTAL NUMBER OF OBSERVATIONS 870

USAFETAC FORM AIR 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS) 1200-1800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.5	1.0	1.2								2.7	9.8
NNE	.1	.6	.3	.5								1.5	7.8
NE		.3	.6	.3	.1							1.4	9.5
ENE		.3	.6	2.2	.3							3.4	12.3
E		.9	4.5	6.4	1.0							12.8	11.6
ESE		.5	5.4	5.2	.2							11.4	10.4
SE		.3	3.2	1.9								5.4	9.8
SSE		.7	2.6	1.5								4.8	9.3
S		1.2	2.2	3.7	.6	.3						8.1	11.5
SSW		.2	1.6	2.3	.3	.2						4.7	12.2
SW	.1	.2	1.8	3.0	.5	.1						5.7	11.7
WSW		.5	1.9	4.3	.6							7.3	11.9
W		.9	3.9	6.2	.8	.2						12.0	11.7
WNW		.5	2.5	4.4	.6	.1						8.1	12.0
NW		.5	2.4	3.4								6.2	11.0
NNW	.1	.9	1.1	2.4	.1							4.7	10.4
VARBL													
CALM													
	.3	9.0	35.6	48.9	5.1	1.0						100.0	11.2

TOTAL NUMBER OF OBSERVATIONS 881

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.5	1.6	.9								3.0	9.3
NNE		.6	.7	.2								1.5	7.7
NE		.6	.6	.1	.3							1.6	9.7
ENE		.2	1.5	2.2	.3	.1						4.9	12.0
E	.1	1.0	4.8	6.8	1.2	.2						14.2	11.6
ESE		.8	8.0	3.3	.1							12.2	9.8
SE	.1	1.2	5.0	1.0								7.3	8.7
SSE		.7	1.4	.8								2.9	8.8
S		.5	2.0	2.5	.5	.1						5.5	11.7
SSW		.1	1.4	2.4	.3	.2						4.5	12.8
SW	.1	.2	.9	2.3	.8							4.4	12.8
WSW		.6	2.1	2.8	.6	.1						6.1	11.5
W		1.5	3.8	6.0	1.5							12.8	11.8
WNW		.9	2.8	4.5	.7	.1						9.0	11.6
NW		.9	2.7	3.0	.2							6.8	10.5
NNW		.1	.9	2.7								3.7	11.9
VARBL													
CALM												.1	
	.3	10.4	40.0	41.6	6.6	.9						100.0	10.9

TOTAL NUMBER OF OBSERVATIONS 867

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS) 1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.7	1.6	.3								3.9	7.2
NNE		1.1	.2	.2	.1							1.7	7.6
NE		.5	.1									.6	5.9
ENE		1.5	2.1	1.0	.1	.2						4.9	9.3
E	.1	2.5	8.6	6.7	.7							18.6	10.1
ESE	.1	2.9	7.1	2.1								12.2	8.4
SE		1.3	3.0									4.2	7.3
SSE		1.6	2.3	.2								4.1	7.7
S		.9	2.3	1.7	.1							5.1	10.0
SSW	.1	.5	1.6	1.4	.3							3.9	10.7
SW		1.4	1.7	.9	.1		.1					4.2	9.5
WSW		.9	1.3	1.5	.1							3.8	9.4
W	.2	3.8	3.4	2.5	.5							10.4	8.5
WNW	.2	2.2	3.6	3.4	.2							9.6	9.2
NW		1.6	2.9	1.1								5.6	8.2
NNW	.2	1.1	1.5	2.3								5.2	9.1
VARBL													
CALM												1.8	
	1.3	25.5	43.3	25.5	2.3	.2	.1					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 871

USAFETAC FORM AM 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.6	2.4	.5	.2								3.7	5.4
NNE	.1	.3	.5	.1								1.0	7.1
NE		1.0	.5	.3								1.8	7.7
ENE	.2	.7	1.5	.1	.2							2.8	8.1
E	.6	3.8	10.1	4.6	.5							19.5	8.8
ESE	.9	3.9	5.7	1.2								11.7	7.2
SE		2.1	1.8	.3	.1							4.9	7.0
SSE	.2	2.0	1.7									3.9	6.3
S	.2	1.4	2.3	1.5								5.4	8.6
SSW	.1	.6	1.7	.2	.1							2.8	7.8
SW		.9	1.7	.2								2.9	7.6
WSW	.3	2.2	2.4	.5	.1							5.5	7.8
W	.3	5.7	3.4	1.3	.2							10.9	6.9
WNW	.3	2.0	2.9	1.6								6.8	8.2
NW	.2	3.1	1.7	.6	.1							5.8	7.0
NNW	.5	2.9	1.4	.8								5.5	6.5
VARBL													
CALM												5.4	
	4.7	35.0	39.8	13.6	1.4							100.0	7.2

TOTAL NUMBER OF OBSERVATIONS 865

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.6	1.7	.8								4.3	7.8
NNE	.1	.7	.6	.2	.0							1.7	7.1
NE	.0	.6	.4	.1	.1							1.2	7.6
ENE	.0	.7	1.3	1.2	.2	.0						3.4	9.9
E	.3	2.1	6.4	5.4	.6	.0						14.8	10.0
ESE	.3	2.2	5.7	2.7	.1							11.0	8.7
SE	.1	1.2	2.6	.7	.0							4.7	8.0
SSE	.1	1.0	1.7	.6								3.4	8.1
S	.1	1.1	2.3	1.9	.2	.1						5.6	9.8
SSW	.1	.6	1.6	1.4	.2	.1						4.1	10.3
SW	.1	.9	1.7	1.4	.2	.0	.0					4.4	9.8
WSW	.1	1.1	2.6	1.8	.3	.1						6.1	9.7
W	.3	3.7	4.1	3.1	.5	.1						11.8	8.9
WNW	.2	1.8	3.4	2.8	.3	.1						8.5	9.5
NW	.2	2.0	2.5	2.1	.1							6.9	9.0
NNW	.2	1.9	1.7	1.6	.0							5.5	8.4
VARBL													
CALM												2.7	
	2.6	23.3	40.2	27.9	2.9	.4	.0					100.0	8.9

TOTAL NUMBER OF OBSERVATIONS 6947

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) IIII (MONTH)

ALL WEATHER (CLASS) 0000-0200 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	2.3	.7	.1	.2							4.0	6.0
NNE		.4										.4	5.3
NE	.2	.4		.1								.8	5.3
ENE	.2	.8	.2	.2								1.4	6.2
E	.4	3.5	5.8	1.8								11.6	7.8
ESE	.4	2.6	2.6	.2								5.9	6.6
SE	.4	2.3	2.0	.1								4.8	6.2
SSE	.7	1.3	1.5	.2								3.7	6.4
S	.2	1.8	3.0	.9								5.8	7.8
SSW	.1	.7	2.6	1.4								4.8	8.9
SW	.6	1.5	1.8	1.2								5.1	7.5
WSW	.6	2.5	1.7	.6								5.3	6.8
W	1.8	5.4	5.8	1.5								14.5	6.8
WNW	1.0	3.5	3.4	.7								8.6	6.7
NW	.8	3.5	3.4	.4								8.1	6.5
NNW	.6	3.5	1.4	.3								5.8	6.0
VARBL													
CALM												9.1	
	8.6	36.2	36.0	9.8	.2							100.0	6.3

TOTAL NUMBER OF OBSERVATIONS 908

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

ALL WEATHER (CLASS) 0300-0500 (HOURS (L.S.T.))

(CONDITION)

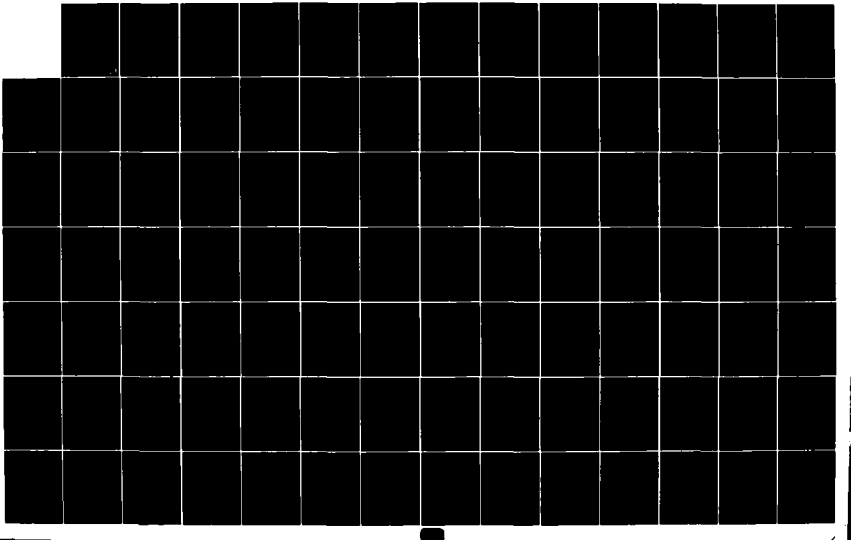
SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	3.7	.8	.1								5.3	5.3
NNE	.1	.3	.3	.1								.9	7.1
NE	.1	.3	.1									.6	5.2
ENE	.3	1.0	.7	.1								2.1	5.9
E	.3	2.5	6.2	1.7								10.7	8.0
ESE	.6	2.6	2.4	.4								6.1	6.7
SE	.4	1.3	1.4	.1								3.3	6.1
SSE	.6	1.4	1.7	.1								3.7	6.2
S	.4	2.1	2.3	1.2								6.1	7.7
SSW	.1	.9	1.9	1.5								4.4	9.2
SW	.2	.8	1.8	1.3								4.1	8.8
WSW		3.4	1.5	.6								5.5	6.6
W	.8	6.3	4.8	1.2								13.1	6.6
WNW	1.0	2.9	3.6	.7	.3							8.5	7.1
NW	.7	5.6	3.2	.2								9.7	6.3
NNW	.4	5.2	1.5	.6								7.7	6.1
VARBL													
CALM												8.5	
	6.7	40.4	34.2	9.9	.3							100.0	6.3

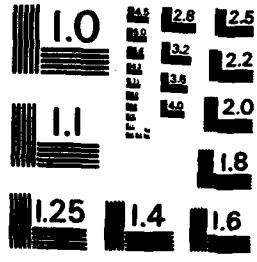
TOTAL NUMBER OF OBSERVATIONS 909

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

AD-A134 200 DULUTH DULUTH IAP MINNESOTA REVISED UNIFORM SUMMARY OF SURFACE WEATHER OB..(U) AIR FORCE ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER SCOTT A.. 01 AUG 83

UNCLASSIFIED USAFETAC/DS-83/030 SBI-AD-E850 418 F/G 4/2 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

ALL WEATHER (CLASS) 0600-0800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	4.0	2.0	.3								6.5	6.3
NNE		.9	.6	.3								1.8	7.6
NE	.1	.6	.3	.1								1.1	6.1
ENE	.2	.9	.3	.1								1.5	5.7
E	.1	1.7	5.2	3.3	.2							10.5	9.8
ESE		2.8	3.1	1.4								7.3	8.0
SE	.1	1.3	1.0	.1								2.5	6.5
SSE	.1	1.2	1.8									3.1	6.7
S		.9	2.7	1.9	.1							5.5	9.7
SSW		1.5	2.2	1.8								5.5	9.2
SW	.2	1.7	2.5	2.7	.1							7.2	9.2
WSW	.6	1.5	2.0	1.0								5.1	7.3
W	.7	3.5	3.4	1.2								8.8	7.8
WNW	.7	3.4	3.2	2.1	.2							9.6	8.2
NW	.3	4.3	3.5	1.2								9.8	7.8
NNW	.3	4.6	2.0	.9								7.9	6.8
VARBL													
CALM												6.5	
	3.7	34.8	35.8	18.5	.7							100.0	7.8

TOTAL NUMBER OF OBSERVATIONS 908

USAFETAC FORM AUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

ALL WEATHER (CLASS) 0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	1.7	2.8	.3								5.1	7.2
NNE		1.7	.9									2.5	6.3
NE		.9	1.0									1.9	6.7
ENE	.2	.3	1.7	.1	.2							2.5	8.6
E		1.1	4.1	3.8	.4							9.1	10.3
ESE	.1	1.9	4.7	1.1								7.8	8.2
SE		.7	2.4	.3								3.4	8.1
SSE		1.0	2.4	.6								4.0	8.3
S	.1	1.4	3.8	2.2	.2							7.7	9.3
SSW		.9	4.2	3.2	.3							8.6	10.6
SW		1.4	2.9	2.8	.1							7.2	10.0
WSW	.1	1.4	2.4	1.8	.3							6.1	9.4
W		2.2	4.3	2.9								9.4	8.8
WNW	.2	1.5	3.8	4.4	.2							10.2	9.9
NW		1.4	4.0	2.8	.2							8.4	9.5
NNW	.1	1.7	2.6	1.2								5.6	8.1
VARBL													
CALM												.6	
	1.2	21.2	47.9	27.0	2.1							100.0	9.1

TOTAL NUMBER OF OBSERVATIONS 904

USAFETAC FORM AUG 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (HOURS)

ALL WEATHER (CLASS)

1200-1800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.4	1.9	.7								4.1	7.7
NNE		.3	.7									1.0	7.6
NE		.2	.4									.7	6.8
ENE		.7	1.1	.2	.1							2.1	8.6
E	.1	.6	4.1	3.8	.3	.1						9.0	10.6
ESE		1.2	4.3	2.7								8.2	9.2
SE	.1	.8	5.5	.7								7.1	8.3
SSE		.7	2.9	1.1								4.6	9.1
S		.6	5.0	3.9	.1							9.5	10.8
SSW	.1	.8	2.5	3.2	.2							6.9	10.5
SW	.3	1.8	2.1	3.0	.1							7.3	9.7
WSW		1.1	1.9	2.4								5.4	9.2
W	.3	1.0	4.4	5.4	1.0	.1						12.3	11.3
WNW		1.1	3.2	4.6	.1							9.1	10.6
NW		1.3	4.3	2.7								8.3	9.3
NNW		.9	2.0	1.3								4.2	9.0
VARBL													
CALM												.3	
	1.1	14.4	46.3	35.6	2.0	.2						100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 908

USAFETAC FORM 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.0	1.9	.3								3.3	7.8
NNE		.5	.4									1.0	6.6
NE	.1	.7		.1	.1							1.0	7.1
ENE		.3	.8	1.0								2.1	9.9
E		.7	3.7	5.9	.1							10.4	11.1
ESE	.1	1.3	6.4	2.4								10.2	8.8
SE		.9	4.9	.4								6.3	8.2
SSE	.2	1.0	4.6	.8								6.6	8.9
S		.4	3.4	3.7	.2							7.8	10.8
SSW		.7	2.4	2.1	.1							5.3	10.2
SW		.8	2.2	3.4								6.4	10.7
WSW	.1	.7	2.5	2.0								5.3	9.9
W	.1	.9	4.8	5.2	.9	.1						12.0	11.1
WNW		1.3	4.0	4.6								9.9	10.1
NW	.1	1.6	3.3	2.4								7.5	9.1
NNW	.1	.7	2.6	1.4								4.8	8.8
VARBL													
CALM												.3	
	1.0	13.4	48.0	35.8	1.4	.1						100.0	9.7

TOTAL NUMBER OF OBSERVATIONS 911

USAFETAC FORM AIR 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

ALL WEATHER (CLASS)

1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	1.8	.7									2.8	6.4
NNE	.2	.9	.1									1.2	5.1
NE	.2	.1	.2	.1								.7	6.5
ENE	.2	.9	1.4	.7								3.2	8.0
E	.6	3.1	6.1	3.8								13.5	8.7
ESE		3.2	8.1	.6								11.9	7.5
SE		3.0	2.8	.1								5.9	6.7
SSE		1.8	2.0									3.8	6.7
S	.1	2.3	4.9	1.4								8.8	8.1
SSW		.7	2.7	.7								4.0	8.8
SW		1.3	3.4	.7								5.4	8.2
WSW	.1	2.2	2.3	.8								5.4	7.6
W	.7	4.7	4.8	2.1								12.2	7.3
WNW	.3	2.4	3.9	1.4								8.1	8.0
NW	.4	2.0	2.7	1.1								6.2	8.0
NNW	.3	1.8	2.0	.7	.1							4.9	7.5
VARBL													
CALM												2.1	
	3.5	32.2	48.0	14.1	.1							100.0	7.5

TOTAL NUMBER OF OBSERVATIONS 982

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ____ (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	2.6	.4									3.7	6.8
NNE	.1	1.0	.1									1.2	5.2
NE		.4		.1								.6	5.8
ENE	.1	1.0	.8	.2								2.1	7.1
E	.2	5.3	6.5	2.1		.1						14.3	7.9
ESE	.3	3.7	5.0	.4								9.4	7.1
SE	.3	2.0	1.8	.1								4.2	6.2
SSE		2.1	1.4	.1								3.7	6.5
S		1.6	4.6	.8								6.9	8.3
SSW		1.0	2.0	.4								3.4	8.4
SW	.3	1.8	2.1	.3								4.6	7.1
WSW	.4	3.4	1.9	.1								5.9	5.7
W	1.6	7.4	5.4	.3								14.8	6.0
WNW	.2	3.1	3.6	.3								7.2	6.9
NW	.6	4.0	2.1	.6								7.2	6.2
NNW	.6	2.4	.4									3.4	4.9
VARBL													
CALM												7.4	
	5.4	42.8	38.2	6.0		.1						100.0	6.2

TOTAL NUMBER OF OBSERVATIONS 901

USAFETAC FORM AIR 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

ALL WEATHER (CLASS)

ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.4	2.3	1.8	.2	.0							4.7	6.3
NNE	.1	.8	.9	.1								1.9	6.8
NE	.1	.5	.3	.1	.0							.9	6.3
ENE	.2	.7	.9	.3	.0							2.1	7.7
E	.2	2.3	5.2	3.2	.1	.0						11.1	9.1
ESE	.2	2.4	4.6	1.2								8.4	7.9
SE	.2	1.5	2.7	.2								4.7	7.2
SSE	.2	1.3	2.3	.4								4.2	7.4
S	.1	1.4	3.7	2.0	.1							7.3	9.1
SSW	.0	.9	2.6	1.8	.1							5.4	9.6
SW	.2	1.4	2.3	1.9	.0							5.9	9.1
WSW	.2	2.0	2.0	1.1	.0							5.5	7.9
W	.7	3.9	4.7	2.5	.2	.0						12.1	8.1
WNW	.4	2.4	3.6	2.4	.1							8.9	8.3
NW	.4	3.0	3.3	1.9	.0							8.1	7.7
NNW	.3	2.6	1.8	.8	.0							5.5	7.1
VARBL													
CALM												4.4	
	3.9	29.4	41.8	19.6	.9	.1						100.0	7.8

TOTAL NUMBER OF OBSERVATIONS 7285

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

ALL WEATHER (CLASS)

0000-0200 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	2.3	.6	.1								3.7	5.2
NNE	.4	.6	.3	.2								1.6	6.3
NE	.2	.8	.3									1.3	5.4
ENE	.1	1.0	.9	.7								2.7	7.9
E	.2	3.8	6.3	1.9								12.2	8.1
ESE	.3	4.5	3.7	1.0								9.5	6.9
SE	.3	3.0	1.8	.3								5.4	6.3
SSE	.6	1.3	1.3	.1								3.3	6.0
S	.2	1.2	1.7	.8								3.9	8.0
SSW	.1	1.0	3.1	.9								5.1	8.8
SW	.3	1.2	2.2	.8								4.5	8.2
WSW	.6	2.8	3.3	.9								7.5	6.9
W	.6	6.5	3.7	.9								11.6	6.9
WNW	.6	4.3	2.4	.2								7.5	6.1
NW	.9	2.5	1.9	.4								5.8	6.0
NNW	.6	2.3	1.2	.6								4.7	6.5
VARBL													
CALM												9.7	
	6.6	39.2	34.7	9.7								100.0	6.3

TOTAL NUMBER OF OBSERVATIONS 903

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

ALL WEATHER (CLASS) 0300-0500 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.7	1.9	1.2	.3								4.1	6.1
NNE	.1	1.0	.2									1.3	5.3
NE		.9	.4									.9	5.9
ENE		1.2	1.2	.6								3.0	7.5
E	.1	4.0	4.8	2.6								11.5	8.2
ESE	.1	3.6	4.2	1.7								9.6	7.7
SE	.1	2.2	1.4	.2	.1							4.1	6.8
SSE	.1	1.0	1.2									2.3	6.7
S		1.9	2.4	1.2	.2							5.8	8.7
SSW	.2	.8	1.8	1.0								3.8	8.4
SW	.1	1.0	1.2	.9								3.2	8.6
WSW	.4	2.3	2.3	.8								5.9	7.0
W	1.2	5.8	4.8	.8								12.6	6.5
WNW	.7	4.2	2.9	.3								8.1	6.4
NW	.8	5.0	1.1	.9								7.8	6.3
NNW	1.2	3.5	1.2	.3								6.2	5.8
VARBL													
CALM												9.7	
	5.9	39.9	32.6	11.6	.3							100.0	6.8

TOTAL NUMBER OF OBSERVATIONS 898

USAFETAC FORM AIR 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

ALL WEATHER (CLASS)

0600-0900 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.6	3.0	2.1	.6								6.2	6.6
NNE	.2	1.1	.7									2.0	5.6
NE		1.0	.8	.1								1.9	6.0
ENE	.3	1.0	.8	1.1	.2							3.4	8.7
E	.2	2.9	5.4	2.9	.1							11.6	8.8
ESE	.4	1.9	4.8	1.1								8.2	8.0
SE	.4	3.2	1.4	.4								5.6	6.3
SSE	.4	1.7	2.3	.6	.1							5.1	7.3
S	.1	1.1	2.0	1.8	.1							5.1	9.6
SSW	.1	1.1	1.7	1.2								4.1	8.5
SW	.4	1.7	2.3	.9	.1							5.4	7.8
WSW	.1	1.6	2.1	.9	.1							4.8	8.5
W	.8	2.7	3.2	1.3								8.0	7.4
WNW	.8	2.4	3.8	1.9								8.9	8.0
NW	.6	3.2	3.0	1.7								8.4	7.7
NNW	.3	2.6	2.0	.3								5.2	6.8
VARBL													
CALM												6.0	
	5.9	32.1	38.4	16.8	.8							100.0	7.3

TOTAL NUMBER OF OBSERVATIONS 990

USAFETAC FORM AIR 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | AUG MONTH

ALL WEATHER CLASS | 0900-1100 HOURS (L.S.T.)

CONDITION

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		1.4	2.0	.8								4.2	8.1
NNE		.6	.7									1.2	7.3
NE		1.0	.5	.1								1.6	5.9
ENE		.8	.7	1.6								3.0	9.8
E	.3	1.1	5.4	5.4	.6							12.9	10.8
ESE		2.0	4.5	2.0								8.6	8.6
SE	.5	1.5	3.6	.7								6.2	7.8
SSE	.2	1.7	3.3	.6								5.8	7.8
S	.3	1.5	3.6	3.0								8.5	9.3
SSW		1.5	2.4	2.9								6.8	9.6
SW	.2	1.9	2.6	.9								5.6	7.8
WSW	.6	1.2	2.4	2.1	.2	.1						6.7	9.2
W	.2	1.2	4.1	3.7	.2							9.5	9.7
WNW		.9	2.5	3.8	.1							7.3	10.6
NW		1.1	2.6	2.7								6.4	10.2
NNW		1.8	1.9	.9								4.6	7.9
VARBL													
CALM												1.1	
	2.9	21.2	42.7	31.8	1.1	.1						100.0	9.0

TOTAL NUMBER OF OBSERVATIONS 886

USAFETAC FORM AIR 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

ALL WEATHER (CLASS) 1200-1400 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	.7	1.1	.5								2.4	7.9
NNE		.5	.9	.1								1.5	7.0
NE		.2	.6	.1								.9	8.3
ENE		.5	1.0	1.0	.2							2.7	10.7
E	.3	1.1	4.3	6.3	.1							12.2	10.5
ESE	.2	1.4	4.6	2.6	.1							8.9	9.2
SE	.1	1.4	5.4	1.2	.1							8.2	8.6
SSE		1.7	3.7	2.0	.1							7.6	8.7
S	.1	2.4	4.7	3.2	.2							10.6	9.4
SSW		1.2	1.7	3.3								6.2	10.0
SW		.8	1.5	2.3	.1							4.6	10.1
WSW		1.0	2.4	1.7	.3							5.4	10.0
W		1.2	3.4	5.0	.6							10.2	11.0
WNW	.2	.7	3.7	5.4	.2							10.3	11.1
NW		.6	2.7	1.6	.1							5.0	9.8
NNW		.3	1.6	1.0								2.9	9.8
VARBL													
CALM												.5	
	1.1	15.6	43.3	37.2	2.3							100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 886

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.9	.8	.4	.1							2.2	8.5
NNE		.4		.2								.7	7.0
NE		.2	.1									.3	7.3
ENE		.3	.9	1.0	.3							2.6	11.0
E		1.0	7.5	5.5	.1							14.1	10.3
ESE		1.9	5.9	2.7	.1							10.6	9.1
SE	.1	2.1	5.3	1.1								8.6	7.9
SSE	.1	1.3	4.1	1.5	.1							7.2	8.7
S	.1	1.7	3.8	2.5	.2							7.8	9.5
SSW		.6	1.9	2.3	.2							5.0	10.8
SW	.2	.8	2.2	1.5	.1							4.8	9.8
WSW	.1	1.7	2.1	2.3	.3							6.6	10.1
W	.1	1.0	4.8	5.5	.3							11.7	10.8
WNW	.1	1.1	3.9	2.5	.1							7.7	9.5
NW		1.2	3.4	2.1	.1							6.8	9.3
NNW	.1	.8	1.5	.2								2.6	7.5
VARBL													
CALM												.6	
	1.0	17.1	47.8	31.3	2.2							100.0	9.5

TOTAL NUMBER OF OBSERVATIONS 898

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

ALL WEATHER (CLASS)

1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.4	.9	.6	.1								2.0	6.2
NNE	.2	1.0	.2									1.4	5.8
NE		.1	.2	.1								.4	8.3
ENE	.1	.7	2.0	.4	.1							3.3	8.4
E	.1	4.5	8.1	4.8	.1							17.6	8.8
ESE	.9	3.6	7.8	.7								12.9	7.1
SE	.4	3.9	3.5	.3								8.1	6.7
SSE	.2	1.2	1.0	.9								3.3	7.7
S	.3	1.4	2.6	.9								5.2	8.0
SSW		.9	2.3	.9	.1							4.2	8.7
SW		1.2	2.4	1.0								4.7	8.3
WSW		1.7	1.7	.9								4.2	7.7
W	.7	4.7	4.5	1.4	.1							11.4	7.4
WNW	.4	4.2	2.9	.8	.1							8.5	6.9
NW	.2	2.7	1.7	.4								5.0	6.5
NNW	.1	1.8	.7	.6								3.1	6.9
VARBL													
CALM												4.5	
	4.2	34.4	42.1	14.3	.6							100.0	7.2

TOTAL NUMBER OF OBSERVATIONS 898

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.2	.2	.2								2.8	5.3
NNE	.2	.2	.2	.1								.8	6.6
NE	.2	.9	.3	.2								1.7	6.1
ENE		1.1	1.7	.4								3.2	7.9
E	.4	4.2	6.3	2.8								13.7	8.1
ESE	.8	5.4	6.0	1.0								13.2	7.0
SE	.3	2.2	2.2	.3								5.1	6.7
SSE	.2	1.8	1.6	.1								3.7	6.8
S		1.8	2.3	.9								5.0	7.9
SSW		.8	2.5	.6								3.8	8.7
SW	.1	1.2	3.1	.6	.1							5.1	8.2
WSW	.3	2.0	1.3	.4	.1							4.2	6.7
W	1.0	6.6	2.8	.6								10.9	5.9
WNW	.1	5.0	2.6	.4								8.2	6.6
NW	.3	3.6	1.8	.6								6.3	6.6
NNW	.2	1.1	.9	.3								2.6	6.6
VARBL													
CALM												9.5	
	4.6	40.2	35.9	9.6	.2							100.0	6.8

TOTAL NUMBER OF OBSERVATIONS 895

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	1.7	1.1	.4	.0							3.5	6.6
NNE	.2	.7	.4	.1								1.3	6.1
NE	.1	.6	.4	.1								1.1	6.3
ENE	.1	.8	1.1	.9	.1							3.0	8.9
E	.2	2.8	6.0	4.0	.1							13.2	9.1
ESE	.3	3.0	5.2	1.6	.0							10.2	7.9
SE	.3	2.4	3.1	.6	.0							6.4	7.2
SSE	.2	1.5	2.3	.7	.0							4.8	7.7
S	.2	1.6	2.8	1.8	.1							6.5	8.9
SSW	.1	1.0	2.2	1.6	.0							4.9	9.3
SW	.2	1.2	2.2	1.1	.1							4.8	8.5
WSW	.3	1.8	2.2	1.3	.1	.0						5.7	8.3
W	.6	3.7	3.9	2.4	.2							10.7	8.1
WNW	.4	2.9	3.1	1.9	.1							8.3	8.2
NW	.3	2.5	2.3	1.3	.0							6.4	7.8
NNW	.3	1.8	1.4	.5								4.0	6.9
VARBL													
CALM												5.2	
	4.0	30.0	39.7	20.2	.9	.0						100.0	7.7

TOTAL NUMBER OF OBSERVATIONS 7160

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

14755 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS) 0000-0200 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥ 56	%	MEAN WIND SPEED
N	.6	2.6	1.8									5.0	6.0
NNE	.1	1.0	.9									2.0	6.1
NE	.3	1.2	.2	.1								1.9	5.5
ENE		.7	1.1	.7	.3	.1	.1					3.0	11.1
E	.2	2.3	2.5	4.3	.3	.2						9.8	10.2
ESE	.1	3.5	4.2	1.4	.1							9.2	7.6
SE	.1	3.0	1.7	.1								5.0	6.4
SSE	.6	1.8	.7	.3								3.4	6.2
S	.3	2.0	2.7	.6	.1							5.7	7.5
SSW	.1	.7	1.9	1.5	.1							4.3	9.3
SW	.2	1.0	2.1	2.3	.5							6.1	10.3
WSW	.5	1.5	2.1	.7	.2							5.0	7.8
W	.5	4.4	4.6	.9	.1	.1						10.6	7.8
WNW	.5	2.9	5.4	.9	.1							9.8	7.5
NW	.5	2.7	3.3	1.8	.1							8.3	8.2
NNW	.2	1.9	1.9	.2								4.3	6.6
VARBL													
CALM												6.6	
	4.7	33.2	37.2	15.7	2.0	.5	.1					100.0	7.8

TOTAL NUMBER OF OBSERVATIONS 884

USAFETAC FORM AIR 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS)

0300-0500 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	2.9	2.1									5.0	6.5
NNE	.2	.5	.9									1.6	6.1
NE		.9	.9									1.8	6.6
ENE	.2	1.6	.2	.6	.5	.2						3.3	9.7
E	.2	2.4	2.9	4.3	.5	.1						10.4	10.2
ESE	.1	3.1	2.6	.7	.2							6.7	7.4
SE	.1	2.4	2.7	.3								5.6	7.1
SSE	.2	1.4	1.3	.2								3.1	6.5
S	.1	1.7	1.6	.5	.1							4.0	7.4
SSW	.1	.9	1.6	1.1	.1							3.9	8.8
SW	.2	.9	2.3	2.7	.2							6.4	10.3
WSW	.1	1.6	2.4	.7	.3							5.1	8.7
W	.3	4.9	4.3	1.5		.3						11.4	7.8
WNW	.5	3.8	4.5	.7	.1							9.5	7.5
NW	.6	3.3	3.7	1.9								9.5	7.9
NNW	.2	3.1	2.4	.6								6.3	6.7
VARBL													
CALM												6.3	
	3.4	35.3	36.3	15.9	2.1	.7						100.0	7.5

TOTAL NUMBER OF OBSERVATIONS 875

USAFETAC FORM AS 44 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS) 0600-0800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.2	2.2	.5								5.0	6.9
NNE	.1	1.3	.9	.2								2.5	7.1
NE	.1	.6	.7	.1								1.5	7.5
ENE		.3	1.3	.1	.3							2.0	9.3
E	.3	1.4	5.0	4.9	.8	.2	.1					12.7	11.0
ESE	.2	1.7	2.6	2.0	.3							6.9	9.1
SE	.3	1.9	2.4	.6		.1						5.3	7.6
SSE	.2	1.1	1.9	.6								3.9	7.5
S	.1	1.1	1.7	.9	.1							4.0	8.5
SSW		.6	1.9	.7	.1							3.3	9.6
SW	.1	.7	2.3	2.7	.5	.2						6.5	11.8
WSW	.1	1.5	2.7	.8	.1							5.2	8.1
W	.7	3.0	4.7	3.1	.1	.2						11.7	8.8
WNW		2.4	4.0	1.7								8.1	8.2
NW	.6	4.2	4.4	1.5								10.7	7.8
NNW		2.0	3.3	1.0								6.8	7.9
VARBL													
CALM												4.2	
	3.2	25.9	42.0	21.8	2.8	.8	.1					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 879

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS)

0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		1.8	2.4	1.4								5.6	8.5
NNE		.6	1.1	.5								2.2	8.4
NE		.3	.7	.2								1.3	8.1
ENE			.7	1.6		.1						2.4	12.5
E		.2	3.3	6.2	1.4	.2						11.4	12.4
ESE	.1	.8	2.6	2.2	.8							6.5	10.8
SE	.2	1.0	1.8	1.5								4.6	9.0
SSE		.7	1.6	.9	.2							3.4	9.8
S		.9	4.4	1.8								7.1	9.2
SSW	.1	1.5	3.1	2.5	.1							7.3	9.3
SW		.8	2.9	3.3	.2	.1	.2					7.6	11.4
WSW		.2	1.9	1.9		.1	.1					4.4	11.5
W	.1	1.4	2.4	5.3	.5	.1						9.7	11.2
WNW	.2	1.8	3.2	4.1	.1							9.5	9.8
NW	.1	.3	5.3	3.6	.2							9.5	10.2
NNW	.1	1.0	3.1	2.4								6.7	9.6
VARBL													
CALM												.8	
	1.0	13.5	40.6	39.4	3.6	.7	.3					100.0	10.3

TOTAL NUMBER OF OBSERVATIONS 872

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS) 1200-1400 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.5	3.2	1.8								5.0	9.3
NNE		.7	.9	.3								1.9	7.9
NE		.1	.2									.3	7.7
ENE		.5	.6	2.0	.1	.1	.1					3.4	12.3
E		.6	2.7	5.6	1.5	.1						10.5	12.5
ESE		1.1	3.8	2.0	.3							7.3	10.0
SE	.2	1.4	2.9	.9								5.4	8.2
SSE	.1	1.1	2.1	1.5								4.9	8.8
S		.9	2.5	3.3	.2							6.9	10.8
SSW	.2	.7	2.9	3.3	.3							7.4	10.7
SW		.5	2.3	3.8	.1							6.7	11.3
WSW	.1	.6	2.3	3.0	.1	.1						6.2	11.0
W		.7	3.5	5.1	.8	.6	.2					10.8	12.6
WNW	.1	.3	2.6	5.4	.5	.2						9.1	12.0
NW	.1	1.1	3.7	4.9	.1							9.9	10.3
NNW	.1	.3	2.4	1.2	.1							4.2	9.9
VARBL													
CALM													
	1.0	10.9	38.6	43.8	4.2	1.1	.3					100.0	10.8

TOTAL NUMBER OF OBSERVATIONS 886

USAFETAC FORM 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.9	2.5	.6								4.0	8.3
NNE		.3	.3									.7	6.8
NE		.2	.1	.1								.5	8.3
ENE		.3	.7	1.8	.2							3.1	12.3
E		1.5	4.4	5.7	1.3	.3						13.2	11.4
ESE		1.4	4.0	2.0	.1							7.5	9.3
SE	.1	.9	4.3	.7	.1							6.1	8.5
SSE		.9	2.8	1.0								4.8	8.6
S	.1	.3	3.2	2.2	.2							6.0	10.1
SSW	.1	.2	2.4	2.6	.3							5.7	11.0
SW	.1	1.1	3.4	2.6	.3							7.6	10.0
WSW		1.3	1.1	2.7	.1	.1						5.3	10.6
W		1.0	4.4	5.1	.7	.3						11.6	11.3
WNW		1.5	3.4	4.8	.3							10.0	10.5
NW	.2	1.3	3.2	3.5	.2							8.4	9.9
NNW	.1	1.4	1.4	1.7	.1							4.7	9.1
VARBL													
CALM												.8	
	.8	19.6	41.8	37.2	4.1	.8						100.0	10.1

TOTAL NUMBER OF OBSERVATIONS 879

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS)

1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.9	1.1	.6								3.7	7.2
NNE	.2	.7	.3									1.2	5.6
NE	.2	.6	.2									1.0	6.8
ENE	.2	.6	1.5	.7	.3							3.3	9.6
E	.1	2.7	8.6	5.5	1.1	.3						18.4	10.2
ESE		2.2	4.7	1.0								7.8	8.1
SE		1.6	2.6	.7								4.9	7.8
SSE	.1	1.2	2.0	.5								3.9	7.6
S	.3	1.8	2.5	.9								5.6	7.8
SSW	.1	1.0	3.0	1.1	.1							5.3	8.5
SW	.3	1.2	2.0	.8	.1							4.5	8.0
WSW	.2	1.6	1.5	.9	.3							4.5	8.8
W	.9	4.5	4.2	.9								10.6	6.7
WNW	.3	2.8	4.3	1.6	.2							9.3	8.1
NW	.2	2.4	3.4	1.7								7.7	8.1
NNW	.1	1.8	1.8	.1								3.9	6.6
VARBL													
CALM												4.2	
	3.6	28.7	43.9	16.9	2.3	.3						100.0	7.8

TOTAL NUMBER OF OBSERVATIONS 880

USAFETAC FORM AIR 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	1.6	1.5	.5								3.9	7.1
NNE	.1	.9	.7	.1								1.8	6.7
NE	.1	.8	.5									1.4	5.7
ENE	.1	.9	.8	.7	.2							2.8	8.9
E	.1	3.2	5.5	4.9	.6	.3						14.7	10.3
ESE	.3	3.4	3.6	1.5								8.9	7.6
SE	.1	2.3	1.0	.2								3.7	6.3
SSE	.2	1.6	1.7	.5								4.0	7.1
S		1.7	2.9	1.7								6.3	8.7
SSW	.3	1.4	1.6	1.0	.2							4.6	8.2
SW	.1	.8	2.5	1.1	.1							4.7	9.2
WSW	.2	1.3	2.1	.8	.3							4.7	9.0
W	.2	5.1	4.7	.5	.1							10.6	6.8
WNW	.2	3.8	4.7	1.6	.3							10.7	8.0
NW	.2	2.4	2.1	.9								5.6	7.5
NNW	.2	2.4	3.0	.2								5.9	6.6
VARBL													
CALM												5.7	
	3.1	33.7	38.9	16.3	2.0	.3						100.0	7.6

TOTAL NUMBER OF OBSERVATIONS 870

USAFETAC FORM 0-8-5 (GL A) JUL 64 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.8	2.1	.6								4.7	7.5
NNE	.1	.7	.8	.1								1.7	7.0
NE	.1	.6	.4	.1								1.2	6.5
ENE	.1	.6	.9	1.0	.3	.1	.0					2.9	10.8
E	.1	1.8	4.4	5.2	.9	.2	.0					12.6	11.0
ESE	.1	2.1	3.5	1.6	.2							7.6	8.7
SE	.2	1.8	2.4	.6	.0	.0						5.1	7.7
SSE	.2	1.2	1.8	.7	.0							3.9	7.8
S	.1	1.3	2.7	1.5	.1							5.7	8.8
SSW	.1	.9	2.3	1.7	.2							5.2	9.5
SW	.1	.9	2.5	2.4	.3	.0	.0					6.3	10.4
WSW	.2	1.2	2.0	1.5	.2	.0	.0					5.1	9.8
W	.3	3.1	4.1	2.8	.3	.2	.0					10.9	9.1
WNW	.2	2.4	4.0	2.6	.2	.0						9.5	8.9
NW	.3	2.2	3.6	2.5	.1							8.7	8.7
NNW	.1	1.7	2.4	.9	.0							5.3	7.9
VARBL													
CALM	X	X	X	X	X	X	X	X	X	X	X	3.6	
	2.6	29.5	39.9	25.8	2.8	.7	.1					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 7029

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS) 0000-0200 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥ 56	%	MEAN WIND SPEED
N	.6	2.7	1.1	.9								5.2	6.6
NNE	.1	.8	.4	.3								1.7	7.1
NE	.1	.6	.2									.9	5.6
ENE		.8	.7	.4	.1	.2						2.2	9.9
E		1.9	2.8	3.0	.6	.2						8.4	10.6
ESE		2.3	2.3	2.9								8.0	8.9
SE	.2	1.0	1.9	1.3								4.4	8.7
SSE	.1	1.4	.4	.3								2.3	6.8
S		1.7	3.3	2.2	.2							7.4	9.4
SSW	.1	.9	2.5	1.4	.3							5.3	9.8
SW	.1	1.5	2.3	2.7								6.6	9.2
WSW		1.8	3.0	1.7	.3							6.7	9.3
W	.4	3.6	3.2	1.7								9.0	7.7
WNW	.2	3.6	3.6	1.8	.1							9.4	7.9
NW	.3	2.8	4.9	3.3	.3	.2						11.8	9.2
NNW	.2	3.1	1.1	1.5	.1							6.1	7.8
VARBL													
CALM												4.6	
	2.5	30.4	34.3	25.4	2.1	.7						100.0	8.3

TOTAL NUMBER OF OBSERVATIONS 905

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS)

0300-0500 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	AVG WIND SPEED
N	.3	2.3	1.0	.7								4.3	6.9
NNE	.1	.5	.2	.4								1.3	7.8
NE		1.1			.1							1.2	6.5
ENE	.2	.7	.1	.4	.2							1.6	9.0
E		1.5	3.4	2.4	.8	.1						8.2	10.4
ESE	.1	1.4	3.1	1.8	.2							6.6	9.1
SE	.1	1.5	3.5	1.2								6.9	8.4
SSE		1.2	2.1	.3								3.6	7.8
S	.2	2.0	2.5	1.2	.2							6.1	8.2
SSW		.4	1.9	2.4	.3							5.0	11.0
SW	.1	1.4	2.1	1.6	.1							5.4	9.0
WSW	.2	1.1	3.3	1.6	.2							6.5	9.3
W	.4	4.6	3.4	2.4								10.8	7.9
WNW	.2	3.2	2.5	2.1								8.0	8.1
NW	.1	3.9	3.6	4.7		.1						12.5	9.0
NNW	.8	2.7	1.1	2.4	.1	.1						7.2	8.3
VARBL													
CALM												5.3	
	3.0	29.7	33.7	25.7	2.3	.3						100.0	8.3

TOTAL NUMBER OF OBSERVATIONS 913

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS)

0600-0800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	2.4	1.1	1.2								4.8	7.6
NNE		.6	.6	.4								1.5	8.1
NE	.1	.9	.1	.1	.2							1.4	7.9
ENE	.1	.9	1.2	.4	.2							2.9	8.3
E	.3	.9	2.6	2.4	1.2	.2						7.7	11.3
ESE		1.8	2.4	1.9	.1							6.2	9.1
SE		1.5	2.5	1.2								5.3	8.6
SSE	.3	1.1	1.9	.8								4.1	8.2
S	.1	1.5	2.1	1.9	.1							5.7	9.1
SSW	.2	.7	2.0	2.1	.2							5.2	10.1
SW	.2	1.1	3.7	2.2	.2							7.5	9.5
WSW	.4	.6	1.8	1.1								3.9	8.5
W	.2	3.3	2.6	2.8	.1							9.0	8.6
WNW	.7	2.0	3.5	2.8								8.9	8.8
NW	.7	3.3	4.8	4.3	.4							13.5	9.3
NNW	.7	2.3	1.7	2.2								6.8	8.2
VARBL													
CALM												5.6	
	4.2	24.8	34.7	27.7	2.9	.2						100.0	8.5

TOTAL NUMBER OF OBSERVATIONS 909

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS) 0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.6	1.6	2.0	1.8								5.9	8.8
NNE		.7	.4	.3								1.4	8.0
NE	.1	.6	.8	.6								2.0	8.7
ENE	.1	.4	1.0	.2								1.8	7.4
E	.2	.3	2.3	5.1	.8	.1						8.9	12.2
ESE	.2	1.3	1.9	2.8	.2							6.4	9.6
SE	.2	1.3	2.7	2.7								6.9	9.1
SSE		.9	1.3	.9	.1							3.2	8.8
S		.7	3.4	4.0	.3							8.4	10.8
SSW	.2	1.1	2.0	2.1	.3							5.8	10.0
SW		.8	2.7	3.3	.4							7.2	10.8
WSW	.1	.6	1.4	1.4	.4	.1						4.1	11.1
W	.1	1.8	3.2	4.1	.8							10.0	10.6
WNW	.1	1.2	1.8	4.4	.3							7.9	11.0
NW	.2	1.8	3.4	5.5	.7	.1						11.7	10.7
NNW	.1	1.1	1.9	3.4	.4							7.0	10.8
VARBL													
CALM												1.6	
	2.3	16.1	32.2	42.6	4.9	.3						100.0	10.2

TOTAL NUMBER OF OBSERVATIONS 903

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS)

1200-1400 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.7	1.7	1.2	.1							3.7	9.4
NNE	.1	.3	.4	.4								1.3	8.8
NE		.2	.6	.1								.9	7.9
ENE	.1	.4	1.0	1.0		.1						2.7	10.0
E		.9	2.7	5.4	1.1	.2						10.3	12.1
ESE		.8	2.9	3.3	.1							7.1	10.0
SE	.1	1.0	2.4	2.2								5.8	9.5
SSE		.6	2.0	.6	.2							3.3	9.2
S	.2	.8	2.9	4.0	.4	.2						8.6	11.1
SSW		.9	1.7	3.9	.7							7.1	11.9
SW		.9	1.9	3.6	.2							6.6	11.2
WSW	.1	.4	1.7	2.1	.7							5.0	11.1
W	.1	1.7	3.4	5.0	1.8	.2						12.2	11.9
WNW	.1	1.0	2.6	2.4	.8	.1						7.0	10.8
NW	.3	1.4	3.7	6.1	.6	.1						12.2	11.0
NNW		.9	1.2	3.1	.4							5.7	11.3
VARBL													
CALM												.6	
	1.2	12.9	32.7	44.6	7.1	1.0						100.0	10.9

TOTAL NUMBER OF OBSERVATIONS 900

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.8	1.4	1.2								3.4	8.0
NNE		.3	.1	.3								.8	8.3
NE	.1	.2	.2									.4	5.4
ENE		.7	.3	1.0	.1							2.1	9.6
E	.1	1.6	4.5	4.9	1.1	.3						12.5	11.2
ESE		1.4	3.4	3.8	.1							8.7	9.7
SE	.1	1.0	2.8	.7								4.5	8.3
SSE	.1	1.0	1.8	1.2	.1							4.2	9.3
S	.1	.9	2.4	3.8	.4	.1						7.8	11.2
SSW		.8	1.7	2.7	.3							5.4	11.1
SW	.1	1.3	2.3	3.1	.2							7.1	10.2
WSW		.7	2.1	1.2								4.0	9.7
W	.1	1.0	2.7	3.8	1.1	.1						8.7	11.8
WNW	.2	1.4	4.3	5.8	.4							12.2	10.6
NW		1.1	4.3	5.3	.7							11.4	10.7
NNW		.9	2.0	2.8								5.6	10.1
VARBL													
CALM												.9	
	1.0	15.1	36.4	41.4	4.7	.6						100.0	10.3

TOTAL NUMBER OF OBSERVATIONS 903

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

AL CLIMATOLOGY BRANCH
ETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS) 1800-2000 (HOURS (L.S.T.))

(OBSERVERS)

SPEED (KNOTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	.9	1.1	.4								2.8	7.8
NNE	.2	.3	.4	.1								1.1	7.0
NE	.3	.4	.2	.1								1.1	5.9
ENE	.3	1.1	1.2	.8								3.4	8.2
E	.3	2.2	5.0	3.4	1.4	.3						12.7	10.6
ESE		1.7	4.5	2.3	.1							8.6	9.0
SE	.2	1.0	1.7	.6								3.4	7.9
SSE	.2	2.1	2.1	.4								4.8	7.3
S	.2	1.3	2.1	2.0								5.6	9.0
SSW		.9	2.0	2.1	.3							5.3	10.0
SW		.9	3.4	1.2	.1							5.6	8.9
WSW		1.3	1.1	.3	.1							2.9	8.0
W	.3	3.9	4.7	2.2	.1							11.2	8.1
WNW	.4	3.4	4.8	2.5	.3							11.6	8.3
NW	.6	2.5	3.9	3.5								10.5	8.8
NNW	.1	1.1	2.0	1.7								4.8	9.2
VARBL													
CALM												4.7	
	3.6	25.0	40.2	23.7	2.5	.3						100.0	8.4

TOTAL NUMBER OF OBSERVATIONS 909

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS)

2100-2300 (HOUR (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.4	2.0	1.0	.3								3.8	6.2
NNE	.3	.7	.1	.1								1.2	5.1
NE	.1	.9	.4	.1								1.6	6.1
ENE		.2	.9	1.0	.1	.1						2.4	11.5
E	.8	1.7	3.9	3.8	.6	.3	.1					11.2	10.3
ESE		2.4	3.0	2.8								8.2	8.7
SE	.1	.7	1.2	.8								2.8	8.7
SSE	.1	1.5	2.5	.9								4.9	8.3
S		1.5	2.5	2.1	.2							6.3	9.5
SSW	.1	1.0	2.2	2.7	.2							6.3	9.9
SW	.4	1.0	3.4	1.9								6.7	9.0
WSW	.1	1.5	1.8	.9								4.3	7.6
W	.4	1.7	4.5	1.8	.1							8.5	8.5
WNW	.1	2.4	4.8	2.0	.1							9.4	8.4
NW		3.3	3.8	4.4								11.6	9.3
NNW	.4	1.9	2.1	1.7	.1							6.3	8.5
VARBL													
CALM												4.7	
	3.6	29.1	38.2	27.8	1.5	.8	.1					100.0	8.5

TOTAL NUMBER OF OBSERVATIONS 892

USAFETAC FORM AIR 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	1.7	1.3	1.0	.0							4.2	7.7
NNE	.1	.5	.3	.3								1.3	7.5
NE	.1	.6	.3	.1	.0							1.2	7.0
ENE	.1	.6	.8	.7	.1	.1						2.4	9.2
E	.2	1.4	3.4	3.8	.9	.2	.0					10.0	11.1
ESE	.0	1.6	3.0	2.7	.1							7.5	9.3
SE	.1	1.1	2.3	1.3								4.9	8.7
SSE	.1	1.2	1.8	.7	.1							3.8	8.2
S	.1	1.3	2.7	2.6	.2	.0						7.0	9.9
SSW	.1	.8	2.0	2.4	.3							5.7	10.5
SW	.1	1.1	2.7	2.4	.2							6.6	9.8
WSW	.1	1.0	2.0	1.3	.2	.0						4.7	9.4
W	.3	2.7	3.5	3.0	.5	.0						9.9	9.4
WNW	.3	2.3	3.5	3.0	.3	.0						9.3	9.2
NW	.3	2.5	4.1	4.6	.3	.1						11.9	9.7
NNW	.3	1.8	1.6	2.4	.2	.0						6.2	9.2
VARBL													
CALM												3.5	
	2.7	22.3	35.3	32.3	3.5	.5	.0					100.0	9.2

TOTAL NUMBER OF OBSERVATIONS 7239

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS)

0000-0200 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		2.0	2.3	.7	.3							5.3	8.3
NNE	.1	.6	.5	.2								1.4	6.9
NE			.2	.3								.6	11.6
ENE		.2	.3	1.3	.2	.2	.1					2.4	13.4
E	.1	.7	1.5	2.1	.5	.2						5.1	11.3
ESE	.1	1.3	1.8	1.5	.3							5.1	9.4
SE	.2	.8	.7	.7								2.4	8.0
SSE	.1	.9	1.4	.3								2.8	7.2
S	.5	1.3	2.8	.9								5.4	7.8
SSW	.2	1.8	2.5	1.5	.2							6.3	8.7
SW	.1	1.7	2.9	1.7	.2							6.7	8.9
WSW	.1	2.3	3.0	.9		.2						6.6	8.3
W	.2	3.3	5.0	3.9	.3	.1						12.9	9.2
WNW	.1	2.6	5.2	3.6	.3							11.9	9.2
NW	.5	3.0	5.9	5.4	.2							15.0	9.4
NNW		2.2	3.5	2.0	.3	.1						8.1	9.4
VARBL													
CALM												2.2	
	2.9	24.8	39.4	27.1	3.1	.9	.1					100.0	8.9

TOTAL NUMBER OF OBSERVATIONS 868

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS)

0300-0500 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.3	2.4	1.0								5.9	7.7
NNE		1.1	.8	.2								2.2	7.2
NE	.2	.1		.2	.1							.7	8.8
ENE	.2	.3	.3	.5	.1	.1	.2					1.8	12.7
E		.3	2.7	2.3	.3							5.7	11.0
ESE	.5	.8	2.3	1.1	.2							4.9	8.8
SE		1.5	1.4	.5								3.3	7.2
SSE	.8	1.4	.9	.5								3.5	6.3
S	.3	1.1	1.9	.6	.2							4.2	8.3
SSW	.3	.5	2.7	1.6								5.1	9.1
SW	.3	1.5	2.3	2.7	.1							7.0	9.3
WSW	.2	1.7	2.2	.8								4.9	7.4
W	.5	4.8	4.6	2.5	.1	.3						12.8	8.5
WNW	.5	2.3	6.4	3.7	.6	.1						13.5	9.4
NW	.7	2.3	5.0	4.5	.7							13.1	9.7
NNW	.1	1.5	2.3	4.3	.1							8.3	10.3
VARBL													
CALM												3.0	
	4.9	23.5	38.2	26.9	2.6	.6	.2					100.0	8.7

TOTAL NUMBER OF OBSERVATIONS 876

USAFETAC FORM 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS) 0600-0800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	3.3	2.4	1.4	.2	.1						7.6	8.1
NNE	.2	.6	1.0	.2	.2							2.3	8.4
NE	.2	.7	.3									1.3	5.3
ENE		.7	.8	.8			.1					2.4	10.4
E	.1	.5	2.6	1.5	.8	.1						5.6	11.7
ESE		.8	3.0	1.4								5.2	9.4
SE	.2	1.7	2.1	.2								4.2	7.3
SSE	.2	1.4	1.4	.1								3.1	6.9
S	.3	1.9	2.4	1.1								5.8	7.8
SSW		1.0	1.4	1.5								3.9	9.3
SW	.2	.7	3.1	2.6								6.6	9.8
WSW	.2	2.1	1.8	.9								5.0	7.7
W	.7	2.9	3.6	2.6	.3	.2						10.3	9.0
WNW	.3	3.2	5.5	4.0	.3	.1						13.5	9.3
NW	.2	2.5	4.4	5.5	.6							13.2	10.1
NNW	.2	1.6	2.4	2.5	.5	.2						7.4	10.2
VARBL													
CALM												2.5	
	3.9	25.5	38.1	26.5	3.0	.8	.1					100.0	8.9

TOTAL NUMBER OF OBSERVATIONS 873

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS) 0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.7	3.6	1.6	.1							7.2	8.9
NNE		.6	.8		.2							1.6	8.6
NE		.8	.6		.1							1.5	7.5
ENE		.5	1.0	.7		.1	.1					2.4	11.1
E	.2	.6	1.8	3.5	.6	.1	.1					7.0	11.8
ESE	.3	.9	2.6	1.9								5.8	9.0
SE		1.1	1.8	.9								3.9	8.4
SSE	.2	1.1	2.2	.8								4.3	8.2
S		1.4	2.1	1.9								5.4	9.0
SSW	.1	.2	1.4	2.5								4.2	10.8
SW	.1	1.0	3.2	2.9	.7							7.9	10.6
WSW		1.0	2.7	1.7	.3							5.8	9.7
W	.3	1.4	3.5	3.4	1.4							10.0	10.6
WNW		2.2	4.6	6.0	.6	.1						13.5	10.7
NW	.2	.7	3.6	6.0	1.3							11.9	11.8
NNW	.1	1.6	1.9	1.9	.2	.2						6.0	10.0
VARBL													
CALM												1.7	
	1.8	16.8	37.5	35.9	5.5	.6	.2					100.0	10.0

TOTAL NUMBER OF OBSERVATIONS 877

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS) 1200-1800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N		.9	2.4	.6								3.9	8.4
NNE		.5	1.0	.2	.2							1.9	9.2
NE		.7	.2									.9	5.9
ENE		.6	1.0	1.1	.1	.1						3.0	11.0
E		1.1	1.9	3.9	.5							7.4	11.1
ESE		.6	2.5	1.6	.1	.1						4.9	10.2
SE		.6	2.6	1.1								4.3	9.1
SSE		.6	1.6	1.1								3.3	9.0
S	.3	1.4	2.6	2.7								7.1	9.2
SSW		.3	.9	2.6	.5							4.3	12.1
SW		.7	3.7	3.3	.6							8.2	10.9
WSW		.6	3.2	2.9								6.6	10.1
W		1.4	3.1	5.9	1.3	.1						11.8	12.0
WNW	.1	1.0	4.0	6.7	1.7							13.6	11.9
NW	.1	1.6	4.7	5.4	.6							12.3	11.0
NNW		1.3	1.4	2.2	.6	.1						5.5	10.8
VARBL													
CALM												.8	
	.6	13.7	36.9	41.5	6.1	.5						100.0	10.6

TOTAL NUMBER OF OBSERVATIONS 875

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.0	1.5	1.4								4.1	8.8
NNE	.2	.3	.9	.3								1.8	7.9
NE		.8	.5	.3								1.6	8.2
ENE	.1	1.4	.9	.9								3.3	8.2
E	.2	.9	3.6	3.8	.3							8.9	10.7
ESE		.9	2.9	1.4								5.2	8.9
SE	.1	1.3	1.4	.6								3.3	7.7
SSE		1.4	1.6	.5								3.5	7.5
S		1.4	2.0	1.5	.1	.1						5.1	9.4
SSW	.1	.6	2.8	2.1	.6							6.1	10.2
SW		.9	2.9	2.5	.1	.2						6.7	10.6
WSW		.7	2.3	2.8	.6	.1						6.5	11.1
W	.6	2.8	5.3	4.3	.8							13.7	9.4
WNW	.1	1.6	4.0	5.1	.3	.1						11.3	10.6
NW	.2	1.6	3.7	6.0	1.2							12.7	11.3
NNW	.1	1.0	2.1	2.0	.1							5.3	9.7
VARBL													
CALM												.9	
	2.1	18.7	38.2	35.4	4.1	.6						100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 868

USAFETAC FORM AIR 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS) 1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.0	1.9	.8	.3							5.3	8.2
NNE		.7	.8	.5								1.9	8.1
NE		.3	.7	.2								1.3	8.2
ENE	.1	.6	.9	.9	.2							2.7	10.1
E	.2	1.0	2.0	3.3	.5							7.1	10.8
ESE	.2	1.6	1.6	1.8	.1							5.3	8.7
SE		1.5	1.8	1.0								4.3	8.0
SSE	.1	1.4	1.0	.2								2.7	7.0
S	.1	1.6	1.9	1.6			.1					5.3	9.2
SSW	.5	.3	2.8	1.6	.2		.1					5.6	9.8
SW	.2	.7	3.0	1.8								5.7	9.9
WSW	.5	1.6	2.7	.9	.6							6.3	8.7
W	.5	4.1	4.3	2.7	.3	.1						12.1	8.6
WNW	.3	3.2	3.5	4.9	.1							12.1	9.9
NW		2.8	5.1	4.8	.6							13.3	9.8
NNW	.3	1.4	2.2	2.5	.2							6.6	9.6
VARBL													
CALM												2.4	
	3.3	29.8	36.8	29.6	3.2	.1	.2					100.0	8.8

TOTAL NUMBER OF OBSERVATIONS 472

USAFETAC FORM 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.7	3.1	1.6	.1							6.8	8.6
NNE		.5	.9	.6								2.0	9.0
NE	.1	.1	.8	.3								1.4	8.6
ENE		.2	.7	.2	.2							1.4	10.3
E		1.0	1.3	3.8	.7							6.8	11.6
ESE		.9	1.7	1.2	.1							3.9	9.8
SE	.1	1.2	1.4	1.2	.1							3.9	8.4
SSE	.1	2.2	1.0	.3								3.7	6.6
S		1.6	1.7	.9								4.3	8.6
SSW	.1	.8	2.2	1.6	.3							5.1	9.7
SW	.1	1.2	2.3	2.4	.1	.3						6.5	10.3
WSW	.3	1.5	3.7	1.6	.5							7.6	8.9
W	.7	3.8	3.6	3.1	.7							11.9	8.8
WNW	.6	2.4	3.5	4.5	.1							11.1	9.5
NW	.5	2.7	5.2	5.1	.5							13.9	9.7
NNW	.3	1.0	3.9	2.4	.2							8.0	9.7
VARBL													
CALM												1.6	
	3.2	22.9	37.2	31.0	3.7	.3						100.0	9.2

TOTAL NUMBER OF OBSERVATIONS 869

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.9	2.5	1.1	.1	.0						5.8	8.8
NNE	.1	.6	.8	.3	.1							1.9	8.2
NE	.1	.4	.4	.2	.0							1.1	7.8
ENE	.1	.6	.8	.8	.1	.1	.1					2.4	10.7
E	.1	.8	2.2	3.0	.5	.1	.0					6.7	11.2
ESE	.1	1.0	2.3	1.5	.1	.0						5.0	9.2
SE	.1	1.2	1.6	.8	.0							3.7	8.1
SSE	.2	1.3	1.4	.5								3.4	7.8
S	.2	1.5	2.2	1.4	.0	.0	.0					5.3	8.7
SSW	.2	.7	2.1	1.9	.2		.0					5.1	9.9
SW	.1	1.0	2.9	2.5	.2	.1						6.9	10.0
WSW	.2	1.4	2.7	1.6	.2	.0						6.2	9.1
W	.4	3.1	4.1	3.6	.7	.1						11.9	9.5
WNW	.3	2.3	4.6	4.8	.5	.1						12.6	10.0
NW	.3	2.1	4.7	5.3	.7							13.2	10.3
NNW	.2	1.4	2.4	2.5	.3	.1						6.9	9.9
VARBL													
CALM												1.9	
	2.7	21.3	37.8	31.7	3.9	.5	.1					100.0	9.8

TOTAL NUMBER OF OBSERVATIONS 6980

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS)

0000-0200 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	2.0	2.1	1.4								5.7	8.1
NNE	.1	.5	.7	.3								1.6	7.9
NE	.1	.4	.2									.8	5.4
ENE		.3	.5	.3	.1							1.3	9.8
E		.5	1.4	1.4	.5	.2						4.2	11.7
ESE	.1	.9	2.1	1.4	.4							4.9	10.2
SE	.1	.9	2.0	1.4								4.4	8.4
SSE	.1	1.5	1.9									3.5	6.7
S	.2	.7	2.0	1.4	.2							4.5	9.2
SSW		1.0	2.1	2.1	.3							5.5	10.4
SW	.2	.7	2.1	2.9	.4							6.3	10.9
WSW	.1	1.5	2.0	1.5	.1							5.3	8.9
W	.9	2.9	4.3	1.8	.1							9.9	7.8
WNW	.2	4.7	5.4	4.1								14.4	8.4
NW	.3	2.7	7.7	6.2	.4							17.4	9.7
NNW	.1	1.5	4.4	2.3	.2							8.6	9.3
VARBL													
CALM												1.8	
	2.9	22.9	40.8	28.6	3.0	.2						100.0	9.0

TOTAL NUMBER OF OBSERVATIONS 910

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS) 0300-0500 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	2.8	2.7	1.1	.3							7.1	8.0
NNE		.7	.6	.1								1.3	8.8
NE		.3	.3									.7	7.2
ENE	.1	.1	.8			.1						.8	9.3
E	.2	.9	1.5	1.6	.6	.1						4.8	10.7
ESE		.7	1.2	2.9								4.8	11.0
SE		2.1	2.0	.6								4.7	7.6
SSE	.2	.3	1.3	.3								2.2	7.6
S	.2	.9	2.1	.9	.2							4.8	9.2
SSW	.1	.4	2.1	1.8	.4							4.9	10.8
SW	.2	1.2	1.9	2.8	.4							6.6	10.3
WSW	.2	.8	2.2	1.5	.1							4.8	9.5
W	.4	3.3	4.7	2.0	.1							10.5	8.8
WNW	.3	3.0	5.2	3.3								11.8	8.3
NW	.7	3.5	8.3	5.5	.7							18.6	9.3
NNW	.1	2.8	4.8	2.5	.3							10.5	8.8
VARBL													
CALM												1.3	
	3.0	23.9	51.5	26.8	3.3	.2						100.0	8.9

TOTAL NUMBER OF OBSERVATIONS 892

USAFETAC FORM JUL 64 0-8-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72765 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS) 0600-0800 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.4	2.5	1.6	1.5	.2							6.8	8.3
NNE	.1	.7	.8									1.5	6.5
NE	.2		.7	.1								1.0	7.9
ENE	.2	.5	.7	.7		.2						2.3	10.4
E		.8	.8	2.2	.2	.1						4.1	11.7
ESE	.1	.5	1.2	1.6	.2							3.7	10.3
SE	.2	.9	3.0	1.0								5.1	8.1
SSE	.1	1.2	1.5	.4								3.3	7.5
S	.1	1.0	1.9	.7	.1							3.7	8.7
SSW		.2	1.3	1.2	.3							3.1	11.7
SW	.2	1.3	2.4	2.3	.3							6.6	10.2
WSW		1.0	4.0	1.3	.2							6.5	9.4
W	.2	2.7	4.6	2.4	.4							10.4	8.9
WNW	.1	3.7	4.4	3.1	.3							11.6	8.8
NW	.8	4.4	8.7	5.8	.1							19.8	9.0
NNW	.2	2.1	3.6	2.6								8.6	8.9
VARBL													
CALM												2.3	
	3.1	23.6	41.1	27.0	2.5	.3						100.0	8.9

TOTAL NUMBER OF OBSERVATIONS 910

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS) 0900-1100 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	2.8	2.9	1.7	.1							7.7	8.0
NNE		.7	.6	.3								1.5	7.9
NE		.3	.4	.1								.9	8.3
ENE		.8	.9	.8	.2							2.7	10.0
E	.1	.4	1.0	2.2	.8	.3						4.9	13.0
ESE	.2	.4	1.2	2.1	.1							4.1	10.2
SE	.1	.7	3.5	1.4								5.8	8.8
SSE	.2	.8	1.4	.2								2.7	7.8
S		.6	2.7	1.4								4.6	9.5
SSW	.1	.9	1.3	1.2	.1							3.7	9.5
SW	.1	1.7	3.3	2.3	.6							8.0	9.7
WSW	.2	1.5	3.3	1.8								6.9	8.6
W	.1	1.4	3.9	4.4	.7							10.5	10.5
WNW	.1	1.5	5.1	4.0	.3	.1						11.2	10.1
NW	.1	2.2	5.2	6.5	.2							14.3	9.9
NNW	.3	1.7	3.5	3.8	.4							9.7	10.0
VARBL													
CALM												1.0	
	2.1	18.9	50.3	39.3	3.5	.8						100.0	9.6

TOTAL NUMBER OF OBSERVATIONS 908

USAFETAC FORM AM 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS) 1200-1400 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	.8	3.1	1.7	.1							5.7	9.5
NNE	.1	.3	.7	.2								1.3	7.9
NE		.3	.3	.2								.9	7.9
ENE		.1	.7	1.0	.1	.1	.1					2.1	12.6
E		.7	1.8	2.2	1.3	.2						6.2	12.8
ESE	.2	.6	2.4	2.4	.1							5.7	10.1
SE	.1	.8	2.2	1.3	.1							4.5	9.4
SSE	.2	.8	1.7	.1								2.8	7.0
S		.7	2.0	2.3								5.0	10.3
SSW		.7	1.8	1.0	.4							3.9	10.4
SW		1.0	3.7	3.5								8.3	10.1
WSW	.1	1.0	1.8	2.9	.1							5.8	10.3
W	.2	2.2	4.4	4.9	.7							12.3	10.1
WNW		3.0	5.4	8.2	.6	.2						17.3	10.6
NW	.1	.6	3.5	5.5	.2							9.9	11.3
NNW		.8	2.8	2.5	.6	.2						6.8	11.0
VARBL													
CALM												1.4	
	1.2	14.1	38.1	39.9	4.3	.8	.1					100.0	10.3

TOTAL NUMBER OF OBSERVATIONS 907

USAFETAC FORM AIR 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

14913 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS) 1500-1700 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	.9	1.3	1.1								3.6	8.8
NNE		.7	.2	.1								1.0	6.6
NE		.4	.2	.6								1.2	9.8
ENE		.3	.3	1.1		.2						2.0	12.5
E		.7	2.0	2.6	1.3	.3						6.9	12.8
ESE	.1	1.0	2.8	1.6	.7							6.1	9.9
SE	.1	.8	2.2	.9								4.0	8.6
SSE	.1	1.1	1.9	.8								3.6	7.8
S	.1	1.4	2.0	1.4	.1							5.1	9.0
SSW	.1	1.1	2.1	2.1	.6							6.0	10.3
SW	.3	2.2	3.1	1.4								7.1	8.0
WSW		1.1	2.6	1.0	.3							5.0	9.4
W	.2	2.8	3.7	4.4	.8							11.9	9.8
WNW	.1	2.4	4.8	5.2	.1	.1	.1					12.9	10.0
NW		2.6	4.8	6.2	.6	.3						14.4	10.7
NNW	.1	1.2	2.9	2.9	.2							7.3	10.0
VARBL													
CALM												1.9	
	1.6	20.8	36.9	33.1	8.7	1.0	.1					100.0	9.7

TOTAL NUMBER OF OBSERVATIONS 900

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS) 1800-2000 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	1.8	1.4	.6								4.1	7.2
NNE	.1	.3	.3	.1								.9	6.4
NE	.2	.4	.4	.3								1.4	7.3
ENE		.8	.3	.3								1.4	8.3
E	.1	.7	1.7	2.3	1.1	.3						6.2	12.4
ESE	.1	.6	1.7	1.8	.6							4.7	11.1
SE	.3	1.8	2.7	1.2								6.0	8.1
SSE	.1	1.7	1.6	.2								3.6	6.8
S	.1	.8	1.9	1.7								4.4	9.6
SSW		.2	1.9	2.7								4.8	10.9
SW	.4	1.3	2.4	1.6	.2							6.0	9.2
WSW	.3	1.4	3.1	.8								5.7	7.8
W	.2	3.2	4.7	2.8	.1							11.0	8.5
WNW	.1	3.0	5.0	5.8	.1							14.0	9.4
NW	.1	2.6	4.6	4.7	.7							12.5	10.0
NNW	.2	1.6	3.3	4.9	.4	.1						10.5	10.6
VARBL													
CALM												2.8	
	2.9	22.1	37.0	31.6	3.2	.4						100.0	9.1

TOTAL NUMBER OF OBSERVATIONS 901

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS) 2100-2300 (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.1	1.6	2.0	1.6								5.3	8.4
NNE	.2	.6	.7									1.5	6.3
NE	.1	.4	.3									.9	5.3
ENE	.2		.3	.6	.1	.1						1.3	11.7
E		.7	1.6	1.5	.9	.2						4.8	11.6
ESE		.8	1.9	1.2	.6							4.5	10.5
SE	.1	.9	1.6	1.1								3.7	8.9
SSE		1.3	2.2	.3								3.9	7.2
S	.1	1.2	1.7	1.8	.1							4.9	9.3
SSW	.2	.9	1.5	2.5	.2							5.3	10.3
SW		.6	2.1	1.6	.7							4.9	11.2
WSW	.1	1.0	2.1	1.6	.3							5.2	9.5
W	1.0	2.8	4.2	1.9	.2							10.1	7.9
WNW	.1	2.9	5.3	5.2	.3							13.8	9.7
NW	.3	3.5	6.5	5.4	.2							15.9	9.5
NNW	.1	1.6	5.1	4.6	.2							11.6	9.9
VARBL													
CALM												2.4	
	2.8	20.8	39.1	30.8	3.9	.3						100.0	9.2

TOTAL NUMBER OF OBSERVATIONS 891

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.9	2.1	1.3	.1							5.7	8.3
NNE	.1	.6	.6	.2								1.3	7.1
NE	.1	.3	.4	.2								1.0	7.4
ENE	.1	.4	.5	.6	.1	.1	.0					1.7	10.7
E	.1	.7	1.5	2.0	.8	.2						5.3	12.1
ESE	.1	.7	1.8	1.9	.3							4.8	10.4
SE	.1	1.1	2.4	1.1	.0							4.8	8.5
SSE	.1	1.1	1.7	.3								3.2	7.2
S	.1	.9	2.0	1.5	.1							4.6	9.4
SSW	.1	.7	1.8	1.8	.3							4.6	10.5
SW	.2	1.2	2.6	2.3	.3							6.7	9.9
WSW	.1	1.2	2.6	1.5	.2							5.6	9.2
W	.4	2.7	4.3	3.1	.4							10.8	9.0
WNW	.1	3.0	5.1	4.8	.2	.1	.0					13.4	9.5
NW	.3	2.7	6.2	5.7	.4	.0						15.4	9.8
NNW	.2	1.6	3.8	3.3	.3	.0						9.2	9.8
VARBL													
CALM												1.9	
	2.4	20.8	39.3	31.5	3.5	.5	.0					100.0	9.3

TOTAL NUMBER OF OBSERVATIONS 7215

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

ALL WEATHER (CLASS) ALL (HOURS (L.S.T.))

(CONDITION)

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.3	2.0	2.1	1.1	.1	.0						5.6	7.9
NNE	.1	.6	.6	.2	.0							1.6	7.3
NE	.1	.5	.4	.2	.0	.0	.0					1.3	7.8
ENE	.1	.6	1.1	1.2	.3	.1	.0	.0				3.5	11.0
E	.2	1.8	4.6	4.6	.9	.3	.0					12.8	10.8
ESE	.2	1.8	3.9	2.0	.1	.0						8.0	8.8
SE	.1	1.4	2.1	.7	.0	.0						4.4	7.8
SSE	.1	1.1	1.5	.5	.0	.0						3.2	7.7
S	.1	1.1	2.1	1.4	.1	.0	.0					4.9	9.1
SSW	.1	.7	1.8	1.6	.2	.0	.0					4.4	9.9
SW	.1	1.0	2.2	1.8	.2	.0	.0					5.3	9.8
WSW	.1	1.3	2.1	1.4	.2	.0	.0					5.1	9.1
W	.4	2.8	3.8	2.9	.8	.1	.0					10.3	9.1
WNW	.3	2.2	3.7	3.2	.3	.1	.0					9.7	9.6
NW	.3	2.4	3.8	3.6	.4	.0	.0					10.5	9.6
NNW	.2	1.0	2.3	2.0	.2	.0						6.7	9.0
VARBL													
CALM												3.3	
	2.8	23.2	38.0	28.5	3.8	.7	.1	.0				100.0	9.0

TOTAL NUMBER OF OBSERVATIONS 85130

USAFETAC FORM JUL 64 0-8-5 (GL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SURFACE WINDS

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (FROM HOURLY OBSERVATIONS)

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

INSTRUMENT (CLASS) ALL (HOURS (L.S.T.))

CIG 200 TO 1400 FT W/ VSBY 1/2 MI OR MORE, (CONDITION)

AND/OR VSBY 1/2 TO 2-1/2 MI W/CIG 200 FT OR MORE

SPEED (KNTS) DIR.	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	22 - 27	28 - 33	34 - 40	41 - 47	48 - 55	≥56	%	MEAN WIND SPEED
N	.2	1.8	2.9	1.9	.2	.0						7.0	9.0
NNE	.1	.7	.9	.4	.1							2.2	8.2
NE	.0	.8	1.0	.6	.1	.0	.0					2.6	9.1
ENE	.1	.7	2.1	2.6	.8	.4	.1					6.9	12.4
E	.2	1.6	5.9	9.0	2.5	1.1	.1					20.3	12.5
ESE	.1	1.3	3.5	3.0	.3							8.3	9.9
SE	.1	1.1	2.0	.9	.0							4.2	8.2
SSE	.1	1.0	1.4	.4								2.9	7.6
S	.1	1.2	2.1	1.4	.1	.0						4.7	9.0
SSW	.0	.7	1.6	1.1	.1	.0						3.5	9.5
SW	.1	.7	1.8	1.6	.1	.0	.0					4.3	9.9
WSW	.1	.8	1.3	1.3	.1	.0						3.6	9.8
W	.1	1.3	2.1	2.0	.2	.1	.0					5.8	9.8
WNW	.1	1.3	2.5	2.7	.3	.0	.0					7.1	10.2
NW	.1	1.4	3.1	3.8	.4	.1						9.0	10.6
NNW	.1	1.1	2.1	2.2	.3	.1						5.8	10.1
VARBL													
CALM												1.8	
	1.6	17.5	36.4	34.8	5.7	1.9	.3					100.0	10.2

TOTAL NUMBER OF OBSERVATIONS 18504

U S AIR FORCE
ENVIRONMENTAL TECHNICAL
APPLICATIONS CENTER

PART D CEILING VERSUS VISIBILITY

This summary is a bivariate percentage frequency distribution by classes of ceiling from zero to equal to or greater than 20,000 feet and as a separate class "no ceiling", versus visibility in 16 classes from zero to equal to or greater than 10 miles. Data are derived from hourly observations, and three sets of tables are presented as follows:

1. Annual - all years and all hours combined
2. By month - all years and all hours combined
3. By month - by standard 3-hour groups

Due to the cumulative nature of this presentation, it is possible to determine the percentage frequency of occurrence for any given limit of ceiling or visibility separately, or in combination of ceiling and visibility. The totals progress to the right and downward. Ceiling may be determined independently by referring to totals in the extreme right hand column. Also, visibility may be determined independently by reference to the horizontal row of totals at the bottom of the page. The percentage frequency for which the station was meeting or exceeding any given set of minima may be determined from the figure at the intersection of the appropriate ceiling column and visibility row. Several examples in the use of these tables are shown on pages 2 and 3 below.

D

U. S. Weather Bureau and Navy stations did not report ceilings within the range 10,000 feet and higher prior to January 1949. Summaries prepared from data for these stations using the earlier period and data subsequent to January 1949 will be modified to limit ceilings to 10,000 feet. Short periods of record prior to 1949 for these stations will be eliminated from the summary. For Air Force stations, the "no ceiling" category includes clear and scattered conditions, and ceilings above 20,000 feet for period through June 1948. Beginning in July 1948 for Air Force stations and January 1949 for USWB and U. S. Navy stations the "no ceiling" category consists of observations with less than 6/10 total sky cover and those cases where total sky cover is 6/10 or more, but not more than 1/2 of the sky cover is opaque.

Beginning in January 1968, METAR stations report visibilities to 6 miles and then greater than 6 miles. Thus, for METAR stations, the category equal to or greater than 10 miles is not printed in the tables, unless the summary was for a period ending before January 1968.

Continued on Reverse Side

EXAMPLES FOR USE OF CEILING VERSUS VISIBILITY TABLES IN THIS TABULATION

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥ 10	≥ 6	≥ 5	≥ 4	≥ 3	≥ 2½	≥ 2	≥ 1½	≥ 1¼	≥ 1	≥ ¾	≥ ⅝	≥ ½	≥ 5/16	≥ ¼	≥ 0
NO CEILING																
≥ 1800 ≥ 1500					91.0											92.6
≥ 1200 ≥ 1000																
≥ 900 ≥ 800																
≥ 700 ≥ 600																
≥ 500 ≥ 400										97.4						98.1
≥ 300 ≥ 200																
≥ 100 ≥ 0					95.4		96.9			98.3						100.0

EXAMPLE # 1 Read ceiling values independently of visibility under column at right headed ≥ 0. For instance, from the table: Ceiling ≥ 1500 feet = 92.6%.
Ceiling ≥ 500 feet = 98.1%.

EXAMPLE # 2 Read visibilities independently of ceilings on bottom line opposite ≥ 0. From the table:
Visibility ≥ 3 miles = 95.4%.
Visibility ≥ 2 miles = 96.9%.
Visibility ≥ 1 mile = 98.3%.

EXAMPLE # 3 To obtain combinations of ceiling with visibility, read figure at intersection of the two categories; i.e.: Ceiling ≥ 1500 feet with visibility ≥ 3 miles = 91.0%.

ADDITIONAL EXAMPLES

EXAMPLE # 4 Values below minimums stated in the table may be obtained by subtracting the value given in the table from 100%.
Thus, to obtain the percentage of observations with ceiling < 1500 feet and/or visibility < 3 miles, subtract the value read from the table at the intersection, which is 91.0, from 100.0. The answer 9.0 is the percentage of observations with ceiling < 1500 feet and/or visibility < 3 miles.

Likewise, the percentage of observations with ceiling < 500 feet and/or visibility < 1 mile is 2.6, obtained by subtracting 97.4 from 100.0.

EXAMPLE # 5 To find the percentage of observations falling within the two categories given in example above, subtract the value read from the table for the first set of limits from the value in the table for the second set of limits. The difference will be the percentage of observations meeting the lower set of limits, but not meeting the higher set of limits.

The value 91.0 read from the table at the intersection of $\geq$ 1500 feet with $\geq$ 3 miles, subtracted from 97.4 read from the table at the intersection of $\geq$ 500 feet with $\geq$ 1 mile is equal to 6.4%. Thus; 6.4 percent of the observations meet the criteria: "ceiling $\geq$ 500 feet with visibility $\geq$ 1 mile, but < 3 miles; or ceiling $\geq$ 500 feet, but < 1500 feet with visibility $\geq$ 1 mile."

Since these tabulations are prepared in several ways including by month, by 3-hour groups it is possible to determine diurnal variations of ceiling and visibility limits as well as probabilities of various ceiling-visibility combinations.

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0000-0200 (HOURS L.S.T.)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	47.0	48.2	48.3	48.9	48.9	48.9	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.1
≥ 20000	48.5	50.2	50.3	51.0	51.0	51.0	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.2
≥ 18000	48.5	50.2	50.3	51.0	51.0	51.0	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.2
≥ 16000	48.5	50.2	50.3	51.0	51.0	51.0	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.2
≥ 14000	48.7	50.4	50.8	51.5	51.5	51.5	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.8
≥ 12000	49.0	50.8	51.1	51.9	52.0	52.0	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.2
≥ 10000	51.0	52.8	53.1	53.9	54.0	54.0	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.2
≥ 9000	52.0	53.9	54.2	55.2	55.3	55.3	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.5
≥ 8000	52.9	54.9	55.2	56.2	56.3	56.3	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.5
≥ 7000	54.1	56.5	56.9	58.0	58.2	58.2	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.4
≥ 6000	55.4	58.1	58.4	59.5	59.7	59.7	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	60.0
≥ 5000	56.0	59.1	59.4	60.6	61.0	61.0	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.2
≥ 4500	56.4	59.7	60.1	61.3	61.6	61.6	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.8
≥ 4000	58.1	61.6	62.2	63.4	63.9	63.9	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.2
≥ 3500	59.0	62.6	63.3	64.8	65.3	65.3	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.5
≥ 3000	59.2	62.9	63.9	65.5	65.9	65.9	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.3
≥ 2500	60.3	64.4	65.5	67.0	67.5	67.6	67.9	67.9	67.9	67.9	67.9	67.9	67.9	67.9	67.9	68.0
≥ 2000	61.3	66.0	67.6	69.1	69.8	70.0	70.3	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.6	70.7
≥ 1800	62.4	67.6	69.1	70.7	71.6	71.8	72.1	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.6
≥ 1500	63.5	69.4	71.5	73.1	74.1	74.4	74.8	75.2	75.2	75.3	75.3	75.3	75.3	75.3	75.3	75.4
≥ 1200	65.2	72.9	75.3	77.1	78.2	78.5	78.9	79.4	79.4	79.6	79.6	79.6	79.6	79.6	79.6	79.8
≥ 1000	66.3	75.2	77.8	79.5	81.0	81.4	82.0	82.7	82.7	83.2	83.2	83.2	83.2	83.2	83.3	83.4
≥ 900	66.8	75.9	78.4	80.3	81.7	82.3	82.9	83.6	83.6	84.1	84.1	84.1	84.1	84.1	84.2	84.3
≥ 800	67.4	76.7	79.3	81.2	82.6	83.2	83.8	84.7	84.7	85.2	85.2	85.2	85.2	85.2	85.3	85.4
≥ 700	67.4	77.1	80.0	82.2	83.6	84.2	85.3	86.1	86.1	86.5	86.5	86.5	86.5	86.5	86.6	86.7
≥ 600	67.7	78.1	81.1	83.3	84.7	85.3	86.5	87.6	87.6	88.3	88.4	88.4	88.4	88.4	88.5	88.6
≥ 500	68.0	79.1	82.3	84.6	86.5	87.2	88.5	89.8	89.8	90.6	90.7	90.7	90.9	90.9	91.0	91.2
≥ 400	68.3	79.5	82.8	85.8	87.5	88.2	89.6	91.5	91.5	92.5	92.6	92.6	92.8	92.9	93.0	93.1
≥ 300	68.3	79.5	82.9	86.0	88.2	88.9	90.7	92.9	92.9	94.1	94.5	94.5	94.7	94.8	94.9	95.0
≥ 200	68.3	79.9	83.0	86.2	88.5	89.4	91.5	93.1	93.1	95.4	96.3	96.3	96.8	97.1	97.3	97.5
≥ 100	68.3	79.9	83.0	86.2	88.6	89.5	91.7	94.4	94.4	95.7	96.7	96.7	97.7	97.9	98.3	99.4
0	68.3	79.9	83.0	86.2	88.6	89.5	91.7	94.4	94.4	95.7	96.7	96.7	97.7	97.9	98.3	100.0

TOTAL NUMBER OF OBSERVATIONS 884

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0300-0500 (HOUR LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	46.9	49.4	49.5	49.9	50.2	50.3	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.5	50.5
≥ 20000	48.6	51.1	51.2	51.7	51.9	52.0	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.2	52.2
≥ 18000	48.7	51.3	51.4	51.9	52.1	52.2	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.5	52.5
≥ 16000	48.7	51.3	51.4	51.9	52.1	52.2	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.5	52.5
≥ 14000	48.9	51.5	51.7	52.1	52.3	52.5	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.7	52.7
≥ 12000	49.3	51.9	52.0	52.5	52.7	52.8	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	53.0	53.0
≥ 10000	50.9	53.6	53.8	54.3	54.5	54.6	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.8	54.8
≥ 9000	51.4	54.4	54.6	55.1	55.3	55.4	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.9	55.9
≥ 8000	51.9	54.8	55.2	55.6	55.9	56.0	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.4	56.4
≥ 7000	52.9	56.1	56.7	57.5	57.7	57.8	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.3	58.3
≥ 6000	53.4	56.8	57.5	58.3	58.6	58.7	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.2	59.2
≥ 5000	53.7	57.2	58.0	58.8	59.2	59.3	59.6	59.6	59.6	59.6	59.6	59.6	59.6	59.6	59.7	59.7
≥ 4500	54.2	58.2	59.0	59.7	60.1	60.2	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.7	60.7
≥ 4000	55.2	59.6	60.5	61.3	61.8	61.9	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.4	62.4
≥ 3500	56.2	60.8	61.8	62.6	63.1	63.2	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.6	63.6
≥ 3000	57.1	62.1	63.3	64.1	64.5	64.7	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.1	65.1
≥ 2500	57.9	63.3	64.4	65.3	65.8	65.9	66.4	66.4	66.6	66.6	66.6	66.6	66.6	66.6	66.7	66.7
≥ 2000	59.0	64.9	66.2	67.2	68.0	68.1	68.5	68.6	68.9	68.9	68.9	68.9	68.9	68.9	69.0	69.0
≥ 1800	59.6	66.0	67.4	68.5	69.3	69.4	69.9	70.2	70.5	70.5	70.5	70.5	70.5	70.5	70.6	70.6
≥ 1500	61.2	67.7	69.2	70.6	71.7	71.9	72.4	72.7	73.0	73.1	73.1	73.1	73.1	73.1	73.2	73.2
≥ 1200	63.1	70.7	72.3	73.8	75.0	75.4	75.8	76.4	76.6	77.0	77.0	77.0	77.1	77.1	77.2	77.2
≥ 1000	64.3	72.5	74.2	75.8	77.2	78.0	79.0	79.8	80.0	80.6	80.6	80.6	80.7	80.7	80.8	80.8
≥ 900	64.4	73.1	74.8	76.4	77.8	78.6	79.7	80.6	80.8	81.4	81.4	81.4	81.5	81.5	81.6	81.6
≥ 800	64.7	73.9	75.6	77.3	78.7	79.6	81.1	82.0	82.2	82.9	82.9	82.9	83.2	83.2	83.4	83.4
≥ 700	65.0	74.8	76.7	78.9	80.3	81.2	83.6	84.6	84.8	85.5	85.6	85.6	86.0	86.0	86.1	86.1
≥ 600	65.8	76.3	78.2	80.5	81.9	82.8	85.2	86.3	86.5	87.7	87.8	87.8	88.3	88.3	88.9	88.9
≥ 500	66.2	77.2	79.1	81.6	83.1	84.0	86.4	88.0	88.3	89.6	89.9	89.9	90.4	90.4	90.5	90.5
≥ 400	66.5	77.4	79.5	82.2	84.0	84.9	87.3	89.2	89.4	90.9	91.1	91.1	91.7	91.7	91.8	91.8
≥ 300	66.5	77.5	79.8	83.0	84.9	86.0	88.7	91.0	91.2	92.8	93.3	93.3	94.0	94.0	94.2	94.2
≥ 200	66.5	77.5	79.9	83.4	85.3	86.4	89.3	92.4	92.8	95.3	96.0	96.0	97.3	97.3	97.8	97.8
≥ 100	66.5	77.5	79.9	83.4	85.3	86.5	89.4	92.7	93.2	95.8	96.5	96.5	98.1	98.1	99.1	99.4
≥ 0	66.5	77.5	79.9	83.4	85.3	86.5	89.4	92.7	93.2	95.8	96.5	96.5	98.1	98.1	99.1	100.0

TOTAL NUMBER OF OBSERVATIONS 877

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0600-0800 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	42.7	45.9	46.6	47.1	47.6	47.7	47.9	47.9	47.9	47.9	47.9	47.9	48.0	48.0	48.0	48.0
≥ 20000	48.9	48.6	49.2	49.8	50.2	50.3	50.6	50.6	50.6	50.6	50.6	50.6	50.7	50.7	50.7	50.7
≥ 18000	48.9	48.6	49.2	49.8	50.2	50.3	50.6	50.6	50.6	50.6	50.6	50.6	50.7	50.7	50.7	50.7
≥ 16000	48.9	48.6	49.2	49.8	50.2	50.3	50.6	50.6	50.6	50.6	50.6	50.6	50.7	50.7	50.7	50.7
≥ 14000	45.5	49.1	49.8	50.3	50.8	50.9	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.2	51.2	51.2
≥ 12000	46.1	50.1	50.9	51.4	51.9	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.3	52.3	52.3	52.3
≥ 10000	47.6	51.8	52.5	53.1	53.5	53.8	54.0	54.0	54.0	54.0	54.0	54.0	54.1	54.1	54.1	54.1
≥ 9000	48.5	53.0	53.8	54.3	54.8	55.0	55.2	55.2	55.2	55.2	55.2	55.2	55.3	55.3	55.3	55.3
≥ 8000	49.1	53.7	54.4	55.0	55.4	55.6	55.8	55.9	55.9	55.9	55.9	55.9	56.0	56.0	56.0	56.0
≥ 7000	50.7	55.4	56.2	57.3	57.7	58.0	58.2	58.2	58.2	58.2	58.2	58.2	58.3	58.3	58.3	58.3
≥ 6000	51.3	56.4	57.2	58.4	58.8	59.1	59.3	59.3	59.3	59.3	59.3	59.3	59.4	59.4	59.4	59.4
≥ 5000	52.4	57.5	58.7	59.6	60.1	60.3	60.5	60.5	60.5	60.5	60.5	60.5	60.6	60.6	60.6	60.6
≥ 4500	53.0	58.3	59.6	60.6	61.1	61.3	61.6	61.6	61.6	61.6	61.6	61.6	61.7	61.7	61.7	61.7
≥ 4000	54.6	60.5	61.9	63.1	63.6	63.8	64.2	64.2	64.2	64.2	64.2	64.2	64.3	64.3	64.3	64.3
≥ 3500	55.4	61.8	63.3	64.5	65.3	65.5	65.8	65.8	65.8	65.9	65.9	65.9	66.0	66.0	66.0	66.0
≥ 3000	56.4	62.9	64.4	65.6	66.4	66.6	66.9	66.9	66.9	67.0	67.0	67.0	67.1	67.1	67.1	67.1
≥ 2500	57.1	64.2	65.6	66.9	67.8	68.0	68.8	68.8	68.8	68.9	68.9	68.9	69.0	69.0	69.0	69.0
≥ 2000	58.5	66.2	67.8	69.2	70.5	70.8	71.7	71.7	71.7	71.8	71.8	71.8	71.9	71.9	71.9	71.9
≥ 1800	60.1	68.4	70.0	71.5	72.8	73.3	74.2	74.3	74.3	74.4	74.4	74.4	74.6	74.6	74.6	74.6
≥ 1500	61.3	69.7	71.7	73.3	74.7	75.3	76.2	76.5	76.5	77.1	77.1	77.1	77.2	77.2	77.2	77.2
≥ 1200	61.9	70.7	72.7	74.4	75.8	76.4	77.5	77.9	77.9	78.4	78.4	78.4	78.5	78.5	78.5	78.5
≥ 1000	62.2	71.3	73.3	75.4	76.9	77.9	79.1	79.5	79.5	80.2	80.2	80.2	80.3	80.3	80.3	80.3
≥ 900	62.3	72.1	74.1	76.0	77.3	78.3	79.6	80.4	80.4	81.1	81.1	81.1	81.3	81.3	81.3	81.3
≥ 800	62.8	72.6	74.6	76.4	77.9	79.0	80.4	81.2	81.2	82.1	82.1	82.1	82.4	82.4	82.4	82.4
≥ 700	62.9	74.2	76.2	78.3	79.8	81.1	82.6	83.4	83.4	84.5	84.5	84.5	84.8	84.8	84.8	84.8
≥ 600	63.3	75.4	77.7	79.8	81.5	82.6	84.2	85.0	85.1	86.6	86.6	86.6	87.2	87.2	87.2	87.2
≥ 500	63.4	75.9	78.1	80.4	82.2	83.5	85.3	86.5	86.6	88.3	88.7	88.7	89.4	89.4	89.4	89.4
≥ 400	63.6	76.5	78.8	81.2	83.1	84.5	86.4	87.8	87.9	90.0	90.6	90.6	91.8	91.8	91.8	91.8
≥ 300	63.9	77.1	79.4	81.9	83.8	85.3	87.4	89.0	89.3	91.4	92.4	92.4	93.3	93.3	93.3	93.3
≥ 200	63.9	77.2	79.6	82.1	84.2	85.8	88.0	90.9	91.3	93.5	95.6	95.6	97.1	97.2	97.5	97.6
≥ 100	63.9	77.2	79.6	82.1	84.2	86.0	88.5	91.0	91.4	93.7	95.8	95.8	97.7	97.8	98.6	99.4
0	63.9	77.2	79.6	82.1	84.2	86.0	88.5	91.0	91.4	93.7	95.8	95.8	97.7	97.8	98.6	100.0

TOTAL NUMBER OF OBSERVATIONS 806

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0900-1100 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	39.1	44.3	45.2	45.9	46.3	46.5	46.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9
≥ 20000	43.4	49.7	50.8	51.6	52.0	52.3	53.0	53.0	53.0	53.0	53.0	53.0	53.1	53.1	53.1	53.1
≥ 18000	43.8	50.3	51.4	52.2	52.5	52.8	53.5	53.5	53.5	53.5	53.5	53.5	53.6	53.6	53.6	53.6
≥ 16000	43.8	50.3	51.4	52.2	52.5	52.8	53.5	53.5	53.5	53.5	53.5	53.5	53.6	53.6	53.6	53.6
≥ 14000	44.0	50.5	51.6	52.4	52.8	53.2	53.8	53.8	53.8	53.8	53.8	53.8	54.0	54.0	54.0	54.0
≥ 12000	44.7	51.3	52.4	53.2	53.7	54.1	54.7	54.7	54.7	54.7	54.7	54.7	54.8	54.8	54.8	54.8
≥ 10000	46.4	53.4	54.5	55.3	55.9	56.4	57.2	57.2	57.2	57.2	57.2	57.2	57.3	57.3	57.4	57.4
≥ 9000	47.2	54.2	55.3	56.1	56.7	57.4	58.2	58.2	58.2	58.2	58.2	58.2	58.3	58.3	58.4	58.4
≥ 8000	47.8	55.1	56.2	57.0	57.6	58.4	59.2	59.2	59.2	59.2	59.2	59.2	59.3	59.3	59.4	59.4
≥ 7000	49.5	57.1	58.2	59.0	59.8	60.8	61.5	61.5	61.6	61.6	61.6	61.6	61.8	61.8	61.9	61.9
≥ 6000	49.6	57.3	58.5	59.3	60.1	61.2	62.0	62.0	62.1	62.1	62.1	62.1	62.2	62.2	62.3	62.3
≥ 5000	50.4	58.2	59.5	60.3	61.3	62.7	63.4	63.4	63.5	63.5	63.5	63.5	63.8	63.8	63.9	63.9
≥ 4500	50.6	58.6	60.2	61.0	62.0	63.3	64.1	64.1	64.2	64.2	64.3	64.3	64.5	64.5	64.7	64.7
≥ 4000	51.7	60.5	62.3	63.1	64.1	65.4	66.2	66.3	66.4	66.4	66.6	66.6	66.8	66.8	66.9	66.9
≥ 3500	52.2	61.2	63.1	64.0	65.0	66.7	67.4	67.8	67.9	68.0	68.1	68.1	68.3	68.3	68.5	68.5
≥ 3000	53.1	62.9	64.9	65.9	67.1	68.8	69.7	70.0	70.1	70.2	70.3	70.3	70.6	70.6	70.7	70.7
≥ 2500	53.4	63.9	66.0	67.1	68.5	70.1	71.7	72.0	72.1	72.5	72.6	72.6	72.8	72.8	72.9	72.9
≥ 2000	53.5	64.2	66.3	67.6	69.0	70.8	72.5	72.8	72.9	73.6	73.7	73.7	73.9	73.9	74.0	74.0
≥ 1800	54.0	65.2	67.3	68.6	70.1	71.9	73.9	74.2	74.4	75.0	75.1	75.1	75.4	75.4	75.5	75.5
≥ 1500	54.7	67.1	69.3	70.7	72.2	74.2	76.3	76.9	77.0	78.5	78.6	78.6	78.8	78.8	78.9	78.9
≥ 1200	55.6	68.2	70.7	72.4	74.4	76.4	78.5	79.3	79.4	80.9	81.3	81.3	81.6	81.6	81.7	81.7
≥ 1000	56.0	69.1	71.6	73.2	75.4	77.6	79.8	80.9	81.0	82.7	83.1	83.1	83.4	83.4	83.5	83.7
≥ 900	56.1	69.6	72.0	73.7	75.9	78.0	80.6	81.9	82.1	83.8	84.2	84.2	84.5	84.5	84.6	84.8
≥ 800	56.4	70.3	72.8	74.5	76.8	79.0	81.6	83.2	83.5	85.4	85.7	85.7	86.1	86.1	86.2	86.4
≥ 700	56.6	70.7	73.1	74.8	77.3	79.5	82.1	83.6	83.9	86.0	86.3	86.3	87.1	87.1	87.2	87.4
≥ 600	56.7	71.6	74.1	75.8	78.6	80.8	83.5	85.3	85.6	87.6	88.1	88.1	88.9	88.9	89.0	89.2
≥ 500	56.7	71.7	74.2	76.3	79.3	81.6	84.7	86.8	87.2	89.3	90.1	90.1	91.0	91.0	91.1	91.3
≥ 400	56.7	71.9	74.5	76.9	80.3	82.8	87.0	89.6	90.1	92.5	93.5	93.5	94.6	94.6	94.8	95.0
≥ 300	56.7	72.0	74.6	77.3	80.6	83.5	87.7	90.7	91.3	94.0	95.1	95.1	96.8	96.8	96.9	97.1
≥ 200	56.7	72.0	74.6	77.3	80.7	83.7	88.1	91.3	91.9	94.6	95.8	95.9	97.8	97.8	98.1	98.4
≥ 100	56.7	72.0	74.6	77.3	80.7	83.7	88.1	91.3	91.9	94.6	95.9	96.0	98.1	98.4	99.1	100.0
≥ 0	56.7	72.0	74.6	77.3	80.7	83.7	88.1	91.3	91.9	94.6	95.9	96.0	98.1	98.4	99.1	100.0

TOTAL NUMBER OF OBSERVATIONS 897

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1200-1400 (HOUR LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	43.0	46.1	47.0	47.3	47.5	47.7	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8
≥ 20000	48.6	53.1	54.1	54.3	54.6	55.2	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5
≥ 18000	48.6	53.3	54.3	54.5	54.9	55.4	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
≥ 16000	48.7	53.4	54.4	54.6	55.0	55.5	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9
≥ 14000	48.7	53.4	54.4	54.6	55.0	55.5	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9
≥ 12000	49.3	54.0	55.0	55.2	55.5	56.1	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4
≥ 10000	50.2	55.3	56.6	56.8	57.1	57.7	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
≥ 9000	51.1	56.2	57.6	57.7	58.0	58.7	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0
≥ 8000	52.1	57.8	59.1	59.4	59.7	60.4	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7	60.7
≥ 7000	53.3	59.1	60.5	60.7	61.0	61.7	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0
≥ 6000	54.2	60.2	61.8	62.0	62.4	63.4	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
≥ 5000	54.4	60.4	62.3	62.5	62.8	63.8	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
≥ 4500	54.6	61.0	62.6	62.9	63.3	64.3	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7
≥ 4000	55.4	61.8	63.5	63.8	64.8	65.8	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
≥ 3500	56.2	63.0	64.7	65.1	65.7	66.9	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6
≥ 3000	57.2	64.3	66.0	66.4	67.1	68.2	69.0	69.0	69.0	69.0	69.1	69.1	69.1	69.1	69.1	69.1
≥ 2500	58.7	66.4	68.3	69.1	69.8	71.0	71.9	72.0	72.0	72.1	72.1	72.1	72.1	72.1	72.1	72.1
≥ 2000	59.8	68.0	70.2	71.8	72.1	73.3	74.5	74.8	74.8	75.0	75.1	75.1	75.1	75.1	75.1	75.1
≥ 1800	60.5	69.7	72.0	73.3	74.1	75.5	76.7	77.0	77.0	77.3	77.4	77.4	77.5	77.5	77.5	77.5
≥ 1500	61.6	72.0	74.6	76.0	77.0	78.4	80.1	80.5	80.5	81.1	81.3	81.3	81.4	81.4	81.4	81.4
≥ 1200	62.6	74.3	77.0	78.6	79.8	81.2	83.4	83.9	83.9	84.7	84.9	84.9	85.0	85.0	85.0	85.0
≥ 1000	62.9	74.8	77.7	79.4	80.9	82.4	84.8	85.3	85.3	86.2	87.0	87.0	87.2	87.2	87.2	87.2
≥ 900	62.9	74.9	77.9	79.6	81.3	82.9	85.3	86.0	86.0	87.5	87.8	87.8	88.1	88.1	88.1	88.1
≥ 800	62.9	75.3	78.3	80.1	81.7	83.4	86.2	87.0	87.0	88.8	89.1	89.1	89.6	89.6	89.6	89.6
≥ 700	63.0	75.8	78.9	80.7	82.6	84.3	87.3	88.1	88.1	89.9	90.5	90.5	91.0	91.0	91.0	91.0
≥ 600	63.0	76.1	79.3	81.2	83.5	85.2	88.7	89.7	89.7	91.8	92.4	92.4	92.8	92.8	92.8	92.8
≥ 500	63.0	76.4	79.6	82.1	84.9	86.7	90.3	91.4	91.4	94.0	94.7	94.7	95.3	95.3	95.5	95.5
≥ 400	63.0	76.5	79.7	82.6	85.6	87.6	91.8	92.6	92.6	95.6	96.8	96.8	97.5	97.8	98.0	98.0
≥ 300	63.0	76.5	79.7	82.6	85.7	87.7	91.8	93.2	93.2	96.5	97.6	97.6	98.4	98.7	98.9	98.9
≥ 200	63.0	76.5	79.7	82.6	85.7	87.7	91.8	93.2	93.2	96.6	97.8	97.8	98.5	98.8	99.2	99.3
≥ 100	63.0	76.5	79.7	82.6	85.7	87.7	91.8	93.2	93.2	96.6	97.8	97.8	98.7	98.9	99.4	99.9
0	63.0	76.5	79.7	82.6	85.7	87.7	91.8	93.2	93.2	96.6	97.8	97.8	98.7	98.9	99.4	100.0

TOTAL NUMBER OF OBSERVATIONS 883

USAF ETAC FORM AM 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1500-1700 (HOURS LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	45.1	47.9	48.4	48.6	48.6	48.6	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8
≥ 20000	49.8	53.7	54.8	55.5	55.5	55.6	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9
≥ 8000	49.9	53.9	55.0	55.7	55.7	55.8	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 6000	49.9	53.9	55.0	55.7	55.7	55.8	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 4000	50.1	54.1	55.3	55.9	55.9	56.0	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4
≥ 2000	50.6	54.8	56.1	56.7	56.7	56.9	57.3	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4
≥ 1000	51.6	55.9	57.2	57.8	57.8	58.2	58.5	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7
≥ 900	52.4	57.4	58.6	59.4	59.4	59.8	60.3	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5
≥ 800	53.8	58.4	59.6	60.4	60.4	60.8	61.3	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5
≥ 700	55.8	60.3	61.6	62.4	62.5	62.9	63.4	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6
≥ 6000	56.2	61.2	62.7	63.5	63.6	64.3	64.7	65.0	65.0	65.1	65.1	65.1	65.1	65.1	65.1	65.1
≥ 5000	56.5	61.6	63.5	64.3	64.4	65.0	65.5	65.8	65.8	65.9	65.9	65.9	65.9	65.9	65.9	65.9
≥ 4500	57.3	62.4	64.0	64.8	64.9	65.6	66.0	66.4	66.4	66.5	66.5	66.5	66.5	66.5	66.5	66.5
≥ 4000	58.1	63.4	65.4	66.4	66.5	67.1	67.6	67.9	67.9	68.1	68.1	68.1	68.1	68.1	68.1	68.1
≥ 3500	58.6	64.0	65.8	66.8	67.0	67.7	68.1	68.5	68.5	68.7	68.7	68.7	68.7	68.7	68.7	68.7
≥ 3000	59.8	65.7	67.5	68.7	68.9	69.6	70.1	70.5	70.5	70.7	70.7	70.7	70.7	70.7	70.7	70.7
≥ 2500	61.3	67.8	69.8	71.0	71.3	72.0	72.7	73.1	73.1	73.5	73.5	73.5	73.5	73.5	73.5	73.5
≥ 2000	62.8	70.5	72.5	73.8	74.0	74.8	75.6	76.2	76.2	76.7	76.9	76.9	76.9	76.9	76.9	76.9
≥ 1800	63.4	71.4	74.0	75.4	75.7	76.6	77.6	78.4	78.4	78.8	79.0	79.0	79.0	79.0	79.0	79.0
≥ 1500	64.4	73.8	76.3	77.8	78.0	80.1	81.4	82.7	82.7	83.7	84.0	84.0	84.0	84.0	84.0	84.0
≥ 1200	64.4	74.4	77.0	78.6	80.0	81.9	83.0	84.2	84.2	85.5	85.8	85.8	85.8	85.8	85.8	85.8
≥ 1000	64.6	74.9	77.4	79.5	80.9	82.6	83.5	85.7	85.7	87.0	87.7	87.7	87.7	87.7	87.7	87.7
≥ 900	64.7	75.1	77.6	79.8	81.4	83.0	84.9	86.1	86.2	87.7	88.5	88.5	88.5	88.5	88.5	88.5
≥ 800	64.7	75.7	78.3	80.4	82.0	83.8	86.0	87.2	87.6	89.3	90.2	90.2	90.2	90.2	90.2	90.2
≥ 700	64.9	76.0	78.6	80.8	82.6	84.5	86.8	88.2	88.6	90.3	91.5	91.5	91.5	91.5	91.5	91.5
≥ 600	64.9	76.1	78.7	81.5	83.3	85.1	87.9	89.3	89.7	91.7	92.9	92.9	92.9	92.9	93.0	93.0
≥ 500	64.9	76.2	78.9	81.9	83.8	85.7	88.8	90.0	90.3	92.6	94.1	94.1	94.3	94.3	94.6	94.6
≥ 400	64.9	76.2	78.9	82.2	84.2	86.5	89.2	91.0	91.3	93.8	95.6	95.6	95.8	95.8	96.0	96.0
≥ 300	64.9	76.2	78.9	82.4	84.6	86.8	89.7	91.6	91.9	94.5	96.4	96.4	96.8	96.8	97.0	97.0
≥ 200	64.9	76.2	78.9	82.6	84.8	87.0	90.2	92.1	92.5	95.1	97.1	97.1	98.0	98.1	98.4	98.9
≥ 100	64.9	76.2	78.9	82.6	84.8	87.0	90.2	92.1	92.5	95.1	97.1	97.1	98.3	98.4	99.0	99.8
≥ 0	64.9	76.2	78.9	82.6	84.8	87.0	90.2	92.1	92.5	95.1	97.1	97.1	98.3	98.4	99.0	100.0

TOTAL NUMBER OF OBSERVATIONS 901

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1800-2000 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	49.1	50.1	50.6	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9
≥ 20000	51.4	52.7	53.4	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
≥ 18000	51.4	52.7	53.4	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
≥ 16000	51.4	52.7	53.4	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
≥ 14000	51.6	53.1	53.7	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1
≥ 12000	51.8	53.5	54.2	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5
≥ 10000	53.3	55.3	56.3	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6
≥ 9000	54.5	56.6	57.6	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3
≥ 8000	55.6	58.0	59.0	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7
≥ 7000	57.3	60.0	61.0	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7
≥ 6000	58.1	61.0	62.1	62.8	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
≥ 5000	59.1	62.0	63.1	63.8	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
≥ 4500	59.4	62.3	63.5	64.3	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4
≥ 4000	60.2	63.1	64.3	65.5	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9
≥ 3500	60.7	64.2	65.7	66.5	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9
≥ 3000	61.5	65.6	67.2	68.0	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3
≥ 2500	63.5	68.5	70.1	70.9	71.4	71.5	71.5	71.5	71.5	71.5	71.5	71.5	71.5	71.5	71.5	71.5
≥ 2000	65.5	71.2	72.9	73.6	74.2	74.8	75.2	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3
≥ 1800	66.3	72.3	74.0	74.9	76.2	76.5	77.0	77.3	77.3	77.3	77.3	77.3	77.3	77.3	77.3	77.3
≥ 1500	67.1	73.1	74.9	75.9	77.4	78.0	78.6	81.2	81.2	81.8	81.8	81.8	81.8	81.8	81.8	81.8
≥ 1200	68.0	76.0	78.4	80.0	82.1	82.5	83.9	84.8	84.8	85.2	85.2	85.2	85.2	85.2	85.2	85.2
≥ 1000	68.6	77.8	80.3	81.6	83.9	84.3	85.7	86.7	86.7	87.1	87.1	87.1	87.1	87.1	87.1	87.1
≥ 900	68.9	77.8	80.5	82.1	84.4	84.9	86.2	87.2	87.2	87.7	87.7	87.7	87.7	87.7	87.7	87.7
≥ 800	69.3	78.8	81.5	83.2	85.5	86.1	87.8	88.7	88.7	89.1	89.1	89.1	89.1	89.1	89.1	89.1
≥ 700	69.5	79.4	82.5	84.3	86.7	87.2	88.7	90.0	90.0	90.5	90.7	90.7	90.7	90.7	90.7	90.7
≥ 600	69.7	80.1	83.6	85.7	88.0	88.5	90.2	91.7	91.7	92.5	93.2	93.2	93.8	93.8	93.8	93.8
≥ 500	70.0	80.6	84.2	86.3	89.0	89.7	91.5	93.1	93.1	94.2	94.9	94.9	95.1	95.1	95.1	95.1
≥ 400	70.0	81.0	84.6	86.8	89.7	90.3	92.2	93.9	94.0	95.2	96.2	96.2	96.6	96.6	96.6	96.6
≥ 300	70.0	81.0	84.6	86.9	89.8	90.7	93.0	94.9	95.0	96.3	97.4	97.4	98.1	98.1	98.1	98.1
≥ 200	70.0	81.0	84.6	86.9	89.8	90.7	93.2	95.2	95.3	96.8	97.9	97.9	98.9	98.9	98.9	98.9
≥ 100	70.0	81.0	84.6	86.9	89.8	90.7	93.4	95.4	95.6	97.1	98.3	98.3	99.4	99.4	99.8	100.0
≥ 0	70.0	81.0	84.6	86.9	89.8	90.7	93.4	95.4	95.6	97.1	98.3	98.3	99.4	99.4	99.8	100.0

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

2100-2300 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	46.9	48.4	48.7	49.2	49.2	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.5
≥ 20000	48.5	50.2	50.5	50.9	50.9	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.4
≥ 18000	48.5	50.2	50.5	50.9	50.9	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.4
≥ 16000	48.5	50.2	50.5	50.9	50.9	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.4
≥ 14000	49.1	50.7	51.1	51.5	51.5	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	52.0
≥ 12000	49.2	51.1	51.4	51.8	51.8	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.3
≥ 10000	51.6	53.7	54.2	54.6	54.6	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	55.1
≥ 9000	53.0	55.3	55.7	56.3	56.3	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.7
≥ 8000	54.0	56.3	56.7	57.3	57.5	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	58.0
≥ 7000	54.8	57.5	58.1	58.6	58.9	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.3
≥ 6000	55.4	58.5	59.1	59.6	59.9	60.1	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.4
≥ 5000	56.2	59.6	60.2	60.8	61.0	61.2	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.8
≥ 4500	56.7	60.2	60.8	61.3	61.5	61.8	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.3
≥ 4000	57.3	61.3	62.2	62.9	63.3	63.5	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9	64.1
≥ 3500	58.0	62.3	63.3	64.1	64.5	64.8	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.3
≥ 3000	58.8	63.3	64.3	65.1	65.6	65.8	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.3
≥ 2500	59.8	65.0	66.4	67.2	67.8	68.1	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.7
≥ 2000	61.5	67.6	69.6	70.6	71.1	71.6	71.9	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.2
≥ 1800	62.3	69.5	71.5	72.5	73.1	73.7	74.0	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.4
≥ 1500	64.0	71.8	74.1	76.0	76.9	77.7	78.3	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	79.2
≥ 1200	66.1	75.0	77.5	79.6	80.6	81.4	81.9	82.7	82.7	83.1	83.1	83.1	83.1	83.1	83.1	83.3
≥ 1000	67.2	76.9	79.4	81.5	82.6	83.4	84.1	84.8	84.8	85.3	85.3	85.3	85.3	85.3	85.3	85.5
≥ 900	67.4	78.3	80.7	82.9	84.1	84.8	85.6	86.4	86.4	86.8	86.8	86.8	86.8	86.8	86.8	87.1
≥ 800	67.7	78.9	81.4	83.6	84.8	85.6	86.4	87.4	87.4	88.2	88.3	88.3	88.3	88.3	88.3	88.5
≥ 700	67.8	79.6	82.1	84.3	85.6	86.4	87.5	88.5	88.5	89.4	89.6	89.6	89.6	89.6	89.6	89.9
≥ 600	68.0	80.3	83.1	85.5	86.8	87.6	88.9	90.0	90.0	91.0	91.3	91.3	91.4	91.4	91.4	91.6
≥ 500	68.0	80.6	83.8	86.6	88.0	88.7	90.4	91.6	91.6	93.0	93.3	93.3	93.4	93.4	93.4	93.6
≥ 400	68.0	80.6	83.8	86.7	88.1	89.1	91.1	92.9	92.9	93.9	94.5	94.5	94.6	94.6	94.6	94.9
≥ 300	68.0	80.7	83.9	87.0	88.4	89.4	91.6	93.3	93.3	95.1	95.9	95.9	96.0	96.0	96.1	96.3
≥ 200	68.0	80.7	83.9	87.0	88.4	89.4	91.9	93.9	93.9	96.7	97.4	97.4	97.5	97.7	97.9	98.1
≥ 100	68.0	80.7	84.1	87.1	88.5	89.5	92.0	94.1	94.1	97.1	98.0	98.0	98.2	98.3	98.9	99.3
0	68.0	80.7	84.1	87.1	88.5	89.5	92.0	94.1	94.1	97.1	98.0	98.0	98.2	98.3	99.0	100.0

TOTAL NUMBER OF OBSERVATIONS 897

USAF ETAC FORM AM 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

ALL (HOURS M.S.T.)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	45.0	47.5	48.0	48.5	48.6	48.7	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9	49.0
≥ 20000	47.9	51.2	51.8	52.3	52.5	52.7	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	53.0
≥ 18000	48.0	51.3	52.0	52.5	52.6	52.8	53.0	53.0	53.0	53.0	53.0	53.0	53.1	53.1	53.1	53.1
≥ 16000	48.0	51.3	52.0	52.5	52.6	52.8	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1
≥ 14000	48.3	51.6	52.3	52.8	53.0	53.2	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.5
≥ 12000	48.7	52.2	52.9	53.4	53.6	53.8	54.0	54.0	54.0	54.0	54.0	54.0	54.1	54.1	54.1	54.1
≥ 10000	50.3	54.0	54.8	55.3	55.5	55.8	56.0	56.0	56.0	56.0	56.0	56.0	56.1	56.1	56.1	56.1
≥ 9000	51.3	55.1	55.9	56.5	56.8	57.1	57.3	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.5
≥ 8000	52.1	56.1	56.9	57.6	57.8	58.1	58.4	58.4	58.4	58.4	58.4	58.4	58.5	58.5	58.5	58.5
≥ 7000	53.5	57.8	58.7	59.4	59.7	60.0	60.3	60.3	60.3	60.3	60.3	60.3	60.4	60.4	60.4	60.4
≥ 6000	54.2	58.7	59.7	60.4	60.8	61.2	61.5	61.5	61.5	61.6	61.6	61.6	61.6	61.6	61.6	61.7
≥ 5000	54.9	59.5	60.6	61.3	61.7	62.2	62.5	62.5	62.5	62.6	62.6	62.6	62.6	62.6	62.6	62.7
≥ 4500	55.3	60.1	61.2	62.0	62.4	62.8	63.2	63.2	63.2	63.2	63.2	63.2	63.3	63.3	63.3	63.4
≥ 4000	56.4	61.4	62.9	63.7	64.2	64.6	65.0	65.1	65.1	65.1	65.1	65.1	65.2	65.2	65.2	65.2
≥ 3500	57.0	62.5	63.9	64.8	65.4	65.9	66.2	66.3	66.3	66.4	66.4	66.4	66.5	66.5	66.5	66.5
≥ 3000	57.9	63.7	65.2	66.2	66.7	67.2	67.7	67.7	67.8	67.8	67.8	67.8	67.9	67.9	67.9	68.0
≥ 2500	59.0	65.4	67.0	68.1	68.7	69.3	69.9	70.0	70.1	70.2	70.2	70.2	70.2	70.2	70.3	70.3
≥ 2000	60.2	67.3	69.1	70.3	71.2	71.8	72.5	72.8	72.8	73.0	73.0	73.0	73.1	73.1	73.1	73.2
≥ 1800	61.1	68.8	70.7	71.9	72.9	73.6	74.4	74.8	74.8	75.0	75.1	75.1	75.1	75.1	75.1	75.2
≥ 1500	62.2	70.7	72.9	74.4	75.7	76.5	77.5	78.1	78.2	78.7	78.7	78.7	78.8	78.8	78.8	78.9
≥ 1200	63.3	72.8	75.1	76.8	78.2	79.2	80.4	81.1	81.1	81.8	81.9	81.9	82.0	82.0	82.0	82.1
≥ 1000	64.0	74.1	76.5	78.3	79.8	80.9	82.4	83.2	83.2	83.9	84.1	84.3	84.4	84.4	84.4	84.5
≥ 900	64.2	74.6	77.0	78.9	80.5	81.6	83.1	84.0	84.1	85.0	85.2	85.2	85.3	85.3	85.4	85.4
≥ 800	64.6	75.3	77.7	79.6	81.3	82.5	84.1	85.2	85.3	86.2	86.4	86.4	86.8	86.8	86.8	86.9
≥ 700	64.7	76.0	78.5	80.5	82.3	83.5	85.5	86.6	86.7	87.8	88.1	88.1	88.4	88.4	88.4	88.5
≥ 600	64.9	76.8	79.5	81.7	83.5	84.8	86.9	88.1	88.2	89.7	90.1	90.1	90.4	90.4	90.5	90.5
≥ 500	65.0	77.2	80.0	82.5	84.6	85.9	88.2	89.7	89.8	91.4	92.1	92.1	92.5	92.5	92.6	92.7
≥ 400	65.1	77.5	80.6	83.1	85.3	86.7	89.3	91.0	91.2	93.1	93.9	93.9	94.4	94.4	94.5	94.6
≥ 300	65.2	77.6	80.5	83.4	85.8	87.3	90.1	92.1	92.3	94.3	95.3	95.3	96.0	96.0	96.2	96.2
≥ 200	65.2	77.8	80.5	83.5	85.9	87.5	90.5	92.9	93.1	95.6	96.7	96.8	97.8	97.9	98.1	98.3
≥ 100	65.2	77.8	80.6	83.5	85.9	87.6	90.6	93.0	93.3	95.8	97.0	97.0	98.3	98.4	99.0	99.7
0	65.2	77.8	80.6	83.5	85.9	87.6	90.6	93.0	93.3	95.8	97.0	97.0	98.3	98.4	99.0	100.0

TOTAL NUMBER OF OBSERVATIONS 7172

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0000-0200 (HOURS LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	44.9	46.1	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.3	46.3
≥ 20000	46.9	48.6	48.7	48.7	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.9	49.0	49.0
≥ 18000	47.0	48.7	48.9	48.9	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.1	49.1
≥ 16000	47.0	48.7	48.9	48.9	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.1	49.1
≥ 14000	47.4	49.1	49.2	49.2	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.5	49.5
≥ 12000	49.3	51.0	51.1	51.1	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.4	51.4
≥ 10000	51.0	52.8	53.1	53.2	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.7	53.7
≥ 9000	52.1	54.1	54.3	54.4	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.9	54.9
≥ 8000	52.5	54.4	54.7	54.8	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.4	55.4
≥ 7000	54.9	57.0	57.3	57.4	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	58.0	58.0
≥ 6000	56.2	58.3	58.6	58.8	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.4	59.4
≥ 5000	56.5	58.6	59.0	59.1	59.6	59.6	59.6	59.6	59.6	59.6	59.6	59.6	59.6	59.6	59.7	59.7
≥ 4500	56.7	59.4	59.9	60.0	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.6	60.6
≥ 4000	57.4	60.5	61.2	61.4	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.2	62.2
≥ 3500	58.2	61.7	62.4	62.6	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.4	63.4
≥ 3000	59.7	63.6	64.3	64.6	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.4	65.4
≥ 2500	62.4	67.5	68.7	69.0	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.3	70.3
≥ 2000	65.2	71.6	73.0	73.6	75.0	75.1	75.2	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.5	75.5
≥ 1800	65.8	72.3	74.2	74.8	76.2	76.3	76.4	76.5	76.5	76.5	76.5	76.5	76.5	76.5	76.7	76.7
≥ 1500	66.9	74.5	76.9	77.9	79.6	79.7	79.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.2	80.2
≥ 1200	68.1	75.8	78.6	79.6	81.4	81.7	82.0	82.1	82.1	82.2	82.2	82.2	82.2	82.2	82.3	82.3
≥ 1000	68.4	76.7	79.6	80.7	82.6	83.0	83.6	83.8	83.8	84.3	84.3	84.3	84.3	84.3	84.4	84.4
≥ 900	68.9	77.8	80.8	81.9	84.0	84.4	85.1	85.5	85.5	86.1	86.1	86.1	86.1	86.1	86.2	86.2
≥ 800	69.3	78.1	81.1	82.3	84.6	85.1	85.9	86.3	86.3	86.9	86.9	86.9	86.9	86.9	87.1	87.1
≥ 700	69.5	78.8	82.3	83.6	86.0	86.5	87.3	87.8	87.8	88.5	88.5	88.5	88.5	88.5	88.6	88.6
≥ 600	69.9	79.6	83.6	84.8	87.4	87.9	88.9	89.4	89.4	90.1	90.1	90.1	90.1	90.1	90.2	90.2
≥ 500	70.3	80.0	84.2	85.5	88.3	88.9	89.8	90.6	90.6	91.4	91.5	91.5	91.5	91.5	91.7	91.7
≥ 400	70.5	80.9	85.1	86.8	89.7	90.4	92.3	93.0	93.0	94.1	94.2	94.2	94.3	94.3	94.4	94.4
≥ 300	70.5	80.9	85.2	87.3	90.4	91.5	93.7	94.6	94.6	96.4	96.5	96.5	96.6	96.7	96.9	96.9
≥ 200	70.5	80.9	85.2	87.4	90.8	92.0	94.6	95.8	95.9	97.9	98.1	98.1	98.5	98.7	98.9	98.9
≥ 100	70.5	80.9	85.2	87.4	90.9	92.1	94.7	96.0	96.1	98.2	98.3	98.3	99.0	99.2	99.5	100.0
≥ 0	70.5	80.9	85.2	87.4	90.9	92.1	94.7	96.0	96.1	98.2	98.3	98.3	99.0	99.2	99.5	100.0

TOTAL NUMBER OF OBSERVATIONS 827

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0300-0530 (HOURS LST)

CEILING FEET	VISIBILITY STATUTE MILES															
	≥10	≥6	≥5	≥4	≥3	≥2 7/8	≥2	≥1 7/8	≥1 1/4	≥1	≥ 3/4	≥ 5/8	≥ 1/2	≥ 5/16	≥ 1/4	≥0
NO CEILING	41.5	43.2	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.8	43.8	43.8	43.8	43.8	43.8	43.8
≥ 20000	43.6	45.5	46.0	46.0	46.1	46.1	46.1	46.1	46.1	46.4	46.4	46.4	46.4	46.4	46.4	46.4
≥ 18000	44.0	45.9	46.4	46.4	46.5	46.5	46.5	46.5	46.5	46.7	46.7	46.7	46.7	46.7	46.7	46.7
≥ 16000	44.0	45.9	46.4	46.4	46.5	46.5	46.5	46.5	46.5	46.7	46.7	46.7	46.7	46.7	46.7	46.7
≥ 14000	44.7	46.6	47.1	47.1	47.2	47.2	47.2	47.2	47.2	47.5	47.5	47.5	47.5	47.5	47.5	47.5
≥ 12000	45.4	47.3	47.9	47.9	48.1	48.1	48.1	48.1	48.1	48.3	48.3	48.3	48.3	48.3	48.3	48.3
≥ 10000	47.5	49.6	50.2	50.2	50.4	50.4	50.4	50.4	50.4	50.6	50.6	50.6	50.6	50.6	50.6	50.6
≥ 9000	48.6	50.7	51.3	51.3	51.4	51.4	51.4	51.4	51.4	51.7	51.7	51.7	51.7	51.7	51.7	51.7
≥ 8000	49.2	51.3	51.9	51.9	52.1	52.1	52.1	52.1	52.1	52.3	52.3	52.3	52.3	52.3	52.3	52.3
≥ 7000	51.7	54.0	54.7	54.7	54.8	54.8	54.8	54.8	54.8	55.1	55.1	55.1	55.1	55.1	55.1	55.1
≥ 6000	53.3	56.0	56.8	56.8	56.9	56.9	56.9	56.9	56.9	57.1	57.1	57.1	57.1	57.1	57.1	57.1
≥ 5000	54.3	57.5	58.2	58.2	58.3	58.3	58.3	58.3	58.3	58.6	58.6	58.6	58.6	58.6	58.6	58.6
≥ 4500	55.0	58.3	59.2	59.2	59.3	59.3	59.3	59.3	59.3	59.5	59.5	59.5	59.5	59.5	59.5	59.5
≥ 4000	55.1	58.9	59.8	59.9	60.0	60.0	60.0	60.0	60.0	60.3	60.3	60.3	60.3	60.3	60.3	60.3
≥ 3500	55.3	59.7	60.6	60.7	61.0	61.0	61.0	61.0	61.0	61.2	61.2	61.2	61.2	61.2	61.2	61.2
≥ 3000	56.0	61.2	62.1	62.3	62.6	62.6	62.6	62.6	62.6	62.8	62.8	62.8	62.8	62.8	62.8	62.8
≥ 2500	58.7	65.7	66.7	67.3	67.8	67.8	67.8	67.8	67.8	68.0	68.0	68.0	68.0	68.0	68.0	68.0
≥ 2000	60.8	68.6	70.0	71.1	71.6	71.7	72.0	72.2	72.2	72.5	72.5	72.5	72.5	72.5	72.5	72.5
≥ 1800	62.1	70.9	72.3	73.4	73.9	74.0	74.4	74.6	74.6	74.9	74.9	74.9	74.9	74.9	74.9	74.9
≥ 1500	64.9	74.5	76.2	77.7	78.3	78.4	79.1	79.6	79.6	79.8	79.8	79.8	79.8	79.8	79.8	79.8
≥ 1200	65.2	75.4	77.2	78.7	79.5	79.6	80.4	81.3	81.3	81.5	81.5	81.5	81.5	81.5	81.5	81.5
≥ 1000	65.6	76.1	78.0	79.7	80.6	80.7	81.9	83.5	83.5	83.8	83.8	83.8	83.8	83.8	83.8	83.8
≥ 900	66.1	76.9	79.0	80.7	81.5	81.6	83.1	84.7	84.7	85.0	85.0	85.0	85.0	85.0	85.0	85.0
≥ 800	66.4	77.5	79.6	81.6	82.5	82.6	84.1	85.6	85.6	86.2	86.4	86.4	86.4	86.4	86.4	86.4
≥ 700	67.0	78.1	80.4	82.4	83.2	83.3	85.0	86.6	86.6	87.7	87.8	87.8	87.8	87.8	87.8	87.8
≥ 600	67.3	78.6	80.9	83.1	84.1	84.2	85.9	87.6	87.6	88.9	89.0	89.0	89.0	89.0	89.0	89.0
≥ 500	67.5	79.6	82.2	84.4	85.5	85.6	87.8	89.4	89.4	90.8	90.9	90.9	90.9	90.9	90.9	91.1
≥ 400	67.6	80.0	82.6	84.8	86.0	86.1	88.3	90.5	90.5	92.0	92.1	92.1	92.1	92.1	92.3	92.5
≥ 300	67.6	80.1	82.9	85.1	86.4	87.1	90.5	92.5	92.5	94.4	94.6	94.6	94.6	94.6	94.7	94.9
≥ 200	67.6	80.1	82.9	85.1	86.8	87.7	91.9	94.2	94.6	97.1	97.5	97.5	98.2	98.2	98.8	98.8
≥ 100	67.6	80.1	82.9	85.1	86.8	87.7	91.9	94.2	94.6	97.1	97.8	97.8	98.7	99.0	99.4	100.0
≥ 0	67.6	80.1	82.9	85.1	86.8	87.7	91.9	94.2	94.6	97.1	97.8	97.8	98.7	99.0	99.4	100.0

TOTAL NUMBER OF OBSERVATIONS 828

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0600-0800 (HOURS L.S.T.)

CEILING FEET	VISIBILITY STATUTE MILES															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	40.4	43.2	43.4	43.4	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6
≥ 20000	43.4	46.7	47.2	47.2	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.6	47.6
≥ 18000	43.4	46.7	47.2	47.2	47.5	47.5	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.8	47.8
≥ 16000	43.4	46.7	47.2	47.2	47.5	47.5	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.8	47.8
≥ 14000	43.7	47.0	47.5	47.5	47.7	47.7	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	48.1	48.1
≥ 12000	44.2	47.6	48.1	48.1	48.3	48.3	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.7	48.7
≥ 10000	45.5	49.2	49.8	49.8	50.2	50.2	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.7	50.7
≥ 9000	45.9	49.9	50.6	50.6	51.2	51.2	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.7	51.7
≥ 8000	46.8	50.8	51.6	51.6	52.2	52.2	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.7	52.7
≥ 7000	49.6	53.6	54.5	54.5	55.1	55.1	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.6	55.6
≥ 6000	50.5	54.5	55.3	55.3	56.1	56.1	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.6	56.6
≥ 5000	51.5	55.7	56.6	57.0	57.9	57.9	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.5	58.5
≥ 4500	51.8	56.2	57.3	57.6	58.5	58.5	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.1	59.1
≥ 4000	52.2	57.3	58.5	58.9	59.7	59.7	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.4	60.4
≥ 3500	52.8	58.1	59.3	59.8	60.8	60.8	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.5	61.5
≥ 3000	53.8	59.6	60.8	61.3	62.4	62.4	63.0	63.0	63.0	63.0	63.0	63.0	63.1	63.1	63.2	63.2
≥ 2500	55.6	62.1	63.6	64.3	65.7	66.0	66.9	67.0	67.0	67.0	67.0	67.0	67.1	67.1	67.2	67.2
≥ 2000	56.8	64.1	65.5	66.3	67.7	68.2	69.2	69.3	69.3	69.3	69.3	69.3	69.4	69.4	69.5	69.5
≥ 1800	57.9	65.7	67.1	67.8	69.5	70.0	71.0	71.4	71.4	71.6	71.6	71.6	71.7	71.7	71.8	71.8
≥ 1500	59.5	68.2	69.9	70.9	72.8	73.4	74.4	74.9	74.9	75.1	75.1	75.1	75.2	75.2	75.4	75.4
≥ 1200	60.3	70.0	71.7	72.9	75.1	75.7	76.7	77.2	77.2	77.7	77.7	77.7	77.8	77.8	77.9	77.9
≥ 1000	60.8	71.4	73.1	74.6	76.9	77.9	79.0	79.7	79.7	80.3	80.3	80.3	80.5	80.5	80.6	80.6
≥ 900	61.2	71.7	73.4	75.0	77.3	78.4	79.5	80.2	80.2	81.2	81.2	81.2	81.3	81.3	81.4	81.4
≥ 800	62.1	73.3	75.1	76.8	79.1	80.5	81.6	82.4	82.4	84.0	84.1	84.1	84.2	84.2	84.3	84.3
≥ 700	62.7	74.3	76.5	78.2	80.6	81.9	83.1	84.1	84.1	85.7	85.9	85.9	86.0	86.0	86.2	86.2
≥ 600	63.0	74.9	77.1	78.8	81.2	82.6	84.2	85.6	85.6	87.6	87.9	87.9	88.1	88.1	88.2	88.2
≥ 500	63.1	75.1	77.7	80.0	82.8	84.5	86.4	88.1	88.1	90.2	90.7	90.7	91.1	91.1	91.4	91.4
≥ 400	63.1	75.7	78.3	80.8	84.0	85.8	87.9	89.7	89.7	92.1	92.7	92.7	93.3	93.4	93.7	93.7
≥ 300	63.1	75.8	78.4	81.4	84.7	86.8	89.1	91.5	91.5	93.9	94.7	94.7	95.4	95.6	95.9	96.2
≥ 200	63.1	75.8	78.4	81.6	84.8	86.9	89.3	92.2	92.4	95.5	96.4	96.4	97.6	97.8	98.1	98.4
≥ 100	63.1	75.8	78.4	81.6	84.8	86.9	89.3	92.2	92.5	95.8	96.6	96.6	98.1	98.3	98.8	99.9
≥ 0	63.1	75.8	78.4	81.6	84.8	86.9	89.3	92.2	92.5	95.8	96.6	96.6	98.1	98.3	98.8	100.0

TOTAL NUMBER OF OBSERVATIONS 826

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0900-1100 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	39.1	42.7	42.8	43.4	43.8	44.0	44.5	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.7	44.7
≥ 20000	48.3	48.7	48.9	49.5	50.0	50.2	50.7	50.9	50.9	50.9	50.9	50.9	50.9	50.9	51.0	51.0
≥ 18000	44.5	49.0	49.3	49.9	50.6	50.9	51.5	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.7	51.7
≥ 16000	48.5	49.0	49.3	49.9	50.6	50.9	51.5	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.7	51.7
≥ 14000	44.6	49.1	49.4	50.0	50.7	51.0	51.6	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.8	51.8
≥ 12000	45.0	49.5	49.8	50.4	51.1	51.3	52.0	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.2	52.2
≥ 10000	45.7	50.7	51.0	51.6	52.4	52.7	53.3	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.5	53.5
≥ 9000	46.2	51.5	51.8	52.3	53.1	53.4	54.0	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.2	54.2
≥ 8000	46.7	52.0	52.3	53.2	54.3	54.5	55.1	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.5	55.5
≥ 7000	47.8	53.5	54.0	55.0	56.2	56.5	57.3	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.8	57.8
≥ 6000	48.2	54.5	55.1	56.2	57.7	57.9	58.9	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.4	59.4
≥ 5000	48.8	55.5	56.2	57.3	58.8	59.2	60.3	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.8	60.8
≥ 4500	48.8	55.5	56.2	57.3	58.8	59.3	60.4	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.9	60.9
≥ 4000	49.3	56.1	56.8	58.1	59.5	60.1	61.5	61.9	61.9	61.9	61.9	61.9	61.9	61.9	62.0	62.0
≥ 3500	49.4	56.5	57.3	58.6	60.1	60.8	62.3	62.8	62.8	62.8	62.8	62.8	62.8	62.8	63.0	63.0
≥ 3000	49.9	57.5	58.3	59.7	61.2	61.9	63.7	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.4	64.4
≥ 2500	50.9	58.8	59.7	61.2	63.1	63.9	66.3	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.1	67.1
≥ 2000	51.8	60.1	61.1	63.3	65.5	66.6	69.3	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.2	70.2
≥ 1800	52.4	61.0	62.5	64.5	66.9	68.3	71.0	71.8	71.9	72.1	72.1	72.1	72.1	72.1	72.2	72.2
≥ 1500	53.2	62.8	64.7	67.1	69.8	71.4	74.7	75.7	75.8	76.3	76.3	76.3	76.3	76.3	76.4	76.4
≥ 1200	53.5	64.2	66.0	68.8	71.6	73.3	76.8	77.9	78.0	78.7	79.0	79.0	79.0	79.0	79.1	79.1
≥ 1000	54.3	65.4	67.8	70.9	74.0	76.2	79.6	80.9	81.2	81.9	82.4	82.4	82.4	82.4	82.5	82.5
≥ 900	54.6	65.8	68.3	71.4	74.6	76.8	80.3	82.3	82.6	83.4	83.9	83.9	83.9	83.9	84.0	84.0
≥ 800	55.0	66.7	69.8	73.1	76.8	79.6	83.3	85.2	85.7	86.6	87.0	87.0	87.0	87.0	87.2	87.2
≥ 700	55.0	67.1	70.3	73.7	77.8	80.7	84.8	86.9	87.4	88.4	89.5	89.6	89.7	89.7	89.9	89.9
≥ 600	55.0	67.4	70.9	74.6	78.9	81.8	86.2	88.5	89.0	90.2	91.3	91.4	91.7	91.7	91.8	91.8
≥ 500	55.0	67.6	71.1	75.3	79.6	83.0	87.5	90.3	91.1	92.8	94.0	94.1	94.5	94.5	94.6	94.6
≥ 400	55.0	67.6	71.1	75.3	79.7	83.3	88.0	91.0	91.7	93.8	95.2	95.4	95.8	96.0	96.1	96.1
≥ 300	55.0	67.6	71.1	75.4	79.8	83.5	88.3	91.3	92.1	94.3	96.1	96.2	97.2	97.3	97.6	97.9
≥ 200	55.0	67.6	71.1	75.4	79.8	83.5	88.3	91.4	92.2	94.5	96.7	96.8	98.3	98.8	99.0	99.5
≥ 100	55.0	67.6	71.1	75.4	79.8	83.5	88.3	91.4	92.2	94.5	96.7	96.8	98.5	99.1	99.4	100.0
≥ 0	55.0	67.6	71.1	75.4	79.8	83.5	88.3	91.4	92.2	94.5	96.7	96.8	98.5	99.1	99.4	100.0

TOTAL NUMBER OF OBSERVATIONS 818

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1200-1800 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	45.4	47.9	48.3	48.3	48.5	48.5	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8
≥ 20000	51.0	54.0	54.5	54.5	54.7	54.7	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0
≥ 18000	51.3	54.6	55.1	55.1	55.3	55.3	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6
≥ 16000	51.3	54.6	55.1	55.1	55.3	55.3	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6
≥ 14000	51.6	54.9	55.3	55.3	55.6	55.6	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
≥ 12000	52.1	55.3	55.8	55.8	56.1	56.1	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3
≥ 10000	53.4	56.8	57.3	57.3	57.8	57.8	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
≥ 9000	54.0	57.4	58.0	58.0	58.5	58.6	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9
≥ 8000	54.9	58.3	59.0	59.1	59.6	59.7	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1
≥ 7000	55.5	59.2	60.0	60.3	60.8	61.2	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7
≥ 6000	56.6	60.6	61.4	61.8	62.3	62.6	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1
≥ 5000	56.6	60.9	61.8	62.3	62.7	63.1	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6
≥ 4500	56.7	61.0	61.9	62.4	63.0	63.3	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
≥ 4000	57.2	61.9	62.7	63.2	63.8	64.3	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9
≥ 3500	57.3	62.0	62.9	63.3	64.0	64.6	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2
≥ 3000	58.4	63.3	64.3	64.8	65.4	66.0	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6
≥ 2500	61.2	66.5	67.8	68.4	69.3	69.9	70.5	70.8	70.8	71.0	71.0	71.0	71.0	71.0	71.0	71.0
≥ 2000	63.6	70.4	71.8	72.7	73.7	74.5	75.4	75.6	75.6	76.1	76.1	76.1	76.1	76.1	76.1	76.1
≥ 1800	64.7	71.6	73.5	74.4	75.4	76.3	77.4	77.8	77.8	78.4	78.4	78.6	78.6	78.6	78.6	78.6
≥ 1500	65.8	73.5	76.0	77.4	78.6	80.0	81.6	81.9	81.9	82.6	82.6	83.0	83.1	83.1	83.1	83.1
≥ 1200	66.0	74.6	77.2	78.9	80.8	82.3	84.2	84.6	84.7	85.4	85.6	85.9	86.3	86.3	86.3	86.3
≥ 1000	66.1	75.5	78.0	80.0	82.4	84.2	86.4	87.1	87.3	88.5	88.6	89.0	89.4	89.4	89.4	89.4
≥ 900	66.5	76.3	79.1	81.3	83.9	85.8	88.1	89.1	89.2	90.5	90.7	91.0	91.6	91.6	91.6	91.6
≥ 800	66.5	76.6	79.4	81.8	84.6	86.7	89.3	90.4	90.5	91.9	92.2	92.6	93.2	93.2	93.2	93.2
≥ 700	66.6	76.9	79.9	82.4	85.3	87.4	90.3	91.4	91.5	93.0	93.3	93.7	94.3	94.3	94.3	94.3
≥ 600	66.6	77.2	80.2	82.9	85.9	88.0	91.1	92.2	92.4	94.1	94.5	94.9	95.5	95.5	95.5	95.5
≥ 500	66.6	77.4	80.5	83.1	86.5	89.0	92.5	93.6	93.7	95.8	96.2	96.6	97.5	97.5	97.5	97.5
≥ 400	66.6	77.4	80.5	83.1	86.8	89.4	93.1	94.3	94.5	96.6	97.1	97.5	98.4	98.4	98.4	98.4
≥ 300	66.6	77.4	80.5	83.1	86.8	89.4	93.3	94.8	95.0	97.1	97.6	97.9	98.9	98.9	98.9	98.9
≥ 200	66.6	77.4	80.5	83.1	86.8	89.4	93.3	94.9	95.1	97.5	98.1	98.4	99.6	99.8	99.9	99.9
≥ 100	66.6	77.4	80.5	83.1	86.8	89.4	93.3	94.9	95.1	97.5	98.1	98.4	99.6	99.8	99.9	100.0
≥ 0	66.6	77.4	80.5	83.1	86.8	89.4	93.3	94.9	95.1	97.5	98.1	98.4	99.6	99.8	99.9	100.0

TOTAL NUMBER OF OBSERVATIONS 828

USAF ETAC FORM JUL 64 0-14-3 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1500-1700 (HOUR LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥⅛	≥0
NO CEILING	43.4	45.2	45.2	45.2	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3
≥ 20000	50.2	52.9	52.9	53.0	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1
< 20000	50.2	53.2	53.2	53.3	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5
≥ 18000	50.7	53.7	53.7	53.8	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0
< 18000	51.3	54.3	54.3	54.4	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6
≥ 16000	52.0	55.1	55.1	55.2	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
< 14000	53.0	56.2	56.3	56.4	56.5	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8
≥ 12000	54.7	58.1	58.3	58.5	58.6	59.0	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1
< 10000	55.5	59.1	59.3	59.4	59.6	59.9	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2
≥ 9000	56.2	59.7	59.9	60.0	60.2	60.5	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8
< 8000	56.6	60.7	61.1	61.4	61.5	61.9	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1
≥ 7000	58.3	62.5	63.0	63.3	63.5	63.8	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
< 6000	59.1	63.3	63.8	64.2	64.3	64.7	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9
≥ 5000	59.7	64.1	64.6	65.0	65.2	65.5	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8
< 4500	60.8	65.3	65.8	66.3	66.4	66.7	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
≥ 4000	63.1	67.8	68.5	69.1	69.2	69.5	69.8	69.8	69.8	69.9	69.9	69.9	69.9	69.9	69.9	69.9
< 3500	65.9	72.1	73.2	73.8	74.4	75.0	75.4	75.4	75.4	75.6	75.6	75.6	75.8	75.8	75.8	75.8
≥ 3000	68.1	75.8	76.6	77.6	78.6	79.8	80.3	80.3	80.8	81.0	81.0	81.2	81.2	81.2	81.2	81.2
< 2500	68.9	77.0	78.4	79.4	80.6	82.0	82.6	82.6	82.7	83.4	83.6	83.6	83.8	83.8	83.8	83.8
≥ 2000	69.3	78.1	79.5	80.5	82.0	83.4	88.3	88.7	88.8	85.6	85.7	86.1	86.4	86.4	86.4	86.4
< 1800	69.7	79.0	80.6	81.7	83.3	84.9	85.9	86.2	86.4	87.3	87.5	87.8	88.1	88.1	88.1	88.1
≥ 1500	69.9	80.4	82.3	84.0	85.9	87.5	88.4	88.8	88.9	90.4	90.5	90.9	91.5	91.6	91.7	91.7
< 1200	69.9	80.8	82.7	84.9	87.0	88.6	89.6	90.0	90.1	91.7	92.2	92.6	93.2	93.3	93.4	93.4
≥ 1000	70.3	81.2	83.2	85.4	87.6	89.4	90.7	91.1	91.2	92.9	93.5	93.9	94.5	94.6	94.8	94.8
< 900	70.3	81.7	83.7	85.9	88.4	90.4	91.8	92.2	92.3	94.0	94.8	95.1	95.7	95.9	96.0	96.0
≥ 800	70.4	81.9	83.8	86.2	89.3	91.2	92.7	93.1	93.3	95.2	96.1	96.5	97.1	97.2	97.3	97.3
< 700	70.4	82.0	83.9	86.4	89.4	91.5	92.9	93.7	93.8	95.7	96.7	97.1	97.7	97.8	97.9	97.9
≥ 600	70.4	82.0	83.9	86.4	89.5	91.7	93.3	94.0	94.2	96.3	97.6	97.9	98.7	98.8	98.9	98.9
< 500	70.4	82.0	83.9	86.4	89.5	91.7	93.3	94.3	94.4	96.6	97.9	98.3	99.0	99.1	99.3	99.3
≥ 400	70.4	82.0	83.9	86.4	89.5	91.7	93.3	94.3	94.4	96.7	98.3	98.7	99.5	99.6	99.9	99.9
< 300	70.4	82.0	83.9	86.4	89.5	91.7	93.3	94.3	94.4	96.7	98.3	98.7	99.5	99.6	99.9	100.0
≥ 200	70.4	82.0	83.9	86.4	89.5	91.7	93.3	94.3	94.4	96.7	98.3	98.7	99.5	99.6	99.9	100.0
< 100	70.4	82.0	83.9	86.4	89.5	91.7	93.3	94.3	94.4	96.7	98.3	98.7	99.5	99.6	99.9	100.0
≥ 0	70.4	82.0	83.9	86.4	89.5	91.7	93.3	94.3	94.4	96.7	98.3	98.7	99.5	99.6	99.9	100.0

TOTAL NUMBER OF OBSERVATIONS 821

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1800-2000 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	49.1	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6
≥ 20000	49.2	51.0	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2
≥ 18000	49.5	51.4	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5
≥ 16000	49.5	51.4	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5
≥ 14000	49.7	51.8	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9	51.9
≥ 12000	50.8	53.1	53.2	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3
≥ 10000	53.0	55.8	56.0	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3
≥ 9000	54.7	57.6	57.8	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1
≥ 8000	56.4	59.3	59.5	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8
≥ 7000	58.4	61.5	62.0	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5
≥ 6000	59.8	63.3	63.8	64.4	64.4	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5
≥ 5000	60.5	64.3	64.8	65.4	65.5	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6
≥ 4500	61.1	64.9	65.4	66.1	66.2	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3
≥ 4000	61.5	65.5	66.0	67.2	67.4	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6
≥ 3500	63.3	67.8	68.5	69.7	70.0	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2
≥ 3000	64.4	69.1	69.9	71.2	71.4	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7
≥ 2500	66.6	72.5	73.5	74.8	75.3	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7
≥ 2000	69.0	75.6	76.8	78.4	79.2	79.7	80.0	80.1	80.1	80.1	80.1	80.1	80.1	80.1	80.1	80.1
≥ 1800	69.9	77.2	78.5	80.2	81.2	81.7	82.0	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3
≥ 1500	70.0	77.5	78.9	81.0	82.3	83.0	83.6	84.2	84.2	84.2	84.3	84.4	84.4	84.4	84.4	84.4
≥ 1200	70.5	78.6	80.1	82.5	83.8	84.6	85.4	86.1	86.1	86.4	86.5	86.6	86.6	86.6	86.6	86.6
≥ 1000	70.6	79.1	80.9	83.5	84.9	85.9	86.5	87.7	87.7	88.3	88.6	88.7	88.8	88.8	88.9	88.9
≥ 900	71.2	79.8	81.8	84.4	86.0	87.0	87.7	88.9	88.9	89.7	89.9	90.0	90.2	90.2	90.3	90.3
≥ 800	71.7	80.4	82.4	85.3	86.9	88.0	88.7	90.2	90.2	90.9	91.1	91.3	91.4	91.4	91.5	91.5
≥ 700	72.2	81.3	83.2	86.5	88.3	89.6	90.3	91.9	91.9	92.6	93.0	93.1	93.4	93.4	93.6	93.6
≥ 600	72.5	81.8	83.7	87.1	88.9	90.2	91.3	93.0	93.0	93.8	94.2	94.3	94.7	94.7	94.8	94.8
≥ 500	72.7	82.0	84.1	87.8	89.8	91.0	92.3	94.0	94.0	94.9	95.4	95.5	96.0	96.0	96.1	96.1
≥ 400	72.7	82.5	84.8	88.7	90.6	92.1	93.4	95.6	95.6	96.6	97.2	97.3	97.8	97.8	97.9	97.9
≥ 300	72.7	82.5	84.8	88.9	90.9	92.3	93.9	96.1	96.1	97.3	98.1	98.2	98.7	98.7	98.8	98.8
≥ 200	72.7	82.5	84.8	89.1	91.0	92.5	94.0	96.2	96.2	98.1	98.8	98.9	99.5	99.5	99.6	99.6
≥ 100	72.7	82.5	84.8	89.1	91.0	92.5	94.0	96.2	96.2	98.2	98.9	99.0	99.6	99.6	99.8	100.0
≥ 0	72.7	82.5	84.8	89.1	91.0	92.5	94.0	96.2	96.2	98.2	98.9	99.0	99.6	99.6	99.8	100.0

TOTAL NUMBER OF OBSERVATIONS 823

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | FEB MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

2100-2300 HOUR (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥⅛	≥0
NO CEILING	46.1	47.9	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
≥ 20000	48.9	51.1	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6
≥ 18000	49.1	51.3	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8
≥ 16000	49.1	51.3	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8
≥ 14000	49.4	51.6	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1
≥ 12000	50.1	52.3	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8
≥ 10000	52.6	55.5	56.0	56.0	56.0	56.1	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 9000	58.4	57.3	57.9	57.9	57.9	58.1	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2
≥ 8000	55.1	58.1	58.8	58.9	58.9	59.0	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2
≥ 7000	57.1	60.5	61.2	61.8	61.8	61.5	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6
≥ 6000	57.9	61.4	62.2	62.5	62.5	62.6	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7
≥ 5000	59.0	62.6	63.8	63.8	63.8	63.9	64.1	64.2	64.2	64.3	64.3	64.3	64.3	64.3	64.3	64.3
≥ 4500	59.9	63.6	64.4	64.8	64.9	65.0	65.2	65.3	65.3	65.4	65.4	65.4	65.4	65.4	65.4	65.4
≥ 4000	60.8	64.3	65.3	65.6	65.8	65.9	66.0	66.1	66.1	66.3	66.3	66.3	66.3	66.3	66.3	66.3
≥ 3500	61.1	65.6	66.9	67.2	67.6	67.7	67.8	68.0	68.0	68.1	68.1	68.1	68.1	68.1	68.1	68.1
≥ 3000	62.5	67.0	68.2	68.6	68.9	69.1	69.2	69.3	69.3	69.8	69.8	69.8	69.8	69.8	69.8	69.8
≥ 2500	64.1	69.6	71.0	71.4	71.8	71.9	72.0	72.1	72.1	72.2	72.2	72.2	72.2	72.2	72.2	72.2
≥ 2000	67.0	73.2	75.2	75.6	76.5	76.9	77.5	77.6	77.6	77.8	77.8	77.8	77.8	77.8	77.8	77.8
≥ 1800	68.6	75.3	77.3	77.8	78.7	79.3	80.1	80.2	80.2	80.3	80.3	80.3	80.3	80.3	80.3	80.3
≥ 1500	70.2	77.5	79.7	80.4	81.4	82.2	83.1	83.2	83.2	83.6	83.6	83.6	83.6	83.6	83.6	83.6
≥ 1200	70.6	78.9	81.2	82.4	83.4	84.5	85.7	86.1	86.1	86.4	86.4	86.4	86.4	86.4	86.4	86.4
≥ 1000	71.3	80.2	82.5	83.7	84.8	85.9	87.1	87.2	87.2	88.3	88.3	88.3	88.3	88.3	88.3	88.3
≥ 900	71.6	80.8	83.4	84.6	85.7	86.8	88.4	89.0	89.0	89.5	89.5	89.5	89.5	89.5	89.5	89.5
≥ 800	71.9	81.3	83.9	85.2	86.4	87.5	89.6	90.5	90.5	91.0	91.0	91.0	91.0	91.0	91.0	91.0
≥ 700	72.0	81.9	84.6	86.1	87.4	88.5	90.6	91.8	91.8	92.3	92.3	92.3	92.3	92.3	92.3	92.3
≥ 600	72.6	82.6	85.5	86.9	88.2	90.0	92.1	93.4	93.4	93.3	93.3	93.3	93.3	93.3	93.3	93.3
≥ 500	72.9	83.4	86.3	88.3	90.5	91.7	94.0	95.4	95.4	96.2	96.2	96.2	96.3	96.3	96.3	96.3
≥ 400	73.0	83.7	86.8	89.0	91.3	92.5	95.1	96.6	96.6	97.7	97.7	97.7	97.8	97.8	97.8	97.8
≥ 300	73.1	83.9	86.9	89.4	91.9	93.2	95.7	97.2	97.2	98.3	98.4	98.4	98.5	98.5	98.5	98.5
≥ 200	73.1	83.9	86.9	89.4	91.9	93.3	95.8	97.3	97.3	98.8	98.7	98.7	98.1	98.1	98.3	98.3
≥ 100	73.1	83.9	86.9	89.4	91.9	93.3	95.8	97.3	97.3	98.7	98.9	98.9	99.4	99.4	99.5	100.0
0	73.1	83.9	86.9	89.4	91.9	93.3	95.8	97.3	97.3	98.7	98.9	98.9	99.4	99.4	99.5	100.0

TOTAL NUMBER OF OBSERVATIONS 818

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	43.1	45.2	45.4	45.5	45.6	45.6	45.7	45.7	45.7	45.8	45.8	45.8	45.8	45.8	45.8	45.8
≥ 20000	47.2	49.8	50.1	50.2	50.8	50.8	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.6	50.6
≥ 18000	47.4	50.1	50.4	50.5	50.7	50.7	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	51.0	51.0
≥ 16000	47.4	50.2	50.5	50.6	50.8	50.8	50.9	50.9	50.9	51.0	51.0	51.0	51.0	51.0	51.0	51.0
≥ 14000	47.8	50.5	50.8	50.9	51.1	51.2	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.4	51.4
≥ 12000	48.6	51.4	51.7	51.8	52.0	52.1	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.3	52.3
≥ 10000	50.2	53.3	53.7	53.8	54.1	54.2	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.5	54.5
≥ 9000	51.3	54.6	55.0	55.2	55.5	55.6	55.8	55.8	55.8	55.9	55.9	55.9	55.9	55.9	55.9	55.9
≥ 8000	52.1	55.4	55.9	56.1	56.4	56.6	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.9	56.9
≥ 7000	53.9	57.4	58.0	58.2	58.6	58.7	59.0	59.0	59.0	59.1	59.1	59.1	59.1	59.1	59.1	59.1
≥ 6000	54.9	58.7	59.3	59.6	60.1	60.2	60.5	60.5	60.5	60.6	60.6	60.6	60.6	60.6	60.6	60.6
≥ 5000	55.7	59.7	60.4	60.8	61.3	61.4	61.7	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.9	61.9
≥ 4500	56.1	60.3	61.0	61.4	61.9	62.1	62.4	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.6	62.6
≥ 4000	56.6	61.1	61.9	62.4	62.9	63.1	63.5	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.7	63.7
≥ 3500	57.3	62.1	63.0	63.5	64.1	64.4	64.8	64.8	64.8	64.9	64.9	64.9	64.9	64.9	64.9	64.9
≥ 3000	58.5	63.6	64.5	65.2	65.8	66.0	66.5	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.7	66.7
≥ 2500	60.7	66.9	68.0	68.8	69.7	70.0	70.6	70.7	70.7	70.8	70.8	70.8	70.9	70.9	70.9	70.9
≥ 2000	62.7	69.9	71.3	72.3	73.5	74.1	74.8	75.1	75.1	75.2	75.3	75.3	75.3	75.3	75.3	75.3
≥ 1800	63.8	71.4	73.0	74.1	75.3	76.0	76.9	77.1	77.2	77.4	77.5	77.5	77.5	77.5	77.6	77.6
≥ 1500	65.0	73.3	75.2	76.4	78.1	78.9	80.1	80.5	80.6	80.9	81.0	81.1	81.1	81.1	81.2	81.2
≥ 1200	65.5	74.6	76.6	78.2	79.9	80.9	82.1	82.7	82.7	83.2	83.3	83.4	83.5	83.5	83.5	83.5
≥ 1000	65.9	75.6	77.8	79.6	81.5	82.7	84.1	84.9	85.0	85.7	85.8	85.9	86.1	86.1	86.2	86.2
≥ 900	66.3	76.2	78.6	80.5	82.5	83.7	85.2	86.2	86.3	87.1	87.3	87.4	87.6	87.6	87.7	87.7
≥ 800	66.7	76.9	79.3	81.5	83.6	84.9	86.6	87.7	87.8	88.8	89.0	89.1	89.3	89.3	89.4	89.4
≥ 700	66.9	77.5	80.1	82.3	84.6	86.0	87.9	89.1	89.2	90.3	90.6	90.7	91.0	91.0	91.1	91.1
≥ 600	67.2	78.0	80.7	83.0	85.6	87.0	89.0	90.4	90.4	91.8	92.2	92.3	92.6	92.6	92.6	92.6
≥ 500	67.3	78.4	81.3	83.9	86.5	88.1	90.4	91.9	92.0	93.5	94.0	94.1	94.4	94.5	94.5	94.6
≥ 400	67.4	78.7	81.6	84.4	87.2	89.0	91.5	93.1	93.2	94.9	95.5	95.6	96.0	96.1	96.2	96.2
≥ 300	67.4	78.8	81.7	84.6	87.6	89.4	92.2	94.0	94.2	96.0	96.7	96.8	97.4	97.4	97.6	97.7
≥ 200	67.4	78.8	81.7	84.7	87.7	89.6	92.6	94.5	94.8	97.0	97.8	97.9	98.8	98.9	99.1	99.3
≥ 100	67.4	78.8	81.7	84.7	87.7	89.6	92.6	94.6	94.8	97.1	97.9	98.1	99.1	99.3	99.5	100.0
0	67.4	78.8	81.7	84.7	87.7	89.6	92.6	94.6	94.8	97.1	97.9	98.1	99.1	99.3	99.5	100.0

TOTAL NUMBER OF OBSERVATIONS 6583

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAR MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0000-0200 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥¼	≥0
NO CEILING	44.7	46.0	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.2
≥ 20000	47.3	48.5	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.7
≥ 18000	47.5	48.7	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.9
≥ 16000	47.5	48.7	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.9
≥ 14000	48.0	49.2	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.5
≥ 12000	49.2	50.4	50.5	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.8
≥ 10000	51.5	52.8	53.0	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.2
≥ 9000	52.4	53.8	53.9	54.0	54.0	54.0	54.0	54.0	54.0	54.2	54.2	54.2	54.3	54.3	54.3	54.4
≥ 8000	53.2	54.6	54.7	54.8	54.8	54.8	54.8	54.8	54.8	54.9	54.9	54.9	55.0	55.0	55.0	55.1
≥ 7000	56.3	57.9	58.0	58.2	58.2	58.2	58.2	58.2	58.2	58.3	58.3	58.3	58.4	58.4	58.4	58.5
≥ 6000	58.1	59.7	59.8	60.1	60.1	60.1	60.2	60.2	60.2	60.3	60.3	60.3	60.4	60.4	60.4	60.5
≥ 5000	59.1	61.4	61.5	61.7	61.8	61.8	61.9	61.9	61.9	62.0	62.0	62.0	62.1	62.1	62.1	62.3
≥ 4500	59.3	61.7	61.8	62.0	62.1	62.1	62.3	62.3	62.3	62.4	62.4	62.4	62.5	62.5	62.5	62.6
≥ 4000	60.7	63.3	63.5	63.7	63.8	63.8	64.1	64.1	64.1	64.2	64.2	64.2	64.3	64.3	64.3	64.6
≥ 3500	62.6	65.5	65.6	66.0	66.2	66.4	66.5	66.5	66.5	66.6	66.6	66.6	66.8	66.8	66.8	67.0
≥ 3000	63.6	67.0	67.1	67.5	67.6	67.8	67.9	67.9	67.9	68.1	68.1	68.1	68.3	68.3	68.3	68.5
≥ 2500	65.0	68.7	69.0	69.4	69.6	69.8	69.9	69.9	69.9	70.0	70.0	70.0	70.2	70.2	70.2	70.4
≥ 2000	65.6	70.1	70.5	70.9	71.1	71.3	71.4	71.4	71.4	71.7	71.7	71.7	71.9	71.9	71.9	72.0
≥ 1800	66.4	71.3	71.8	72.2	72.4	72.6	72.8	72.9	72.9	73.2	73.2	73.2	73.4	73.4	73.4	73.5
≥ 1500	68.3	74.1	74.7	75.3	75.5	75.7	75.9	76.3	76.3	76.6	76.6	76.6	76.8	76.8	76.8	76.9
≥ 1200	69.6	75.7	76.4	76.9	77.4	77.6	77.8	78.3	78.3	78.7	78.7	78.7	78.9	78.9	78.9	79.0
≥ 1000	70.2	76.8	77.6	78.1	78.5	79.2	79.4	80.0	80.0	80.7	80.7	80.7	81.0	81.0	81.0	81.1
≥ 900	70.5	77.1	78.0	78.6	79.4	79.9	80.3	81.2	81.2	81.5	81.5	81.5	81.8	81.8	81.8	81.9
≥ 800	70.6	77.5	78.5	79.3	80.0	80.5	81.0	81.8	81.9	82.3	82.6	82.6	83.0	83.0	83.2	83.3
≥ 700	70.7	77.9	78.9	79.5	80.4	81.1	81.6	82.6	82.7	83.3	83.6	83.6	84.0	84.0	84.1	84.2
≥ 600	70.1	78.0	79.1	80.2	81.6	82.3	83.3	84.5	84.6	85.1	85.5	85.5	85.9	85.9	86.0	86.1
≥ 500	70.1	78.3	79.6	81.3	83.2	84.1	85.3	87.1	87.2	88.2	88.7	88.7	89.2	89.2	89.3	89.4
≥ 400	70.1	78.4	79.9	81.7	83.7	84.8	86.8	88.7	88.8	90.0	90.7	90.7	91.4	91.4	91.5	91.6
≥ 300	70.1	78.4	79.9	81.9	84.2	85.3	88.0	90.2	90.3	91.9	92.6	92.6	93.5	93.5	93.9	94.0
≥ 200	70.1	78.6	80.0	82.2	84.4	85.5	89.1	91.4	91.7	93.1	93.9	93.9	94.2	94.2	97.0	97.5
≥ 100	70.1	78.6	80.0	82.2	84.6	85.9	89.2	91.9	92.0	94.5	95.4	95.4	96.9	96.9	98.1	99.8
0	70.1	78.6	80.0	82.2	84.6	85.9	89.2	91.9	92.0	94.5	95.4	95.4	96.9	96.9	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 914

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0300-0500 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	42.6	43.5	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.8	43.8
≥ 20000	46.0	47.0	47.2	47.2	47.2	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.5	47.5
≥ 18000	46.2	47.2	47.4	47.4	47.4	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.7	47.7
≥ 16000	46.2	47.2	47.4	47.4	47.4	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.7	47.7
≥ 14000	46.2	47.2	47.4	47.4	47.4	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.7	47.7
≥ 12000	47.3	48.3	48.5	48.5	48.5	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.8	48.8
≥ 10000	50.9	51.9	52.1	52.3	52.3	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.6	52.6
≥ 9000	51.9	53.0	53.2	53.4	53.4	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.7	53.7
≥ 8000	52.7	53.8	54.0	54.1	54.1	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.5	54.5
≥ 7000	55.3	56.5	56.8	56.9	56.9	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.3	57.3
≥ 6000	56.2	57.6	57.9	58.0	58.0	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.4	58.4
≥ 5000	57.1	58.6	58.9	59.0	59.0	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.4	59.4
≥ 4500	57.3	59.0	59.2	59.3	59.3	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.7	59.7
≥ 4000	58.9	60.8	61.2	61.3	61.3	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.7	61.7
≥ 3500	59.8	61.9	62.4	62.6	62.6	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	63.0	63.0
≥ 3000	61.5	63.9	64.7	64.9	64.9	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.3	65.3
≥ 2500	62.9	66.2	67.1	67.3	67.3	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.8	67.8
≥ 2000	63.8	67.8	68.9	69.3	69.3	69.5	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.9	69.9
≥ 1800	64.2	68.4	69.6	70.2	70.2	70.4	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.7	70.7
≥ 1500	65.5	70.2	71.4	72.3	72.3	72.5	72.8	72.9	72.9	72.9	72.9	72.9	72.9	72.9	73.2	73.2
≥ 1200	66.9	71.9	73.4	74.3	74.3	74.7	75.1	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.8	75.8
≥ 1000	68.0	73.5	75.0	76.2	76.2	76.9	77.3	77.7	77.7	77.9	77.9	77.9	77.9	77.9	78.2	78.2
≥ 900	68.5	74.7	76.3	77.9	77.9	78.5	79.0	79.3	79.3	79.5	79.5	79.5	79.5	79.5	79.9	79.9
≥ 800	68.8	75.2	77.0	79.0	79.1	79.9	80.6	81.1	81.1	81.5	82.2	82.2	82.2	82.2	82.5	82.5
≥ 700	68.9	75.9	77.7	79.9	80.3	81.2	82.1	82.5	82.5	82.9	83.6	83.6	83.6	83.6	83.9	83.9
≥ 600	69.1	76.5	78.2	80.6	81.2	82.2	83.1	83.5	83.5	84.5	85.1	85.1	85.1	85.1	85.5	85.5
≥ 500	69.1	76.9	78.7	81.3	82.0	82.9	84.0	85.4	85.4	86.4	87.3	87.3	87.3	87.3	87.7	87.7
≥ 400	69.1	77.1	78.9	81.6	82.3	83.3	85.1	86.6	86.6	87.8	88.9	88.9	88.9	88.9	89.4	89.4
≥ 300	69.1	77.1	78.9	81.6	82.4	83.5	86.1	88.3	88.3	89.9	91.5	91.5	91.5	91.5	92.2	92.3
≥ 200	69.1	77.1	78.9	82.0	82.7	83.8	87.2	89.7	89.8	91.7	93.5	93.6	93.8	94.4	95.6	95.7
≥ 100	69.1	77.1	78.9	82.0	82.9	84.2	87.6	90.2	90.3	92.5	94.6	94.7	95.8	96.1	98.1	99.4
≥ 0	69.2	77.2	79.0	82.1	83.1	84.3	87.7	90.3	90.4	92.6	94.7	94.8	95.9	96.3	98.2	100.0

TOTAL NUMBER OF OBSERVATIONS 909

USAF ETAC FORM AUG 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

0600-0800 (HOURS LST)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	39.5	41.7	41.8	41.9	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.2	42.3	42.5
≥ 20000	43.3	45.7	46.0	46.3	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.6	46.7	46.8
≥ 18000	43.4	45.8	46.1	46.4	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.7	46.8	46.9
≥ 16000	43.4	45.8	46.1	46.4	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.7	46.8	46.9
≥ 14000	43.4	46.0	46.2	46.5	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.8	46.9	47.0
≥ 12000	43.6	47.2	47.4	47.7	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	48.0	48.1	48.2
≥ 10000	46.6	49.3	49.6	49.9	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.2	50.3	50.4
≥ 9000	48.7	51.4	51.6	52.1	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.2	52.4	52.5	52.6
≥ 8000	49.8	52.5	52.7	53.2	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.5	53.6	53.7
≥ 7000	51.4	54.4	54.7	55.1	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.4	55.5	55.6
≥ 6000	52.4	55.5	55.8	56.2	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.8	56.9	57.0
≥ 5000	53.3	56.3	56.7	57.2	57.5	57.5	57.5	57.5	57.5	57.5	57.6	57.8	57.8	57.8	57.9	58.0
≥ 4500	54.0	57.1	57.4	58.0	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.5	58.6	58.8
≥ 4000	55.5	59.3	59.6	60.4	60.7	60.7	60.9	60.9	60.9	60.9	60.9	60.9	60.9	61.2	61.3	61.4
≥ 3500	56.2	60.2	60.5	61.3	61.8	61.9	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.5	62.6	62.7
≥ 3000	56.9	61.1	61.4	62.1	62.7	62.8	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.7	63.8	63.9
≥ 2500	57.8	62.6	62.9	63.8	64.4	64.6	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.5	65.6	65.8
≥ 2000	58.6	63.8	64.2	65.1	65.8	65.9	66.8	66.8	66.8	67.0	67.0	67.0	67.0	67.2	67.3	67.4
≥ 1800	59.3	65.0	65.4	66.3	67.1	67.4	68.4	68.4	68.4	68.6	68.6	68.6	68.6	68.8	68.9	69.0
≥ 1500	61.3	67.1	67.6	68.7	69.9	70.2	71.8	71.8	71.8	71.8	71.8	71.8	71.8	72.0	72.1	72.2
≥ 1200	62.8	68.8	69.5	70.8	72.1	72.5	74.0	74.2	74.2	74.4	74.4	74.4	74.5	74.7	74.8	74.9
≥ 1000	63.0	69.0	69.7	71.0	72.3	72.8	74.8	74.8	74.8	75.2	75.2	75.2	75.7	75.9	76.0	76.1
≥ 900	63.3	69.8	70.2	71.6	73.0	73.4	75.1	75.5	75.5	75.9	75.9	75.9	76.7	76.9	77.0	77.1
≥ 800	63.6	70.0	71.0	72.4	73.9	74.4	76.5	77.0	77.0	77.6	77.6	77.6	78.4	78.7	78.8	78.9
≥ 700	63.7	70.9	71.9	73.4	74.9	76.0	77.7	78.2	78.3	78.9	79.0	79.0	80.0	80.2	80.3	80.4
≥ 600	63.8	71.3	72.4	74.1	75.6	76.9	78.8	79.4	79.8	80.7	80.9	80.9	81.8	82.1	82.2	82.3
≥ 500	63.9	71.6	72.8	74.5	76.7	77.8	80.4	81.5	81.7	83.2	83.6	83.6	85.0	85.2	85.3	85.4
≥ 400	64.0	71.9	73.3	75.3	77.6	78.8	82.1	83.7	84.0	85.8	86.2	86.2	87.7	88.0	88.1	88.2
≥ 300	64.1	72.1	73.5	75.6	77.9	79.3	83.0	85.2	85.6	87.9	88.4	88.4	90.6	90.8	91.2	91.4
≥ 200	64.1	72.2	73.7	75.8	78.1	79.8	83.7	86.2	86.5	89.2	90.0	90.0	93.2	93.7	94.3	95.1
≥ 100	64.1	72.2	73.7	75.9	78.2	80.0	83.8	86.3	86.7	89.4	90.6	90.6	93.7	94.2	96.1	98.9
≥ 0	64.1	72.2	73.7	75.9	78.2	80.0	83.8	86.3	86.7	89.4	90.6	90.6	93.7	94.2	96.2	100.0

TOTAL NUMBER OF OBSERVATIONS 914

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0900-1100 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	39.6	42.2	42.2	42.3	42.3	42.4	42.4	42.4	42.4	42.5	42.5	42.5	42.5	42.5	42.5	42.5
≥ 20000	45.1	48.5	48.7	49.2	49.2	49.3	49.3	49.3	49.3	49.4	49.4	49.4	49.4	49.4	49.4	49.4
≥ 18000	45.1	48.5	48.7	49.2	49.2	49.3	49.3	49.3	49.3	49.4	49.4	49.4	49.4	49.4	49.4	49.4
≥ 16000	45.1	48.5	48.7	49.2	49.2	49.3	49.3	49.3	49.3	49.4	49.4	49.4	49.4	49.4	49.4	49.4
≥ 14000	45.1	48.5	48.7	49.2	49.2	49.3	49.3	49.3	49.3	49.4	49.4	49.4	49.4	49.4	49.4	49.4
≥ 12000	45.7	49.2	49.4	49.8	49.8	49.9	49.9	49.9	49.9	50.1	50.1	50.1	50.1	50.1	50.1	50.1
≥ 10000	46.9	50.6	50.9	51.6	51.6	51.7	51.7	51.7	51.7	51.8	51.8	51.8	51.8	51.8	51.8	51.8
≥ 9000	48.1	51.7	52.1	52.7	52.7	52.9	52.9	52.9	52.9	53.3	53.3	53.3	53.3	53.3	53.3	53.3
≥ 8000	48.9	52.7	53.1	53.7	53.7	53.9	54.1	54.1	54.1	54.4	54.4	54.4	54.4	54.4	54.4	54.4
≥ 7000	50.1	54.3	54.6	55.3	55.3	55.6	55.8	55.8	55.8	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 6000	51.1	55.4	55.8	56.5	56.6	57.0	57.2	57.2	57.2	57.6	57.6	57.6	57.6	57.6	57.6	57.6
≥ 5000	52.4	56.8	57.3	58.0	58.1	58.5	58.7	58.7	58.7	59.2	59.2	59.2	59.2	59.2	59.2	59.2
≥ 4500	52.4	56.8	57.4	58.1	58.2	58.6	58.8	58.8	58.8	59.3	59.3	59.3	59.3	59.3	59.3	59.3
≥ 4000	52.8	57.6	58.2	59.0	59.1	59.5	59.7	59.7	59.7	60.2	60.2	60.2	60.2	60.2	60.2	60.2
≥ 3500	53.6	59.1	59.7	60.5	60.6	61.1	61.5	61.5	61.5	62.0	62.0	62.0	62.0	62.0	62.0	62.0
≥ 3000	54.7	60.5	61.2	62.1	62.3	62.7	63.2	63.2	63.2	63.7	63.7	63.7	63.7	63.7	63.7	63.7
≥ 2500	55.4	61.6	62.5	63.6	63.8	64.3	64.8	64.8	64.8	65.4	65.4	65.4	65.4	65.4	65.4	65.4
≥ 2000	57.4	64.4	65.5	67.1	67.3	67.9	68.4	68.6	68.6	69.3	69.3	69.3	69.3	69.3	69.3	69.3
≥ 1800	58.1	65.7	66.9	68.5	68.9	69.4	70.1	70.3	70.3	71.2	71.2	71.2	71.2	71.2	71.2	71.2
≥ 1500	59.5	68.2	69.5	71.6	72.1	72.7	73.6	73.9	73.9	75.0	75.0	75.0	75.0	75.0	75.0	75.0
≥ 1200	60.4	70.0	71.4	73.9	74.4	75.3	76.2	76.5	76.5	77.6	77.8	77.8	77.8	77.8	77.8	77.8
≥ 1000	60.5	71.1	73.0	75.4	76.1	77.3	78.4	78.9	78.9	80.2	80.4	80.4	80.4	80.4	80.4	80.4
≥ 900	60.7	71.6	73.6	76.2	77.0	78.3	79.4	80.0	80.0	81.4	81.6	81.6	81.6	81.6	81.6	81.6
≥ 800	60.8	72.1	74.3	77.1	77.9	79.4	80.9	81.5	81.5	83.2	83.4	83.4	83.4	83.4	83.4	83.4
≥ 700	61.0	72.5	74.9	77.8	78.5	80.2	81.9	82.5	82.5	84.3	84.6	84.6	85.0	85.0	85.2	85.3
≥ 600	61.0	72.5	75.1	78.2	79.1	80.8	82.6	83.3	83.3	85.2	85.5	85.5	86.0	86.0	86.2	86.3
≥ 500	61.0	72.6	75.3	78.8	79.9	81.8	84.1	85.1	85.1	87.3	87.9	87.9	88.8	88.9	89.1	89.2
≥ 400	61.0	72.6	75.3	79.1	80.4	82.2	85.0	86.0	86.0	88.4	89.2	89.2	90.4	90.5	90.8	90.9
≥ 300	61.0	72.6	75.3	79.2	80.6	82.6	85.9	87.1	87.3	90.4	91.4	91.4	92.9	93.1	93.5	93.7
≥ 200	61.0	72.6	75.3	79.2	80.6	82.8	86.1	87.4	87.8	91.2	92.5	92.5	94.3	94.9	95.4	96.4
≥ 100	61.0	72.6	75.3	79.2	80.6	82.8	86.1	87.4	87.8	91.2	92.7	92.7	94.8	95.6	97.3	99.2
≥ 0	61.0	72.6	75.3	79.2	80.6	82.8	86.1	87.4	87.8	91.2	92.7	92.7	94.8	95.6	97.3	100.0

TOTAL NUMBER OF OBSERVATIONS 899

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1200-1800 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	43.0	44.6	44.6	44.8	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
≥ 20000	48.7	50.5	50.7	51.2	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3
≥ 18000	48.7	50.5	50.7	51.2	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3
≥ 16000	48.9	50.8	50.9	51.4	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5
≥ 14000	49.0	50.9	51.0	51.5	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6
≥ 12000	49.6	51.6	51.8	52.3	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4
≥ 10000	51.6	53.8	54.1	54.7	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8
≥ 9000	52.4	54.7	54.9	55.6	55.7	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
≥ 8000	53.1	55.6	55.8	56.7	56.8	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9
≥ 7000	53.8	56.7	57.1	58.0	58.1	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4
≥ 6000	53.9	57.1	57.7	58.6	58.7	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0
≥ 5000	58.5	57.7	58.2	59.1	59.2	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5
≥ 4500	54.7	58.0	58.6	59.4	59.5	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
≥ 4000	56.4	59.8	60.6	61.5	61.7	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1
≥ 3500	58.2	61.7	62.6	63.6	63.9	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
≥ 3000	60.0	63.9	64.8	65.8	66.1	66.4	66.6	66.6	66.6	66.6	66.7	66.7	66.7	66.7	66.7	66.7
≥ 2500	61.7	66.4	67.3	68.4	69.1	69.4	69.5	69.7	69.7	69.7	69.8	69.8	69.8	69.8	69.8	69.8
≥ 2000	63.2	69.0	70.0	71.7	72.5	73.2	73.6	73.8	73.9	73.9	74.0	74.0	74.0	74.0	74.0	74.0
≥ 1800	64.1	70.9	71.9	73.9	74.8	75.5	76.0	76.4	76.4	76.4	76.5	76.5	76.5	76.5	76.5	76.5
≥ 1500	65.4	72.7	73.8	76.3	77.8	78.2	78.6	79.3	79.3	79.5	79.6	79.6	79.6	79.6	79.6	79.6
≥ 1200	65.9	74.1	75.2	78.1	79.3	80.2	80.7	81.6	81.6	81.8	82.1	82.1	82.1	82.1	82.1	82.1
≥ 1000	66.1	75.8	77.0	80.0	81.5	82.3	83.1	84.0	84.0	84.5	84.9	84.9	84.9	84.9	84.9	84.9
≥ 900	66.2	75.9	77.5	80.7	82.5	83.3	84.4	85.5	85.5	86.2	86.5	86.5	86.7	86.7	86.7	86.7
≥ 800	66.3	76.1	77.9	81.3	83.0	84.0	85.2	86.5	86.5	87.5	87.8	87.8	88.2	88.2	88.2	88.2
≥ 700	66.3	76.3	78.2	82.0	84.1	85.1	86.3	87.6	87.7	88.8	89.3	89.5	90.0	90.0	90.0	90.0
≥ 600	66.3	76.3	78.2	82.6	84.8	85.7	87.1	88.5	88.6	90.0	90.8	91.1	92.0	92.0	92.0	92.0
≥ 500	66.3	76.3	78.2	83.0	85.2	86.3	87.7	89.3	89.4	91.3	92.3	92.7	93.5	93.6	93.6	93.6
≥ 400	66.3	76.3	78.2	83.1	85.3	86.4	88.0	89.6	89.7	92.1	93.2	93.5	94.4	94.5	94.5	94.5
≥ 300	66.3	76.3	78.2	83.1	85.4	86.8	88.5	90.2	90.4	92.9	94.0	94.3	95.3	95.5	95.6	95.8
≥ 200	66.3	76.3	78.2	83.1	85.8	86.8	88.8	90.6	90.7	93.3	94.6	95.0	96.0	96.6	97.0	97.8
≥ 100	66.3	76.3	78.2	83.1	85.4	86.8	88.8	90.6	90.7	93.3	94.6	95.0	96.9	97.1	98.1	99.3
≥ 0	66.3	76.3	78.2	83.1	85.4	86.8	88.8	90.6	90.7	93.3	94.6	95.0	96.9	97.1	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 912

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1500-1700 (HOURS L.S.T.)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	43.2	44.4	44.4	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
≥ 20000	49.7	51.6	51.6	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3
≥ 18000	50.3	52.1	52.1	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8
≥ 16000	50.3	52.1	52.1	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8
≥ 14000	50.3	52.1	52.1	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8
≥ 12000	51.0	52.9	52.9	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6
≥ 10000	52.1	54.0	54.0	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7
≥ 9000	52.6	54.6	54.6	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2
≥ 8000	52.9	55.2	55.3	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 7000	53.4	56.1	56.3	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2
≥ 6000	53.9	56.9	57.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2
≥ 5000	54.8	57.8	58.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.1
≥ 4500	55.2	58.9	59.2	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3
≥ 4000	58.4	62.8	63.0	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
≥ 3500	60.2	64.5	65.2	66.3	66.3	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4
≥ 3000	62.7	67.4	68.1	69.7	69.8	69.9	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1	70.1
≥ 2500	64.2	69.8	70.8	72.5	72.7	72.9	73.2	73.3	73.3	73.3	73.3	73.3	73.3	73.3	73.3	73.3
≥ 2000	65.7	72.7	73.6	75.7	76.3	76.6	77.1	77.5	77.5	77.6	77.6	77.6	77.6	77.6	77.6	77.6
≥ 1800	66.4	73.9	75.0	77.3	78.1	78.5	78.9	79.4	79.4	79.5	79.5	79.5	79.5	79.5	79.5	79.5
≥ 1500	66.8	74.9	76.4	79.2	80.0	80.5	80.9	81.6	81.6	81.8	81.8	81.8	81.9	81.9	81.9	81.9
≥ 1200	67.4	75.5	77.1	80.2	81.1	81.6	82.2	82.9	82.9	83.6	83.9	83.9	84.1	84.1	84.1	84.1
≥ 1000	67.6	76.2	78.1	81.4	82.5	83.1	83.8	84.5	84.5	85.3	85.8	85.8	86.1	86.1	86.2	86.2
≥ 900	67.6	76.3	78.2	81.5	82.6	83.2	83.9	84.6	84.6	85.7	86.1	86.1	86.5	86.5	86.8	86.8
≥ 800	67.7	76.5	78.4	81.7	82.8	83.6	84.3	85.1	85.1	86.7	87.1	87.1	87.5	87.5	87.8	87.8
≥ 700	67.7	76.6	78.6	82.2	83.5	84.2	85.0	86.0	86.0	87.7	88.5	88.5	89.0	89.0	89.2	89.2
≥ 600	67.8	77.0	78.9	82.9	84.5	85.3	86.1	87.2	87.2	88.9	90.1	90.2	90.7	90.7	91.0	91.0
≥ 500	67.8	77.1	79.1	83.4	85.2	86.3	87.2	88.4	88.5	90.7	92.2	92.3	92.8	92.8	93.1	93.1
≥ 400	67.8	77.1	79.1	83.5	85.6	86.9	87.8	89.0	89.2	91.7	93.3	93.4	94.3	94.3	94.5	94.7
≥ 300	67.8	77.1	79.1	83.6	85.8	87.1	88.3	89.9	90.1	92.9	94.5	94.6	95.7	95.7	95.9	96.4
≥ 200	67.8	77.1	79.1	83.6	85.8	87.1	88.3	90.0	90.2	93.2	94.8	94.9	96.8	96.8	97.4	97.9
≥ 100	67.8	77.1	79.1	83.6	85.8	87.1	88.3	90.1	90.3	93.3	94.9	95.0	96.9	97.1	98.0	99.8
0	67.8	77.1	79.1	83.6	85.8	87.1	88.3	90.1	90.3	93.3	94.9	95.0	96.9	97.1	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 907

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

~~1800-2000~~ (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	47.2	47.8	48.1	48.1	48.1	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2
≥ 20000	52.0	52.7	53.1	53.1	53.1	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 18000	52.0	52.7	53.1	53.1	53.1	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 16000	52.0	52.7	53.1	53.1	53.1	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 14000	52.4	53.1	53.5	53.5	53.5	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
≥ 12000	53.8	54.2	54.7	54.7	54.8	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9
≥ 10000	54.7	55.4	55.9	55.9	56.0	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1
≥ 9000	55.5	56.8	57.3	57.3	57.4	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5
≥ 8000	56.2	57.5	58.2	58.3	58.5	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6
≥ 7000	57.4	58.8	59.5	59.8	60.1	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2
≥ 6000	58.0	59.6	60.3	60.5	60.9	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0
≥ 5000	59.1	61.0	61.6	61.9	62.2	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3
≥ 4500	60.0	62.0	62.6	62.9	63.2	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3
≥ 4000	61.9	64.2	64.9	65.1	65.4	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6
≥ 3500	64.2	67.1	68.2	68.4	68.8	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1
≥ 3000	65.5	68.7	69.8	70.1	70.6	71.0	71.0	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1
≥ 2500	67.4	71.2	72.3	72.9	73.6	74.1	74.1	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3
≥ 2000	68.3	73.5	74.7	75.4	76.2	76.7	77.1	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4
≥ 1800	68.8	74.6	75.9	76.6	77.4	77.9	78.3	78.6	78.6	78.7	78.7	78.7	78.7	78.7	78.7	78.7
≥ 1500	69.2	75.2	76.5	77.4	78.2	78.8	79.3	79.6	79.8	79.9	79.9	79.9	79.9	79.9	79.9	79.9
≥ 1200	69.6	76.5	78.2	79.3	80.0	80.7	81.2	81.6	81.8	82.3	82.3	82.3	82.3	82.3	82.3	82.3
≥ 1000	70.0	77.1	78.9	80.3	81.0	81.7	82.2	82.7	82.9	83.5	83.5	83.5	83.7	83.7	83.7	83.7
≥ 900	70.0	77.6	79.7	81.2	81.9	82.6	83.0	83.6	83.8	84.5	84.5	84.5	84.8	84.8	85.0	85.0
≥ 800	70.3	78.2	80.3	81.7	82.5	83.4	83.8	84.5	84.7	85.7	85.9	85.9	86.4	86.4	86.6	86.6
≥ 700	70.3	78.8	81.0	82.6	83.4	84.3	84.7	85.5	85.7	86.9	87.1	87.1	87.6	87.6	87.8	87.8
≥ 600	70.4	78.9	81.3	83.0	84.3	85.3	85.8	86.6	86.9	88.2	88.5	88.5	89.0	89.0	89.2	89.2
≥ 500	70.4	78.9	81.3	83.1	84.6	85.8	86.4	87.1	87.6	89.0	89.5	89.5	90.0	90.0	90.4	90.4
≥ 400	70.5	79.2	81.6	83.6	85.3	86.5	87.5	88.2	88.7	90.2	90.8	90.8	91.6	91.6	91.9	92.2
≥ 300	70.5	79.2	81.6	83.6	85.3	86.6	87.9	89.4	89.9	92.2	92.8	92.8	93.6	93.6	93.9	94.5
≥ 200	70.5	79.2	81.6	83.6	85.3	86.8	88.2	90.2	90.8	93.6	94.6	94.6	96.0	96.0	96.5	97.3
≥ 100	70.5	79.2	81.6	83.6	85.3	86.8	88.2	90.2	90.8	93.6	94.7	94.7	96.8	97.0	98.1	99.9
≥ 0	70.5	79.2	81.6	83.6	85.3	86.8	88.2	90.2	90.8	93.6	94.7	94.7	96.8	97.0	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 902

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

2100-2300 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	47.8	48.1	48.1	48.5	48.5	48.5	48.6	48.7	48.7	48.7	48.7	48.7	48.7	48.7	48.7	48.7
≥ 20000	49.9	50.2	50.3	50.7	50.7	50.7	50.8	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9
≥ 18000	49.9	50.2	50.3	50.7	50.7	50.7	50.8	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9
≥ 16000	49.9	50.2	50.3	50.7	50.7	50.7	50.8	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9
≥ 14000	50.2	50.4	50.5	50.9	50.9	50.9	51.0	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2
≥ 12000	51.6	51.8	51.9	52.4	52.4	52.4	52.5	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6
≥ 10000	52.4	52.6	52.7	53.1	53.1	53.1	53.3	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4
≥ 9000	53.5	53.9	54.0	54.5	54.5	54.5	54.6	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7
≥ 8000	54.4	54.9	55.0	55.5	55.5	55.5	55.6	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7
≥ 7000	56.2	57.0	57.3	57.9	57.9	57.9	58.0	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1
≥ 6000	58.5	59.9	60.3	60.9	60.9	60.9	61.0	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1
≥ 5000	59.9	61.7	62.1	62.7	62.7	62.7	62.8	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
≥ 4500	60.6	62.3	62.8	63.4	63.4	63.4	63.5	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6
≥ 4000	62.3	64.9	65.3	66.0	66.0	66.0	66.1	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2
≥ 3500	63.1	66.0	66.5	67.2	67.2	67.2	67.3	67.4	67.4	67.4	67.4	67.4	67.4	67.4	67.4	67.4
≥ 3000	64.2	67.5	68.2	68.8	68.8	68.8	69.0	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1
≥ 2500	66.0	69.6	70.4	71.0	71.3	71.3	71.4	71.5	71.5	71.5	71.5	71.5	71.5	71.5	71.5	71.5
≥ 2000	67.0	70.9	72.0	72.9	73.4	73.5	73.9	74.0	74.0	74.1	74.1	74.1	74.1	74.1	74.1	74.1
≥ 1800	67.6	72.2	73.3	74.1	74.6	74.7	75.1	75.2	75.2	75.4	75.4	75.4	75.4	75.4	75.4	75.4
≥ 1500	69.1	74.4	75.7	76.6	77.0	77.1	77.7	77.8	77.8	77.9	77.9	77.9	77.9	77.9	77.9	77.9
≥ 1200	69.9	75.6	77.1	78.1	78.7	78.8	79.6	79.7	79.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0
≥ 1000	70.2	76.2	77.9	78.9	79.8	80.0	81.0	81.1	81.3	81.8	81.8	81.8	81.9	81.9	81.9	81.9
≥ 900	70.4	76.9	78.7	79.7	80.6	80.8	81.8	82.1	82.3	82.9	83.0	83.0	83.1	83.1	83.1	83.1
≥ 800	70.8	77.7	79.6	80.6	81.4	81.7	82.7	83.0	83.4	84.2	84.4	84.4	84.6	84.6	84.6	84.6
≥ 700	70.8	77.7	79.9	81.0	82.0	82.2	83.3	83.8	84.2	85.3	85.5	85.5	86.0	86.0	86.1	86.1
≥ 600	70.8	78.3	80.6	82.1	83.1	83.4	84.5	85.0	85.4	86.7	87.0	87.0	87.4	87.4	87.5	87.5
≥ 500	70.8	78.6	81.0	82.8	83.9	84.3	85.4	86.0	86.4	88.1	88.5	88.5	89.1	89.1	89.2	89.2
≥ 400	70.8	78.8	81.5	83.5	84.9	85.4	87.0	87.7	88.2	90.2	90.7	90.7	91.3	91.3	91.4	91.4
≥ 300	70.8	78.8	81.7	83.8	85.4	86.2	87.8	89.0	89.4	91.6	92.2	92.3	93.0	93.0	93.4	93.4
≥ 200	70.8	78.8	81.7	83.9	85.6	86.4	88.2	89.9	90.4	93.4	94.1	94.3	95.5	95.5	95.9	96.4
≥ 100	70.9	78.9	81.8	84.0	85.7	86.5	88.3	90.4	90.8	93.8	94.6	94.7	96.6	96.6	97.7	99.3
≥ 0	70.9	78.9	81.8	84.0	85.7	86.5	88.3	90.4	90.8	93.8	94.6	94.7	96.6	96.6	97.7	100.0

TOTAL NUMBER OF OBSERVATIONS 905

USAF ETAC FORM NOV 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL (HOURS M.S.T.)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	43.5	44.8	44.9	45.0	45.0	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.2	45.2
≥ 20000	47.7	49.3	49.5	49.8	49.8	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	50.0	50.0
≥ 18000	47.9	49.5	49.6	49.9	50.0	50.0	50.0	50.0	50.0	50.1	50.1	50.1	50.1	50.1	50.1	50.2
≥ 16000	47.9	49.5	49.7	50.0	50.0	50.0	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.2	50.2
≥ 14000	48.1	49.7	49.8	50.2	50.2	50.2	50.2	50.2	50.2	50.3	50.3	50.3	50.3	50.3	50.3	50.4
≥ 12000	49.1	50.7	50.9	51.2	51.2	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.4	51.4
≥ 10000	50.9	52.6	52.8	53.2	53.2	53.2	53.2	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.4
≥ 9000	51.9	53.7	54.1	54.4	54.4	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.6	54.6	54.6	54.7
≥ 8000	52.6	54.6	54.9	55.3	55.4	55.4	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.6	55.6	55.6
≥ 7000	54.3	56.5	56.8	57.3	57.4	57.5	57.5	57.6	57.6	57.6	57.6	57.6	57.6	57.7	57.7	57.7
≥ 6000	55.3	57.7	58.1	58.6	58.7	58.9	58.9	58.9	58.9	59.0	59.0	59.0	59.0	59.0	59.1	59.1
≥ 5000	56.3	58.9	59.3	59.8	59.9	60.1	60.1	60.1	60.1	60.2	60.2	60.2	60.2	60.3	60.3	60.3
≥ 4500	56.7	59.5	59.9	60.4	60.5	60.7	60.7	60.8	60.8	60.8	60.8	60.8	60.8	60.9	60.9	60.9
≥ 4000	58.4	61.5	62.0	62.6	62.8	62.9	63.0	63.0	63.0	63.1	63.1	63.1	63.1	63.2	63.2	63.2
≥ 3500	59.7	63.2	63.8	64.5	64.7	64.9	65.0	65.0	65.0	65.1	65.1	65.1	65.1	65.1	65.2	65.2
≥ 3000	61.1	65.0	65.7	66.4	66.6	66.8	67.0	67.1	67.1	67.1	67.2	67.2	67.2	67.2	67.3	67.3
≥ 2500	62.5	67.0	67.8	68.6	69.0	69.2	69.5	69.6	69.6	69.6	69.7	69.7	69.7	69.7	69.7	69.8
≥ 2000	63.7	69.0	69.9	71.0	71.5	71.8	72.2	72.4	72.4	72.6	72.6	72.6	72.6	72.6	72.7	72.7
≥ 1800	64.4	70.3	71.2	72.4	72.9	73.3	73.8	74.0	74.0	74.2	74.2	74.2	74.2	74.2	74.3	74.3
≥ 1500	65.6	72.1	73.2	74.7	75.3	75.7	76.3	76.6	76.6	76.9	76.9	76.9	77.0	77.0	77.0	77.1
≥ 1200	66.6	73.5	74.8	76.4	77.2	77.7	78.3	78.8	78.8	79.2	79.3	79.3	79.4	79.4	79.5	79.5
≥ 1000	67.0	74.4	75.9	77.7	78.5	79.2	80.0	80.5	80.6	81.1	81.3	81.3	81.4	81.5	81.5	81.6
≥ 900	67.2	75.0	76.5	78.4	79.3	80.0	80.9	81.5	81.5	82.2	82.3	82.3	82.6	82.6	82.7	82.8
≥ 800	67.4	75.4	77.1	79.1	80.1	80.9	81.9	82.6	82.7	83.6	83.9	83.9	84.2	84.2	84.4	84.4
≥ 700	67.4	75.8	77.6	79.8	80.9	81.8	82.8	83.6	83.7	84.8	85.2	85.2	85.6	85.7	85.8	85.9
≥ 600	67.5	76.1	78.0	80.5	81.8	82.7	83.9	84.8	84.9	86.2	86.7	86.7	87.2	87.3	87.4	87.5
≥ 500	67.5	76.3	78.2	81.0	82.6	83.6	85.1	86.2	86.4	88.0	88.7	88.8	89.5	89.5	89.7	89.7
≥ 400	67.5	76.4	78.5	81.4	83.1	84.3	86.1	87.4	87.6	89.5	90.4	90.8	91.2	91.3	91.5	91.6
≥ 300	67.5	76.5	78.5	81.5	83.4	84.7	86.9	88.7	88.9	91.2	92.2	92.2	93.3	93.3	93.7	93.9
≥ 200	67.5	76.5	78.5	81.7	83.5	84.9	87.5	89.5	89.7	92.5	93.7	93.8	95.3	95.5	96.1	96.4
≥ 100	67.6	76.5	78.6	81.7	83.6	85.0	87.5	89.6	89.9	92.7	94.0	94.1	96.0	96.3	97.7	99.5
≥ 0	67.6	76.5	78.6	81.7	83.6	85.0	87.6	89.7	89.9	92.7	94.0	94.1	96.1	96.4	97.7	100.0

TOTAL NUMBER OF OBSERVATIONS 7262

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0000-0200 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	52.9	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6
≥ 20000	56.3	57.0	57.3	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0
≥ 18000	56.5	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2
≥ 16000	56.5	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2
≥ 14000	56.7	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3
≥ 12000	57.8	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
≥ 10000	60.4	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1
≥ 9000	62.5	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2
≥ 8000	64.3	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
≥ 7000	66.9	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7
≥ 6000	68.9	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7
≥ 5000	70.2	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0
≥ 4500	71.0	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8
≥ 4000	72.2	73.3	73.3	73.4	73.4	73.4	73.4	73.4	73.4	73.4	73.4	73.4	73.4	73.4	73.4	73.4
≥ 3500	73.2	74.4	74.4	74.5	74.5	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7
≥ 3000	74.8	76.0	76.0	76.1	76.1	76.3	76.3	76.3	76.3	76.3	76.3	76.3	76.3	76.3	76.3	76.3
≥ 2500	76.9	79.0	79.1	79.2	79.2	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4	79.4
≥ 2000	78.9	81.2	81.3	81.4	81.4	81.5	81.5	81.5	81.5	81.5	81.5	81.5	81.5	81.5	81.5	81.5
≥ 1800	79.6	82.2	82.3	82.5	82.6	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7
≥ 1500	80.6	83.4	83.5	83.8	84.1	84.2	84.2	84.2	84.2	84.2	84.2	84.2	84.2	84.2	84.2	84.2
≥ 1200	81.0	84.2	84.3	84.7	85.1	85.2	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3
≥ 1000	81.5	84.9	85.0	85.6	85.9	86.0	86.1	86.1	86.1	86.1	86.1	86.1	86.5	86.5	86.5	86.5
≥ 900	81.7	85.0	85.1	85.7	86.0	86.2	86.4	86.6	86.6	86.6	86.6	86.6	86.9	86.9	86.9	86.9
≥ 800	82.0	85.6	85.7	86.2	86.6	86.8	86.9	87.2	87.2	87.2	87.2	87.2	87.5	87.5	87.5	87.5
≥ 700	82.2	86.0	86.4	87.3	87.6	87.8	88.0	88.2	88.2	88.3	88.3	88.3	88.6	88.6	88.6	88.6
≥ 600	82.5	86.2	86.9	88.1	88.5	88.8	88.9	89.1	89.1	89.2	89.2	89.2	89.6	89.6	89.6	89.6
≥ 500	82.9	87.2	87.8	89.6	90.0	90.3	90.6	90.8	90.8	91.1	91.1	91.1	91.4	91.4	91.4	91.4
≥ 400	83.0	87.6	88.4	90.1	91.1	91.4	92.0	92.2	92.2	92.4	92.5	92.5	92.9	92.9	92.9	92.9
≥ 300	83.1	87.8	88.6	90.4	91.5	91.9	92.9	93.2	93.2	93.5	93.6	93.6	93.9	93.9	94.3	94.3
≥ 200	83.1	88.0	88.8	90.6	91.7	92.2	93.6	94.5	94.5	95.2	95.3	95.3	95.8	95.8	96.2	96.4
≥ 100	83.1	88.0	88.8	90.6	91.7	92.2	93.6	94.5	94.5	95.4	95.8	95.8	96.3	96.3	97.7	98.7
≥ 0	83.1	88.0	88.8	90.6	91.7	92.2	93.6	94.5	94.5	95.4	95.8	95.8	96.3	96.3	97.7	98.0

TOTAL NUMBER OF OBSERVATIONS 872

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0700-0500 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥¼	≥0
NO CEILING	51.0	51.2	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.4	51.4	51.4	51.4
≥ 20000	54.3	54.4	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.6	54.6	54.6	54.6
≥ 18000	54.3	54.4	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.6	54.6	54.6	54.6
≥ 16000	54.3	54.4	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.6	54.6	54.6	54.6
≥ 14000	54.4	54.5	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.7	54.7	54.7	54.7
≥ 12000	54.8	55.0	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.2	55.2	55.2	55.2
≥ 10000	57.6	57.7	57.8	57.8	57.	57.8	57.8	57.8	57.8	57.8	57.8	57.8	57.9	57.9	57.9	57.9
≥ 9000	60.7	60.8	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	61.1	61.1	61.1	61.1
≥ 8000	62.1	62.2	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.3	62.4	62.4	62.4	62.4
≥ 7000	64.7	65.0	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.2	65.2	65.2	65.2
≥ 6000	66.6	66.9	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.2	67.2	67.2	67.2
≥ 5000	67.6	68.0	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.2	68.2	68.2	68.2
≥ 4500	68.5	69.0	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.1	69.2	69.2	69.2	69.2
≥ 4000	69.6	70.2	70.3	70.3	70.4	70.4	70.4	70.4	70.4	70.4	70.4	70.4	70.5	70.5	70.5	70.5
≥ 3500	70.9	71.4	71.5	71.5	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.8	71.8	71.8	71.8
≥ 3000	71.8	72.6	72.8	72.8	72.9	73.0	73.0	73.0	73.0	73.0	73.0	73.0	73.2	73.2	73.2	73.2
≥ 2500	73.0	73.8	74.1	74.1	74.2	74.3	74.4	74.4	74.4	74.4	74.4	74.4	74.5	74.5	74.5	74.5
≥ 2000	75.5	76.6	76.8	77.1	77.2	77.3	77.4	77.4	77.4	77.4	77.4	77.4	77.5	77.5	77.5	77.5
≥ 1800	75.7	77.0	77.2	77.5	77.9	78.0	78.1	78.1	78.1	78.1	78.1	78.1	78.2	78.2	78.2	78.2
≥ 1500	77.1	78.6	78.8	79.1	79.5	79.6	79.7	79.7	79.7	79.7	79.7	79.7	79.8	79.8	79.8	79.8
≥ 1200	77.9	79.8	80.1	80.4	80.8	80.9	81.0	81.0	81.0	81.0	81.0	81.0	81.1	81.1	81.1	81.1
≥ 1000	78.7	81.5	81.9	82.4	82.7	82.8	82.9	83.1	83.1	83.1	83.2	83.2	83.5	83.5	83.5	83.5
≥ 900	79.1	82.0	82.5	82.9	83.4	83.5	83.6	83.8	83.8	83.8	83.9	83.9	84.2	84.2	84.2	84.2
≥ 800	79.8	83.2	83.6	84.1	84.6	84.8	84.9	85.0	85.0	85.3	85.4	85.4	85.7	85.7	85.8	85.8
≥ 700	80.3	84.1	84.9	85.5	85.9	86.5	86.6	86.8	86.8	87.0	87.2	87.2	87.6	87.6	87.7	87.7
≥ 600	80.5	84.6	85.4	85.9	86.5	87.1	87.2	87.4	87.4	87.7	87.9	87.9	88.2	88.2	88.4	88.4
≥ 500	80.8	84.9	85.8	86.5	87.3	88.1	88.2	88.5	88.6	88.8	89.3	89.3	89.6	89.6	89.7	89.7
≥ 400	80.8	85.1	86.3	87.2	88.4	89.2	89.6	89.9	90.0	90.3	90.8	90.8	91.2	91.2	91.4	91.4
≥ 300	80.8	85.1	86.3	87.6	88.7	89.6	90.2	90.7	90.8	91.4	91.8	91.8	92.9	92.9	93.3	93.5
≥ 200	80.8	85.4	86.5	87.8	89.1	90.2	91.2	92.1	92.2	93.4	94.0	94.0	95.0	95.2	95.6	96.0
≥ 100	80.8	85.4	86.5	87.9	89.2	90.3	91.4	92.3	92.4	93.7	94.4	94.4	96.1	96.2	97.2	99.0
0	80.8	85.4	86.5	87.9	89.2	90.3	91.4	92.3	92.4	93.7	94.4	94.4	96.1	96.2	97.2	100.0

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0600-0900 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	47.2	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.1
≥ 20000	51.4	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.6	53.6	53.6	53.6	53.6	53.6	53.7
≥ 18000	51.5	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.7	53.7	53.7	53.7	53.7	53.7	53.8
≥ 16000	51.5	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.7	53.7	53.7	53.7	53.7	53.7	53.8
≥ 14000	51.7	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.9	53.9	53.9	53.9	53.9	53.9	54.*
≥ 12000	53.5	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.1	56.1	56.1	56.1	56.1	56.1	56.2
≥ 10000	55.6	58.1	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.3	58.3	58.3	58.3	58.3	58.3	58.4
≥ 9000	56.9	59.7	59.9	60.0	60.0	60.0	60.0	60.0	60.0	60.1	60.1	60.1	60.1	60.1	60.1	60.2
≥ 8000	57.4	60.4	60.6	60.7	60.7	60.7	60.8	60.8	60.8	60.9	60.9	60.9	60.9	60.9	60.9	61.0
≥ 7000	59.2	62.8	63.2	63.6	63.6	63.6	63.7	63.7	63.7	63.9	63.9	63.9	63.9	63.9	63.9	64.0
≥ 6000	60.2	64.0	64.3	64.8	64.8	64.8	64.9	65.0	65.0	65.1	65.1	65.1	65.1	65.1	65.1	65.2
≥ 5000	61.1	64.9	65.3	65.8	65.8	65.8	65.9	66.0	66.0	66.1	66.1	66.1	66.1	66.1	66.1	66.2
≥ 4500	61.4	65.2	65.7	66.1	66.1	66.1	66.2	66.3	66.3	66.4	66.4	66.4	66.4	66.4	66.4	66.6
≥ 4000	62.5	67.0	67.5	67.9	67.9	67.9	68.1	68.2	68.2	68.4	68.4	68.4	68.4	68.4	68.4	68.5
≥ 3500	63.1	68.4	68.8	69.3	69.4	69.4	69.6	69.7	69.7	69.9	69.9	69.9	69.9	69.9	69.9	70.2
≥ 3000	63.7	69.5	69.9	70.4	70.6	70.7	71.1	71.3	71.3	71.5	71.5	71.5	71.5	71.5	71.5	71.8
≥ 2500	64.8	70.6	71.2	71.6	71.8	72.0	72.4	72.6	72.6	72.9	72.9	72.9	72.9	72.9	72.9	73.2
≥ 2000	66.0	71.8	72.5	73.0	73.2	73.3	73.8	74.0	74.0	74.2	74.2	74.2	74.2	74.2	74.2	74.5
≥ 1800	66.8	73.1	73.8	74.4	74.8	74.9	75.5	75.8	75.8	76.0	76.2	76.2	76.2	76.2	76.2	76.6
≥ 1500	68.2	75.0	75.8	76.5	76.9	77.3	77.9	78.4	78.4	78.6	78.8	78.8	78.8	78.8	78.8	79.3
≥ 1200	69.6	77.1	78.0	78.7	79.3	79.6	80.3	81.0	81.0	81.2	81.4	81.4	81.4	81.4	81.4	81.9
≥ 1000	70.7	78.9	80.0	80.7	81.4	81.9	82.7	83.3	83.3	83.7	84.1	84.1	84.1	84.1	84.1	84.6
≥ 900	70.9	79.2	80.2	81.2	81.9	82.3	83.1	83.9	83.9	84.2	84.7	84.7	84.7	84.7	84.7	85.1
≥ 800	71.3	79.7	80.9	81.9	82.5	83.0	83.9	84.8	84.8	85.1	85.6	85.6	85.6	85.6	85.6	86.0
≥ 700	71.8	80.5	81.6	82.8	83.9	84.3	85.4	86.4	86.4	86.7	87.3	87.3	87.3	87.3	87.3	87.7
≥ 600	72.0	80.9	82.0	83.3	84.5	84.9	86.3	87.5	87.5	87.8	88.4	88.4	88.4	88.4	88.4	88.9
≥ 500	72.1	81.4	82.5	83.9	85.1	85.7	87.0	88.3	88.3	88.6	89.2	89.2	89.2	89.2	89.2	89.6
≥ 400	72.3	81.8	82.9	84.5	85.9	86.8	88.4	90.0	90.0	90.5	91.1	91.1	91.1	91.1	91.2	91.8
≥ 300	72.4	82.0	83.4	85.1	86.7	87.6	89.5	91.3	91.3	92.0	92.8	92.8	93.8	93.8	94.0	94.9
≥ 200	72.4	82.0	83.4	85.1	86.8	87.8	90.0	91.9	91.9	93.0	93.9	93.9	95.4	95.5	95.8	97.5
≥ 100	72.4	82.0	83.4	85.1	86.8	87.8	90.0	92.0	92.0	93.2	94.1	94.1	95.8	95.9	96.5	99.7
≥ 0	72.4	82.0	83.4	85.1	86.8	87.8	90.0	92.0	92.0	93.2	94.1	94.1	95.8	95.9	96.5	100.0

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0900-1100 (HOURS L.S.T.)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	46.9	47.6	47.7	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8
≥ 20000	53.2	54.1	54.5	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7
≥ 18000	53.4	54.3	54.7	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9
≥ 16000	53.4	54.3	54.7	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9	54.9
≥ 14000	53.8	54.7	55.0	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
≥ 12000	54.7	55.7	56.2	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4
≥ 10000	56.8	58.2	58.7	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9
≥ 9000	58.3	59.7	60.2	60.4	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5
≥ 8000	59.7	61.3	61.9	62.1	62.3	62.3	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4
≥ 7000	61.3	63.0	63.6	63.9	64.3	64.5	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6
≥ 6000	61.8	63.5	64.2	64.5	64.8	65.1	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2
≥ 5000	62.6	64.8	65.1	65.5	65.9	66.1	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2
≥ 4500	62.8	64.7	65.4	65.9	66.2	66.4	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6
≥ 4000	63.9	66.7	67.5	68.2	68.5	68.7	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8
≥ 3500	65.1	67.9	68.9	69.6	70.2	70.4	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5
≥ 3000	66.2	69.5	70.5	71.2	71.8	72.0	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1
≥ 2500	68.0	71.9	72.9	73.9	74.5	74.8	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9
≥ 2000	70.3	74.7	75.7	76.6	77.3	77.5	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9
≥ 1800	71.5	75.9	76.9	78.0	78.7	78.9	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3
≥ 1500	73.2	78.7	79.7	80.7	81.6	82.0	82.6	82.6	82.6	82.9	82.9	82.9	82.9	82.9	82.9	82.9
≥ 1200	74.4	80.7	82.0	83.0	83.9	84.2	85.0	85.0	85.0	85.3	85.4	85.4	85.5	85.5	85.5	85.5
≥ 1000	74.8	81.7	83.1	84.4	85.5	85.8	86.6	86.6	86.6	86.9	87.0	87.0	87.1	87.1	87.1	87.1
≥ 900	75.1	82.4	83.8	85.0	86.3	86.8	87.6	87.6	87.6	87.8	87.9	87.9	88.0	88.0	88.0	88.0
≥ 800	75.8	83.3	84.9	86.3	87.9	88.4	89.3	89.3	89.3	89.6	89.7	89.7	89.8	89.8	89.8	89.8
≥ 700	75.8	84.0	85.7	87.1	88.7	89.2	90.2	90.3	90.3	90.6	90.8	90.8	90.9	90.9	90.9	90.9
≥ 600	75.8	84.4	86.1	87.4	89.0	89.5	90.6	90.8	90.8	91.1	91.3	91.3	91.4	91.4	91.4	91.4
≥ 500	75.9	84.9	86.6	88.1	89.8	90.3	91.8	91.9	91.9	92.2	92.5	92.5	92.8	92.8	92.8	92.8
≥ 400	75.9	84.9	86.9	88.6	90.5	91.1	92.9	93.2	93.2	94.1	94.4	94.4	94.9	94.9	94.9	94.9
≥ 300	75.9	84.9	86.9	89.0	91.0	91.6	93.4	93.8	93.8	95.0	95.4	95.4	95.9	95.9	95.9	96.0
≥ 200	75.9	84.9	86.9	89.0	91.0	91.7	93.6	94.3	94.4	95.7	96.2	96.2	96.8	96.9	97.0	98.1
≥ 100	75.9	84.9	86.9	89.0	91.0	91.7	93.6	94.4	94.5	96.1	96.7	96.7	97.4	97.5	97.8	99.3
≥ 0	75.9	84.9	86.9	89.0	91.0	91.7	93.6	94.4	94.5	96.1	96.7	96.7	97.4	97.5	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 874

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1200-1800 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	46.7	47.6	48.0	48.2	48.2	48.2	48.2	48.2	48.2	48.3	48.3	48.3	48.3	48.3	48.3	48.3
≥ 20000	54.3	55.7	56.0	56.3	56.3	56.3	56.3	56.3	56.3	56.4	56.4	56.4	56.4	56.4	56.4	56.4
≥ 18000	54.7	56.0	56.4	56.6	56.6	56.6	56.6	56.6	56.6	56.7	56.7	56.7	56.7	56.7	56.7	56.7
≥ 16000	54.7	56.0	56.4	56.6	56.6	56.6	56.6	56.6	56.6	56.7	56.7	56.7	56.7	56.7	56.7	56.7
≥ 14000	54.9	56.3	56.6	56.8	56.8	56.8	56.8	56.8	56.8	56.9	56.9	56.9	56.9	56.9	56.9	56.9
≥ 12000	56.5	57.8	58.2	58.4	58.4	58.4	58.4	58.4	58.4	58.5	58.5	58.5	58.5	58.5	58.5	58.5
≥ 10000	58.1	59.4	59.8	60.0	60.0	60.0	60.0	60.0	60.0	60.1	60.1	60.1	60.1	60.1	60.1	60.1
≥ 9000	59.7	61.1	61.5	61.7	61.7	61.7	61.7	61.7	61.7	61.8	61.8	61.8	61.8	61.8	61.8	61.8
≥ 8000	61.5	63.0	63.3	63.5	63.5	63.5	63.5	63.5	63.5	63.6	63.6	63.6	63.6	63.6	63.6	63.6
≥ 7000	63.6	65.3	65.7	66.0	66.0	66.0	66.0	66.0	66.0	66.3	66.3	66.3	66.3	66.3	66.3	66.3
≥ 6000	64.3	66.1	66.5	66.8	66.8	66.8	66.8	66.8	66.8	67.0	67.0	67.0	67.0	67.0	67.0	67.0
≥ 5000	65.6	67.6	68.0	68.3	68.3	68.3	68.3	68.3	68.3	68.5	68.5	68.5	68.5	68.5	68.5	68.5
≥ 4500	66.1	68.2	68.5	68.9	68.9	68.9	68.9	68.9	68.9	69.1	69.1	69.1	69.1	69.1	69.1	69.1
≥ 4000	68.1	70.2	70.6	71.0	71.3	71.4	71.4	71.4	71.4	71.6	71.6	71.6	71.6	71.6	71.6	71.6
≥ 3500	70.0	72.3	72.6	73.1	73.4	73.5	73.5	73.5	73.5	73.8	73.8	73.8	73.8	73.8	73.8	73.8
≥ 3000	70.9	73.5	73.9	74.3	74.7	74.8	74.8	74.8	74.8	75.0	75.0	75.0	75.0	75.0	75.0	75.0
≥ 2500	73.8	76.9	77.3	77.7	78.5	78.6	78.6	78.6	78.6	78.9	78.9	78.9	79.0	79.0	79.0	79.0
≥ 2000	75.8	79.7	80.0	80.5	81.3	81.4	81.4	81.4	81.4	81.6	81.6	81.6	81.8	81.8	81.8	81.8
≥ 1800	76.8	81.1	81.5	81.9	82.7	82.8	82.8	83.0	83.0	83.2	83.2	83.2	83.5	83.5	83.5	83.5
≥ 1500	78.1	83.1	83.6	84.2	85.1	85.2	85.3	85.5	85.5	85.7	85.7	85.7	86.1	86.1	86.1	86.1
≥ 1200	78.4	84.4	85.2	85.9	86.8	87.0	87.2	87.3	87.3	87.7	87.7	87.7	88.2	88.2	88.2	88.2
≥ 1000	79.0	85.9	86.7	87.5	88.5	88.8	88.9	89.0	89.0	89.4	89.4	89.4	89.9	89.9	89.9	89.9
≥ 900	79.2	86.4	87.2	88.0	89.0	89.2	89.3	89.5	89.5	90.0	90.0	90.0	90.5	90.5	90.5	90.5
≥ 800	79.2	86.8	87.7	88.6	89.9	90.1	90.2	90.6	90.6	91.0	91.0	91.0	91.7	91.7	91.7	91.7
≥ 700	79.4	87.2	88.2	89.1	90.3	90.6	90.7	91.0	91.0	91.5	91.5	91.5	92.2	92.2	92.2	92.2
≥ 600	79.4	87.4	88.5	89.4	90.7	91.0	91.1	91.6	91.6	92.3	92.4	92.4	93.1	93.1	93.1	93.1
≥ 500	79.4	87.4	88.5	89.5	91.0	91.7	91.9	92.5	92.5	93.5	93.6	93.6	94.5	94.5	94.5	94.5
≥ 400	79.4	87.4	88.5	89.9	91.5	92.2	92.6	93.2	93.2	94.2	94.3	94.3	95.2	95.2	95.2	95.3
≥ 300	79.4	87.4	88.5	90.0	91.7	92.8	93.6	94.3	94.3	95.6	95.8	95.8	96.9	96.9	97.0	97.2
≥ 200	79.4	87.4	88.5	90.0	91.7	92.8	93.9	95.0	95.0	96.4	96.7	96.7	98.1	98.2	98.4	98.9
≥ 100	79.4	87.4	88.5	90.0	91.7	92.8	93.9	95.0	95.0	96.4	96.7	96.7	98.1	98.2	98.6	99.3
≥ 0	79.4	87.4	88.5	90.0	91.7	92.8	93.9	95.0	95.0	96.4	96.7	96.7	98.1	98.2	98.6	100.0

TOTAL NUMBER OF OBSERVATIONS 880

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF TF-5 FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1500-1700 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	47.4	48.2	48.3	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6
≥ 20000	56.1	57.1	57.3	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7
≥ 18000	56.7	57.7	57.9	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3
≥ 16000	56.7	57.7	57.9	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3
≥ 14000	57.0	58.0	58.3	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6
≥ 12000	58.8	60.0	60.2	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6
≥ 10000	60.7	62.0	62.3	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6
≥ 9000	62.0	63.5	63.8	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
≥ 8000	63.1	64.7	64.9	65.3	65.5	65.5	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6
≥ 7000	65.9	67.7	67.9	68.2	68.5	68.5	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6
≥ 6000	66.9	68.7	69.0	69.4	69.6	69.6	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.7
≥ 5000	68.2	70.4	71.0	71.3	71.6	71.6	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7
≥ 4500	69.2	71.4	72.0	72.4	72.6	72.6	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7
≥ 4000	71.4	74.0	75.2	75.6	75.8	75.8	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9
≥ 3500	73.3	76.4	77.2	77.6	77.9	77.9	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1
≥ 3000	75.3	78.8	79.8	80.3	80.5	80.5	80.7	80.7	80.7	80.7	80.7	80.7	80.8	80.8	80.8	80.8
≥ 2500	76.7	81.0	82.0	82.7	82.9	82.9	83.1	83.1	83.1	83.1	83.1	83.1	83.3	83.3	83.3	83.3
≥ 2000	78.7	83.7	84.7	85.6	85.9	85.9	86.1	86.1	86.1	86.1	86.1	86.2	86.4	86.4	86.4	86.4
≥ 1800	79.1	84.4	85.4	86.2	86.6	86.6	86.8	86.8	86.8	86.8	86.8	87.0	87.2	87.2	87.2	87.2
≥ 1500	79.7	85.1	86.2	87.0	87.4	87.4	87.7	87.7	87.8	87.8	87.8	88.1	88.3	88.3	88.3	88.3
≥ 1200	80.3	85.7	86.8	87.6	88.0	88.0	88.3	88.4	88.5	88.5	88.5	88.8	89.0	89.0	89.0	89.0
≥ 1000	80.7	86.5	87.7	88.5	89.4	89.4	89.8	89.9	90.0	90.0	90.0	90.3	90.5	90.5	90.5	90.5
≥ 900	80.8	86.6	87.8	89.1	89.7	89.8	90.1	90.4	90.5	90.5	90.6	90.8	91.2	91.2	91.2	91.2
≥ 800	81.1	87.0	88.3	89.6	90.3	90.4	90.7	90.9	91.1	91.1	91.2	91.4	91.7	91.7	91.7	91.7
≥ 700	81.1	87.5	88.8	90.0	90.7	90.9	91.3	91.6	91.9	91.9	92.0	92.2	92.5	92.5	92.7	92.7
≥ 600	81.2	87.7	89.1	90.3	90.9	91.3	91.7	92.1	92.3	92.4	92.5	92.8	93.2	93.2	93.3	93.3
≥ 500	81.4	88.1	89.4	90.8	91.5	92.0	92.7	93.2	93.5	93.7	94.0	94.3	94.8	94.8	95.0	95.0
≥ 400	81.4	88.1	89.4	90.9	92.0	92.5	93.5	94.3	94.5	94.7	95.1	95.3	95.9	96.0	96.2	96.3
≥ 300	81.4	88.1	89.4	90.9	92.0	92.8	93.8	94.7	95.0	95.6	96.0	96.2	96.8	96.9	97.1	97.2
≥ 200	81.4	88.1	89.4	90.9	92.0	92.8	93.9	95.1	95.3	96.6	97.0	97.4	98.2	98.5	98.7	98.9
≥ 100	81.4	88.1	89.4	90.9	92.0	92.8	93.9	95.1	95.3	96.6	97.1	97.5	98.4	98.7	99.1	99.9
≥ 0	81.4	88.1	89.4	90.9	92.0	92.8	93.9	95.1	95.3	96.6	97.1	97.5	98.4	98.7	99.1	100.0

TOTAL NUMBER OF OBSERVATIONS 872

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1600-2000 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	47.1	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.7
≥ 20000	54.5	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2
≥ 18000	55.3	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0
≥ 16000	55.3	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0
≥ 14000	55.5	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 12000	57.8	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6
≥ 10000	59.9	61.1	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.5	61.5
≥ 9000	62.1	63.4	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9	64.0	64.0
≥ 8000	63.4	64.9	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.5	65.5	65.5	65.5	65.5	65.6	65.6
≥ 7000	67.5	69.1	69.7	69.7	69.7	69.7	69.7	69.7	69.7	69.8	69.8	69.8	69.8	69.8	69.9	69.9
≥ 6000	69.1	71.2	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.9	71.9	71.9	71.9	71.9	72.0	72.0
≥ 5000	71.9	74.1	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.9	74.9
≥ 4500	72.8	75.0	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.7	75.7	75.7	75.7	75.7	75.8	75.8
≥ 4000	74.3	76.8	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.6	77.6	77.6	77.6	77.6	77.7	77.7
≥ 3500	76.3	79.1	79.8	79.9	79.9	79.9	79.9	79.9	79.9	80.0	80.0	80.0	80.0	80.0	80.1	80.1
≥ 3000	77.9	81.1	81.9	82.4	82.4	82.4	82.4	82.4	82.4	82.5	82.5	82.5	82.5	82.5	82.6	82.6
≥ 2500	79.5	83.2	84.1	84.6	84.6	84.6	84.6	84.6	84.6	84.7	84.7	84.7	84.7	84.7	84.8	84.8
≥ 2000	80.7	84.5	85.4	85.8	85.9	85.9	86.2	86.2	86.2	86.3	86.3	86.3	86.3	86.3	86.4	86.4
≥ 1800	81.0	85.1	86.2	86.6	86.7	86.7	87.0	87.0	87.0	87.1	87.1	87.1	87.1	87.1	87.2	87.2
≥ 1500	81.4	85.8	86.9	87.3	87.4	87.7	88.0	88.0	88.0	88.1	88.1	88.2	88.2	88.2	88.3	88.3
≥ 1200	81.6	86.1	87.2	87.7	87.9	88.1	88.5	88.5	88.5	88.6	88.6	88.7	88.7	88.7	88.8	88.8
≥ 1000	81.6	86.1	87.2	87.7	87.9	88.2	88.6	88.6	88.6	88.7	88.7	88.8	88.8	88.8	88.9	88.9
≥ 900	81.8	86.5	87.7	88.2	88.6	88.9	89.3	89.3	89.3	89.4	89.4	89.5	89.5	89.5	89.6	89.6
≥ 800	81.8	86.7	87.9	88.8	89.1	89.5	90.1	90.1	90.1	90.2	90.2	90.3	90.3	90.3	90.4	90.4
≥ 700	81.9	87.0	88.5	89.6	89.9	90.3	90.9	90.9	90.9	91.2	91.2	91.3	91.3	91.3	91.4	91.4
≥ 600	82.1	87.4	88.9	90.2	90.5	90.9	91.5	91.5	91.5	92.2	92.2	92.3	92.3	92.3	92.5	92.5
≥ 500	82.3	87.7	89.4	90.7	91.3	92.0	92.9	93.0	93.0	93.8	94.3	94.4	94.4	94.4	94.5	94.5
≥ 400	82.3	87.7	89.5	91.1	91.7	92.5	93.4	93.9	93.9	94.7	95.3	95.4	95.5	95.5	95.7	95.8
≥ 300	82.3	87.7	89.6	91.2	91.8	92.9	93.9	94.5	94.5	95.3	95.9	96.0	96.1	96.1	96.2	96.3
≥ 200	82.3	87.7	89.6	91.2	91.8	93.0	94.2	95.1	95.1	96.6	97.3	97.4	97.9	97.9	98.1	98.2
≥ 100	82.3	87.7	89.6	91.2	91.8	93.0	94.2	95.1	95.1	96.6	97.5	97.6	98.3	98.4	98.7	99.5
0	82.3	87.7	89.6	91.2	91.8	93.0	94.2	95.1	95.1	96.6	97.5	97.6	98.3	98.4	98.7	100.0

TOTAL NUMBER OF OBSERVATIONS 875

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

2100-2300 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	52.3	52.9	52.9	53.1	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 20000	55.6	56.3	56.3	56.6	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7
≥ 18000	56.4	57.1	57.1	57.4	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5
≥ 16000	56.4	57.1	57.1	57.4	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5
≥ 14000	56.9	57.6	57.6	57.8	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9
≥ 12000	58.4	59.4	59.4	59.7	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8
≥ 10000	60.2	61.0	61.0	61.3	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4
≥ 9000	62.5	63.3	63.3	63.6	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7
≥ 8000	64.1	65.1	65.1	65.3	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4
≥ 7000	67.2	68.2	68.2	68.4	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5
≥ 6000	68.4	69.3	69.3	69.7	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8
≥ 5000	70.8	71.8	71.8	72.2	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3
≥ 4500	72.0	73.0	73.1	73.4	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6	73.6
≥ 4000	74.4	76.0	76.2	76.6	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7
≥ 3500	76.1	78.0	78.3	78.6	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7
≥ 3000	78.5	80.5	80.7	81.0	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3
≥ 2500	79.9	82.2	82.4	82.8	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0
≥ 2000	81.1	83.6	84.0	84.4	84.6	84.6	84.6	84.6	84.6	84.6	84.6	84.6	84.6	84.6	84.6	84.6
≥ 1800	81.5	84.3	84.5	84.8	85.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1
≥ 1500	82.1	84.9	85.2	85.6	85.9	85.9	85.9	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0
≥ 1200	82.6	85.9	86.3	87.0	87.2	87.2	87.2	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
≥ 1000	82.6	86.0	86.4	87.2	87.6	87.6	87.7	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.8
≥ 900	82.9	86.1	86.6	87.7	88.2	88.2	88.3	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5
≥ 800	83.2	86.9	87.5	88.6	89.2	89.2	89.3	89.5	89.5	89.5	89.5	89.5	89.5	89.5	89.5	89.5
≥ 700	83.2	87.5	88.4	89.9	90.6	90.8	91.0	91.3	91.3	91.3	91.3	91.3	91.3	91.3	91.3	91.3
≥ 600	83.7	88.3	89.2	90.8	91.5	91.7	92.1	92.3	92.3	92.3	92.3	92.3	92.3	92.3	92.3	92.3
≥ 500	83.8	89.0	90.1	92.1	92.9	93.1	93.6	93.8	93.8	93.9	93.9	93.9	93.9	93.9	93.9	93.9
≥ 400	83.8	89.0	90.2	92.2	93.0	93.2	93.8	98.1	98.1	98.3	98.3	98.3	98.3	98.3	98.3	98.3
≥ 300	83.8	89.1	90.6	92.6	93.6	94.1	95.1	95.6	95.6	96.2	96.2	96.2	96.2	96.3	96.7	96.8
≥ 200	83.8	89.1	90.6	92.6	93.8	94.3	95.2	96.0	96.0	96.9	96.9	96.9	96.9	97.0	97.5	97.6
≥ 100	83.8	89.1	90.6	92.6	93.6	94.3	95.3	96.2	96.2	97.2	97.4	97.4	97.6	97.7	98.7	99.5
0	83.8	89.1	90.6	92.6	93.6	94.3	95.3	96.2	96.2	97.2	97.4	97.4	97.6	97.7	98.7	100.0

TOTAL NUMBER OF OBSERVATIONS 870

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	48.9	49.7	49.8	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	50.0
≥ 20000	54.4	55.4	55.5	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7
≥ 18000	54.8	55.8	55.9	56.0	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1
≥ 16000	54.8	55.8	55.9	56.0	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1
≥ 14000	55.1	56.0	56.2	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.3	56.4	56.4	56.4	56.4
≥ 12000	56.6	57.6	57.8	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	58.0
≥ 10000	58.7	59.8	60.0	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2
≥ 9000	60.6	61.8	62.1	62.2	62.2	62.2	62.2	62.2	62.2	62.3	62.3	62.3	62.3	62.3	62.3	62.3
≥ 8000	61.9	63.3	63.5	63.7	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.9	63.9	63.9	63.9
≥ 7000	64.5	66.1	66.4	66.6	66.7	66.7	66.7	66.7	66.7	66.8	66.8	66.8	66.8	66.8	66.8	66.8
≥ 6000	65.8	67.4	67.7	67.9	68.0	68.1	68.1	68.1	68.1	68.2	68.2	68.2	68.2	68.2	68.2	68.2
≥ 5000	67.2	69.0	69.3	69.6	69.7	69.7	69.7	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.9
≥ 4500	67.9	69.8	70.1	70.4	70.5	70.5	70.5	70.5	70.5	70.6	70.6	70.6	70.6	70.6	70.6	70.6
≥ 4000	69.5	71.8	72.2	72.5	72.7	72.7	72.8	72.8	72.8	72.8	72.8	72.8	72.8	72.8	72.9	72.9
≥ 3500	71.0	73.5	73.9	74.3	74.4	74.5	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.7	74.7
≥ 3000	72.4	75.2	75.7	76.1	76.3	76.4	76.4	76.5	76.5	76.5	76.5	76.5	76.6	76.6	76.6	76.6
≥ 2500	74.1	77.3	77.9	78.3	78.6	78.7	78.8	78.8	78.8	78.9	78.9	78.9	78.9	78.9	78.9	79.0
≥ 2000	75.8	79.5	80.0	80.5	80.8	80.9	81.1	81.1	81.1	81.2	81.2	81.2	81.3	81.3	81.3	81.3
≥ 1800	76.5	80.4	81.0	81.5	81.9	81.9	82.1	82.2	82.2	82.3	82.3	82.3	82.4	82.4	82.4	82.5
≥ 1500	77.5	81.8	82.4	83.0	83.5	83.6	83.9	84.0	84.0	84.1	84.1	84.2	84.3	84.3	84.3	84.4
≥ 1200	78.2	83.0	83.7	84.4	84.9	85.0	85.3	85.5	85.5	85.6	85.7	85.7	85.8	85.8	85.8	85.9
≥ 1000	78.7	83.9	84.7	85.5	86.1	86.3	86.7	86.8	86.8	87.0	87.0	87.1	87.3	87.3	87.3	87.3
≥ 900	78.9	84.3	85.1	86.0	86.6	86.9	87.2	87.4	87.4	87.6	87.7	87.7	87.9	87.9	87.9	88.0
≥ 800	79.3	84.9	85.8	86.8	87.5	87.8	88.2	88.4	88.4	88.6	88.7	88.8	89.0	89.0	89.0	89.1
≥ 700	79.5	85.5	86.5	87.6	88.5	88.8	89.2	89.5	89.6	89.8	89.9	90.0	90.2	90.2	90.2	90.3
≥ 600	79.6	85.8	87.0	88.2	89.0	89.4	89.9	90.3	90.3	90.6	90.8	90.8	91.1	91.1	91.1	91.2
≥ 500	79.8	86.3	87.5	88.9	89.9	90.4	91.1	91.5	91.5	92.0	92.2	92.3	92.6	92.6	92.6	92.7
≥ 400	79.8	86.4	87.8	89.3	90.5	91.1	92.0	92.6	92.6	93.2	93.5	93.5	93.9	93.9	94.0	94.1
≥ 300	79.9	86.5	87.9	89.6	90.9	91.7	92.8	93.5	93.6	94.3	94.7	94.7	95.3	95.3	95.6	95.8
≥ 200	79.9	86.5	88.0	89.7	90.9	91.8	93.2	94.2	94.3	95.5	95.9	96.0	96.8	96.9	97.2	97.7
≥ 100	79.9	86.5	88.0	89.7	91.0	91.9	93.2	94.3	94.4	95.6	96.2	96.3	97.2	97.4	98.1	99.4
0	79.9	86.5	88.0	89.7	91.0	91.9	93.2	94.3	94.4	95.6	96.2	96.3	97.2	97.4	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 7001

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

~~0000-0200~~ (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	53.7	55.7	55.7	55.8	55.8	55.8	55.8	55.8	55.8	55.9	55.9	55.9	55.9	55.9	55.9	56.0
≥ 20000	55.9	58.0	58.0	58.1	58.1	58.1	58.1	58.1	58.1	58.2	58.2	58.2	58.2	58.2	58.2	58.3
≥ 18000	56.0	58.1	58.1	58.2	58.2	58.2	58.2	58.2	58.2	58.3	58.3	58.3	58.3	58.3	58.3	58.4
≥ 16000	56.0	58.1	58.1	58.2	58.2	58.2	58.2	58.2	58.2	58.3	58.3	58.3	58.3	58.3	58.3	58.4
≥ 14000	56.6	58.9	58.9	59.0	59.0	59.0	59.0	59.0	59.0	59.1	59.1	59.1	59.1	59.1	59.1	59.2
≥ 12000	58.4	60.7	60.7	60.9	60.9	60.9	60.9	60.9	60.9	61.0	61.0	61.0	61.0	61.0	61.0	61.1
≥ 10000	61.7	64.1	64.1	64.3	64.3	64.3	64.3	64.3	64.3	64.4	64.4	64.4	64.4	64.4	64.4	64.5
≥ 9000	64.2	66.6	66.7	66.9	66.9	66.9	66.9	66.9	66.9	67.0	67.0	67.0	67.0	67.0	67.0	67.1
≥ 8000	65.2	67.9	68.1	68.4	68.4	68.4	68.4	68.4	68.4	68.5	68.5	68.5	68.5	68.5	68.5	68.6
≥ 7000	67.8	70.6	70.8	71.0	71.0	71.0	71.0	71.0	71.0	71.1	71.1	71.1	71.1	71.1	71.1	71.2
≥ 6000	70.8	73.5	73.8	74.0	74.0	74.0	74.0	74.0	74.0	74.1	74.1	74.1	74.1	74.1	74.1	74.2
≥ 5000	72.0	74.9	75.2	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.7
≥ 4500	72.5	75.5	75.9	76.2	76.2	76.2	76.2	76.2	76.2	76.3	76.3	76.3	76.3	76.3	76.3	76.4
≥ 4000	73.4	77.1	77.5	77.9	77.9	77.9	77.9	77.9	77.9	78.1	78.1	78.1	78.1	78.1	78.1	78.2
≥ 3500	74.4	78.2	78.6	79.1	79.1	79.1	79.1	79.1	79.1	79.2	79.2	79.2	79.2	79.2	79.2	79.3
≥ 3000	74.6	78.4	78.9	79.4	79.4	79.4	79.4	79.4	79.4	79.5	79.5	79.5	79.5	79.5	79.5	79.6
≥ 2500	75.7	79.6	80.2	80.7	80.7	80.7	80.7	80.7	80.7	80.8	80.8	80.8	80.8	80.8	80.8	80.9
≥ 2000	76.3	80.4	80.9	81.5	81.5	81.5	81.5	81.5	81.5	81.6	81.6	81.6	81.6	81.6	81.6	81.7
≥ 1800	76.7	80.9	81.6	82.1	82.1	82.1	82.1	82.1	82.1	82.2	82.2	82.2	82.2	82.2	82.2	82.4
≥ 1500	77.3	81.7	82.4	82.9	82.9	82.9	82.9	82.9	82.9	83.0	83.0	83.0	83.0	83.0	83.0	83.1
≥ 1200	77.7	82.2	83.0	83.6	83.6	83.6	83.6	83.6	83.6	83.7	83.7	83.7	83.7	83.7	83.7	83.8
≥ 1000	78.6	83.2	84.2	84.8	84.8	84.8	84.8	84.8	84.8	84.9	84.9	84.9	84.9	84.9	84.9	85.0
≥ 900	78.7	83.5	84.6	85.1	85.2	85.2	85.2	85.2	85.2	85.3	85.3	85.3	85.3	85.3	85.3	85.4
≥ 800	78.8	83.6	84.8	85.3	85.4	85.4	85.4	85.6	85.6	85.7	85.7	85.7	85.7	85.7	85.7	85.8
≥ 700	79.2	84.2	85.4	86.0	86.1	86.1	86.1	86.2	86.2	86.3	86.3	86.3	86.3	86.3	86.3	86.4
≥ 600	79.4	84.9	86.1	86.8	87.0	87.0	87.0	87.2	87.2	87.3	87.3	87.3	87.3	87.3	87.3	87.4
≥ 500	79.8	85.4	87.0	87.8	88.0	88.0	88.1	88.4	88.4	88.5	88.5	88.5	88.5	88.5	88.5	88.6
≥ 400	79.8	85.6	87.1	88.6	89.1	89.3	89.5	89.9	89.9	90.1	90.1	90.1	90.1	90.1	90.1	90.2
≥ 300	79.8	85.7	87.3	89.4	90.0	90.3	90.6	91.2	91.2	91.4	91.4	91.4	91.5	91.6	91.7	91.8
≥ 200	79.8	85.7	87.4	89.7	90.4	91.0	91.6	92.8	93.3	93.7	93.9	93.9	94.4	94.5	95.1	95.3
≥ 100	79.8	85.7	87.4	89.7	90.6	91.2	91.8	93.1	93.5	93.9	94.2	94.2	94.7	94.8	95.8	98.1
≥ 0	79.8	85.7	87.4	89.7	90.6	91.2	91.8	93.1	93.5	93.9	94.2	94.2	94.7	94.8	95.8	100.0

TOTAL NUMBER OF OBSERVATIONS 907

USAF ETAC FORM 101-64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0300-0500 (HOURS LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	50.3	52.0	52.3	52.5	52.5	52.5	52.7	52.8	52.8	52.9	52.9	52.9	52.9	52.9	52.9	53.1
≥ 20000	53.5	55.3	55.6	56.0	56.0	56.0	56.1	56.2	56.2	56.2	56.4	56.4	56.4	56.4	56.4	56.7
≥ 18000	53.5	55.3	55.6	56.0	56.0	56.0	56.1	56.2	56.2	56.2	56.4	56.4	56.4	56.4	56.4	56.7
≥ 16000	53.5	55.4	55.8	56.1	56.1	56.1	56.2	56.3	56.3	56.3	56.5	56.5	56.5	56.5	56.5	56.9
≥ 14000	54.0	55.9	56.2	56.5	56.5	56.5	56.7	56.9	56.9	56.9	57.1	57.1	57.1	57.1	57.1	57.4
≥ 12000	55.6	57.5	57.9	58.2	58.2	58.2	58.4	58.5	58.5	58.5	58.7	58.7	58.7	58.7	58.7	59.1
≥ 10000	58.6	61.2	61.5	61.8	61.8	61.8	62.1	62.2	62.2	62.2	62.4	62.4	62.4	62.4	62.4	62.7
≥ 9000	60.6	63.4	63.7	64.0	64.0	64.0	64.3	64.4	64.4	64.4	64.6	64.6	64.6	64.6	64.6	64.9
≥ 8000	61.2	64.0	64.4	64.7	64.7	64.7	64.9	65.0	65.0	65.0	65.3	65.3	65.3	65.3	65.3	65.6
≥ 7000	64.3	67.4	68.0	68.4	68.5	68.6	68.8	69.0	69.0	69.0	69.2	69.2	69.2	69.2	69.2	69.6
≥ 6000	66.3	69.5	70.2	70.6	70.7	70.8	71.0	71.2	71.2	71.2	71.5	71.5	71.5	71.5	71.5	71.8
≥ 5000	67.8	71.0	71.8	72.1	72.2	72.3	72.6	72.8	72.8	72.8	73.0	73.0	73.0	73.0	73.0	73.3
≥ 4500	68.5	71.7	72.6	72.9	73.0	73.1	73.3	73.6	73.6	73.6	73.8	73.8	73.8	73.8	73.8	74.1
≥ 4000	69.8	73.0	74.1	74.4	74.6	74.7	74.9	75.1	75.1	75.1	75.3	75.3	75.3	75.3	75.3	75.7
≥ 3500	70.8	74.3	75.4	76.0	76.1	76.2	76.4	76.7	76.7	76.7	76.9	76.9	76.9	76.9	76.9	77.2
≥ 3000	71.2	74.8	75.9	76.4	76.5	76.7	76.9	77.1	77.1	77.1	77.3	77.3	77.3	77.3	77.3	77.7
≥ 2500	71.7	75.7	76.8	77.3	77.4	77.5	77.8	78.0	78.0	78.0	78.2	78.2	78.2	78.2	78.2	78.5
≥ 2000	72.5	76.4	77.5	78.1	78.3	78.4	78.7	78.9	78.9	78.9	79.1	79.1	79.1	79.1	79.1	79.4
≥ 1800	73.3	77.3	78.4	79.0	79.2	79.3	79.5	79.8	79.8	79.8	80.0	80.0	80.0	80.0	80.0	80.3
≥ 1500	73.7	78.1	79.2	79.8	80.0	80.1	80.3	80.5	80.5	80.5	80.8	80.8	80.8	80.8	80.8	81.1
≥ 1200	74.6	79.0	80.4	81.0	81.2	81.3	81.5	81.7	81.7	81.7	82.0	82.0	82.0	82.0	82.0	82.3
≥ 1000	75.3	80.1	81.5	82.2	82.4	82.6	83.0	83.2	83.2	83.2	83.4	83.4	83.4	83.4	83.4	83.7
≥ 900	75.6	80.8	82.4	83.2	83.4	83.6	84.0	84.2	84.2	84.2	84.4	84.4	84.4	84.4	84.4	84.7
≥ 800	75.9	81.2	83.0	83.7	84.0	84.2	84.5	84.8	84.8	84.8	85.1	85.1	85.1	85.1	85.1	85.4
≥ 700	76.1	81.5	83.3	84.1	84.3	84.5	84.8	85.3	85.3	85.3	85.5	85.5	85.5	85.5	85.5	85.8
≥ 600	76.2	81.9	83.7	84.5	84.7	85.0	85.3	85.8	85.8	85.8	86.1	86.1	86.1	86.1	86.1	86.4
≥ 500	76.3	82.1	84.0	84.8	85.4	85.6	86.0	86.5	86.5	86.5	86.7	86.7	86.7	86.7	86.7	87.1
≥ 400	76.5	82.3	84.3	85.6	86.2	86.4	87.1	87.7	87.7	87.7	87.9	87.9	88.3	88.3	88.3	88.6
≥ 300	76.5	82.3	84.4	86.1	86.8	87.2	88.2	89.4	89.6	89.7	89.9	89.9	90.4	90.5	90.6	91.0
≥ 200	76.5	82.4	84.6	86.4	87.5	87.9	89.3	91.0	91.7	92.1	92.8	92.8	94.2	94.4	94.5	95.2
≥ 100	76.5	82.4	84.6	86.4	87.5	87.9	89.3	91.0	91.7	92.3	93.4	93.4	94.8	94.9	95.6	99.0
≥ 0	76.5	82.4	84.6	86.4	87.5	87.9	89.3	91.0	91.7	92.3	93.4	93.4	94.8	94.9	95.6	100.0

TOTAL NUMBER OF OBSERVATIONS 904

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0600-0800 HOURS LST

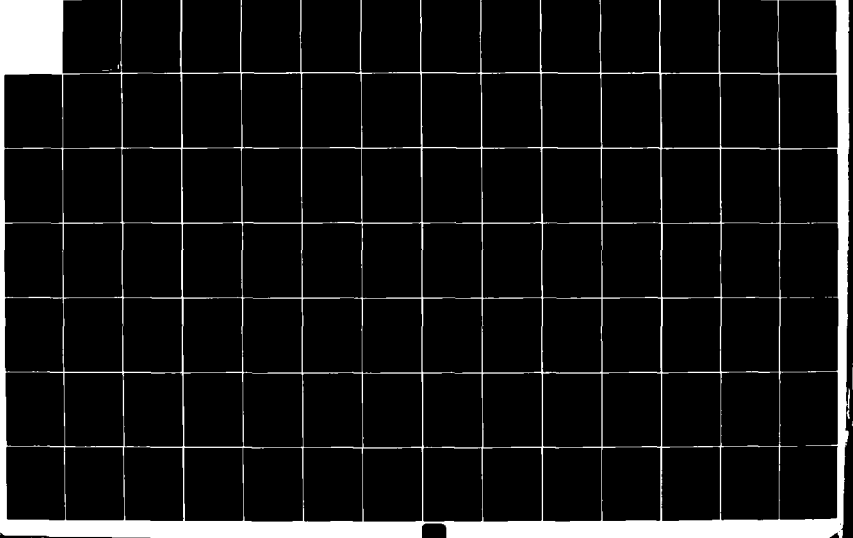
CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	46.5	48.6	48.8	49.2	49.2	49.3	49.4	49.4	49.4	49.6	49.6	49.6	49.6	49.6	49.8	50.1
≥ 20000	51.3	53.5	53.8	54.2	54.3	54.4	54.6	54.6	54.6	54.8	54.8	54.8	54.8	54.8	55.0	55.3
≥ 18000	51.3	53.5	53.8	54.2	54.3	54.4	54.6	54.6	54.6	54.8	54.8	54.8	54.8	54.8	55.0	55.3
≥ 16000	51.4	53.6	53.9	54.3	54.4	54.6	54.7	54.7	54.7	54.9	54.9	54.9	54.9	54.9	55.1	55.4
≥ 14000	51.6	53.9	54.2	54.7	54.8	54.9	55.0	55.0	55.0	55.2	55.2	55.2	55.2	55.2	55.4	55.8
≥ 12000	53.2	55.7	56.1	56.6	56.6	56.8	57.0	57.0	57.0	57.2	57.2	57.2	57.2	57.2	57.4	57.7
≥ 10000	55.9	58.4	58.9	59.5	59.7	59.9	60.0	60.0	60.0	60.3	60.3	60.3	60.3	60.3	60.5	60.8
≥ 9000	58.4	61.3	61.8	62.3	62.6	62.8	62.9	62.9	62.9	63.1	63.1	63.1	63.1	63.1	63.3	63.7
≥ 8000	59.4	62.5	63.0	63.6	63.8	64.0	64.1	64.1	64.1	64.3	64.3	64.3	64.3	64.3	64.5	64.9
≥ 7000	61.9	65.1	65.9	66.5	66.7	67.1	67.2	67.2	67.2	67.4	67.4	67.4	67.4	67.4	67.6	67.9
≥ 6000	63.3	67.0	67.9	68.6	68.8	69.3	69.4	69.4	69.4	69.6	69.6	69.6	69.6	69.6	69.8	70.1
≥ 5000	64.7	68.3	69.3	69.9	70.3	70.7	70.8	70.8	70.8	71.0	71.0	71.0	71.0	71.0	71.2	71.7
≥ 4500	64.9	68.6	69.6	70.3	70.6	71.1	71.1	71.1	71.1	71.4	71.4	71.4	71.4	71.4	71.6	72.0
≥ 4000	65.6	69.8	70.9	71.6	71.9	72.3	72.4	72.4	72.4	72.7	72.7	72.7	72.7	72.7	72.9	73.3
≥ 3500	66.5	71.0	72.1	72.8	73.1	73.7	73.8	73.8	73.8	74.0	74.0	74.0	74.0	74.0	74.2	74.6
≥ 3000	66.8	71.4	72.6	73.3	73.7	74.3	74.4	74.4	74.4	74.6	74.6	74.6	74.6	74.6	74.9	75.3
≥ 2500	67.4	71.9	73.1	74.0	74.3	75.0	75.1	75.1	75.1	75.3	75.3	75.3	75.3	75.3	75.5	76.0
≥ 2000	68.7	73.4	74.6	75.5	75.9	76.5	76.6	76.6	76.6	76.9	76.9	76.9	76.9	76.9	77.3	77.7
≥ 1800	69.3	74.0	75.5	76.4	76.8	77.5	77.6	77.6	77.6	78.0	78.0	78.0	78.0	78.0	78.4	78.8
≥ 1500	70.7	75.6	77.2	78.2	78.6	79.3	79.5	79.5	79.5	79.9	79.9	79.9	79.9	79.9	80.2	80.7
≥ 1200	71.7	76.9	78.7	79.8	80.2	80.9	81.4	81.4	81.4	81.9	81.9	81.9	81.9	81.9	82.2	82.7
≥ 1000	72.6	78.1	79.8	81.0	81.4	82.2	82.8	82.8	82.8	83.2	83.2	83.2	83.2	83.2	83.5	84.0
≥ 900	73.0	78.6	80.5	81.8	82.2	83.0	83.5	83.5	83.5	84.0	84.0	84.0	84.0	84.0	84.3	84.7
≥ 800	73.0	78.6	80.5	81.8	82.2	83.1	83.6	83.6	83.6	84.1	84.1	84.1	84.1	84.1	84.4	84.9
≥ 700	73.2	79.3	81.2	82.5	83.0	83.9	84.4	84.5	84.5	85.0	85.1	85.1	85.1	85.1	85.4	85.8
≥ 600	73.4	79.7	81.7	83.0	83.4	84.3	84.9	85.0	85.0	85.4	85.5	85.5	85.5	85.5	85.8	86.4
≥ 500	74.3	80.7	82.8	84.1	84.6	85.5	86.1	86.3	86.4	86.8	86.9	86.9	86.9	86.9	87.3	87.8
≥ 400	74.4	81.1	83.3	84.7	85.3	86.2	87.0	87.3	87.4	87.8	87.9	87.9	87.9	87.9	88.3	88.8
≥ 300	74.4	81.1	83.3	85.0	85.5	86.6	87.8	88.3	88.5	89.6	89.9	89.9	89.9	90.0	90.7	91.4
≥ 200	74.4	81.1	83.3	85.0	85.6	86.7	88.3	88.8	89.1	90.7	91.5	91.7	92.2	92.5	93.4	94.4
≥ 100	74.4	81.1	83.3	85.0	85.6	86.7	88.3	88.8	89.1	90.7	91.5	91.7	92.4	92.9	94.3	99.2
≥ 0	74.4	81.1	83.3	85.0	85.6	86.7	88.3	88.8	89.1	90.7	91.5	91.7	92.4	92.9	94.3	100.0

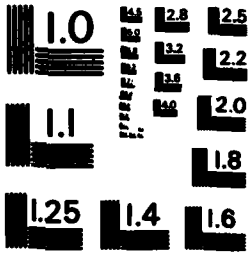
TOTAL NUMBER OF OBSERVATIONS 911

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

AD-A134 200 DULUTH DULUTH IAP MINNESOTA REVISED UNIFORM SUMMARY OF SURFACE WEATHER OB..(U) AIR FORCE ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER SCOTT A.. 01 AUG 83

UNCLASSIFIED USAFETAC/DS-83/030 SBI-AD-E850 418 F/G 4/2 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0900-1100 (HOURS - LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	47.9	49.6	49.8	50.1	50.2	50.3	50.3	50.3	50.3	50.4	50.4	50.4	50.4	50.4	50.4	50.4
≥ 20000	54.4	57.3	57.4	57.7	57.8	57.9	57.9	57.9	57.9	58.1	58.1	58.1	58.1	58.1	58.1	58.1
≥ 18000	54.4	57.0	57.4	57.7	57.8	57.9	57.9	57.9	57.9	58.1	58.1	58.1	58.1	58.1	58.1	58.1
≥ 16000	54.5	57.1	57.5	57.8	57.9	58.1	58.1	58.1	58.1	58.2	58.2	58.2	58.2	58.2	58.2	58.2
≥ 14000	54.6	57.3	57.7	58.1	58.2	58.3	58.3	58.3	58.3	58.4	58.4	58.4	58.4	58.4	58.4	58.4
≥ 12000	55.4	58.1	58.5	58.8	58.9	59.1	59.1	59.1	59.1	59.2	59.2	59.2	59.2	59.2	59.2	59.2
≥ 10000	57.1	60.0	60.5	60.8	60.9	61.3	61.3	61.4	61.4	61.5	61.5	61.5	61.5	61.5	61.5	61.5
≥ 9000	59.1	62.4	62.8	63.1	63.2	63.6	63.6	63.7	63.7	63.8	63.8	63.8	63.8	63.8	63.8	63.8
≥ 8000	60.8	64.2	64.7	65.1	65.2	65.6	65.6	65.7	65.7	65.8	65.8	65.8	65.8	65.8	65.8	65.8
≥ 7000	61.3	65.1	65.6	66.0	66.1	66.7	66.7	66.8	66.8	66.9	66.9	66.9	66.9	66.9	66.9	66.9
≥ 6000	62.1	66.2	66.7	67.1	67.2	67.8	67.8	67.9	67.9	68.0	68.0	68.0	68.0	68.0	68.0	68.0
≥ 5000	63.7	68.1	68.7	69.1	69.2	69.8	69.8	69.9	69.9	70.0	70.0	70.0	70.0	70.0	70.0	70.0
≥ 4500	63.9	68.3	68.9	69.3	69.4	70.0	70.1	70.2	70.2	70.3	70.3	70.3	70.3	70.3	70.3	70.3
≥ 4000	64.6	69.1	69.6	70.1	70.3	70.9	71.0	71.1	71.1	71.2	71.2	71.2	71.2	71.2	71.2	71.2
≥ 3500	65.9	70.1	70.8	71.2	71.4	72.0	72.1	72.2	72.2	72.3	72.3	72.3	72.3	72.3	72.3	72.3
≥ 3000	66.9	72.1	72.7	73.2	73.4	74.0	74.1	74.2	74.2	74.3	74.3	74.3	74.3	74.3	74.3	74.3
≥ 2500	68.3	74.4	75.2	75.6	75.8	76.4	76.5	76.6	76.6	76.7	76.7	76.7	76.7	76.7	76.7	76.7
≥ 2000	70.2	77.3	78.0	78.5	78.7	79.2	79.4	79.5	79.5	79.6	79.6	79.6	79.6	79.6	79.6	79.6
≥ 1800	70.6	78.1	78.9	79.5	79.7	80.2	80.4	80.5	80.5	80.7	80.7	80.7	80.7	80.7	80.7	80.7
≥ 1500	72.0	79.8	80.6	81.3	81.6	82.1	82.2	82.3	82.3	82.6	82.6	82.6	82.6	82.6	82.6	82.6
≥ 1200	73.7	81.6	82.9	83.4	83.7	84.4	84.7	84.8	84.9	85.1	85.1	85.1	85.1	85.1	85.1	85.1
≥ 1000	74.6	82.9	84.8	85.4	85.8	86.5	86.9	87.0	87.1	87.3	87.3	87.3	87.3	87.3	87.3	87.3
≥ 900	74.6	83.1	85.0	85.7	86.1	86.9	87.2	87.3	87.4	87.6	87.6	87.6	87.6	87.6	87.6	87.6
≥ 800	74.9	83.4	85.3	86.2	86.9	87.9	88.2	88.3	88.4	88.6	88.6	88.6	88.6	88.6	88.6	88.6
≥ 700	75.3	84.0	85.9	86.9	87.6	88.6	89.0	89.1	89.2	89.4	89.4	89.4	89.4	89.4	89.4	89.4
≥ 600	75.4	84.1	86.1	87.2	88.1	89.1	89.5	89.6	89.7	90.0	90.0	90.0	90.0	90.0	90.0	90.0
≥ 500	75.5	84.4	86.5	88.1	89.0	90.1	90.8	91.2	91.3	91.5	91.5	91.5	91.5	91.5	91.5	91.5
≥ 400	75.5	84.4	86.5	88.3	89.3	90.7	91.7	92.3	92.5	92.9	93.3	93.3	93.4	93.4	93.4	93.4
≥ 300	75.5	84.4	86.5	88.3	89.6	91.1	92.5	93.5	93.7	94.5	95.0	95.0	95.4	95.4	95.5	95.5
≥ 200	75.5	84.4	86.5	88.3	89.7	91.2	92.6	93.8	94.4	95.1	96.0	96.0	96.6	97.0	97.4	97.5
≥ 100	75.5	84.4	86.5	88.3	89.7	91.2	92.6	93.8	94.4	95.3	96.1	96.1	96.8	97.2	97.8	100.0
≥ 0	75.5	84.4	86.5	88.3	89.7	91.2	92.6	93.8	94.4	95.3	96.1	96.1	96.8	97.2	97.8	100.0

TOTAL NUMBER OF OBSERVATIONS 904

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ~~MAY~~ (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

~~1200-1400~~ (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥⅜	≥5/16	≥¼	≥0
NO CEILING	46.9	49.3	49.3	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8
≥ 20000	53.3	56.6	56.7	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2
≥ 18000	53.4	56.8	56.9	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4
≥ 16000	53.5	56.9	57.0	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5
≥ 14000	53.6	57.2	57.3	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7	57.7
≥ 12000	58.7	58.8	58.5	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9
≥ 10000	55.4	59.5	59.7	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1
≥ 9000	57.2	61.6	61.9	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4	62.4
≥ 8000	58.5	63.0	63.3	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
≥ 7000	60.8	65.3	65.6	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3
≥ 6000	61.7	67.0	67.3	68.0	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1
≥ 5000	63.7	69.2	69.5	70.3	70.4	70.4	70.4	70.4	70.4	70.4	70.4	70.4	70.4	70.4	70.4	70.4
≥ 4500	65.0	70.6	70.9	71.7	71.8	71.9	71.9	71.9	71.9	71.9	71.9	71.9	71.9	71.9	71.9	71.9
≥ 4000	67.1	73.6	73.9	74.7	74.8	74.9	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
≥ 3500	68.8	74.7	75.0	75.8	76.0	76.1	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2
≥ 3000	70.0	76.2	76.7	77.6	77.9	78.0	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1
≥ 2500	72.4	79.5	80.0	80.9	81.3	81.4	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6
≥ 2000	73.9	81.6	82.3	83.4	83.8	83.9	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3
≥ 1800	74.3	82.5	82.9	84.0	84.5	84.6	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9
≥ 1500	75.3	84.1	84.7	85.9	86.3	86.5	86.8	86.8	86.8	86.8	86.8	86.8	86.8	86.8	86.8	86.8
≥ 1200	76.0	85.4	85.9	87.1	87.8	88.0	88.3	88.3	88.3	88.3	88.3	88.3	88.3	88.3	88.3	88.3
≥ 1000	76.5	86.1	86.7	87.9	88.5	88.8	89.4	89.5	89.5	89.5	89.5	89.5	89.5	89.5	89.5	89.5
≥ 900	76.7	86.3	87.1	88.3	89.0	89.2	90.0	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1
≥ 800	76.8	86.7	87.4	88.8	89.5	89.8	91.0	91.1	91.1	91.1	91.1	91.1	91.1	91.1	91.2	91.2
≥ 700	76.8	86.9	87.7	89.3	90.3	90.6	91.9	92.0	92.0	92.2	92.2	92.2	92.2	92.2	92.3	92.3
≥ 600	76.9	87.1	87.9	89.5	90.6	91.1	92.3	92.4	92.4	92.6	92.6	92.6	92.7	92.7	92.8	92.8
≥ 500	76.9	87.1	87.9	89.6	90.7	91.2	92.5	92.6	92.6	93.0	93.0	93.0	93.1	93.1	93.2	93.2
≥ 400	76.9	87.2	88.0	90.1	91.4	92.0	93.4	93.6	93.6	93.8	93.8	93.8	93.8	93.8	93.8	93.8
≥ 300	76.9	87.2	88.0	90.1	91.7	92.3	94.2	95.4	95.4	95.7	95.8	95.8	96.4	96.4	96.5	96.5
≥ 200	76.9	87.2	88.0	90.1	91.7	92.3	94.3	95.8	95.8	96.3	96.7	96.7	97.6	97.7	97.8	97.9
≥ 100	76.9	87.2	88.0	90.1	91.7	92.3	94.3	95.9	95.9	96.3	96.7	96.7	97.8	97.9	98.3	99.6
≥ 0	76.9	87.2	88.0	90.1	91.7	92.3	94.3	95.9	95.9	96.3	96.7	96.7	97.8	97.9	98.3	100.0

TOTAL NUMBER OF OBSERVATIONS 908

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1500-1700 (HOUR (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	48.2	50.9	51.2	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7
≥ 20000	56.5	59.7	60.0	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6
≥ 18000	56.8	60.0	60.4	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9
≥ 16000	57.0	60.2	60.5	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0
≥ 14000	57.3	60.5	60.8	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4
≥ 12000	58.5	61.8	62.1	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7
≥ 10000	59.8	63.7	64.0	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6
≥ 9000	61.5	65.6	65.9	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6
≥ 8000	62.9	67.3	67.9	68.7	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8
≥ 7000	65.5	70.8	71.4	72.3	72.4	72.4	72.4	72.4	72.4	72.4	72.4	72.4	72.4	72.4	72.4	72.4
≥ 6000	68.4	74.6	75.4	76.4	76.5	76.5	76.5	76.5	76.5	76.6	76.6	76.6	76.6	76.6	76.6	76.6
≥ 5000	69.9	76.4	77.2	78.4	78.5	78.5	78.5	78.5	78.5	78.6	78.6	78.6	78.6	78.6	78.6	78.6
≥ 4500	71.4	78.1	79.0	80.4	80.5	80.5	80.5	80.5	80.5	80.6	80.6	80.6	80.6	80.6	80.6	80.6
≥ 4000	72.5	79.6	80.6	82.0	82.2	82.2	82.3	82.3	82.3	82.5	82.5	82.5	82.5	82.5	82.5	82.5
≥ 3500	74.6	81.8	82.8	84.3	84.5	84.5	84.7	84.7	84.7	84.8	84.8	84.8	84.8	84.8	84.8	84.8
≥ 3000	76.5	83.9	85.0	86.6	87.1	87.1	87.3	87.3	87.3	87.4	87.4	87.4	87.4	87.4	87.4	87.4
≥ 2500	77.3	84.9	86.0	87.6	88.2	88.2	88.4	88.4	88.4	88.5	88.5	88.5	88.5	88.5	88.5	88.5
≥ 2000	77.8	85.5	86.6	88.3	88.9	88.9	89.1	89.1	89.1	89.2	89.2	89.2	89.2	89.2	89.2	89.2
≥ 1800	78.0	85.8	86.9	88.5	89.1	89.1	89.3	89.3	89.3	89.4	89.4	89.4	89.4	89.4	89.4	89.4
≥ 1500	78.0	85.8	86.9	88.5	89.1	89.1	89.3	89.3	89.3	89.4	89.4	89.4	89.4	89.4	89.4	89.4
≥ 1200	78.6	86.4	87.5	89.3	90.0	90.1	90.4	90.4	90.4	90.5	90.5	90.5	90.5	90.5	90.5	90.5
≥ 1000	78.6	87.2	88.3	90.2	91.1	91.2	91.5	91.5	91.5	91.6	91.6	91.6	91.7	91.7	91.7	91.7
≥ 900	78.9	87.4	88.6	90.5	91.4	91.6	91.9	91.9	91.9	92.1	92.1	92.1	92.2	92.2	92.2	92.2
≥ 800	79.0	88.2	89.5	91.4	92.3	92.5	92.8	92.8	92.8	92.9	92.9	92.9	93.0	93.0	93.0	93.0
≥ 700	79.0	88.3	89.8	91.9	92.9	93.2	93.6	93.6	93.6	93.7	93.7	93.7	93.8	93.8	93.8	93.8
≥ 600	79.0	88.3	89.8	91.9	93.3	93.7	94.2	94.2	94.2	94.3	94.3	94.3	94.4	94.4	94.4	94.4
≥ 500	79.1	88.4	90.0	92.2	93.5	94.2	94.6	94.7	94.7	94.8	94.8	94.8	94.9	94.9	94.9	94.9
≥ 400	79.1	88.4	90.0	92.3	93.7	94.5	95.0	95.1	95.1	95.4	95.4	95.4	95.6	95.6	95.6	95.6
≥ 300	79.1	88.4	90.0	92.3	93.7	94.8	95.8	96.1	96.1	96.6	96.7	96.7	96.9	96.9	96.9	96.9
≥ 200	79.1	88.4	90.0	92.3	93.7	94.8	95.9	96.4	96.4	96.8	96.9	96.9	97.1	97.2	97.4	98.1
≥ 100	79.1	88.4	90.0	92.3	93.7	94.8	95.9	96.4	96.4	96.8	96.9	96.9	97.2	97.4	97.8	99.6
0	79.1	88.4	90.0	92.3	93.7	94.8	95.9	96.4	96.4	96.8	96.9	96.9	97.2	97.4	97.8	100.0

TOTAL NUMBER OF OBSERVATIONS 806

USAF ETAC FORM NO. 64 0-14-3 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

~~1800-2000~~ HOUR (LST)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	48.7	51.2	51.8	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
≥ 20000	56.6	59.6	60.5	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0
≥ 18000	57.1	60.0	60.9	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5
≥ 16000	57.3	60.3	61.1	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7
≥ 14000	57.6	60.6	61.5	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0
≥ 12000	58.6	61.6	62.5	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
≥ 10000	61.5	64.6	65.7	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3
≥ 9000	63.0	66.6	67.6	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3
≥ 8000	64.6	68.2	69.1	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
≥ 7000	68.2	72.6	73.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3
≥ 6000	71.3	76.9	77.8	79.0	79.1	79.1	79.1	79.1	79.1	79.1	79.1	79.1	79.1	79.1	79.1	79.1
≥ 5000	73.3	79.3	80.0	81.5	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
≥ 4500	74.2	80.0	81.0	82.5	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.7
≥ 4000	74.9	80.9	81.9	83.3	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6
≥ 3500	75.2	81.3	82.3	83.8	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0
≥ 3000	76.3	82.7	83.7	85.2	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5	85.5
≥ 2500	77.2	83.9	84.9	86.4	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
≥ 2000	77.9	84.3	85.4	87.0	87.2	87.3	87.5	87.5	87.5	87.6	87.6	87.6	87.6	87.6	87.6	87.6
≥ 1800	77.6	84.5	85.7	87.2	87.4	87.5	87.7	87.7	87.7	87.9	87.9	87.9	87.9	87.9	87.9	87.9
≥ 1500	78.1	85.3	86.5	88.1	88.3	88.5	88.6	88.6	88.6	89.0	89.0	89.0	89.0	89.0	89.0	89.0
≥ 1200	78.7	86.2	87.5	89.1	89.4	89.7	90.1	90.1	90.1	90.2	90.2	90.2	90.2	90.2	90.2	90.2
≥ 1000	78.9	86.6	88.0	89.5	89.8	90.2	90.5	90.7	90.7	90.8	90.8	90.8	90.8	90.8	90.8	90.8
≥ 900	79.4	87.4	88.7	90.3	90.7	91.1	91.4	91.6	91.6	91.7	91.7	91.7	91.7	91.7	91.7	91.7
≥ 800	79.4	87.5	88.9	90.6	91.1	91.5	91.7	91.9	91.9	92.1	92.1	92.1	92.1	92.1	92.1	92.1
≥ 700	79.4	87.6	89.1	90.6	91.3	91.6	91.9	92.3	92.3	92.4	92.4	92.4	92.4	92.4	92.4	92.4
≥ 600	79.4	87.6	89.1	90.6	91.6	92.2	92.6	92.8	92.8	93.2	93.2	93.2	93.2	93.2	93.2	93.2
≥ 500	79.5	87.7	89.2	91.3	92.3	92.6	93.2	93.9	93.9	94.3	94.3	94.3	94.3	94.3	94.3	94.3
≥ 400	79.5	87.7	89.2	91.3	92.3	92.8	93.5	94.3	94.3	95.1	95.3	95.3	95.3	95.3	95.3	95.3
≥ 300	79.5	87.7	89.2	91.5	92.5	93.3	94.2	95.1	95.4	95.8	96.0	96.0	96.0	96.0	96.1	96.1
≥ 200	79.5	87.7	89.2	91.5	92.5	93.3	94.2	95.2	95.7	96.2	96.4	96.4	96.5	97.0	97.6	97.9
≥ 100	79.5	87.7	89.2	91.5	92.5	93.3	94.2	95.2	95.7	96.2	96.7	96.7	97.1	97.4	98.2	99.3
≥ 0	79.5	87.7	89.2	91.5	92.5	93.3	94.2	95.2	95.7	96.2	96.7	96.7	97.1	97.4	98.2	100.0

TOTAL NUMBER OF OBSERVATIONS 804

USAF ETAC FORM AM 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

2100-2300 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	53.2	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.5	55.5
≥ 20000	58.3	60.6	60.8	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.1	61.1
≥ 18000	58.4	60.8	60.9	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.3	61.3
≥ 16000	58.5	60.9	61.0	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.4	61.4
≥ 14000	59.0	61.3	61.4	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.9	61.9
≥ 12000	60.0	62.3	62.5	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.9	62.9
≥ 10000	63.6	66.5	66.7	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.2	67.2
≥ 9000	65.5	68.6	68.8	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.3	69.3
≥ 8000	66.0	69.3	69.7	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.3	70.3
≥ 7000	69.7	73.3	73.6	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.2	74.2
≥ 6000	72.7	76.8	77.2	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.7	77.7
≥ 5000	73.8	77.9	78.3	78.7	78.7	78.7	78.7	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.9	78.9
≥ 4500	74.8	79.3	79.6	80.2	80.2	80.2	80.2	80.3	80.3	80.3	80.3	80.3	80.3	80.3	80.4	80.4
≥ 4000	75.8	80.3	80.6	81.2	81.2	81.2	81.2	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.4	81.4
≥ 3500	76.3	81.0	81.5	82.0	82.0	82.0	82.0	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.3	82.3
≥ 3000	76.7	81.6	82.0	82.6	82.6	82.6	82.6	82.7	82.7	82.7	82.7	82.7	82.7	82.7	82.8	82.8
≥ 2500	78.0	83.0	83.5	84.0	84.0	84.0	84.0	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.3	84.3
≥ 2000	78.6	83.7	84.1	84.6	84.6	84.6	84.6	84.9	84.9	84.9	84.9	84.9	84.9	84.9	85.0	85.0
≥ 1800	78.8	84.0	84.5	85.1	85.1	85.1	85.1	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.4	85.4
≥ 1500	79.2	84.5	84.8	85.5	85.5	85.5	85.5	85.6	85.6	85.6	85.6	85.6	85.6	85.6	85.7	85.7
≥ 1200	80.3	85.7	86.1	86.9	86.9	86.9	86.9	87.0	87.0	87.0	87.0	87.0	87.0	87.0	87.1	87.1
≥ 1000	80.4	86.1	86.7	87.5	87.6	87.6	87.6	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.9	87.9
≥ 900	80.7	86.7	87.5	88.2	88.4	88.4	88.4	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.7	88.7
≥ 800	80.7	86.7	87.5	88.4	88.5	88.5	88.5	88.7	88.7	88.7	88.7	88.7	88.7	88.7	88.8	88.8
≥ 700	80.8	87.0	87.8	88.7	88.8	88.8	88.8	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.1	89.1
≥ 600	81.0	87.6	88.9	89.8	90.0	90.1	90.1	90.4	90.4	90.4	90.4	90.4	90.4	90.4	90.5	90.5
≥ 500	81.5	88.4	89.8	90.9	91.1	91.2	91.4	91.7	91.7	91.7	91.7	91.7	91.7	91.7	91.8	91.8
≥ 400	81.5	88.6	90.0	91.4	91.8	92.1	92.5	92.9	92.9	92.9	93.0	93.0	93.0	93.0	93.1	93.1
≥ 300	81.5	88.6	90.1	92.0	92.7	93.5	93.9	94.5	94.5	94.5	94.6	94.6	94.7	94.7	94.9	94.9
≥ 200	81.5	88.6	90.1	92.1	92.8	93.7	94.2	95.2	95.3	95.4	95.9	95.9	96.6	96.7	97.2	97.5
≥ 100	81.5	88.6	90.1	92.1	92.8	93.7	94.3	95.3	95.5	95.8	96.2	96.2	97.1	97.2	98.0	99.0
0	81.5	88.6	90.1	92.1	92.8	93.7	94.3	95.3	95.5	95.8	96.2	96.2	97.1	97.2	98.0	100.0

TOTAL NUMBER OF OBSERVATIONS 902

USAF ETAC FORM AUG 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS (L.S.T.))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	49.4	51.6	51.8	52.1	52.1	52.1	52.1	52.1	52.1	52.2	52.2	52.2	52.2	52.2	52.2	52.3
≥ 20000	55.0	57.5	57.8	58.2	58.2	58.3	58.3	58.3	58.3	58.4	58.4	58.4	58.4	58.4	58.4	58.5
≥ 18000	55.1	57.7	58.0	58.4	58.4	58.4	58.5	58.5	58.5	58.5	58.6	58.6	58.6	58.6	58.6	58.7
≥ 16000	55.2	57.8	58.1	58.5	58.5	58.6	58.6	58.6	58.6	58.6	58.7	58.7	58.7	58.7	58.7	58.8
≥ 14000	55.5	58.2	58.5	58.9	58.9	58.9	59.0	59.0	59.0	59.0	59.1	59.1	59.1	59.1	59.1	59.2
≥ 12000	56.8	59.5	59.8	60.2	60.2	60.3	60.3	60.3	60.3	60.3	60.8	60.8	60.8	60.8	60.5	60.6
≥ 10000	59.2	62.3	62.6	63.1	63.1	63.2	63.2	63.2	63.2	63.3	63.3	63.3	63.3	63.3	63.4	63.5
≥ 9000	61.2	64.5	64.9	65.4	65.4	65.5	65.5	65.5	65.5	65.6	65.6	65.6	65.6	65.6	65.7	65.8
≥ 8000	62.3	65.8	66.3	66.8	66.9	66.9	67.0	67.0	67.0	67.1	67.1	67.1	67.1	67.1	67.1	67.2
≥ 7000	64.9	68.7	69.3	69.8	69.9	70.0	70.1	70.1	70.1	70.2	70.2	70.2	70.2	70.2	70.2	70.3
≥ 6000	67.1	71.4	72.0	72.6	72.7	72.9	72.9	73.0	73.0	73.0	73.1	73.1	73.1	73.1	73.1	73.2
≥ 5000	68.6	73.1	73.7	74.4	74.6	74.7	74.7	74.8	74.8	74.9	74.9	74.9	74.9	74.9	74.9	75.0
≥ 4500	69.4	74.0	74.7	75.4	75.5	75.7	75.7	75.8	75.8	75.9	75.9	75.9	75.9	75.9	75.9	76.0
≥ 4000	70.6	75.4	76.1	76.9	77.0	77.2	77.3	77.3	77.3	77.4	77.4	77.4	77.4	77.4	77.5	77.6
≥ 3500	71.5	76.6	77.3	78.1	78.3	78.4	78.5	78.6	78.6	78.6	78.7	78.7	78.7	78.7	78.7	78.8
≥ 3000	72.4	77.6	78.4	79.3	79.5	79.7	79.8	79.8	79.8	79.9	79.9	79.9	79.9	79.9	80.0	80.1
≥ 2500	73.5	79.1	79.9	80.8	81.0	81.2	81.4	81.4	81.4	81.5	81.5	81.5	81.5	81.5	81.5	81.7
≥ 2000	74.4	80.4	81.2	82.1	82.4	82.6	82.7	82.8	82.8	82.9	82.9	82.9	82.9	82.9	83.0	83.1
≥ 1800	74.8	80.9	81.8	82.7	83.0	83.2	83.3	83.4	83.4	83.5	83.5	83.5	83.5	83.5	83.6	83.7
≥ 1500	75.5	81.6	82.6	83.6	84.0	84.2	84.4	84.5	84.5	84.6	84.6	84.6	84.6	84.6	84.7	84.8
≥ 1200	76.4	83.0	84.0	85.0	85.3	85.6	85.9	85.9	85.9	86.1	86.1	86.1	86.1	86.1	86.1	86.2
≥ 1000	77.0	83.8	85.0	86.1	86.4	86.7	87.0	87.2	87.2	87.3	87.3	87.3	87.3	87.3	87.4	87.5
≥ 900	77.2	84.2	85.5	86.6	87.0	87.4	87.7	87.8	87.8	87.9	88.0	88.0	88.0	88.0	88.0	88.2
≥ 800	77.3	84.5	85.8	87.0	87.5	87.8	88.2	88.4	88.4	88.5	88.5	88.5	88.5	88.5	88.6	88.7
≥ 700	77.5	84.9	86.3	87.5	88.0	88.4	88.8	89.0	89.0	89.2	89.2	89.2	89.2	89.2	89.3	89.4
≥ 600	77.6	85.1	86.7	87.9	88.4	88.8	89.2	89.5	89.5	89.7	89.9	89.9	89.9	89.9	90.0	90.1
≥ 500	77.9	85.5	87.1	88.4	89.3	89.8	90.3	90.7	90.7	90.9	90.9	90.9	91.0	91.0	91.0	91.1
≥ 400	77.9	85.7	87.3	89.0	89.9	90.5	91.2	91.7	91.8	92.1	92.2	92.2	92.3	92.3	92.3	92.5
≥ 300	77.9	85.7	87.4	89.3	90.3	91.1	92.1	92.9	93.0	93.5	93.7	93.7	93.9	93.9	94.1	94.3
≥ 200	77.9	85.7	87.4	89.4	90.5	91.4	92.4	93.2	93.4	94.0	94.4	94.5	94.7	94.8	94.9	95.2
≥ 100	77.9	85.7	87.4	89.4	90.5	91.4	92.4	93.2	93.4	94.0	94.4	94.5	94.7	94.8	94.9	95.2
0	77.9	85.7	87.4	89.4	90.5	91.4	92.4	93.2	93.4	94.0	94.4	94.5	94.7	94.8	94.9	95.2

TOTAL NUMBER OF OBSERVATIONS 7250

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0000-0200 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	53.3	55.7	56.3	56.6	56.6	56.6	56.6	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.8	56.8
≥ 20000	58.1	60.7	61.5	61.9	61.9	61.9	61.9	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.1	62.1
≥ 18000	58.2	60.8	61.7	62.0	62.0	62.0	62.0	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.2	62.2
≥ 16000	58.2	60.8	61.7	62.0	62.0	62.0	62.0	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.2	62.2
≥ 14000	58.9	61.7	62.5	62.8	62.8	62.8	62.8	62.9	62.9	62.9	62.9	62.9	62.9	62.9	63.0	63.0
≥ 12000	59.9	62.9	63.7	64.1	64.1	64.1	64.1	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.3	64.3
≥ 10000	62.9	65.9	66.7	67.0	67.0	67.0	67.0	67.2	67.2	67.2	67.2	67.2	67.2	67.2	67.3	67.3
≥ 9000	64.1	68.2	69.0	69.3	69.3	69.3	69.3	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.6	69.6
≥ 8000	65.3	69.6	70.4	70.8	70.8	70.8	70.8	71.0	71.0	71.0	71.0	71.0	71.1	71.1	71.2	71.2
≥ 7000	68.4	72.8	73.6	74.1	74.1	74.1	74.1	74.2	74.2	74.2	74.2	74.2	74.3	74.3	74.4	74.4
≥ 6000	69.7	74.4	75.3	75.8	75.8	75.8	75.8	75.9	75.9	75.9	75.9	75.9	76.0	76.0	76.1	76.1
≥ 5000	71.0	75.9	76.9	77.4	77.4	77.4	77.4	77.5	77.5	77.5	77.5	77.5	77.6	77.6	77.7	77.7
≥ 4500	71.5	76.6	77.6	78.1	78.1	78.1	78.1	78.2	78.2	78.2	78.2	78.2	78.3	78.3	78.4	78.4
≥ 4000	73.2	78.4	79.4	79.9	79.9	79.9	79.9	80.0	80.0	80.0	80.0	80.0	80.1	80.1	80.3	80.3
≥ 3500	74.1	79.3	80.4	80.8	80.8	80.8	80.9	81.1	81.1	81.1	81.1	81.1	81.2	81.2	81.3	81.3
≥ 3000	74.2	79.7	80.7	81.2	81.2	81.3	81.3	81.4	81.4	81.4	81.4	81.4	81.5	81.5	81.6	81.6
≥ 2500	74.5	80.1	81.5	82.0	82.0	82.1	82.2	82.3	82.3	82.3	82.3	82.3	82.4	82.4	82.5	82.5
≥ 2000	75.2	80.9	82.3	82.9	82.9	83.0	83.2	83.4	83.4	83.4	83.4	83.4	83.5	83.5	83.6	83.6
≥ 1800	75.3	81.3	82.7	83.2	83.2	83.4	83.7	83.8	83.8	83.8	83.8	83.8	83.9	83.9	84.0	84.0
≥ 1500	76.0	82.4	83.8	84.5	84.5	84.6	85.0	85.1	85.1	85.1	85.1	85.1	85.2	85.2	85.3	85.3
≥ 1200	77.7	84.4	86.1	86.7	86.7	86.8	87.1	87.3	87.3	87.3	87.3	87.3	87.4	87.4	87.5	87.5
≥ 1000	78.0	85.0	86.5	87.0	87.0	87.1	87.5	87.6	87.6	87.6	87.6	87.6	87.7	87.7	87.8	87.8
≥ 900	78.5	85.6	87.3	87.9	87.9	88.1	88.4	88.5	88.5	88.5	88.5	88.5	88.6	88.6	88.7	88.7
≥ 800	78.5	85.6	87.4	88.1	88.1	88.2	88.5	88.6	88.6	88.6	88.6	88.6	88.7	88.7	88.9	88.9
≥ 700	79.0	86.1	87.9	88.9	88.9	89.0	89.3	89.7	89.7	89.7	89.7	89.7	89.8	89.8	89.9	89.9
≥ 600	79.0	86.2	88.0	89.3	89.3	89.4	89.9	90.4	90.4	90.4	90.4	90.4	90.5	90.5	90.6	90.6
≥ 500	79.0	86.2	88.0	89.6	89.6	89.9	90.4	90.8	90.8	90.8	90.8	90.8	90.9	90.9	91.0	91.0
≥ 400	79.0	86.3	88.0	89.7	89.9	90.4	91.2	91.6	91.6	91.6	91.6	91.6	91.7	91.7	91.8	91.8
≥ 300	79.3	86.7	89.0	90.4	90.9	91.7	92.3	92.8	92.8	93.0	93.1	93.1	93.2	93.2	93.3	93.3
≥ 200	79.3	86.7	89.0	90.4	91.3	92.4	93.5	93.9	93.9	94.1	94.4	94.4	94.5	94.7	95.2	95.5
≥ 100	79.3	86.7	89.0	90.4	91.3	92.4	93.6	94.1	94.1	94.5	94.7	94.7	95.2	95.5	96.8	99.0
0	79.3	86.7	89.0	90.4	91.3	92.4	93.6	94.1	94.1	94.5	94.7	94.7	95.2	95.5	96.9	100.0

TOTAL NUMBER OF OBSERVATIONS 871

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0300-0600 (HOUR (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	46.0	49.9	50.2	50.6	50.8	50.8	51.0	51.0	51.0	51.1	51.1	51.1	51.3	51.4	51.6	52.0
≥ 20000	50.0	54.0	54.6	55.3	55.3	55.3	55.5	55.5	55.5	55.9	55.9	55.9	56.0	56.1	56.3	56.7
≥ 18000	50.3	54.4	54.9	55.4	55.6	55.6	55.9	55.9	55.9	56.2	56.2	56.2	56.3	56.4	56.7	57.0
≥ 16000	50.3	54.4	54.9	55.4	55.6	55.6	55.9	55.9	55.9	56.2	56.2	56.2	56.3	56.4	56.7	57.0
≥ 14000	51.4	55.5	56.2	56.7	56.9	56.9	57.1	57.1	57.1	57.5	57.5	57.5	57.6	57.7	57.9	58.3
≥ 12000	52.2	56.4	57.2	57.8	58.0	58.0	58.3	58.3	58.3	58.6	58.6	58.6	58.7	58.9	59.2	59.5
≥ 10000	56.0	60.3	61.1	61.8	62.1	62.1	62.3	62.3	62.3	62.8	62.8	62.8	63.0	63.1	63.4	63.8
≥ 9000	59.1	63.8	64.7	65.4	65.6	65.6	65.9	65.9	65.9	66.3	66.3	66.3	66.4	66.7	67.0	67.5
≥ 8000	60.5	65.2	66.2	67.0	67.2	67.2	67.5	67.5	67.5	67.9	67.9	67.9	68.2	68.3	68.6	69.1
≥ 7000	63.0	68.2	69.2	70.2	70.5	70.5	70.7	70.7	70.7	71.1	71.1	71.1	71.4	71.5	71.8	72.3
≥ 6000	64.7	70.0	71.1	72.3	72.5	72.5	72.8	72.8	72.8	73.2	73.2	73.2	73.4	73.6	73.9	74.4
≥ 5000	65.9	71.3	72.4	73.6	73.8	73.8	74.0	74.0	74.0	74.5	74.5	74.5	74.7	74.8	75.2	75.6
≥ 4500	66.4	71.7	73.0	74.1	74.4	74.4	74.6	74.6	74.6	75.1	75.1	75.1	75.3	75.4	75.7	76.2
≥ 4000	67.6	73.0	74.4	75.5	75.7	75.7	76.0	76.0	76.0	76.4	76.4	76.4	76.7	76.8	77.1	77.6
≥ 3500	68.5	74.0	75.4	76.6	76.8	76.8	77.0	77.0	77.0	77.5	77.5	77.5	77.7	77.8	78.2	78.6
≥ 3000	68.9	74.4	75.7	76.9	77.2	77.2	77.5	77.5	77.5	77.9	77.9	77.9	78.2	78.3	78.6	79.2
≥ 2500	69.2	74.8	76.2	77.4	77.9	77.9	78.2	78.2	78.2	78.6	78.6	78.6	78.9	79.0	79.3	79.9
≥ 2000	70.1	76.6	77.8	79.2	79.5	79.5	80.1	80.1	80.1	80.6	80.6	80.6	80.8	80.9	81.3	81.8
≥ 1800	71.1	77.5	78.9	80.3	81.0	81.0	81.3	81.3	81.3	81.7	81.7	81.7	82.0	82.1	82.4	83.0
≥ 1500	71.3	77.6	79.0	80.6	81.3	81.3	81.7	81.7	81.7	82.2	82.2	82.2	82.4	82.5	82.9	83.4
≥ 1200	71.6	78.5	79.9	81.6	82.4	82.4	82.8	82.8	82.8	83.2	83.2	83.2	83.4	83.6	83.9	84.5
≥ 1000	72.9	79.5	81.0	82.8	83.6	83.6	84.0	84.0	84.0	84.5	84.5	84.5	84.7	84.8	85.2	85.7
≥ 900	73.6	80.6	82.3	84.1	84.9	84.9	85.4	85.4	85.4	85.9	85.9	85.9	86.1	86.2	86.6	87.1
≥ 800	73.9	81.3	82.9	84.8	85.6	85.6	86.1	86.1	86.1	86.6	86.6	86.6	86.8	86.9	87.2	87.8
≥ 700	74.8	82.4	84.0	86.2	86.9	86.9	87.5	87.6	87.6	88.0	88.0	88.0	88.3	88.4	88.7	89.3
≥ 600	74.9	82.8	84.3	86.3	87.2	87.2	87.9	88.3	88.3	88.7	88.7	88.7	89.0	89.1	89.4	90.0
≥ 500	74.9	82.6	84.3	86.3	87.2	87.4	87.9	88.3	88.3	88.7	88.7	88.7	89.0	89.1	89.4	90.0
≥ 400	75.2	83.0	84.6	86.8	87.7	88.3	89.0	89.0	89.0	90.3	90.3	90.3	90.6	90.7	91.0	91.6
≥ 300	75.2	83.0	84.7	87.0	88.3	89.2	91.0	91.6	91.6	92.1	92.1	92.1	92.5	92.6	93.1	93.7
≥ 200	75.2	83.0	84.7	87.2	88.7	89.8	91.8	92.5	92.5	93.7	93.8	93.8	94.2	94.3	95.0	96.0
≥ 100	75.2	83.0	84.7	87.2	88.7	89.8	91.8	92.5	92.5	93.9	94.0	94.0	95.3	95.5	96.4	98.9
0	75.2	83.0	84.7	87.2	88.7	89.8	91.8	92.5	92.5	93.9	94.0	94.0	95.3	95.5	96.4	98.9

TOTAL NUMBER OF OBSERVATIONS 870

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0600-0900 (HOURS L.S.T.)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	49.2	46.8	46.8	47.2	47.3	47.3	47.4	47.5	47.5	47.5	47.5	47.5	47.7	47.7	47.7	47.7
≥ 20000	49.7	53.2	53.9	53.9	54.0	54.0	54.3	54.9	54.9	54.5	54.5	54.5	54.7	54.7	54.7	54.7
≥ 18000	49.9	53.5	53.6	54.2	54.3	54.3	54.5	54.6	54.6	54.7	54.7	54.7	55.0	55.0	55.0	55.0
≥ 16000	49.9	53.5	53.6	54.2	54.3	54.3	54.5	54.6	54.6	54.7	54.7	54.7	55.0	55.0	55.0	55.0
≥ 14000	50.6	54.3	54.4	55.0	55.1	55.1	55.3	55.4	55.4	55.5	55.5	55.5	55.8	55.8	55.8	55.8
≥ 12000	52.2	55.9	56.0	56.7	56.9	56.9	57.1	57.2	57.2	57.5	57.5	57.5	57.7	57.7	57.7	57.7
≥ 10000	55.8	59.5	59.9	60.7	61.0	61.0	61.3	61.5	61.5	61.7	61.7	61.7	61.9	61.9	61.9	61.9
≥ 9000	59.3	63.3	63.6	64.5	64.8	64.8	65.1	65.2	65.2	65.5	65.5	65.5	65.7	65.7	65.7	65.7
≥ 8000	61.0	65.2	65.6	66.4	66.7	66.7	67.0	67.2	67.2	67.4	67.4	67.4	67.6	67.6	67.6	67.6
≥ 7000	64.0	68.4	68.8	69.6	69.9	70.0	70.4	70.5	70.5	70.7	70.7	70.7	70.9	70.9	70.9	70.9
≥ 6000	66.0	70.5	70.9	71.7	72.2	72.3	72.6	72.7	72.7	73.0	73.0	73.0	73.2	73.2	73.2	73.2
≥ 5000	67.2	71.7	72.2	73.0	73.4	73.5	74.0	74.1	74.1	74.3	74.3	74.3	74.6	74.6	74.6	74.6
≥ 4500	67.6	72.2	72.6	73.4	73.9	74.0	74.5	74.6	74.6	74.8	74.8	74.8	75.0	75.0	75.0	75.0
≥ 4000	68.5	73.1	73.5	74.3	74.8	74.9	75.4	75.5	75.5	75.7	75.7	75.7	75.9	75.9	75.9	75.9
≥ 3500	68.6	73.3	73.8	74.7	75.1	75.3	75.7	75.8	75.8	76.1	76.1	76.1	76.3	76.3	76.3	76.3
≥ 3000	69.0	73.7	74.2	75.1	75.6	75.7	76.2	76.3	76.3	76.5	76.5	76.5	76.7	76.7	76.7	76.7
≥ 2500	69.8	74.5	75.0	75.9	76.4	76.5	77.0	77.1	77.1	77.3	77.3	77.3	77.5	77.5	77.5	77.5
≥ 2000	70.7	75.6	76.4	77.4	77.8	78.0	78.4	78.7	78.7	78.9	78.9	78.9	79.1	79.1	79.1	79.1
≥ 1800	71.0	75.9	76.7	77.8	78.2	78.3	78.8	79.0	79.0	79.2	79.2	79.2	79.5	79.5	79.5	79.5
≥ 1500	73.0	77.9	78.8	79.8	80.3	80.4	80.8	81.1	81.1	81.3	81.3	81.3	81.5	81.5	81.5	81.5
≥ 1200	74.3	79.4	80.3	81.3	81.9	82.0	82.6	82.8	82.8	83.0	83.0	83.0	83.2	83.2	83.2	83.2
≥ 1000	75.1	80.6	81.5	82.7	83.2	83.4	83.9	84.2	84.2	84.4	84.4	84.4	84.6	84.6	84.6	84.6
≥ 900	75.7	81.4	82.3	83.6	84.2	84.3	85.2	85.4	85.4	85.6	85.6	85.6	85.9	85.9	85.9	85.9
≥ 800	76.2	82.1	83.2	84.6	85.2	85.3	86.4	86.7	86.7	86.9	86.9	86.9	87.1	87.1	87.1	87.1
≥ 700	76.7	82.8	84.0	85.6	86.3	86.5	87.9	88.1	88.1	88.4	88.4	88.4	88.6	88.6	88.6	88.6
≥ 600	77.1	83.5	84.9	86.7	87.3	87.7	89.2	89.4	89.4	89.6	89.6	89.6	89.9	89.9	89.9	89.9
≥ 500	77.3	83.7	85.2	87.0	87.8	88.1	90.0	90.2	90.2	90.4	90.4	90.4	90.8	90.8	90.8	90.8
≥ 400	77.3	83.9	85.5	87.8	88.9	88.8	91.0	91.2	91.3	91.7	91.7	91.7	92.0	92.0	92.0	92.1
≥ 300	77.3	84.0	85.6	87.7	88.7	89.4	92.4	92.9	93.0	93.4	93.5	93.5	94.0	94.0	94.0	94.2
≥ 200	77.3	84.0	85.6	87.7	88.7	89.4	92.4	93.2	93.5	93.8	94.4	94.4	95.2	95.3	95.7	96.8
≥ 100	77.3	84.0	85.6	87.7	88.7	89.4	92.4	93.2	93.5	93.8	94.4	94.4	95.4	95.6	96.2	98.9
0	77.3	84.0	85.6	87.7	88.7	89.4	92.4	93.2	93.5	93.8	94.4	94.4	95.4	95.6	96.2	100.0

TOTAL NUMBER OF OBSERVATIONS 872

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0900-1100 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING ≥ 20000	46.1 58.1	47.6 56.3	47.8 56.5	47.8 56.6	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7	47.9 56.7
≥ 18000 ≥ 16000	54.4 54.4	56.3 56.3	56.7 56.7	56.8 56.8	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9	56.9 56.9
≥ 14000 ≥ 12000	54.8 56.5	56.9 58.5	57.3 58.8	57.4 59.0	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1	57.5 59.1
≥ 10000 ≥ 9000	59.3 60.9	61.5 63.4	62.0 63.8	62.1 63.9	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1	62.2 64.1
≥ 8000 ≥ 7000	63.0 65.0	65.7 68.2	66.2 68.7	66.2 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8	66.4 68.8
≥ 6000 ≥ 5000	66.5 68.3	69.6 71.5	70.3 72.4	70.4 72.5	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6	70.5 72.6
≥ 4500 ≥ 4000	68.9 70.5	72.5 74.3	72.9 74.8	73.0 75.0	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1	73.2 75.1
≥ 3500 ≥ 3000	72.4 73.6	76.2 77.8	76.6 78.2	76.8 78.5	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6	77.0 78.6
≥ 2500 ≥ 2000	75.3 77.3	79.3 81.6	79.7 82.1	80.0 82.5	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6	80.2 82.6
≥ 1800 ≥ 1500	79.1 80.5	83.9 85.5	84.4 86.1	84.6 86.4	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5	84.9 86.5
≥ 1200 ≥ 1000	81.7 82.3	87.2 87.8	88.0 88.7	88.5 89.4	88.7 89.6	88.9 90.1	88.9 90.1	88.9 90.1	88.9 90.1	88.9 90.1	88.9 90.1	88.9 90.1	88.9 90.1	88.9 90.1	88.9 90.1	88.9 90.1
≥ 900 ≥ 800	82.4 82.9	88.1 88.6	89.1 90.0	89.5 90.4	90.0 91.0	91.2 92.1	91.2 92.1	91.2 92.1	91.2 92.1	91.2 92.1	91.2 92.1	91.2 92.1	91.2 92.1	91.2 92.1	91.2 92.1	91.2 92.1
≥ 700 ≥ 600	82.9 83.2	88.9 89.6	90.1 90.6	91.5 91.9	92.2 92.8	92.9 93.3	93.0 93.4	93.0 93.4	93.0 93.4	93.1 93.5	93.1 93.5	93.1 93.5	93.1 93.5	93.1 93.5	93.1 93.5	93.1 93.5
≥ 500 ≥ 400	83.2 83.2	89.3 89.3	90.1 90.1	92.2 92.2	93.2 93.2	94.0 94.0	94.0 94.0	94.0 94.0	94.0 94.0	94.0 94.0	94.0 94.0	94.0 94.0	94.0 94.0	94.0 94.0	94.0 94.0	94.0 94.0
≥ 300 ≥ 200	83.2 83.2	89.3 89.3	90.1 90.1	92.3 92.3	93.4 93.4	94.8 94.8	95.0 95.0	95.0 95.0	95.0 95.0	96.4 96.4	96.4 96.4	96.4 96.4	96.4 96.4	96.4 96.4	96.5 96.5	96.8 96.8
≥ 100 0	83.2 83.2	89.3 89.3	90.1 90.1	92.3 92.3	93.4 93.4	94.8 94.8	95.0 95.0	95.0 95.0	95.0 95.0	96.4 96.4	96.4 96.4	96.4 96.4	96.4 96.4	96.4 96.4	96.5 96.5	96.8 96.8

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM AM 64 9-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1200-1800 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)														
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥0
NO CEILING	42.2	43.9	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
≥ 20000	50.8	52.7	53.1	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 18000	51.1	53.1	53.4	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5
≥ 16000	51.1	53.1	53.4	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5
≥ 14000	51.7	53.6	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1
≥ 12000	52.7	54.6	55.0	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1
≥ 10000	56.9	57.0	57.5	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6
≥ 9000	56.9	59.0	59.7	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8
≥ 8000	58.4	60.7	61.4	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5
≥ 7000	61.1	64.1	64.8	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
≥ 6000	63.0	66.4	67.2	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6
≥ 5000	67.5	71.2	71.9	72.4	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5
≥ 4500	69.0	72.7	73.6	74.2	74.3	74.3	74.3	74.3	74.3	74.4	74.4	74.4	74.4	74.4	74.4
≥ 4000	72.7	76.8	77.7	78.3	78.5	78.5	78.6	78.6	78.6	78.7	78.7	78.7	78.7	78.7	78.7
≥ 3500	75.2	79.3	80.2	80.8	81.0	81.0	81.1	81.1	81.1	81.3	81.3	81.3	81.3	81.3	81.3
≥ 3000	77.3	81.3	82.2	82.8	83.0	83.0	83.1	83.1	83.1	83.4	83.4	83.4	83.4	83.4	83.4
≥ 2500	80.0	84.2	85.1	85.7	86.0	86.1	86.2	86.2	86.2	86.4	86.4	86.4	86.4	86.4	86.4
≥ 2000	82.8	87.2	88.1	88.8	89.0	89.1	89.3	89.3	89.3	89.5	89.5	89.5	89.5	89.5	89.6
≥ 1800	83.3	87.8	88.7	89.4	89.6	89.7	89.8	89.8	89.8	90.0	90.0	90.0	90.0	90.0	90.2
≥ 1500	83.8	88.7	89.6	90.4	90.6	90.7	90.8	90.8	90.8	91.1	91.1	91.1	91.1	91.1	91.2
≥ 1200	84.2	89.8	90.7	91.7	92.3	92.4	92.5	92.6	92.6	92.9	92.9	92.9	92.9	92.9	93.0
≥ 1000	84.3	90.2	91.1	92.3	93.1	93.2	93.3	93.4	93.4	93.7	93.7	93.7	93.7	93.7	93.8
≥ 900	84.5	90.7	91.6	93.0	93.8	93.9	94.0	94.1	94.1	94.3	94.3	94.3	94.3	94.3	94.5
≥ 800	84.6	90.8	92.0	93.3	94.1	94.3	94.5	94.6	94.6	94.8	94.8	94.8	94.8	94.8	94.9
≥ 700	84.8	91.1	92.2	93.6	94.4	94.8	94.9	95.0	95.0	95.2	95.2	95.2	95.2	95.2	95.4
≥ 600	84.8	91.1	92.3	93.8	94.8	95.1	95.5	95.6	95.6	95.8	95.8	95.8	95.8	95.8	95.9
≥ 500	84.8	91.1	92.3	93.8	95.0	95.4	95.7	95.8	95.8	96.0	96.0	96.0	96.0	96.0	96.2
≥ 400	84.8	91.1	92.3	93.8	95.0	95.5	95.8	96.0	96.0	96.4	96.4	96.5	96.5	96.5	96.6
≥ 300	84.8	91.1	92.3	93.8	95.0	95.5	95.9	96.3	96.3	96.8	96.8	96.9	96.9	96.9	97.3	97.7
≥ 200	84.8	91.1	92.3	93.9	95.1	95.6	96.2	96.5	96.5	97.2	97.3	97.4	98.1	98.2	98.6	99.1
≥ 100	84.8	91.1	92.3	93.9	95.1	95.6	96.2	96.5	96.5	97.2	97.3	97.4	98.1	98.2	98.6	99.9
≥ 0	84.8	91.1	92.3	93.9	95.1	95.6	96.2	96.5	96.5	97.2	97.3	97.4	98.1	98.2	98.6	100.0

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1500-1700 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	44.7	45.9	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2
≥ 20000	53.5	55.1	55.3	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4
≥ 18000	53.6	55.2	55.4	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6
≥ 16000	53.8	55.4	55.7	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
≥ 14000	53.9	55.8	56.0	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1
≥ 12000	54.5	56.5	56.8	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9
≥ 10000	57.3	59.4	59.8	60.0	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3
≥ 9000	59.0	61.1	61.6	61.7	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0
≥ 8000	61.1	63.3	63.8	64.0	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4
≥ 7000	63.0	65.6	66.1	66.4	66.8	66.8	66.8	66.8	66.8	66.9	66.9	66.9	66.9	66.9	66.9	66.9
≥ 6000	66.2	69.6	70.4	70.8	71.2	71.3	71.3	71.3	71.3	71.4	71.4	71.4	71.4	71.4	71.4	71.4
≥ 5000	70.1	74.1	75.0	75.8	76.2	76.3	76.4	76.4	76.4	76.5	76.5	76.5	76.5	76.5	76.5	76.5
≥ 4500	72.1	76.5	77.4	78.2	78.7	78.8	78.9	78.9	78.9	79.1	79.1	79.1	79.1	79.1	79.1	79.1
≥ 4000	78.2	79.8	80.8	81.6	81.9	82.1	82.3	82.3	82.3	82.4	82.5	82.5	82.5	82.5	82.5	82.5
≥ 3500	76.3	81.7	82.8	83.9	84.6	84.7	85.0	85.0	85.0	85.1	85.2	85.2	85.2	85.2	85.2	85.2
≥ 3000	77.1	82.6	83.7	84.8	85.5	85.6	85.9	86.0	86.0	86.2	86.3	86.3	86.3	86.3	86.3	86.3
≥ 2500	79.3	85.6	86.8	88.0	88.7	88.8	89.0	89.1	89.1	89.4	89.5	89.5	89.5	89.5	89.5	89.5
≥ 2000	80.7	87.3	88.5	89.8	90.6	90.7	91.0	91.1	91.1	91.3	91.4	91.4	91.4	91.4	91.4	91.4
≥ 1800	81.4	88.2	89.4	90.9	91.7	91.8	92.0	92.1	92.1	92.4	92.5	92.5	92.5	92.5	92.5	92.5
≥ 1500	81.5	88.4	89.7	91.3	92.1	92.2	92.5	92.6	92.6	92.8	92.9	92.9	92.9	92.9	92.9	92.9
≥ 1200	81.5	88.9	90.2	91.8	92.6	92.7	92.9	93.2	93.2	93.4	93.5	93.5	93.5	93.5	93.5	93.5
≥ 1000	81.8	89.4	90.7	92.4	93.2	93.4	93.6	93.9	93.9	94.1	94.2	94.2	94.2	94.2	94.2	94.2
≥ 900	82.2	90.0	91.4	93.1	93.9	94.1	94.3	94.6	94.6	94.8	94.9	94.9	94.9	94.9	94.9	94.9
≥ 800	82.2	90.0	91.6	93.2	94.0	94.2	94.4	94.7	94.7	94.9	95.0	95.0	95.0	95.0	95.0	95.0
≥ 700	82.2	90.3	91.9	93.5	94.3	94.7	95.1	95.4	95.4	95.6	95.7	95.7	95.7	95.7	95.7	95.7
≥ 600	82.3	90.5	92.0	93.6	94.4	94.8	95.3	95.5	95.5	95.7	95.8	95.8	95.8	95.8	95.8	95.8
≥ 500	82.5	90.6	92.2	93.9	94.7	95.1	95.6	95.9	95.9	96.2	96.3	96.3	96.3	96.3	96.3	96.3
≥ 400	82.5	90.6	92.2	93.9	94.7	95.1	95.8	96.0	96.0	96.4	96.8	96.8	96.8	96.8	96.8	96.8
≥ 300	82.5	90.6	92.2	93.9	94.7	95.4	96.5	97.1	97.1	97.3	97.8	97.9	97.9	98.0	98.1	98.1
≥ 200	82.5	90.6	92.2	93.9	94.8	95.6	96.9	97.5	97.5	97.9	98.6	98.7	99.0	99.1	99.7	99.7
≥ 100	82.5	90.6	92.2	93.9	94.8	95.6	96.9	97.5	97.5	97.9	98.6	98.7	99.0	99.1	99.8	99.9
0	82.5	90.6	92.2	93.9	94.8	95.6	96.9	97.5	97.5	97.9	98.6	98.7	99.0	99.1	99.8	100.0

TOTAL NUMBER OF OBSERVATIONS 868

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1800-2000 (HOURS L.S.T.)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	47.9	49.4	49.7	50.2	50.2	50.2	50.2	50.2	50.2	50.3	50.3	50.3	50.3	50.3	50.3	50.3
≥ 20000	55.2	57.4	57.8	58.5	58.6	58.6	58.6	58.7	58.7	58.8	58.8	58.8	58.8	58.8	58.8	58.8
≥ 18000	55.5	57.7	58.0	58.7	58.8	58.8	58.8	58.9	58.9	59.0	59.0	59.0	59.0	59.0	59.0	59.0
≥ 16000	55.8	58.0	58.3	59.0	59.1	59.1	59.1	59.3	59.3	59.4	59.4	59.4	59.4	59.4	59.4	59.4
≥ 14000	56.2	58.3	58.7	59.4	59.5	59.5	59.5	59.6	59.6	59.7	59.7	59.7	59.7	59.7	59.7	59.7
≥ 12000	56.6	59.3	59.6	60.3	60.4	60.4	60.4	60.5	60.5	60.6	60.6	60.6	60.6	60.6	60.6	60.6
≥ 10000	60.1	62.9	63.3	64.0	64.1	64.1	64.1	64.2	64.2	64.3	64.3	64.3	64.4	64.4	64.4	64.4
≥ 9000	62.7	66.5	66.9	67.8	68.2	68.2	68.5	68.6	68.6	68.7	68.7	68.7	68.8	68.8	68.8	68.8
≥ 8000	64.0	68.0	68.4	69.3	69.7	69.7	70.0	70.1	70.1	70.2	70.2	70.2	70.4	70.4	70.4	70.4
≥ 7000	67.0	71.3	71.8	72.8	73.3	73.4	73.6	73.8	73.8	73.9	73.9	73.9	74.1	74.1	74.1	74.1
≥ 6000	69.9	75.3	75.8	76.9	77.3	77.4	77.7	77.8	77.8	77.9	78.0	78.0	78.3	78.3	78.3	78.3
≥ 5000	71.5	77.9	78.5	79.6	80.3	80.6	80.9	81.0	81.0	81.1	81.2	81.2	81.5	81.5	81.5	81.5
≥ 4500	71.8	78.7	79.3	80.6	81.2	81.5	81.8	81.9	81.9	82.0	82.2	82.2	82.4	82.4	82.4	82.4
≥ 4000	74.0	81.0	81.7	83.1	83.8	84.0	84.3	84.6	84.6	84.7	84.8	84.8	85.0	85.0	85.0	85.0
≥ 3500	75.6	82.7	83.4	84.9	85.6	85.8	86.2	86.5	86.5	86.7	86.8	86.8	87.0	87.0	87.0	87.0
≥ 3000	75.8	83.3	84.1	85.6	86.3	86.5	86.9	87.2	87.2	87.5	87.6	87.6	87.8	87.8	87.8	87.8
≥ 2500	76.8	84.5	85.3	86.9	87.6	87.8	88.1	88.5	88.5	88.7	88.8	88.8	89.1	89.1	89.1	89.1
≥ 2000	77.8	85.5	86.3	87.9	88.8	89.1	89.4	89.8	89.8	90.0	90.1	90.1	90.3	90.3	90.3	90.3
≥ 1800	78.5	86.2	87.0	88.6	89.5	89.8	90.1	90.4	90.4	90.7	90.8	90.8	91.0	91.0	91.0	91.0
≥ 1500	78.6	86.3	87.1	89.0	90.0	90.3	90.7	91.0	91.0	91.3	91.4	91.4	91.6	91.6	91.6	91.6
≥ 1200	78.7	86.7	87.5	89.3	90.4	90.8	91.1	91.5	91.5	91.7	91.8	91.8	92.1	92.1	92.1	92.1
≥ 1000	78.9	87.1	88.0	90.0	91.1	91.5	91.9	92.4	92.4	92.6	92.8	92.8	93.0	93.0	93.0	93.0
≥ 900	78.9	87.1	88.0	90.0	91.1	91.5	91.9	92.4	92.4	92.6	92.8	92.8	93.0	93.0	93.0	93.0
≥ 800	79.1	87.5	88.4	90.4	91.6	91.9	92.4	92.9	92.9	93.2	93.3	93.3	93.6	93.6	93.6	93.6
≥ 700	79.2	87.7	88.6	90.7	91.8	92.2	92.6	93.1	93.1	93.4	93.6	93.6	93.8	93.8	93.8	93.8
≥ 600	79.3	87.8	88.7	90.8	91.9	92.4	92.9	93.3	93.3	93.7	93.8	93.8	94.0	94.0	94.0	94.0
≥ 500	79.4	87.9	88.8	91.5	92.6	93.7	94.2	94.7	94.7	95.1	95.2	95.2	95.4	95.4	95.4	95.4
≥ 400	79.4	88.0	89.0	91.6	92.9	93.9	94.6	95.2	95.2	95.6	95.7	95.7	96.0	96.1	96.1	96.1
≥ 300	79.4	88.0	89.0	91.7	93.0	94.1	95.3	96.0	96.0	96.8	97.0	97.0	97.4	97.5	97.5	97.5
≥ 200	79.4	88.0	89.0	91.7	93.1	94.4	96.0	96.8	96.8	97.6	97.8	97.8	98.3	98.4	98.6	98.8
≥ 100	79.4	88.0	89.0	91.7	93.1	94.4	96.0	96.8	96.8	97.6	97.8	97.8	98.4	98.5	98.8	99.8
≥ 0	79.4	88.0	89.0	91.7	93.1	94.4	96.0	96.8	96.8	97.6	97.8	97.8	98.4	98.5	98.8	100.0

TOTAL NUMBER OF OBSERVATIONS 869

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) T3-82 (YEARS) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

~~2100-2300~~ (HOURS (L.S.T.))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥⅜	≥5/16	≥¼	≥0
NO CEILING	54.7	56.6	57.3	57.4	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.9	57.9	57.9	57.9
≥ 20000	58.3	60.9	61.5	61.8	62.1	62.1	62.1	62.1	62.1	62.2	62.2	62.2	62.5	62.5	62.5	62.5
≥ 18000	58.3	60.9	61.5	61.8	62.1	62.1	62.1	62.1	62.1	62.2	62.2	62.2	62.5	62.5	62.5	62.5
≥ 16000	58.3	60.9	61.5	61.8	62.1	62.1	62.1	62.1	62.1	62.2	62.2	62.2	62.5	62.5	62.5	62.5
≥ 14000	58.8	61.4	62.1	62.4	62.7	62.7	62.7	62.7	62.7	62.8	62.8	62.8	63.0	63.0	63.0	63.0
≥ 12000	59.8	62.8	63.3	63.5	63.9	63.9	63.9	63.9	63.9	64.0	64.0	64.0	64.2	64.2	64.2	64.2
≥ 10000	63.2	66.6	67.3	67.6	67.9	68.0	68.0	68.0	68.0	68.1	68.1	68.1	68.4	68.4	68.4	68.4
≥ 9000	66.2	69.9	70.6	70.8	71.1	71.2	71.2	71.2	71.2	71.5	71.5	71.5	71.7	71.7	71.7	71.7
≥ 8000	67.6	71.5	72.2	72.4	72.7	72.9	72.9	72.9	72.9	73.1	73.1	73.1	73.3	73.3	73.3	73.3
≥ 7000	70.1	74.4	75.3	75.5	75.9	76.1	76.2	76.2	76.2	76.4	76.4	76.4	76.7	76.7	76.7	76.7
≥ 6000	71.4	76.2	77.1	77.4	77.7	77.9	78.1	78.1	78.1	78.3	78.3	78.3	78.5	78.5	78.5	78.5
≥ 5000	72.9	78.3	79.2	79.6	80.1	80.4	80.5	80.5	80.5	80.7	80.7	80.7	80.9	80.9	80.9	80.9
≥ 4500	73.7	79.1	80.0	80.4	80.9	81.2	81.3	81.4	81.4	81.6	81.6	81.6	81.9	81.9	81.9	81.9
≥ 4000	74.8	80.6	81.6	82.1	82.7	82.9	83.0	83.1	83.1	83.4	83.4	83.4	83.6	83.6	83.6	83.6
≥ 3500	75.4	81.2	82.3	82.8	83.4	83.6	83.8	83.9	83.9	84.2	84.2	84.2	84.4	84.4	84.4	84.4
≥ 3000	75.8	81.5	82.7	83.1	83.7	83.9	84.2	84.3	84.3	84.5	84.5	84.5	84.8	84.8	84.8	84.8
≥ 2500	76.8	82.7	83.8	84.3	84.9	85.1	85.3	85.5	85.5	85.7	85.7	85.7	85.9	85.9	85.9	85.9
≥ 2000	77.7	83.7	85.0	85.5	86.0	86.3	86.5	86.6	86.6	86.8	86.8	86.8	87.1	87.1	87.1	87.1
≥ 1800	77.9	84.3	85.6	86.0	86.6	86.8	87.1	87.2	87.2	87.4	87.4	87.4	87.6	87.6	87.6	87.6
≥ 1500	78.8	85.2	86.6	87.1	87.6	87.9	88.1	88.2	88.2	88.5	88.5	88.5	88.7	88.7	88.7	88.7
≥ 1200	79.7	86.4	87.8	88.2	88.9	89.1	89.4	89.6	89.6	89.8	89.8	89.8	90.1	90.1	90.1	90.1
≥ 1000	80.4	87.3	88.7	89.4	90.1	90.3	90.5	90.8	90.8	91.0	91.0	91.0	91.2	91.2	91.2	91.2
≥ 900	80.5	87.5	89.0	89.7	90.4	90.6	90.9	91.1	91.1	91.3	91.3	91.3	91.6	91.6	91.6	91.6
≥ 800	80.8	87.9	89.5	90.2	90.9	91.1	91.3	91.6	91.6	91.8	91.8	91.8	92.0	92.0	92.0	92.0
≥ 700	81.1	88.3	90.1	90.8	91.5	91.7	91.9	92.1	92.1	92.4	92.4	92.4	92.6	92.6	92.6	92.6
≥ 600	81.4	88.7	90.5	91.3	92.0	92.2	92.4	92.7	93.0	93.0	93.2	93.2	93.2	93.4	93.4	93.4
≥ 500	81.5	88.9	91.0	92.1	92.8	93.2	93.5	93.8	93.8	94.1	94.1	94.1	94.3	94.3	94.3	94.3
≥ 400	81.8	89.1	91.2	92.6	93.3	93.7	93.9	94.2	94.2	94.5	94.5	94.5	94.8	94.8	94.8	94.8
≥ 300	81.8	89.1	91.2	92.6	93.3	94.2	94.9	95.3	95.3	95.6	95.6	95.6	96.0	96.0	96.0	96.0
≥ 200	81.8	89.1	91.2	92.6	93.3	94.2	95.5	95.8	95.8	96.1	96.1	96.1	96.4	96.4	96.4	96.4
≥ 100	81.8	89.1	91.2	92.7	93.5	94.5	95.7	96.1	96.1	97.0	97.1	97.1	97.9	97.9	98.2	99.5
0	81.8	89.1	91.2	92.7	93.5	94.5	95.7	96.1	96.1	97.0	97.1	97.1	97.9	97.9	98.2	100.0

TOTAL NUMBER OF OBSERVATIONS 864

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL (HOURS LST)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1½	≥1	≥⅝	≥½	≥⅜	≥5/16	≥¼	≥0
NO CEILING	47.4	49.4	49.8	50.0	50.1	50.1	50.1	50.2	50.2	50.2	50.2	50.2	50.2	50.3	50.3	50.3
≥ 20000	53.7	56.3	56.7	57.0	57.1	57.1	57.2	57.2	57.2	57.3	57.3	57.3	57.4	57.4	57.5	57.5
≥ 18000	53.9	56.5	56.9	57.2	57.3	57.3	57.4	57.4	57.4	57.5	57.5	57.5	57.6	57.6	57.7	57.7
≥ 16000	54.0	56.5	57.0	57.3	57.4	57.4	[illegible]5	57.5	57.5	57.6	57.6	57.6	57.7	57.7	57.7	57.8
≥ 14000	54.5	57.2	57.6	58.0	58.1	58.1	58.1	58.2	58.2	58.3	58.3	58.3	58.3	58.3	58.4	58.4
≥ 12000	55.5	58.3	58.8	59.2	59.3	59.3	59.3	59.4	59.4	59.5	59.5	59.5	59.6	59.6	59.6	59.7
≥ 10000	58.6	61.6	62.2	62.6	62.8	62.8	62.8	62.9	62.9	63.0	63.0	63.0	63.1	63.1	63.2	63.2
≥ 9000	61.0	64.0	65.0	65.4	65.6	65.6	65.7	65.8	65.8	65.9	65.9	65.9	66.0	66.0	66.1	66.1
≥ 8000	62.6	66.1	66.7	67.2	67.4	67.4	67.5	67.6	67.6	67.7	67.7	67.7	67.8	67.9	67.9	68.0
≥ 7000	65.2	69.1	69.8	70.3	70.5	70.6	70.7	70.7	70.7	70.9	70.9	70.9	71.0	71.0	71.1	71.1
≥ 6000	67.2	71.5	72.3	72.9	73.1	73.2	73.3	73.3	73.3	73.5	73.5	73.5	73.6	73.6	73.7	73.7
≥ 5000	69.3	74.0	74.8	75.5	75.8	75.9	76.0	76.1	76.1	76.2	76.2	76.2	76.4	76.4	76.4	76.5
≥ 4500	70.1	75.0	75.8	76.5	76.8	76.9	77.1	77.1	77.1	77.3	77.3	77.3	77.4	77.4	77.5	77.6
≥ 4000	71.9	77.1	78.0	78.7	79.1	79.1	79.3	79.4	79.4	79.6	79.6	79.6	79.7	79.7	79.8	79.8
≥ 3500	73.3	78.5	79.4	80.2	80.5	80.6	80.8	80.9	80.9	81.1	81.1	81.1	81.2	81.3	81.3	81.4
≥ 3000	74.0	79.3	80.2	81.0	81.4	81.5	81.7	81.8	81.8	82.0	82.0	82.0	82.1	82.2	82.2	82.3
≥ 2500	75.2	80.7	81.7	82.5	82.9	83.0	83.3	83.4	83.4	83.6	83.6	83.6	83.7	83.7	83.8	83.9
≥ 2000	76.6	82.3	83.3	84.2	84.7	84.8	85.1	85.2	85.2	85.4	85.4	85.4	85.5	85.6	85.6	85.7
≥ 1800	77.2	83.1	84.2	85.1	85.6	85.7	86.0	86.1	86.1	86.3	86.3	86.3	86.4	86.4	86.5	86.6
≥ 1500	77.9	84.0	85.1	86.2	86.7	86.8	87.1	87.2	87.2	87.4	87.4	87.4	87.5	87.5	87.6	87.7
≥ 1200	78.7	85.2	86.3	87.4	88.0	88.1	88.4	88.6	88.6	88.8	88.8	88.8	88.9	89.0	89.0	89.1
≥ 1000	79.2	85.9	87.0	88.2	88.9	89.1	89.4	89.6	89.6	89.8	89.8	89.8	90.0	90.0	90.0	90.1
≥ 900	79.6	86.4	87.6	88.9	89.6	89.8	90.2	90.3	90.3	90.5	90.6	90.6	90.7	90.7	90.8	90.9
≥ 800	79.8	86.8	88.1	89.4	90.1	90.3	90.7	90.9	90.9	91.1	91.2	91.2	91.3	91.3	91.4	91.4
≥ 700	80.1	87.2	88.6	90.1	90.8	91.1	91.5	91.7	91.7	92.0	92.0	92.0	92.1	92.2	92.2	92.3
≥ 600	80.3	87.4	89.0	90.4	91.2	91.6	92.1	92.4	92.4	92.6	92.6	92.6	92.8	92.8	92.8	92.9
≥ 500	80.3	87.5	89.1	90.8	91.6	92.1	92.7	93.0	93.0	93.3	93.3	93.3	93.4	93.5	93.5	93.6
≥ 400	80.4	87.7	89.3	91.0	91.9	92.6	93.4	93.8	93.8	94.1	94.2	94.2	94.3	94.4	94.4	94.5
≥ 300	80.4	87.7	89.3	91.2	92.2	93.0	94.2	94.7	94.7	95.2	95.3	95.3	95.5	95.6	95.7	95.9
≥ 200	80.4	87.7	89.3	91.2	92.3	93.2	94.7	95.3	95.3	96.1	96.3	96.3	96.8	97.0	97.3	97.9
≥ 100	80.4	87.7	89.3	91.2	92.3	93.3	94.7	95.3	95.4	96.2	96.4	96.5	97.1	97.3	97.9	99.5
≥ 0	80.4	87.7	89.3	91.2	92.3	93.3	94.7	95.3	95.4	96.2	96.4	96.5	97.1	97.3	97.9	100.0

TOTAL NUMBER OF OBSERVATIONS 4868

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ANN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0000-0200 (HOUR LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1½	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	60.4	63.3	64.6	64.7	64.9	64.9	64.9	65.1	65.1	65.3	65.3	65.3	65.3	65.3	65.5	65.6
≥ 20000	63.5	66.8	68.1	68.2	68.5	68.5	68.5	68.8	68.8	69.0	69.0	69.0	69.0	69.0	69.1	69.2
≥ 18000	63.5	66.8	68.1	68.2	68.5	68.5	68.5	68.8	68.8	69.0	69.0	69.0	69.0	69.0	69.1	69.2
≥ 16000	63.5	66.8	68.1	68.2	68.5	68.5	68.5	68.8	68.8	69.0	69.0	69.0	69.0	69.0	69.1	69.2
≥ 14000	64.0	67.7	69.1	69.2	69.5	69.5	69.5	69.7	69.7	70.0	70.0	70.0	70.0	70.0	70.1	70.2
≥ 12000	65.8	69.6	71.2	71.3	71.6	71.6	71.6	71.8	71.8	72.1	72.1	72.1	72.1	72.1	72.2	72.3
≥ 10000	69.7	73.8	75.5	75.6	76.0	76.1	76.1	76.3	76.3	76.6	76.6	76.6	76.6	76.6	76.7	76.8
≥ 9000	71.4	75.6	77.2	77.3	77.8	77.9	77.9	78.1	78.1	78.3	78.3	78.3	78.3	78.3	78.4	78.5
≥ 8000	71.9	76.1	77.8	77.9	78.3	78.7	78.7	78.9	78.9	79.1	79.1	79.1	79.1	79.1	79.2	79.3
≥ 7000	73.3	77.6	79.1	79.2	79.8	80.1	80.1	80.3	80.3	80.5	80.5	80.5	80.6	80.6	80.7	80.9
≥ 6000	74.5	78.8	80.4	80.5	81.1	81.4	81.4	81.6	81.6	81.8	81.8	81.8	82.0	82.0	82.1	82.2
≥ 5000	75.8	80.1	81.7	81.8	82.4	82.7	82.7	82.8	82.8	83.2	83.2	83.2	83.3	83.3	83.4	83.5
≥ 4500	75.7	80.5	82.2	82.3	82.8	83.2	83.2	83.4	83.4	83.6	83.6	83.6	83.7	83.7	83.8	83.9
≥ 4000	76.7	81.8	83.6	83.7	84.3	84.7	84.7	85.0	85.0	85.3	85.3	85.3	85.4	85.4	85.5	85.6
≥ 3500	77.0	82.3	84.0	84.2	84.7	85.1	85.1	85.5	85.5	85.7	85.7	85.7	85.8	85.8	85.9	86.0
≥ 3000	77.3	83.3	85.0	85.1	85.7	86.1	86.1	86.5	86.5	86.7	86.7	86.7	86.8	86.8	86.9	87.0
≥ 2500	78.2	84.5	86.2	86.4	87.0	87.5	87.5	87.8	87.8	88.0	88.0	88.0	88.1	88.1	88.2	88.3
≥ 2000	78.7	85.1	86.9	87.1	87.8	88.2	88.2	88.6	88.6	88.8	88.8	88.8	88.9	88.9	89.0	89.1
≥ 1800	78.9	85.6	87.3	87.7	88.3	88.8	88.8	89.1	89.1	89.3	89.3	89.3	89.4	89.4	89.5	89.7
≥ 1500	79.3	86.7	88.4	88.8	89.5	90.0	90.0	90.3	90.3	90.5	90.5	90.5	90.6	90.6	90.8	90.9
≥ 1200	80.0	87.3	89.1	89.4	90.2	90.6	90.6	91.0	91.0	91.2	91.2	91.2	91.3	91.3	91.4	91.5
≥ 1000	80.4	87.8	89.5	89.9	90.6	91.1	91.1	91.4	91.4	91.6	91.6	91.6	91.7	91.7	92.0	92.1
≥ 900	80.4	88.0	89.8	90.2	91.0	91.4	91.4	91.7	91.7	92.0	92.0	92.0	92.1	92.1	92.3	92.4
≥ 800	80.6	88.2	90.0	90.4	91.3	91.7	91.7	92.1	92.1	92.3	92.3	92.3	92.4	92.4	92.6	92.7
≥ 700	81.0	88.6	90.3	90.8	91.6	92.1	92.2	92.5	92.5	92.7	92.7	92.7	92.8	92.8	93.1	93.2
≥ 600	81.2	88.8	90.5	91.1	92.1	92.5	92.7	93.1	93.1	93.3	93.3	93.3	93.4	93.4	93.6	93.7
≥ 500	81.3	89.1	90.9	91.5	92.5	93.0	93.4	93.7	93.7	93.9	93.9	93.9	94.1	94.1	94.3	94.4
≥ 400	81.3	89.5	91.5	92.4	93.5	93.9	94.3	94.7	94.7	94.9	94.9	94.9	95.2	95.2	95.4	95.5
≥ 300	81.3	89.5	91.5	92.6	93.8	94.3	94.7	95.2	95.2	95.4	95.4	95.4	95.6	95.6	95.8	95.9
≥ 200	81.3	89.5	91.5	92.8	94.4	94.9	95.5	96.1	96.1	96.3	96.3	96.3	96.4	96.4	96.9	97.7
≥ 100	81.3	89.5	91.5	92.8	94.4	94.9	95.5	96.3	96.3	96.6	96.6	96.6	96.8	96.8	97.9	99.3
≥ 0	81.3	89.5	91.5	92.8	94.4	94.9	95.5	96.3	96.3	96.6	96.6	96.6	96.8	96.8	97.9	100.0

TOTAL NUMBER OF OBSERVATIONS 909

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0300-0500 (HOURS LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	53.9	57.1	58.1	58.6	58.7	58.7	59.1	59.1	59.1	59.6	59.7	59.7	60.1	60.1	60.3	60.4
≥ 20000	56.5	60.0	61.1	61.6	61.7	61.7	62.0	62.0	62.0	62.6	62.7	62.7	63.0	63.0	63.3	63.4
≥ 18000	56.8	60.3	61.4	61.9	62.0	62.0	62.4	62.4	62.4	62.9	63.0	63.0	63.4	63.4	63.6	63.7
≥ 16000	56.8	60.3	61.4	61.9	62.0	62.0	62.4	62.4	62.4	62.9	63.0	63.0	63.4	63.4	63.6	63.7
≥ 14000	57.4	60.9	62.0	62.6	62.7	62.7	63.0	63.0	63.0	63.6	63.7	63.7	64.0	64.0	64.2	64.4
≥ 12000	58.7	62.5	63.7	64.2	64.4	64.4	64.7	64.7	64.7	65.2	65.3	65.3	65.7	65.7	65.9	66.1
≥ 10000	62.7	66.6	67.8	68.3	68.4	68.4	68.8	68.8	68.8	69.3	69.4	69.4	69.7	69.7	70.0	70.2
≥ 9000	64.6	68.8	70.1	70.7	70.8	70.8	71.2	71.3	71.3	71.8	71.9	71.9	72.3	72.3	72.5	72.7
≥ 8000	65.5	69.7	71.1	71.7	71.8	71.8	72.2	72.3	72.3	72.8	72.9	72.9	73.3	73.3	73.5	73.7
≥ 7000	67.3	71.7	73.3	73.9	74.0	74.0	74.4	74.5	74.5	75.0	75.1	75.1	75.5	75.5	75.7	75.9
≥ 6000	68.9	73.5	75.0	75.7	75.8	75.8	76.1	76.2	76.2	76.8	76.9	76.9	77.3	77.3	77.6	77.8
≥ 5000	69.3	74.3	75.8	76.6	76.7	76.7	77.0	77.1	77.1	77.7	77.8	77.8	78.2	78.2	78.4	78.7
≥ 4500	69.4	74.4	75.9	76.7	76.8	76.8	77.1	77.2	77.2	77.8	77.9	77.9	78.3	78.3	78.5	78.8
≥ 4000	70.4	75.5	77.1	78.0	78.2	78.2	78.7	78.8	78.8	79.3	79.4	79.4	79.9	79.9	80.1	80.3
≥ 3500	71.1	76.5	78.2	79.1	79.3	79.3	79.8	79.9	79.9	80.4	80.5	80.5	81.0	81.0	81.2	81.4
≥ 3000	71.7	77.2	79.0	79.9	80.1	80.1	80.5	80.6	80.6	81.2	81.3	81.3	81.7	81.7	82.0	82.2
≥ 2500	72.6	78.3	80.1	81.0	81.2	81.2	81.6	81.7	81.7	82.3	82.4	82.4	82.9	82.9	83.2	83.4
≥ 2000	73.3	79.2	81.0	81.8	82.1	82.1	82.5	82.6	82.6	83.2	83.3	83.3	83.8	83.8	84.0	84.3
≥ 1800	73.8	80.4	82.3	83.2	83.4	83.4	83.8	83.9	83.9	84.5	84.6	84.6	85.1	85.1	85.4	85.6
≥ 1500	74.5	81.3	83.2	84.2	84.4	84.4	84.8	84.9	84.9	85.5	85.6	85.6	86.1	86.1	86.4	86.6
≥ 1200	75.9	82.9	84.8	86.1	86.4	86.4	86.9	87.0	87.0	87.6	87.7	87.7	88.2	88.2	88.4	88.7
≥ 1000	76.5	83.5	85.5	86.8	87.0	87.0	87.6	87.7	87.7	88.2	88.3	88.3	88.9	88.9	89.1	89.3
≥ 900	76.6	84.3	86.2	87.6	87.8	87.8	88.3	88.4	88.4	89.0	89.1	89.1	89.7	89.7	89.9	90.1
≥ 800	76.6	84.6	86.6	88.0	88.3	88.3	88.9	89.0	89.0	89.5	89.7	89.7	90.2	90.2	90.4	90.6
≥ 700	76.8	84.6	86.6	88.0	88.3	88.3	88.9	89.0	89.0	89.5	89.7	89.7	90.2	90.2	90.4	90.6
≥ 600	77.1	85.0	87.0	88.7	89.1	89.1	89.7	89.8	89.8	90.3	90.4	90.4	91.0	91.0	91.2	91.4
≥ 500	77.2	85.4	87.3	89.0	89.4	89.4	90.0	90.2	90.2	90.8	91.0	91.0	91.5	91.5	91.9	92.1
≥ 400	77.4	85.6	87.7	89.8	90.2	90.2	90.9	91.2	91.2	91.7	92.0	92.0	92.5	92.5	92.8	93.2
≥ 300	77.4	85.7	88.0	90.1	90.9	91.1	91.9	92.3	92.3	92.8	93.1	93.1	93.7	93.7	94.1	94.4
≥ 200	77.4	85.7	88.0	90.1	91.1	91.4	92.2	92.8	92.8	93.6	93.9	94.2	95.2	95.2	95.5	96.3
≥ 100	77.4	85.8	88.1	90.2	91.2	91.5	92.3	93.0	93.0	93.7	94.4	94.4	95.9	95.9	96.8	98.8
0	77.4	85.8	88.1	90.2	91.2	91.5	92.3	93.0	93.0	93.7	94.4	94.4	95.9	95.9	96.9	100.0

TOTAL NUMBER OF OBSERVATIONS 909

USAF ETAC FORM AUG 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0600-0800 (HOUR (L,Z))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	48.1	51.7	52.0	53.3	53.3	53.3	53.3	53.7	53.7	53.8	53.8	53.8	54.0	54.0	54.3	54.4
≥ 20000	52.0	56.4	57.3	58.6	58.8	58.8	58.8	59.0	59.0	59.0	59.0	59.7	59.9	59.9	60.1	60.2
≥ 18000	52.3	56.8	57.5	58.8	59.0	59.0	59.0	59.6	59.6	59.8	59.9	59.9	60.1	60.1	60.4	60.5
≥ 16000	52.3	56.8	57.5	58.8	59.0	59.0	59.0	59.6	59.6	59.8	59.9	59.9	60.1	60.1	60.4	60.5
≥ 14000	52.9	57.7	58.4	59.7	59.9	59.9	59.9	60.5	60.5	60.7	60.8	60.8	61.0	61.0	61.2	61.4
≥ 12000	58.6	59.6	60.8	61.7	61.9	61.9	61.9	62.5	62.5	62.7	62.8	62.8	63.0	63.0	63.2	63.5
≥ 10000	57.5	63.2	64.0	65.6	65.8	65.8	65.9	66.4	66.4	66.7	66.8	66.8	67.0	67.0	67.2	67.4
≥ 9000	58.4	64.3	65.1	66.9	67.2	67.3	67.4	68.3	68.3	68.5	68.7	68.7	68.9	68.9	69.1	69.3
≥ 8000	59.4	65.8	66.6	68.4	68.9	69.0	69.4	70.0	70.0	70.2	70.3	70.3	70.5	70.5	70.8	71.0
≥ 7000	61.1	68.0	68.9	70.8	71.2	71.3	71.8	72.3	72.3	72.5	72.6	72.6	73.1	73.1	73.3	73.5
≥ 6000	62.7	69.7	70.7	72.8	73.3	73.4	74.0	74.5	74.5	74.8	74.9	74.9	75.3	75.3	75.5	75.7
≥ 5000	63.6	70.5	71.7	73.0	73.6	73.8	75.3	75.9	75.9	76.1	76.2	76.2	76.6	76.6	76.8	77.1
≥ 4500	63.8	70.8	72.0	74.3	75.0	75.1	75.6	76.2	76.2	76.5	76.6	76.6	77.1	77.1	77.3	77.5
≥ 4000	68.0	71.2	72.4	74.8	75.4	75.5	76.1	76.7	76.7	77.1	77.2	77.2	77.6	77.6	77.8	78.1
≥ 3500	64.6	72.0	73.3	75.6	76.3	76.4	77.0	77.6	77.6	78.0	78.1	78.1	78.5	78.5	78.7	79.0
≥ 3000	68.6	72.2	73.5	75.9	76.5	76.6	77.2	77.8	77.8	78.2	78.3	78.3	78.7	78.7	79.0	79.2
≥ 2500	65.4	73.3	74.8	77.1	77.9	78.0	78.5	79.4	79.4	79.7	79.8	79.8	80.3	80.3	80.5	80.7
≥ 2000	66.2	74.1	75.5	77.9	78.6	78.7	79.3	80.2	80.2	80.5	80.6	80.6	81.1	81.1	81.3	81.5
≥ 1800	66.7	75.0	76.4	78.7	79.5	79.6	80.2	81.1	81.1	81.4	81.5	81.5	81.9	81.9	82.2	82.4
≥ 1500	67.9	76.3	77.7	80.1	80.8	81.0	81.5	82.4	82.4	82.7	82.8	82.8	83.3	83.3	83.5	83.7
≥ 1200	69.4	77.9	79.3	81.7	82.5	82.6	83.2	84.1	84.1	84.4	84.5	84.5	84.9	84.9	85.2	85.4
≥ 1000	70.2	79.2	80.6	83.2	83.9	84.1	84.6	85.5	85.5	85.8	85.9	85.9	86.4	86.4	86.6	86.8
≥ 900	70.5	79.6	81.1	83.6	84.4	84.5	85.0	85.9	85.9	86.3	86.4	86.4	86.8	86.8	87.0	87.4
≥ 800	70.8	80.3	81.7	84.4	85.3	85.4	85.9	86.8	86.8	87.2	87.3	87.3	87.7	87.7	87.9	88.3
≥ 700	70.9	80.6	82.1	84.8	85.7	85.8	86.4	87.4	87.4	87.8	87.9	87.9	88.4	88.4	88.6	88.9
≥ 600	71.1	81.1	82.5	85.5	86.4	86.5	87.0	88.2	88.2	88.6	88.7	88.7	89.1	89.1	89.4	89.7
≥ 500	71.4	81.5	83.2	86.4	87.3	87.4	87.9	89.1	89.1	89.6	89.7	89.7	90.3	90.3	90.5	90.8
≥ 400	71.5	81.7	83.6	86.9	87.9	88.2	88.7	90.0	90.0	90.6	90.9	90.9	91.5	91.5	91.7	92.2
≥ 300	71.7	82.1	84.1	87.2	88.2	88.6	89.7	91.5	91.7	92.2	92.6	92.6	93.1	93.1	93.5	94.4
≥ 200	71.7	82.1	84.2	87.6	88.6	89.1	90.0	91.8	92.1	92.8	93.2	93.2	93.6	93.6	93.9	94.7
≥ 100	71.7	82.1	84.2	87.6	88.9	89.3	90.1	91.9	92.2	93.1	94.1	94.1	95.3	95.3	96.2	99.3
0	71.7	82.1	84.2	87.6	88.9	89.3	90.1	91.9	92.2	93.1	94.1	94.1	95.3	95.3	96.2	100.0

TOTAL NUMBER OF OBSERVATIONS 803

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0900-1100 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥¼	≥0
NO CEILING	47.0	52.4	52.9	53.0	53.0	53.0	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4
≥ 20000	52.9	58.8	59.3	59.7	59.7	59.7	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
≥ 18000	52.9	58.9	59.4	59.8	59.8	59.8	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1
≥ 16000	52.9	59.0	59.6	59.9	59.9	59.9	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2
≥ 14000	53.1	59.6	60.1	60.4	60.4	60.4	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8
≥ 12000	55.4	61.9	62.4	62.8	62.8	62.8	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1
≥ 10000	57.8	64.9	65.5	65.9	66.0	66.0	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4
≥ 9000	58.6	66.2	67.2	67.5	67.6	67.8	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3
≥ 8000	58.9	66.5	67.6	68.0	68.4	68.4	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0
≥ 7000	60.6	68.5	69.7	70.1	70.5	70.6	71.2	71.2	71.2	71.2	71.2	71.2	71.3	71.3	71.3	71.3
≥ 6000	61.2	69.4	70.6	71.0	71.5	71.6	72.2	72.2	72.2	72.2	72.2	72.2	72.3	72.3	72.3	72.3
≥ 5000	62.0	70.4	71.6	72.4	72.8	72.9	73.8	73.8	73.8	73.8	73.8	73.8	73.9	73.9	73.9	73.9
≥ 4500	62.3	70.7	71.9	72.7	73.1	73.3	74.1	74.1	74.1	74.1	74.1	74.1	74.3	74.3	74.3	74.3
≥ 4000	63.0	71.6	72.8	73.6	74.0	74.1	75.0	75.0	75.0	75.0	75.0	75.0	75.1	75.1	75.1	75.1
≥ 3500	64.4	73.1	74.4	75.1	75.6	75.7	76.6	76.6	76.6	76.6	76.6	76.6	76.7	76.7	76.7	76.7
≥ 3000	66.3	75.4	76.6	77.5	78.0	78.1	79.0	79.0	79.0	79.1	79.1	79.1	79.2	79.2	79.2	79.2
≥ 2500	67.4	76.5	77.7	78.6	79.1	79.2	80.1	80.1	80.1	80.2	80.2	80.2	80.3	80.3	80.3	80.3
≥ 2000	69.5	78.7	80.0	81.0	81.7	81.8	82.7	82.7	82.7	82.8	82.8	82.8	82.9	82.9	82.9	82.9
≥ 1800	70.9	79.9	81.2	82.2	82.9	83.0	83.9	83.9	83.9	84.0	84.0	84.0	84.1	84.1	84.1	84.1
≥ 1500	71.6	81.0	83.2	84.2	84.9	85.0	85.9	85.9	85.9	86.0	86.0	86.0	86.1	86.1	86.1	86.1
≥ 1200	72.6	83.2	84.5	85.5	86.2	86.3	87.2	87.2	87.2	87.3	87.3	87.3	87.4	87.4	87.4	87.4
≥ 1000	72.7	84.2	85.5	86.5	87.3	87.4	88.3	88.3	88.3	88.4	88.4	88.4	88.5	88.5	88.5	88.5
≥ 900	73.1	84.9	86.2	87.2	88.0	88.1	89.0	89.0	89.0	89.1	89.1	89.1	89.2	89.2	89.2	89.2
≥ 800	73.6	85.7	87.2	88.3	89.2	89.3	90.2	90.2	90.2	90.3	90.3	90.3	90.4	90.4	90.4	90.4
≥ 700	73.9	86.1	88.0	89.4	90.3	90.4	91.3	91.3	91.3	91.4	91.5	91.5	91.6	91.6	91.6	91.6
≥ 600	73.9	86.3	88.2	89.8	91.5	91.8	92.6	92.6	92.6	92.7	92.8	92.8	92.9	92.9	92.9	92.9
≥ 500	73.9	86.4	88.4	90.3	92.3	92.7	94.1	94.3	94.3	94.5	94.6	94.6	94.8	94.8	94.8	94.8
≥ 400	73.9	86.4	88.4	90.4	92.6	93.0	94.5	94.8	94.8	95.1	95.2	95.2	95.5	95.5	95.5	95.5
≥ 300	73.9	86.4	88.5	90.6	92.8	93.9	94.8	95.4	95.5	96.4	96.7	96.7	96.9	96.9	97.0	97.0
≥ 200	73.9	86.4	88.5	90.6	92.8	93.9	94.8	95.5	95.6	97.0	97.7	97.7	98.2	98.2	99.0	99.0
≥ 100	73.9	86.4	88.5	90.6	92.8	93.9	94.8	95.5	95.6	97.0	97.7	97.7	98.2	98.2	99.3	99.7
0	73.9	86.4	88.5	90.6	92.8	93.9	94.8	95.5	95.6	97.0	97.7	97.7	98.2	98.2	99.3	100.0

TOTAL NUMBER OF OBSERVATIONS 905

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1200-1800 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	48.0	52.1	53.1	53.2	53.4	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5	53.5
≥ 20000	56.2	61.1	62.2	62.5	62.7	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8
< 20000	56.2	61.1	62.2	62.5	62.7	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8
≥ 18000	56.2	61.1	62.2	62.5	62.7	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8
< 16000	56.8	61.3	62.4	62.7	62.9	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1
≥ 14000	56.9	61.7	62.8	63.2	63.4	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5
< 12000	58.5	64.2	65.3	65.6	65.8	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9
≥ 10000	61.1	67.1	68.3	68.6	68.8	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9
< 9000	61.9	69.2	70.6	71.0	71.2	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3
≥ 8000	62.8	70.6	71.9	72.3	72.6	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7
< 7000	68.2	72.0	73.3	73.8	74.1	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2
≥ 6000	66.3	74.2	75.6	76.2	76.5	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7
< 5000	68.4	76.3	77.7	78.3	78.7	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8
≥ 4500	69.7	77.8	79.1	79.8	80.1	80.2	80.2	80.2	80.2	80.2	80.2	80.2	80.2	80.2	80.2	80.2
< 4000	72.5	80.5	81.9	82.5	83.0	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1	83.1
≥ 3500	74.2	82.9	84.2	85.0	85.4	85.5	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7
< 3000	76.0	85.0	86.3	87.1	87.5	87.6	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.8
≥ 2500	77.9	86.9	88.3	89.0	89.6	89.7	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9
< 2000	79.0	88.3	89.6	90.4	91.0	91.2	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4	91.4
≥ 1800	79.3	88.6	89.9	90.7	91.4	91.5	91.8	91.8	91.8	91.8	91.8	91.8	91.8	91.8	91.8	91.8
< 1500	79.5	89.0	90.4	91.2	91.8	91.9	92.3	92.3	92.3	92.3	92.3	92.3	92.3	92.3	92.3	92.3
≥ 1200	80.2	89.7	91.0	91.8	92.6	92.7	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0
< 1000	80.2	89.8	91.5	92.3	93.1	93.3	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7
≥ 900	80.2	89.9	91.5	92.3	93.1	93.3	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7	93.7
< 800	80.2	89.9	91.6	92.5	93.4	93.5	93.9	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0
≥ 700	80.2	90.2	92.1	93.1	94.1	94.2	94.7	94.8	94.8	94.8	94.8	94.8	94.8	94.8	94.8	94.8
< 600	80.2	90.2	92.1	93.3	94.6	94.7	95.2	95.4	95.4	95.4	95.4	95.4	95.4	95.4	95.4	95.4
≥ 500	80.2	90.3	92.3	93.6	95.1	95.7	96.5	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7
< 400	80.2	90.3	92.3	93.7	95.4	95.9	97.1	97.4	97.4	97.4	97.8	98.0	98.0	98.0	98.0	98.0
≥ 300	80.2	90.3	92.3	93.8	95.7	96.7	97.8	98.0	98.0	98.3	98.5	98.5	98.5	98.5	98.5	98.5
< 200	80.2	90.3	92.3	93.8	95.7	96.7	98.0	98.2	98.2	98.5	98.8	98.8	98.8	98.8	98.8	98.8
≥ 100	80.2	90.3	92.3	93.8	95.7	96.7	98.0	98.2	98.3	99.1	99.4	99.4	99.7	99.7	99.9	100.0
0	80.2	90.3	92.3	93.8	95.7	96.7	98.0	98.2	98.3	99.1	99.4	99.4	99.7	99.7	99.9	100.0

TOTAL NUMBER OF OBSERVATIONS 908

USAF ETAC FORM AU 64 0-14-3 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1500-1700 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	50.7	54.3	55.1	55.1	55.1	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4
≥ 20000	60.8	65.3	66.3	66.3	66.3	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6
≥ 18000	60.8	65.3	66.3	66.3	66.3	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6
≥ 16000	61.2	65.7	66.7	66.7	66.7	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
≥ 14000	61.8	66.6	67.6	67.6	67.6	67.9	67.9	67.9	67.9	67.9	67.9	67.9	67.9	67.9	67.9	67.9
≥ 12000	64.2	69.0	70.0	70.0	70.0	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3
≥ 10000	66.4	71.5	72.9	72.9	73.1	73.4	73.4	73.4	73.4	73.5	73.5	73.5	73.5	73.5	73.5	73.5
≥ 9000	68.9	74.9	76.3	76.7	76.8	77.1	77.1	77.1	77.1	77.2	77.2	77.2	77.2	77.2	77.2	77.2
≥ 8000	69.6	75.8	77.2	77.5	77.7	78.0	78.0	78.0	78.0	78.1	78.1	78.1	78.1	78.1	78.1	78.1
≥ 7000	71.5	77.8	79.4	79.7	79.8	80.2	80.2	80.2	80.2	80.3	80.3	80.3	80.3	80.3	80.3	80.3
≥ 6000	72.9	79.2	80.8	81.2	81.3	81.6	81.6	81.6	81.6	81.7	81.7	81.7	81.7	81.7	81.7	81.7
≥ 5000	75.6	81.8	83.6	84.0	84.1	84.4	84.4	84.4	84.4	84.6	84.6	84.6	84.6	84.6	84.6	84.6
≥ 4500	77.3	83.7	85.4	85.9	86.0	86.3	86.3	86.3	86.3	86.4	86.4	86.4	86.4	86.4	86.4	86.4
≥ 4000	79.2	85.8	87.5	88.2	88.3	88.6	88.7	88.8	88.8	88.9	88.9	88.9	88.9	88.9	88.9	88.9
≥ 3500	80.3	87.1	89.0	89.7	89.8	90.1	90.3	90.4	90.4	90.5	90.5	90.5	90.5	90.5	90.5	90.5
≥ 3000	81.2	88.1	90.3	90.9	91.0	91.3	91.5	91.6	91.6	91.7	91.7	91.7	91.7	91.7	91.7	91.7
≥ 2500	81.9	89.6	91.9	92.6	92.7	93.1	93.2	93.3	93.3	93.4	93.4	93.4	93.4	93.4	93.4	93.4
≥ 2000	82.1	90.1	92.4	93.1	93.2	93.6	93.8	93.9	93.9	94.0	94.0	94.0	94.0	94.0	94.0	94.0
≥ 1800	82.4	90.6	92.9	93.5	93.6	94.1	94.2	94.3	94.3	94.4	94.4	94.4	94.4	94.4	94.4	94.4
≥ 1500	82.4	90.6	92.9	93.5	93.6	94.1	94.2	94.3	94.3	94.4	94.4	94.4	94.4	94.4	94.4	94.4
≥ 1200	82.6	90.8	93.1	93.8	93.9	94.3	94.4	94.5	94.5	94.6	94.6	94.6	94.6	94.6	94.6	94.6
≥ 1000	82.6	90.8	93.3	94.1	94.2	94.7	94.9	95.0	95.0	95.1	95.1	95.1	95.1	95.1	95.1	95.1
≥ 900	82.6	90.8	93.3	94.1	94.2	94.7	94.9	95.0	95.0	95.1	95.1	95.1	95.1	95.1	95.1	95.1
≥ 800	82.6	90.9	93.4	94.4	94.5	95.1	95.3	95.5	95.5	95.6	95.6	95.6	95.6	95.6	95.6	95.6
≥ 700	82.6	91.1	93.8	95.2	95.3	95.8	96.1	96.3	96.3	96.4	96.4	96.4	96.4	96.4	96.4	96.4
≥ 600	82.6	91.1	93.8	95.4	95.7	96.3	96.5	96.7	96.8	96.9	96.9	96.9	96.9	96.9	96.9	96.9
≥ 500	82.6	91.1	93.8	95.5	95.8	96.5	96.8	97.0	97.2	97.3	97.3	97.3	97.3	97.3	97.3	97.3
≥ 400	82.6	91.1	93.9	95.8	96.2	97.0	97.5	97.8	97.9	98.1	98.1	98.1	98.2	98.2	98.2	98.2
≥ 300	82.6	91.1	93.9	96.1	96.4	97.4	97.8	98.2	98.6	98.8	98.8	98.8	98.9	98.9	99.0	99.1
≥ 200	82.6	91.1	93.9	96.1	96.4	97.4	97.8	98.4	98.7	99.1	99.1	99.1	99.2	99.2	99.3	99.5
≥ 100	82.6	91.1	93.9	96.1	96.4	97.4	97.8	98.4	98.7	99.1	99.1	99.1	99.5	99.5	99.7	99.9
≥ 0	82.6	91.1	93.9	96.1	96.4	97.4	97.8	98.4	98.7	99.1	99.1	99.1	99.5	99.5	99.7	100.0

TOTAL NUMBER OF OBSERVATIONS 913

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1800-2000 (HOURS L.S.T.)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	55.9	58.7	59.2	59.8	59.8	60.0	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.4	60.4
≥ 20000	63.9	67.3	67.9	68.4	68.4	68.8	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.1	69.1
≥ 18000	63.9	67.3	67.9	68.4	68.4	68.8	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.1	69.1
≥ 16000	64.1	67.8	68.3	68.9	68.9	69.2	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.5	69.5
≥ 14000	64.7	68.1	68.7	69.2	69.2	69.5	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.9	69.9
≥ 12000	66.6	70.4	71.0	71.5	71.5	71.9	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.1	72.2	72.2
≥ 10000	69.7	74.0	74.9	75.5	75.5	75.9	76.3	76.3	76.3	76.3	76.3	76.3	76.3	76.3	76.4	76.4
≥ 9000	72.5	77.1	78.1	78.7	78.7	79.1	79.5	79.6	79.6	79.7	79.7	79.7	79.7	79.7	79.8	79.8
≥ 8000	73.6	78.5	79.5	80.2	80.3	80.6	81.1	81.2	81.2	81.3	81.3	81.3	81.3	81.3	81.4	81.4
≥ 7000	79.6	84.0	85.2	85.8	85.9	86.2	86.7	86.8	86.8	86.9	86.9	86.9	86.9	86.9	87.0	87.0
≥ 6000	76.1	81.7	82.9	83.6	83.7	84.1	84.5	84.6	84.6	84.7	84.7	84.7	84.7	84.7	84.8	84.8
≥ 5000	77.5	83.3	84.5	85.3	85.4	85.7	86.2	86.3	86.3	86.4	86.4	86.4	86.4	86.4	86.5	86.5
≥ 4500	78.3	84.4	85.6	86.6	86.7	87.0	87.5	87.6	87.6	87.7	87.7	87.7	87.7	87.7	87.8	87.8
≥ 4000	79.0	85.8	86.6	87.8	87.9	88.3	88.8	88.9	88.9	89.0	89.1	89.1	89.1	89.1	89.3	89.3
≥ 3500	79.3	85.7	86.9	88.2	88.3	88.7	89.4	89.5	89.5	89.6	89.7	89.7	89.7	89.7	89.8	89.8
≥ 3000	79.7	86.5	87.8	89.0	89.1	89.7	90.5	90.6	90.6	90.7	90.8	90.8	90.9	90.9	91.0	91.0
≥ 2500	80.4	87.2	88.7	89.9	90.0	90.6	91.4	91.5	91.5	91.6	91.7	91.7	91.9	91.9	92.0	92.0
≥ 2000	80.6	87.7	89.4	90.6	90.7	91.3	92.0	92.1	92.1	92.2	92.3	92.3	92.6	92.6	92.7	92.7
≥ 1800	80.8	88.0	89.8	91.0	91.1	91.8	92.6	92.7	92.7	92.8	92.9	92.9	93.1	93.1	93.2	93.2
≥ 1500	81.1	88.4	90.4	91.6	91.7	92.4	93.1	93.2	93.2	93.3	93.4	93.4	93.6	93.6	93.9	93.9
≥ 1200	81.2	88.8	90.7	91.9	92.0	92.7	93.5	93.7	93.7	93.8	93.9	93.9	94.1	94.1	94.2	94.2
≥ 1000	81.3	88.9	90.8	92.0	92.1	92.8	93.6	93.8	93.8	93.9	94.0	94.0	94.2	94.2	94.3	94.3
≥ 900	81.3	88.9	90.8	92.0	92.1	92.8	93.6	93.8	93.8	93.9	94.0	94.0	94.2	94.2	94.4	94.4
≥ 800	81.3	88.9	90.8	92.0	92.1	92.8	93.7	93.8	93.8	93.9	94.0	94.1	94.3	94.3	94.5	94.5
≥ 700	81.3	89.0	90.9	92.2	92.4	93.1	93.9	94.1	94.1	94.2	94.4	94.4	94.6	94.6	94.7	94.7
≥ 600	81.3	89.1	91.0	92.5	92.6	93.4	94.1	94.3	94.3	94.5	94.6	94.6	94.8	94.8	94.9	94.9
≥ 500	81.3	89.3	91.3	92.6	92.9	93.7	94.6	94.8	94.8	95.0	95.1	95.1	95.3	95.3	95.5	95.5
≥ 400	81.3	89.5	91.5	93.1	93.2	94.0	94.9	95.1	95.1	95.3	95.4	95.4	95.6	95.6	95.9	95.9
≥ 300	81.3	89.5	91.5	93.1	93.2	94.0	94.9	95.2	95.2	95.4	95.5	95.5	95.7	95.7	96.0	96.0
≥ 200	81.3	89.5	91.5	93.1	93.2	94.1	95.2	95.5	95.5	95.7	95.8	95.8	96.0	96.0	96.3	96.3
≥ 100	81.3	89.5	91.5	93.1	93.2	94.1	95.2	95.5	95.5	95.7	95.8	95.8	96.0	96.0	96.3	96.3
≥ 0	81.3	89.5	91.5	93.1	93.2	94.1	95.2	95.5	95.5	95.7	95.8	95.8	96.0	96.0	96.3	96.3

TOTAL NUMBER OF OBSERVATIONS 903

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

2100-2300 (HOUR LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2¾	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥¼	≥0
NO CEILING	59.6	62.7	63.3	63.7	63.8	63.9	64.0	64.4	64.4	64.4	64.7	64.7	64.7	64.7	64.7	64.8
≥ 20000	65.6	69.1	69.9	70.2	70.3	70.4	70.6	71.0	71.0	71.0	71.2	71.2	71.2	71.2	71.2	71.3
≥ 18000	65.7	69.2	70.0	70.3	70.4	70.6	70.7	71.1	71.1	71.1	71.3	71.3	71.3	71.3	71.3	71.4
≥ 16000	65.8	69.3	70.1	70.4	70.6	70.7	70.8	71.2	71.2	71.2	71.4	71.4	71.4	71.4	71.4	71.6
≥ 14000	66.4	70.2	71.0	71.3	71.4	71.6	71.7	72.1	72.1	72.1	72.3	72.3	72.3	72.3	72.3	72.4
≥ 12000	68.0	71.9	72.7	73.0	73.1	73.2	73.4	73.9	73.9	73.9	74.1	74.1	74.1	74.1	74.1	74.2
≥ 10000	71.1	75.7	76.4	76.8	77.0	77.1	77.3	77.8	77.8	77.8	78.0	78.0	78.0	78.0	78.0	78.1
≥ 9000	73.3	78.0	78.8	79.1	79.3	79.4	79.8	80.3	80.3	80.3	80.6	80.6	80.6	80.6	80.6	80.7
≥ 8000	73.8	78.6	79.3	79.7	79.9	80.0	80.3	80.9	80.9	80.9	81.1	81.1	81.1	81.1	81.1	81.2
≥ 7000	74.7	80.0	80.9	81.2	81.4	81.7	82.0	82.6	82.6	82.6	82.8	82.8	82.8	82.8	82.8	82.9
≥ 6000	76.3	82.1	83.0	83.3	83.6	83.8	84.1	84.7	84.7	84.7	84.9	84.9	84.9	84.9	84.9	85.0
≥ 5000	77.4	83.3	84.2	84.7	84.9	85.1	85.4	86.0	86.0	86.0	86.2	86.2	86.2	86.2	86.2	86.3
≥ 4500	77.6	83.6	84.7	85.1	85.3	85.6	85.9	86.4	86.4	86.4	86.7	86.7	86.7	86.7	86.7	86.8
≥ 4000	78.7	84.8	86.0	86.4	86.8	87.0	87.3	88.0	88.0	88.1	88.4	88.4	88.6	88.6	88.6	88.7
≥ 3500	79.1	85.4	86.7	87.1	87.4	87.7	88.0	88.7	88.7	88.8	89.1	89.1	89.2	89.2	89.2	89.3
≥ 3000	79.9	86.6	87.8	88.2	88.6	88.8	89.1	89.9	89.9	90.0	90.3	90.3	90.4	90.4	90.4	90.6
≥ 2500	80.2	87.2	88.3	88.8	89.1	89.3	89.7	90.4	90.4	90.6	90.9	90.9	91.0	91.0	91.0	91.1
≥ 2000	80.3	87.4	88.8	89.2	89.6	89.8	90.2	91.0	91.0	91.1	91.4	91.4	91.6	91.6	91.6	91.7
≥ 1800	80.8	88.1	89.3	89.8	90.1	90.3	90.8	91.6	91.6	91.8	92.1	92.1	92.2	92.2	92.2	92.3
≥ 1500	81.1	88.7	89.9	90.3	90.7	90.9	91.3	92.1	92.1	92.3	92.7	92.7	92.8	92.8	92.8	92.9
≥ 1200	81.1	88.7	90.1	90.6	90.9	91.1	91.6	92.3	92.3	92.6	92.9	92.9	93.0	93.0	93.0	93.1
≥ 1000	81.4	89.0	90.4	90.9	91.2	91.4	91.9	92.7	92.7	92.9	93.2	93.2	93.3	93.3	93.3	93.4
≥ 900	81.4	89.1	90.6	91.0	91.3	91.6	92.0	92.8	92.8	93.0	93.3	93.3	93.4	93.4	93.4	93.6
≥ 800	81.6	89.3	90.8	91.2	91.7	91.9	92.4	93.2	93.2	93.4	93.8	93.8	93.9	93.9	93.9	94.0
≥ 700	81.7	89.4	90.9	91.3	91.8	92.0	92.6	93.3	93.3	93.6	93.9	93.9	94.0	94.0	94.0	94.1
≥ 600	81.8	89.7	91.1	91.5	92.3	92.6	93.1	93.9	93.9	94.1	94.4	94.4	94.6	94.6	94.6	94.7
≥ 500	81.9	89.8	91.3	92.2	92.7	92.9	93.6	94.3	94.3	94.6	94.9	94.9	95.1	95.1	95.1	95.2
≥ 400	82.0	90.8	91.6	92.6	93.1	93.3	94.1	94.9	94.9	95.1	95.4	95.4	95.7	95.7	95.7	95.8
≥ 300	82.0	90.2	91.8	93.1	93.7	93.9	94.9	95.9	95.9	96.1	96.4	96.4	96.8	96.8	96.8	96.9
≥ 200	82.0	90.2	91.8	93.1	93.7	94.1	95.2	96.3	96.3	96.8	97.1	97.1	97.4	97.4	97.8	97.9
≥ 100	82.0	90.2	91.8	93.2	93.8	94.2	95.3	96.4	96.4	97.0	97.6	97.6	98.2	98.2	99.0	99.4
≥ 0	82.0	90.2	91.8	93.2	93.8	94.2	95.3	96.4	96.4	97.0	97.6	97.6	98.2	98.2	99.1	100.0

TOTAL NUMBER OF OBSERVATIONS 900

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 STATION — DULUTH IAP MN STATION NAME — 73-82 YEARS — ALL MONTH — ALL HOURS V.T.

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	52.9	56.5	57.3	57.7	57.8	57.9	58.0	58.1	58.1	58.2	58.3	58.3	58.3	58.3	58.4	58.5
≥ 20000	58.9	63.1	64.0	64.4	64.6	64.7	64.8	64.9	64.9	65.1	65.1	65.1	65.2	65.2	65.3	65.3
≥ 18000	59.0	63.2	64.1	64.5	64.7	64.8	64.9	65.0	65.0	65.2	65.2	65.2	65.3	65.3	65.4	65.4
≥ 16000	59.1	63.4	64.3	64.7	64.8	64.9	65.1	65.2	65.2	65.3	65.4	65.4	65.5	65.5	65.5	65.6
≥ 14000	59.6	64.1	65.0	65.4	65.5	65.6	65.8	65.9	65.9	66.0	66.1	66.1	66.2	66.2	66.2	66.3
≥ 12000	61.5	66.1	67.1	67.5	67.6	67.7	67.9	68.0	68.0	68.2	68.2	68.2	68.3	68.3	68.4	68.5
≥ 10000	64.5	69.6	70.7	71.1	71.3	71.4	71.6	71.8	71.8	71.9	72.0	72.0	72.1	72.1	72.1	72.2
≥ 9000	66.2	71.8	72.9	73.5	73.7	73.8	74.1	74.3	74.3	74.5	74.5	74.5	74.6	74.6	74.7	74.7
≥ 8000	66.9	72.7	73.9	74.5	74.7	74.9	75.2	75.4	75.4	75.5	75.6	75.6	75.6	75.6	75.7	75.8
≥ 7000	68.4	74.4	75.7	76.3	76.6	76.8	77.1	77.3	77.3	77.4	77.5	77.5	77.6	77.6	77.7	77.8
≥ 6000	69.8	76.1	77.4	78.0	78.3	78.5	78.8	79.0	79.0	79.2	79.2	79.2	79.4	79.4	79.4	79.5
≥ 5000	71.1	77.5	78.8	79.4	79.8	80.1	80.5	80.7	80.7	80.8	80.9	80.9	81.0	81.0	81.1	81.2
≥ 4500	71.8	78.2	79.6	80.4	80.7	80.9	81.2	81.4	81.4	81.6	81.7	81.7	81.8	81.8	81.9	82.0
≥ 4000	72.9	79.6	81.0	81.8	82.2	82.4	82.8	83.1	83.1	83.2	83.3	83.3	83.5	83.5	83.6	83.6
≥ 3500	73.8	80.6	82.1	83.0	83.4	83.6	84.0	84.2	84.2	84.4	84.5	84.5	84.6	84.6	84.7	84.8
≥ 3000	74.6	81.5	83.3	84.2	84.6	84.8	85.2	85.5	85.5	85.7	85.8	85.8	85.9	85.9	86.0	86.1
≥ 2500	75.5	82.9	84.5	85.4	85.8	86.1	86.5	86.8	86.8	87.0	87.1	87.1	87.2	87.2	87.3	87.4
≥ 2000	76.2	83.9	85.5	86.4	86.8	87.1	87.5	87.8	87.8	88.0	88.1	88.1	88.3	88.3	88.4	88.5
≥ 1800	76.6	84.5	86.2	87.2	87.6	87.8	88.3	88.5	88.5	88.8	88.8	88.8	89.0	89.0	89.1	89.2
≥ 1500	77.2	85.4	87.0	88.0	88.4	88.7	89.1	89.4	89.4	89.6	89.7	89.7	89.9	89.9	90.0	90.1
≥ 1200	77.9	86.2	87.8	88.9	89.3	89.6	90.0	90.4	90.4	90.6	90.6	90.6	90.8	90.8	90.9	91.0
≥ 1000	78.2	86.7	88.4	89.6	90.0	90.2	90.7	91.0	91.0	91.2	91.3	91.3	91.5	91.5	91.6	91.7
≥ 900	78.3	86.9	88.7	89.7	90.2	90.5	91.0	91.3	91.3	91.5	91.6	91.6	91.8	91.8	91.9	92.0
≥ 800	78.5	87.2	89.0	90.2	90.7	91.0	91.5	91.8	91.8	92.1	92.1	92.1	92.3	92.3	92.4	92.5
≥ 700	78.5	87.5	89.3	90.6	91.2	91.5	92.0	92.3	92.3	92.6	92.7	92.7	92.9	92.9	92.9	93.0
≥ 600	78.7	87.7	89.5	91.0	91.6	92.1	92.6	93.0	93.0	93.2	93.3	93.3	93.5	93.5	93.6	93.7
≥ 500	78.7	87.9	89.8	91.4	92.3	92.7	93.4	93.8	93.8	94.0	94.1	94.1	94.4	94.4	94.5	94.6
≥ 400	78.8	88.0	90.0	91.8	92.8	93.3	94.1	94.6	94.6	94.9	95.0	95.0	95.3	95.3	95.4	95.5
≥ 300	78.8	88.1	90.2	92.1	93.1	93.7	94.6	95.2	95.3	95.8	96.0	96.0	96.3	96.3	96.5	96.7
≥ 200	78.8	88.1	90.3	92.2	93.3	93.9	94.9	95.5	95.8	96.5	96.9	96.9	97.3	97.3	97.7	98.1
≥ 100	78.8	88.1	90.2	92.2	93.3	93.9	94.9	95.7	95.8	96.6	97.1	97.1	97.8	97.8	98.5	99.5
0	78.8	88.1	90.2	92.2	93.3	93.9	94.9	95.7	95.8	96.6	97.1	97.1	97.8	97.8	98.5	100.0

TOTAL NUMBER OF OBSERVATIONS 7284

USAF ETAC FORM AM 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0000-0200 (HOUR LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	50.8	54.7	55.6	56.0	56.2	56.4	56.4	56.8	56.8	56.8	57.0	57.0	57.3	57.3	57.6	57.7
≥ 20000	53.0	57.7	58.7	59.3	59.5	59.8	59.8	60.1	60.1	60.1	60.3	60.3	60.6	60.6	60.9	61.0
≥ 18000	53.0	57.7	58.7	59.3	59.5	59.8	59.8	60.1	60.1	60.1	60.3	60.3	60.6	60.6	60.9	61.0
≥ 16000	53.0	57.7	58.7	59.3	59.5	59.8	59.8	60.1	60.1	60.1	60.3	60.3	60.6	60.6	60.9	61.0
≥ 14000	53.1	57.8	58.8	59.4	59.6	59.9	59.9	60.2	60.2	60.2	60.4	60.4	60.7	60.7	61.0	61.1
≥ 12000	54.0	58.8	59.8	60.4	60.6	60.9	60.9	61.2	61.2	61.2	61.4	61.4	61.7	61.7	62.0	62.1
≥ 10000	55.8	60.6	61.6	62.4	62.6	62.8	62.8	63.2	63.2	63.2	63.4	63.4	63.7	63.7	63.9	64.1
≥ 9000	58.0	62.8	63.8	64.6	64.8	65.0	65.0	65.4	65.4	65.4	65.6	65.6	65.9	65.9	66.2	66.3
≥ 8000	59.5	64.5	65.5	66.3	66.5	66.7	66.8	67.1	67.1	67.1	67.4	67.4	67.7	67.7	67.9	68.0
≥ 7000	62.4	68.0	69.0	69.9	70.1	70.3	70.5	70.8	70.8	70.8	71.0	71.0	71.3	71.3	71.6	71.7
≥ 6000	62.8	68.6	69.7	70.7	70.9	71.1	71.2	71.6	71.6	71.6	71.8	71.8	72.1	72.1	72.3	72.4
≥ 5000	63.9	69.7	70.9	71.9	72.1	72.3	72.4	72.8	72.8	72.8	73.0	73.0	73.3	73.3	73.5	73.6
≥ 4500	64.9	70.9	72.1	73.1	73.3	73.5	73.6	74.0	74.0	74.1	74.3	74.3	74.6	74.6	74.9	75.0
≥ 4000	66.2	72.5	74.0	75.0	75.2	75.4	75.5	75.9	75.9	76.0	76.2	76.2	76.5	76.5	76.7	76.8
≥ 3500	66.8	73.3	74.8	75.7	76.0	76.2	76.5	76.8	76.8	77.0	77.2	77.2	77.5	77.5	77.7	77.8
≥ 3000	67.7	74.6	76.2	77.4	77.6	77.8	78.2	78.5	78.5	78.6	78.8	78.8	79.2	79.2	79.4	79.5
≥ 2500	68.9	76.2	77.7	79.1	79.3	79.5	80.0	80.4	80.4	80.5	80.7	80.7	81.0	81.0	81.3	81.4
≥ 2000	69.3	76.7	78.4	79.7	80.0	80.3	81.0	81.4	81.4	81.5	81.7	81.7	82.0	82.0	82.2	82.4
≥ 1800	69.5	76.8	78.6	79.9	80.3	80.5	81.3	81.6	81.6	81.7	81.9	81.9	82.2	82.2	82.5	82.6
≥ 1500	69.7	77.2	78.9	80.3	80.6	80.8	81.6	81.9	81.9	82.0	82.2	82.2	82.6	82.6	82.8	82.9
≥ 1200	70.0	77.8	79.6	80.9	81.3	81.5	82.2	82.6	82.6	82.7	82.9	82.9	83.2	83.2	83.5	83.6
≥ 1000	70.2	78.3	80.2	81.5	81.8	82.0	82.8	83.1	83.1	83.2	83.5	83.5	83.8	83.8	84.0	84.1
≥ 900	70.5	78.7	80.8	82.1	82.5	82.7	83.5	83.8	83.8	83.9	84.1	84.1	84.5	84.5	84.7	84.9
≥ 800	70.7	79.3	81.4	82.7	83.0	83.2	84.0	84.3	84.3	84.5	84.7	84.7	85.0	85.0	85.2	85.3
≥ 700	71.0	79.8	81.9	83.2	83.6	83.9	84.7	85.0	85.0	85.1	85.3	85.3	85.7	85.7	85.9	86.0
≥ 600	71.0	80.0	82.1	83.5	83.8	84.2	85.1	85.6	85.6	85.7	85.9	85.9	86.2	86.2	86.4	86.5
≥ 500	71.0	80.5	82.7	84.2	84.6	85.0	86.0	86.5	86.5	86.7	86.9	86.9	87.2	87.2	87.4	87.5
≥ 400	71.0	81.1	83.5	85.3	86.0	86.4	87.9	88.4	88.4	88.5	88.8	88.8	89.1	89.1	89.3	89.4
≥ 300	71.0	81.4	83.8	86.0	86.9	87.5	89.2	89.9	89.9	90.1	90.3	90.3	90.7	90.7	91.2	91.3
≥ 200	71.0	81.4	83.8	86.8	87.7	88.3	90.2	90.8	90.8	91.8	92.3	92.3	93.1	93.1	94.6	95.5
≥ 100	71.0	81.4	83.8	86.8	87.7	88.3	90.3	91.1	91.1	92.3	92.8	92.8	93.7	93.7	96.5	99.1
≥ 0	71.0	81.4	83.8	86.8	87.7	88.3	90.3	91.1	91.1	92.3	92.8	92.8	93.7	93.7	96.5	100.0

TOTAL NUMBER OF OBSERVATIONS 907

USAF ETAC FORM NOV 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0300-0500 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	44.0	48.6	49.5	50.7	50.9	51.4	51.5	51.5	51.5	51.5	51.7	51.7	52.0	52.0	52.4	52.5
≥ 20000	46.6	51.5	52.4	53.7	53.9	54.6	54.7	54.7	54.7	54.7	54.9	54.9	55.3	55.3	55.6	55.7
≥ 18000	46.6	51.5	52.4	53.7	53.9	54.6	54.7	54.7	54.7	54.7	54.9	54.9	55.3	55.3	55.6	55.7
≥ 16000	46.6	51.5	52.4	53.7	53.9	54.6	54.7	54.7	54.7	54.7	54.9	54.9	55.3	55.3	55.6	55.7
≥ 14000	47.1	52.0	52.9	54.4	54.6	55.3	55.4	55.4	55.4	55.4	55.6	55.6	55.9	55.9	56.3	56.4
≥ 12000	48.3	53.6	54.5	56.0	56.3	56.9	57.0	57.1	57.1	57.1	57.4	57.4	57.7	57.7	58.0	58.1
≥ 10000	50.5	56.1	57.1	58.7	58.9	59.6	59.7	59.8	59.8	59.8	60.0	60.0	60.4	60.4	60.7	60.8
≥ 9000	52.4	58.1	59.1	60.7	60.9	61.6	61.7	61.8	61.8	61.8	62.0	62.0	62.3	62.3	62.7	62.8
≥ 8000	53.0	58.8	59.9	61.5	61.7	62.3	62.5	62.6	62.6	62.6	62.8	62.8	63.1	63.1	63.5	63.6
≥ 7000	55.3	61.4	62.8	64.3	64.6	65.2	65.3	65.4	65.4	65.4	65.7	65.7	66.0	66.0	66.3	66.4
≥ 6000	55.9	62.3	63.8	65.3	65.6	66.2	66.4	66.6	66.6	66.6	66.8	66.8	67.1	67.1	67.4	67.6
≥ 5000	56.9	63.6	65.0	66.6	66.8	67.4	67.7	67.9	67.9	67.9	68.1	68.1	68.4	68.4	68.8	68.9
≥ 4500	57.6	64.2	65.7	67.2	67.4	68.1	68.3	68.5	68.5	68.5	68.8	68.8	69.1	69.1	69.4	69.5
≥ 4000	58.3	65.1	66.6	68.1	68.3	69.0	69.2	69.4	69.4	69.5	69.8	69.8	70.1	70.1	70.4	70.5
≥ 3500	58.8	65.8	67.2	68.8	69.1	69.8	70.0	70.2	70.2	70.4	70.7	70.7	71.0	71.0	71.3	71.4
≥ 3000	59.1	66.4	67.9	69.4	69.8	70.4	70.7	70.9	70.9	71.1	71.3	71.3	71.7	71.7	72.0	72.2
≥ 2500	60.4	68.2	69.8	71.7	72.0	72.6	72.9	73.1	73.1	73.3	73.5	73.5	73.9	73.9	74.2	74.4
≥ 2000	61.1	69.4	71.3	73.2	73.5	74.2	74.6	74.9	74.9	75.1	75.3	75.3	75.6	75.6	76.0	76.2
≥ 1800	61.1	69.4	71.3	73.2	73.5	74.2	74.6	74.9	74.9	75.1	75.3	75.3	75.6	75.6	76.0	76.2
≥ 1500	61.6	70.1	72.0	74.0	74.3	75.1	75.5	75.7	75.7	76.0	76.2	76.2	76.5	76.5	76.9	77.1
≥ 1200	62.3	71.1	73.2	75.3	75.7	76.5	77.0	77.2	77.2	77.4	77.6	77.6	78.0	78.0	78.3	78.5
≥ 1000	62.9	71.8	73.9	76.0	76.5	77.3	77.7	78.0	78.0	78.2	78.4	78.4	78.7	78.7	79.1	79.3
≥ 900	63.3	72.3	74.4	76.5	77.1	77.9	78.3	78.5	78.5	78.7	79.0	79.0	79.3	79.3	79.6	79.8
≥ 800	63.7	72.8	74.9	77.0	77.5	78.3	78.7	79.0	79.0	79.2	79.4	79.4	79.7	79.7	80.1	80.3
≥ 700	64.2	73.6	75.7	78.0	78.6	79.4	79.8	80.1	80.1	80.3	80.5	80.5	80.8	80.8	81.2	81.4
≥ 600	64.3	74.3	76.4	78.6	79.3	80.1	80.5	80.7	80.7	81.0	81.2	81.2	81.5	81.5	81.9	82.2
≥ 500	64.8	75.9	78.1	80.5	81.4	82.4	83.1	83.3	83.3	83.5	83.7	83.7	84.1	84.1	84.5	84.7
≥ 400	65.0	76.3	78.7	81.6	82.7	83.9	84.9	85.5	85.5	85.8	86.0	86.0	86.4	86.4	86.8	87.0
≥ 300	65.1	76.5	79.0	82.1	83.3	84.5	85.7	86.3	86.3	87.2	87.4	87.4	87.7	87.7	88.5	88.9
≥ 200	65.1	76.6	79.1	82.5	84.1	85.5	87.2	88.2	88.2	89.4	89.7	89.7	90.5	90.5	92.2	93.8
≥ 100	65.1	76.6	79.1	82.5	84.1	85.5	87.2	88.3	88.3	89.7	90.4	90.4	91.4	91.6	94.2	98.6
0	65.1	76.6	79.1	82.5	84.1	85.5	87.2	88.3	88.3	89.7	90.4	90.4	91.4	91.6	94.2	100.0

TOTAL NUMBER OF OBSERVATIONS 903

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0600-0800 (HOURS LST)

CEILING FEET	VISIBILITY STATUTE MILES															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1½	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	38.8	42.6	43.2	44.3	45.1	45.3	45.4	45.8	45.8	46.1	46.3	46.3	46.7	46.8	46.8	47.2
≥ 20000	42.1	46.9	47.7	49.2	49.9	50.2	50.6	51.1	51.1	51.3	51.5	51.5	51.9	52.1	52.2	52.8
≥ 18000	42.1	46.9	47.7	49.2	49.9	50.2	50.6	51.1	51.1	51.3	51.5	51.5	51.9	52.1	52.2	52.8
≥ 16000	42.1	46.9	47.7	49.2	49.9	50.2	50.6	51.1	51.1	51.3	51.5	51.5	51.9	52.1	52.2	52.8
≥ 14000	42.6	47.5	48.3	49.7	50.5	50.7	51.2	51.6	51.6	51.8	52.1	52.1	52.5	52.6	52.7	53.4
≥ 12000	44.1	49.2	49.9	51.6	52.5	52.7	53.2	53.6	53.6	53.8	54.1	54.1	54.5	54.6	54.7	55.4
≥ 10000	45.6	51.5	52.3	54.1	55.0	55.3	55.8	56.3	56.3	56.5	56.7	56.7	57.2	57.3	57.4	58.0
≥ 9000	47.4	53.4	54.2	55.9	57.2	57.5	58.0	58.5	58.5	58.7	58.9	58.9	59.4	59.5	59.6	60.3
≥ 8000	48.3	54.5	55.5	57.4	58.6	58.9	59.6	60.0	60.0	60.2	60.5	60.5	60.9	61.0	61.2	61.8
≥ 7000	51.1	57.3	58.4	60.4	61.6	62.0	62.8	63.3	63.3	63.5	63.7	63.7	64.2	64.3	64.4	65.0
≥ 6000	52.1	58.5	59.6	61.7	63.0	63.5	64.4	64.8	64.8	65.0	65.3	65.3	65.7	65.8	65.9	66.6
≥ 5000	52.7	59.6	60.7	62.8	64.3	64.7	65.6	66.0	66.0	66.3	66.5	66.5	66.9	67.0	67.1	67.8
≥ 4500	52.9	59.9	61.0	63.2	64.6	65.0	65.9	66.4	66.4	66.6	66.8	66.8	67.3	67.4	67.5	68.1
≥ 4000	53.6	60.7	62.2	64.4	65.8	66.4	67.3	67.7	67.7	67.9	68.1	68.1	68.6	68.7	68.8	69.5
≥ 3500	54.1	61.2	62.6	64.9	66.4	66.9	67.8	68.3	68.3	68.5	68.7	68.7	69.1	69.3	69.4	70.0
≥ 3000	54.5	61.6	63.0	65.4	66.8	67.4	68.3	68.7	68.7	68.9	69.1	69.1	69.6	69.7	69.8	70.5
≥ 2500	54.9	62.0	63.5	65.8	67.3	67.8	68.8	69.4	69.4	69.6	69.8	69.8	70.3	70.4	70.5	71.1
≥ 2000	55.0	62.5	63.9	66.5	67.9	68.5	69.5	70.0	70.0	70.3	70.5	70.5	70.9	71.0	71.1	71.8
≥ 1800	55.5	62.9	64.5	67.1	68.6	69.1	70.1	70.7	70.7	70.9	71.1	71.1	71.6	71.7	71.8	72.5
≥ 1500	55.7	63.6	65.3	68.0	69.5	70.0	71.0	71.6	71.7	72.0	72.3	72.3	72.7	72.8	72.9	73.6
≥ 1200	56.4	64.6	66.3	69.3	70.8	71.4	72.4	72.9	73.1	73.6	73.8	73.8	74.3	74.4	74.5	75.1
≥ 1000	57.4	65.8	67.5	70.5	72.0	72.6	73.6	74.1	74.4	74.8	75.0	75.0	75.5	75.6	75.7	76.4
≥ 900	57.9	66.6	68.3	71.4	72.9	73.5	74.5	75.2	75.5	75.9	76.1	76.1	76.6	76.7	76.8	77.5
≥ 800	58.5	67.3	69.0	72.3	73.9	74.6	75.7	76.5	76.7	77.1	77.4	77.4	77.8	77.9	78.0	78.7
≥ 700	58.9	68.0	70.0	73.5	75.4	76.0	77.1	77.9	78.1	78.6	78.8	78.8	79.2	79.4	79.5	80.1
≥ 600	58.9	68.6	70.6	74.4	76.2	76.9	78.2	79.0	79.2	79.7	79.9	79.9	80.4	80.5	80.6	81.2
≥ 500	59.2	69.1	71.3	75.2	77.2	78.4	79.9	80.8	81.0	81.5	81.7	81.7	82.1	82.2	82.4	83.0
≥ 400	59.2	69.9	72.1	76.2	78.6	80.0	82.1	83.5	83.7	84.2	84.5	84.5	85.0	85.1	85.2	85.9
≥ 300	59.2	70.0	72.3	76.8	79.6	81.0	83.8	85.5	85.9	86.9	87.1	87.3	88.2	88.3	88.9	89.8
≥ 200	59.2	70.0	72.4	76.9	79.9	81.5	84.6	86.3	86.8	88.3	89.8	90.0	91.7	91.9	93.3	95.1
≥ 100	59.2	70.0	72.4	76.9	79.9	81.5	84.7	86.5	86.9	88.6	90.1	90.3	92.1	92.5	94.3	98.9
≥ 0	59.2	70.0	72.4	76.9	79.9	81.5	84.7	86.5	86.9	88.6	90.1	90.3	92.1	92.5	94.5	100.0

TOTAL NUMBER OF OBSERVATIONS 901

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0900-1100 (HOUR LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥⅜	≥¼	≥5/16	≥0
NO CEILING	41.2	44.4	45.1	45.5	46.2	46.2	46.6	46.6	46.6	46.7	46.7	46.7	46.7	46.7	46.7	46.7
≥ 20000	46.2	49.4	50.3	51.2	52.0	52.0	52.4	52.4	52.4	52.5	52.5	52.5	52.5	52.5	52.5	52.5
≥ 18000	46.2	49.6	50.3	51.2	52.0	52.0	52.4	52.4	52.4	52.5	52.5	52.5	52.5	52.5	52.5	52.5
≥ 16000	46.3	49.7	50.4	51.3	52.1	52.1	52.5	52.5	52.5	52.7	52.7	52.7	52.7	52.7	52.7	52.7
≥ 14000	46.4	49.8	50.5	51.4	52.2	52.2	52.7	52.7	52.7	52.8	52.8	52.8	52.8	52.8	52.8	52.8
≥ 12000	47.6	51.6	52.3	53.3	54.1	54.1	54.6	54.6	54.6	54.7	54.7	54.7	54.7	54.7	54.7	54.7
≥ 10000	49.4	54.7	55.6	56.6	57.7	57.7	58.3	58.3	58.3	58.4	58.4	58.4	58.4	58.4	58.4	58.4
≥ 9000	50.6	56.3	57.5	58.8	59.9	59.9	60.5	60.5	60.5	60.6	60.6	60.6	60.6	60.6	60.6	60.6
≥ 8000	51.6	57.4	58.6	59.9	61.1	61.4	61.9	62.0	62.0	62.1	62.1	62.1	62.1	62.1	62.1	62.1
≥ 7000	52.9	58.6	60.1	61.8	62.6	62.9	63.7	63.8	63.8	64.0	64.0	64.0	64.0	64.0	64.0	64.0
≥ 6000	53.0	59.0	60.7	62.0	63.3	63.6	64.4	64.5	64.5	64.6	64.6	64.6	64.6	64.6	64.6	64.6
≥ 5000	53.6	59.7	61.4	62.7	64.0	64.3	65.3	65.4	65.4	65.5	65.5	65.5	65.5	65.5	65.5	65.5
≥ 4500	53.8	59.9	61.6	62.9	64.2	64.5	65.5	65.6	65.6	65.8	65.8	65.8	65.8	65.8	65.8	65.8
≥ 4000	54.4	61.0	62.7	64.2	65.4	65.8	66.8	66.9	66.9	67.0	67.0	67.0	67.0	67.0	67.0	67.0
≥ 3500	55.0	61.8	63.5	65.1	66.3	66.7	67.7	67.8	67.8	68.0	68.0	68.0	68.0	68.0	68.0	68.0
≥ 3000	57.1	64.0	65.6	67.2	68.5	68.8	69.8	69.9	69.9	70.2	70.2	70.2	70.2	70.2	70.2	70.2
≥ 2500	59.2	66.2	67.9	69.7	71.0	71.3	72.3	72.4	72.4	72.7	72.7	72.7	72.7	72.7	72.7	72.7
≥ 2000	60.8	68.0	69.7	71.5	72.8	73.1	74.1	74.2	74.2	74.5	74.5	74.5	74.5	74.5	74.5	74.5
≥ 1800	61.6	69.0	70.7	72.5	73.8	74.1	75.3	75.4	75.4	75.6	75.6	75.6	75.6	75.6	75.6	75.6
≥ 1500	63.3	71.1	72.8	74.9	76.3	76.6	77.7	77.9	77.9	78.1	78.1	78.1	78.1	78.1	78.1	78.1
≥ 1200	65.4	73.8	75.5	77.9	79.4	79.8	80.9	81.1	81.1	81.4	81.4	81.4	81.4	81.4	81.4	81.4
≥ 1000	66.0	74.9	76.6	79.5	81.1	81.6	82.7	82.9	82.9	83.2	83.2	83.2	83.2	83.2	83.2	83.2
≥ 900	66.1	75.4	77.3	80.5	82.0	82.5	83.6	84.0	84.0	84.2	84.2	84.2	84.2	84.2	84.2	84.2
≥ 800	66.3	75.9	78.0	81.6	83.5	84.0	85.1	85.4	85.4	85.6	85.8	85.8	85.8	85.8	85.8	85.8
≥ 700	66.4	76.3	78.3	82.1	84.2	84.7	86.0	86.3	86.3	86.6	86.7	86.7	86.7	86.7	86.7	86.7
≥ 600	66.7	76.6	78.6	83.3	85.6	86.3	87.7	88.0	88.0	88.4	88.5	88.5	88.5	88.5	88.5	88.5
≥ 500	66.7	77.3	79.3	84.0	86.3	87.6	88.9	89.4	89.4	89.7	89.8	89.8	90.1	90.1	90.1	90.1
≥ 400	66.7	77.3	79.3	84.1	86.8	88.4	90.8	91.0	91.0	91.8	91.8	91.8	92.0	92.0	92.0	92.1
≥ 300	66.7	77.3	79.3	84.2	87.0	88.7	91.3	92.7	92.7	93.2	94.0	94.0	94.6	94.6	94.6	94.8
≥ 200	66.7	77.3	79.3	84.2	87.2	88.9	91.9	93.3	93.4	94.5	95.8	95.8	97.1	97.2	97.9	97.9
≥ 100	66.7	77.3	79.3	84.2	87.2	88.9	91.9	93.3	93.4	94.6	96.0	96.0	97.4	97.9	98.4	99.7
0	66.7	77.3	79.3	84.2	87.2	88.9	91.9	93.3	93.4	94.6	96.0	96.0	97.4	97.9	98.4	100.0

TOTAL NUMBER OF OBSERVATIONS 885

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1200-1800 HOURS LST

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	41.0	44.5	45.2	45.9	46.0	46.3	46.3	46.3	46.3	46.3	46.3	46.3	46.3	46.3	46.3	46.3
≥ 20000	48.0	52.4	53.5	54.6	55.0	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2	55.2
≥ 18000	48.1	52.5	53.6	54.8	55.1	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
≥ 16000	48.2	52.6	53.7	54.9	55.2	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4
≥ 14000	48.3	52.7	53.8	55.0	55.3	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5
≥ 12000	49.2	53.6	55.0	56.1	56.4	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7
≥ 10000	51.6	56.7	58.1	59.3	60.2	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4
≥ 9000	53.4	58.5	60.1	61.4	62.3	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7
≥ 8000	54.1	59.2	60.7	62.1	63.2	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6
≥ 7000	55.0	60.2	62.0	63.5	64.6	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9
≥ 6000	55.5	61.1	62.9	64.4	65.5	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8
≥ 5000	57.5	63.1	64.9	66.5	67.6	68.0	68.1	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2
≥ 4500	58.5	64.1	66.0	67.5	68.7	69.0	69.1	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2
≥ 4000	61.1	67.2	69.0	70.6	71.7	72.1	72.2	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3
≥ 3500	63.8	69.9	71.7	73.3	74.4	74.8	74.9	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
≥ 3000	65.8	72.5	74.3	76.0	77.1	77.5	77.6	77.7	77.7	77.7	77.7	77.7	77.7	77.7	77.7	77.7
≥ 2500	67.8	75.1	77.0	78.8	80.1	80.4	80.5	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7
≥ 2000	69.1	76.9	79.1	80.9	82.2	82.6	82.8	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9	82.9
≥ 1800	70.0	77.9	80.4	82.2	83.6	83.9	84.2	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3	84.3
≥ 1500	71.4	79.8	82.2	84.2	85.5	85.9	86.1	86.2	86.2	86.2	86.2	86.2	86.2	86.2	86.2	86.2
≥ 1200	71.7	80.4	83.0	85.1	86.4	86.8	87.1	87.2	87.2	87.2	87.2	87.2	87.2	87.2	87.2	87.2
≥ 1000	71.7	81.0	83.6	85.6	87.1	87.4	87.8	88.0	88.0	88.0	88.1	88.1	88.1	88.1	88.1	88.1
≥ 900	72.3	82.1	84.7	86.8	88.3	88.9	89.3	89.5	89.5	89.5	89.6	89.6	89.6	89.6	89.6	89.6
≥ 800	72.4	82.2	85.0	87.6	89.1	89.7	90.0	90.3	90.3	90.3	90.4	90.4	90.4	90.4	90.4	90.4
≥ 700	72.4	82.7	85.5	88.1	89.9	90.6	91.0	91.3	91.3	91.3	91.4	91.4	91.4	91.4	91.4	91.4
≥ 600	72.5	83.0	86.0	88.8	91.1	91.7	92.2	92.6	92.6	92.6	92.8	92.8	92.8	92.8	92.8	92.8
≥ 500	72.5	83.0	86.1	89.5	92.2	93.0	93.6	94.7	94.7	94.7	94.8	94.8	94.8	94.8	94.8	94.8
≥ 400	72.5	83.0	86.3	90.0	92.9	93.8	94.6	95.9	95.9	95.9	96.0	96.0	96.3	96.3	96.3	96.3
≥ 300	72.5	83.0	86.3	90.2	93.1	94.0	95.0	96.5	96.5	96.9	97.3	97.3	97.7	97.7	97.9	97.9
≥ 200	72.5	83.0	86.3	90.2	93.1	94.0	95.0	96.5	96.5	97.1	97.5	97.5	98.8	98.8	99.0	99.0
≥ 100	72.5	83.0	86.3	90.2	93.1	94.0	95.0	96.5	96.5	97.2	97.6	97.6	98.9	99.0	99.5	100.0
≥ 0	72.5	83.0	86.3	90.2	93.1	94.0	95.0	96.5	96.5	97.2	97.6	97.6	98.9	99.0	99.5	100.0

TOTAL NUMBER OF OBSERVATIONS 884

USAF ETAC FORM AUG 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ANN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

~~1500-1700~~ (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	41.7	47.5	49.0	49.2	49.5	49.5	49.5	49.5	89.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5
≥ 20000	50.8	57.2	58.9	59.5	59.8	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
≥ 18000	50.8	57.2	58.9	59.5	59.8	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
≥ 16000	50.8	57.2	58.9	59.5	59.8	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
≥ 14000	50.8	57.2	58.9	59.5	59.8	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
≥ 12000	52.8	58.9	60.6	61.1	61.5	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6
≥ 10000	55.3	62.0	63.9	64.4	64.8	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9
≥ 9000	57.3	64.3	66.1	67.0	67.3	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7	67.7
≥ 8000	59.5	66.8	68.7	69.6	69.9	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3
≥ 7000	60.1	67.7	69.6	70.5	70.8	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2	71.2
≥ 6000	61.8	69.7	71.6	72.5	72.9	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2
≥ 5000	64.2	72.2	74.1	75.0	75.3	75.8	75.8	75.8	75.8	75.9	75.9	75.9	75.9	75.9	75.9	75.9
≥ 4500	65.5	73.6	75.6	76.5	76.8	77.3	77.3	77.3	77.3	77.4	77.4	77.4	77.4	77.4	77.4	77.4
≥ 4000	67.9	76.4	78.3	79.3	79.6	80.1	80.1	80.1	80.1	80.2	80.2	80.2	80.2	80.2	80.2	80.2
≥ 3500	68.9	77.7	79.6	80.6	81.0	81.4	81.4	81.4	81.4	81.5	81.5	81.5	81.5	81.5	81.5	81.5
≥ 3000	69.8	78.7	80.7	81.9	82.2	82.7	82.7	82.7	82.7	82.8	82.8	82.8	82.8	82.8	82.8	82.8
≥ 2500	70.8	79.8	82.1	83.7	84.1	84.6	84.6	84.6	84.6	84.7	84.7	84.7	84.7	84.7	84.7	84.7
≥ 2000	72.2	81.2	83.6	85.2	85.7	86.1	86.1	86.1	86.1	86.3	86.3	86.3	86.3	86.3	86.3	86.3
≥ 1800	72.6	81.9	84.2	85.9	86.4	86.8	86.9	86.9	86.9	87.0	87.0	87.0	87.2	87.2	87.2	87.2
≥ 1500	72.9	82.2	84.6	86.3	86.8	87.3	87.5	87.5	87.5	87.6	87.6	87.6	87.7	87.7	87.7	87.7
≥ 1200	73.1	83.0	85.5	87.2	87.7	88.2	88.6	88.7	88.7	88.9	88.9	88.9	89.0	89.0	89.0	89.0
≥ 1000	73.3	83.4	86.1	88.0	88.7	89.2	89.6	89.9	89.9	90.1	90.1	90.1	90.2	90.2	90.2	90.2
≥ 900	73.6	84.0	86.7	88.5	89.4	89.9	90.3	90.5	90.5	90.8	90.8	90.8	90.9	90.9	90.9	90.9
≥ 800	74.0	84.5	87.5	89.3	90.2	90.7	91.1	91.4	91.4	91.7	91.7	91.7	91.8	91.8	91.8	91.8
≥ 700	74.1	84.7	87.7	89.9	90.9	91.4	92.0	92.5	92.5	92.7	92.7	92.7	92.8	92.8	92.8	92.8
≥ 600	74.1	84.8	87.8	90.9	91.9	92.6	93.1	93.7	93.7	93.9	93.9	93.9	94.0	94.0	94.0	94.0
≥ 500	74.1	84.8	87.8	90.9	92.1	92.9	93.5	94.0	94.0	94.5	94.5	94.5	94.6	94.6	94.6	94.6
≥ 400	74.1	84.8	87.8	90.9	92.2	93.8	94.1	95.0	95.0	95.6	95.7	95.7	96.2	96.2	96.2	96.2
≥ 300	74.1	84.8	87.8	90.9	92.2	93.8	94.3	95.3	95.3	96.5	96.6	96.6	97.1	97.1	97.2	97.2
≥ 200	74.1	84.8	87.8	90.9	92.2	93.8	94.3	95.4	95.4	97.0	97.6	97.6	98.8	98.8	98.9	98.9
≥ 100	74.1	84.8	87.8	90.9	92.2	93.8	94.3	95.6	95.6	97.0	97.6	97.6	98.9	99.0	99.4	99.7
0	74.1	84.8	87.8	90.9	92.2	93.8	94.3	95.6	95.6	97.0	97.6	97.6	98.9	99.0	99.4	100.0

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1800-2000 (HOURS L.T.)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1½	≥1	≥⅞	≥¾	≥½	≥5/16	≥¼	≥0
NO CEILING	47.2	52.4	53.6	54.2	54.2	54.2	54.2	54.2	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3
≥ 20000	54.2	60.9	62.3	63.0	63.8	63.8	63.9	63.9	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5
≥ 18000	54.4	61.3	62.6	63.4	63.7	63.7	63.7	63.7	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
≥ 16000	54.4	61.3	62.6	63.4	63.7	63.7	63.7	63.7	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
≥ 14000	54.4	61.3	62.7	63.5	63.9	63.9	63.9	63.9	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
≥ 12000	56.0	63.0	64.6	65.5	65.9	65.9	66.0	66.0	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
≥ 10000	59.7	66.7	68.3	69.1	69.6	69.6	69.7	69.7	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8
≥ 9000	61.9	69.5	71.0	71.9	72.4	72.4	72.5	72.5	72.6	72.6	72.6	72.6	72.6	72.6	72.6	72.6
≥ 8000	63.8	71.5	73.0	73.9	74.4	74.4	74.5	74.5	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6
≥ 7000	65.1	72.8	74.5	75.7	76.1	76.1	76.2	76.2	76.9	76.9	76.9	76.9	76.9	76.9	76.9	76.9
≥ 6000	65.8	73.6	75.2	76.5	76.9	76.9	77.0	77.0	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1
≥ 5000	67.1	75.1	76.8	78.0	78.5	78.5	78.6	78.6	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7
≥ 4500	67.8	75.8	77.6	78.8	79.4	79.4	79.5	79.5	79.6	79.6	79.6	79.6	79.6	79.6	79.6	79.6
≥ 4000	68.5	76.8	78.7	80.1	80.7	80.7	80.8	80.8	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9
≥ 3500	69.4	77.8	79.8	81.2	81.8	81.8	81.9	81.9	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0
≥ 3000	70.4	79.1	81.1	82.6	83.4	83.4	83.5	83.5	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6
≥ 2500	71.5	80.4	82.4	84.4	85.0	85.0	85.1	85.1	85.2	85.2	85.2	85.2	85.2	85.2	85.2	85.2
≥ 2000	71.7	80.8	82.9	85.0	85.9	85.9	86.1	86.1	86.2	86.2	86.2	86.2	86.2	86.2	86.2	86.2
≥ 1800	72.4	81.5	83.6	85.8	86.7	86.7	86.9	86.9	87.0	87.0	87.0	87.0	87.0	87.0	87.0	87.0
≥ 1500	72.7	82.4	84.5	87.0	87.9	88.0	88.2	88.2	88.3	88.5	88.5	88.5	88.5	88.5	88.5	88.5
≥ 1200	73.0	82.9	85.3	87.9	88.8	88.9	89.1	89.2	89.3	89.5	89.5	89.5	89.5	89.5	89.5	89.5
≥ 1000	73.1	83.2	85.8	88.3	89.2	89.3	89.7	89.8	89.9	90.0	90.0	90.0	90.0	90.0	90.0	90.0
≥ 900	73.1	83.2	85.9	88.6	89.5	89.6	89.9	90.0	90.1	90.2	90.2	90.2	90.2	90.2	90.2	90.2
≥ 800	73.5	83.6	86.3	89.0	89.9	90.0	90.3	90.6	90.7	90.8	90.8	90.8	90.8	90.8	90.8	90.8
≥ 700	73.5	83.7	86.6	89.7	90.8	90.9	91.3	91.6	91.7	91.9	91.9	91.9	92.0	92.0	92.0	92.0
≥ 600	73.9	84.5	87.5	90.7	91.8	92.0	92.5	92.8	92.9	93.1	93.2	93.2	93.3	93.3	93.3	93.3
≥ 500	73.9	84.6	87.6	90.9	92.1	92.7	93.1	93.6	93.7	94.0	94.2	94.2	94.3	94.3	94.3	94.3
≥ 400	74.0	84.7	87.7	91.3	92.7	93.3	93.9	94.6	94.7	95.2	95.4	95.4	95.6	95.6	95.6	95.6
≥ 300	74.0	84.7	87.7	91.3	92.8	93.6	94.3	95.1	95.2	96.0	96.3	96.3	96.7	96.7	96.7	96.7
≥ 200	74.0	84.7	87.7	91.5	92.9	93.7	94.5	95.4	95.6	96.7	97.0	97.0	97.7	97.7	97.9	98.2
≥ 100	74.0	84.7	87.7	91.5	92.9	93.7	94.5	95.6	95.7	96.8	97.1	97.1	98.1	98.3	98.8	99.9
0	74.0	84.7	87.7	91.5	92.9	93.7	94.5	95.6	95.7	96.8	97.1	97.1	98.1	98.3	98.8	100.0

TOTAL NUMBER OF OBSERVATIONS 901

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | AUG MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

~~2100-2300~~ HOUR (LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	50.0	55.0	55.8	56.0	56.0	56.1	56.2	56.5	56.5	56.5	56.6	56.6	56.6	56.6	56.6	56.7
≥ 20000	52.9	58.6	59.8	60.2	60.2	60.4	60.5	60.8	60.8	60.9	61.0	61.0	61.0	61.0	61.0	61.1
≥ 18000	52.9	58.6	59.8	60.2	60.2	60.4	60.5	60.8	60.8	60.9	61.0	61.0	61.0	61.0	61.0	61.1
≥ 16000	52.9	58.6	59.8	60.2	60.2	60.4	60.5	60.8	60.8	60.9	61.0	61.0	61.0	61.0	61.0	61.1
≥ 14000	53.0	58.8	60.0	60.5	60.5	60.6	60.7	61.0	61.0	61.1	61.2	61.2	61.2	61.2	61.2	61.4
≥ 12000	53.9	59.7	61.0	61.5	61.5	61.6	61.7	62.0	62.0	62.1	62.2	62.2	62.2	62.2	62.2	62.4
≥ 10000	55.9	61.9	63.6	64.1	64.1	64.3	64.4	64.7	64.7	64.8	64.9	64.9	64.9	64.9	64.9	65.0
≥ 9000	58.9	65.3	67.0	67.6	67.6	67.7	67.8	68.2	68.2	68.4	68.5	68.5	68.5	68.5	68.5	68.6
≥ 8000	61.4	68.2	69.9	70.5	70.5	70.6	70.7	71.0	71.0	71.3	71.4	71.4	71.4	71.4	71.4	71.5
≥ 7000	62.9	69.9	71.8	72.4	72.4	72.5	72.6	72.9	72.9	73.2	73.3	73.3	73.3	73.3	73.3	73.4
≥ 6000	64.5	71.6	73.5	74.2	74.2	74.3	74.4	74.7	74.7	74.9	75.1	75.1	75.1	75.1	75.1	75.2
≥ 5000	65.3	72.3	74.3	75.0	75.0	75.1	75.2	75.5	75.5	75.8	76.0	76.0	76.0	76.0	76.0	76.1
≥ 4500	66.3	73.8	75.9	76.6	76.6	76.7	76.8	77.2	77.2	77.4	77.5	77.5	77.5	77.5	77.5	77.6
≥ 4000	67.1	74.7	76.8	77.5	77.5	77.6	77.7	78.1	78.1	78.3	78.4	78.4	78.4	78.4	78.4	78.5
≥ 3500	67.5	75.1	77.2	77.8	77.8	78.1	78.2	78.5	78.5	78.7	78.8	78.8	78.8	78.8	79.0	79.1
≥ 3000	68.7	76.3	78.8	79.5	79.5	79.7	79.8	80.2	80.2	80.4	80.5	80.5	80.5	80.5	80.6	80.7
≥ 2500	69.5	77.7	79.8	80.5	80.5	80.7	80.8	81.3	81.3	81.5	81.6	81.6	81.6	81.6	81.7	81.8
≥ 2000	69.8	78.2	80.4	81.1	81.1	81.3	81.5	82.0	82.0	82.2	82.3	82.3	82.3	82.3	82.4	82.5
≥ 1800	70.3	78.6	81.0	81.7	81.7	82.0	82.2	82.6	82.6	82.9	83.0	83.0	83.0	83.0	83.1	83.2
≥ 1500	70.6	79.1	81.5	82.2	82.2	82.6	83.0	83.4	83.4	83.6	83.7	83.7	83.7	83.7	83.9	84.0
≥ 1200	71.0	79.5	82.0	82.7	83.1	83.3	83.7	84.2	84.2	84.4	84.5	84.5	84.5	84.5	84.6	84.7
≥ 1000	71.5	80.3	83.0	83.7	84.2	84.4	84.9	85.3	85.3	85.5	85.6	85.6	85.6	85.6	85.7	85.9
≥ 900	71.6	80.7	83.4	84.2	84.6	84.9	85.3	85.7	85.7	86.0	86.1	86.1	86.1	86.1	86.2	86.3
≥ 800	71.8	81.0	83.6	84.4	84.9	85.1	85.5	86.0	86.0	86.2	86.3	86.3	86.3	86.3	86.4	86.5
≥ 700	71.9	81.1	83.9	84.6	85.1	85.3	85.7	86.4	86.4	86.6	86.7	86.7	86.7	86.7	86.9	87.0
≥ 600	71.9	81.3	84.1	84.9	85.3	85.5	86.0	86.7	86.7	87.0	87.1	87.1	87.1	87.1	87.2	87.3
≥ 500	72.2	82.4	85.4	86.4	87.0	87.3	88.1	89.2	89.2	89.4	89.5	89.5	89.5	89.5	89.6	89.8
≥ 400	72.3	82.7	85.9	87.0	87.8	88.2	89.2	90.4	90.4	90.6	90.9	90.9	91.0	91.0	91.3	91.5
≥ 300	72.3	82.7	86.0	87.3	88.4	89.2	90.5	92.0	92.0	92.4	92.8	92.8	92.9	92.9	93.5	93.8
≥ 200	72.3	82.7	86.3	87.6	88.8	89.5	91.2	93.1	93.1	93.9	94.4	94.4	94.5	94.7	95.5	96.1
≥ 100	72.3	82.7	86.1	87.6	88.8	89.5	91.2	93.3	93.3	94.1	94.7	94.7	95.0	95.2	96.9	99.4
≥ 0	72.3	82.7	86.3	87.6	88.8	89.5	91.2	93.3	93.3	94.1	94.7	94.7	95.0	95.2	97.0	100.0

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM AU 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS LST)

CEILING FEET	VISIBILITY STATUTE MILES															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	48.4	48.7	49.6	50.3	50.6	50.7	50.8	50.9	50.9	51.0	51.1	51.1	51.2	51.2	51.3	51.4
≥ 20000	49.2	54.4	55.4	56.4	56.7	56.9	57.1	57.2	57.2	57.3	57.4	57.4	57.5	57.5	57.6	57.7
≥ 18000	49.3	54.4	55.5	56.4	56.8	57.0	57.1	57.3	57.3	57.3	57.4	57.4	57.6	57.6	57.7	57.8
≥ 16000	49.3	54.4	55.5	56.4	56.8	57.0	57.2	57.3	57.3	57.4	57.5	57.5	57.6	57.6	57.7	57.8
≥ 14000	49.5	54.7	55.8	56.7	57.1	57.3	57.4	57.5	57.6	57.6	57.7	57.7	57.8	57.9	57.9	58.1
≥ 12000	50.7	56.1	57.2	58.2	58.6	58.8	59.0	59.1	59.1	59.2	59.3	59.3	59.4	59.4	59.5	59.6
≥ 10000	53.0	58.8	60.1	61.1	61.6	61.8	62.0	62.2	62.2	62.2	62.3	62.3	62.5	62.5	62.6	62.7
≥ 9000	55.0	61.0	62.4	63.5	64.1	64.3	64.5	64.6	64.7	64.7	64.8	64.8	65.0	65.0	65.1	65.2
≥ 8000	56.4	62.6	64.0	65.1	65.7	66.0	66.2	66.4	66.4	66.5	66.6	66.6	66.7	66.7	66.8	66.9
≥ 7000	58.1	64.5	66.0	67.3	67.9	68.2	68.4	68.6	68.6	68.7	68.8	68.8	68.9	68.9	69.0	69.1
≥ 6000	59.0	65.6	67.1	68.4	69.0	69.3	69.6	69.8	69.8	69.9	70.0	70.0	70.1	70.1	70.2	70.3
≥ 5000	60.2	67.0	68.6	69.9	70.5	70.8	71.1	71.3	71.4	71.4	71.5	71.5	71.7	71.7	71.8	71.9
≥ 4500	60.9	67.8	69.4	70.7	71.4	71.7	72.0	72.2	72.2	72.3	72.4	72.4	72.6	72.6	72.7	72.8
≥ 4000	62.1	69.3	71.2	72.4	73.0	73.4	73.7	73.9	73.9	74.0	74.1	74.1	74.3	74.3	74.4	74.5
≥ 3500	63.0	70.3	72.1	73.4	74.1	74.5	74.8	75.0	75.0	75.1	75.2	75.2	75.4	75.4	75.5	75.6
≥ 3000	64.1	71.7	73.5	75.0	75.6	76.0	76.3	76.5	76.5	76.7	76.8	76.8	76.9	76.9	77.0	77.1
≥ 2500	65.4	73.2	75.0	76.7	77.4	77.7	78.1	78.4	78.4	78.5	78.6	78.6	78.7	78.8	78.9	79.0
≥ 2000	66.1	74.2	76.2	77.9	78.6	79.0	79.5	79.7	79.7	79.9	79.9	79.9	80.1	80.1	80.2	80.4
≥ 1800	66.6	74.8	76.8	78.4	79.3	79.7	80.2	80.4	80.4	80.5	80.6	80.6	80.8	80.8	80.9	81.1
≥ 1500	67.2	75.6	77.7	79.6	80.4	80.8	81.3	81.5	81.6	81.7	81.8	81.8	82.0	82.0	82.1	82.2
≥ 1200	67.9	76.6	78.8	80.8	81.6	82.0	82.6	82.9	82.9	83.1	83.2	83.2	83.4	83.4	83.5	83.6
≥ 1000	68.3	77.3	79.6	81.6	82.6	83.0	83.6	83.9	83.9	84.1	84.2	84.2	84.4	84.4	84.5	84.6
≥ 900	68.6	77.9	80.2	82.3	83.3	83.7	84.3	84.6	84.7	84.9	85.0	85.0	85.1	85.2	85.3	85.4
≥ 800	68.8	78.3	80.7	82.9	84.0	84.4	85.0	85.4	85.4	85.6	85.8	85.8	85.9	85.9	86.0	86.2
≥ 700	69.1	78.7	81.2	83.4	84.8	85.3	85.9	86.4	86.4	86.6	86.7	86.7	86.9	86.9	87.0	87.1
≥ 600	69.2	79.1	81.6	84.3	85.6	86.1	86.9	87.4	87.4	87.6	87.8	87.8	87.9	88.0	88.1	88.2
≥ 500	69.3	79.7	82.3	85.2	86.6	87.4	88.2	88.9	88.9	89.2	89.4	89.4	89.6	89.6	89.7	89.8
≥ 400	69.3	80.0	82.7	85.8	87.4	88.4	89.6	90.5	90.6	90.9	91.1	91.1	91.4	91.4	91.6	91.7
≥ 300	69.3	80.0	82.8	86.1	87.9	89.0	90.5	91.6	91.7	92.4	92.7	92.7	93.2	93.2	93.5	93.8
≥ 200	69.3	80.1	82.8	86.3	88.2	89.3	91.1	92.4	92.5	93.6	94.3	94.3	95.2	95.3	96.1	96.8
≥ 100	69.3	80.1	82.8	86.3	88.2	89.3	91.1	92.5	92.6	93.7	94.5	94.6	95.7	95.9	97.3	99.4
0	69.3	80.1	82.8	86.3	88.2	89.3	91.1	92.5	92.6	93.7	94.5	94.6	95.7	95.9	97.3	100.0

TOTAL NUMBER OF OBSERVATIONS 7162

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0000-0200 (HOUR LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥ ¾	≥ ½	≥ ¼	≥5/16	≥ 0	≥0
NO CEILING	51.1	52.3	52.4	52.5	52.5	52.5	52.5	52.5	52.6	52.7	52.7	52.7	52.8	52.8	52.9	53.0
≥ 20000	53.2	54.5	54.6	54.8	54.8	54.8	54.8	54.8	55.0	55.1	55.1	55.1	55.2	55.2	55.3	55.4
≥ 18000	53.2	54.5	54.6	54.8	54.8	54.8	54.8	54.8	55.0	55.1	55.1	55.1	55.2	55.2	55.3	55.4
≥ 16000	53.2	54.5	54.6	54.8	54.8	54.8	54.8	54.8	55.0	55.1	55.1	55.1	55.2	55.2	55.3	55.4
≥ 14000	53.4	54.7	54.8	55.1	55.1	55.1	55.1	55.1	55.2	55.3	55.3	55.3	55.4	55.4	55.5	55.6
≥ 12000	54.2	55.5	55.7	56.0	56.0	56.0	56.0	56.0	56.1	56.2	56.2	56.2	56.3	56.3	56.4	56.5
≥ 10000	55.3	56.6	56.9	57.2	57.2	57.2	57.2	57.2	57.3	57.4	57.4	57.4	57.5	57.5	57.7	57.8
≥ 9000	57.4	59.0	59.2	59.7	59.7	59.7	59.7	59.7	59.8	59.9	59.9	59.9	60.0	60.0	60.1	60.2
≥ 8000	58.6	60.2	60.5	60.9	60.9	60.9	60.9	60.9	61.0	61.1	61.1	61.1	61.3	61.3	61.4	61.5
≥ 7000	61.5	63.4	63.9	64.4	64.4	64.4	64.4	64.4	64.5	64.6	64.6	64.6	64.8	64.8	64.9	65.0
≥ 6000	62.5	64.8	65.1	65.8	65.8	65.8	65.8	65.8	65.9	66.0	66.0	66.0	66.1	66.1	66.2	66.3
≥ 5000	63.5	66.1	66.4	67.1	67.1	67.1	67.1	67.1	67.2	67.3	67.3	67.3	67.5	67.5	67.6	67.7
≥ 4500	64.0	66.7	67.0	67.7	67.7	67.7	67.7	67.7	67.8	67.9	67.9	67.9	68.0	68.0	68.1	68.2
≥ 4000	65.2	68.4	68.7	69.4	69.4	69.4	69.4	69.4	69.5	69.6	69.6	69.6	69.7	69.7	69.8	69.9
≥ 3500	65.8	69.0	69.4	70.0	70.0	70.0	70.0	70.0	70.2	70.3	70.3	70.3	70.4	70.4	70.5	70.6
≥ 3000	66.6	70.4	70.7	71.4	71.4	71.4	71.4	71.4	71.5	71.6	71.6	71.6	71.7	71.7	71.8	72.0
≥ 2500	67.6	72.2	72.5	73.2	73.2	73.2	73.3	73.3	73.4	73.5	73.5	73.5	73.6	73.6	73.8	73.9
≥ 2000	68.5	73.8	74.3	75.2	75.2	75.2	75.3	75.3	75.5	75.6	75.6	75.6	75.7	75.7	75.8	75.9
≥ 1800	68.9	74.4	74.9	75.8	75.8	75.8	75.9	75.9	76.0	76.1	76.1	76.1	76.2	76.2	76.4	76.5
≥ 1500	69.6	75.5	75.9	77.1	77.1	77.1	77.3	77.3	77.5	77.6	77.6	77.6	77.7	77.7	77.8	77.9
≥ 1200	70.6	76.7	77.5	78.7	78.8	78.8	78.9	79.1	79.2	79.3	79.3	79.3	79.4	79.4	79.5	79.6
≥ 1000	71.1	78.0	78.8	80.1	80.2	80.2	80.3	80.5	80.5	80.6	80.6	80.6	80.7	80.7	80.9	81.0
≥ 900	71.5	78.6	79.4	80.9	81.0	81.0	81.1	81.2	81.3	81.4	81.4	81.4	81.5	81.5	81.6	81.8
≥ 800	71.6	79.2	80.1	81.5	81.5	82.1	82.2	82.3	82.4	82.5	82.5	82.5	82.7	82.7	82.8	82.9
≥ 700	71.8	79.5	80.5	82.4	82.9	83.3	83.4	83.6	83.7	83.8	83.8	83.8	83.9	83.9	84.0	84.1
≥ 600	72.3	80.2	81.2	83.4	83.9	84.3	84.5	84.6	84.7	84.8	84.8	84.8	84.9	84.9	85.0	85.1
≥ 500	72.6	81.3	82.9	85.6	86.5	86.9	87.0	87.3	87.4	87.6	87.6	87.6	87.7	87.7	87.8	88.0
≥ 400	73.1	82.0	83.7	86.6	87.5	88.2	88.4	88.8	89.0	89.3	89.3	89.3	89.4	89.4	89.5	89.6
≥ 300	73.2	82.7	84.5	87.5	88.5	89.5	90.4	91.3	91.4	92.0	92.0	92.0	92.1	92.1	92.2	92.3
≥ 200	73.3	83.0	84.8	88.0	89.3	90.3	91.8	92.8	93.0	93.8	93.8	93.8	93.9	93.9	94.0	95.7
≥ 100	73.3	83.0	84.8	88.0	89.3	90.3	91.8	93.1	93.2	93.8	93.8	93.8	93.9	93.9	96.3	98.9
≥ 0	73.3	83.0	84.8	88.0	89.3	90.3	91.8	93.1	93.2	93.8	93.8	93.8	93.9	93.9	96.5	100.0

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0300-0500 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	47.0	48.6	48.7	49.0	49.2	49.2	49.2	49.4	49.4	49.4	49.7	49.7	49.7	49.7	49.9	50.3
≥ 20000	49.4	51.5	51.6	51.8	52.1	52.1	52.1	52.3	52.3	52.3	52.5	52.5	52.5	52.5	52.7	53.2
≥ 18000	49.4	51.5	51.6	51.8	52.1	52.1	52.1	52.3	52.3	52.3	52.5	52.5	52.5	52.5	52.7	53.2
≥ 16000	49.4	51.5	51.6	51.8	52.1	52.1	52.1	52.3	52.3	52.3	52.5	52.5	52.5	52.5	52.7	53.2
≥ 14000	49.5	51.6	51.7	51.9	52.2	52.2	52.2	52.4	52.4	52.4	52.6	52.6	52.6	52.6	52.9	53.3
≥ 12000	50.2	52.3	52.7	53.0	53.2	53.2	53.2	53.4	53.4	53.4	53.7	53.7	53.7	53.7	53.9	54.3
≥ 10000	51.6	53.8	54.2	54.5	54.7	54.7	54.7	54.9	54.9	54.9	55.1	55.1	55.1	55.1	55.4	55.8
≥ 9000	53.8	56.1	56.5	56.7	57.0	57.0	57.0	57.2	57.2	57.2	57.4	57.4	57.4	57.4	57.6	58.1
≥ 8000	54.6	57.0	57.4	57.6	57.9	57.9	57.9	58.1	58.1	58.1	58.3	58.3	58.3	58.3	58.6	59.0
≥ 7000	58.0	60.7	61.3	61.6	61.9	62.0	62.0	62.2	62.2	62.2	62.4	62.4	62.4	62.4	62.7	63.1
≥ 6000	58.4	61.8	62.3	62.7	62.9	63.0	63.0	63.2	63.2	63.2	63.5	63.5	63.5	63.5	63.7	64.2
≥ 5000	59.0	62.4	63.0	63.4	63.6	63.7	63.7	63.9	63.9	63.9	64.2	64.2	64.2	64.2	64.4	64.8
≥ 4500	59.6	63.0	63.6	63.9	64.2	64.3	64.3	64.5	64.5	64.5	64.7	64.7	64.7	64.7	65.0	65.4
≥ 4000	60.6	64.4	65.0	65.3	65.5	65.6	65.6	65.9	65.9	65.9	66.1	66.1	66.1	66.1	66.3	66.8
≥ 3500	61.2	65.4	66.0	66.4	66.7	66.8	66.9	67.1	67.1	67.1	67.4	67.4	67.4	67.4	67.6	68.0
≥ 3000	61.8	66.0	66.7	67.2	67.6	67.7	67.8	68.0	68.0	68.0	68.3	68.3	68.3	68.3	68.5	68.9
≥ 2500	63.0	67.4	68.0	68.6	68.9	69.1	69.2	69.4	69.4	69.4	69.6	69.6	69.6	69.6	69.9	70.3
≥ 2000	63.4	68.2	68.9	69.6	70.1	70.2	70.3	70.5	70.5	70.5	70.8	70.8	70.8	70.8	71.0	71.5
≥ 1800	63.7	68.6	69.4	70.1	70.5	70.7	70.8	71.0	71.0	71.0	71.2	71.2	71.2	71.2	71.5	71.9
≥ 1500	64.6	69.7	70.5	71.2	71.8	71.9	72.0	72.3	72.3	72.3	72.5	72.5	72.5	72.5	72.7	73.2
≥ 1200	65.4	71.2	72.1	72.8	73.6	73.7	73.9	74.1	74.1	74.1	74.3	74.3	74.3	74.3	74.5	75.0
≥ 1000	67.2	73.3	74.2	75.0	75.9	76.0	76.1	76.4	76.4	76.4	76.6	76.6	76.6	76.6	76.8	77.3
≥ 900	67.6	74.0	74.9	75.9	76.9	77.1	77.2	77.4	77.4	77.4	77.6	77.6	77.6	77.6	77.9	78.3
≥ 800	68.5	75.0	75.9	76.9	78.2	78.3	78.4	78.7	78.7	78.7	78.9	78.9	78.9	78.9	79.1	79.6
≥ 700	68.7	75.5	76.5	77.5	78.9	79.0	79.1	79.3	79.3	79.3	79.6	79.6	79.6	79.6	79.8	80.3
≥ 600	69.2	76.0	77.4	78.8	80.1	80.3	80.4	80.6	80.6	80.6	80.8	80.8	80.8	80.8	81.1	81.5
≥ 500	69.7	77.3	79.0	81.1	82.6	83.0	83.1	83.3	83.3	83.3	83.6	83.6	83.6	83.6	83.8	84.2
≥ 400	70.4	78.3	80.3	83.0	84.8	85.4	85.7	86.0	86.0	86.1	86.3	86.3	86.3	86.3	86.5	87.0
≥ 300	70.5	78.8	80.8	83.8	85.8	86.4	87.2	88.0	88.0	88.6	88.8	88.8	89.0	89.0	89.4	90.0
≥ 200	70.5	78.9	81.1	84.2	86.3	86.9	88.4	90.0	90.1	91.3	91.6	91.6	92.0	92.0	92.4	94.6
≥ 100	70.5	78.9	81.1	84.6	86.6	87.2	88.8	90.4	90.5	91.9	92.8	92.8	93.3	93.3	94.7	98.2
≥ 0	70.5	78.9	81.1	84.6	86.6	87.2	88.8	90.4	90.5	91.9	92.8	92.8	93.4	93.4	95.1	100.0

TOTAL NUMBER OF OBSERVATIONS 876

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | SEP MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0600-0800 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	40.2	42.4	42.7	43.1	43.1	43.2	43.3	43.3	43.3	43.4	43.5	43.5	43.7	43.8	44.2	45.0
≥ 20000	43.9	46.2	46.6	47.0	47.0	47.1	47.2	47.2	47.2	47.3	47.4	47.4	47.6	47.7	48.1	48.9
≥ 18000	44.0	46.3	46.7	47.1	47.1	47.2	47.3	47.3	47.3	47.4	47.5	47.5	47.7	47.8	48.2	49.0
≥ 16000	44.1	46.4	46.9	47.2	47.2	47.3	47.4	47.4	47.4	47.5	47.7	47.7	47.8	47.9	48.3	49.1
≥ 14000	44.5	46.7	47.2	47.5	47.5	47.7	47.8	47.8	47.8	47.9	48.0	48.0	48.1	48.2	48.7	49.5
≥ 12000	45.8	48.1	48.6	48.9	48.9	49.0	49.1	49.1	49.1	49.3	49.4	49.4	49.5	49.6	50.1	50.9
≥ 10000	47.7	50.1	50.5	50.9	50.9	51.0	51.1	51.1	51.1	51.2	51.3	51.3	51.4	51.5	52.0	52.8
≥ 9000	48.7	51.3	51.8	52.5	52.6	52.7	52.8	52.8	52.8	52.9	53.0	53.0	53.1	53.3	53.7	54.5
≥ 8000	49.0	51.7	52.1	52.8	52.9	53.0	53.3	53.3	53.3	53.4	53.5	53.5	53.6	53.7	54.2	55.0
≥ 7000	50.5	53.3	53.9	54.6	54.7	54.8	55.1	55.1	55.1	55.2	55.3	55.3	55.4	55.5	56.0	56.8
≥ 6000	52.3	55.1	55.8	56.5	56.6	56.7	56.9	56.9	56.9	57.0	57.1	57.1	57.3	57.4	57.8	58.6
≥ 5000	53.3	56.1	56.8	57.5	57.6	57.7	57.9	57.9	57.9	58.1	58.2	58.2	58.3	58.4	58.8	59.7
≥ 4500	54.1	57.0	57.7	58.4	58.5	58.6	58.9	58.9	58.9	59.0	59.1	59.1	59.2	59.3	59.8	60.6
≥ 4000	54.6	57.8	58.5	59.2	59.3	59.4	59.7	59.7	59.7	59.8	59.9	59.9	60.0	60.1	60.6	61.4
≥ 3500	55.1	58.5	59.3	60.0	60.1	60.2	60.5	60.5	60.5	60.6	60.8	60.8	60.9	61.0	61.5	62.3
≥ 3000	55.7	59.1	59.9	60.6	60.7	60.8	61.0	61.0	61.0	61.1	61.3	61.3	61.5	61.6	62.1	62.9
≥ 2500	57.0	60.6	61.4	62.1	62.3	62.4	62.6	62.6	62.6	62.7	63.0	63.0	63.1	63.2	63.7	64.5
≥ 2000	58.4	62.5	63.5	64.2	64.5	64.6	64.9	64.9	64.9	65.0	65.3	65.3	65.4	65.5	65.9	66.7
≥ 1800	58.9	63.1	64.2	64.9	65.1	65.3	65.6	65.6	65.6	65.7	65.9	65.9	66.1	66.2	66.6	67.4
≥ 1500	60.2	64.7	65.9	66.6	66.8	67.0	67.3	67.3	67.3	67.4	67.7	67.7	67.8	67.9	68.3	69.1
≥ 1200	60.9	65.5	66.9	67.5	67.8	67.9	68.2	68.2	68.2	68.3	68.6	68.6	68.7	68.8	69.3	70.1
≥ 1000	62.4	67.7	69.0	69.8	70.1	70.2	70.5	70.5	70.5	70.6	70.9	70.9	71.0	71.1	71.5	72.3
≥ 900	62.9	68.6	69.9	71.0	71.4	71.5	71.9	71.9	71.9	72.0	72.2	72.2	72.3	72.5	72.9	73.7
≥ 800	63.7	69.8	71.2	72.3	73.3	73.6	73.7	73.7	73.7	73.8	74.1	74.1	74.2	74.3	74.7	75.5
≥ 700	64.5	70.7	72.3	73.9	74.6	74.9	75.2	75.2	75.2	75.3	75.5	75.5	75.7	75.8	76.2	77.0
≥ 600	65.7	72.1	73.7	75.5	76.2	76.6	76.9	77.0	77.0	77.1	77.3	77.5	77.6	77.7	78.2	79.0
≥ 500	65.9	73.1	74.9	77.0	78.1	78.9	79.3	79.5	79.5	79.8	80.0	80.0	80.1	80.2	80.7	81.5
≥ 400	66.4	74.1	76.0	78.5	79.7	80.8	81.5	82.9	82.9	82.9	83.1	83.1	83.2	83.3	83.8	84.6
≥ 300	66.5	74.4	77.0	79.7	81.0	82.4	83.3	85.0	85.0	86.2	86.5	86.5	86.6	86.9	87.5	88.6
≥ 200	66.5	74.4	77.0	79.8	81.3	82.7	83.8	86.2	86.2	87.8	88.8	88.8	90.2	90.6	91.8	94.5
≥ 100	66.5	74.4	77.0	79.8	81.3	82.7	83.8	86.2	86.2	88.0	89.1	89.1	90.7	91.4	93.5	97.7
≥ 0	66.5	74.4	77.0	79.8	81.3	82.7	83.8	86.2	86.2	88.0	89.1	89.1	90.7	91.4	93.5	100.0

TOTAL NUMBER OF OBSERVATIONS 875

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0900-1100 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1¼	≥1	≥⅝	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	37.1	40.2	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	41.0	41.0
≥ 20000	41.7	44.7	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.9	45.9
≥ 18000	41.7	44.7	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.9	45.9
≥ 16000	41.7	44.7	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.9	45.9
≥ 14000	41.8	44.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	46.0	46.0
≥ 12000	42.9	46.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.1	47.1
≥ 10000	44.5	48.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.2	49.2
≥ 9000	45.9	49.4	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.6	50.6
≥ 8000	46.6	50.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.3	51.3
≥ 7000	48.2	51.8	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	53.0	53.0
≥ 6000	49.0	52.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	54.0	54.0
≥ 5000	49.7	53.5	54.6	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.8	54.8
≥ 4500	50.3	54.2	55.3	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.5	55.5
≥ 4000	50.6	54.7	55.9	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.2	56.2
≥ 3500	52.1	56.4	57.6	57.8	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	58.0	58.0
≥ 3000	52.9	57.4	58.7	58.8	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	59.0	59.0
≥ 2500	55.4	59.9	61.2	61.3	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.4	61.5	61.5
≥ 2000	58.8	63.9	65.4	65.6	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.9	65.9
≥ 1800	61.3	66.6	68.0	68.3	68.4	68.4	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.5	68.6	68.6
≥ 1500	64.2	69.6	71.3	71.6	71.7	71.7	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.9	71.9
≥ 1200	67.2	73.2	74.9	75.3	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.7	75.7
≥ 1000	69.3	75.9	77.6	78.3	78.7	78.8	79.0	79.0	79.0	79.1	79.1	79.1	79.1	79.1	79.2	79.2
≥ 900	69.6	76.4	78.1	78.8	79.1	79.2	79.5	79.6	79.6	79.7	79.7	79.7	79.7	79.7	79.8	79.8
≥ 800	70.4	77.4	79.2	80.3	80.6	80.8	81.1	81.2	81.2	81.4	81.4	81.4	81.4	81.4	81.5	81.5
≥ 700	70.8	78.2	80.3	81.4	81.7	82.1	82.3	82.4	82.4	82.6	82.6	82.6	82.6	82.6	82.8	82.8
≥ 600	71.0	78.9	81.1	83.2	84.0	84.5	84.9	85.0	85.0	85.4	85.4	85.4	85.4	85.4	85.5	85.5
≥ 500	71.2	79.3	81.7	84.4	85.5	86.1	87.1	87.6	87.7	88.2	88.2	88.2	88.2	88.2	88.4	88.4
≥ 400	71.2	79.3	81.7	84.7	86.0	86.6	87.9	88.6	88.7	89.8	90.0	90.0	90.1	90.1	90.2	90.2
≥ 300	71.2	79.5	82.1	85.2	86.4	87.2	88.8	90.0	90.2	92.0	92.4	92.4	92.7	92.8	93.0	93.2
≥ 200	71.3	79.6	82.2	85.3	86.5	87.3	88.9	91.1	91.6	93.9	94.7	94.7	95.9	96.0	96.5	97.0
≥ 100	71.3	79.6	82.2	85.3	86.5	87.3	88.9	91.1	91.6	94.1	95.2	95.2	96.6	96.8	97.5	98.9
≥ 0	71.3	79.6	82.2	85.3	86.5	87.3	88.9	91.1	91.6	94.1	95.2	95.2	96.6	96.8	97.7	100.0

TOTAL NUMBER OF OBSERVATIONS 876

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

~~1200-1400~~ (HOUR (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	38.2	40.9	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3	41.3
≥ 20000	43.5	46.3	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8
≥ 18000	43.6	46.4	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
≥ 16000	43.6	46.4	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
≥ 14000	43.7	46.5	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1
≥ 12000	44.9	48.0	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6
≥ 10000	46.5	49.8	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5
≥ 9000	48.4	51.9	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7
≥ 8000	49.3	52.9	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8
≥ 7000	50.7	54.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
≥ 6000	51.9	55.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6
≥ 5000	52.7	57.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1
≥ 4500	54.1	58.4	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5
≥ 4000	57.9	62.5	63.5	63.5	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6
≥ 3500	60.1	65.0	66.0	66.0	66.1	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2
≥ 3000	63.4	68.8	69.4	69.4	69.5	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
≥ 2500	66.6	72.2	73.6	73.6	73.8	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9
≥ 2000	69.3	75.8	77.5	77.6	77.7	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8
≥ 1800	70.9	78.0	79.7	80.0	80.1	80.2	80.2	80.2	80.2	80.2	80.2	80.2	80.2	80.2	80.2	80.2
≥ 1500	72.7	80.5	82.4	83.0	83.4	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6
≥ 1200	74.2	82.3	84.3	85.2	85.7	85.8	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9
≥ 1000	75.3	83.8	85.8	86.8	87.3	87.4	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6	87.6
≥ 900	75.9	84.5	86.5	87.6	88.1	88.2	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5
≥ 800	75.9	84.9	87.0	88.5	89.0	89.1	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4
≥ 700	75.9	85.2	87.4	89.1	89.5	89.6	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
≥ 600	75.9	85.5	87.8	89.5	90.1	90.4	90.9	90.9	90.9	91.0	91.0	91.0	91.0	91.0	91.0	91.0
≥ 500	75.9	85.6	88.1	90.0	90.5	90.9	91.8	91.9	91.9	92.1	92.1	92.1	92.1	92.1	92.1	92.1
≥ 400	75.9	85.6	88.1	90.3	91.0	91.4	92.8	93.1	93.1	93.6	93.6	93.6	93.6	93.6	93.6	93.6
≥ 300	75.9	85.6	88.1	90.4	91.3	91.8	93.2	94.3	94.4	95.4	95.6	95.6	95.8	95.8	96.2	96.2
≥ 200	75.9	85.6	88.1	90.4	91.3	91.9	93.5	94.8	94.9	96.4	97.0	97.0	97.3	97.5	98.0	98.2
≥ 100	75.9	85.6	88.1	90.4	91.3	91.9	93.5	94.8	94.9	96.4	97.1	97.1	97.4	97.6	98.4	99.2
≥ 0	75.9	85.6	88.1	90.4	91.3	91.9	93.5	94.8	94.9	96.4	97.1	97.1	97.4	97.6	98.4	100.0

TOTAL NUMBER OF OBSERVATIONS 888

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1500-1700 (HOURS (L))

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2 7/8	≥2	≥1 1/2	≥1 1/4	≥1	≥ 7/8	≥ 3/4	≥ 5/8	≥ 5/16	≥ 4	≥0
NO CEILING	42.8	44.2	44.6	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
≥ 20000	47.2	49.3	49.8	50.1	50.2	50.2	50.2	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3
≥ 18000	47.2	49.3	49.8	50.1	50.2	50.2	50.2	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3
≥ 16000	47.2	49.3	49.8	50.1	50.2	50.2	50.2	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3
≥ 14000	47.2	49.3	49.8	50.1	50.2	50.2	50.2	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3	50.3
≥ 12000	48.1	50.4	51.0	51.2	51.3	51.3	51.3	51.4	51.4	51.4	51.4	51.4	51.4	51.4	51.4	51.4
≥ 10000	50.1	52.7	53.2	53.6	53.7	53.7	53.7	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8
≥ 9000	51.9	54.8	55.6	56.0	56.1	56.1	56.1	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 8000	52.9	56.0	56.8	57.1	57.2	57.2	57.2	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4
≥ 7000	56.6	60.0	61.3	61.3	61.5	61.5	61.5	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6	61.6
≥ 6000	58.7	62.3	63.3	63.6	63.9	63.9	63.9	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
≥ 5000	60.4	64.3	65.7	66.0	66.2	66.2	66.2	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4
≥ 4500	62.7	66.8	68.2	68.5	68.8	68.8	68.8	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9
≥ 4000	66.5	71.5	73.0	73.4	73.7	73.7	73.7	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8
≥ 3500	68.3	73.7	75.1	75.6	75.8	75.8	75.8	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9
≥ 3000	69.6	75.0	76.5	77.0	77.3	77.3	77.3	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4
≥ 2500	72.7	78.9	80.5	81.0	81.4	81.4	81.4	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6	81.6
≥ 2000	74.9	81.8	83.9	84.0	84.5	84.5	84.6	84.8	84.8	84.8	84.9	84.9	84.9	84.9	84.9	84.9
≥ 1800	76.3	83.6	85.3	86.0	86.4	86.4	86.5	86.8	86.8	86.8	86.9	86.9	86.9	86.9	86.9	86.9
≥ 1500	77.2	84.6	86.7	87.5	87.9	87.9	88.1	88.4	88.4	88.4	88.5	88.5	88.5	88.5	88.5	88.5
≥ 1200	77.8	85.3	87.5	88.3	88.7	88.7	88.9	89.2	89.2	89.3	89.4	89.4	89.4	89.4	89.4	89.4
≥ 1000	78.3	85.9	88.0	89.2	89.6	89.6	89.9	90.1	90.1	90.2	90.3	90.3	90.3	90.3	90.3	90.3
≥ 900	78.4	86.1	88.3	89.4	89.9	89.9	90.1	90.3	90.3	90.4	90.5	90.5	90.5	90.5	90.5	90.5
≥ 800	78.8	86.9	89.1	90.2	90.6	90.8	91.1	91.3	91.3	91.4	91.6	91.6	91.6	91.6	91.6	91.6
≥ 700	78.8	87.2	89.4	90.5	91.0	91.1	91.4	91.7	91.7	91.8	91.9	91.9	91.9	91.9	91.9	91.9
≥ 600	78.8	87.3	89.5	90.9	91.3	91.6	92.0	92.4	92.4	92.5	92.6	92.6	92.6	92.6	92.6	92.6
≥ 500	78.9	87.6	89.7	91.2	91.9	92.1	92.7	93.2	93.2	93.4	93.5	93.5	93.6	93.6	93.6	93.7
≥ 400	78.9	87.6	89.9	91.4	92.1	92.4	92.9	94.0	94.0	94.3	94.4	94.4	94.5	94.5	94.5	94.6
≥ 300	78.9	87.6	89.9	91.7	92.4	92.7	93.5	95.1	95.1	96.1	96.6	96.6	96.7	96.7	96.7	96.8
≥ 200	78.9	87.6	89.9	91.7	92.4	92.7	93.5	95.1	95.1	96.9	97.9	97.9	98.2	98.2	98.5	98.6
≥ 100	78.9	87.6	89.9	91.7	92.4	92.7	93.5	95.1	95.1	96.9	98.1	98.1	98.4	98.4	98.9	99.4
0	78.9	87.6	89.9	91.7	92.4	92.7	93.5	95.1	95.1	96.9	98.1	98.1	98.4	98.4	98.9	100.0

TOTAL NUMBER OF OBSERVATIONS 477

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | SEP MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1800-2000 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	47.0	49.4	49.7	50.1	50.3	50.3	50.3	50.4	50.4	50.5	50.5	50.5	50.5	50.5	50.5	50.5
≥ 20000	50.2	53.3	54.0	54.4	54.6	54.6	54.6	54.7	54.7	54.8	54.8	54.8	54.8	54.8	54.8	54.8
≥ 18000	50.2	53.3	54.0	54.4	54.6	54.6	54.6	54.7	54.7	54.8	54.8	54.8	54.8	54.8	54.8	54.8
≥ 16000	50.2	53.3	54.0	54.4	54.6	54.6	54.6	54.7	54.7	54.8	54.8	54.8	54.8	54.8	54.8	54.8
≥ 14000	50.4	53.7	54.4	54.7	54.9	54.9	54.9	55.0	55.0	55.2	55.2	55.2	55.2	55.2	55.2	55.2
≥ 12000	51.4	54.8	55.5	55.8	56.1	56.1	56.1	56.2	56.2	56.3	56.3	56.3	56.3	56.3	56.3	56.3
≥ 10000	53.2	56.6	57.3	57.6	57.9	57.9	57.9	58.0	58.0	58.1	58.1	58.1	58.1	58.1	58.1	58.1
≥ 9000	55.3	58.7	59.3	59.8	60.0	60.0	60.0	60.1	60.1	60.2	60.2	60.2	60.2	60.2	60.2	60.2
≥ 8000	56.6	60.1	60.8	61.3	61.5	61.5	61.5	61.6	61.6	61.7	61.7	61.7	61.7	61.7	61.7	61.7
≥ 7000	59.5	63.3	64.0	64.4	64.7	64.7	64.7	64.8	64.8	64.9	64.9	64.9	64.9	64.9	64.9	64.9
≥ 6000	61.2	65.1	65.8	66.4	66.6	66.6	66.7	66.8	66.8	66.9	66.9	66.9	66.9	66.9	66.9	66.9
≥ 5000	62.7	66.7	67.6	68.2	68.4	68.5	68.6	68.9	68.9	69.0	69.0	69.0	69.0	69.0	69.0	69.0
≥ 4500	64.3	68.5	69.6	70.2	70.4	70.6	70.7	70.9	70.9	71.0	71.0	71.0	71.0	71.0	71.0	71.0
≥ 4000	65.6	70.3	71.6	72.1	72.4	72.5	72.6	72.8	72.8	73.0	73.0	73.0	73.0	73.0	73.0	73.0
≥ 3500	66.9	71.8	73.3	74.0	74.2	74.3	74.4	74.6	74.6	74.9	74.9	74.9	74.9	74.9	74.9	74.9
≥ 3000	68.0	73.0	74.5	75.2	75.4	75.5	75.7	75.9	75.9	76.1	76.1	76.1	76.1	76.1	76.1	76.1
≥ 2500	70.2	76.2	77.8	78.5	78.7	78.8	78.9	79.2	79.2	79.4	79.4	79.4	79.4	79.4	79.4	79.4
≥ 2000	71.7	78.4	80.1	80.7	81.0	81.1	81.2	81.4	81.4	81.7	81.7	81.7	81.7	81.7	81.7	81.7
≥ 1800	72.1	78.9	80.6	81.3	81.5	81.8	82.0	82.2	82.2	82.4	82.4	82.4	82.4	82.4	82.4	82.4
≥ 1500	73.3	80.6	82.3	83.2	83.5	83.9	84.1	84.4	84.4	84.6	84.6	84.6	84.6	84.6	84.6	84.6
≥ 1200	73.8	81.4	83.4	84.3	84.5	84.9	85.3	85.5	85.5	85.7	85.7	85.7	85.7	85.7	85.7	85.7
≥ 1000	74.4	82.3	84.3	85.2	85.5	86.0	86.3	86.5	86.5	86.7	86.7	86.7	86.7	86.7	86.7	86.7
≥ 900	74.6	83.1	85.1	86.0	86.4	86.9	87.2	87.4	87.4	87.7	87.7	87.7	87.7	87.7	87.7	87.7
≥ 800	75.2	84.3	86.1	87.2	87.8	88.4	88.8	89.0	89.0	89.2	89.2	89.2	89.2	89.2	89.2	89.4
≥ 700	75.5	84.6	86.6	87.9	88.4	89.1	89.5	89.7	89.7	89.9	89.9	89.9	89.9	89.9	89.9	90.0
≥ 600	75.9	85.2	87.3	88.6	89.1	90.0	90.5	90.7	90.7	91.1	91.1	91.1	91.1	91.1	91.1	91.2
≥ 500	76.2	85.8	88.0	89.4	90.1	91.2	91.6	91.8	91.8	92.2	92.2	92.2	92.2	92.2	92.2	92.3
≥ 400	76.2	85.8	88.0	89.4	90.1	91.4	92.1	93.1	93.1	93.7	93.8	93.8	93.8	93.8	93.8	94.1
≥ 300	76.2	85.8	88.0	89.6	90.6	92.0	93.4	94.8	94.8	95.8	95.9	95.9	95.9	95.9	95.9	96.4
≥ 200	76.2	85.8	88.0	89.6	90.6	92.1	93.5	95.4	95.4	96.8	97.5	97.5	97.5	97.5	97.6	98.1
≥ 100	76.2	85.8	88.0	89.6	90.6	92.1	93.5	95.4	95.4	96.9	97.7	97.7	98.0	98.0	98.3	99.4
≥ 0	76.2	85.8	88.0	89.6	90.6	92.1	93.5	95.4	95.4	96.9	97.7	97.7	98.0	98.0	98.3	100.0

TOTAL NUMBER OF OBSERVATIONS 883

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

2100-2300 (HOURS L.S.T.)

CEILING FEET	VISIBILITY STATUTE MILES															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	49.1	51.0	51.2	51.6	51.6	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.8	51.8
≥ 20000	50.6	52.6	52.8	53.2	53.2	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.4	53.4
≥ 18000	50.7	52.7	52.9	53.3	53.3	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.5	53.5
≥ 16000	50.7	52.7	52.9	53.3	53.3	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.5	53.5
≥ 14000	51.7	53.6	53.9	54.2	54.2	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.4	54.4
≥ 12000	52.8	54.9	55.4	55.7	55.7	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.9	55.9
≥ 10000	53.9	55.9	56.4	56.8	56.8	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.1	57.1
≥ 9000	56.6	58.8	59.3	59.7	59.7	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8	60.0	60.0
≥ 8000	57.9	60.2	60.6	61.1	61.1	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.2	61.3	61.3
≥ 7000	60.5	62.9	63.4	63.9	63.9	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.1	64.1
≥ 6000	61.7	64.3	64.8	65.2	65.2	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.5	65.5
≥ 5000	63.9	66.6	67.2	67.8	67.8	67.9	67.9	67.9	67.9	67.9	67.9	67.9	67.9	67.9	68.0	68.0
≥ 4500	64.7	67.7	68.4	68.9	68.9	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.2	69.2
≥ 4000	65.4	69.2	70.0	70.7	70.7	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.9	70.9
≥ 3500	66.5	71.3	72.2	72.8	72.8	73.0	73.0	73.0	73.0	73.0	73.0	73.0	73.0	73.0	73.1	73.1
≥ 3000	67.5	72.8	73.9	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.8	74.8
≥ 2500	70.0	75.6	76.8	77.4	77.4	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.6	77.7	77.7
≥ 2000	71.6	77.8	78.9	79.7	79.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.1	80.1
≥ 1800	72.0	78.5	79.6	80.6	80.8	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.1	81.1
≥ 1500	73.2	79.9	81.0	81.9	82.3	82.5	82.5	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.7	82.7
≥ 1200	73.6	80.4	81.6	82.5	82.9	83.2	83.2	83.3	83.3	83.3	83.3	83.3	83.3	83.3	83.4	83.4
≥ 1000	73.9	81.0	82.2	83.1	83.4	83.9	83.9	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.1	84.1
≥ 900	74.1	81.8	83.0	83.9	84.2	84.8	84.8	84.9	84.9	84.9	84.9	84.9	84.9	84.9	85.0	85.0
≥ 800	74.2	82.3	83.4	84.3	84.8	85.4	85.4	85.5	85.5	85.5	85.5	85.5	85.6	85.6	85.7	85.7
≥ 700	75.4	83.8	85.2	86.2	86.7	87.2	87.6	87.7	87.7	87.7	87.7	87.7	87.8	87.8	87.9	87.9
≥ 600	75.7	84.3	85.8	86.9	87.5	88.0	88.4	88.5	88.5	88.5	88.5	88.5	88.6	88.6	88.7	88.7
≥ 500	76.1	84.9	87.0	88.4	89.4	90.1	90.8	90.9	90.9	90.9	91.0	91.0	91.1	91.1	91.3	91.3
≥ 400	76.4	85.6	87.7	89.1	90.3	91.0	92.1	92.2	92.2	92.2	92.3	92.3	92.4	92.4	92.5	92.6
≥ 300	76.5	86.0	88.0	89.8	91.0	91.7	93.0	93.3	93.3	93.3	93.4	93.4	93.6	93.6	93.7	94.0
≥ 200	76.5	86.1	88.1	89.9	91.4	92.1	94.1	95.5	95.5	95.9	96.1	96.1	96.3	96.3	96.5	96.9
≥ 100	76.5	86.1	88.1	89.9	91.5	92.2	94.2	95.9	95.9	96.4	96.8	96.8	97.5	97.5	98.0	99.4
≥ 0	76.5	86.1	88.1	89.9	91.5	92.2	94.2	95.9	95.9	96.4	96.8	96.8	97.5	97.5	98.2	100.0

TOTAL NUMBER OF OBSERVATIONS 869

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS (LST))

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	44.1	46.1	46.4	46.6	46.7	46.7	46.7	46.8	46.8	46.8	46.9	46.9	46.9	46.9	47.1	47.2
≥ 20000	47.5	49.8	50.3	50.5	50.6	50.6	50.6	50.7	50.7	50.7	50.8	50.8	50.8	50.8	50.9	51.1
≥ 18000	47.5	49.8	50.3	50.5	50.6	50.6	50.6	50.7	50.7	50.8	50.8	50.8	50.8	50.8	51.0	51.1
≥ 16000	47.5	49.9	50.3	50.5	50.6	50.6	50.7	50.7	50.7	50.8	50.8	50.8	50.8	50.9	51.0	51.2
≥ 14000	47.8	50.1	50.6	50.8	50.9	50.9	50.9	51.0	51.0	51.0	51.0	51.1	51.1	51.1	51.3	51.4
≥ 12000	48.8	51.3	51.8	52.0	52.1	52.1	52.1	52.2	52.2	52.3	52.3	52.3	52.3	52.3	52.5	52.6
≥ 10000	50.3	52.9	53.5	53.8	53.8	53.9	53.9	53.9	54.0	54.0	54.0	54.0	54.1	54.1	54.2	54.4
≥ 9000	52.2	55.0	55.6	55.9	56.0	56.1	56.1	56.1	56.1	56.2	56.2	56.2	56.3	56.3	56.4	56.6
≥ 8000	53.2	56.0	56.7	57.0	57.1	57.1	57.1	57.2	57.2	57.2	57.3	57.3	57.3	57.3	57.5	57.6
≥ 7000	55.7	58.7	59.5	59.8	59.9	59.9	60.0	60.0	60.0	60.1	60.1	60.1	60.2	60.2	60.3	60.5
≥ 6000	56.9	60.2	60.9	61.3	61.4	61.5	61.5	61.6	61.6	61.6	61.7	61.7	61.7	61.7	61.8	62.0
≥ 5000	58.1	61.6	62.4	62.8	62.9	63.0	63.0	63.1	63.1	63.2	63.2	63.2	63.2	63.3	63.4	63.6
≥ 4500	59.2	62.8	63.7	64.1	64.2	64.2	64.3	64.3	64.3	64.4	64.4	64.4	64.5	64.5	64.6	64.8
≥ 4000	60.8	64.8	65.8	66.2	66.3	66.4	66.4	66.5	66.5	66.6	66.6	66.6	66.6	66.7	66.8	67.0
≥ 3500	62.0	66.4	67.4	67.8	68.0	68.0	68.1	68.2	68.2	68.2	68.3	68.3	68.3	68.3	68.5	68.6
≥ 3000	63.2	67.8	68.8	69.3	69.4	69.5	69.6	69.6	69.6	69.7	69.8	69.8	69.8	69.8	69.9	70.1
≥ 2500	65.3	70.4	71.5	72.0	72.2	72.2	72.3	72.4	72.4	72.5	72.5	72.5	72.5	72.6	72.7	72.9
≥ 2000	67.1	72.8	74.0	74.6	74.8	74.9	75.0	75.1	75.1	75.2	75.2	75.2	75.3	75.3	75.4	75.6
≥ 1800	68.0	74.0	75.2	75.9	76.1	76.2	76.3	76.4	76.4	76.5	76.6	76.6	76.6	76.6	76.7	76.9
≥ 1500	69.4	75.7	77.0	77.8	78.1	78.2	78.4	78.5	78.5	78.5	78.6	78.6	78.6	78.7	78.8	79.0
≥ 1200	70.5	77.0	78.5	79.4	79.7	79.8	80.0	80.1	80.1	80.2	80.3	80.3	80.3	80.3	80.4	80.6
≥ 1000	71.5	78.5	80.0	80.9	81.3	81.5	81.7	81.8	81.8	81.9	82.0	82.0	82.0	82.0	82.2	82.3
≥ 900	71.8	79.1	80.6	81.7	82.1	82.3	82.5	82.7	82.7	82.8	82.8	82.8	82.9	82.9	83.0	83.2
≥ 800	72.3	80.0	81.5	82.7	83.3	83.5	83.8	83.9	83.9	84.0	84.1	84.1	84.1	84.1	84.3	84.5
≥ 700	72.7	80.6	82.3	83.6	84.2	84.6	84.8	85.0	85.0	85.1	85.1	85.1	85.2	85.2	85.3	85.5
≥ 600	73.1	81.2	83.0	84.4	85.3	85.7	86.1	86.2	86.2	86.4	86.5	86.5	86.5	86.5	86.6	86.8
≥ 500	73.3	81.9	83.9	85.9	86.8	87.4	87.9	88.2	88.2	88.5	88.5	88.5	88.6	88.6	88.7	88.9
≥ 400	73.6	82.3	84.4	86.6	87.7	88.4	89.2	89.8	89.8	90.2	90.3	90.3	90.4	90.4	90.6	90.8
≥ 300	73.6	82.5	84.8	87.2	88.4	89.2	90.4	91.5	91.5	92.4	92.7	92.7	92.8	92.9	93.1	93.4
≥ 200	73.7	82.6	84.9	87.4	88.6	89.5	90.9	92.6	92.7	94.1	94.7	94.7	95.2	95.3	95.7	96.7
≥ 100	73.7	82.6	84.9	87.4	88.7	89.5	91.0	92.7	92.8	94.4	95.2	95.2	95.8	96.0	97.0	98.9
0	73.7	82.6	84.9	87.4	88.7	89.5	91.0	92.7	92.8	94.4	95.2	95.2	95.8	96.0	97.1	100.0

TOTAL NUMBER OF OBSERVATIONS 7032

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0000-0200 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	45.3	46.0	46.0	46.1	46.2	46.3	46.3	46.3	46.3	46.3	46.4	46.4	46.4	46.4	46.7	46.7
≥ 20000	48.7	49.5	49.5	49.6	49.7	49.8	49.8	49.8	49.8	49.8	49.9	49.9	49.9	49.9	50.3	50.3
≥ 18000	49.0	49.7	49.7	49.8	49.9	50.1	50.1	50.1	50.1	50.1	50.2	50.2	50.2	50.2	50.5	50.5
≥ 16000	49.0	49.7	49.7	49.8	49.9	50.1	50.1	50.1	50.1	50.1	50.2	50.2	50.2	50.2	50.5	50.5
≥ 14000	49.5	50.3	50.3	50.4	50.5	50.6	50.6	50.6	50.6	50.6	50.8	50.8	50.8	50.8	51.2	51.2
≥ 12000	51.2	51.9	51.9	52.0	52.1	52.3	52.3	52.3	52.3	52.3	52.5	52.5	52.5	52.5	52.8	52.8
≥ 10000	54.1	54.9	54.9	55.0	55.1	55.2	55.2	55.2	55.2	55.2	55.5	55.5	55.5	55.5	55.8	55.8
≥ 9000	55.1	55.9	56.0	56.2	56.3	56.4	56.4	56.4	56.4	56.4	56.7	56.7	56.7	56.7	57.0	57.0
≥ 8000	55.5	56.2	56.3	56.6	56.7	56.8	56.8	56.8	56.8	56.8	57.0	57.0	57.0	57.0	57.3	57.3
≥ 7000	57.9	58.8	58.9	59.1	59.2	59.3	59.3	59.3	59.3	59.3	59.5	59.5	59.6	59.6	60.0	60.0
≥ 6000	60.4	61.4	61.5	61.7	61.9	62.0	62.0	62.0	62.0	62.0	62.2	62.2	62.3	62.3	62.6	62.6
≥ 5000	61.9	62.8	63.0	63.2	63.3	63.4	63.4	63.4	63.4	63.4	63.6	63.6	63.7	63.7	64.1	64.1
≥ 4500	62.7	63.9	64.1	64.3	64.4	64.5	64.5	64.5	64.5	64.5	64.7	64.7	64.8	64.8	65.2	65.2
≥ 4000	66.0	67.7	67.8	68.0	68.2	68.4	68.4	68.4	68.4	68.4	68.6	68.6	68.7	68.7	69.0	69.0
≥ 3500	66.9	69.1	69.2	69.5	69.7	69.8	69.8	69.8	69.8	69.8	70.0	70.0	70.1	70.1	70.5	70.5
≥ 3000	68.0	70.7	70.8	71.0	71.2	71.3	71.3	71.3	71.3	71.3	71.6	71.6	71.7	71.7	72.0	72.0
≥ 2500	70.2	73.2	73.3	73.6	73.9	74.2	74.2	74.2	74.2	74.2	74.4	74.4	74.5	74.5	74.9	74.9
≥ 2000	71.8	75.1	75.3	75.7	76.0	76.3	76.3	76.3	76.3	76.3	76.5	76.5	76.6	76.6	77.0	77.0
≥ 1800	72.7	76.1	76.3	76.7	77.0	77.3	77.3	77.3	77.3	77.3	77.5	77.5	77.6	77.6	77.9	77.9
≥ 1500	74.1	77.6	77.9	78.5	78.7	79.1	79.1	79.1	79.1	79.1	79.3	79.3	79.4	79.4	79.7	79.7
≥ 1200	74.8	78.7	79.1	79.6	79.8	80.2	80.2	80.2	80.2	80.2	80.4	80.4	80.5	80.5	80.8	80.8
≥ 1000	76.3	81.1	81.5	82.2	82.5	82.8	83.0	83.0	83.0	83.0	83.2	83.2	83.4	83.4	83.7	83.7
≥ 900	76.5	81.6	81.9	82.8	83.0	83.5	83.7	83.7	83.7	83.7	83.9	83.9	84.0	84.0	84.3	84.3
≥ 800	76.6	81.9	82.2	83.1	83.4	83.8	84.2	84.3	84.3	84.3	84.6	84.6	84.7	84.7	85.0	85.0
≥ 700	77.4	82.9	83.2	84.1	84.5	84.9	85.3	85.6	85.6	85.6	85.8	85.8	85.9	85.9	86.2	86.2
≥ 600	78.1	84.3	84.7	85.8	86.2	86.7	87.1	87.3	87.3	87.3	87.8	87.8	87.9	87.9	88.2	88.2
≥ 500	78.6	85.3	85.7	87.2	88.2	88.6	89.1	89.6	89.6	89.6	90.1	90.1	90.2	90.2	90.5	90.5
≥ 400	78.7	85.6	85.9	87.8	89.7	90.4	91.0	91.5	91.5	91.6	92.2	92.2	92.3	92.3	92.6	92.6
≥ 300	78.9	86.0	86.3	88.9	91.3	92.1	92.8	93.5	93.5	93.6	94.4	94.4	94.5	94.5	94.8	94.8
≥ 200	79.1	86.1	86.5	89.1	91.5	92.3	93.1	93.9	93.9	93.9	95.1	95.3	95.5	95.6	97.1	97.5
≥ 100	79.1	86.1	86.5	89.1	91.5	92.3	93.5	95.5	95.5	95.7	96.9	96.9	97.2	97.4	98.3	99.7
≥ 0	79.1	86.1	86.5	89.1	91.5	92.3	93.5	95.5	95.5	95.7	96.9	96.9	97.4	97.5	98.7	100.0

TOTAL NUMBER OF OBSERVATIONS 907

USAF ETAC FORM AM 84 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0300-0500 (HOURS L.T.)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	46.3	47.3	47.5	47.7	47.7	47.9	47.9	48.0	48.0	48.1	48.1	48.1	48.1	48.1	48.4	48.6
≥ 20000	49.2	50.2	50.4	50.6	50.6	50.7	50.7	50.8	50.8	50.9	50.9	50.9	50.9	50.9	51.3	51.5
≥ 18000	49.3	50.3	50.5	50.7	50.7	50.8	50.8	50.9	50.9	51.0	51.0	51.0	51.0	51.0	51.4	51.6
≥ 16000	49.3	50.3	50.5	50.7	50.7	50.8	50.8	50.9	50.9	51.0	51.0	51.0	51.0	51.0	51.4	51.6
≥ 14000	49.7	50.7	51.0	51.5	51.5	51.6	51.6	51.7	51.7	51.8	51.8	51.8	51.8	51.8	52.1	52.4
≥ 12000	51.0	52.0	52.4	52.8	52.8	52.9	52.9	53.0	53.0	53.1	53.1	53.1	53.1	53.1	53.5	53.7
≥ 10000	53.1	54.3	54.7	55.1	55.1	55.2	55.2	55.3	55.3	55.4	55.4	55.4	55.4	55.4	55.8	56.0
≥ 9000	54.2	55.6	55.9	56.3	56.3	56.4	56.4	56.5	56.5	56.7	56.7	56.7	56.7	56.7	57.0	57.2
≥ 8000	54.7	56.1	56.4	56.9	56.9	57.0	57.0	57.1	57.1	57.2	57.2	57.2	57.2	57.2	57.5	57.8
≥ 7000	57.0	58.7	59.1	59.5	59.5	59.6	59.6	59.7	59.7	59.8	59.8	59.8	59.8	59.8	60.2	60.4
≥ 6000	58.4	60.3	60.6	61.2	61.2	61.3	61.4	61.5	61.5	61.7	61.7	61.7	61.7	61.7	62.0	62.3
≥ 5000	60.1	61.9	62.3	62.8	62.8	62.9	63.0	63.1	63.1	63.3	63.3	63.3	63.3	63.3	63.7	63.9
≥ 4500	61.1	62.9	63.3	63.8	63.8	63.9	64.0	64.1	64.1	64.4	64.4	64.4	64.4	64.4	64.7	64.9
≥ 4000	61.9	63.9	64.2	64.8	64.8	64.9	65.0	65.1	65.1	65.3	65.3	65.3	65.3	65.3	65.7	65.9
≥ 3500	62.8	64.9	65.2	65.8	65.8	65.9	66.0	66.1	66.1	66.3	66.3	66.3	66.3	66.3	66.7	66.9
≥ 3000	64.6	66.9	67.2	67.8	67.8	67.9	68.0	68.1	68.1	68.3	68.3	68.3	68.3	68.3	68.6	68.9
≥ 2500	67.0	69.6	70.0	70.5	70.6	70.7	70.8	71.0	71.0	71.2	71.2	71.2	71.2	71.2	71.5	71.7
≥ 2000	68.3	71.5	71.8	72.4	72.6	72.7	72.8	72.9	72.9	73.2	73.2	73.2	73.2	73.2	73.5	73.7
≥ 1800	69.2	72.5	72.8	73.4	73.6	73.7	73.8	73.9	73.9	74.1	74.1	74.1	74.1	74.1	74.5	74.7
≥ 1500	71.0	74.8	75.2	75.8	76.0	76.1	76.2	76.3	76.3	76.6	76.6	76.6	76.6	76.6	76.9	77.1
≥ 1200	72.4	76.8	77.1	77.7	77.9	78.0	78.2	78.3	78.3	78.5	78.5	78.5	78.5	78.5	78.9	79.1
≥ 1000	73.5	78.4	79.0	79.5	79.8	79.9	80.1	80.2	80.2	80.4	80.4	80.4	80.4	80.4	80.7	81.0
≥ 900	74.0	79.0	79.5	80.2	80.5	80.6	81.1	81.2	81.2	81.4	81.4	81.4	81.4	81.4	81.7	82.0
≥ 800	74.6	79.8	80.3	81.0	81.3	81.4	82.0	82.1	82.1	82.4	82.4	82.4	82.4	82.4	82.7	82.9
≥ 700	76.0	81.4	82.0	83.3	83.6	83.7	84.3	84.5	84.5	84.8	84.8	84.8	84.8	84.8	85.1	85.4
≥ 600	76.5	82.4	83.2	84.5	84.9	85.0	85.7	86.1	86.1	86.5	86.5	86.5	86.5	86.5	86.8	87.0
≥ 500	76.8	82.8	84.2	85.6	86.2	86.4	87.0	87.5	87.5	88.0	88.0	88.0	88.0	88.0	88.3	88.6
≥ 400	76.8	83.1	84.6	86.5	87.2	87.6	88.3	89.0	89.0	89.8	90.0	90.0	90.0	90.0	90.3	90.5
≥ 300	76.8	83.3	84.8	87.1	88.3	88.7	90.1	91.5	91.5	92.5	92.8	92.8	92.8	92.8	93.2	93.4
≥ 200	76.8	83.3	84.8	87.1	88.4	88.8	90.4	92.7	92.7	94.5	94.9	94.9	95.2	95.2	96.0	96.2
≥ 100	76.8	83.3	84.8	87.1	88.4	88.8	90.4	92.8	92.8	94.6	95.2	95.2	95.8	95.8	97.6	99.6
≥ 0	76.8	83.3	84.8	87.1	88.4	88.8	90.4	92.8	92.8	94.6	95.2	95.2	95.8	95.8	97.8	100.0

TOTAL NUMBER OF OBSERVATIONS 909

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0600-0830 HOURS (LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	41.7	44.3	44.5	45.0	45.0	45.0	45.2	45.4	45.4	45.4	45.5	45.5	45.7	45.7	45.7	46.1
≥ 20000	45.0	47.7	47.9	48.5	48.5	48.5	48.6	48.8	48.8	48.3	48.9	48.9	49.1	49.1	49.1	49.6
≥ 18000	45.2	47.9	48.1	48.7	48.7	48.7	48.8	49.0	49.0	49.0	49.1	49.1	49.3	49.3	49.3	49.8
≥ 16000	45.2	47.9	48.1	48.7	48.7	48.7	48.8	49.0	49.0	49.0	49.1	49.1	49.3	49.3	49.3	49.8
≥ 14000	45.5	48.2	48.5	49.0	49.0	49.0	49.1	49.3	49.3	49.3	49.4	49.4	49.7	49.7	49.7	50.1
≥ 12000	47.4	50.2	50.4	51.1	51.1	51.1	51.2	51.4	51.4	51.4	51.5	51.5	51.8	51.8	51.9	52.3
≥ 10000	50.2	53.3	53.5	54.2	54.2	54.2	54.3	54.5	54.5	54.5	54.6	54.6	54.8	54.8	55.0	55.4
≥ 9000	50.9	54.0	54.2	54.8	54.8	54.8	55.0	55.2	55.2	55.2	55.3	55.3	55.5	55.5	55.6	56.1
≥ 8000	51.7	54.8	55.1	55.8	55.8	55.8	55.9	56.2	56.2	56.2	56.3	56.3	56.5	56.5	56.7	57.2
≥ 7000	53.6	56.9	57.2	57.9	57.9	58.0	58.1	58.4	58.4	58.4	58.5	58.5	58.7	58.7	58.9	59.4
≥ 6000	54.5	57.8	58.0	58.8	58.8	58.9	59.0	59.3	59.3	59.3	59.4	59.4	59.6	59.6	59.8	60.2
≥ 5000	56.2	59.6	59.9	60.7	60.8	60.9	61.0	61.2	61.2	61.2	61.3	61.3	61.6	61.6	61.9	62.3
≥ 4500	56.8	60.2	60.6	61.5	61.7	61.8	61.9	62.1	62.1	62.1	62.2	62.2	62.4	62.4	62.8	63.2
≥ 4000	58.5	62.1	62.4	63.3	63.5	63.7	63.8	64.0	64.0	64.0	64.1	64.1	64.3	64.3	64.6	65.1
≥ 3500	58.7	62.4	62.8	63.7	63.9	64.0	64.1	64.3	64.3	64.3	64.4	64.4	64.6	64.6	65.0	65.4
≥ 3000	59.8	63.7	64.0	65.0	65.2	65.3	65.5	65.7	65.7	65.7	65.9	65.9	66.1	66.1	66.5	66.9
≥ 2500	61.0	64.9	65.3	66.3	66.5	66.6	67.0	67.2	67.2	67.2	67.3	67.3	67.5	67.5	67.8	68.3
≥ 2000	63.3	67.6	68.1	69.1	69.4	69.5	69.8	70.0	70.0	70.0	70.2	70.2	70.4	70.4	70.7	71.1
≥ 1800	64.9	69.5	69.9	71.0	71.4	71.5	71.8	72.0	72.0	72.0	72.1	72.1	72.4	72.4	72.7	73.1
≥ 1500	67.2	72.7	73.3	74.4	74.8	75.0	75.4	75.7	75.7	75.7	75.8	75.8	76.0	76.0	76.3	76.8
≥ 1200	68.3	74.1	74.8	76.0	76.5	76.8	77.3	77.5	77.5	77.5	77.6	77.6	77.9	77.9	78.2	78.6
≥ 1000	69.3	75.7	76.5	77.8	78.3	78.6	79.2	79.5	79.5	79.5	79.6	79.6	79.8	79.8	80.2	80.6
≥ 900	69.6	76.2	77.1	78.7	79.3	79.7	80.3	80.6	80.6	80.6	80.7	80.7	80.9	80.9	81.3	81.7
≥ 800	70.4	77.3	78.2	80.0	80.6	80.9	81.5	81.8	81.8	81.8	81.9	81.9	82.2	82.2	82.5	82.9
≥ 700	71.0	78.4	79.3	81.4	82.0	82.5	83.1	83.5	83.5	83.5	83.6	83.6	83.8	83.8	84.1	84.6
≥ 600	71.6	79.5	80.4	82.6	83.5	83.9	84.6	84.9	84.9	84.9	85.0	85.0	85.2	85.2	85.6	86.0
≥ 500	72.1	80.5	81.8	84.8	85.8	86.3	87.0	87.6	87.6	87.6	87.7	87.7	87.9	87.9	88.2	88.7
≥ 400	72.3	81.3	82.8	86.2	87.7	88.3	89.4	90.4	90.4	90.4	90.7	90.7	91.0	91.0	91.3	91.7
≥ 300	72.3	81.6	83.1	86.7	88.1	88.8	90.2	91.5	91.5	91.7	92.1	92.1	92.4	92.4	92.7	93.2
≥ 200	72.3	81.6	83.1	86.9	88.3	89.0	90.5	91.9	92.0	92.3	93.1	93.1	93.4	93.7	95.5	96.4
≥ 100	72.3	81.6	83.1	86.9	88.3	89.0	90.5	91.9	92.0	92.5	93.4	93.5	95.3	95.6	96.8	99.4
≥ 0	72.3	81.6	83.1	86.9	88.3	89.0	90.5	91.9	92.0	92.5	93.4	93.5	95.3	95.6	96.8	100.0

TOTAL NUMBER OF OBSERVATIONS 908

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

~~0900-1100~~ (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	38.0	39.1	39.4	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
≥ 20000	42.7	44.0	44.3	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
≥ 18000	42.7	44.0	44.3	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
≥ 16000	42.7	44.0	44.3	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
≥ 14000	43.3	44.6	45.0	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6
≥ 12000	44.9	46.2	46.5	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2
≥ 10000	47.1	48.9	49.3	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9
≥ 9000	48.6	50.6	50.9	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6
≥ 8000	49.8	52.2	52.5	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 7000	52.3	54.9	55.3	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9
≥ 6000	53.2	55.8	56.1	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8	56.8
≥ 5000	53.9	56.6	56.9	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6
≥ 4500	54.3	56.9	57.3	57.9	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
≥ 4000	55.6	58.3	58.7	59.4	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7
≥ 3500	56.7	59.5	60.0	60.7	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1
≥ 3000	58.4	61.4	61.9	62.7	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1
≥ 2500	62.3	65.7	66.2	67.0	67.4	67.4	67.4	67.4	67.4	67.6	67.6	67.6	67.6	67.6	67.6	67.6
≥ 2000	66.0	70.2	70.9	71.8	72.2	72.2	72.2	72.2	72.2	72.3	72.3	72.3	72.3	72.3	72.3	72.3
≥ 1800	68.1	72.4	73.1	74.0	74.5	74.5	74.5	74.6	74.6	74.8	74.8	74.8	74.8	74.8	74.8	74.8
≥ 1500	69.4	74.1	74.8	75.7	76.3	76.3	76.8	76.5	76.5	76.6	76.6	76.6	76.6	76.6	76.6	76.6
≥ 1200	71.4	76.9	77.5	78.6	79.6	79.6	80.0	80.1	80.1	80.2	80.2	80.2	80.2	80.2	80.2	80.2
≥ 1000	72.6	79.1	79.8	81.1	82.4	82.4	82.7	82.8	82.8	82.9	82.9	82.9	82.9	82.9	82.9	82.9
≥ 900	73.3	80.0	80.7	81.9	83.4	83.4	83.8	83.9	83.9	84.1	84.1	84.1	84.1	84.1	84.1	84.1
≥ 800	74.6	81.8	82.7	84.2	85.6	85.6	86.0	86.3	86.3	86.4	86.4	86.4	86.4	86.4	86.4	86.4
≥ 700	75.0	82.7	83.6	85.2	86.7	86.8	87.4	87.6	87.6	87.7	87.7	87.7	87.7	87.7	87.7	87.7
≥ 600	75.4	83.3	84.3	85.9	87.7	87.9	88.6	88.8	88.8	88.9	89.0	89.0	89.0	89.0	89.0	89.0
≥ 500	75.6	83.7	84.7	86.5	88.4	88.7	89.5	89.8	89.8	90.3	90.5	90.5	90.5	90.5	90.5	90.5
≥ 400	75.6	83.7	85.3	87.4	89.8	90.3	91.1	91.8	91.8	92.4	92.6	92.6	92.6	92.6	92.6	92.6
≥ 300	75.6	83.7	85.3	87.4	89.8	90.3	91.7	92.7	92.7	94.0	94.5	94.5	94.5	94.5	94.7	94.8
≥ 200	75.6	83.7	85.3	87.4	89.8	90.3	91.7	92.9	92.9	94.6	95.8	96.0	96.6	96.8	97.8	98.2
≥ 100	75.6	83.7	85.3	87.4	89.8	90.3	91.7	92.9	92.9	94.6	95.9	96.2	96.8	97.0	98.0	100.0
≥ 0	75.6	83.7	85.3	87.4	89.8	90.3	91.7	92.9	92.9	94.6	95.9	96.2	96.8	97.0	98.0	100.0

TOTAL NUMBER OF OBSERVATIONS 893

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1200-1800 (HOUR LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	39.8	41.0	41.0	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1
≥ 20000	46.2	47.7	47.7	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8
≥ 18000	46.3	47.8	47.8	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
≥ 16000	46.3	47.8	47.8	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
≥ 14000	47.1	48.6	48.6	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8
≥ 12000	47.6	49.0	49.0	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.2
≥ 10000	49.6	51.0	51.0	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2	51.2
≥ 9000	51.0	52.6	52.6	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8	52.8
≥ 8000	51.9	53.5	53.5	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
≥ 7000	54.0	55.9	55.9	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1	56.1
≥ 6000	55.9	57.8	57.8	58.0	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1
≥ 5000	56.7	58.7	58.7	58.9	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0
≥ 4500	57.8	59.8	59.8	60.0	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1
≥ 4000	60.6	63.0	63.0	63.4	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5
≥ 3500	63.6	66.1	66.1	66.6	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
≥ 3000	66.5	69.7	69.9	70.6	70.7	70.7	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8
≥ 2500	68.6	72.2	72.7	73.6	73.8	73.8	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9
≥ 2000	71.6	75.9	76.6	77.6	78.0	78.0	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1
≥ 1800	72.9	77.4	78.3	79.5	79.8	79.8	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
≥ 1500	74.6	80.0	81.2	82.4	83.0	83.0	83.1	83.2	83.2	83.2	83.2	83.2	83.2	83.2	83.2	83.2
≥ 1200	76.1	81.8	83.2	84.6	85.2	85.3	85.5	85.6	85.6	85.6	85.6	85.6	85.6	85.6	85.6	85.6
≥ 1000	77.3	83.3	84.6	86.4	87.3	87.6	88.0	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1
≥ 900	77.7	84.1	85.5	87.6	88.6	89.0	89.5	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6
≥ 800	78.0	84.4	86.0	88.2	89.2	89.8	90.4	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6
≥ 700	78.1	84.6	86.4	88.9	90.0	90.6	91.3	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5	91.5
≥ 600	78.1	84.6	86.4	89.4	91.0	91.6	92.3	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8
≥ 500	78.1	84.6	86.5	89.9	91.8	92.4	93.4	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3	94.3
≥ 400	78.1	84.6	86.9	90.3	92.7	93.4	94.9	96.0	96.0	96.0	96.1	96.1	96.1	96.1	96.1	96.1
≥ 300	78.1	84.6	86.9	90.3	92.9	93.7	95.3	96.5	96.5	97.0	97.4	97.4	97.7	97.7	97.7	97.7
≥ 200	78.1	84.6	86.9	90.3	92.9	93.7	95.4	96.8	96.8	97.3	98.1	98.2	98.9	98.9	99.0	99.3
≥ 100	78.1	84.6	86.9	90.3	92.9	93.7	95.4	96.8	96.8	97.3	98.1	98.2	98.9	98.9	99.1	100.0
≥ 0	78.1	84.6	86.9	90.3	92.9	93.7	95.4	96.8	96.8	97.3	98.1	98.2	98.9	98.9	99.1	100.0

TOTAL NUMBER OF OBSERVATIONS 898

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1500-1700 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	39.8	41.6	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7
≥ 20000	46.3	48.1	48.2	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
≥ 18000	46.3	48.1	48.2	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
≥ 16000	46.3	48.1	48.2	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
≥ 14000	47.0	48.8	48.9	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1
≥ 12000	48.6	50.3	50.4	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7	50.7
≥ 10000	50.3	52.1	52.2	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5
≥ 9000	52.2	54.0	54.1	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4
≥ 8000	54.0	55.8	55.9	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 7000	56.3	58.3	58.4	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7
≥ 6000	58.0	60.2	60.3	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6	60.6
≥ 5000	60.2	62.4	62.7	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1
≥ 4500	62.2	64.7	65.0	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4
≥ 4000	65.3	68.4	68.9	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4	69.4
≥ 3500	67.6	71.1	71.9	72.5	72.5	72.6	72.6	72.6	72.6	72.6	72.6	72.6	72.6	72.6	72.6	72.6
≥ 3000	69.1	72.8	73.6	74.1	74.1	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2
≥ 2500	72.6	77.1	78.2	79.1	79.2	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3
≥ 2000	73.9	79.2	80.3	81.3	81.5	81.6	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
≥ 1800	75.8	81.2	82.4	83.5	83.8	84.0	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1
≥ 1500	77.2	83.1	84.4	85.5	85.8	86.0	86.2	86.3	86.3	86.4	86.4	86.4	86.4	86.4	86.4	86.4
≥ 1200	77.8	84.0	85.3	86.5	86.9	87.1	87.3	87.4	87.4	87.7	87.7	87.7	87.7	87.7	87.7	87.7
≥ 1000	78.3	84.8	86.3	87.6	88.2	88.4	88.7	89.0	89.0	89.4	89.4	89.4	89.4	89.4	89.4	89.4
≥ 900	78.3	85.2	86.7	88.3	88.8	89.0	89.4	89.7	89.7	90.0	90.0	90.0	90.0	90.0	90.0	90.0
≥ 800	78.8	85.4	87.3	88.8	89.4	89.6	90.0	90.4	90.4	90.7	90.7	90.7	90.7	90.7	90.7	90.7
≥ 700	78.9	86.0	87.7	89.6	90.3	90.5	90.9	91.3	91.3	91.6	91.6	91.6	91.6	91.6	91.6	91.6
≥ 600	79.1	86.4	88.4	90.7	91.6	91.8	92.4	93.0	93.0	93.5	93.5	93.5	93.5	93.5	93.5	93.5
≥ 500	79.1	86.4	88.5	91.2	92.3	92.5	93.6	94.0	94.0	94.6	94.6	94.6	94.6	94.6	94.6	94.6
≥ 400	79.1	86.4	88.7	91.7	92.9	93.3	94.6	95.4	95.4	96.0	96.2	96.2	96.2	96.2	96.3	96.3
≥ 300	79.1	86.4	88.7	92.0	93.4	93.7	95.1	95.9	95.9	96.8	97.2	97.2	97.2	97.2	97.6	97.6
≥ 200	79.1	86.4	88.7	92.0	93.4	93.7	95.1	96.0	96.0	97.3	97.9	97.9	97.9	98.0	98.1	98.4	99.0
≥ 100	79.1	86.4	88.7	92.0	93.4	93.7	95.1	96.0	96.0	97.3	97.9	97.9	98.1	98.2	98.8	100.0
0	79.1	86.4	88.7	92.0	93.4	93.7	95.1	96.0	96.0	97.3	97.9	97.9	98.1	98.2	98.8	100.0

TOTAL NUMBER OF OBSERVATIONS 904

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1800-2000 (HOURS LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	47.2	48.4	48.7	48.7	48.7	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1	49.1
≥ 20000	51.2	52.5	52.8	52.8	52.8	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1
≥ 18000	51.3	52.6	52.9	52.9	52.9	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 16000	51.3	52.6	52.9	52.9	52.9	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 14000	51.4	52.7	53.0	53.0	53.0	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3
≥ 12000	53.0	54.3	54.7	54.7	54.7	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0
≥ 10000	54.6	56.0	56.3	56.3	56.3	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6
≥ 9000	56.0	57.4	57.7	57.7	57.7	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1
≥ 8000	58.1	59.5	59.8	59.8	59.8	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2
≥ 7000	60.4	62.2	62.6	62.6	62.6	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
≥ 6000	62.1	64.2	64.5	64.5	64.5	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9
≥ 5000	64.0	66.5	66.8	66.8	66.8	67.2	67.2	67.2	67.2	67.2	67.2	67.2	67.2	67.2	67.2	67.2
≥ 4500	65.5	68.4	68.7	68.7	68.7	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0
≥ 4000	70.3	73.4	73.9	74.1	74.1	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4
≥ 3500	71.5	74.6	75.2	75.4	75.4	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7
≥ 3000	72.9	76.5	77.1	77.5	77.5	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9
≥ 2500	74.5	79.0	79.9	80.5	80.5	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9	80.9
≥ 2000	75.4	80.1	81.1	81.9	82.0	82.4	82.4	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5
≥ 1800	76.6	81.8	82.9	83.8	83.9	84.3	84.3	84.4	84.4	84.4	84.4	84.4	84.5	84.5	84.5	84.5
≥ 1500	77.6	83.2	84.3	85.3	85.6	86.1	86.1	86.2	86.2	86.3	86.3	86.3	86.4	86.4	86.4	86.4
≥ 1200	78.2	84.6	85.9	86.9	87.3	87.7	87.7	87.8	87.8	87.9	87.9	87.9	88.0	88.0	88.0	88.0
≥ 1000	78.4	85.0	86.4	87.4	87.7	88.1	88.1	88.3	88.3	88.4	88.6	88.6	88.7	88.7	88.7	88.7
≥ 900	78.6	85.6	87.2	88.1	88.6	89.0	89.0	89.1	89.1	89.2	89.5	89.5	89.6	89.6	89.6	89.6
≥ 800	78.6	86.1	87.6	88.6	89.0	89.6	89.6	89.8	89.8	89.9	90.1	90.1	90.2	90.2	90.2	90.2
≥ 700	78.8	86.5	88.0	89.0	89.5	90.0	90.1	90.3	90.3	90.5	90.7	90.7	90.8	90.8	90.8	90.8
≥ 600	78.8	86.7	88.4	89.5	89.9	90.5	90.6	90.8	90.8	90.9	91.1	91.1	91.2	91.2	91.2	91.2
≥ 500	79.1	87.4	89.0	90.3	91.0	91.8	92.2	92.4	92.4	92.5	92.8	92.8	92.9	92.9	92.9	92.9
≥ 400	79.4	87.6	89.5	90.8	91.5	92.3	93.2	93.6	93.7	94.0	94.2	94.2	94.4	94.4	94.4	94.4
≥ 300	79.4	87.6	89.5	91.0	92.0	92.9	94.1	94.7	94.8	95.1	95.5	95.5	95.7	95.7	95.7	95.7
≥ 200	79.4	87.6	89.5	91.1	92.1	93.1	94.3	95.6	95.7	96.6	97.4	97.4	97.8	97.9	98.5	98.9
≥ 100	79.4	87.6	89.5	91.1	92.1	93.1	94.4	95.7	95.8	96.7	97.5	97.5	98.0	98.4	99.0	99.7
≥ 0	79.4	87.6	89.5	91.1	92.1	93.1	94.4	95.7	95.8	96.7	97.5	97.5	98.0	98.4	99.0	100.0

TOTAL NUMBER OF OBSERVATIONS 911

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | OCT MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

2100-2300 HOURS (LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	46.6	47.7	48.3	48.1	48.2	48.2	48.2	48.2	48.2	48.2	48.3	48.3	48.3	48.3	48.3	48.4
≥ 20000	50.2	51.2	51.6	51.7	51.8	51.8	51.8	51.8	51.8	51.8	51.9	51.9	51.9	51.9	51.9	52.0
≥ 18000	50.2	51.2	51.6	51.7	51.8	51.8	51.8	51.8	51.8	51.8	51.9	51.9	51.9	51.9	51.9	52.0
≥ 16000	50.2	51.2	51.6	51.7	51.8	51.8	51.8	51.8	51.8	51.8	51.9	51.9	51.9	51.9	51.9	52.0
≥ 14000	50.6	51.6	51.9	52.0	52.1	52.1	52.1	52.1	52.1	52.1	52.2	52.2	52.2	52.2	52.2	52.3
≥ 12000	51.7	52.7	53.0	53.1	53.2	53.2	53.2	53.2	53.2	53.2	53.8	53.8	53.8	53.8	53.8	53.5
≥ 10000	53.4	54.4	54.7	54.8	54.9	54.9	54.9	54.9	54.9	54.9	55.0	55.0	55.0	55.0	55.0	55.1
≥ 9000	55.0	56.0	56.4	56.5	56.6	56.6	56.6	56.6	56.6	56.6	56.7	56.7	56.7	56.7	56.7	56.8
≥ 8000	56.4	57.4	57.8	57.9	58.1	58.1	58.1	58.1	58.1	58.1	58.2	58.2	58.2	58.2	58.2	58.3
≥ 7000	58.4	59.4	60.1	60.3	60.8	60.8	60.8	60.8	60.8	60.8	60.5	60.5	60.5	60.5	60.5	60.6
≥ 6000	60.1	61.3	62.0	62.2	62.3	62.3	62.3	62.3	62.3	62.3	62.4	62.4	62.4	62.4	62.4	62.5
≥ 5000	62.1	63.4	64.3	64.6	64.7	64.7	64.7	64.7	64.7	64.7	64.8	64.8	64.8	64.8	64.8	64.9
≥ 4500	63.3	64.9	65.5	65.9	66.1	66.1	66.1	66.1	66.1	66.1	66.2	66.2	66.2	66.2	66.2	66.3
≥ 4000	66.9	68.7	69.4	69.7	69.9	69.9	69.9	69.9	69.9	70.0	70.1	70.1	70.1	70.1	70.1	70.2
≥ 3500	69.6	70.6	71.3	71.6	71.8	71.8	71.8	71.8	71.8	71.9	72.0	72.0	72.0	72.0	72.0	72.1
≥ 3000	70.6	72.8	73.5	73.9	74.2	74.2	74.2	74.2	74.2	74.3	74.4	74.4	74.4	74.4	74.4	74.5
≥ 2500	72.5	75.2	75.8	76.3	76.5	76.6	76.6	76.7	76.7	76.8	77.0	77.0	77.0	77.0	77.0	77.1
≥ 2000	74.0	77.3	78.1	78.6	78.9	79.0	79.1	79.2	79.2	79.3	79.4	79.4	79.5	79.5	79.5	79.6
≥ 1800	74.8	78.2	79.0	79.5	79.8	80.0	80.1	80.2	80.2	80.3	80.4	80.4	80.5	80.5	80.5	80.6
≥ 1500	76.4	80.0	80.9	81.5	81.8	82.0	82.1	82.2	82.2	82.3	82.4	82.4	82.4	82.4	82.4	82.7
≥ 1200	76.1	81.0	82.0	82.9	83.1	83.3	83.4	83.7	83.7	83.8	83.9	83.9	84.0	84.0	84.0	84.1
≥ 1000	77.6	82.2	83.2	84.2	84.6	84.8	85.0	85.1	85.1	85.2	85.3	85.3	85.5	85.5	85.5	85.6
≥ 900	77.9	82.4	83.6	84.6	84.9	85.5	85.7	85.8	85.8	85.9	86.0	86.0	86.1	86.1	86.1	86.2
≥ 800	78.1	82.9	84.1	85.2	85.7	86.2	86.4	86.7	86.7	86.8	86.9	86.9	87.0	87.0	87.0	87.1
≥ 700	78.9	83.6	84.8	86.0	86.5	87.0	87.4	87.6	87.6	87.8	87.9	87.9	88.0	88.0	88.0	88.1
≥ 600	79.0	84.5	85.7	87.0	87.6	88.3	88.5	88.9	88.9	89.1	89.3	89.3	89.4	89.4	89.4	89.5
≥ 500	79.8	85.6	86.9	88.5	89.1	89.9	90.3	90.7	90.7	91.2	91.3	91.3	91.4	91.4	91.4	91.5
≥ 400	80.0	85.9	87.5	89.3	90.2	91.1	91.5	91.9	91.9	92.4	92.5	92.5	92.6	92.6	92.6	92.8
≥ 300	80.1	86.6	88.3	90.9	91.9	92.8	93.4	94.0	94.0	94.4	94.5	94.5	94.6	94.6	94.6	94.9
≥ 200	80.1	86.7	88.5	91.3	92.3	93.2	93.8	94.4	94.4	94.8	94.9	94.9	94.9	94.9	94.9	95.1
≥ 100	80.1	86.7	88.4	91.3	92.3	93.4	94.2	96.0	96.0	96.8	97.2	97.2	97.8	97.8	98.0	99.3
0	80.1	86.7	88.4	91.3	92.3	93.4	94.2	96.0	96.0	96.8	97.2	97.2	97.9	97.9	98.2	100.0

TOTAL NUMBER OF OBSERVATIONS 884

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	43.1	44.4	44.6	44.8	44.8	44.9	44.9	45.0	45.0	45.0	45.0	45.0	45.1	45.1	45.1	45.2
≥ 20000	47.5	48.9	49.0	49.3	49.3	49.4	49.4	49.4	49.8	49.4	49.5	49.5	49.5	49.5	49.6	49.7
≥ 18000	47.5	48.9	49.1	49.4	49.4	49.5	49.5	49.5	49.5	49.6	49.6	49.6	49.6	49.6	49.7	49.8
≥ 16000	47.5	48.9	49.1	49.4	49.4	49.5	49.5	49.5	49.5	49.6	49.6	49.6	49.6	49.6	49.7	49.8
≥ 14000	48.0	49.4	49.6	49.9	50.0	50.0	50.0	50.1	50.1	50.1	50.2	50.2	50.2	50.2	50.3	50.4
≥ 12000	49.4	50.8	51.1	51.4	51.4	51.5	51.5	51.5	51.5	51.5	51.6	51.6	51.6	51.6	51.7	51.8
≥ 10000	51.5	53.1	53.3	53.6	53.7	53.7	53.8	53.8	53.8	53.8	53.9	53.9	53.9	53.9	54.0	54.1
≥ 9000	52.9	54.5	54.7	55.1	55.1	55.2	55.2	55.2	55.2	55.2	55.3	55.3	55.3	55.3	55.4	55.5
≥ 8000	54.0	55.7	55.9	56.3	56.3	56.4	56.4	56.4	56.4	56.4	56.5	56.5	56.5	56.5	56.6	56.7
≥ 7000	56.2	58.2	58.4	58.8	58.8	58.9	58.9	58.9	58.9	59.0	59.0	59.0	59.1	59.1	59.2	59.3
≥ 6000	57.8	59.9	60.1	60.5	60.5	60.6	60.6	60.7	60.7	60.7	60.8	60.8	60.8	60.8	60.9	61.0
≥ 5000	59.4	61.5	61.8	62.2	62.3	62.3	62.4	62.4	62.4	62.4	62.5	62.5	62.5	62.5	62.7	62.8
≥ 4500	60.5	62.7	63.0	63.4	63.5	63.6	63.6	63.7	63.7	63.7	63.8	63.8	63.8	63.8	63.9	64.0
≥ 4000	63.1	65.7	66.0	66.5	66.6	66.7	66.8	66.8	66.8	66.8	66.9	66.9	66.9	66.9	67.1	67.2
≥ 3500	64.5	67.3	67.7	68.2	68.4	68.5	68.5	68.5	68.5	68.6	68.6	68.6	68.7	68.7	68.8	68.9
≥ 3000	66.2	69.3	69.7	70.3	70.5	70.6	70.6	70.7	70.7	70.7	70.8	70.8	70.8	70.8	70.9	71.0
≥ 2500	68.6	72.1	72.7	73.4	73.6	73.7	73.8	73.8	73.8	73.9	73.9	73.9	74.0	74.0	74.1	74.2
≥ 2000	70.5	74.6	75.3	76.0	76.3	76.5	76.6	76.6	76.6	76.7	76.7	76.7	76.8	76.8	76.9	77.0
≥ 1800	71.9	76.1	76.8	77.7	78.0	78.1	78.2	78.3	78.3	78.4	78.4	78.4	78.5	78.5	78.6	78.7
≥ 1500	73.5	78.2	79.0	79.9	80.2	80.4	80.6	80.7	80.7	80.8	80.8	80.8	80.9	80.9	81.0	81.1
≥ 1200	74.4	79.7	80.6	81.6	82.0	82.2	82.5	82.6	82.6	82.7	82.7	82.7	82.8	82.8	82.9	83.0
≥ 1000	75.4	81.2	82.2	83.3	83.8	84.1	84.4	84.5	84.5	84.6	84.7	84.7	84.8	84.8	84.9	85.0
≥ 900	75.7	81.8	82.8	84.0	84.6	85.0	85.3	85.5	85.5	85.6	85.7	85.7	85.7	85.7	85.8	85.9
≥ 800	76.2	82.5	83.5	84.9	85.5	85.9	86.3	86.5	86.5	86.6	86.7	86.7	86.8	86.8	86.9	87.0
≥ 700	76.7	83.3	84.4	85.9	86.6	87.0	87.5	87.7	87.7	87.9	87.9	87.9	88.0	88.0	88.1	88.2
≥ 600	77.1	84.0	85.2	86.9	87.8	88.2	88.7	89.1	89.1	89.2	89.4	89.4	89.4	89.4	89.5	89.6
≥ 500	77.4	84.5	85.9	88.0	89.1	89.6	90.3	90.7	90.7	91.0	91.1	91.1	91.2	91.2	91.3	91.4
≥ 400	77.5	84.8	86.4	88.7	90.2	90.8	91.8	92.5	92.5	92.8	93.1	93.1	93.1	93.1	93.3	93.4
≥ 300	77.5	85.0	86.6	89.3	91.0	91.6	92.8	93.8	93.8	94.4	94.8	94.8	94.9	94.9	95.1	95.2
≥ 200	77.5	85.0	86.6	89.4	91.1	91.7	93.1	94.6	94.6	95.5	96.2	96.3	96.8	96.9	97.4	98.0
≥ 100	77.5	85.0	86.6	89.4	91.1	91.8	93.2	94.7	94.7	95.7	96.5	96.6	97.2	97.4	98.2	99.7
≥ 0	77.5	85.0	86.6	89.4	91.1	91.8	93.2	94.7	94.7	95.7	96.5	96.6	97.3	97.4	98.3	100.0

TOTAL NUMBER OF OBSERVATIONS 7238

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0000-0200 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	40.2	41.1	41.2	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.5	41.5	41.5	41.5	41.5	41.5
≥ 20000	43.1	44.2	44.3	44.4	44.6	44.6	44.6	44.6	44.6	44.6	44.7	44.7	44.7	44.7	44.7	44.7
≥ 18000	43.2	44.3	44.4	44.6	44.7	44.7	44.7	44.7	44.7	44.7	44.8	44.8	44.8	44.8	44.8	44.8
≥ 16000	43.2	44.3	44.4	44.6	44.7	44.7	44.7	44.7	44.7	44.7	44.8	44.8	44.8	44.8	44.8	44.8
≥ 14000	43.9	45.0	45.1	45.2	45.4	45.4	45.4	45.4	45.4	45.4	45.5	45.5	45.5	45.5	45.5	45.5
≥ 12000	45.1	46.3	46.4	46.5	46.6	46.6	46.6	46.6	46.6	46.7	46.8	46.8	46.8	46.8	46.8	46.8
≥ 10000	47.2	48.3	48.5	48.6	48.7	48.7	48.7	48.7	48.7	48.8	48.9	48.9	48.9	48.9	48.9	48.9
≥ 9000	48.7	49.8	49.9	50.1	50.2	50.2	50.2	50.2	50.2	50.3	50.4	50.4	50.4	50.4	50.4	50.4
≥ 8000	49.6	50.7	50.9	51.0	51.1	51.1	51.1	51.1	51.1	51.2	51.3	51.3	51.3	51.3	51.3	51.3
≥ 7000	50.7	52.0	52.1	52.2	52.3	52.3	52.3	52.3	52.3	52.5	52.6	52.6	52.6	52.6	52.6	52.6
≥ 6000	51.8	53.3	53.4	53.5	53.6	53.6	53.6	53.6	53.6	53.7	53.8	53.8	53.8	53.8	53.8	53.8
≥ 5000	52.7	54.5	54.6	54.8	55.0	55.0	55.0	55.0	55.0	55.1	55.2	55.2	55.2	55.2	55.2	55.2
≥ 4500	53.2	55.1	55.2	55.3	55.6	55.6	55.6	55.7	55.7	55.8	55.9	55.9	55.9	55.9	55.9	55.9
≥ 4000	54.6	56.7	56.9	57.0	57.3	57.3	57.3	57.4	57.4	57.5	57.6	57.6	57.6	57.6	57.6	57.6
≥ 3500	56.2	58.8	59.0	59.1	59.3	59.5	59.6	59.7	59.7	59.8	59.9	59.9	59.9	59.9	59.9	59.9
≥ 3000	57.2	59.8	60.0	60.1	60.4	60.5	60.6	60.7	60.7	60.8	60.9	60.9	60.9	60.9	60.9	60.9
≥ 2500	60.3	63.7	63.9	64.0	64.3	64.4	64.5	64.6	64.6	64.7	64.8	64.8	64.8	64.8	64.8	64.8
≥ 2000	63.6	67.4	67.6	67.9	68.3	68.4	68.5	68.7	68.7	68.8	69.0	69.0	69.0	69.0	69.0	69.0
≥ 1800	66.0	70.0	70.2	70.8	71.4	71.5	71.7	71.9	71.9	72.1	72.2	72.2	72.2	72.2	72.2	72.2
≥ 1500	67.9	72.3	73.3	74.0	74.7	74.8	75.0	75.4	75.4	75.5	75.6	75.6	75.6	75.6	75.6	75.6
≥ 1200	69.6	75.4	76.3	77.1	78.0	78.2	78.6	78.9	78.9	79.2	79.3	79.3	79.4	79.4	79.4	79.4
≥ 1000	71.2	77.2	78.2	79.2	80.3	80.5	81.1	82.0	82.0	82.5	82.6	82.6	82.7	82.7	82.7	82.7
≥ 900	71.6	77.7	78.7	79.6	80.8	81.0	81.6	82.5	82.5	82.9	83.0	83.0	83.2	83.2	83.2	83.2
≥ 800	72.5	78.8	79.8	80.8	81.9	82.1	82.8	83.7	83.7	84.2	84.3	84.3	84.4	84.4	84.4	84.4
≥ 700	73.5	80.1	81.1	82.0	83.2	83.5	84.3	85.2	85.2	85.7	85.8	85.8	85.9	85.9	85.9	85.9
≥ 600	73.9	80.6	81.5	82.4	83.6	83.9	84.8	85.7	85.7	86.2	86.3	86.3	86.4	86.4	86.4	86.4
≥ 500	74.0	81.3	82.8	84.2	85.7	86.0	87.1	88.2	88.2	89.1	89.2	89.2	89.3	89.3	89.3	89.3
≥ 400	74.0	81.6	83.2	84.7	86.4	86.7	87.7	88.9	88.9	89.8	89.9	89.9	90.1	90.1	90.1	90.1
≥ 300	74.0	81.7	83.4	85.1	86.8	87.2	88.5	90.6	90.6	91.6	91.8	91.8	92.2	92.2	92.3	92.3
≥ 200	74.0	81.8	83.5	85.2	87.1	87.6	89.3	91.8	91.8	93.5	93.8	93.8	95.0	95.1	95.3	95.9
≥ 100	74.0	81.8	83.5	85.2	87.1	87.6	89.3	91.8	91.8	93.5	94.3	94.3	95.9	96.4	97.8	99.2
≥ 0	74.0	81.8	83.5	85.2	87.1	87.6	89.3	91.8	91.8	93.5	94.3	94.3	95.9	96.4	97.8	100.0

TOTAL NUMBER OF OBSERVATIONS 873

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0300-0500 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1½	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	38.6	39.2	39.3	39.5	39.5	39.5	39.5	39.6	39.6	39.9	39.9	39.9	39.9	39.9	39.9	39.9
≥ 20000	40.8	41.3	41.5	41.7	41.7	41.7	41.7	41.8	41.8	42.0	42.0	42.0	42.0	42.0	42.0	42.0
≥ 18000	40.8	41.3	41.5	41.7	41.7	41.7	41.7	41.8	41.8	42.0	42.0	42.0	42.0	42.0	42.0	42.0
≥ 16000	40.8	41.3	41.5	41.7	41.7	41.7	41.7	41.8	41.8	42.0	42.0	42.0	42.0	42.0	42.0	42.0
≥ 14000	40.9	41.5	41.6	41.8	41.8	41.8	41.8	41.9	41.9	42.1	42.1	42.1	42.1	42.1	42.1	42.1
≥ 12000	42.1	42.7	42.8	43.1	43.1	43.1	43.1	43.2	43.2	43.4	43.4	43.4	43.4	43.4	43.4	43.4
≥ 10000	44.6	45.2	45.4	45.7	45.8	45.8	45.8	45.9	45.9	46.1	46.1	46.1	46.1	46.1	46.1	46.1
≥ 9000	45.9	46.6	46.8	47.0	47.2	47.2	47.2	47.3	47.3	47.5	47.5	47.5	47.5	47.5	47.5	47.5
≥ 8000	46.2	46.9	47.3	47.5	47.6	47.6	47.6	47.7	47.7	47.9	47.9	47.9	47.9	47.9	47.9	47.9
≥ 7000	47.6	48.3	48.6	48.9	49.0	49.0	49.0	49.1	49.1	49.3	49.3	49.3	49.3	49.3	49.3	49.3
≥ 6000	48.4	49.3	49.7	49.9	50.0	50.0	50.0	50.1	50.1	50.3	50.3	50.3	50.3	50.3	50.3	50.3
≥ 5000	48.9	49.8	50.1	50.3	50.5	50.5	50.5	50.6	50.6	50.8	50.8	50.8	50.8	50.8	50.8	50.8
≥ 4500	49.3	50.2	50.6	50.8	50.9	50.9	50.9	51.0	51.0	51.3	51.3	51.3	51.3	51.3	51.3	51.3
≥ 4000	50.7	51.7	52.1	52.4	52.5	52.5	52.5	52.6	52.6	52.8	52.8	52.8	52.8	52.8	52.8	52.8
≥ 3500	52.4	53.8	54.1	54.4	54.6	54.6	54.6	54.7	54.7	54.9	54.9	54.9	54.9	54.9	54.9	54.9
≥ 3000	54.2	55.6	55.9	56.3	56.4	56.4	56.4	56.5	56.5	56.7	56.7	56.7	56.7	56.7	56.7	56.7
≥ 2500	57.4	59.1	59.5	59.9	60.0	60.0	60.0	60.1	60.1	60.4	60.4	60.4	60.4	60.4	60.4	60.4
≥ 2000	61.0	63.1	63.7	64.4	64.5	64.5	64.5	64.6	64.6	64.8	64.8	64.8	64.8	64.8	64.8	64.8
≥ 1800	62.6	64.9	65.9	66.6	66.7	66.7	66.7	66.9	66.9	67.1	67.1	67.1	67.1	67.1	67.1	67.1
≥ 1500	65.1	67.9	68.9	69.7	69.9	70.0	70.2	70.3	70.3	70.5	70.5	70.5	70.5	70.5	70.5	70.5
≥ 1200	67.5	71.5	72.7	73.5	73.7	73.8	73.9	74.0	74.0	74.3	74.3	74.3	74.3	74.3	74.3	74.3
≥ 1000	69.7	74.1	75.4	76.2	76.4	76.5	76.9	77.3	77.3	77.7	77.8	77.8	77.8	77.8	77.8	77.8
≥ 900	70.7	75.5	76.9	77.7	78.1	78.2	78.7	79.2	79.2	79.5	79.6	79.6	79.6	79.6	79.6	79.6
≥ 800	71.3	76.3	77.7	78.6	79.3	79.4	80.1	80.5	80.5	80.9	81.0	81.0	81.0	81.0	81.0	81.0
≥ 700	72.7	78.6	80.1	81.2	81.9	82.1	82.9	83.4	83.4	83.7	83.8	83.8	83.8	83.8	83.8	83.8
≥ 600	73.6	79.8	81.5	83.0	83.8	84.1	84.9	85.3	85.4	85.8	85.9	85.9	85.9	85.9	85.9	85.9
≥ 500	73.8	80.4	82.3	84.2	85.0	85.3	86.4	86.9	87.0	87.5	87.8	87.8	87.8	87.8	87.8	87.8
≥ 400	73.9	80.6	82.7	84.9	86.9	86.8	88.3	88.7	88.8	89.3	89.7	89.7	89.9	89.9	89.9	89.9
≥ 300	73.9	80.6	82.7	84.9	87.0	87.4	89.0	90.4	90.5	91.3	91.9	91.9	92.1	92.1	92.3	92.3
≥ 200	73.9	80.6	82.7	85.0	87.2	87.6	90.2	92.3	92.4	93.6	94.6	94.6	95.4	95.4	95.7	96.0
≥ 100	73.9	80.6	82.7	85.0	87.2	87.6	90.3	92.4	92.5	93.8	95.6	95.6	97.2	97.7	98.1	99.3
≥ 0	73.9	80.6	82.7	85.0	87.2	87.6	90.3	92.4	92.5	93.8	95.6	95.6	97.2	97.7	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 878

USAF ETAC FORM 101 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

~~0600-0900~~ (HOUR)

CEILING FEET	VISIBILITY STATUTE MILES															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	36.2	38.3	38.9	39.2	39.3	39.3	39.3	39.3	39.3	39.3	39.3	39.3	39.3	39.3	39.4	39.7
≥ 20000	39.1	41.4	42.0	42.4	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.7	42.9
≥ 18000	39.2	41.5	42.1	42.5	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.8	43.0
≥ 16000	39.2	41.5	42.1	42.5	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.8	43.0
≥ 14000	39.4	41.7	42.3	42.8	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	43.0	43.2
≥ 12000	41.1	43.3	43.9	44.4	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.6	44.8
≥ 10000	43.6	45.9	46.4	46.9	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.2	47.5
≥ 9000	44.7	47.1	47.8	48.3	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.6	48.9
≥ 8000	45.0	47.6	48.3	48.7	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.1	49.3
≥ 7000	46.2	49.0	49.8	50.2	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.6	50.8
≥ 6000	46.8	49.5	50.3	50.8	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.1	51.4
≥ 5000	47.1	50.0	50.8	51.3	51.5	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.7	51.9
≥ 4500	47.6	50.5	51.3	51.7	51.9	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.2	52.4
≥ 4000	48.9	51.8	52.8	53.2	53.4	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.7	53.9
≥ 3500	50.2	53.3	54.5	54.9	55.2	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.4	55.6
≥ 3000	51.0	54.4	55.6	56.1	56.4	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.8	57.0
≥ 2500	53.0	56.5	57.8	58.4	58.7	58.9	58.9	59.1	59.1	59.1	59.1	59.1	59.1	59.1	59.2	59.4
≥ 2000	56.3	60.3	61.7	62.3	62.6	63.0	63.0	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.2	63.4
≥ 1800	57.3	61.8	63.2	63.8	64.3	64.8	64.8	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.1	65.4
≥ 1500	60.3	65.0	66.4	67.0	67.5	68.0	68.2	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.7	68.9
≥ 1200	62.7	67.7	69.0	69.8	70.4	70.9	71.2	71.8	71.8	71.8	71.8	71.8	71.8	71.8	71.9	72.1
≥ 1000	65.0	71.1	72.6	73.4	74.0	74.5	74.9	75.5	75.5	75.6	75.6	75.6	75.7	75.7	75.8	76.0
≥ 900	65.6	72.4	73.9	74.9	75.6	76.1	76.5	77.1	77.1	77.2	77.2	77.2	77.3	77.3	77.4	77.6
≥ 800	66.5	74.0	75.5	76.5	77.4	78.0	78.3	78.9	78.9	79.1	79.2	79.2	79.4	79.4	79.5	79.7
≥ 700	67.8	75.7	77.2	78.2	79.2	79.8	80.3	80.8	80.8	81.1	81.2	81.2	81.3	81.3	81.4	81.7
≥ 600	69.0	77.4	79.1	80.3	81.5	82.1	82.6	83.1	83.3	83.6	83.7	83.7	83.8	83.8	83.9	84.2
≥ 500	69.6	78.2	80.0	81.5	83.1	84.1	84.7	85.4	85.7	86.1	86.4	86.4	86.5	86.5	86.6	86.8
≥ 400	69.6	78.4	80.4	82.5	84.5	85.8	86.6	87.3	87.6	88.2	88.6	88.6	88.8	88.8	88.9	89.1
≥ 300	69.6	78.6	80.4	82.7	85.0	86.2	87.6	88.4	88.8	89.4	90.4	90.4	90.7	90.7	90.8	91.1
≥ 200	69.6	78.6	80.4	82.7	85.1	86.4	88.1	89.6	89.9	91.3	93.2	93.2	94.2	94.3	94.8	95.2
≥ 100	69.6	78.6	80.4	82.8	85.2	86.5	88.2	89.7	90.0	91.5	93.6	93.6	95.2	95.6	96.7	99.2
≥ 0	69.6	78.6	80.4	82.8	85.2	86.5	88.2	89.7	90.0	91.5	93.6	93.6	95.2	95.6	96.7	100.0

TOTAL NUMBER OF OBSERVATIONS 72

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0900-1100 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	32.2	35.2	36.1	36.1	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.7	36.7	36.7	36.7
≥ 20000	37.9	41.9	42.9	43.0	43.6	43.6	43.6	43.7	43.7	43.7	43.7	43.7	43.8	43.8	43.8	43.8
≥ 18000	38.0	42.0	43.0	43.1	43.7	43.7	43.7	43.8	43.8	43.8	43.8	43.8	43.9	43.9	43.9	43.9
≥ 16000	38.2	42.2	43.2	43.3	43.9	43.9	43.9	44.0	44.0	44.0	44.0	44.0	44.1	44.1	44.1	44.1
≥ 14000	38.3	42.3	43.3	43.5	44.0	44.0	44.0	44.1	44.1	44.1	44.1	44.1	44.3	44.3	44.3	44.3
≥ 12000	38.7	42.9	43.9	44.0	44.6	44.6	44.6	44.7	44.7	44.7	44.7	44.7	44.8	44.8	44.8	44.8
≥ 10000	40.6	45.1	46.1	46.2	46.8	46.8	46.8	46.9	46.9	46.9	46.9	46.9	47.0	47.0	47.0	47.0
≥ 9000	41.5	46.0	47.0	47.2	47.9	47.9	47.9	48.0	48.0	48.0	48.0	48.0	48.1	48.1	48.1	48.1
≥ 8000	42.5	47.0	48.0	48.2	48.9	48.9	48.9	49.0	49.0	49.0	49.0	49.0	49.1	49.1	49.1	49.1
≥ 7000	43.2	47.7	48.7	48.9	49.6	49.6	49.6	49.7	49.7	49.7	49.7	49.7	49.8	49.8	49.8	49.8
≥ 6000	43.9	48.6	49.6	49.9	50.6	50.6	50.6	50.7	50.7	50.7	50.7	50.7	50.9	50.9	50.9	50.9
≥ 5000	45.2	49.8	50.9	51.2	51.9	51.9	51.9	52.0	52.0	52.0	52.0	52.0	52.1	52.1	52.1	52.1
≥ 4500	46.1	50.7	51.8	52.1	52.8	52.8	52.8	52.9	52.9	52.9	52.9	52.9	53.0	53.0	53.0	53.0
≥ 4000	46.5	51.3	52.3	52.7	53.5	53.5	53.5	53.6	53.6	53.6	53.6	53.6	53.7	53.7	53.7	53.7
≥ 3500	47.6	52.4	53.5	53.9	54.8	54.8	54.8	54.9	54.9	54.9	54.9	54.9	55.1	55.1	55.1	55.1
≥ 3000	48.5	53.5	54.5	54.9	56.0	56.0	56.1	56.2	56.2	56.2	56.2	56.2	56.3	56.3	56.3	56.3
≥ 2500	49.9	55.3	56.5	57.0	58.0	58.0	58.1	58.2	58.2	58.4	58.4	58.4	58.5	58.5	58.5	58.5
≥ 2000	53.0	58.7	60.1	61.0	62.0	62.2	62.3	62.7	62.7	62.8	62.8	62.8	62.9	62.9	62.9	62.9
≥ 1800	54.7	60.6	62.0	63.1	64.3	64.7	64.8	65.2	65.2	65.3	65.4	65.4	65.5	65.5	65.5	65.5
≥ 1500	57.3	63.6	65.1	66.8	68.3	68.8	68.9	69.4	69.4	69.6	69.7	69.7	69.9	69.9	69.9	69.9
≥ 1200	60.1	67.3	68.9	70.8	72.2	72.8	73.0	73.6	73.6	73.8	73.9	73.9	74.1	74.1	74.1	74.1
≥ 1000	62.9	70.4	72.1	74.2	75.7	76.3	76.6	77.2	77.2	77.5	77.7	77.7	77.9	77.9	77.9	77.9
≥ 900	62.9	71.6	73.4	75.7	77.4	78.2	78.5	79.2	79.2	79.5	80.1	80.1	80.3	80.3	80.3	80.3
≥ 800	63.6	72.7	74.7	77.0	78.8	79.9	80.2	81.1	81.1	81.6	82.4	82.4	82.7	82.7	82.7	82.7
≥ 700	63.7	72.9	75.1	77.6	79.7	80.9	81.3	82.3	82.3	82.8	83.6	83.6	84.0	84.0	84.0	84.0
≥ 600	64.2	73.6	75.9	78.7	81.2	82.5	83.0	84.1	84.1	84.6	85.4	85.4	85.9	85.9	85.9	85.9
≥ 500	64.4	73.8	76.2	79.2	82.5	83.7	84.5	85.6	85.7	86.3	87.4	87.4	87.8	87.8	88.1	88.1
≥ 400	64.4	73.8	76.2	79.2	82.9	84.4	86.0	87.4	87.5	88.3	89.3	89.5	90.1	90.3	90.6	90.6
≥ 300	64.4	73.8	76.2	79.4	83.4	85.1	87.0	88.9	89.1	90.3	91.8	92.0	92.8	93.1	93.4	93.4
≥ 200	64.4	73.8	76.2	79.4	83.5	85.2	87.5	89.6	89.9	91.5	93.7	94.0	95.3	95.6	96.5	96.6
≥ 100	64.4	73.8	76.2	79.4	83.5	85.2	87.5	89.6	90.0	91.6	94.0	94.2	96.0	96.2	97.3	99.3
≥ 0	64.4	73.8	76.2	79.4	83.5	85.2	87.5	89.6	90.0	91.6	94.0	94.2	96.0	96.2	97.3	100.0

TOTAL NUMBER OF OBSERVATIONS 879

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

~~1200-1400~~ (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	38.7	40.1	40.3	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
≥ 20000	43.6	45.9	46.1	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5
≥ 18000	44.4	46.7	46.9	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3
≥ 16000	44.4	46.7	46.9	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3
≥ 14000	44.5	46.8	47.0	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4
≥ 12000	45.8	48.4	48.6	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0
≥ 10000	47.3	50.0	50.2	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6
≥ 9000	48.3	51.1	51.4	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7
≥ 8000	49.2	52.2	52.4	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7
≥ 7000	49.7	52.6	52.9	53.2	53.2	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3
≥ 6000	50.5	53.5	53.9	54.2	54.2	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3
≥ 5000	51.3	54.3	54.7	55.0	55.0	55.1	55.1	55.1	55.1	55.3	55.3	55.3	55.3	55.3	55.3	55.3
≥ 4500	52.1	55.1	55.5	55.8	55.8	55.9	55.9	55.9	55.9	56.1	56.1	56.1	56.1	56.1	56.1	56.1
≥ 4000	52.5	55.6	55.9	56.3	56.3	56.4	56.4	56.4	56.4	56.5	56.5	56.5	56.5	56.5	56.5	56.5
≥ 3500	53.9	57.1	57.4	57.8	57.8	57.9	57.9	57.9	57.9	58.0	58.0	58.0	58.0	58.0	58.0	58.0
≥ 3000	55.3	58.6	59.1	59.5	59.5	59.6	59.6	59.6	59.6	59.7	59.7	59.7	59.7	59.7	59.7	59.7
≥ 2500	57.5	61.6	62.6	63.1	63.4	63.6	63.7	63.8	63.8	63.9	63.9	63.9	63.9	63.9	63.9	63.9
≥ 2000	61.1	66.2	67.2	68.5	68.7	69.1	69.5	69.7	69.7	69.9	69.9	69.9	69.9	69.9	69.9	69.9
≥ 1800	62.4	68.2	69.2	70.7	70.9	71.3	71.8	72.0	72.0	72.1	72.1	72.1	72.1	72.1	72.1	72.1
≥ 1500	65.4	72.0	73.2	75.0	75.6	76.3	77.1	77.3	77.3	77.5	77.5	77.5	77.5	77.5	77.5	77.5
≥ 1200	67.6	75.5	76.7	78.7	79.2	80.0	80.9	81.3	81.3	81.5	81.5	81.5	81.5	81.5	81.5	81.5
≥ 1000	68.4	76.5	78.5	80.7	81.3	82.1	83.1	83.6	83.6	84.1	84.2	84.2	84.2	84.2	84.2	84.2
≥ 900	68.7	77.5	79.1	81.7	82.5	83.6	84.7	85.2	85.2	85.7	86.0	86.0	86.0	86.0	86.0	86.0
≥ 800	69.5	78.6	80.3	83.2	84.2	85.5	86.6	87.1	87.1	88.0	88.2	88.2	88.2	88.2	88.2	88.2
≥ 700	69.6	78.5	80.5	83.7	84.8	86.0	87.2	87.8	87.8	88.8	89.3	89.3	89.3	89.3	89.3	89.3
≥ 600	69.7	78.7	80.7	83.9	85.2	86.3	87.6	88.1	88.1	89.3	89.7	89.7	89.7	89.7	89.7	89.7
≥ 500	69.7	79.0	81.1	84.4	85.6	87.0	88.4	89.3	89.3	90.4	91.0	91.0	91.0	91.0	91.0	91.0
≥ 400	69.7	79.0	81.2	84.6	86.0	87.6	88.9	90.3	90.3	91.6	92.5	92.5	92.7	92.7	92.7	92.7
≥ 300	69.7	79.0	81.2	84.6	86.5	88.1	89.7	91.4	91.7	92.9	93.9	93.9	94.6	94.9	94.9	94.9
≥ 200	69.7	79.0	81.2	84.8	86.6	88.2	89.8	92.0	92.2	93.8	95.1	95.1	95.9	96.3	96.8	97.3
≥ 100	69.7	79.0	81.2	84.8	86.6	88.2	89.8	92.0	92.5	94.2	95.5	95.5	96.8	97.3	98.1	99.7
0	69.7	79.0	81.2	84.8	86.6	88.2	89.8	92.0	92.5	94.2	95.5	95.5	96.8	97.3	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 876

USAF ETAC FORM NOV 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1500-1700 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	38.5	40.1	40.5	40.5	40.5	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
≥ 20000	44.5	46.6	47.1	47.1	47.1	47.2	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.3
≥ 18000	44.9	47.0	47.4	47.4	47.4	47.5	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6
≥ 16000	44.9	47.0	47.4	47.4	47.4	47.5	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6
≥ 14000	45.5	47.5	48.0	48.0	48.0	48.1	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2	48.2
≥ 12000	46.8	48.9	49.4	49.4	49.4	49.5	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6
≥ 10000	48.3	50.7	51.3	51.3	51.3	51.4	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5
≥ 9000	49.4	51.9	52.5	52.5	52.5	52.6	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7
≥ 8000	49.9	52.5	53.0	53.0	53.0	53.2	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3
≥ 7000	51.0	53.5	54.1	54.2	54.2	54.3	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4
≥ 6000	51.9	54.4	55.0	55.1	55.1	55.2	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
≥ 5000	52.5	55.2	55.9	56.0	56.0	56.1	56.3	56.3	56.3	56.4	56.4	56.4	56.4	56.4	56.4	56.4
≥ 4500	53.2	55.9	56.6	56.7	56.7	56.8	56.9	56.9	56.9	57.2	57.2	57.2	57.2	57.2	57.2	57.2
≥ 4000	54.3	57.3	58.0	58.1	58.1	58.2	58.3	58.3	58.3	58.6	58.6	58.6	58.6	58.6	58.6	58.6
≥ 3500	56.5	59.6	60.3	60.4	60.5	60.6	60.7	60.7	60.7	61.0	61.0	61.0	61.0	61.0	61.0	61.0
≥ 3000	57.6	61.1	61.8	61.9	62.0	62.1	62.3	62.3	62.3	62.6	62.6	62.6	62.6	62.6	62.6	62.6
≥ 2500	59.8	64.4	65.3	65.8	65.9	66.1	66.4	66.4	66.4	66.6	66.6	66.6	66.6	66.6	66.6	66.6
≥ 2000	62.7	68.4	69.6	70.6	70.8	71.2	71.5	71.8	71.8	72.0	72.0	72.0	72.0	72.0	72.1	72.1
≥ 1800	65.2	71.6	72.9	74.4	74.6	75.3	75.7	75.9	75.9	76.1	76.1	76.1	76.1	76.1	76.2	76.2
≥ 1500	67.4	74.6	76.6	78.2	78.5	79.3	79.9	80.4	80.4	80.7	80.7	80.7	80.7	80.7	80.8	80.8
≥ 1200	69.2	77.2	79.4	81.2	81.5	82.5	83.1	83.7	83.7	84.2	84.2	84.2	84.2	84.2	84.3	84.3
≥ 1000	69.9	78.4	80.8	83.0	83.4	84.4	85.2	85.8	85.8	86.2	86.5	86.5	86.5	86.5	86.6	86.6
≥ 900	70.0	79.1	81.5	83.8	84.3	85.3	86.2	86.8	86.8	87.4	87.6	87.6	87.6	87.6	87.7	87.7
≥ 800	70.5	80.3	82.7	85.1	85.5	86.6	87.5	88.3	88.3	89.2	89.7	89.7	89.7	89.7	89.8	89.8
≥ 700	70.6	80.7	83.1	85.5	86.0	87.1	88.1	89.0	89.0	90.0	90.5	90.5	90.5	90.5	90.6	90.6
≥ 600	70.7	80.8	83.2	85.8	86.3	87.6	88.5	89.6	89.6	90.6	91.0	91.0	91.0	91.0	91.2	91.2
≥ 500	71.0	81.3	83.7	86.5	87.3	88.7	89.8	90.9	90.9	92.1	92.7	92.7	92.7	92.7	92.8	92.8
≥ 400	71.0	81.3	83.7	86.5	87.3	88.7	89.8	90.9	90.9	92.1	93.0	93.0	93.0	93.0	93.1	93.1
≥ 300	71.1	81.4	83.8	86.6	87.5	89.2	90.4	91.8	92.0	93.3	94.5	94.5	94.8	94.8	94.9	94.9
≥ 200	71.1	81.4	83.8	86.6	87.5	89.2	90.4	92.4	92.7	94.5	95.8	95.8	96.7	96.7	96.9	97.1
≥ 100	71.1	81.4	83.8	86.6	87.5	89.2	90.4	92.7	93.0	94.8	96.2	96.2	97.5	97.5	97.8	99.2
≥ 0	71.1	81.4	83.8	86.6	87.5	89.2	90.4	92.7	93.0	94.8	96.2	96.2	97.5	97.5	97.9	100.0

TOTAL NUMBER OF OBSERVATIONS 871

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 DULUTH IAP MN 73-82 NOV
STATION STATION NAME YEARS MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1800-2000
HOUR (LST)

CEILING FEET	VISIBILITY STATUTE MILES															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1½	≥1	≥¾	≥½	≥¼	≥⅛	≥5/16	≥0
NO CEILING	39.8	41.7	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8
≥ 20000	42.5	44.7	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
≥ 18000	42.7	44.9	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
≥ 16000	42.8	45.0	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1	45.1
≥ 14000	43.9	46.3	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4
≥ 12000	44.5	47.0	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2	47.2
≥ 10000	47.0	49.5	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7	49.7
≥ 9000	48.0	50.5	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6
≥ 8000	48.5	51.0	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1	51.1
≥ 7000	49.8	52.6	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7
≥ 6000	50.5	53.5	53.6	53.6	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8
≥ 5000	51.3	54.5	54.7	54.7	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8
≥ 4500	51.6	54.9	55.0	55.0	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1
≥ 4000	53.1	56.5	56.6	56.6	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7
≥ 3500	54.9	58.3	58.4	58.4	58.5	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6	58.6
≥ 3000	55.5	59.3	59.4	59.5	59.7	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
≥ 2500	58.9	63.4	63.5	63.8	63.9	64.1	64.2	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
≥ 2000	63.2	69.0	69.1	69.4	69.5	69.8	69.9	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
≥ 1800	64.8	71.6	71.8	72.4	72.7	73.0	73.1	73.3	73.3	73.3	73.3	73.3	73.3	73.3	73.3	73.3
≥ 1500	68.1	76.5	77.2	78.0	78.6	79.0	79.1	79.4	79.5	79.7	79.7	79.7	79.7	79.7	79.7	79.7
≥ 1200	70.8	80.5	81.1	82.2	82.8	83.3	83.4	83.8	83.9	84.0	84.0	84.0	84.0	84.0	84.0	84.0
≥ 1000	71.7	81.5	82.6	83.9	84.7	85.1	85.5	85.8	85.9	86.3	86.5	86.5	86.5	86.5	86.5	86.5
≥ 900	71.8	82.5	83.2	84.4	85.3	85.9	86.3	86.7	86.8	87.2	87.3	87.3	87.3	87.3	87.3	87.3
≥ 800	72.2	82.8	83.6	84.9	85.9	86.6	86.9	87.4	87.5	87.8	88.0	88.0	88.1	88.1	88.1	88.1
≥ 700	72.4	83.4	84.3	85.6	86.6	87.4	87.8	88.4	88.5	88.9	89.1	89.1	89.2	89.2	89.2	89.2
≥ 600	72.5	83.5	84.5	85.9	86.9	88.0	88.4	89.3	89.5	89.8	90.0	90.0	90.1	90.1	90.1	90.1
≥ 500	72.7	84.0	85.3	86.9	88.0	89.1	89.9	90.8	90.9	91.3	91.5	91.5	91.6	91.6	91.6	91.6
≥ 400	72.8	84.3	85.6	87.2	88.2	89.5	90.6	91.7	91.8	92.3	92.4	92.4	92.7	92.7	92.7	92.7
≥ 300	73.2	84.7	86.3	88.1	89.1	90.5	92.0	93.2	93.3	93.8	94.1	94.1	94.2	94.2	94.2	94.2
≥ 200	73.2	84.7	86.3	88.2	89.3	90.7	92.4	93.7	93.8	93.5	96.5	96.5	96.7	97.0	97.2	97.5
≥ 100	73.2	84.7	86.3	88.2	89.3	90.7	92.5	95.0	95.1	95.8	97.0	97.0	97.4	97.8	98.4	99.4
≥ 0	73.2	84.7	86.3	88.2	89.3	90.7	92.5	95.0	95.1	95.8	97.0	97.0	97.4	98.0	98.5	100.0

TOTAL NUMBER OF OBSERVATIONS 880

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

2100-2300 (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	40.6	41.5	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9
≥ 20000	43.6	44.9	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3
≥ 18000	44.1	45.3	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8
≥ 16000	44.2	45.5	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9
≥ 14000	45.2	46.6	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1
≥ 12000	45.9	47.5	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
≥ 10000	48.0	49.7	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2
≥ 9000	49.5	51.2	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7
≥ 8000	49.9	51.7	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1
≥ 7000	50.7	52.7	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
≥ 6000	52.0	54.1	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5
≥ 5000	52.8	55.0	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6
≥ 4500	52.8	55.1	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7
≥ 4000	54.1	56.5	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1
≥ 3500	55.8	58.2	58.8	58.8	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9
≥ 3000	56.4	58.9	59.5	59.6	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7
≥ 2500	59.7	63.1	63.8	64.3	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4
≥ 2000	63.4	67.2	68.2	68.8	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9
≥ 1800	65.1	69.6	71.0	71.7	71.8	71.8	71.8	71.9	71.9	71.9	71.9	71.9	71.9	71.9	71.9	71.9
≥ 1500	67.4	72.8	74.3	75.1	75.4	75.7	75.8	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1
≥ 1200	70.0	76.2	78.0	78.8	79.2	79.6	79.7	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
≥ 1000	71.0	77.8	79.6	80.4	80.8	81.4	81.5	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8
≥ 900	71.3	78.4	80.4	81.2	81.9	82.5	82.6	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0
≥ 800	72.3	79.4	81.5	82.3	83.1	83.8	83.9	84.2	84.2	84.2	84.2	84.2	84.2	84.2	84.2	84.2
≥ 700	72.5	80.1	82.5	83.4	84.2	85.0	85.2	85.6	85.6	85.6	85.6	85.6	85.6	85.6	85.6	85.6
≥ 600	72.8	81.2	83.7	84.6	85.5	86.3	86.4	86.9	86.9	86.9	87.1	87.1	87.1	87.1	87.1	87.1
≥ 500	73.1	82.2	84.7	85.7	87.0	87.9	88.1	88.6	88.6	88.8	88.8	88.8	88.8	88.8	88.8	88.8
≥ 400	73.3	82.7	85.5	86.9	88.3	89.4	89.6	90.4	90.4	90.8	90.8	90.8	91.0	91.0	91.0	91.0
≥ 300	73.5	83.0	85.7	87.5	89.0	90.1	90.9	92.1	92.1	92.5	92.8	92.8	93.0	93.0	93.0	93.0
≥ 200	73.5	83.0	85.7	87.6	89.1	90.3	92.1	93.7	93.7	94.8	95.4	95.4	95.9	95.9	96.0	96.5
≥ 100	73.5	83.1	85.8	87.7	89.2	90.4	92.2	93.8	93.8	95.2	96.0	96.0	96.4	96.8	97.7	99.1
≥ 0	73.5	83.1	85.8	87.7	89.2	90.4	92.2	93.8	93.8	95.2	96.3	96.3	96.8	97.1	98.2	100.0

TOTAL NUMBER OF OBSERVATIONS 869

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	38.1	39.6	40.0	40.1	40.2	40.2	40.2	40.2	40.2	40.3	40.3	40.3	40.3	40.3	40.3	40.3
≥ 20000	41.9	43.9	44.2	44.4	44.5	44.5	44.5	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.7
≥ 18000	42.2	44.1	44.5	44.7	44.8	44.8	44.8	44.8	44.8	44.9	44.9	44.9	44.9	44.9	44.9	44.9
≥ 16000	42.2	44.2	44.6	44.7	44.8	44.8	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	45.0	45.0
≥ 14000	42.7	44.7	45.1	45.3	45.4	45.4	45.4	45.4	45.4	45.4	45.5	45.5	45.5	45.5	45.5	45.5
≥ 12000	43.5	45.5	46.3	46.4	46.5	46.5	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.7	46.7	46.7
≥ 10000	45.8	48.1	48.5	48.6	48.8	48.8	48.8	48.8	48.8	48.9	48.9	48.9	48.9	48.9	48.9	48.9
≥ 9000	47.0	49.3	49.7	49.9	50.0	50.0	50.0	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.2	50.2
≥ 8000	47.6	49.9	50.4	50.6	50.7	50.7	50.7	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.9
≥ 7000	48.6	51.0	51.5	51.7	51.8	51.9	51.9	51.9	51.9	51.9	52.0	52.0	52.0	52.0	52.0	52.0
≥ 6000	49.5	52.0	52.5	52.7	52.9	52.9	52.9	52.9	52.9	53.0	53.0	53.0	53.0	53.0	53.0	53.0
≥ 5000	50.2	52.9	53.4	53.6	53.8	53.8	53.8	53.9	53.9	53.9	53.9	53.9	54.0	54.0	54.0	54.0
≥ 4500	50.7	53.4	53.9	54.1	54.3	54.4	54.4	54.4	54.4	54.5	54.5	54.5	54.5	54.5	54.5	54.6
≥ 4000	51.5	54.7	55.2	55.4	55.6	55.6	55.7	55.7	55.7	55.8	55.8	55.8	55.8	55.8	55.8	55.9
≥ 3500	53.4	56.4	57.0	57.2	57.4	57.5	57.5	57.6	57.6	57.7	57.7	57.7	57.7	57.7	57.7	57.7
≥ 3000	54.5	57.6	58.2	58.5	58.7	58.8	58.9	58.9	58.9	59.0	59.0	59.0	59.1	59.1	59.1	59.1
≥ 2500	57.1	60.9	61.6	62.0	62.3	62.4	62.5	62.6	62.6	62.7	62.7	62.7	62.7	62.7	62.8	62.8
≥ 2000	60.5	65.0	65.9	66.4	66.9	67.1	67.3	67.4	67.4	67.5	67.5	67.5	67.6	67.6	67.6	67.6
≥ 1800	62.3	67.3	68.3	69.2	69.6	69.9	70.0	70.3	70.3	70.4	70.4	70.4	70.4	70.4	70.4	70.5
≥ 1500	64.9	70.6	71.9	73.0	73.6	74.0	74.3	74.6	74.6	74.8	74.8	74.8	74.8	74.8	74.8	74.9
≥ 1200	67.2	73.9	75.3	76.5	77.1	77.7	78.0	78.4	78.4	78.6	78.6	78.6	78.6	78.6	78.7	78.7
≥ 1000	68.7	76.0	77.5	78.8	79.6	80.1	80.6	81.1	81.1	81.5	81.6	81.6	81.6	81.6	81.7	81.7
≥ 900	69.1	76.8	78.4	79.9	80.7	81.4	81.9	82.4	82.5	82.8	83.0	83.0	83.0	83.0	83.1	83.1
≥ 800	69.6	77.8	79.5	81.0	82.0	82.7	83.3	83.9	83.9	84.4	84.6	84.6	84.7	84.7	84.8	84.8
≥ 700	70.3	78.6	80.5	82.2	83.2	84.0	84.6	85.3	85.3	85.8	86.1	86.1	86.2	86.2	86.2	86.3
≥ 600	70.8	79.5	81.3	83.1	84.3	85.1	85.8	86.6	86.6	87.2	87.5	87.5	87.6	87.6	87.6	87.6
≥ 500	71.0	80.0	82.0	84.1	85.8	86.8	87.4	88.2	88.3	89.0	89.3	89.3	89.4	89.4	89.5	89.5
≥ 400	71.1	80.2	82.3	84.5	86.2	87.4	88.0	89.1	89.2	89.9	90.2	90.2	90.3	90.3	90.4	90.4
≥ 300	71.2	80.3	82.5	84.9	86.8	88.0	89.4	90.9	91.0	91.9	92.6	92.7	93.1	93.1	93.2	93.3
≥ 200	71.2	80.4	82.5	84.9	86.9	88.1	90.0	92.0	92.2	93.6	94.8	94.8	95.6	95.8	96.1	96.5
≥ 100	71.2	80.4	82.5	85.0	87.0	88.2	90.0	92.1	92.3	93.8	95.3	95.3	96.5	96.9	97.7	99.3
0	71.2	80.5	82.5	85.0	87.0	88.2	90.0	92.1	92.3	93.8	95.3	95.3	96.6	97.0	97.8	100.0

TOTAL NUMBER OF OBSERVATIONS 4884

USAF ETAC FORM AM 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

0000-0200 (HOURS L.S.T.)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	<10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	37.6	38.7	39.2	39.5	39.5	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.7	39.7	39.7	39.8
≥ 20000	39.7	40.8	41.3	41.5	41.5	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.8	41.8	41.8	41.9
≥ 18000	39.7	40.8	41.3	41.5	41.5	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.8	41.8	41.8	41.9
≥ 16000	39.7	40.8	41.3	41.5	41.5	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.8	41.8	41.8	41.9
≥ 14000	40.0	41.1	41.6	41.9	41.9	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.1	42.1	42.1	42.2
≥ 12000	40.9	42.0	42.5	42.7	42.7	42.9	42.9	42.9	42.9	42.9	42.9	42.9	43.0	43.0	43.0	43.1
≥ 10000	42.9	44.3	44.8	45.1	45.1	45.2	45.4	45.4	45.4	45.4	45.4	45.4	45.5	45.5	45.5	45.6
≥ 9000	44.9	46.6	47.1	47.5	47.5	47.6	47.8	47.8	47.8	47.8	47.8	47.8	47.9	47.9	47.9	48.0
≥ 8000	46.3	48.5	49.0	49.3	49.3	49.5	49.8	49.9	49.9	49.9	49.9	49.9	50.0	50.0	50.0	50.1
≥ 7000	48.1	50.5	51.1	51.5	51.5	51.8	52.2	52.3	52.3	52.3	52.3	52.3	52.4	52.4	52.4	52.5
≥ 6000	49.0	51.5	52.1	52.5	52.5	52.7	53.2	53.3	53.3	53.3	53.3	53.3	53.4	53.4	53.4	53.5
≥ 5000	50.2	52.9	53.4	54.1	54.1	54.3	54.7	54.8	54.8	54.8	54.8	54.8	54.9	54.9	54.9	55.1
≥ 4500	50.4	53.1	53.6	54.3	54.4	54.6	55.1	55.2	55.2	55.2	55.2	55.2	55.3	55.3	55.3	55.4
≥ 4000	51.4	54.3	55.2	55.8	55.9	56.2	56.6	56.7	56.7	56.8	56.8	56.8	56.9	56.9	56.9	57.0
≥ 3500	51.6	54.5	55.4	56.2	56.3	56.5	57.0	57.1	57.1	57.3	57.3	57.3	57.4	57.4	57.4	57.5
≥ 3000	52.5	55.6	56.7	57.5	57.7	57.9	58.5	58.6	58.6	58.7	58.7	58.7	58.8	58.8	58.8	58.9
≥ 2500	55.3	58.9	60.0	60.9	61.1	61.3	61.9	62.0	62.0	62.1	62.1	62.1	62.2	62.2	62.2	62.3
≥ 2000	57.1	61.9	63.1	64.4	64.7	64.9	65.6	65.7	65.7	65.8	65.8	65.8	65.9	65.9	65.9	66.0
≥ 1800	58.0	62.9	64.2	65.5	65.8	66.0	66.7	66.8	66.8	66.9	66.9	66.9	67.0	67.0	67.0	67.1
≥ 1500	60.8	66.3	67.6	68.9	69.2	69.5	70.1	70.2	70.2	70.3	70.3	70.3	70.4	70.4	70.4	70.5
≥ 1200	62.9	68.8	70.2	71.6	72.3	72.5	73.4	73.5	73.5	73.6	73.6	73.6	73.7	73.7	73.7	73.8
≥ 1000	65.7	72.1	73.5	75.1	75.8	76.2	77.0	77.1	77.1	77.4	77.4	77.4	77.5	77.5	77.5	77.6
≥ 900	66.4	73.4	75.1	76.6	77.6	78.2	79.3	79.7	79.7	80.0	80.0	80.0	80.1	80.1	80.1	80.2
≥ 800	67.1	74.2	75.8	77.4	78.7	79.3	80.9	80.9	80.9	81.9	81.9	81.9	81.5	81.5	81.5	81.6
≥ 700	67.9	75.2	77.1	78.8	80.2	80.9	82.3	83.0	83.0	83.7	83.7	83.7	83.8	83.8	83.8	84.0
≥ 600	68.7	76.4	78.4	80.0	81.5	82.3	83.8	84.6	84.6	85.8	85.8	85.8	85.9	85.9	85.9	86.0
≥ 500	69.0	77.1	79.1	81.2	83.1	84.1	85.8	86.8	86.8	88.0	88.1	88.1	88.2	88.2	88.2	88.4
≥ 400	69.1	77.6	79.9	82.2	84.5	85.6	87.5	89.2	89.2	90.8	91.2	91.2	91.3	91.3	91.3	91.4
≥ 300	69.2	77.9	80.7	83.2	85.6	86.9	89.5	91.5	91.5	93.4	94.0	94.0	94.3	94.3	94.3	94.4
≥ 200	69.2	77.9	80.7	83.2	85.6	87.1	90.1	92.3	92.7	95.7	96.8	96.8	97.4	97.5	97.7	97.8
≥ 100	69.2	77.9	80.7	83.2	85.6	87.1	90.1	92.4	92.9	95.8	96.9	96.9	97.9	98.0	98.6	99.3
≥ 0	69.2	77.9	80.7	83.2	85.6	87.1	90.1	92.4	92.9	95.8	96.9	96.9	97.9	98.0	98.7	100.0

TOTAL NUMBER OF OBSERVATIONS 910

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0300-0500 (HOURS L.S.T.)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	36.2	36.7	37.1	37.2	37.2	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.4	37.4	37.4	37.6
≥ 20000	37.6	38.4	38.7	38.8	38.8	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.1	39.1	39.1	39.3
≥ 18000	37.6	38.4	38.7	38.8	38.8	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.1	39.1	39.1	39.3
≥ 16000	37.6	38.4	38.7	38.8	38.8	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.1	39.1	39.1	39.3
≥ 14000	37.8	38.6	39.0	39.1	39.1	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.3	39.3	39.3	39.5
≥ 12000	39.1	39.8	40.2	40.3	40.3	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.5	40.5	40.5	40.7
≥ 10000	41.4	42.2	42.5	42.6	42.6	42.7	42.9	42.9	42.9	42.9	42.9	42.9	43.0	43.0	43.0	43.2
≥ 9000	42.3	43.2	43.6	43.8	43.9	44.0	44.3	44.3	44.3	44.3	44.3	44.3	44.4	44.4	44.4	44.6
≥ 8000	44.4	45.3	45.8	46.0	46.1	46.2	46.5	46.5	46.5	46.5	46.5	46.5	46.7	46.7	46.7	46.9
≥ 7000	47.0	48.0	48.4	48.7	48.8	48.9	49.2	49.2	49.2	49.2	49.2	49.2	49.3	49.3	49.3	49.6
≥ 6000	48.5	50.1	50.6	50.9	51.0	51.1	51.5	51.5	51.5	51.5	51.5	51.5	51.6	51.6	51.6	51.8
≥ 5000	49.3	50.9	51.3	51.7	51.8	51.9	52.2	52.2	52.2	52.2	52.2	52.2	52.3	52.3	52.3	52.6
≥ 4500	49.7	51.5	51.9	52.2	52.3	52.5	52.8	52.8	52.8	52.8	52.8	52.8	52.9	52.9	52.9	53.1
≥ 4000	50.7	53.2	53.7	54.0	54.1	54.2	54.6	54.6	54.6	54.6	54.6	54.6	54.7	54.7	54.7	54.9
≥ 3500	51.5	54.2	54.8	55.1	55.2	55.4	55.8	55.8	55.8	55.8	55.8	55.8	55.9	55.9	55.9	56.1
≥ 3000	52.1	55.0	55.8	56.1	56.3	56.4	56.8	56.8	56.8	56.8	56.8	56.8	56.9	56.9	56.9	57.1
≥ 2500	54.2	57.3	58.1	58.7	58.8	59.0	59.5	59.6	59.6	59.6	59.6	59.6	59.7	59.7	59.7	59.9
≥ 2000	55.9	60.0	61.0	61.6	61.7	62.1	62.6	62.7	62.7	62.7	62.7	62.7	62.8	62.8	62.8	63.1
≥ 1800	56.8	61.2	62.2	62.7	63.1	63.6	64.3	64.4	64.4	64.4	64.4	64.4	64.5	64.5	64.5	64.7
≥ 1500	58.7	63.5	64.6	65.2	65.7	66.5	67.2	67.3	67.3	67.3	67.4	67.4	67.5	67.5	67.5	67.7
≥ 1200	60.7	66.1	67.4	68.5	69.2	70.0	70.6	70.8	70.8	70.8	70.9	70.9	71.0	71.0	71.0	71.2
≥ 1000	62.3	68.5	70.0	71.2	72.0	73.0	73.8	73.9	73.9	74.0	74.1	74.1	74.2	74.2	74.2	74.4
≥ 900	63.1	70.1	71.7	73.0	74.0	75.1	75.9	76.0	76.0	76.1	76.2	76.2	76.3	76.3	76.3	76.6
≥ 800	64.1	71.5	73.3	74.8	75.8	76.9	77.9	78.0	78.0	78.1	78.2	78.2	78.3	78.3	78.3	78.6
≥ 700	65.0	73.0	75.0	76.6	77.6	78.7	79.9	80.5	80.5	80.6	80.9	80.9	81.0	81.0	81.0	81.3
≥ 600	65.8	74.6	77.0	78.8	79.8	81.3	82.6	83.5	83.5	83.6	83.7	83.7	83.8	83.8	83.8	84.0
≥ 500	66.6	75.7	78.1	80.1	81.7	83.6	84.7	85.9	85.9	86.8	87.2	87.2	87.3	87.3	87.3	87.5
≥ 400	66.6	76.1	78.8	81.0	82.9	84.6	86.2	87.8	87.8	89.2	89.7	89.7	90.0	90.0	90.0	90.2
≥ 300	66.6	76.5	79.1	81.4	83.7	85.7	88.3	90.5	90.6	92.6	93.2	93.2	93.6	93.6	93.6	93.9
≥ 200	66.6	76.6	79.5	81.6	83.9	86.2	89.2	92.2	92.3	94.9	96.4	96.4	97.1	97.1	97.1	97.3
≥ 100	66.6	76.7	79.5	81.7	84.0	86.3	89.3	92.4	92.5	95.2	97.0	97.0	98.1	98.3	98.8	99.7
0	66.6	76.7	79.5	81.7	84.0	86.3	89.3	92.4	92.5	95.2	97.0	97.0	98.1	98.3	98.8	100.0

TOTAL NUMBER OF OBSERVATIONS 806

USAF ETAC FORM 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0600-0800 (HOUR LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	32.9	34.5	34.6	34.9	35.0	35.1	35.1	35.1	35.1	35.2	35.5	35.5	35.5	35.5	35.6	35.8
≥ 20000	34.2	36.2	36.3	36.7	36.8	36.9	36.9	36.9	36.9	37.0	37.2	37.2	37.2	37.2	37.3	37.5
≥ 18000	34.4	36.3	36.4	36.8	36.9	37.0	37.0	37.0	37.0	37.1	37.3	37.3	37.3	37.3	37.4	37.7
≥ 16000	34.4	36.3	36.4	36.8	36.9	37.0	37.0	37.0	37.0	37.1	37.3	37.3	37.3	37.3	37.4	37.7
≥ 14000	34.8	36.8	37.0	37.3	37.4	37.5	37.5	37.5	37.5	37.7	37.9	37.9	37.9	37.9	38.0	38.2
≥ 12000	36.6	38.5	38.7	39.3	39.4	39.5	39.5	39.6	39.6	39.7	40.0	40.0	40.0	40.0	40.1	40.3
≥ 10000	39.2	41.6	41.8	42.4	42.5	42.6	42.6	42.7	42.7	42.8	43.0	43.0	43.0	43.0	43.1	43.4
≥ 9000	40.6	43.0	43.6	44.1	44.2	44.3	44.6	44.7	44.7	44.8	45.0	45.0	45.0	45.0	45.1	45.3
≥ 8000	41.6	44.3	44.6	45.1	45.3	45.4	45.7	45.8	45.8	45.9	46.1	46.1	46.1	46.1	46.2	46.4
≥ 7000	44.5	47.8	47.6	48.2	48.4	48.5	48.7	48.8	48.8	49.0	49.2	49.2	49.2	49.2	49.3	49.5
≥ 6000	45.3	48.6	48.8	49.5	49.7	49.8	50.2	50.3	50.3	50.4	50.6	50.6	50.6	50.6	50.7	50.9
≥ 5000	46.4	49.8	50.1	50.7	51.0	51.2	51.5	51.6	51.6	51.7	51.9	51.9	51.9	51.9	52.0	52.3
≥ 4500	46.9	50.4	50.6	51.3	51.7	51.8	52.3	52.4	52.4	52.5	52.7	52.7	52.7	52.7	52.8	53.0
≥ 4000	47.5	51.4	51.8	52.5	52.9	53.0	53.5	53.6	53.6	53.7	53.9	53.9	53.9	53.9	54.0	54.2
≥ 3500	49.0	53.0	53.5	54.1	54.6	54.7	55.2	55.3	55.3	55.4	55.7	55.7	55.7	55.7	55.8	56.0
≥ 3000	49.9	54.2	54.7	55.3	55.9	56.0	56.5	56.6	56.6	56.8	57.0	57.0	57.0	57.0	57.1	57.3
≥ 2500	50.6	55.2	55.9	56.6	57.2	57.4	58.0	58.1	58.1	58.3	58.5	58.5	58.5	58.5	58.6	58.8
≥ 2000	52.0	57.2	58.1	59.1	59.8	60.0	60.7	60.8	60.8	61.0	61.3	61.3	61.3	61.3	61.4	61.6
≥ 1800	52.9	58.1	59.1	60.0	60.8	61.0	61.8	62.0	62.0	62.2	62.5	62.5	62.5	62.5	62.6	62.8
≥ 1500	54.7	60.0	61.0	62.2	63.2	63.4	64.5	64.9	65.0	65.5	65.9	65.9	65.9	65.9	66.0	66.2
≥ 1200	56.4	62.2	63.4	64.8	65.8	66.1	67.4	67.8	67.9	68.5	68.8	68.8	68.8	68.8	68.9	69.2
≥ 1000	58.2	64.8	66.0	67.6	68.8	69.2	70.5	71.0	71.1	71.7	72.0	72.0	72.0	72.0	72.1	72.3
≥ 900	58.7	65.6	66.8	68.5	69.8	70.3	71.8	72.7	72.8	73.3	73.7	73.7	73.7	73.7	73.8	74.0
≥ 800	60.0	67.1	68.4	70.0	71.5	71.9	73.7	74.6	74.8	75.4	75.9	75.9	76.0	76.0	76.1	76.3
≥ 700	60.6	68.1	69.7	71.4	72.8	73.2	75.0	76.4	76.6	77.5	77.9	77.9	78.2	78.2	78.3	78.5
≥ 600	61.4	69.3	71.0	73.2	74.9	75.3	77.1	78.6	78.8	79.9	80.7	80.7	81.0	81.0	81.1	81.3
≥ 500	62.3	71.4	73.1	75.9	77.8	78.4	80.4	82.1	82.3	84.2	85.0	85.0	85.3	85.3	85.4	85.6
≥ 400	62.6	72.1	73.9	76.9	79.1	79.8	82.1	84.5	84.7	86.8	87.8	87.8	88.4	88.4	88.5	88.7
≥ 300	62.8	72.4	74.4	77.6	79.9	80.9	84.1	87.0	87.3	89.6	90.8	90.8	91.3	91.3	91.5	91.8
≥ 200	62.9	72.9	75.1	78.3	80.6	81.6	85.2	88.6	88.8	92.0	94.2	94.2	95.4	95.5	96.6	96.8
≥ 100	62.9	72.9	75.1	78.3	80.6	81.6	85.2	88.6	88.9	92.3	94.8	94.8	96.5	96.8	98.4	99.7
≥ 0	62.9	72.9	75.1	78.3	80.6	81.6	85.2	88.6	88.9	92.3	94.8	94.8	96.5	96.8	98.4	100.0

TOTAL NUMBER OF OBSERVATIONS 911

USAF ETAC FORM NO. 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

0900-1100 (HOUR LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	29.6	32.9	33.8	34.7	34.8	34.8	34.9	34.9	34.9	35.0	35.0	35.0	35.1	35.1	35.1	35.2
≥ 20000	39.3	38.1	39.1	40.0	40.1	40.1	40.2	40.4	40.5	40.6	40.6	40.6	40.7	40.7	40.7	40.8
≥ 18000	39.4	38.3	39.4	40.3	40.4	40.4	40.5	40.7	40.8	40.9	40.9	40.9	41.1	41.1	41.1	41.2
≥ 16000	39.4	38.3	39.4	40.3	40.5	40.4	40.5	40.7	40.8	40.9	40.9	40.9	41.1	41.1	41.1	41.2
≥ 14000	34.5	38.4	39.5	40.4	40.5	40.5	40.6	40.8	40.9	41.1	41.1	41.1	41.2	41.2	41.2	41.3
≥ 12000	36.5	40.7	41.8	42.7	42.8	42.8	42.9	43.2	43.3	43.4	43.4	43.4	43.5	43.5	43.5	43.6
≥ 10000	37.9	43.2	44.3	45.1	45.3	45.3	45.4	45.6	45.7	45.8	45.8	45.8	45.9	45.9	45.9	46.0
≥ 9000	38.4	44.0	45.1	46.0	46.1	46.1	46.2	46.5	46.6	46.7	46.7	46.7	46.8	46.8	46.8	46.9
≥ 8000	39.4	45.3	46.4	47.2	47.4	47.4	47.5	47.7	47.8	47.9	47.9	47.9	48.0	48.0	48.0	48.1
≥ 7000	40.3	46.8	48.1	49.3	49.6	49.7	49.8	50.0	50.1	50.2	50.2	50.2	50.3	50.3	50.3	50.4
≥ 6000	40.7	47.4	48.8	50.2	50.6	50.8	51.0	51.2	51.3	51.4	51.4	51.4	51.5	51.5	51.5	51.7
≥ 5000	40.9	47.7	49.2	50.7	51.0	51.2	51.4	51.5	52.0	52.1	52.1	52.1	52.2	52.2	52.2	52.3
≥ 4500	41.5	48.6	50.2	51.8	52.1	52.3	52.6	53.1	53.2	53.3	53.3	53.3	53.4	53.4	53.4	53.5
≥ 4000	42.7	50.2	52.0	53.5	54.0	54.3	54.7	55.2	55.3	55.4	55.4	55.4	55.5	55.5	55.5	55.6
≥ 3500	43.3	51.1	53.0	54.5	55.1	55.4	56.0	56.4	56.5	56.7	56.7	56.7	56.8	56.8	56.8	57.0
≥ 3000	43.6	51.8	53.6	55.2	55.7	56.5	57.2	57.6	57.7	57.9	57.9	57.9	58.1	58.1	58.1	58.2
≥ 2500	44.2	53.0	54.9	56.4	57.1	57.9	58.8	59.4	59.5	59.8	59.8	59.8	59.9	59.9	59.9	60.0
≥ 2000	48.9	58.5	56.5	58.3	59.1	59.8	61.1	61.7	61.8	62.4	62.4	62.4	62.5	62.5	62.5	62.6
≥ 1800	45.7	55.7	57.7	59.5	60.4	61.4	62.8	63.4	63.5	64.0	64.0	64.0	64.1	64.1	64.1	64.2
≥ 1500	47.0	57.3	59.5	61.3	62.4	63.8	65.4	66.2	66.3	67.0	67.0	67.0	67.1	67.1	67.1	67.2
≥ 1200	48.5	58.9	61.4	63.4	64.8	66.2	68.1	68.8	68.9	69.5	69.5	69.5	69.9	69.9	69.9	70.0
≥ 1000	49.3	60.7	63.2	65.3	67.1	68.5	70.8	71.5	71.6	72.6	72.6	72.6	73.1	73.1	73.1	73.2
≥ 900	50.1	61.8	64.5	66.9	68.5	70.1	72.1	73.4	73.6	74.8	74.8	74.8	75.3	75.3	75.3	75.4
≥ 800	50.2	62.7	65.8	68.4	70.5	72.1	74.3	75.6	75.8	77.2	77.3	77.3	78.0	78.0	78.0	78.1
≥ 700	51.1	64.1	67.3	70.3	72.6	74.3	76.5	78.1	78.4	80.0	80.4	80.4	81.2	81.2	81.2	81.3
≥ 600	51.3	64.6	68.3	71.8	74.3	75.7	78.0	79.8	80.0	82.3	82.9	82.9	84.2	84.2	84.2	84.3
≥ 500	51.4	65.2	69.3	72.6	75.6	77.3	80.0	82.1	82.3	84.8	85.3	85.3	86.8	86.8	86.8	86.9
≥ 400	51.4	65.3	69.5	73.3	76.7	79.1	82.5	84.9	85.2	87.6	89.1	89.1	90.5	90.5	90.5	90.6
≥ 300	51.4	65.3	69.5	73.4	77.0	79.8	84.0	86.8	87.1	90.0	91.5	91.6	93.3	93.4	93.4	93.5
≥ 200	51.4	65.5	69.6	73.5	77.2	79.9	84.1	87.5	87.9	91.2	92.9	93.0	94.9	95.3	95.9	96.5
≥ 100	51.4	65.5	69.6	73.5	77.2	79.9	84.1	87.5	87.9	91.2	93.0	93.2	95.3	96.0	97.7	99.7
≥ 0	51.4	65.5	69.6	73.5	77.2	79.9	84.1	87.5	87.9	91.2	93.0	93.2	95.3	96.0	97.7	100.0

TOTAL NUMBER OF OBSERVATIONS 904

USAF ETAC FORM AM 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1200-1800 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	35.1	37.7	37.9	37.9	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0
≥ 20000	39.9	43.2	43.5	43.5	43.8	43.8	43.8	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
≥ 18000	39.9	43.2	43.5	43.5	43.8	43.8	43.8	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
≥ 16000	39.9	43.2	43.5	43.5	43.8	43.8	43.8	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
≥ 14000	39.9	43.2	43.5	43.5	43.8	43.8	43.8	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
≥ 12000	41.1	45.1	45.4	45.4	45.7	45.7	45.7	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8
≥ 10000	43.4	47.8	48.1	48.1	48.6	48.7	48.7	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8
≥ 9000	45.3	49.9	50.2	50.2	50.7	50.8	50.8	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9
≥ 8000	46.0	50.8	51.1	51.1	51.5	51.6	51.6	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8	51.8
≥ 7000	46.5	51.8	52.1	52.2	52.6	52.7	52.9	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1
≥ 6000	47.1	52.6	53.1	53.3	53.7	53.8	54.0	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.2
≥ 5000	47.7	54.2	54.8	55.4	55.8	55.9	56.2	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4
≥ 4500	48.0	54.8	55.6	56.2	56.7	56.8	57.0	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3
≥ 4000	48.4	55.7	56.6	57.1	57.8	57.9	58.2	58.5	58.5	58.5	58.6	58.6	58.6	58.6	58.6	58.6
≥ 3500	49.0	56.6	57.5	58.2	59.1	59.2	59.6	59.8	59.8	59.8	59.9	59.9	59.9	59.9	59.9	59.9
≥ 3000	49.0	56.7	57.7	58.6	59.5	59.6	60.1	60.3	60.3	60.3	60.4	60.4	60.4	60.4	60.4	60.4
≥ 2500	50.2	58.2	59.7	60.5	61.4	61.5	62.2	62.4	62.4	62.4	62.5	62.5	62.5	62.5	62.5	62.5
≥ 2000	51.0	60.0	61.4	62.5	63.7	64.0	64.6	64.9	64.9	64.9	65.1	65.1	65.1	65.1	65.1	65.1
≥ 1800	51.9	61.5	63.1	64.2	65.4	65.7	66.4	66.7	66.7	66.8	67.0	67.0	67.0	67.0	67.0	67.0
≥ 1500	53.3	64.2	66.0	67.5	68.7	69.1	69.9	70.4	70.4	70.7	70.9	70.9	70.9	70.9	70.9	70.9
≥ 1200	54.6	66.2	68.1	69.6	71.5	72.3	73.3	74.4	74.6	75.1	75.3	75.3	75.4	75.4	75.4	75.4
≥ 1000	55.6	67.8	70.0	71.5	74.2	75.3	76.4	77.8	78.0	78.6	78.9	78.9	79.1	79.1	79.1	79.1
≥ 900	55.8	68.9	71.2	73.0	75.7	76.9	78.0	79.5	79.7	80.3	80.7	80.7	80.9	80.9	80.9	80.9
≥ 800	55.9	69.9	72.6	74.6	77.7	79.1	80.4	81.9	82.1	82.7	83.3	83.5	83.8	83.8	83.8	83.8
≥ 700	55.9	70.2	73.4	75.8	78.9	80.3	81.9	83.3	83.5	84.5	85.2	85.4	85.8	85.8	85.8	85.8
≥ 600	55.9	70.4	73.7	76.8	80.2	81.6	83.8	85.4	85.6	87.0	87.7	87.9	88.9	89.0	89.0	89.0
≥ 500	55.9	70.4	74.2	77.7	81.5	83.3	85.6	87.4	87.6	89.1	89.9	90.1	91.2	91.3	91.3	91.3
≥ 400	55.9	70.5	74.4	78.5	82.4	84.5	87.4	89.6	89.8	91.4	92.4	92.6	93.7	93.8	93.8	93.8
≥ 300	55.9	70.7	74.5	78.6	82.6	85.1	88.1	90.4	90.7	92.7	94.0	94.2	95.9	96.3	96.3	96.3
≥ 200	55.9	70.7	74.5	78.6	82.6	85.1	88.1	90.5	90.8	93.3	94.8	95.2	97.5	97.8	98.2	98.6
≥ 100	55.9	70.7	74.5	78.6	82.6	85.1	88.1	90.5	90.8	93.4	94.9	95.3	97.7	98.0	98.8	100.0
≥ 0	55.9	70.7	74.5	78.6	82.6	85.1	88.1	90.5	90.8	93.4	94.9	95.3	97.7	98.0	98.8	100.0

TOTAL NUMBER OF OBSERVATIONS 910

USAF ETAC FORM NOV 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

1500-1700 HOURS (LST)

CEILING (FEET)	VISIBILITY STATUTE MILES															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	36.1	38.1	38.1	38.6	38.8	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9
≥ 20000	39.7	42.3	42.4	42.9	43.1	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5
≥ 18000	39.8	42.4	42.5	43.0	43.2	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6
≥ 16000	39.8	42.4	42.5	43.0	43.2	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6
≥ 14000	39.8	42.4	42.5	43.0	43.2	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6
≥ 12000	40.7	43.6	43.8	44.2	44.4	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9
≥ 10000	43.2	46.6	46.7	47.2	47.5	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
≥ 9000	45.0	48.6	48.7	49.2	49.5	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9
≥ 8000	46.2	49.9	50.3	50.7	51.2	51.6	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7
≥ 7000	47.4	51.5	51.8	52.3	52.7	53.1	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8
≥ 6000	48.8	53.3	53.6	54.0	54.6	55.0	55.2	55.2	55.2	55.2	55.4	55.4	55.4	55.4	55.4	55.4
≥ 5000	49.8	54.3	54.6	55.0	55.6	56.1	56.6	56.7	56.7	56.7	56.8	56.8	56.8	56.8	56.8	56.8
≥ 4500	50.5	54.9	55.2	55.7	56.2	56.8	57.2	57.3	57.3	57.3	57.5	57.5	57.5	57.5	57.5	57.5
≥ 4000	52.4	57.2	57.6	58.0	58.6	59.1	59.6	59.7	59.7	59.7	59.8	59.8	59.8	59.8	59.8	59.8
≥ 3500	53.4	58.8	59.1	59.6	60.2	60.8	61.4	61.5	61.5	61.7	61.8	61.8	61.8	61.8	61.8	61.8
≥ 3000	54.5	60.4	60.8	61.2	61.9	62.8	63.1	63.2	63.2	63.3	63.8	63.8	63.8	63.8	63.8	63.8
≥ 2500	56.1	63.0	63.3	64.0	64.6	65.3	66.2	66.4	66.4	66.7	66.9	66.9	66.9	66.9	66.9	66.9
≥ 2000	57.3	64.9	65.4	66.1	66.9	67.6	68.8	69.1	69.1	69.8	69.5	69.5	69.5	69.5	69.5	69.5
≥ 1800	58.3	66.6	67.3	68.2	69.1	69.8	71.4	71.7	71.7	72.0	72.2	72.2	72.2	72.2	72.2	72.2
≥ 1500	59.8	69.3	70.4	71.8	72.9	73.7	75.6	76.2	76.2	76.8	77.0	77.0	77.0	77.0	77.0	77.0
≥ 1200	60.4	70.8	72.4	74.0	75.5	76.5	78.3	79.0	79.1	79.7	80.0	80.0	80.0	80.0	80.0	80.0
≥ 1000	61.0	72.2	73.9	76.0	77.8	78.8	80.7	81.8	81.9	82.7	83.0	83.0	83.0	83.0	83.0	83.0
≥ 900	61.4	72.8	74.6	77.0	78.8	79.9	82.0	83.1	83.2	84.0	84.3	84.3	84.3	84.3	84.3	84.3
≥ 800	61.7	74.0	75.9	78.3	80.2	81.7	83.8	84.9	85.3	86.2	86.6	86.7	86.9	86.9	86.9	86.9
≥ 700	61.9	74.3	76.2	79.0	81.0	82.4	84.6	86.0	86.4	87.3	87.8	88.0	88.1	88.1	88.1	88.1
≥ 600	62.0	74.6	76.6	79.4	81.5	83.0	85.2	87.2	87.6	88.7	89.3	89.8	89.8	89.8	90.1	90.1
≥ 500	62.1	74.7	77.1	80.3	83.2	84.8	87.5	89.0	89.4	90.7	91.4	91.5	91.9	91.9	92.2	92.2
≥ 400	62.1	74.8	77.3	80.7	84.1	85.7	88.5	90.1	90.5	91.9	93.0	93.1	93.7	93.8	94.0	94.0
≥ 300	62.1	74.8	77.6	80.9	84.3	86.1	89.2	90.9	91.4	93.0	94.5	94.6	95.6	95.7	96.0	96.0
≥ 200	62.1	74.8	77.6	80.9	84.4	86.2	89.3	91.0	91.5	93.5	95.1	95.5	97.5	97.7	98.0	98.2
≥ 100	62.1	74.8	77.6	80.9	84.4	86.2	89.3	91.0	91.5	93.6	95.2	95.6	97.8	98.0	98.2	100.0
0	62.1	74.8	77.6	80.9	84.4	86.2	89.3	91.0	91.5	93.6	95.2	95.6	97.8	98.0	98.2	100.0

TOTAL NUMBER OF OBSERVATIONS 905

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

1800-2000 (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	37.6	39.3	39.5	39.5	39.5	39.5	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6
≥ 20000	40.0	41.9	42.1	42.2	42.2	42.2	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3
≥ 18000	40.0	41.9	42.1	42.2	42.2	42.2	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3
≥ 16000	40.0	41.9	42.1	42.2	42.2	42.2	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3
≥ 14000	40.5	42.3	42.6	42.7	42.7	42.7	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8	42.8
≥ 12000	42.9	44.9	45.1	45.2	45.2	45.2	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3
≥ 10000	45.8	48.2	48.4	48.5	48.5	48.5	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6	48.6
≥ 9000	47.0	49.5	49.7	49.8	49.8	49.8	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9	49.9
≥ 8000	47.6	50.4	50.7	50.9	50.9	50.9	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0
≥ 7000	48.4	51.6	52.1	52.5	52.5	52.5	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6	52.6
≥ 6000	49.4	52.9	53.7	54.0	54.0	54.0	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1
≥ 5000	50.3	54.2	55.3	55.7	55.8	55.8	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9
≥ 4500	50.6	54.6	55.7	56.0	56.1	56.1	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
≥ 4000	51.9	56.3	57.4	57.9	58.1	58.1	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2	58.2
≥ 3500	52.5	57.2	58.3	58.9	59.1	59.1	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5	59.5
≥ 3000	53.9	58.8	59.9	60.4	60.6	60.6	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1
≥ 2500	56.0	61.4	62.7	63.3	63.7	63.8	64.5	64.5	64.5	64.6	64.6	64.6	64.6	64.6	64.6	64.6
≥ 2000	59.8	65.9	67.3	68.0	68.8	68.9	69.6	69.6	69.6	69.7	69.7	69.7	69.7	69.7	69.7	69.7
≥ 1800	61.5	67.7	69.0	69.9	70.9	71.0	71.7	71.7	71.7	71.8	71.8	71.8	71.8	71.8	71.8	71.8
≥ 1500	64.3	71.2	73.0	73.9	74.9	75.0	75.7	75.7	75.7	75.9	75.9	75.9	75.9	75.9	75.9	75.9
≥ 1200	66.6	74.0	76.0	77.0	78.1	78.2	79.2	79.2	79.2	79.4	79.4	79.4	79.4	79.4	79.4	79.4
≥ 1000	67.8	75.5	77.9	79.2	80.4	80.6	82.0	82.1	82.1	82.5	82.6	82.6	82.6	82.6	82.6	82.6
≥ 900	67.9	75.9	78.6	79.8	81.0	81.3	82.7	82.8	82.8	83.2	83.4	83.4	83.4	83.4	83.4	83.4
≥ 800	68.6	76.6	79.4	80.8	82.1	82.5	84.1	84.3	84.6	85.2	85.3	85.3	85.4	85.4	85.4	85.4
≥ 700	69.1	77.4	80.4	81.9	83.4	83.7	85.4	85.7	85.9	86.8	86.9	86.9	87.0	87.0	87.0	87.0
≥ 600	69.3	78.3	81.5	83.1	84.9	85.2	87.3	87.7	87.9	88.9	89.3	89.3	89.6	89.6	89.6	89.6
≥ 500	69.5	78.8	82.0	83.7	85.8	86.3	88.6	89.0	89.2	90.2	90.7	90.7	91.1	91.1	91.1	91.1
≥ 400	69.5	79.4	82.7	84.7	87.1	88.4	91.2	92.0	92.2	93.2	93.7	93.7	94.0	94.0	94.0	94.0
≥ 300	69.5	79.4	82.8	85.1	88.0	89.7	92.5	93.3	93.5	94.5	95.6	95.6	95.9	95.9	95.9	95.9
≥ 200	69.5	79.5	82.9	85.2	88.1	90.2	93.2	94.4	94.6	96.0	97.5	97.5	97.9	98.1	98.3	98.3
≥ 100	69.5	79.5	82.9	85.2	88.1	90.2	93.2	94.5	94.7	96.4	98.0	98.0	98.5	99.0	99.2	99.9
≥ 0	69.5	79.5	82.9	85.2	88.1	90.2	93.2	94.5	94.7	96.4	98.0	98.0	98.5	99.0	99.2	100.0

TOTAL NUMBER OF OBSERVATIONS 907

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

2100-2300 (HOURS, LST)

CEILING FEET	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	34.6	35.9	36.2	36.3	36.5	36.6	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7
≥ 20000	36.9	38.5	38.7	38.8	39.2	39.3	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4
≥ 18000	37.1	38.7	39.0	39.1	39.4	39.5	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6
≥ 16000	37.1	38.7	39.0	39.1	39.4	39.5	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6
≥ 14000	37.3	39.0	39.2	39.3	39.6	39.7	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8
≥ 12000	38.8	40.6	40.8	41.0	41.3	41.4	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
≥ 10000	42.0	44.6	44.9	45.0	45.3	45.4	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5
≥ 9000	43.2	46.4	46.8	46.9	47.2	47.3	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4
≥ 8000	44.1	47.4	47.8	47.9	48.2	48.3	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8	48.8
≥ 7000	45.1	48.8	49.1	49.2	49.6	49.7	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.1	50.1
≥ 6000	46.0	50.1	50.7	50.8	51.1	51.2	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7
≥ 5000	47.0	51.5	52.1	52.2	52.6	52.7	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1
≥ 4500	48.3	53.0	53.8	53.9	54.2	54.4	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8	54.8
≥ 4000	49.6	54.5	55.4	55.5	55.9	56.0	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5	56.5
≥ 3500	49.8	54.8	55.7	56.0	56.6	56.7	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1	57.1
≥ 3000	50.9	56.1	57.1	57.6	58.1	58.3	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7	58.7
≥ 2500	53.2	58.9	60.2	60.8	61.5	61.6	62.1	62.1	62.1	62.3	62.3	62.3	62.3	62.3	62.3	62.3
≥ 2000	56.4	63.3	64.5	65.2	66.0	66.1	66.5	66.5	66.5	66.7	66.7	66.7	66.7	66.7	66.7	66.7
≥ 1800	58.4	65.7	67.0	67.7	68.6	68.9	69.3	69.3	69.3	69.5	69.5	69.5	69.5	69.5	69.5	69.5
≥ 1500	61.2	69.0	70.2	71.2	72.2	72.6	72.9	72.9	72.9	73.1	73.1	73.1	73.1	73.1	73.1	73.1
≥ 1200	64.5	73.0	74.3	75.3	76.3	76.6	77.0	77.0	77.0	77.2	77.6	77.6	77.6	77.6	77.6	77.6
≥ 1000	67.0	75.8	77.1	78.1	79.5	79.7	80.4	80.6	80.6	81.0	81.4	81.4	81.4	81.4	81.4	81.4
≥ 900	67.5	76.6	78.1	79.2	80.7	80.9	81.6	81.9	81.9	82.5	82.8	82.8	82.8	82.8	82.8	82.8
≥ 800	68.2	77.3	79.1	80.7	82.1	82.5	83.3	83.7	83.9	84.9	85.3	85.3	85.3	85.3	85.3	85.3
≥ 700	68.6	78.1	80.1	81.9	83.4	83.7	84.6	85.0	85.3	86.6	87.1	87.1	87.1	87.1	87.1	87.1
≥ 600	68.8	78.3	80.4	82.5	83.9	84.5	85.4	85.8	86.0	87.5	88.2	88.2	88.3	88.3	88.3	88.3
≥ 500	69.0	79.2	81.5	84.0	85.7	86.4	87.5	88.2	88.4	90.0	90.6	90.6	91.0	91.0	91.0	91.0
≥ 400	69.1	79.9	82.1	84.8	86.8	87.6	89.4	90.1	90.3	91.9	92.5	92.5	92.9	92.9	92.9	92.9
≥ 300	69.2	80.1	82.5	85.9	87.9	89.2	91.1	91.7	92.0	93.6	94.8	94.8	95.1	95.1	95.1	95.1
≥ 200	69.2	80.1	82.5	86.2	88.2	90.0	92.5	93.6	98.0	96.1	97.5	97.5	97.9	98.0	98.1	98.1
≥ 100	69.2	80.1	82.5	86.2	88.2	90.0	92.7	94.0	94.3	96.5	98.2	98.2	98.7	98.8	98.9	99.7
≥ 0	69.2	80.1	82.5	86.2	88.2	90.0	92.7	94.0	94.3	96.5	98.2	98.2	98.7	98.8	98.9	100.0

TOTAL NUMBER OF OBSERVATIONS 896

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS LST)

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1¾	≥1¼	≥1	≥¾	≥½	≥¼	≥5/16	≥0	≥0
NO CEILING	35.0	36.7	37.0	37.3	37.4	37.5	37.5	37.5	37.5	37.5	37.6	37.6	37.6	37.6	37.6	37.7
≥ 20000	37.8	39.9	40.3	40.6	40.7	40.8	40.9	40.9	40.9	40.9	41.0	41.0	41.0	41.0	41.0	41.1
≥ 18000	37.9	40.0	40.4	40.7	40.8	40.9	40.9	41.0	41.0	41.0	41.1	41.1	41.1	41.1	41.1	41.2
≥ 16000	37.9	40.0	40.4	40.7	40.8	40.9	40.9	41.0	41.0	41.0	41.1	41.1	41.1	41.1	41.1	41.2
≥ 14000	38.1	40.2	40.6	40.9	41.0	41.1	41.2	41.2	41.2	41.3	41.3	41.3	41.3	41.3	41.3	41.4
≥ 12000	39.6	41.9	42.3	42.6	42.7	42.9	42.9	42.9	43.0	43.0	43.0	43.0	43.1	43.1	43.1	43.2
≥ 10000	42.0	44.8	45.2	45.5	45.7	45.8	45.9	45.9	45.9	46.0	46.0	46.0	46.0	46.0	46.1	46.1
≥ 9000	43.3	46.5	46.9	47.2	47.4	47.5	47.6	47.7	47.7	47.7	47.8	47.8	47.8	47.8	47.8	47.9
≥ 8000	44.5	47.7	48.2	48.5	48.8	48.9	49.1	49.2	49.2	49.2	49.2	49.2	49.3	49.3	49.3	49.4
≥ 7000	45.9	49.6	50.1	50.5	50.7	50.9	51.1	51.2	51.2	51.2	51.3	51.3	51.3	51.3	51.3	51.4
≥ 6000	46.9	50.8	51.4	51.9	52.2	52.3	52.6	52.7	52.7	52.7	52.8	52.8	52.8	52.8	52.8	52.9
≥ 5000	47.7	51.9	52.6	53.2	53.5	53.6	54.0	54.1	54.1	54.1	54.2	54.2	54.2	54.2	54.2	54.3
≥ 4500	48.2	52.6	53.3	53.9	54.2	54.4	54.8	54.9	54.9	54.9	55.0	55.0	55.0	55.0	55.0	55.1
≥ 4000	49.3	54.1	55.0	55.5	55.9	56.1	56.5	56.6	56.6	56.7	56.7	56.7	56.8	56.8	56.8	56.9
≥ 3500	50.0	55.0	55.9	56.6	57.0	57.2	57.7	57.8	57.9	57.9	58.0	58.0	58.0	58.0	58.0	58.1
≥ 3000	50.8	56.1	57.0	57.7	58.2	58.5	59.0	59.1	59.1	59.2	59.3	59.3	59.3	59.3	59.3	59.4
≥ 2500	52.5	58.2	59.3	60.2	60.7	61.0	61.6	61.8	61.8	62.0	62.0	62.0	62.1	62.1	62.1	62.2
≥ 2000	54.3	61.0	62.2	63.1	63.8	64.2	64.9	65.1	65.1	65.3	65.4	65.4	65.4	65.4	65.4	65.5
≥ 1800	55.4	62.4	63.7	64.7	65.5	65.9	66.8	67.0	67.0	67.2	67.3	67.3	67.3	67.3	67.3	67.4
≥ 1500	57.5	65.1	66.5	67.7	68.7	69.2	70.2	70.5	70.5	70.8	70.9	70.9	71.0	71.0	71.0	71.1
≥ 1200	59.3	67.5	69.1	70.5	71.7	72.3	73.4	73.8	73.9	74.2	74.4	74.4	74.5	74.5	74.5	74.6
≥ 1000	60.8	69.6	71.5	73.0	74.4	75.1	76.4	77.0	77.0	77.5	77.7	77.7	77.8	77.8	77.9	77.9
≥ 900	61.4	70.6	72.6	74.2	75.8	76.6	77.9	78.6	78.7	79.3	79.5	79.5	79.6	79.6	79.6	79.7
≥ 800	62.0	71.7	73.8	75.6	77.3	78.2	79.7	80.5	80.7	81.4	81.7	81.7	81.9	81.9	81.9	82.0
≥ 700	62.5	72.5	74.9	77.0	78.7	79.6	81.3	82.2	82.4	83.4	83.7	83.8	84.0	84.0	84.0	84.1
≥ 600	62.9	73.3	75.8	78.2	80.1	81.1	83.0	84.1	84.3	85.6	86.1	86.1	86.6	86.6	86.6	86.7
≥ 500	63.2	74.1	76.8	79.4	81.8	83.0	85.0	86.3	86.5	88.0	88.5	88.6	89.1	89.1	89.1	89.2
≥ 400	63.3	74.5	77.3	80.3	83.0	84.4	86.8	88.5	88.7	90.3	91.2	91.2	91.8	91.8	91.9	92.0
≥ 300	63.3	74.6	77.6	80.7	83.6	85.4	88.3	90.3	90.5	92.4	93.5	93.6	94.4	94.4	94.5	94.6
≥ 200	63.3	74.7	77.8	80.9	83.8	85.8	89.0	91.3	91.6	94.1	95.7	95.8	96.9	97.1	97.5	97.7
≥ 100	63.3	74.7	77.8	80.9	83.8	85.8	89.0	91.4	91.7	94.3	96.0	96.1	97.5	97.9	98.6	99.7
≥ 0	63.3	74.7	77.8	80.9	83.8	85.8	89.0	91.4	91.7	94.3	96.0	96.1	97.5	97.9	98.6	100.0

TOTAL NUMBER OF OBSERVATIONS 7241

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

CEILING VERSUS VISIBILITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

ALL (HOURS (LST))

CEILING (FEET)	VISIBILITY (STATUTE MILES)															
	≥10	≥6	≥5	≥4	≥3	≥2½	≥2	≥1½	≥1¼	≥1	≥¾	≥⅝	≥½	≥5/16	≥¼	≥0
NO CEILING	44.6	46.7	47.1	47.3	47.4	47.5	47.5	47.6	47.6	47.6	47.6	47.6	47.6	47.7	47.7	47.8
≥ 20000	49.1	51.6	52.1	52.4	52.5	52.6	52.7	52.7	52.7	52.7	52.8	52.8	52.8	52.8	52.9	52.9
< 20000	49.2	51.8	52.2	52.6	52.7	52.8	52.8	52.9	52.9	52.9	52.9	52.9	53.0	53.0	53.0	53.1
≥ 18000	49.3	51.8	52.3	52.6	52.7	52.8	52.9	52.9	52.9	53.0	53.0	53.0	53.0	53.0	53.1	53.2
< 16000																
≥ 14000	49.6	52.2	52.7	53.0	53.1	53.2	53.3	53.3	53.3	53.4	53.4	53.4	53.4	53.4	53.5	53.5
< 12000	50.8	53.5	54.0	54.3	54.5	54.5	54.6	54.7	54.7	54.7	54.7	54.7	54.8	54.8	54.8	54.9
≥ 10000	52.9	55.9	56.5	56.8	57.0	57.1	57.2	57.2	57.2	57.3	57.3	57.3	57.3	57.3	57.4	57.5
< 9000	54.5	57.7	58.3	58.7	58.9	59.0	59.1	59.1	59.1	59.2	59.2	59.2	59.3	59.3	59.3	59.4
≥ 8000	55.5	58.9	59.5	59.9	60.1	60.2	60.3	60.4	60.4	60.4	60.5	60.5	60.5	60.5	60.6	60.6
< 7000	57.4	61.0	61.7	62.2	62.4	62.5	62.7	62.7	62.7	62.8	62.8	62.8	62.9	62.9	62.9	63.0
≥ 6000	58.7	62.5	63.2	63.8	64.0	64.2	64.3	64.4	64.4	64.4	64.5	64.5	64.5	64.5	64.6	64.6
< 5000	59.5	63.8	64.7	65.3	65.5	65.7	65.8	65.9	65.9	66.0	66.0	66.0	66.1	66.1	66.1	66.2
≥ 4500	60.6	64.7	65.5	66.1	66.4	66.5	66.7	66.8	66.8	66.8	66.9	66.9	66.9	66.9	67.0	67.1
< 4000	62.0	66.4	67.3	67.9	68.2	68.4	68.6	68.7	68.7	68.8	68.8	68.8	68.8	68.9	68.9	69.0
≥ 3500	63.1	67.7	68.6	69.3	69.7	69.9	70.1	70.2	70.2	70.3	70.3	70.3	70.4	70.4	70.4	70.5
< 3000	64.2	69.1	70.1	70.8	71.1	71.3	71.6	71.7	71.7	71.8	71.8	71.8	71.9	71.9	71.9	72.0
≥ 2500	65.8	71.2	72.3	73.1	73.5	73.7	74.0	74.2	74.2	74.3	74.3	74.3	74.4	74.4	74.4	74.5
< 2000	67.4	73.3	74.5	75.4	76.0	76.2	76.6	76.8	76.8	76.9	76.9	76.9	77.0	77.0	77.1	77.2
≥ 1800	68.2	74.5	75.7	76.7	77.3	77.6	78.0	78.2	78.2	78.4	78.4	78.4	78.5	78.5	78.6	78.6
< 1500	69.4	76.2	77.6	78.7	79.4	79.8	80.3	80.5	80.5	80.7	80.8	80.8	80.9	80.9	80.9	81.0
≥ 1200	70.5	77.7	79.2	80.5	81.2	81.7	82.2	82.5	82.6	82.8	82.9	82.9	83.0	83.0	83.1	83.1
< 1000	71.2	78.9	80.5	81.9	82.7	83.2	83.9	84.3	84.3	84.6	84.7	84.8	84.9	84.9	84.9	85.0
≥ 900	71.5	79.5	81.1	82.6	83.5	84.1	84.8	85.2	85.2	85.6	85.7	85.7	85.8	85.8	85.9	86.0
< 800	71.9	80.1	81.8	83.3	84.3	85.0	85.8	86.2	86.3	86.7	86.9	86.9	87.1	87.1	87.1	87.2
≥ 700	72.2	80.7	82.5	84.2	85.3	86.0	86.8	87.4	87.4	87.9	88.1	88.1	88.3	88.3	88.4	88.5
< 600	72.8	81.2	83.1	85.0	86.2	86.9	87.9	88.5	88.5	89.1	89.4	89.4	89.6	89.6	89.7	89.8
≥ 500	72.6	81.6	83.7	85.8	87.2	88.0	89.1	89.9	90.0	90.7	91.0	91.0	91.3	91.3	91.4	91.5
< 400	72.6	81.8	84.0	86.3	87.9	88.9	90.3	91.2	91.3	92.2	92.6	92.6	92.9	92.9	93.0	93.2
≥ 300	72.7	81.9	84.1	86.7	88.4	89.5	91.2	92.4	92.5	93.6	94.2	94.2	94.7	94.7	94.9	95.0
< 200	72.7	82.0	84.2	86.8	88.6	89.7	91.6	93.2	93.4	94.8	95.7	95.7	96.5	96.6	97.1	97.5
≥ 100	72.7	82.0	84.2	86.8	88.6	89.8	91.7	93.3	93.5	95.0	95.9	96.0	97.0	97.2	98.0	99.5
0	72.7	82.0	84.2	86.8	88.6	89.8	91.7	93.3	93.5	95.0	95.9	96.0	97.0	97.2	98.1	100.0

TOTAL NUMBER OF OBSERVATIONS 85155

USAF ETAC FORM JUL 64 0-14-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

U S AIR FORCE
ENVIRONMENTAL TECHNICAL
APPLICATIONS CENTER

TOTAL SKY COVER

FOR AIRWAYS STATIONS THE SYMBOLS OF CLEAR, SCATTERED, BROKEN, OVERCAST, & OBSCURED WERE USED AS INPUT FOR THE TOTAL SKY COVER.

CLEAR WAS CONVERTED TO 0/10

SCATTERED WAS CONVERTED TO 3/10

BROKEN WAS CONVERTED TO 9/10

OVERCAST WAS CONVERTED TO 10/10

OBSCURED WAS CONVERTED TO 10/10

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) JAN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
JAN	00-02	32.7			10.8						8.6	47.9	5.9	910
	03-05	33.5			11.1						8.0	47.4	5.8	886
	06-08	25.9			15.5						11.9	46.6	6.2	907
	09-11	21.5			14.3						15.0	49.2	6.7	904
	12-14	20.0			14.5						17.9	47.5	6.8	903
	15-17	21.6			16.0						17.8	44.6	6.5	911
	18-20	26.4			17.1						12.1	44.4	6.0	907
	21-23	30.1			13.1						10.2	46.7	6.0	904
TOTALS		26.5			14.1						12.7	46.8	6.2	7238

USAFETAC FORM JUL 64 0-9-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) FEB (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
FEB	00-02	28.2			12.4						9.8	49.6	6.2	829
	03-05	27.5			9.4						8.2	54.9	6.5	829
	06-08	21.7			14.5						10.7	53.1	6.7	829
	09-11	18.7			15.1						14.3	51.9	6.9	817
	12-14	17.1			18.6						14.9	49.9	6.8	826
	15-17	18.1			16.0						16.7	49.2	6.9	821
	18-20	20.6			16.1						13.8	49.5	6.7	825
	21-23	29.3			13.1						11.7	45.9	6.0	819
TOTALS		22.7			14.9						12.5	50.5	6.6	6695

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) MAR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
MAR	00-02	28.9			12.0						7.8	51.3	6.2	916
	03-05	26.8			10.8						9.0	53.4	6.5	908
	06-08	19.9			19.2						11.6	59.3	6.9	913
	09-11	16.3			19.1						15.3	58.3	7.2	901
	12-14	15.5			17.1						17.2	50.1	7.1	916
	15-17	14.6			18.0						16.5	50.9	7.1	908
	18-20	21.5			15.8						15.2	47.5	6.6	903
	21-23	28.2			12.6						10.3	48.9	6.2	909
TOTALS		21.5			18.3						12.9	51.3	6.7	7263

USAFETAC FORM 0-9-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) APR (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
APR	00-02	30.9			14.9						9.9	44.3	5.8	875
	03-05	26.6			15.6						12.1	45.7	6.1	871
	06-08	18.2			16.1						18.1	47.6	6.9	889
	09-11	18.0			15.4						18.2	48.4	6.9	878
	12-14	14.6			20.9						17.9	46.6	6.9	882
	15-17	16.8			16.9						21.4	44.9	6.9	874
	18-20	16.2			19.8						18.0	46.0	6.8	877
	21-23	27.4			16.8						11.6	44.2	6.0	869
TOTALS		21.1			17.1						15.9	46.0	6.5	7015

USAPETAC FORM JUL 64 0-9-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) MAY (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
MAY	00-02	32.9			14.9						11.6	40.6	5.6	908
	03-05	23.7			18.8						17.7	39.8	6.1	903
	06-08	21.4			17.0						17.2	44.3	6.5	911
	09-11	17.8			18.2						20.1	44.0	6.8	907
	12-14	14.3			18.9						25.6	41.1	7.0	909
	15-17	12.9			22.5						24.3	40.3	6.9	908
	18-20	16.3			22.1						22.8	38.8	6.6	907
	21-23	26.0			20.2						15.0	38.8	5.8	901
TOTALS		20.7			19.1						19.3	41.0	6.8	7258

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) JUN (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
JUN	00-02	31.8			18.9						15.2	34.1	5.3	871
	03-05	22.0			21.6						19.4	36.9	6.1	869
	06-08	16.3			19.8						20.5	43.4	6.8	878
	09-11	12.8			21.6						26.6	39.1	6.9	870
	12-14	7.1			23.2						33.3	36.4	7.3	884
	15-17	6.0			26.9						30.6	36.6	7.7	867
	18-20	12.7			25.9						25.5	35.8	6.7	871
	21-23	23.4			26.1						17.1	33.4	5.7	862
TOTALS		16.5			23.0						23.5	37.0	6.5	6967

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) JUL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
JUL	00-02	40.0			19.2						11.8	29.1	8.5	908
	03-05	30.5			21.8						16.5	31.2	5.3	908
	06-08	21.4			21.5						22.7	34.4	6.1	903
	09-11	15.7			25.8						26.6	32.3	6.4	906
	12-14	9.2			28.6						35.7	26.5	6.7	905
	15-17	8.9			31.8						32.2	27.6	6.6	914
	18-20	16.5			31.5						26.9	25.2	5.9	905
	21-23	30.2			26.5						19.1	28.2	8.9	898
TOTALS		21.5			25.8						23.9	28.8	5.8	7283

USAFETAC FORM AR 64 0-9-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) AUG (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
AUG	00-02	35.5			17.3						11.5	35.7	5.1	896
	03-05	28.9			18.9						12.8	39.4	5.7	893
	06-08	20.8			19.8						17.4	41.9	6.4	897
	09-11	16.6			22.3						20.5	40.6	6.6	884
	12-14	9.6			27.4						27.5	35.6	6.9	888
	15-17	6.9			31.6						27.5	33.9	6.8	893
	18-20	16.4			27.4						23.8	32.4	6.2	903
	21-23	27.9			20.7						15.3	36.1	5.6	893
TOTALS		20.3			23.2						19.5	37.0	6.2	7197

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) SEP (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
SEP	00-02	35.1			14.2						9.5	41.2	5.4	886
	03-05	30.2			15.9						11.8	42.2	5.8	868
	06-08	20.2			18.0						18.4	43.3	6.5	870
	09-11	15.3			18.5						23.2	43.0	6.9	876
	12-14	11.1			21.0						28.5	39.4	7.1	889
	15-17	13.3			21.3						27.5	37.9	6.9	879
	18-20	19.7			22.2						19.3	38.8	6.3	883
	21-23	30.0			17.1						11.8	41.1	5.7	872
TOTALS		21.9			18.5						18.8	40.9	6.3	7023

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) OCT (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
OCT	00-02	27.9			13.4						12.2	46.6	6.2	904
	03-05	26.6			15.8						12.7	44.9	6.1	911
	06-08	20.5			18.0						16.2	45.4	6.5	904
	09-11	15.2			14.0						20.4	50.3	7.3	905
	12-14	12.7			16.6						20.5	50.2	7.4	901
	15-17	12.9			16.9						24.3	45.8	7.3	904
	18-20	18.8			19.8						17.6	43.8	6.6	909
	21-23	26.2			15.7						13.5	44.6	6.1	892
TOTALS		20.1			16.3						17.2	46.5	6.7	7230

2

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) NOV (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
NOV	00-02	23.9			12.5						10.5	53.0	6.6	873
	03-05	23.4			11.3						9.8	55.5	6.8	877
	06-08	16.3			14.8						14.4	54.5	7.2	871
	09-11	13.7			13.1						18.1	55.1	7.5	878
	12-14	12.4			15.6						20.1	51.9	7.5	877
	15-17	15.0			15.3						17.9	51.8	7.3	872
	18-20	20.2			14.1						11.8	53.9	6.9	881
	21-23	22.2			12.8						9.9	55.1	6.8	869
TOTALS		18.8			13.7						14.1	53.9	7.1	6998

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) DEC (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
DEC	00-02	25.5			9.7						8.8	56.0	6.7	909
	03-05	23.9			10.0						7.3	58.9	6.8	893
	06-08	19.9			11.0						10.4	58.7	7.1	911
	09-11	16.6			10.8						13.6	59.0	7.4	904
	12-14	14.6			12.3						16.2	56.5	7.5	912
	15-17	14.7			13.8						16.0	55.5	7.4	905
	18-20	19.8			13.1						9.3	57.8	7.0	907
	21-23	20.9			10.9						9.0	59.2	7.1	896
TOTALS		19.5			11.5						11.3	57.7	7.1	7237

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

SKY COVER

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) ALL (MONTH)

PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF TENTHS OF TOTAL SKY COVER											MEAN TENTHS OF SKY COVER	TOTAL NO. OF OBS.
		0	1	2	3	4	5	6	7	8	9	10		
JAN	ALL	26.5			14.1						12.7	46.8	6.2	7232
FEB		22.7			14.4						12.5	50.5	6.6	6595
MAR		21.5			14.3						12.9	51.3	6.7	7267
APR		21.1			17.1						15.9	46.0	6.5	7015
MAY		20.7			19.1						19.3	41.0	6.4	7254
JUN		16.5			23.0						23.5	37.0	6.5	6967
JUL		21.5			25.8						23.9	28.8	5.8	7243
AUG		20.3			23.2						19.5	37.0	6.2	7147
SEP		21.9			18.5						18.8	40.9	6.3	7023
OCT		20.1			16.3						17.2	46.5	6.7	7230
NOV		18.4			13.7						14.1	53.9	7.1	6998
DEC		19.5			11.5						11.3	57.7	7.1	7237
TOTALS		20.9			17.6						16.8	44.8	6.5	85208

U S AIR FORCE
ENVIRONMENTAL TECHNICAL
APPLICATIONS CENTER

PART E PSYCHROMETRIC SUMMARIES

In this section are presented various summaries of dry- and wet-bulb temperatures, dew points, and relative humidity. The order and manner of presentations follows:

* 1. Cumulative percentage frequency of occurrence - derived from daily observations and presented by month and annual for all years combined. These tabulations provide the cumulative percentage frequency to tenths of temperature by 5-degree Fahrenheit increments, plus mean temperature, standard deviations, and total number of observations in three separate tables as follows:

a. Daily maximum temperatures
b. Daily minimum temperatures
c. Daily mean temperatures

NOTE: Beginning in January 1964, daily maximum and minimum temperatures are routinely selected from hourly observations recorded on surface observing forms or from automated data collections for all Air Force operated stations. For those stations observing less than 24 hours per day, and where maximum and minimum temperatures are required but not recorded, these are also selected from hourly data from as early as January 1949 and later. Please refer to notations on summary pages and Station History for further information on reporting practices of individual stations.

* 2. Extreme values - derived from daily observations with the extreme value selected for each year and month of record available. An annual (ALL MONTHS) value is selected when all months for a year have valid extremes. Means and standard deviations are computed for months and annual when four or more values are present for any column. Two tables of daily extremes are prepared:

a. Extreme maximum temperature
b. Extreme minimum temperature

NOTE: The following symbols are used in the extreme data blocks:

(1) * indicates the extreme was selected from a month with one or more days missing.

(2) # indicates the extreme was selected from a month in which hourly temperatures were available for less than 24 hours for at least one day in the month.

* Values for means and standard deviations do not include measurements for incomplete months.

Continued on Reverse

3. Bivariate percentage frequency distribution and computations of dry-bulb versus wet-bulb temperature. This tabulation is derived from hourly observations and is presented by month and annual, all hours and years combined. The following information is provided:

   a. The main body of the summary consists of a bivariate percentage frequency distribution of wet-bulb depression in 17 classes spread horizontally; by 2-degree intervals of dry-bulb temperature spread vertically. Also provided for each of the dry-bulb intervals is the percentage of observations with dry-bulb and wet-bulb temperature combined; and again for dry-bulb, wet-bulb, and dew-point temperatures separately. Total observations for these four items is also provided in two lines at end of each tabulation table, which may be continued on several pages.

      NOTE: A percentage frequency in this table of ".0" represents one or more occurrences amounting to less than .05 percent.

   b. Statistical data for the individual elements of relative humidity, dry-bulb, wet-bulb, and dew-point temperatures are shown in the section at the bottom left of the forms. These consist of the sum of squares (ΣX^2), sums of values (ΣX), means ($\bar{X}$), and standard deviations (σ_x). The number of observations used in the computation for each element is also shown.

   c. At the lower right of the form are given the mean number of hours of occurrence for six ranges of dry-bulb, wet-bulb, and dew-point temperatures, and total number of hours possible in the period represented. Mean number of hours is shown to tenths and indicates mean number of hours per year in the annual summary, or mean number of hours per month in the tabulation by month.

      NOTE: Wet-bulb temperature usually was not reported prior to 1946. Relative humidity usually was not reported prior to 1949, nor subsequent to June 1958; and was computed by machine methods for observations recorded during these periods. All values of dew-point temperature and relative humidity are with respect to water, unless otherwise indicated.

4. Means and standard deviations - These tabulations are derived from hourly observations and present the mean, standard deviation, and total number of observations for the eight standard 3-hour groups, by month and annual and again at the bottom for all hours combined. Records for all years combined are presented in the following three tables; DRY-BULB TEMPERATURE, WET-BULB TEMPERATURE, and DEW-POINT TEMPERATURE.

5. Cumulative percentage frequency of occurrence of relative humidity - This summary is derived from hourly observations and presents the cumulative percentage frequency of occurrence of relative humidity by increments of 10% classes, plus the mean relative humidity and total number of observations in two tables.

   a. Table 1 is prepared by month and annual, all years combined, with month being the vertical argument.

   b. Table 2 is prepared by month by standard 3-hour groups, with the hour groups being the vertical argument and a separate page for each month. All years are also combined for this summary.

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

DAILY TEMPERATURES

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM DAILY OBSERVATIONS)

MAXIMUM

TEMP (°F)	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ANNUAL
95							.1	.2	.1				.0
90					.2	1.1	2.5	2.5	.3				.5
85				.3	1.7	5.5	13.6	8.5	1.9	.1			2.6
80				.7	5.5	15.9	35.9	23.9	5.1	.9			7.4
75				2.0	13.0	33.1	62.0	47.6	13.5	2.8			14.6
70				4.6	23.1	52.6	81.6	66.8	27.3	7.4	.1		22.2
65			.2	9.3	39.0	72.6	93.7	86.5	46.5	14.5	.5		30.3
60			.8	17.5	57.2	89.7	97.7	95.7	66.6	27.8	2.2		38.0
55		.1	1.5	25.7	71.2	96.3	99.8	99.1	82.2	42.8	5.3	.1	43.7
50		.7	3.7	39.3	84.8	99.8	100.0	100.0	94.1	60.4	11.1	.5	49.6
45	.1	1.5	8.7	54.7	92.7	100.0			98.8	78.2	19.0	.9	56.6
40	1.2	4.6	19.4	71.2	97.2				100.0	89.2	31.2	2.5	59.7
35	4.8	10.4	39.5	87.5	99.4					96.9	48.7	10.2	66.5
30	13.0	24.6	60.3	96.4	99.9					99.5	70.8	25.7	74.2
25	27.5	42.9	78.9	98.8	100.0					100.0	84.9	44.7	81.5
20	44.0	60.5	90.1	99.9							93.5	62.0	87.5
15	56.8	74.4	95.1								96.9	75.5	91.6
10	68.4	84.4	98.2	100.0							99.1	85.0	94.6
5	79.2	92.6	99.3								99.6	92.2	96.9
0	86.9	96.4	99.9								99.8	97.0	98.3
-5	94.1	99.3	100.0								99.9	99.2	99.4
-10	98.1	100.0									100.0	99.8	99.8
-15	99.3											99.9	99.9
-20	99.8											100.0	100.0
-25	100.0												100.0
MEAN	15.8	21.0	31.7	47.4	61.2	70.3	76.3	73.6	63.7	52.9	35.1	21.8	47.6
S. D.	12.710	11.212	9.909	11.925	11.174	8.701	7.462	8.099	9.419	10.740	11.045	10.930	23.385
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1085	12480

USAFETAC FORM JUL 64 0-21-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

DAILY TEMPERATURES

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM DAILY OBSERVATIONS)

MINIMUM

TEMP (°F)	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ANNUAL
70							.5	.3					.1
65						1.2	5.5	4.0	.8				1.0
60					.5	5.4	20.9	16.3	3.0	.1			3.9
55					2.6	17.7	48.6	41.3	10.7	.9			10.2
50				.3	8.9	39.5	78.7	69.9	27.4	3.4	.1		19.1
45				2.3	23.6	70.2	95.0	88.0	49.8	13.2	.8		28.6
40			.5	9.7	48.7	90.2	99.4	97.2	71.5	32.4	3.0		37.7
35		.1	2.4	22.5	71.7	98.2	100.0	99.7	87.6	52.9	8.6	.3	45.4
33		.6	4.4	30.1	81.4	99.0		100.0	92.0	62.0	14.0	.6	48.7
30	.4	2.0	9.6	48.4	92.4	99.9			97.2	76.4	25.9	2.8	54.6
25	2.5	4.9	22.1	73.0	98.5	100.0			99.5	91.1	44.6	9.4	62.2
20	6.8	12.4	39.1	88.6	99.6				100.0	97.1	62.0	19.4	68.8
15	14.6	22.2	53.4	94.2	100.0					99.3	73.4	31.6	74.2
10	25.0	32.2	68.4	97.5						99.9	84.2	42.9	78.9
5	36.0	45.4	74.2	98.9						100.0	90.7	52.6	83.2
0	44.1	56.9	83.8	99.7							95.2	65.3	87.2
-5	53.6	68.9	90.7	100.0							97.9	76.3	90.7
-10	64.8	79.1	96.0								99.4	86.3	93.8
-15	76.5	87.6	98.6								99.8	93.5	96.4
-20	86.8	93.7	99.2								99.9	98.1	98.2
-25	94.0	98.1	99.8								100.0	99.6	99.3
-30	98.0	99.9	100.0									100.0	99.8
-35	99.6	100.0											100.0
-40	100.0												100.0
MEAN	-2.9	2.2	13.6	28.7	39.3	48.3	54.9	52.8	34.3	25.3	21.5	5.8	28.6
S.D.	14.989	14.232	12.972	8.446	7.417	6.786	6.101	6.690	8.140	8.235	11.941	13.855	22.033
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1085	12480

USAFETAC FORM JUL 64 0-21-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

DAILY TEMPERATURES

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM DAILY OBSERVATIONS)

MEAN

TEMP (°F)	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ANNUAL
≥ 80						.3	.8	.9					.2
≥ 75					.1	2.4	7.5	4.9	.8				1.3
≥ 70					1.2	8.3	27.9	18.0	3.4	.1			5.0
≥ 65				.3	5.4	23.8	56.8	43.5	11.2	1.0			11.9
≥ 60				1.7	14.2	46.8	83.0	70.6	24.7	5.0			20.6
≥ 55				5.1	32.4	74.4	96.6	90.7	46.9	11.3	.4		29.9
≥ 50			.3	13.5	54.2	93.3	99.9	99.0	71.4	29.3	1.3		38.5
≥ 45			1.5	23.5	75.0	99.4	100.0	100.0	89.2	49.5	6.7	.2	45.5
≥ 40		.6	4.1	39.9	89.8	100.0			97.5	68.4	14.5	.6	51.3
≥ 35	.2	2.5	13.3	65.9	97.4				99.8	87.8	28.5	1.7	58.1
≥ 30	2.6	6.5	29.6	85.1	99.5				100.0	95.5	48.2	8.5	64.7
≥ 25	8.1	16.2	47.4	94.3	99.9					98.8	66.0	21.5	71.1
≥ 20	18.8	29.7	64.6	97.7	100.0					99.9	79.9	36.2	77.3
≥ 15	32.4	45.0	77.0	99.2						100.0	89.9	51.9	83.0
≥ 10	45.2	59.9	87.9	99.8							95.0	65.5	87.8
≥ 5	56.5	72.5	94.6	100.0							98.2	76.8	91.6
≥ 0	66.3	81.9	97.6								99.0	85.7	94.2
≥ -5	77.8	89.9	99.0								99.7	93.0	96.6
≥ -10	87.0	96.5	99.7								99.9	98.3	98.5
≥ -15	94.6	99.5	100.0								100.0	99.5	99.5
≥ -20	98.4	99.9										99.9	99.8
≥ -25	99.5	100.0										100.0	100.0
≥ -30	100.0												100.0
MEAN	6.4	12.0	22.9	38.3	50.5	59.4	68.8	63.5	54.2	44.3	28.4	16.0	38.3
S.D.	13.542	12.312	10.819	9.369	8.422	6.973	6.080	6.363	7.986	8.757	10.742	11.996	22.424
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1085	12480

USAFETAC FORM JUL 64 0-21-5 (OL A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

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EXTREME VALUES

MAXIMUM TEMPERATURE

(FROM DAILY OBSERVATIONS)

727450 (STATION) DULUTH IAP MN (STATION NAME) 48-82 (YEARS)

WHOLE DEGREES FAHRENHEIT

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
48	34	41	52	67	83	90	93	94	89	69	60	40	94
49	39	30	46	76	83	91	92	95	81	72	62	45	95
50	34	36	41	53	80	83	89	88	81	74	49	39	89
51	33	41	45	73	80	82	88	81	75	76	49	50	88
52	39	35	40	88	85	87	88	87	83	65	55	39	88
53	37	36	50	63	86	85	86	90	86	86	68	39	90
54	32	45	44	68	75	87	88	86	82	65	60	37	88
55	34	33	58	79	85	87	91	92	80	81	43	33	92
56	32	39	47	60	77	92	84	87	79	80	56	42	92
57	33	40	53	82	77	80	89	90	80	72	50	43	90
58	38	53	51	76	82	85	87	92	82	70	61	37	92
59	30	39	54	68	86	88	89	89	83	70	44	44	89
60	33	36	45	71	78	85	93	86	89	77	55	45	93
61	40	52	50	61	82	93	87	95	90	83	60	44	95
62	36	37	42	77	84	87	80	82	77	73	52	55	87
63	40	37	63	73	82	92	90	90	81	84	58	38	92
64	42	44	46	70	90	87	94	85	81	75	63	33	94
65	36	39	40	83	80	82	87	89	77	74	63	37	89
66	28	44	49	62	84	89	90	84	80	79	52	37	90
67	37	35	65	67	74	81	87	85	79	73	51	41	87
68	44	40	65	78	77	90	86	87	79	73	52	35	90
69	32	36	46	65	90	81	88	90	84	71	56	42	90
70	32	41	47	73	85	87	90	92	85	70	55	41	92
71											51	33	
72	34	32	46	62	87	88	82	88	73	67	48	28	88
73	47	40	56	69	79	80	91	90	80	73	45	34	91
74	35	36	46	69	76	83	92	82	75	74	55	36	92
75	33	33	43	52	81	85	93	87	72	78	69	34	93
76	35	58	50	72	79	88	86	94	95	71	50	38	95
77	29	45	56	84	86	86	89	77	73	65	56	36	89
MEAN													
S. D.													
TOTAL OBS.													

NOTES * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM AIR 64 0-88-8 (OLA)

(AT LEAST ONE DAY LESS THAN 24 OBS)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

EXTREME VALUES

MAXIMUM TEMPERATURE

(FROM DAILY OBSERVATIONS)

727450 (STATION) DULUTH IAP MN (STATION NAME) 48-82 (YEARS)

WHOLE DEGREES FAHRENHEIT

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
78	25	33	58	72	85	87	88	91	91	76	70	35	91
79	26	35	44	60	83	85	88	83	83	68	53	43	88
80	38	35	44	80	86	93	95	82	78	80	58	39	95
81	43	53	60	67	80	78	88	82	82	64	63	34	88
82	34	41	41	75	75	80	90	82	78	66	53	52	90
MEAN	35.1	39.6	49.5	70.4	81.8	86.0	88.8	87.5	81.3	73.4	58.6	39.4	90.8
S.D.	4.910	6.277	7.119	8.504	4.217	4.015	3.220	4.474	5.265	5.736	6.762	5.673	2.475
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1085	12480

NOTES * (BASED ON LESS THAN FULL MONTHS)

& (AT LEAST ONE DAY LESS THAN 24 OBS)

USAF ETAC FORM 0-8-6 (OL-A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

EXTREME VALUES

MINIMUM TEMPERATURE

(FROM DAILY OBSERVATIONS)

727450 DULUTH IAP MN 48-82
STATION STATION NAME YEARS

WHOLE DEGREES FAHRENHEIT

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
48	-27	-26	-26	14	24	35	40	46	38	18	10	-20	-27
49	-24	-24	-9	17	29	35	50	41	29	16	9	-16	-24
50	-33	-22	-21	6	24	37	42	38	30	28	-7	-21	-33
51	-35	-29	-11	18	28	34	45	44	30	12	-5	-19	-35
52	-26	-3	-11	12	32	35	48	43	32	12	-5	-7	-26
53	-23	-24	-17	12	24	36	48	48	31	24	5	-20	-24
54	-33	-17	-9	-5	20	37	48	42	32	21	12	-2	-33
55	-26	-18	-21	20	28	42	50	45	30	24	-8	-30	-30
56	-24	-16	-14	14	24	32	46	42	27	25	-10	-20	-24
57	-25	-15	-11	9	25	35	48	41	28	18	-5	-16	-25
58	-16	-24	5	13	22	34	44	41	32	25	-17	-18	-24
59	-23	-23	-3	15	28	40	45	44	28	22	-9	2	-23
60	-25	-9	-11	12	27	40	42	42	29	17	4	-17	-25
61	-28	-11	7	11	26	38	37	44	24	17	10	-22	-28
62	-33	-26	-28	10	26	30	39	41	23	15	19	-20	-33
63	-31	-27	-5	18	23	33	40	41	30	27	7	-18	-31
64	-14	-13	-11	14	33	31	43	36	27	[illegible]	-23	-25	-25
65	-38	-28	-21	19	32	37	41	36	23	20	8	-9	-38
66	-37	-28	-6	19	19	35	42	43	31	21	-6	-15	-37
67	-30	-28	-17	5	17	41	36	37	25	22	-2	-29	-30
68	-33	-21	-3	12	25	35	41	35	33	25	8	-24	-33
69	-20	-17	-9	16	29	32	39	42	34	16	-6	-12	-20
70	-30	-32	-7	0	26	38	45	33	29	26	-4	-23	-32
71											2	-11	
72	-39	-29	-15	5	28	27	38	38	26	12	3	-20	-39
73	-31	-30	11	17	27	41	38	42	24	26	7	-23	-31
74	-31	-23	-21	5	26	38	48	38	23	18	6	-4	-31
75	-24	-22	-18	-5	28	36	42	38	30	18	-8	-21	-24
76	-30	-28	-7	19	28	39	46	33	29	8	-14	-26	-30
77	-35	-16	4	15	30	37	47	35	36	27	-10	-27	-35
MEAN													
S.D.													
TOTAL OBS.													

NOTES * (BASED ON LESS THAN FULL MONTHS)

USAF ETAC FORM 0-8-6 (OL-A)

§ (AT LEAST ONE DAY LESS THAN 24 OBS)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

EXTREME VALUES

MINIMUM TEMPERATURE

(FROM DAILY OBSERVATIONS)

72745C DULUTH IAP MN 48-82
STATION STATION NAME YEARS

WHOLE DEGREES FAHRENHEIT

YEAR \ MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ALL MONTHS
78	-22	-25	-14	19	20	38	45	39	32	21	-12	-20	-25
79	-32	-23	-8	2	28	35	43	37	33	25	5	-11	-32
80	-24	-22	-14	20	29	34	42	42	27	15	11	-19	-24
81	-23	-26	-4	11	23	43	42	39	29	12	8	-16	-26
82	-38	-30	-21	2	31	30	41	34	30	25	-4	-7	-38
MEAN	-28.3	-22.0	-10.8	11.5	26.1	35.9	43.0	40.0	29.2	19.9	-.5	-17.3	-29.3
S.D.	6.173	6.631	9.139	6.973	3.783	3.625	3.605	3.782	3.619	5.274	9.491	7.514	5.065
TOTAL OBS.	1054	961	1054	1020	1054	1020	1054	1054	1020	1054	1050	1065	12480

NOTES * (BASED ON LESS THAN FULL MONTHS)

(AT LEAST ONE DAY LESS THAN 24 OBS)

USAF ETAC FORM AIR 64 0-88-5 (OLA)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72785 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

PAGE 1 | 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
34/ 33	.3																	3	7	3	3
32/ 31	.9	.6	.3															16	16	8	5
30/ 29	.3	1.0	.7															18	20	9	7
28/ 27	2.3	.6	.2															28	29	34	18
26/ 25	- .8	1.6	.1															22	22	20	15
24/ 23	1.1	1.8	.2															28	28	30	18
22/ 21	1.6	1.7	.1															30	30	36	17
20/ 19	2.7	4.0	.1															61	61	44	33
18/ 17	.4	2.0	.1															23	24	36	42
16/ 15	1.1	1.8																26	26	22	36
14/ 13	2.1	2.1	.1															39	39	35	31
12/ 11	2.0	2.9																48	45	40	33
10/ 9	1.7	2.6																38	38	46	38
8/ 7	1.8	2.8																41	41	36	38
6/ 5	.2	2.6																25	25	27	17
4/ 3	.7	2.9																32	32	38	27
2/ 1	.9	5.0																53	53	49	25
0/ -1	1.6	2.8																39	39	29	22
-2/ -3	2.4	1.8																38	38	54	24
-4/ -5	2.9	1.0																35	35	38	34
-6/ -7	5.3	.8																55	55	59	27
-8/ -9	4.0																	36	36	41	29
-10/-11	3.8																	34	34	34	49
-12/-13	2.1																	19	19	19	31
-14/-15	3.9																	34	34	34	39
-16/-17	2.8																	25	25	25	39
-18/-19	2.2																	20	20	20	51
-20/-21	1.3																	12	12	12	30
-22/-23	1.3																	12	12	12	31
-24/-25	.8																	7	7	7	30
-26/-27	.4																	4	4	4	22
-28/-29	.2																	2	2	2	13
-30/-31																					10
-32/-33																			2		10

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

2

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PAGE 2 0000-0200 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-34/-35																					2
-36/-37																					6
-38/-39																					5
TOTAL	56.0	2.0	2.0																910		899
																		899		899	

Element (X)	$\Sigma x'$	Σx_i	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4891734	65192	72.5	13.525	899							
Dry Bulb	218824	4302	4.7	14.777	910	38.2	92.3					93
Wet Bulb	197448	3624	4.0	14.269	899	39.9	92.7					93
Dew Point	264906	-2184	-2.4	17.003	899	52.1	92.7					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

7745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

PAGE 1 | 0300-0500 HOURS (L.T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
36/ 35																			1		
34/ 33		.1																1	8		
32/ 31	.8	.2		.1														10	12	8	4
30/ 29	.1	.6	.1															7	9	3	3
28/ 27	1.8	.9	.6															29	32	26	15
26/ 25	1.4	1.6																26	26	20	17
24/ 23	1.0	1.7																24	24	34	15
22/ 21	2.3	1.1	.1															31	33	34	16
20/ 19	2.2	2.9	.1															45	45	33	36
18/ 17	1.4	2.6																35	35	35	37
16/ 15	1.0	1.5	.1															23	23	30	33
14/ 13	2.6	1.5	.1															37	37	31	29
12/ 11	1.7	2.3																35	35	30	32
10/ 9	2.5	2.6																45	45	34	31
8/ 7	1.3	2.2																30	30	26	30
6/ 5	.3	2.2																22	22	25	27
4/ 3	.9	2.1																26	26	31	21
2/ 1	.3	4.4																41	41	28	21
0/ -1	2.4	2.0																38	38	40	19
-2/ -3	2.3	2.3																40	40	50	20
-4/ -5	3.4	.9																38	36	37	24
-6/ -7	4.8	.2																48	48	50	27
-8/ -9	3.9																	34	34	36	30
-10/-11	3.6																	31	31	31	37
-12/-13	2.3																	20	20	20	33
-14/-15	3.6																	31	31	31	40
-16/-17	3.0																	26	26	26	44
-18/-19	4.4																	38	38	38	43
-20/-21	3.3																	29	29	29	19
-22/-23	1.4																	12	12	12	37
-24/-25	.9																	8	8	8	17
-26/-27	.9																	8	8	8	35
-28/-29	.3																	3	3	3	29
-30/-31	.3																	3	6	3	9

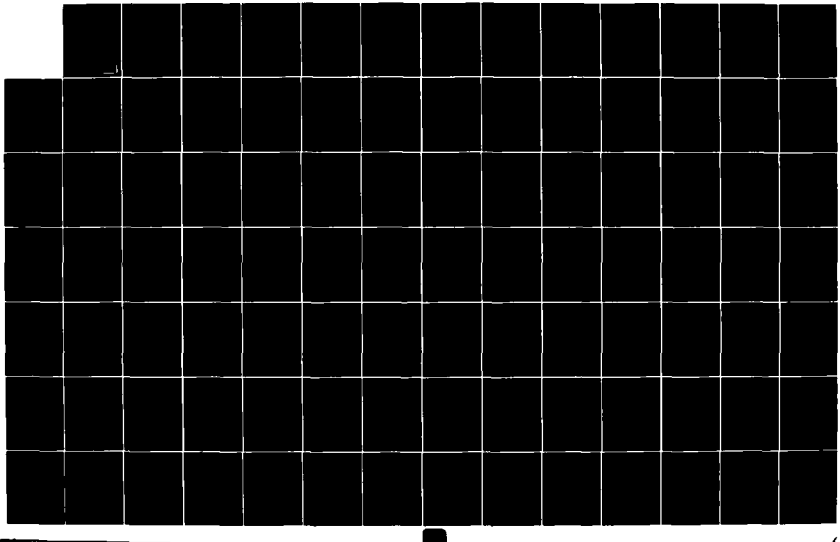
Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

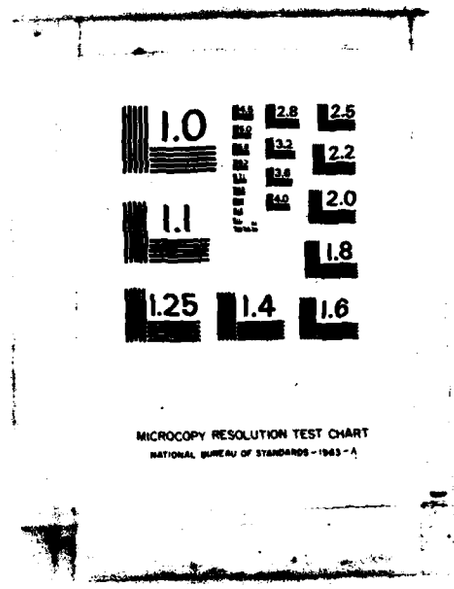
USAFETAC FORM 0-26-5 (OL A) JUN 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

AD-A134 200 DULUTH DULUTH IAP MINNESOTA REVISED UNIFORM SUMMARY OF SURFACE WEATHER OB..(U) AIR FORCE ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER SCOTT A.. 01 AUG 83

UNCLASSIFIED USAFETAC/DS-83/030 SBI-AD-E850 418 F/G 4/2 NL

4/6

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-32/-33																			1		11
-34/-35																					14
-36/-37																					6
-38/-39																					7
TOTAL	62.8	36.0	1.1	.1														870	887	870	870

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	9798063	63595	73.1	13.113	870							
Dry Bulb	222581	2735	3.1	15.547	887	92.7	92.5					93
Wet Bulb	197806	2076	2.4	14.897	870	45.1	93.0					93
Dew Point	281213	-3397	-3.9	17.560	870	53.8	93.0					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

 0600-0800 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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					
36/ 35																				3		
32/ 31	.3	.1																	4	7	3	3
30/ 29	.7	.3																	9	9	7	4
28/ 27	2.2	.8	.2																29	30	27	18
26/ 25	1.0	.8	.6																21	21	15	16
24/ 23	1.6	1.0	.1																28	28	25	14
22/ 21	3.0	1.3																	39	39	47	21
20/ 19	3.4	2.3	.1																52	52	61	32
18/ 17	1.6	2.3																	35	35	40	41
16/ 15	1.3	1.6	.1																27	27	26	31
14/ 13	3.0	.7	.1																34	34	35	42
12/ 11	1.5	1.3																	25	25	21	25
10/ 9	2.5	2.3																	43	44	38	34
8/ 7	1.3	1.0																	21	21	32	21
6/ 5	.8	1.6																	21	22	19	21
4/ 3	1.5	2.5																	35	35	38	21
2/ 1	.4	4.2																	42	42	26	18
0/ -1	2.5	1.8																	38	38	48	22
-2/ -3	2.1	2.0																	37	37	44	18
-4/ -5	5.0	1.2																	56	56	58	22
-6/ -7	3.9	.2																	37	37	45	25
-8/ -9	4.1																		37	37	39	43
-10/-11	2.8																		25	25	25	41
-12/-13	1.8																		16	16	16	31
-14/-15	3.6																		32	32	32	44
-16/-17	2.8																		25	25	25	35
-18/-19	5.8																		52	52	52	45
-20/-21	4.1																		37	37	37	27
-22/-23	1.7																		15	15	15	20
-24/-25	1.1																		10	10	10	33
-26/-27	.6																		5	6	5	34
-28/-29	.9																		8	10	8	39
-30/-31	.3																		3	4	3	17
-32/-33	.1																		1	2	1	15

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

 0600-0800 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-34/-35																					5
-36/-37																			2		15
-38/-39																					6
TOTAL	69.3	29.5	1.2																911		895
																		895		895	

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≥ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	9985228	65739	73.4	13.266	895							
Dry Bulb	231268	1752	1.9	5.825	911	95.0	92.7					93
Wet Bulb	209532	1400	1.6	5.229	895	97.3	93.0					93
Dew Point	304939	-9103	-9.7	7.867	895	85.8	93.0					93

FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PAGE 1 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
40/ 39				.1														1	1		
36/ 35	.2	.2	.1															5	6	2	2
34/ 33	.1	.5		.1														6	6	5	
32/ 31	.1	.6	.3	.1														10	15	5	8
30/ 29	1.2	.5	.2															17	19	17	9
28/ 27	.8	.7																13	18	17	18
26/ 25	1.7	1.5	.2															30	30	22	15
24/ 23	1.6	1.5	.2															29	30	30	24
22/ 21	2.7	1.8	.1															41	42	47	24
20/ 19	2.6	2.8	.2	.1														51	51	36	31
18/ 17	1.2	2.0	.1															30	30	40	37
16/ 15	1.2	1.9	.2															30	30	33	26
14/ 13	2.0	1.6	.2															34	34	27	41
12/ 11	1.5	1.9	.2															32	33	30	27
10/ 9	2.3	2.7																44	44	40	35
8/ 7	.6	3.0	.1															33	38	36	27
6/ 5	.8	3.9																42	42	42	13
4/ 3	.9	2.8																33	33	42	17
2/ 1	.5	3.6																36	36	35	36
0/ -1	3.7	1.0																42	42	45	28
-2/ -3	3.0	2.7																51	51	49	34
-4/ -5	3.8	1.9																47	47	43	25
-6/ -7	3.2	.5																32	32	42	31
-8/ -9	4.1																	36	36	40	39
-10/-11	2.0																	18	18	18	45
-12/-13	1.9																	17	17	17	28
-14/-15	2.8																	25	25	25	42
-16/-17	3.0																	27	27	27	25
-18/-19	4.7																	42	42	42	49
-20/-21	2.0																	18	19	18	31
-22/-23	.7																	6	6	6	25
-24/-25	.3																	3	3	3	28
-26/-27	.6																	5	6	5	31
-28/-29	.1																	1	1	1	26

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

PAGE 2 | 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-30/-31	.1																	1	1	1	6
-32/-33																					5
-34/-35																					8
-36/-37																					4
TOTAL	57.7	39.5	2.4	.5														888	906	888	888

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4848172	64966	72.6	13.768	888							
Dry Bulb	225589	4391	4.8	5.025	906	38.6	91.7					93
Wet Bulb	199091	3663	4.1	4.402	888	40.0	92.3					93
Dew Point	259933	-2055	-2.3	6.961	888	33.0	92.8					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

PAGE 1 | 1200-1800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
46/ 45					.1													1	1		
44/ 43				.1														1	1		
42/ 41				.1														1	1		
40/ 39			.2		.1	.2												5	5		
38/ 37		.1	.2	.1	.2													6	6	3	
36/ 35	.1	.4	.2	.3	.1													11	11	7	1
34/ 33	.2	.1	.7		.1													10	11	6	3
32/ 31	.7	1.1	.3	.1														20	22	17	10
30/ 29	.7	.4	.2															12	14	23	13
28/ 27	.7	.6																11	11	15	14
26/ 25	1.2	2.2	.6	.2														38	38	22	15
24/ 23	1.1	1.9	.6	.1														33	33	36	18
22/ 21	2.1	3.1	.8															54	54	50	24
20/ 19	2.3	5.5	.6	.2														77	77	55	45
18/ 17	.6	2.8	.6															35	35	54	37
16/ 15	.6	3.1	.9															41	41	36	36
14/ 13	1.0	4.0	1.1															55	55	41	31
12/ 11	.4	3.8	.6															43	45	46	37
10/ 9	.7	4.0	.6															47	47	56	48
8/ 7	.3	3.8	.4															41	41	42	28
6/ 5		4.3																38	38	37	22
4/ 3	.1	4.1																38	38	45	23
2/ 1	.1	6.7																61	61	60	45
0/ -1	1.9	2.2																37	37	50	32
-2/ -3	1.0	1.6																23	23	34	24
-4/ -5	1.5	2.8																38	38	25	22
-6/ -7	2.1	1.7																34	34	42	41
-8/ -9	3.2	.1																30	30	41	41
-10/-11	1.1																	10	10	10	70
-12/-13	1.1																	10	10	10	32
-14/-15	1.9																	17	17	17	35
-16/-17	.9																	8	8	8	22
-18/-19	.1																	1	1	1	42
-20/-21	.3																	3	3	3	20

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AM 94 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

* U.S. GOVERNMENT PRINTING OFFICE: 1981 664-512/1119

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

PAGE 2 | 1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-22/-23	.4																	4	4	4	23
-24/-25																					24
-26/-27																					5
-28/-29																					5
-34/-35																					1
-36/-37																					3
-38/-39																					2
TOTAL	28.6	60.6	8.5	1.3	.7	.2												901			894
																		894		894	

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	9165568	59922	66.5	15.550	894							
Dry Bulb	249644	9328	10.4	13.041	901	22.2	89.3					93
Wet Bulb	211090	8014	9.0	12.487	894	25.5	91.3					93
Dew Point	218388	810	.9	15.611	894	46.2	92.6					93

FORM AS-4a 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
48/ 47					.2													2	2		
46/ 45					.1													1	1		
44/ 43				.1														1	1		
42/ 41			.1	.1														2	2		
40/ 39		.1			.3	.4												8	8	2	
38/ 37		.2	.3	.2	.2	.1												10	10	5	
36/ 35		.2	.3	.1	.1													7	7	2	
34/ 33		.2	.6	.3														10	12	9	3
32/ 31	.7	.7	.3															15	20	17	6
30/ 29	.2	.7	.4															12	12	18	12
28/ 27	.7	.9	.1	.1														16	16	18	12
26/ 25	1.3	2.9	.7	.2														26	26	32	18
24/ 23	.8	1.8	.2	.2														27	27	36	20
22/ 21	2.9	2.4	1.3															60	60	48	23
20/ 19	1.4	6.2	.7	.1														76	76	52	55
18/ 17	.4	4.0	1.6															58	58	60	29
16/ 15	.7	4.2	1.4															57	57	48	40
14/ 13	.6	3.1	1.0															42	42	57	28
12/ 11	.1	3.2	1.7															45	46	41	42
10/ 9	.6	4.4	1.4															58	58	46	49
8/ 7	.2	3.3	.8															39	39	58	44
6/ 5		3.9	.1															36	36	38	21
4/ 3	.1	4.1																38	38	50	34
2/ 1		5.4																49	49	43	27
0/ -1	1.3	2.4																34	34	49	28
-2/ -3	.2	2.0																20	21	29	27
-4/ -5	1.0	3.7																42	42	28	32
-6/ -7	.4	4.0																40	40	38	49
-8/ -9	2.3	.1																22	22	49	28
-10/-11	1.0																	9	9	9	56
-12/-13	1.0																	9	10	9	38
-14/-15	.7																	6	6	6	32
-16/-17	.1																	1	1	1	28
-18/-19																					41

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 88 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-20/-21	.3																	3	3	3	25
-22/-23	.3																	3	3	3	24
-24/-25																					15
-26/-27																					6
-28/-29																					2
-36/-37																					4
-38/-39																					2
TOTAL	19.4	64.3	13.1	1.6	1.0	.6													910		900
																		900		900	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 89 F	≤ 93 F	Total
Rel. Hum.	3913418	57536	63.9	16.175	900							
Dry Bulb	268575	10631	11.7	12.603	910	19.5	88.6					93
Wet Bulb	218186	9000	10.0	11.991	900	22.7	91.1					93
Dew Point	211593	1121	1.2	5.291	900	85.2	92.7					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE AS 64

* U.S. GOVERNMENT PRINTING OFFICE:1968-644-012/1119

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

 1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
40/ 39			.1		.1													2	2		
38/ 37			.1	.1		.1												3	3		
36/ 35		.2	.1	.1														4	4	1	
34/ 33	.1	.8	.1	.1	.3													13	15	5	2
32/ 31	.3	.7	.3	.8	.1													20	20	15	6
30/ 29	.8	1.5	.3															24	24	15	7
28/ 27	.6	.4																9	9	24	16
26/ 25	2.0	2.0	.1															37	37	35	21
24/ 23	1.5	1.7		.1														30	31	38	19
22/ 21	1.5	2.1	.2															35	35	35	29
20/ 19	1.9	4.6	.7															65	65	38	41
18/ 17	.6	2.8	.2															32	32	59	28
16/ 15	.8	4.6																49	49	42	26
14/ 13	1.3	2.9	.2															80	80	39	32
12/ 11	.9	3.9																43	43	40	46
10/ 9	1.4	5.0	.8															65	65	52	58
8/ 7	.4	4.4	.1															45	45	51	38
6/ 5	.2	2.8																28	28	83	19
4/ 3	.4	4.8																47	47	37	36
2/ 1	.3	5.2																50	50	89	30
0/ -1	2.1	1.5																33	33	48	17
-2/ -3	1.3	2.8																37	37	39	20
-4/ -5	1.3	2.3																33	33	31	35
-6/ -7	1.5	2.4																36	36	32	38
-8/ -9	5.0	.2																47	47	64	43
-10/-11	3.3																	30	30	31	41
-12/-13	1.0																	9	9	9	38
-14/-15	2.2																	20	20	20	29
-16/-17	.9																	8	8	8	31
-18/-19	.7																	6	6	6	41
-20/-21	.2																	2	2	2	40
-22/-23	.4																	6	6	6	31
-24/-25	.1																	1	1	1	16
-26/-27	.1																	1	1	1	15

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 90 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

* U.S. GOVERNMENT PRINTING OFFICE: 1961 664-112/1039

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-2[illegible]/-29																					6
-[illegible]/-31																					5
-[illegible]/-33																					2
-3[illegible]/-37																					4
-3[illegible]/-39																					2
TOTAL	35.4	59.3	3.4	1.2	.6	.1													907		904
																		904		904	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4451440	61904	68.5	15.336	904							
Dry Bulb	226115	7731	8.5	3.298	907	27.4	90.5					93
Wet Bulb	198267	6723	7.4	2.814	904	30.5	92.4					93
Dew Point	230859	-99	-.1	5.989	904	46.7	92.8					93

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

PAGE 1 2100-2300 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
34/ 33	.1			.1														2	6	1	
32/ 31	.8	.9	.2	.6														22	22	9	8
30/ 29	.3	1.8	.2	.6														26	27	13	5
28/ 27	1.2	1.2	.2															24	25	28	18
26/ 25	1.1	1.2																21	22	29	20
24/ 23	1.9	1.1																27	28	35	14
22/ 21	1.0	1.8	.1															26	27	28	25
20/ 19	2.8	4.8	.1															69	69	82	32
18/ 17	.9	1.7	.2															25	25	48	35
16/ 15	.9	2.7																32	32	19	30
14/ 13	1.0	2.8																34	34	33	41
12/ 11	2.3	3.6																53	53	46	39
10/ 9	2.1	3.8																53	53	65	35
8/ 7	.7	3.8																40	40	33	33
6/ 5	.6	2.8																30	30	37	24
4/ 3	.4	3.7																37	37	37	38
2/ 1	.1	5.7																52	52	35	36
0/ -1	2.8	.8																32	32	60	24
-2/ -3	2.5	1.6																36	36	37	21
-4/ -5	2.3	2.3																42	42	28	22
-6/ -7	3.8	1.7																49	49	58	25
-8/ -9	3.8																	34	34	45	36
-11/-11	4.4																	39	39	39	60
-12/-13	2.9																	25	25	25	24
-14/-15	2.0																	18	18	18	29
-16/-17	2.0																	18	18	18	29
-18/-19	1.0																	9	9	9	68
-20/-21	1.2																	11	11	11	33
-22/-23	.2																	2	2	2	33
-24/-25	.3																	3	3	3	21
-26/-27	.3																	3	3	3	17
-28/-29																					13
-30/-31	.1																	1	1	1	2
-32/-33																					2

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JAN (MONTH)

2100-2300 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-34/-35																					5
-36/-37																					3
-38/-39																					3
TOTAL	47.9	49.7	1.1	1.2															904		895
																		895		895	

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4680547	63467	70.9	14.186	895							
Dry Bulb	211805	5837	6.5	13.886	904	33.1	92.9					93
Wet Bulb	187753	4935	5.5	13.401	895	37.1	92.9					93
Dew Point	239559	-1239	-1.4	16.311	895	48.8	93.0					93

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

ALL HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
48/ 47					.0													2	2		
46/ 45					.0													2	2		
44/ 43				.0														2	2		
42/ 41			.0	.0														3	3		
40/ 39		.0	.0	.0	.1	.1												16	16	2	
38/ 37		.0	.1	.1	.1	.0												19	19	8	
36/ 35	.0	.1	.1	.1	.0													27	32	12	3
34/ 33	.1	.2	.2	.1	.1													45	61	29	11
32/ 31	.6	.6	.2	.2	.0													117	134	82	46
30/ 29	.5	.9	.3	.1														125	138	105	60
28/ 27	1.3	.8	.2	.0														159	166	189	117
26/ 25	1.3	1.7	.3	.1														241	242	195	137
24/ 23	1.3	1.6	.2	.1														222	225	264	138
22/ 21	2.1	1.9	.3															316	320	325	179
20/ 19	2.4	4.2	.3	.1														496	496	341	305
18/ 17	.9	2.5	.3															269	270	362	286
16/ 15	1.0	2.7	.3															285	285	256	258
14/ 13	1.7	2.3	.4															315	315	298	275
12/ 11	1.3	2.9	.3															320	325	292	281
10/ 9	1.7	3.4	.3															393	394	397	328
8/ 7	.8	3.1	.2															290	291	314	255
6/ 5	.4	3.0	.0															238	239	268	168
4/ 3	.6	3.4																286	286	318	213
2/ 1	.3	5.0																388	388	325	238
0/ -1	2.3	1.8																293	293	365	192
-2/ -3	1.9	2.1																282	283	336	188
-4/ -5	2.6	2.0																331	331	280	216
-6/ -7	3.1	1.4																327	327	362	263
-8/ -9	3.8	.1																276	276	355	289
-10/-11	2.7																	196	196	197	399
-12/-13	1.7																	125	126	125	255
-14/-15	2.6																	183	183	183	290
-16/-17	1.9																	138	138	138	253
-18/-19	2.8																	168	168	168	380

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AS 54 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JAN MONTH

PAGE 2 | ALL HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-20/-21	1.6																	115	116	115	225
-22/-23	.8																	58	58	58	224
-24/-25	.4																	32	32	32	182
-26/-27	.4																	26	28	26	165
-28/-29	.2																	14	19	14	133
-30/-31	.1																	8	12	8	49
-32/-33	.0																	1	5	1	45
-34/-35																					35
-36/-37																			2		45
-38/-39																					27
TOTAL	47.0	47.7	4.1	.7	.3	.1													7236		7145
																		7145		7145	

Element (X)	Σ_X'	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	36734170	501316	70.2	9.778	7145							
Dry Bulb	1854401	46707	6.5	4.651	7236	266.6	729.9					744
Wet Bulb	1619173	39435	5.5	4.006	7145	287.7	738.7					744
Dew Point	2011380	-11208	-1.6	6.706	7145	481.9	742.5					744

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

 0000-0200 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
41/ 39			.4															3	3		
38/ 37		.2	.5			.1												7	7	1	
36/ 35		.4	.4															6	6	7	
34/ 33		.7	.4		.2													11	11	5	6
32/ 31	.4	3.5	.4															35	35	28	9
30/ 29	.6	1.3	1.0															28	28	25	23
28/ 27	1.1	1.8	.6															29	29	27	25
26/ 25	1.5	3.2	.4															41	41	38	20
24/ 23	1.5	2.9	.2															38	41	49	22
22/ 21	1.8	3.6	.4															48	48	46	38
20/ 19	1.2	4.9	.4															53	53	28	38
18/ 17	.7	3.6	.1															37	37	58	35
16/ 15	.1	4.4	.1															38	38	36	37
14/ 13	1.6	2.8	.2															38	38	46	31
12/ 11	1.7	3.8	.1															46	46	35	47
10/ 9	2.2	4.1	.4															55	55	52	58
8/ 7	1.0	2.9																32	32	43	38
6/ 5	.1	2.7																23	23	28	25
4/ 3	.8	3.0																32	32	38	21
2/ 1	.4	4.0																36	38	29	31
0/ -1	1.9	.6																21	21	34	27
-2/ -3	1.6	1.3																28	28	27	27
-4/ -5	2.4	1.0																28	28	24	29
-6/ -7	2.5	.6																26	26	30	25
-8/ -9	2.3																	19	19	21	33
-10/-11	2.2																	18	18	18	25
-12/-13	1.2																	10	10	10	14
-14/-15	1.2																	10	10	10	30
-16/-17	2.5																	21	21	21	10
-18/-19	1.3																	11	11	11	27
-20/-21	.4																	3	3	3	21
-22/-23	.1																	1	1	1	15
-24/-25																					17
-26/-27																					18

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_s	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum..						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PAGE 2 0000-0200 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-24/-29																					7
-32/-33																					2
-34/-35																					1
TOTAL	36.4	57.4	5.8		.2	.1													829		824
																		824		824	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4608009	60623	73.6	13.405	824							
Dry Bulb	265106	9382	11.3	13.854	829	19.5	81.3					84
Wet Bulb	236637	8531	10.4	13.424	824	21.4	82.7					84
Dew Point	224398	3552	4.3	15.939	824	33.0	83.9					84

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | FEB MONTH

PAGE 1 | 0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
38/ 37			.4	.2	.1													6	6		
36/ 35		.6																5	5	3	
34/ 33		1.7	.5															18	18	11	4
32/ 31	.6	2.8	.8															31	31	23	13
30/ 29	1.2	2.2	.7															34	34	33	23
28/ 27	.7	1.6	.1															20	20	29	24
26/ 25	1.1	2.0	.5															30	30	27	28
24/ 23	1.8	3.9																47	47	52	22
22/ 21	2.0	2.4																37	37	44	31
20/ 19	1.3	3.0	.4															39	39	23	47
18/ 17	.7	3.5																35	35	41	34
16/ 15	1.6	3.0																38	38	40	27
14/ 13	2.2	3.9																50	50	39	39
12/ 11	1.2	3.9																42	42	46	28
10/ 9	1.9	2.4																36	36	40	46
8/ 7	.8	2.7																29	29	30	45
6/ 5	.5	2.7	.1															27	27	32	26
4/ 3	1.2	3.3																37	37	43	15
2/ 1	1.2	4.3																46	46	38	24
0/ -1	1.6	.5																17	17	26	32
-2/ -3	1.0	.7																14	14	14	31
-4/ -5	3.3	.5																31	31	33	27
-6/ -7	3.7																	31	31	33	30
-8/ -9	3.5																	29	29	29	22
-10/-11	1.8																	15	15	15	20
-12/-13	1.4																	12	12	12	28
-14/-15	2.2																	18	18	18	17
-16/-17	1.7																	14	14	14	25
-18/-19	2.9																	24	24	24	23
-20/-21	1.3																	11	11	11	22
-22/-23	.8																	7	7	7	18
-24/-25																					16
-26/-27																					22
-28/-29																					10

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

 0300-0500 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-30/-31																					10
-32/-33																					3
-34/-35																					1
-36/-37																					1
TOTAL	45.3	51.3	3.0	.2	.1													830	830	830	830

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4862401	62661	75.5	12.609	830							
Dry Bulb	260206	7962	9.6	14.891	830	22.6	81.1					84
Wet Bulb	239196	7360	8.9	14.985	830	23.9	82.6					84
Dew Point	248039	2748	3.3	16.978	830	35.8	83.6					84

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | FEB MONTH

PAGE 1 | 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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					
38/ 37				.2															2	2		
36/ 35	.2	.1		.2															5	5	3	1
34/ 33		1.8	.4																18	18	2	2
32/ 31	1.0	2.3	.4																30	30	29	11
30/ 29	1.0	2.9	.5																36	36	33	20
28/ 27	1.5	1.0	.1																21	21	32	26
26/ 25	.8	1.7	.2																23	25	26	34
24/ 23	1.9	3.8																	88	88	35	10
22/ 21	2.3	1.7																	33	33	46	38
20/ 19	2.1	1.9	.4																36	36	33	42
18/ 17	1.1	2.4																	29	29	30	31
16/ 15	1.3	3.5																	40	40	30	33
14/ 13	2.1	1.1																	26	26	36	32
12/ 11	1.8	3.5																	44	44	31	33
10/ 9	2.7	3.9																	54	54	57	28
8/ 7	1.1	2.3																	28	28	35	36
6/ 5	.8	2.7	.1																30	30	31	27
4/ 3	.7	3.2																	32	32	37	32
2/ 1	.1	6.1																	51	51	38	23
0/ -1	2.3	1.6																	32	32	37	20
-2/ -3	2.2																		18	18	31	29
-4/ -5	2.2	.2																	20	20	18	25
-6/ -7	3.0																		25	25	27	40
-8/ -9	3.0	.1																	26	26	26	33
-10/-11	2.2																		18	18	18	33
-12/-13	1.6																		13	13	13	16
-14/-15	1.5																		12	12	12	14
-16/-17	3.2																		24	24	24	16
-18/-19	2.4																		20	20	20	24
-20/-21	1.7																		14	14	14	13
-22/-23	1.2																		10	10	10	14
-24/-25	.6																		5	5	5	25
-26/-27	.2																		2	2	2	24
-28/-29																						16

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM: 0-26-5 (OL A) 80 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

 0600-0800 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-30/-31	.1																	1	1	1	6
-32/-33																					5
-34/-35																					10
-36/-37																					2
TOTAL	50.0	47.5	2.1	.5														824	826	824	824

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4865188	62468	75.8	12.541	824							
Dry Bulb	252133	7015	8.5	15.277	826	24.6	81.5					84
Wet Bulb	233585	6443	7.8	14.920	824	26.5	83.5					84
Dew Point	255009	1905	2.3	17.450	824	37.2	83.7					84

USAFETAC FORM AS 54 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PAGE 1 0900-1100 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
47/ 45					.1	.1												2	2		
45/ 43				.1	.1													2	3		
41/ 39			.1	.2														3	3	1	
39/ 37	.2	.1	.4															6	6	4	1
37/ 35		.7	.1															7	7	6	1
34/ 33	.4	1.4	.1															15	15	13	6
32/ 31	1.1	3.1	.6															39	39	25	18
30/ 29	.9	2.0	.6	.1														29	29	29	22
28/ 27	.6	1.9	.5	.1														25	25	27	24
26/ 25	1.6	2.7	.9															82	85	38	29
24/ 23	2.0	2.6	.4															40	40	49	19
22/ 21	1.0	3.0	.2															38	38	44	29
20/ 19	1.0	4.7	1.4															57	58	28	44
18/ 17	1.2	4.5	.4															49	49	66	22
16/ 15	.7	3.7	.4															39	39	36	41
14/ 13	.5	2.6	.5															29	29	35	46
12/ 11	1.2	4.6	.2															49	49	30	41
10/ 9	1.2	4.7	.1															49	49	59	38
8/ 7	.9	4.5																43	43	46	28
6/ 5	.2	4.2																36	36	43	23
4/ 3	.6	2.8																28	28	38	37
2/ 1	.1	4.5																37	37	26	31
0/ -1	2.2	.9																25	25	39	31
-2/ -3	1.1	.9																16	16	18	32
-4/ -5	1.5	.6																17	17	17	47
-6/ -7	1.9	.5																19	19	21	25
-8/ -9	2.7	.1																23	23	25	29
-10/-11	1.6																	13	13	18	28
-12/-13	.6																	5	5	5	9
-14/-15	1.4																	11	11	11	21
-16/-17	1.4																	11	11	11	15
-18/-19	.7																	6	7	6	21
-20/-21	.1																	1	1	1	17
-22/-23	.1																	1	1	1	12

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

 0900-1100 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-24/-25																					15
-26/-27																					7
-28/-29																					3
-30/-31																					3
-32/-33																					1
TOTAL	30.9	61.1	6.9	.6	.2	.1													814		808
																		808		808	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4929783	58703	72.7	9.075	808							
Dry Bulb	278278	10922	12.8	3.347	814	15.4	80.3					84
Wet Bulb	243312	9416	11.7	2.866	808	17.6	81.5					84
Dew Point	217449	4347	5.4	5.507	808	32.4	83.2					84

USAFETAC FORM 0-26-5 (OL A) AS 44 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | FEB MONTH

 1200-1800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
52/ 51				.1	.2			.2										5	5			
50/ 49			.1		.2	.1	.1											5	5			
48/ 47		.1			.1													2	2			
46/ 45					.1	.2												3	3	3		
44/ 43				.2	.2													4	4	2	1	
42/ 41				.4														3	3	3	1	
40/ 39		.1	.7	.2														9	9	2	1	
38/ 37		.2	.7	.1														9	9	12		
36/ 35		.6	.5	.2														11	11	15		
34/ 33	.4	1.7	.7	1.1														32	33	17	13	
32/ 31	.4	2.3	2.1	.6	.1													45	45	21	16	
30/ 29	.7	1.6	1.8	.2														36	36	33	25	
28/ 27	1.6	2.5	1.5	.4														49	50	57	30	
26/ 25	.4	3.5	1.1	.4														48	48	57	27	
24/ 23	.2	2.1	1.3															30	30	0	21	
22/ 21	1.1	4.5	2.3	.7														71	71	89	29	
20/ 19	1.0	5.8	3.2	.6														87	87	57	54	
18/ 17	.4	1.3	1.3															25	25	75	82	
16/ 15	.1	2.8	1.6															37	37	37	56	
14/ 13	.5	4.6	1.9															58	58	33	39	
12/ 11	.4	3.8	1.1															43	43	56	29	
10/ 9	.8	4.6	1.2															55	55	55	36	
8/ 7	.1	2.7	.8															30	30	48	46	
6/ 5		2.4	.1															21	21	33	26	
4/ 3		3.4																28	28	24	26	
2/ 1		2.9																28	28	36	42	
0/ -1	.2	.6																7	7	16	37	
-2/ -3	.2	1.1																11	11	10	40	
-4/ -5	.4	1.7																17	17	7	33	
-6/ -7	.7	1.0																14	14	21	13	
-8/ -9	.7	.1																7	7	14	22	
-10/-11																					29	
-12/-13	.1																	1	1	1	15	
-14/-15	.1																	1	1	1	16	

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) 80 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

* U.S. GOVERNMENT PRINTING OFFICE: 1979-640-527/1019

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | FEB MONTH

1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-16/-17																					19
-18/-19																					15
-20/-21																					10
-22/-23																					10
-24/-25																					4
-26/-27																					1
TOTAL	10.6	58.1	24.2	5.3	1.1	.4	.1	.2										824	826	824	824

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature					
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.	3688620	53538	65.0	15.977	824							
Dry Bulb	394160	15122	18.3	11.925	826	5.9	75.5					84
Wet Bulb	318899	13305	16.1	11.245	824	7.1	78.5					84
Dew Point	221843	6525	7.9	14.380	824	26.9	82.9					84

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | FEB MONTH

 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
54/ 53					.2		.2											4	4		
52/ 51					.4				.4									6	6		
50/ 49					.1	.1												2	2		
48/ 47					.2													2	2		
46/ 45				.4	.4	.1												7	7	2	
44/ 43				.1	.2													3	3	4	
42/ 41				.6	.1													6	6	4	
40/ 39			.5	1.2														14	14	4	
38/ 37		.2	.5	.1														7	7	11	1
36/ 35		.2	.2	1.0	.1													13	13	13	2
34/ 33	.1	2.7	1.8	1.6	.2													53	53	21	6
32/ 31		2.0	1.7	.5	.2													36	36	27	18
30/ 29	.5	1.3	1.6	.1														29	29	45	23
28/ 27	1.1	2.6	2.3	.4														52	52	43	25
26/ 25	.1	2.7	1.7	.9														44	44	43	36
24/ 23	.7	2.1	2.0	.4														42	42	58	17
22/ 21	.6	3.6	2.3	1.6														66	66	44	33
20/ 19	1.7	4.8	4.4	.2														91	92	68	59
18/ 17		2.3	1.5	.2														33	34	75	43
16/ 15		2.1	1.7	.4														34	34	42	48
14/ 13	.1	2.7	1.8	.1														39	39	32	52
12/ 11	.5	2.8	2.9															51	51	40	26
10/ 9	.4	4.2	.7															43	43	56	35
8/ 7	.1	2.1	1.2															28	28	52	46
6/ 5	.1	1.8	.9															23	23	22	27
4/ 3		2.7																22	22	27	28
2/ 1		1.6																13	13	27	35
0/ -1	.5	.7																10	10	13	28
-2/ -3	.1	1.6																14	14	11	36
-4/ -5	.5	1.6																17	17	13	37
-6/ -7	.4	.9																10	10	14	21
-8/ -9	.1																	1	1	8	22
-10/-11																					23
-12/-13																					18

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

1500-1700 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-14/-15																				16
-16/-17																				15
-18/-19																				21
-20/-21																				7
-22/-23																				12
-24/-25																				3
TOTAL	7.7	89.3	29.9	9.8	2.3	.2	.2		.4								815	917	815	815

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3307602	50112	61.5	16.676	815							
Dry Bulb	433294	16122	19.7	11.879	817	5.3	72.0					84
Wet Bulb	337583	13979	17.2	10.962	815	6.1	77.9					84
Dew Point	216027	6933	7.9	9.298	815	26.7	83.1					84

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PAGE 1 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
50/ 49						.1												1	1		
48/ 47								.1										1	1		
46/ 45				.2														2	2		
44/ 43				.1	.2													3	3		
42/ 41			.1	.4		.1												5	5		
40/ 39			.7	.2														8	8	3	
38/ 37			.4	.5		.1												8	8	8	
36/ 35		.1	.6	.4														9	9	6	
34/ 33		2.7	1.1	.2														33	33	13	6
32/ 31	.7	2.3	1.2	.2														37	37	38	21
30/ 29	.6	1.1	1.7	.5														32	32	30	26
28/ 27	.2	1.9	1.9	.1														35	35	28	13
26/ 25	1.2	3.6	.9	.2														49	49	52	31
24/ 23	.5	3.0	1.0	.4														60	60	53	19
22/ 21	2.1	3.8	1.6	.4														68	68	62	28
20/ 19	.9	5.5	2.7	.4														77	77	38	71
18/ 17		3.8	1.5	.2														45	45	63	42
16/ 15	.2	2.6	1.2															33	33	57	32
14/ 13	.7	2.9	1.3															41	41	33	35
12/ 11	1.1	3.5	.9															45	45	46	38
10/ 9	.6	3.8	.9															43	43	52	57
8/ 7	.6	2.7	.5															31	31	60	31
6/ 5	.1	3.3																28	28	28	38
4/ 3	.1	3.6																31	32	36	26
2/ 1	.2	3.0																27	27	33	32
0/ -1	.9	1.5																19	20	26	25
-2/ -3	.4	1.3																14	14	17	27
-4/ -5	.9	1.3																18	18	12	33
-6/ -7	.2	1.6																15	15	15	23
-8/ -9	1.5	.2																16	16	25	27
-10/-11	.6																	5	5	5	32
-12/-13	.5																	6	6	6	17
-14/-15	.5																	6	6	6	18
-16/-17	.2																	2	2	2	8

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) JUL 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | FEB MONTH

1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-14/-19																					25
-20/-21																					19
-22/-23																					3
-24/-25																					13
-26/-27																					8
-30/-31																					1
TOTAL	15.6	59.2	20.0	4.5	.2	.4		.1										823	825	823	823

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3849430	54650	66.4	16.378	823							
Dry Bulb	345409	13475	16.3	12.332	825	9.8	76.9					84
Wet Bulb	285610	11948	14.5	11.681	823	11.2	80.9					84
Dew Point	218826	5422	6.6	14.925	823	28.5	83.4					84

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | FEB MONTH

PAGE 1 | 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
42/ 41			.4															3	3		
40/ 39		.2	.6	.1														8	8		
38/ 37		.1	.5															5	5	7	
36/ 35		.2	.4															5	5	5	
34/ 33		1.3	.4		.2													16	16	7	10
32/ 31	.4	3.1	1.1															37	37	26	8
30/ 29		2.6	1.0	.1														30	30	23	30
28/ 27	.1	2.2	.5															23	23	38	8
26/ 25	1.7	3.5	.9															50	50	41	30
24/ 23	.9	4.3	.6															47	47	52	20
22/ 21	2.0	3.3	.7															49	49	65	32
20/ 19	.2	3.4	1.1															39	39	22	62
18/ 17	.5	4.3	.6															44	44	40	35
16/ 15	1.2	4.8	1.0	.1														58	58	48	28
14/ 13	1.0	2.9	.6															37	37	50	44
12/ 11	1.0	4.3	.6															48	48	39	29
10/ 9	1.2	4.2	.4															47	47	55	50
8/ 7	.7	3.1	.1															32	32	39	48
6/ 5	.7	2.8																29	29	40	25
4/ 3	.1	2.7																23	23	26	33
2/ 1	.6	3.9																37	37	33	26
0/ -1	1.6	1.6																26	26	29	25
-2/ -3	1.5	1.3																23	23	30	24
-4/ -5	.6	1.5																17	17	18	31
-6/ -7	1.0	1.8																23	23	20	27
-8/ -9	1.8	.1																16	16	26	20
-10/-11	2.1																	17	17	18	39
-12/-13	.6																	5	5	5	12
-14/-15	1.7																	14	14	14	21
-16/-17	.7																	6	6	6	18
-18/-19	.2																	2	2	2	23
-20/-21	.1																	1	1	1	22
-22/-23																					8
-24/-25																					11

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AM 64 0-26-5 (OL A) USAFETAC

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

PAGE 2 2100-2300 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-26/-27																					15
-28/-29																					2
-30/-31																					1
TOTAL	24.4	63.6	11.4	.4	.2														817		817
																			817	817	

Element (X)	Σx^2	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.	4269336	57866	70.8	14.469	817							
Dry Bulb	283352	10908	13.4	12.991	817	15.4	80.2					84
Wet Bulb	247650	9884	12.1	12.528	817	17.0	82.0					84
Dew Point	218081	4379	5.4	15.443	817	30.7	83.0					84

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

 ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
54/ 53					.0		.0											4	4		
52/ 51				.0	.1			.0	.0									11	11		
50/ 49			.0		.0	.0	.0											8	8		
48/ 47		.0			.0			.0										5	5		
46/ 45				.1	.1	.1												14	14	5	
44/ 43				.1	.1													12	13	6	1
42/ 41			.1	.2	.0	.0												17	17	7	1
40/ 39		.0	.4	.3														85	85	10	1
38/ 37	.0	.1	.4	.2	.0	.0												50	50	43	2
36/ 35	.0	.4	.3	.2	.0													61	61	58	4
34/ 33	.1	1.8	.7	.4	.1													196	197	89	53
32/ 31	.6	2.7	1.3	.2	.0													290	290	217	114
30/ 29	.7	1.9	1.1	.1														250	250	251	192
28/ 27	.9	1.9	.9	.1														258	255	277	175
26/ 25	1.1	2.9	.8	.2														323	328	308	235
24/ 23	1.2	3.0	.7	.1														328	331	383	150
22/ 21	1.6	3.2	.9	.3														402	402	400	258
20/ 19	1.2	4.2	1.7	.2														479	481	293	417
18/ 17	.6	3.2	.7	.1														297	298	448	284
16/ 15	.7	3.4	.7	.1														317	317	326	298
14/ 13	1.1	2.9	.8	.0														318	318	304	318
12/ 11	1.1	3.8	.7															368	368	323	271
10/ 9	1.4	4.0	.5															382	382	426	340
8/ 7	.7	2.8	.3															253	253	333	318
6/ 5	.3	2.8	.2															217	217	257	217
4/ 3	.5	3.1																233	238	267	216
2/ 1	.3	3.8																271	273	255	244
0/ -1	1.4	1.0																157	158	220	225
-2/ -3	1.0	1.0																134	134	158	246
-4/ -5	1.5	1.1																165	165	138	262
-6/ -7	1.7	.8																163	163	181	204
-8/ -9	2.0	.1																135	135	174	208
-10/-11	1.3																	86	86	88	225
-12/-13	.8																	50	50	50	125

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 90 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) FEB (MONTH)

 ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-14/-15	1.1																	70	70	70	153
-16/-17	1.2																	80	80	80	126
-18/-19	1.0																	63	64	63	179
-20/-21	.5																	30	30	30	131
-22/-23	.3																	19	19	19	92
-24/-25	.1																	5	5	5	104
-26/-27	.0																	2	2	2	91
-28/-29																					38
-30/-31	.0																	1	1	1	21
-32/-33																					11
-34/-35																					12
-36/-37																					3
TOTAL	27.6	55.9	12.9	2.7	.6	.2	.0	.0	.0									6565	6584	6565	6565

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 90 F	Total
Rel. Hum.	33875369	460621	70.2	15.400	6565							
Dry Bulb	2511938	90408	13.7	13.892	6584	118.6	628.6					672
Wet Bulb	2142472	80866	12.3	13.215	6565	130.9	649.7					672
Dew Point	1819667	35307	5.4	15.757	6565	251.4	665.7					672

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 DULUTH IAP MN 73-82 MAR
STATION STATION NAME YEARS MONTH

PAGE 1 0000-0200
HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
49/ 47		.2	.1															3	3	1	1
46/ 45		.3			.1													4	4	3	1
44/ 43		.3	.1	.1														5	5	2	2
42/ 41	.2		.1	.1														4	4	5	5
40/ 39			.3	.4														7	7	1	1
38/ 37	1.3	2.1	2.2	.2	.3													56	56	19	7
36/ 35	1.2	.5	.8	.1														24	24	36	23
34/ 33	1.9	4.1	.7	.1														61	61	89	25
32/ 31	1.0	5.0	2.6	.2														81	82	65	40
30/ 29	1.8	3.8	2.6	.3														74	75	61	63
28/ 27	2.2	3.9	1.5															70	71	79	53
26/ 25	1.6	5.3	.7															69	69	84	87
24/ 23	1.0	3.0	1.1															46	46	71	36
22/ 21	1.8	3.5	1.9	.1														66	66	89	63
20/ 19	1.1	5.3	1.4															71	71	58	82
18/ 17	.4	2.3	.2															27	27	58	57
16/ 15		2.4	.7															28	29	32	47
14/ 13		2.3	.5															26	26	22	35
12/ 11	.4	1.6	.9															27	27	28	27
10/ 9	.5	2.5	.3															31	31	28	35
8/ 7	.2	2.3	.2															25	25	38	41
6/ 5	.1	2.3																22	22	27	20
4/ 3	.1	2.5																24	24	29	17
2/ 1		2.6																24	24	19	20
0/ -1	.7	.5																11	11	22	22
-2/ -3	.2	.7																8	8	10	15
-4/ -5	.3	.4																7	7	6	36
-6/ -7	.1	.1																2	2	4	12
-8/ -9	.3																	3	3	4	13
-10/-11	.2																	2	2	2	24
-12/-13	.1																	1	1	1	10
-14/-15	.1																	1	1	1	11
-16/-17	.2																	2	2	2	6
-18/-19																					4

Element (X)	$\Sigma_{R'}$	Σ_R	$\bar{X}$	σ_R	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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			Dry Bulb	Wet Bulb	Dew Point
-20/-21																						4
-22/-23																						3
-24/-25																						1
-26/-27																						2
-28/-29																						1
TOTAL	19.2	59.6	19.0	1.8	.4														912		916		912
																			912		912	

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 89 F	≥ 93 F	Total
Rel. Hum.	5313705	68267	74.9	14.951	912							
Dry Bulb	576071	20465	22.3	11.397	916	3.8	76.3					93
Wet Bulb	506521	18917	20.7	11.193	912	5.3	81.2					93
Dew Point	392806	13904	15.2	14.089	912	16.7	86.9					93

USAFETAC FORM AS 44 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAR MONTH

 0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
44/ 43		.4																4	4	1	
42/ 41		.2																2	2	5	4
40/ 39		.3	.6															8	8	1	2
38/ 37	1.3	1.3	1.5	.4														42	42	16	10
36/ 35	1.3	1.7	1.2	.2														40	40	31	19
34/ 33	2.5	3.1	.7															57	57	60	32
32/ 31	2.1	3.9	1.7															69	69	61	47
30/ 29	2.1	3.1	1.5															61	61	59	56
28/ 27	.9	3.3	1.4															51	51	47	35
26/ 25	1.8	2.9	1.5															56	56	71	47
24/ 23	.9	5.0	.8															60	60	65	41
22/ 21	2.8	3.3	.7															61	61	76	54
20/ 19	1.8	4.7	1.1															69	69	45	82
18/ 17	.7	3.0	.4															37	37	57	68
16/ 15	.9	3.2																33	33	29	52
14/ 13	.3	3.2																32	32	32	31
12/ 11	.8	2.5	.1															31	31	37	35
10/ 9	.8	2.5	.1															31	31	34	36
8/ 7	.8	1.8																23	23	27	43
6/ 5	.2	2.4																24	24	19	27
4/ 3	.2	2.4																24	24	34	19
2/ 1		3.1																28	28	22	17
0/ -1	.9	.7																13	13	21	17
-2/ -3	.7	.3																9	9	14	15
-4/ -5	1.0	.2																11	11	10	27
-6/ -7	.6	.2																7	7	7	24
-8/ -9	1.1																	10	10	12	17
-10/-11	.9																	4	4	4	19
-12/-13	.2																	2	2	2	11
-14/-15	.3																	3	3	3	8
-16/-17	.1																	1	1	1	5
-18/-19	.2																	2	2	2	10
-20/-21	.2																	2	2	2	7
-22/-23																					5

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 88 F	≤ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) 8/73 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

2

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

 0300-0500 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-24/-25																					1
-26/-27																					1
-28/-29																					3
TOTAL	27.	25	8.8	13.3	.7														907		907
																		907		907	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.	5614037	70275	77.5	13.661	907							
Dry Bulb	519493	18603	20.5	12.339	907	6.6	77.3					93
Wet Bulb	468363	17455	19.2	12.091	907	8.0	81.3					93
Dew Point	378782	13038	14.4	14.533	907	17.8	86.1					93

FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAR MONTH

PAGE 1 | 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
44/ 43		.2																2	2		
42/ 41		.2																2	2	2	2
40/ 39		.3	.2	.4														9	9	2	1
38/ 37	1.8	1.6	.8	.1														39	39	19	11
36/ 35	1.8	1.8	1.5															46	46	37	23
34/ 33	1.8	2.2	.9															44	44	53	33
32/ 31	2.4	4.9	1.5															81	81	60	44
30/ 29	1.8	3.1	1.0															53	53	59	47
28/ 27	2.0	2.6	.8	.1														50	51	60	49
26/ 25	1.5	4.2	.7															58	58	58	53
24/ 23	1.0	3.7	.4															47	47	61	36
22/ 21	2.4	4.9	.9															75	75	71	51
20/ 19	2.0	3.6	.9															59	59	53	73
18/ 17	.7	2.4	.3															31	31	37	55
16/ 15	.7	3.2																35	35	41	38
14/ 13	.8	1.8	.1															24	24	31	32
12/ 11	.4	3.0	.2															33	34	23	33
10/ 9	1.8	2.3	.2															39	39	47	36
8/ 7	.4	2.1																23	23	23	38
6/ 5	.8	2.2																24	24	24	24
4/ 3	.5	3.2																34	34	44	22
2/ 1	.1	2.9																27	27	23	28
0/ -1	1.1	.7																16	16	21	14
-2/ -3	1.3	.3																15	15	21	20
-4/ -5	.8	.2																9	9	7	19
-6/ -7	1.2	.1																12	12	14	28
-8/ -9	.4																	4	4	4	28
-10/-11	.4																	4	4	4	19
-12/-13	.4																	4	4	4	11
-14/-15	.3																	3	3	3	10
-16/-17	.8																	7	7	7	9
-18/-19	.1																	1	1	1	5
-20/-21	.2																	2	2	2	5
-22/-23																					6

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AS-64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

2

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

 0600-0800 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-24/-25																					5
-26/-27																					2
-28/-29																					2
TOTAL	31	257	710	4	7														914		912
																		912		912	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	5787241	71631	78.5	13.300	912							
Dry Bulb	508124	18098	19.8	12.808	914	7.8	78.6					93
Wet Bulb	461236	17018	18.7	12.558	912	9.0	81.5					93
Dew Point	381786	12794	14.0	14.902	912	18.7	85.9					93

USAFETAC FORM 0-26-5 (OL A) AUG 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAR MONTH

PAGE 1 | 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
50/ 49			.1		.1													2	2		
48/ 47				.1	.3													8	4	1	
46/ 45				.2	.3													5	5		1
44/ 43		.1	.3	.1	.1	.1												7	7		
42/ 41			.3	1.1		.1												14	14	3	
40/ 39	.3	.3	.8	.4		.1												18	18	13	4
38/ 37	1.7	2.0	1.9	1.3														62	62	29	13
36/ 35	1.1	1.6	2.3	.8	.2													58	58	89	29
34/ 33	1.7	3.6	3.3	.8														84	84	62	26
32/ 31	2.3	4.3	3.7	.9	.1													99	99	89	55
30/ 29	1.6	1.9	2.2	.4	.1													56	56	79	52
28/ 27	.9	3.0	1.3	.2														49	49	70	64
26/ 25	.8	3.0	1.4	.7														53	53	54	54
24/ 23	.3	2.4	1.0	.2														36	36	52	50
22/ 21	1.6	3.3	1.4	.6														62	62	55	53
20/ 19	1.4	3.9	2.4	.1														71	71	61	67
18/ 17		2.9	1.6															40	40	50	49
16/ 15		1.8	1.3															28	28	43	38
14/ 13	.6	2.3	.8															33	33	34	33
12/ 11	.7	2.2	.9															34	34	34	42
10/ 9		1.9	.9															25	25	30	38
8/ 7		1.3	.2															14	14	28	33
6/ 5	.2	1.8																18	18	18	21
4/ 3		.9																8	8	15	27
2/ 1		1.0																9	9	11	24
0/ -1	.1	.3																4	4	6	26
-2/ -3		.2																2	2	4	19
-4/ -5		.1																1	1	1	18
-6/ -7	.1	.1																2	2	3	23
-8/ -9	.1	.1																2	2	2	11
-10/-11	.1																	1	1	1	9
-12/-13	.1																	1	1	1	3
-14/-15	.1																	1	1	1	4
-16/-17																					5

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AWS A4 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PAGE 2 0900-1100 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-1 / -19																					3
- 0 / -21																					1
- 2 / -23																					3
-24 / -25																					1
TOTAL	15.5	46.5	28.4	8.0	1.3	.3												899	899	899	899

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 88 F	≥ 93 F	Total
Rel. Hum.	4853968	64366	71.6	16.536	899							
Dry Bulb	666634	22580	25.1	10.526	899	1.4	67.1					93
Wet Bulb	564956	20604	22.9	10.162	899	2.0	76.8					93
Dew Point	404475	15019	16.7	13.077	899	13.0	85.4					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PAGE 1 1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
[illegible] / 59				.1														1	1		
56/ 55			.1				.1											2	2		
54/ 53						.4	.1											5	5	1	
52/ 51			.1		.2		.3											6	6	1	
50/ 49					.4	.4	.1											9	9	1	1
48/ 47			.2	.1	.2	.3	.3											11	11		1
46/ 45			.1	.4	.7		.2											13	13	4	1
44/ 43		.2	.2	.5	.4	.1	.1											15	15	6	
42/ 41		.7	.8	.4	1.0	.1												24	24	13	
40/ 39	.3	.4	1.0	3.1	1.2													55	55	24	10
38/ 37	1.4	1.2	2.3	2.4	.9	.1												76	76	37	11
36/ 35	.8	3.1	2.3	2.7	.8	.1												89	89	52	26
34/ 33	1.2	2.3	2.1	1.5	.7	.1												72	72	106	29
32/ 31	1.2	1.7	3.3	1.7	.5	.1												79	79	83	50
30/ 29	.8	2.2	1.7	1.1	.7													59	59	68	49
28/ 27	.4	2.6	1.4	1.2	.2													54	54	82	55
26/ 25	.7	2.7	2.6	1.0														64	64	65	67
24/ 23	.1	2.0	2.2	.3														42	42	48	58
22/ 21	1.1	2.3	2.9	.9														66	66	87	62
20/ 19	.3	3.2	2.6	.8														63	63	51	92
18/ 17		.9	2.1															27	27	57	46
16/ 15		1.3	1.5															26	26	38	80
14/ 13		.9	1.1															18	18	29	46
12/ 11		.4	1.0															13	13	18	51
10/ 9	.1	.3	.5															9	9	15	31
8/ 7		.5	.2															7	7	15	20
6/ 5		.3																3	3	7	29
4/ 3		.1																1	1	4	30
2/ 1		.1																1	1	1	17
0/ -1		.1																1	1	2	19
-2/ -3		.1																1	1	1	14
-4/ -5		.2																2	2	1	17
-6/ -7		.2																2	2	2	15
-8/ -9																				1	9

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PAGE 2 1200-1400 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-1?/-11																					9
-1?/-13																					2
-1?/-15																					3
-1?/-17																					1
-1?/-19																					2
-?2/-23																					3
TOTAL	8.4	30.1	32.1	18.3	7.9	1.9	1.3											916	916	916	916

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4088566	58800	64.2	18.527	916							
Dry Bulb	879572	26930	29.4	9.785	916	.6	54.6					93
Wet Bulb	691072	23788	26.0	8.951	916	.7	68.1					93
Dew Point	427986	16369	17.9	12.153	916	9.5	85.0					93

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAR MONTH

PAGE 1 | 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
60/ 59				.1														1	1		
58/ 57			.1	.1		.1												3	3		
56/ 55						.2		.1										3	3		
54/ 53						.1	.2											3	3	3	
52/ 51					.2	.2	.1											5	5		
50/ 49				.2	.1	.1	.6											9	9		2
48/ 47				.2	.6	.6	.1											13	13	1	1
46/ 45		.1		.2	.3	.6	.4											15	15	3	
44/ 43		.6	.3	1.1	.7	.3	.1											28	28	7	
42/ 41		.1	.4	1.9	.7	.2												30	30	12	2
40/ 39	.6	.6	.7	2.5	1.4	.6	.1											58	58	22	8
38/ 37	.8	.7	1.3	2.2	1.2													56	56	80	11
36/ 35	1.0	3.3	1.9	3.5	.9													96	96	61	20
34/ 33	.9	2.4	1.2	2.2	1.3	.2												75	75	92	32
32/ 31	.9	2.3	2.9	2.1	1.2													85	85	88	51
30/ 29	.6	2.1	2.2	1.1	.6													59	59	71	38
28/ 27	.7	3.5	1.8	1.1	.3													67	67	95	59
26/ 25	.8	2.3	2.8	.9														61	61	77	57
24/ 23	.2	1.9	2.2	.4														43	43	59	59
22/ 21	.7	1.4	2.4	1.3														53	54	57	74
20/ 19	.4	2.0	2.3	.4														47	47	55	99
18/ 17	.1	1.0	.9	.4														22	22	50	84
16/ 15		.9	2.0	.1														27	28	33	48
14/ 13		.6	1.9															22	22	15	31
12/ 11		.3	.8															10	10	23	46
10/ 9			.6															5	5	20	39
8/ 7																				11	23
6/ 5		.1	.1															2	2	1	38
4/ 3		.1																1	1	2	25
2/ 1																				1	13
0/ -1																					8
-2/ -3																					19
-4/ -5		.3																3	3	3	6
-6/ -7																					18

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL-A) 84 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

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PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAR MONTH

PAGE 2 | 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-9/ -9																					16
-10/-11																					10
-14/-15																					3
-16/-17																					3
-20/-21																					1
-22/-23																					2
TOTAL	7.5	26.7	28.8	22.4	9.5	3.2	1.7	.1										902	904	902	902

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	3823285	56033	62.1	19.496	902							
Dry Bulb	918492	27532	30.5	9.411	904	.3	52.4					93
Wet Bulb	705425	24039	26.7	8.478	902	.3	68.2					93
Dew Point	419586	16176	17.9	11.988	902	8.9	85.2					93

USAFETAC FORM AN 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 DULUTH IAP MN 73-82 MAR
STATION STATION NAME YEARS MONTH

PAGE 1 1800-2000
HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
58/ 57			.1															1	1		
56/ 55			.2															2	2		
54/ 53																				2	
52/ 51							.1											1	1	1	
50/ 49					.1													1	1		3
48/ 47			.1	.2	.2	.3	.1											9	9		
46/ 45		.1	.1	.1	.4	.3												10	10		
44/ 43		.3		.4	.3	.2												12	12	4	
42/ 41		.2		.9	.7	.1												17	17	7	1
40/ 39	.1	.6	.8	.9	.9	.4												33	33	11	6
38/ 37	.7	.9	2.1	1.4	.8													53	53	22	6
36/ 35	.7	2.6	1.1	1.9	.2													58	59	20	15
34/ 33	1.6	3.1	2.6	1.9	.7													88	88	82	27
32/ 31	.9	4.1	4.3	2.0	.3													105	105	69	53
30/ 29	.4	1.7	2.8	1.3	.1													57	58	89	39
28/ 27	2.1	4.1	2.4	1.1	.2													90	91	88	57
26/ 25	.8	3.5	2.4	.8	.2													69	69	96	66
24/ 23	.8	1.1	1.9	.7	---													80	80	68	49
22/ 21	.9	2.1	2.6	.2														51	51	61	54
20/ 19	.8	1.9	3.9	.9														67	67	56	107
18/ 17		.9	1.0	.2														19	19	37	56
16/ 15	.1	1.7	1.2	.1														28	28	42	31
14/ 13	.2	1.1	1.2															23	23	29	29
12/ 11		.4	1.3															16	16	21	50
10/ 9		.6	1.8															21	21	16	49
8/ 7		1.1	.3															13	13	25	35
6/ 5	.1	.4	.2															7	7	19	19
4/ 3		.3																3	3	6	28
2/ 1		.1																1	1	4	14
0/ -1																					9
-2/ -3																					10
-4/ -5																					20
-6/ -7		.1																1	1	1	12
-8/ -9		.1																1	1	1	22

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 88 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AM 64 0-26-5 (OL A) - REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-10/-11	.1																	1	1	1	16
-12/-13																					4
-14/-15																					5
-16/-17																					1
-18/-19																					2
-24/-25																					1
-26/-27																					2
TOTAL	10.1	33.2	34.6	15.1	5.2	1.4	.2												901		898
																		898		898	

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 90 F	Total
Rel. Hum.	4214002	59122	65.8	18.934	898							
Dry Bulb	767070	24916	27.7	9.312	901	.3	68.5					93
Wet Bulb	613710	22098	24.6	8.829	898	.3	75.5					93
Dew Point	393122	15090	16.8	12.473	898	10.8	87.0					93

USAFETAC FORM 0-26-5 (OL-A) PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

PAGE 1 2100-2300 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
2/ 51		.1	.2															3	3	1	
50/ 49		.1																1	1	1	1
48/ 47		.2	.2															4	4	2	2
46/ 45				.2	.1													3	3	2	2
44/ 43		.1	.1	.1	.2													5	5	2	
42/ 41		.2	.3	.1	.1													7	7	1	3
40/ 39		.6	.3	.6	.3													16	16	7	3
38/ 37	.9	.8	2.2	1.1	.2													47	47	18	8
36/ 35	1.9	.7	1.3	.6														40	40	35	17
34/ 33	1.9	3.8	1.3	1.0	.1													73	73	68	20
32/ 31	1.1	4.8	4.2	1.0														100	100	63	49
30/ 29	.8	3.3	2.5	.3														63	63	60	49
28/ 27	2.3	4.5	1.9															79	79	105	53
26/ 25	2.1	4.6	1.9	.6														83	83	88	65
24/ 23	.3	3.3	1.4	.3														49	49	71	47
22/ 21	1.1	3.6	2.8	.3														71	71	62	58
20/ 19	.6	2.9	1.5	.3														48	48	59	96
18/ 17		1.8	1.5															30	30	83	53
16/ 15		1.5	.9															22	22	31	51
14/ 13	.1	2.1	1.1															30	30	27	37
12/ 11	.4	1.9	1.1															31	31	34	23
10/ 9	.2	2.4	.1															25	25	24	36
8/ 7		1.0	.8															16	16	28	42
6/ 5	.1	1.5																15	15	17	21
4/ 3	.3	1.8																19	19	19	20
2/ 1	.1	1.1																11	11	21	22
0/ -1		.3																3	3	5	14
-2/ -3	.2	.2																4	4	5	12
-4/ -5	.1	.2																3	3	2	25
-6/ -7		.1																1	1	2	15
-8/ -9																				1	14
-10/-11	.1																	1	1	1	23
-12/-13	.1																	1	1	1	7
-14/-15	.1																	1	1	1	5

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Norm No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (10-A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAR MONTH

PAGE 2 | 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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				
-16/-17																					5
-18/-19																					3
-20/-21																					1
-26/-27																					3
TOTAL	14.9	39.6	27.8	6.5	1.1													905	905	905	905

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4895231	64881	71.7	16.422	905							
Dry Bulb	642600	22269	24.6	10.295	905	1.9	72.6					93
Wet Bulb	549156	20370	22.5	10.014	905	1.8	79.3					93
Dew Point	395389	19723	16.3	13.131	905	13.1	87.2					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAR MONTH

 ALL HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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			Dry Bulb	Wet Bulb	Dew Point
60/ 59				.0															2	2		
58/ 57			.0	.0		.0													4	4		
56/ 55			.0			.0	.0	.0											7	7		
54/ 53						.1	.0												8	8	6	
52/ 51		.0	.0		.1	.0	.1												15	15	3	
50/ 49		.0	.0	.0	.1	.1	.1												22	22	2	1
48/ 47		.1	.1	.1	.2	.2	.1												44	44	5	5
46/ 45		.1	.0	.2	.2	.1	.1												50	50	12	5
44/ 43		.3	.1	.3	.2	.1	.0												78	78	22	2
42/ 41	.0	.2	.2	.6	.3	.1													100	100	18	17
40/ 39	.2	.4	.6	1.0	.5	.1	.0												204	204	81	35
38/ 37	1.2	1.3	1.8	1.2	.4	.0													331	331	200	77
36/ 35	1.2	1.9	1.6	1.2	.3	.0													447	448	341	172
34/ 33	1.7	3.1	1.6	.9	.3	.0													558	558	568	224
32/ 31	1.4	3.9	3.0	1.0	.3	.0													699	700	578	389
30/ 29	1.2	2.6	2.1	.6	.2														482	486	586	393
28/ 27	1.4	3.5	1.6	.5	.1														510	513	626	425
26/ 25	1.3	3.6	1.8	.5	.0														513	513	589	852
24/ 23	.6	2.8	1.4	.2															363	363	495	376
22/ 21	1.5	3.1	1.9	.4															505	506	518	469
20/ 19	1.0	3.4	2.0	.3															495	495	438	698
18/ 17	.2	1.9	1.0	.1															233	233	389	808
16/ 15	.2	2.0	1.0	.0															227	229	285	345
14/ 13	.2	1.8	.8																208	208	219	274
12/ 11	.3	1.6	.8																195	196	218	307
10/ 9	.4	1.6	.6																186	186	212	300
8/ 7	.2	1.3	.2																121	121	195	275
6/ 5	.2	1.4	.0																115	115	132	195
4/ 3	.2	1.4																	114	114	153	188
2/ 1	.0	1.4																	101	101	102	155
0/ -1	.3	.3																	48	48	77	129
-2/ -3	.3	.2																	39	39	55	126
-4/ -5	.3	.2																	36	36	30	168
-6/ -7	.2	.1																	27	27	33	151

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AS-4 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAR (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-8/ -9	.2	.0																20	20	25	130
-10/-11	.2																	13	13	13	129
-12/-13	.1																	9	9	9	48
-14/-15	.1																	9	9	9	49
-16/-17	.1																	10	10	10	35
-18/-19	.0																	3	3	3	29
-20/-21	.1																	4	4	4	19
-22/-23																					22
-24/-25																					9
-26/-27																					10
-28/-29																					6
TOTAL	16.8	45.3	24.3	9.2	3.2	.9	.4	.0											7262		7251
																		7251		7251	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	38590035	513375	70.8	17.588	7251							
Dry Bulb	5478056	181392	25.0	11.422	7262	22.3	542.5					744
Wet Bulb	4560439	169289	22.7	10.752	7251	27.5	611.8					744
Dew Point	3193932	117108	16.2	13.401	7251	188.6	688.2					744

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | APR MONTH

PAGE 1 | 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
60/ 59						.1		.1										2	2		
58/ 57						.3												3	3		
56/ 55		.6				.2	.2											9	9		
54/ 53		.1			.3	.1												5	5	5	3
52/ 51			.1		.1		.2											4	4	1	2
50/ 49	.1	.3	.3	.2	.3	.3												15	15	5	3
48/ 47	.3	.6	.5	.8	.8	.5												30	30	15	4
46/ 45	.2	.8	.2	.9	.8	.2												28	28	12	9
44/ 43		1.0	.8	.8	.8	.1												31	31	18	10
42/ 41		2.1	1.0	.9	.3													38	38	29	8
40/ 39	.2	1.3	2.9	1.3	.7	.1												56	56	43	26
38/ 37	.3	3.0	2.4	1.3	.6													66	66	46	19
36/ 35	1.8	3.2	3.9	2.1	.8													103	103	96	46
34/ 33	1.5	4.8	3.6	2.2														105	105	82	68
32/ 31	.3	4.4	6.7	1.7	.1													115	116	95	66
30/ 29	.3	4.0	3.0	.8														71	71	92	65
28/ 27	.5	2.9	3.4															59	60	110	66
26/ 25	.3	3.1	1.4	.1														43	43	70	79
24/ 23	.3	1.5	.9	.2														26	26	61	46
22/ 21	.7	.8	.5															17	17	29	81
20/ 19	.2	1.0																11	11	18	102
18/ 17		.3																3	3	10	85
16/ 15		.3																3	3	3	35
14/ 13	.1	.2	.2															5	5	4	23
12/ 11	.1	.5																5	5	3	16
10/ 9	.2	1.1																12	12	11	11
8/ 7		.6																5	5	9	12
6/ 5		.2																2	2	3	1
4/ 3																				2	7
2/ 1																					9
0/ -1																					2
-2/ -3																					5
-4/ -5																					1
-6/ -7																					5

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

 0000-0200 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-1/ -9																					1
TOTAL	7.8	38.8	31.8	13.3	5.7	2.1	.5	.1										872	874		872
																		872		872	

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4726796	62742	72.0	15.614	872							
Dry Bulb	1063078	29532	33.8	8.643	874		39.0					90
Wet Bulb	879149	26811	30.7	7.932	872		53.7					90
Dew Point	632560	21920	25.1	9.676	872	1.4	70.0					90

FORM AS-4 0-26-5 (OL-A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

 0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
[illegible] / 59							.1											1	1		
56 / 55		.3			.1	.1												5	5		
[illegible] / 53				.1	.2		.1											4	4	3	3
[illegible] / 51	.3	.3	.1	.5	.1	.1	.2											15	15	5	3
50 / 49		.5	.2		.2													8	8	4	4
48 / 47		1.0	.1	.6	.2													17	17	14	2
46 / 45		1.1	.2	.6	.6													22	22	1[illegible]	11
44 / 43	.1	1.5	.5	.7	.1													25	25	12	12
42 / 41	.2	2.3	.7	.3	.5													35	35	35	14
40 / 39	.8	1.4	2.5	.6	.1													87	87	34	32
38 / 37	.5	3.6	1.6	2.2	.3													71	71	41	17
36 / 35	1.8	4.5	3.4	1.5	.5													102	102	75	43
34 / 33	1.0	5.6	2.8	.9														90	90	87	55
32 / 31	.5	4.2	6.5	.3	.1													102	102	87	80
30 / 29	.7	4.7	2.5	.9														77	78	83	51
28 / 27	.1	3.7	2.9	.2														60	60	107	58
26 / 25	1.3	3.9	1.4	.1														58	58	72	69
24 / 23	.3	2.9	.6															33	33	72	87
[illegible] / 21	.6	1.5	1.3															29	29	36	81
20 / 19	.3	2.0	.5															24	24	26	111
18 / 17		.3	.2															5	5	18	44
16 / 15	.1	.6																6	6	5	30
14 / 13		.1																1	1	5	21
12 / 11		.5																4	4	1	22
10 / 9	.3	.2																5	5	8	14
8 / 7	.2	.7																8	8	3	16
6 / 5	.1	.7																7	7	8	4
4 / 3		.7																6	6	8	4
2 / 1		.3																3	3	5	4
0 / -1																				1	
-2 / -3	.1																	1	1	1	5
-4 / -5																					5
-6 / -7																					7
-8 / -9																					5

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

 0300-0500 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-11/-11																					1
TOTAL	9.5	49.1	28.0	9.5	3.1	.2	.5												872		871
																		871		871	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5146296	65728	75.5	14.631	871							
Dry Bulb	981074	28136	32.3	9.170	872	.1	44.9					90
Wet Bulb	839245	25949	29.8	8.721	871	.2	56.4					90
Dew Point	637073	21721	24.9	10.471	871	2.9	69.7					90

USAFETAC FORM AK 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
62/ 61								.1										1	1		
60/ 59					.1	.1	.1											3	3		
58/ 57					.1	.1		.2	.1									5	5		
56/ 55		.2			.2	.1		.1										6	6		
54/ 53	.1	.5	.1	.2		.2	.1											11	11	5	2
52/ 51	.1	.1	.1		.6	.5												12	12	5	6
50/ 49		.2	.7	.2	.8													17	17	7	1
48/ 47		1.1	.3	.2	.7	.3	.1											25	25	8	3
46/ 45	.1	2.0	.6	.7	.9	.2												40	40	24	10
44/ 43	.1	.9	.3	.8	.8													26	26	36	23
42/ 41	.1	2.0	.8	1.0	.2													37	37	32	19
40/ 39	1.5	1.5	2.3	1.7	.3	.1												65	65	41	33
38/ 37	.6	3.2	1.5	2.1	.3	.1												69	69	50	19
36/ 35	1.4	4.1	2.7	2.3	.6													97	97	73	38
34/ 33	1.6	5.9	3.2	2.1	.2													115	115	105	67
32/ 31	.6	3.7	4.1	.7														80	81	97	89
30/ 29	.1	4.7	2.0	.7														67	67	75	69
28/ 27	.3	2.8	2.5	.2														52	52	102	47
26/ 25	1.0	3.6	.2	.2														45	45	58	71
24/ 23	.5	1.5	.3															20	20	58	70
22/ 21	.1	1.6	1.2															26	26	20	74
20/ 19	.3	1.6	.7	.1														24	24	28	79
18/ 17	.1	.6	.3															9	9	16	45
16/ 15	.2	.3																5	5	16	26
14/ 13		.2	.1															3	3	1	18
12/ 11	.1	.5	.1															6	6	3	23
10/ 9		.2																2	2	6	15
8/ 7		.5																8	8	3	6
6/ 5		.5																4	4	5	6
4/ 3		.6																5	5	3	5
2/ 1		.3																3	3	6	3
0/ -1																				1	8
-2/ -3	.2																	2	2	2	5
-4/ -5																					6

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

 0600-0800 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-6/ -7																					1
-8/ -9																					6
-10/-11																					2
TOTAL	9.1	44.8	24.2	13.3	5.9	1.8	.3	.5	.1										887		886
																		886		886	

Element (X)	Σ_X'	Σ_X	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.	5033362	65260	73.7	15.998	886							
Dry Bulb	1100145	30047	33.9	9.638	887	.2	36.3					90
Wet Bulb	918725	27943	31.0	8.811	886	.3	50.8					90
Dew Point	684432	22818	25.8	10.457	886	2.9	67.6					90

USAFETAC FORM 0-26-5 (OL A) 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | APR MONTH

PAGE 1 | 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
[illegible] 79												.1						1	1		
76/ 75											.1							1	1		
72/ 71									.1		.1							2	2		
70/ 69								.1		.1	.1							3	3		
68/ 67							.1	.2	.2									5	5		
66/ 65								.1	.5	.2	.1							8	8		
64/ 63					.1	.1	.2	.6	.3									12	12		
62/ 61				.1		.1	.2	.9	.2	.1								15	15		
60/ 59			.1		.1		.5	.5	.2									12	12		
58/ 57		.2		.1	.1	.3	.1	.6										13	13	5	
56/ 55		.3		.3	.1	.8	.6	.3										22	22	7	2
54/ 53		.5	.1	.3	.1	.5	1.0											22	22	10	6
52/ 51		.6	.1	.3	.5	.8	1.1											30	30	14	4
50/ 49	.1	.5	.7	.6	.9	1.5	.8	.1										45	45	28	6
48/ 47	.1	.8	.5	.9	2.1	1.1	.7											54	54	24	7
46/ 45	.2	.8	.7	1.1	1.7	1.3	.1											52	52	44	16
44/ 43		1.3	.7	.8	.7	.8	.3											40	40	40	16
42/ 41	.6	.8	.9	2.1	1.7	.6	.1											59	59	58	28
40/ 39	.8	1.0	1.4	2.1	2.1	.3												67	67	64	32
38/ 37	.9	1.6	1.7	2.6	1.0	.2												71	71	73	21
36/ 35	.9	4.6	1.8	2.4	.6													90	90	72	51
34/ 33	.6	2.3	1.3	1.9	.3													56	56	110	60
32/ 31	.6	1.4	3.6	1.0	.3													61	61	85	95
30/ 29		1.6	1.5	.7	.3													36	36	57	50
28/ 27	.2	1.9	.8	.2	.3													31	31	64	64
26/ 25	.2	1.7	.6	.3	.1													26	26	80	85
24/ 23	.1	.7	.6															12	12	32	51
22/ 21		.3	.2	.1														6	6	16	62
20/ 19		.3	.6	.1														9	9	12	83
18/ 17		.1	.5															5	5	5	31
16/ 15		.1	.1															2	2	5	23
14/ 13		.3	.3															6	6	7	26
12/ 11		.2	.2															4	4	4	13
10/ 9																					18

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PAGE 2 0900-1100 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
87 / 7																			2	7
67 / 5																				4
47 / 3																				4
27 / 1																				8
07 / -1																				3
-27 / -3																				2
-47 / -5																				5
-67 / -7																				2
-87 / -9																				1
TOTAL	5.4	23.9	18.9	18.2	13.2	8.4	5.9	3.4	1.6	.5	.5	.1						878	878	878	878

Element (X)	Σx^2	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	3726672	54369	61.9	20.276	878							
Dry Bulb	1541173	35505	40.4	10.963	878		20.3	1.2	.2			90
Wet Bulb	1146292	30786	35.1	8.729	878		34.1					90
Dew Point	732540	23666	27.0	10.388	878	1.3	64.9					90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE AS 64

* U.S. GOVERNMENT PRINTING OFFICE: 1973 [illegible]-512/1

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

 1200-1900 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
82/ 81												.1						1	1		
80/ 79											.1							1	1		
78/ 77										.1	.2	.1						4	4		
76/ 75										.1	.1							2	2		
74/ 73										.1	.1	.2						4	4		
72/ 71										.1	.1	.1						3	3		
70/ 69									.1	.6	.6							11	11		
66/ 67					.2		.1	.1	.3	.3	.2							12	12		
66/ 65							.3	.2	.5	.5								13	13		
64/ 63				.1	.1	.1	.5	.2	1.0	.1								20	20		
62/ 61			.1		.6	.1	.6	.8	.9	.6								32	32	3	
60/ 59		.1			.1	.6	.5	.2	.6									18	18	3	
58/ 57		.3			.1	.1	.5	.2	.3									14	14	7	
56/ 55		.1	.2	.1	.2	.5	.7	1.7										31	31	10	6
54/ 53	.1	.2		.2	.1	.6	1.5	.8										31	31	12	3
52/ 51		.2	1.0	.3	.7	1.0	1.4	.3										48	48	28	1
50/ 49	.2	.3	.7	.7	.8	2.3	2.2	.2										65	65	39	10
48/ 47	.1	.2	.9	1.3	.8	2.3	1.1	.3										62	62	33	10
46/ 45		.8	.8	1.4	2.2	2.2	.3	.1										68	69	41	12
44/ 43	.3	.8	.7	.5	1.6	1.5	.2											49	49	56	26
42/ 41	.2	.6	1.0	1.4	.9	.5												40	40	70	21
40/ 39	.5	.7	.9	2.3	.8	.6												50	50	88	27
38/ 37	.1	1.8	1.3	1.7	.8	.2												52	52	76	31
36/ 35	.6	3.1	1.3	3.0	1.4	.1												82	82	77	65
34/ 33	.5	1.3	1.1	1.8	.5	.2												47	47	96	65
32/ 31	.3	1.1	1.8	.9	.5	.1												42	42	85	70
30/ 29		1.7	.7	.2														23	23	60	57
28/ 27	.3	1.0	.7	.5	.1													23	23	59	65
26/ 25		.2	.7	.3	.1													12	12	26	89
24/ 23		.2	.2	.3														7	7	15	55
22/ 21		.2	.6															7	8	12	86
20/ 19	.1	.1	.2	.2														6	6	10	60
18/ 17																				7	32
16/ 15																				2	25

Element (X)	$\bar{X}_{gr}$	$\bar{X}_{\Sigma}$	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 90 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) AS 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | APR MONTH

1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
14/ 13																				1	20
12/ 11		.3																3	3		18
10/ 9																				3	14
8/ 7																					7
6/ 5																					6
4/ 3																					8
2/ 1																					4
0/ -1																					1
-2/ -3																					1
-4/ -5																					4
TOTAL	3.4	15.6	14.9	17.2	12.5	12.9	9.9	5.3	3.8	2.5	1.5	.6						879	881	879	879

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.	3035986	48209	54.8	21.143	879	≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Dry Bulb	1865970	39206	44.5	11.737	881		12.7	3.9	1.2	.2		90
Wet Bulb	1294159	32865	37.4	8.628	879		24.6					90
Dew Point	745129	23987	27.3	10.155	879	.6	63.7					90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | APR MONTH

 1500-1700 HOURS (L.S.T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
84/ 83													.3					3	3		
78/ 77												.1	.1					2	2		
76/ 75												.1						1	1		
74/ 73										.2	.5	.3						9	9		
72/ 71									.1	.2	.1	.1						5	5		
70/ 69										.1	.6							6	6		
68/ 67				.1				.2	.5	.9	.2							17	17		
66/ 65					.1			.5	.3	.2								10	10		
64/ 63			.2	.1		.1	.5	.6	.6	.2								20	20		
62/ 61			.1	.1	.3	.3	.2	.6	.7	.9								29	29	8	
60/ 59		.1		.1	.5	.5	.2	.6	.7	.2								25	25	2	
58/ 57		.1	.1	.1	.2	.2	.3	1.0	.9									27	27	8	3
56/ 55			.3	.1	.2	.3	1.1	1.4	.1									32	32	10	3
54/ 53			.1	.3	.6	.8	.7	1.6	.2									38	38	20	1
52/ 51			.6	.8		.7	1.6	.5										36	36	26	4
50/ 49	.3	.2	.1	.6	.9	1.6	2.5	.8	.2									68	68	39	6
48/ 47			.6	1.1	1.0	3.0	1.3	.5										65	65	27	7
46/ 45		.6	.6	1.1	2.1	1.5	1.0											60	60	39	13
44/ 43	.2	.5	.3	1.3	.9	1.3	.7											45	45	60	15
42/ 41		.3	1.0	1.5	1.0	.6												39	39	53	15
40/ 39	.6	.7	1.3	1.6	1.0	.9	.1											54	54	96	29
38/ 37	.2	1.7	1.7	1.0	1.7	.5												60	60	89	36
36/ 35	.5	2.4	1.0	2.3	1.0													63	63	83	33
34/ 33	.6	1.8	1.0	1.7	.5	.2												51	51	83	63
32/ 31	.5	.8	2.5	.7	.1	.1												41	41	54	86
30/ 29		1.0	1.0	.2														20	20	59	61
28/ 27	.2	.8	.3	.9	.2													22	22	57	44
26/ 25	.1	.1	.8	.3	.1													13	13	22	70
24/ 23		.1	.7	.1														8	8	13	52
22/ 21				.2														2	2	17	92
20/ 19		.1	.2															3	3	7	78
18/ 17																				5	26
16/ 15																				1	1	41
14/ 13		.1																1	1		33

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 90 F	≤ 95 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

PAGE 2 1500-1700 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
12/ 11		.2																2	2	1	14
10/ 9																				2	12
8/ 7																					14
6/ 5																					5
4/ 3																					8
2/ 1																					3
0/ -1																					5
-2/ -3																					2
-4/ -5																					1
-6/ -7																					1
-8/ -9																					1
TOTAL	3.2	11.8	14.8	16.6	12.6	12.6	10.3	8.1	4.4	3.1	1.4	.7	.5						874		873
																		873		873	

Element (X)	Σx^2	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	2769960	458406	52.0	21.690	873							
Dry Bulb	1907457	39509	45.2	21.795	874		11.6	4.4	1.5	.3		90
Wet Bulb	1288747	32725	37.5	8.434	873		24.5					90
Dew Point	698171	23029	26.4	18.218	873	.8	66.5					90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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				
82/ 81												.1						1	1		
76/ 75										.1								1	1		
74/ 73												.1						1	1		
72/ 71										.1	.1							2	2		
70/ 69											.1							1	1		
68/ 67							.1		.1	.6								7	7		
66/ 65								.1	.2	.1								4	4		
64/ 63					.1	.2	.2	.2	.7	.2								15	15		
62/ 61				.2			.2	.2	.1	.2								9	9		
60/ 59			.2	.2	.1	.1	.2	.6	.5									17	17	1	
58/ 57					.1	.5	.8	.8	.3									22	22	2	
56/ 55		.2		.1	.3	.2	.6	.6	.2	.1								21	21	7	1
54/ 53			.2	.6	.3	.8	.3	.2	.1									23	23	6	1
52/ 51	.3	.2	.5	.2	.3	.8	1.4	.3										36	36	12	9
50/ 49		.7	.2	.3	1.4	1.1	.9	.1										42	43	23	
48/ 47		.1	.3	.8	1.3	1.3	.9	.1										42	42	33	4
46/ 45		.3	.6	.9	1.5	2.3	.8											56	56	28	19
44/ 43		.5	.8	.9	1.7	1.5	.3											50	50	32	7
42/ 41		.8	1.5	1.7	1.9	1.3	.2											65	65	59	11
40/ 39	.8	1.1	1.5	2.5	2.2	.9												79	79	61	23
38/ 37	.2	1.4	2.2	1.6	1.6	.5												65	65	75	21
36/ 35	1.0	2.3	2.3	2.3	.9	.1												78	78	97	39
34/ 33	1.4	1.9	1.1	2.9	.5	.1												69	69	115	66
32/ 31	.5	1.5	2.7	2.4	.7	.2												70	70	82	83
30/ 29		.9	1.5	.3	.1													25	25	64	63
28/ 27		1.3	.9	.6	.1													25	25	61	60
26/ 25	.5	.5	.6	.3														16	16	53	57
24/ 23		.6	.8	.5														16	16	19	57
22/ 21		.1	.6	.1														7	7	18	64
20/ 19			.6															5	5	9	88
18/ 17			.1															1	1	10	55
16/ 15			.1															1	1	3	40
14/ 13																				1	33
12/ 11		.3																3	3	1	10

Element (X)	Σ_{X^2}	Σ_X	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

2

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
10/ 9																				3	12
8/ 7																					10
6/ 5																					13
4/ 3																					8
2/ 1																					5
0/ -1																					2
-2/ -5																					3
-6/ -7																					2
TOTAL	4.7	14.7	19.3	19.5	15.2	11.9	7.1	3.3	2.3	1.5	.2	.2						875	876	875	875

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3192021	49747	56.9	20.400	875							
Dry Bulb	1582719	36109	41.2	10.381	876		17.4	1.3	.3	.1		90
Wet Bulb	1127568	30626	35.0	7.978	875		33.3					90
Dew Point	649869	22192	25.4	9.978	875	.7	69.3					90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | APR MONTH

PAGE 1 | 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
66/ 65										.1								1	1		
64/ 63							.2		.1									3	3		
62/ 61							.5	.2	.1									7	7		
60/ 59			.6				.1	.2										8	8		
58/ 57			.1	.1			.1	.2										5	5	5	
56/ 55				.1	.2	.3	.1											7	7	1	2
54/ 53			.1		.1	.2	.2	.1										7	7		4
52/ 51	.1		.1	.1	.6	.5	.2											18	18	7	1
50/ 49		.9	.6	.1	1.1	.8	.5											35	35	6	
48/ 47	.1	.7	.5	1.3	1.0	.5	.2											37	37	19	6
46/ 45		.8	.7	.8	.7	.5												30	30	20	11
44/ 43		.3	.8	.9	1.8	.3	.1											38	38	23	8
42/ 41		1.5	1.4	1.6	.8													46	47	37	10
40/ 39	.2	1.6	1.0	1.6	.9	.3												50	50	58	28
38/ 37	.3	3.1	2.2	2.8	1.5													86	86	61	17
36/ 35	1.0	2.5	3.6	3.8	.7													101	101	77	39
34/ 33	.5	4.8	4.3	2.8														116	116	97	72
32/ 31	.5	2.4	5.1	2.8	.1													98	98	102	68
30/ 29	.3	1.8	3.7	1.1	.1													62	62	101	66
28/ 27	.1	1.7	2.4	.2	.1													80	80	87	71
26/ 25	.5	1.8	.7	.2	.1													29	29	74	70
24/ 23		1.6	.2	.3														19	19	38	60
22/ 21		.2	.3	.1														6	6	21	70
20/ 19		.2	.5															6	6	5	83
18/ 17		.3	.7															9	9	10	62
16/ 15		.2	.1															3	3	8	39
14/ 13		.2	.3															5	5	5	26
12/ 11		.3	.1															8	8	3	12
10/ 9		.1	.1															2	2	7	7
8/ 7																				2	5
6/ 5																					10
4/ 3																					8
2/ 1																					2
0/ -1																					0

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 88 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

2100-2300 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-2/ -3																					4
-6/ -7																					3
-8/ -9																					2
TOTAL	4.7	27.5	30.1	20.8	10.0	3.4	2.3	.8	.2	.1									871		870
																		870		870	

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4096937	57789	66.4	17.242	870							
Dry Bulb	1224651	31731	36.4	8.885	871		28.8					90
Wet Bulb	962953	28159	32.4	7.701	870		47.9					90
Dew Point	692703	22133	25.4	9.573	870	1.3	69.5					90

USAFETAC FORM AK 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | APR MONTH

ALL HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
4/ 83													.0					3	3		
2/ 81												.0						2	2		
0/ 79											.0	.0						2	2		
8/ 77										.0	.0	.0	.0					6	6		
6/ 75										.0	.0	.0						5	5		
4/ 73										.0	.1	.1						14	14		
2/ 71									.0	.1	.1	.0						12	12		
0/ 69								.0	.0	.1	.2							21	21		
68/ 67				.0	.0		.0	.1	.1	.2	.1							41	41		
6/ 65					.0		.0	.1	.2	.1	.0							36	36		
4/ 63			.0	.0	.0	.1	.2	.2	.3	.1								70	70		
2/ 61			.0	.1	.1	.1	.2	.4	.3	.2								93	93	7	
0/ 59		.0	.1	.0	.1	.2	.2	.3	.2	.0								86	86	6	
58/ 57		.1	.0	.0	.1	.2	.2	.4	.2									89	89	23	3
56/ 55		.2	.1	.1	.2	.3	.4	.5	.0	.0								133	133	35	14
4/ 53	.0	.2	.1	.2	.2	.4	.5	.3	.0									141	141	61	23
2/ 51	.1	.2	.3	.3	.4	.5	.8	.1										191	191	98	30
50/ 49	.1	.5	.4	.3	.8	1.0	.9	.2	.0									291	292	151	30
48/ 47	.1	.6	.5	.9	1.0	1.1	.5	.1										332	332	173	43
46/ 45	.1	.9	.5	.9	1.3	1.0	.3	.0										356	357	223	101
44/ 43	.1	.8	.6	.8	1.1	.7	.2											304	304	277	117
42/ 41	.1	1.3	1.0	1.3	.9	.4	.0											359	360	369	122
40/ 39	.7	1.4	1.7	1.7	1.0	.4	.0											468	468	481	230
38/ 37	.4	2.4	1.8	1.9	1.0	.2												540	540	511	181
36/ 35	1.1	3.3	2.5	2.4	.8	.0												716	716	650	334
34/ 33	1.1	3.6	2.3	2.0	.2	.1												689	689	775	512
32/ 31	.5	2.4	4.1	1.3	.2	.1												605	607	647	632
30/ 29	.2	2.6	2.0	.6	.1													381	382	591	882
28/ 27	.2	2.0	1.7	.4	.1													312	313	647	471
26/ 25	.5	1.9	.8	.3	.1													282	282	815	590
24/ 23	.2	1.1	.5	.2														141	141	308	438
22/ 21	.2	.6	.6	.1														100	101	169	610
20/ 19	.1	.7	.4	.1														88	88	115	684
18/ 17	.0	.2	.2															32	32	81	340

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) 8-64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) APR (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
16/ 15	.0	.2	.0															20	21	43	259
14/ 13	.0	.2	.1															21	21	24	198
12/ 11	.0	.4	.1															31	31	16	137
10/ 9	.1	.2	.0															21	21	44	99
8/ 7	.0	.2																17	17	19	77
6/ 5	.0	.2																13	13	16	49
4/ 3		.2																11	11	13	52
2/ 1		.1																6	6	11	38
0/ -1																				2	19
-2/ -3	.0																	3	3	3	24
-4/ -5																					25
-6/ -7																					21
-8/ -9																					16
-10/-11																					3
TOTAL	6.0	28.3	22.7	16.1	8.8	6.7	4.6	2.7	1.5	1.0	.4	.2	.1					7004	7013	7004	7004

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	31727938	449240	64.1	20.397	7004							
Dry Bulb	11266267	269775	38.5	21.257	7013	.3	210.5	10.9	3.3	.6		720
Wet Bulb	8456832	235364	33.6	8.843	7004	.5	325.3					720
Dew Point	5422466	181462	25.9	10.147	7004	11.1	541.1					720

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
68/ 67							.1											1	1		
66/ 65			.2				.1		.1									4	4		
64/ 63				.1		.3	.2	.3	.1									10	10	2	
62/ 61		.3	.1	.1	.2	.9	.8	.1	.2									25	25		2
60/ 59		1.1	.4	.4	.6	.7	.3											32	32	5	3
58/ 57		1.3	.6	.8	.1	.9	.1											30	30	18	5
56/ 55	.2	2.1	.7	.6	.2	.2	.9											44	44	25	20
54/ 53		1.3	.6	1.8	.1	.8												41	41	38	15
52/ 51	.3	1.5	2.0	.8	.7	.6	.2											55	55	38	29
50/ 49	.6	2.1	2.3	1.4	1.8	.6	.6											88	88	63	33
48/ 47	.4	2.5	1.4	2.1	1.5	1.0	.1											83	83	60	24
46/ 45	.3	2.8	2.9	1.8	2.0	.6												93	93	59	56
44/ 43	.1	2.6	1.9	1.7	1.1	.1	.2											70	70	78	68
42/ 41	.3	2.1	2.1	.6	.1													87	87	93	39
40/ 39	.3	1.7	2.0	2.4	.1	.1												60	60	78	59
38/ 37	.2	3.2	2.0	1.0	.9													66	66	80	61
36/ 35	.1	2.5	1.5	1.5	.1													53	53	68	61
34/ 33		2.2	2.2	1.7	.6													60	60	63	80
32/ 31		1.3	2.0	.2														32	32	50	71
30/ 29		.9	.2															10	10	87	56
28/ 27		.6	.1															6	6	33	56
26/ 25		.2																2	2	11	58
24/ 23																				3	29
22/ 21																					30
20/ 19																					31
18/ 17																					9
16/ 15																					6
14/ 13																					8
12/ 11																					1
10/ 9																					2
8/ 7																					1
TOTAL	3.0	32.4	25.1	18.8	10.0	6.2	3.6	.8	.8										908		908
																		908		908	

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4887007	64981	71.0	7.187	908							
Dry Bulb	1934852	41196	45.4	8.517	908		5.1	.1				93
Wet Bulb	1592397	37335	41.1	7.986	908		18.7					93
Dew Point	1251749	32875	35.8	9.976	908		36.2					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

PAGE 1 | 0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
64/ 63		.1		.2		.1	.1											5	5		
62/ 61		.3			.4	.8	.3											17	17	1	
60/ 59		.2		.1	.7	.3	.1											13	13	4	3
58/ 57		.8	.4	.2		.6	.2											20	20	6	1
56/ 55	.1	2.4	1.1	1.0	.6	.1	.2											50	50	16	12
54/ 53		2.5	.7	1.1	.3	.3	.8											52	52	29	16
52/ 51	.4	1.4	1.1	.7	.4	.2												39	39	53	35
50/ 49	.6	3.2	2.0	.6	.8	.8	.1											72	72	60	33
48/ 47	.1	1.8	2.9	1.9	.6	.1												66	66	43	36
46/ 45	.1	2.9	2.9	2.7	.9													85	85	57	46
44/ 43	.6	4.0	1.2	1.7	.6	.1												73	73	82	60
42/ 41	.6	2.5	1.4	1.4	.9	.1												63	63	88	47
40/ 39	.6	1.9	2.1	.9	.4													53	53	74	63
38/ 37	.1	3.9	1.8	1.8	.1													69	69	60	69
36/ 35	.2	3.6	3.1	1.4	.2													78	78	64	50
34/ 33	.4	3.3	1.3	.7	.1													53	53	78	59
32/ 31	.2	2.7	3.2	.7	.1													62	62	74	96
30/ 29	.1	1.1	.6															16	16	44	57
28/ 27	.1	1.1																11	11	49	54
26/ 25		.7																6	6	17	41
24/ 23																				4	32
22/ 21		.1																1	1	1	46
20/ 19		.1																1	1	1	29
18/ 17																					6
16/ 15																					8
14/ 13																					4
12/ 11																					2
TOTAL	4.2	40.7	25.7	16.9	7.1	3.5	1.9												905		905
																		905		905	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5320185	67935	75.1	15.620	905							
Dry Bulb	1779003	39377	43.5	8.524	905		10.0					93
Wet Bulb	1509629	36241	40.0	8.034	905		19.5					93
Dew Point	1230715	32211	35.6	9.654	905		38.5					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

PAGE 1 | 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
/4/ 73							.1		.1									2	2		
72/ 71								.2										2	2		
70/ 69							.1	.1										2	2		
68/ 67					.1	.1	.4		.1									7	7		
66/ 65			.1	.1	.4	.2	.2		.1									11	11		
64/ 63		.3		.1	1.0	.5	.3	.1	.3	.1								26	26		
62/ 61		.3	.4	.1	.5	.3	.2		.2									20	20	5	2
60/ 59		1.5	.4	.4	.4	.5	.3	.5										39	39	12	6
58/ 57		.7	.4	1.1	.5	.2		.2	.1									30	30	27	8
56/ 55	.1	1.6	1.4	1.3	.9	.4	.9	.4	.1									66	66	34	22
54/ 53	.4	1.2	1.1	1.6	1.2	1.2	.4	.1										67	67	38	19
52/ 51	.3	1.8	1.1	1.2	1.4	1.2	.2	.1										67	67	52	28
50/ 49	.2	2.7	2.4	2.6	1.5	.5	.4	.1										97	97	61	43
48/ 47	.5	2.3	2.0	1.5	1.6	.7	.1											80	80	62	48
46/ 45	.4	2.3	1.5	1.9	1.4	.4												73	73	91	61
44/ 43	.5	2.4	.8	1.1	.5	.2												51	51	105	57
42/ 41	.2	1.3	1.3	1.8	.5	.1												48	48	75	62
40/ 39	.7	1.9	1.4	1.2	.3													50	50	68	62
38/ 37		3.4	1.8	1.3	.4													63	63	71	58
36/ 35		2.4	1.5	1.2	.2													89	89	59	56
34/ 33	.3	1.4	1.0	.5														30	30	57	68
32/ 31	.1	1.0	1.8															26	26	88	86
30/ 29		.2	.2	.1														5	5	32	57
28/ 27		.1																1	1	17	33
26/ 25		.1																1	1	2	43
24/ 23																				1	27
22/ 21																					33
20/ 19																					18
18/ 17																					10
16/ 15																					3
14/ 13																					2
12/ 11																					1
TOTAL	3.9	29.0	20.7	19.3	13.3	6.8	3.8	2.0	1.1	.1								913		913	
																			913		

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4768703	63815	69.9	18.266	913							
Dry Bulb	2141780	43978	47.6	8.843	913		3.4	1.3	.2			93
Wet Bulb	1736132	39162	42.9	7.859	913		9.8					93
Dew Point	1359331	36081	37.3	9.775	913		31.9					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
82/ 81										.2				.1				3	3		
80/ 79											.3	.1	.2					6	6		
78/ 77									.3	.3	.3	.1	.1					11	11		
76/ 75					.1	.1		.1	.3	.1	.1		.1					9	9		
74/ 73				.1		.2	.2	.1	.1	.2		.1						10	10		
72/ 71				.1	.3	.2	.1	.2	.6	.3	.3	.1						21	21		
70/ 69			.1	.1	.7	.1	.3	.4	.2	.2	.6							25	25		
68/ 67			.2	.3	.4	.7	.8	.1	.3	.4	.3							33	33	2	
66/ 65			.7	.6	.6	1.3	.6	.4	.3	.7								46	46	3	
64/ 63		.2	.3	.8	1.1	1.4	.4	.6	1.2	.8								62	62	13	2
62/ 61			.8	1.0	1.1	.9	.4	.8	1.0	.7								60	60	27	7
60/ 59		.9	.8	.7	.8	.3	1.0	1.2	1.0									60	60	31	9
58/ 57	.1	.7		1.0	.3	1.1	.9	1.0	.3	.1								50	50	50	20
56/ 55		1.3	1.0	.9	.8	1.0	1.2	.7	.3									65	65	67	24
54/ 53	.2	.6	.9	1.3	1.2	1.5	1.1	.7	.1									69	69	49	38
52/ 51	.1	1.3	.9	1.2	1.1	1.5	.3	.1										60	60	58	33
50/ 49	.4	1.3	1.0	.8	1.5	1.4	.6	.1										65	65	67	56
48/ 47		1.3	.6	.6	1.3	.7	.6											45	45	93	42
46/ 45		2.0	.7	1.0	.7	.4												43	43	88	66
44/ 43	.3	.6	.8	.4	.4	.7	.2											31	31	80	52
42/ 41	.3	1.3	1.2	.6	.6	.3												39	39	68	42
40/ 39	.2	1.0	1.3	1.0	.7	.3												41	41	67	46
38/ 37	.1	1.3	.4	.9	.4	.1												30	30	43	55
36/ 35		.4	.2	.3														9	9	41	49
34/ 33		.7	.2	.2														10	10	22	59
32/ 31		.3	.1															4	4	28	79
30/ 29																				8	60
28/ 27																				2	43
26/ 25																					26
24/ 23																					25
22/ 21																					32
20/ 19																					19
18/ 17																					9
16/ 15																					3

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AS-44 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
14/ 13																					6
12/ 11																					3
10/ 9																					2
TOTAL	1.9	15.2	12.1	13.8	14.1	14.8	8.7	6.5	6.2	4.1	2.0	.8	.8	.1				907	907		907
																		907		907	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3858661	52827	57.8	21.639	907							
Dry Bulb	2827484	49758	54.9	10.388	907		.8	12.1	8.0	.7		93
Wet Bulb	2053673	42521	46.9	8.155	907		3.9	.2				93
Dew Point	1837588	38736	38.3	10.680	907		31.5					93

USAFETAC FORM AWS 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

 1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
96/ 85												.1			.2			3	3		
94/ 83								.1			.2	.2	.1		.1			7	7		
92/ 81											.1	.7		.2				9	9		
90/ 79									.2	.2	.4	.4	.1					13	13		
88/ 77						.2	.2	.9	.2	.2	.6	.1	.7					28	28		
86/ 75					.1		.1	.2	.4	.7	.1	.7	.2					23	23		
84/ 73					.3	.3	.2	.3	.7	.6	.6	.3						30	30		
82/ 71				.2	.4	.4	.3	.7	.4	.2	.4	.6						34	34		
80/ 69				.3	.6	.2	.2	.6	.2	.2	.7							27	27	1	
78/ 67				.1	.4	.8	1.2	.3	.7	.9	.6							45	45	5	
76/ 65			.1	.6	.4	.4	.7	.3	1.0	1.1	.1							43	43	7	
74/ 63		.2		2.3	1.2	1.3	.4	1.7	1.8	1.7								96	96	26	4
72/ 61		.9	.4	.6	.8	1.4	1.1	.7	2.1	.9								80	80	28	6
70/ 59		.7	.4	.2	1.2	.7	1.4	1.5	.8	.6								68	68	54	14
68/ 57		.1	.2	.3	.1	.8	1.2	.8	.4									36	36	68	17
66/ 55		1.0	.3	.4	.3	1.0	1.4	1.3	.1									54	54	53	37
64/ 53		.4	.6	.9	.1	.7	1.1	.2										36	36	65	38
62/ 51	.1	.4	.2	.4	.4	1.8	.1	.3										35	35	64	27
60/ 49	.3	1.7	.9	.8	1.0	.4	1.3	.3										61	62	83	33
58/ 47	.2	1.3	.9	.8	.8	.3	.8	.1										47	49	79	47
56/ 45	.2	1.2	.8	.9	.6	.6	.2											40	40	106	76
54/ 43		.4	.7	.2	.3	.8	.2											24	25	63	58
52/ 41		1.8	.4	.4	.7													30	30	68	32
50/ 39		.2	.7	.3	.2													13	13	43	42
48/ 37	.2	.3	.2															7	7	26	49
46/ 35	.1	.1	.2															4	4	33	54
44/ 33		.8		.3														10	10	22	57
42/ 31		.1																1	1	7	88
40/ 29																				2	54
38/ 27																				1	39
36/ 25																					39
34/ 23																					20
32/ 21																					23
30/ 19																					20

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) AUG 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

* U.S. GOVERNMENT PRINTING OFFICE: 1966-664-012/1019

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

PAGE 2 | 1200-1800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
18/ 17																					19
16/ 15																					8
14/ 13																					6
12/ 11																					1
TOTAL	1.2	11.7	7.1	10.2	10.1	12.2	12.4	10.4	9.1	7.2	3.8	3.1	1.1	.2	.3			908	908	908	904

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	2798552	46018	50.9	22.373	908							
Dry Bulb	3273679	53595	59.0	11.023	908		.1	22.9	11.4	2.7		93
Wet Bulb	2219699	44205	48.9	8.022	908		1.8	.6				93
Dew Point	1880338	38472	38.8	11.068	908		32.2					93

USAFETAC FORM AS 44 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

PAGE 1 | 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
86/ 85									.1			.1	.3		.2			7	7		
84/ 83									.1		.1	.1	.3		.1			7	7		
82/ 81								.2	.1			.9	.1					12	12		
80/ 79							.1	.1	.2	.1	.6	.3	.1					14	14		
78/ 77						.2	.2	.4	.1	.2	.7	.9	.8	.2				34	34		
76/ 75							.3	.6	.2	.2	.4	.4	.3					23	23		
74/ 73						.4	.1	.3	.3	.4	.2	.3	.3					23	23		
72/ 71					.2	.1	.2	.7	.2	.1	.8	.4						25	25		
70/ 69			.1	.1	.6	.3	.2	.1		.4	.2							19	19	3	
68/ 67			.2	.4	.4	.3	.6	.9	.4	1.2	.3							44	44	4	
66/ 65			.3	.4	.7	.8	.9	.9	.9	1.3	.3							59	59	7	1
64/ 63			.3	.8	1.3	.3	1.1	1.8	2.2	2.4	.4							97	97	26	2
62/ 61		.3	.6	1.4	1.0	1.0	1.3	1.4	1.3	.6	.1							82	82	23	6
60/ 59		.3	.9	.2	.7	.8	1.2	1.7	.7	.3								61	61	49	13
58/ 57		.3	.1	.4	.8	.6	1.4	1.3	.2									47	47	51	15
56/ 55		.2	.1	.6	.3	.3	1.1	.8	.6									36	36	74	32
54/ 53	.1	.4	.2	.7	.8	1.2	1.1	1.3										53	53	53	32
52/ 51	.2	1.0	.8	.2	1.3	1.2	.7	.6										54	54	64	28
50/ 49	.2	1.1	.6	.3	.9	.6	.7	.4										43	44	87	46
48/ 47		1.6	.7	1.2	.8	.2	1.0	.3										52	52	103	27
46/ 45		1.0	.4	.4	.6	.8	.4											33	33	89	52
44/ 43		.7	.3	.1	.7	.1												17	17	72	59
42/ 41	.1	1.4	.3	.7	.7													29	29	66	54
40/ 39		.2	.1	.3	.2													8	8	50	37
38/ 37			.1	.1														2	2	20	53
36/ 35	.6	1.0	.3	.1														18	18	38	50
34/ 33		.4																4	4	25	51
32/ 31																				4	85
30/ 29																				1	63
28/ 27																					49
26/ 25																					37
24/ 23																					22
22/ 21																					27
20/ 19																					25

Element (X)	Σx^2	Σx	$\bar{x}$	σ	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 90 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AS-54 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
18/ 17																					17
16/ 15																					8
14/ 13																					12
TOTAL	1.2	10.1	6.5	8.6	11.8	9.3	12.7	13.8	7.8	7.8	8.2	3.5	2.3	.2	.3			903	908		903
																		903		903	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 88 F	≥ 93 F	Total
Rel. Hum.	2597001	88081	88.8	22.312	903							
Dry Bulb	3299937	53707	59.4	10.996	909			21.8	12.3	3.8		93
Wet Bulb	2196670	43968	48.7	7.867	903		.5	.7				93
Dew Point	1376775	33789	37.8	11.165	903		35.5					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

2

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

PAGE 1 | 1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
84/ 83												.1			.1			2	2		
82/ 81												.1						1	1		
80/ 79								.1			.4	.1		.1				7	7		
78/ 77							.1			.2	.3	.2	.1					9	9		
76/ 75							.1	.1	.1	.4	.1	.4	.1					13	13		
74/ 73						.1	.3		.2	.2	.3	.1						12	12		
72/ 71							.2	.1	.1	.1	.6	.3						13	13		
70/ 69					.2	.1	.2	.6	.2		.3							15	15		
68/ 67			.1	.4	.3	.6	.7	.4	.3	.6								31	31		
66/ 65			.3	.6	.4	.6	.6	.9	.6	.7								41	42	3	
64/ 63		.1	.3	.4	.8	.9	.8	1.0	1.1	1.0	.1							59	59	4	
62/ 61		.1	.9	.7	.6	.4	.6	.7	1.8	.7								57	57	17	2
60/ 59		.9	1.2	.6	1.7	.4	.6	1.2	.7	.1	.1							67	67	29	10
58/ 57	.2	.4	1.5	.6	.8	.8	.9	1.2	.6	.1								64	64	43	9
56/ 55		.9	.9	1.1	1.1	1.4	1.2	.6	.6									70	70	56	29
54/ 53		.7	.4	.9	.7	1.2	1.8	.8	.1									59	59	62	25
52/ 51	.3	.4	.3	.8	1.2	1.8	1.2	.8	.1									63	63	67	34
50/ 49	.2	1.4	1.4	1.0	1.3	2.1	.9	.1										77	77	57	36
48/ 47	.1	1.7	.9	.8	1.8	.2	1.4	.1										63	63	85	40
46/ 45		1.3	.9	.6	.7	.7	.6											42	42	87	64
44/ 43	.1	1.8	.7	.9	.4	.8	.3											45	46	96	47
42/ 41	.2	.9	.4	.7	.7	.4	.1											31	31	84	48
40/ 39	.1	.6	.7	.7	.1	.3												22	22	68	48
38/ 37		.3	.4		.3													10	10	43	54
36/ 35	.3	.9	.6	.3	.2													21	21	42	47
34/ 33		.6	.3	.2														10	10	32	43
32/ 31			.1															1	1	15	78
30/ 29																				13	67
28/ 27																				2	53
26/ 25																					32
24/ 23																					35
22/ 21																					25
20/ 19																					35
18/ 17																					13

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

 1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
16/ 15																					8
14/ 13																					11
12/ 11																					8
10/ 9																					1
8/ 7																					2
6/ 5																					1
TOTAL	1.7	12.9	12.5	11.0	13.3	12.8	12.5	8.6	6.4	4.1	2.3	1.4	.2	.1	.1			905	907	905	905

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	3118962	89186	58.3	22.205	905							
Dry Bulb	2817724	49786	54.8	9.929	907		.1	10.6	4.5	.6		93
Wet Bulb	1986696	41822	46.2	7.730	905		3.1					93
Dew Point	1313863	32963	36.8	11.173	905		37.9					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

 2100-2300 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
72/ 71								.2										2	2		
70/ 69					.1			.1		.1								3	3		
68/ 67			.3				.2	.3	.2									10	10		
66/ 65				.1	.1	.1	.6	.1	.1	.3								13	13		
64/ 63		.2	.1	.1	.2	.6	.4	.6										20	20	4	
62/ 61		.6	.7	.3	.3	1.0	.7	.1	.1									34	34	3	2
60/ 59		1.0	.4	.4	.9	.1	.2	.3										31	31	8	6
58/ 57	.1	2.0	1.3	1.0	.7	.7	.3	.6										60	60	26	8
56/ 55		1.2	1.1	2.1	.6	.8	.8	.1										60	60	34	28
54/ 53		1.1	1.3	1.1	.8	.6	.9	.2										54	54	43	17
52/ 51	.1	1.6	1.7	1.1	1.1	1.8	.8											73	73	55	27
50/ 49	.3	2.0	1.3	1.9	1.6	2.1	.7											89	89	74	32
48/ 47		2.1	1.2	1.7	2.5	1.8												84	84	65	41
46/ 45	.1	2.7	2.2	2.5	1.4	.4	.1											86	86	55	64
44/ 43		1.6	1.4	1.8	1.1	.4	.1											58	58	84	62
42/ 41	.2	1.2	1.7	1.2	1.0	.4												52	52	90	42
40/ 39	.3	1.4	1.4	1.3	.9	.3												52	52	102	55
38/ 37	.2	1.0	1.2	1.4	.8	.1												43	43	68	51
36/ 35	.1	2.1	.9	.9	.3	.1												40	40	49	59
34/ 33		.8	1.2	.6	.2													25	25	62	72
32/ 31			.6	.3														8	8	29	77
30/ 29		.1	.2															3	3	28	51
28/ 27		.2																2	2	17	43
26/ 25																				6	45
24/ 23																					32
22/ 21																					25
20/ 19																					27
18/ 17																					10
16/ 15																					8
14/ 13																					8
12/ 11																					6
10/ 9																					1
8/ 7																					2
6/ 5																					1

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMAR

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

 2100-230 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Po
	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				
TOTAL	1.6	22.8	20.4	20.0	14.6	11.3	5.8	2.7	.4	.4								902	902	902	90

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 86 F	≥ 93 F	Total
Rel. Hum.	8171757	58959	65.4	18.788	902							
Dry Bulb	2191708	93804	98.6	8.457	902		1.3	1.5				9
Wet Bulb	1728392	38850	43.1	7.819	902		8.2					9
Dew Point	1295660	32842	36.4	10.529	902		38.4					9

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | MAY MONTH

ALL HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
86/ 85									.0			.0	.0		.1			10	10		
84/ 83								.0	.0		.0	.1	.1		.0			16	16		
82/ 81								.0	.0	.0	.0	.2	.0	.0				25	25		
80/ 79							.0	.0	.1	.0	.2	.1	.1	.0				40	40		
78/ 77						.1	.1	.2	.1	.1	.2	.2	.2	.0				82	82		
76/ 75					.0	.0	.1	.1	.1	.2	.1	.2	.1					68	68		
74/ 73				.0	.0	.1	.1	.1	.2	.2	.1	.1	.0					77	77		
72/ 71				.0	.1	.1	.1	.3	.2	.1	.3	.2						97	97		
70/ 69			.0	.1	.3	.1	.1	.2	.1	.1	.2							91	91	4	
68/ 67			.1	.2	.2	.3	.5	.3	.3	.4	.2							171	171	11	
66/ 65			.2	.3	.3	.4	.4	.3	.4	.5	.1							217	218	20	1
64/ 63		.2	.1	.6	.7	.7	.5	.7	.8	.7	.1							375	375	75	8
62/ 61		.4	.5	.5	.6	.8	.7	.5	.8	.3	.0							375	375	104	27
60/ 59		.8	.6	.4	.9	.5	.6	.8	.4	.1	.0							371	371	192	64
58/ 57	.1	.8	.6	.7	.4	.6	.5	.6	.2	.0								337	337	285	83
56/ 55	.1	1.4	.8	1.0	.6	.7	1.0	.5	.2									445	445	359	204
54/ 53	.1	1.0	.7	1.2	.6	.9	.9	.4	.0									431	431	377	200
52/ 51	.2	1.2	1.0	.8	1.0	1.3	.4	.2	.0									446	446	448	241
50/ 49	.4	1.9	1.5	1.2	1.3	1.1	.6	.1										588	590	550	312
48/ 47	.2	1.8	1.3	1.3	1.4	.6	.5	.1										520	522	589	305
46/ 45	.2	2.0	1.5	1.5	1.0	.5	.2											495	495	632	485
44/ 43	.2	1.8	1.0	1.0	.6	.4	.1											369	371	660	463
42/ 41	.2	1.6	1.1	.9	.6	.2	.0											339	339	632	366
40/ 39	.3	1.1	1.2	1.0	.4	.1												299	299	550	412
38/ 37	.1	1.7	1.0	.8	.4	.0												290	290	411	450
36/ 35	.2	1.6	1.0	.7	.1	.0												272	272	394	426
34/ 33	.1	1.3	.8	.5	.1													202	202	361	489
32/ 31	.0	.7	1.0	.2	.0													134	134	251	660
30/ 29	.0	.3	.2	.0														34	34	175	465
28/ 27	.0	.2	.0															20	20	121	370
26/ 25		.1																9	9	36	321
24/ 23																				8	217
22/ 21		.0																1	1	1	241
20/ 19		.0																1	1	1	204

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) MAY (MONTH)

 ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
1-/ 17																					93
16/ 15																					88
14/ 13																					57
12/ 11																					22
10/ 9																					6
8/ 7																					5
6/ 5																					2
TOTAL	2.3	21.9	16.3	14.8	11.8	9.6	7.7	5.5	3.9	2.9	1.5	1.1	.5	.1	.1				7258		7247
																		7247		7247	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	31068828	896862	61.7	22.024	7247							
Dry Bulb	20266167	374661	51.6	11.239	7258		20.4	69.4	32.6	7.4		744
Wet Bulb	15023288	324104	44.7	8.541	7247		60.9	1.5				744
Dew Point	10705579	267769	36.9	10.585	7247		278.3					744

USAFETAC FORM AWS 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUN MONTH

0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
78/ 77						.1												1	1		
76/ 75					.2													2	2		
72/ 71				.1														1	1		
70/ 69			.1	.1		.1												3	3	2	
68/ 67			1.1	.2	.2	.3	.1											18	18	1	
66/ 65		.2	.1	.2	.3	.5	.2											18	18	4	2
64/ 63	.2	1.1	.9	1.0	.6													34	34	15	10
62/ 61	.2	2.3	2.0	1.5	.2	.2												56	56	17	9
60/ 59	.2	1.3	1.8	.9	1.6		.1											52	52	42	27
58/ 57	.2	2.6	1.6	1.3	.5	.3	.2											59	59	60	23
56/ 55	.2	3.7	3.6	1.8	.7	.1												88	88	64	56
54/ 53	.3	6.1	2.2	2.6	.8													105	105	61	68
52/ 51		5.9	2.4	1.4	.5													88	88	111	64
50/ 49	.6	5.4	3.4	1.3	.3													96	96	104	107
48/ 47	.6	6.9	3.4	1.4	.7													113	113	108	77
46/ 45		3.0	1.7	.7	.1													48	48	99	104
44/ 43	.3	2.6	.6	.2														33	33	68	76
42/ 41	.1	1.7	.3	.6														24	24	48	71
40/ 39	.2	1.8	.2															20	20	30	61
38/ 37	.1	.7	.3															10	10	23	49
36/ 35		.1	.1															2	2	10	26
34/ 33																				3	23
32/ 31																				1	8
30/ 29																					5
28/ 27																					5
TOTAL	3.4	45.5	26.1	15.4	7.2	1.7	.7												871		871
																		871		871	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≥ 93 F	Total
Rel. Hum.	5766015	70101	80.5	11.941	871							
Dry Bulb	2471603	46005	52.8	6.922	871			2.6	.3			90
Wet Bulb	2179436	43210	49.6	6.415	871		.1	.3				90
Dew Point	1947298	40704	46.7	7.200	871		1.9					90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUN MONTH

 0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
72/ 71				.3														3	3		
68/ 67			.5		.5													8	8		
66/ 65		.3	.6	.1	.2	.6												16	16	3	
64/ 63	.2	.9	.8	.8	.5	.1	.1											30	30	12	7
62/ 61	.1	2.0	1.4	.8	.6	.2												44	45	17	14
60/ 59	.6	1.3	1.3	.7	.3	.1												37	37	38	22
58/ 57	.3	2.8	.7	.6	.3													41	41	49	25
56/ 55	.1	4.7	2.1	1.3	.6													76	76	88	43
54/ 53	.3	5.1	3.9	1.5	.2													96	96	57	54
52/ 51	.7	4.8	3.7	.7	.1													83	83	93	58
50/ 49	.2	9.3	3.6	.6	.2													121	122	95	85
48/ 47	.2	8.1	5.8	1.6														133	133	140	96
46/ 45	.2	3.3	1.4	.6	.2													50	50	91	126
44/ 43	.2	3.0	.9	.2														38	38	81	83
42/ 41	.2	2.9	.8	.3														37	37	48	71
40/ 39	.2	2.5	.7															30	30	41	57
38/ 37		1.5																13	13	30	45
36/ 35	.1	.9																9	9	23	37
34/ 33		.2																2	2	3	24
32/ 31		.1																1	1	2	18
30/ 29																				1	4
28/ 27																					3
TOTAL	3.9	53.3	27.6	10.1	3.8	1.0	.1											868	870	868	868

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	6117336	72298	83.3	10.529	868							
Dry Bulb	2322627	48549	51.2	6.907	870		.1	1.1				90
Wet Bulb	2081390	42130	48.5	6.491	868		.3					90
Dew Point	1891330	40058	46.1	7.045	868		2.2					90

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUN MONTH

PAGE 1 | 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
76/ 75					.1	.1	.2											4	4		
74/ 73					.1													1	1		
72/ 71				.1	.1	.6												7	7		
70/ 69			.3	.6	.5	.3	.3											18	18		
68/ 67		.1	.7	.5	.8	.3	.5	.1										26	26	2	
66/ 65		.6	.8	1.1	1.3	.8	.1											39	39	9	1
64/ 63	.2	1.6	1.3	2.4	2.1	1.6	.2											82	82	28	13
62/ 61		1.5	1.8	1.5	.5	1.1	.1											57	57	32	18
60/ 59	.3	1.3	2.3	1.0	1.5	.5	.1											61	61	53	31
58/ 57	.6	3.3	2.6	2.4	1.3	.3												92	92	90	44
56/ 55	.5	4.1	2.2	2.7	1.3	.2	.2											98	98	85	65
54/ 53	.7	3.8	3.7	1.8	1.5	.1												101	101	88	90
52/ 51	.9	4.0	3.2	.8	.7	.2												86	86	118	78
50/ 49	.6	4.9	3.5	1.4	1.0	.1												101	101	112	88
48/ 47	.3	2.7	2.1	.8														52	52	99	92
46/ 45	.6	.8	.9	.1	.1													22	22	74	132
44/ 43	.2	1.0	.2	.2														15	15	42	71
42/ 41		.3	.3	.3														9	9	27	45
40/ 39		.2		.1														3	3	6	36
38/ 37			.2															2	2	7	28
36/ 35																				3	14
34/ 33																				1	12
32/ 31																					8
30/ 29																					8
TOTAL	4.9	30.3	26.1	17.9	12.4	6.4	1.8	.1										876	876	876	876

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5350933	67351	76.9	14.048	876							
Dry Bulb	2787654	49066	56.0	6.710	876			5.8	.5			90
Wet Bulb	2392267	45481	51.9	5.947	876			.2				90
Dew Point	2097152	42436	48.4	6.881	876		1.6					90

USAFETAC FORM 0-26-5 (OL A) JUL 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUN MONTH

 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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			Dry Bulb	Wet Bulb	Dew Point
84/ 83								.1	.1										2	2		
82/ 81								.1	.1	.1	.1								4	4		
80/ 79						.2	.5		.1										7	7		
78/ 77						.5	.6	.5	.7	.2	.1								22	22		
76/ 75			.1		.6	.8	1.1	1.1	.5	.3									40	40		
74/ 73			.1		.7	1.1	1.0	.8	.7										39	39		
72/ 71				.8	.5	1.6	1.4	1.0	.8	.2									55	55	1	
70/ 69		.1	.3	.2	1.0	1.0	1.0	.6	.3										41	41	5	1
68/ 67		.1	.6	.6	1.3	2.0	1.5	.9	.2										62	62	18	2
66/ 65		.3	.9	1.6	1.3	1.3	1.3	1.3	.3										72	72	35	1
64/ 63		1.0	1.7	2.5	3.2	2.8	1.7	.9	.1										122	122	47	21
62/ 61	.2	.9	2.2	2.2	2.0	2.1	1.8	.1	.2										98	98	72	29
60/ 59	.1	.5	1.8	.6	1.7	1.1	.3	.2	.1										57	57	92	42
58/ 57		1.3	.6	2.1	1.3	.7	.3	.2											56	56	108	81
56/ 55	.3	1.0	.7	1.5	1.0	.3	.2												45	45	106	78
54/ 53	.5	1.6	1.5	1.7	.3	.5	.1												54	54	82	98
52/ 51	1.1	1.5	1.7	.6	.3	.2	.1												49	49	114	90
50/ 49	.1	1.1	.7	.1	.2														20	20	80	75
48/ 47		.3	.8	.2	.1	.1													14	14	51	85
46/ 45	.2	.2			.2														6	6	23	92
44/ 43		.3																	3	3	19	64
42/ 41		.2																	2	2	12	82
40/ 39																					5	52
38/ 37																						23
36/ 35																						9
34/ 33																						8
32/ 31																						11
30/ 29																						4
28/ 27																						5
26/ 25																						1
TOTAL	2.6	10.7	13.8	14.7	15.7	16.3	12.6	7.9	4.4	.9	.2								870		870	
																			870	870		

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3728705	54965	63.2	17.168	870							
Dry Bulb	3500099	54757	62.9	7.864	870			28.1	11.8	.7		90
Wet Bulb	2694377	48133	55.3	6.012	870			2.5				90
Dew Point	2158359	42840	49.2	7.898	870		2.2	.3				90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUN MONTH

PAGE 1 | 1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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				
92/ 91												.1						1	1		
90/ 89											.1							1	1		
88/ 87										.1				.1				2	2		
86/ 85									.2	.1		.2	.1					6	6		
84/ 83						.1	.1	.2	.3	.1		.1						9	9		
82/ 81						.1	.1	.6	.3	.5	.5							18	18		
80/ 79					.3	.2	.5	.3	1.2	.6	.7	.1						35	35		
78/ 77					.2	.6	1.1	1.8	.7	.9	.6							52	52		
76/ 75			.2		.8	.2	2.0	1.6	1.5	1.5	.1							70	70		
74/ 73				.2	.5	.8	1.0	1.4	1.6	.3	.1							52	52	3	
72/ 71				.3	.3	1.6	1.0	1.1	1.1	.1	.1							51	51	8	1
70/ 69			.6	.3	.6	1.0	1.5	1.5	1.1	.5								62	62	16	4
68/ 67		.1	.6	.8	1.6	1.0	1.8	1.1	1.4	.1								75	75	26	3
66/ 65		.1	.6	.9	1.6	1.6	2.4	1.2	.5	.1								79	79	41	10
64/ 63	.1	.5	1.6	3.1	1.8	2.9	2.5	1.0	.5	.2								125	125	73	18
62/ 61		.1	.3	.7	1.1	1.6	1.5	.1	.1									49	49	79	31
60/ 59		.7	1.4	1.0	1.1	.6	.5	.5	.1									51	51	102	34
58/ 57		.8	.9	.7	.8	.5	.1											33	33	114	52
56/ 55	.3	.8	1.2	1.2		.2	.1											35	35	103	75
54/ 53	.7	.9	.3	.7		.2												25	25	110	101
52/ 51		.9	.8	.1	.5	.2												22	22	86	68
50/ 49	.2	.7	.6	.6	.1													19	19	57	77
48/ 47		.6	.1															6	6	31	72
46/ 45		.6																5	5	22	104
44/ 43																				10	79
42/ 41																				2	40
40/ 39																					43
38/ 37																					33
36/ 35																					12
34/ 33																					11
32/ 31																					7
30/ 29																					4
28/ 27																					3
26/ 25																					1

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) JUN 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

PAGE 2 1200-1800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
TOTAL	1.4	6.7	9.2	10.6	11.3	13.5	16.2	12.5	10.6	5.1	2.2	.6	.1	.1				883	883	883	883

Element (X)	Σx^2	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3072585	89637	56.2	17.889	883							
Dry Bulb	4002059	58971	66.8	8.898	883			88.2	25.1	5.2		90
Wet Bulb	2897795	50309	57.0	5.970	883			5.8	.3			90
Dew Point	2203887	43585	49.8	7.685	883		1.5	.8				90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUN MONTH

 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
[illegible] / 89											.3							3	3		
[illegible] / 87											.2	.1	.2	.1				6	6		
[illegible] / 85								.3	.3	.2	.1	.1						10	10		
[illegible] / 83						.1	.1	.1		.3	.1							7	7		
[illegible] / 81						.1		.2	.3	1.0	.3	.5						22	22		
[illegible] / 79					.1		.5	.6	1.0	.9	1.3							38	38		
[illegible] / 77						.6	.5	.9	1.4	1.2	.7							45	45		
76 / 75					.6	.2	1.8	1.2	1.2	1.4	.6							60	60		
74 / 73				.7	.5	.6	1.3	1.2	2.0	.6	.3							61	61	2	
[illegible] / 71			.1	.3	.3	.6	1.3	1.6	1.2	.7								53	53	7	
[illegible] / 69		.1	.3	.6	.9	.7	.7	1.3	1.7	.2								57	57	13	2
[illegible] / 67			.5	.3	1.5	2.1	1.6	1.4	1.2	.5								78	78	28	3
66 / 65		.3	.3	1.0	.9	1.4	1.3	1.5	.7	.1								66	66	38	7
64 / 63		.2	1.4	2.3	1.7	2.2	1.6	1.0	.8									98	98	67	25
[illegible] / 61		.7	.7	1.5	1.8	1.7	.8	.3										66	66	65	20
[illegible] / 59		.3	1.4	.9	1.3	.8	.3	.1										45	45	117	32
[illegible] / 57	.1	.6	1.3	1.2	.4	.3	.5											41	41	123	42
56 / 55	.1	1.4	1.3	1.0	.3	.3												39	39	91	65
[illegible] / 53	.6	1.0	.6	.5	.1	.2												26	26	113	102
[illegible] / 51	.1	.2	.6	.1	.2	.1												12	12	87	76
50 / 49	.2	.9	.9	.2		.1												21	21	52	82
[illegible] / 47		1.2	.1															11	11	35	73
[illegible] / 45		.3																3	3	23	102
[illegible] / 43																				6	76
42 / 41																					56
[illegible] / 39																				1	42
38 / 37																					21
36 / 35																					13
34 / 33																					18
[illegible] / 31																					6
30 / 29																					5
TOTAL	1.2	7.4	9.4	10.7	11.2	12.2	12.2	11.8	11.8	7.1	4.0	.7	.2	.1					868		868
																		868		868	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	2983135	48259	55.6	18.603	868							
Dry Bulb	3955795	58095	66.9	8.824	868			45.6	26.1	6.7		90
Wet Bulb	2835476	49354	56.9	5.807	868			5.2	.2			90
Dew Point	2134896	42562	49.0	7.432	868		1.1	.5				90

USAFETAC FORM 0-26-5 (OL A) AS 44 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUN MONTH

PAGE 1 | 1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
90/ 89											.1							1	1		
88/ 87										.1								1	1		
86/ 85									.1	.2		.1						4	4		
84/ 83								.1	.1	.1								3	3		
82/ 81								.1		.6	.1							7	7		
80/ 79							.7	.1	.1	.5		.1						13	13		
78/ 77						.2	.3	.3	.7	.9								22	22		
76/ 75			.1		.2	.6	.3	1.4	.8	.3								33	33		
74/ 73		.1		.3	.5	1.0	.7	.7	.8	.6	.1							42	42		
72/ 71				.6	.1	.9	1.5	.9	1.0	.1								46	45	2	2
70/ 69				.2	.3	.8	.7	.8	1.3	.1								37	37	9	
68/ 67			.7	.2	2.0	1.6	1.0	1.1	.9									46	46	15	
66/ 65		.5	1.0	1.1	2.1	1.5	1.0	1.1	.6									78	78	26	1
64/ 63	.1	1.0	1.0	2.8	1.4	1.3	1.8	.8	.7									95	95	41	17
62/ 61		.5	.8	2.2	2.3	1.6	.9	.2	.1									75	75	63	21
60/ 59		.9	2.0	1.6	1.5	1.4	.8	.5										75	75	86	60
58/ 57	.1	1.1	1.0	1.0	1.3	.8	.2											49	49	111	30
56/ 55	.3	2.1	2.1	1.7	1.5	.6	.2											78	78	98	65
54/ 53	.2	2.1	1.1	2.3	.2	.3	.2											57	57	100	98
52/ 51	.1	1.7	2.0	.2	.6	.2	.2											88	88	113	88
50/ 49		.8	.8	.3	.3													20	20	79	94
48/ 47	.2	1.8	.3	.2	.3													22	22	67	68
46/ 45		.5	.1	.1														6	6	30	95
44/ 43				.1														1	1	17	70
42/ 41																				10	57
40/ 39																				4	37
38/ 37																				1	38
36/ 35																					19
34/ 33																					11
32/ 31																					12
30/ 29																					4
28/ 27																					6
26/ 25																					1

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 72 F	≤ 80 F	≤ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

* U.S. GOVERNMENT PRINTING OFFICE: 1981 664-012/1019

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
TOTAL	1.1	12.6	13.1	15.2	14.6	12.9	10.8	8.3	7.2	3.6	.3	.2						870	871	870	870

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3609142	53748	61.8	18.225	870							
Dry Bulb	3510938	54814	62.9	8.399	871			28.4	13.1	2.3		90
Wet Bulb	2653982	47768	54.9	5.996	870			2.7				90
Dew Point	2085860	42092	48.4	7.538	870		2.4	.2				90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUN MONTH

 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
78/ 77						.3												3	3		
76/ 75					.1	.1		.1										3	3		
74/ 73				.2	.3		.1											6	6		
72/ 71					.5	.6	.3		.1									13	13		
70/ 69			.3	.6	.1	.5	.5	.1										18	18	1	
68/ 67			.1	.5	.7	.2		.1										18	18	5	
66/ 65		.3	.6	1.0	.7	.7	.1											30	30	9	1
64/ 63		1.5	1.2	2.0	.8	.8	.2											56	56	13	9
62/ 61	.1	2.3	1.9	1.6	1.0	.7	.3											69	69	39	17
60/ 59	.1	1.6	2.8	2.0	1.5	.5	.1											78	78	56	33
58/ 57	.1	2.4	3.5	2.2	1.2	.5	.1											86	86	61	39
56/ 55	.5	3.6	5.0	2.5	1.3	.2												113	113	86	46
54/ 53		3.7	3.0	1.3	1.3													80	80	104	77
52/ 51	.5	4.7	2.8	3.1	.7	.1												103	103	108	87
50/ 49	.2	3.6	3.4	1.6	.6	.5												85	85	111	111
48/ 47		3.5	2.3	1.0	.6													68	68	81	82
46/ 45	.1	1.5	.8	.3	.3													27	27	100	101
44/ 43		.8	.2	.1														10	10	88	76
42/ 41		.1	.3	.2														6	7	25	53
40/ 39		.1	.2	.1														4	4	14	50
38/ 37																				3	33
36/ 35																				1	23
34/ 33																					7
32/ 31																					8
30/ 29																					9
28/ 27																					2
TOTAL	1.6	29.9	23.4	20.5	11.7	5.7	1.9	.3	.1									869		865	864

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	5089048	65308	75.6	13.295	864							
Dry Bulb	2781163	48343	55.9	6.751	865			5.9	1.2			90
Wet Bulb	2334907	44615	51.6	6.002	864			.6				90
Dew Point	2026612	41408	47.9	7.016	864		2.0					90

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
92/ 91												.0						1	1		
90/ 89											.1							5	5		
88/ 87										.0	.0	.0	.0	.0				9	9		
86/ 85								.0	.1	.1	.0	.1	.0					20	20		
84/ 83						.0	.0	.1	.1	.1	.0	.0						21	22		
82/ 81						.0	.0	.1	.1	.3	.1	.1						51	51		
80/ 79					.1	.1	.3	.1	.3	.2	.2	.0						93	93		
78/ 77					.0	.3	.3	.4	.4	.4	.2							145	145		
76/ 75			.1		.3	.3	.7	.7	.5	.4	.1							212	212		
74/ 73		.0	.0	.2	.3	.4	.5	.5	.6	.2	.1							201	201	5	
72/ 71			.0	.3	.2	.7	.7	.6	.5	.1	.0							228	228	18	3
70/ 69		.0	.3	.3	.4	.6	.6	.5	.6	.1								236	236	46	7
68/ 67		.0	.6	.4	1.1	.9	.8	.6	.5	.1								347	347	95	8
66/ 65		.3	.6	.9	1.1	1.0	.8	.6	.3	.0								398	398	165	23
64/ 63	.1	1.0	1.2	2.1	1.5	1.5	1.0	.5	.3	.0								642	642	296	120
62/ 61	.1	1.3	1.4	1.5	1.2	1.2	.6	.1	.1									514	515	384	159
60/ 59	.2	1.0	1.8	1.1	1.3	.6	.3	.2	.0									452	452	580	261
58/ 57	.2	1.9	1.5	1.4	.9	.4	.2	.0										457	457	716	296
56/ 55	.3	2.7	2.3	1.7	.8	.3	.1											568	568	681	493
54/ 53	.4	3.0	2.0	1.5	.6	.2	.0											544	544	715	684
52/ 51	.4	2.9	2.1	.9	.4	.1	.0											487	487	830	609
50/ 49	.3	3.3	2.1	.8	.4	.1												483	484	690	719
48/ 47	.2	3.1	1.8	.7	.2	.0												415	415	612	641
46/ 45	.1	1.3	.6	.2	.1													167	167	462	856
44/ 43	.1	1.0	.2	.1														100	100	287	595
42/ 41	.3	.7	.2	.2														78	79	172	435
40/ 39	.1	.6	.1	.0														57	57	101	380
38/ 37	.0	.3	.1															25	25	64	270
36/ 35	.0	.1	.0															11	11	40	153
34/ 33		.0																2	2	7	114
32/ 31		.0																1	1	3	74
30/ 29																				1	43
28/ 27																					24
26/ 25																					2

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMAR

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUN (MONTH)

 A1 (HOURS (L. S. T.

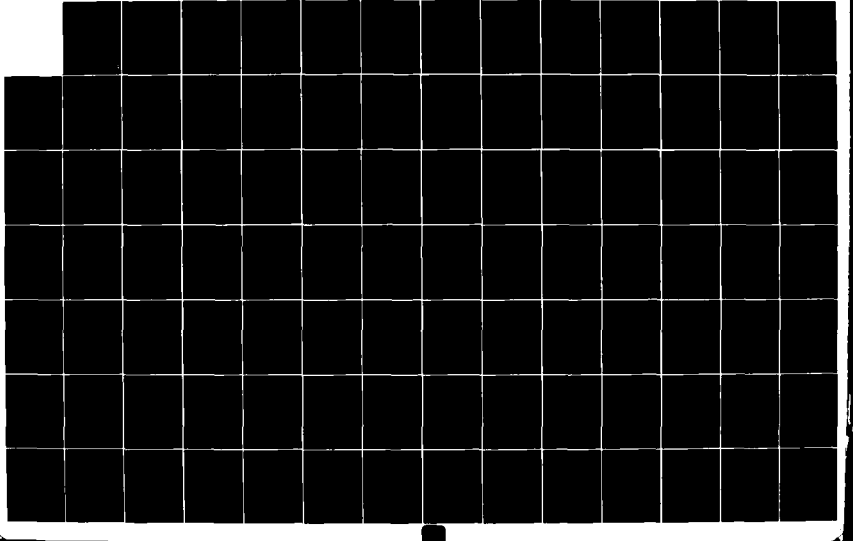
Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew P
	0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10	11 - 12	13 - 14	15 - 16	17 - 18	19 - 20	21 - 22	23 - 24	25 - 26	27 - 28	29 - 30	≥ 31				
2/ 21																					
TOTAL	2.5	24.5	19.2	14.9	11.0	8.7	7.1	5.1	4.3	2.1	.8	.2	.0	.0					6978		697
																		6970		6970	

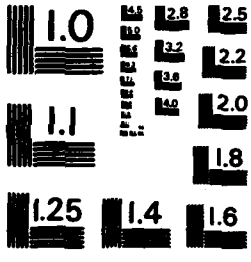
Element (X)	Σ_{X^2}	Σ_X	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	35716859	481663	69.1	18.679	6970							
Dry Bulb	25291938	414600	59.4	9.612	6978		.1	162.1	78.4	15.0		7
Wet Bulb	20069630	371000	53.2	6.797	6970		.4	16.9	.5			7
Dew Point	16598949	335677	48.2	7.371	6970		18.9	1.9				7

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

AD-A134 200 DULUTH DULUTH IAP MINNESOTA REVISED UNIFORM SUMMARY OF SURFACE WEATHER OB..(U) AIR FORCE ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER SCOTT A.. 01 AUG 83

UNCLASSIFIED USAFETAC/DS-83/030 SBI-AD-E850 418 F/G 4/2 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUL MONTH

0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
[illegible]/ 79						.2												2	2		
78/ 77				.2	.2													4	4		
76/ 75				.5	.5													10	10		
74/ 73			.5	.9	.3	.2												18	18		
72/ 71			.8	.9	.2	.2												19	19	5	
70/ 69		.2	1.5	.4	.9													28	28	16	
68/ 67		1.1	2.0	2.4	1.6													65	65	23	16
66/ 65		2.1	4.9	2.2	.4	.1												89	89	36	28
64/ 63		3.0	4.0	3.2	.9													100	100	57	44
62/ 61	.1	4.2	3.7	2.1	.7													98	99	101	51
60/ 59		3.1	4.6	2.4	.4													96	96	112	84
58/ 57	.1	4.9	4.2	1.3														96	96	106	84
56/ 55	.3	3.6	3.7	.4	.3													77	77	115	125
54/ 53		4.7	3.6	.5														81	81	105	118
52/ 51	.1	2.4	2.6															47	47	90	97
50/ 49	.1	1.5	2.1	.1														35	35	49	82
48/ 47		2.2	1.0															29	29	39	65
46/ 45		.9																8	8	42	47
44/ 43		.8																7	7	10	49
42/ 41		.1																1	1	3	12
40/ 39																				1	8
TOTAL	.8	34.8	39.3	17.7	6.6	.8													911		910
																		910		910	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	6057478	73826	81.1	8.659	910							
Dry Bulb	3311532	54582	59.9	6.736	911			14.9	3.5	.2		93
Wet Bulb	2935279	51393	56.5	6.009	910			4.5				93
Dew Point	2690409	49163	54.0	6.149	910			1.6				93

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

 0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
78/ 77					.1													1	1		
76/ 75			.1	.9														5	5		
74/ 73			.2	.7	.2													10	10		
72/ 71			.7	.8	.1	.4												18	18	1	
70/ 69		.1	1.0	.1	.4													15	16	7	1
68/ 67	.3	1.1	2.0	.9	.2													41	41	28	12
66/ 65	.3	1.4	3.4	1.4	.7													66	66	28	19
64/ 63	.2	5.8	4.0	1.9	.1													105	105	53	41
62/ 61		4.4	2.8	2.2	.2													87	87	92	48
60/ 59	.2	4.0	4.5	1.7														98	98	87	86
58/ 57	.2	5.4	3.5	.9														91	91	105	83
56/ 55	.4	7.6	3.5	.8														112	112	116	95
54/ 53		5.3	3.3															78	78	116	127
52/ 51	.2	3.7	2.3															57	57	76	105
50/ 49	.4	3.2	2.6															57	57	74	81
48/ 47	.1	3.3	.2															33	33	51	75
46/ 45		2.1	.1															20	20	40	61
44/ 43		1.2																11	11	23	42
42/ 41		.8																7	7	11	16
40/ 39		.1																1	1	5	18
38/ 37																					3
TOTAL	2.5	89.1	34.2	11.7	2.1	.4													910		909
																		909		909	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	6503100	76566	88.2	7.702	909							
Dry Bulb	3122859	52955	58.2	6.739	910			9.3	1.6			93
Wet Bulb	2829880	50362	55.9	6.176	909			3.3				93
Dew Point	2628836	48550	53.8	6.241	909			1.3				93

USAFETAC FORM 0-26-5 (OL A) AS 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUL MONTH

PAGE 1 | 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
[illegible] 79				.1														1	1		
73/ 77					.1	.2	.1											4	4		
76/ 75			.1	.8	.7	.2	.2											18	18		
74/ 73			.2	1.1	.6	.3												20	20	1	
72/ 71	.1	.1	.4	1.8	.7	.6	.1	.1										35	35	6	3
70/ 69	.1	.4	2.4	.9	.7	.9	.1											50	50	14	5
68/ 67		1.6	2.7	1.8	2.4	.7												82	82	32	12
66/ 65	.2	1.8	3.8	2.7	1.0	.7												91	91	57	37
64/ 63	.1	5.5	4.2	4.1	2.2	.4	.2											152	152	75	52
62/ 61	.3	4.4	4.0	2.5	1.9	.1												120	121	126	76
60/ 59		3.4	4.0	1.8	.7													89	89	119	97
58/ 57	.1	4.2	2.1	1.2	.1													70	70	141	98
56/ 55	.1	5.2	2.2	.6														73	74	106	133
54/ 53	.3	2.9	2.4	.1														52	52	107	119
52/ 51	.1	1.9	.7															24	24	58	94
50/ 49		1.2	.4															15	15	37	84
48/ 47		.4																4	4	17	51
46/ 45	.1	.1																2	2	5	31
44/ 43																				1	10
TOTAL	1.7	33.3	29.7	19.4	11.0	4.1	.8	.1											904		902
																		902		902	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	5835555	71863	79.7	11.058	902							
Dry Bulb	3531110	56240	62.2	5.979	904			21.6	4.4			93
Wet Bulb	3092295	52609	58.3	5.149	902			5.5	.1			93
Dew Point	2822122	50206	55.7	5.536	902			2.1				93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

PAGE 1 0900-1100 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
90/ 89												.1						1	1		
86/ 85						.1		.1	.1									3	3		
84/ 83				.1		.3	.3	.1		.1								9	9		
82/ 81				.2	.2	.7	.2	.3		.1								16	16		
80/ 79				.2	1.1	.8	.4	.6	.6									33	33		
78/ 77				.6	2.4	1.8	2.2	1.2	1.2	.6								90	90	1	
76/ 75				.4	2.5	1.7	2.8	3.0	.8	.1								102	102	5	
74/ 73			.2	1.8	2.1	1.9	1.5	.7		.1								72	72	8	1
72/ 71		.3	.7	1.4	1.2	2.9	1.4	.4	.7									82	82	31	7
70/ 69		.2	1.1	1.8	1.9	1.8	1.2	.3	.2									78	78	89	13
68/ 67		1.2	2.4	2.1	1.5	1.4	1.5	.3										96	96	78	30
66/ 65		1.1	1.0	1.8	2.5	1.5	1.3	.1										82	82	97	63
64/ 63	.1	2.2	1.7	3.2	1.7	1.1	.4											94	94	111	71
62/ 61		2.1	2.2	1.8	1.2	.6	.2											70	70	185	69
60/ 59	.1	1.5	1.2	.7	.4	.2												38	38	117	99
58/ 57	.2	1.1	.3	.2	.2	.1												20	20	108	95
56/ 55	.1	1.2	.4	.1	.1													18	18	81	108
54/ 53	.2	.2	.1															5	5	86	118
52/ 51		.1																1	1	22	78
50/ 49																				6	57
48/ 47																				1	41
46/ 45																					24
44/ 43																					21
42/ 41																					12
40/ 39																					3
TOTAL	.8	11.4	11.4	15.0	19.2	16.8	13.7	7.2	3.5	1.0		.1							906		906
																		906		906	

Element (X)	Σx^2	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 90 F	Total
Rel. Hum.	8075822	59218	65.4	15.058	906							
Dry Bulb	4401539	62856	69.4	6.710	906			59.3	33.5	8.3		93
Wet Bulb	3969759	55870	61.7	5.196	906			17.7	1.9			93
Dew Point	2937908	51256	56.6	6.893	906			5.2	.1			93

USAFETAC FORM 0-26-5 (OL A) 84 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUL MONTH

PAGE 1 | 1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
94/ 93														.1				1	1		
92/ 91									.3	.3			.2					8	8		
90/ 89								.2	.6	.1	.1	.1						10	10		
88/ 87							.2	.3	.3	.3								11	11		
86/ 85						.7	.9	.8	.2	.2	.2							27	27		
84/ 83					.1	.9	.9	.6	.1	1.0	.1							33	33		
82/ 81					.2	.9	.8	.4	1.2	.9	.6							45	45		
80/ 79			.1	.1	.9	1.8	2.4	1.8	2.0	.2	.7							90	90		
78/ 77				.6	1.8	3.1	2.9	3.8	3.1	.8	.1							145	145	1	
76/ 75				.3	2.0	1.2	2.4	1.7	1.7	.9								92	93	18	1
74/ 73			.1	.4	1.3	1.3	1.5	1.7	.8	.6								70	70	30	
72/ 71		.1	.6	1.2	.7	.7	1.2	.6	.6	.1								51	51	51	9
70/ 69		.4	.8	.8	1.2	.9	1.8	.2	.1									56	56	66	28
68/ 67		.3	1.1	1.1	1.2	2.1	2.0	.8	.1									79	79	90	52
66/ 65		.8	1.2	1.8	1.3	.9	1.0	.1										64	64	108	55
64/ 63		.9	1.1	1.8	1.3	.7	.4											56	56	126	66
62/ 61		.8	1.0	.2	.6	.6	.1											29	29	109	81
60/ 59		.8	.6	.1														13	13	118	67
58/ 57	.1	.7	.2															9	9	83	90
56/ 55	.2	.4	.3	.1														10	10	63	105
54/ 53		.3	.1															4	4	29	91
52/ 51			.1															1	1	9	78
50/ 49																				2	55
48/ 47																				1	47
46/ 45																					40
44/ 43																					26
42/ 41																					9
40/ 39																					4
TOTAL	.3	5.5	7.3	8.5	12.6	15.6	18.6	12.8	11.1	5.4	1.8	.1	.2	.1				904	905	904	904

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 90 F	≥ 93 F	Total
Rel. Hum.	3214861	52069	57.6	15.458	904							
Dry Bulb	4937724	66500	73.5	7.530	905			73.9	54.8	18.1	.1	93
Wet Bulb	3644117	57179	63.3	5.517	904			26.3	5.0			93
Dew Point	2951306	51256	56.7	7.070	904			9.3	.1			93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 DULUTH IAP MN 73-82 JUL
STATION STATION NAME YEARS MONTH

PAGE 1 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
94/ 93														.1				1	1		
92/ 91									.5	.1	.7	.1						13	13		
90/ 89								.5	.7		.5							16	16		
88/ 87							.3	.8	.8	.8		.5						23	23		
86/ 85						.7	.8	1.2	.3	.2	.1	.1						31	31		
84/ 83				.1		1.3	.3	.4	.8	.8	.7	.2						39	40		
82/ 81					.2	.8	.8	1.2	.9	.9	.3							46	46		
80/ 79				.1	.8	1.5	1.8	1.8	2.0	.2	.9							79	79		
78/ 77				.5	1.4	2.3	3.9	3.2	2.7	1.1	.3							142	142	1	
76/ 75			.1	.7	1.3	2.2	2.1	1.9	1.3	1.3	.2							101	101	31	
74/ 73		.1		.3	1.4	.9	1.5	1.1	1.1	.3								62	62	23	1
72/ 71		.1	.2	.9	.9	.9	1.6	1.0	.8	.2								60	60	63	16
70/ 69		.3	.4	.7	1.1	1.6	1.9	.8	.1									63	63	52	33
68/ 67		.1	.9	1.2	1.2	1.8	1.5	1.1	.2									70	70	89	39
66/ 65	.1	.3	.4	1.4	1.5	1.0	.8	.3										54	54	114	45
64/ 63	.1	1.0	.9	1.3	.5	1.0	.9											68	68	122	59
62/ 61		.7	.5	.5	.3	.5												24	24	109	82
60/ 59		.8	.2	.2	.1													12	12	116	88
58/ 57		.9	.5	.1														14	14	75	86
56/ 55	.3	.5	.3	.1														12	12	66	96
54/ 53		.1	.2															3	3	40	105
52/ 51																				10	70
50/ 49																				2	58
48/ 47																					85
46/ 45																					41
44/ 43																					28
42/ 41																					20
40/ 39																					4
38/ 37																					1
TOTAL	.5	4.9	4.8	8.2	10.8	16.1	17.7	18.6	11.8	5.6	3.7	1.0		.1				913	913		913
																		913		913	

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3057867	50977	55.8	15.232	913							
Dry Bulb	5075020	67732	74.1	7.813	914			76.0	56.4	19.5	.1	93
Wet Bulb	3687101	57787	63.3	5.693	913			26.4	5.6			93
Dew Point	2950879	51477	56.8	7.262	913			9.1	.1			93

USAFETAC FORM 26 44 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUL MONTH

1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
92/ 91												.1						1	1		
90/ 89							.1	.2	.2	.2								7	7		
88/ 87							.4	.4	.1	.1								10	10		
86/ 85						.2	.4	.7	.3	.1	.1	.1						18	18		
84/ 83						.3	.4	.6	.1		.1							14	14		
82/ 81					.4	.3	.4	.6	.4	.1								21	21		
80/ 79				.3	.6	1.0	1.1	.7	.6	.6								43	43		
78/ 77				1.3	1.0	2.4	1.8	1.4	.8		.2							81	81	2	
76/ 75			.2	.4	.9	1.9	1.4	1.1	1.0	.4								67	67	10	
74/ 73		.1	.7	1.0	2.1	2.4	1.1	1.4	.7	.4								90	90	23	1
72/ 71			.4	.1	1.9	2.0	1.2	1.1	.2									63	63	45	13
70/ 69		.1	1.3	1.9	2.9	2.0	1.0	.3	.2									88	88	39	26
68/ 67		.1	1.2	2.1	2.1	1.1	1.3	.6										77	77	75	30
66/ 65		.3	2.4	2.2	2.8	1.0	.4	.1	.1									85	86	66	45
64/ 63		1.0	1.9	2.8	1.6	.8	.6	.1										78	79	118	53
62/ 61		1.7	1.0	2.0	1.4	1.2	.1	.1										68	68	133	72
60/ 59		.9	.8	.9	1.1	.2												35	35	118	87
58/ 57		.9	1.4		.3	.1												25	25	101	113
56/ 55	.3	1.2	.6	.1	.1													21	21	76	102
54/ 53		.7	.2	.1														9	9	51	89
52/ 51		.1																1	1	32	69
50/ 49																				10	85
48/ 47																				3	43
46/ 45																					28
44/ 43																					22
42/ 41																					15
40/ 39																					6
38/ 35																					3
TOTAL	.3	7.1	12.2	15.3	19.2	17.1	12.0	9.4	4.8	2.0	.4	.2						902	904	902	902

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 95 F	Total
Rel. Hum.	3804895	57065	63.3	14.699	902							
Dry Bulb	4480027	63263	70.0	7.647	904			59.7	36.2	8.7		93
Wet Bulb	3462742	55644	61.7	5.779	902			20.0	3.6			93
Dew Point	2893505	50703	56.2	6.290	902			7.2	.1			93

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | JUL MONTH

PAGE 1 | 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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			Dry Bulb	Wet Bulb	Dew Point
84/ 83						.1													1	1		
82/ 81						.2													2	2		
80/ 79				.2	.4		.1												7	7		
78/ 77				.6	.8	.4													16	16		
76/ 75			.2	.3	1.6	.4	.2												25	25		
74/ 73			.7	.7	.6	.8	.3												27	27	8	
72/ 71		.3	1.3	1.9	.6	.8													44	44	17	3
70/ 69		.2	1.7	2.2	1.4	.3	.1												58	58	25	13
68/ 67		1.0	1.7	1.8	2.4	.8													69	69	39	22
66/ 65		1.8	4.2	3.3	1.8	.3													103	103	52	33
64/ 63		3.0	4.0	2.7	1.4	.3													103	104	75	46
62/ 61	.1	3.8	3.6	3.8	1.3	.1													114	114	103	67
60/ 59		2.3	5.1	2.9	.7	.1													100	100	129	88
58/ 57		2.0	3.0	1.4	.4	.1													63	63	102	108
56/ 55	.3	4.3	3.1	1.4	.3														86	86	126	108
54/ 53		1.3	2.8	.8	.3														47	47	85	116
52/ 51		1.1	1.2	.4															25	25	57	95
50/ 49		.8	.1																8	8	51	75
48/ 47		.4	.1																5	5	28	56
46/ 45		.2																	2	2	8	42
44/ 43																						21
42/ 41																						5
40/ 39																						7
TOTAL	.4	22.6	32.7	24.4	14.1	4.9	.8													902		901
																			901		901	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 88 F	≥ 93 F	Total
Rel. Hum.	5404030	69182	76.8	10.110	901							
Dry Bulb	3604858	56706	62.9	6.623	902			25.3	8.0	.5		93
Wet Bulb	3103069	52619	58.9	5.782	901			3.8	.9			93
Dew Point	2788906	49812	55.3	6.239	901			3.9				93

USAFETAC FORM 0-26-5 (OL A) AS 54 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) JUL (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
94/ 93														.0				2	2		
92/ 91									.1	.1	.1	.0	.0					22	22		
90/ 89							.0	.1	.2	.0	.1	.0						34	34		
88/ 87							.1	.2	.2	.1		.1						44	44		
86/ 85						.2	.3	.3	.1	.1	.1	.0						79	79		
84/ 83				.0	.0	.4	.2	.2	.1	.2	.1	.0						96	97		
82/ 81				.0	.1	.4	.3	.3	.3	.2	.1							130	130		
80/ 79			.0	.1	.5	.7	.7	.6	.6	.1	.2							255	255		
78/ 77				.5	1.0	1.3	1.4	1.2	1.0	.3	.1							483	483	5	
76/ 75			.1	.5	1.2	1.0	1.1	1.0	.6	.3	.0							420	421	64	1
74/ 73		.0	.3	.8	1.1	1.0	.8	.6	.3	.2								369	369	89	3
72/ 71	.0	.1	.6	1.1	.8	1.0	.7	.4	.3	.0								372	372	219	51
70/ 69	.0	.3	1.3	1.0	1.3	.9	.8	.2	.1									428	429	268	119
68/ 67	.0	.8	1.7	1.7	1.6	.9	.8	.3	.0									579	579	450	213
66/ 65	.1	1.2	2.7	2.1	1.5	.7	.4	.1	.0									634	635	558	325
64/ 63	.1	2.7	2.7	2.6	1.2	.5	.3	.0										736	738	737	432
62/ 61	.1	2.7	2.3	1.8	1.0	.4	.1	.0										610	612	918	546
60/ 59	.0	2.1	2.6	1.3	.4	.1												477	477	916	692
58/ 57	.1	2.5	1.9	.6	.1	.0												388	388	821	753
56/ 55	.3	3.0	1.8	.5	.1													409	410	749	872
54/ 53	.1	1.9	1.6	.2	.0													279	279	579	879
52/ 51	.1	1.2	.9	.1														156	156	354	686
50/ 49	.1	.8	.7	.0														115	115	231	577
48/ 47	.0	.8	.2															71	71	140	423
46/ 45	.0	.4	.0															32	32	95	314
44/ 43		.2																18	18	34	219
42/ 41		.1																8	8	14	89
40/ 39		.0																1	1	6	46
38/ 37																					4
36/ 35																					3
TOTAL	.9	21.1	21.5	15.0	11.9	9.5	7.9	5.5	3.9	1.8	.7	.2	.0	.0				7247	7256	7247	7247

Element (X)	Σ_X'	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	37953608	510766	70.5	16.426	7247							
Dry Bulb	32464260	490834	66.3	9.100	7256			340.0	198.5	51.5	.2	744
Wet Bulb	26219237	433463	59.8	6.355	7247			112.4	16.2			744
Dew Point	22663071	402423	55.5	6.611	7247			39.7	.4			744

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | AUG MONTH

 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
76/ 75				.2	.1	.1												4	4		
74/ 73			.7	.2	.8	.1												13	13		
72/ 71			.1	.2		.2	.1											6	6		
70/ 69		.8	1.2	.6	.1													21	21	9	1
68/ 67		1.1	2.2	.4		.1	.1											36	36	18	12
66/ 65		2.8	1.3	.6	.7	.3												51	51	30	16
64/ 63	.3	4.1	2.0	1.0	.6			.1										73	73	45	44
62/ 61	.1	7.8	2.7	.9	.1			.1										102	102	78	88
60/ 59	.6	6.1	2.9	.8														93	94	94	80
58/ 57		5.1	2.5	.7	.2													77	77	107	79
56/ 55	.1	6.4	3.3	1.1	.1													100	100	81	90
54/ 53	.2	6.8	3.6	.8	.1													101	101	89	81
52/ 51		4.2	2.7	.1														63	63	100	88
50/ 49	.7	2.0	3.0															51	51	79	110
48/ 47	.2	2.8	2.3															45	45	52	62
46/ 45	.1	1.7	.7															22	22	87	88
44/ 43		1.9	.3															20	20	35	53
42/ 41		1.4																13	13	18	36
40/ 39		.3																3	3	13	31
38/ 37		.6																5	5	6	13
36/ 35		.7																6	6	4	8
34/ 33																				8	8
32/ 31																					4
30/ 29																					1
TOTAL	2.3	54.9	31.5	7.5	2.4	.9	.2	.2										905	906	905	905

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 98 F	Total
Rel. Hum.	6530881	76889	84.5	8.955	905							
Dry Bulb	2991219	51637	57.0	7.298	906			8.2	1.7			93
Wet Bulb	2716487	49183	54.3	6.984	905			2.8				93
Dew Point	2523782	47328	52.3	7.372	905		.5	1.3				93

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

* U.S. GOVERNMENT PRINTING OFFICE: 1981-664-312/119

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
76/ 75				.1														1	1		
74/ 73			.3															3	3		
72/ 71			.1	.3	.1	.1												6	6	1	
70/ 69	.2	.4	.8	.2	.3													18	18	5	3
68/ 67		.7	2.1	.1														26	26	10	8
66/ 65		2.6	1.6	.2	.2	.2												43	43	25	11
64/ 63	.4	4.6	1.1	.4	.9													67	67	52	35
62/ 61	.2	7.0	1.3	.7	.2													85	85	67	54
60/ 59	.7	6.2	2.3	.7			.1											90	91	79	77
58/ 57	.2	7.6	2.1	.7		.1												96	96	78	62
56/ 55	.3	4.7	2.4	.8														74	74	107	99
54/ 53	1.6	6.1	2.9	1.2	.1													107	107	81	77
52/ 51	.6	4.9	2.3	.2														72	73	94	100
50/ 49	.4	3.2	2.8															58	58	80	79
48/ 47	.1	3.8	1.4															48	48	60	70
46/ 45	.1	2.7	.8															32	32	53	58
44/ 43	.1	2.8	.2															28	28	40	49
42/ 41	.2	.9	.1															11	11	26	40
40/ 39	.2	1.3																14	14	13	35
38/ 37	.1	1.6																15	15	10	13
36/ 35		.3																3	3	15	12
34/ 33		.2																2	2	1	14
32/ 31																				2	
30/ 29																					3
TOTAL	5.6	61.5	24.8	5.7	1.9	.4	.1											899	901	899	899

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.	6785761	77749	86.5	8.291	899							
Dry Bulb	2842668	50160	55.7	7.467	901			5.6	.4			93
Wet Bulb	2612338	48022	53.4	7.245	899		.2	1.7				93
Dew Point	2451933	46451	51.7	7.597	899		.3	1.1				93

FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | AUG MONTH

PAGE 1 | 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
79/ 77				.1														1	1		
76/ 75			.2	.1														3	3		
74/ 73			.1	.4														5	5		
72/ 71		.1		.3				.1										5	5	3	
70/ 69	.1	.4	.7	.4	.8	.1												23	23	5	5
68/ 67		.9	1.8	.9	.4	.3												39	39	13	7
66/ 65	.2	2.4	2.3	1.0	.8													61	61	24	13
64/ 63	.4	6.8	2.9	1.4	.7													110	110	60	49
62/ 61	.1	6.9	3.9	1.8	.6	.1												120	120	97	61
60/ 59	.9	5.0	2.7	2.0	.4													99	99	108	88
58/ 57	.9	6.8	2.3	1.1	.1													101	101	127	91
56/ 55	.7	5.2	2.3	.8	.1													82	82	108	117
54/ 53	1.3	4.2	2.4	1.3														84	84	93	114
52/ 51	.6	3.4	1.2	.6														52	52	75	74
50/ 49	.8	2.3	2.1	.2	.1													50	50	70	87
48/ 47		2.1	1.0															28	28	43	51
46/ 45		1.1	.2	.1														13	13	38	47
44/ 43		.6	.1															6	6	13	40
42/ 41		.7																6	6	11	22
40/ 39	.1	.8																8	8	6	15
38/ 37		.4																4	4	6	9
36/ 35	.1																	1	1	5	5
34/ 33		.1																1	1		6
32/ 31																				1	
30/ 29																					1
TOTAL	6.2	50.2	26.3	12.6	4.0	.6		.1										902	902	902	902

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	6553101	76353	84.6	9.991	902							
Dry Bulb	3094590	52492	58.2	6.647	902			7.8	.9			93
Wet Bulb	2813093	50049	55.5	6.328	902		.1	2.2				93
Dew Point	2622382	48296	53.5	6.812	902		.1	1.2				93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
ATR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | AUG MONTH

PAGE 1 | 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
86/ 85							.1											1	1		
84/ 83						.1	.1											2	2		
82/ 81					.1	.1												2	2		
80/ 79				.1	.2	.2	.3	.1	.1		.1							11	11		
78/ 77				.1	.5	.9	.3	.6	.1	.3	.1							26	26		
76/ 75				.8	1.2	.7	1.1	.5	.1									39	39		
74/ 73			.3	.9	.9	.9	.7	.5	.1									38	38	4	
72/ 71			.9	1.2	1.2	1.6	.9	.7										58	58	13	
70/ 69		.2	1.6	.8	2.4	1.9	.9	.3										72	72	18	9
68/ 67		1.7	1.6	2.0	2.5	2.0	1.2	.1										99	99	44	20
66/ 65	.1	2.0	3.2	2.0	2.7	.9	.6	.2										104	104	61	36
64/ 63	.1	4.6	3.0	3.6	2.7	1.5	.9	.1										147	147	97	56
62/ 61		4.6	2.1	1.8	1.9	1.4	.2	.1										108	108	126	69
60/ 59	.1	2.0	1.2	1.8	1.4	.7	.3											67	67	143	94
58/ 57	.1	1.2	.2	.8	.7	.3												30	31	120	103
56/ 55	.3	1.4	.9	.6	.1	.2												31	31	89	104
54/ 53	.1	1.7	.5	.7	.2	.2												30	30	60	89
52/ 51		.9	.2	.6	.1	.2												18	18	54	74
50/ 49			.2		.1													3	3	28	64
48/ 47																				14	68
46/ 45																				10	35
44/ 43																				2	17
42/ 41																				3	18
40/ 39																					15
38/ 37																					6
36/ 35																					3
34/ 33																					1
32/ 31																					5
TOTAL	.9	20.4	16.0	17.8	19.0	13.9	7.8	3.2	.5	.3	.2							886	887	886	886

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4626631	62569	70.6	15.332	886							
Dry Bulb	3805713	57825	65.2	6.375	887			36.5	12.5	1.0		93
Wet Bulb	3128255	52421	59.2	5.495	886			8.3	.4			93
Dew Point	2706512	48572	54.8	7.028	886		.5	3.0				93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | AUG MONTH

 1200-1800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
92/ 91									.1	.2								3	3		
90/ 89								.1	.2		.1							4	4		
88/ 87							.1					.1						2	2		
86/ 85						.2	.7	.2			.1							11	11		
84/ 83						.3	.1	.5	.3	.1								12	12		
82/ 81					.3	.2	.6	.5	.2	.5								20	20		
80/ 79					.3	1.0	.6	.9	.6	.2	.6	.1						38	38		
78/ 77				.1	1.9	1.0	1.6	2.1	.5	.3	.2							69	69		
76/ 75			.1	.8	1.7	.7	2.5	1.0	1.5	.2								75	75	9	
74/ 73		.2	.1	.5	1.1	1.8	1.9	2.1	.5									73	73	12	
72/ 71			.9	1.0	.3	1.4	1.6	1.2	.3									60	60	19	2
70/ 69		.5	1.2	1.2	1.9	1.6	1.5	1.0	.1									80	80	89	16
68/ 67		.9	2.3	1.4	2.0	2.0	1.8	.9										100	100	63	30
66/ 65		1.0	1.2	2.4	1.8	1.8	.7	.2	.1									78	78	76	63
64/ 63		2.6	1.1	1.5	1.7	1.7	1.9	.7										99	99	109	46
62/ 61		1.8	1.8	.7	1.4	1.0	1.5	.1										73	73	115	55
60/ 59	.3	1.6	.9	.6	.1	.3	.1											35	35	124	78
58/ 57	.2	.7	.5	.3	.1	.2	.1											19	19	113	92
56/ 55		.9	.6	.2	.2		.2											19	19	63	107
54/ 53		.6	.2	.1	.2	.2												12	12	58	76
52/ 51	.1	.2	.1															4	4	40	81
50/ 49																			1	23	58
48/ 47																				9	60
46/ 45																				1	35
44/ 43																				3	27
42/ 41																					21
40/ 39																					20
38/ 37																					11
36/ 35																					4
34/ 33																					3
32/ 31																					1
TOTAL	.7	10.9	11.1	10.7	15.2	15.1	17.4	11.6	4.4	1.6	1.0	.2						886	887	886	886

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	36888829	55221	62.3	16.710	886							
Dry Bulb	42989939	61401	69.2	7.404	887			57.4	32.2	7.4		93
Wet Bulb	33031149	53850	60.8	5.842	886			16.0	2.2			93
Dew Point	27220228	48638	54.9	7.668	886		.4	5.0				93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION — DULUTH IAP MN STATION NAME — 73-82 YEARS — AUG MONTH

PAGE 1 — 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
94/ 93										.1	.1							2	2		
92/ 91								.2		.1								3	3		
90/ 89							.1	.2	.2	.1			.2					8	8		
88/ 87								.1		.3			.1					5	5		
86/ 85							.2	.3	.2		.1							8	8		
84/ 83						.1	.2	.4		.2								9	10		
82/ 81					.1	.4	.6	.4	.2	.1		.2						19	19		
80/ 79					.4	1.1	.9	.3	.6	.2	.3							35	35		
78/ 77				.4	2.2	1.8	.9	1.8	1.5	.7	.1							83	83	3	
76/ 75			.1	.6	1.2	.8	2.6	2.5	1.5	.1	.2							85	85	5	
74/ 73			.2	1.8	1.0	1.9	2.0	1.9	1.2	.2								92	92	9	
72/ 71		.1	.2	.7	1.7	1.8	1.2	1.1	.3									64	64	30	5
70/ 69		.3	.7	.4	2.2	.8	1.8	1.0	.1									66	66	57	7
68/ 67		.9	1.9	1.5	1.6	.9	1.3	.8	.3									82	82	50	36
66/ 65		1.1	1.0	1.6	1.3	1.9	1.1	.9										80	80	61	57
64/ 63	.2	2.4	1.5	2.0	1.1	.8	1.6	1.3										97	97	118	62
62/ 61		1.7	1.3	1.1	1.0	1.5	.6	.1										65	65	148	59
60/ 59		1.2	1.0	.9	.4	1.0	.2											43	43	111	65
58/ 57		.4	.2	.1	.1	.2		.2										12	12	98	86
56/ 55		1.5	.8															20	20	63	90
54/ 53		.6																5	5	65	100
52/ 51	.2			.2	.1													5	5	47	77
50/ 49		.1	.2															3	3	15	63
48/ 47																				4	42
46/ 45																				7	46
44/ 43																					34
42/ 41																					22
40/ 39																					25
38/ 37																					9
36/ 35																					4
34/ 31																					2
TOTAL	.4	10.3	9.2	11.3	14.7	15.0	15.4	13.8	6.2	2.1	.9	.2	.3						892		891
																		891		891	

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 92 F	Total
Rel. Hum.	3585680	54508	61.2	16.796	891							
Dry Bulb	4390507	62219	69.8	7.535	892			58.6	36.5	7.4	.2	93
Wet Bulb	3333730	54252	60.9	5.843	891			16.1	1.8			93
Dew Point	2727356	48818	54.8	7.689	891		.2	5.0				93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | AUG MONTH

PAGE 1 | 1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
90/ 89										.1								1	1		
86/ 85						.1	.1		.3									5	5		
84/ 83					.1		.1	.1				.1						4	4		
82/ 81						.1												1	1		
80/ 79					.2	.6		.1		.1								9	9		
78/ 77					.9	.9	.2	.3	.4	.1								26	26		
76/ 75			.1	.9	.9	.9	.4	.4	.1									34	34	2	
74/ 73			.1	1.1	.7	1.0	1.6	.4	.2	.1								87	87	1	
72/ 71			.6	1.9	1.7	1.2	1.1	.7										64	64	14	2
70/ 69		.4	1.6	1.6	1.8	1.1	.8	.4										69	69	22	3
68/ 67		1.4	2.3	2.1	2.1	1.3	.6	.2										91	91	44	19
66/ 65	.1	2.3	2.2	3.1	2.1	1.6	.6	.1										109	109	71	37
64/ 63	.1	2.7	3.1	2.4	1.3	.9	1.2	.2										108	108	89	70
62/ 61	.1	2.9	3.0	2.8	1.4	1.0	.2											103	103	111	61
60/ 59		2.2	2.2	1.8	1.6	.3	.1											74	74	148	71
58/ 57		1.3	2.2	1.9	1.3	.2	.1											60	60	99	101
56/ 55	.1	1.1	1.6	.6	.2		.1											33	33	89	112
54/ 53		1.0	1.2	1.4	.2													35	35	77	100
52/ 51	.3	.4	.2	.4		.1												14	14	61	71
50/ 49		.1	.1	.3														5	5	38	73
48/ 47		.1	.7		.1													8	8	18	54
46/ 45																				10	41
44/ 43			.1															1	1	5	36
42/ 41																				1	26
40/ 39																				1	13
38/ 37																					5
36/ 35																					2
34/ 33																					1
32/ 31																					3
TOTAL	.8	16.1	21.3	21.9	16.6	11.3	7.2	3.1	1.1	.8		.1						901			901
																		901		901	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4656068	63862	70.8	18.380	901							
Dry Bulb	3837311	58867	65.9	6.937	901			36.2	13.1	1.7		93
Wet Bulb	3150850	53022	58.8	5.832	901			2.6	.3			93
Dew Point	2720867	49105	54.5	7.081	901		.1	2.5				93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

PSYCHROMETRIC SUMMARY

72745 STATION — DULUTH IAP MN STATION NAME — 73-82 YEARS — AUG MONTH

PAGE 1 — 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
≥ 81								.1										1	1		
80 / 79							.1											1	1		
78 / 77					.1	.1												2	2		
76 / 75			.1	.4	.1		.1	.1										8	8		
74 / 73					.4		.1											5	5		
72 / 71			.4	1.3		.1												17	17	6	
70 / 69		.3	.3	.7	.9													20	20	3	4
68 / 67		1.7	3.0	.8	.4	.4												57	57	19	9
66 / 65	.2	2.6	3.6	1.9	1.1	.2												86	86	39	15
64 / 63		2.9	3.0	1.8	1.0		.1											79	79	60	51
62 / 61	.6	6.1	4.0	1.4	.3		.1											113	113	78	62
60 / 59	.2	6.1	4.6	1.3	.3													113	113	121	64
58 / 57	.2	3.7	4.3	1.2	.4													89	89	127	118
56 / 55		4.8	4.8	1.2	.3													100	100	89	91
54 / 53		2.8	3.2	.9														62	62	98	99
52 / 51	.2	1.9	2.3	.9														48	48	74	84
50 / 49	.2	1.4	3.9	.2														52	52	67	101
48 / 47		.7	1.6	.1														21	21	40	53
46 / 45		1.1	.2															12	12	45	36
44 / 43		.3	.1															4	4	18	45
42 / 41		.2	.2															4	4	5	34
40 / 39		.2	.1															3	3	3	21
38 / 37																				5	2
36 / 35																					5
34 / 33																					2
32 / 31																					1
TOTAL	1.7	36.9	39.9	14.3	5.6	.9	.6	.2											897		897
																		897		897	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	6009842	72936	81.3	9.410	897							
Dry Bulb	3185805	53131	59.2	6.577	897			11.5	1.8	.2		93
Wet Bulb	2839398	50160	55.9	6.202	897			2.9				93
Dew Point	2600673	47909	53.4	6.834	897		.1	1.3				93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) AUG (MONTH)

 ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
[illegible]/ 93										.0	.0							2	2		
[illegible]/ 91								.0	.0	.0								6	6		
[illegible]/ 89							.0	.0	.1	.0	.0		.0					13	13		
[illegible]/ 87							.0	.0		.0		.0	.0					7	7		
[illegible]/ 85						.0	.1	.1	.1		.0							25	25		
[illegible]/ 83					.1	.1	.1	.1	.0	.0		.0						27	28		
[illegible]/ 81					.1	.1	.1	.1	.1	.1		.0						43	43		
[illegible]/ 79				.0	.2	.2	.2	.2	.2	.1	.1	.0						94	94		
[illegible]/ 77				.1	.7	.6	.4	.6	.3	.2	.1							207	207	3	
[illegible]/ 75			.1	.5	.7	.8	.8	.6	.8	.0	.0							249	249	16	
[illegible]/ 73		.0	.2	.6	.6	.7	.8	.6	.3	.0								276	276	26	
[illegible]/ 71		.0	.8	.9	.6	.8	.6	.5	.1									280	280	86	9
[illegible]/ 69	.0	.4	1.0	.7	1.3	.7	.6	.3	.0									369	369	168	48
[illegible]/ 67		1.2	2.1	1.1	1.1	.9	.6	.3	.0									530	530	261	181
[illegible]/ 65	.1	2.1	2.1	1.6	1.3	.8	.4	.2	.0									612	612	387	248
[illegible]/ 63	.2	3.8	2.2	1.8	1.2	.6	.7	.3										780	780	630	413
[illegible]/ 61	.1	4.8	2.5	1.4	.9	.6	.3	.1										769	769	816	969
[illegible]/ 59	.3	3.8	2.2	1.2	.5	.3	.1											618	616	928	617
[illegible]/ 57	.2	3.4	1.8	.8	.4	.1	.0	.0										484	485	869	732
[illegible]/ 55	.2	3.3	2.1	.7	.1	.0	.0											459	459	685	810
[illegible]/ 53	.4	2.9	1.8	.8	.1	.1												436	436	621	736
[illegible]/ 51	.3	2.0	1.1	.4	.0	.0												276	277	585	689
50/ 49	.3	1.2	1.5	.1	.0													222	223	400	635
48/ 47	.0	1.1	.9	.0	.0													150	150	290	460
46/ 45	.0	.8	.2	.0														79	79	211	342
44/ 43	.0	.7	.1															59	59	116	301
42/ 41	.0	.4	.0															34	34	64	219
40/ 39	.0	.3	.0															28	28	36	175
38/ 37	.0	.3																24	24	27	68
36/ 35	.0	.1																10	10	24	93
34/ 33		.0																3	3	5	28
32/ 31																				3	18
30/ 29																					6

Element (X)	Σ_{X^2}	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | AUG MONTH

 ALL HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
TOTAL	2.3	32.8	22.6	12.7	9.9	7.2	6.0	4.0	1.5	.6	.3	.1	.0					7167	7173	7167	7167

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	42936353	539247	75.2	16.125	7167							
Dry Bulb	28446752	447332	62.4	8.759	7173			220.8	98.5	17.6	.2	744
Wet Bulb	23897295	410959	57.3	6.814	7167		.3	58.1	9.7			744
Dew Point	21075527	385063	53.7	7.350	7167		2.9	20.6				744

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

PAGE 1 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
76/ 75					.2													2	2		
74/ 73			.2	.2														4	4		
72/ 71					.1		.1	.2										4	4		
70/ 69		.1	.6	.3	.2													11	11	3	
68/ 67		.5	.6		.1													10	10	8	6
66/ 65			.7		.1													7	7	6	8
64/ 63	.2	.8	.7	.7	.3													24	24	12	3
62/ 61	.1	1.1	1.2	.3	.5													29	29	19	17
60/ 59	.2	.9	.9	.5	.5													26	26	21	15
58/ 57	.1	3.5	1.1	.8		.1												50	50	33	15
56/ 55	.5	2.3	1.4	1.1	.1	.1												48	48	53	46
54/ 53	.6	5.1	2.0	1.2	.1													80	80	36	44
52/ 51	.3	5.3	4.8	.5	.2													99	99	81	47
50/ 49	.3	5.4	5.7	.7														108	108	78	71
48/ 47	.3	6.0	1.2		.1													68	68	108	70
46/ 45		6.3	1.2	.5														71	71	105	100
44/ 43		3.5	1.9	.1														49	49	70	107
42/ 41	.1	4.2	.8															85	85	89	57
40/ 39	.6	3.6	1.0															46	46	64	65
38/ 37	.3	4.7	.5															89	89	48	57
36/ 35		2.0	.7															24	24	39	50
34/ 33		1.0	.7															15	15	19	41
32/ 31		.8	.3															10	10	13	31
30/ 29		.6																5	5	13	13
28/ 27	.1	.1																2	2	7	6
26/ 25		.1																1	1	1	8
24/ 23																				1	5
22/ 21																					4
20/ 19																					1
TOTAL	3.8	57.8	28.3	6.9	2.6	.2	.1	.2											887		887
																		887		887	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤						
						0 F	32 F	67 F	73 F	88 F	93 F	Total
Rel. Hum.	6296775	79281	83.7	9.273	887							
Dry Bulb	2221288	43722	49.3	8.637	887		1.8	3.1	.6			90
Wet Bulb	2008819	41509	46.8	8.085	887		3.6	1.1				90
Dew Point	1817998	39888	45.5	8.497	887		6.2	.6				80

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | SEP MONTH

0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
72/ 71			.3	.1				.1										5	5		
70/ 69		.3	.1	.2	.1	.3	.1											11	11	2	1
68/ 67		.3	.3				.1											7	7	8	3
66/ 65			1.0															9	9	1	6
64/ 63	.3	.9	.6		.3													19	19	10	5
62/ 61		.6	1.0	.2	.2													18	18	18	4
60/ 59	.1	1.7	.3	.5	.1													24	24	19	23
58/ 57	.3	3.2	.7	.3	.1													41	41	32	19
56/ 55	.3	3.3	.7	.6	.1													44	44	44	31
54/ 53	1.0	3.9	1.8	.5	.1													64	64	46	49
52/ 51	.3	4.6	3.4	.2	.2													77	77	51	43
50/ 49		7.4	3.4	.8	.1													103	103	70	56
48/ 47	.5	7.2	2.3	.7														93	93	94	63
46/ 45	.2	6.8	.8	.6														74	74	111	99
44/ 43	.1	3.8	.9	.2														44	44	79	98
42/ 41	.7	5.3	.3															55	55	60	76
40/ 39	1.6	4.5	.6															58	58	72	68
38/ 37	.9	3.0	.5															38	38	40	63
36/ 35		3.4	.5															34	34	33	38
34/ 33	.1	2.2	1.3															31	31	36	35
32/ 31	.1	1.5	.1															15	15	23	43
30/ 29		.3																3	3	15	20
28/ 27	.1	.2																3	3	5	10
26/ 25	.3	.1																4	4	4	12
24/ 23	.1	.1																2	2	2	8
22/ 21																				1	2
20/ 19																					1
TOTAL	7.3	64.6	21.0	4.9	1.5	.3	.2	.1											876		876
																		876		876	

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	6511982	75120	85.8	8.956	876							
Dry Bulb	2073640	41926	47.9	8.753	876		2.8	2.4				90
Wet Bulb	1891724	40060	45.7	8.264	876		5.1	1.0				90
Dew Point	1737691	38281	43.7	8.607	876		9.9	.4				90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
74/ 73				.1														1	1		
72/ 71				.1	.1													2	2		
70/ 69		.3	.2	.2	.1	.1												9	9	3	3
68/ 67		.3	.3	.1		.3	.2											12	12	8	1
66/ 65	.2	.2	1.0		.1			.1										15	15	6	6
64/ 63	.1	.6	.5	.2	.2	.2												16	16	12	3
62/ 61	.2	1.4	.8	.2	.3	.2												28	28	17	13
60/ 59	.1	1.2	.8	.5	.1													24	24	22	23
58/ 57		3.3	.8	.6	.1	.2												44	44	26	16
56/ 55	.1	2.4	1.2	.6	.1	.1												40	40	40	30
54/ 53	1.2	3.2	2.3	.6	.1													65	65	52	39
52/ 51	.5	5.3	3.2	1.0	.1													89	89	55	43
50/ 49	.3	7.6	4.1	.9	.3													117	117	82	74
48/ 47	.2	6.6	1.9	.3														80	80	110	68
46/ 45	.9	5.5	2.3	.5														80	80	112	109
44/ 43	.1	5.0	.9	.5	.1													58	58	82	99
42/ 41	.6	4.3	.5	.1														48	48	67	76
40/ 39	1.9	3.6	1.1															59	59	58	85
38/ 37	.8	1.8	.2	.1														26	26	50	50
36/ 35	.7	1.7	.3	.1														25	25	28	41
34/ 33	.1	1.5	.7	.1														21	21	20	35
32/ 31	.1	1.0	.3															13	13	15	20
30/ 29	.1		.1															2	2	16	20
28/ 27	.2	.2																4	4	3	7
26/ 25	.1																	1	1	3	9
24/ 23	.1																	1	1	1	6
22/ 21																					3
20/ 19																					1
TOTAL	8.9	57.2	23.6	6.8	1.9	1.2	.2	.1										880		880	
																			880		

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	68708 71	78905	85.1	10.376	880							
Dry Bulb	2149704	92862	98.7	8.401	880		2.1	2.5	.1			90
Wet Bulb	1950156	90898	96.9	7.893	880		3.9	.7				90
Dew Point	1785335	88963	99.3	8.276	880		6.7	.9				90

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

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PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

 0900-1100 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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				
86/ 85								.1		.1								2	2		
82/ 81						.1		.2										3	3		
80/ 79						.2							.1					3	3		
78/ 77					.1	.5	.1	.2				.1						9	9		
76/ 75					.2		.1	.2										5	5		
74/ 73		.1		.3	.1		.3	.3	.1									12	12		
72/ 71		.2		.2	.1	.3	.1	.1		.1								11	11	3	1
70/ 69		.3	.1		.2	.3	.3	.2		.1								15	15	6	1
68/ 67			.1	.5	.5	.3	.7	.3										21	21	16	4
66/ 65	.2	.5	1.0	.3	.8	.7	.5											35	35	6	7
64/ 63	.1	1.1	1.4	.7	1.5	1.3	.7	.3										62	62	16	12
62/ 61		1.6	.9	.7	1.5	1.7	.5											60	60	36	14
60/ 59		.9	.5	1.7	1.3	1.3	.1	.1										51	51	38	32
58/ 57	.2	1.4	1.3	2.5	1.4	.6	.5											68	68	46	23
56/ 55	.5	2.3	1.8	2.1	1.7	.9	.2											83	83	61	41
54/ 53	.8	1.7	2.4	3.5	2.1	.5												96	96	78	42
52/ 51	.1	3.2	2.3	2.5	1.5	.3												87	87	95	49
50/ 49	.3	2.9	4.1	2.1	1.1	.1												93	93	103	68
48/ 47	.3	1.6	1.5	1.5	.5													47	47	100	98
46/ 45	.1	2.4	1.1	.7	.6													43	43	104	76
44/ 43		.9	.6	.8														20	20	62	104
42/ 41	.3	1.6	.9	.5														29	29	46	74
40/ 39		.6	.2	.1														8	8	22	68
38/ 37			.2		.1													3	3	18	49
36/ 35		.3	.1	.2														6	6	6	37
34/ 33		.1	.1															2	2	4	32
32/ 31			.1															1	1	2	18
30/ 29																				5	11
28/ 27																					6
26/ 25																					5
18/ 17																					3
TOTAL	3.1	23.8	20.8	20.9	15.2	9.1	4.1	2.3	.1	.3		.1	.1						875		875
																		875		875	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	4686411	62489	71.4	15.998	875							
Dry Bulb	2757081	48555	55.5	8.470	875		.1	8.3	3.5	.5		90
Wet Bulb	2265336	44072	50.4	7.217	875		.7	2.6				90
Dew Point	1889046	39992	45.7	8.368	875		4.4	.6				90

FORM AIR 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

 1200-1800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
94/ 93														.2				2	2		
92/ 91												.1						1	1		
90/ 89										.2								2	2		
88/ 87								.1		.1								2	2		
86/ 85									.1			.1						2	2		
84/ 83							.1	.1		.1	.1							4	4		
82/ 81							.1	.1						.1				3	3		
80/ 79				.1		.1		.4		.1		.1	.1					9	9		
78/ 77			.1		.2	.3	.4	1.0	.6	.2	.1	.1	.1					29	29		
76/ 75		.1			.2	.2	.8	.6	.1	.1		.1						17	17		
74/ 73			.1	.2	.1		.7	.2	.4	.6	.1							22	22	6	
72/ 71		.2	.1	.4	.4	.2	.3	.2	.2	.3								23	23	2	2
70/ 69			.3	.2	.1	.1	1.5	.6	.4									29	29	14	4
68/ 67	.2		.4	.9	.8	1.1	.8	1.1	.2									47	47	10	7
66/ 65	.1	.4	.6	.6	1.0	1.2	1.0	1.6	.2	.1								61	61	29	8
64/ 63		.2	1.0	.8	1.3	2.4	2.0	1.2	.3	.1								89	89	27	17
62/ 61		.4	.4	.8	1.6	2.1	.6		.2									55	55	34	10
60/ 59	.1	.8	.7	2.0	1.8	1.5	1.5	.2	.1									77	77	[illegible]	28
58/ 57	.1	1.2	.6	1.6	1.1	1.7	.7	.2										64	64	56	26
56/ 55	.3	.9	1.3	1.8	2.4	1.7	.2	.1										78	78	78	43
54/ 53	.8	1.1	2.0	1.5	1.8	1.0	.2											75	75	119	52
52/ 51		1.8	2.4	.9	1.6	.7												65	65	93	65
50/ 49		1.0	1.7	.9	1.6	.6	.1											52	52	92	67
48/ 47	.3	1.3	.8	.6	.1	.2	.2											32	32	92	87
46/ 45		1.1	.3	.6	.7													24	24	86	85
44/ 43		.6	.2		.3													10	10	88	67
42/ 41	.4	.6	.1	.1	.2	.1												14	14	30	81
40/ 39				.1	.1													2	2	21	77
38/ 37				.3														3	3	2	46
36/ 35			.1															1	1	4	48
34/ 33																				4	31
32/ 31																				4	22
30/ 29																					10
28/ 27																					14

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

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72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | SEP MONTH

1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
25/ 25																					5
24/ 23																					3
22/ 21																					2
20/ 19																					1
18/ 17																					3
TOTAL	2.5	11.9	13.4	14.4	17.5	15.3	10.6	7.9	3.0	2.0	.3	.6	.2	.3					889		889
																		889		889	

Element (X)	Σ_X'	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3669617	54781	61.6	18.194	889							
Dry Bulb	3258916	53170	59.8	9.425	889			19.4	9.4	2.0	.2	90
Wet Bulb	2466747	46385	52.2	7.393	889		.4	3.2	.6			90
Dew Point	1905806	40362	45.4	9.086	889		6.3	1.3				90

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | SEP MONTH

 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
94/ 93														.2				2	2		
92/ 91													.1					1	1		
90/ 89									.1									1	1		
88/ 87							.2			.2	.1	.1						6	6		
86/ 85									.1		.1				.1			3	3		
84/ 83						.2	.1				.1	.1	.1		.1			7	7		
82/ 81						.3		.1	.1		.1							6	6		
80/ 79				.1			.2	.1				.1						5	5		
78/ 77				.3	.3	.3	.3	.8	.6		.2	.3						29	29		
76/ 75			.2		.5	.1	.2	.7	.2		.1	.1						19	19	2	
74/ 73			.1	.2	.5	.1	.2	.6	.1	.9	.3							27	27	4	
72/ 71				.6	.2	.1		.6	.6	.5								22	22	10	2
70/ 69		.1	.2	.5	.2	.3	1.0	.7	.3	.1	.1							32	32	7	7
68/ 67		.1	.6	.6	.6	.8	1.3	.9	.3									45	45	22	10
66/ 65	.1		.8	1.0	.9	.8	1.7	1.0	.3	.1								60	60	17	6
64/ 63			.6	.8	1.3	2.4	2.3	.6	.7	.1								76	76	25	12
62/ 61		.2	.2	1.5	2.0	1.9	1.0	.8	.3									71	71	29	14
60/ 59		.7	.7	1.6	1.1	.9	1.8	.1	.3									64	64	33	20
58/ 57		1.0	1.5	1.9	.7	1.3	.2	.5										62	62	68	24
56/ 55	.1	1.4	.9	1.8	2.3	1.8	.3											74	74	74	30
54/ 53	.7	.7	1.7	1.4	1.8	.8	.1	.1										64	64	126	50
52/ 51	.1	.8	3.3	1.3	.9	.7	.1	.1										64	64	78	47
50/ 49	.2	1.0	1.6	1.4	1.1	.9	.2											57	57	90	63
48/ 47	.1	1.0	1.1	.5	.7													30	30	107	69
46/ 45		1.3	.5	.2	.2													19	20	76	105
44/ 43		.9	.3	.1	.2	.3												17	17	40	85
42/ 41	.5	.5																8	8	38	69
40/ 39					.6													5	5	18	73
38/ 37		.2		.1														3	3	4	55
36/ 35																				5	42
34/ 33																				1	33
32/ 31																				5	20
30/ 29																					10
28/ 27																					13

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | SEP MONTH

1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
26/ 25																					9
24/ 23																					3
22/ 21																					8
20/ 19																					5
TOTAL	1.8	9.9	14.3	15.8	15.9	14.2	11.5	7.6	4.2	1.9	1.3	.8	.2	.2	.2			879	880	879	879

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	3506520	53098	60.4	18.454	879							
Dry Bulb	3272336	52974	60.2	9.742	880			21.0	10.8	2.9	.2	90
Wet Bulb	2446781	45907	52.2	7.488	879		.5	9.6	.6			90
Dew Point	1864216	39660	45.1	9.229	879		6.5	1.9				90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

 1800-2000 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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					
9[illegible]/ 89												.1							1	1		
[illegible]4/ 83						.1				.1									2	2		
[illegible]2/ 81					.1	.1				.2									4	4		
[illegible]0/ 79						.3	.1			.1									5	5		
7[illegible]/ 77				.1	.1	.3					.1								6	6		
76/ 75			.2	.2		.1	.1	.1											7	7		
[illegible]4/ 73		.1		.1	.5		.5	.1		.1									12	12	2	
[illegible]2/ 71			.1	.5		.1	.1												7	7	7	1
7[illegible]/ 69			.3	.1	.2	.2	.6	.1	.2	.1									17	17	6	6
6[illegible]/ 67		.3	.7	.1	.1	.6	.1	.1											18	18	12	5
[illegible]6/ 65	.1	.3	.1	.7	.7	.6	.6	.2											29	29	15	8
[illegible]4/ 63	.1	.3	1.1	1.3	.8	1.4	.3												47	47	10	13
[illegible]2/ 61		.3	1.7	1.3	.9	1.4	.1	.1											51	51	16	13
60/ 59		1.0	.5	1.8	1.8	.3	.6												53	53	38	6
[illegible]/ 57		1.1	1.8	1.7	.9	.3	.1												53	53	50	20
56/ 55		2.4	2.4	2.6	1.9	.3	.1												86	86	43	36
[illegible]4/ 53	.9	2.3	5.1	2.7	.9	.3	.2												110	111	93	54
[illegible]2/ 51		2.4	3.0	2.2	.6	.2													73	73	98	40
50/ 49	.3	2.8	3.9	1.6	.9	.1	.1												86	86	97	87
4[illegible]/ 47	.1	1.9	3.3	1.1	.5	.3													64	64	106	82
[illegible]/ 45	.2	2.4	2.4	.7	.3	.1													54	54	82	108
[illegible]4/ 43		1.7	1.7	.7	.1														37	37	78	86
[illegible]2/ 41	.3	1.5	.7	.3	.1														26	26	42	83
4[illegible]/ 39		.8	.5	.1															12	12	42	72
3[illegible]/ 37		.7	.2	.2															10	10	20	48
[illegible]6/ 35			.1	.2															3	3	12	36
34/ 33			.1																1	1	4	22
[illegible]2/ 31		.1	.3																4	4	4	19
30/ 29																					2	8
28/ 27																					3	8
26/ 25																						6
24/ 23																						2
[illegible]2/ 21																						9

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AS 44 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
TOTAL	2.2	22.7	30.3	20.4	11.5	7.4	3.6	.8	.2	.7	.1	.1						878	879	878	878

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4793732	63614	72.5	14.512	878							
Dry Bulb	2690330	48008	54.6	8.820	879		.4	8.1	3.8	.8		90
Wet Bulb	2225490	43708	49.8	7.524	878		.9	2.8	.2			90
Dew Point	1870190	39838	45.4	8.448	878		5.3	1.2				90

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

 2100-2300 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
82/ 81									.1									1	1		
80/ 79								.1										1	1		
78/ 77					.1													1	1		
76/ 75				.3	.2													5	5		
74/ 73			.2	.2	.2		.1											7	7		
72/ 71				.5	.1		.2											7	7	1	
70/ 69			.1	.2														3	3	6	1
68/ 67		.1	.2	.1	.2	.1		.1										8	8	3	4
66/ 65	.1	.1	1.4	.1	.2		.1											18	18	13	5
64/ 63	.1	.3	.8	.7	.2	.3	.2											28	28	6	9
62/ 61		.8	1.3	.3	.6	.5												30	30	19	9
60/ 59	.2	2.3	2.2	.8	.5	.2												54	54	24	20
58/ 57		1.5	1.4	.8	.5	.2												38	38	46	16
56/ 55	.1	1.5	1.3	1.0	.2	.1												37	37	29	38
54/ 53	.8	5.6	4.6	2.3	.1													117	117	61	53
52/ 51	.1	4.4	4.8	1.3														92	92	83	51
50/ 49	.3	4.7	4.7	.5	.5													93	93	96	64
48/ 47	.3	3.8	3.2	1.0														73	73	109	79
46/ 45		4.6	2.4	.8														68	68	79	96
44/ 43		3.7	2.6	.1	.1													57	57	75	100
42/ 41	.1	2.5	1.3	.6														39	39	66	70
40/ 39	.2	2.8	1.3	.2														39	39	50	68
38/ 37	.7	2.1	.6															29	29	44	53
36/ 35		1.0	.2															11	11	26	47
34/ 33		.5	.6															9	9	11	34
32/ 31		.2	.6															7	7	9	15
30/ 29		.1	.3															4	4	4	19
28/ 27																				7	6
26/ 25																				1	4
24/ 23																					2
22/ 21																					5
20/ 19																					4
TOTAL	3.2	82.5	36.0	11.9	3.8	1.5	.7	.2	.1									872		872	872

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 88 F	≥ 93 F	Total
Rel. Hum.	5753690	70190	80.5	10.918	872							
Dry Bulb	2309072	44262	50.8	8.962	872		1.1	3.9	1.5	.1		90
Wet Bulb	2032944	41556	47.7	7.768	872		2.2	1.0				90
Dew Point	1808008	39034	44.8	8.398	872		5.7	.5				90

USAFETAC FORM 0-26-5 (OL A) AS 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
94/ 93														.1				4	4		
92/ 91												.0	.0					2	2		
90/ 89									.0	.0		.0						4	4		
88/ 87							.0	.0		.0	.0	.0						8	8		
86/ 85								.0	.0	.0	.0	.0			.0			7	7		
84/ 83						.0	.0	.0		.0	.0	.0	.0		.0			13	13		
82/ 81					.0	.1	.0	.1	.0	.0	.0			.0				17	17		
80/ 79				.0		.1	.0	.1		.0		.0	.0					23	23		
78/ 77			.0	.1	.1	.2	.1	.3	.1	.0	.1	.1	.0					74	74		
76/ 75		.0	.1	.1	.2	.1	.1	.2	.0	.0	.0	.0						55	55	2	
74/ 73		.0	.1	.2	.2	.0	.2	.2	.1	.2	.1							85	85	12	
72/ 71		.1	.1	.3	.1	.1	.1	.2	.1	.1								81	81	23	6
70/ 69		.2	.3	.2	.2	.2	.4	.2	.1	.0	.0							127	127	47	23
68/ 67	.0	.2	.4	.3	.3	.4	.4	.3	.1									168	168	83	40
66/ 65	.1	.2	.8	.3	.5	.4	.5	.4	.1	.0								234	234	93	54
64/ 63	.1	.5	.8	.6	.8	1.0	.7	.3	.1	.0								352	352	118	74
62/ 61	.0	.8	1.0	.7	1.0	1.0	.3	.1	.1									342	342	188	94
60/ 59	.1	1.2	.8	1.2	.9	.5	.5	.1	.1									373	373	233	163
58/ 57	.1	2.0	1.1	1.3	.6	.6	.2	.1										420	420	357	159
56/ 55	.2	2.0	1.4	1.4	1.1	.6	.1	.0										490	490	418	295
54/ 53	.9	2.9	2.7	1.7	.9	.3	.1	.0										671	672	611	383
52/ 51	.2	3.5	3.4	1.2	.6	.2	.0	.0										646	646	634	365
50/ 49	.2	4.1	3.7	1.1	.7	.2	.1											709	709	708	550
48/ 47	.3	3.7	1.9	.7	.2	.1	.0											487	487	826	616
46/ 45	.2	3.8	1.4	.6	.2	.0												433	434	755	778
44/ 43	.0	2.5	1.2	.3	.1	.0												292	292	534	746
42/ 41	.4	2.5	.6	.2	.0	.0												264	264	400	586
40/ 39	.5	2.0	.6	.1	.1													229	229	343	576
38/ 37	.3	1.6	.3	.1	.0													161	161	226	421
36/ 35	.1	1.1	.3	.1														104	104	157	339
34/ 33	.0	.7	.4	.0														79	79	99	263
32/ 31	.0	.5	.2															50	50	75	188
30/ 29	.0	.1	.1															14	14	55	111
28/ 27	.1	.1																9	9	25	72

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb					4							
Wet Bulb												
Dew Point												

FORM AWS 84 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) SEP (MONTH)

 ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
2[illegible]/ 25	.1	.0																6	6	9	53
24/ 23	.0	.0																3	3	8	29
[illegible]2/ 21																				1	33
20/ 19																					13
1[illegible]/ 17																					6
TOTAL	.1	36.3	23.5	12.7	8.3	6.2	3.9	2.8	1.0	.6	.2	.2	.1	.1	.0				7038		7036
																		7036		7036	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	91689148	528478	75.1	16.839	7036							
Dry Bulb	20732323	375479	53.4	9.977	7038		8.9	68.3	29.9	6.3	.9	720
Wet Bulb	17281597	349045	48.9	8.073	7036		17.3	17.1	1.4			720
Dew Point	18678290	315578	88.9	8.638	7036		51.7	7.1				720

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

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PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | OCT MONTH

PAGE 1 | 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
67/ 65						.1												1	1		
64/ 63						.3	.1	.2										6	6		
62/ 61					.2													2	2		
60/ 59		.9	.3	.1		.2												14	14	3	
58/ 57			.3	.3	.2	.2												10	10	7	5
56/ 55		.2		.2		.1												5	5	4	4
54/ 53	.1	.7	.6	.4	.9	.1												25	25	11	2
52/ 51	.4	1.2	.4	.4	.7	.1												30	30	21	11
50/ 49	.7	1.2	1.3	1.3	1.4													54	55	30	26
48/ 47	.4	2.5	1.5	1.4	.8	.3												64	64	26	21
46/ 45	.6	3.8	2.2	2.0	.4	.3												84	84	54	21
44/ 43	.9	3.7	1.9	1.3	.1	.1												72	72	99	53
42/ 41	.6	2.4	3.1	1.0	.9													72	72	60	57
40/ 39	.2	3.8	2.7	.9	.3													71	71	77	47
38/ 37	.3	4.1	4.6	1.1	.2													94	94	78	55
36/ 35	.6	4.3	2.4	.8														73	73	85	90
34/ 33	.4	2.7	3.0	.2														57	57	103	79
32/ 31	.4	3.7	2.8															62	62	58	82
30/ 29	.6	1.7	1.3															32	32	64	70
28/ 27		2.1	.7															25	25	41	57
26/ 25		1.3	.1															13	13	34	49
24/ 23	.1	1.5	.3															18	18	16	40
22/ 21		.9	.3															11	11	18	43
20/ 19		.2																2	2	8	40
18/ 17		.4																4	4	1	27
16/ 15		.1																1	1	3	9
14/ 13		.1																1	1	1	1
12/ 11		.1																1	1	1	12
10/ 9																				1	1
8/ 7																					1
6/ 5																					1
TOTAL	6.3	43.6	30.0	11.6	6.2	2.0	.1	.2										904	905		904
																		904		904	

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5435428	68994	76.3	13.711	904							
Dry Bulb	1529337	36365	40.2	8.680	905		17.5					93
Wet Bulb	1305702	33574	37.1	8.068	904		25.3					93
Dew Point	1055791	29751	32.9	9.215	904		49.8					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

 0300-0500 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
/64 63							.2	.1										3	3		
62/ 61			.1	.1														2	2		
/60 59		.7	.1															7	7	3	1
58/ 57		.5	.2	.2	.1													10	10	8	5
56/ 55			.8		.1	.2												10	10	4	4
/54 53	.3	.2	.9	.5	.3													21	21	8	8
/52 51	.2	.8	.2	.2	.1													14	14	20	3
50/ 49	1.2	1.2	1.3	1.2	.4													89	89	30	23
48/ 47	.9	1.4	2.5	.7	.4	.1												55	55	23	23
46/ 45	.7	3.9	1.6	1.4	.7	.2												78	78	85	28
/44 43	.5	5.0	1.6	1.0	.3													78	78	83	33
42/ 41	.2	3.6	1.9	1.1	.2													68	68	77	55
40/ 39	.1	4.3	2.8	.8	.2													75	75	63	76
38/ 37	.8	4.8	2.3	.8														79	79	88	62
36/ 35	1.0	4.6	4.2	.7														95	95	81	65
34/ 33	.5	3.8	2.8															66	66	93	75
/32 31	.3	3.1	3.7															65	65	75	88
30/ 29	.5	3.1	.9															41	41	59	58
/28 27	.1	2.6	.1															26	26	56	54
/26 25	.3	1.4																16	16	33	76
24/ 23		1.2	.3															14	14	17	35
22/ 21	.3	1.5																17	17	17	46
20/ 19	.2	1.4																15	15	13	45
/18 17	.1	.7																7	7	13	16
16/ 15																				2	8
14/ 13		.2																2	2	2	8
12/ 11		.2																2	2		9
10/ 9	.1																	1	1	3	5
8/ 7		.1																1	1	1	1
6/ 5																					2
4/ 3																					1
TOTAL	8.5	50.5	28.5	8.7	3.0	.5	.2	.1											918		913
																		913		913	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 72 F	≤ 80 F	≤ 90 F	Total
Rel. Hum.	5878790	72816	79.3	12.167	913							
Dry Bulb	1946891	35997	38.8	8.888	918		21.1					93
Wet Bulb	1267018	33139	36.3	8.912	913		29.6					93
Dew Point	1054059	29806	32.6	9.832	913		86.0					93

USAFETAC FORM AUG 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | OCT MONTH

PAGE 1 | 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
62/ 61			.1			.1	.1											3	3		
60/ 59		.6	.1			.1												7	7	4	1
58/ 57		.3				.3												6	6	2	3
56/ 55		.2	.2	.1	.1													6	6	4	4
54/ 53	.3	.6	.6		.3													16	16	6	5
52/ 51		.7	.9	.1	.2													17	17	12	3
50/ 49	1.3	1.0	1.3	1.2														44	44	27	25
48/ 47	.6	2.5	3.0	1.3	.3	.1												71	71	28	18
46/ 45	1.3	3.9	1.4	.9		.1												69	69	61	38
44/ 43	.1	5.0	3.1	.8	.1													82	82	73	35
42/ 41	.1	3.1	2.9	1.5	.1													70	70	71	53
40/ 39	.2	4.7	3.1	.3	.1													77	77	77	56
38/ 37	.7	4.5	2.0	.4														69	69	87	81
36/ 35	.6	4.7	3.0	.6														80	80	80	70
34/ 33	.6	7.0	2.9	.2														97	97	83	75
32/ 31	.4	3.3	3.5															66	66	90	104
30/ 29	.6	2.1	.9															32	32	59	60
28/ 27	.2	2.9	.2															30	30	54	66
26/ 25	.3	1.9	.1															21	21	34	50
24/ 23		.7																6	6	13	43
22/ 21	.4	1.1	.1															15	15	15	47
20/ 19	.2	.9																10	10	10	31
18/ 17	.1	.7																7	7	7	13
16/ 15	.1	.6																6	6	8	6
14/ 13		.2																2	2	4	8
12/ 11																					7
10/ 9																					7
TOTAL	8.1	52.9	29.3	7.5	1.3	.8	.1												909		909
																		909		909	

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.	5988294	73764	80.4	11.280	909							
Dry Bulb	1426371	35179	38.7	8.455	909		20.0					93
Wet Bulb	1260510	33054	36.4	8.031	909		30.1					93
Dew Point	1060190	29964	33.0	8.934	909		43.2					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | OCT MONTH

 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
74/ 73										.1								1	1		
72/ 71									.1									1	1		
68/ 67							.1	.3										4	4		
66/ 65			.1		.1		.2	.1										5	5		
64/ 63			.2	.1	.3		.2	.3										11	11		
62/ 61			.2	.4	.1	1.1	.3											20	20	1	
60/ 59		.8	.1	.2	.3	.3	.2	.2										20	20	7	1
58/ 57			.1	.4	.4	.8	.2	.1										19	19	7	8
56/ 55	.2	.1	.3	.6	.7	.7	.2	.2										27	27	12	6
54/ 53	.2	.2	.6	1.8	.8	.7	.3											41	41	15	2
52/ 51	.1	1.0	.8	1.3	1.7	1.0	.1											54	54	26	10
50/ 49	1.3	1.7	1.1	2.0	2.5	.7	.2											86	86	52	29
48/ 47	.7	2.8	1.3	1.9	2.1	.4	.1	.1										85	85	64	20
46/ 45	.6	2.4	.6	1.9	.9	.1	.1											59	59	71	42
44/ 43		2.2	2.4	2.7	.7	.1												73	73	77	56
42/ 41	.2	.9	2.5	2.2	.3	.1												57	57	80	51
40/ 39	.3	3.2	3.2	2.8	.6													91	91	80	51
38/ 37	.2	2.8	2.7	1.1	.3													68	68	88	50
36/ 35	.4	2.2	2.7	1.4														61	61	87	82
34/ 33	.4	2.1	2.4	1.3														57	57	82	95
32/ 31		.6	2.7	.1														30	30	52	101
30/ 29		.7	.4															10	10	38	66
28/ 27		1.3	.4															16	16	41	52
26/ 25		.6	.3															8	8	19	86
24/ 23		.3																3	3	9	35
22/ 21		.2																2	2	5	43
20/ 19																				1	37
18/ 17																					8
16/ 15																					7
14/ 13																					7
TOTAL	4.8	26.0	25.2	22.2	11.8	6.0	2.4	1.4	.1	.1								905	905	905	905

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 92 F	Total
Rel. Hum.	4596625	62793	69.4	16.286	905							
Dry Bulb	1839880	40014	44.2	8.843	905		7.1	.6	.1			93
Wet Bulb	1483068	35978	39.8	7.641	905		16.0					93
Dew Point	1122648	30850	34.1	8.863	905		81.3					93

FORM 26 54 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

 1200-1400 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL			
	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		Dry Bulb	Wet Bulb	Dew Point
78/ 77										.2	.1							3	3			
76/ 75										.2	.1							3	3			
74/ 73										.4	.1							5	5			
72/ 71							.1	.1	.2	.1								5	5			
70/ 69							.3	.3	.1									7	7			
68/ 67				.1	.1		.3	.1										6	6			
66/ 65			.3	.3	.4	.3	.3	.4	.7	.1								27	27			
64/ 63	.1		.4		.2	.1	1.3	.6	.3									28	28	1	1	
62/ 61		.1	.1		.6	.8	.7	.8	1.0	.1								37	37	6		
60/ 59	.1		.1		.6	.9	.9	1.1	.3	.1								37	37	14	3	
58/ 57				.4	1.0	.7	1.2	.8										37	37	16	8	
56/ 55		.1	.6	.9	1.1	2.0	.8											49	49	14	2	
54/ 53		.6	.2	.6	1.0	3.0	.1	.4	.1									54	54	22	6	
52/ 51	.9	.6	.3	.3	1.6	1.6	1.1	.4	.1									62	63	50	17	
50/ 49	.8	1.6	.9	.4	2.3	.9	.4	.1										67	67	63	20	
48/ 47	.3	1.7	1.4	1.6	1.6	.7		.2										67	67	68	27	
46/ 45	.3	1.6	1.2	2.4	3.1	.6		.1										84	84	89	44	
44/ 43	.1	.4	1.3	1.4	1.1	.4												44	44	77	51	
42/ 41		1.3	.9	2.4	1.1	.3												55	55	69	41	
40/ 39	.1	2.6	1.3	2.6	.8													66	66	86	44	
38/ 37	.1	1.8	2.1	1.6	.4													54	54	87	53	
36/ 35	.3	1.2	1.0	2.4	.4													49	49	73	70	
34/ 33		.4	.8	1.4	.2													26	26	64	99	
32/ 31		.2	.9	.3														13	13	27	94	
30/ 29		.1		.3														4	4	37	61	
28/ 27		.4	.1															5	5	22	63	
26/ 25		.3	.1															4	4	7	47	
24/ 23																				5	30	
22/ 21																				1	36	
20/ 19																					42	
18/ 17																					11	
16/ 15																					12	
14/ 13																					12	
12/ 9																					1	

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

 1200-1800 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
/ 7																					2
// 5																					1
TOTAL	3.2	15.0	14.3	19.7	17.7	12.2	7.7	5.6	2.9	1.3	.3							898	899	898	898

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	3518305	53551	59.6	19.031	898							
Dry Bulb	2209258	43618	48.5	9.898	899		2.7	3.0	1.1			93
Wet Bulb	1626896	37578	41.8	7.787	898		10.3					93
Dew Point	1102842	30306	33.7	9.498	898		92.7					93

FORM AIR 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | OCT MONTH

PAGE 1 | 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
80/ 79											.1							1	1		
78/ 77											.2							2	2		
76/ 75										.4								4	4		
74/ 73									.2	.2								4	4		
72/ 71							.2	.1	.2	.1								6	6		
70/ 69							.1		.2									3	3		
68/ 67					.1	.1		.1	.2									5	5		
66/ 65			.2	.1	.4	.6	.4	.3	.7	.1								26	26		
64/ 63			.2	.1	.1	.2	.8	.8	.8									27	27		
62/ 61		.2		.3	.1	1.2	.7	1.7	.4	.3	.1							46	46	3	
60/ 59		.1		.1	.9	.3	.9	1.3	.4	.1								38	38	11	2
58/ 57			.2	1.1	.7	.3	1.3	.8		.1								41	41	16	4
56/ 55		.2	.3	.4	1.3	.7	1.0	.7										42	42	16	3
54/ 53		.9	.6	.3	.4	2.2	.3	.3	.4									50	50	22	3
52/ 51	.6	.3	.9	.7	1.1	.9	.8	.6										52	52	52	23
50/ 49	.9	1.7	1.1	1.4	3.1	1.1	.6	.1										90	90	58	21
48/ 47	.2	2.1	.7	2.2	1.8	.6		.1										69	69	84	27
46/ 45	.2	1.4	1.1	2.0	2.5	1.3	.4											82	82	72	51
44/ 43		.6	1.2	1.2	1.4	.6												45	45	79	41
42/ 41	.2	.9	1.2	2.2	1.2	.1												53	53	83	46
40/ 39	.6	1.4	2.4	2.8	.9													73	73	82	35
38/ 37	.1	2.0	1.3	1.4	.1													45	45	80	50
36/ 35	.6	.8	1.1	2.4	.9													52	52	84	70
34/ 33		.4	.3	1.0	.2													18	18	62	111
32/ 31		.3	.8	.3														13	13	31	92
30/ 29		.2	.6	.1														8	8	28	53
28/ 27		.3	.2															5	5	24	46
26/ 25			.3															3	3	11	58
24/ 23																				2	30
22/ 21																				3	43
20/ 19																					34
18/ 17																					18
16/ 15																					20
14/ 13																					14

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PAGE 2 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
12/ 11																						8
TOTAL	3.3	14.0	18.8	20.4	17.4	10.2	7.5	6.9	3.7	1.8	.8								903			903
																			903		903	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	3860791	53069	58.8	19.470	903							
Dry Bulb	2214527	43835	48.5	9.799	903		3.0	2.6	1.1			93
Wet Bulb	1625599	37681	41.7	7.681	903		10.2					93
Dew Point	1084457	30063	33.3	9.627	903		82.8					93

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

PAGE 1 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
74/ 73										.1								1	1		
72/ 71								.2										2	2		
69/ 67							.2											2	2		
66/ 63			.1		.2	.1	.1	.2										7	7		
62/ 61			.2	.1	.1	.2	.3	.3										12	12		
60/ 59		.4	.1	.2	.2	.5	.3											17	17	1	
58/ 57			.5	.5	.4	.3	.9											25	25	9	3
56/ 55		.1	.5	.4	.8	.5	.8											29	29	8	3
54/ 53		.8	.3	.4	1.3	1.8	.4	.2										48	48	14	2
52/ 51	.4	.9	1.1	1.3	1.2	.5	.2											52	52	25	14
50/ 49	.9	1.3	1.6	.9	1.4	.8	.4	.1										68	68	38	27
48/ 47	.1	3.0	2.1	1.6	1.6	.9	.7											91	91	59	25
46/ 45	.1	2.7	1.3	2.5	1.9	1.0												87	87	78	30
44/ 43	.3	2.4	2.4	1.4	.7	.4												70	70	88	56
42/ 41	.4	.2	2.4	1.9	.5	.1												51	51	73	41
40/ 39	.1	2.1	2.6	2.6	.5	.1												74	74	71	54
38/ 37	.4	3.3	2.4	2.2	.5													81	82	92	44
36/ 35	.2	1.5	1.9	2.2	.1													54	54	95	74
34/ 33	.1	2.3	2.4	1.0	.1													54	54	68	96
32/ 31		1.6	3.0	.7	.1													49	49	69	94
30/ 29	.4	.3	.4	.7														17	17	52	46
28/ 27		.1	.5															6	6	37	67
26/ 25		.3	.2															5	5	12	63
24/ 23		.2	.4															6	6	11	27
22/ 21		.1																1	1	5	46
20/ 19		.1																1	1	4	49
18/ 17																				1	17
16/ 15																					10
14/ 13																					11
12/ 11																					10
10/ 9																					1
TOTAL	3.6	24.0	26.8	20.8	11.9	7.4	4.4	1.1		.1									911		910
																		910		910	

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4397894	61356	67.4	16.945	910							
Dry Bulb	1810944	39866	43.8	8.541	911		8.7	.5	.1			93
Wet Bulb	1439698	35542	39.1	7.529	910		19.5					93
Dew Point	1060457	29889	32.8	9.308	910		45.1					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | OCT MONTH

PAGE 1 | 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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			Dry Bulb	Wet Bulb	Dew Point
68/ 67							.1												1	1		
66/ 65						.1													1	1		
64/ 63						.1	.4												5	5		
62/ 61		.2	.2			.1	.1												6	6	1	
60/ 59		.2		.1		.2													5	5	1	1
58/ 57	.1	.1	.6	.1	.2	.4	.1												15	15	5	3
56/ 55	.1	.4	.3	.2	.4	.7													20	20	6	4
54/ 53		.6		.3	.9	.8													22	22	11	1
52/ 51	.3	1.5	1.0	1.1	.4	.2													41	41	26	11
50/ 49	.6	1.0	2.7	1.5	1.1	.1													62	62	21	23
48/ 47	.3	3.4	1.7	2.4	1.5	.8													89	89	32	18
46/ 45		3.1	1.8	1.5	1.0	.7													72	72	88	27
44/ 43	.7	4.1	2.2	1.9	.8	.6													92	92	77	55
42/ 41	.2	1.1	2.2	.4	.9														83	83	87	60
40/ 39		3.1	3.5	2.0	.4														81	81	52	54
38/ 37	.3	3.7	3.4	1.1	.1														77	77	88	56
36/ 35	.4	2.8	2.0	1.2															58	58	83	66
34/ 33	.1	2.8	3.8	.6															65	65	87	88
32/ 31	.6	2.4	3.4																56	56	57	83
30/ 29	.2	1.7	2.0	.3															38	38	68	68
28/ 27		.6	1.1																15	16	43	54
26/ 25		1.2	.3																14	14	25	45
24/ 23		.2	.6																7	7	19	44
22/ 21		.2																	2	2	6	42
20/ 19		.2																	2	2	4	43
18/ 17		.1																	1	1	3	28
16/ 15																						4
14/ 13	.2																		2	2	2	7
12/ 11																						11
10/ 9																						4
TOTAL	4.3	34.9	32.8	14.8	7.6	4.8	.8												892	893	892	892
																			892		892	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 92 F	Total
Rel. Hum.	4938449	65091	72.9	18.829	892							
Dry Bulb	1597637	37019	41.5	8.406	893		18.9	.1				93
Wet Bulb	1332267	33773	37.9	7.752	892		23.7					93
Dew Point	1081755	29353	32.9	9.226	892		58.3					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

2

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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					
[illegible] / 79											.0							1	1		
78 / 77										.0	.0							5	5		
76 / 75										.1	.0							7	7		
74 / 73									.0	.1	.0							11	11		
72 / 71							.0	.1	.1	.0								14	14		
70 / 69							.1	.0	.0									10	10		
68 / 67				.0	.0	.0	.1	.1	.0									18	18		
66 / 65			.1	.1	.1	.1	.1	.1	.2	.0								60	60		
64 / 63	.0		.1	.0	.1	.1	.4	.3	.1									87	87	1	1
62 / 61		.1	.1	.1	.1	.4	.3	.3	.2	.1	.0							128	128	11	
60 / 59	.0	.5	.1	.1	.2	.3	.3	.3	.1	.0								145	145	44	9
58 / 57	.0	.1	.2	.4	.4	.4	.5	.2		.0								163	163	70	39
56 / 55	.0	.2	.4	.4	.6	.6	.3	.1										188	188	68	30
54 / 53	.1	.6	.5	.6	.7	1.1	.2	.1	.1									277	277	105	29
52 / 51	.4	.9	.7	.7	.9	.5	.3	.1	.0									322	323	232	92
50 / 49	1.0	1.3	1.4	1.2	1.5	.4	.2	.0										520	521	319	194
48 / 47	.4	2.4	1.8	1.6	1.3	.5	.1	.1										591	591	384	179
46 / 45	.5	2.9	1.4	1.8	1.3	.5	.1	.0										615	616	558	281
44 / 43	.3	2.9	2.0	1.5	.6	.3												556	556	653	380
42 / 41	.2	1.7	2.1	1.6	.6	.1												465	465	600	404
40 / 39	.2	3.2	2.7	1.8	.5	.0												608	608	588	417
38 / 37	.4	3.4	2.6	1.2	.2													563	564	688	451
36 / 35	.5	2.8	2.3	1.5	.2													522	522	668	587
34 / 33	.3	2.7	2.3	.7	.1													440	440	642	718
32 / 31	.2	1.9	2.6	.2	.0													354	354	459	738
30 / 29	.3	1.2	.8	.2														182	182	401	478
28 / 27	.0	1.3	.4															128	129	318	459
26 / 25	.1	.9	.2															84	84	170	434
24 / 23	.0	.5	.2															54	54	92	284
22 / 21	.1	.5	.1															48	48	70	346
20 / 19	.1	.4																30	30	40	321
18 / 17	.0	.2																19	19	25	134
16 / 15	.0	.1																7	7	13	76
14 / 13	.0	.1																7	7	9	68

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AWS 94 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) OCT (MONTH)

 ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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			Dry Bulb	Wet Bulb	Dew Point
12/ 11		.0																	3	3	1	57
10/ 9	.0																		1	1	4	19
8/ 7		.0																	1	1	1	4
6/ 5																						4
4/ 3																						1
TOTAL	5.3	32.6	25.2	15.7	9.6	5.5	2.9	1.9	.8	.4	.1									7239		7238
																			7234		7234	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	38214576	510284	70.5	17.517	7238							
Dry Bulb	14069795	311343	43.0	9.687	7239		99.5	6.8	2.5			744
Wet Bulb	11340758	280314	38.7	8.136	7239		164.9					744
Dew Point	8582198	239980	33.2	9.267	7238		352.0					744

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
ATR WEATHER SERVICE/MAC

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PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | NOV MONTH

PAGE 1 | 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
56/ 55		.1	.3															4	4		
54/ 53			.2															2	2	1	
52/ 51		.5																4	4	6	3
50/ 49		.6	.5	.3	.1													13	13	5	7
48/ 47		.3	.6	.1	.1	.1												11	11	4	6
46/ 45		.3	.3	.3	.2													11	11	10	2
44/ 43		.8	.9	.6	.1													21	21	9	6
42/ 41		.7	1.3	.9														25	25	18	7
40/ 39	.3	1.3	.9	.3														25	25	20	15
38/ 37	1.0	2.6	.8	.3														42	42	41	17
36/ 35	.7	3.0	1.6	.3	.2													51	51	42	30
34/ 33	.6	4.3	1.5	.9														63	63	47	31
32/ 31	2.1	5.6	4.5	.6	.3													114	114	76	71
30/ 29	.5	3.8	2.3															57	57	67	57
28/ 27	.1	4.7	1.6															56	56	81	38
26/ 25	.8	5.5	.8															62	62	77	47
24/ 23	.7	3.7	.8															45	45	71	51
22/ 21	.9	5.9	1.1															69	69	62	57
20/ 19	1.0	3.4	.5															43	43	54	78
18/ 17	.3	1.5																16	16	33	84
16/ 15		2.6																23	23	21	51
14/ 13	.3	2.4																24	24	20	25
12/ 11	.3	2.5																25	25	23	29
10/ 9	.7	1.0	.1															16	16	28	41
8/ 7		.8																7	7	6	24
6/ 5		.7																6	6	9	14
4/ 3		1.0																9	9	10	18
2/ 1	.1	.8																8	8	9	4
0/ -1	.2	.5																6	6	5	6
-2/ -3		.1																1	1	4	12
-4/ -5	.3																	3	3	3	3
-6/ -7	.5																	4	4	4	11
-8/ -9	.3																	3	3	3	2
-10/-11	.1																	1	1	1	3

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) 80 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

 0000-0200 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-12/-13																					3
-14/-15																					9
-16/-17																					4
-18/-19																					3
-20/-21																					1
TOTAL	12	161	120	8	1	1												870			870
																		870		870	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 88 F	≤ 93 F	Total
Rel. Hum.	5216845	66509	76.4	12.388	870							
Dry Bulb	762809	23859	27.4	11.179	870	1.9	61.9					90
Wet Bulb	663683	22181	25.5	10.629	870	2.1	69.0					90
Dew Point	507693	18051	20.7	12.377	870	5.9	77.2					90

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PAGE 1 0300-0500 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
56/ 55		.3																3	3		
54/ 53		.1																1	1	3	
52/ 51		.5																4	4	3	5
50/ 49		.3	.1	.3														7	7	3	3
48/ 47		.5	.3	.1	.1													9	9	5	4
46/ 45		.9	.2	.1														11	11	7	2
44/ 43		.7	.6	.2	.1													14	15	11	6
42/ 41	.2	.5	1.4	1.1														28	28	13	13
40/ 39	.6	.8	1.3	.1														24	24	13	11
38/ 37	1.1	1.4	1.3	.2														35	35	37	17
36/ 35	.5	3.8	1.1	.2														49	49	39	19
34/ 33	1.1	3.8	.9	.6														56	56	64	32
32/ 31	1.3	7.6	4.7	1.1														129	129	62	67
30/ 29	.3	2.9	2.3															48	48	66	49
28/ 27	.8	5.0	.9															59	59	78	55
26/ 25	1.3	4.9	.9															62	62	81	47
24/ 23	.7	5.0	.1															51	51	76	50
22/ 21	1.3	5.0	.7															61	61	73	48
20/ 19	1.0	4.8	.9															59	59	35	110
18/ 17		2.5	.1															23	23	46	67
16/ 15	.6	1.4																17	17	28	49
14/ 13	.1	1.8																17	17	14	42
12/ 11	.7	1.4																18	18	17	21
10/ 9	1.0	2.3																29	29	28	26
8/ 7		1.0																9	9	15	31
6/ 5	.1	1.0																10	10	10	13
4/ 3		.9																8	8	9	11
2/ 1	.2	1.1																12	12	10	12
0/ -1	.1	.3																4	4	8	10
-2/ -3	.1	.5																5	5	6	7
-4/ -5	.3	.1																4	4	5	6
-6/ -7	.1																	1	1	2	10
-8/ -9	.3																	3	3	3	5
-10/-11	.5																	4	4	4	9

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

 0300-0500 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-1 /-13	.2																	2	2	2	2
-14/-15																					8
-16/-17																					4
-18/-19																					3
-20/-21																					5
-22/-23																					1
TOTAL	14.6	63.1	17.8	4.2	.2													876	877	876	876

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5433889	68197	77.9	11.939	876							
Dry Bulb	725508	23152	26.4	11.423	877	2.9	65.2					90
Wet Bulb	637168	21590	24.6	10.957	876	3.1	69.7					90
Dew Point	896000	17690	20.2	12.593	876	6.8	78.5					90

FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | NOV MONTH

PAGE 1 | 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
56/ 55		.1	.2															3	3		
54/ 53		.3																3	3	2	
52/ 51		.6																5	5	6	5
50/ 49		.3																3	3	4	7
48/ 47		.1	.1	.2	.2													6	6	2	
46/ 45		.9	.5	.3	.1													16	16	5	2
44/ 43	.1	.6	.3	.2	.1													12	12	7	7
42/ 41	.5	.6	.7	.2														17	17	19	14
40/ 39	1.3	1.1	1.0															30	30	22	15
38/ 37	.3	1.3	.7	.6	.1													26	26	26	10
36/ 35	.1	4.1	.9	.2														47	47	26	15
34/ 33	1.6	4.8	1.1	1.0														75	75	70	37
32/ 31	1.0	7.1	2.8	.7														101	101	59	59
30/ 29	.5	3.0	1.7															45	45	66	51
28/ 27	.7	4.9	1.7															64	64	71	49
26/ 25	2.1	5.6	.2															69	69	88	50
24/ 23	1.5	3.1																40	40	77	50
22/ 21	1.3	6.0	.2															65	65	53	65
20/ 19	1.7	4.2	.1															53	53	49	90
18/ 17	.8	1.9	.2															26	26	38	66
16/ 15	.8	2.8	.1															32	32	28	51
14/ 13	1.3	2.2																30	30	36	42
12/ 11	.3	1.6																17	17	21	24
10/ 9	.7	.9																14	14	19	23
8/ 7	.8	.8																14	14	13	22
6/ 5	.1	.3																4	4	7	18
4/ 3	.1	1.4																13	13	14	27
2/ 1		.9																8	8	6	11
0/ -1	.6	.2																7	7	10	3
-2/ -3	.3	.6																8	8	7	5
-4/ -5	.3	.2																5	5	6	4
-6/ -7	.3																	3	3	4	10
-8/ -9	.2																	2	2	2	5
-10/-11	.3																	3	3	3	7

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AIR 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PAGE 2 0600-0800 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-1 /-13	.3																	3	3	3	7
-14/-15	.3																	3	3	3	3
-16/-17																					6
-18/-19																					2
-20/-21																					5
-22/-23																					4
-24/-25																					1
TOTAL	20.	9	52.	7	32.	7	3.	6	.6										872		872
																		872		872	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5558697	68825	78.9	12.051	872							
Dry Bulb	695985	22399	25.7	11.768	872	3.5	68.9					90
Wet Bulb	618934	21042	24.1	11.298	872	3.9	70.5					90
Dew Point	491509	17313	19.9	13.025	872	6.8	78.8					90

FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

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PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | NOV MONTH

PAGE 1 | 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
62/ 61				.1	.1				.1									3	3		
60/ 59					.1													1	1		
58/ 57			.1		.1		.1	.1										4	4		
56/ 55		.1	.2				.2											5	5	1	
54/ 53		.5		.2	.1	.2												9	9	4	1
52/ 51		.5	.1	.1	.1	.6												12	12	10	9
50/ 49		.1	.3		.8	.2												13	13	2	3
48/ 47		.3		.6	.3													11	11	7	2
46/ 45		.2	.3	.5	.7													15	15	9	8
44/ 43	.2	1.0	.6	1.1	.2		.1											29	29	17	7
42/ 41		1.0	.7	.5	.2	.1												22	22	30	8
40/ 39	.3	.7	.8	.7		.1												23	23	20	19
38/ 37	.9	1.9	.8	.9	.2													42	42	35	9
36/ 35	.6	3.7	2.3	.9	.2													67	67	40	28
34/ 33	.8	3.7	1.9	.9	.1													65	65	60	39
32/ 31	1.9	4.6	3.4	1.1														97	97	85	68
30/ 29	.3	3.3	1.0	.2	.2													45	45	69	72
28/ 27	.8	4.2	2.5															66	66	70	35
26/ 25	1.7	5.6	.9	.1														73	73	83	59
24/ 23	.2	4.5	.8															48	49	70	57
22/ 21	1.1	3.9	1.4															56	56	61	59
20/ 19	.3	3.2	.8															38	38	34	75
18/ 17	.2	1.6	.3															19	19	41	66
16/ 15	.1	1.7	.3															19	19	20	41
14/ 13	.6	1.8	.1															22	22	21	45
12/ 11	.2	1.1																12	12	16	23
10/ 9	.1	.9	.1															10	10	16	22
8/ 7		1.4																12	12	8	19
6/ 5		.6																5	5	10	14
4/ 3	.3	.3																6	6	9	20
2/ 1	.1	.7																7	7	3	18
0/ -1	.2	.3																5	5	9	7
-2/ -3	.5	.1																6	6	5	5
-4/ -5	.3																	3	3	5	1

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

 0900-1100 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	0	1 - 2	3 - 4	5 - 6	7 - 8	9 - 10	11 - 12	13 - 14	5 - 16	17 - 18	19 - 20	21 - 22	23 - 24	25 - 26	27 - 28	29 - 30	≥ 31		Dry Bulb	Wet Bulb	Dew Point
-8/ -7	.5																	4	4	4	10
-6/ -9																					5
-10/-11																					6
-12/-13	.1																	1	1	1	4
-14/-15																					2
-16/-17																					3
-18/-19																					6
TOTAL	12.7	53.7	20.0	8.0	3.7	1.3	.5	.1	.1										876		875
																		875		875	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5087360	65200	74.5	18.706	875							
Dry Bulb	853217	25331	28.9	11.796	876	2.0	57.0					90
Wet Bulb	720298	23256	26.6	10.813	875	2.5	65.8					90
Dew Point	538578	18702	21.8	12.821	875	5.0	76.3					90

USAFETAC FORM 0-26-5 (OL A) JUL 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

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72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | NOV MONTH

PAGE 1 | 1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
7 / 69								.1										1	1		
69 / 67							.1	.1										2	2		
67 / 65				.1		.2	.1											4	4		
64 / 63		.1		.1	.1	.1			.3									7	7		
62 / 61				.1					.2									3	3	1	
60 / 59			.1				.1	.3	.3									8	8	1	1
57 / 57			.1			.1	.7	.6										13	13	1	
54 / 55		.6	.1	.1	.1	.1		.1										10	10	10	1
54 / 53		.2			.6	.3	.2											12	12	6	
52 / 51				.2	.7	.8												15	15	3	11
50 / 49		.5	.1	.1	1.1	.6	.2											23	23	2	2
48 / 47		.1	.3	.6	.6	.9												22	22	13	5
46 / 45		.6	.3	.2	.9	.2	.3											23	23	23	8
44 / 43		.3	.7	.5	.5	.3												20	20	27	6
42 / 41	.2	.1	.7	1.6	.6	.1												29	29	31	5
40 / 39	.2	.5	1.0	.8	.7	.1												29	29	22	9
38 / 37	.8	1.3	2.1	.8	.7	.1												50	50	42	17
36 / 35	.7	1.3	2.2	1.6	.5	.1												55	55	45	29
34 / 33	.9	4.0	4.2	1.5	.6													98	98	61	33
32 / 31	1.9	2.7	3.4	1.3	.2													84	84	96	76
30 / 29		2.3	2.9	.8	.1													53	53	72	49
28 / 27	.7	3.4	4.5	.2	.1													78	78	68	50
26 / 25	.6	3.2	3.0	.6														64	64	90	86
24 / 23	.2	2.1	1.4	.2														34	34	74	49
22 / 21	.1	1.1	1.7	.2														28	28	42	51
20 / 19		1.5	1.3	.1														25	25	32	85
18 / 17		1.1	.7															16	16	22	58
16 / 15		.6	.6															10	10	19	46
14 / 13		1.5	.7															19	19	10	34
12 / 11		1.0	.8															16	16	17	27
10 / 9		.5	.1															5	5	15	25
8 / 7		.2	.2															4	4	11	19
6 / 5		.2																2	2	3	11
4 / 3		.9																8	8	4	14

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | NOV MONTH

PAGE 7 | 1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
2/ 1		.3																3	3	7	21
0/ -1		.1																1	1	3	10
- 2/ -3		.1																1	1	2	4
-4/ -5																					9
-6/ -7																					6
-8/ -9																					5
-10/-11																					4
-12/-13																					2
-14/-17																					4
-18/-19																					1
TOTAL	6.4	32.5	33.1	11.8	8.0	4.2	1.8	1.3	.9									875	875	875	875

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	4048365	57559	65.8	17.182	875							
Dry Bulb	1065316	28678	32.8	11.978	875	.2	86.4	.3				90
Wet Bulb	829711	25381	29.0	10.342	875	.5	60.4					90
Dew Point	539692	18990	21.7	12.081	875	9.8	76.9					90

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | NOV MONTH

PAGE 1 | 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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				
70/ 69								.1										1	1		
68/ 67						.1	.1	.1										3	3		
66/ 65							.1											1	1		
64/ 63					.2	.1			.5									7	7		
62/ 61				.3	.1		.1	.2										7	7		
60/ 59					.1		.1	.1	.2									5	5		
58/ 57				.1			.6	.5										10	10	1	
56/ 55		.2				.1	.1	.2										6	6	10	
54/ 53		.1			.2	.2	.3	.2										10	10	4	
52/ 51			.1		.5	.3	.1											9	9	2	6
50/ 49		.3	.1	.1	.0	.7	.3											22	22	2	5
48/ 47		.2	.7	.6	.6	.8	.1											26	26	13	6
46/ 45		.3	.7	1.0	.7	.8	.1											32	32	16	2
44/ 43		.2	.5	.5	.7	.2	.1											19	19	23	5
42/ 41	.3	.2	.9	1.3	.5	.1												29	29	28	9
40/ 39		.5	1.0	1.3	.3	.1												28	28	34	8
38/ 37	1.0	.9	1.3	1.3	.8													46	47	38	18
36/ 35	.5	1.0	1.5	1.2	.3	.1												40	40	51	24
34/ 33	1.2	4.9	4.3	1.6	.7													110	110	50	38
32/ 31	1.0	3.7	5.2	1.8	.3													105	105	96	65
30/ 29		2.6	2.2	.8	.3													52	52	72	41
28/ 27	.1	3.1	3.7	.6														65	65	87	63
26/ 25	.5	3.2	2.1	.6														55	55	78	78
24/ 23	.8	2.0	1.5	.3														40	40	73	46
22/ 21		1.7	1.8	.5														35	35	39	67
20/ 19		1.8	1.2															26	26	33	81
18/ 17		1.2	.8	.1														18	18	33	56
16/ 15		.7	.7															12	12	21	37
14/ 13		.8	.6															12	12	11	48
12/ 11		.9	.5															12	12	12	30
10/ 9		.3	.7															9	9	12	19
8/ 7		.3	.1															4	4	10	20
6/ 5		.2																2	2	6	15
4/ 3		.5																4	4	3	19

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PAGE 2 1500-1700 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
[illegible] 1		.3																3	3	5	14
[illegible] -1		.2																2	2	2	6
[illegible] -3		.1																1	1	3	4
-4/ -5		.1																1	1	1	10
-6/ -7																					9
-8/ -9																					6
-10/-11																					3
-12/-13																					4
-14/-15																					2
-16/-17																					2
-18/-19																					3
TOTAL	5.4	33.0	32.0	13.9	7.4	3.8	2.3	1.5	.7										870		869
																		869		869	

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	3927065	56437	64.9	17.366	869							
Dry Bulb	1041708	28398	32.6	11.659	870	.4	97.9	.8				90
Wet Bulb	803675	24961	28.7	9.994	869	.6	61.8					90
Dew Point	512782	18392	21.2	11.929	869	5.1	77.5					90

USAFETAC FORM 0-26-5 (OL A) AUG 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PAGE 1 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL	TOTAL		
	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	D.B./W.B.	Dry Bulb	Wet Bulb	Dew Point
62/ 61							.1											1	1		
60/ 59				.1	.1	.1		.1										4	4		
58/ 57			.2	.3	.1													6	6		
56/ 55			.1				.2											3	3	2	
54/ 53																				3	
52/ 51		.3			.6	.2	.1											11	11	3	2
50/ 49		.3	.1	.1	.1	.6	.1											12	12	8	6
48/ 47			.1	.3	.2	.3												9	9	2	4
46/ 45		.8	.5	.2	.7	.2	.1											22	22	3	3
44/ 43		.5	.7	.7	.8	.3												26	26	16	4
42/ 41	.3	.5	.9	.3	.2	.1												21	21	17	7
40/ 39		1.7	.9	.7	.6	.3												37	37	24	7
38/ 37	1.1	1.7	1.5	1.2														49	49	50	20
36/ 35	.6	.7	1.6	.9	.1													34	34	37	36
34/ 33	.8	5.4	2.5	1.6														91	91	50	31
32/ 31	1.2	5.7	4.4	.6	.3													108	108	100	43
30/ 29		5.1	3.7	.6														83	83	75	58
28/ 27	.1	3.3	2.5	.3														55	55	90	53
26/ 25	.5	3.9	1.8	.2														56	56	80	79
24/ 23	.7	3.2	1.5	.3														50	50	71	48
22/ 21	.2	3.2	1.5															43	43	50	62
20/ 19	.2	3.4	.8	.1														40	40	41	92
18/ 17	.1	1.9	.5															22	22	43	56
16/ 15	.1	2.5	.3															26	26	26	41
14/ 13		1.7																15	15	18	40
12/ 11		1.2	.1															12	12	15	47
10/ 9		.7	.2															8	8	11	23
8/ 7		1.2																11	11	11	25
6/ 5		.5																4	4	9	12
4/ 3		.9																8	8	6	17
2/ 1		.6																5	5	8	16
0/ -1		.1																1	1	3	4
-2/ -3		.5																5	5	2	1
-4/ -5		.5																4	4	3	7

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 88 F	≤ 92 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) AS 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 DULUTH IAP MN 73-82 NOV
STATION STATION NAME YEARS MONTH

 1800-2000
HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-6/ -7	.1																	1	1	4	10
-8/ -9																					12
-10/-11																					1
-12/-13																					3
-14/-15																					3
-16/-17																					7
-18/-19																					1
TOTAL	6.1	51.8	26.9	8.7	3.9	2.3	.7	.1										881	881	881	881

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.	8A191A1	62379	70.8	15.167	881							
Dry Bulb	866389	25936	29.4	10.811	881	.9	56.7					90
Wet Bulb	713598	23502	26.7	9.920	881	1.2	68.0					90
Dew Point	898380	16150	20.6	11.893	881	5.0	77.7					90

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | NOV MONTH

PAGE 1 | 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
59/ 57			.1															1	1		
56/ 55		.1	.1	.2														4	4		
54/ 53			.2			.1												3	3	3	
52/ 51		.8																7	7	3	4
50/ 49		.1		.3	.6	.3												12	12	9	3
48/ 47			.5	.7	.3													13	13		6
46/ 45		.7	.1	.5	.3													14	14	2	1
44/ 43	.1	.8	.6	.6	.3													21	21	17	7
42/ 41		.3	.2	.8	.2													14	14	19	8
40/ 39	.2	.8	1.3	.2	.2	.1												25	25	18	6
38/ 37	.9	3.1	.6	.6	.2													47	47	35	21
36/ 35	.6	1.7	1.6	.8														41	41	47	23
34/ 33	1.0	5.0	1.7	1.0														76	77	45	45
32/ 31	1.9	6.0	4.4	.6	.1													112	112	88	58
30/ 29	.5	5.8	2.3															74	74	64	56
28/ 27	.2	2.8	1.9	.1														43	43	96	45
26/ 25	.7	5.2	1.2	.1														62	62	61	50
24/ 23	.7	4.6	1.5	.2														61	62	76	52
22/ 21	.5	3.8	1.4															49	49	56	60
20/ 19	.9	3.7																40	40	53	79
18/ 17		1.4	.5															16	16	33	72
16/ 15		2.5	.1															23	23	13	42
14/ 13	.6	2.8	.1															30	30	27	32
12/ 11	.2	2.0	.2															21	21	32	46
10/ 9		1.0																9	9	14	25
8/ 7		1.5																13	13	10	24
6/ 5		.7																6	6	10	14
4/ 3		.5																4	4	8	16
2/ 1		1.2																10	10	4	8
0/ -1	.3	.1																4	4	11	14
-2/ -3	.1																	1	1	2	1
-4/ -5	.3	.1																4	4	3	9
-6/ -7	.1																	1	1	2	10
-8/ -9	.3																	3	3	3	6

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AS 64 0-26-3 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | NOV MONTH

 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (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	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
-10/-11																					6
-12/-13																					5
-14/-15																					4
-16/-17																					3
-18/-19																					3
TOTAL	10.3	59.3	20.6	6.8	2.4	.6												866			866
																	864		864		

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature ≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 92 F	Total
Rel. Hum.	8982709	68301	78.9	3.500	864							
Dry Bulb	777838	29154	27.9	10.973	866	1.9	61.0					90
Wet Bulb	663784	22220	25.7	10.389	864	2.2	69.8					90
Dew Point	490618	17688	20.5	12.202	864	6.8	77.1					90

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
70/ 69								.0										2	2		
68/ 67						.0	.0	.0										5	5		
66/ 65				.0		.0	.0											5	5		
64/ 63		.0		.0	.0	.0			.1									14	14		
62/ 61				.1	.0		.0	.0	.0									14	14	1	
60/ 59			.0	.0	.0	.0	.0	.1	.1									18	18	1	1
58/ 57			.1	.1	.0	.0	.2	.1										34	34	2	
56/ 55		.2	.1	.0	.0	.0	.1	.0										38	38	23	1
54/ 53		.2	.1	.0	.1	.1	.1	.0										40	40	26	1
52/ 51		.4	.0	.0	.2	.2	.0											67	67	36	45
50/ 49		.3	.2	.2	.5	.3	.1											105	105	35	36
48/ 47		.2	.3	.4	.3	.3	.0											107	107	46	33
46/ 45		.6	.4	.4	.5	.2	.1											144	144	75	28
44/ 43	.1	.6	.6	.5	.4	.1	.0											162	163	127	48
42/ 41	.2	.5	.8	.8	.2	.1												185	185	175	71
40/ 39	.4	.9	1.0	.5	.2	.1												221	221	173	90
38/ 37	.9	1.8	1.1	.7	.3	.0												337	338	304	129
36/ 35	.5	2.4	1.6	.8	.2	.0												384	384	327	204
34/ 33	1.0	4.5	2.3	1.1	.2													634	635	447	286
32/ 31	1.5	5.4	4.1	1.0	.2													850	850	662	507
30/ 29	.3	3.6	2.3	.3	.1													457	457	551	433
28/ 27	.4	3.9	2.4	.2	.0													486	486	641	388
26/ 25	1.0	4.6	1.4	.2														503	503	638	496
24/ 23	.7	3.5	.9	.1														369	371	588	403
22/ 21	.7	3.8	1.2	.1														406	406	436	469
20/ 19	.7	3.3	.7	.0														324	324	331	690
18/ 17	.2	1.6	.4	.0														156	156	289	525
16/ 15	.2	1.8	.3															162	162	176	358
14/ 13	.4	1.9	.2															169	169	157	308
12/ 11	.2	1.5	.2															133	133	153	247
10/ 9	.3	1.0	.2															100	100	143	204
8/ 7	.1	.9	.0															74	74	84	184
6/ 5	.0	.5																39	39	64	111
4/ 3	.1	.8																60	60	63	142

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 90 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) NOV (MONTH)

PAGE 2 ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
2/ 1	.1	.7																56	56	52	104
0/ -1	.2	.2																30	30	51	60
-2/ -3	.1	.2																26	26	31	39
-4/ -5	.2	.1																24	24	26	49
-6/ -7	.2																	14	14	20	76
-8/ -9	.2																	11	11	11	86
-10/-11	.1																	8	8	8	39
-12/-13	.1																	6	6	6	32
-14/-15	.0																	3	3	3	27
-16/-17																					33
-18/-19																					22
-20/-21																					11
-22/-23																					5
-24/-25																					1
TOTAL	11.0	52.1	22.9	7.7	3.4	1.5	.7	.4	.2									6982	6987	6982	6982

Element (X)	Σ_X'	Σ_X	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	38790091	5098807	73.0	15.251	6982							
Dry Bulb	6788761	201857	28.9	11.704	6987	12.6	960.4	.7				720
Wet Bulb	5650801	189133	26.9	10.670	6982	16.1	539.6					720
Dew Point	3071198	144976	20.8	12.327	6982	85.9	619.7					720

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PAGE 1 0000-0200 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
47/ 45		.1																1	1		
44/ 43			.1															1	1	1	
42/ 41																					1
40/ 39			.1	.1														2	2	1	
37/ 37	.3																	3	3	3	3
36/ 35	.2	.8		.2														11	11	4	3
34/ 33	1.0	2.0	.1	.1														29	29	22	13
32/ 31	.3	1.8	.9	.2														29	29	18	18
30/ 29	2.1	2.0	.6															42	42	40	25
28/ 27	1.5	2.2	.7															40	40	42	23
26/ 25	1.7	4.8	.4															63	63	45	32
24/ 23	1.0	2.9																35	35	66	21
22/ 21	2.5	4.4																63	63	68	49
20/ 19	3.0	5.3	.9															83	83	49	73
18/ 17	1.4	3.0																40	40	65	62
16/ 15	1.0	2.9	.1															36	36	40	47
14/ 13	1.9	3.1																45	45	32	55
12/ 11	1.8	4.7																59	59	47	36
10/ 9	1.0	3.2	.1															39	39	55	43
8/ 7	1.0	2.3	.1															31	31	39	35
6/ 5	.7	1.5																20	20	23	22
4/ 3	.4	2.8																29	29	29	37
2/ 1	.8	4.6																49	49	45	32
0/ -1	1.4	1.1																23	23	30	20
-2/ -3	1.1	2.2																30	30	30	17
-4/ -5	1.8	.8																23	23	26	18
-6/ -7	1.3	.2																14	14	18	34
-8/ -9	1.7																	15	15	17	31
-10/-11	1.9																	17	17	17	30
-12/-13	.6																	5	5	5	22
-14/-15	1.1																	10	10	10	18
-16/-17	.9																	8	8	8	12
-18/-19	.7																	6	6	6	17
-20/-21	.2																	2	2	2	17

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

 0000-0200 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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				
-22/-23	.3																	3	3	3	10
-24/-25	.3																	3	3	3	18
-26/-27																					4
-28/-31																					4
-32/-33																					4
-34/-35																					2
-36/-37																					1
TOTAL	36.7	58.5	4.1	.7															909		909
																		909		909	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 88 F	≤ 93 F	Total
Rel. Hum.	5885448	69522	76.5	13.613	909							
Dry Bulb	332848	12504	13.8	13.310	909	16.3	88.2					93
Wet Bulb	309735	11701	12.9	13.028	909	17.9	89.8					93
Dew Point	276868	6882	7.6	15.733	909	28.5	91.0					93

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PAGE 1 0300-0500 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
42/ 41	.1		.1															2	2	1	1
40/ 39	.2		.1															3	3	2	2
38/ 37		.2																2	2	1	
36/ 35	.3	.3	.1															7	7	9	
34/ 33	.9	1.6		.3														25	25	15	13
32/ 31	.6	1.6	.3															22	22	16	20
30/ 29	1.8	1.9	.6															38	38	28	19
28/ 27	2.3	2.8	.7															52	52	48	26
26/ 25	2.1	4.5																59	59	53	38
24/ 23	1.2	2.2	.1															32	32	60	31
22/ 21	2.3	3.8	.2															57	57	52	48
20/ 19	2.6	5.5	.3															75	75	47	60
18/ 17	2.6	2.1																42	42	73	52
16/ 15	1.6	2.1																33	33	35	55
14/ 13	2.7	2.1																43	43	36	58
12/ 11	2.0	3.9																53	53	37	35
10/ 9	2.5	2.7	.2															48	48	63	40
8/ 7	.8	2.0																25	25	27	36
6/ 5	.3	2.0																21	21	27	25
4/ 3	1.0	1.3																21	21	26	30
2/ 1	.6	4.7																47	47	30	21
0/ -1	2.3	1.0																30	31	43	22
-2/ -3	2.6	1.3																35	35	39	17
-4/ -5	1.3	.7																18	18	19	16
-6/ -7	1.6	.4																18	18	17	34
-8/ -9	1.9																	17	17	21	27
-10/-11	1.8																	16	16	16	26
-12/-13	1.0																	9	9	9	23
-14/-15	1.5																	13	13	13	25
-16/-17	.7																	6	6	6	8
-18/-19	1.2																	11	11	11	22
-20/-21	1.0																	9	9	9	15
-22/-23	.4																	4	4	4	17
-24/-25																					19

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 90 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AM 34 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

 0300-0500 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-26/-27	.2																	2	2	2	9
-28/-29																					5
-30/-31																					2
-32/-33																					6
-34/-37																					2
TOTAL	46.0	50.8	2.8	.3															896		895
																		895		895	

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	5537587	69385	77.5	13.572	895							
Dry Bulb	315473	11329	12.6	13.872	896	19.6	89.0					93
Wet Bulb	293871	10699	12.0	13.625	895	21.7	90.1					93
Dew Point	280880	6102	6.8	16.360	895	30.7	91.3					93

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

PAGE 1 0600-0800 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
42/ 41	.3		.1															4	4	3	3
40/ 39				.1														1	1		
38/ 37			.1															1	1	1	
36/ 35	.3	.3																6	6	4	
34/ 33	.7	1.1																16	16	13	6
32/ 31	1.1	2.2	.3															33	33	27	21
30/ 29	1.4	1.3	.2															27	27	24	24
28/ 27	2.8	2.9	.9															59	59	50	29
26/ 25	1.7	4.0	.1															52	52	44	42
24/ 23	1.4	2.4	.2															37	37	59	15
22/ 21	1.9	3.3	.1															48	48	52	42
20/ 19	4.0	3.7	.2															72	72	50	57
18/ 17	1.8	3.4																47	47	59	55
16/ 15	2.0	2.8																43	43	42	55
14/ 13	2.4	3.2																51	51	40	53
12/ 11	1.4	2.2																33	33	45	48
10/ 9	1.7	3.2	.3															47	50	43	32
8/ 7	1.5	2.3																35	35	41	38
6/ 5	.7	2.4																28	28	33	22
4/ 3	.2	1.9																19	19	22	34
2/ 1	.6	3.4																36	36	28	23
0/ -1	1.9	1.0																26	26	32	13
-2/ -3	2.5	1.1																33	33	34	16
-4/ -5	2.9	1.4																39	39	35	24
-6/ -7	2.1	.2																21	21	33	22
-8/ -9	2.0																	18	18	18	28
-10/-11	.4																	4	4	4	32
-12/-13	1.5																	14	14	14	27
-14/-15	1.7																	15	15	15	21
-16/-17	1.8																	16	16	16	26
-18/-19	1.1																	10	10	10	25
-20/-21	.6																	5	5	5	7
-22/-23	1.0																	9	9	9	16
-24/-25	.2																	2	2	2	22

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

 0600-0800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-28/-27	.1																	1	1	1	10
-24/-29																					9
-30/-31																					2
-32/-33																					0
-34/-35																					4
-36/-37																					1
TOTAL	47.5	49.8	2.6	.1														908	911	908	908

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5628790	70438	77.6	13.470	908							
Dry Bulb	311284	10810	11.9	19.181	911	21.7	90.1					93
Wet Bulb	290587	10169	11.2	13.958	908	23.9	90.8					93
Dew Point	287215	5533	6.1	16.718	908	31.6	92.1					93

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

 0900-1100 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
46/ 45	.1																	1	1	1	1
44/ 43	.1	.1																2	2	1	1
42/ 41																				1	1
38/ 37			.1															1	1		
36/ 35	.2	.7	.2															10	10	2	
34/ 33	1.0	1.7																24	24	20	5
32/ 31	1.4	2.5	.7															42	42	33	27
30/ 29	1.4	1.9	.6															35	35	31	27
28/ 27	2.7	3.4	.2															57	57	56	33
26/ 25	1.5	4.5	.6															60	60	53	38
24/ 23	1.1	3.0	.1															39	38	55	31
22/ 21	1.9	4.3	.4															60	60	63	48
20/ 19	4.3	3.7	.2															74	74	63	64
18/ 17	1.5	3.1	.1															43	43	49	64
16/ 15	1.5	2.8	.1															40	40	37	37
14/ 13	1.3	3.7	.2															47	47	41	48
12/ 11	1.5	2.9	.2															42	42	41	44
10/ 9	.3	3.4	.3															37	37	41	38
8/ 7	1.2	2.7																35	35	40	25
6/ 5	.2	2.4																24	24	33	20
4/ 3	.8	2.4																29	29	32	28
2/ 1	.2	3.9																37	37	32	27
0/ -1	2.9	2.0																44	44	39	31
-2/ -3	1.3	1.1																22	22	34	23
-4/ -5	1.3	1.2																23	23	20	20
-6/ -7	1.2	.9																19	19	23	30
-8/ -9	1.3																	12	12	17	31
-10/-11	.9																	8	8	8	36
-12/-13	.7																	6	6	6	25
-14/-15	.7																	6	6	6	17
-16/-17	1.5																	14	14	14	13
-18/-19	.7																	6	6	6	21
-20/-21	.4																	4	4	4	13
-22/-23	.2																	2	2	2	11

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AWS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

 0900-1100 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-24/-25																					10
-26/-27																					8
-28/-29																					6
-30/-31																					1
-32/-33																					1
TOTAL	37	758	2	4	1														904		904
																		904		904	

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	5477050	69236	76.6	13.896	904							
Dry Bulb	334272	12684	14.0	13.156	904	17.1	89.1					93
Wet Bulb	308538	11902	13.2	12.967	904	18.9	90.9					93
Dew Point	280210	7106	7.9	15.762	904	30.6	92.2					93

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

1200-1400 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
48/ 47		.1																1	1		
46/ 45	.1	.1																2	2	3	3
38/ 37			.1	.3	.1													5	5		
36/ 35	.2	1.2	1.3	.1														26	26	2	
34/ 33	1.0	2.3	1.8	.2														48	48	32	9
32/ 31	.8	2.7	1.6															47	47	44	27
30/ 29	.7	3.1	.9	.3														45	45	44	31
28/ 27	2.0	2.9	.9	.1														53	53	68	29
26/ 25	1.4	5.1	.9	.2														69	69	44	59
24/ 23	1.1	3.8	.7															51	51	76	36
22/ 21	.7	5.9	.8															67	67	72	41
20/ 19	2.1	5.1	1.9	.2														84	84	70	74
18/ 17	.9	2.2	1.1															38	38	51	57
16/ 15	.4	3.3	1.1															44	44	36	61
14/ 13	.9	3.6	.5															46	46	45	35
12/ 11	.4	3.6	1.5															51	51	42	39
10/ 9	.3	3.5	.5															40	40	39	38
8/ 7	.2	3.3	.1															33	33	53	31
6/ 5	.1	3.8																36	36	35	18
4/ 3	.1	3.5																33	33	36	26
2/ 1		1.9																17	17	32	39
0/ -1	.5	2.0																23	23	22	30
-2/ -3		1.2																11	11	20	16
-4/ -5		1.4																13	13	7	38
-6/ -7	.9	.5																13	13	20	27
-8/ -9	.5																	5	5	8	23
-10/-11	.3																	3	3	3	27
-12/-13	.1																	1	1	1	15
-14/-15	.4																	4	4	4	26
-16/-17	.1																	1	1	1	18
-18/-19																					17
-20/-21																					6
-22/-23																					6
-24/-25																					6

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 90 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AWS 94 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

1200-1800 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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			Dry Bulb	Wet Bulb	Dew Point
-26/-27																						2
TOTAL	16.9	66.3	15.7	1.5	.1															910		910
																			910		910	

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Rel. Hum.	8815933	68515	70.9	16.320	910							
Dry Bulb	409774	16362	18.0	11.276	910	7.6	89.6					93
Wet Bulb	357491	14937	16.4	11.115	910	8.8	89.2					93
Dew Point	282926	8848	9.7	8.718	910	26.3	91.8					93

USAFETAC FORM AE 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GPO 1981 664-012/1139

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

PAGE 1 | 1500-1700 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
50/ 49		.2																2	2	2	2
40/ 39			.1	.1														2	2		
38/ 37				.6	.1													6	6		
36/ 35	.8	.9	1.2	.6														31	31	8	3
34/ 33	1.0	1.6	1.6															37	37	28	16
32/ 31	.4	2.6	2.4	.1														50	50	34	14
30/ 29	1.3	3.1	.8	.3														50	50	50	21
28/ 27	1.2	3.6	1.2	.2														56	56	67	36
26/ 25	.8	4.1	1.6	.2														60	60	45	42
24/ 23	.7	4.3	.3	.2														50	50	71	36
22/ 21	1.4	6.3	1.4	.1														84	84	80	49
20/ 19	1.0	5.9	1.7	.1														78	78	58	69
18/ 17	.6	1.9	1.2	.1														34	34	62	64
16/ 15	.9	2.6	1.3															43	43	40	55
14/ 13	.7	3.6	.9															46	46	38	48
12/ 11	.3	4.1	1.3															52	52	47	31
10/ 9	.4	3.4	.8															42	42	50	41
8/ 7		3.7	.1															34	34	48	37
6/ 5		3.4																31	31	32	22
4/ 3		2.9																26	26	34	28
2/ 1	.1	1.9																18	20	23	40
0/ -1	.4	1.4																17	17	23	29
-2/ -3	.1	1.4																14	14	16	19
-4/ -5	.1	1.9																18	18	9	29
-6/ -7	.4	.8																11	11	23	29
-8/ -9	.2	.1																3	3	7	25
-10/-11	.2																	2	2	2	24
-12/-13	.2																	2	3	2	13
-14/-15																					18
-16/-17	.1																	1	1	1	19
-18/-19																					20
-20/-21																					7
-22/-23																					4
-24/-25																					5

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72785 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

 1500-1700 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-26/-27																					4
-25/-29																					1
TOTAL	13.6	65.7	18.0	2.7	.1													900	903	900	900

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≥ 0 F	≥ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	856187	62368	69.3	16.322	900							
Dry Bulb	812274	16892	18.3	11.097	903	7.1	85.0					93
Wet Bulb	359656	19975	16.6	10.834	900	8.6	89.1					93
Dew Point	270088	8570	9.5	18.829	900	25.8	90.8					93

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GPO 824-512/1119

2

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
52/ 51		.2																2	2	2	
50/ 49		.1																1	1	1	3
36/ 35	.6	.7	.1	.7														18	18	5	2
34/ 33	.9	.9	.2															18	18	15	17
32/ 31	.1	3.8	1.9	.2														54	54	16	7
30/ 29	1.6	3.0	.6	.1														47	47	56	28
28/ 27	1.1	4.3	.4	.1														54	54	58	25
26/ 25	.6	4.3	.6	.1														50	50	48	27
24/ 23	1.4	3.4	.6															49	49	74	38
22/ 21	2.0	6.1	.8															80	80	58	62
20/ 19	.9	6.3	1.2															76	76	62	65
18/ 17	.6	3.1	.8	.1														41	41	67	56
16/ 15	.7	2.7	.3															33	33	36	44
14/ 13	1.0	4.3	.1															49	49	37	54
12/ 11	.3	2.8	.3															31	31	46	35
10/ 9	.4	4.7	.7															52	52	39	36
8/ 7	.2	2.4	.1															25	25	40	39
6/ 5	.3	2.4																25	25	31	20
4/ 3	.4	3.8																38	38	39	30
2/ 1	.1	4.4																41	41	34	39
0/ -1	1.2	1.0																20	20	34	20
-2/ -3	1.0	1.6																23	24	23	14
-4/ -5	.3	2.4																25	25	16	26
-6/ -7	.6	1.8																21	22	27	33
-8/ -9	1.0	.1																10	10	20	37
-10/-11	.8																	7	7	8	37
-12/-13	.6																	5	5	5	19
-14/-15	.3																	3	3	3	16
-16/-17																					18
-18/-19	.1																	1	1	1	16
-20/-21	.3																	3	3	3	19
-22/-23																					6
-24/-25																					9
-26/-27																					1

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.												
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

 1800-2000 (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-28/-29																					1
-30/-31																					1
TOTAL	19.4	70.6	8.6	1.3														902	908	902	902

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_X	No. Obs.	Mean No. of Hours with Temperature ≤						
						0 F	32 F	67 F	73 F	88 F	93 F	Total
Rel. Hum.	8987111	65399	72.5	15.088	902							
Dry Bulb	357941	16177	15.7	12.255	908	12.3	89.0					93
Wet Bulb	318075	13033	14.9	12.001	902	14.9	90.6					93
Dew Point	265788	7360	8.2	15.111	902	28.9	90.7					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
52/ 51		.2																2	2		
50/ 49																				2	1
48/ 47		.1																1	1		1
46/ 45																				1	
44/ 43																					1
36/ 35	.7	.8	.2	.2														17	17	6	6
34/ 33	.8	1.3	.2	.2														23	23	17	12
32/ 31	.7	2.4	.8															34	34	20	14
30/ 29	1.6	2.7	.8															45	45	42	21
28/ 27	1.9	2.7	.3															44	44	46	24
26/ 25	1.1	4.6	1.1															61	61	50	35
24/ 23	2.0	3.9	.3															56	56	75	24
22/ 21	1.1	4.4	.1															50	50	54	47
20/ 19	2.2	4.8	1.0															72	72	59	79
18/ 17	.4	4.9	.4															52	52	48	49
16/ 15	1.5	3.0	.3															43	44	62	46
14/ 13	1.5	2.8	.1															39	39	34	55
12/ 11	1.0	3.5	.2															42	42	37	52
10/ 9	.4	3.5	.4															39	39	48	36
8/ 7	.4	3.4																34	34	23	24
6/ 5		2.2																20	20	35	19
4/ 3	.6	2.8																30	30	34	35
2/ 1	.2	5.3																49	49	35	27
0/ -1	.8	1.3																19	19	33	21
-2/ -3	1.8	.8																23	23	31	18
-4/ -5	.9	2.0																26	26	16	25
-6/ -7	1.5	1.2																24	24	29	33
-8/ -9	1.8	.1																17	17	24	34
-10/-11	.7																	6	6	7	31
-12/-13	1.2																	11	11	11	17
-14/-15	.4																	4	4	4	15
-16/-17	.2																	2	2	2	21
-18/-19	.2																	2	2	2	25
-20/-21	.3																	3	3	3	15

Element (X)	$\Sigma x'$	Σx	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≤ 67 F	≥ 73 F	≥ 80 F	≥ 92 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AS 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

U.S. GOVERNMENT PRINTING OFFICE: 1981 (64-012/21-19

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) DEC (MONTH)

 2100-2300 HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																		TOTAL D.B./W.B.	TOTAL		
	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			Dry Bulb	Wet Bulb	Dew Point
-22/-23	.1																		1	1	1	8
-24/-25	.2																		2	2	2	12
-26/-27																						3
-28/-29																						2
-30/-31																						2
-32/-33																						2
-36/-37																						1
TOTAL	28.3	64.7	6.5	.8																898		893
																			893		893	

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	5118639	66351	78.3	18.588	893							
Dry Bulb	338350	13066	14.6	12.897	898	14.6	88.5					93
Wet Bulb	305536	12088	13.5	12.613	893	17.2	90.3					93
Dew Point	268881	6869	7.7	15.563	893	29.7	90.8					93

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

PAGE 1 | ALL HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
52/ 51		.1																4	4	2	
50/ 49		.0																3	3	5	6
48/ 47		.0																2	2		1
46/ 45	.0	.0																4	4	5	4
44/ 43	.0	.0	.0															3	3	2	2
42/ 41	.1		.0															6	6	5	6
40/ 39	.0		.0	.0														8	8	3	2
38/ 37	.0	.0	.0	.1	.0													18	18	5	3
36/ 35	.4	.7	.4	.2														126	126	40	14
34/ 33	.9	1.6	.5	.1														220	220	162	91
32/ 31	.7	2.4	1.1	.1														311	311	208	148
30/ 29	1.5	2.4	.6	.1														329	329	315	196
28/ 27	1.9	3.1	.7	.1														415	415	435	225
26/ 25	1.4	4.5	.7	.1														474	474	382	313
24/ 23	1.2	3.3	.3	.0														348	348	536	222
22/ 21	1.7	4.8	.5	.0														509	509	499	386
20/ 19	2.5	5.0	.9	.0														614	614	458	541
18/ 17	1.2	3.0	.5	.0														337	337	474	459
16/ 15	1.2	2.8	.4															315	316	326	400
14/ 13	1.5	3.3	.2															366	366	303	406
12/ 11	1.1	3.5	.5															363	363	342	320
10/ 9	.9	3.4	.4															344	347	378	304
8/ 7	.7	2.8	.1															252	252	311	265
6/ 5	.3	2.5																205	205	249	168
4/ 3	.4	2.7																225	225	252	248
2/ 1	.3	3.8																294	296	259	248
0/ -1	1.4	1.4																202	203	256	186
-2/ -3	1.3	1.3																191	192	227	140
-4/ -5	1.1	1.5																185	185	148	196
-6/ -7	1.2	.8																141	142	190	242
-8/ -9	1.3	.0																97	97	132	236
-10/-11	.9																	63	63	65	243
-12/-13	.7																	53	54	53	161
-14/-15	.8																	55	55	55	156

Element (X)	$\Sigma X'$	ΣX	$\bar{X}$	σ_n	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 90 F	≥ 92 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 YEARS | DEC MONTH

 ALL HOURS (L. S. T.)

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
-16/-17	.7																	48	48	48	135
-18/-19	.5																	36	36	36	163
-20/-21	.4																	26	26	26	99
-22/-23	.3																	19	19	19	78
-24/-25	.1																	7	7	7	101
-26/-27	.0																	3	3	3	81
-28/-29																					24
-30/-31																					18
-32/-33																					17
-34/-35																					6
-36/-37																					5
TOTAL	30.7	60.6	7.8	.9	.0														7231		7221
																		7221		7221	

Element (X)	$\Sigma x'$	Σx	$\bar{x}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.	81571988	537178	74.8	18.939	7221	≤ 0 F	≤ 32 F	≤ 67 F	≤ 73 F	≤ 80 F	≤ 93 F	Total
Dry Bulb	2812216	107928	14.9	12.970	7231	116.3	703.5					744
Wet Bulb	2533989	99503	13.8	12.688	7221	130.3	720.4					744
Dew Point	2212888	57270	7.9	15.607	7221	231.1	730.7					744

USAFETAC FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
94/ 93										.0	.0			.0				8	8		
92/ 91								.0	.0	.0	.0	.0	.0					31	31		
90/ 89							.0	.0	.0	.0	.0	.0	.0					56	56		
88/ 87							.0	.0	.0	.0	.0	.0	.0	.0				68	68		
86/ 85						.0	.0	.0	.0	.0	.0	.0	.0		.0			141	141		
84/ 83				.0	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0			176	179		
82/ 81				.0	.0	.0	.0	.1	.0	.1	.0	.0	.0	.0				268	268		
80/ 79			.0	.0	.1	.1	.1	.1	.1	.0	.1	.0	.0	.0				508	508		
78/ 77			.0	.1	.2	.2	.2	.2	.2	.1	.1	.0	.0	.0				1002	1002	8	
76/ 75		.0	.0	.1	.2	.1	.2	.2	.1	.1	.0	.0	.0					1016	1017	82	1
74/ 73		.0	.1	.2	.2	.2	.2	.2	.1	.1	.0	.0	.0					1033	1033	132	3
72/ 71	.0	.0	.1	.2	.2	.2	.2	.2	.1	.0	.0	.0						1084	1084	346	69
70/ 69	.0	.1	.2	.2	.3	.2	.2	.1	.1	.0	.0							1284	1285	533	197
68/ 67	.0	.2	.4	.3	.4	.3	.3	.2	.1	.1	.0							1859	1859	900	402
66/ 65	.0	.3	.5	.4	.4	.3	.2	.2	.1	.1	.0							2196	2198	1223	651
64/ 63	.0	.7	.6	.7	.5	.4	.3	.2	.2	.1	.0							3056	3058	1857	1048
62/ 61	.0	.8	.7	.5	.4	.4	.2	.1	.1	.1	.0							2845	2848	2429	1295
60/ 59	.1	.8	.7	.5	.4	.2	.2	.1	.1	.0	.0							2538	2540	2900	1807
58/ 57	.1	.9	.6	.4	.2	.2	.2	.1	.0	.0								2376	2377	3143	2065
56/ 55	.1	1.1	.8	.5	.3	.2	.2	.1	.0	.0								2737	2738	3018	2719
54/ 53	.2	1.1	.8	.5	.3	.3	.2	.1	.0									2831	2832	3101	2935
52/ 51	.1	1.0	.8	.4	.3	.3	.1	.0	.0									2621	2623	3182	2717
50/ 49	.2	1.1	1.0	.4	.4	.3	.2	.0	.0									3066	3072	3091	3066
48/ 47	.1	1.2	.7	.5	.4	.2	.1	.0										2726	2728	3015	2706
46/ 45	.1	1.1	.5	.5	.4	.2	.1	.0										2391	2394	3033	3194
44/ 43	.1	.9	.5	.4	.3	.1	.0											1955	1959	2718	2874
42/ 41	.1	.8	.5	.5	.2	.1	.0											1858	1860	2486	2316
40/ 39	.2	.8	.7	.5	.2	.1	.0											2184	2184	2374	2364
38/ 37	.3	1.1	.8	.5	.2	.0												2458	2460	2487	2056
36/ 35	.3	1.2	.8	.6	.1	.0												2680	2686	2711	2282
34/ 33	.4	1.6	.9	.5	.1	.0												3024	3042	3184	2789
32/ 31	.5	1.7	1.4	.3	.1	.0												3411	3431	3185	3514
30/ 29	.4	1.3	.8	.2	.0													2254	2266	2991	2859
28/ 27	.5	1.4	.7	.1	.0													2293	2306	3279	2726

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

FORM AM 64 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

USAFETAC

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

 ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL Dry Bulb	TOTAL Wet Bulb	TOTAL Dew Point
	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				
26/ 25	.5	1.7	.5	.1	.0													2395	2401	2742	3033
24/ 23	.4	1.3	.3	.1														1828	1836	2678	2257
22/ 21	.7	1.5	.5	.1														2287	2293	2419	2992
20/ 19	.7	1.8	.5	.1														2527	2529	2017	3873
18/ 17	.3	1.0	.3	.0														1343	1345	2068	2535
16/ 15	.3	1.1	.2	.0														1333	1337	1825	2042
14/ 13	.4	1.0	.2	.0														1404	1404	1314	1904
12/ 11	.3	1.1	.2															1413	1419	1385	1642
10/ 9	.4	1.1	.2															1427	1431	1604	1596
8/ 7	.2	.9	.1															1008	1009	1257	1383
6/ 5	.1	.9	.0															827	828	986	910
4/ 3	.1	.9																929	930	1066	1060
2/ 1	.1	1.2																1112	1116	1004	1027
0/ -1	.5	.4																730	732	971	811
-2/ -3	.4	.4																675	677	810	761
-4/ -5	.5	.4																741	741	622	916
-6/ -7	.5	.3																672	673	786	957
-8/ -9	.6	.0																539	539	697	925
-10/-11	.4																	366	366	371	1038
-12/-13	.3																	243	245	243	621
-14/-15	.4																	320	320	320	675
-16/-17	.3																	276	276	276	582
-18/-19	.3																	270	271	270	773
-20/-21	.2																	175	176	175	885
-22/-23	.1																	96	96	96	421
-24/-25	.1																	48	48	48	397
-26/-27	.0																	31	33	31	307
-28/-29	.0																	18	19	18	201
-30/-31	.0																	9	13	9	84
-32/-33	.0																	1	5	1	73
-34/-35																					53
-36/-37																			2		53
-38/-39																					27

Element (X)	ΣX^2	ΣX	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
Rel. Hum.						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Dry Bulb												
Wet Bulb												
Dew Point												

USAFETAC FORM AS 44 0-26-5 (OL A) REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

2

PSYCHROMETRIC SUMMARY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS) ALL (MONTH)

ALL (HOURS (L. S. T.))

Temp. (F)	WET BULB TEMPERATURE DEPRESSION (F)																	TOTAL D.B./W.B.	TOTAL		
	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		Dry Bulb	Wet Bulb	Dew Point
TOTAL	13.0	38.1	18.6	10.3	6.7	4.7	3.5	2.3	1.4	.8	.3	.2	.1	.0	.0			85069	85247	85069	85069

Element (X)	$\Sigma_{X'}$	Σ_X	$\bar{X}$	σ_x	No. Obs.	Mean No. of Hours with Temperature						
						≤ 0 F	≤ 32 F	≥ 67 F	≥ 73 F	≥ 80 F	≥ 93 F	Total
Rel. Hum.	448368959	5988433	70.4	17.754	85069							
Dry Bulb	171982874	3301812	38.7	22.744	85247	536.7	3398.8	879.0	443.7	98.4	.8	8760
Wet Bulb	138795011	2967475	34.9	20.365	85069	593.0	3829.3	206.0	22.8			8760
Dew Point	112980597	2471401	29.1	22.002	85069	1049.0	4687.3	69.3	.9			8760

USAFETAC FORM 0-26-5 (OL A) JUL 64 REVISED PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

MEANS AND STANDARD DEVIATIONS

DRY-BULB TEMPERATURES DEG F FROM HOURLY OBSERVATIONS

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS)

HRS (L S T)		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
00-02	MEAN	4.7	11.3	22.3	33.8	45.4	52.8	59.9	57.0	49.3	40.2	27.4	13.8	34.9
	S D	14.777	13.854	11.397	8.643	8.517	6.922	6.736	7.298	8.637	8.680	11.174	13.310	20.812
	TOTAL OBS	910	829	916	879	908	871	911	906	887	905	870	909	10696
03-05	MEAN	3.1	9.6	20.5	32.3	43.5	51.2	58.2	55.7	47.9	38.8	26.4	12.6	33.5
	S D	15.547	14.891	12.339	9.170	8.529	6.907	6.739	7.467	8.753	8.888	11.423	13.872	20.978
	TOTAL OBS	887	830	907	872	905	870	910	901	876	914	877	896	10695
06-08	MEAN	1.9	8.5	19.8	33.9	47.6	56.0	62.2	58.2	48.7	38.7	25.7	11.9	34.5
	S D	15.825	15.277	12.808	9.638	8.843	6.710	5.979	6.647	8.401	8.455	11.768	14.181	22.628
	TOTAL OBS	911	826	919	887	913	876	904	902	880	909	872	911	10705
09-11	MEAN	4.8	12.8	25.1	40.4	54.9	62.9	69.8	65.2	55.5	44.2	28.9	14.0	40.0
	S D	15.025	13.347	10.526	10.963	10.388	7.864	6.710	6.375	8.470	8.843	11.746	13.156	23.881
	TOTAL OBS	906	814	899	878	907	870	906	887	875	905	876	904	10627
12-14	MEAN	10.4	18.3	29.4	44.5	59.0	66.8	73.5	69.2	59.8	48.5	32.8	18.0	44.3
	S D	13.041	11.925	9.785	11.737	11.023	8.498	7.530	7.404	9.425	9.898	11.978	11.276	23.509
	TOTAL OBS	901	826	916	881	908	883	905	887	889	899	875	910	10680
15-17	MEAN	11.7	19.7	30.5	45.2	59.4	66.9	74.1	69.8	60.2	48.5	32.6	18.3	44.9
	S D	12.603	11.879	9.411	11.795	10.996	8.824	7.813	7.535	9.742	9.799	11.654	11.097	23.322
	TOTAL OBS	910	817	909	879	904	868	918	892	880	903	870	903	10639
18-20	MEAN	8.5	16.3	27.7	41.2	54.8	62.9	70.0	66.9	56.6	43.8	29.4	15.7	40.9
	S D	13.298	12.332	9.312	10.381	9.929	8.399	7.647	6.937	8.820	8.541	10.811	12.255	22.564
	TOTAL OBS	907	825	901	876	907	871	909	901	879	911	881	904	10667
21-23	MEAN	6.5	13.9	24.6	36.9	48.6	55.9	62.9	59.2	50.8	41.5	27.9	14.6	36.9
	S D	13.886	12.991	10.245	8.885	8.457	6.751	6.623	6.577	8.462	8.406	10.973	12.847	20.964
	TOTAL OBS	904	817	905	871	902	865	902	897	872	893	866	899	10588
ALL HOURS	MEAN	6.5	13.7	25.0	38.5	51.6	59.4	66.3	62.4	53.4	43.0	28.9	14.9	38.7
	S D	14.651	13.892	11.422	11.257	11.234	9.612	9.100	8.754	9.977	9.687	11.704	12.970	22.744
	TOTAL OBS	7236	6589	7262	7013	7254	6974	7256	7173	7038	7239	6987	7231	85297

USAFETAC FORM JUL 64 0-89-5 (OLA)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

MEANS AND STANDARD DEVIATIONS

WET-BULB TEMPERATURES DEG F FROM HOURLY OBSERVATIONS

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS)

HRS (L S T)		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
00-02	MEAN	4.0	10.4	20.7	30.7	41.1	49.6	56.5	54.3	46.8	37.1	25.5	12.9	32.6
	S D	14.269	13.428	11.193	7.932	7.946	6.415	6.009	6.944	8.085	8.068	10.629	13.028	19.771
	TOTAL OBS	899	824	912	872	908	871	910	905	887	904	870	909	10671
03-05	MEAN	2.4	8.9	19.2	29.8	40.0	48.5	55.4	53.4	45.7	36.3	24.6	12.0	31.6
	S D	14.897	14.488	12.091	8.721	8.034	6.491	6.176	7.245	8.264	8.412	10.957	13.625	20.099
	TOTAL OBS	870	830	907	871	905	868	909	899	876	913	876	895	10619
06-08	MEAN	1.6	7.8	18.7	31.0	42.9	51.9	58.3	55.5	46.4	36.4	24.1	11.2	32.3
	S D	15.229	14.928	12.558	8.811	7.859	5.947	5.149	6.324	7.843	8.031	11.298	13.958	21.311
	TOTAL OBS	895	824	912	886	913	876	902	902	880	909	872	908	10679
09-11	MEAN	4.1	11.7	22.9	35.1	46.9	55.3	61.7	59.2	50.4	39.8	26.6	13.2	35.7
	S D	14.402	12.866	10.162	8.729	8.155	6.012	5.196	5.495	7.217	7.641	10.813	12.967	21.178
	TOTAL OBS	888	808	899	878	907	870	906	886	875	905	875	904	10601
12-14	MEAN	9.0	16.1	26.0	37.4	48.9	57.0	63.3	60.8	52.2	41.8	29.0	16.4	38.2
	S D	12.487	11.245	8.951	8.628	8.022	5.970	5.517	5.842	7.393	7.787	10.342	11.115	20.003
	TOTAL OBS	894	824	916	879	904	883	904	886	889	898	875	910	10662
15-17	MEAN	10.0	17.2	26.7	37.5	48.7	56.9	63.3	60.9	52.2	41.7	28.7	16.6	38.5
	S D	11.941	10.962	8.478	8.434	7.867	5.807	5.693	5.843	7.488	7.681	9.994	10.834	19.665
	TOTAL OBS	900	815	902	873	903	868	913	891	879	903	869	900	10616
18-20	MEAN	7.4	14.5	24.6	35.0	46.2	54.9	61.7	58.8	49.8	39.1	26.7	14.4	36.2
	S D	12.814	11.681	8.829	7.978	7.730	5.996	5.779	5.832	7.524	7.529	9.920	12.001	19.921
	TOTAL OBS	904	823	898	875	905	870	902	901	878	910	881	902	10649
21-23	MEAN	5.5	12.1	22.5	32.4	43.1	51.6	58.0	55.9	47.7	37.9	25.7	13.5	34.0
	S D	13.401	12.528	10.014	7.701	7.819	6.002	5.782	6.202	7.768	7.752	10.344	12.613	19.649
	TOTAL OBS	895	817	905	870	902	864	901	897	872	892	864	893	10572
ALL HOURS	MEAN	5.5	12.3	22.7	33.6	44.7	53.2	59.8	57.3	48.9	38.7	26.4	13.8	34.9
	S D	14.006	13.215	10.752	8.843	8.541	6.797	6.358	6.814	8.073	8.136	10.670	12.688	20.365
	TOTAL OBS	7145	6565	7251	7004	7247	6970	7247	7167	7036	7234	6982	7221	85069

USAFETAC FORM JUL 64 0-89-5 (OLA)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

MEANS AND STANDARD DEVIATIONS

DEW-POINT TEMPERATURES DEG F FROM HOURLY OBSERVATIONS

72765 — STATION
DULUTH IAP MN — STATION NAME
73-82 — YEARS

HRS L S T		JAN	FEB	MAR	APR.	MAY	JUN.	JUL.	AUG	SEP.	OCT	NOV	DEC	ANNUAL
00-02	MEAN	-2.4	4.3	15.2	25.1	35.8	46.7	54.0	52.3	44.5	32.9	20.7	7.6	28.2
	S D	17.175	15.939	14.089	9.676	9.976	7.200	6.149	7.372	8.497	9.215	12.377	15.733	21.855
	TOTAL OBS	899	824	912	872	908	871	910	905	887	909	870	909	10671
03-05	MEAN	-3.9	3.3	14.4	24.9	35.6	46.1	53.4	51.7	43.7	32.6	20.2	6.8	27.6
	S D	17.989	16.978	14.533	10.471	9.654	7.045	6.281	7.597	8.607	9.432	12.593	16.360	22.168
	TOTAL OBS	870	830	907	871	905	868	909	899	876	913	876	895	10619
06-08	MEAN	-4.7	2.3	14.0	25.8	37.3	48.4	55.7	53.5	44.3	33.0	19.9	6.1	28.1
	S D	18.469	17.450	14.902	10.457	9.775	6.881	5.536	6.812	8.276	8.934	13.025	16.718	23.144
	TOTAL OBS	895	824	912	886	913	876	902	902	880	909	872	908	10679
09-11	MEAN	-2.3	5.4	16.7	27.0	38.3	49.2	56.6	54.8	45.7	34.1	21.4	7.9	29.7
	S D	17.119	15.507	13.077	10.388	10.880	7.498	6.493	7.028	8.368	8.863	12.421	15.762	22.402
	TOTAL OBS	888	808	899	878	907	870	906	886	875	905	875	904	10681
12-14	MEAN	.9	7.9	17.9	27.3	38.4	49.4	56.7	54.9	45.4	33.7	21.7	9.7	30.4
	S D	15.611	14.380	12.153	10.155	11.064	7.685	7.070	7.664	9.086	9.448	12.081	14.718	21.426
	TOTAL OBS	894	824	916	879	904	883	904	886	889	898	875	910	10662
15-17	MEAN	1.2	7.9	17.9	26.4	37.4	49.0	56.4	54.8	45.1	33.3	21.2	9.5	30.2
	S D	15.291	14.248	11.988	10.210	11.165	7.432	7.262	7.689	9.229	9.627	11.929	14.479	21.299
	TOTAL OBS	900	815	902	873	903	868	913	891	879	903	869	900	10616
18-20	MEAN	-.1	6.6	16.8	25.8	36.8	48.4	56.2	54.5	45.4	32.8	20.6	8.2	29.4
	S D	15.989	14.925	12.473	9.978	11.173	7.538	6.980	7.041	8.448	9.308	11.893	15.111	21.709
	TOTAL OBS	904	823	898	875	905	870	902	901	876	910	881	902	10649
21-23	MEAN	-1.4	5.4	16.3	25.8	36.8	47.9	55.3	53.4	44.8	32.9	20.5	7.7	28.8
	S D	16.369	15.443	13.131	9.573	10.529	7.016	6.239	6.834	8.348	9.226	12.202	15.563	21.798
	TOTAL OBS	895	817	905	870	902	869	901	897	872	892	864	893	10572
ALL HOURS	MEAN	-1.6	5.4	16.2	25.9	36.9	48.2	55.8	53.7	44.9	33.2	20.8	7.9	29.1
	S D	16.779	15.757	13.401	10.147	10.585	7.371	6.611	7.350	8.634	9.267	12.327	15.607	22.002
	TOTAL OBS	7195	6565	7251	7009	7247	6970	7247	7167	7036	7239	6982	7221	85069

USAFETAC FORM JUL 64 0-89-5 (OLA)

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) JAN (MONTH)

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
JAN	00-02	100.0	100.0	100.0	99.9	97.9	77.0	49.5	30.7	13.3	72.5	899
	03-05	100.0	100.0	100.0	100.0	98.7	82.2	50.8	30.1	14.6	73.1	870
	06-08	100.0	100.0	100.0	100.0	98.8	81.7	51.2	31.4	16.3	73.4	895
	09-11	100.0	100.0	100.0	99.5	96.4	77.7	52.3	30.2	14.6	72.6	888
	12-14	100.0	100.0	99.9	97.8	84.2	56.9	37.4	20.8	10.0	66.5	894
	15-17	100.0	100.0	99.8	95.3	73.9	53.2	32.8	17.9	8.4	63.9	900
	18-20	100.0	100.0	99.9	99.0	86.9	63.8	43.1	24.4	11.3	68.5	904
	21-23	100.0	100.0	100.0	100.0	95.4	71.4	46.4	27.9	13.6	70.9	895
TOTALS		100.0	100.0	100.0	98.9	91.5	70.5	45.4	26.7	12.8	70.2	7145

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) FEB (MONTH)

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
FEB	00-02	100.0	100.0	100.0	99.4	96.5	82.0	55.0	32.4	13.8	73.6	824
	03-05	100.0	100.0	100.0	99.8	98.6	87.5	61.0	36.3	15.5	75.5	830
	06-08	100.0	100.0	100.0	99.9	99.2	88.3	62.6	37.5	16.6	75.8	824
	09-11	100.0	100.0	100.0	99.3	94.6	78.0	53.3	32.7	13.4	72.7	808
	12-14	100.0	100.0	99.4	94.1	80.3	57.8	35.8	19.4	6.9	65.0	824
	15-17	100.0	99.6	97.8	90.4	69.8	49.9	30.9	15.3	5.4	61.5	815
	18-20	100.0	99.9	99.0	95.4	80.6	60.8	39.9	22.7	8.4	66.4	823
	21-23	100.0	100.0	99.9	98.7	91.9	71.5	51.2	30.0	9.7	70.8	817
TOTALS		100.0	99.9	99.5	97.1	88.9	72.0	48.7	28.3	11.2	70.2	6565

USAFETAC FORM JUL 64 0-87-5 (OL A)

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745	DULUTH IAP MN	73-82	MAR
STATION	STATION NAME	PERIOD	MONTH

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
MAR	00-02	100.0	100.0	100.0	99.5	94.6	79.5	61.5	39.3	20.1	74.9	912
	03-05	100.0	100.0	100.0	99.9	97.4	86.2	67.4	44.4	22.1	77.5	907
	06-08	100.0	100.0	100.0	100.0	97.3	89.7	70.4	49.9	23.1	78.5	912
	09-11	100.0	100.0	99.8	97.4	89.5	72.1	50.6	33.3	17.0	71.6	899
	12-14	100.0	100.0	98.4	88.9	73.4	54.4	36.0	24.3	10.5	64.2	916
	15-17	100.0	99.9	97.5	84.9	68.1	48.9	33.8	22.9	10.6	62.1	902
	18-20	100.0	100.0	98.4	90.1	74.4	58.2	40.8	28.5	12.5	65.8	898
	21-23	100.0	100.0	100.0	97.9	88.3	71.2	52.9	34.6	17.1	71.7	905
TOTALS		100.0	100.0	99.3	94.8	85.4	70.0	51.7	34.7	16.6	70.8	7251

USAFETAC FORM 0-87-5 (OL A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) APR (MONTH)

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
APR	00-02	100.0	100.0	100.0	97.9	89.8	74.5	52.3	33.4	14.6	72.0	872
	03-05	100.0	100.0	100.0	99.2	94.1	82.7	62.1	43.3	18.5	75.5	871
	06-08	100.0	100.0	99.8	97.7	91.6	76.9	58.8	39.5	17.3	73.7	886
	09-11	100.0	100.0	95.7	83.0	66.6	49.1	34.6	23.3	11.5	61.9	878
	12-14	100.0	99.3	87.9	68.9	51.0	36.3	26.5	15.9	7.1	54.8	879
	15-17	100.0	98.4	80.9	61.7	47.7	35.6	21.6	12.7	8.1	52.0	873
	18-20	100.0	99.4	90.9	75.9	56.5	40.0	26.1	15.9	8.3	56.9	875
	21-23	100.0	99.9	98.9	94.5	78.5	60.3	39.7	25.2	10.1	66.9	870
TOTALS		100.0	99.6	94.1	84.8	72.0	56.6	40.2	26.2	11.9	64.2	7004

USAFETAC FORM AWS 64 0-87-5 (OL A)

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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 PERIOD | MAY MONTH

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
MAY	00-02	100.0	100.0	99.9	95.6	85.9	70.5	53.7	34.0	14.5	71.0	908
	03-05	100.0	100.0	100.0	98.2	91.7	79.7	63.5	42.9	18.1	75.1	905
	06-08	100.0	100.0	98.8	93.9	82.8	68.5	49.6	33.4	15.3	69.9	913
	09-11	100.0	98.8	87.9	74.0	59.2	43.2	29.7	19.3	8.7	57.8	907
	12-14	100.0	96.6	77.9	60.0	43.6	32.2	22.0	13.7	6.9	50.9	904
	15-17	100.0	95.5	73.2	55.8	40.3	28.5	19.0	13.0	6.1	48.8	903
	18-20	100.0	98.1	82.7	66.5	51.2	38.5	26.2	16.0	7.3	54.3	905
	21-23	100.0	100.0	98.0	89.1	73.7	58.1	41.2	26.5	10.0	65.4	902
TOTALS		100.0	98.6	89.8	79.1	66.1	52.9	38.1	24.9	10.9	61.7	7247

USAFETAC FORM JUL 64 0-87-5 (OL A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72795 STATION | DULUTH IAP MN STATION NAME | 73-82 PERIOD | JUN MONTH

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
JUN	00-02	100.0	100.0	100.0	99.9	99.0	92.1	80.5	56.3	20.6	80.5	871
	03-05	100.0	100.0	100.0	100.0	99.8	96.2	87.8	63.9	27.5	83.3	868
	06-08	100.0	100.0	100.0	99.5	96.5	88.9	67.5	43.4	17.6	76.9	876
	09-11	100.0	100.0	99.5	90.9	73.4	50.1	32.9	17.1	7.0	63.2	870
	12-14	100.0	100.0	95.5	80.0	53.7	36.6	22.0	11.1	4.8	56.2	883
	15-17	100.0	100.0	94.7	73.6	53.7	35.6	24.1	11.2	4.7	55.6	868
	18-20	100.0	100.0	98.9	85.3	68.2	50.2	32.8	18.6	6.3	61.8	870
	21-23	100.0	100.0	100.0	99.8	96.1	84.4	65.6	38.9	12.8	75.6	869
TOTALS		100.0	100.0	98.6	91.1	80.1	66.3	51.7	32.6	12.7	69.1	6970

USAFETAC FORM AM 64 0-87-5 (OL A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) JUL (MONTH)

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
JUL	00-02	100.0	100.0	100.0	100.0	100.0	98.5	86.3	54.8	12.1	81.1	910
	03-05	100.0	100.0	100.0	100.0	100.0	99.7	94.4	70.2	17.8	84.2	909
	06-08	100.0	100.0	100.0	100.0	99.6	93.7	78.8	48.3	16.0	79.7	902
	09-11	100.0	100.0	100.0	96.1	81.3	58.7	35.3	18.2	5.2	65.4	906
	12-14	100.0	100.0	99.3	86.4	62.4	38.7	19.9	10.7	2.1	57.6	904
	15-17	100.0	100.0	98.4	83.7	58.3	33.0	16.1	8.3	2.3	55.8	913
	18-20	100.0	100.0	99.6	94.3	78.6	55.4	30.0	14.6	2.5	63.3	902
	21-23	100.0	100.0	100.0	100.0	99.7	93.6	71.5	37.8	6.1	76.8	901
TOTALS		100.0	100.0	99.7	95.1	85.0	71.4	54.0	32.9	8.0	70.5	7247

USAFETAC FORM JUL 64 0-87-5 (OL A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) AUG (MONTH)

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
AUG	00-02	100.0	100.0	100.0	99.8	99.7	97.7	93.5	70.9	24.1	84.5	905
	03-05	100.0	100.0	100.0	99.9	99.9	98.9	94.5	80.3	31.1	86.5	899
	06-08	100.0	100.0	100.0	100.0	99.9	97.9	89.4	68.0	30.3	84.6	902
	09-11	100.0	100.0	99.9	98.8	90.1	70.7	48.8	29.8	10.9	70.6	886
	12-14	100.0	100.0	99.3	93.3	70.1	47.9	31.0	16.8	5.6	62.3	886
	15-17	100.0	100.0	98.9	90.0	67.8	47.7	28.8	16.5	5.5	61.2	891
	18-20	100.0	100.0	99.8	98.1	89.1	73.4	51.5	26.9	6.8	70.4	901
	21-23	100.0	100.0	100.0	100.0	99.4	96.5	87.1	55.5	14.4	81.3	897
TOTALS		100.0	100.0	99.7	97.5	89.5	78.8	65.6	45.8	16.1	75.2	7167

USAFETAC FORM JUL 64 0-87-5 (OL A)

2

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) SEP (MONTH)

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
SEP	00-02	100.0	100.0	100.0	100.0	99.3	98.1	91.0	70.0	21.6	83.7	887
	03-05	100.0	100.0	100.0	100.0	99.5	97.8	93.2	78.2	29.1	85.8	876
	06-08	100.0	100.0	100.0	99.9	99.2	96.9	90.3	72.7	31.8	85.1	880
	09-11	100.0	99.9	99.5	97.8	89.5	72.6	51.4	32.0	13.5	71.4	875
	12-14	100.0	99.7	97.0	87.6	68.4	47.5	31.7	18.2	6.7	61.6	889
	15-17	100.0	99.8	95.3	85.8	65.2	46.4	31.5	16.4	4.9	60.4	879
	18-20	100.0	100.0	99.7	97.6	92.4	78.2	59.3	30.2	8.3	72.5	878
	21-23	100.0	100.0	100.0	99.9	98.1	95.2	82.6	54.6	15.9	80.5	872
TOTALS		100.0	99.9	98.9	96.1	89.0	79.1	66.4	46.5	16.5	75.1	7036

USAFETAC FORM JUL 64 0-87-5 (OL A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) OCT (MONTH)

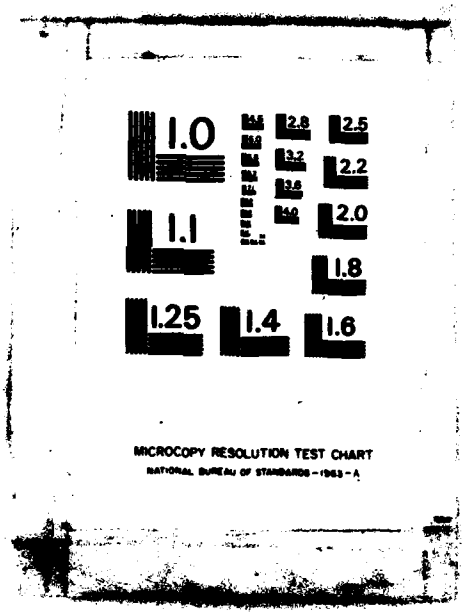
CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
OCT	00-02	100.0	100.0	100.0	99.3	96.0	85.6	66.2	43.4	14.7	76.3	904
	03-05	100.0	100.0	100.0	99.7	98.5	92.7	77.2	50.3	17.5	79.3	913
	06-08	100.0	100.0	100.0	99.9	99.1	94.6	79.8	54.5	18.4	80.4	909
	09-11	100.0	100.0	99.4	96.1	86.9	69.0	45.3	28.6	10.4	69.4	905
	12-14	100.0	99.6	95.5	85.0	63.8	41.1	28.2	18.7	7.8	59.6	898
	15-17	100.0	99.7	94.5	81.3	60.8	41.7	26.8	17.7	6.6	58.8	903
	18-20	100.0	100.0	99.6	93.6	81.6	63.5	44.7	25.7	8.2	67.4	910
	21-23	100.0	100.0	100.0	99.1	91.6	78.7	56.5	35.7	10.7	72.9	892
TOTALS		100.0	99.9	98.6	94.3	84.8	70.9	53.1	34.3	11.8	70.5	7234

USAFETAC FORM JUL 64 0-87-5 (OL A)

AD-A134 200 DULUTH DULUTH IAP MINNESOTA REVISED UNIFORM SUMMARY OF SURFACE WEATHER OB..(U) AIR FORCE ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER SCOTT A.. 01 AUG 83

UNCLASSIFIED USAFETAC/DS-83/030 SBI-AD-E850 418 F/G 4/2 NL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MICROCOPY RESOLUTION TEST CHART
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GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72795 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (PERIOD) NOV (MONTH)

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE
(FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
NOV	00-02	100.0	100.0	100.0	99.9	97.9	88.0	68.3	39.3	14.5	76.4	870
	03-05	100.0	100.0	100.0	100.0	98.7	90.4	71.9	44.6	16.3	77.9	876
	06-08	100.0	100.0	100.0	100.0	98.5	91.5	75.1	52.2	18.5	78.9	872
	09-11	100.0	100.0	99.8	98.5	93.4	81.4	64.0	38.1	16.7	74.5	875
	12-14	100.0	100.0	98.2	93.8	79.1	61.1	39.1	21.9	9.8	65.8	875
	15-17	100.0	100.0	97.8	90.8	77.8	59.8	39.1	20.9	8.5	64.9	869
	18-20	100.0	100.0	100.0	96.8	88.8	75.3	51.6	29.9	10.0	70.8	881
	21-23	100.0	100.0	100.0	99.2	94.6	83.6	61.8	36.6	12.8	74.4	864
TOTALS		100.0	100.0	99.5	97.3	91.0	78.9	58.9	35.5	13.4	73.8	6982

USAFETAC FORM 0-07-5 (OL A)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72745 STATION | DULUTH IAP MN STATION NAME | 73-82 PERIOD | DEC MONTH

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
DEC	00-02	100.0	100.0	100.0	100.0	97.9	83.4	66.3	44.7	17.1	76.5	909
	03-05	100.0	100.0	100.0	99.9	97.7	86.0	68.2	48.9	20.0	77.5	895
	06-08	100.0	100.0	100.0	100.0	97.6	86.5	67.3	46.7	19.7	77.6	988
	09-11	100.0	100.0	100.0	100.0	97.3	82.6	64.7	46.3	18.8	76.6	904
	12-14	100.0	100.0	100.0	98.0	86.5	69.9	53.3	32.9	12.7	70.9	910
	15-17	100.0	100.0	100.0	96.6	83.4	67.6	50.0	31.0	10.1	69.3	900
	18-20	100.0	100.0	100.0	98.8	91.8	78.6	57.3	33.8	13.3	72.5	902
	21-23	100.0	100.0	100.0	99.4	95.0	77.2	61.9	37.1	15.6	74.3	893
TOTALS		100.0	100.0	100.0	99.1	93.2	78.5	61.1	40.2	15.9	74.4	7221

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

RELATIVE HUMIDITY

72795 DULUTH IAP MN 73-82 ALL
STATION STATION NAME PERIOD MONTH

CUMULATIVE PERCENTAGE FREQUENCY OF OCCURRENCE (FROM HOURLY OBSERVATIONS)

MONTH	HOURS (L.S.T.)	PERCENTAGE FREQUENCY OF RELATIVE HUMIDITY GREATER THAN									MEAN RELATIVE HUMIDITY	TOTAL NO. OF OBS.
		10%	20%	30%	40%	50%	60%	70%	80%	90%		
JAN	ALL	100.0	100.0	100.0	98.9	91.5	78.5	45.4	26.7	12.8	78.2	7145
FEB		100.0	99.9	99.5	97.1	88.9	72.0	48.7	28.3	11.2	78.2	6565
MAR		100.0	100.0	99.3	94.8	85.4	78.0	51.7	34.7	16.6	78.6	7251
APR		100.0	99.6	94.1	84.8	72.8	56.6	40.2	26.2	11.9	64.2	7004
MAY		100.0	98.6	89.8	79.1	66.1	52.4	38.1	24.9	10.9	61.7	7247
JUN		100.0	100.0	98.6	91.1	80.1	66.3	51.7	32.6	12.7	69.1	6978
JUL		100.0	100.0	99.7	95.1	85.0	71.4	54.0	32.9	8.0	78.5	7247
AUG		100.0	100.0	99.7	97.5	89.5	78.8	65.6	45.8	16.1	75.2	7167
SEP		100.0	99.9	98.9	96.1	89.0	79.1	66.4	46.5	16.5	75.1	7036
OCT		100.0	99.9	98.6	94.3	84.8	78.9	53.1	34.3	11.8	78.5	7234
NOV		100.0	100.0	99.5	97.3	91.0	78.9	58.9	35.5	13.4	73.8	6982
DEC		100.0	100.0	100.0	99.1	93.2	78.5	61.1	48.2	15.9	79.4	7221
TOTALS		100.0	99.8	98.1	93.8	84.7	78.5	52.9	34.1	13.2	78.4	85069

U S AIR FORCE
ENVIRONMENTAL TECHNICAL
APPLICATIONS CENTER

PART F PRESSURE SUMMARY

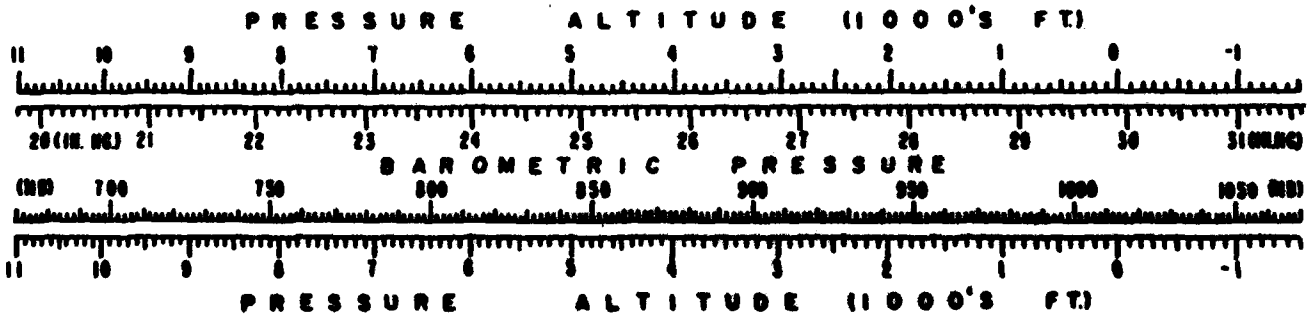
Presented in this part are two tables giving the means, standard deviations, and total number of observations of station pressure and sea-level pressure by month and annual for the local hourly observations corresponding to the eight 3-hourly synoptic times GCT. The same computations are also provided at the bottom of the page for all hours combined. All years of data available are combined in both of these tables, although the overall period is limited by service as indicated below.

NOTES: Station pressure not reported for all services until late in 1945.
Station pressure reported only at 6-hourly times for Air Force stations from Jan 64 - Jul 65.
METAR stations do not report Sea-level pressure for the period Jan 68 - Dec 70.

1. Station pressure is presented in the table in inches of mercury.

2. Sea-level pressure is presented in millibars.

Provided below is a scale to convert station pressure values in inches of mercury or millibars to pressure-altitude in 1000's of feet. This scale is an enlarged model of the pressure-altitude scale in the Smithsonian Meteorological Tables.



F

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

MEANS AND STANDARD DEVIATIONS

STATION PRESSURE IN INCHES HG FROM HOURLY OBSERVATIONS

72745 — STATION
DULUTH IAP MN — STATION NAME
73-82 — YEARS

HRS (L.S.T.)		JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC	ANNUAL
00	MEAN	28.459	28.495	28.429	28.478	28.434	28.404	28.383	28.389	28.431	28.463	28.463	28.450	28.439
	S.D.	.262	.272	.236	.225	.172	.171	.148	.148	.178	.216	.242	.258	.215
	TOTAL OBS	309	288	310	298	309	299	306	307	308	308	299	309	3629
03	MEAN	28.454	28.488	28.406	28.458	28.428	28.387	28.358	28.373	28.426	28.476	28.452	28.447	28.440	28.445
	S.D.	.269	.276	.240	.238	.178	.176	.144	.144	.177	.221	.237	.259	.216
	TOTAL OBS	299	274	302	298	301	293	308	308	299	305	284	298	3506
06	MEAN	28.454	28.498	28.421	28.478	28.438	28.413	28.378	28.398	28.461	28.488	28.457	28.446	28.442
	S.D.	.268	.277	.240	.239	.184	.188	.146	.153	.178	.222	.248	.265	.222
	TOTAL OBS	308	282	308	297	306	295	308	307	299	310	293	308	3621
09	MEAN	28.466	28.500	28.418	28.478	28.438	28.412	28.378	28.391	28.440	28.477	28.459	28.449	28.443
	S.D.	.265	.279	.245	.240	.185	.183	.148	.154	.188	.225	.248	.266	.223
	TOTAL OBS	309	272	308	298	308	288	298	288	289	308	292	301	3527
12	MEAN	28.469	28.509	28.422	28.478	28.438	28.412	28.378	28.398	28.438	28.478	28.458	28.452	28.443
	S.D.	.263	.288	.249	.238	.181	.184	.148	.148	.176	.223	.255	.266	.223
	TOTAL OBS	307	281	308	308	308	308	308	307	298	307	296	307	3621
15	MEAN	28.435	28.471	28.388	28.448	28.408	28.382	28.348	28.358	28.408	28.449	28.431	28.422	28.414
	S.D.	.258	.273	.240	.228	.171	.174	.138	.143	.168	.221	.244	.254	.214
	TOTAL OBS	301	271	298	298	308	288	308	299	298	308	287	299	3539
18	MEAN	28.466	28.498	28.418	28.478	28.438	28.412	28.378	28.398	28.447	28.481	28.463	28.453	28.443
	S.D.	.257	.266	.238	.236	.167	.175	.138	.148	.167	.212	.234	.252	.218
	TOTAL OBS	307	278	308	298	308	288	308	308	308	308	296	308	3611
21	MEAN	28.456	28.487	28.410	28.468	28.428	28.402	28.368	28.388	28.438	28.468	28.448	28.442	28.433
	S.D.	.259	.262	.238	.230	.169	.170	.138	.148	.171	.214	.236	.248	.208
	TOTAL OBS	308	278	308	308	308	288	308	308	308	307	298	309	3627
ALL HOURS	MEAN	28.457	28.493	28.414	28.468	28.428	28.402	28.368	28.388	28.438	28.468	28.448	28.442	28.433
	S.D.	.264	.272	.238	.230	.176	.176	.142	.147	.176	.218	.243	.256	.217
	TOTAL OBS	2936	2704	2940	2854	2940	2844	2940	2940	2844	2940	2844	2940	34626

USAFETAC FORM AM 64 0-09-5 (OLA)

GLOBAL CLIMATOLOGY BRANCH
USAFETAC
AIR WEATHER SERVICE/MAC

MEANS AND STANDARD DEVIATIONS

SEA LEVEL PRESSURE IN MBS FROM HOURLY OBSERVATIONS

72765 (STATION) DULUTH IAP MN (STATION NAME) 73-82 (YEARS)

HRS (L S T)		JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ANNUAL
00	MEAN	1018.4	1019.2	1015.8	1016.6	1010.4	1012.9	1014.8	1015.8	1016.3	1016.1	1016.9	1017.4	1016.2
	S. D.	9.925	10.288	8.692	8.166	6.313	6.186	5.152	5.379	6.486	7.987	8.952	9.716	8.097
	TOTAL OBS	309	288	310	299	309	299	309	307	309	309	295	309	3632
03	MEAN	1018.4	1019.0	1015.8	1016.2	1010.0	1012.8	1014.6	1015.6	1016.2	1015.9	1016.7	1017.4	1016.0
	S. D.	10.286	10.413	8.920	8.508	6.652	6.308	5.286	5.343	6.543	8.179	8.869	9.859	8.262
	TOTAL OBS	299	278	302	291	302	293	305	309	293	306	289	302	3550
06	MEAN	1018.3	1019.2	1015.8	1016.7	1010.9	1013.2	1015.2	1016.0	1016.8	1016.8	1016.8	1017.4	1016.4
	S. D.	10.211	10.443	9.038	8.640	6.709	6.471	5.328	5.573	6.579	8.191	9.163	9.936	8.324
	TOTAL OBS	306	282	306	296	306	295	308	308	299	318	294	308	3624
09	MEAN	1019.1	1019.8	1016.8	1017.2	1012.5	1013.8	1015.8	1016.3	1017.0	1017.0	1017.2	1017.9	1016.8
	S. D.	10.147	10.644	9.134	8.763	6.788	6.826	5.284	5.497	6.671	8.253	9.239	10.000	8.428
	TOTAL OBS	305	273	306	293	303	286	299	291	299	301	292	304	3511
12	MEAN	1018.7	1019.6	1015.7	1016.6	1010.7	1013.1	1015.2	1016.1	1016.8	1016.6	1016.8	1017.5	1016.4
	S. D.	9.934	10.548	9.155	8.578	6.550	6.503	5.108	5.498	6.468	8.163	9.379	9.914	8.311
	TOTAL OBS	307	281	316	296	309	295	309	302	298	307	296	307	3621
15	MEAN	1017.7	1018.4	1014.1	1015.0	1010.3	1012.0	1014.0	1015.0	1015.8	1015.5	1016.1	1016.9	1015.6
	S. D.	9.826	10.359	8.858	8.883	6.258	6.383	5.930	5.324	6.286	7.886	9.093	9.525	8.041
	TOTAL OBS	306	278	308	291	308	287	308	299	292	304	289	302	3581
18	MEAN	1018.5	1019.2	1015.8	1016.6	1011.3	1013.0	1014.9	1015.8	1016.2	1016.0	1017.0	1017.6	1016.3
	S. D.	9.773	10.098	8.678	7.808	6.073	6.187	5.069	5.173	6.189	7.884	8.771	9.468	7.959
	TOTAL OBS	307	286	307	296	308	297	308	306	308	307	296	308	3610
21	MEAN	1018.7	1019.3	1015.8	1016.6	1010.8	1013.2	1015.4	1016.2	1016.6	1016.3	1017.0	1017.9	1016.3
	S. D.	9.974	10.187	8.388	7.706	5.978	6.048	5.016	5.000	6.283	7.499	8.683	9.488	7.927
	TOTAL OBS	301	271	308	295	308	300	309	308	292	297	292	309	3598
ALL HOURS	MEAN	1018.5	1019.2	1015.8	1016.6	1010.8	1013.0	1014.9	1015.7	1016.3	1016.2	1016.8	1017.5	1016.2
	S. D.	10.081	10.381	8.830	8.207	6.410	6.306	5.138	5.390	6.448	8.048	9.020	9.732	8.170
	TOTAL OBS	2492	2211	2465	2359	2435	2352	2465	2430	2390	2452	2352	2453	28866

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