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Historical Extreme Winds for the United States - Great Lakes and Adjacent Regions

Prepared by M. J. Changery

National Climatic Center
National Oceanic and Atmospheric Administration

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ABSTRACT

Annual fastest mile wind data were extracted for the complete period of record for 70 locations in the Great Lakes, Ohio, and upper Mississippi valley regions. Existing models were used to standardize the data to 10 and 30 meters for airport-type exposures and 30 meters for city exposures. Selected probability estimates were developed from application of the Fisher-Tippett Type I extreme value model for all extracted data. Maps present the .99 probability level (100-year return period) for 10 and 30 meters for airport-type exposures, and 30 meters for city exposures.

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Illustrations

I. INTRODUCTION

In modern building codes and standards, basic design wind speeds are specified in probabilistic terms. For any location with wind records, a random variable consisting of the yearly extreme wind speed is defined. The probabilistic behavior of these extremes can be estimated from the cumulative distribution function of this variable. Any design wind speed is a speed corresponding to a specified mean recurrence interval. A 50-year mean recurrence interval is specified by the American National Standard Institute (ANSI) Standard A58.1-1972 for permanent structures except those with an unusually high or negligible hazard to life. This Standard also assumes that the Type II distribution best models the probabilistic behavior of the winds.

The Standard is undergoing a revision utilizing additional years of available data. It includes only airport data for the general period of record 1945-1977, and assumes a Type I distribution. Earlier city office data were excluded since they were obtained for city locations not considered representative of an open, unobstructed environment.

Areas of the United States subject to frequent occurrences of extreme winds include the Great Lakes, Ohio, and upper Mississippi valleys. These areas are subject to severe extratropical storm passages during the late autumn to early spring season, and intense thunderstorm activity during the spring and summer seasons. The combination of frequent severe storms and the open exposures along the Lakes' coastline produces the second highest design wind regime in the continental United States.

Researchers and designers could best model the extreme wind behavior of these regions if all historical wind data were available for analysis. This includes city office data useful for modeling the urban environment and additional shoreline locations with unobstructed surroundings similar to airport environments. In this study, all available annual extreme wind data in the states of Minnesota, Iowa, Wisconsin, Michigan, Illinois, Indiana, Ohio, and western and central New York and Pennsylvania will be extracted, verified, and reduced to a standard height. Appropriate extreme value models will be used to develop design wind speeds for selected return periods.

II. INSTRUMENTATION HISTORY

A. Contact Anemometer.

The rotating cup, contact-type anemometer has been used by the National Weather Service (and its predecessor agencies, the Weather Bureau, and Army Signal Corps) since its introduction in 1870. Although supplemented, or replaced, by the magneto-type anemometer for aviation purposes in the 1930's, the contact-type instrument measures speed such that an extreme useful to engineers can be extracted. This instrument utilizes three or four hemispherical cups mounted on supporting arms attached to a vertical spindle. Wind speed is determined by counting the number of miles of wind passage (based on the circumference distance of the cup wheel) per unit of time on either a mechanical dial or chart-recording mechanism. Each of the four types of contact anemometers used since 1870 will be discussed in the following sections. Abbreviations following the anemometer type are used in the data listings.

1. Four-Cup Anemometer (4c). This instrument was initially introduced in 1870, used through 1927, and utilized four-inch diameter cups mounted on arms ~ 6.7 inches in length. As with all instruments of this type, the indicated speed needed to be corrected to a "true" speed. Although the speed overrun is considerable for the four-cup, especially at the higher speeds, available correction tables were not used for extracted and/or published data. All data recorded prior to 1928 require the necessary four-cup corrections before use in any analysis. The four-cup was reintroduced at most locations in 1932 with all readings corrected to true values before being entered in the official manuscripts. During the 1940's, it was generally replaced by the three-cup (mentioned next), but did remain in use at a few locations through the 1960's.

2. Three-Cup Anemometer (3c). Considerable research directed to an improved wind-measuring system during the 1920's led to the introduction of the three-cup instrument in 1928. This instrument (8) utilized five-inch cups mounted on arms ~ 6.3 inches in length. Tests indicated more uniform torque on the three-cup with considerably smaller departures from the true wind. At the time the three-cup was introduced in 1928, it was assumed that the three-cup ran so close to the true that no corrections were necessary. Users of manuscript data for the period 1928-1931 should, however, correct the data using available three-cup correction tables. Although replaced by the four-cup for a number of years beginning in 1932, the three-cup was gradually reintroduced and all readings were corrected to true before being entered in official records. Nearly all locations currently equipped with contact anemometers use the three-cup instrument.

3. Four-Cup Beaded Anemometer (4c-b). Additional research during the early 1930's led to the discovery that a bead produced by rolling the cup edge outward produced a more responsive instrument (9). The primary finding was that all cup forms tend to overrun in a turbulent windstream and that the effect is considerably reduced with a beaded anemometer. For unknown reasons, this advantage was never incorporated into the standardized three-cup contact anemometer. A limited number of stations did use a beaded four-cup system for a number of years.

4. Four-Cup Experimental Anemometer (4c-x). A unique four-cup instrument was also developed in the 1930's with beaded edges and a special gearing such that the anemometer ran within two miles per hour of the true wind over the complete range of interest. This instrument was used at only a few locations for a limited number of years.

B. Single or Multiple Register Recording System.

Special instruments were used at selected locations to record the passage of each mile of wind. The earliest instruments (single register) recorded wind data only; the multiple register recorded wind, precipitation, and sunshine data. Current instruments record data on a continuous paper strip. Prior to the 1960's, 24 hours of data were recorded on a chart wrapped on a drum, which rotated four times during the period. Each of the four

horizontal lines on the drum represented six hours of data. With the passage of each mile of wind, a pen arm made a short mark perpendicular to that of the pen traverse. The number of such marks within any one-hour period provides the actual hourly wind speed.

III. MEASUREMENT OF EXTREME WIND SPEED

A. Definition of Terms.

The daily fastest mile is defined as the speed equivalent of the shortest distance (and, therefore, least time) between any two adjacent mile marks recorded in a 24-hour period. As an example, if two marks occurred within one minute of each other, the mile per minute is converted to a 60-mile/hour fastest mile. Similarly, if the two marks are two minutes apart, the one mile in two minutes is converted to 30 miles/hour. In practice, station personnel utilize a special scale to determine the mile/hour equivalent of the visually determined two closest marks in any 24-hour period.

B. Fastest Mile History.

An early measure of the wind extreme was the daily fastest mile previously defined. Within the last 40 years, it has been supplemented or replaced by the (visually estimated) one-minute maximum or peak gust obtained from the standard dial-type anemometer. Its advantage, then and now, was that it was a speed which occurred at a known time interval (30 to 90 sec) obtained from a recorded continuous trace.

This measurement was initially extracted at stations with a recording instrument in July 1887 on a daily basis and continued through 1904. After a seven-year hiatus, it was again extracted beginning in 1912. These daily extracted data were included on appropriate manuscript forms. Although it was not extracted prior to July 1887, available charts as early as 1872 provided a source from which measurements could be made.

C. Extraction of the Fastest Mile.

The initial aim of this report was to extract as large a set of annual fastest mile data for all available locations. To include all data, the following procedures were used:

1. For the stations of interest, published annual extremes (obtained by ordering the daily values) were checked against the original trace charts. Readings judged reasonably accurate ($\pm$ 2 mph) were left unchanged due to the subjectivity involved in using the measuring scale. Many cases required adjustment to a higher value. For values determined to be too high, the adjusted extreme was compared to the next highest published value. If the next highest was larger than the adjusted, it was checked for accuracy and accepted as the annual extreme if reasonably accurate. Otherwise, succeedingly lower extremes were checked until one was found to be accurate.

2. For the period of record through June 1887 and for 1905-1911, fastest mile data were not extracted on station. Another measurement (five-minute maximum) was extracted and published. The annual five-minute maximum provided the highest five-minute speed for the year and proved to be a guide to the occurrence of the extreme fastest mile. It might be expected that the annual extreme fastest mile would occur at the time of the annual extreme five-minute maximum. Under certain conditions (such as thunderstorm-related winds), however, an extreme fastest mile could be included in a five-minute period with lower speed than the published annual extreme five-minute maximum.

In order to verify the assumption that the two events occur simultaneously, a test was run for six coastal locations for the period 1912-1950. For each station-year a comparison was made of:

(a) The frequency of simultaneous occurrences of the annual extreme fastest mile and annual extreme five-minute maximum.

(b) The frequency of simultaneous occurrences of the annual extreme fastest mile and one of the 12 monthly extreme five-minute maxima.

As shown in Table 1, out of the total sample of 232 station years, 223 occurrences of the fastest mile occurred on one of the 12 published dates of monthly five-minute maxima.

Table 1. Number of simultaneous occurrences of extreme fastest mile; and, (a) annual maximum, and (b) one of 12 monthly maxima.

	Number Years	Extreme Maximum (Annual)	Extreme Maximum (Monthly)
Boston, MA	38	28	38
Cape Henry, VA	39	31	38
Charleston, SC	39	27	39
Corpus Christi, TX	39	34	37
Mobile, AL	38	27	33
Pensacola, FL	39	28	38

This indicates that the dates of available monthly maxima can be used as a reliable guide to the date of the annual extreme fastest mile. Thus, for stations in this period without extracted extremes, an extreme was calculated at the occurrence of each published monthly maximum. This probable monthly extreme was used as a base in visually checking the remainder of the daily charts for that month. This procedure was followed for each month in order to determine the true annual extreme fastest mile.

3. For a few stations, no fastest mile or five-minute data have been extracted. For these, a visual check of all daily charts for each year was required. This was accomplished by determining an extreme for January (normally one of the windier months) and using this as a guide in visually reviewing daily charts for each succeeding month until a higher extreme was determined. This new value was then used in reviewing succeeding charts. By using some measure of extreme wind as a guide, the majority of daily charts could be eliminated with only a cursory glance. Through this process an annual extreme was determined.

IV. CATEGORIZATION OF STATION EXPOSURES

A. Boundary Layer Effects.

Proper utilization of extracted fastest mile data requires a suitable categorization be made into specific exposure types. Under normal meteorological conditions, the frictional effects of the earth's surface reduces the speed of the wind near the surface and introduces mechanical turbulence. A very rough surface, such as the urban environment, affects the near-earth layer to a much greater degree than a relatively smooth lake or shoreline environment. The large roughness elements present in a city increase the frictional drag exerted on the airflow and extend the effect through a deeper layer of the atmosphere. Current techniques for estimating the wind at a given elevation within this disturbed layer from a known wind at another elevation require an assessment of the roughness elements surrounding the known site. These techniques are discussed in Section V. Categorizing the station exposures ensures that the proper parameters are used in standardizing each data set to a standard height. Known features associated with particular types of exposures can be clarified, eliminating the problem of combining non-homogeneous data sets.

B. Station Types.

Stations extracted and analyzed in this report were categorized into four basic types of exposures. Abbreviations following the station-type name are used in the data listings.

1. Weather Bureau Office (WBO). Multiple registers were installed in most large metropolitan areas in the 1870-1890 period. These, and their attendant anemometers, were located on Federal facilities or large commercial buildings (banks, etc.) near, or in, the center-city area. The anemometers were installed on 12 to 20 foot (or frequently higher) masts atop the facilities. Most locations experienced frequent moves in the center-city area with the instruments usually placed at increasing above-ground elevations due to the increase in tall-building construction. An assumption made in this study is that the average building height surrounding the instrument within one-half mile in all directions is approximately .75 that of the instrument. The preferred method (not possible within the limited resources available for this study) would be to obtain historical profiles of the city skyline in a number of directions to better model the urban influence over time and by wind direction. However, the assumption that officials responsible for

locating the instruments would choose an unobstructed open exposure (higher than most of the surrounding skyline) is reasonable. Most WBO instruments were relocated to an airport exposure in the 1935-1950 period.

2. Airport (APT). Relocated WBO instruments were initially placed on airport control towers or terminal buildings. Instrument heights ranged from 60 to 100 feet above ground. By the early 1960's, they were again relocated on masts near the runways at a 20 to 25 foot elevation. Due to the obvious requirements for an airport environment, exposure is considered to be open and unobstructed in all directions.

3. Weather Bureau Office (WBO*). Many sites were located in flat, open terrain along the shoreline and on islands in the Great Lakes at lighthouses and lifesaving stations. Terrain exposure at most locations can be considered to be less obstructed than airport locations. Many of these locations operated during only non-winter months. These stations are so noted.

4. Weather Bureau Office (WBO**). A few sites were located in small communities. Although located in an urban environment, surrounding structures were limited in vertical extent and did not extend as far upwind as at a WBO site. These smaller roughness elements affected the airstream to a smaller degree than those in a true urban environment and were included in an intermediate category.

V. HEIGHT REDUCTION

A. Exposure-Type Reductions.

Reduction of recorded wind speeds to a standard elevation is necessary in order to ensure the data's meteorological homogeneity. However, differences in the complexity of windflow over urban and rural areas prohibit combining both locations into one set. Combining urban and rural data into a set useful to designers/engineers is a problem which remains to be solved. Because of this problem, only airport and WBO* stations are considered to have similar surrounding surface features and both are reduced to a 10-meter standard height. WBO** stations are all reduced as a class to 10 meters also. The assumption made is that although the flow is disturbed more so than at an airport location, the small surface elements do not introduce complexity to the near surface flow. All WBO stations have been reduced to a 30-meter height. The large-scale obstructions increase the turbulent flow and also cause significant accelerations or decelerations at ground level dependent on building orientations. For these reasons a 10-meter standard height would not be useful or accurate and a 30-meter height would be more representative of the disturbed, but not unduly complex, flow regime over urban areas. Additionally, all airport and WBO* site data have been reduced to a 30-meter height. These reduced data are not included in Part VII - Station Data and Return Period Values - but derived probability estimates are presented in Figure 3. This figure presents information useful for tower design in open countryside.

B. Height Reduction Techniques.

The wind profile near the earth's surface in homogeneous terrain is given by the logarithmic law in the form:

$$V(z) = \frac{\log \frac{z-z_d}{z_o}}{\log \frac{10}{z_o}} V(10) \qquad (1)$$

where z is the anemometer height above ground,
10 is the standard height,
V(10) is the speed at standard height,
z_o is the roughness length, and
z_d is the zero plane displacement;
all expressed in meters.

Although the power law

$$V(z) = \left(\frac{z}{10}\right)^{\eta} V(10) \qquad (2)$$

where η ranges from 1/2 to 1/7 depending on exposure,

has also been used extensively by researchers in modeling the near-ground wind profile, a number of sources (2, 11) indicate, however, that the logarithmic law provides a superior representation of this profile.

The zero-plane displacement is zero except for urban areas (WBO and WBO** designated sites) where the smaller of 20 meters or .75 $\bar{H}$ (where $\bar{H}$ is the average height of surrounding buildings) is used (13). For WBO and WBO** sites, the zero-plane adjustment was made with the assumption that $\bar{H}$ was .75 of the anemometer height. Such estimates are necessary without accurate assessments of building heights surrounding the instrument. For this report then, z_d is the smaller of 20 meters or .5625 of the anemometer height at WBO and WBO** sites.

The roughness (Z_o) is derived from a classification scheme of terrain features surrounding a given site. Table 2 gives some suggested values (12).

Table 2. Values of Z_o for various exposure types.

Exposure	Z_o (Meters)
Coastal	.005-.01
Open	.03-.10
Outskirts of towns	.20-.30
Town center	.35-.45
City center	.60-.80

Based on Table 2 and the exposure categorization scheme developed in Section IV, values of Z_o used in this study are:

WBO	Z_o = .7 meters
WBO**	Z_o = .4 meters
WBO*, APT	Z_o = .05 meters

The logarithmic law is considered valid for mean winds measured over an interval of approximately one hour. Simiu (15) developed a relationship

$$V(10) = V(z) \frac{\log \frac{10}{z_o}}{\log \frac{z-z_d}{z_o}} \left(1 + \frac{z-10}{10} .02\right) \qquad (3)$$

considered more appropriate over the time range (30 to 90 seconds) consistent with the speed range of fastest mile measurements.

Equation 3 is used to standardize reported and extracted winds to a 10-meter height. Substituting the value 30 for the 10 in Equation 3 yields the 30-meter standardized winds. These standardized data are presented in Part VII. It should be noted again that WBO and airport data sets for a given location are treated as separate sets with WBO and airport data reduced to 30 meters and 10 meters, respectively.

VI. STATISTICAL ANALYSIS

For each station, the methods described in Section V provide standardized values of the annual extreme fastest mile for each year of the period of record. This set of annual extremes is most appropriately analyzed by fitting an extreme value distribution to the data. These have been extensively studied by Gumbel (3, 4) and Lieblein (5, 6, 7). Two such distributions, known as the Type I and Type II are given by:

$$F_I(x) = \exp\{-\exp[-(x-\alpha)/\sigma]\} \qquad (4)$$

and

$$F_{II}(x) = \exp\left[-\frac{(x-\alpha)}{\sigma}^{-\gamma}\right] \qquad (5)$$

where $F(x)$ is the probability that an observation will be equal to or less than a value X,
α is the mode,
σ is the scale parameter, and
γ is the tail length parameter.

The Type II may actually be shown to be a logarithmic transformation of the Type I.

Although the Type II has been used extensively by Thom in the ANSI 58.1 Standard (16, 17), other investigators have demonstrated that the Type I is the more appropriate distribution to use (14, 15).

Equation 4 may also be written

$$F_1(x) = \exp\,[-\exp\,(-y)] \tag{6}$$

where y is a reduced variate similar to the standardized variate of the normal distribution.

Estimation of extreme values for a given probability can be derived from

$$U_\rho = \alpha + Y_\rho \beta \tag{7}$$

where U_ρ is the extreme value at probability level ρ, and Y_ρ^ρ is the corresponding reduced variate.

The best linear unbiased estimates of α and σ are computed from Lieblein's order statistic approach (5, 6, 7) and used in determining the estimated extreme value. The methodology used divided each data set into subgroups containing between 8 and 15 elements with the larger chosen if more than one was possible. If it was not possible to produce a whole number of subgroups, then the remainder group was chosen such that the element number was maximized. For example, a data set with 40 elements was divided into 4 subgroups of 10 each although 5 subgroups of 8 each was also possible. A data set of 38 was divided into 2 subgroups of 13 each with a remainder group of 12. This maximization technique provided the subgroup and remainder group sizes used in Lieblein's approach.

For the report, extreme value estimates were made for the following probability levels (return periods): .5 (2 year), .8 (5 year), .9 (10 year), .95 (20 year), .96 (25 year), .98 (50 year), .99 (100 year), .995 (200 year), .998 (500 year), and .999 (1000 year).

Figure 1 depicts the stations used in this report with Figures 2, 3, and 4 containing data for the .99 probability level for City Office (30m), Airport (30m), and Airport (10m) locations, respectively. The short period of record for some locations provides possibly unrepresentative return period estimates. A few locations in Figures 3 and 4 depict estimates derived from a reporting period excluding the winter months. These stations are so noted. Due to these problems, the plotted data will not necessarily match the presented analyses. It should be mentioned that the roughness chosen for a particular location affects the final probability estimates for that location. These analyses of estimates reflect the decisions made in this report. Presenting the raw data enables other readers to standardize the data if methods other than those used in this report are considered appropriate. Part VII of this report contains detailed station data and the return period estimates for all calculated probability levels.

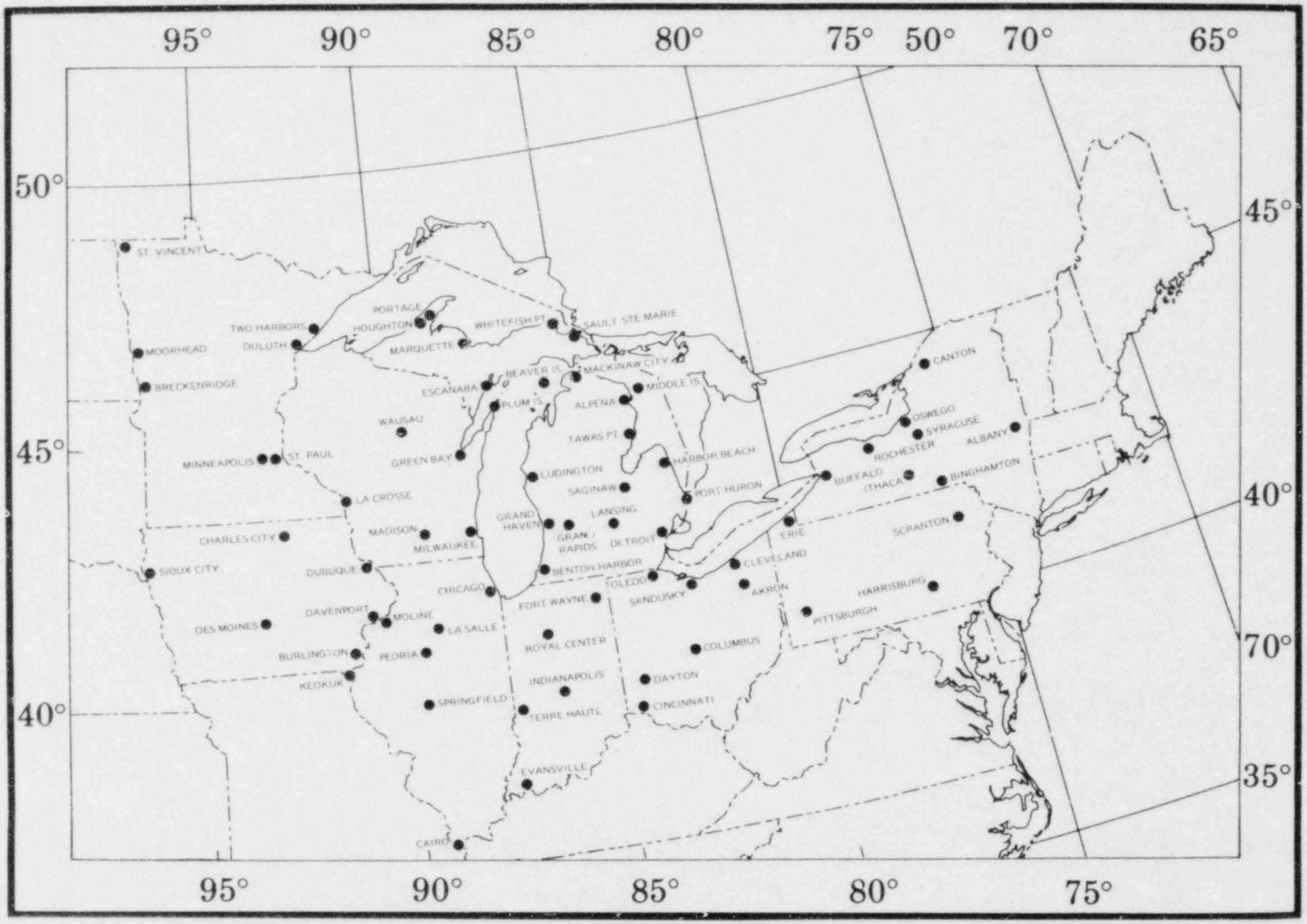

Figure 1. Station Locations

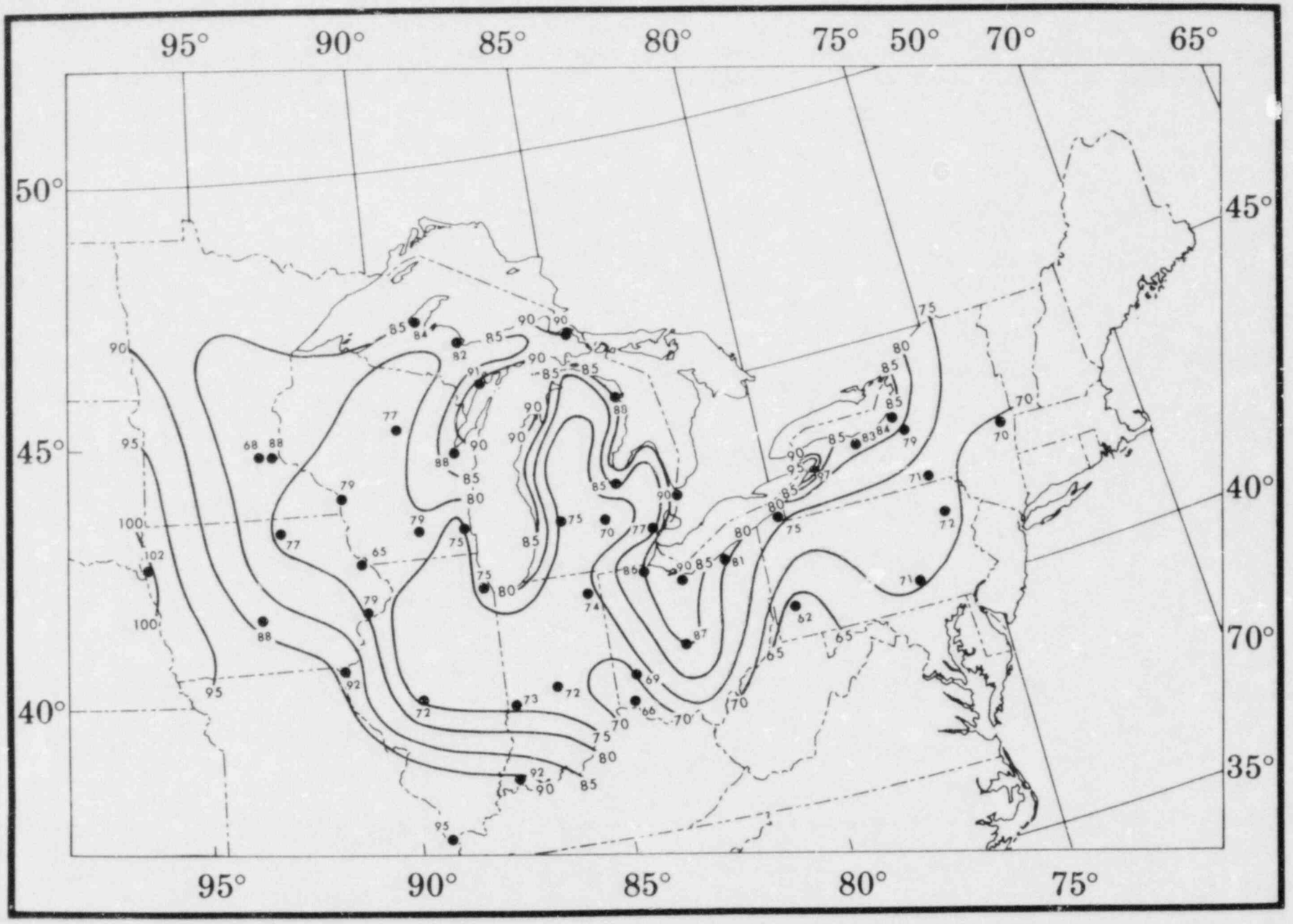

Figure 2. City office exposure- Extreme Annual fastest mile wind speed for the .99 probability level (100-year return period) at 30 meters above ground level.

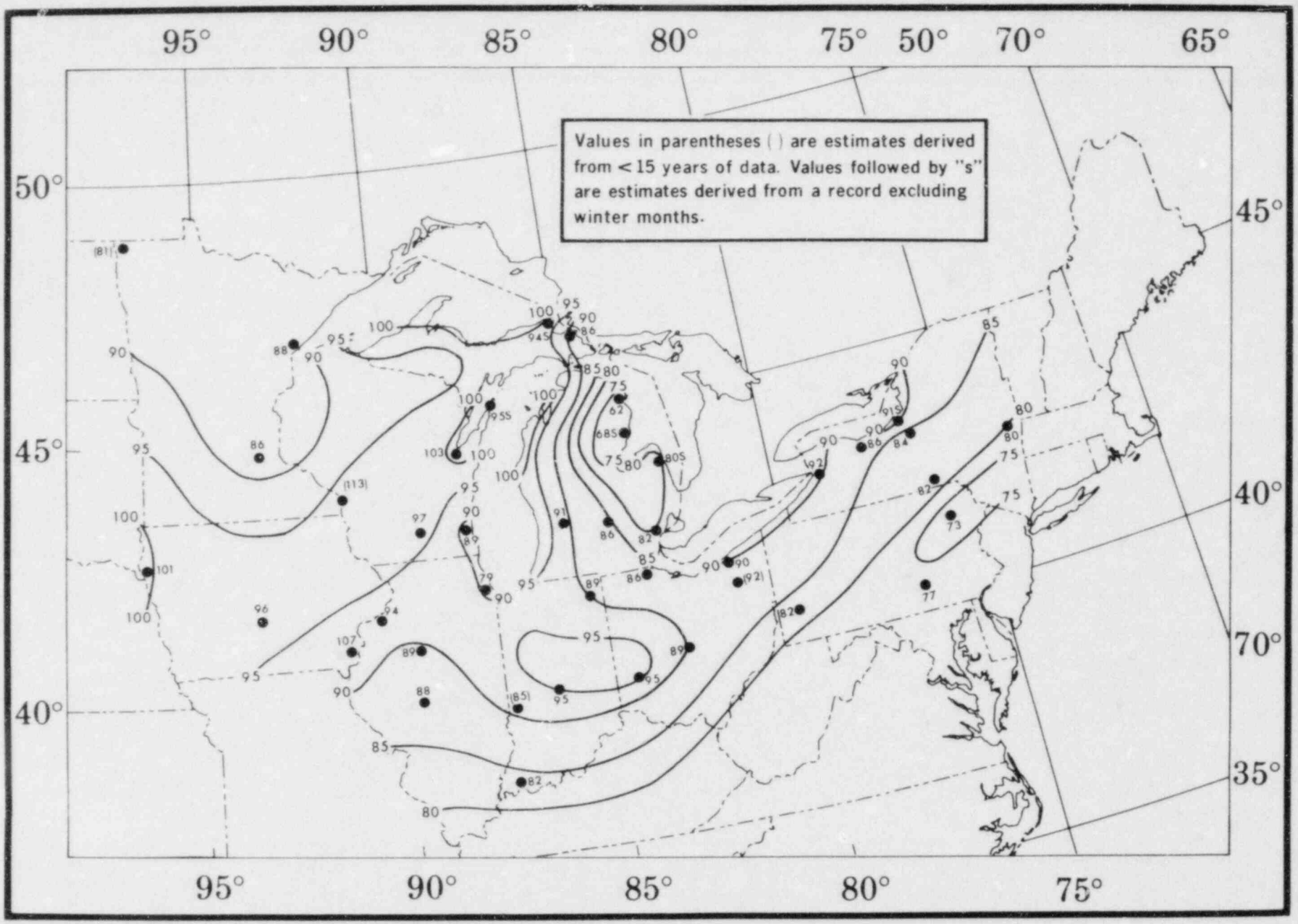

Figure 3. Airport type exposure- Extreme Annual fastest mile wind speed for the .99 probability level (100-year return period) at 30 meters above ground level.

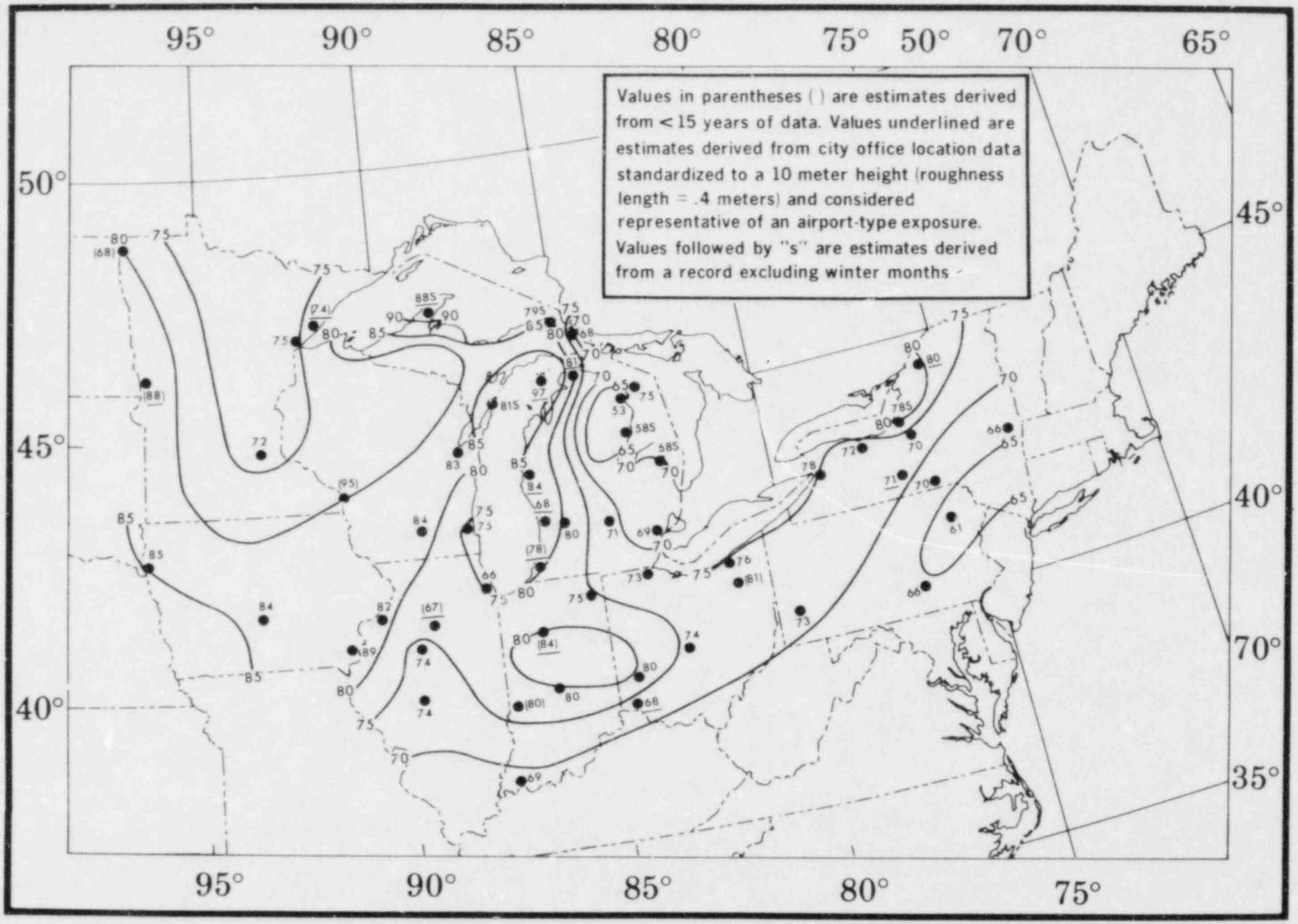

Figure 4. Airport type exposure- Extreme Annual fastest mile wind speed for the .99 probability level (100-year return period) at 10 meters above ground level.

VII. STATION DATA AND RETURN PERIOD VALUES

The following pages provide annual extreme wind data, anemometer data and selected return period values. Locations are in city order within each state. Each location provides:

1. STATION NAME - Includes 3-letter station identifier and 5-digit identification number where applicable.

2. EXPOSURE TYPE.

WBO	$Z_o = .7$
WBO**	$Z_o = .4$
WBO*	$Z_o = .05$
APT	$Z_o = .05$

3. PERIOD OF RECORD.

4. LATITUDE, LONGITUDE - In degrees-minutes.

5. MEASURED SPEED - Uncorrected speed extracted from register charts. An "E" preceding indicates estimated speeds. MISSING is self-explanatory.

6. TRUE SPEED - Measured speed corrected to true using appropriate tables for each anemometer type (Item 11).

7. SPEED AT STANDARD HEIGHT - Speed standardized to 10 meters (WBO*, WBO**, APT) or 30 meters (WBO) using appropriate roughness lengths.

8. DIRECTION - To eight compass points. UNK indicates unknown directions.

9. ANEM TYPE - 4c = 4 cup anemometer
4c-b = 4 cup beaded anemometer
4c-x = 4 cup experimental anemometer
3c = 3 cup anemometer

10. ANEM HT - Numbers indicate height of the instrument above ground level. Preceding "E" indicates an estimated height based on:

a. The first known instrument height and assuming this height existed from the beginning of the period of record, or

b. A 50-foot elevation for locations with no available data. Most nonurban sites were instrumented at approximately this height early in their record history.

Following "R" indicates instrument mast is roof mounted. Following "G" indicates instrument mast is ground mounted.

11. REMARKS - Consecutive numbers for each year necessitating remarks with self-explanatory notes listed after the data set.

CAIRO, ILLINOIS WBO z_o=.7 1887-1979 37 00 89 10
WBAN #93809

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
12/20/1887	48	38	50	W	4c	93R	
07/09/1888	60	47	61	SW	"	"	
12/24/1889	60	47	61	S	"	"	
01/01/1890	60	47	61	S	"	"	
06/21/1891	105	80	104	W	"	"	
03/26/1892	60	47	61	W	"	"	
05/23/1893	60	47	61	S	"	"	
02/09/1894	60	47	61	SW	"	"	
01/26/1895	60	47	61	W	"	"	
05/26/1896	80	62	81	NW	"	"	
03/05/1897	60	47	61	S	"	"	
01/22/1898	69	54	71	SW	"	"	
01/04/1899	72	56	73	W	"	"	
06/10/1900	50	40	52	NW	"	"	
04/05/1901	55	43	56	W	"	"	
04/25/1902	60	47	61	SW	"	"	
08/05/1903	62	49	64	N	"	"	
02/07/1904	75	58	76	SW	"	"	
04/28/1905	60	47	61	NW	"	"	
01/03/1906	64	50	65	SW	"	"	
07/19/1907	76	59	77	NW	"	"	
05/11/1908	58	46	60	S	"	"	
01/29/1909	68	53	69	W	"	"	
04/14/1910	72	56	73	SW	"	"	
06/17/1911	50	40	52	NW	"	"	
07/05/1912	75	58	76	E	"	"	
03/14/1913	52	41	54	SW	"	"	
02/28/1914	48	38	50	NW	"	"	
08/01/1915	52	41	54	SE	"	"	
06/18/1916	58	46	60	SW	"	"	
06/01/1917	60	47	61	SW	"	"	
05/11/1918	68	53	69	SW	"	"	
08/13/1919	72	56	73	N	"	"	
04/04/1920	72	56	73	SW	"	"	
07/31/1921	76	59	77	NW	"	"	
03/19/1922	60	47	61	SW	"	"	
03/11/1923	66	51	67	S	"	"	
03/28/1924	76	59	77	SW	"	"	
03/18/1925	66	51	67	SW	"	"	
05/08/1926	62	49	64	N	"	"	
03/31/1927	76	59	77	SW	"	"	
01/24/1928	54	43	56	SW	"	"	
01/18/1929	60	47	61	SW	"	"	
01/14/1930	48	38	50	SW	"	"	
03/07/1931	40	32	42	SW	"	"	
01/12/1932	56	44	57	SW	"	"	
05/11/1933	60	47	61	NW	"	"	
07/25/1934	48	38	50	E	"	"	
03/16/1935	54	43	56	S	"	"	
05/12/1936	64	50	65	SW	"	"	
05/18/1937	80	62	81	N	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
03/30/1938	54	43	56	S	"	"	
06/09/1939	50	47	61	SW	3c	93R	
06/28/1940	56	52	68	N	"	"	
01/16/1941	36	38	50	SW	4c-x	"	
02/06/1942	42	44	57	SW	"	"	
07/26/1943	50	47	60	NE	3c	93R	
04/23/1944	40	38	48	SW	"	"	
05/29/1945	54	50	64	W	"	"	
02/13/1946	54	50	64	SW	"	"	
04/05/1947	62	57	73	SW	"	"	
05/02/1948	56	52	67	SW	"	"	
01/27/1949	42	40	51	SW	"	"	
04/10/1950	38	36	46	SW	"	"	
06/08/1951	46	43	55	NW	"	"	
11/25/1952	50	47	60	SW	"	"	
06/13/1953	53	50	64	NE	"	"	
08/05/1954	47	44	56	NW	"	"	
07/11/1955	46	43	55	NE	"	"	
02/25/1956	60	56	72	SW	"	"	
04/03/1957	64	59	76	SW	"	"	
06/12/1958	42	40	51	NW	"	"	
05/26/1959	48	45	58	SW	"	"	
02/09/1960	48	45	58	SW	"	"	
05/07/1961	52	49	63	SW	"	"	
05/29/1962	44	42	54	SW	"	"	
04/29/1963	43	41	53	SW	"	"	
03/04/1964	65	60	77	NW	"	"	
01/25/1965	46	43	55	S	"	"	
06/07/1966	48	45	58	SW	"	"	
02/15/1967	50	47	60	SW	"	"	
11/28/1968	57	53	68	N	"	"	
06/28/1969	38	36	46	SW	"	"	
04/20/1970	44	42	54	SW	"	"	
12/10/1971	68	63	81	SW	"	"	
03/06/1972	43	41	53	SW	"	"	
06/02/1973	65	60	77	SW	"	"	
04/03/1974	46	43	55	SW	"	"	
03/24/1975	47	44	56	SW	"	"	
01/13/1976	54	50	64	SW	"	"	
03/28/1977	51	48	62	SW	"	"	
05/28/1978	52	49	63	SW	"	"	
02/25/1979	46	43	55	NE	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	61
.80	5	70
.90	10	76
.95	20	82
.96	25	84
.98	50	90
.99	100	95
.995	200	101
.998	500	108
.999	1000	114

CHICAGO, ILLINOIS WBO z_o=.7 1872-1925 41 53 87 38
WBAN #14881

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
04/15/1872	68	53	66	NE	4c	108R	
1873	Missing				"	"	
02/23/1874	44	35	44	SW	"	"	
08/05/1875	45	36	45	S	"	"	
01/01/1876	46	37	46	N	"	"	
06/25/1877	56	44	55	NW	"	"	
04/1[illegible]/1878	40	32	40	S	"	"	
09/16/1879	34	28	35	NW	"	"	
02/28/1880	50	40	50	W	"	"	
03/18/1881	42	34	42	NE	"	"	
03/21/1882	44	35	44	SW	"	"	
04/22/1883	40	32	40	NE	"	"	
10/08/1884	58	46	57	N	"	"	
05/08/1885	40	32	40	SW	"	"	
10/14/1886	66	51	63	SW	"	"	
10/03/1887	66	51	53	W	"	153R	
07/12/1888	60	47	49	NE	"	"	
05/31/1889	58	46	48	N	"	"	
03/27/1890	100	76	66	NE	"	274R	
03/10/1891	100	76	66	S	"	"	
04/05/1892	90	69	60	SW	"	"	
04/20/1893	85	65	56	NE	"	"	
02/12/1894	115	87	75	NE	"	"	
01/25/1895	75	58	50	NE	"	"	
04/13/1896	72	56	48	S	"	"	
07/05/1897	80	62	54	W	"	"	
08/16/1898	80	62	54	SW	"	"	
05/28/1899	85	65	56	S	"	"	
09/11/1900	90	69	60	SW	"	"	
02/03/1901	75	58	50	NE	"	"	
04/25/1902	90	69	60	SW	"	"	
05/25/1903	90	69	60	SW	"	"	
12/27/1904	86	66	57	SW	"	"	
04/29/1905	68	53	46	W	"	"	
11/21/1906	72	56	47	SW	"	310R	
01/20/1907	78	60	50	W	"	"	
05/28/1908	90	69	58	W	"	"	
04/07/1909	79	61	51	W	"	"	
08/23/1910	76	59	50	NE	"	"	
01/08/1911	73	57	48	W	"	"	
02/21/1912	60	47	39	N	"	"	
03/24/1913	70	54	45	SW	"	"	
06/06/1914	55	43	36	S	"	"	
02/01/1915	50	40	34	NE	"	"	
03/22/1916	54	43	36	NE	"	"	
06/12/1917	62	49	41	W	"	"	
02/19/1918	56	44	37	W	"	"	
07/09/1919	56	44	37	SW	"	"	
03/24/1920	58	46	39	S	"	"	
10/17/1921	62	49	41	S	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
04/19/1922	58	46	39	W	"	"	
03/11/1923	64	50	42	NE	"	"	
08/08/1924	62	49	41	S	"	"	
06/12/1925	52	41	34	S	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	54
.90	10	59
.95	20	63
.96	25	65
.98	50	69
.99	100	73
.995	200	77
.998	500	83
.999	1000	101

CHICAGO, ILLINOIS (University) WBO z_o=.7 1916-1941 41 47 87 36
WBAN #14892

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
09/05/1916	59	46	52	NW	4c	131R	
04/01/1917	60	47	53	NE	"	"	
01/06/1918	54	43	49	NE	"	"	
11/29/1919	59	46	52	SW	"	"	
03/28/1920	60	47	53	SE	"	"	
04/16/1921	60	47	53	NE	"	"	
04/19/1922	62	49	55	W	"	"	
04/21/1923	62	49	55	SW	"	"	
01/25/1924	54	43	49	NW	"	"	
01/22/1925	54	43	49	NW	"	"	
03/24/1926	50	40	45	SW	"	"	
04/04/1927	66	51	58	SE	"	"	
01/19/1928	48	38	43	NW	"	"	
03/06/1929	43	35	40	NW	"	"	
03/25/1930	40	32	36	NE	"	"	
06/22/1931	35	29	33	NW	"	"	
02/11/1932	58	46	52	SW	"	"	
03/08/1933	78	60	68	NW	"	"	
06/20/1934	54	43	49	NW	"	"	
04/15/1935	52	41	46	NW	"	"	
12/30/1936	60	47	53	SW	"	"	
01/02/1937	51	41	46	SW	"	"	
04/08/1938	54	43	49	NE	"	"	
02/10/1939	51	45	51	SW	4c-b	"	
11/11/1940	59	55	62	SW	3c	"	
04/20/1941	46	43	49	SW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	56
.90	10	61
.95	20	66
.96	25	68
.98	50	72
.99	100	77
.995	200	82
.998	500	88
.999	1000	92

CHICAGO, ILLINOIS (MDW) APT. z_o=.05 1943-1979 41 47 87 45
WBAN #14819

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
04/27/1943	48	45	44	SW	3c	36R	
05/25/1944	50	47	46	S	"	"	
03/17/1945	44	42	41	W	"	"	
11/21/1946	40	38	37	W	"	"	
04/05/1947	44	42	41	SW	"	"	
12/05/1948	54	50	49	SW	"	"	
08/31/1949	58	54	53	NW	"	38R	
05/05/1950	58	54	53	S	"	"	
04/28/1951	54	50	49	NW	"	"	
11/26/1952	65	60	59	SW	"	"	
06/04/1953	54	50	49	W	"	"	
03/25/1954	55	51	50	W	"	"	
03/22/1955	58	54	53	NW	"	"	
03/10/1956	49	46	45	SW	"	"	
03/15/1957	46	43	42	W	"	"	
11/17/1958	52	49	46	SW	"	48R	
05/28/1959	55	51	48	W	"	"	
03/22/1960	44	42	40	NW	"	"	
03/27/1961	50	47	44	SW	"	"	
04/09/1962	48	45	42	W	"	"	
06/08/1963	52	49	54	N	"	20G	
05/08/1964	50	47	51	SW	"	"	
12/24/1965	50	47	51	NE	"	"	
07/18/1966	41	39	43	W	"	"	
02/15/1967	55	51	56	SW	"	"	
11/28/1968	44	42	46	NE	"	"	
04/21/1969	40	38	42	W	"	"	
07/02/1970	41	39	43	NW	"	"	
11/01/1971	46	43	47	S	"	"	
01/24/1972	42	40	44	SW	"	"	
04/19/1973	44	42	46	SE	"	"	
07/14/1974	43	41	45	W	"	"	
11/30/1975	46	43	47	S	"	"	
06/13/1976	42	40	44	E	"	"	
03/29/1977	50	47	51	S	"	"	
04/18/1978	38	36	39	SE	"	"	
04/05/1979	58	54	59	W	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	46
.80	5	52
.90	10	55
.95	20	59
.96	25	60
.98	50	63
.99	100	66
.995	200	70
.998	500	74
.999	1000	77

LA SALLE, ILLINOIS WBO** z_c=.4 1905-1913 41 20 89 05

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
11/24/1905	49	39	42	SW	4c	64R	
01/03/1906	52	41	44	SW	"	"	
01/20/1907	46	37	40	W	"	"	
08/15/1908	64	50	54	NW	"	"	
04/06/1909	70	54	58	SW	"	"	
03/30/1910	44	35	38	SW	"	"	
03/15/1911	47	38	41	NW	"	"	
05/27/1912	48	38	41	SW	"	"	
03/24/1913	64	50	54	SW	"	"	1.

1. Ends 9/30

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	44
.80	5	51
.90	10	55
.95	20	59
.96	25	60
.98	50	64
.99	100	67
.995	200	71
.998	500	76
.999	1000	80

MOLINE, ILLINOIS (MLI) APT. z_o=.05 1929-1933 41 27 90 31
WBAN #14923 1944-1979

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
03/06/1929	55	51	47	NW	3c	53R	
08/09/1930	50	47	44	NW	"	"	
08/27/1931	66	61	57	SW	"	"	
12/24/1932	62	49	45	SW	4c	"	
06/23/1933	84	65	60	N	"	"	
05/03/1944	60	56	52	SW	3c	50R	
04/11/1945	76	70	66	SW	"	"	
08/09/1946	60	56	52	SW	"	"	
06/10/1947	84	77	72	SW	"	"	
12/05/1948	65	60	56	SW	"	"	
10/10/1949	60	56	52	SW	"	"	
05/05/1950	70	65	60	SW	"	54R	
05/19/1951	61	57	53	SW	"	"	
03/23/1952	66	61	56	SW	"	"	
03/22/1953	72	66	61	S	"	"	
03/25/1954	72	66	61	SW	"	"	
05/06/1955	74	68	63	SW	"	"	
04/03/1956	75	69	64	SW	"	"	
03/15/1957	58	54	50	SW	"	"	
05/22/1958	46	43	40	W	"	"	
03/26/1959	48	45	47	NW	"	"	
02/10/1960	48	45	47	NE	"	"	
09/01/1961	47	44	46	SW	"	"	
11/23/1962	48	45	47	NW	"	"	
07/19/1963	E64	59	62	NW	"	"	
05/08/1964	56	52	55	SW	"	"	
11/27/1965	49	46	48	W	"	"	
05/07/1966	68	63	66	NE	"	"	
05/18/1967	54	50	52	NW	"	"	
12/05/1968	47	44	46	NW	"	"	
07/03/1969	46	43	45	SW	"	"	
05/09/1970	60	56	59	SW	"	"	
04/27/1971	50	47	49	E	"	"	
07/14/1972	52	49	51	W	"	"	
06/18/1973	61	57	60	SE	"	"	
06/20/1974	61	57	60	N	"	"	
12/14/1975	46	43	45	SW	"	"	
06/13/1976	69	64	67	NW	"	"	
07/10/1977	50	47	49	SE	"	"	
08/18/1978	68	63	66	SW	"	"	
04/11/1979	52	49	51	NE	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	61
.90	10	66
.95	20	71
.96	25	72
.98	50	77
.99	100	82
.995	200	87
.998	500	93
.999	1000	98

PEORIA, ILLINOIS WBO** z_o=.4 1905-1942 40 43 89 36
WBAN #14874

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
10/19/1905	60	47	56	W	4c	45R	1.
07/28/1906	68	53	63	W	"	"	
08/06/1907	78	60	72	N	"	"	
03/06/1908	64	50	60	W	"	"	
04/18/1909	68	53	63	W	"	"	
01/26/1910	48	38	45	W	"	"	
11/11/1911	49	39	47	SW	"	"	
12/05/1912	41	33	40	SW	"	"	
03/24/1913	56	44	53	SW	"	"	
07/16/1914	37	30	36	W	"	"	
05/03/1915	40	32	38	SW	"	"	
04/20/1916	43	35	42	W	"	"	
01/21/1917	42	34	41	W	"	"	
02/14/1918	60	47	56	SW	"	"	
08/24/1919	44	35	42	NW	"	"	
03/28/1920	46	37	44	SW	"	"	
04/16/1921	46	37	44	NE	"	"	
04/10/1922	42	34	41	SW	"	"	
03/11/1923	37	30	36	NE	"	"	
06/28/1924	62	49	59	NW	"	"	
04/19/1925	42	34	41	W	"	"	
04/24/1926	39	32	38	W	"	"	
12/07/1927	43	35	42	W	"	"	
12/03/1928	31	26	31	W	"	"	
03/06/1929	37	30	36	NW	"	"	
05/07/1930	30	25	30	SW	"	"	
03/07/1931	30	25	30	NE	"	"	
02/11/1932	41	33	40	W	"	"	
05/01/1933	40	32	38	SW	"	"	
01/28/1934	41	33	40	W	"	"	
03/15/1935	40	32	38	SW	"	"	
08/25/1936	35	29	35	NW	"	"	
02/21/1937	42	34	41	W	"	"	
05/04/1938	34	28	34	W	"	"	
03/12/1939	28	27	32	NE	3c	"	
11/11/1940	34	33	40	SW	"	"	
04/20/1941	30	29	35	SW	"	"	
01/01/1942	33	32	38	SW	"	"	

1. Begins February

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	42
.80	5	49
.90	10	54
.95	20	59
.96	25	61
.98	50	66
.99	100	70
.995	200	75
.998	500	81
.999	1000	86

PEORIA, ILLINOIS (PIA) APT. z_o=.05 1943-1979 40 40 89 41
WBAN #14842

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
07/28/1943	64	59	61	NW	3c	26R	
04/11/1944	54	50	52	E	"	"	
11/08/1945	54	50	52	SW	"	"	
06/12/1946	54	50	52	W	"	"	
04/05/1947	72	66	69	SW	"	"	
12/05/1948	63	58	54	SW	"	50R	
01/27/1949	56	52	49	W	"	"	
05/05/1950	66	61	57	SW	"	"	
09/26/1951	54	50	47	W	"	"	
11/26/1952	54	50	47	SW	"	"	
07/05/1953	82	75	70	NW	"	"	
05/31/1954	59	55	51	SW	"	"	
03/22/1955	54	50	47	NW	"	"	
08/13/1956	70	65	61	W	"	"	
03/14/1957	56	52	49	SW	"	"	
10/09/1958	65	60	56	SW	"	"	
09/26/1959	65	60	56	W	"	"	
05/24/1960	50	47	51	NW	"	20G	
03/27/1961	46	43	47	SW	"	"	
04/30/1962	42	40	44	W	"	"	
07/19/1963	43	41	45	NW	"	"	
11/20/1964	60	56	61	W	"	"	
09/14/1965	55	51	56	W	"	"	
03/31/1966	42	40	44	NW	"	"	
02/23/1967	49	46	50	NW	"	"	
12/04/1968	41	39	43	NW	"	"	
06/25/1969	46	43	47	W	"	"	
05/13/1970	47	44	48	NE	"	"	
12/15/1971	49	46	50	SW	"	"	
01/24/1972	39	37	40	W	"	"	
06/16/1973	58	54	59	NW	"	"	
07/14/1974	52	49	54	W	"	"	
07/23/1975	53	50	55	W	"	"	
03/04/1976	46	43	47	W	"	"	
03/30/1977	47	44	48	SW	"	"	
07/09/1978	35	34	37	N	"	"	
04/05/1979	43	41	45	NW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	50
.80	5	57
.90	10	61
.95	20	65
.96	25	66
.98	50	70
.99	100	74
.995	200	78
.998	500	83
.999	1000	87

SPRINGFIELD, ILLINOIS WBO z_o=.7 1887-1947 39 48 89 39
WBAN #93896

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
11/19/1887	60	47	64	NW	4c	84R	
01/13/1888	60	47	64	W	"	"	
12/29/1889	60	47	64	W	"	"	
01/13/1890	60	47	64	SW	"	"	
01/29/1891	48	38	51	W	"	"	
01/01/1892	48	38	51	S	"	"	
01/05/1893	48	38	51	NW	"	"	
04/18/1894	50	40	54	SW	"	"	
01/21/1895	45	36	47	W	"	92R	
04/13/1896	60	47	62	S	"	"	
04/18/1897	44	35	46	S	"	"	
03/27/1898	42	34	45	W	"	"	
03/11/1899	48	38	50	W	"	"	
08/24/1900	60	47	62	W	"	"	
06/22/1901	60	47	62	NW	"	"	
06/11/1902	60	47	62	N	"	"	
12/25/1903	48	38	50	NW	"	"	
12/27/1904	48	38	50	SW	"	"	
11/05/1905	42	34	45	SW	"	"	
10/27/1906	47	38	50	NW	"	91R	
04/24/1907	42	34	45	S	"	"	
05/27/1908	54	43	57	W	"	"	
06/29/1909	44	35	46	E	"	"	
06/08/1910	50	40	53	SE	"	"	
09/13/1911	61	48	63	NW	"	"	
04/25/1912	54	43	57	S	"	"	
03/13/1913	48	38	50	SW	"	"	
02/15/1914	40	32	42	NW	"	"	
07/10/1915	42	34	45	NW	"	"	
03/07/1916	40	32	42	W	"	"	
02/04/1917	45	36	47	NW	"	"	
03/09/1918	58	46	60	SW	"	"	
11/29/1919	66	51	67	SW	"	"	
03/28/1920	53	42	55	SW	"	"	
04/16/1921	47	38	50	NE	"	"	
06/13/1922	48	38	50	N	"	"	
08/04/1923	46	37	49	NW	"	"	
08/08/1924	42	34	45	NW	"	"	
04/13/1925	58	46	60	NW	"	"	
06/13/1926	46	37	49	S	"	"	
05/14/1927	48	38	50	NW	"	"	
11/21/1928	40	38	36	NW	3c	191R	
04/01/1929	58	54	52	SW	"	"	
05/07/1930	50	47	45	S	"	"	
03/07/1931	50	47	45	NE	"	"	
02/11/1932	60	47	45	W	4c	"	
05/20/1933	60	47	45	SW	"	"	
11/30/1934	60	47	45	S	"	"	
04/15/1935	60	47	45	W	"	"	
08/15/1936	64	50	48	NW	"	"	
08/11/1937	58	46	44	NW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
11/04/1938	58	46	44	S	"	"	
08/06/1939	60	47	45	N	"	"	
11/11/1940	69	54	52	SW	"	"	
06/09/1941	52	41	39	NW	"	"	
05/13/1942	64	50	48	SW	"	"	
07/04/1943	70	54	52	N	"	"	
06/18/1944	48	45	43	NW	3c	"	
06/07/1945	50	47	45	SE	"	"	
02/06/1946	40	38	36	W	"	"	
04/05/1947	56	52	50	S	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	56
.90	10	60
.95	20	64
.96	25	65
.98	50	69
.99	100	72
.995	200	76
.998	500	81
.999	1000	85

SPRINGFIELD, ILLINOIS (SPI) APT z_o=.05 1948-1979 39 50 89 40
WBAN #93822

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
12/05/1948	72	66	62	SW	3c	48R	
01/27/1949	70	65	61	SW	"	"	
05/05/1950	61	57	54	SW	"	"	
08/15/1951	63	58	55	W	"	"	
03/23/1952	64	59	56	W	"	"	
12/14/1953	63	58	55	W	"	"	
08/18/1954	54	50	47	W	"	"	
05/26/1955	60	56	53	SW	"	"	
06/26/1955	58	54	51	SW	"	"	
06/14/1957	82	75	71	SW	"	"	
05/31/1958	55	51	48	N	"	"	
03/06/1959	62	57	54	W	"	"	
05/25/1960	63	58	55	W	"	"	
03/27/1961	70	65	61	SW	"	"	
07/13/1962	79	73	69	SW	"	"	
06/10/1963	52	49	54	NW	"	20G	
06/21/1964	51	48	53	W	"	"	
03/17/1965	48	45	49	W	"	"	
03/23/1966	44	42	46	W	"	"	
01/06/1967	55	51	56	SW	"	"	
12/22/1968	44	42	46	SW	"	"	
06/28/1969	51	48	53	NW	"	"	
06/14/1970	54	50	55	NE	"	"	
12/15/1971	58	54	59	SW	"	"	
01/24/1972	48	45	49	W	"	"	
04/20/1973	48	45	49	SE	"	"	
05/30/1974	51	48	53	NE	"	"	
11/29/1975	52	49	54	SW	"	"	
03/12/1976	51	48	53	SW	"	"	
04/02/1977	47	44	48	W	"	"	
01/26/1978	48	45	49	W	"	"	
10/31/1979	40	38	42	SE	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	59
.90	10	62
.95	20	66
.96	25	67
.98	50	71
.99	100	74
.995	200	78
.998	500	82
.999	1000	86

EVANSVILLE, INDIANA WBO Z_o=.7 1898-1940 37 58 87 33
WBAN #93817

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
01/20/1898	50	40	54	SW	4c	82R	
12/11/1899	45	36	49	SW	"	"	
08/01/1900	48	38	52	N	"	"	
11/11/1901	40	32	44	S	"	"	
12/02/1902	60	47	64	SW	"	"	
04/03/1903	48	38	52	S	"	"	
05/29/1904	60	47	64	SW	"	"	
03/23/1905	40	32	44	S	"	"	
01/15/1906	60	47	64	S	"	"	
06/07/1907	60	47	64	SW	"	"	
05/11/1908	50	40	54	SW	"	"	
04/29/1909	60	47	64	S	"	"	
07/11/1910	50	40	54	S	"	"	
11/11/1911	50	40	54	S	"	"	
05/11/1912	52	41	56	SW	"	"	
07/11/1913	55	43	59	SW	"	"	
06/05/1914	58	46	63	N	"	"	
06/21/1915	67	52	71	N	"	"	
08/26/1916	105	80	79	SW	"	175R	
05/30/1917	63	49	48	S	"	"	
02/25/1918	100	76	75	SW	"	"	
06/02/1919	150	113	112	SE	"	"	
03/15/1920	64	50	49	SW	"	"	
07/19/1921	60	47	46	W	"	"	
07/23/1922	78	60	59	W	"	"	
03/11/1923	80	62	61	SW	"	"	
03/29/1924	70	54	53	SW	"	"	
03/18/1925	66	51	50	W	"	"	
02/25/1926	66	51	50	SW	"	"	
04/29/1927	60	47	57	SW	"	116R	
01/24/1928	48	45	55	W	3c	"	
01/18/1929	44	42	51	W	"	"	
06/25/1930	55	51	62	SW	"	"	
10/27/1931	43	41	50	SW	"	"	
03/30/1932	70	54	66	SW	4c	"	
03/13/1933	58	46	56	SW	"	"	
11/30/1934	74	57	69	SW	"	"	
03/16/1935	56	49	60	S	4c-b	"	
08/10/1936	52	46	56	N	"	"	
02/08/1937	60	53	65	NW	"	"	
11/04/1938	65	57	69	SW	"	"	
05/08/1939	64	56	68	SW	"	"	
04/30/1940	70	61	74	SW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	58
.80	5	67
.90	10	73
.95	20	79
.96	25	81
.98	50	86
.99	100	92
.995	200	97
.998	500	104
.999	1000	110

EVANSVILLE, INDIANA (EVV) APT z_o=.05 1941-1979 38 03 87 32
WBAN #93817

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
07/07/1941	57	53	51	NW	3c	40R	1.
06/11/1942	54	50	48	S	"	"	
08/04/1943	52	49	47	SW	"	"	
03/04/1944	58	54	52	W	"	"	
03/17/1945	60	56	54	S	"	"	
02/13/1946	56	52	50	SW	"	"	
03/24/1947	54	50	48	W	"	"	
03/19/1948	58	54	52	SW	"	"	
06/24/1949	60	56	54	S	"	"	
11/20/1950	42	40	39	SW	"	"	
05/27/1951	48	45	41	NW	"	64R	
06/30/1952	50	47	43	NW	"	"	
04/30/1953	52	49	44	SE	"	"	
02/20/1954	58	54	49	SE	"	"	
03/01/1955	50	47	43	SW	"	"	
02/25/1956	64	59	53	W	"	"	
06/12/1957	61	57	52	NW	"	"	
06/10/1958	63	58	55	NW	"	"	
03/05/1959	57	53	48	SE	"	"	
05/24/1960	44	42	38	NW	"	"	
05/07/1961	50	47	43	NW	"	"	
04/30/1962	46	43	47	SW	"	20G	
08/28/1963	52	49	54	NW	"	"	
03/04/1964	46	43	47	S	"	"	
05/18/1965	44	42	46	NW	"	"	
07/06/1966	40	38	42	NW	"	"	
02/15/1967	41	39	43	W	"	"	
11/28/1968	38	36	39	S	"	"	
05/10/1969	37	35	38	W	"	"	
04/19/1970	36	34	37	SW	"	"	
12/10/1971	60	56	61	SW	"	"	
07/15/1972	34	33	36	SW	"	"	
06/04/1973	47	44	48	SW	"	"	
01/26/1974	43	44	48	S	"	"	
05/25/1975	52	49	54	SW	"	"	
01/13/1976	46	43	47	W	"	"	
06/30/1977	49	46	50	W	"	"	
07/01/1978	44	42	46	N	"	"	
04/12/1979	44	42	46	SE	"	"	

1. Begins April

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	46
.80	5	52
.90	10	56
.95	20	60
.96	25	61
.98	50	65
.99	100	69
.995	200	73
.998	500	78
.999	1000	82

FORT WAYNE, INDIANA WBO z_o=.7 1911-1940 41 05 85 10
WBAN #14827

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
12/27/1911	50	40	47	SW	4c	124R	1.
04/26/1912	48	38	44	S	"	"	
03/21/1913	64	51	60	SW	"	"	
07/24/1914	55	43	50	NW	"	"	
05/15/1915	46	37	43	NW	"	"	
03/09/1916	48	38	44	SW	"	"	
03/17/1917	60	47	55	SW	"	"	
03/09/1918	66	51	60	W	"	"	
11/29/1919	74	57	67	SW	"	"	
04/02/1920	60	47	55	SW	"	"	
06/18/1921	50	40	47	SW	"	"	
07/10/1922	66	51	60	SW	"	"	
03/12/1923	62	49	57	SW	"	"	
03/29/1924	56	44	51	SW	"	"	
03/10/1925	50	40	47	SW	"	"	
04/24/1926	52	41	48	SW	"	"	
11/11/1927	52	41	48	SW	"	"	
01/19/1928	44	42	49	W	3c	"	
03/06/1929	44	42	49	W	"	"	
08/09/1930	48	45	54	W	"	119R	
01/30/1931	48	45	54	NW	"	"	
12/24/1932	48	38	51	SW	4c	84R	
02/21/1933	54	43	58	W	"	"	
06/26/1934	56	44	59	W	"	"	
07/03/1935	60	47	64	S	"	"	
02/04/1936	50	40	54	W	"	"	
07/15/1937	50	40	54	W	"	"	
01/24/1938	60	47	64	SW	"	"	
03/15/1939	54	43	58	W	"	"	
11/11/1940	72	56	76	SW	"	"	

1. Begins May

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	59
.90	10	62
.95	20	66
.96	25	67
.98	50	71
.99	100	74
.995	200	78
.998	500	82
.999	1000	86

FORT WAYNE, INDIANA (FWA) APT z_o=.05 1941-1979 41 00 85 13
WBAN #14827

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
09/25/1941	60	56	56	W	3c	33R	1.
03/09/1942	54	50	50	NW	"	"	
06/15/1943	44	42	42	W	"	"	
02/22/1944	46	43	43	W	"	"	
07/25/1945	52	49	49	NW	"	"	
11/21/1946	44	42	42	W	"	"	
03/24/1947	51	48	48	W	"	"	
03/19/1948	70	65	65	S	"	34R	
01/18/1949	64	59	59	SW	"	"	
06/16/1950	46	43	43	NW	"	"	
06/27/1951	61	57	57	S	"	"	
11/25/1952	52	49	49	SE	"	"	
04/10/1953	65	60	55	W	"	62R	
07/20/1954	66	61	55	NW	"	"	
03/22/1955	68	63	57	SW	"	"	
11/15/1956	58	54	49	SW	"	"	
04/05/1957	61	57	52	SW	"	"	
05/22/1958	55	51	46	SW	"	68R	
03/15/1959	61	57	51	SW	"	"	
05/20/1960	61	57	51	S	"	"	
03/06/1961	61	57	51	SW	"	"	
04/30/1962	68	63	69	W	"	20G	
04/17/1963	50	47	51	NE	"	"	
03/05/1964	56	52	57	SW	"	"	
08/27/1965	55	51	56	N	"	"	
07/12/1966	46	43	47	N	"	"	
02/15/1967	66	61	67	W	"	"	
06/11/1968	58	54	59	SW	"	"	
05/31/1969	60	56	61	W	"	"	
05/15/1970	56	52	57	SW	"	"	
12/15/1971	52	49	54	SW	"	"	
01/25/1972	57	53	58	W	"	"	
06/26/1973	50	47	51	W	"	"	
06/20/1974	52	49	54	W	"	"	
01/10/1975	54	50	55	SW	"	"	
03/12/1976	42	40	44	W	"	"	
01/26/1977	54	50	55	W	"	"	
01/26/1978	59	55	60	W	"	"	
06/20/1979	55	51	56	SW	"	"	

1. Begins April

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	52
.80	5	58
.90	10	62
.95	20	66
.96	25	67
.98	50	71
.99	100	75
.995	200	79
.998	500	83
.999	1000	87

INDIANAPOLIS, INDIANA WBO z_o=.7 1873-1942 39 46 86 10
WBAN #93892

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
07/03/1873	58	46	60	NW	4c	91R	
06/25/1874	45	36	47	UNK	"	"	
04/29/1875	48	38	50	W	"	"	
01/09/1876	42	34	45	UNK	"	"	
06/25/1877	54	43	57	NW	"	"	
08/08/1878	42	34	45	NW	"	"	
06/27/1879	34	28	37	SW	"	"	
03/27/1880	45	36	43	W	"	"	
08/06/1881	40	32	42	W	"	"	
06/25/1882	66	51	67	W	"	"	
07/12/1883	47	38	50	NW	"	"	
02/19/1884	40	32	42	NW	"	"	
12/05/1885	33	27	36	NW	"	"	
08/22/1886	36	30	39	NW	"	"	
08/05/1887	35	29	38	W	"	"	
03/11/1888	30	25	33	NW	"	"	
07/10/1889	36	25	33	NW	"	"	
04/09/1890	40	32	42	W	"	"	
10/26/1891	42	34	45	NW	"	"	
11/17/1892	40	32	42	SW	"	"	
04/20/1893	39	32	42	SE	"	"	
01/11/1894	46	37	49	NW	"	"	
03/25/1895	36	30	39	W	"	"	
10/30/1896	60	47	47	S	"	167R	
09/01/1897	80	62	62	W	"	"	
01/22/1898	66	51	51	SW	"	"	
03/15/1899	60	47	47	W	"	"	
08/12/1900	70	54	54	NW	"	"	
11/11/1901	58	46	46	S	"	"	
04/26/1902	75	58	58	SW	"	"	
02/04/1903	60	47	47	SW	"	"	
12/27/1904	63	49	49	SW	"	"	
05/30/1905	56	44	44	S	"	"	
11/21/1906	75	58	58	SW	"	"	
01/19/1907	70	54	54	SW	"	"	
05/11/1908	54	43	43	SW	"	"	
08/27/1909	72	56	56	S	"	"	
01/26/1910	60	47	47	W	"	"	
01/08/1911	66	51	51	W	"	"	
04/26/1912	56	44	44	SE	"	"	
03/21/1913	72	56	56	SW	"	"	
04/18/1914	56	44	44	S	"	"	
07/20/1915	70	54	49	NW	"	232R	
03/07/1916	70	54	49	W	"	"	
04/05/1917	66	51	46	NW	"	"	
02/25/1918	84	65	59	S	"	"	
11/29/1919	70	54	49	SW	"	"	
07/31/1920	64	50	45	NW	"	"	
11/01/1921	62	49	44	NE	"	"	
08/06/1922	66	51	46	NW	"	"	
03/12/1923	78	60	54	SW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
08/09/1924	72	56	50	N	"	"	
07/12/1925	94	72	65	NE	"	"	
02/25/1926	66	51	46	SW	"	"	
05/18/1927	80	62	56	W	"	"	
03/26/1928	60	47	42	W	"	"	
06/30/1929	122	92	83	NW	"	"	
08/09/1930	60	47	42	NW	"	"	
10/07/1931	50	40	36	NW	"	"	
01/12/1932	68	53	48	SW	"	"	
03/08/1933	62	49	44	W	"	"	
01/28/1934	64	50	45	NW	"	"	
12/25/1935	60	53	48	W	4c-b	"	
01/22/1936	60	53	48	W	"	"	
08/11/1937	78	68	61	W	"	"	
01/24/1938	62	55	50	SW	"	"	
06/10/1939	50	44	40	NW	"	131R	
11/11/1940	50	44	50	SW	"	"	
02/17/1941	42	37	42	W	"	"	
11/10/1942	42	37	42	SW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	54
.90	10	58
.95	20	63
.96	25	64
.98	50	68
.99	100	72
.995	200	77
.998	500	82
.999	1000	87

INDIANAPOLIS, INDIANA (IND) APT z_o=.05 1943-1979 39 44 86 16
WBAN #93819

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
04/16/1943	54	50	46	SW	3c	54R	
02/22/1944	56	52	48	SW	"	"	
05/14/1945	74	68	63	NW	"	"	
06/13/1946	84	77	71	N	"	"	
03/24/1947	74	68	63	NW	"	"	
03/19/1948	72	66	61	SW	"	"	
01/18/1949	65	60	56	SW	"	"	
01/25/1950	99	90	83	W	"	"	
05/03/1951	74	68	62	W	"	59R	
09/18/1952	66	61	56	NW	"	"	
07/05/1953	61	57	52	NW	"	"	
03/03/1954	60	56	51	NW	"	"	
03/11/1955	60	56	51	NW	"	"	
04/07/1956	65	60	55	W	"	"	
07/08/1957	61	57	52	W	"	"	
06/10/1958	64	59	54	NW	"	"	
03/15/1959	56	52	48	SW	"	"	
04/08/1960	44	42	46	NW	"	20G	
02/25/1961	42	40	44	N	"	"	
10/07/1962	E93	85	93	SW	"	"	
04/22/1963	E54	50	55	N	"	"	
03/05/1964	55	51	56	SW	"	"	
11/26/1965	54	50	55	SW	"	"	
07/11/1966	47	44	48	NW	"	"	
02/15/1967	52	49	54	W	"	"	
12/05/1968	44	42	46	NW	"	"	
06/01/1969	42	40	44	SW	"	"	
12/03/1970	48	45	49	W	"	"	
06/11/1971	59	55	60	W	"	"	
04/07/1972	51	48	53	N	"	"	
03/11/1973	47	44	48	SW	"	"	
01/26/1974	47	44	48	SW	"	"	
01/10/1975	52	49	54	SW	"	"	
03/30/1976	39	37	41	SW	"	"	
01/26/1977	47	44	48	W	"	"	
01/26/1978	47	44	48	NW	"	"	
03/30/1979	44	42	46	S			

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	60
.90	10	65
.95	20	69
.96	25	71
.98	50	75
.99	100	80
.995	200	84
.998	500	90
.999	1000	95

ROYAL CENTER, INDIANA WBO** z_o=.4 1918-1931 40 53 86 29

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
06/30/1918	54	43	48	NW	4c	55R	1.
11/29/1919	78	60	67	W	"	"	
04/02/1920	60	47	53	SW	"	"	
03/24/1921	45	36	40	W	"	"	
07/10/1922	66	51	57	W	"	"	
03/11/1923	60	47	53	E	"	"	
12/13/1924	42	41	46	NW	"	"	
07/03/1925	78	60	67	SW	"	"	
04/24/1926	54	43	48	SW	"	"	
12/07/1927	58	46	52	SW	"	"	
07/10/1928	48	45	50	NW	3c	"	
04/01/1929	48	45	50	SW	"	"	
08/09/1930	72	66	74	W	"	"	
03/07/1931	48	45	50	E	"	"	

1. Begins 5/18

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	52
.80	5	61
.90	10	66
.95	20	72
.96	25	73
.98	50	78
.99	100	84
.995	200	89
.998	500	96
.999	1000	101

TERRE HAUTE, INDIANA WBO z_o=.7 1913-1946 39 29 87 24
WBAN #93823

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
03/21/1913	55	43	49	SW	4c	130R	
07/16/1914	48	38	43	E	"	"	
05/25/1915	50	40	45	NW	"	"	
03/07/1916	52	41	47	NW	"	"	
10/18/1917	49	39	44	SW	"	"	
03/09/1918	62	49	56	SW	"	"	
11/29/1919	52	41	47	W	"	"	
03/29/1920	64	50	57	SW	"	"	
07/28/1921	68	53	60	SW	"	"	
04/08/1922	54	43	49	S	"	"	
03/12/1923	66	51	58	SW	"	"	
03/29/1924	56	44	50	S	"	"	
08/12/1925	56	44	50	W	"	"	
07/03/1926	54	43	49	NW	"	"	
02/18/1927	52	41	47	N	"	"	
07/04/1928	42	40	45	N	3c	"	
12/18/1929	44	42	48	N	"	"	
03/26/1930	46	43	49	W	"	"	
08/02/1931	54	50	57	SW	"	"	
08/02/1932	71	55	62	W	4c	"	
10/22/1933	50	40	45	W	"	"	
06/24/1934	66	51	58	N	"	"	
08/12/1935	48	43	45	W	4c-b	150R	
08/28/1936	74	65	68	W	"	"	
02/21/1937	47	42	44	SW	"	"	
07/11/1938	58	51	54	N	"	"	
02/09/1939	54	48	51	S	"	"	
11/11/1940	72	63	66	SW	"	"	
07/17/1941	49	43	45	NW	"	"	
01/01/1942	46	41	43	SW	"	"	
07/28/1943	62	55	58	NW	"	"	
06/14/1944	58	51	54	SW	"	"	
06/16/1945	62	55	58	W	"	"	
08/05/1946	49	43	45	NW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	50
.80	5	56
.90	10	60
.95	20	64
.96	25	65
.98	50	69
.99	100	73
.995	200	76
.998	500	81
.999	1000	85

TERRE HAUTE, INDIANA (HUF) APT z_o=.05 1947-1953 39 27 87 18
WBAN #93823

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
04/05/1947	60	56	59	W	3c	25R	1.
03/19/1948	72	66	69	W	"	"	
03/21/1949	52	49	51	S	"	"	
07/17/1950	60	56	59	SW	"	"	
06/28/1951	61	57	60	SW	"	"	
11/26/1952	50	47	49	SW	"	"	
06/26/1953	54	50	52	W	"	"	

1. Begins February

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	62
.90	10	67
.95	20	71
.96	25	72
.98	50	76
.99	100	80
.995	200	84
.998	500	90
.999	1000	94

BURLINGTON, IOWA (BRL) APT z_o=.05 1942-1964 40 47 91 07
WBAN #14931

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
05/01/1942	46	43	42	SW	3c	36R	
12/12/1943	60	56	55	NW	"	"	
06/25/1944	E76	70	69	NW	"	"	
05/21/1945	68	63	62	SW	"	"	
08/09/1946	60	56	55	W	"	"	
08/30/1947	80	73	72	N	"	"	
12/05/1948	78	72	71	SW	"	"	
10/10/1949	50	47	46	SW	"	"	
05/05/1950	74	68	68	SW	"	33R	
11/03/1951	50	47	47	W	"	"	
01/19/1952	52	49	49	W	"	"	
10/03/1953	68	63	63	W	"	"	
04/26/1954	60	56	56	W	"	"	
04/23/1955	58	54	54	SW	"	"	
04/03/1956	60	56	56	SW	"	"	
03/15/1957	52	49	49	W	"	"	
11/05/1958	46	43	43	NW	"	"	
03/15/1959	58	54	54	NW	"	"	
06/01/1960	60	56	56	NW	"	"	
03/27/1961	51	48	48	SW	"	"	
09/13/1962	60	56	56	W	"	"	
03/20/1963	51	48	48	W	"	"	
06/20/1964	78	72	72	NW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	55
.80	5	64
.90	10	70
.95	20	76
.96	25	78
.98	50	84
.99	100	89
.995	200	95
.998	500	103
.999	1000	108

CHARLES CITY, IOWA WBO Z_o=.7 1905-1952 43 04 92 40
WBAN #14966

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
06/05/1905	50	40	62	SW	4c	58R	
01/15/1906	49	39	60	NW	"	"	
01/19/1907	44	35	54	NW	"	"	
06/20/1908	45	36	59	NE	"	51R	
04/11/1909	41	33	54	S	"	'	
08/20/1910	44	35	57	N	"	"	
03/21/1911	38	31	51	SW	"	"	
04/26/1912	40	32	52	SW	"	"	
04/22/1913	40	32	52	SW	"	"	
02/28/1914	38	31	51	NW	"	"	
11/07/1915	36	30	49	SW	"	"	
09/06/1916	60	47	77	NW	"	"	
05/19/1917	39	32	52	W	"	"	
05/08/1918	40	32	52	SW	"	"	
11/10/1919	38	31	51	SW	"	"	
03/16/1920	52	41	67	NW	"	"	
02/16/1921	48	38	62	NW		"	
11/30/1922	46	37	61	SW	"	"	
02/14/1923	34	28	46	NW	"	"	
09/21/1924	37	30	49	SW	"	"	
09/19/1925	37	30	49	W	"	"	
03/01/1926	38	31	51	NW	"	"	
05/03/1927	42	34	56	SW	"	"	
03/24/1928	33	32	52	NW	3c	"	
06/13/1929	31	30	49	SE	"	"	
06/29/1930	29	28	46	N	"	"	
04/12/1931	31	30	49	SW	"	"	
02/11/1932	38	31	51	W	4c	"	
05/23/1933	45	36	59	SW	"	"	
05/12/1934	45	36	59	SE	"	"	
04/15/1935	43	35	57	NW	"	"	
02/26/1936	37	30	49	SW	"	"	
03/24/1937	40	36	59	NE	4c-b	"	
03/22/1938	34	31	51	NW	"	"	
05/28/1939	31	28	46	SE	"	"	
11/11/1940	42	37	61	W	"	"	
04/14/1941	33	30	49	SW	"	"	
07/18/1942	36	32	52	SW	"	"	
03/17/1943	38	34	56	W	"	"	
06/11/1944	31	28	46	SE	"	"	
04/16/1945	31	28	46	S	"	"	
04/03/1946	33	30	49	SW	"	"	
09/09/1947	52	46	75	S	"	"	
03/27/1948	30	27	44	N	"	"	
10/10/1949	54	48	79	SW	"	"	
05/05/1950	49	43	70	SW	"	"	
08/28/1951	42	37	61	S	"	"	
03/22/1952	33	29	47	NE	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	54
.80	5	60
.90	10	64
.95	20	68
.96	25	70
.98	50	74
.99	100	77
.995	200	81
.998	500	87
.999	1000	91

DAVENPORT, IOWA WBO z_o=.7 1873-1942 41 30 90 38
WBAN #14932

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
11/11/1873	46	37	50	W	4c	84R	
09/18/1874	56	44	59	SE	"	"	
02/03/1875	48	38	51	W	"	"	
01/01/1876	66	51	69	SW	"	"	
04/01/1877	62	49	66	W	"	"	
07/31/1878	63	49	66	SW	"	"	
07/09/1879	68	53	72	N	"	"	
10/16/1880	88	68	92	SW	"	"	
03/19/1881	62	49	66	N	"	"	
05/09/1882	55	43	58	S	"	"	
04/14/1883	72	56	76	S	"	"	
04/27/1884	48	38	51	W	"	"	
07/08/1885	54	43	58	SW	"	"	
10/14/1886	50	40	54	SW	"	"	
11/19/1887	52	41	55	SW	"	"	
05/04/1888	79	61	82	SE	"	"	
05/05/1889	60	47	64	S	"	"	
01/11/1890	58	46	62	SW	"	"	
12/04/1891	50	40	50	SW	"	110R	
04/01/1892	64	50	62	SW	"	"	
04/12/1893	60	47	58	SW	"	"	
03/10/1894	75	58	72	SW	"	"	
07/07/1895	68	53	66	W	"	"	
05/16/1896	70	54	67	NW	"	"	
12/16/1897	50	40	52	W	"	97R	
05/27/1898	56	44	57	W	"	"	
03/11/1899	42	34	44	SW	"	"	
09/11/1900	60	47	61	SW	"	"	
06/28/1901	42	34	44	SW	"	"	
04/26/1902	45	36	46	W	"	"	
01/07/1903	40	32	41	W	"	"	
12/27/1904	42	34	44	NW	"	"	
09/01/1905	46	37	48	NW	"	"	
06/29/1906	48	38	49	NW	"	"	
01/19/1907	40	32	41	NW	"	"	
05/28/1908	46	37	48	SW	"	"	
04/29/1909	53	42	54	NW	"	"	
07/09/1910	42	34	44	NW	"	"	
12/10/1911	48	38	49	SW	"	"	
04/26/1912	44	35	45	S	"	"	
03/23/1913	60	47	61	SW	"	"	
02/28/1914	42	34	44	W	"	"	
05/26/1915	41	33	43	E	"	"	
08/10/1916	52	41	53	W	"	"	
01/21/1917	56	44	57	W	"	"	
05/21/1918	44	35	45	E	"	"	
05/06/1919	60	47	61	NW	"	"	
05/12/1920	50	40	52	NE	"	"	
04/16/1921	46	37	48	NE	"	"	
04/09/1922	56	44	57	SW	"	"	
03/11/1923	50	40	52	NE	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
02/04/1924	44	35	45	NE	"	"	
06/07/1925	44	35	45	SW	"	"	
03/30/1926	40	32	41	NE	"	"	
05/27/1927	52	41	53	E	"	"	
06/07/1928	39	37	48	SE	3c	"	
10/28/1929	45	42	54	E	"	"	
05/01/1930	36	34	44	NW	"	"	
12/30/1931	44	42	45	SE	"	143R	1.
06/17/1932	58	54	58	NW	"	"	
11/12/1933	52	41	42	W	4c	161R	2.
01/28/1934	56	44	45	NW	"	"	
04/15/1935	60	47	48	NW	"	"	
06/29/1936	62	49	50	NW	"	"	
07/15/1927	58	46	47	W	"	"	
06/10/1938	54	43	44	SW	"	"	
08/16/1939	64	50	51	SE	"	"	
07/26/1940	60	47	48	NE	"	"	
06/30/1941	54	43	44	NW	"	"	
07/05/1942	72	56	57	NW	"	"	

1. 3 months missing

2. 2 months missing

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	60
.90	10	64
.95	20	69
.96	25	70
.98	50	74
.99	100	79
.995	200	83
.998	500	88
.999	1000	93

DES MOINES, IOWA WBO Z_o=.7 1887-1949 41 35 93 37
WBAN #14967

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
11/19/1887	58	46	64	NW	4c	78R	
01/12/1888	34	28	39	W	"	"	
05/10/1889	60	47	63	N	"	88R	
0[illegible]/05/1890	47	38	51	SW	"	"	
0[illegible]/27/1891	48	38	51	Unk	"	"	
04/01/1892	100	76	101	SW	"	"	
08/10/1893	80	62	82	SW	"	"	
03/10/1894	48	38	51	SW	"	"	
0[illegible]/03/1895	67	52	69	SW	"	"	
03/28/1896	48	38	51	W	"	"	
07/23/1897	60	47	63	NW	"	"	
07/19/1898	45	36	48	W	"	"	
04/30/1899	60	47	63	SW	"	"	
06/10/1900	60	47	63	SW	"	"	
06/28/1901	60	47	63	SW	"	"	
08/19/1902	58	46	59	NW	"	100R	
05/20/1903	58	46	59	SW	"	"	
03/02/1904	45	36	46	NW	"	101R	
03/27/1905	60	47	60	NW	"	"	
06/30/1906	44	35	44	W	"	"	
05/12/1907	60	47	60	SW	"	"	
03/25/1908	50	40	51	SW	"	"	
01/29/1909	59	46	58	NW	"	"	
03/23/1910	60	47	60	SW	"	"	
02/25/1911	46	37	48	SW	"	97R	
04/14/1912	55	43	55	SW	"	"	
03/18/1913	58	46	59	SW	"	"	
06/06/1914	54	43	55	SW	"	"	
11/07/1915	48	38	49	SW	"	"	
11/06/1916	45	36	46	SW	"	"	
03/16/1917	46	37	48	SW	"	"	
05/09/1918	55	43	55	SW	"	"	
11/10/1919	56	44	57	SW	"	"	
03/15/1920	46	37	48	SW	"	"	
03/10/1921	46	37	48	SW	"	"	
11/30/1922	66	51	66	SW	"	"	
04/19/1923	46	37	48	SW	"	"	
06/28/1924	60	47	61	NW	"	"	
04/26/1925	52	49	63	SW	"	"	
02/05/1926	40	32	41	SW	"	"	
05/09/1927	43	35	45	SW	"	"	
10/10/1928	42	34	44	SW	"	"	
11/27/1929	62	49	63	W	"	99R	
11/25/1930	48	38	49	NW	"	"	
04/12/1931	42	34	44	S	"	"	
03/29/1932	53	42	54	S	"	"	
02/22/1933	60	47	60	W	"	"	
05/09/1934	62	49	63	W	"	"	
04/14/1935	60	47	60	NW	"	"	
06/09/1936	71	55	70	SW	"	"	
02/21/1937	58	46	59	NW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
03/22/1938	61	47	60	NW	"	"	
06/07/1939	65	60	77	NW	3c	"	
08/12/1940	46	43	55	SE	"	"	
04/13/1941	60	56	72	SW	"	"	
04/27/1942	46	63	55	SE	"	"	
08/29/1943	61	57	73	N	"	"	
05/25/1944	52	49	63	NW	"	"	
05/21/1945	48	45	58	S	"	"	
02/14/1946	44	42	54	N	"	"	
04/30/1947	50	47	60	SW	"	"	
02/19/1948	48	45	58	NW	"	"	
12/11/1949	63	58	74	SW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	66
.90	10	70
.95	20	76
.96	25	77
.98	50	83
.99	100	88
.995	200	93
.998	500	100
.999	1000	105

DES MOINES, IOWA (DSM) APT z_o=.05 1950-1979 41 32 93 39
WBAN #14933

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
05/05/1950	77	71	64	SW	3c	63R	
11/03/1951	68	63	57	NW	"	"	
11/26/1952	78	72	65	W	"	"	
06/07/1953	83	76	69	NW	"	"	
06/12/1954	70	65	59	SE	"	"	
05/28/1955	76	70	63	W	"	69R	
06/19/1956	68	63	57	W	"	"	
11/08/1957	74	68	61	NW	"	"	
07/01/1958	66	61	55	SE	"	"	
05/18/1959	58	54	48	NE	"	"	
08/24/1960	65	60	54	S	"	"	
07/12/1961	54	50	55	SW	"	20G	
05/18/1962	60	56	61	SW	"	"	
06/28/1963	60	56	61	NE	"	"	
05/08/1964	71	65	71	SW	"	"	
06/27/1965	65	60	66	SW	"	"	
07/05/1966	58	54	59	NW	"	"	
04/17/1967	54	50	55	NW	"	"	
07/08/1968	79	73	80	W	"	"	
06/26/1969	63	58	64	SW	"	"	
07/02/1970	60	56	61	NW	"	"	
07/08/1971	48	45	49	NW	"	"	
05/01/1972	44	42	46	SW	"	"	
06/16/1973	52	49	54	SW	"	"	
06/14/1974	42	40	44	E	"	"	
01/11/1975	44	42	46	NW	"	"	
06/14/1976	49	46	50	S	"	"	
03/29/1977	46	43	47	SW	"	"	
06/26/1978	44	42	46	NW	"	"	
08/19/1979	60	56	61	SW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	64
.90	10	69
.95	20	73
.96	25	75
.98	50	80
.99	100	84
.995	200	89
.998	500	95
.999	1000	99

DUBUQUE, IOWA (DBQ) WBO z_o=.7 1887-1950 42 30 90 40
WBAN #14934

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
11/19/1887	27	23	35	SW	4c	60R	
03/21/1888	30	25	38	NW	"	"	
07/02/1889	30	25	38	W	"	"	
03/25/1890	40	32	49	W	"	"	
04/27/1891	30	25	38	W	"	"	
08/09/1892	45	36	55	NE	"	"	
09/15/1893	45	36	55	UNK	"	"	
04/29/1894	43	35	54	W	"	"	1.
1895	Missing						
04/18/1896	40	32	50	NW	"	57R	2.
09/16/1897	44	35	43	SW	"	109R	
07/19/1898	65	51	63	NW	"	"	
12/24/1899	56	44	55	NW	"	"	
07/02/1900	56	44	55	SW	"	"	
07/04/1901	41	33	41	NW	"	"	
06/12/1902	44	35	45	SW	"	98R	
07/09/1903	49	39	50	N	"	"	
05/22/1904	39	32	41	NW	"		
03/27/1905	46	37	47	SW	"	"	
03/21/1906	39	32	41	NW	"	"	
08/06/1907	47	38	49	N	"	"	
06/20/1908	48	38	49	N	"	96R	
04/07/1909	44	35	45	NW	"	"	
03/07/1910	36	30	39	NW	"	"	
03/15/1911	38	31	40	NW	"	"	
02/26/1912	36	30	39	NE	"	"	
11/09/1913	31	26	34	N	"	"	
02/28/1914	40	32	41	NW	"	"	
01/16/1915	33	27	35	S	"	"	
10/16/1916	40	32	41	NW	"	"	
02/04/1917	37	30	39	NW	"	"	
05/21/1918	42	34	44	SE	"	"	
05/03/1919	42	34	44	SE	"	"	
03/15/1920	36	30	39	S	"	"	
07/12/1921	36	30	39	NW	"	"	
04/19/1922	40	32	41	NW	"	"	
05/08/1923	43	35	45	NW	"	"	
07/21/1924	43	35	45	NW	"	"	
04/14/1925	37	30	39	N	"	"	
01/27/1926	40	32	41	NW	"	"	
02/17/1927	34	28	36	N	"	"	
01/20/1928	35	34	44	NW	3c	"	
03/06/1929	34	33	43	NW	"	"	
05/06/1930	31	30	39	SW	"	"	
06/22/1931	32	31	40	NE	"	"	
06/17/1932	42	34	44	NW	4c	"	
07/02/1933	54	43	56	NW	"	"	
01/28/1934	52	41	53	NW	"	"	
03/14/1935	41	33	46	NW	"	79R	
11/20/1936	42	34	47	NW	"	"	
04/24/1937	44	35	48	SE	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
11/04/1938	33	27	37	SE	"	"	
01/21/1939	38	31	43	NW	"	"	
06/18/1940	60	47	65	NW	"	"	
03/16/1941	42	34	47	NW	"	"	
03/21/1942	38	31	43	NW	"	"	
07/29/1943	38	31	43	NE	"	"	
04/11/1944	28	27	37	E	3c	"	
04/11/1945	24	24	33	SW	"	"	
02/14/1946	28	27	37	NW	"	"	
06/28/1947	36	34	47	NW	"	"	
02/19/1948	29	28	39	NW	"	"	
11/30/1949	28	27	37	NW	"	"	
07/31/1950	37	35	48	NW	"	"	

1. Ends 6/1

2. Begins April

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	43
.80	5	49
.90	10	53
.95	20	56
.96	25	58
.98	50	61
.99	100	65
.995	200	68
.998	500	73
.999	1000	76

KEOKUK, IOWA WBO Z_o=.4 1873-1941 40 24 91 24
WBAN #14969

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
12/03/1873	44	35	46	W	4c	78R	1.
06/04/1874	58	46	61	S	"	"	
04/01/1875	68	53	70	W	"	"	
05/17/1876	56	44	58	SW	"	"	
06/25/1877	47	38	50	UNK	"	"	
05/14/1878	53	42	55	SE	"	"	
07/03/1879	52	41	54	W	"	"	
10/15/1880	62	49	65	SW	"	"	
05/10/1881	65	51	67	S	"	"	
05/05/1882	62	49	65	E	"	"	
10/17/1883	61	48	63	S	"	"	
03/27/1884	56	44	58	SE	"	"	
06/07/1885	46	38	50	SW	"	"	
08/12/1886	74	57	75	NW	"	"	
05/01/1887	62	49	65	SE	"	"	
05/02/1888	59	46	61	SE	"	"	
04/11/1889	48	38	50	SE	"	"	
06/04/1890	49	39	51	S	"	"	
05/20/1891	48	38	50	SW	"	"	
03/09/1892	56	44	58	NW	"	"	
12/29/1893	50	40	53	UNK	"	"	
02/10/1894	65	51	67	NW	"	"	
09/04/1895	44	35	46	W	"	"	
08/01/1896	68	53	70	NW	"	"	
01/04/1897	45	36	47	SW	"	"	
05/18/1898	53	42	55	W	"	"	
03/11/1899	67	52	69	W	"	"	
12/23/1900	68	53	70	W	"	"	
03/03/1901	48	38	50	W	"	"	
04/22/1902	62	49	65	SW	"	"	
12/25/1903	50	40	53	NW	"	"	
10/21/1904	56	44	58	NW	"	"	
07/02/1905	45	36	47	SW	"	"	
01/03/1906	E55	43	57	SW	"	"	
03/29/1907	48	38	50	W	"	"	
06/07/1908	48	38	50	SE	"	"	
04/29/1909	60	47	62	W	"	"	
01/20/1910	44	35	46	NW	"	"	
12/10/1911	40	32	42	SW	"	"	
04/06/1912	44	35	46	NW	"	"	
03/23/1913	68	53	70	W	"	"	
04/18/1914	48	38	50	SW	"	"	
05/03/1915	39	32	42	NW	"	"	
04/19/1916	60	47	62	SW	"	"	
06/27/1917	56	44	58	W	"	"	
03/09/1918	52	41	54	SW	"	"	
11/10/1919	84	65	86	SW	"	"	
03/28/1920	64	50	66	SW	"	"	
04/25/1921	62	49	65	W	"	"	
02/01/1922	58	46	61	SW	"	"	
05/11/1923	58	46	61	NW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
03/29/1924	60	47	62	W	"	"	
09/10/1925	60	47	62	W	"	"	
05/29/1926	60	47	62	S	"	"	
08/07/1927	52	41	54	SW	"	"	
01/19/1928	38	31	41	NW	"	"	
11/27/1929	42	34	45	W	"	"	
09/14/1930	48	38	50	W	"	"	
09/14/1931	32	27	36	SW	"	"	
06/17/1932	54	43	57	W	"	"	
11/12/1933	49	39	51	NW	"	"	
06/20/1934	43	35	46	W	"	"	
12/25/1935	43	35	46	NW	"	"	
03/12/1936	56	44	58	NW	"	"	
04/24/1937	79	61	80	SW	"	"	
11/04/1938	60	47	62	S	"	"	
01/22/1939	50	47	62	NW	3c	"	
11/11/1940	58	54	71	W	"	"	
10/26/1941	43	41	54	SW	"	"	

1. Low anemometer heights imply lower surface roughness. .4 used for Z_o instead of .7.

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	65
.90	10	72
.95	20	78
.96	25	80
.98	50	86
.99	100	92
.995	200	97
.998	500	105
.999	1000	111

SIOUX CITY, IOWA WBO z_o=.7 1889-1941 42 30 96 24
WBAN #14987

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
07/13/1889	76	59	75	N	4c	100R	
05/27/1890	56	44	56	S	"	"	
06/26/1891	61	48	61	SE	"	"	
04/01/1892	75	58	72	S	"	109R	
05/21/1893	112	85	106	NW	"	"	
06/20/1894	84	65	81	S	"	"	
04/28/1895	68	53	66	NW	"	"	
06/06/1896	70	54	67	SW	"	"	
06/18/1897	83	64	65	S	"	164R	
06/24/1898	74	57	58	NW	"	"	
08/02/1899	70	54	55	NW	"	"	
09/14/1900	85	65	66	SE	"	"	
01/08/1901	76	59	60	NW	"	"	
04/25/1902	100	76	77	N	"	"	
01/06/1903	90	69	70	NW	"	"	
12/27/1904	90	69	70	NW	"	"	
03/21/1905	72	56	57	NW	"	"	
05/03/1906	73	57	58	S	"	"	
01/19/1907	78	60	61	NW	"	"	
06/22/1908	74	57	58	SW	"	"	
01/29/1909	100	76	77	NW	"	"	
08/02/1910	80	62	63	N	"	"	
04/12/1911	122	92	93	NW	"	"	
01/08/1912	61	47	48	NW	"	"	
08/09/1913	90	69	70	W	"	"	
06/23/1914	84	65	66	SW	"	"	
05/16/1915	78	60	61	NW	"	"	
08/06/1916	120	91	92	SW	"	"	
06/22/1917	105	80	81	W	"	"	
04/29/1918	79	61	62	NW	"	"	
11/10/1919	56	44	45	W	"	"	
06/08/1920	79	61	62	SW	"	"	
04/24/1921	60	47	48	NW	"	"	
06/08/1922	72	56	57	S	"	"	
02/13/1923	58	46	47	NW	"	"	
06/17/1924	74	57	58	SW	"	"	
06/01/1925	104	79	80	SW	"	"	
05/28/1926	60	47	48	S	"	"	
05/02/1927	58	46	47	W	"	"	
04/18/1928	54	43	44	NW	"	"	
03/06/1929	66	51	52	NW	"	"	
03/10/1930	68	53	54	NW	"	"	
04/20/1931	58	46	47	NW	"	"	
07/27/1932	70	54	55	NW	"	"	
05/22/1933	68	53	54	S	"	"	
06/06/1934	54	43	54	NW	"	106R	
04/14/1935	56	49	61	NW	4c-b	"	
06/26/1936	85	74	93	NW	"	"	
08/05/1937	69	61	76	NW	"	"	
12/26/1938	64	56	70	NW	"	"	
12/01/1939	52	46	58	NW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht. (30 M)	Direction	Anem Type	Anem Ht.	Remarks
11/11/1940	49	46	58	NW	"	"	
07/10/1941	58	54	68	NW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	62
.80	5	72
.90	10	80
.95	20	86
.96	25	89
.98	50	95
.99	100	102
.995	200	109
.998	500	117
.999	1000	124

SIOUX CITY, IOWA APT z_o=.05 1942-1979 42 23 96 22
WBAN #14943

Date	Measured Speed	True Speed	Speed at Standard Ht. (10 M)	Direction	Anem Type	Anem Ht.	Remarks
04/27/1942	58	54	56	S	3c	27R	
03/16/1943	57	53	51	NW	"	40R	
09/15/1944	54	50	48	W	"	"	
06/27/1945	100	91	88	W	"	"	
04/03/1946	74	68	66	W	"	"	
06/09/1947	78	72	70	W	"	"	
12/05/1948	54	50	48	NW	"	"	
10/10/1949	76	70	68	W	"	"	
03/07/1950	66	61	59	N	"	"	
08/14/1951	60	56	54	NW	"	"	
07/06/1952	63	58	56	NW	"	"	
05/10/1953	52	49	47	SW	"	"	
11/24/1954	64	59	51	NW	"	103R	
04/03/1955	72	66	57	S	"	"	
05/10/1956	87	80	69	W	"	"	
08/17/1957	72	66	57	S	"	"	
06/08/1958	70	65	69	W	"	24G	
05/02/1959	58	54	57	S	"	"	
11/28/1960	52	49	52	NW	"	"	
04/15/1961	50	47	50	NW	"	"	
05/13/1962	76	70	74	SW	"	"	
12/08/1963	55	51	54	NW	"	"	
05/05/1964	61	57	60	SW	"	"	
03/17/1965	65	60	63	NW	"	"	
03/31/1966	52	49	52	NW	"	"	
07/09/1967	72	66	70	NW	"	"	
12/22/1968	57	53	56	NW	"	"	
07/04/1969	56	52	55	SW	"	"	
06/15/1970	58	54	57	NW	"	"	
01/25/1971	47	44	47	NW	"	"	
05/01/1972	50	47	50	SW	"	"	
06/18/1973	56	52	55	N	"	"	
06/22/1974	42	40	42	N	"	"	
11/12/1975	50	47	50	NW	"	"	
04/16/1976	60	56	59	S	"	"	
11/09/1977	60	56	59	NW	"	"	
07/05/1978	60	56	59	NW	"	"	
07/30/1979	58	54	57	NW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	64
.90	10	69
.95	20	74
.96	25	76
.98	50	81
.99	100	85
.995	200	90
.998	500	97
.999	1000	101

ALPENA, MICHIGAN WBO z_o=.4 1873-1959 45 04 83 26
WBAN #14814

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
12/04/1873	84	65	90	UNK	4c	67R	1, 2
11/05/1874	80	62	86	SW	"	"	
07/15/1875	62	49	68	SW	"	"	
03/16/1876	59	46	64	E	"	"	
06/30/1877	56	44	61	S	"	"	
09/20/1878	68	53	73	SW	"	"	
01/25/1879	59	46	64	W	"	"	
07/13/1880	75	58	80	W	"	"	
06/13/1881	57	45	62	W	"	"	
03/21/1882	49	39	54	E	"	"	
01/12/1883	67	52	72	S	"	"	
09/10/1884	65	51	70	W	"	"	
03/09/1885	66	51	70	SE	"	"	
08/13/1886	58	53	73	NW	"	"	
09/07/1887	48	38	52	W	"	"	
01/12/1888	67	52	72	SE	"	"	
04/19/1889	48	38	52	W	"	"	
01/08/1890	48	38	52	W	"	"	
09/12/1891	60	47	65	SW	"	"	
06/21/1892	78	60	83	W	"	"	
04/04/1893	60	47	65	NW	"	"	
03/11/1894	58	46	64	NW	"	"	
09/23/1895	60	47	65	SW	"	"	
05/17/1896	48	38	52	SW	"	"	
04/18/1897	44	35	48	SW	"	"	
06/29/1898	53	42	58	SW	"	"	
04/28/1899	48	38	52	SW	"	"	
12/09/1900	52	41	57	NW	"	"	
03/03/1901	60	47	62	SE	"	80R	
04/22/1902	51	41	54	W	"	"	
12/21/1903	48	38	50	NW	"	"	
09/30/1904	54	43	56	NW	"	"	
10/20/1905	60	47	59	E	"	92R	
11/17/1906	56	44	55	SE	"	"	
03/19/1907	60	47	59	NW	"	"	
02/05/1908	66	61	77	SE	"	"	
04/07/1909	70	54	68	W	"	"	
01/05/1910	72	56	71	SE	"	"	
02/14/1911	61	48	60	E	"	"	
09/10/1912	60	47	59	NW	"	"	
07/27/1913	70	54	68	SW	"	"	
11/03/1914	57	45	57	SE	"	"	
08/03/1915	56	44	55	E	"	"	
01/22/1916	62	49	62	W	"	"	
03/13/1917	55	43	54	E	"	"	
02/26/1918	64	50	63	NW	"	"	
10/28/1919	64	50	63	NW	"	"	
03/15/1920	46	37	47	SE	"	"	
07/13/1921	72	56	71	SE	"	"	
04/19/1922	64	50	63	NW	"	"	
07/30/1923	54	43	54	W	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
09/24/1924	66	51	64	S	"	"	
10/19/1925	52	41	52	W	"	"	
03/31/1926	62	49	62	E	"	"	
04/20/1927	60	47	59	W	"	"	
03/04/1928	46	43	54	NW	3c	"	
01/22/1929	54	50	63	SE	"	"	
05/23/1930	50	47	59	NW	"	"	
06/19/1931	54	50	63	NW	"	"	
09/19/1932	72	56	71	SE	4c	89R	
06/11/1933	60	47	60	NW	"	"	
01/28/1934	54	43	55	NW	"	"	
01/17/1935	64	50	64	SE	"	"	
02/09/1936	58	46	58	SE	"	"	
04/21/1937	58	46	58	E	"	"	
12/27/1938	58	46	58	NW	"	"	
07/09/1939	66	51	65	NW	"	"	
11/11/1940	66	51	65	SW	"	"	
10/07/1941	50	40	51	W	"	"	
03/09/1942	58	46	58	NW	"	"	
04/05/1943	50	40	51	NW	"	"	
03/29/1944	60	56	71	SE	3c	"	
10/30/1945	54	50	64	NW	"	"	
04/02/1946	56	52	66	W	"	"	
01/30/1947	60	56	71	E	"	"	
11/19/1948	50	47	60	E	"	"	
01/19/1949	50	47	60	SW	"	"	
03/17/1950	56	52	66	SE	"	"	
09/26/1951	48	45	57	S	"	"	
08/31/1952	56	52	66	S	"	"	
05/21/1953	45	42	53	SW	"	"	
03/25/1954	54	50	64	SE	"	"	
11/17/1955	48	45	57	SW	"	"	
01/28/1956	45	42	53	SE	"	"	
04/04/1957	42	40	51	E	"	"	
07/01/1958	53	49	62	S	"	"	
03/21/1959	42	40	51	NW	"	"	

1. Begins 4/12
2. Low Anemometer Height Indicates Lower Roughness. .4 Used for $\not{z}_0$ Instead of .7.

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	61
.80	5	68
.90	10	73
.95	20	77
.96	25	79
.98	50	83
.99	100	88
.995	200	92
.998	500	98
.999	1000	103

ALPENA, MICHIGAN (APN) APT. z_o=.05 1960-1979 45 04 83 34
WBAN # 94849

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
02/25/1960	34	33	33	NE	3c	33G	
06/02/1961	41	39	39	NW	"	"	
12/29/1962	31	30	30	NW	"	"	
04/03/1963	46	43	43	W	"	"	
04/14/1964	39	37	37	SW	"	"	
03/17/1965	45	42	42	SE	"	"	
04/27/1966	40	38	38	E	"	"	
01/27/1967	37	35	35	NE	"	"	
04/08/1968	37	35	35	SW	"	"	
06/12/1969	42	40	40	W	"	"	
11/21/1970	47	44	44	W	"	"	
01/27/1971	40	38	38	NW	"	"	
01/24/1972	36	34	34	E	"	"	
04/16/1973	34	33	33	SW	"	"	
04/03/1974	37	35	35	NE	"	"	
01/11/1975	38	36	39	SW	"	22G	
10/13/1976	37	35	38	NW	"	"	
04/07/1977	30	29	31	NW	"	"	
01/26/1978	40	38	41	N	"	"	
04/06/1979	34	33	36	W	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	36
.80	5	41
.90	10	44
.95	20	46
.96	25	47
.98	50	50
.99	100	53
.995	200	56
.998	500	59
.999	1000	62

BEAVER ISLAND, MICHIGAN WBO** z_o=.4 1906-1936 45 45 85 30

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
05/18/1906	60	47	47	UNK	4c	E85R	1.
03/19/1907	66	51	51	"	"	"	
11/26/1908	96	73	73	"	"	"	
12/06/1909	74	57	57	"	"	"	
03/21/1910	75	58	58	"	"	"	
01/29/1911	64	50	50	"	"	"	
04/26/1912	63	49	49	"	"	"	
03/24/1913	62	49	64	"	"	E35R	
05/25/1914	67	52	68	"	"	"	
11/11/1915	64	50	66	"	"	"	
01/22/1916	65	51	67	"	"	"	
03/14/1917	55	43	56	"	"	"	
02/01/1918	63	49	64	"	"	"	
11/10/1919	67	52	68	"	"	"	
1920	MISSING			"	"		
1921	MISSING			"	"		
1922	MISSING			"	"		
1923	MISSING			"	"		
05/08/1924	58	46	60	"	"	"	
1925	MISSING			"	"		
01/23/1926	74	57	75	"	"	"	
06/25/1927	77	60	79	"	"	"	
01/04/1928	47	44	58	"	E3c	"	
06/10/1929	60	56	74	"	"	"	
02/18/1930	51	48	63	"	"	"	
11/24/1931	62	57	75	"	"	"	
02/12/1932	66	51	67	"	E4c	"	
11/17/1933	46	37	49	"	"	"	
06/23/1934	71	55	72	"	"	"	
08/12/1935	50	40	53	"	"	"	
11/19/1936	62	49	64	"	"	"	

1. Begins 4/19

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	61
.80	5	71
.90	10	77
.95	20	83
.96	25	85
.98	50	91
.99	100	97
.995	200	103
.998	500	111
.999	1000	117

BENTON HARBOR, MICHIGAN WBO** z_o=.4 1900-1910 42 08 86 26

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
11/08/1900	53	42	49	UNK	4c	E50R	1, 2
05/11/1901	78	60	69	"	"	"	"
11/29/1902	52	41	47	"	"	"	"
02/18/1903	51	41	47	"	"	"	"
03/03/1904	56	44	51	"	"	"	"
05/11/1905	68	53	61	"	"	"	"
1906	MISSING						
1907	MISSING						
02/06/1908	58	46	53	"	"	"	"
04/07/1909	62	49	57	"	"	"	"
10/27/1910	48	38	44	"	"	"	"

1. Begins 4/2
2. Anemomster Height Unknown - Estimated Value

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	52
.80	5	59
.90	10	63
.95	20	68
.96	25	70
.98	50	73
.99	100	78
.995	200	82
.998	500	87
.999	1000	92

DETROIT, MICHIGAN WBO z_o=.7 1887-1933 42 20 83 03
WBAN # 14883

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/03/1887	60	47	57	W	4c	117R	
01/01/1888	60	47	57	W	"	"	
12/29/1889	60	47	57	SW	"	"	
06/17/1890	125	95	115	NW	"	"	
11/21/1891	60	47	48	SW	"	161R	
04/05/1892	64	50	51	SW	"	"	
04/20/1893	120	91	93	NE	"	"	
02/10/1894	70	54	55	SW	"	"	
11/26/1895	90	69	70	SW	"	"	
06/25/1896	80	62	63	SW	"	166R	
01/17/1897	60	47	47	SW	"	"	
11/05/1898	58	46	46	SW	"	"	
12/12/1899	60	47	47	SW	"	"	
12/23/1900	60	47	45	SW	"	190R	
10/12/1901	62	49	47	S	"	"	
04/26/1902	62	49	47	SW	"	"	
03/24/1903	60	47	45	SW	"	"	
12/28/1904	63	49	47	SW	"	"	
11/24/1905	60	47	45	SW	"	"	
01/15/1906	60	47	45	SW	"	"	
01/20/1907	66	51	49	SW	"	"	
06/19/1908	72	56	49	W	"	258R	
04/07/1909	78	60	53	SW	"	"	
07/24/1910	78	60	53	W	"	"	
12/33/1911	66	51	45	SW	"	"	
09/05/1912	80	62	54	NW	"	"	
03/21/1913	90	69	60	W	"	"	
11/26/1914	62	49	43	SW	"	"	
05/21/1915	64	50	44	SW	"	"	
09/07/1916	80	62	54	NW	"	"	
01/22/1917	72	56	49	SW	"	"	
02/14/1918	72	56	49	W	"	"	
11/29/1919	96	73	64	SW	"	"	
12/14/1920	68	53	46	SW	"	"	
07/27/1921	62	49	43	SW	"	"	
02/23/1922	62	49	43	W	"	"	
03/12/1923	92	70	61	SW	"	"	
01/06/1924	70	54	47	SW	"	"	
02/09/1925	74	57	50	SW	"	"	
02/25/1926	76	59	52	SW	"	"	
12/08/1927	72	56	49	SW	"	"	
04/14/1928	68	63	55	SW	3c	"	
12/20/1929	72	66	58	SW	"	"	
09/26/1930	60	56	49	SW	"	"	
06/20/1931	50	47	41	SW	"	"	
01/13/1932	64	50	44	SW	4c	"	
01/19/1933	72	56	49	SW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	51
.80	5	58
.90	10	63
.95	20	67
.96	25	68
.98	50	73
99	100	77
.995	200	81
.998	500	87
.999	1000	91

DETROIT, MICHIGAN (DTW) APT. z_o=.05 1934-1966 42 25 83 01
WBAN # 14822 1967-1979 42 14 83 20
WBAN # 94847

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
11/13/1934	56	52	46	NW	3c	77R	
03/17/1935	56	52	46	CW	"	"	
02/27/1936	52	49	43	W	"	"	
06/20/1937	48	45	40	SW	"	"	
12/27/1938	48	45	40	SW	"	"	
03/15/1939	50	47	42	SW	"	"	
11/11/1940	60	56	50	SW	"	"	
09/25/1941	56	52	46	SW	"	"	
05/29/1942	66	61	54	NW	"	"	
03/17/1943	74	68	60	SW	"	"	
05/26/1944	62	57	50	NW	"	"	
08/29/1945	54	50	44	NW	"	"	
04/02/1946	50	47	42	NW	"	"	
03/25/1947	58	54	48	N	"	"	
02/19/1948	52	49	43	NW	"	"	
04/23/1949	60	56	50	NW	"	"	
01/10/1950	56	52	46	NW	"	"	
06/01/1951	60	56	50	SW	"	"	
11/26/1952	71	65	57	SW	"	82R	
04/10/1953	58	54	47	SW	"	"	
03/25/1954	60	56	49	SW	"	"	
07/27/1955	61	57	50	SW	"	"	
03/11/1956	55	51	45	W	"	"	
09/23/1957	E48	45	40	W	"	"	
02/24/1958	50	47	41	W	"	"	
03/15/1959	51	48	42	SW	"	"	
07/22/1960	84	77	68	NW	"	"	
03/06/1961	43	41	36	W	"	"	
09/13/1962	61	57	50	NW	"	"	
05/04/1963	65	60	53	NW	"	"	
06/19/1964	60	56	49	W	"	"	
04/12/1965	59	55	48	W	"	"	
03/01/1966	49	46	40	W	"	"	
02/16/1967	56	52	57	SW	"	20G	
07/09/1968	54	50	55	W	"	"	
04/21/1969	40	38	42	W	"	"	
07/03/1970	51	48	53	NW	"	"	
01/26/1971	54	50	55	NW	"	"	
12/06/1972	54	50	55	W	"	"	
04/16/1973	48	45	49	SW	"	"	
01/27/1974	54	50	55	SW	"	"	
03/24/1975	56	52	57	SW	"	"	
03/05/1976	53	49	54	SW	"	"	
07/19/1977	60	56	61	W	"	"	
09/11/1978	55	51	56	SW	"	"	
04/05/1979	60	56	61	NW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	48
.80	5	54
.90	10	58
.95	20	61
.96	25	62
.98	50	66
.99	100	69
.995	200	73
.998	500	77
.999	1000	81

ESCANABA, MICHIGAN WBO z_o=.4 1874-1888 45 44 87 05
WBAN # 14824 1899-1962

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
03/01/1874	58	46	71	UNK	4c	48R	1.
08/20/1875	54	43	66	"	"	"	
03/17/1876	64	50	77	"	"	"	
11/08/1877	70	54	83	"	"	"	
04/10/1878	61	48	74	"	"	"	
11/02/1879	44	35	54	"	"	"	
10/16/1880	58	46	71	"	"	"	
02/12/1881	84	65	100	"	"	"	
04/03/1882	49	39	60	N	"	"	
03/18/1883	51	41	63	NW	"	"	
04/19/1884	48	38	59	N	"	"	
06/07/1885	43	35	54	N	"	"	
02/19/1886	43	35	52	N	"	54R	
10/12/1887	46	37	55	W	"	"	
03/10/1888	76	59	87	N	"	"	
11/01/1899	42	34	49	N	"	57R	
12/08/1900	40	32	47	NW	"	"	
01/18/1901	40	32	47	N	"	"	
04/22/1902	60	47	68	S	"	"	
02/04/1903	40	32	47	N	"	"	
03/03/1904	40	32	49	NW	"	49R	
11/13/1905	40	32	49	NE	"	"	
09/11/1906	60	47	61	W	"	82R	
03/19/1907	66	51	66	NW	"	"	
04/27/1908	64	50	65	E	"	"	
04/29/1909	50	40	52	E	"	"	
04/23/1910	54	43	56	N	"	"	
11/28/1911	50	40	57	N	"	60R	
11/24/1912	54	43	61	N	"	"	
06/06/1913	46	37	53	N	"	"	
03/01/1914	44	35	50	N	"	"	
06/18/1915	48	38	54	NE	"	"	
05/08/1916	52	41	59	NW	"	"	
11/22/1917	60	47	67	N	"	"	
02/14/1918	60	47	67	N	"	"	
11/10/1919	58	46	66	S	"	"	
06/16/1920	45	36	51	NE	"	"	
07/24/1921	46	37	53	NE	"	"	
02/23/1922	59	46	66	NE	"	"	
03/12/1923	58	46	66	N	"	"	
03/30/1924	54	43	61	N	"	"	
03/14/1925	40	32	46	N	"	"	
11/09/1926	58	46	66	N	"	"	
12/07/1927	56	44	63	N	"	"	
03/26/1928	50	47	67	N	3c	"	
10/22/1929	57	53	76	N	"	"	
04/07/1930	44	42	60	N	"	"	
07/19/1931	39	37	53	N	"	"	
10/29/1932	46	37	53	NW	4c	"	
09/06/1933	52	41	59	NW	"	"	
06/23/1934	48	38	54	W	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/03/1935	46	37	53	NW	"	"	
10/10/1936	55	43	61	N	"	"	
11/08/1937	54	43	66	SW	"	49R	
02/27/1938	60	47	63	N	"	72R	
09/03/1939	60	47	63	NW	"	"	
11/11/1940	52	49	66	S	3c	"	
11/01/1941	46	43	58	NE	"	"	
01/01/1942	50	47	63	N	"	"	
04/04/1943	46	43	58	NW	"	"	
04/23/1944	44	42	57	E	"	"	
05/22/1945	47	44	59	NW	"	"	
06/07/1946	54	50	68	SE	"	"	
10/23/1947	52	49	66	N	"	"	
03/26/1948	74	68	92	N	"	"	
07/03/1949	52	49	66	N	"	"	
11/25/1950	60	56	76	N	"	"	
11/07/1951	50	47	63	N	"	"	
07/22/1952	49	46	62	NW	"	"	
06/30/1953	50	47	63	NW	"	"	
03/20/1954	53	49	66	N	"	"	
03/22/1955	54	50	68	NW	"	"	
03/11/1956	53	49	66	N	"	"	
05/15/1957	62	57	79	NW	"	66R	
04/24/1958	48	45	62	N	"	"	
03/15/1959	43	41	57	N	"	"	
02/10/1960	60	56	78	N	"	"	
10/19/1961	56	52	72	NE	"	"	
01/03/1962	49	46	64	N	"	"	

1. Low Anemometer Height Indicates Lower Roughness.
   .4 Used for Z_o instead of .7.

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	61
.80	5	69
.90	10	74
.95	20	80
.96	25	81
.98	50	86
.99	100	91
.995	200	96
.998	500	103
.999	1000	107

GRAND HAVEN, MICHIGAN WBO** z_o=.4 1873-1933 43 05 86 14

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
12/04/1873	74	57	56	W	4c	92R	
11/23/1874	68	53	52	NW	"	"	
02/03/1875	67	52	51	W	"	"	
12/15/1876	80	62	60	SW	"	"	
07/05/1877	98	75	73	NW	"	"	
12/24/1878	68	53	52	NW	"	"	
02/22/1879	77	60	59	W	"	"	
10/16/1880	75	58	57	SW	"	"	
09/03/1881	65	51	50	SW	"	"	
11/23/1882	80	62	60	NW	"	"	
11/11/1883	61	48	47	W	"	"	
02/19/1884	70	54	53	NW	"	"	
12/18/1885	62	49	48	NW	"	"	
11/18/1886	76	59	58	SW	"	"	
10/23/1887	58	46	45	SW	"	"	
01/13/1888	61	48	47	SW	"	"	
01/09/1889	67	52	51	NW	"	"	
01/13/1890	70	54	58	SW	"	64R	
12/04/1891	65	51	55	SW	"	"	
10/28/1892	64	50	54	W	"	"	
10/14/1893	60	47	50	NW	"	"	
03/10/1894	47	38	41	SE	"	"	
01/21/1895	60	47	50	SW	"	"	
08/09/1896	65	51	55	NW	"	"	
11/11/1897	60	47	50	NW	"	"	
07/19/1898	60	47	50	NW	"	"	
12/12/1899	60	47	50	SW	"	"	
12/08/1900	63	49	48	NW	"	92R	
03/03/1901	65	51	50	SW	"	"	
04/26/1902	60	47	46	W	"	"	
03/24/1903	58	46	45	S	"	"	
12/27/1904	66	51	50	UNK	"	"	
10/20/1905	76	59	57	NW	"	"	
11/21/1906	84	65	63	SW	"	"	
02/10/1907	64	50	49	W	"	"	
02/05/1908	64	50	49	SW	"	"	
12/05/1909	62	49	48	SW	"	"	
02/15/1910	66	51	50	W	"	"	
01/08/1911	64	50	49	W	"	"	
11/23/1912	60	47	46	W	"	"	
1'09/1913	63	49	48	NW	"	"	
01/11/1914	60	47	46	NW	"	"	
11/19/1915	64	50	49	W	"	"	
11/24/1916	65	51	50	W	"	"	
05/01/1917	60	47	46	W	"	"	
11/28/1918	60	47	46	S	"	"	
10/03/1919	65	51	50	NW	"	89R	
12/14/1920	62	49	48	SW	"	"	
01/16/1921	74	57	56	W	"	"	
04/19/1922	72	56	55	W	"	"	
02/13/1923	62	49	48	W	"	"	
12/13/1924	74	57	56	W	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
12/13/1924	74	57	56	W	"	"	
10/19/1925	62	49	48	W	"	"	
01/27/1926	68	53	52	W	"	"	
12/08/1927	66	51	50	W	"	"	
01/19/1928	60	56	55	NW	3c	"	
03/06/1929	64	59	58	W	"	"	
07/12/1930	52	49	48	W	"	"	
12/06/1931	44	42	41	NW	"	"	
02/08/1932	64	50	49	W	4c	"	
03/08/1933	68	53	52	NW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	51
.80	5	55
.90	10	58
.95	20	61
.96	25	62
.98	50	65
.99	100	68
.995	200	70
.998	500	74
.999	1000	77

GRAND RAPIDS, MICHIGAN WBO z_o=.7 1904-1950 42 58 85 40
WBAN # 14885

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
09/18/1904	74	57	58	SW	4c	162R	
11/24/1905	68	53	54	SW	"	"	
11/21/1906	86	66	67	SW	"	165R	
03/29/1907	62	49	50	SW	"	"	
03/06/1908	66	51	52	SW	"	"	
12/05/1909	68	53	54	SW	"	"	
08/23/1910	58	46	47	SE	"	"	
10/04/1911	38	31	41	W	"	87R	
07/13/1912	33	27	36	W	"	"	
03/21/1913	64	50	67	W	"	"	
03/26/1914	42	34	45	NW	"	"	
07/01/1915	40	32	43	W	"	"	
04/17/1916	36	30	40	W	"	"	
05/01/1917	36	30	40	W	"	"	
02/25/1918	34	28	37	NW	"	"	
11/22/1919	32	27	36	W	"	"	
07/02/1920	44	35	47	W	"	"	
01/16/1921	44	35	47	NW	"	"	
04/19/1922	36	30	40	W	"	"	
02/13/1923	38	31	41	W	"	"	
12/07/1924	44	35	47	SE	"	"	
04/19/1925	42	34	45	SE	"	"	
01/23/1926	34	28	37	NW	"	"	
05/09/1927	48	38	51	W	"	"	
01/19/1928	32	31	41	W	3c	"	
03/06/1929	36	34	45	NW	"	"	
03/02/1930	72	66	59	W	"	244R	
12/11/1931	50	47	42	SW	"	"	
02/11/1932	76	59	52	SW	4c	"	
01/19/1933	70	54	48	SW	"	"	
09/15/1934	64	50	44	SW	"	"	
09/30/1935	62	55	49	SW	4c-b	"	
12/30/1936	62	55	49	SW	"	"	
10/19/1937	74	65	58	SW	"	"	
04/19/1938	66	58	52	SW	"	"	
02/10/1939	74	65	58	SW	"	"	
11/11/1940	92	80	71	SW	"	"	
12/05/1941	78	68	60	SW	"	"	
05/03/1942	80	70	62	SW	"	"	
05/10/1943	70	61	54	SW	"	"	
06/05/1944	61	57	51	SW	3c	"	
11/12/1945	79	69	61	SW	4c-b	"	
01/05/1946	72	63	56	SW	"	"	
04/05/1947	79	73	65	SW	3c	"	
12/05/1948	73	67	60	SW	"	"	
01/19/1949	66	61	54	SW	"	"	
05/06/1950	82	75	67	SW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	56
.90	10	61
.95	20	65
.96	25	67
.98	50	71
.99	100	75
.995	200	79
.998	500	85
.999	1000	89

GRAND RAPIDS, MICHIGAN (GRR) APT. z_o=.05 1951-1979 42 54 85 40
WBAN # 14830
" 94860

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
10/30/1951	50	47	43	W	3c	64R	
11/26/1952	71	65	59	SW	"	"	
02/06/1953	49	46	42	SW	"	"	
03/25/1954	62	57	52	SW	"	"	
11/16/1955	47	44	40	W	"	"	
03/06/1956	56	52	47	NW	"	"	
03/15/1957	48	45	41	W	"	"	
11/29/1958	42	40	36	NW	"	"	
09/26/1959	42	40	36	SW	"	"	
04/11/1960	46	43	39	SW	"	"	
03/27/1961	42	40	36	SW	"	"	
04/30/1962	43	41	37	W	"	"	
04/03/1963	48	45	41	SW	"	"	
06/09/1964	E63	58	64	W	"	20G	
06/20/1965	56	52	57	W	"	"	
03/18/1966	42	40	44	SW	"	"	
01/16/1967	46	43	47	SW	"	"	
04/08/1968	54	50	55	SW	"	"	
10/07/1969	54	50	55	SW	"	"	
11/22/1970	42	40	44	W	"	"	
02/05/1971	63	58	64	SW	"	"	
01/24/1972	60	56	61	SW	"	"	
04/16/1973	39	37	41	S	"	"	
03/22/1974	50	47	51	SW	"	"	
11/10/1975	66	61	67	S	"	"	
03/20/1976	66	61	67	SW	"	"	
07/01/1977	41	39	43	W	"	"	
11/17/1978	55	51	56	SW	"	"	
04/05/1979	52	49	54	W	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	56
.90	10	62
.95	20	67
.96	25	69
.98	50	74
.99	100	80
.995	200	85
.998	500	92
.999	1000	97

HARBOR BEACH, MICHIGAN WBO* z_o=.05 1899-1931 43 51 82 39

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
03/04/1899	55	43	40	UNK	4c	E50R	1, 2.
02/24/1900	55	43	40	"	"	"	" "
10/04/1901	56	44	41	"	"	"	" "
04/21/1902	58	46	43	"	"	"	" "
11/09/1903	50	40	37	"	"	"	" "
11/11/1904	54	43	40	"	"	"	" "
11/23/1905	64	50	47	"	"	"	" "
11/22/1906	56	44	41	"	"	"	" "
11/20/1907	65	51	48	"	"	"	" "
11/26/1908	50	40	37	"	"	"	" "
04/29/1909	63	49	46	"	"	"	" "
08/22/1910	49	39	37	"	"	"	" "
10/07/1911	51	41	38	"	"	"	" "
05/16/1912	44	35	33	"	"	"	" "
11/09/1913	66	51	48	"	"	"	" "
04/18/1914	67	52	49	"	"	"	" "
11/19/1915	58	46	43	"	"	"	" "
05/10/1916	62	49	46	"	"	"	" "
11/22/1917	72	56	52	"	"	"	" "
05/10/1918	56	44	41	"	"	"	" "
10/28/1919	68	53	50	"	"	"	" "
12/14/1920	63	49	46	"	"	"	" "
04/16/1921	62	49	46	"	"	"	" "
04/20/1922	61	48	45	"	"	"	" "
10/24/1923	84	65	61	"	"	"	" "
09/02/1924	77	60	56	"	"	"	" "
11/07/1925	64	50	47	"	"	"	" "
11/01/1926	67	52	49	"	"	"	" "
12/18/1927	68	53	50	"	"	"	" "
11/15/1928	71	65	61	"	3c	"	" "
05/02/1929	75	69	65	"	"	"	" "
05/02/1930	56	52	49	"	"	"	" "
10/16/1931	46	43	40	"	"	"	" "

1. General Period of Record 4/15-12/15
2. Unknown Anemometer Height-estimated value

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	45
.80	5	51
.90	10	55
.95	20	59
.96	25	60
.98	50	64
.99	100	68
.995	200	72
.998	500	77
.999	1000	80

HOUGHTON, MICHIGAN WBO z_o=.7 1901-1932 47 07 88 34
WBAN # 14871

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
03/03/1901	50	40	57	NW	4c	74R	
05/08/1902	42	34	48	NW	"	"	
10/04/1903	48	38	54	W	"	"	
12/28/1904	34	28	40	N	"	"	
11/28/1905	45	36	51	E	"	"	
05/04/1906	38	31	44	NW	"	"	
02/24/1907	45	36	51	NW	"	"	
11/30/1908	42	34	48	NW	"	"	
01/29/1909	41	33	47	N	"	"	
04/23/1910	60	47	66	N	"	"	
11/10/1911	52	41	59	W	"	72R	
04/26/1912	44	35	50	NW	"	"	
07/31/1913	52	41	59	W	"	"	
05/25/1914	52	41	59	NW	"	"	
11/08/1915	50	40	57	W	"	"	
05/08/1916	74	57	73	SW	"	99R	
02/04/1917	52	41	52	W	"	"	
03/02/1918	60	47	60	W	"	"	
09/20/1919	72	56	72	W	"	"	
07/13/1920	60	47	60	NW	"	"	
09/17/1921	64	50	64	W	"	"	
12/05/1922	70	54	69	W	"	"	
02/14/1923	70	54	69	W	"	"	
09/22/1924	66	51	65	W	"	"	
09/20/1925	72	56	72	W	"	"	
10/04/1926	60	47	60	W	"	"	
05/09/1927	66	51	65	E	"	"	
07/07/1928	52	49	63	NW	3c	"	
03/06/1929	44	42	54	NW	"	"	
03/20/1930	48	45	58	W	"	"	
11/24/1931	48	45	58	W	"	"	
02/12/1932	52	49	63	W	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	57
.80	5	64
.90	10	69
.95	20	74
.96	25	76
.98	50	79
.99	100	84
.995	200	88
.998	500	94
.999	1000	98

(EAST) LANSING, MICHIGAN WBO z_o=.7 1911-1948 42 44 84 33
WBAN # 14884 1955-1958

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
11/11/1911	39	32	45	SW	4c	62R	
04/26/1912	36	30	42	W	"	"	
03/24/1913	46	37	52	SW	"	"	
05/14/1914	39	32	45	NW	"	"	
05/21/1915	34	28	39	SW	"	"	
03/09/1916	38	31	44	NW	"	"	
03/28/1917	40	32	45	NW	"	"	
02/25/1918	46	37	52	NW	"	"	
02/28/1919	40	32	45	SW	"	"	
03/28/1920	39	32	45	SE	"	"	
07/14/1921	37	30	42	NW	"	"	
04/19/1922	33	27	38	SW	"	"	
03/12/1923	40	32	45	SW	"	"	
12/13/1924	32	27	38	NW	"	"	
01/22/1925	36	30	42	NW	"	"	
02/25/1926	44	35	49	SW	"	"	
12/08/1927	37	30	42	SW	"	"	
11/28/1928	30	29	44	NW	3c	49R	
03/07/1929	40	38	58	W	"	"	
05/02/1930	32	31	47	NW	"	"	
06/26/1931	38	36	47	NW	"	90R	
02/11/1932	52	41	53	SW	4c	"	
10/21/1933	56	44	57	SW	"	"	
01/16/1934	42	34	44	W	"	"	
01/17/1935	52	41	53	W	"	"	
02/04/1936	46	37	48	W	"	"	
04/13/1937	48	38	49	W	"	"	
01/24/1938	58	46	60	S	"	"	
03/15/1939	48	38	49	SW	"	"	
11/11/1940	64	50	65	SW	"	"	
09/25/1941	39	37	48	NW	3c	"	
05/29/1942	53	49	64	NW	"	"	
06/21/1943	44	42	55	N	"	"	
06/18/1944	31	30	39	N	"	"	
03/17/1945	40	38	49	W	"	"	
04/02/1946	35	34	44	W	"	"	
04/06/1947	38	36	47	SW	"	"	
11/17/1948	57	53	69	W	"	"	
03/22/1955	30	29	50	SW	"	45R	
11/16/1956	27	26	45	W	"	"	
11/14/1957	23	23	40	SW	"	"	
04/24/1958	22	22	38	W	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	53
.90	10	57
.95	20	61
.96	25	62
.98	50	66
.99	100	70
.995	200	74
.998	500	78
.999	1000	82

LANSING, MICHIGAN (LAN) APT. Z_o=.05 1949-1954 42 47 84 36
WBAN # 14836 1959-1979

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
04/23/1949	56	52	48	W	3c	52R	
01/18/1950	56	52	48	W	"	"	
03/24/1951	56	52	48	NW	"	"	
11/26/1952	73	67	62	SW	"	"	
04/09/1953	78	72	67	NW	"	"	
06/25/1954	55	51	48	W	"	"	
07/30/1959	60	56	50	NE	"	78R	
03/22/1960	60	56	50	NW	"	"	
03/06/1961	64	59	52	W	"	"	
04/30/1962	65	60	53	W	"	"	
06/09/1963	68	63	56	SE	"	"	
11/12/1964	50	47	51	SW	"	20G	
03/18/1965	50	47	51	SW	"	"	
10/10/1966	48	45	49	W	"	"	
02/16/1967	60	56	61	W	"	"	
06/23/1968	53	49	54	NW	"	"	
09/06/1969	58	54	59	W	"	"	
12/01/1970	58	54	59	W	"	"	
02/27/1971	60	56	61	SW	"	"	
01/25/1972	46	43	47	W	"	"	
01/04/1973	45	42	46	SW	"	"	
01/27/1974	48	45	49	SW	"	"	
06/15/1975	58	54	59	NW	"	"	
03/30/1976	56	52	57	SW	"	"	
04/02/1977	64	59	65	SW	"	"	
01/09/1978	48	45	49	NW	"	"	
06/10/1979	50	47	51	W	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	58
.90	10	61
.95	20	64
.96	25	65
.98	50	68
.99	100	71
.995	200	74
.998	500	78
.999	1000	81

LUDINGTON, MICHIGAN WBO** Z_o=.4 1904-1910 43 57 86 28
WBAN # 94816 1913-1933

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
08/21/1904	76	59	63	UNK	4c	E66R	1.
10/20/1905	79	61	65	"	"	"	
03/21/1906	82	63	67	"	"	"	
01/20/1907	80	61	65	"	"	"	
02/01/1908	83	64	68	"	"	"	
04/07/1909	86	66	70	"	"	"	
08/22/1910	112	85	90	"	"	"	
11/09/1913	58	46	49	NW	"	66R	
02/21/1914	56	44	47	SW	"	"	
02/15/1915	46	37	39	SW	"	"	
08/03/1916	60	47	50	W	"	"	
10/26/1917	54	43	46	W	"	"	
10/28/1918	56	44	47	SW	"	"	
11/10/1919	64	50	53	SW	"	"	
12/14/1920	62	49	52	W	"	"	
01/16/1921	64	50	53	W	"	"	
01/21/1922	60	47	50	W	"	"	
02/14/1923	58	46	49	W	"	"	
01/06/1924	60	47	50	SW	"	"	
03/03/1925	60	47	50	SW	"	"	
01/23/1926	65	51	54	SW	"	"	
12/08/1927	66	51	54	NW	"	"	
01/19/1928	46	43	46	W	3c	"	
03/06/1929	48	45	48	NW	"	"	
09/26/1930	58	54	57	SW	"	"	
11/20/1931	48	45	48	SW	"	"	
02/11/1932	52	41	44	SW	4c	"	
01/01/1933	60	47	50	SW	"	"	

1. Begins 7/17

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	61
.90	10	67
.95	20	72
.96	25	74
.98	50	79
.99	100	84
.995	200	89
.998	500	96
.999	1000	101

MACKINAW CITY, MICHIGAN WBO** z_o=.4 1883-1919 45 47 84 43

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
05/10/1883	74	57	65	UNK	4c	E52R	
03/12/1884	49	39	45	"	"	"	
10/19/1885	48	38	43	"	"	"	
11/17/1886	71	55	63	"	"	"	
1887	MISSING						
12/31/1888	72	56	64	"	"	"	
1900	MISSING						
03/10/1901	58	46	53	"	"	"	
12/15/1902	63	49	56	"	"	"	
11/16/1903	50	40	46	"	"	"	
03/21/1904	59	46	53	"	"	"	
10/19/1905	66	51	58	"	"	"	
11/16/1906	67	52	59	"	"	"	
03/19/1907	78	60	69	"	"	"	
03/06/1908	69	54	62	"	"	"	
04/29/1909	62	49	56	"	"	"	
08/23/1910	56	44	50	"	"	"	
01/29/1911	68	53	61	"	"	"	
11/23/1912	66	51	58	"	"	"	
11/09/1913	65	51	58	"	"	"	
01/12/1914	61	48	55	"	"	52R	
02/01/1915	65	51	58	"	"	"	
05/26/1916	62	49	56	"	"	"	
03/14/1917	73	57	65	"	"	"	
12/10/1918	63	49	56	"	"	"	
01/09/1919	60	47	54	"	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	63
.90	10	67
.95	20	71
.96	25	73
.98	50	77
.99	100	81
.995	200	85
.998	500	91
.999	1000	95

MARQUETTE, MICHIGAN WBO z_o=.7 1888-1979 46 34 87 24
WBAN #14838

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
08/20/1888	60	47	61	W	4c	E95R	
03/13/1889	42	34	44	NW	"	"	
01/24/1890	60	47	61	SW	"	95R	
04/30/1891	60	47	61	W	"	"	
01/02/1892	60	47	61	NW	"	"	
09/21/1893	71	55	71	S	"	"	
11/14/1894	59	46	60	SW	"	"	
09/05/1895	60	47	61	SE	"	"	
03/24/1896	60	47	61	S	"	"	
03/17/1897	53	42	54	S	"	"	
07/19/1898	59	46	60	SW	"	"	
06/13/1899	55	43	56	SE	"	"	
07/10/1900	54	43	56	SE	"	"	
07/20/1901	80	62	76	SW	"	116R	
05/08/1902	57	45	55	NW	"	"	
10/03/1903	62	49	60	SW	"	"	
05/22/1904	60	47	57	W	"	"	
10/07/1905	60	47	57	SW	"	"	
02/22/1906	60	47	57	S	"	"	
06/16/1907	71	55	67	SW	"	"	
04/14/1908	64	50	61	SW	"	"	
04/11/1909	66	51	62	S	"	"	
03/24/1910	54	43	52	SW	"	"	
08/21/1911	72	56	68	S	"	"	
04/26/1912	60	47	57	SW	"	"	
06/05/1913	56	44	54	SW	"	"	
04/11/1914	55	43	52	SW	"	"	
02/10/1915	72	56	68	SW	"	"	
05/08/1916	68	53	65	W	"	"	
08/04/1917	66	51	62	SE	"	"	
05/19/1918	64	50	61	S	"	"	
01/15/1919	54	43	52	SW	"	"	
01/26/1920	53	42	51	S	"	"	
03/27/1921	54	43	52	SW	"	"	
01/14/1922	61	48	58	SE	"	"	
01/18/1923	46	37	45	W	"	"	
08/03/1924	54	43	52	SE	"	"	
11/17/1925	60	47	57	SW	"	"	
03/17/1926	58	46	56	SW	"	"	
07/01/1927	51	41	50	W	"	"	
05/07/1928	44	42	51	SW	3c	"	
01/23/1929	44	42	51	NW	"	"	
02/18/1930	42	40	49	S	"	"	
10/11/1931	52	49	60	NW	"	"	
11/27/1932	54	43	52	SW	4c	"	
12/18/1933	58	46	56	SW	"	"	
02/09/1934	56	44	54	W	"	"	
01/05/1935	60	47	57	SW	"	"	
10/30/1936	50	47	57	S	3c	"	
01/11/1937	46	43	52	SW	"	"	
12/15/1938	36	34	48	SW	"	73R	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/15/1939	45	42	60	SW	"	"	
11/12/1940	37	35	50	SW	"	"	
10/07/1941	50	47	67	SW	"	"	
11/04/1942	49	46	65	S	"	"	
12/11/1943	40	38	54	SW	"	"	
03/10/1944	38	36	51	S	"	"	
04/09/1945	42	40	57	S	"	"	
06/24/1946	60	56	80	S	"	"	
06/23/1947	37	35	50	S	"	"	
03/25/1948	56	52	74	SW	"	"	
10/10/1949	50	47	67	S	"	"	
11/16/1950	39	37	53	NW	"	"	
10/30/1951	50	47	67	NW	"	"	
07/22/1952	34	33	47	S	"	"	
10/13/1953	37	35	50	SW	"	"	
11/13/1954	39	37	53	S	"	"	
11/16/1955	38	36	51	SW	"	"	
12/18/1956	40	38	54	SW	"	"	
04/20/1957	42	40	57	SW	"	"	
06/30/1958	64	59	84	SW	"	"	
03/18/1959	48	45	64	SW	"	"	
08/27/1960	56	52	74	SW	"	"	
10/11/1961	39	37	53	SW	"	"	
04/21/1962	45	42	60	SW	"	"	
04/03/1963	49	46	65	SW	"	"	
04/13/1964	54	50	71	SW	"	"	
10/23/1965	38	36	51	NW	"	"	
11/28/1966	40	38	54	NW	"	"	
03/30/1967	43	41	58	S	"	"	
07/01/1968	42	40	57	SW	"	"	
12/02/1969	37	35	50	SW	"	"	
11/22/1970	40	38	54	SW	"	"	
01/20/1971	45	42	60	SW	"	"	
09/06/1972	40	38	54	S	"	"	
04/15/1973	39	37	53	SW	"	"	
07/02/1974	54	50	71	SW	"	"	
01/11/1975	48	45	64	SW	"	"	
01/18/1976	45	42	60	SW	"	"	
11/21/1977	38	36	51	SW	"	"	
01/26/1978	50	47	67	N	"	"	
04/06/1979	44	42	60	NW	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	57
.80	5	64
.90	10	68
.95	20	72
.96	25	74
.98	50	78
.99	100	82
.995	200	86
.998	500	92
.999	1000	96

MIDDLE IS, MICHIGAN WBO* z_o=.05 1894-1931 45 18 83 40

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
03/11/1894	80	62	58	UNK	4c	E50R	1.
09/24/1895	89	68	64	"	"	"	"
11/27/1896	78	60	56	"	"	"	"
04/19/1897	82	63	59	"	"	"	"
06/24/1898	78	60	56	"	"	"	"
01/26/1899	70	54	51	"	"	"	"
12/09/1900	79	61	57	"	"	"	"
03/03/1901	86	66	62	"	"	"	"
09/06/1902	78	60	56	"	"	"	"
11/10/1903	67	52	49	"	"	"	"
03/03/1904	74	57	53	"	"	"	"
11/24/1905	73	57	53	"	"	"	"
10/27/1906	66	51	48	"	"	"	"
03/29/1907	74	57	53	"	"	"	"
11/26/1908	76	59	55	"	"	"	"
04/07/1909	77	60	56	"	"	"	"
01/22/1910	85	65	61	"	"	"	"
01/09/1911	77	60	56	"	"	"	"
04/26/1912	78	60	56	"	"	"	"
11/09/1913	90	69	65	"	"	"	"
05/29/1914	66	51	48	"	"	"	"
07/05/1915	63	49	46	"	"	"	"
01/22/1916	73	57	53	"	"	"	"
03/17/1917	75	58	54	"	"	"	"
02/25/1918	71	55	51	"	"	"	"
11/29/1919	92	70	66	"	"	"	"
03/16/1920	72	56	52	"	"	"	"
07/30/1921	80	62	58	"	"	"	"
04/19/1922	76	59	55	"	"	"	"
01/18/1923	61	48	45	"	"	"	"
05/18/1924	73	57	53	"	"	"	"
02/25/1925	67	52	49	"	"	"	"
11/09/1926	71	55	51	"	"	"	"
01/30/1927	76	59	55	"	"	"	"
08/21/1928	60	56	52	"	E3C	"	"
05/16/1929	61	57	53	"	"	"	"
08/08/1930	86	79	74	"	"	"	"
09/13/1931	67	62	58	"	"	"	"

1. Unknown Anemometer Height-Estimated Value

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	54
.80	5	60
.90	10	64
.95	20	67
.96	25	68
.98	50	72
.99	100	75
.995	200	79
.998	500	83
.999	1000	87

PORTAGE CANAL, MICHIGAN WBO** z_o=.4 1907-1939 47 07 88 36

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
12/09/1907	52	41	47	UNK	4c	E50R	1, 2
12/01/1908	70	54	62	"	"	"	" "
05/06/1909	76	59	68	"	"	"	" "
04/23/1910	72	56	65	"	"	"	" "
11/10/1911	71	55	64	"	"	"	" "
11/24/1912	77	60	69	"	"	"	" "
11/08/1913	73	57	66	"	"	"	" "
04/19/1914	66	51	59	"	"	"	" "
11/08/1915	70	54	62	"	"	"	" "
10/25/1916	58	46	53	"	"	"	" "
11/21/1917	64	50	58	"	"	"	" "
11/18/1918	58	46	53	"	"	"	" "
1919	MISSING						" "
11/09/1920	63	49	57	"	"	"	" "
09/17/1921	61	48	55	"	"	"	" "
12/13/1922	59	46	53	"	"	"	" "
12/16/1923	56	44	51	"	"	"	" "
09/22/1924	68	53	61	"	"	"	" "
11/05/1925	80	62	72	"	"	"	" "
10/05/1926	65	51	59	"	"	"	" "
12/07/1927	73	57	66	"	"	"	" "
11/15/1928	62	57	66	"	E3C	"	" "
10/23/1929	88	81	94	"	"	"	" "
11/04/1930	52	49	57	"	"	"	" "
11/24/1931	54	50	58	"	"	"	" "
10/29/1932	66	51	59	"	E4C	"	" "
11/02/1933	77	60	69	"	"	"	" "
08/19/1934	55	43	50	"	"	"	" "
10/03/1935	64	50	58	"	"	"	" "
11/24/1936	73	57	66	"	"	"	" "
11/02/1937	72	56	65	"	"	"	" "
11/08/1938	48	38	44	"	"	"	" "
11/10/1939	55	43	50	"	"	"	" "

1. General Period of Record 4/15-12/15
2. Unknown Anemometer Height-Estimated Value

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	59
.80	5	67
.90	10	72
.95	20	77
.96	25	79
.98	50	83
.99	100	88
.995	200	93
.998	500	99
.999	1000	104

PORT HURON, MICHIGAN WBO z_o=.7 1875-1933 43 00 82 26

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
02/03/1875	62	49	68	SW	4c	79R	
01/09/1876	69	54	75	S	"	"	
03/08/1877	56	44	61	N	"	"	
09/20/1878	73	57	79	S	"	"	
07/11/1879	78	60	83	N	"	"	
02/29/1880	66	51	70	S	"	"	
07/12/1881	61	48	66	W	"	"	
11/23/1882	51	41	57	SW	"	"	
11/11/1883	66	51	70	W	"	"	
03/12/1884	65	51	70	W	"	"	
12/09/1885	67	52	72	SW	"	"	
10/14/1886	64	50	69	SW	"	"	
10/23/1887	75	58	72	SW	"	108R	
01/13/1888	70	54	67	SW	"	"	
12/29/1889	80	62	77	SW	"	"	
01/13/1890	96	73	91	SW	"	"	
03/15/1891	61	48	60	S	"	"	
04/05/1892	73	57	71	SW	"	"	
04/13/1893	72	56	70	SW	"	"	
04/04/1894	86	66	82	SW	"	"	
11/26/1895	74	57	71	SW	"	"	
05/17/1896	65	51	63	SW	"	"	
03/12/1897	66	51	63	SW	"	"	
01/23/1898	60	47	59	W	"	"	
01/26/1899	58	46	57	SW	"	"	
11/21/1900	60	47	56	W	"	120R	
01/16/1901	60	47	56	W	"	"	
07/27/1902	65	51	61	SW	"	"	
03/24/1903	50	40	48	SW	"	"	
06/29/1904	62	49	58	W	"	"	
11/24/1905	64	50	60	W	"	"	
07/22/1906	74	57	68	NW	"	"	
01/20/1907	76	59	70	W	"	"	
06/08/1908	80	62	74	W	"	"	
04/07/1909	66	51	61	W	"	"	
07/24/1910	64	50	60	NW	"	"	
03/20/1911	60	47	56	NW	"	"	
02/26/1912	60	47	56	E	"	"	
03/21/1913	74	57	68	SW	"	"	
09/22/1914	58	46	55	NW	"	"	
05/07/1915	50	40	48	W	"	"	
05/11/1916	52	41	49	W	"	"	
08/05/1917	70	54	64	NW	"	"	
02/25/1918	66	51	61	NW	"	"	
11/29/1919	80	62	74	W	"	"	
12/14/1920	66	51	61	SW	"	"	
12/31/1921	66	51	61	W	"	"	
02/23/1922	62	49	58	W	"	"	
12/28/1923	62	49	58	W	"	"	
11/07/1924	58	46	55	W	"	"	
03/21/1925	63	49	58	W	"	"	
07/09/1926	63	49	58	SW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
01/30/1927	64	50	60	W	"	"	
04/19/1928	49	46	55	W	3c	"	
03/06/1929	60	56	67	W	"	"	
08/14/1930	43	41	49	NW	"	"	
06/20/1931	56	52	62	W	"	"	
07/13/1932	62	49	58	N	4c	128R	
01/19/1933	66	51	61	SW	" "	1.	

1. Ends 7/31

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	63
.80	5	70
.90	10	75
.95	20	79
.96	25	81
.98	50	85
.99	100	90
.995	200	94
.998	500	100
.999	1000	104

SAGINAW, MICHIGAN WBO z_o=.7 1913-1925 43 32 84 05

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
11/09/1913	54	43	59	NW	4c	82R	
11/04/1914	42	34	46	W	"	"	
06/18/1915	54	43	59	S	"	"	
05/10/1916	60	47	64	SE	"	"	
03/28/1917	52	41	56	W	"	"	
02/25/1918	62	49	67	NW	"	"	
11/29/1919	64	50	70	SW	"	77R	
12/14/1920	54	43	60	SW	"	"	
07/18/1921	52	41	57	SW	"	"	
04/19/1922	48	38	53	SW	"	"	
02/14/1923	40	32	45	W	"	"	
11/01/1924	42	34	47	SW	"	"	
06/09/1925	42	34	47	SW	"	"	1.

1. Ends 7/23.

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	55
.80	5	63
.90	10	68
.95	20	74
.96	25	75
.98	50	80
.99	100	85
.995	200	90
.998	500	97
.999	1000	102

SAULT STE MARIE, MICHIGAN WBO z_o=.4 1891-1940 46 28 84 22

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
05/04/1891	58	46	64	NW	4c	65R	1.
05/18/1892	60	47	66	SE	"	"	
04/20/1893	62	49	68	SE	"	"	
04/10/1894	61	48	67	SE	"	"	
02/21/1895	58	46	64	NW	"	"	
11/18/1896	60	47	66	NW	"	"	
08/29/1897	70	54	75	NW	"	"	
04/19/1898	60	47	66	SE	"	"	
09/12/1899	50	40	60	NW	"	52R	
04/30/1900	60	47	70	NW	"	"	
12/31/1901	60	47	70	NW	"	"	
04/23/1902	58	46	69	NW	"	"	
09/23/1903	58	46	69	NW	"	"	
09/30/1904	80	62	93	W	"	"	
11/24/1905	58	46	69	NW	"	"	
01/06/1906	54	43	64	W	"	"	
03/19/1907	76	59	88	NW	"	"	
12/01/1908	60	47	70	W	"	"	
01/25/1909	64	50	75	W	"	"	
10/01/1910	54	43	64	NW	"	"	
03/20/1911	58	46	69	NW	"	"	
04/27/1912	60	47	70	W	"	"	
11/24/1913	56	44	66	NW	"	"	
11/17/1914	54	43	64	NW	"	"	
11/09/1915	62	49	73	W	"	"	
05/08/1916	62	49	73	NW	"	"	
12/27/1917	58	46	69	NW	"	"	
03/02/1918	72	56	84	W	"	"	
04/25/1919	52	41	61	NW	"	"	
01/13/1920	50	40	60	NW	"	"	
09/25/1921	58	46	69	NW	"	"	
12/05/1922	60	47	70	NW	"	"	
03/27/1923	62	49	73	NW	"	"	
05/18/1924	56	44	66	NW	"	"	
01/31/1925	56	44	66	NW	"	"	
04/16/1926	48	38	57	NW	"	"	
11/11/1927	48	38	57	NW	"	"	
03/04/1928	46	43	64	NW	3c	"	
10/22/1929	46	43	64	NE	"	"	
03/13/1930	54	50	75	NW	"	"	
11/03/1931	45	42	63	NW	"	"	
02/08/1932	48	38	57	NW	4c	"	
02/21/1933	68	53	79	NW	"	"	
10/06/1934	58	46	69	NW	"	"	
01/17/1935	56	44	66	NW	"	"	
03/04/1936	52	41	61	NW	"	"	
11/09/1937	52	41	61	NW	"	"	
12/14/1938	60	47	70	NW	"	"	
02/10/1939	64	50	75	SW	"	"	
12/07/1940	40	42	63	NW	4c-x	"	

1. Low Anemometer Height Indicates Lower Roughness.
.4 Used for z_o instead of .7.

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	67
.80	5	73
.90	10	77
.95	20	81
.96	25	83
.98	50	86
.99	100	90
.995	200	94
.998	500	99
.999	1000	103

SAULT STE MARIE, MICHIGAN (SSM) APT. z_o=.05 1941-1955 46 28 84 22
WBAN # 14848 1966-1979

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
10/07/1941	48	50	48	SW	4c-x	43R	
03/09/1942	52	54	52	NW	"	"	
09/07/1943	60	62	59	SW	"	"	
08/11/1944	54	56	52	SW	"	52R	
04/04/1945	70	72	67	SW	"	"	
11/22/1946	69	64	60	NW	3c	"	
11/07/1947	49	46	43	SE	"	"	
11/17/1948	72	66	61	W	"	"	
12/12/1949	56	52	52	SW	"	33R	
05/05/1950	52	49	49	SE	"	"	
10/31/1951	50	47	47	W	"	"	
01/15/1952	46	43	43	W	"	"	
11/03/1953	42	40	40	W	"	"	
01/30/1954	38	36	36	W	"	"	
03/12/1955	47	44	44	W	"	"	
04/28/1966	45	42	41	SE	"	40R	
01/17/1967	37	35	38	NW	"	20G	
02/22/1968	50	47	51	W	"	"	
12/02/1969	40	38	42	NW	"	"	
09/10/1970	46	43	47	W	"	"	
12/24/1971	41	39	43	NW	"	"	
01/19/1972	41	39	43	W	"	"	
10/15/1973	40	38	42	NW	"	"	
01/31/1974	47	44	48	NW	"	"	
11/10/1975	57	53	58	NW	"	"	
12/10/1976	48	45	49	NW	"	"	
09/24/1977	38	36	39	SE	"	"	
04/01/1978	40	38	42	NW	"	"	
04/06/1979	47	44	48	NW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	53
.90	10	56
.95	20	60
.96	25	61
.98	50	65
.99	100	68
.995	200	72
.998	500	77
.999	1000	80

TAWAS, MICHIGAN WBO* z_o=.05 1917-1938 44 15 83 26

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
06/06/1917	58	46	43	UNK	4c	E50R	1, 2
11/28/1918	62	49	46	"	"	"	" "
11/29/1919	63	49	46	"	"	"	" "
12/14/1920	58	46	43	"	"	"	" "
07/23/1921	72	56	52	"	"	"	" "
12/05/1922	62	49	46	"	"	"	" "
06/25/1923	58	46	43	"	"	"	" "
11/11/1924	53	42	39	"	"	"	" "
07/25/1925	66	51	48	"	"	"	" "
1926	MISSING						
12/08/1927	71	55	52	"	"	"	" "
04/19/1928	54	50	47	"	E3C	"	" "
10/23/1929	45	42	39	"	"	"	" "
05/02/1930	44	42	39	"	"	"	" "
09/13/1931	70	50	47	"	"	"	" "
11/13/1932	51	41	38	"	4c	"	" "
10/19/1933	56	44	41	"	"	"	" "
05/10/1934	52	41	38	"	"	"	" "
05/03/1935	55	43	40	"	"	"	" "
10/12/1936	44	42	39	"	3c	"	" "
10/20/1937	72	66	62	"	"	"	" "
10/22/1938	43	41	38	"	"	"	" "

1. General Period of Record 4/15-12/16
2. Anemometer Height Unknown. Estimated Value.

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	43
.80	5	47
.90	10	50
.95	20	52
.96	25	53
.98	50	55
.99	100	58
.995	200	60
.998	500	63
.999	1000	66

WHITEFISH POINT, MICHIGAN WBO* Z_o=.05 1915-1939 46 46 84 57

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
11/09/1915	80	62	58	UNK	4c	E50R	1, 2
12/07/1916	75	58	54	"	"	"	" "
10/26/1917	62	49	46	"	"	"	" "
09/15/1918	108	82	77	"	"	"	" "
11/10/1919	84	65	61	"	"	"	" "
1920	MISSING						
12/02/1921	77	60	56	"	"	"	" "
12/01/1922	78	60	56	"	"	"	" "
12/13/1923	61	48	45	"	"	"	" "
08/22/1924	78	60	56	"	"	"	" "
12/08/1925	80	62	58	"	"	"	" "
11/26/1926	78	60	56	"	"	"	" "
11/11/1927	71	55	51	"	"	"	" "
11/12/1928	61	57	53	"	E3c	"	" "
05/03/1929	65	60	56	"	"	"	" "
10/07/1930	64	59	55	"	"	"	" "
10/11/1931	55	51	48	"	"	"	" "
10/11/1932	70	54	51	"	E4c	"	" "
10/28/1933	72	56	52	"	"	"	" "
04/30/1934	94	72	67	"	"	"	" "
10/03/1935	78	60	56	"	"	"	" "
1936	MISSING						
11/09/1937	66	51	48	"	"	"	" "
10/07/1938	60	47	44	"	"	"	" "
12/07/1939	78	60	56	"	"	"	" "

1. General Period of Record 4/15-12/15
2. Anemometer Height Unknown. Estimated Value.

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	54
.80	5	60
.90	10	65
.95	20	69
.96	25	70
.98	50	75
.99	100	79
.995	200	83
.998	500	88
.999	1000	92

BRECKENRIDGE, MINNESOTA WBO* z_o=.05 1874-1880 46 16 95 35

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
03/14/1874	70	54	51	UNK	4c	E50R	1.
01/20/1875	68	53	50	"	"	"	"
04/09/1876	67	52	49	"	"	"	"
07/07/1877	104	79	74	NW	"	"	"
04/17/1878	57	45	42	E	"	"	"
06/07/1879	82	63	59	SE	"	"	"
10/16/1880	78	60	56	NW	"	"	" 2.

1. Anemometer Height Unknown - Estimated Value
2. Ends 11/30

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	62
.90	10	68
.95	20	74
.96	25	76
.98	50	82
.99	100	88
.995	200	93
.998	500	101
.999	1000	107

DULUTH, MINNESOTA WBO* z_o=.05 1887-1949 46 47 92 06
WBAN # 14959

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
10/02/1887	48	38	34	NW	4c	75R	
02/20/1888	40	32	28	NW	"	"	
02/15/1889	40	32	28	NE	"	"	
03/14/1890	42	34	30	NW	"	"	
12/25/1891	42	34	30	NW	"	72R	
03/09/1892	60	47	42	NE	"	"	
12/18/1893	36	30	27	NW	"	"	
05/07/1894	40	32	29	NW	"	"	
04/21/1895	62	49	42	NW	"	106R	
10/30/1896	66	51	44	NE	"	"	
08/08/1897	70	54	46	NW	"	"	
11/21/1898	60	47	40	NW	"	"	
01/26/1899	60	47	40	NW	"	"	
02/08/1900	60	47	40	NW	"	"	
11/14/1901	60	47	44	NW	"	116R	
12/24/1902	60	47	44	NW	"	"	
02/18/1903	60	47	44	NW	"	"	
06/03/1904	75	58	55	NE	"	47R	
11/24/1905	84	65	61	NW	"	"	
03/02/1906	64	50	47	NE	"	"	
04/16/1907	73	57	54	NW	"	"	
11/30/1908	72	56	53	W	"	"	
01/29/1909	80	62	59	NW	"	"	
03/21/1910	70	54	51	SW	"	"	
01/10/1911	68	53	50	NW	"	"	
04/26/1912	78	60	57	NW	"	"	
11/07/1913	68	53	50	NW	"	"	
06/27/1914	72	56	53	NE	"	"	
01/17/1915	67	52	49	NW	"	"	
05/08/1916	76	59	56	W	"	"	
02/04/1917	76	59	56	W	"	"	
10/12/1918	76	59	56	W	"	"	
01/08/1919	75	58	55	W	"	"	
04/02/1920	70	54	51	NW	"	"	
03/27/1921	78	60	57	NW	"	"	
11/30/1922	76	59	56	SW	"	"	
01/18/1923	76	59	56	NW	"	"	
09/21/1924	78	60	57	NW	"	"	
12/04/1925	67	52	49	NW	"	"	
01/22/1926	74	57	54	NW	"	"	
12/07/1927	79	61	58	NW	"	"	
01/19/1928	70	65	61	NW	3c	"	
01/22/1929	62	57	54	NW	"	"	
02/25/1930	60	56	53	E	"	"	
11/24/1931	48	45	43	SW	"	"	
03/06/1932	74	57	54	NW	4c	"	
03/14/1933	72	56	53	NW	"	"	
08/18/1934	88	68	64	N	"	"	
04/14/1935	70	54	51	NW	"	"	
11/24/1936	65	51	48	NW	"	"	
02/21/1937	76	59	56	NW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
01/25/1938	80	62	59	NW	"	"	
02/10/1939	72	56	53	NW	"	"	
11/11/1940	68	63	60	NW	3c	"	
03/16/1941	82	75	71	NW	"	"	
01/14/1942	66	61	58	NW	"	"	
04/04/1943	60	56	53	NW	"	"	
04/23/1944	61	57	54	NE	"	"	
12/09/1945	54	50	47	NW	"	"	
12/16/1946	64	59	56	NW	"	"	
01/30/1947	52	49	46	NE	"	"	
02/19/1948	68	63	60	W	"	"	
06/12/1949	64	59	56	NW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	53
.90	10	56
.95	20	59
.96	25	60
.98	50	63
.99	100	66
.995	200	69
.998	500	72
.999	1000	75

DULUTH, MINNESOTA (DLH) APT. z_o=.05 1950-1979 46 50 92 11
WBAN # 14913

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
12/23/1950	50	47	44	NW	3c	53R	
04/22/1951	52	49	46	W	"	"	
07/22/1952	78	72	67	W	"	"	
04/30/1953	60	56	52	NE	"	"	
04/17/1954	52	49	46	W	"	"	
12/03/1955	57	53	49	NE	"	"	
10/13/1956	66	61	57	S	"	"	
05/20/1957	66	61	57	NE	"	"	
04/05/1958	82	75	70	NE	"	"	
05/12/1959	66	61	57	W	"	"	
11/28/1960	74	68	63	E	"	"	
05/14/1961	49	46	43	NE	"	"	
04/27/1962	51	48	45	NE	"	"	
04/16/1963	51	48	45	SW	"	"	
01/23/1964	60	56	52	NE	"	"	
02/28/1965	54	50	46	E	"	"	
03/03/1966	62	57	53	NE	"	"	
04/30/1967	68	63	59	E	"	"	
04/23/1968	48	45	42	NW	"	"	
04/21/1969	46	43	40	NW	"	"	
04/08/1970	58	54	50	W	"	"	
08/09/1971	52	49	45	W	"	"	
01/24/1972	62	57	53	NW	"	"	
10/13/1973	46	43	40	W	"	"	
10/31/1974	54	50	46	NE	"	"	
03/23/1975	58	54	59	NE	"	21G	
03/02/1976	45	42	42	E	"	"	
09/09/1977	48	45	45	SE	"	"	
09/12/1978	37	35	35	NE	"	"	
06/03/1979	41	39	39	SW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	48
.80	5	55
.90	10	60
.95	20	65
.96	25	66
.98	50	71
.99	100	75
.995	200	80
.998	500	86
.999	1000	90

MINNEAPOLIS, MINNESOTA WBO Z_o=.7 1896-1937 44 59 93 18
WBAN # 14961

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
08/04/1896	77	59	55	N	4c	208R	
06/29/1897	60	47	44	NW	"	"	
03/14/1898	60	47	44	SE	"	"	
09/06/1899	60	47	44	E	"	"	
06/13/1900	60	47	44	SE	"	"	
08/25/1901	70	54	50	NW	"	"	
10/30/1902	64	50	47	NW	"	"	
07/09/1903	72	56	52	NW	"	"	
08/20/1904	110	84	78	NW	"	"	
06/24/1905	70	54	50	S	"	"	
03/21/1906	67	52	48	NW	"	"	
08/18/1907	78	60	56	W	"	"	
07/17/1908	66	51	47	NW	"	"	
10/11/1909	64	50	47	NW	"	"	
03/06/1910	72	56	52	NW	"	"	
03/14/1911	70	54	50	NW	"	"	
07/12/1912	96	73	68	NW	"	"	
06/17/1913	72	56	52	NW	"	"	
06/18/1914	70	54	50	N	"	"	
09/20/1915	60	47	44	NW	"	"	
05/07/1916	54	43	40	NW	"	"	
11/21/1917	60	47	44	NW	"	"	
02/14/1918	66	51	47	NE	"	"	
09/26/1919	58	46	43	S	"	"	
03/15/1920	72	56	52	SW	"	"	
08/26/1921	72	56	52	NW	"	"	
08/24/1922	74	57	53	NW	"	"	
05/08/1923	62	49	46	N	"	"	
06/14/1924	64	50	47	N	"	"	
06/02/1925	56	44	41	S	"	"	
08/26/1926	62	49	46	N	"	"	
12/07/1927	58	46	43	N	"	"	
08/01/1928	62	57	53	N	3c	"	
08/11/1929	54	50	47	N	"	"	
07/25/1930	64	59	55	NW	"	"	
06/19/1931	46	43	40	NW	"	"	
07/09/1932	48	38	35	E	4c	"	
11/12/1933	58	46	43	W	"	"	
05/09/1934	72	56	52	NW	"	"	
04/15/1935	54	43	40	NW	"	"	
08/15/1936	60	47	44	W	"	"	
11/02/1937	54	43	40	W	"	"	

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	53
.90	10	56
.95	20	60
.96	25	61
.98	50	65
.99	100	68
.995	200	72
.998	500	76
.999	1000	80

MINNEAPOLIS, MINNESOTA (MSP) APT. Z_o= 5 1938-1979 44 53 93 13
WBAN # 14922

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
05/03/ ,38	54	50	46	S	3c	61R	
06/07/1939	68	63	57	NW	"	"	
11/11/1940	46	43	38	W	"	75R	
03/16/1941	54	50	44	NW	"	"	
05/29/1942	48	45	40	NW	"	"	
08/31/1943	52	49	44	S	"	"	
06/04/1944	64	59	52	SW	"	"	
10/30/1945	62	57	51	W	"	"	
12/16/1946	56	52	46	W	"	"	
06/28/1947	62	57	51	SW	"	"	
07/01/1948	48	45	40	SE	"	"	
10/10/1949	79	73	65	S	"	"	
05/05/1950	56	52	46	SW	"	"	
07/20/1951	101	92	82	W	"	"	
06/24/1952	56	52	47	NW	"	"	
06/03/1953	58	54	48	SE	"	"	
03/12/1954	49	46	41	E	"	"	
04/20/1955	51	48	43	SW	"	"	
12/11/1956	50	47	42	NW	"	"	
07/14/1957	52	49	44	N.	"	"	
11/17/1958	65	60	65	SW	"	21G	
05/05/1959	44	42	46	SW	"	"	
04/11/1960	44	42	46	NW	"	"	
05/11/1961	42	40	43	S	"	"	
07/21/1962	50	47	51	N	"	"	
04/03/1963	48	45	49	SW	"	"	
05/23/1964	66	61	66	NW	"	"	
02/21/1965	48	45	49	NW	"	"	
07/10/1966	56	52	56	NE	"	"	
08/06/1967	67	62	67	N	"	"	
02/16/1968	47	44	48	NW	"	"	
04/21/1969	45	42	46	N	"	"	
04/29/1970	48	45	49	W	"	"	
02/27/1971	45	42	46	NW	"	"	
09/06/1972	40	38	41	SW	"	"	
04/09/1973	45	42	46	NE	"	"	
06/20/1974	52	49	53	N	"	"	
07/23/1975	54	50	54	NW	"	"	
01/28/1976	39	37	40	NW	"	"	
11/20/1977	43	41	44	W	"	"	
04/12/1978	41	39	42	W	"	"	
04/05/1979	39	37	40	NW	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	54
.90	10	58
.95	20	63
.96	25	64
.98	50	68
.99	100	72
.995	200	77
.998	500	82
.999	1000	86

MOORHEAD, MINNESOTA WBO** z_o=.4 1881-1941 46 52 96 44

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
02/04/1881	77	60	66	UNK	4c	E60K	
09/28/1882	66	51	56	SE	"	"	
12/07/1883	76	59	64	NW	"	"	
02/24/1884	74	57	62	SE	"	"	
07/29/1885	77	60	66	N	"	"	
09/14/1886	76	59	64	S	"	"	
05/07/1887	80	62	68	SE	"	"	
08/13/1888	85	65	71	S	"	"	
05/06/1889	79	61	67	S	"	"	
07/07/1890	90	69	75	NW	"	"	
10/11/1891	64	50	55	SE	"	60R	
03/09/1892	61	48	52	NW	"	"	
05/19/1893	62	49	54	SE	"	"	
03/24/1894	75	58	63	NW	"	"	
05/03/1895	62	49	54	SE	"	"	
05/12/1896	75	58	63	SE	"	"	
01/03/1897	60	47	51	N	"	"	
03/15/1898	60	47	51	SE	"	"	
01/11/1899	50	40	44	SE	"	"	
06/09/1900	50	40	44	SE	"	"	
04/03/1901	60	47	51	SE	"	"	
05/01/1902	60	47	51	SE	"	"	
09/12/1903	60	47	51	SW	"	"	
03/25/1904	60	47	51	SW	"	"	
07/15/1905	58	46	51	NW	"	57R	
05/17/1906	42	34	38	NW	"	"	
06/15/1907	44	35	39	E	"	"	
08/29/1908	48	38	42	NW	"	"	
01/28/1909	56	44	49	NW	"	"	
03/06/1910	48	38	42	NW	"	"	
05/10/1911	50	40	44	NW	"	"	
05/02/1912	54	43	48	SE	"	"	
09/05/1913	46	36	40	NW	"	"	
09/12/1914	48	38	42	SE	"	"	
06/26/1915	48	38	42	NW	"	"	
05/07/1916	54	43	48	NW	"	"	
03/28/1917	54	43	48	NW	"	"	
10/12/1918	43	35	39	NW	"	"	
03/14/1919	48	38	42	E	"	"	
06/08/1920	54	43	48	NW	"	"	
10/21/1921	52	-	45	NW	"	58R	
10/24/1922	52	41	45	NW	"	"	
06/23/1923	54	43	47	SW	"	"	
04/15/1924	50	40	44	SE	"	"	
06/05/1925	64	50	55	NW	"	"	
08/05/1926	42	34	38	NW	"	"	
05/08/1927	59	46	51	SE	"	"	
07/01/1928	49	46	51	NW	3c	"	
07/10/1929	34	33	36	S	"	"	
07/26/1930	54	50	55	NW	"	"	
08/28/1931	37	35	39	NW	"	"	
06/30/1932	45	36	40	NW	4c	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
11/12/1933	50	40	44	N	"	"	
06/19/1934	54	43	47	NW	"	"	
06/13/1935	46	37	41	N	"	"	
12/19/1936	54	43	47	NW	"	"	
04/24/1937	45	36	40	N	"	"	
06/06/1938	47	38	42	NW	"	"	
12/01/1939	35	34	38	NW	3c	"	
11/11/1940	38	36	40	N	"	"	
03/15/1941	50	47	52	NE	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	54
.90	10	57
.95	20	61
.96	25	62
.98	50	65
.99	100	68
.995	200	71
.998	500	75
.999	1000	78

SAINT PAUL, MINNESOTA WBO z_o=.7 1873-1933 44 57 93 05
WBAN # 14927

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/17/1873	48	38	62	UNK	4c	52R	
11/07/1874	58	46	75	"	"	"	
04/15/1875	64	50	81	"	"	"	
07/06/1876	72	56	91	"	"	"	
06/29/1877	67	52	84	"	"	"	
09/22/1878	66	51	70	S	"	81R	
03/28/1879	64	50	68	NW	"	"	
01/13/1880	65	51	70	SE	"	"	
04/30/1881	77	60	82	SE	"	"	
10/11/1882	58	46	63	SE	"	"	
04/13/1883	72	56	77	SE	"	"	
08/19/1884	62	49	66	SE	"	83R	
04/21/1885	52	41	56	S	"	"	
06/21/1886	59	46	54	NW	"	122R	
06/18/1887	58	46	54	W	"	"	
07/30/1888	68	53	63	W	"	"	
05/06/1889	46	37	44	SE	"	"	
06/28/1890	40	32	38	SW	"	"	
06/02/1891	48	38	45	NW	"	"	
10/28/1892	54	43	51	NW	"	"	
12/18/1893	52	41	48	NW	"	"	
11/09/1894	41	33	39	NW	"	"	
09/06/1895	60	47	55	SE	"	"	
08/04/1896	80	62	73	NW	"	"	
06/16/1897	60	47	55	NW	"	"	
11/22/1898	50	40	47	N	"	"	
06/12/1899	52	41	48	NW	"	"	
02/23/1900	44	35	41	NW	"	"	
06/28/1901	61	48	57	SW	"	"	
07/22/1902	50	40	47	NW	"	"	
07/09/1903	60	47	55	NW	"	"	
08/20/1904	130	98	96	NW	"	179R	
08/04/1905	76	59	58	N	"	"	
06/06/1906	70	54	53	S	"	"	
01/19/1907	60	47	46	W	"	"	
06/22/1908	70	54	53	SW	"	"	
01/29/1909	66	51	50	N	"	"	
03/06/1910	73	57	56	W	"	"	
03/15/1911	78	60	56	NW	"	212R	
07/12/1912	68	53	48	N	"	236R	
06/17/1913	80	62	56	NW	"	"	
06/23/1914	78	60	54	NW	"	"	
05/11/1915	78	60	54	W	"	"	
04/19/1916	75	58	52	E	"	"	
06/13/1917	60	47	42	NW	"	"	
05/25/1918	78	60	54	N	"	"	
07/13/1919	72	56	49	SW	"	261R	
03/15/1920	76	59	52	SW	"	"	
12/30/1921	66	51	45	W	"	"	
11/30/1922	80	62	54	SW	"	"	
02/13/1923	70	54	47	SW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
09/21/1924	80	62	54	SW	"	"	
06/02/1925	78	60	52	SW	"	"	
08/15/1926	60	47	41	NW	"	"	
07/27/1927	78	60	52	SW	"	"	
08/01/1928	70	65	57	N	3c	"	
06/10/1929	52	49	43	W	"	"	
07/25/1930	55	51	45	NW	"	"	
06/03/1931	50	47	41	NW	"	"	
06/30/1932	42	34	36	NW	4c	149R	
06/07/1933	58	46	49	SW	"	"	1.

1. Ends 7/31

Probability	Return Period (Years)	30 M Wind Speed (mph) Type I Distribution
.50	2	54
.80	5	63
.90	10	69
.95	20	75
.96	25	77
.98	50	82
.99	100	88
.995	200	93
.998	500	100
.999	1000	106

SAINT VINCENT, MINNESOTA WBO* z_o=.05 1881-1895 48 56 97 14

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
04/26/1881	71	55	58	SW	4c	E24R	
04/03/1882	54	43	45	NW	"	"	
04/15/1883	62	49	52	NW	"	"	
08/24/1884	55	43	45	SW	"	"	
04/06/1885	52	41	43	NW	"	"	
11/04/1886	58	46	49	W	"	"	
09/19/1887	52	41	43	S	"	"	
03/20/1888	58	46	49	NW	"	"	
09/01/1889	70	54	57	S	"	"	
02/07/1890	62	49	52	NW	"	"	
06/23/1891	56	44	47	SE	"	"	
04/28/1892	66	51	54	NW	"	"	
05/19/1893	73	57	60	S	"	24R	
03/23/1894	65	51	51	N	"	31R	
10/18/1895	55	43	43	N	"	"	

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	54
.90	10	58
.95	20	61
.96	25	62
.98	50	65
.99	100	68
.995	200	72
.998	500	76
.999	1000	79

TWO HARBORS, MINNESOTA WBO** z_o=.4 1894-1904 47 01 91 40

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
03/22/1894	63	49	57	UNK	4c	E50R	1.
09/28/1895	47	38	44	"	"	"	"
04/01/1896	80	62	72	"	"	"	"
06/02/1897	51	41	47	"	"	"	"
08/28/1898	47	38	44	"	"	"	"
06/19/1899	48	38	44	"	"	"	"
12/08/1900	49	39	45	"	"	"	"
11/14/1901	58	46	53	"	"	"	"
07/05/1902	61	48	55	"	"	"	"
1903	MISSING						
03/26/1904	59	46	53	"	"	"	" 2.

1. Anemometer Height Unknown. Estimated Value.
2. Ends 8/1.

Probability	Return Period (Years)	10 M Wind Speed (mph) Type I Distribution
.50	2	50
.80	5	56
.90	10	60
.95	20	64
.96	25	66
.98	50	70
.99	100	74
.995	200	78
.998	500	83
.999	1000	87

ALBANY, NEW YORK WBO z_o=.7 1878-1937 42 39 73 45
WBAN #14796

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
07/06/1887	36	30	37	S	4c	109R	
07/12/1888	56	44	55	NW	"	"	
01/16/1889	45	35	43	SE	"	"	
02/14/1890	48	38	47	SE	"	"	
12/04/1891	60	47	58	SE	"	"	
11/18/1892	75	58	72	SE	"	"	
12/26/1893	60	47	58	N	"	"	
08/25/1894	50	40	50	NW	"	"	
12/27/1895	55	43	53	W	"	"	
02/06/1896	55	43	53	E	"	"	
05/23/1897	48	38	47	S	"	113R	
12/05/1898	60	47	58	NE	"	"	
12/24/1899	50	40	49	E	"	"	
02/22/1900	50	40	49	E	"	"	
03/03/1901	55	43	53	SE	"	"	
02/03/1902	60	47	57	W	"	115R	
02/28/1903	46	37	45	W	"	"	
03/25/1904	46	37	45	S	"	"	
01/07/1905	50	40	49	SE	"	"	
06/22/1906	48	38	46	E	"	"	
11/02/1907	45	36	44	SE	"	"	
07/18/1908	60	47	57	S	"	"	
03/25/1909	62	49	60	E	"	"	
01/22/1910	39	32	39	S	"	"	
01/08/1911	43	35	43	SE	"	"	
07/09/1912	48	38	46	SW	"	"	
01/03/1913	50	40	49	SW	"	"	
11/13/1914	52	41	50	S	"	"	
06/27/1915	46	37	45	NW	"	"	
01/10/1916	43	35	43	S	"	"	
03/23/1917	40	32	39	S	"	"	
02/19/1918	60	47	57	S	"	"	
12/12/1919	40	32	39	S	"	"	
11/09/1920	38	31	38	S	"	"	
01/16/1921	50	40	49	S	"	"	
05/19/1922	46	37	45	S	"	"	
03/10/1923	47	38	46	S	"	"	
05/24/1924	47	38	46	S	"	"	
04/14/1925	54	43	53	S	"	"	
11/16/1926	56	44	54	SE	"	"	
04/26/1927	46	37	45	S	"		
03/04/1928	42	40	49	S	3c	"	
03/25/1929	30	29	35	S	"	"	
11/30/1930	31	30	37	SE	"	"	
04/10/1931	32	31	38	SE	"	"	
03/28/1932	43	35	43	N	4c	"	
01/20/1933	37	30	37	W	"	"	
11/23/1934	42	34	42	S	"	"	
10/03/1935	37	30	37	S	"	112R	
04/06/1936	42	34	42	S	"	"	
02/22/1937	46	37	46	SE	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	46
.80	5	53
.90	10	57
.95	20	61
.96	25	62
.98	50	66
.99	100	70
.995	200	73
.998	500	78
.999	1000	82

ALBANY, NEW YORK (ALB) APT z_o=.05 1938-1979 42 45 73 48
WBAN #14735

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
09/21/1938	49	46	45	W	3c	40R	
01/25/1939	54	50	48	NW	"	"	
04/05/1940	44	42	41	NW	"	"	
03/19/1941	59	55	53	W	"	"	
03/19/1942	48	45	44	W	"	"	
04/05/1943	50	47	46	W	"	"	
12/28/1944	58	54	52	W	"	"	
04/05/1945	50	47	46	SW	"	"	
01/19/1946	54	50	48	W	"	"	
01/21/1947	48	45	44	W	"	"	
02/14/1948	46	43	42	W	"	"	
01/19/1949	45	42	41	W	"	"	
11/25/1950	76	70	68	E	"	41R	
01/21/1951	56	52	50	NW	"	"	
01/18/1952	62	57	55	W	"	"	
02/15/1953	77	71	69	NW	"	"	
04/08/1954	52	49	47	W	"	"	
03/27/1955	48	45	43	W	"	"	
02/25/1956	46	43	42	NW	"	"	
01/23/1957	52	49	47	W	"	"	
02/25/1958	45	42	41	W	"	"	
02/19/1959	62	57	55	W	"	"	
02/20/1960	49	46	44	W	"	"	
09/02/1961	51	48	46	S	"	"	
04/25/1962	43	41	40	NW	"	"	
04/04/1963	48	45	49	W	"	20G	
01/10/1964	45	42	46	W	"	"	
10/31/1965	42	40	44	NW	"	"	
06/06/1966	47	44	48	NW	"	"	
02/16/1967	48	45	49	NW	"	"	
02/17/1968	46	43	47	W	"	"	
01/08/1969	45	42	46	W	"	"	
04/03/1970	45	42	46	W	"	"	
06/08/1971	62	57	62	NW	"	"	
02/20/1972	45	42	46	NW	"	"	
01/29/1973	37	35	38	NW	"	"	
03/10/1974	50	47	51	NW	"	"	
01/30/1975	48	45	49	NW	"	"	
12/13/1976	51	48	53	NW	"	"	
04/08/1977	45	42	46	NW	"	"	
12/17/1978	41	39	43	NW	"	"	
09/14/1979	46	43	47	SW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	52
.90	10	55
.95	20	59
.96	25	60
.98	50	63
.99	100	66
.995	200	70
.998	500	74
.999	1000	77

BINGHAMTON, NEW YORK WBO z_o=.7 1887-1950 42 06 75 55
WBAN #14798

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
01/17/1897	55	43	57	S	4c	88R	
01/23/1898	44	35	47	W	"	"	
01/26/1899	45	36	48	NW	"	"	
11/21/1900	60	47	63	W	"	"	
12/14/1901	41	33	44	S	"	"	
02/03/1902	43	35	47	W	"	"	
12/13/1903	46	37	49	S	"	"	
03/26/1904	38	31	41	SW	"	"	
12/21/1905	38	31	41	SE	"	"	
01/04/1906	39	32	43	W	"	"	
01/20/1907	54	43	57	SW	"	"	
03/16/1908	48	38	51	W	"	"	
04/08/1909	56	44	59	W	"	"	
01/22/1910	41	33	44	S	"	"	
06/11/1911	54	43	57	N	"	"	
02/22/1912	40	32	43	SW	"	"	
01/18/1913	42	34	45	SW	"	"	
03/01/1914	41	33	48	NW	"	70R	
11/02/1915	33	27	39	NW	"	"	
12/06/1916	37	30	43	NW	"	"	
01/05/1917	37	30	43	SE	"	"	
02/26/1918	42	34	49	SW	"	"	
01/31/1919	60	47	68	NW	"	"	
06/29/1920	62	49	66	W	"	84R	
12/18/1921	44	35	47	W	"	"	
10/18/1922	40	32	43	W	"	"	
03/16/1923	48	38	51	S	"	"	
01/25/1924	36	30	41	NW	"	"	
03/19/1925	44	35	47	SW	"	"	
07/22/1926	54	43	58	SW	"	"	
11/17/1927	48	38	51	SW	"	"	
01/25/1928	33	32	43	W	3c	"	
03/07/1929	36	34	46	SW	"	"	
09/14/1930	31	30	41	SW	"	"	
04/26/1931	28	27	36	SW	"	"	
03/28/1932	40	32	43	NW	4c	"	
03/09/1933	37	30	44	NW	"	68R	
01/24/1934	44	35	51	NW	"	"	
07/19/1935	41	33	48	NE	"	"	
05/18/1936	50	40	55	W	"	79R	
11/28/1937	40	32	44	SW	"	"	
12/27/1938	38	31	43	SE	"	"	
03/06/1939	48	38	52	SW	"	"	
03/20/1940	36	30	41	NW	"	"	
03/18/1941	40	32	44	NW	"	"	
12/13/1942	65	60	83	N	3c	"	
01/19/1943	37	35	48	W	"	"	
06/29/1944	30	29	40	NW	"	"	
05/30/1945	42	40	55	W	"	"	
06/08/1946	38	36	50	W	"	"	
03/25/1947	37	35	48	SW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
04/30/1948	30	29	40	NW	"	"	
05/18/1949	31	30	41	S	"	"	
01/14/1950	35	34	47	SW	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	53
.90	10	58
.95	20	62
.96	25	63
.98	50	67
.99	100	71
.995	200	75
.998	500	81
.999	1000	85

BINGHAMTON, NEW YORK (BGM) APT z_o=.05 1951-1979 42 13 75 59
WBAN #04725

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
11/07/1951	62	57	51	SE	3c	76R	
03/11/1952	58	54	48	NW	"	"	
12/10/1953	57	53	47	W	"	"	
10/15/1954	92	84	74	S	"	"	
10/24/1955	72	66	59	W	"	"	
02/25/1956	72	66	59	W	"	"	
01/23/1957	62	57	51	NW	"	"	
08/14/1958	62	57	51	N	"	"	
01/05/1959	64	59	52	NW	"	"	
01/05/1960	60	56	50	W	"	"	
04/16/1961	42	40	43	E	"	22G	
02/14/1962	54	50	54	SE	"	"	
04/04/1963	45	42	45	W	"	"	
03/05/1964	50	47	51	SW	"	"	
04/12/1965	45	42	45	W	"	"	
01/31/1966	50	47	51	W	"	"	
06/15/1967	48	45	48	NW	"	"	
12/05/1968	56	52	56	W	"	"	
03/24/1969	40	38	41	SE	"	"	
04/02/1970	41	39	42	W	"	"	
01/26/1971	60	56	60	SW	"	"	
01/25/1972	43	41	44	W	"	"	
03/17/1973	43	41	44	S	"	"	
02/23/1974	43	41	44	W	"	"	
01/29/1975	40	38	41	W	"	"	
10/13/1976	38	36	39	NW	"	"	
08/05/1977	50	47	51	W	"	"	
01/26/1978	45	42	45	SW	"	"	
04/06/1979	50	47	51	W	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	48
.80	5	54
.90	10	58
.95	20	62
.96	25	63
.98	50	66
.99	100	70
.995	200	73
.998	500	78
.999	1000	82

BUFFALO, NEW YORK WBO z_o=.7 1873-1943 42 53 78 53
WBAN #94753

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
12/04/1873	60	47	63	W	4c	85R	
11/23/1874	72	56	75	W	"	"	
02/03/1875	66	51	69	W	"	"	
10/06/1876	72	56	75	W	"	"	
11/02/1877	76	59	79	W	"	"	
12/24/1878	84	65	87	SW	"	"	
02/26/1879	60	47	63	SW	"	"	
11/07/1880	66	51	69	SW	"	"	
11/27/1881	54	43	53	SW	"	113R	
11/24/1882	80	62	76	W	"	"	
11/12/1883	64	50	63	W	"	108R	
12/15/1884	82	63	78	SW	"	"	
01/17/1885	92	70	87	SW	"	"	
10/14/1886	78	60	75	SW	"	"	
10/24/1887	80	62	77	W	"	"	
01/13/1888	67	52	65	SW	"	"	
01/10/1889	88	68	85	SW	"	"	
01/13/1890	108	82	102	SW	"	"	
12/26/1891	100	77	96	SW	"	"	
01/21/1892	75	58	72	SW	"	"	
10/14/1893	70	54	67	SW	"	"	
02/10/1894	66	51	63	W	"	"	
12/31/1895	86	66	77	W	"	123R	
11/06/1896	85	65	61	W	"	206R	
03/12/1897	84	65	61	W	"	"	
12/23/1898	75	58	54	W	"	"	
01/26/1399	90	69	64	W	"	"	
09/12/1900	90	69	64	W	"	"	
01/16/1901	78	60	56	W	"	"	
04/26/1902	80	62	58	W	"	"	
02/08/1903	84	65	61	SW	"	"	
12/28/1904	78	60	56	W	"	"	
12/29/1905	86	66	62	SW	"	"	
10/28/1906	88	68	63	SW	"	"	
01/20/1907	102	78	73	SW	"	"	
02/01/1908	90	69	64	SW	"	"	
12/07/1909	92	70	65	W	"	"	
12/14/1910	74	57	53	SW	"	"	
12/31/1911	100	76	71	W	"	"	
02/22/1912	84	65	61	W	"	"	
03/21/1913	100	76	65	W	"	280R	
11/13/1914	100	76	65	SW	"	"	
01/07/1915	100	76	65	SW	"	"	
03/07/1916	90	69	59	W	"	"	
01/22/1917	120	91	78	W	"	"	
01/12/1918	94	72	62	W	"	"	
10/28/1919	92	70	60	W	"	"	
12/23/1920	118	89	76	SW	"	"	
12/18/1921	128	97	83	SW	"	"	
02/23/1922	104	79	68	SW	"	"	
03/04/1923	102	78	67	W	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
06/21/1924	108	82	70	W	"	"	
03/19/1925	100	76	65	W	"	"	
02/26/1926	106	81	70	SW	"	"	
12/08/1927	104	79	68	SW	"	"	
03/27/1928	76	70	60	SW	3c	"	
04/01/1929	88	81	70	SW	"	"	
09/27/1930	68	63	54	SW	"	"	
12/07/1931	68	63	54	W	"	"	
12/04/1932	79	73	63	SW	"	"	
01/19/1933	72	66	57	W	"	"	
03/06/1934	68	63	54	SW	"	"	
03/17/1935	78	72	62	SW	"	"	
02/04/1936	80	73	63	SW	"	"	
11/28/1937	70	65	56	SW	"	"	
12/27/1938	84	77	66	SW	"	"	
03/01/1939	80	73	63	SW	"	"	
11/12/1940	66	61	52	SW	"	"	
12/06/1941	78	72	62	W	"	"	
12/02/1942	80	73	63	W	"	"	
03/06/1943	104	95	82	SW	"	"	1.

1. Ends June

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	66
.80	5	74
.90	10	80
.95	20	85
.96	25	87
.98	50	92
.99	100	97
.995	200	102
.998	500	109
.999	1000	114

BUFFALO, NEW YORK (BUF) APT z_o=.05 1944-1979 42 56 78 44
WBAN #14733

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
02/05/1944	62	57	49	SW	3c	96R	
05/22/1945	67	62	54	SW	"	"	
02/14/1946	76	70	60	SW	"	"	
12/17/1947	62	57	49	SW	"	"	
03/16/1948	72	66	57	SW	"	"	
01/18/1949	64	59	51	SW	"	"	
01/14/1950	100	91	79	SW	"	"	
03/24/1951	72	66	57	SW	"	"	
01/15/1952	56	52	45	SW	"	"	
02/21/1953	75	69	60	SW	"	"	
10/15/1954	68	63	54	SW	"	"	
11/16/1955	69	64	55	SW	"	"	
03/11/1956	62	57	49	SW	"	"	
04/25/1957	72	67	58	W	"	"	
10/10/1958	64	59	51	SW	"	"	
03/07/1959	74	68	59	W	"	"	
01/08/1960	50	47	51	SW	"	20G	
02/19/1961	46	43	47	SW	"	"	
01/07/1962	45	42	46	SW	"	"	
03/06/1963	56	52	57	SW	"	"	
03/05/1964	56	52	57	SW	"	"	
01/07/1965	50	47	51	SW	"	"	
11/03/1966	46	43	47	SW	"	"	
02/16/1967	67	62	68	SW	"	"	
02/16/1968	62	57	62	SW	"	"	
05/09/1969	47	44	48	SW	"	"	
09/26/1970	43	41	45	SW	"	"	
03/15/1971	56	52	57	SW	"	"	
01/17/1972	51	48	53	SW	"	"	
12/06/1973	40	38	42	W	"	"	
04/15/1974	51	48	53	W	"	"	
02/26/1975	50	47	51	SW	"	"	
03/27/1976	54	50	55	SW	"	"	
01/28/1977	54	50	55	SW	"	"	
01/26/1978	65	60	66	S	"	"	
12/07/1979	52	49	54	SW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	60
.90	10	64
.95	20	68
.96	25	70
.98	50	74
.99	100	78
.995	200	82
.998	500	87
.999	1000	92

CANTON, NEW YORK WBO** z_o=.4 1907-1949 44 35 75 10
WBAN #14743

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
01/20/1907	104	79	86	SW	4c	61R	
12/01/1908	86	66	72	W	"	"	
02/06/1909	100	76	83	W	"	"	
10/27/1910	78	60	65	SW	"	"	
05/02/1911	66	51	55	SW	"	"	
12/06/1912	76	59	64	SW	"	"	
03/21/1913	82	63	69	SW	"	"	
02/01/1914	75	58	63	W	"	"	
01/19/1915	70	54	59	SW	"	"	
06/18/1916	62	49	53	SW	"	"	
03/24/1917	64	50	54	SW	"	"	
02/26/1918	75	58	63	W	"	"	
10/28/1919	76	59	64	W	"	"	
12/23/1920	60	47	51	SW	"	"	
12/18/1921	74	57	62	SW	"	"	
12/12/1922	55	43	47	W	"	"	
04/08/1923	65	51	55	W	"	"	
01/01/1924	59	46	50	W	"	"	
03/19/1925	84	65	71	SW	"	"	
06/02/1926	72	56	61	W	"	"	
11/29/1927	51	41	45	SW	"	"	
01/01/1928	58	46	50	SW	"	"	
01/19/1929	52	49	53	SW	3c	"	
04/01/1930	42	40	44	SW	"	"	
04/13/1931	44	42	46	W	"	"	
12/07/1932	62	49	53	W	4c	"	
06/28/1933	62	49	53	NW	"	"	
12/26/1934	56	44	48	W	"	"	
03/17/1935	62	49	53	W	"	"	
02/04/1936	64	50	54	W	"	"	
04/06/1937	54	43	47	SW	"	"	
09/22/1938	52	41	45	SW	"	"	
02/18/1939	58	46	50	SW	"	"	
11/12/1940	48	38	41	SW	"	"	
09/25/1941	56	44	48	SW	"	"	
01/02/1942	58	46	50	W	"	"	
03/07/1943	60	47	51	SW	"	"	
12/12/1944	40	32	35	E	"	"	
04/05/1945	50	40	44	W	"	"	
02/14/1946	60	47	51	W	"	"	
01/05/1947	54	43	47	SW	"	"	
03/16/1948	50	40	44	W	"	"	
01/19/1949	44	42	46	W	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	61
.90	10	65
.95	20	70
.96	25	71
.98	50	76
.99	100	80
.995	200	85
.998	500	90
.999	1000	95

ITHACA, NEW YORK WBO** z_o=.4 1900-1942 42 27 76 29
WBAN #94761

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
09/12/1900	58	46	44	NW	4c	100R	
12/31/1901	40	32	31	W	"	"	
02/02/1902	60	47	45	W	"	"	
08/25/1903	69	54	52	NW	"	"	
03/03/1904	57	45	43	W	"	"	
02/17/1905	42	34	32	NW	"	"	
01/07/1906	44	35	33	NW	"	"	
02/02/1907	50	40	38	NW	"	"	
02/01/1908	60	47	45	SE	"	"	
04/30/1909	90	69	66	SE	"	"	
01/22/1910	84	65	62	SE	"	"	
11/12/1911	70	54	52	SE	"	"	
01/08/1912	66	51	49	SE	"	"	
11/10/1913	64	50	48	S	"	"	
03/01/1914	64	50	48	NW	"	"	
11/19/1915	60	47	45	SE	"	"	
03/06/1916	56	44	42	SE	"	"	
10/19/1917	72	56	54	SE	"	"	
01/12/1918	76	59	56	S	"	"	
03/28/1919	58	46	44	NW	"	"	
12/14/1920	76	59	56	SE	"	"	
12/18/1921	62	49	47	SE	"	"	
08/06/1922	52	41	39	NW	"	"	
03/16/1923	72	56	54	S	"	"	
01/16/1924	60	47	45	S	"	"	
11/07/1925	64	50	48	S	"	"	
03/31/1926	62	49	47	SE	"	"	
10/12/1927	72	56	54	S	"	"	
04/14/1928	58	54	52	SE	3c	"	
01/25/1929	52	49	47	SE	"	"	
06/10/1930	46	43	41	SE	"	"	
04/10/1931	40	38	36	S	4c	"	
11/10/1932	50	40	38	E	"	"	
06/21/1933	66	51	49	NW	"	"	
04/11/1934	60	47	45	SE	"	"	
03/23/1935	64	56	54	NW	4c-b	"	
12/19/1936	48	43	41	SE	"	"	
02/21/1937	54	50	48	SE	3c	"	
01/24/1938	60	53	51	SE	4c-b	"	
02/10/1939	50	44	42	SE	"	"	
01/14/1940	62	57	54	SE	3c	"	
02/16/1941	48	45	43	NW	"	"	
05/03/1942	48	45	43	S	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	45
.80	5	52
.90	10	57
.95	20	61
.96	25	62
.98	50	67
.99	100	71
.995	200	75
.998	500	80
.999	1000	85

OSWEGO, NEW YORK WBO z_o=.7 1887-1952 43 27 76 31
WBAN #14759

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/24/1887	53	42	56	W	4c	87R	
01/13/1888	53	42	56	SE	"	"	
01/10/1889	62	49	65	W	"	"	
01/08/1890	58	46	61	NW	"	"	
11/17/1891	55	43	57	W	"	"	
03/11/1892	60	47	63	NW	"	"	
04/20/1893	80	62	84	SE	"	84R	
12/27/1894	65	51	69	NE	"	"	
12/31/1895	66	51	69	W	"	"	
03/07/1896	48	38	51	SW	"	"	
01/25/1897	54	43	58	W	"	"	
01/08/1898	48	38	51	W	"	"	
01/07/1899	58	46	62	W	"	"	
02/22/1900	64	50	68	SE	"	"	
03/03/1901	60	47	62	S	"	91R	
02/03/1902	60	47	62	NW	"	"	
02/08/1903	60	47	62	NW	"	"	
11/13/1904	60	47	62	N	"	"	
01/25/1905	54	43	57	NE	"	"	
12/06/1906	60	47	62	SW	"	"	
02/02/1907	64	50	66	W	"	"	
02/01/1908	54	43	57	NW	"	"	
04/13/1909	60	47	62	S	"	"	
01/03/1910	54	43	57	NW	"	"	
12/28/1911	60	47	62	NW	"	"	
02/22/1912	60	47	62	W	"	"	
03/21/1913	60	47	62	W	"	"	
02/07/1914	53	42	55	W	"	"	
03/30/1915	53	42	55	NW	"	"	
02/27/1916	60	47	62	NW	"	"	
01/22/1917	53	42	55	SW	"	"	
02/26/1918	69	54	71	W	"	"	
03/29/1919	53	42	55	NW	"	"	
09/30/1920	60	47	62	NE	"	"	
12/18/1921	69	54	71	SW	"	"	
01/11/1922	60	47	62	NE	"	"	
03/16/1923	60	47	62	SW	"	"	
11/08/1924	60	47	63	W	"	85R	
10/25/1925	60	47	63	W	"	"	
08/06/1926	80	62	83	NW	"	"	
02/03/1927	49	39	52	NW	"	"	
01/25/1928	50	47	63	W	3c	"	
04/01/1929	60	56	75	W	"	"	
01/25/1930	40	38	51	NW	"	"	
12/17/1931	37	35	47	W	"	"	
03/28/1932	52	41	55	N	4c	"	
12/01/1933	66	51	69	NW	"	"	
12/26/1934	62	49	66	W	"	"	
01/17/1935	50	40	54	SE	"	"	
01/23/1936	60	47	63	W	"	"	
11/13/1937	37	35	47	SE	3c	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
12/28/1938	48	45	61	W	"	"	
02/10/1939	42	40	54	SE	"	"	
02/21/1940	48	45	61	N	"	"	
07/28/1941	41	39	53	N	"	"	
12/03/1942	48	45	61	W	"	"	
03/07/1943	44	42	57	SW	"	"	
05/18/1944	52	41	55	N	4c	"	
11/16/1945	39	37	50	W	"	"	
01/19/1946	44	42	57	W	"	"	
01/21/1947	37	35	47	W	"	"	
03/19/1948	43	41	55	SW	"	"	
03/12/1949	37	35	47	NW	"	"	
11/25/1950	60	56	75	SE	"	"	
01/21/1951	37	35	47	W	"	"	
11/26/1952	35	34	46	S	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	59
.80	5	65
.90	10	70
.95	20	74
.96	25	76
.98	50	80
.99	100	84
.995	200	88
.998	500	94
.999	1000	98

OSWEGO, NEW YORK WBO* z_o=.05 1953-1967 43 28 76 31

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
07/26/1953	60	47	42	UNK	4c	65R	1.
10/15/1954	80	62	56	"	"	"	"
11/17/1955	76	59	53	"	"	"	"
11/21/1956	64	50	45	"	"	"	"
07/03/1957	72	56	51	"	"	"	"
11/29/1958	70	54	49	"	"	"	"
12/08/1959	65	51	46	"	"	"	"
11/29/1960	74	57	51	"	"	"	"
12/05/1961	66	51	46	"	"	"	"
1962	Missing						
09/12/1963	80	62	56	"	"	"	"
11/21/1964	112	85	77	"	"	"	"
10/31/1965	100	76	69	"	"	"	"
05/03/1966	62	49	44	"	"	"	"
11/04/1967	60	47	42	"	"	"	"

1. General period of record 4/10 - 12/15.

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	50
.80	5	58
.90	10	63
.95	20	67
.96	25	69
.98	50	74
.99	100	78
.995	200	83
.998	500	89
.999	1000	94

ROCHESTER, NEW YORK WBO z_o=.7 1887-1940 43 09 77 37
WBAN #94777

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/24/1887	60	47	48	SW	4c	162R	
03/21/1888	60	47	48	W	"	"	
12/22/1889	75	58	61	W	"	150R	
01/13/1890	60	47	50	W	"	"	
03/13/1891	60	47	62	W	"	90R	
03/11/1892	50	40	53	NW	"	"	
08/29/1893	60	47	62	NE	"	"	
11/03/1894	56	44	58	SW	"	"	
12/31/1895	60	47	62	SW	"	"	
05/17/1896	48	38	50	SW	"	"	
03/12/1897	54	43	57	SW	"	"	
03/13/1898	50	40	53	W	"	"	
03/29/1899	48	38	50	W	"	"	
11/21/1900	54	43	57	SW	"	"	
09/15/1901	52	41	52	SW	"	102R	
04/23/1902	59	46	58	SW	"	"	
01/30/1903	54	43	54	W	"	"	
03/03/1904	60	47	60	W	"	"	
02/10/1905	40	32	41	W	"	"	
12/06/1906	52	41	52	W	"	"	
01/20/1907	61	48	61	W	"	"	
04/11/1908	56	44	56	W	"	"	
04/07/1909	70	54	68	W	"	"	
03/31/1910	60	47	60	W	"	"	
10/04/1911	52	41	52	W	"	"	
02/22/1912	58	46	58	W	"	"	
03/02/1913	50	40	51	W	"	"	
02/07/1914	56	44	56	W	"	"	
04/10/1915	52	41	52	SW	"	"	
05/11/1916	54	43	54	W	"	"	
01/22/1917	54	43	54	W	"	"	
02/26/1918	60	47	60	W	"	"	
05/02/1919	50	40	51	SW	"	"	
04/02/1920	66	51	65	W	"	"	
12/18/1921	66	51	65	SW	"	"	
02/23/1922	78	60	76	W	"	"	
02/14/1923	74	57	72	W	"	"	
06/21/1924	54	43	54	W	"	"	
10/25/1925	60	47	60	SW	"	"	
01/28/1926	54	43	54	W	"	"	
04/06/1927	60	47	60	W	"	"	
04/19/1928	50	47	60	SW	3c	"	
03/07/1929	58	54	68	SW	"	"	
02/14/1930	37	35	44	SW	"	"	
04/28/1931	42	40	51	W	"	"	
06/21/1932	58	46	58	SW	4c	"	
01/22/1933	62	49	62	W	"	"	
04/24/1934	46	37	47	SW	"	"	
03/17/1935	62	55	70	SW	4c-b	"	
02/04/1936	58	51	65	SW	"	"	
01/02/1937	50	44	56	SW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
12/27/1938	55	51	65	SW	3c	"	
03/60/1939	52	49	62	SW	"	"	
01/21/1940	42	40	51	SW	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	63
.90	10	68
.95	20	73
.96	25	74
.98	50	79
.99	100	83
.995	200	88
.998	500	94
.999	1000	98

ROCHESTER, NEW YORK (ROC) APT z_o=.05 1941-1979 43 07 77 40
WBAN #14768

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
09/25/1941	58	54	48	W	3c	69R	
03/09/1942	56	52	47	W	"	"	
03/07/1943	64	59	53	S	"	"	
02/06/1944	54	50	45	W	"	"	
05/22/1945	62	57	51	W	"	"	
02/14/1946	72	66	59	W	"	"	
05/29/1947	66	61	55	W	"	"	
03/16/1948	62	57	51	SW	"	"	
12/27/1949	60	56	50	W	"	"	
01/14/1950	79	73	65	W	"	"	
01/21/1951	62	57	51	W	"	"	
01/15/1952	58	54	48	W	"	"	
02/21/1953	70	65	58	W	"	"	
03/03/1954	67	62	57	W	"	60R	
03/23/1955	65	60	55	W	"	"	
02/25/1956	72	66	60	W	"	"	
06/29/1957	58	54	49	SW	"	"	
06/25/1958	62	57	52	W	"	"	
01/22/1959	72	66	60	SW	"	"	
04/18/1960	60	56	51	W	"	"	
04/26/1961	55	51	47	W	"	"	
05/24/1962	58	54	49	SW	"	"	
09/12/1963	52	49	54	W	"	20G	
05/09/1964	60	56	61	SW	"	"	
10/31/1965	52	49	54	W	"	"	
01/31/1966	54	50	55	SW	"	"	
02/16/1967	62	57	62	SW	"	"	
02/22/1968	44	42	46	SW	"	"	
06/27/1969	47	44	48	SW	"	"	
03/26/1970	44	42	46	SW	"	"	
12/11/1971	51	48	53	SW	"	"	
01/25/1972	54	50	55	SW	"	"	
06/06/1973	60	56	61	SW	"	"	
01/27/1974	48	45	49	SW	"	"	
04/19/1975	60	56	61	SW	"	"	
02/19/1976	49	46	50	SW	"	"	
03/30/1977	49	46	50	W	"	"	
01/09/1978	50	47	51	SW	"	"	
04/06/1979	65	60	66	SW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	52
.80	5	58
.90	10	61
.95	20	64
.96	25	65
.98	50	69
.99	100	72
.995	200	75
.998	500	79
.999	1000	83

SYRACUSE, NEW YORK WBO z_o=.7 1903-1940 43 02 76 08
WBAN #94781

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
01/11/1903	68	53	65	S	4c	113R	
03/25/1904	64	50	61	S	"	"	
11/28/1905	78	60	74	S	"	"	
01/15/1906	70	54	66	S	"	"	
03/24/1907	84	65	80	S	"	"	
02/06/1908	78	60	74	S	"	"	
04/07/1909	74	57	70	SW	"	"	
01/05/1910	71	55	68	S	"	"	
02/02/1911	70	54	66	S	"	"	
02/22/1912	75	58	71	W	"	"	
04/01/1913	80	62	76	NW	"	"	
02/01/1914	70	54	66	SW	"	"	
09/26/1915	58	46	56	NW	"	"	
12/06/1916	70	54	66	NW	"	"	
03/23/1917	72	56	69	S	"	"	
12/01/1918	60	47	58	NW	"	"	
10/28/1919	60	47	58	W	"	"	
01/20/1920	66	51	63	S	"	"	
12/18/1921	98	75	92	SW	"	"	
02/23/1922	75	58	71	SW	"	"	
03/16/1923	70	54	66	S	"	"	
06/21/1924	66	51	63	SW	"	"	
03/19/1925	65	51	63	SW	"	"	
01/28/1926	62	49	60	SW	"	"	
02/04/1927	50	47	58	NW	"	"	
01/25/1928	50	47	65	W	3c	79R	
01/19/1929	38	36	50	SW	"	"	
05/03/1930	30	29	40	W	"	"	
12/07/1931	30	29	40	NW	"	"	
06/21/1932	42	34	47	NW	4c	"	
01/19/1933	42	34	47	SW	"	"	
12/26/1934	38	31	43	NW	"	"	
01/03/1935	37	30	41	NW	"	"	
04/16/1936	38	31	43	SW	"	"	
01/14/1937	35	29	40	S	"	"	
04/17/1938	42	34	47	S	"	"	
09/10/1939	38	31	43	SW	3c	"	
11/03/1940	37	30	41	W	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	59
.80	5	64
.90	10	68
.95	20	71
.96	25	72
.98	50	76
.99	100	79
.995	200	82
.998	500	87
.999	1000	90

SYRACUSE, NEW YORK (SYR) APT z_o=.05 1941-1979 43 07 76 07
WBAN #14771

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
07/28/1941	56	52	49	NW	3c	51R	
06/19/1942	64	59	54	NW	"	57R	
12/11/1943	60	56	52	W	"	"	
03/07/1944	52	49	45	S	"	"	
03/31/1945	64	59	54	SW	"	"	
11/22/1946	60	56	52	W	"	"	
03/25/1947	64	59	54	SW	"	"	
04/11/1948	58	54	50	S	"	"	
02/17/1949	66	61	56	W	"	"	
11/25/1950	64	59	53	E	"	72R	
07/19/1951	50	47	42	NW	"	"	
11/26/1952	50	47	42	S	"	"	
12/10/1953	50	47	42	NW	"	"	
10/15/1954	68	63	56	SE	"	"	
11/16/1955	58	54	48	W	"	"	
02/25/1956	62	57	51	W	"	"	
04/07/1957	56	52	46	NW	"	"	
02/25/1958	54	50	45	W	"	"	
03/07/1959	54	50	45	W	"	"	
01/02/1960	46	43	38	S	"	"	
06/10/1961	52	49	44	NW	"	"	
10/23/1962	58	54	48	W	"	"	
04/04/1963	50	47	51	NW	"	21G	
01/25/1964	56	52	56	S	"	"	
10/31/1965	52	49	53	W	"	"	
01/31/1966	59	55	60	W	"	"	
02/16/1967	67	62	67	W	"	"	
03/24/1968	46	43	47	W	"	"	
06/30/1969	50	47	51	W	"	"	
03/26/1970	46	43	47	W	"	"	
01/30/1971	50	47	51	W	"	"	
01/25/1972	52	49	53	W	"	"	
10/14/1973	48	45	49	W	"	"	
01/27/1974	65	60	65	W	"	"	
02/26/1975	46	43	47	SW	"	"	
04/21/1976	51	48	52	W	"	"	
01/11/1977	47	44	48	W	"	"	
12/21/1978	51	48	52	W	"	"	
04/06/1979	51	48	52	W	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	55
.90	10	59
.95	20	62
.96	25	63
.98	50	67
.99	100	70
.995	200	73
.998	500	78
.999	1000	81

AKRON, OHIO (CAK) APT z_o=.05 1932-1939 41 02 81 27
WBAN #14813

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
08/17/1932	66	61	58	NW	3c	45R	
07/23/1933	70	65	62	SW	"	"	
06/22/1934	60	56	53	W	"	"	
01/17/1935	54	50	57	W	"	"	
08/25/1936	70	65	62	SW	"	"	
11/28/1937	50	47	45	SW	"	65R	
10/26/1938	50	47	45	W	"	"	
04/21/1939	60	56	53	SW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	61
.90	10	66
.95	20	70
.96	25	72
.98	50	76
.99	100	81
.995	200	85
.998	500	91
.999	1000	96

CINCINNATI, OHIO WBO z_o=.7 1873-1914 39 06 84 31

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
03/09/1873	45	36	46	W	4c	98R	
07/24/1874	44	35	45	NE	"	"	
12/26/1875	38	31	40	S	"	"	
03/16/1876	49	39	50	SW	"	"	
06/25/1877	50	40	51	SW	"	"	
04/23/1878	39	32	41	SW	"	"	
11/14/1879	38	31	40	SW	"	"	
04/16/1880	41	33	42	W	"	"	
05/09/1881	48	38	49	S	"	"	
07/18/1882	42	34	44	W	"	"	
01/30/1883	30	25	32	S	"	"	
05/06/1884	35	29	37	SW	"	"	
07/30/1885	54	43	45	NE	"	153R	
08/22/1886	68	53	55	NE	"	"	
10/23/1887	48	38	40	SW	"	"	
03/21/1888	36	30	31	NW	"	"	
03/31/1889	64	50	52	SW	"	"	
12/27/1890	54	43	45	SW	"	"	
06/01/1891	42	34	35	NW	"	"	
05/26/1892	58	46	48	NW	"	"	
02/19/1893	56	44	46	W	"	"	
03/15/1894	48	38	40	NW	"	"	
11/26/1895	60	47	49	SW	"	"	
08/01/1896	67	52	54	NW	"	"	
01/22/1897	54	43	45	W	"	"	
01/22/1898	52	41	43	SW	"	"	
01/14/1899	55	43	45	SW	"	"	
08/14/1900	56	44	46	NW	"	"	
03/03/1901	60	47	49	SW	"	"	
05/20/1902	56	44	46	N	"	"	
10/07/1903	60	47	48	SW	"	160R	
04/25/1904	50	40	41	W	"	"	
05/11/1905	46	37	38	NW	"	"	
01/15/1906	47	38	39	SW	"	"	
01/19/1907	47	38	39	SW	"	"	
02/01/1908	46	37	38	W	"	"	
01/29/1909	58	46	47	W	"	"	
01/26/1910	50	40	41	W	"	"	
04/19/1911	47	38	39	SW	"	"	
06/16/1912	55	43	44	W	"	"	
07/09/1913	46	37	38	NW	"	"	
07/16/1914	39	32	33	SW	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	42
.80	5	49
.90	10	53
.95	20	57
.96	25	58
.98	50	62
.99	100	66
.995	200	70
.998	500	75
.999	1000	79

CINCINNATI (ABBE), OHIO WBO** z_o=.4 1916-1945 39 09 84 31
WBAN #93890 1952-1979

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
03/07/1916	62	49	56	W	4c	51R	
04/30/1917	46	37	42	SW	"	"	
02/25/1918	62	49	56	SW	"	"	
11/29/1919	60	47	54	SW	"	"	
04/12/1920	60	47	54	SW	"	"	
03/27/1921	55	43	49	W	"	"	
03/30/1922	62	49	56	SW	"	"	
03/12/1923	56	44	51	SW	"	"	
04/07/1924	50	40	46	SW	"	"	
03/18/1925	44	35	40	SW	"	"	
02/25/1926	55	43	49	SW	"	"	
05/18/1927	44	35	40	NW	"	"	
07/11/1928	46	43	49	NW	3c	"	
01/18/1929	43	41	47	SW	"	"	
04/01/1930	33	32	37	SW	"	"	
07/22/1931	32	21	24	SW	"	"	
04/02/1932	54	43	49	SW	4c	"	
02/22/1933	45	36	41	SW	"	"	
06/22/1934	50	40	46	W	"	"	
01/17/1935	42	34	39	W	"	"	
02/04/1936	44	35	40	SW	"	"	
02/21/1937	48	38	44	SW	"	"	
11/04/1938	46	37	42	SW	"	"	
02/28/1939	50	40	46	SW	"	"	
11/11/1940	48	38	44	SW	"	"	
03/11/1941	52	41	47	SW	"	"	
03/22/1942	49	39	45	W	"	"	
02/06/1943	39	32	37	SW	"	"	
08/21/1944	48	38	44	W	"	"	
05/14/1945	45	36	41	W	"	"	
01/19/1952	53	42	48	SW	3c	"	
03/03/1953	48	38	44	S	"	"	
10/11/1954	41	33	38	NW	"	"	
03/22/1955	57	45	52	SW	"	"	
03/01/1956	48	38	44	SW	"	"	
04/05/1957	39	32	37	SW	"	"	
08/11/1958	30	25	29	N	"	"	
01/21/1959	63	49	56	SW	"	"	
05/20/1960	42	34	39	SW	"	"	
04/25/1961	48	38	44	SW	"	"	
04/13/1962	34	28	32	W	"	"	
06/10/1963	42	34	39	NW	"	"	
03/05/1964	48	38	44	SW	"	"	
04/08/1965	35	34	39	W	"	"	
04/01/1966	35	34	39	W	"	"	
02/15/1967	50	47	54	SW	"	"	
12/28/1968	37	35	40	SW	"	"	
06/12/1969	28	27	31	SW	"	"	
04/02/1970	34	33	38	SW	"	"	
01/26/1971	37	35	40	NW	"	"	
07/24/1972	32	31	36	NW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
04/09/1973	30	29	33	SW	"	"	
05/14/1974	33	32	37	SW	"	"	
04/18/1975	33	32	37	SW	"	"	
01/13/1976	39	37	42	SW	"	"	
03/04/1977	34	33	38	W	"	"	
01/26/1978	34	33	38	SW	"	"	
12/07/1979	37	35	40	W	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	42
.80	5	49
.90	10	53
.95	20	58
.96	25	59
.98	50	64
.99	100	68
.995	200	72
.998	500	78
.999	1000	82

CLEVELAND, OHIO WBO Z_o=.7 1872-1940 41 30 81 40
WBAN # 14882

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
09/19/1872	40	32	40	UNK	4c	103R	
12/04/1873	60	47	53	SW	"	130R	
01/24/1874	54	43	49	W	"	"	
05/01/1875	70	54	61	W	"	"	
03/16/1876	60	47	53	SW	"	"	
08/31/1877	70	54	61	NW	"	"	
12/11/1878	66	51	58	W	"	"	
07/10/1879	74	57	65	N	"	"	
04/16/1880	80	62	70	SW	"	"	
12/07/1881	58	46	52	W	"	"	
01/26/1882	56	44	50	SW	"	"	
11/11/1883	52	41	47	W	"	"	
01/02/1884	50	40	45	SW	"	"	
12/06/1885	42	34	39	W	"	"	
04/01/1886	70	54	61	SW	"	"	
02/18/1887	52	41	47	S	"	"	
01/12/1888	60	47	53	SE	"	"	
01/09/1889	48	38	48	SW	"	103R	
11/09/1890	100	76	88	SW	"	125R	
12/08/1891	50	40	46	SE	"	125R	
07/24/1892	75	58	66	NW	"	130R	
05/23/1893	70	54	61	SW	"	"	
10/11/1894	75	58	66	W	"	"	
11/26/1895	94	72	82	S	"	"	
02/11/1896	89	68	77	W	"	"	
09/16/1897	74	57	54	NW	"	201R	
01/23/1898	75	58	55	W	"	"	
05/16/1899	62	49	46	W	"	"	
11/21/1900	75	58	55	SW	"	"	
01/19/1901	80	62	58	W	"	"	
02/28/1902	80	62	58	SE	"	"	
12/12/1903	63	49	46	S	"	"	
02/02/1904	70	54	51	SW	"	"	
05/11/1905	78	60	56	NW	"	"	
12/06/1906	76	59	56	W	"	"	
03/05/1907	76	59	56	W	"	"	
02/01/1908	70	54	51	W	"	"	
04/21/1909	84	65	61	W	"	"	
07/28/1910	72	56	53	NW	"	"	
05/31/1911	80	62	58	NW	"	"	
02/22/1912	78	60	56	W	"	"	
06/19/1913	80	62	58	SW	"	"	
01/12/1914	64	50	47	W	"	"	
03/29/1915	60	47	44	W	"	"	
12/22/1916	62	49	46	NE	"	"	
12/08/1917	82	63	59	W	"	"	
03/10/1918	74	57	54	NW	"	"	
11/29/1919	73	57	54	W	"	"	
08/10/1920	78	60	56	NW	"	"	
01/16/1921	78	60	56	W	"	"	
04/20/1922	75	58	55	W	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
02/14/1923	74	57	54	W	"	"	
01/25/1924	69	54	51	W	"	"	
03/19/1925	E65	51	48	SW	"	"	
12/26/1926	64	50	47	N	"	"	
11/30/1927	60	47	44	N	"	"	
10/24/1928	E64	59	56	NW	3c	"	
03/06/1929	E70	65	61	W	"	"	
01/03/1930	56	52	43	NW	"	337R	
06/26/1931	64	59	49	N	"	"	
01/13/1932	76	59	49	S	4c	"	
01/19/1933	78	60	50	SW	"	"	
01/28/1934	93	71	59	W	"	"	
02/05/1935	82	63	52	N	"	"	
06/02/1936	88	68	56	NW	"	"	
03/24/1937	88	68	56	NW	"	"	
07/28/1938	86	66	55	W	"	"	
01/22/1939	82	63	52	W	"	"	
05/19/1940	90	78	64	SW	4c-b	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	54
.80	5	61
.90	10	66
.95	20	71
.96	25	72
.98	50	77
.99	100	81
.995	200	86
.998	500	92
.999	1000	96

CLEVELAND, OHIO (CLE) APT z_o=.05 1941-1976 41 24 81 51
WBAN #14820

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
09/25/1941	60	56	52	S	3c	54R	
03/09/1942	60	56	52	SW	"	"	
01/19/1943	51	48	44	SW	"	"	
02/23/1944	62	57	53	SW	"	"	
02/22/1945	64	59	55	SW	"	"	
02/14/1946	70	65	60	SW	"	"	
03/25/1947	62	57	53	NW	"	"	
03/19/1948	81	74	69	W	"	"	
05/19/1949	72	66	61	SW	"	56R	
01/14/1950	64	59	54	SW	"	"	
04/28/1951	65	60	55	W	"	"	
01/22/1952	60	56	52	SW	"	"	
03/04/1953	68	63	58	W	"	"	
04/07/1954	63	58	53	SW	"	"	
03/22/1955	74	68	63	SW	"	"	
02/24/1956	71	65	57	W	"	88R	
05/14/1957	74	68	59	SW	"	"	
04/24/1958	64	59	51	SW	"	"	
03/15/1959	76	70	61	SW	"	"	
09/01/1960	45	42	46	N	"	20G	
02/25/1961	46	43	47	NW	"	"	
03/06/1962	40	38	42	N	"	"	
08/03/1963	62	57	62	S	"	"	
03/05/1964	51	48	53	SW	"	"	
07/09/1965	46	43	47	W	"	"	
03/23/1966	42	40	44	SW	"	"	
02/15/1967	57	53	58	W	"	"	
12/05/1968	42	40	44	SW	"	"	
07/04/1969	42	40	44	N	"	"	
03/26/1970	48	45	49	SW	"	"	
12/15/1971	52	49	54	SW	"	"	
07/18/1972	50	47	51	SW	"	"	
06/04/1973	39	37	41	SW	"	"	
05/11/1974	54	50	55	W	"	"	
04/19/1975	48	45	49	SW	"	"	
02/18/1976	52	49	54	SW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	52
.80	5	58
.90	10	63
.95	20	67
.96	25	68
.98	50	72
.99	100	76
.995	200	80
.998	500	85
.999	1000	89

COLUMBUS, OHIO WBO z_o=.7 1887-1951 39 58 83 00
WBAN #93891

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/23/1887	56	44	59	S	4c	84R	
10/01/1888	57	45	61	SW	"	"	
01/09/1889	50	40	54	SW	"	"	
05/18/1890	70	54	69	W	"	100R	
06/02/1891	60	47	60	W	"	"	
06/14/1892	40	32	40	W	"	100R	
10/14/1893	62	49	55	W	"	132R	
02/09/1894	60	47	53	W	"	"	
11/26/1895	40	32	42	SW	"	93R	
07/29/1896	45	36	47	W	"	"	
09/01/1897	59	46	59	NW	"	100R	
01/23/1898	60	47	60	W	"	"	
12/12/1899	60	47	60	SW	"	"	
11/21/1900	48	38	48	SW	"	"	
03/03/1901	50	40	51	SW	"	"	
07/18/1902	59	46	44	W	"	190R	
02/04/1903	75	58	56	SW	"	"	
01/22/1904	75	58	56	SW	"	"	
05/30/1905	70	54	52	W	"	"	
04/09/1906	78	60	58	W	"	"	
01/20/1907	88	68	62	NW	"	222R	
03/15/1908	90	69	63	W	"	"	
07/12/1909	84	65	59	W	"	"	
11/10/1910	68	53	48	W	"	"	
07/24/1911	84	65	59	W	"	"	
06/16/1912	76	59	54	NW	"	"	
06/01/1913	72	56	51	NW	"	"	
02/15/1914	74	57	52	W	"	"	
08/24/1915	76	59	54	NW	"	"	
07/31/1916	110	84	77	NW	"	"	
07/01/1917	64	50	46	NW	"	"	
08/12/1918	102	78	71	N	"	"	
07/12/1919	64	50	46	NW	"	"	
04/07/1920	100	76	69	W	"	"	
08/06/1921	74	57	52	NW	"	"	
08/07/1922	65	51	47	NW	"	"	
02/14/1923	72	56	51	NW	"	"	
12/13/1924	64	50	46	NW	"	"	
04/11/1925	72	56	51	W	"	"	
01/28/1926	62	49	45	NW	"	"	
11/30/1927	66	51	47	NW	"	"	
01/25/1928	60	56	51	W	3c	"	
03/07/1929	66	61	56	NW	"	"	
06/24/1930	58	54	49	NW	"	"	
04/26/1931	56	52	47	W	"	230R	
01/13/1932	68	53	48	S	4c	"	
03/08/1933	78	60	54	W	"	"	
07/03/1934	78	60	54	NW	"	"	
03/16/1935	72	56	69	SW	"	110R	
02/04/1936	UNK	53	66	SW	UNK "	1.	
03/20/1937	"	53	66	SW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
01/24/1938	UNK	63	78	S	"	"	
01/05/1939	"	55	68	SW	"	"	
05/19/1940	"	53	66	S	"	"	
05/16/1941	"	51	63	NW	"	"	
03/09/1942	"	68	84	SW	"	"	
03/16/1943	"	55	68	SW	"	"	
04/24/1944	"	44	54	SW	"	"	
03/17/1945	"	63	78	SW	"	"	
10/18/1946	"	60	74	S	"	"	
04/11/1947	"	55	68	SW	"	"	
03/19/1948	"	61	76	SW	"	"	
01/19/1949	"	52	64	SW	"	"	
11/20/1950	62	57	71	SW	3c	"	
03/29/1951	47	44	54	SW	"	"	

1. Register charts not available. Measured speed and anemometer type unknown until 1950.

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	65
.90	10	70
.95	20	75
.96	25	77
.98	50	82
.99	100	87
.995	200	92
.998	500	99
.999	1000	104

COLUMBUS, OHIO (CMH) APT z_o=.05 1952-1979 39 59 82 55
WBAN #14821

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
11/21/1952	66	61	58	N	3c	46R	
07/02/1953	46	43	41	NW	"	"	
03/28/1954	56	52	49	SW	"	"	
03/11/1955	68	63	60	NW	"	"	
02/25/1956	62	57	54	W	"	"	
05/18/1957	51	48	46	W	"	"	
08/14/1958	44	42	40	N	"	"	
01/21/1959	60	56	47	W	"	128R	
02/22/1960	44	42	46	W	"	20G	
04/28/1961	42	40	44	NW	"	"	
01/07/1962	40	38	42	SW	"	"	
03/20/1963	47	44	48	W	"	"	
05/24/1964	54	50	55	NW	"	"	
11/27/1965	50	47	51	W	"	"	
06/28/1966	50	47	51	NW	"	"	
02/16/1967	58	54	59	W	"	"	
12/28/1968	44	42	46	W	"	"	
11/30/1969	38	36	39	SW	"	"	
04/02/1970	60	56	61	W	"	"	
12/15/1971	50	47	51	SW	"	"	
07/09/1972	43	41	45	SW	"	"	
08/30/1973	44	42	46	SW	"	"	
04/14/1974	56	52	57	SW	"	"	
03/24/1975	39	37	41	SW	"	"	
07/15/1976	55	51	56	W	"	"	
03/04/1977	50	47	51	SW	"	"	
01/26/1978	57	53	58	SW	"	"	
03/13/1979	51	48	53	SW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	56
.90	10	60
.95	20	65
.96	25	66
.98	50	70
.99	100	74
.995	200	79
.998	500	84
.999	1000	89

DAYTON, OHIO WBO Σ_o=.7 1912-1942 39 54 84 13
WBAN #93815

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
04/21/1912	60	47	43	W	4c	216R	
07/14/1913	70	54	50	NW	"	"	
07/13/1914	60	47	43	NW	"	"	
11/28/1915	52	41	38	SW	"	"	
03/06/1916	75	58	53	SW	"	"	
05/22/1917	60	47	43	SW	"	"	
02/25/1918	68	53	49	NW	"	"	
02/28/1919	72	56	52	SW	"	"	
03/28/1920	70	54	50	S	"	"	
06/18/1921	60	47	43	W	"	"	
04/11/1922	62	49	45	W	"	"	
03/12/1923	72	56	52	W	"	"	
03/29/1924	64	50	50	SW	"	173R	
03/18/1925	56	44	44	SW	"	"	
07/06/1926	74	57	57	NW	"	"	
12/08/1927	60	47	47	W	"	"	
11/21/1928	56	52	52	NW	3c	"	
04/28/1929	54	50	50	NW	"	"	
08/09/1930	40	38	38	NW	"	"	
06/06/1931	44	42	42	SW	"	"	
02/11/1932	73	57	57	NW	4c	"	
1933						1.	
1934	Missing						
08/13/1935	46	43	44	SW	3c	163R	
07/23/1936	43	41	42	N	"	"	
02/21/1937	54	48	49	W	4c-b	"	
05/23/1938	63	55	51	SW	"	213R	
06/22/1939	62	55	51	W	"	"	
11/11/1940	64	56	52	S	"	"	
09/25/1941	72	63	58	SW	"	"	
01/02/1942	58	51	47	SW	"	"	

1. 6 months only.

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	53
.90	10	57
.95	20	61
.96	25	62
.98	50	66
.99	100	69
.995	200	73
.998	500	78
.999	1000	81

DAYTON, OHIO (DAY) APT z_o=.05 1943-1979 39 54 84 13
WBAN #93815

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
07/25/1943	76	70	65	W	3c	55R	
06/14/1944	56	52	48	NW	"	"	
06/16/1945	76	70	65	SW	"	"	
02/14/1946	72	66	61	SW	"	"	
03/24/1947	75	69	64	NW	"	"	
03/19/1948	76	70	65	W	"	"	
01/18/1949	52	49	45	SW	"	"	
06/16/1950	85	78	72	NW	"	"	
06/27/1951	60	56	52	W	"	"	
02/08/1952	67	62	57	W	"	"	
03/04/1953	55	51	47	W	"	"	
05/02/1954	60	56	52	S	"	"	
03/22/1955	66	61	56	SW	"	"	
02/25/1956	60	56	52	NW	"	"	
11/08/1957	52	49	45	SW	"	"	
04/05/1958	60	56	52	NW	"	"	
03/06/1959	68	63	58	W	"	"	
04/07/1960	60	56	52	W	"	"	
02/25/1961	64	59	54	NW	"	"	
02/13/1962	41	39	43	W	"	20G	
06/10/1963	57	53	58	W	"	"	
03/05/1964	54	50	55	S	"	"	
11/27/1965	39	37	40	SW	"	"	
06/27/1966	42	40	44	NW	"	"	
02/15/1967	60	56	61	NW	"	"	
04/04/1968	46	43	47	SW	"	"	
06/12/1969	41	39	43	W	"	"	
04/02/1970	51	48	53	W	"	"	
01/26/1971	60	56	61	W	"	"	
07/24/1972	56	52	57	W	"	"	
12/26/1973	50	47	51	S	"	"	
04/14/1974	50	47	51	W	"	22G	
04/03/1975	45	42	45	W	"	"	
01/13/1976	48	45	48	SW	"	"	
03/04/1977	48	45	48	W	"	"	
01/26/1978	60	56	60	SW	"	"	
07/23/1979	47	44	47	SW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	52
.80	5	60
.90	10	64
.95	20	69
.96	25	71
.98	50	75
.99	100	80
.995	200	84
.998	500	90
.999	1000	95

SANDUSKY, OHIO WBO Z_o=.7 1877-1962 41 27 82 43
WBAN #14846

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
11/11/1887	70	54	78	NW	4c	70R	
01/13/1888	48	38	55	W	"	"	
01/09/1889	48	38	55	SW	"	"	
08/21/1890	53	42	61	W	"	"	
06/03/1891	54	43	62	SW	"	"	
07/24/1892	60	47	68	NW	"	"	
02/19/1893	60	47	68	NW	"	"	
02/12/1894	54	43	62	E	"	"	
11/26/1895	60	47	68	S	"	"	
02/10/1896	58	46	66	NW	"	"	
08/04/1897	60	47	68	N	"	"	
01/23/1898	46	37	53	W	"	"	
07/07/1899	60	47	68	NW	"	"	
07/17/1900	50	40	58	W	"	"	
07/04/1901	48	38	55	N	"	"	
03/31/1902	50	40	58	NW	"	"	
04/30/1903	42	34	49	W	"	"	
03/03/1904	58	46	66	NW	"	"	
07/19/1905	50	40	58	NW	"	"	
07/22/1906	51	41	59	N	"	"	
03/05/1907	60	47	68	NW	"	"	
03/15/1908	45	36	52	NW	"	"	
04/07/1909	44	35	50	W	"	"	
03/13/1910	46	37	53	NW	"	"	
07/11/1911	50	40	58	W	"	"	
02/21/1912	48	38	55	NE	"	"	
11/10/1913	55	43	62	NW	"	"	
03/01/1914	62	49	71	NW	"	"	
04/11/1915	50	40	58	W	"	"	
02/18/1916	56	44	63	N	"	"	
08/16/1917	66	51	74	NW	"	"	
02/25/1918	62	49	71	W	"	"	
11/29/1919	82	63	91	SW	"	"	
04/02/1920	64	50	72	SW	"	"	
11/01/1921	62	49	71	N	"	"	
02/23/1922	66	51	74	W	"	"	
02/14/1923	50	40	58	NW	"	"	
06/28/1924	60	47	68	NW	"	"	
11/07/1925	44	35	50	SW	"	"	
12/26/1926	46	37	53	N	"	"	
12/08/1927	50	40	58	SW	"	"	
04/14/1928	43	41	60	SW	3c	67R	
04/01/1929	51	48	70	SW	"	"	
04/07/1930	35	34	50	NW	"	"	
06/20/1931	40	38	56	NW	"	"	
02/11/1932	55	43	63	SW	4c	"	
01/19/1933	52	41	60	SW	"	"	
01/28/1934	52	41	60	NW	"	"	
03/29/1935	51	41	60	SW	"	"	
02/04/1936	65	51	75	SW	"	"	
10/19/1937	52	41	60	SW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
12/27/1938	44	35	51	SW	"	"	
02/28/1939	51	41	60	SW	"	"	
11/11/1940	60	47	69	SW	"	"	
09/25/1941	60	47	69	SW	"	"	
12/02/1942	46	37	54	SW	"	"	
02/28/1943	48	38	56	SW	"	"	
02/23/1944	60	47	69	SW	"	"	
04/04/1945	48	38	56	SW	"	"	
02/14/1946	56	44	65	SW	"	"	
02/25/1947	64	50	73	W	"	"	
03/19/1948	62	49	72	W	"	"	
01/19/1949	54	43	63	SW	"	"	
04/11/1950	46	43	63	SW	3c	"	
04/28/1951	40	38	56	S	"	"	
11/26/1952	44	42	62	SW	"	"	
03/03/1953	54	50	73	SW	"	"	
08/16/1954	47	44	65	NW	"	"	
03/22/1955	48	45	66	SW	"	"	
02/25/1956	48	45	66	NW	"	"	
04/05/1957	40	38	56	SW	"	"	
11/29/1958	36	34	50	NW	"	"	
03/15/1959	50	47	69	SW	"	"	
06/04/1960	36	34	50	NW	"	"	
04/16/1961	35	34	50	SW	"	"	
08/20/1962	44	42	62	NW	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	61
.80	5	69
.90	10	74
.95	20	79
.96	25	80
.98	50	85
.99	100	90
.995	200	95
.998	500	101
.999	1000	106

TOLEDO, OHIO WBO z_o=.7 1873-1942 41 39 83 32
WBAN #14889

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
12/04/1873	54	43	53	SW	4c	114R	
11/23/1874	66	51	62	SW	"	"	
03/13/1875	80	62	76	UNK	"	"	
01/09/1876	66	51	62	W	"	"	
04/08/1877	66	51	62	NE	"	"	
01/31/1878	80	62	76	E	"	"	
03/24/1879	58	46	56	W	"	"	
03/04/1880	90	69	84	E	"	"	
03/03/1881	60	47	58	NE	"	"	
05/06/1882	76	59	72	E	"	"	
04/23/1883	70	54	66	E	"	"	
04/22/1884	60	47	57	NE	"	"	
03/09/1885	45	36	44	SW	"	"	
10/14/1886	64	50	61	SW	"	"	
04/18/1887	72	56	69	NE	"	"	
06/13/1888	76	59	72	W	"	"	
01/09/1889	66	51	62	SW	"	"	
01/13/1890	60	47	58	S	"	"	
11/21/1891	62	49	56	SE	"	127R	
04/05/1892	70	54	62	W	"	"	
05/23/1893	62	49	56	W	"	"	
03/24/1894	56	44	51	W	"	"	
11/26/1895	81	62	71	SW	"	"	
02/10/1896	58	46	53	NW	"	"	
01/17/1897	60	47	54	SW	"	"	
09/24/1898	65	51	59	S	"	"	
05/16/1899	48	38	44	NW	"	"	
11/21/1900	60	47	54	W	"	"	
10/12/1901	60	47	54	SE	"	"	
04/26/1902	60	47	54	SW	"	"	
07/01/1903	75	58	67	W	"	"	
12/28/1904	58	46	53	SW	"	"	
08/05/1905	48	38	44	W	"	"	
11/26/1906	80	62	55	SW	"	246R	
01/20/1907	88	68	60	SW	"	"	
04/25/1908	74	57	51	SW	"	"	
04/07/1909	84	65	58	SW	"	"	
04/05/1910	79	61	54	SW	"	"	
01/08/1911	80	62	55	SW	"	"	
12/02/1912	68	53	47	SW	"	"	
03/21/1913	100	76	67	SW	"	"	
02/07/1914	64	50	44	SW	"	"	
09/10/1915	72	56	50	W	"	"	
04/17/1916	72	56	50	W	"	"	
05/01/1917	75	58	51	SW	"	"	
02/25/1918	80	62	55	W	"	"	
11/29/1919	100	76	67	SW	"	"	
12/14/1920	90	69	61	SW	"	"	
12/17/1921	70	54	48	SW	"	"	
07/10/1922	100	76	67	SW	"	"	
03/12/1923	100	76	67	SW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
08/08/1924	100	76	67	W	"	"	
03/10/1925	60	47	42	SW	"	"	
02/25/1926	75	58	51	SW	"	"	
12/08/1927	75	58	51	SW	"	"	
04/14/1928	60	56	50	SW	3c	"	
04/01/1929	66	61	54	SW	"	"	
06/06/1930	60	56	50	W	"	"	
04/21/1931	48	45	40	SW	"	"	
02/11/1932	80	62	55	SW	4c	"	
01/19/1933	57	45	60	W	"	87R	
01/28/1934	48	38	51	NW	"	"	
01/17/1935	50	40	53	W	"	"	
02/04/1936	60	47	63	W	"	"	
04/13/1937	53	42	56	W	"	"	
03/16/1938	48	38	51	W	"	"	
02/28/1939	52	41	55	W	"	"	
07/27/1940	64	50	67	NW	"	"	
12/05/1941	64	50	67	W	"	"	
01/06/1942	54	43	57	W	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	64
.90	10	70
.95	20	75
.96	25	76
.98	50	81
.99	100	86
.995	200	91
.998	500	97
.999	1000	102

TOLEDO, OHIO (TOL) APT Z_o=.05 1943-1979 41 36 83 48
WBAN #94830

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
03/17/1943	60	56	54	SW	3c	41R	
06/02/1944	50	47	44	W	"	47R	
03/17/1945	66	61	58	S	"	"	
02/14/1946	68	63	60	SW	"	"	
04/06/1947	64	59	56	SW	"	"	
03/19/1948	66	61	58	SW	"	"	
01/19/1949	72	66	62	SW	"	"	
01/14/1950	60	56	53	SW	"	"	
03/03/1951	56	52	49	SW	"	"	
11/26/1952	60	56	53	SW	"	"	
03/18/1953	57	53	50	W	"	"	
03/25/1954	52	49	46	SW	"	"	
03/22/1955	60	56	51	SW	"	66R	
04/03/1956	78	72	65	SW	"	"	
04/05/1957	72	66	59	W	"	"	
04/24/1958	49	46	42	SW	"	"	
04/03/1959	42	40	44	NW	"	20G	
02/19/1960	37	35	38	NW	"	"	
06/01/1961	50	47	51	W	"	"	
04/30/1962	55	51	56	NW	"	"	
06/10/1963	44	42	46	SW	"	"	
06/12/1964	39	37	41	SW	"	"	
08/27/1965	50	47	51	W	"	"	
01/27/1966	37	35	38	NW	"	"	
02/16/1967	60	56	61	SW	"	"	
04/08/1968	42	40	44	SW	"	"	
07/04/1969	57	53	54	NW	"	30G	
07/02/1970	58	54	55	NW	"	"	
01/29/1971	50	47	48	W	"	"	
01/24/1972	50	47	48	W	"	"	
06/26/1973	46	43	44	SW	"	"	
04/14/1974	42	40	41	SW	"	"	
07/03/1975	54	50	51	NW	"	"	
03/05/1976	43	41	42	SW	"	"	
01/28/1977	44	42	43	W	"	"	
11/17/1978	40	38	39	W	"	"	
04/05/1979	48	45	46	NW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	55
.90	10	60
.95	20	64
.96	25	65
.98	50	69
.99	100	73
.995	200	77
.998	500	83
.999	1000	87

ERIE, PENNSYLVANIA (ERI) WBO z_o=.7 1887-1952 42 07 80 05
WBAN #14893

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/24/1887	50	40	55	W	4c	78R	
01/12/1888	60	47	60	S	"	102R	
01/10/1889	62	49	62	SW	"	"	
02/07/1890	75	58	74	SE	"	"	
02/27/1891	61	48	61	NW	"	"	
01/01/1892	60	47	60	UNK	"	"	
01/01/1893	60	47	60	SW	"	"	
04/10/1894	60	47	60	SE	"	"	
11/26/1895	60	47	60	SW	"	"	
02/11/1896	60	47	60	W	"	"	
03/14/1897	60	47	60	S	"	"	
01/20/1898	58	46	58	S	"	"	
02/26/1899	60	47	60	S	"	"	
11/21/1900	55	43	54	NW	"	"	
03/03/1901	55	43	54	S	"	"	
12/15/1902	55	43	54	S	"	"	
01/30/1903	52	41	52	NW	"	"	
02/28/1904	54	43	54	W	"	"	
11/28/1905	60	47	60	S	"	"	
01/03/1906	56	44	56	SE	"	"	
11/20/1907	64	50	63	SE	"	"	
02/01/1908	66	51	65	NW	"	"	
12/13/1909	66	51	65	SE	"	"	
04/17/1910	60	47	60	SE	"	"	
02/02/1911	60	47	60	SE	"	"	
01/08/1912	54	43	54	SE	"	"	
03/21/1913	56	44	56	SW	"	"	
01/12/1914	50	40	51	NW	"	"	
11/19/1915	78	60	61	SE	"	166R	
07/02/1916	76	59	59	W	"	"	
03/23/1917	77	60	61	SW	"	"	
01/12/1918	72	56	56	SE	"	"	
03/09/1919	72	56	56	SE	"	"	
01/20/1920	62	49	49	SE	"	"	
09/30/1921	78	60	61	SW	"	"	
04/19/1922	72	56	56	W	"	"	
02/14/1923	74	57	57	W	"	"	
02/20/1924	66	51	51	SE	"	"	
05/16/1925	66	51	51	SW	"	"	
08/20/1926	75	58	58	SE	"	"	
04/05/1927	68	53	53	SE	"	"	
01/19/1928	52	49	49	SW	3c	"	
04/01/1929	66	61	62	SW	"	"	
04/17/1930	46	43	43	SE	"	"	
12/07/1931	47	44	44	W	"	"	
01/27/1932	70	54	54	W	4c	"	
01/07/1933	64	50	50	SW	"	"	
07/12/1934	62	49	49	NW	"	"	
01/17/1935	68	53	53	SW	"	"	
05/02/1936	78	60	61	W	"	"	
01/02/1937	80	62	63	SE	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
01/24/1938	83	64	65	SE	"	"	
02/10/1939	52	41	56	SE	"	81R	
01/14/1940	40	38	52	SE	3c	"	
09/25/1941	44	42	57	SW	"	"	
12/27/1942	44	42	57	SE	"	"	
01/19/1943	35	34	47	W	"	"	
03/29/1944	50	47	64	SE	"	"	
12/25/1945	37	35	48	SE	"	"	
02/14/1946	46	43	59	SW	"	"	
03/25/1947	44	42	57	W	"	"	
03/19/1948	42	40	55	SW	"	"	
12/07/1949	37	35	48	SW	"	"	
12/07/1950	46	43	59	SE	"	"	
03/03/1951	38	36	49	SE	"	"	
06/08/1952	34	33	45	SW	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	56
.80	5	61
.90	10	64
.95	20	68
.96	25	69
.98	50	72
.99	100	75
.995	200	78
.998	500	82
.999	1000	86

HARRISBURG, PENNSYLVANIA WBO z_o=.7 1888-1938 40 16 76 53
WBAN #94718

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
12/18/1888	48	38	48	N	4c	102R	
12/16/1889	66	51	65	W	"	"	
12/17/1890	66	51	65	NE	"	"	
04/19/1891	75	58	74	UNK	"	"	
03/11/1892	49	39	49	NW	"	"	
02/19/1893	60	47	60	NW	"	"	
01/30/1894	57	45	57	NW	"	"	
02/10/1895	60	47	60	W	"	"	
09/30/1896	80	62	79	S	"	"	
11/09/1897	50	40	50	W	"	104R	
01/23/1898	60	47	59	W	"	"	
03/29/1899	50	40	50	W	"	"	
11/21/1900	60	47	59	W	"	"	
01/19/1901	43	35	44	NW	"	"	
02/02/1902	50	40	50	W	"	"	
01/30/1903	60	47	59	W	"	"	
02/24/1904	43	35	44	NW	"	"	
08/13/1905	52	41	52	NE	"	"	
01/06/1906	54	43	54	W	"	"	
01/20/1907	44	35	44	W	"	"	
04/11/1908	56	44	55	NW	"	"	
04/08/1909	51	41	52	W	"	"	
09/06/1910	49	40	50	NW	"	"	
05/24/1911	50	40	50	NW	"	"	
02/22/1912	48	38	48	W	"	"	
01/03/1913	48	38	48	SW	"	"	
03/01/1914	44	35	44	NW	"	"	
04/10/1915	46	37	47	SW	"	"	
09/08/1916	48	38	48	W	"	"	
09/02/1917	48	38	48	N	"	"	
02/26/1918	60	47	59	NW	"	"	
06/15/1919	40	32	40	N	"	"	
06/16/1920	48	38	48	W	"	"	
12/18/1921	50	40	50	SW	"	"	
04/11/1922	48	38	48	SW	"	"	
05/09/1923	46	37	47	SW	"	"	
01/24/1924	44	35	44	NW	"	"	
04/19/1925	44	35	44	SW	"	"	
09/06/1926	44	35	44	SW	"	"	
11/17/1927	58	46	58	SW	"	"	
11/19/1928	44	42	53	SW	3c	"	
04/01/1929	42	40	50	S	"	"	
03/27/1930	38	36	45	SW	"	"	
12/14/1931	44	42	53	SW	"	"	
02/13/1932	48	38	48	W	4c	"	
08/23/1933	56	44	55	NE	"	"	
12/26/1934	52	41	52	NW	"	"	
03/17/1935	44	35	44	SW	"	"	
05/13/1936	50	40	50	W	"	"	
06/14/1937	48	38	48	W	"	"	
01/25/1938	50	40	50	SW	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	51
.80	5	56
.90	10	60
.95	20	63
.96	25	67
.98	50	68
.99	100	71
.995	200	74
.998	500	79
.999	1000	82

HARRISBURG, PENNSYLVANIA (HAR) APT z_o=.05 1939-1977 40 13 76 51
WBAN #14751

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
12/08/1939	52	49	46	NW	3c	50R	
05/15/1940	49	46	43	S	"	"	
03/18/1941	44	42	39	NW	"	"	
06/12/1942	49	46	43	SW	"	"	
08/04/1943	46	43	40	SW	"	"	
12/28/1944	43	41	38	NW	"	"	
03/31/1945	50	47	44	S	"	"	
02/14/1946	52	49	46	S	"	"	
03/25/1947	44	42	39	W	"	"	
04/09/1948	47	44	42	W	"	46R	
01/01/1949	41	39	37	NW	"	"	
11/25/1950	63	58	55	SE	"	"	
12/15/1951	44	42	40	NW	"	"	
04/05/1952	60	56	53	SW	"	"	
12/31/1953	66	61	58	NW	"	"	
03/01/1954	60	56	53	SE	"	"	
03/16/1955	66	61	58	NW	"	"	
02/25/1956	64	59	56	NW	"	"	
02/10/1957	43	41	39	NW	"	"	
11/29/1958	40	38	36	W	"	"	
01/09/1959	42	40	38	NW	"	"	
02/20/1960	39	37	35	W	"	"	
02/26/1961	39	37	35	NW	"	"	
03/06/1962	38	36	39	NE	"	21G	
06/10/1963	51	48	52	W	"	"	
03/26/1964	44	42	46	W	"	"	
04/12/1965	44	42	46	W	"	"	
01/30/1966	44	42	46	NW	"	"	
04/22/1967	46	43	47	W	"	"	
02/17/1968	46	43	47	NW	"	"	
01/01/1969	38	36	39	NW	"	"	
04/02/1970	55	51	55	W	"	"	
01/26/1971	49	46	50	W	"	"	
01/25/1972	44	42	46	W	"	"	
03/17/1973	42	40	43	SW	"	"	
09/29/1974	41	39	42	NW	"	"	
04/03/1975	49	46	50	NW	"	"	
01/14/1976	54	50	54	W	"	"	
11/26/1977	44	42	46	NW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	44
.80	5	50
.90	10	54
.95	20	57
.96	25	59
.98	50	62
.99	100	66
.995	200	69
.998	500	74
.999	1000	78

PITTSBURGH, PENNSYLVANIA WBO z_o=.7 1874-1934 40 27 80 00
WBAN #14861

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
08/12/1874	48	38	48	NW	4c	103R	
04/29/1875	46	37	47	W	"	"	
12/16/1876	46	37	47	NW	"	"	
11/02/1877	40	32	40	W	"	"	
04/24/1878	64	50	63	S	"	"	
02/23/1879	39	32	40	W	"	"	
03/05/1880	40	32	40	W	"	"	
06/01/1881	46	37	47	NW	"	"	
01/26/1882	44	35	44	SW	"	"	
06/11/1883	36	30	38	W	"	"	
12/09/1884	54	43	54	W	"	"	
01/16/1885	42	34	43	W	"	"	
01/09/1886	42	34	43	SW	"	"	
02/26/1887	60	47	52	W	"	138R	
03/21/1888	42	34	37	SW	"	"	
03/31/1889	39	32	35	W	"	"	
01/13/1890	40	32	35	NW	"	"	
03/13/1891	45	36	40	SW	"	"	
09/25/1892	48	38	45	NW	"	123R	
02/18/1893	45	36	42	NW	"	"	
03/06/1894	36	30	35	W	"	"	
03/04/1895	43	35	41	NW	"	"	
02/10/1896	43	35	41	W	"	"	
03/14/1897	46	37	43	S	"	"	
06/25/1898	50	40	47	NW	"	"	
01/14/1899	45	36	42	NW	"	"	
02/13/1900	40	32	38	NW	"	"	
06/26/1901	40	32	38	NE	"	"	
02/02/1902	40	32	38	NW	"	"	
02/28/1903	50	40	47	NW	"	"	
12/28/1904	68	53	43	W	"	352R	
04/10/1905	67	52	43	W	"	"	
01/15/1906	80	62	51	W	"	"	
01/20/1907	76	59	48	W	"	"	
03/15/1908	76	59	48	W	"	"	
12/07/1909	78	60	49	W	"	"	
06/06/1910	76	59	47	W	"	410R	
06/04/1911	78	60	49	NW	"	"	
02/22/1912	72	56	45	W	"	"	
04/04/1913	74	57	45	W	"	"	
05/11/1914	95	73	58	NW	"	"	
04/11/1915	68	53	42	NW	"	"	
04/14/1916	62	49	39	NW	"	"	
06/23/1917	74	57	45	NW	"	"	
03/10/1918	66	51	41	W	"	"	
07/10/1919	72	56	45	NW	"	"	
03/12/1920	94	72	57	W	"	"	
09/30/1921	70	54	43	NW	"	"	
02/23/1922	68	53	42	W	"	"	
03/04/1923	80	62	49	W	"	"	
12/13/1924	57	45	36	W	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
04/19/1925	78	60	48	SW	"	"	
02/25/1926	66	51	41	SW	"	"	
10/12/1927	66	51	41	SE	"	"	
01/19/1928	73	67	53	W	3c	"	
03/07/1929	62	57	45	W	"	"	
03/12/1930	54	50	40	W	"	"	
07/16/1931	52	49	39	N	"	"	
02/11/1932	74	57	45	W	4c	"	
07/22/1933	75	58	46	NW	"	"	
06/22/1934	75	58	46	NW	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	43
.80	5	48
.90	10	52
.95	20	55
.96	25	56
.98	50	59
.99	100	62
.995	200	66
.998	500	70
.999	1000	73

PITTSBURGH, PENNSYLVANIA (PIT) APT z_o=.05 1935-1952 40 21 79 56
WBAN #14762

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
08/15/1935	54	50	47	S	3c	52R	
04/15/1936	65	60	56	NW	"	"	
07/25/1937	69	64	60	NW	"	"	
12/27/1938	50	47	44	W	"	"	
02/20/1939	63	58	54	NW	"	"	
05/19/1940	58	54	50	NW	"	"	
04/21/1941	48	45	42	NW	"	"	
03/09/1942	60	56	52	SW	"	"	
01/04/1943	55	51	48	NW	"	"	
02/23/1944	54	50	47	NW	"	"	
04/04/1945	51	48	45	NW	"	"	
02/15/1946	56	52	48	NW	"	"	
04/06/1947	64	59	55	W	"	"	
03/22/1948	53	49	46	W	"	"	
01/01/1949	51	48	45	NW	"	"	
03/18/1950	44	42	39	NW	"	"	
12/15/1951	46	43	40	W	"	"	
05/25/1952	63	58	54	W	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	47
.80	5	53
.90	10	57
.95	20	61
.96	25	62
.98	50	66
.99	100	69
.995	200	73
.998	500	78
.999	1000	81

SCRANTON, PENNSYLVANIA WBO z_o=.7 1901-1954 41 25 75 40
WBAN #14769

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
06/22/1901	44	35	42	W	4c	119R	
02/03/1902	52	41	49	NW	"	"	
02/28/1903	50	40	48	W	"	"	
04/16/1904	50	40	48	NW	"	"	
04/10/1905	60	47	56	W	"	"	
10/27/1906	50	40	48	W	"	"	
06/05/1907	56	44	53	W	"	"	
01/12/1908	56	44	53	E	"	"	
02/06/1909	50	40	48	SW	"	"	
05/03/1910	60	47	56	SW	"	"	
03/20/1911	64	50	60	NW	"	"	
02/22/1912	62	49	59	SW	"	"	
03/21/1913	52	41	49	S	"	"	
11/13/1914	50	40	48	SW	"	"	
11/02/1915	46	37	44	W	"	"	
12/06/1916	52	41	49	W	"	"	
01/22/1917	52	41	49	SW	"	"	
02/26/1918	54	43	52	W	"	"	
11/30/1919	48	38	46	SW	"	"	
07/14/1920	44	35	42	SW	"	"	
12/18/1921	49	39	47	SW	"	"	
04/11/1922	52	41	49	SW	"	"	
06/26/1923	52	41	49	SW	"	"	
01/01/1924	48	38	46	SW	"	"	
09/13/1925	60	47	56	S	"	"	
11/16/1926	44	35	42	SW	"	"	
07/21/1927	53	42	50	S	"	"	
04/19/1928	42	40	48	SW	3c	"	
01/07/1929	37	35	42	SW	"	"	
05/02/1930	31	30	36	NW	"	"	
12/14/1931	38	36	45	NW	"	106R	
11/10/1932	54	43	54	SE	4c	"	
06/07/1933	52	41	51	NW	"	"	
01/29/1934	47	38	48	NW	"	"	
05/07/1935	51	45	56	NW	4c-b	"	
05/24/1936	43	38	48	NW	"	"	
04/18/1937	37	33	41	NW	"	"	
01/24/1938	42	37	46	SE	"	"	
09/10/1939	45	40	50	NW	"	"	
04/04/1940	56	49	61	NW	"	"	
03/18/1941	44	39	49	NW	"	"	
03/09/1942	37	33	41	SW	"	"	
12/11/1943	40	38	48	NW	3c	"	
07/16/1944	60	56	70	NW	"	"	
04/21/1945	35	34	43	NW	"	"	
12/02/1946	39	37	46	NW	"	"	
07/01/1947	52	49	61	NW	"	"	
09/18/1948	42	40	50	NW	"	"	
05/05/1949	58	54	68	NW	"	"	
11/25/1950	47	44	55	E	"	"	
02/08/1951	40	38	48	NW	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
02/09/1952	38	36	45	NW	"	"	
12/14/1953	33	32	40	SW	"	"	
10/15/1954	48	45	56	SE	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	55
.90	10	59
.95	20	63
.96	25	64
.98	50	68
.99	100	72
.995	200	76
.998	500	81
.999	1000	85

SCRANTON, PENNSYLVANIA (AVP) APT z_o=.05 1955-1979 41 20 75 44
WBAN #14777

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
10/14/1955	54	50	43	SE	3c	92R	
02/25/1956	65	60	52	W	"	"	
12/20/1957	50	47	41	SW	"	"	
08/31/1958	50	47	41	SW	"	"	
03/06/1959	45	42	46	SE	"	21G	
02/25/1960	54	50	54	SE	"	"	
06/02/1961	45	42	46	SW	"	"	
12/30/1962	48	45	49	W	"	"	
04/04/1963	45	42	46	W	"	"	
01/25/1964	46	43	47	SE	"	"	
04/12/1965	42	40	43	SW	"	"	
03/01/1966	35	34	37	W	"	"	
02/16/1967	43	41	44	SW	"	"	
05/03/1968	41	39	42	W	"	"	
11/19/1969	35	34	37	S	"	"	
03/26/1970	52	49	53	S	"	"	
03/04/1971	40	38	41	W	"	"	
01/25/1972	38	36	39	SW	"	"	
03/17/1973	46	43	47	SW	"	"	
12/02/1974	45	42	46	E	"	"	
04/03/1975	40	38	41	NW	"	"	
03/17/1976	40	38	41	NW	"	"	
01/28/1977	50	47	51	SE	"	"	
01/26/1978	41	39	42	S	"	"	
04/06/1979	41	39	42	W	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	44
.80	5	48
.90	10	51
.95	20	54
.96	25	55
.98	50	58
.99	100	61
.995	200	64
.998	500	68
.999	1000	70

GREEN BAY, WISCONSIN WBO z_o=.7 1887-1948 44 31 88 01
WBAN #14831

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
10/12/1887	60	47	73	SW	4c	57R	
08/08/1888	45	36	56	SW	"	"	
11/28/1889	60	47	73	N	"	"	
03/28/1890	60	47	73	N	"	"	
07/13/1891	60	47	73	SW	"	"	
04/02/1892	60	47	73	W	"	"	
02/19/1893	60	47	73	N	"	"	
05/18/1894	60	47	73	N	"	"	
09/22/1895	56	44	69	SW	"	"	
05/17/1896	50	40	62	SW	"	"	
04/18/1897	40	32	50	SW	"	"	
07/19/1898	50	40	62	SW	"	"	
06/04/1899	42	34	53	SW	"	"	
07/07/1900	50	40	62	W	"	"	
03/03/1901	46	37	58	SW	"	"	
07/30/1902	52	41	64	NW	"	"	
07/01/1903	67	52	81	NW	"	"	
04/15/1904	75	58	91	NE	"	"	
10/19/1905	60	47	73	NE	"	"	
11/21/1906	58	46	72	N	"	"	
03/19/1907	60	47	73	NW	"	"	
06/22/1908	66	51	80	W	"	"	
04/07/1909	70	54	84	NW	"	"	
04/23/1910	66	51	80	N	"	"	
05/01/1911	76	59	69	N	"	123R	
04/26/1912	60	47	55	SW	"	"	
11/09/1913	60	47	55	N	"	"	
06/24/1914	60	47	55	SW	"	"	
09/08/1915	60	47	55	SW	"	"	
05/08/1916	64	50	59	W	"	"	
01/21/1917	60	47	55	N	"	"	
03/09/1918	72	56	66	NE	"	"	
04/07/1919	66	51	60	NE	"	"	
12/14/1920	67	52	61	W	"	"	
02/16/1921	60	47	55	SW	"	"	
07/30/1922	72	56	66	NW	"	"	
03/12/1923	64	50	59	N	"	"	
03/29/1924	56	44	52	NE	"	"	
04/18/1925	48	38	45	NE	"	"	
04/24/1926	58	46	54	N	"	"	
06/09/1927	50	40	47	S	"	"	
04/13/1928	46	43	50	NE	3c	"	
04/01/1929	51	48	56	NE	"	"	
05/01/1930	52	49	57	W	"	"	
03/28/1931	60	56	66	NE	"	"	
05/16/1932	58	46	54	W	4c	:	
03/19/1933	62	49	57	NE	"	"	
06/23/1934	62	49	57	W	"	"	
09/25/1935	62	49	57	SW	"	"	
08/15/1936	70	54	63	NW	"	"	
04/21/1937	56	44	52	NE	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
08/16/1938	60	47	55	NE	"	"	
02/10/1939	60	47	55	SW	"	"	
11/11/1940	70	54	63	S	"	"	
08/29/1941	58	46	54	NW	"	"	
01/01/1942	58	46	54	N	"	"	
05/16/1943	44	42	49	SW	3c	"	
08/15/1944	60	56	66	SW	"	"	
04/05/1945	57	53	62	S	"	"	
11/21/1946	45	42	60	SW	"	30R	1.
01/30/1947	44	42	60	NE	"	"	"
02/19/1948	48	45	65	SW	"	"	"

1. Standardized to 30 M using Z_o=.05 due to exposure at temporary location.

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	61
.80	5	69
.90	10	73
.95	20	78
.96	25	79
.98	50	84
.99	100	89
.995	200	93
.998	500	99
.999	1000	103

GREEN BAY, WISCONSIN (GRB) APT z_o=.05 1949-1979 44 29 88 08
WBAN #14898

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
10/10/1949	72	66	62	SW	3c	47R	
05/05/1950	96	88	83	SW	"	"	
03/03/1951	70	65	61	W	"	"	
04/13/1952	61	57	54	NE	"	"	
06/04/1953	80	73	69	SW	"	"	
03/25/1954	65	60	57	SW	"	"	
11/16/1955	73	67	63	W	"	"	
07/01/1956	68	63	60	NW	"	"	
07/29/1957	76	70	66	NE	"	"	
11/18/1958	64	59	56	SW	"	"	
07/08/1959	52	49	46	SW	"	"	
04/11/1960	60	56	53	W	"	"	
10/11/1961	55	51	48	SW	"	"	
11/20/1962	50	47	51	S	"	20G	
04/03/1963	54	50	55	SW	"	"	
04/13/1964	64	59	65	SW	"	"	
06/20/1965	48	45	49	W	"	"	
10/22/1966	42	40	44	SW	"	"	
05/18/1967	52	49	54	SW	"	"	
05/08/1968	58	54	59	SW	"	"	
08/13/1969	39	37	41	S	"	"	
06/17/1970	65	60	66	W	"	"	
02/27/1971	54	50	55	SW	"	"	
01/25/1972	45	42	46	W	"	"	
04/09/1973	50	47	51	NE	"	"	
04/21/1974	38	36	39	S	"	"	
01/11/1975	64	59	65	SW	"	"	
06/15/1976	45	42	46	SW	"	"	
03/29/1977	54	50	55	SW	"	"	
01/26/1978	50	47	51	NW	"	"	
04/05/1979	43	41	45	N	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	54
.80	5	62
.90	10	67
.95	20	72
.96	25	73
.98	50	78
.99	100	83
.995	200	88
.998	500	94
.999	1000	99

LACROSSE, WISCONSIN WBO z_o=.4 1874-1942 43 49 91 15
WBAN #14968

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
06/26/1874	79	61	83	NW	4c	70R	1.
04/15/1875	110	84	114	UNK	"	"	
12/15/1876	55	43	59	NW	"	"	
05/17/1877	49	39	53	SW	"	"	
04/10/1878	58	46	63	S	"	"	
09/28/1879	48	38	52	S	"	"	
05/24/1880	53	42	57	W	"	"	
08/05/1881	50	40	52	N	"	81R	
06/23/1882	78	60	78	SW	"	"	
06/11/1883	47	38	50	W	"	"	
06/25/1884	80	62	81	N	"	"	
07/29/1885	61	48	63	N	"	"	
03/21/1886	62	49	64	N	"	"	
11/19/1887	54	43	56	NW	"	80R	
06/14/1888	41	33	43	SE	"	"	
12/29/1889	64	50	65	NW	"	"	
07/14/1890	60	47	61	W	"	81R	
12/04/1891	34	28	37	SW	"	"	
01/29/1892	48	38	50	NW	"	"	
09/15/1893	50	40	52	W	"	"	
06/21/1894	44	35	46	S	"	"	
09/22/1895	54	43	56	S	"	"	
02/10/1896	50	40	52	W	"	"	
08/31/1897	60	47	61	S	"	"	
07/02/1898	50	40	52	SW	"	"	
06/12/1899	55	43	56	W	"	"	
12/08/1900	44	35	46	NW	"	"	
03/03/1901	45	36	47	SW	"	"	
04/11/1902	50	40	51	W	"	87R	
08/05/1903	45	36	46	N	"	"	
12/27/1904	48	38	49	N	"	"	
08/20/1905	42	34	43	N	"	"	
10/08/1906	46	37	47	NW	"	"	
08/11/1907	63	49	63	NW	"	"	
03/21/1908	30	25	38	SW	"	49R	
04/07/1909	37	30	46	NW	"	"	
03/60/1910	30	25	38	NW	"	"	
03/15/1911	36	30	46	NW	"	"	
07/09/1912	42	34	52	SW	"	"	
07/04/1913	40	32	49	NE	"	"	
06/24/1914	52	41	63	NW	"	"	
11/07/1915	38	31	47	SW	"	"	
04/16/1916	36	30	46	NW	"	"	
07/31/1917	30	25	38	NW	"	"	
02/25/1918	30	25	38	NW	"	"	
11/10/1919	38	31	47	SW	"	"	
03/16/1920	40	32	49	SW	"	"	
03/27/1921	36	30	46	SW	"	"	
02/01/1922	36	30	46	SW	"	"	
06/25/1923	42	34	52	NW	"	"	
09/21/1924	40	32	49	S	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
04/22/1925	34	28	43	S	"	"	
01/23/1926	29	24	37	S	"	"	
04/05/1927	25	21	32	W	"	"	
11/15/1928	27	26	40	SW	3c	"	
08/13/1929	25	25	38	NW	"	"	
11/16/1930	23	23	35	SW	"	"	
11/20/1931	39	37	57	SW	"	"	
10/29/1932	26	22	34	NW	4c	"	
03/08/1933	32	27	41	NW	"	"	
03/05/1934	37	30	46	NW	"	"	
04/15/1935	31	26	40	NW	"	"	
04/15/1936	40	32	49	NW	"	"	
04/18/1937	29	24	37	W	"	"	
01/24/1938	27	23	35	NW	"	"	
01/21/1939	26	24	37	NW	"	"	
05/02/1940	34	31	47	N	"	"	
12/05/1941	31	28	43	NW	"	"	
11/12/1942	27	25	38	W	"	"	

1. Low anemometer heights imply lower surface roughness. .4 used for z_o instead of .7.

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	49
.80	5	57
.90	10	62
.95	20	67
.96	25	69
.98	50	74
.99	100	79
.995	200	84
.998	500	90
.999	1000	95

LACROSSE, WISCONSIN (LSE) APT z_o=.05 1943-1950 43 56 91 17
WBAN #14920

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
02/27/1943	60	53	54	NW	4c-b	29R	
08/15/1944	70	65	66	SW	3c	"	
04/17/1945	42	40	41	W	"	"	
08/16/1946	56	52	53	NW	"	"	
11/07/1947	50	47	48	S	"	"	
02/19/1948	58	54	55	NW	"	"	
10/10/1949	75	69	71	SW	"	"	
05/05/1950	66	61	62	S	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	55
.80	5	65
.90	10	73
.95	20	79
.96	25	82
.98	50	88
.99	100	95
.995	200	102
.998	500	110
.999	1000	117

MADISON, WISCONSIN WBO z_o=.7 1905-1946 43 05 89 24
WBAN #14887

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
11/13/1905	54	43	60	NE	4c	78R	
02/13/1906	66	51	71	NE	"	"	
04/24/1907	53	42	58	N	"	"	
02/19/1908	62	49	68	NE	"	"	
04/11/1909	64	50	69	S	"	"	
01/13/1910	58	46	64	NE	"	"	
12/10/1911	56	44	61	SW	"	"	
02/26/1912	60	47	65	NE	"	"	
05/14/1913	54	43	60	NE	"	"	
10/24/1914	48	38	53	NE	"	"	
11/11/1915	48	38	53	S	"	"	
03/22/1916	50	40	55	N	"	"	
06/06/1917	56	44	61	SW	"	"	
05/17/1918	56	44	61	SW	"	"	
11/10/1919	48	38	53	SW	"	"	
03/16/1920	64	50	69	SW	"	"	
04/16/1921	52	41	57	NE	"	"	
02/01/1922	52	41	57	SW	"	"	
03/12/1923	54	43	60	N	"	"	
02/04/1924	50	40	55	NE	"	"	
03/13/1925	46	37	51	NE	"	"	
03/31/1926	52	41	57	NE	"	"	
04/01/1927	40	32	44	NE	"	"	
08/20/1928	38	36	50	SW	3c	"	
12/18/1929	35	34	47	N	"	"	
03/25/1930	35	34	47	NE	"	"	
03/28/1931	46	43	60	N	"	"	
02/11/1932	38	31	43	SW	4c	"	
04/30/1933	50	40	55	NE	"	"	
11/30/1934	50	40	55	NE	"	"	
02/25/1935	44	42	58	N	3c	"	
03/23/1936	48	38	53	S	4c	"	
09/01/1937	48	45	62	S	3c	"	
04/08/1938	40	38	53	NE	"	"	
12/07/1939	32	31	43	NW	"	"	
07/10/1940	46	43	60	N	"	"	
03/03/1941	38	36	50	NE	"	"	
01/01/1942	42	40	55	NE	"	"	
04/19/1943	43	41	57	NE	"	"	
06/15/1944	38	36	50	NW	"	"	
05/03/1945	40	38	53	NE	"	"	
03/08/1946	42	40	55	NE	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	55
.80	5	62
.90	10	66
.95	20	70
.96	25	71
.98	50	75
.99	100	79
.995	200	83
.998	500	88
.999	1000	92

MADISON, WISCONSIN (MSN) APT Z_o=.05 1947-1979 43 08 89 20
WBAN #14837

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
04/05/1947	80	73	76	SW	3c	26R	
12/05/1948	66	61	64	SW	"	"	
10/10/1949	68	63	66	SW	"	"	
05/05/1950	84	77	80	SW	"	"	
10/30/1951	80	73	76	SW	"	"	
01/15/1952	49	46	48	SW	"	"	
05/21/1953	68	63	66	S	"	"	
03/25/1954	76	70	73	SW	"	"	
11/16/1955	52	49	51	SW	"	"	
05/12/1956	50	47	49	W	"	"	
07/08/1957	60	56	58	W	"	"	
11/18/1958	46	43	45	SW	"	"	
04/05/1959	48	45	47	W	"	"	
11/15/1960	54	50	52	SW	"	"	
11/02/1961	45	42	44	S	"	"	
06/17/1962	54	50	52	W	"	"	
06/07/1963	58	54	56	N	"	"	
07/27/1964	62	57	59	NW	"	"	
06/27/1965	56	52	54	SW	"	"	
04/19/1966	49	46	48	S	"	"	
04/14/1967	44	42	49	SW	"	15G	
06/10/1968	58	54	63	W	"	"	
10/09/1969	39	37	43	SW	"	"	
07/30/1970	60	56	65	NW	"	"	
02/27/1971	42	40	46	SW	"	"	
08/14/1972	43	41	48	NW	"	"	
07/09/1973	49	46	53	NW	"	"	
04/12/1974	39	37	43	SW	"	"	
01/11/1975	46	43	50	SW	"	"	
07/30/1976	46	43	50	N	"	"	
07/16/1977	46	43	50	W	"	"	
03/18/1978	36	34	40	SW	"	"	
04/05/1979	52	49	57	NW	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	54
.80	5	62
.90	10	67
.95	20	73
.96	25	74
.98	50	79
.99	100	84
.995	200	90
.998	500	96
.999	1000	101

MILWAUKEE, WISCONSIN WBO z_o=.7 1873-1940 43 02 87 54
WBAN #14888

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
12/04/1873	75	58	71	SW	4c	114R	
07/24/1874	76	59	72	SW	"	"	
04/15/1875	65	51	62	NW	"	"	
04/05/1876	93	71	87	W	"	"	
04/01/1877	59	46	56	SW	"	"	
04/10/1878	71	55	58	SW	"	152R	
08/12/1879	78	60	63	NW	"	"	
10/16/1880	80	62	65	SW	"	"	
03/19/1881	74	57	60	N	"	"	
10/30/1882	73	57	60	S	"	"	
11/11/1883	90	69	72	NW	"	"	
04/27/1884	69	54	57	SW	"	"	
06/06/1885	75	58	61	SW	"	"	
10/14/1886	63	49	51	NW	"	"	
02/26/1887	82	63	66	W	"	"	
03/21/1888	50	40	42	W	"	"	
01/09/1889	60	47	49	NW	"	"	
03/27/1890	60	47	49	NE	"	"	
01/01/1891	65	51	53	N	"	"	
01/01/1892	70	54	57	NW	"	149R	
04/20/1893	60	47	50	E	"	"	
03/10/1894	60	47	50	SW	"	"	
03/24/1895	61	48	51	NW	"	"	
08/09/1896	62	49	52	W	"	"	
04/18/1897	60	47	50	SW	"	"	
07/19/1898	54	43	45	NW	"	"	
05/01/1899	48	38	42	SW	"	139R	
03/05/1900	50	40	44	E	"	"	
06/28/1901	58	46	50	SW	"	"	
07/16/1902	60	47	51	SW	"	"	
02/04/1903	65	51	56	NE	"	"	
01/19/1904	64	50	55	SE	"	"	
11/28/1905	60	47	51	SE	"	"	
11/16/1906	70	54	59	SE	"	"	
11/20/1907	58	46	50	E	"	"	
02/05/1908	60	47	51	SE	"	"	
07/02/1909	70	54	59	NW	"	"	
01/04/1910	70	54	59	SE	"	"	
12/10/1911	66	51	56	SW	"	"	
05/11/1912	78	60	66	NE	"	"	
04/02/1913	50	40	44	SE	"	"	
08/16/1914	60	47	51	SW	"	"	
05/21/1915	52	41	45	SW	"	"	
06/02/1916	64	50	55	SE	"	"	
05/22/1917	66	51	57	N	"	"	
03/09/1918	62	49	54	N	"	"	
02/13/1919	55	43	47	E	"	"	
12/21/1920	58	46	50	E	"	"	
04/16/1921	56	44	48	NE	"	"	
03/06/1922	47	38	42	SW	"	"	
03/12/1923	52	41	45	NE	"	"	

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
08/19/1924	58	46	50	SE	"	"	
04/19/1925	68	53	58	SE	"	"	
06/21/1926	55	43	47	S	"	"	
07/11/1927	71	55	50	NW	"	221R	
11/14/1928	48	45	41	SW	3c	"	
10/22/1929	54	50	46	N	"	"	
08/31/1930	58	54	49	SW	"	"	
08/27/1931	56	52	48	NE	"	"	
02/11/1932	72	56	51	W	4c	"	
01/19/1933	66	51	47	W	"	"	
06/20/1934	86	66	60	W	"	"	
07/05/1935	60	47	43	N	"	"	
08/09/1936	72	56	51	N	"	"	
10/19/1937	62	49	45	W	"	"	
05/05/1938	60	47	43	SW	"	"	
02/10/1939	49	46	42	W	3c	"	
11/12/1940	72	66	60	W	"	"	

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	52
.80	5	58
.90	10	62
.95	20	66
.96	25	67
.98	50	71
.99	100	75
.995	200	78
.998	500	83
.999	1000	87

MILWAUKEE, WISCONSIN (MKE) APT z_o=.05 1941-1979 42 57 87 54
WBAN #14839

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
09/04/1941	60	62	56	SW	4c-x	66R	
05/13/1942	52	54	49	SW	"	"	
03/17/1943	54	56	51	SW	"	"	
05/03/1944	56	58	52	SW	"	"	
11/12/1945	68	70	63	S	"	"	
11/21/1946	60	62	56	SW	"	"	
04/05/1947	64	66	60	SW	"	"	
12/05/1948	60	62	56	SW	"	"	
10/10/1949	58	60	54	S	"	"	
05/05/1950	78	72	65	SW	3c	"	
12/06/1951	54	50	45	S	"	"	
07/23/1952	64	59	53	W	"	"	
05/21/1953	63	58	52	SW	"	"	
03/25/1954	80	73	66	SW	"	"	
11/16/1955	78	72	63	W	"	88R	
05/14/1956	64	59	52	W	"	"	
03/15/1957	58	54	47	W	"	"	
05/22/1958	58	54	47	N	"	"	
09/26/1959	49	46	50	SW	"	20G	
02/10/1960	63	58	64	NE	"	"	
03/27/1961	48	45	49	S	"	"	
07/22/1962	41	39	43	W	"	"	
04/03/1963	60	56	61	SW	"	"	
04/13/1964	54	51	56	SW	"	"	
03/18/1965	46	43	47	SW	"	"	
05/23/1966	42	40	44	SW	"	"	
01/16/1967	48	45	49	SW	"	"	
04/08/1968	45	42	46	SW	"	"	
07/16/1969	49	46	50	SW	"	"	
12/01/1970	48	45	49	SW	"	"	
06/19/1971	67	62	68	W	"	"	
09/18/1972	49	46	50	N	"	"	
06/16/1973	56	52	57	SW	"	"	
08/11/1974	54	50	55	W	"	"	
01/11/1975	58	54	59	SW	"	"	
07/30/1976	52	49	54	NE	"	"	
03/29/1977	48	45	49	SW	"	"	
05/13/1978	54	50	55	N	"	"	
12/24/1979	56	52	57	N	"	"	

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	59
.90	10	63
.95	20	67
.96	25	68
.98	50	72
.99	100	75
.995	200	79
.998	500	84
.999	1000	88

PLUM ISLAND, WISCONSIN WBO* Z_o=.05 1909-1932 45 18 86 57

Date	Measured Speed	True Speed	Speed at Standard Ht (10 M)	Direction	Anem Type	Anem Ht	Remarks
12/09/1909	88	68	64	UNK	4c	E50R	1,2
07/24/1910	64	50	47	"	"	"	" "
01/08/1911	65	51	48	"	"	"	" "
07/10/1912	63	49	46	"	"	"	" "
08/03/1913	89	68	64	"	"	"	" "
05/26/1914	77	60	56	"	"	"	" "
04/28/1915	60	47	44	"	"	"	" "
07/21/1916	67	52	49	"	"	"	" "
12/09/1917	66	51	48	"	"	"	" "
05/10/1918	52	41	38	"	"	"	" "
10/28/1919	92	70	66	"	"	"	" "
10/26/1920	50	40	37	"	"	"	" "
07/07/1921	65	51	48	"	"	"	" "
04/19/1922	82	63	59	"	"	"	" "
07/09/1923	75	58	54	"	"	"	" "
08/03/1924	78	60	56	"	"	"	" "
10/19/1925	86	66	62	"	"	"	" "
07/21/1926	84	65	61	"	"	"	" "
05/15/1927	82	63	59	"	"	"	" "
11/12/1928	64	59	55	"	E3c	"	" "
10/22/1929	67	62	58	"	"	"	" "
05/21/1930	62	57	53	"	"	"	" "
07/28/1931	66	61	57	"	"	"	" "
10/29/1932	77	71	67	"	E4c	"	" "

1. General Period of Record 4/15 - 12/15.
2. Anemometer Height Unknown - Estimated value.

Probability	Return Period (years)	10 M Wind Speed (mph) Type I Distribution
.50	2	53
.80	5	60
.90	10	65
.95	20	70
.96	25	72
.98	50	76
.99	100	81
.995	200	85
.998	500	92
.999	1000	96

WAUSAU, WISCONSIN WBO z_o=.7 1929-1933 44 57 89 35

Date	Measured Speed	True Speed	Speed at Standard Ht (30 M)	Direction	Anem Type	Anem Ht	Remarks
01/25/1929	35	34	51	W	3c	62R	
07/27/1930	42	40	60	NW	"	"	
04/10/1931	27	26	39	W	"	"	
09/19/1932	33	27	41	SW	4c	"	
02/21/1933	39	32	48	W	"	"	1.

1. Ends 7/31/1933.

Probability	Return Period (years)	30 M Wind Speed (mph) Type I Distribution
.50	2	46
.80	5	54
.90	10	60
.95	20	65
.96	25	67
.98	50	72
.99	100	77
.995	[illegible]	82
.998	500	89
.999	1000	93

VIII. SUMMARY

Historical extreme winds were extracted for all available locations in the Great Lakes, Ohio, and upper Mississippi valley regions of the U.S. Station exposures were categorized into four possible types and the logarithmic law used to standardize wind speeds to 30 meters for city locations and to both 10 and 30 meters for airport-type exposures. The Type I extreme value model was utilized in developing estimates for selected return periods. Although many locations' data set contained an unrepresentatively small number of annual values, the overall results confirm existing analyses for airport locations. The period of record dependency of return period estimates exemplifies the need for a long-period site data collection.

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Annual fastest mile wind data were extracted for the complete period of record for 70 locations in the Great Lakes, Ohio, and upper Mississippi valley regions. Existing models were used to standardize the data to 10 and 30 meters for airport-type exposures and 30 meters for city exposures. Selected probability estimates were developed from application of the Fisher-Tippette Type I extreme value model for all extracted data. Maps present the .99 probability level (100-year return period) for 10 and 30 meters for airport-type exposures, and 30 meters for city exposures.

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