UNITED STATES DEPARTMENT OF AGRICULTURE
WEATHER BUREAU

REPORT

OF THE

CHIEF OF THE WEATHER BUREAU

1933-34

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LETTER OF TRANSMITTAL

UNITED STATES DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU,
Washington, D.C., September 11, 1934.

SIR: I submit herewith a report of the work of the Weather Bureau during the fiscal year ended June 30, 1934.

Respectfully,

W. R. GREGG,
Chief of Bureau.

Hon. HENRY A. WALLACE,
Secretary of Agriculture.

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[1] Excessive rainfall data for the years 1933 and 1934 will appear in the 1934-35 issue of this report.

Part I.—ADMINISTRATIVE REPORT

The Weather Bureau is authorized by its organic act to serve a wide variety of interests, including agriculture, commerce, and marine and aerial navigation. This service is provided in part through cooperation with other departments, both civil and military, and with various bureaus of the Department of Agriculture. For example, its forecast work in the protection of forests from fires is carried out in cooperation with the Forest Service, its marine work with the Hydrographic Office, Navy Department, and its service in aid of flying activities with the Bureau of Air Commerce, Department of Commerce. Weather is so intimately related to the welfare and happiness of all classes of people that the most effective service can be attained only by working closely with all other agencies, both governmental and nongovernmental, with which cooperation is possible. During the past year a definite beginning has been made in the development of this policy.

ADOPTION OF PROGRAM RECOMMENDED BY THE SCIENCE ADVISORY BOARD

It has been recognized for some time that there was need of a broader, more open-minded viewpoint regarding the utilization of results of the more recent studies and investigations in forecasting. This feeling found expression during the past year in a report submitted by a committee of the Science Advisory Board, the latter having been created by the President on July 31, 1933, for the purpose of cooperating with the Federal Government in the handling of all problems in which science is involved.

The membership of the special committee on the Weather Bureau was as follows: Robert A. Millikan, director, Norman Bridge Laboratory of Physics, and chairman of the executive council, California Institute of Technology, Pasadena, Calif., chairman; Isaiah Bowman, chairman, National Research Council, director, American Geographical Society, New York City; Karl T. Compton, president, Massachusetts Institute of Technology, Cambridge, Mass., and Charles D. Reed, senior meteorologist in charge, Weather Bureau section center, Des Moines, Iowa.

The committee's report was published in December 1933, was approved in January 1934, and action to carry out its recommendations has been proceeding since that time.

The most important recommendation is that relating to the development of forecasting on the basis of what is known as "air-mass analysis." Briefly stated, air-mass analysis consists of a detailed study of masses of air of decidedly different structure as to temperature, moisture, and wind that meet along an irregular line variously referred to as a "discontinuity line", "polar front", "wind shift", etc. These masses of air, cold and dry from polar regions, warm and humid from equatorial, do not readily mix but tend to preserve their individual identities, the warm, moist air being forced to rise above and flow over the denser cold air, with resulting condensation and precipitation and other attendant phenomena which give us most of the stormy weather characteristic of temperate latitudes.

The chief requisites for the application of air-mass analysis to forecasting are (1) personnel qualified by training and experience in this school of thought; (2) daily reports of temperature, humidity, and other conditions up to 3 or 4 miles above the earth's surface at a large number of places well distributed over the country; and (3) more frequent and more detailed reports of surface conditions, including observations at sea.

In carrying out the first objective a special nonassembled civil-service examination has been announced for the purpose of bringing into the Bureau several well-qualified men who have specialized in forecasting based on air-mass analysis. The introduction of this method will require probably from 3 to 5 years, during which period the personnel of the Bureau, already experienced in forecasting, will be given additional training along the newer lines.

The second part of the program, namely, securing upper-air observations of temperature, humidity, etc., has been put into effect to the extent that this is possible at the present time. This has been accomplished through cooperation with the War and Navy Departments. In all, 20 airplane stations are now in operation, 7 operated by each of these departments and 6 by the Weather Bureau. They are quite well distributed over the country. Daily flights are made to heights of about 17,000 feet, and the data are at once transmitted by the teletype system of

the Bureau of Air Commerce. The organization of this network of upper-air stations constitutes the most important step in the development of the air-mass analysis program. The data will be of great value in theoretical studies as well as in the more practical work of forecasting.

Under existing conditions not much can be done in putting into effect the third objective, namely, securing more frequent and more detailed observations of surface conditions, both on land and at sea. However, a definite program has been worked out for adoption as soon as practicable. It provides for 4 daily weather maps instead of 2 and for more precise information regarding cloud types, character of precipitation, pressure changes, and other elements. The data will be reported in accordance with a system of codes and units that has been adopted for international use, thus assuring comparable reports from all countries.

Generally speaking there has been comparatively little progress in forecasting for many years. It is confidently believed that, through the greater employment of modern working tools such as radio and the airplane which will give essential data in the vertical as well as in the horizontal, we now stand on the threshold of an era of real progress, providing forecasts more accurate and more specific and covering somewhat greater periods in advance than have been possible up to the present time.

COMPILATION OF METEOROLOGICAL DATA

An important accomplishment during the year just ended was the compilation of meteorological data under the Civil Works Administration program. For many years data have accumulated but, owing to lack of personnel, have been summarized only in part. This important work has now been brought more nearly up to date, with the result that a great body of statistical data is now available which is of great value in such studies as those designed to establish cycles or correlations that may possibly be used as bases for longer period forecasts than are now justified. In addition, the data are very useful in furnishing information concerning conditions that prevailed at various times in different parts of this country and its possessions, in the upper air and at sea. Included in this project are the data secured during the International Polar Year. These data, together with those from all other countries that participated in the program, are being entered on Northern Hemisphere maps, which will thus show on a larger scale than has heretofore been possible the progressive changes that occur in weather conditions from day to day and from month to month. Important conclusions are expected from studies of these charts.

The data that have been compiled and classified from ocean weather observations provide information for certain areas where hitherto little has been known concerning climatic conditions, particularly those regions in which hurricanes and other tropical storms have their genesis. The relation of weather to sea-surface temperatures is also receiving attention as a result of this activity.

AEROLOGY

Airplane weather observations were made under contract with commercial operators at four stations during the year. Heights of 17,000 feet were reached in practically all cases, and flights were made nearly every day at all stations. Considerable progress has been made in increasing the accuracy of the data by improving the recording instruments (aerometeorographs) and the method of calibration. The data have been found to be of increasing value in the forecasting work of the Bureau and in providing a better understanding of the mechanics of the atmosphere.

A total of 46 sounding balloons was released from the Weather Bureau airport station, Omaha, Nebr., during January, the international month for 1934. Forty-four (96 percent) of the attached meteorographs have been found and returned. These records are being computed and will be published by the International Commission for the Exploration of the Upper Air.

Measurement of upper-air wind currents by means of pilot balloons was maintained at 75 stations, including 3 in Alaska and 1 in San Juan, P.R. Two to four observations were made daily, weather permitting, at each station to an average altitude of 12,000 to 15,000 feet. These observations provide valuable information for current use by forecasters and air-transport companies and also for studies of the general circulation of the atmosphere.

Good progress was made in the preparation of a summary of average upper-air wind conditions over the United States, based on the records of pilot-balloon stations having a record of 3 years or more. One portion of the summary covering the eastern section of the country has been published.

SERVICE IN AID OF AIR NAVIGATION

On account of a reduction in appropriations available for the fiscal year, it was necessary to carry on the weather service over the civil airways on an amount approximately $250,000 less than that for the previous year. Consequently, no extensions of service were possible, but service was continued on approximately 25,000 miles of existing airways without material curtailment. This was accomplished by reducing personnel and other expenses and by utilizing the services of Department of Commerce radio operators for the taking of surface observations wherever possible. The latter arrangement was made possible through a cooperative agreement with the Department of Commerce and the fact that a system of remote control of the radio stations from the airports had been developed and placed in use at many points. The supervision of all weather service performed by the Department of Commerce employees rests with the Weather Bureau.

Material progress in the stabilizing of the service along administrative, forecasting, and observational lines has been made, and further work in this direction is now going forward.

RIVER AND FLOOD SERVICE

At the opening of the year strenuous efforts were being made to reduce the cost of the service and bring it within the limit of available funds. Although the river and flood work had been undergoing a process of paring for several years, and some important features had been discontinued to meet the necessities, further and rather drastic reductions were made in July 1933. However, through the aid of an analysis of the organization made just prior to the last retrenchment, suspensions of service were confined to the parts that might be called the least essential. Because of the extremely dry weather that has prevailed for a year or more there have been no floods of a general nature, and the decrease in the number of stations has not been felt in a serious way, except that the loss of records is bound to be felt by those who use Weather Bureau data in studies on the relation of stream flow to precipitation.

On June 30, 1934 reports from 709 river gages were available to the Weather Bureau. Of this number 626 were read by the Bureau, and 83 were read for the Bureau by other agencies, principally the Engineer Corps of the Army. Many of the reports (98) are available only in times of threatened or actual floods; 482 are available daily throughout the year, and 129 are available daily in the months that may be said to constitute the flood season.

Despite the dry weather there were some local floods, and some of them were quite severe. The total damage has been estimated at $20,000,000, and the value of property saved by warnings issued by the Weather Bureau has been estimated to amount to $4,000,000.

The Weather Bureau has always worked under disadvantages in its river and flood service; outstanding among these handicaps was the unstable nature of the river gages, which in most instances were of a temporary type, difficult to hold in adjustment. In September 1933 the Public Works Administration gave the Bureau an allotment of $150,000 for replacing river gages with structures of a substantial and modern type. Work under this allotment has progressed actively, and on June 30, 1934, the following river gages had been erected:

Type of gage:	*Number erected*
Staff	76
Weighted chain	9
Weighted wire	97
Recording	47
Total	229

The work is 80 percent complete, and will be brought to a close in December 1934.

The new network of gages will enable the Weather Bureau to improve its stage and flood forecasts, largely through the adoption of the rating-curve method made possible by the erection of recording gages, but another highly important advantage that will be gained through the erection of recording gages will be the opportunity to collect data from which the relation between stream flow and precipitation can be determined. A knowledge of this relation is necessary in planning for power dams, irrigation projects, flood protection and prevention, and farm and city water supplies. However, reliable statistics regarding the relation are too scanty to be of great value, and the dry weather that has prevailed over most of the country has shown engineers in a most positive way that sound plans for water conservation, so necessary to agriculture and the general economic life of the country, cannot be made without a definite knowledge of the volume of water that streams may be expected to deliver in long periods of insufficient rain.

In large parts of those States comprising the Rocky Mountain country the water required for agriculture, for mining, and for towns and cities comes from mountain snowfall. The Weather Bureau maintains as a part of the river and flood work a service devoted to the collection of information of the amount and consistency of snow in the mountain snow fields—snow that is depended upon to give the major part of stream flow until some time in the summer. This service has been valuable throughout its existence of about 25 years, but the increased development of water conservation, which will result in a decrease of waste in times of flood and a greater possible use later in the season, makes it imperative that this service be coordinated to a greater extent with the needs and activities of water users, and a study of the necessities, and the action that is practicable, is now being made.

THE 1934 DROUGHT

Widespread severe drought during the crop-growing season of 1934 adversely affected the principal grazing and grain-producing areas of the country to an unprecedented extent. However, there is nothing to indicate that the 1934 drought in the Midwestern States constitutes a permanent change to desertlike conditions. There have been great climatic changes in geologic times. That is, large areas of the United States have moisture conditions at present very unlike those prevailing a great many centuries ago, but certainly no marked permanent change in climate has taken place within the last few years. On the contrary, the longest available rainfall records indicate that the 1934 drought in these areas is but what may naturally be expected to occur at comparatively long intervals of 30 to 40 years, notwithstanding the present drought is more severe and covers larger areas than any other of which there is a record.

The 1934 drought differed from that of 1930 in several respects. It began in the early spring, while in 1930 critical conditions did not develop in most affected sections until about midsummer. Also it was first severely felt in the Northwest, from which it spread rapidly to many other areas, while in 1930 the spread was westward from the Central Eastern States. In addition the areas affected in 1934 were much more extensive than in 1930.

It is characteristic of precipitation records, in the long run, to vary in wavelike progression. When short-period fluctuations in the records are smoothed there appear successive up-and-down trends, merging, more or less regularly, one into the other and covering comparatively long periods. In general, the difference in the rainfall for the periods of comparatively heavy and those of lighter amounts is marked, and the trends are rather uniform in progress from maximum to minimum and vice versa. However, the time phase, or number of years from maximum to minimum and return to maximum, appears decidedly irregular and without apparent conformity to any law of succession.

Precipitation records for the States east of the Rocky Mountains show a well-marked tendency during the past quarter of a century to decreasing amounts, or lighter rainfall, in much of the North, especially the Northwest, and, until recently, to heavier rains in the South. In most cases in the South and East the trends have changed to downward in recent years.

In the northwestern area the last maximum appears for the 10 years up to about 1908, or around 25 years ago. Since then, there has been a rather regular decrease, as shown by a 10-year moving average, to the present time. In Minnesota, for example, the average precipitation for the 10 years ended with 1908 was approximately 29.5 inches, and for the decade ended with 1933 just a little more than 23 inches. In other words, the former 10-year period had nearly 30 percent more rainfall than the latter. A falling off in precipitation of such magnitude is especially important in a region like this, where the amount normally is rather small. This long-time northwestern decline in precipitation has centered in Minnesota, but covers the northern Plains to the west, especially the Dakotas, and extends to the western Lake region on the east.

About midway between these long-interval depressions in rainfall curves appear series of successive years with comparatively abundant rains, and there is nothing at this time to indicate that history, in this respect, will not repeat itself with a return to another temporary period, not now predictable, when much heavier rains will again be the order of the day. A long record at St. Paul, Minn., covering about 100 years, shows two previous depressions, rather similar to the present, at 30 to 40-year intervals.

The first covered the 10 years ended with 1848 and the second the decade ended with 1894. After each of these there was a marked recovery, with the peaks of the curves appearing in 1874 and 1908, respectively. The amplitude of these swings, or the difference between the averages for the periods of heavier and lighter rainfall, on a 10-year average-rainfall basis, is from about 24 inches minimum to 32 inches maximum. That is, on an average, the wet periods have about one-third more rain than the dry periods.

Long records for other sections of the country show similar trends, but they are not in agreement, one with the other, in regard to the time phases of the trends. For example, the Washington, D. C. record, beginning with 1817, shows a minimum for the 10 years ended with 1831 of 32.2 inches. Thereafter, there was a somewhat irregular, but very definite, rise to 48.2 inches for the decade ended in 1891. Since then the trend has been downward, but not uniformly, to 39.8 inches for the decade ended with 1933. Here we have a difference in the 10-year average of rainfall up to 1831 and the 10-year average ended with 1891 of 16 inches, or about 40 percent. The decrease since the maximum in 1891, or during the last 42 years, has been 8.4 inches.

The Washington record differs from that at St. Paul, Minn., representing northwestern conditions, in that, for the past century, only 1 maximum is shown in the Washington record and 2 in the St. Paul record. Also in the Washington record there is a 60-year interval between the minimum in 1831 and the maximum in 1891, which is much longer than any single trend at St. Paul. Still further, the Washington maximum in 1891 coincides, approximately, with the St. Paul minimum in 1894. In other words the trends for different areas are frequently in opposition instead of agreement. A comparison of records at other long-record stations shows a similar lack of agreement in this respect.

While the trend in precipitation in the Northwest has been downward for a good many years, the present deficiencies in the central valley States, in general, began with June 1933. Table 1 shows the total rainfall by States from June 1933 to July 1934, inclusive, and the percentage of normal, for this 14-month period.

TABLE 1.—*Average State rainfall and percentage of normal for the 14-month period June 1933–July 1934*

State	Total rainfall	Percentage of normal	State	Total rainfall	Percentage of normal	State	Total rainfall	Percentage of normal
	Inches	*Percent*		*Inches*	*Percent*		*Inches*	*Percent*
Alabama	56.49	90	Maryland and Delaware	51.99	106	Ohio	32.52	71
Arizona	11.85	81	Michigan	28.42	78	Oklahoma	31.14	78
Arkansas	48.77	87	Minnesota	22.54	69	Oregon	24.79	93
California	16.54	69	Mississippi	52.65	84	Pennsylvania	45.48	89
Colorado	15.49	76	Missouri	30.97	63	South Carolina	48.97	84
Florida	74.06	111	Montana	16.85	87	South Dakota	16.10	61
Georgia	53.38	89	Nebraska	19.44	63	Tennessee	53.38	91
Idaho	17.50	90	Nevada	6.34	66	Texas	31.33	85
Illinois	28.82	64	New England	50.52	104	Utah	8.84	61
Indiana	31.58	68	New Jersey	52.84	98	Virginia	45.93	91
Iowa	26.81	67	New Mexico	15.31	83	Washington	46.64	126
Kansas	24.21	71	New York	41.76	90	West Virginia	46.34	89
Kentucky	46.14	86	North Carolina	52.56	88	Wisconsin	28.00	74
Louisiana	63.85	96	North Dakota	13.13	57	Wyoming	11.94	69

As previously mentioned, the 1934 drought became established to such an extent as seriously to affect agriculture first in the Northwest, early in the spring, centering in eastern Montana, the Dakotas, and Minnesota. From this area there was a rapid spread southeastward, southward, and southwestward, so that by the end of May it had become the most extensive drought in the climatological history of the United States. In general, by that date the drought was severe throughout the Ohio and central and upper Mississippi Valleys, the central and northern plains, most Rocky Mountain sections, and the Great Basin of the West, covering approximately three-fourths of the country.

The 1934 spring season, March to May, inclusive, was the driest of record in both the Dakotas, Minnesota, Nebraska, Iowa, and Illinois; and the second driest of record in Ohio, Indiana, Wisconsin, Missouri, and Kansas. In Illinois, for example, the total rainfall for the 3 months was only 4.21 inches; the previous low record, 6.06 inches, was more than 40 percent greater than this. In Minnesota the previous low spring record, 3.39 inches, was more than 20 percent greater than the 2.79 inches that fell in the spring of 1934. North Dakota had only 1.27 inches of rain during the 3 months; the previous low record, 2.15 inches in 1901, was nearly 70 percent greater.

Extremely high temperatures during May in the interior valleys and the Northwest intensified the effects of the scanty rainfall; over considerable sections it was the warmest May ever known. For example, at Des Moines, Iowa, the average May temperature of 71° F. was not only the highest of record, but equaled the June normal. In the northern plains, the averages for most stations were higher than the normal for June. Huron, S. Dak., had a May average of 70°, which was 4° higher than the June normal, while the Rapid City mean of 67° was 3° higher than the normal for June. Throughout this northwestern section it was not uncommon for maximum temperatures to range from 100° to 104° for several days in succession. Dust storms were numerous and damaging.

At the end of May small grains, hay, pastures, and other feed crops had suffered severely and were deteriorating at a rapid rate. However, June brought material relief over large areas, as much more rain occurred than theretofore over most of the severely droughty sections. Precipitation in June was only slightly below normal in the Ohio Valley, ranging from about three-fourths of normal in Illinois to somewhat above normal in Kentucky, while much of the central-northern area had from 90 to 98 percent of normal. However, in the Southwest there was a corresponding diminution in rainfall, with June hot and dry in many sections. The dryness centered in Texas, which had less than one-fourth of its normal rainfall, while both New Mexico and Arizona had less than half of normal. At the same time, an area in the central-north, centering in eastern Montana, had no relief, and parts of the Northeast, especially northern and western New York, needed rain badly.

With the advent of July, conditions became rapidly worse in many Central, Southwestern, and Western States, where the effect of the scanty rainfall was aggravated by the persistence of extremely high, often record-breaking, temperatures.

In the Ohio Valley and parts of the upper Mississippi Valley earlier rains had supplied soil moisture sufficient to enable vegetation to withstand the excessive temperatures rather well, and in a few areas the growth of cultivated crops continued excellent. In places the dividing line between favorable and unfavorable conditions was very sharply drawn. An outstanding case is that of Iowa. Conditions in the northern part of the State were generally favorable, with pastures improving rapidly, minor crops doing well, and corn in good to excellent condition, while in the southern portion the situation became serious, with hope for winter feed nearly gone, water supplies exhausted, and no prospect of corn for grain.

At the close of July, conditions in southern Iowa were typical of those in most other sections between the Mississippi River and Rocky Mountains where all crops, except cotton in the southern portion, showed extremely rapid deterioration, with pastures practically gone, the water situation serious, and even trees dying in sections of the Great Plains.

In the Southeastern States, extending from central Virginia to Alabama, and including much of Kentucky and Tennessee, generally good growing conditions continued through July, but considerable portions of the Northeast and Middle Atlantic area, including New England, much of New York, Maryland, and northern and western Virginia, became decidedly dry.

The first half of August brought very helpful showers to most of the Ohio Valley area, and the last half of the month the weather was much cooler, with substantial to heavy rains, in much of the Southwest, especially Oklahoma and Missouri. In addition, during the first few days of September widespread generous rains effectively relieved droughty conditions, at least temporarily, over a large midwestern and southwestern area extending from southern Minnesota and Nebraska southward over the western winter Wheat Belt. The rains were especially timely in conditioning the soil for seeding winter wheat over the most important sections of the belt.

The summer of 1934 was by far the hottest of record over a large midwest area, the excess above normal temperature in many places being nearly twice as great as that for the previous warmest summer of record. At Columbia, Mo., the average maximum temperature for July was 100° F.; at Oklahoma City, Okla., 100°; Topeka, Kans., 102°; and Fort Smith, Ark., 102°. For the summer months (June-August) Des Moines, Iowa, had 22 days with maximum temperatures 100° or higher; Columbia, Mo., 34 days; Topeka, Kans., 47; Oklahoma City, Okla., 45; and Fort Smith, Ark., 53. Nothing remotely approaching this for sustained heat has been experienced in any State east of the Rocky Mountains since weather records began.

In addition to the serious drought situtation over the great western grazing areas and the central grain sections, the scarcity of snow in the western mountains during the preceding winter created a serious situation in the matter of water supply for spring and summer irrigation in many western sections where irrigation is practiced. For example, the seasonal snowfall up to the end of March in California was less than half the normal; in Wyoming there was but little more than a third as much as in the preceding year; Colorado had about half of normal, and in New Mexico, at the close of March, only drifts remained in the northern slopes at the higher elevations, in the northern part of the State.

PART II.—GENERAL SUMMARY OF THE WEATHER CONDITIONS IN THE UNITED STATES DURING THE YEAR 1933, WITH FOUR CHARTS

REVIEW OF THE WEATHER CONDITIONS DURING 1933

The year 1933 was considerably warmer than normal. The average temperature excess for all States was +1.8°, or twice that of 1932. Precipitation was below normal generally; the average for the entire area was 2.4 inches less than that of 1932.

In keeping with trends for some time past, temperatures were abnormally high over most of the country. Only the south Pacific district (California, from Fresno southward to San Diego) averaged below normal for the year, and here the deficiency was only −0.3°. The middle Pacific district (California, from San Francisco northward to Eureka) averaged exactly normal. Elsewhere temperature departures were positive and ranged from +0.1° over the north Pacific area to +3.6° in the Missouri Valley. Only February and April were colder than normal for the entire United States. February, with a departure of −1.3°, was 6° colder than in 1932. The relatively coldest weather occurred in the middle plateau, where this month averaged 13° subnormal. In February a new minimum temperature record for the United States was made when Riverside Ranger Station, in Yellowstone Park, Wyo., reported −66° on the 9th.

The three relatively warmest months were January, with a departure of +5.8°; December, +3.4°; and June, +3.3°. No single month averaged above normal in every district. Every State had maximum temperatures of 100° or higher during the summer except Maine, New Hampshire, and Rhode Island, and in these the maxima ranged between 95° and 99°. The highest temperature of the year was 127° at Greenland Ranch, Calif., on August 12. Using the Wyoming minimum and the California maximum the absolute range for the year was 193°.

The deficiency in precipitation averaged, for all States, over 2 inches. Only 5 of the 21 reporting districts were above normal for the whole year, and except for the north Pacific area and the Ohio Valley and Tennessee, these were along the Atlantic coast. The comparatively wettest area, 8.2 inches above the annual average, was the Florida peninsula; the second largest excess, 4.2 inches, occurred in the North Pacific States. Departures in the three other wetter-than-normal areas were comparatively small.

Practically all the northern, southern, western, and interior portions of the country were drier than normal. Deficiencies ranged from less than 1 inch in the south Pacific area to nearly 9 inches over the southern interior slope (portions of western Texas and New Mexico). In the east Gulf area the rainfall was over 7 inches subnormal, and the lower Lake and the south Atlantic districts had large deficiencies. In several sections (east Gulf, North Dakota, Missouri Valley, the middle and southern slopes, and the middle and northern plateaus) there was less rain than in the dry year 1930.

Six months averaged, for all States, wetter than normal, while July was exactly normal. The wet months were March, April, May, August, September, and October; in May, the comparatively wettest month, the departure was only +0.23 inch. Two (June and November) of the dry months were more than 1 inch subnormal. The largest monthly excess for any district was +7.8 inches for October in the Florida peninsula; the largest monthly deficiency was −2.7 inches in February in the middle Pacific area.

Some unusually heavy rains occurred during the year, notably in Louisiana and eastern Texas on July 22–25, and in southern California during the last week of the year. At several points in Louisiana and Texas 4-day totals during the July rain exceeded 20 inches. Damage, mostly to crops, caused by this rain was estimated at nearly 2 million dollars.

Snowfall was generally subnormal, but there were some instances of unusually large amounts. For example, at Crater Lake, Oreg., the total snowfall for the winter of 1932–33 was 879 inches, 629 inches of which fell in 1933. This seasonal total is only 5 inches less than the record seasonal fall for the United States of 884 inches at Tamarack, Calif., during the winter of 1896–97.

Tornadoes, windstorms, hail damage, and other outstanding features of the weather of 1933 are discussed elsewhere in this publication.

JANUARY

January was warm and dry. Only a few southern Rocky Mountain, Plateau, and Pacific Coast States were cooler than normal and this deficiency was outweighed by abnormal warmth east of the Rockies. Many central stations were above normal every day; several had the warmest January of record. Precipitation was subnormal, except in the middle and upper Mississippi Valley, northern Lake region, portions of the Gulf and Plains States, and from the Great Basin westward.

The year began with a cold wave in the East. Concord, N.H., Boston, Mass., Albany, N.Y., and other stations, had 24-hour temperature falls of 50° or more. Zero readings occurred locally in New England, New York, Arizona, and Colorado. By the 2d temperatures were rising generally but on the 3d colder weather was again reported in the northern Plains.

The week ending January 10 was warm. A few California and lower Great Basin stations averaged below normal, but elsewhere weekly excesses of 10° to 20° occurred, with the largest noted in northern districts.

The following week was more variable. Fairly large areas in the West and Southwest, and along the middle Gulf and south Atlantic coasts were subnormal; the greatest deficiencies occurred in Colorado and Utah, though Havre, Mont., was the first-order station having the lowest temperature of the week, −22°. The warmest weather occurred in the middle Mississippi Valley and Lake region.

The week ending January 24 was decidedly warm in central and eastern portions, but the West, particularly along the Pacific coast, was several degrees subnormal. Freezing weather did not occur south of Columbia, Mo.; zero was reported only in the Northwest.

The last week was warm, except from the central Rocky Mountains westward; southern Utah and northern Arizona had the largest minus departures, while the relatively warmest weather occurred in the upper Mississippi Valley. Freezing reached south to Augusta, Ga., Memphis, Tenn., and Fort Smith, Ark., and subzero weather occurred in North Dakota, Montana, and Wyoming.

Precipitation the first 3 days of the month was widely scattered and mostly light, except on the Pacific coast, where several stations had heavy rains. Moderate rains fell in the Atlantic States and the Cotton Belt during the week ending January 10, and heavy rains in portions of Washington and Oregon, but elsewhere amounts were light.

The following week was rather dry generally; large areas in Texas, Oklahoma, Colorado, and Kansas had no rain, and many northern and central stations had only a trace. Rains were light to moderate in portions of the South Atlantic and east Gulf States and heavy in southern California. Precipitation was heavier the succeeding week, most stations in the Lake region, Ohio Valley and Tennessee, the upper Mississippi Valley, and on the Pacific coast had more than normal; the greatest excesses occurred in California and Arizona. The Atlantic and Gulf States, and most of the Missouri Valley and mountain region were subnormal.

Light to moderate precipitation was general east of the Mississippi River the last week of the month and heavy rains fell on the Pacific coast and locally in the Gulf States. Amounts were light in the Lake region and Plains States; some stations had none.

Snowfall was variable; Salt Lake City had nearly twice the normal, and Raleigh, N.C., had 10 inches on the 13th, but generally amounts were subnormal. Detroit, Mich., Dubuque, Iowa, and several other stations had the least of record for January and many stations had the lightest falls in many years.

Relative humidity was unusually low in portions of the Lake region and the Missouri and middle Mississippi Valleys. In southern California it was below normal the first half of the month and above the latter half. Cloudiness was above normal in portions of the Northwest, the Lake region, and some Gulf sections, and below along the Atlantic coast and in central and northwestern districts.

FEBRUARY

February was warm and dry in the Northwestern States and generally along the Gulf and Atlantic coasts and in portions of the Great Plains, Lake region, and the Mississippi Valley. Large areas in the South, Southeast, and West were colder than normal; the greatest deficiencies occurred in the Great Basin. Precipitation was above normal generally in the South and below in most middle Atlantic and interior valley areas. The far Southwest was unusually dry, but precipitation was plentiful in the Pacific Northwest.

The first week began warm in the west Gulf States and from the Mississippi River eastward, but a sharp reaction to colder occurred later in the week. Some stations in the northern Rockies and Plains States noted 24-hour temperature changes of −60° on the 6th, and on the morning of the 7th nearly one-half the country reported subzero weather with a minimum of −55° at Moran, Wyo.

The second week was unusually cold generally; only limited areas in southern Florida and the extreme Northeast averaged above normal. In the far Northwest many stations set new low February records; Riverside Ranger Station, Yellowstone Park, Wyo., had a minimum of −66° on the 9th, the lowest temperature ever recorded in the United States. Zero weather or below occurred southward to Asheville, N.C., Fort Smith, Ark., and Abilene, Tex. The greatest deficiencies occurred in the Plains States and Rocky Mountain and Plateau regions; at Yellowstone Park, Wyo., the average temperature for the 9-day period, 6 to 14, inclusive, was −16.7°.

The third week was much warmer, with the Eastern States, central valleys, most of the Great Plains, and the east Gulf area above normal. The coldest weather occurred in the Great Basin. Temperatures the last week were abnormally low in the Great Basin, and near normal in Pacific coast districts; elsewhere they were from 3° to 20° above normal. Zero temperatures, first-order stations, were confined to extreme northern Michigan; freezing was not reported south of North Carolina or St. Louis, Mo.

Precipitation the first week was fairly heavy along the Gulf coast; moderate amounts fell in some sections east of the Rockies, but generally it was light; none was reported over much of the Southwest and only small amounts along the north Pacific coast. The second week was marked by heavy falls from the east Gulf States northward to New England. Amounts in the Lake region, central valleys, and the Plains were unimportant; moderate falls occurred in the far Northwest, the Great Basin, and in central Pacific sections.

Precipitation was heavy the third week in portions of the Southeast, except Florida. The greatest amounts were reported in Tennessee. Elsewhere, except in parts of the Northwest, amounts were small; much of the Southwest was dry. The last week was relatively dry, although fairly heavy rains fell in portions of Arkansas, Oklahoma, Texas, Louisiana, Mississippi, Alabama, and the far Northwest.

Snowfall was locally above normal in the West, while at many upper Mississippi Valley, Lake region, and Atlantic coast stations it was subnormal. Cloudiness was slightly above normal in the Southeast, the Plains States and Rocky Mountain region, but elsewhere was generally below. Relative humidity was low in the Southwest and ranged from slightly above normal to considerably above in some southeast sections.

MARCH

Temperatures were generally moderate and above normal, except for comparatively small areas west of the Rockies, in the Lake region, Ohio Valley and Tennessee, New York, New England, and east Gulf States; the relatively warmest weather occurred in the northern Plains States. Precipitation was above normal in the far Northwest, central Gulf area, most of the Northeast, the Ohio and upper Mississippi Valleys, and north-central Great Plains, but elsewhere was mostly below; a large southwestern area had less than 10 percent of normal.

Temperatures were 6° to 16° above normal the first week in northern areas from the Lake region to the Rockies. In the Northeast they were slightly above, and west of the Rockies about normal. The Southeast was 4° to 8° subnormal, and the west Gulf area from 3° to 6° below.

Temperatures the second week varied considerably. On the 8th a minimum of −16° was reported at Havre, Mont. The cold wave moved southeastward to the Middle Atlantic States on the 11th, bringing zero weather in Iowa and Wisconsin. Generally in the East warm weather at the beginning and end of the week offset the cold. Portions of the Rocky Mountain States, western Great Plains, and the Southwest were 6° to 9° above normal; most of the far West was warm.

The third week began abnormally warm east of the Mississippi. A brief reaction to much colder followed, but the deficiency was practically wiped out later in the week. The East was mostly above normal, with the greatest excess, 6° to 12°, in east Gulf and Middle Atlantic States. The extreme northwestern Great Plains were warm; portions of Texas and the far West were normal or above. The largest minus departures were in the Lake region, Southwest, and locally in the Rocky Mountains.

The fourth week was cold in the central valleys, middle Atlantic area, most of the Southeast, and the lower Lake region, with deficiencies of 5° to 15° in the Potomac, Ohio, middle Mississippi, and lower Missouri Valleys. Temperatures were near normal in the middle Gulf sections, much above in the west Gulf area and southern Great Plains, and below in the northern Cotton Belt. The Northeast had about normal and the northern Great Plains abnormal warmth. In northern Plateau and Rocky Mountain areas temperatures were 3° to 5° subnormal. The last few days of the month were generally normal or above.

Precipitation the first week was heavy in east Gulf States, portions of the upper Mississippi and Missouri Valleys, and the far Northwest. The Southwest was dry; many Lake region,

upper Mississippi Valley, Mountain region, and Atlantic coast stations had only a trace. Generous rains the second week were confined to the upper Ohio Valley; central Appalachian Mountain, and north Pacific coast districts. Precipitation was general east of the Rockies the third week and was heavy to excessive in east Gulf sections and northward to Ohio and Pennsylvania; elsewhere amounts were light to moderate.

Precipitation the fourth week was heavy in the far Northwest and frequent over the eastern half of the country, where amounts were mostly small, though some stations had the wettest March of record. Rain fell the last days of March in the middle Gulf area, central valleys, portions of the Lake region, and locally in the far West.

Snowfall varied. Locally along the Atlantic coast, in New England and New York, and in portions of the Mississippi Valley and Great Plains amounts were subnormal; several mountain region, Missouri Valley, and northern Lake region stations reported above-normal amounts and new 24-hour records.

Sunshine was above normal along the Atlantic coast south of New York and in the Southwest; the northern half of the country was generally below. Relative humidity was subnormal in the Southwest and in some areas along the Atlantic coast.

Outstanding events of the month were glaze storms of the third week in portions of the Lake region, tornadic winds in limited Gulf areas on the 30th to 31st, and the Tennessee tornado of the 14th.

APRIL

Temperature averaged near normal, though wide variations occurred. East of the Rockies the means ranged from slightly below to slightly above normal, with a small northwestern area reporting an excess of 4°; a large area in California had above-normal warmth. Elsewhere means were subnormal, with greatest departures in Wyoming, Utah, Colorado, New Mexico, and southwestern Arizona. Precipitation was mostly normal or above east of the Mississippi River although some south Atlantic and north-central areas were dry. Portions of the east Gulf States had three times the normal; amounts were above normal in the west-central Great Plains and locally in the far Southwest; elsewhere in the West rain was generally scanty; parts of California were 90 percent subnormal.

Temperatures were markedly variable in most sections the first few days, though no unusually low minima occurred. The week ending April 11 was warmer than normal along the Atlantic coast, in the Gulf States, the Ohio Valley and Tennessee, and in portions of the Lake region and upper Mississippi and Missouri Valleys, though freezing reached southward to Virginia and Texas. Most Missouri and upper Mississippi Valley and all mountain region stations were subnormal. The following week was unseasonably cool, especially in the South and far Northwest. The relatively warmest weather, 7° above normal, occurred in the eastern Lake region; much of the northern Great Plains was above normal, as were most of California and southern Florida. The largest minus departures were in the southern trans-Mississippi States.

Averages for the succeeding week were slightly above normal from the Rocky Mountains to the Lake region, near normal in the central Great Plains, and somewhat above in the Northwest and the Cotton Belt. The Ohio Valley and most Atlantic districts were 3° to 7° subnormal; the Rocky Mountain States and far Southwest were abnormally cold. Variations from normal the last days of April were mostly small, although the Eastern States had cool weather and the upper Lake region and far Southwest were decidedly cold; west Gulf sections had the relatively warmest weather.

Precipitation the first few days was general in most sections east of the Mississippi River. In the West it was scattered and in the Rocky Mountain region and the Dakotas was often in the form of snow. During the week ending April 11 it was heavy in the lower Ohio and central Mississippi Valleys and eastward to Alabama. The North Atlantic States had good rains, but amounts in the south Atlantic area were mostly light; the heaviest were in east Gulf sections. Portions of the Great Plains, the Southwest, and West were dry.

Amounts the following week were heavy from the Mississippi Valley eastward, except for portions of Alabama, Georgia, and South Carolina. In east Gulf sections totals were unusually large; the Great Plains had but little rain and most of the Southwest was dry.

Precipitation the succeeding week was abundant in Oklahoma, Kansas, and Nebraska, and generous falls occurred in the middle Atlantic area and central Cotton Belt. Elsewhere it was light to moderate—the Ohio and upper Mississippi Valleys, Lake region, and the States west of the Rockies had only light rains, or none. Amounts the last few days were moderate to heavy in the central and lower Mississippi Valleys, the Lake region, and north-central areas, and considerable was reported in Rocky Mountain States and the Northwest. The Southwest was dry.

Severe hailstorms were reported by several stations during the month. Snow was rather frequent in western sections; amounts were unusually heavy in portions of Colorado, Wyoming, Minnesota, Montana, Oregon, and Missouri, and some new 24-hour or monthly records were set.

East of the Mississippi River sunshine was generally below normal; ranging from slightly below to a record low at Apalachicola, Fla. At many points in the upper Mississippi and Missouri Valleys it was subnormal, while in the Southwest, the northern Great Plains, and to westward, it was normal or above. Relative humidity was mostly near normal, but averaged slightly below in portions of the Mississippi Valley.

MAY

May was decidedly warm in the Southern States, central Appalachian and middle Atlantic areas, most of the Great Plains, the Mississippi and Ohio Valleys, and the Lake region; many southeastern stations had the warmest May of record. The West was cool with temperatures 3° to 5° subnormal in the Great Basin; Yakima, Wash., had the coldest May of record. Precipitation was generally above normal; especially in the central Mississippi and Ohio Valleys. St. Paul, Minn., had the second wettest May in 97 years; Nashville, Tenn., the wettest in 63 years, but the Southeast and much of the Southwest were decidedly dry.

The first 2 days had generally above normal temperatures east of the Mississippi River and below in the West. Above-normal warmth the week ending May 9 was confined mostly to south Atlantic and Gulf areas and portions of Tennessee. The Lake region, Mississippi and Missouri Valleys, and the mountain region were cool, with the largest minus departures occurring in the Great Basin.

Temperatures the following week were considerably above normal in eastern and southern areas, with the relatively warmest weather on the Atlantic coast. The far West was generally cold; a minimum of 16° was reported at Flagstaff, Ariz., on the 11th. Warm weather was general the week ending May 23, except on the Pacific coast and in parts of the mountain region; it was abnormally warm between the Mississippi River and the Rockies, but freezing weather occurred over a considerable area in the Great Basin.

The last week was decidedly warm east of the Mississippi, especially in the Lake region and northern New York. The Plains States were near normal, with portions of the Dakotas and Nebraska slightly below. The relatively coldest weather west of the Mississippi occurred in Wyoming, the warmest in California.

Precipitation the first few days was mostly general, except in portions of the Southeast and the far Southwest. Nearly all stations, except in these areas, had substantial rains the week ending May 9, especially in Tennessee and portions of the Lake region. The week ending May 16 was decidedly wet in the central Mississippi and Ohio Valleys. The South Atlantic area had but little rain and a wide belt along the Gulf coast was dry.

The following week brought light to moderate showers to southern sections, although large areas on the Gulf coast and in the Southwest had none. Rather heavy rains fell in the upper Mississippi Valley and most of the northern Great Plains. Rains were heavy the last week from the western Lake region to central and eastern Texas. Totals of 2 inches or more occurred locally in Middle Atlantic States, portions of Georgia, Tennessee, South Carolina, and in the extreme northern Great Plains. A large area extending from the central and southern Rockies westward was dry. Heavy snows fell during the month in portions of the Rocky Mountains; Lander, Wyo., had nearly 30 inches; and new records were set at Cheyenne, Wyo., and Kalispell, Mont.

Sunshine was deficient except locally along the Atlantic coast and in the Southwest. Some low records were set in east Gulf areas, the upper Mississippi Valley, and the far Northwest. Relative humidity was generally near normal.

JUNE

June was above normal in temperature and below normal in precipitation. Only a few scattered stations along the Pacific, Gulf, and Atlantic coasts were cooler than normal, and the departures were small. Elsewhere, temperatures were from 2° to 12° above normal, with the relatively warmest area including the States from the Ohio and extreme lower Missouri Valleys and central Great Plains northward and northwestward. Many stations in these areas had the hottest June of record; several reported new maximum records for June and some for all months. Most States east of the Rockies had less than half the normal precipitation and, many stations had the least of record for June. New Orleans, La., had the driest June in 97 years, with less than 10 percent of normal. A limited southwestern area, portions of the Pacific Northwest, and southern Florida were above normal.

Lincoln, Nebr., had 22 days with maximum temperature of 90° or above; on 6 days they exceeded 100°. Among other stations reporting maxima above 90° on several days were Evansville, Ind., 21; Cairo, Ill., and Keokuk, Iowa, 20; Charles City, Iowa, 19; Greenville, S. C., 18; and Columbus, Ohio, and Fort Wayne, Ind., 14.

The first decade was generally normal except locally in the Pacific area. At most stations east of the Rockies a cool spell occurred the second decade, mostly from the 12th to the 17th. At many stations these were the only subnormal days during the month; damaging frosts were reported in portions of Connecticut, Kentucky, and Michigan. The third decade was warm generally except locally west of the Rockies.

Precipitation along most of the Pacific coast occurred only during the first decade, when showers fell also in portions of the Plains States, northern Rockies, upper Lake region, New York, and along the Atlantic coast. During the second decade rains fell in the Northwest, the middle Rockies, and northern plains, central Texas, portions of the central valleys, the Southeast, and along the Atlantic coast. The third decade was marked by showers in the middle and northern Rockies, the central valleys, Lake region, New York, New England, and the Southeast. Several eastern States had rather generous rains during this period.

Sunshine was generally somewhat below normal in North Pacific regions, near normal in southern California, and slightly below in portions of the Southwest. In the interior, notably in the Mississippi, Missouri, and Ohio Valleys, it was far above; at La Crosse, Wis., the excess was 23 percent. Most eastern stations were above normal. Relative humidity was near normal in southern California, somewhat above in the near Southwest, and considerably below in most central sections; at Kansas City, Mo., it was 22 percent subnormal.

JULY

July was a month of strong contrasts in both temperature and rainfall. High temperature records were broken in some eastern and southern sections, and a new low record was made at Richmond, Va. Many stations had the driest July of record, though Shreveport, La., had a monthly total of 21.89 inches, 12.44 of which fell on the 24th–25th.

Except in the East and South, the month was much warmer than normal. In portions of California and Nevada the excess was 8° and in large areas west of the Mississippi it was 4° to 6°. Portions of all States bordering on the Atlantic and Gulf coasts were somewhat cooler than normal, as were parts of West Virginia, Kentucky, Tennessee, and Arkansas.

Temperatures the first decade were somewhat below normal in portions of the East and Southeast, with several low-record readings reported. Most northern, central, and western areas were hotter than normal, though from the Rockies westward a few subnormal days occurred. Warm weather continued the second decade in most sections west of the Rockies, and locally in the Southwest, Great Plains, and central valleys. The East was subnormal, with departures in some cases of 8°. The final decade was variable; temperatures were normal or above the last few days of the month in the Southwest, most central and northern areas, and along the Gulf and Pacific coasts. Yuma, Ariz., had three consecutive days (25 to 27) on which the daily mean was 100°. Limited areas in Arkansas, Oklahoma, Colorado, Nebraska, Wyoming, Montana, and California, however, were cooler than normal during most of this period. Rain west of the 105th meridian was mostly confined to the first decade. Several stations here had monthly totals of less than 0.01 inch. East of the Rockies rain was better distributed throughout the month, but was subnormal over large areas. Showers occurred during the first decade in eastern and northern districts but amounts were generally subnormal. In the second decade States between the lower Mississippi Valley and the Atlantic had good rains, as did the Plains from eastern Kansas northward; elsewhere amounts were mostly subnormal. The outstanding feature of the third decade was the heavy rains in central and east Gulf areas and portions of Oklahoma, Arkansas, Tennessee, Kentucky, and Virginia. The month ended with rain needed in the upper Mississippi Valley, the Plains States, and the far West.

Sunshine was below normal locally in the near Southwest, lower Mississippi Valley, southern Great Plains, and portions of the Atlantic coast. Northern and most western areas generally had far more than normal; Portland, Oreg., reported the most for any month since 1896. Considering the country as a whole, relative humidity was subnormal. At the noon observation of the 21st the relative humidity at Reno, Nev., was only 4 percent.

AUGUST

Although several stations, mostly western, noted new record maxima, August temperatures were near normal. Precipitation was spotted, with southern Florida, much of the Great Plains, the far Northwest, and middle-eastern sections having excessive falls, while large areas in the South, the Lake region and upper Mississippi Valley, the southern Rocky Mountain region,

Great Basin, and along the Pacific coast from San Francisco northward ranged from near normal to considerably below.

At Phoenix, Ariz., it was the warmest August of record; only once during the month was the maximum temperature below 100°, and on the 10th a record of 115° was set; at Yuma, Ariz., there were three days with a mean of 100° or above. At Helena, Mont., a new low record of 38° occurred on the 21st; new high records were made in Oregon, Nevada, and California.

Temperatures the first week were near normal generally. The relatively coolest weather occurred in portions of the Mississippi and Missouri Valleys, and along the Pacific coast, and the warmest in the northern Great Plains, the Southwest, and locally in Middle Atlantic States.

The second week was near normal, though portions of the Southwest, California, and New York were 3° subnormal, and large areas west of the Mississippi River were from 3° to 9° above. Except for northern districts, the third week was mostly subnormal east of the Rockies. The western States were mostly warm, the greatest excess occurring from North Dakota westward, in the interior of the Pacific area, and in the far Southwest.

The last week showed a decided change, with the northern Rocky Mountains and adjoining districts ranging from near normal to 9° below, while in west Gulf districts, the Pacific Northwest, and generally from the Mississippi River eastward, temperatures were above normal. The last days were about normal.

There was little rain the first week in the northern Great Plains and west Gulf areas, but generous falls were frequent from the Ohio Valley eastward and northeastward, in South Atlantic and east Gulf areas, and in many north-central districts. The lower Missouri Valley, the Pacific Northwest, and some Rocky Mountain sections had rain. A large western area and the Great Plains were dry the second week; good rains occurred, however, over much of the Northeast, extending to the Ohio Valley, eastern Tennessee, and North Carolina; elsewhere rains were scattered and mostly light. Rainfall was heavy the third week along the Atlantic coast from Virginia to Connecticut. There was considerable from Tennessee southward and moderate to heavy falls occurred in most of the Great Plains. Locally heavy rains fell in the Northwest; elsewhere amounts were small.

On Wednesday, August 23, a tropical storm passed inland near Norfolk, Va., and moved northward, causing excessive rains in the middle Atlantic area where several new high records were set. Good rains occurred this week in most of the Great Plains and Rocky Mountains. The upper Mississippi and Ohio Valleys, Lake region, and Pacific States had but little rain; light snows fell in northwestern Wyoming.

Sunshine was near normal west of the Rockies, except locally in California. Large areas in the southern Great Plains, the South, and along the Atlantic were below normal, with several record lows reported. The northern Great Plains, most of the Lake region, and the Ohio Valley ranged from near normal to considerably above.

Relative humidity was generally near normal in most sections, although some areas in the upper Mississippi Valley were below normal.

SEPTEMBER

Following recent trends, September was warmer than normal; precipitation was irregularly distributed in amount and throughout the month. Temperatures were above normal, except in seven Western States. Minus departures were small; the relatively coldest weather, 4° subnormal, occurred in Oregon and southern California, with San Diego recording the coldest September in 71 years. Plus departures were greatest, 8°, in central Texas; elsewhere they were 2° to 6°. Grand Junction, Colo., Springfield, Ill., and Santa Fe, N.Mex., had the warmest September of record; El Paso, Tex., the warmest since 1878, Peoria, Ill., the second warmest in 78 years, and the St. Louis, Mo., figure has been equaled only once since 1838. Los Angeles, Calif., and Portland, Oreg., had the coldest September since 1916 and 1914, respectively.

At San Diego, Calif., no day was above normal in temperature, while several Texas stations and New Orleans, La., had no subnormal days. Many stations in a broad area reaching from New Mexico eastward and northeastward had only 1 or 2 subnormal days, and only a few stations east of the Rockies had more than 8 days with subnormal temperature. These were scattered throughout the month, but occurred mostly during the middle and last decades, except in South Atlantic and Gulf regions where they were more common during the first and last. In the far West and Northwest conditions were reversed; there were but few days with abnormal warmth, and these occurred usually in the first and third decades.

Precipitation was above normal in the Ohio and lower Missouri Valleys, parts of the Central Plains, limited areas in central-northern districts, considerable portions of the Northeast (at Boston it was the wettest of record) and locally in South Atlantic and Gulf areas, and the Pacific Northwest. Cairo, Ill., and Fort Wayne, Ind., had the greatest September rain of record, and

new 24-hour records were established at Charleston, S.C., and Eastport, Maine. Phoenix, Ariz., had unusually heavy rain on the 8th.

Precipitation in the Northwest was fairly well distributed throughout the month. In northern California it was confined mostly to the second and third decades. Fresno and Los Angeles, Calif., and Reno, Nev., had none. Several California, Arizona, Utah, Nevada, Idaho, and Texas stations had rain on only 1 or 2 days. To eastward of the one-hundredth meridian the number of rainy days increased, but amounts were often subnormal. The heaviest rains along the Atlantic coast generally occurred during the second decade.

Relative humidity was slightly above normal in portions of the West and Southwest, and near normal in most central areas. Sunshine was normal or above except for some sections in the West and a strip reaching from Evansville and Fort Wayne, Ind., northeastward. Los Angeles, Calif., was much below normal; San Diego, Calif., had the least of record for September. In contrast, Pensacola, Fla., set a new high record for the month.

OCTOBER

October was warm and dry. Two small California areas and those sections north of a line drawn from Havre, Mont., to Little Rock, Ark., and thence to Raleigh, N.C., and Boston, Mass., were subnormal, but departures were usually less than 4°. Plus departures of 4° to 6° were common over much of the Southwest and West. Precipitation was mostly below normal, with the greatest deficiencies in the Plains States and Rocky Mountain sections. Amounts were decidedly subnormal over a belt reaching from the eastern Lake region to middle Gulf districts, and in the Middle Atlantic States.

At most stations there were marked variations in temperature. Conditions were most uniform in the West and Southwest; Modena, Utah, and Grand Junction, Colo., were normal or above every day; many stations in California, Idaho, Nevada, Utah, Wyoming, Arizona, New Mexico, and Texas had only from 1 to 6 days with subnormal readings. The first 10 days were cool in the central valleys and decidedly warm in more western States. Thereafter the tendency was to normal warmth generally, except in northern sections where the latter part of the month was subnormal. Except for portions of New England, the last 3 days were abnormally warm over a large area to north and east of the southern Rockies.

Abilene, Tex.; Cheyenne, Wyo.; Fresno and Red Bluff, Calif.; Grand Junction, Colo.; Pocatello, Idaho; Phoenix, Ariz.; Reno, Nev.; and Roswell, N.Mex., had the warmest October of record; at Red Bluff temperatures of 100° or above occurred in October for the second time in 56 years; the maximum of 104° on the 5th was a new October high for that station; in contrast, Canton, N.Y., reported the lowest minimum for the month since 1895.

The outstanding precipitation feature was the heavy rains in the Southeast. Key West, Fla., reported the greatest fall for any month at that station, 23.56 inches, of which 13.54 inches fell on the 4th, a new 24-hour record there. Jacksonville, Fla., had the wettest October since 1880. In contrast, October was the driest of record at North Platte, Nebr., Huron, S.Dak., Concordia, Kans., and Cheyenne, Wyo. Many stations west of the Mississippi River, and a few in South Atlantic and east Gulf areas, had measurable amounts on only 1 to 3 days, several on 1 day, while a few points in Wyoming, Nebraska, and Colorado had only a trace.

Distribution of rainfall throughout the month was irregular. In California, Nevada, Wyoming, and Idaho, most of it fell after the 29th. In the Plains area the first and second decades brought the most; in the Southwest the first half was the wetter, while in Central and Eastern areas 1 or 2 rainy days occurred in each decade, though the greater part of the totals came the latter half.

Considerable snow fell in the northwestern Lake region and the northern Rockies; Duluth, Minn., set a new October record of 14 inches, and Canton, N.Y., had heavy snow on the 24th and 25th.

Relative humidity was normal or above over most of the southern half of the country; at Los Angeles, Calif., the excess was considerable. In more northern regions it was subnormal. Sunshine was usually above normal, new records for the month being made in portions of Idaho, Wyoming, and Nebraska. A few areas, mostly in the Southwest, northern California, and the northern Appalachian region, were subnormal.

NOVEMBER

Although some unusually cold weather occurred in eastern and northwestern districts, November was warmer than normal; the month was dry; with only a few local areas, mostly in the Lake region, Northwest, Southwest, and along the Gulf and Atlantic coasts, having normal precipitation.

Except for portions of the Oregon and California coasts, temperatures were above normal over a large area west of a line drawn from Devils Lake, N.Dak., to central North Carolina and thence to the Gulf. Departures here were mostly considerably above normal, and were +4° to +7° from Texas northwestward to Canada. In the East and Northeast minus departures were greatest, 5° to 8°, in the Lake region and New England. At Buffalo, N.Y., it was the coldest November since 1880 (although a new maximum temperature record for the month was made there on the 2d); and at Eastport, Maine, the coldest of record. At Harrisburg, Pa., the Susquehanna River froze over on the 16th–17th, the earliest in 63 years.

Temperature variations were pronounced. In Montana, the Dakotas, Wyoming, Nebraska, and Kansas subnormal temperatures occurred mainly in the first decade, and thereafter most days were above normal. To westward conditions were somewhat similar, except that the closing days were subnormal. East of the Mississippi River and along the Gulf coast the first few days were above normal, but were followed by a sharp reaction to much colder weather. Short periods of warmth occurred again in both the second and third decades, and generally in the East the month ended warm. Freezing was reported as far south as Georgia and central Mississippi, and zero in West Virginia, the North, and Northwest. Big Falls, Minn., had −27° on the 16th, the lowest reading for the month.

Precipitation was scanty in most States; the interior valleys were especially dry, with less than half, and over considerable areas, less than one-fourth the normal. The far West was dry; several California stations had no rain. Except in Washington and Oregon, where the number of rainy days was larger, and in Arizona and Nevada where it was smaller, precipitation west of the Mississippi River occurred on only 3 to 5 days, usually in the first or last decade. East of the Mississippi many stations had only 3 to 6 days with measurable rain, but the time distribution was better.

Snowfall was heavy in the Lake region and locally to westward; Buffalo, N.Y., and Fort Wayne, Ind., had about three times the normal; Providence, R.I., has the snowiest November of record, and amounts were above normal in portions of Minnesota, Iowa, and Michigan, but were subnormal at many northern and western points. Light snows occurred as far south as Norfolk, Va., and Asheville, N.C.

Relative humidity was generally below normal, especially in portions of the West and middle Mississippi Valley. Sunshine was mostly above normal, except in the eastern Great Plains and middle Mississippi Valley and thence northeastward. New high records were set at Pensacola, Fla., and Boise, Idaho; at the latter the excess was 35 percent. At Pittsburgh, Pa., the average was 24 percent subnormal. An unusual feature of the month was the widespread dust storm occurring about the 12th to 14th and reported from Kansas and Iowa to the Carolinas and New England.

DECEMBER

December was warmer than normal, except locally in the Pacific area and the Northern States from central Montana eastward; precipitation was irregularly distributed geographically, but for the country as a whole, averaged slightly above normal.

The relatively coldest weather, 6° to 8° subnormal, occurred from central New York and southern New England northward, and in northern North Dakota and Minnesota; the relatively warmest, 12° above normal, in Wyoming and Colorado. Over large western areas, and in the Gulf States, the excess was 8°; elsewhere, temperatures were 2° to 6° above.

In California warmer-than-normal days were rather few, and were about equally spaced throughout the month. In other districts, except in more northern areas, colder-than-normal days were few, and from the Rockies to California occurred in the first two decades. In Gulf and central areas and thence eastward most days were above normal, mostly so in the last decade. In the upper Lake region and New England most days were subnormal, though short, warm periods occurred each decade.

Temperatures of 90° or above were noted in California, New Mexico, and Texas; the highest was 95° at Laredo, Tex., on the 5th. Minima of zero or below occurred in more than 30 States; Bloomfield, Vt., had −50° on the 30th, and Big Falls, Minn., −51° on the 28th. A number of central and eastern stations set new record minima, and several had the coldest December of record; at Burlington, Vt., there were 13 days with zero or below; in contrast, some central, southeastern, southwestern and western stations had the warmest of record. At Fairbanks, Alaska, the month was 20.9° subnormal, and the average temperature for the 7-day period, 16 to 22, was −42.9°.

Precipitation was above normal in most of Tennessee, Kentucky, and West Virginia, from northeastern Texas to Nebraska, along the northern border to westward of the Great Lakes, in the Pacific States, and locally in southern New England. In some Pacific Northwest areas, and locally in southern California, amounts were two or three times the normal; the largest total was

57.04 inches at Cougar (near), Wash. It was the wettest of record at Seattle, Wash.; and Los Angeles, Calif., had the wettest since 1889.

The Southeast and Southwest were decidedly dry, the greatest deficiencies appearing in the eastern Carolinas, western Texas, and southern New Mexico. From the Dakotas and Montana southward, precipitation occurred mostly the first and last decades, but the number of days with 0.01 inch or more was small; several Wyoming, New Mexico, Arizona, and Texas stations had only a trace. In the Northwest some stations had as many as 30 days with rain or snow. In portions of the Lake region and New England rainy days predominated; in more southern States, east of the Mississippi River, such days were few, but the time distribution was better than in the West.

Snowfall was heavy in the more northern States, but elsewhere was generally moderate or subnormal. Portland, Maine, had more than 42 inches, and Alpena, Mich., the most since 1893. In contrast, Boise, Idaho, and Des Moines, Iowa, had the least in 16 and 21 years, respectively.

Relative humidity was near normal or slightly below in most central and eastern districts; a slight excess was reported locally in southern California. Sunshine varied, ranging from an excess of 24 percent at El Paso, Tex., to record lows at Portland, Oreg., and Rapid City, S.Dak. The Southwest and southern Great Plains were generally above normal, but the northern Great Plains, western Lake region, Mississippi Valley, Ohio Valley and Tennessee, and portions of the Middle Atlantic coast were below normal.

TORNADOES, 1933

As customary in these reports from 1916 onward, the tornadoes of the year are individually described. A tabular style of presentation is used and the grouping by States again followed with the several tornadoes of each State arranged chronologically. The information has been furnished chiefly by the section directors of the Bureau, and descriptions of many of the tornadoes have already been printed in the monthly section reports or in the Monthly Weather Review, while almost all of them were listed in the Review's table, Severe Local Storms. Owing to the receipt of additional information, some differences in details from the Review's description will be found in the table now printed; also a few additional tornadoes have been reported and some storms formerly classified as tornadoes are now thought to have been nontornadic and are omitted from the accompanying compilation. They are included, however, in the small table following to the extent of losses of life and property they caused.

GENERAL SYNOPSIS

During 1933 there were 260 tornadoes in 31 States; none occurred in Alaska, Hawaii, Puerto Rico, or the Virgin Islands. This is the largest number of tornadoes reported in a single year since publication of individual descriptions was begun in this report in 1916. In 1932 the total was 152, and the previous maximum number for a single year was 203 in 1928.

During May, 94 tornadoes occurred, more than were reported during the entire years of 1916, 1918, 1919, and 1920. Tornadoes were reported somewhere in the United States every month of the year, but November had only one. In 1932, November was the only month with no such storms. The number for the other 10 months of 1933 were: January, 13; February, 4; March, 56; April, 32; June, 20; July, 15; August, 11; September, 6; October, 5; and December, 7. The March 1933 figure is 10 greater than for March of the preceding year. On March 31, 26 tornadoes occurred, and on May 7, 14.

The total loss of life through the 1933 tornadoes was 362, which is 32 less than in 1932, and has been exceeded six times since 1916. Over 56 percent of the 1933 fatalities occurred in May, and 2 months, March and May, accounted for at least 91 percent of the total loss of life. Two hundred and six deaths resulted from the May tornadoes; the other deaths due to these storms were, by months: January, 4; March, 124; April, 11; June, 2; July, 5; August, 1; October, 3; and December, 6. Three months, February, September, and November, had no fatalities.

Property losses that were reported from the tornadoes (crop losses included) were probably much less than the true losses, for it is seldom feasible to secure estimates for all parts of a long track, and often no trustworthy reports can be obtained. Estimated losses amount to $16,190,640. This is nearly twice the 1932 figure, but it has been exceeded three times in the last 18 years, and is far less than half of the 1927 figure. Tennessee reported property losses of $3,143,000, a decidedly greater total than any other State; Louisiana was second, with $2,133,300, and Michigan, New Jersey, Ohio, and Texas each had damages exceeding $1,000,000. In 4 other States, Alabama, Kansas, Mississippi, and Pennsylvania, such losses exceeded $500,000, and in 6 States, Arkansas, Iowa, Oklahoma, South Carolina, South Dakota, and Wisconsin, they were more than $250,000.

Several of the 1933 tornadoes were exceptionally severe. On May 1, at 4 p.m., two tornadoes in Bienville and Webster Parishes, La., caused 29 deaths, injured about 450 persons, and resulted in property damage of $1,450,000. The storm in Webster Parish is described as being the most destructive tornado of record in Louisiana. On March 31, 16 tornadoes occurred in Mississippi, the first in Washington County at 3:30 a.m., and the last in George County at 6 p.m. The total loss of life caused by this series of storms was 54, and the property damage exceeded $211,250. Two tornadoes in Jasper and Clarke Counties at 11 a.m. were responsible for 28 of the deaths. In Kentucky, a tornado on May 9 traversed a 30-mile path from Monroe County to Russell County; 34 persons were killed and 75 injured, and property losses were estimated at $200,000. The most destructive tornado of the year occurred over a 40-mile path in Tennessee on March 14. This storm took a total of 15 lives and property losses exceeded $2,200,000, mostly in Nashville. Six other tornadoes on the same afternoon brought the Tennessee losses to 44 lives and $2,889,000. The Nashville tornado is described in detail in the March 1933 issue of the Monthly Weather Review.

SYNOPSIS BY STATES

The list of States in which 1933 tornadoes occurred with fatal consequences, and the number of fatalities, is as follows: Alabama, 26; Arkansas, 17; Georgia, 2; Illinois, 6; Kansas, 5; Kentucky, 36; Louisiana, 46; Mississippi, 58; Missouri, 3; Nebraska, 8; North Dakota, 4; Ohio, 1; Oklahoma, 11; South Carolina, 19; South Dakota, 1; Tennessee, 87; Texas, 30; and Wisconsin, 2. Tornadoes occurred without loss of life in 13 other States, namely: California, Colorado, Florida, Idaho, Indiana, Iowa, Maryland, Michigan, Montana, New Jersey, New Mexico, Pennsylvania, and Wyoming.

It will be noted that in several instances the tornadic character of a storm is given as somewhat doubtful, but in these cases the presence of marked rotary winds over a rather narrow area was taken as sufficient evidence to classify the storm as a tornado. There were 17 States in which no tornadoes occurred in 1933: Arizona, Delaware, Minnesota, Nevada, New York, North Carolina, Oregon, Utah, Virginia, Washington, West Virginia, and the New England group. Summarized geographically, only 2 of the States partially or wholly to the west of the 110th meridian and only 3 of those States partially or wholly to east of the 80th meridian experienced tornadoes in 1933, while with the exception of Minnesota, all States between these two meridians were affected by such storms.

BOUNDARY-CROSSING TORNADOES

Four 1933 tornadoes definitely crossed State boundaries, and thus appear twice each in the table where the count would appear to be 264 instead of the actual 260. A fifth tornado (Kansas no. 18) may have originated in Oklahoma, but conclusive proof of this is lacking. Under the State names the length of path, deaths, and property losses are entered only for the portions within the respective States; but for convenience there are entered here the total lengths, deaths, and losses when such data are available. In the case of the Arkansas-Texas tornado of April 26, complete data for Arkansas are lacking. The length of path of the Arkansas-Missouri tornado of May 1 is not known, but the total damage was about $100,000, and no deaths were reported in Missouri; the Indiana-Ohio storm of May 9 traversed a path estimated to be approximately 173 miles long, caused no fatalities, and did damage to the extent of $1,880,500. The Kansas-Missouri storm of May 12 covered about 27 miles, but the total damage was only about $15,000 and no one was killed.

SPEED OF ADVANCE

Other than the few instances noted in the Iowa and Illinois table there were hardly any cases when the time of the passing of a tornado was so accurately reported from two or more places that the velocity of advance could be estimated satisfactorily. A speed of 25 miles per hour is indicated for Illinois no. 2 and 24 miles per hour for Iowa no. 12, while the Indiana-Ohio storm of May 9 is thought to have averaged about 30 miles per hour.

SUMMARY FOR PAST YEARS

The table below gives the total number of tornadoes, deaths resulting from such storms, and the estimated property loss for each of the years from 1916:

Year	Number reported	Aggregate loss of life	Aggregate reported property losses	Year	Number reported	Aggregate loss of life	Aggregate reported property losses
1916	86	140	$2,511,500	1926	111	144	$4,318,950
1917	121	508	15,007,700	1927	164	540	43,445,650
1918	81	134	7,631,200	1928	203	92	13,235,600
1919	65	205	6,861,500	1929	197	274	10,049,400
1920	87	498	15,205,000	1930	192	179	12,289,100
1921	106	202	5,406,300	1931	94	36	3,215,400
1922	108	133	6,630,000	1932	152	394	8,988,525
1923	100	109	2,958,750	1933	260	362	16,190,640
1924	130	376	26,120,850				
1925	119	794	24,023,900	Total	2,376	5,120	224,089,965

ITEMS OF TABLE

Where two county names appear, the word "and" between them indicates that the tornado path began in the first named and was confined to those counties, unless it was one of the few tornadoes that crossed a State boundary, in which case merely the portion within the single State is indicated. The word "to" between names implies that three or more counties were in the path.

The direction of advance is entered usually to the nearest of eight chief compass points. If the tornado changed direction, the average direction is shown.

The length of path for a "not continuous" storm is not the length devastated but the entire distance from first havoc to last. The width of path, in case more than one width was reported, is the average as well as it can be computed.

When no deaths occurred, but it is known that injuries resulted, a reference and footnote are employed. The number of injuries is frequently known only indefinitely, as "several" or "some" (for either of which "several" is used) or "a few." In case there is a definite number of 2 to 4, reference to "a few" is entered, while 5 to 9 are shown as "several."

Therefore "0" deaths without a reference indicates that not even injuries were reported.

Tornadoes of 1933, arranged by States

State and date	Hour	County	Direction of advance	Length of path	Width of path	Deaths	Property losses	Remarks
ALABAMA				*Miles*	*Yards*	*Number*	*Dollars*	
1. Mar. 18	6 p.m.	Lee	NE	(1)	25	[2] 0	35,000	Tornado touched ground 6 times.
2. Mar. 31	5 p.m.	Baldwin	NE	8	250	1	125,000	
3. Mar. 31	do	Escambia and Conecuh	NE	12	200	[3] 0	125,000	50 persons injured.
4. Mar. 31	7 p.m.	Baldwin	NE	8	300	0	10,000	
5. Mar. 31	8 p.m.	Geneva	NE	[4] 7	140	[5] 0	3,000	
6. May 4	4:45 a.m.	Marion	NE		200	0	30,000	
7. May 5	12:30 a.m.	Choctaw and Marengo	NE	35	440	[3] 4	60,000	30 persons injured.
8. May 5	2:30 a.m.	Bibb to St. Clair	NE	70	500	[2] 21	253,900	196 persons injured.
9. May 5	A.m.	Crenshaw	NE	(1)	9	0	(6)	
10. May 5	3 a.m.	Jefferson	NE		100	[7] 0	4,000	
11. Nov. 21	6:10–6:16 p.m.	Calhoun	E		33	[5] 0	2,500	Damaged C.C.C. camp; 9 persons injured.
ARKANSAS								
1. Mar. 14	5 p.m.	Craighead and Mississippi	E	33	433	[5] 0	17,000	
2. Mar. 18	3:30 p.m.	Saline and Pulaski	E	18	200	[7] 0	15,000	
3. Mar. 30	5 p.m.	Union	NE		433	[2] 1	2,000	
4. Mar. 30–31	Midnight	Chicot	E	5	866	0	8,000	
5. Apr. 10	2:30 p.m.	Sharp	E	7	866	0	4,500	
6. Apr. 10	P.m.	Miller	NE			0	(8)	Probably originated in Texas, but no record of damage in that State.
7. Apr. 26	do	Little River	NE			0	(9)	Continuation of Texas no. 11.
8. Apr. 29	7 p.m.	Garland	NE	(1)	(9)	0	3,000	
9. Apr. 29	10 p.m.	Faulkner	E	1	(9)	0	1,000	
10. May 1	1:30 p.m.	Fulton	NE		870	[2] 3	30,000	2 tornadoes; 17 persons injured.
11. May 1	2:30 p.m.	do	NE		200			Continued into Missouri.
12. May 1	4 p.m.	Columbia	NE		66	[3] 6	5,000	
13. May 1	Midnight	Chicot	NE			[2] 3	50,000	
14. May 4	4 p.m.	do	E	3		0	50,000	Path wide.
15. May 4	P.m.	Izard	NE	6	(9)	0	500	
16. May 7	3 p.m.	White	NE	26	(9)	0	1,000	
17. May 7	4 p.m.	Poinsett	E	16	433	[2] 0	25,000	
18. May 12	11 p.m.	Crawford	NE		(9)	0	500	
19. May 12	11:30 p.m.	Washington	NE		66	0	200	
20. May 13	4 a.m.	Benton	SE	5	333	0	6,000	

Footnotes at end of table.

Tornadoes of 1933, arranged by States—Continued

State and date	Hour	County	Direction of advance	Length of path	Width of path	Deaths	Property losses	Remarks
ARKANSAS—con.				*Miles*	*Yards*	*Number*	*Dollars*	
21. May 13	7:30 p.m.	Izard	NE	3	333	[3] 2	30,000	
22. May 13	9:10 p.m.	Randolph	NE		433	[3] 2	10,000	
23. May 20	4 p.m.	Columbia	NE		(9)	0	(8)	
24. June 25	3 p.m.	Polk	E		(9)	0	500	
25. July 22	3:40 p.m.	Nevada	W	1	100	0	3,000	
26. Dec. 5	6:30 p.m.	Ashley	NE	6	166	[5] 0	8,000	
CALIFORNIA								
1. Mar. 16	3 p.m.	San Joaquin		(1)	(9)	0	(8)	
2. Mar. 16	4:15 p.m.	Merced		(1)	(9)	0	2,000	
COLORADO								
1. Apr. 18	P.m.	Denver			10	0	(8)	
FLORIDA								
1. Mar. 31	8:30 p.m.	Escambia	NE	12	150	[5] 0	1,000	
2. Mar. 31	9:30 p.m.	Okaloosa	E	35	1,760	0	1,100	
3. Apr. 2		Madison				0	1,000	
4. Apr. 5		Sumter	N	5	440	0	1,000	
5. Apr. 9		Martin				0	(8)	
6. Oct. 4–5	Midnight	Dade	ENE	1	60	0	5,000	
7. Oct. 5	1–2 a.m.	Broward				[2] 0	(8)	2 tornadoes.
GEORGIA								
1. Jan. 25		Brooks	NE	(1)	50	[5] 2	76,500	
2. Apr. 3	7:43 p.m.	do			35	[3] 0	(8)	
3. May 8		Turner		(1)	34	0	(8)	Tornadic character somewhat doubtful.
IDAHO								
1. May 17	6 p.m.	Idaho	NE	4	100	0	(8)	Funnel cloud plainly seen.
ILLINOIS								
1. Apr. 30	Noon	Kane		2½	100	[2] 0	25,000	
2. May 1	3:30 p.m.	Fulton and Peoria	NE	12	300	[3] 4	40,000	Storm moved at rate of 25 miles per hour. 30 persons injured.
3. May 9	6 p.m.	Hamilton and White	SE	8	160	[2] 2	5,000	
4. May 12	11 p.m.	Pike	NE	20	660	[2] 0	10,000	
INDIANA								
1. Mar. 13	8:30 p.m.	Kosciusko to Allen	E		1,760	[7] 0	50,000	
2. Mar. 13	11 p.m.	Wells				0	(8)	
3. May 9	5:15–5:30 p.m.	Ripley			225	0	10,000	Funnel cloud of this storm observed from Rising Sun, Ohio.
4. May 9	Early morning	Warren to Wayne	SE	[11] 138	2,500	0	88,500	Passed into Ohio after affecting 7 Indiana counties.
5. Aug. 12	4–5 p.m.	Pike	SE	½	440	0	10,000	Funnel cloud observed.
IOWA								
1. Apr. 29	P.m.	Taylor	N	(10)	(9)	0	(8)	
2. Apr. 29	6 p.m.	Powesheik	N	(10)	(9)	0	(8)	
3. Apr. 29	7 p.m.	Lyon	NE	(10)	(9)	0	(8)	Funnel did not touch ground.
4. May 7	2 p.m.	Plymouth	N	(10)	(9)	0	(8)	
5. May 7	do	Plymouth and Sioux	N	12	(9)	[7] 0	15,000	4 funnel clouds seen depending from principal vortex.
6. May 7	Afternoon	Plymouth	N	(10)	(9)	0	(8)	
7. May 7	P.m.	Calhoun	NE	4	(9)	0	(8)	
8. May 7	do	Ida and Cherokee	N	9	(9)	0	2,000	Some livestock killed.
9. May 7	do	Calhoun	N	12	(9)	0	4,000	
10. May 7	do	Webster	N	(10)	(9)	0	1,000	
11. May 7	do	do	N	(10)	(9)	0	1,000	Path very short.
12. May 7	4 p.m.	Polk and Story	N	12	200	0	3,000	Speed 24 miles per hour.
13. May 7	4:30 p.m.	Wright	NE	(10)	(9)	0	5,000	
14. May 7	5:30 p.m.	Kossuth	N	(10)	(9)	0	500	
15. May 19	7:30 a.m.	Marshall	SE	(10)	(9)	0	(8)	
16. May 19	5:30 p.m.	Sac	E		(9)	0	(8)	Length of path considerable.
17. May 19	8 p.m.	Hamilton	ESE	21		0	75,000	
18. May 19	11 p.m.	Muscatine	E	20	(9)	0	(8)	
19. June 24	9:15 p.m.	Dallas		(10)	(9)	0	2,500	
20. July 1	7 p.m.	Butler	SE	(10)	(9)	0	8,500	
21. July 1	11 p.m.	Floyd	SE	(10)	(9)	0	10,000	
22. July 1	do	Wright	ESE	25	(9)	0	300,000	
23. July 7	2 p.m.	Buena Vista	SW	25	(9)	0	4,000	
KANSAS								
1. Mar. 30	4:20 p.m.	Osage	NE	1	75	0	1,000	
2. Mar. 30	4:30 p.m.	Osage and Douglas	NE	[4] 7	250	0	2,000	
3. Mar. 30	6 p.m.	Shawnee	NE	(1)	10	0	(8)	
4. Apr. 8	4 p.m.	Jefferson	NE	3	(9)	0	(9)	
5. Apr. 19	5:15 p.m.	Norton and Phillips	NW	6	225	[2] 0	12,000	5 or 6 tornado clouds seen at about same time.
6. Apr. 28	P.m.	Phillips				0	(9)	
7. Apr. 29	4:30 p.m.	Anderson	NE	16	50	0	5,000	
8. Apr. 29	5:30 p.m.	Leavenworth	E	1	880	0	10,000	Tornadic character somewhat doubtful.

Footnotes at end of table.

Tornadoes of 1933, arranged by States—Continued

State and date	Hour	County	Direction of advance	Length of path	Width of path	Deaths	Property losses	Remarks
KANSAS—con.				*Miles*	*Yards*	*Number*	*Dollars*	
9. Apr. 29	7 p.m.	Bourbon	NE.	4½	350	0	50,000	
10. May 12	1 p.m.	do	NE.	[11] 24	660	[7] 0	15,000	Continued into Missouri. (Ended near Hume.)
11. May 17	3:30 p.m.	Shawnee	SE.	1	880	0	200	Funnel cloud did not reach ground.
12. May 17	6 p.m.	Pottawatomie and Marshall.	NNE.	11	880	[2] 0	20,000	5 funnel-shaped clouds seen.
13. May 17	7:45 p.m.	Lyon	NW.	4	150	0	10,000	
14. May 20	P.m.	Rush				0	2,000	Tornadic character somewhat doubtful.
15. May 20–21	Night	do				0	(8)	
16. May 22	4:25 p.m.	Finney	NE.	20	200	[3] 1	25,000	Occurred during duststorm.
17. May 22	5:20 p.m.	Rawlins	NE.	21	(9)	0	10,000	
18. May 22	5:29 p.m.	Seward	NE.	8	1,000	[3] 4	750,000	Probably originated in Oklahoma; 150 injured.
19. May 23	1:10 a.m.	Brown		5	100	0	300	Tornadic character somewhat doubtful.
20. June 5	6 p.m.	Decatur	NE.	1	20	[3] 0	40	
21. June 27	6–7 p.m.	Pottawatomie	SE.			0	2,000	Do.
22. June 29	7 p.m.	Republic		10		0	2,000	Do.
23. June 29	do	Lincoln	NE.	21	880	0	1,000	Occurred during heavy hailstorm.
24. July 8	do	Harvey	NE.	3½	1,760	0	5,000	3 funnel-shaped clouds observed.
25. July 18	P.m.	Grant	SE.	10	(9)	0	250	
26. Aug. 19	do	Stanton	NW.	3	440	0	500	
27. Aug. 20	3:30 p.m.	Harper and Sumner	NE.	1	200	0	5,000	
28. Aug. 26	4:30 p.m.	Kingman	NE.	9	1,760	0	20,000	Width of path somewhat doubtful.
29. Sept. 1	3:15 p.m.	Chautauqua	NE.	5	50	0	400	
30. Sept. 18	4 p.m.	Scott	NE.	1	200	0	1,000	Occurred during duststorm; funnel cloud not seen.
KENTUCKY								
1. May 9	8:30 p.m.	Monroe to Russell	NE.	[4] 30	250	[3] 34	200,000	75 persons injured
2. May 9	do	Metcalf and Adair	NE.		400	[3] 2	45,000	12 persons injured.
LOUISIANA								
1. Jan. 24	3–3:30 p.m.	Livingston and Tangipahoa.		35	300	[3] 0	48,300	
2. Feb. 7	8 a.m.	Acadia	NE.	⅛	66	0	4,500	
3. Feb. 7	9:30 a.m.	Iberia	NE.	⅛	65	0	2,000	
4. Feb. 7	10:45 a.m.	St. John the Baptist	NE.	7	1,000	0	30,000	Funnel cloud observed high.
5. Feb. 7	11 a.m.	Terrebonne	NE.	½	100	0	500	
6. Mar. 30	4:30 p.m.	Red River and Jackson		40	900	[3] 7	465,000	40 persons injured.
7. Mar. 31	9:55–11 a.m.	St. Helena and East Baton Rouge.	NE.	[4] 40	200	[3] 3	55,000	
8. Mar. 31	12 noon	St. Tammany	NE.	20	70	0	17,000	
9. May 1	4 p.m.	Bienville	NE.	5	880	[3] 6	200,000	50 persons injured.
10. May 1	do	Webster	E.	6	660	[3] 23	1,250,000	About 400 persons injured and 1,200 homeless. Most destructive tornado of record in Louisiana.
11. May 4	6:30 p.m.	Madison		10	500	[3] 1	35,000	15 persons injured.
12. Dec. 5		Sabine	NE.		(9)	1	(5)	Path short.
13. Dec. 5	6:30 p.m.	Caddo and Bossier	NE.	1	(9)	[5] 0	7,000	
14. Dec. 5	8:30 p.m.	Sabine	NE.	(1)	(9)	1	10,000	
15. Dec. 17	8:15–8:30 a.m.	Caddo	NE.	8	100	[3] 4	9,000	19 persons injured.
MARYLAND								
1. Aug. 10	8:30 a.m.	Frederick	NE.		25	0	(5)	
MICHIGAN								
1. Jan. 19		Southeastern portion of State.				[3] 0	1,000,000	
2. Apr. 30	6 p.m.	Missaukee			65	0	10,000	
3. May 1–2	P.m.	Genesee	NE.	9	(9)	[3] 0	50,000	Tornadic character somewhat doubtful.
4. May 19	3 p.m.	Lapeer			220	[3] 0	100,000	
5. May 26	do	do	NE.	50	125	[3] 0	60,000	
MISSISSIPPI								
1. Jan. 24	7 p.m.	Amite	NE.		33	0	(5)	
2. Mar. 18	5:30 p.m.	Tishomingo			100	[4] 0	5,000	
3. Mar. 30	10 p.m.	Leflore	NE.		33	0	20,000	
4. Mar. 31	3:30 a.m.	Washington	ENE.		100	[4] 6	10,000	27 persons injured.
5. Mar. 31	8 a.m.	Coahoma	NE.		(9)	1	2,000	Width of path varied.
6. Mar. 31	8:15 a.m.	Quitman	NE.		33	0	15,000	
7. Mar. 31	do	do	NE.		440	0	5,000	
8. Mar. 31	8:30 a.m.	Lincoln	NE.		440	[3] 2	10,000	25 persons injured.
9. Mar. 31	10 a.m.	Simpson	NE.		150	[5] 0	(6)	
10. Mar. 31	do	Lee	NE.		100	[5] 0	75,000	
11. Mar. 31	do	Holmes	NE.		200	[5] 0	2,750	
12. Mar. 31	10:15 a.m.	Lowndes	NE.			0	4,500	
13. Mar. 31	10:30 a.m.	Jones	NE.		200	[3] 7	5,000	
14. Mar. 31	10:45 a.m.	Smith	NE.		150	[3] 7	(5)	
15. Mar. 31	11 a.m.	Jasper	NE.		266	[3] 16	15,000	70 persons injured.
16. Mar. 31	do	Clarke	NE.		266	[3] 12	20,000	85 persons injured.
17. Mar. 31	12 noon	Pike and Walthall	NE.			1	4,000	
18. Mar. 31	3 p.m.	George	NE.		440	[3] 2	40,000	17 persons injured.
19. Mar. 31	6 p.m.	do	NE.		440			

Footnotes at end of table.

Tornadoes of 1933, arranged by States—Continued

State and date	Hour	County	Direction of advance	Length of path	Width of path	Deaths	Property losses	Remarks
MISSISSIPPI—Con.				*Miles*	*Yards*	*Number*	*Dollars*	
20. Apr. 26	11 p.m	Washington	NE			0	10,000	
21. Apr. 29	11:15 p.m	do	NE			[3] 1	25,000	
22. Apr. 30	1 a.m	Yazoo	NE			[3] 3	500,000	40 persons injured.
23. May 4	8 p.m	Warren to Sharkey	NE			0	(5)	Path not continuous.
24. May 6	1–2 a.m	Oktibbeha	NE			[3] 0	3,000	
25. May 6	do	Lee	E			[3] 0	6,000	
MISSOURI								
1. Jan. 18	8:50 p.m	Dent	NE	(1)	(9)	0	5,000	
2. Jan. 18	11 p.m	Stoddard	NE	(1)	167	[7] 0	1,000	
3. Jan. 21	5:30 p.m	Benton and Hickory	NE	(1)	440	[3] 0	7,000	Storm touched ground at intervals.
4. Jan. 21	Night	Polk	NE	(1)	(9)	0	500	
5. May 1	2:15 p.m	Oregon				[3] 0	70,000	Continuation of Arkansas no. 10.
6. May 12	Afternoon	Bates		[11] 3		0	(6 11)	Entered from Kansas.
7. May 13		Ripley				[2] 1	(3)	
8. May 20	2 p.m	Andrew and Gentry	E		(9)	0	10,000	Several funnel clouds observed, some of which did not reach ground.
9. May 25		Howell				[7] 2	2,000	
10. June 25		Lawrence and Barry			(9)	0	(5)	Path short.
11. Aug. 2	4:15 p.m	Buchanan		3	(9)	0	250	Path not continuous.
MONTANA								
1. May 22	6–6:15 p.m	Roosevelt	NE		125	[3] 0	50,000	30 persons injured; 2 tornadoes.
2. Aug. 14		Treasure or Yellowstone	N			0	(5)	In isolated region; details lacking.
3. Dec. 21	2:30 a.m	Chouteau	SE		66	0	700	Tornadic character somewhat doubtful.
4. Dec. 27	9 a.m	Judith Basin	NE		7	0	1,000	Do.
NEBRASKA								
1. Apr. 19		Sioux				0	500	
2. Apr. 29		Cedar		(1)	(9)	0	1,000	
3. May 22	5:30–6:30 p.m	Lincoln		10	880	[2] 0	100,000	
4. May 22	6:20 p.m	McPherson			880	[3] 8	40,000	
5. June 7	4:30 p.m	Madison	NE	(1)	(9)	0	50,000	
NEW JERSEY								
1. May 24	4–6 p.m	Camden and Burlington				0	1,000,000	Do.
2. June 7	6 p.m	Gloucester				[2] 0	15,000	Small tornado.
3. Aug. 18	P.m	Monmouth				0	(5)	
NEW MEXICO								
1. Apr. 26	4 p.m	Union	NE	(1)	(9)	0	4,000	
2. June 4	2:30 a.m	Lea				[7] 0	(5)	
NORTH DAKOTA								
1. May 22	7 p.m	Grant	NE	25		[3] 4	100,000	Tornado damage reported in Sioux, Hettinger, and southern Morton Counties on this date.
2. June 5	5:40–6:30 p.m	Ramsey	ENE			0	(5)	2 tornadoes.
OHIO								
1. Mar. 13	9–10 p.m	Allen and Hardin	E			0	150,000	
2. May 1	11:45 p.m	Wood		(1)	(9)	0	(5)	
3. May 9	6:37 a.m	Darke to Fayette	SE	[11] 35	660	[3] 0	1,000,000	Appears to have entered State over southern Darke County from Indiana. Struck Dayton at 6:37 a.m.
4. May 13	5:30 a.m	Greene		2	660	[3] 1	50,000	25 persons injured.
5. July 24	1 a.m	Portage				0	4,000	
OKLAHOMA								
1. Jan. 21	4:45 p.m	Mayes	NE	(1)	150	[2] 0	500	Funnel cloud visible.
2. Mar. 30	3 p.m	Caddo	NE			0	(5)	Do.
3. Mar. 31	5 p.m	Comanche	NE	3	440	0	6,000	
4. Apr. 19	6:20 p.m	Tillman	NE	4	1,320	[2] 0	21,000	
5. Apr. 19	7 p.m	Grady	NE	15	880	[3] 2	250,000	25 persons injured.
6. May 11	4 p.m	Tillman	NE	15	1,760	[7] 1	110,000	
7. May 13	3:30 p.m	Cherokee	NE	15	880	[3] 0	4,000	
8. May 13	5 p.m	Tulsa	NE	14	220	[3] 5	15,000	
9. Oct. 14	9:30 p.m	Beckham	NW		100	[7] 3	3,000	
10. Oct. 15	4 p.m	Bryan	NE	1	50	0	(5)	
PENNSYLVANIA								
1. May 20	5:46 p.m	Berks	ENE		14	[3] 0	750,000	Funnel cloud seen.
SOUTH CAROLINA								
1. May 5	2:30 p.m	Anderson to Spartanburg	E	45	300	[3] 19	350,000	100 persons injured; path not continuous.
2. Sept. 6	6 a.m	Charleston	NNW	½	33	0	10,000	On Sullivan's Island.

Footnotes at end of table.

Tornadoes of 1933, arranged by States—Continued

State and date	Hour	County	Direction of advance	Length of path	Width of path	Deaths	Property losses	Remarks
SOUTH DAKOTA				*Miles*	*Yards*	*Number*	*Dollars*	
1. May 18	6 p.m.	Deuel	NE	5	50	0	5,000	
2. May 22	5 p.m.	Pennington	NE	6	880	[3] 0	(8)	
3. May 22	5:25 p.m.	Perkins	NE			0	4,200	
4. June 3	6 p.m.	Grant and Roberts	NE			1	100,000	
5. June 27	P.m.	Grant	NE		(9)	0	3,000	
6. June 30	4–5 p.m.	Aurora and Davison	E			0	155,000	Path not continuous.
7. July 6	P.m.	Charles Mix	NE		(9)	[2] 0	(8)	
8. July 19	8:30 p.m.	Spink	ESE		(9)	0	5,000	
9. July 19	9 p.m.	Spink and Beadle	E		(9)	0	75,000	
10. Sept. 2	9:30 p.m.	Sanborn	NE	(1)	(9)	0	(8)	
11. Sept. 10	P.m.	do	NE	(1)	(9)	0	(8)	
TENNESSEE								
1. Mar. 14	5:30 p.m.	Campbell	NE		440	[3] 1	39,000	64 persons injured; 2 tornadoes.
2. Mar. 14	5:30–5:45 p.m.	Claiborne	NE		440	[3] 12	375,000	102 persons injured; 2 tornadoes.
3. Mar. 14	7 p.m.	Hancock	NE		(9)	[3] 5	75,000	
4. Mar. 14	7:30–8:15 p.m.	Davidson to Smith	NE	40	500	[3] 15	2,200,000	Described on p. 84, M.W.R. for March 1933.
5. Mar. 14	8:45 p.m.	Sullivan	NE		(9)	[3] 11	200,000	200 persons injured.
6. Mar. 19		Monroe	NE	(1)	(9)	0	4,000	
7. May 7	4:36 p.m.	Tipton	NE			[3] 6	75,000	
8. May 9	10:30 p.m.	Wilson	NE			[3] 2	} 75,000	Scores injured.
9. May 9	do	Pickett	NE			[3] 2		
10. May 9	Midnight	Overton	NE			[3] 33	100,000	Over 100 persons injured.
11. May 12	1 p.m.	Montgomery	NE		(9)	[7] 0	(8)	
TEXAS								
1. Jan. 20	4:30 p.m.	Lamar and Red River	NE	35	200	[3] 2	10,000	23 persons injured.
2. Jan. 21	5 p.m.	Cass	NE	¼	100	0	1,000	
3. Jan. 24	1:30 p.m.	Harris	NE	2	133	[3] 0	(8)	
4. Jan. 24	P.m.	Jefferson	NE	(1)	(9)	[3] 0	1,000	
5. Mar. 30	2:30 p.m.	Kaufman				0	2,000	
6. Mar. 30	3 p.m.	Houston and Trinity	NE	5		[3] 0	10,000	13 persons injured.
7. Mar. 30	do	Smith	NE			[4] 2	75,000	
8. Mar. 30	do	Shelby	NE			[3] 2	75,000	29 persons injured.
9. Mar. 30	do	San Augustine	NE			0		See second storm of same date.
10. Mar. 30	5:15–6:30 p.m.	Angelina, Nacogdoches, and San Augustine.	NE	30	1,000	[3] 10	200,000	56 persons injured (including no. 9).
11. Apr. 26	7:30 p.m.	Bowie	NE	[11] 8	150	[3] 5	14,000	38 persons injured. Continued into Arkansas.
12. Apr. 29	3 p.m.	Rusk	NE	10	100	[3] 0	10,000	
13. May 3	do	Dickens	NW	1	50	0	300	
14. May 3	4:30 p.m.	Fisher	NE	5	150	[7] 0	15,000	
15. May 3	4:50 p.m.	Taylor	NE	5	440	[2] 0	10,250	
16. May 10	7:10 p.m.	Brown	SW	7	200	[5] 4	250,000	
17. June 22		Harrison		(1)	(9)	0	(8)	
18. July 4	5 p.m.	Rockwall	NW			0	25,000	
19. July 5	Night	La Salle			(9)	0	(8)	
20. July 30	3:15 p.m.	Dallas	N	1	35	[3] 5	500,000	30 persons injured; dimensions are of path of greatest destruction.
21. Aug. 24	12:40 p.m.	Armstrong	S		33	0	50,000	No injuries reported.
WISCONSIN								
1. Apr. 30	3 p.m.	Pepin	S	2	100	0	50,000	
2. May 23	3:30 p.m.	Wood	NNE	15	100	[7] 0	75,000	
3. June 5	5:15 p.m.	Green Lake	SSE	[4] 10	150	[2] 1	105,000	
4. July 1	7:30 p.m.	Sauk	SE		250	0	5,000	
5. Aug. 10	4:45 p.m.	Polk	ENE	12	50	0	} 25,000	2 tornadoes; a third funnel visible but it did not touch ground.
6. Aug. 10	do	do	ENE	[4] 20		[3] 1		
7. Sept. 26	Midnight	Dane		(1)	(9)	0	5,000	
WYOMING								
1. June 10		Goshen	NE		(9)	0	(8)	
2. June 21		Albany	NE		(9)	0	(8)	
3. June 22		Sweetwater	NE		(9)	0	(8)	

[1] Less than a mile.
[2] A few persons injured.
[3] Injuries to 10 or more persons.
[4] Path not continuous.
[5] Several persons injured.
[6] Negligible.
[7] One person injured.
[8] Damage occurred—no estimate secured.
[9] Narrow.
[10] Path short.
[11] Within this State.

HAIL, 1933

Information about damaging hail has once more been collected, but, as in 1932, no charts to indicate occurrence during the year are included in this report. The regular and cooperative stations of the Bureau have furnished the greater part of this information, which was assembled first by the officials in charge at the section centers. Total hail losses for the year are estimated at over $6,773,810.

January, February, and December were the months of 1933 in which no material damage by hail was reported, though hail occurred somewhere in the United States every month. October and November brought severe hail to only two States; in October a series of hailstorms in Oklahoma resulted in damage estimated at $45,500, and in Illinois a storm lasting about 10 minutes caused $70,000 loss in November. Some of the stones were reported to be "as large as hen's eggs." During September hailstorms were more frequent, but actual losses are given at only $16,500, of which $11,000 occurred in New Mexico, $5,000 in Montana, and $500 in Wisconsin; several other States reported "considerable" damage, but gave no estimates. The other months, arranged according to damage, were July, $2,026,580; April, $1,962,925; August, May, June, and March; during March such losses were placed at only $82,700.

No hail occurred in Nevada, New Jersey, or the Virgin Islands, and no damage was reported in Alaska, California, Kentucky, North Dakota, Oregon, Puerto Rico, or Utah. In Minnesota, Mississippi, and New England hail losses were "considerable," but no figures are available. In several instances damage would have been much greater if crops had been normally advanced. In 20 States the losses for the year exceeded $50,000; in 15 they were $100,000 or greater; in 5 States, (Colorado, Kansas, Louisiana, Nebraska, and Texas) they exceeded $500,000; while in 2 of these, Louisiana and Nebraska, they were more than $1,000,000. In Louisiana the damage was confined chiefly to April and May; in Nebraska to June, July, and August.

In Montana a total crop loss by hail of $96,100 was paid by private insurance companies, and figures of the State hail-insurance board at Helena show that an additional $36,858 was paid by the State, making a total for 1933 of $132,958, which is estimated as about one-sixth of the total hail damage. In South Dakota the 13 outstanding hail-storms of the year caused damage to crops, buildings, and livestock amounting to $291,000. In Iowa the total hail damage to crops in 1933, reported by township assessors, was $3,188,099, which is 54 percent more than in 1932. Due to the low values placed on crops the damage of 1933 would have ranked high as compared with that reported 10 to 15 years ago. The greatest county damage was in Winneshiek County, amounting to $503,935. Ten counties in Iowa had no hail. The greatest township damage reported in Iowa was in Elk Township, Buena Vista County, where it amounted to $111,338.

The size of the hailstones varied considerably, some being reported no larger than small peas, while in a few unusually severe storms the stones were said to be as big as baseballs.

As in 1932, no hailstorms during the year in question compared in length of path with the Kansas storm of May 4, 1931 (100 miles), or the Montana storm of August 7, 1931 (250 miles); nor was any single 1933 storm as destructive as the above Kansas storm, nor the Connecticut one of July 22–23, 1931, both of which resulted in damage estimated at $1,000,000.

LOSSES FROM WINDSTORMS, 1933

For the eighteenth consecutive year statistics have been collected, chiefly through the field-service officials of the Bureau, of the losses of property and life resulting from all classes of severe winds except those that were considered to have been tornadoes. The accompanying table shows the results; the amounts presented are merely estimates, and frequently it was not feasible to make even a rough estimate, so that a reference is substituted. In nearly all instances where such references appear they stand for comparatively small losses.

Losses from windstorms, other than tornadoes, by months and sections, 1933

[Figures, except in last column, indicate dollars]

Section	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year	Number of lives lost
Alabama		(1)	15,125			[2] 400							[2] 15,525	
Alaska				1,000						1,000		16,500	18,500	
Arizona					1,000		[2] 2,000	[2] 7,000					[2] 10,000	
Arkansas			[2] 77,100	8,700	2,000	[2] 4,000		(1)	(1)				[2] 91,800	1
California	(1)		(1)								(1)		(1)	
Colorado	1,000		3,000	300	[2] 8,300	600		1,000	600			[2] 600	[2] 15,400	
Florida	(1)		(1)	11,850	500	[2] 1,550	(1)		[2] 500,000	[2] 25,000			[2] 538,900	6
Georgia						525							525	
Hawaii														
Idaho			5,000					16,000					21,000	
Illinois			(1)		[2] 571,550	[2] 39,750	[2] 1,000,300	[2] 5,250	(1)			400	[2] 1,617,250	6
Indiana			20,000	(1)	[2] 25,000	[2] 20,000	3,400		(1)	5,000			[2] 73,400	11
Iowa				250	40,000	16,000	275,000		5,000		5,000		341,250	4
Kansas				53,750	218,250	15,000	36,800	51,000	1,300		(1)		[2] 376,100	1
Kentucky	500		100,000		100,000	(1)							[2] 200,500	
Louisiana			(1)	7,500			(1)						[2] 7,500	
Maryland-Delaware	(1)				(1)	(1)	(1)	17,500,000	(1)			(1)	[2] 17,500,000	13
Michigan	(1)	(1)	(1)	(1)	4,000	[2] 37,500	(1)		(1)	(1)			[2] 41,500	5
Minnesota			(1)		120,500	[2] 200,000	(1)	(1)	28,000		(1)		[2] 348,500	
Mississippi			38,900			(1)	(1)	(1)					[2] 38,900	
Missouri			[2] 200,000	(1)	[2] 3,000	1,400	(1)				(1)		[2] 204,400	
Montana			(1)	(1)			3,000	(1)	5,000		(1)	(1)	[2] 8,000	1
Nebraska	(1)			(1)	225,000	36,500	4,000						[2] 265,500	2
Nevada														
New England	2,000,000			100,000			(1)	[2] 1,000	1,500			2,000	[2] 2,104,500	
New Jersey	505,000		35,000	(1)	(1)	(1)		1,500,000	(1)				[2] 2,040,000	10
New Mexico					(1)								(1)	
New York	[2] 3,000	(1)	(1)		(1)	[2] 1,000,000	(1)	(1)	(1)	(1)			[2] 1,003,000	7
North Carolina	75,000	(1)	5,000	35,000	30,000	1,500	(1)	250,000	3,000,000				3,396,500	21
North Dakota		(1)	10,000			2,000					(1)		[2] 12,000	1
Ohio	(1)		(1)	20,000		(1)	(1)	(1)	(1)	(1)		(1)	[2] 20,000	
Oklahoma		(1)	(1)	[2] 4,000	5,500		65,000	10,700		10,000			[2] 95,200	1
Oregon												50,000	50,000	
Pennsylvania	[2] 30,000	(1)	(1)		635,000	40,000	20,000	800,000					[2] 1,525,000	15
Puerto Rico							(1)						(1)	
South Carolina	(1)		6,000	10,000	53,000	4,000	1,000		2,300				[2] 76,900	3
South Dakota					[2] 25,000	[2] 100,000	70,500				3,000,000		[2] 3,195,500	3
Tennessee		(1)	72,500		(1)			1,000					[2] 73,500	
Texas			[2] 4,000	45,000	300		303,500	[2] 500,000	16,903,100				[2] [3] 17,755,900	[2] 26
Utah														
Virginia	5,500	(1)	2,300		8,000	(1)	1,507,000	10,000,000	250,000				[2] 11,772,800	18
Virgin Islands							(1)						(1)	
Washington					(1)		(1)		(1)			500	500	
West Virginia				2,200	(1)		(1)	(1)					[2] 2,200	
Wisconsin	4,550	1,400	34,500		140,000	342,600	170,500	5,200	7,000	400			712,150	1
Wyoming	25,000	9,000	(1)								(1)	(1)	[2] 34,000	
Total	2,649,550	10,400	628,425	299,550	2,222,500	1,863,325	3,462,000	30,648,150	20,703,800	41,400	3,005,000	70,000	[2] 65,604,100	156

[1] Losses occurred; no estimate secured.
[2] Losses not readily estimated in addition to amount stated.
[3] Additional heavy loss of life and property in Mexico.

Deaths and fire losses caused by lightning, also havoc and loss of life caused by floods of streams, are omitted from the table, even though high winds were a feature of the electrical storm that caused the downpour. When hail or beating rain or both accompany the strong wind, or, in the colder months, sleet, glaze, or heavy snow, to aid in causing damage, an effort is made to estimate what share of the total loss was due to wind.

The number of deaths attributed to windstorms other than tornadoes in 1933 was 156 as compared with 306 in 1932. The total losses caused by these storms in 1932 was less than $43,000,000—that of 1933 was over $65,000,000, with Texas, Maryland-Delaware, and Virginia reporting 70 percent of the entire total. Losses in Texas and Maryland-Delaware from the September and August hurricanes amounted to $16,903,100, and $17,500,000, respectively.

August and September were the months of greatest loss of life and property damage, the most of which was caused by hurricanes. Seventeen tropical disturbances were charted during July, August, and September, 7 in August and 6 in September. Total property losses from these for August and September exceeded $51,000,000. The largest single loss occurred in the Maryland-Delaware section when the August 23 storm (described in the August Monthly Climatological Data for that section) caused 13 deaths and losses of over 17 million dollars. This same hurricane cost 15 lives and did damage of more than 10 million dollars in Virginia. The second greatest property loss occurred in Texas in September when the storm of the 4–5th passed inland over the lower Texas coast in the vicinity of Brownsville and resulted in 24 deaths and property losses of nearly 17 million dollars. This storm also caused heavy losses of life and property in Mexico.

In New England strong northeast winds caused damage estimated at $2,000,000 on January 26–29 along the Massachusetts, New Hampshire, and Maine coasts. On November 12 gales and duststorms over the entire State of South Dakota, except for limited areas in the Black Hills, caused losses of approximately $3,000,000.

The table below shows the deaths and property losses caused by windstorms other than tornadoes since 1916:

Year	Number of lives lost	Property damage	Year	Number of lives lost	Property damage
1916	65	$11,712,125	1926	357	$93,610,250
1917	25	1,400,550	1927	64	6,783,160
1918	79	7,502,200	1928	1,947	88,836,000
1919	344	28,170,760	1929	46	20,334,600
1920	42	4,735,400	1930	49	5,706,000
1921	65	13,174,650	1931	17	7,773,000
1922	133	5,055,800	1932	306	42,657,360
1923	68	5,261,800	1933	156	65,604,100
1924	78	13,545,750			
1925	88	11,612,380	Total	3,929	433,575,885

R. J. M.

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SUNSHINE, 1933

The following table gives for 160 stations the monthly amounts of sunshine and percentage of the possible, as derived from the automatic records made by an instrument designated the "thermometric recorder", illustrated in preceding volumes of this series.

This instrument does not record satisfactorily the duration of sunshine for about 1 hour after sunrise and for about 1 hour before sunset, and on this account it has been considered necessary to apply to the record for these hours what has been designated a "twilight correction." The amount of this correction is found by noting the comparative clearness of the sky during the time that elapses between the hour of sunrise and the moment the instrument begins to record and between the time the instrument ceases to act and the hour of sunset.

The average cloudiness of the whole sky is determined by numerous personal observations at all stations during the daytime, and is given in the column "daylight" under "cloudiness" in the tables of part III.

Sunshine, 1933

Stations	January		February		March		April		May		June	
	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible
Albany, N.Y	148	50	144	49	144	39	197	49	308	68	308	67
Albuquerque, N.Mex	246	78	251	82	307	83	310	79	375	86	336	77
Alpena, Mich	98	34	155	53	142	38	170	42	285	62	354	76
Amarillo, Tex	242	77	225	74	276	74	303	77	354	82	360	83
Asheville, N.C	141	45	131	43	217	58	255	65	299	69	311	71
Atlanta, Ga	149	47	110	36	268	72	269	69	338	78	334	78
Atlantic City, N.J	188	62	202	67	220	59	230	58	283	64	321	72
Augusta, Ga	182	57	125	40	298	80	266	68	344	80	343	80
Austin, Tex	113	35	142	46	199	54	288	74	310	73	369	87
Baker, Oreg	121	42	141	48	206	56	291	72	294	64	336	72
Baltimore, Md	176	58	178	59	194	52	252	63	228	51	334	75
Binghamton, N.Y	98	33	118	40	88	24	158	39	184	41	273	60
Birmingham, Ala	134	42	95	31	231	62	222	57	333	77	316	73
Bismarck, N.Dak	114	41	200	69	193	52	225	55	210	45	362	76
Block Island, R.I	149	50	163	55	182	49	192	48	249	55	270	60
Boise, Idaho	92	32	153	52	222	60	320	79	352	77	400	86
Boston, Mass	175	59	207	70	195	53	197	49	282	63	289	63
Brownsville, Tex	114	34	143	45	196	53	216	56	301	72	331	80
Buffalo, N.Y	144	49	152	51	134	36	221	55	260	57	344	75
Burlington, Vt	124	43	115	39	177	48	179	44	301	66	330	71
Canton, N.Y	115	40	124	42	162	44	175	43	302	65	347	74
Cape Henry, Va	169	55	166	55	227	61	226	57	249	57	310	70
Charles City, Iowa	129	44	185	63	196	53	231	57	196	43	357	78
Charleston, S.C	211	67	155	50	311	84	264	68	363	84	331	77
Charlotte, N.C	180	57	156	51	282	76	304	77	351	81	382	88
Chattanooga, Tenn	111	35	105	34	201	54	240	61	322	74	357	82
Cheyenne, Wyo	233	78	252	84	272	73	266	66	285	64	333	74
Chicago University, Ill	119	40	199	67	158	43	183	46	199	44	353	78
Cincinnati, Ohio	145	48	204	68	163	44	221	56	256	58	394	88
Cleveland, Ohio	121	41	164	55	132	35	197	49	234	52	368	81
Columbia, Mo	214	71	215	71	185	50	228	57	274	62	395	89
Columbus, Ohio	131	44	178	59	121	33	208	52	226	51	356	79
Concordia, Kans	217	72	214	71	202	54	264	66	272	61	369	82
Dallas, Tex	173	54	160	52	216	58	285	73	308	72	404	94
Davenport, Iowa	129	44	197	66	146	39	204	51	204	45	385	85
Del Rio, Tex	154	47	153	49	198	53	251	65	270	64	299	71
Denver, Colo	236	78	245	82	264	71	269	67	265	59	293	65
Des Moines, Iowa	173	59	226	76	201	54	226	56	228	50	376	83
Detroit, Mich	90	31	162	55	118	32	181	45	212	47	350	77
Devils Lake, N.Dak	141	51	187	65	263	71	258	63	283	60	375	78
Dodge City, Kans	251	82	234	77	287	77	298	75	341	77	382	86
Dubuque, Iowa	129	44	190	64	177	48	219	55	264	58	384	84
Duluth, Minn	98	35	170	59	212	57	236	58	266	57	365	77
Eastport, Maine	128	45	148	51	212	57	148	37	297	64	255	55
Elkins, W.Va	146	48	150	50	134	36	208	52	167	38	319	72
El Paso, Tex	227	71	234	76	330	89	349	90	408	95	346	81
Erie, Pa	88	30	127	43	96	26	191	48	223	49	362	79
Escanaba, Mich	110	39	146	50	120	32	186	46	255	55	334	71
Eureka, Calif	141	47	178	60	160	43	224	56	190	42	247	55
Evansville, Ind	160	52	180	59	164	44	231	58	229	52	387	87
Fairbanks, Alaska	41	25	108	46	246	67	306	67	288	49	323	50
Fort Smith, Ark	148	47	157	51	167	45	229	59	230	53	344	79
Fort Wayne, Ind	126	42	204	69	128	35	196	49	220	49	366	81
Fort Worth, Tex	189	60	161	50	216	58	273	70	299	70	393	92
Fresno, Calif	124	40	248	82	303	82	359	91	363	83	400	91

Sunshine, 1933—Continued

Stations	July		August		September		October		November		December		Annual	
	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible
Albany, N.Y.	297	64	234	54	197	52	200	58	107	37	88	31	2,371	52
Albuquerque, N.Mex.	359	81	324	78	318	86	287	82	245	79	258	85	3,617	81
Alpena, Mich.	340	72	333	77	214	57	111	33	59	21	69	25	2,331	49
Amarillo, Tex.	345	78	272	65	311	84	263	75	241	78	267	87	3,460	78
Asheville, N.C.	239	54	176	42	234	63	233	67	188	61	152	50	2,575	57
Atlanta, Ga.	265	60	254	61	264	71	231	66	222	71	174	57	2,878	64
Atlantic City, N.J.	255	56	222	52	229	61	247	71	169	56	140	48	2,705	60
Augusta, Ga.	299	68	297	72	312	84	274	78	236	75	195	63	3,170	70
Austin, Tex.	303	71	323	79	266	72	235	66	183	57	184	58	2,915	64
Baker, Oreg.	448	95	382	88	269	71	242	71	201	70	71	26	3,001	65
Baltimore, Md.	292	65	248	58	220	59	265	77	167	55	145	49	2,698	60
Binghamton, N.Y.	284	62	192	45	128	34	147	43	80	27	72	25	1,823	39
Birmingham, Ala.	238	54	244	59	286	77	251	72	222	71	146	47	2,717	60
Bismarck, N.Dak.	346	72	295	67	240	64	188	56	106	38	85	32	2,565	56
Block Island, R.I.	264	58	225	53	200	54	243	71	153	52	104	36	2,393	53
Boise, Idaho	457	98	409	95	320	85	292	86	250	86	66	24	3,334	72
Boston, Mass.	291	63	239	56	200	53	218	64	149	50	95	33	2,537	56
Brownsville, Tex.	260	62	270	67	263	71	276	77	199	61	245	75	2,812	63
Buffalo, N.Y.	382	82	306	71	221	59	196	57	102	35	86	31	2,550	55
Burlington, Vt.	326	70	269	62	190	51	139	41	62	22	65	23	2,276	48
Canton, N.Y.	290	62	253	58	187	50	143	42	72	25	99	36	2,268	48
Cape Henry, Va.	244	55	260	62	236	63	230	66	200	65	135	45	2,653	59
Charles City, Iowa	330	71	297	69	246	66	208	61	127	43	93	33	2,593	57
Charleston, S.C.	304	70	266	64	302	81	243	69	227	72	204	66	3,182	71
Charlotte, N.C.	341	77	282	68	300	81	304	87	242	78	194	64	3,318	74
Chattanooga, Tenn.	299	68	251	60	279	75	237	68	209	67	153	50	2,764	61
Cheyenne, Wyo.	334	73	278	65	248	66	318	93	229	77	199	69	3,246	74
Chicago University, Ill.	368	80	334	78	217	58	221	64	124	42	99	35	2,575	56
Cincinnati, Ohio	352	78	328	77	252	67	211	61	151	50	114	39	2,790	61
Cleveland, Ohio	357	77	315	74	212	57	181	53	78	26	65	23	2,423	52
Columbia, Mo.	384	85	276	65	271	73	223	64	209	69	158	54	3,032	68
Columbus, Ohio	290	64	257	61	213	57	192	56	109	36	86	30	2,367	52
Concordia, Kans.	379	83	287	67	295	79	298	86	221	74	166	57	3,184	71
Dallas, Tex.	336	77	341	82	285	77	271	77	202	64	187	60	3,167	70
Davenport, Iowa	351	76	274	64	231	62	195	57	138	47	72	25	2,525	55
Del Rio, Tex.	276	65	285	70	250	68	223	63	202	63	212	66	2,774	62
Denver, Colo.	320	70	272	64	276	74	290	84	236	79	180	62	3,145	71
Des Moines, Iowa	343	74	245	57	256	68	239	70	174	59	160	56	2,848	64
Detroit, Mich.	397	86	332	77	227	61	202	59	90	31	57	20	2,418	52
Devils Lake, N.Dak.	390	81	350	79	239	63	174	52	110	39	114	43	2,884	62
Dodge City, Kans.	393	87	306	73	315	84	298	86	246	81	243	82	3,594	81
Dubuque, Iowa	362	79	348	81	238	64	200	58	113	38	60	21	2,684	58
Duluth, Minn.	342	71	310	71	198	53	150	44	64	23	87	33	2,497	53
Eastport, Maine	261	55	198	45	147	39	151	45	118	41	96	35	2,159	47
Elkins, W.Va.	274	60	206	49	214	57	178	51	87	29	112	38	2,195	48
El Paso, Tex.	342	79	314	76	323	87	284	80	268	85	299	95	3,724	84
Erie, Pa.	383	83	320	75	216	58	152	44	46	16	24	8	2,229	47
Escanaba, Mich.	314	66	318	73	201	54	132	39	65	23	88	33	2,269	48
Eureka, Calif.	257	56	189	44	161	43	112	33	169	57	100	35	2,130	48
Evansville, Ind.	336	75	286	68	251	67	228	66	162	53	101	34	2,714	60
Fairbanks, Alaska	314	51	160	31	88	22	116	39	36	19	41	34	2,066	42
Fort Smith, Ark.	221	50	209	50	274	74	251	72	175	56	150	49	2,553	57
Fort Wayne, Ind.	355	78	317	74	196	52	206	60	90	30	67	23	2,427	54
Fort Worth, Tex.	336	77	315	76	256	66	256	73	188	60	194	62	3,075	68
Fresno, Calif.	435	97	414	99	366	98	317	91	279	91	102	34	3,710	82

Sunshine, 1933—Continued

Stations	January		February		March		April		May		June	
	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible
Galveston, Tex	129	40	98	31	204	55	249	64	289	69	365	87
Grand Junction, Colo	182	60	221	74	230	62	262	66	317	71	372	83
Grand Rapids, Mich	91	31	148	50	100	27	195	48	249	55	352	77
Green Bay, Wis	102	36	155	53	138	37	166	41	226	49	334	72
Greensboro, N.C	146	47	137	45	245	66	269	68	325	74	332	76
Harrisburg, Pa	135	45	162	54	161	44	254	64	213	48	336	75
Havre, Mont	147	54	178	63	281	76	266	65	302	64	354	73
Helena, Mont	116	42	116	40	207	56	207	51	302	65	336	71
Honolulu, Hawaii	193	56	153	48	191	51	222	59	217	53	191	48
Houston, Tex	111	34	103	33	180	48	237	61	257	61	325	77
Huron, S.Dak	200	69	238	81	274	74	265	65	275	60	402	87
Indianapolis, Ind	153	51	196	65	171	46	220	55	246	55	407	91
Ithaca, N.Y	109	37	147	49	109	29	180	45	234	52	314	69
Jacksonville, Fla	148	46	139	45	294	79	215	55	325	77	301	71
Juneau, Alaska	39	17	68	26	180	49	150	35	230	44	180	33
Kalispell, Mont	63	23	117	41	160	43	227	55	320	68	368	77
Kansas City, Mo	244	80	232	77	223	60	269	68	267	60	379	85
Keokuk, Iowa	175	58	212	71	207	56	239	60	262	59	393	88
Key West, Fla	244	73	250	79	313	84	278	73	264	64	257	63
Knoxville, Tenn	128	41	147	48	179	48	234	59	308	70	354	81
La Crosse, Wis	127	44	187	64	195	53	234	58	247	54	406	88
Lander, Wyo	234	80	223	75	265	71	234	58	312	69	396	86
Lansing, Mich	127	43	198	67	136	37	205	51	262	58	381	83
Lincoln, Nebr	181	61	212	71	202	55	228	57	250	56	365	81
Little Rock, Ark	147	47	147	48	202	54	249	63	294	68	383	88
Los Angeles, Calif	226	72	293	95	328	88	256	65	336	78	310	72
Louisville, Ky	131	43	177	59	165	44	218	55	229	52	388	88
Macon, Ga	195	61	132	43	285	77	278	71	377	88	379	89
Madison, Wis	142	49	194	66	160	43	186	46	217	48	365	79
Marquette, Mich	67	24	107	37	95	26	173	42	209	45	282	59
Memphis, Tenn	158	50	128	42	206	55	245	62	252	58	356	82
Meridian, Miss	145	45	127	41	253	68	219	56	324	76	317	74
Miami, Fla	232	70	245	77	307	82	258	67	294	71	270	65
Miles City, Mont	168	59	196	67	208	56	221	54	265	57	384	81
Milwaukee, Wis	103	35	168	57	148	40	184	46	217	48	344	75
Minneapolis, Minn	133	46	191	66	203	55	237	59	257	56	409	88
Mobile, Ala	134	42	125	40	239	64	208	54	293	69	334	79
Modena, Utah	216	71	269	89	304	81	292	74	323	73	400	90
Nashville, Tenn	150	48	142	47	188	51	212	54	286	65	371	85
New Haven, Conn	176	59	197	66	196	53	195	49	256	57	311	69
New Orleans, La	122	38	138	44	263	71	228	59	328	77	354	84
New York, N.Y	173	58	172	58	178	48	215	54	238	53	321	71
Norfolk, Va	138	45	158	52	237	64	274	69	311	71	351	80
North Head, Wash	47	17	89	31	96	26	204	50	153	33	231	49
North Platte, Nebr	184	62	219	74	210	57	243	61	273	61	376	83
Oklahoma City, Okla	216	69	209	68	236	63	293	75	312	72	380	87
Omaha, Nebr	207	69	229	77	229	62	272	68	274	61	383	85
Oswego, N.Y	89	30	112	38	129	35	214	53	276	61	349	76
Parkersburg, W.Va	111	37	169	56	136	37	234	59	175	39	290	65
Pensacola, Fla	103	32	112	36	268	72	236	61	308	73	330	78
Peoria, Ill	174	58	214	72	175	47	227	57	212	47	397	88
Philadelphia, Pa	168	56	186	62	152	41	217	54	242	54	292	65
Phoenix, Ariz	217	68	256	83	311	84	322	82	408	95	390	91
Pittsburgh, Pa	125	42	164	55	131	35	226	56	227	51	346	76
Pocatello, Idaho	129	44	155	52	216	58	197	49	263	58	367	80

Sunshine, 1933—Continued

Stations	July		August		September		October		November		December		Annual	
	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible
Galveston, Tex	273	64	304	75	264	71	238	67	234	73	206	64	2,853	63
Grand Junction, Colo	364	80	324	77	283	76	290	84	230	76	165	56	3,240	72
Grand Rapids, Mich	362	78	333	77	226	60	199	58	65	22	56	20	2,378	50
Green Bay, Wis	293	62	310	71	216	57	158	46	83	29	84	31	2,267	49
Greensboro, N.C	278	62	206	49	274	74	265	76	208	68	135	45	2,820	62
Harrisburg, Pa	328	72	257	60	194	52	234	68	133	44	112	38	2,519	55
Havre, Mont	419	86	313	70	286	76	204	61	149	54	78	30	2,978	64
Helena, Mont	425	89	288	66	259	69	213	63	153	54	66	25	2,688	58
Honolulu, Hawaii	224	55	271	68	256	70	239	66	243	73	198	59	2,599	59
Houston, Tex	236	55	259	63	242	65	226	64	207	65	165	52	2,548	56
Huron, S.Dak	354	76	312	72	295	79	258	76	119	41	119	43	3,110	69
Indianapolis, Ind	351	77	332	78	232	62	233	67	128	43	88	30	2,758	60
Ithaca, N.Y	312	68	225	53	155	42	146	42	81	27	44	15	2,055	44
Jacksonville, Fla	271	63	283	69	313	85	211	60	256	80	220	69	2,975	67
Juneau, Alaska	143	26	142	30	74	19	71	22	25	11	136	67	1,438	32
Kalispell, Mont	435	90	346	78	222	59	169	50	108	39	50	19	2,584	54
Kansas City, Mo	359	79	247	58	295	79	258	74	199	66	167	57	3,138	70
Keokuk, Iowa	391	86	313	74	276	74	231	67	198	66	113	39	3,009	66
Key West, Fla	242	58	260	65	262	71	212	59	245	75	266	81	3,092	70
Knoxville, Tenn	294	66	237	57	270	73	227	65	182	59	128	43	2,688	59
La Crosse, Wis	367	78	349	81	232	62	193	57	110	38	92	33	2,738	59
Lander, Wyo	375	81	306	71	306	82	269	79	197	68	134	48	3,250	72
Lansing, Mich	396	85	335	78	212	57	186	54	59	20	44	16	2,540	54
Lincoln, Nebr	367	80	234	55	275	74	265	77	214	72	165	57	2,960	66
Little Rock, Ark	286	65	275	66	259	70	256	73	195	63	121	40	2,815	62
Los Angeles, Calif	332	76	330	80	254	68	239	68	280	90	198	64	3,382	76
Louisville, Ky	314	70	298	71	242	65	232	67	124	41	64	22	2,583	56
Macon, Ga	303	69	296	72	278	75	240	68	224	71	188	61	3,176	70
Madison, Wis	355	76	340	79	241	64	206	60	103	35	68	24	2,576	56
Marquette, Mich	244	51	270	62	168	44	71	21	32	11	32	12	1,751	36
Memphis, Tenn	244	55	268	64	252	68	260	74	208	67	126	41	2,703	60
Meridian, Miss	209	48	278	67	292	79	228	65	233	74	180	57	2,805	62
Miami, Fla	229	54	265	66	292	79	212	59	250	77	262	80	3,116	71
Miles City, Mont	426	90	316	72	291	77	206	61	158	56	77	28	2,916	63
Milwaukee, Wis	318	68	345	80	236	63	206	60	120	41	82	29	2,473	54
Minneapolis, Minn	389	82	356	82	254	68	180	53	84	29	77	28	2,770	59
Mobile, Ala	236	55	274	67	292	79	233	66	236	74	199	63	2,805	63
Modena, Utah	301	67	336	80	342	92	283	81	259	85	214	72	3,539	80
Nashville, Tenn	278	63	275	66	240	65	224	64	181	59	119	39	2,666	59
New Haven, Conn	264	58	216	51	196	52	224	65	178	60	118	41	2,528	57
New Orleans, La	256	60	262	64	276	74	258	73	234	73	191	60	2,908	65
New York, N.Y	303	66	232	54	213	57	229	66	172	58	133	46	2,580	57
Norfolk, Va	299	67	293	70	300	80	275	79	191	62	144	48	2,971	66
North Head, Wash	289	61	155	35	112	30	110	32	86	30	11	4	1,584	33
North Platte, Nebr	350	76	218	51	276	74	323	94	250	84	199	69	3,122	70
Oklahoma City, Okla	322	73	219	53	290	78	264	75	216	70	188	62	3,144	70
Omaha, Nebr	375	82	268	63	275	74	276	80	205	69	166	58	3,159	71
Oswego, N.Y	339	73	264	61	161	43	143	42	71	24	47	17	2,195	46
Parkersburg, W.Va	272	60	256	61	250	67	205	59	91	30	81	28	2,269	50
Pensacola, Fla	248	58	298	73	321	87	254	72	273	86	224	71	2,976	67
Peoria, Ill	381	83	300	70	249	67	222	64	172	58	92	32	2,815	62
Philadelphia, Pa	297	65	206	48	206	55	248	72	170	57	129	45	2,513	56
Phoenix, Ariz	347	79	343	83	317	86	305	87	280	89	258	83	3,754	84
Pittsburgh, Pa	322	70	266	62	187	50	168	49	77	26	86	30	2,324	50
Pocatello, Idaho	400	86	345	80	308	82	275	81	200	69	114	40	2,970	65

Sunshine, 1933—Continued

Stations	January		February		March		April		May		June	
	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible
Port Arthur, Tex	149	46	117	38	234	63	265	68	308	73	354	84
Portland, Maine	144	50	158	54	193	52	165	41	293	64	268	58
Portland, Oreg	37	13	47	16	105	28	230	57	167	36	274	58
Providence, R.I	175	59	196	66	201	54	219	55	290	64	333	73
Pueblo, Colo	240	78	239	79	262	71	264	67	301	68	314	71
Raleigh, N.C	151	49	140	46	251	68	260	66	317	73	291	67
Rapid City, S.Dak	190	66	199	68	238	64	232	57	253	55	376	81
Reading, Pa	136	45	153	51	148	40	229	57	222	50	296	66
Red Bluff, Calif	138	46	207	69	171	46	324	81	270	61	380	85
Richmond, Va	137	45	172	57	212	57	264	67	275	62	346	78
Rochester, N.Y	104	36	130	44	130	35	212	53	263	58	327	71
Roseburg, Oreg	59	20	85	29	144	39	245	61	186	41	284	62
Roswell, N.Mex	230	72	232	75	308	83	328	84	356	83	333	78
Sacramento, Calif	111	37	236	78	273	74	355	89	365	82	413	93
St. Joseph, Mo	209	70	220	73	208	56	264	66	273	61	385	86
St. Louis, Mo	160	53	171	57	192	52	204	51	226	51	389	87
Salt Lake City, Utah	128	43	153	51	227	61	263	66	293	65	401	89
San Antonio, Tex	131	40	136	43	192	52	277	72	302	72	364	87
San Diego, Calif	211	66	268	87	291	78	232	60	278	65	267	62
Sandy Hook, N.J	166	55	175	58	175	47	222	56	251	56	306	68
San Francisco, Calif	162	53	260	86	278	75	304	77	347	79	340	77
San Jose, Calif	132	43	250	82	236	63	280	71	285	65	355	81
San Juan, P.R	264	76	248	77	273	73	310	82	280	70	278	70
Santa Fe, N.Mex	215	69	222	73	274	74	267	68	360	82	281	64
Sault Ste. Marie, Mich	49	17	146	50	187	50	245	60	320	69	373	79
Savannah, Ga	169	53	121	39	290	78	220	57	326	76	316	74
Scranton, Pa	139	47	154	52	103	28	196	49	216	48	334	74
Seattle, Wash	43	15	100	35	135	36	231	56	206	44	259	54
Sheridan, Wyo	156	54	163	56	208	56	232	57	291	63	376	81
Sioux City, Iowa	171	58	226	76	225	61	266	66	281	62	384	84
Spokane, Wash	96	35	145	51	198	54	292	71	262	56	332	69
Springfield, Ill	154	51	205	68	179	48	235	59	238	53	406	91
Springfield, Mo	178	58	164	54	172	46	255	65	282	64	392	89
Syracuse, N.Y	99	34	135	46	130	35	201	50	261	57	344	75
Tampa, Fla	244	74	221	70	326	88	260	68	338	81	284	68
Terre Haute, Ind	167	55	212	70	165	44	251	63	258	58	416	93
Toledo, Ohio	115	39	186	63	126	34	169	42	231	51	366	80
Trenton, N.J	184	61	194	65	178	48	238	60	276	62	337	75
Valentine, Nebr	186	64	208	71	216	58	252	63	254	56	389	85
Vicksburg, Miss	126	39	92	30	213	57	229	59	309	72	358	84
Walla Walla, Wash	76	27	106	37	189	51	291	71	297	64	332	70
Washington, D.C	132	43	162	54	168	45	258	65	224	50	320	72
Wichita, Kans	230	75	211	70	236	64	314	79	332	75	385	87
Williston, N.Dak	120	43	176	61	218	59	230	56	259	55	372	78
Wilmington, N.C	191	61	144	47	300	81	274	70	346	80	323	75
Winnemucca, Nev	129	43	191	64	175	47	271	68	254	57	381	84
Wytheville, Va	119	38	136	45	162	44	202	51	235	54	313	71
Yakima, Wash	159	57	165	57	218	59	329	81	310	66	370	78
Yellowstone Park, Wyo	41	14	94	32	196	53	236	58	251	55	366	78
Yuma, Ariz	257	81	285	92	356	96	364	93	417	97	415	97

Sunshine, 1933—Continued

Stations	July		August		September		October		November		December		Annual	
	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible	Hours	Percentage of possible
Port Arthur, Tex	282	66	321	79	293	79	275	77	218	68	190	60	3,006	67
Portland, Maine	250	53	208	48	172	46	198	58	131	45	90	33	2,268	50
Portland, Oreg	395	83	309	71	160	42	152	45	66	23	10	4	1,952	40
Providence, R.I	342	74	233	54	206	55	220	64	170	58	100	35	2,686	59
Pueblo, Colo	337	75	291	69	307	82	290	84	266	87	225	76	3,335	76
Raleigh, N.C	268	60	174	42	243	65	235	67	205	66	165	55	2,701	60
Rapid City, S.Dak	396	85	325	75	313	83	242	71	178	62	85	31	3,026	66
Reading, Pa	288	63	242	57	200	53	212	62	116	39	131	45	2,374	52
Red Bluff, Calif	430	94	395	93	337	90	298	86	275	92	82	37	3,307	73
Richmond, Va	290	64	252	60	235	63	252	73	180	59	139	47	2,754	61
Rochester, N.Y	365	78	266	62	162	43	148	43	60	21	39	14	2,206	46
Roseburg, Oreg	415	89	341	79	193	52	208	61	70	24	44	16	2,274	48
Roswell, N.Mex	338	77	316	76	313	84	300	85	258	82	270	87	3,580	80
Sacramento, Calif	447	99	417	98	357	96	309	89	284	94	84	29	3,650	80
St. Joseph, Mo	392	86	261	61	275	74	264	77	197	66	190	65	3,138	70
St. Louis, Mo	317	70	269	64	230	62	221	64	154	51	87	30	2,621	58
Salt Lake City, Utah	362	79	363	85	308	82	299	87	223	75	150	52	3,171	70
San Antonio, Tex	328	77	323	79	285	77	238	67	187	58	183	57	2,946	65
San Diego, Calif	276	63	279	67	184	50	207	59	254	81	208	67	2,956	67
Sandy Hook, N.J	286	63	232	54	197	53	233	68	152	51	105	36	2,499	55
San Francisco, Calif	330	73	270	64	266	71	220	63	257	85	151	51	3,183	71
San Jose, Calif	400	89	351	83	316	85	250	72	250	82	120	40	3,225	71
San Juan, P.R	290	71	288	73	239	65	271	75	260	77	275	80	3,276	74
Santa Fe, N.Mex	284	64	286	68	298	80	274	79	260	84	269	89	3,290	74
Sault Ste. Marie, Mich	342	72	345	79	206	55	86	25	47	17	49	18	2,396	49
Savannah, Ga	250	57	236	57	276	74	201	57	233	74	188	60	2,824	63
Scranton, Pa	346	76	229	54	182	49	188	55	90	30	105	37	2,282	50
Seattle, Wash	354	73	280	63	152	40	128	38	32	12	22	9	1,942	40
Sheridan, Wyo	424	90	325	75	297	79	222	65	161	56	73	27	2,925	63
Sioux City, Iowa	378	82	297	69	264	70	253	74	156	53	159	56	3,059	68
Spokane, Wash	430	89	355	80	258	68	196	58	61	22	30	11	2,656	55
Springfield, Ill	382	84	304	71	256	68	220	64	165	55	102	35	2,844	62
Springfield, Mo	328	73	264	63	230	62	257	74	191	62	148	50	2,860	63
Syracuse, N.Y	320	69	231	54	137	36	161	47	66	23	40	14	2,124	45
Tampa, Fla	264	62	270	66	297	80	242	68	257	80	259	80	3,263	74
Terre Haute, Ind	334	74	304	72	231	62	250	72	154	51	106	36	2,847	62
Toledo, Ohio	359	78	341	79	222	59	205	60	81	27	55	19	2,456	53
Trenton, N.J	338	74	269	63	250	67	250	73	153	51	136	47	2,802	62
Valentine, Nebr	358	77	268	62	263	70	244	71	144	49	134	48	2,917	65
Vicksburg, Miss	247	57	327	79	311	84	263	75	196	62	155	49	2,826	62
Walla Walla, Wash	429	90	349	80	249	66	204	60	90	32	31	12	2,644	55
Washington, D.C	278	62	240	57	206	55	233	67	144	48	120	41	2,484	55
Wichita, Kans	373	83	298	71	279	75	265	76	229	76	185	63	3,338	74
Williston, N.Dak	414	86	333	75	263	70	178	53	129	46	100	38	2,791	60
Wilmington, N.C	261	59	235	57	282	76	227	65	220	71	216	70	3,019	68
Winnemucca, Nev	419	91	397	93	331	88	295	86	249	84	136	47	3,227	71
Wytheville, Va	238	53	210	50	223	60	241	69	152	50	133	44	2,364	52
Yakima, Wash	435	91	362	82	229	61	248	74	114	40	61	23	2,999	64
Yellowstone Park, Wyo	398	84	288	66	271	72	196	58	138	48	73	27	2,547	54
Yuma, Ariz	418	96	396	96	350	94	334	95	295	94	286	92	4,174	94

EXCESSIVE RAINFALL, 1931 AND 1932

The following tables contain statistics of excessive rainfall during the calendar years 1931 and 1932. Similar data for the years 1896 to 1930, inclusive, have been presented in the appropriate annual reports of the Chief of the Weather Bureau. The published data prior to 1896 consist of a record of maximum amounts of rainfall in 5- and 10-minute periods, also in 1 and 24 hours. The annual report for 1895–96 contains a summary of the records which up to that time had been made at the principal stations supplied with automatic gages.

The following tables show, for most stations of the Weather Bureau furnished with self-registering gages, the accumulated amounts of precipitation for each 5 minutes during all storms of 1931 and 1932 in which the rate of fall equaled or exceeded 0.25 inch in any 5-minute period, or 0.30 inch in any 10-minute period, or 0.35 inch in any 15-minute period, etc. If the period be 1 hour, the minimum fall would need to be 0.80 inch; if 2 hours, 1.40 inches. In the comparatively few cases when the excessive rate of fall continued for more than 2 hours, the record has been spread over 3 or more lines, as necessary, each line showing amounts through 50 minutes; the 4 left-hand columns have each but a single entry for the storm, while the amounts shown in the column headed "5 min." are, in reality, the 55-minute amount on the second line, the 105-minute amount on the third line, etc. Data for 1932 start on page 49.

The excepted stations, for which the statistics of only the more intense storms appear here, are those in the South Atlantic and the Gulf States, including Arkansas, Kentucky, and Tennessee, but not including the western portion of Texas. San Juan, in Puerto Rico, is likewise an excepted station. In these States very heavy falls are so frequent that much space would be needed to print detailed statistics of each rainfall that attained to one of the limits mentioned above, so only the more intense rainfalls are shown. At most stations the only falls included are those in which 1 inch or more fell within an hour, as footnotes 6 in the 1931 table and 8 in the 1932 table indicate; but a few stations within these States had no such fall during 1931 and 1932; so for such stations those falls in which 0.50 inch or more fell within 30 minutes have been presented (footnote 7 in both the tables).

In the columns under "Total duration", when the minute during the nighttime is not known reasonably well, "D.N." is entered, followed by "a.m." or "p.m." as appropriate. "T" indicates trace, an amount too small for measurement.

Normal standard time at the place of occurrence is employed in this table.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
NEW ENGLAND STATES																				
Eastport, Maine:																				
July 16	D.N. a.m.	D.N. a.m.	0.92	3:25 a.m.	3:43 a.m.	0.09	0.20	0.42	0.66	0.74										
Oct. 16	8:45 a.m.	11:34 a.m.	1.27	10:21 a.m.	10:58 a.m.	.26	.20	.26	.34	.52	0.70	0.83	0.92	0.97						
Portland, Maine:																				
June 5	2:07 p.m.	2:55 p.m.	.45	2:16 p.m.	2:27 p.m.	.01	.13	.34	.38											
July 21	4:30 p.m.	6:55 p.m.	.69	6:42 p.m.	6:49 p.m.	.38	.21	.31												
Concord, N.H.:																				
June 8	1:46 p.m.	[1]D.N. p.m.	2.78	4:02 p.m.	4:22 p.m.	.43	.50	.61	.67	.77										
June 26	4:15 p.m.	4:48 p.m.	.43	4:24 p.m.	4:34 p.m.	.01	.20	.41												
July 23	8:20 p.m.	9:30 p.m.	.47	9:00 p.m.	9:16 p.m.	.03	.21	.30	.40	.44										
Aug. 19	2:05 p.m.	2:30 p.m.	.47	2:09 p.m.	2:25 p.m.	.01	.17	.31	.44	.46										
Burlington, Vt.:																				
July 4	7:05 a.m.	7:35 a.m.	.56	7:11 a.m.	7:30 a.m.	.02	.15	.30	.46	.52										
July 9	3:32 p.m.	5:35 p.m.	.83	3:48 p.m.	4:03 p.m.	.01	.13	.42	.52											
Northfield, Vt.:[2]																				
June 5	12:48 p.m.	2:40 p.m.	.66	12:54 p.m.	1:07 p.m.	.01	.35	.56	.61											
July 9	6:20 p.m.	8:35 p.m.	1.67	7:05 p.m.	8:05 p.m.	.24	.07	.22	.38	.46	.67	.74	.90	1.02	1.11	1.21	1.35			
Boston, Mass.:[3]																				
May 21	1:35 p.m.	3:15 p.m.	.60	1:35 p.m.	1:49 p.m.	.00	.40	.51	.56											
July 24	5:05 p.m.	6:10 p.m.	.62	5:32 p.m.	5:43 p.m.	.01	.16	.38	.55											
Aug. 27	7:55 a.m.	9:35 a.m.	.95	8:28 a.m.	8:38 a.m.	.07	.17	.35												
Do	7:55 a.m.	9:35 a.m.	.95	8:56 a.m.	9:16 a.m.	.45	.05	.16	.34	.47										
Sept. 2	9:30 p.m.	[1]4:00 a.m.	.60	10:53 p.m.	11:09 p.m.	.02	.23	.30	.38	.42										
Nantucket, Mass.:																				
July 7	8:25 p.m.	[1]7:10 a.m.	1.04	10:10 p.m.	10:58 p.m.	.15	.11	.14	.23	.26	.35	.41	.47	.63	.81	.84				
July 9	[4]8:40 p.m.	7:30 a.m.	2.06	5:02 a.m.	5:37 a.m.	1.22	.06	.16	.25	.33	.46	.61	.72							
Aug. 24	5:45 a.m.	12:30 p.m.	1.18	9:27 a.m.	10:03 a.m.	.48	.05	.12	.22	.25	.38	.52	.57	.61						
Oct. 16	12:45 a.m.	5:25 p.m.	4.10	2:32 a.m.	3:09 a.m.	.03	.12	.21	.26	.47	.73	.77	.87	.90						
Do	12:45 a.m.	5:25 p.m.	4.10	1:10 p.m.	2:10 p.m.	2.01	.08	.16	.28	.57	.83	.99	1.26	1.46	1.52	1.59	1.74			

[1] On the following date.
[2] Record from January to July, and October to December, inclusive.
[3] Record lacking during a few intense rainfalls.
[4] On preceding date.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
NEW ENGLAND STATES—contd.																				
Block Island, R.I.:																				
May 10	7:38 a.m.	8:30 a.m.	0.64	7:48 a.m.	8:05 a.m.	0.04	0.26	0.49	0.58	0.60										
July 22	7:16 a.m.	7:36 a.m.	.39	7:20 a.m.	7:29 a.m.	.01	.27	.37												
Aug. 11	10:11 a.m.	3:40 p.m.	.67	12:03 p.m.	12:27 p.m.	.01	.13	.28	.41	.59	0.63									
Aug. 12	12:40 p.m.	1:46 p.m.	.48	1:09 p.m.	1:34 p.m.	.02	.16	.33	.37	.41	.45									
Aug. 19	1:10 p.m.	2:16 p.m.	.71	1:16 p.m.	1:26 p.m.	.01	.23	.30												
Do	1:10 p.m.	2:16 p.m.	.71	1:52 p.m.	2:03 p.m.	.35	.13	.33	.36											
Oct. 29	[4]D.N. p.m.	2:50 p.m.	2.22	9:28 a.m.	9:45 a.m.	1.43	.12	.22	.41	.44										
Providence, R.I.:																				
May 10	7:42 a.m.	9:46 a.m.	4.86	8:30 a.m.	8:55 a.m.	.13	.11	.34	.49	.58	.66									
July 22	2:07 a.m.	D.N. a.m.	.41	2:09 a.m.	2:17 a.m.	.01	.30	.37												
Aug. 3	7:35 p.m.	D.N. p.m.	.73	7:39 p.m.	8:09 p.m.	.02	.18	.30	.42	.49	.52	0.62								
Hartford, Conn.:																				
July 6	6:37 a.m.	3:30 p.m.	1.39	9:42 a.m.	10:12 a.m.	.17	.07	.20	.27	.34	.52	.65								
July 17	3:51 p.m.	4:36 p.m.	.41	4:03 p.m.	4:18 p.m.	.02	.05	.24	.36											
Aug. 3	6:45 p.m.	9:18 p.m.	.43	6:57 p.m.	7:03 p.m.	.01	.27	.35												
New Haven, Conn.:																				
May 10	5:30 a.m.	7:30 a.m.	.48	6:15 a.m.	6:21 a.m.	.11	.28	.31												
Do	6:50 p.m.	11:50 p.m.	.84	9:08 p.m.	9:30 p.m.	.08	.22	.40	.51	.59	.62									
May 23	12:45 a.m.	12:20 p.m.	1.63	4:04 a.m.	4:38 a.m.	.07	.05	.10	.15	.34	.52	.69	0.73							
July 6	7:15 a.m.	9:10 p.m.	1.84	8:40 a.m.	9:20 a.m.	.25	.11	.31	.46	.66	.78	.87	.95	1.01						
July 24	4:02 p.m.	4:45 p.m.	.58	4:08 p.m.	4:18 p.m.	.01	.34	.45												
Sept. 2	5:24 p.m.	[1]7:40 a.m.	1.94	5:36 p.m.	5:50 p.m.	.01	.26	.51	.87											
Do	5:24 p.m.	[1]7:40 a.m.	1.94	8:15 p.m.	8:35 p.m.	1.18	.20	.33	.39	.48										
Sept. 27	5:55 p.m.	[1]5:38 a.m.	1.51	8:02 p.m.	8:48 p.m.	.04	.09	.29	.51	.68	.75	.79	.81	.89	0.97	1.01				
MIDDLE ATLANTIC STATES																				
Albany, N.Y.:																				
May 10	2:08 p.m.	2:40 p.m.	.59	2:14 p.m.	2:35 p.m.	.03	.05	.23	.40	.54	.56									
July 8	8:25 a.m.	1:30 p.m.	.96	9:47 a.m.	10:19 a.m.	.15	.10	.22	.31	.44	.55	.63	.67							
July 21	8:25 p.m.	[1]4:30 a.m.	1.57	9:23 p.m.	9:43 p.m.	.12	.15	.27	.52	.65										
Aug. 15	3:05 p.m.	3:50 p.m.	.58	3:07 p.m.	3:27 p.m.	.01	.18	.34	.46	.56										
Binghamton, N.Y.:																				
July 2	3:40 p.m.	6:30 p.m.	.78	4:10 p.m.	4:19 p.m.	.21	.40	.49												
July 9	4:05 p.m.	5:45 p.m.	.41	4:33 p.m.	4:42 p.m.	T	.18	.31												
Aug. 27	6:55 p.m.	9:15 p.m.	1.12	6:55 p.m.	7:28 p.m.	.00	.08	.26	.42	.60	.76	.93	1.00							
Sept. 15	3:00 p.m.	4:30 p.m.	.58	3:32 p.m.	3:44 p.m.	.07	.15	.36	.50											
Sept. 17	3:53 p.m.	4:30 p.m.	.40	4:04 p.m.	4:14 p.m.	.01	.23	.38												
New York, N.Y.:																				
July 18	1:56 p.m.	5:25 p.m.	1.56	2:05 p.m.	2:32 p.m.	.01	.15	.24	.42	.53	.66	.70								
July 21	12:55 p.m.	2:35 p.m.	1.06	1:46 p.m.	2:26 p.m.	.02	.13	.35	.49	.53	.62	.89	.91	1.04						
Aug. 3	7:43 p.m.	11:20 p.m.	.37	10:28 p.m.	10:36 p.m.	.05	.16	.30												
Sept. 2	6:50 p.m.	8:15 p.m.	.32	6:54 p.m.	7:02 p.m.	.01	.16	.29												
Harrisburg, Pa.:																				
May 8	D.N. a.m.	D.N. a.m.	1.28	2:48 a.m.	3:13 a.m.	.54	.17	.28	.42	.52	.60									
June 7	2:14 p.m.	[1]D.N. a.m.	2.07	2:20 p.m.	3:29 p.m.	.01	.35	.69	.91	1.04	1.09	1.21	1.22	1.27	1.32	1.39	1.44	1.65		
July 20	10:50 a.m.	11:40 a.m.	.78	10:52 a.m.	11:06 a.m.	.01	.16	.56	.75											
July 21	4:06 p.m.	7:32 p.m.	.57	7:11 p.m.	7:25 p.m.	.04	.20	.33	.48											
Aug. 9	2:34 p.m.	3:50 p.m.	.88	2:36 p.m.	2:47 p.m.	.01	.29	.46	.47											
Aug. 10	2:00 p.m.	4:15 p.m.	.96	2:39 p.m.	3:23 p.m.	.02	.29	.45	.50	.55	.60	.67	.72	.78	.91					
Sept. 2	4:40 p.m.	8:40 p.m.	.78	7:18 p.m.	7:31 p.m.	.21	[4].31	.45	.49											
Sept. 12	5:42 p.m.	7:10 p.m.	.81	6:11 p.m.	6:38 p.m.	.03	.07	.17	.28	.43	.72	.77								
Oct. 8	12:45 p.m.	5:10 p.m.	1.06	1:30 p.m.	1:50 p.m.	.16	.15	.27	.28	.40										
Philadelphia, Pa.:																				
May 31	7:10 p.m.	[1]7:10 a.m.	1.14	7:12 p.m.	7:52 p.m.	.01	.19	.25	.27	.32	.45	.55	.72	.90						
June 7	8:01 p.m.	D.N. a.m.	1.43	8:03 p.m.	8:37 p.m.	.01	.20	.35	.36	.37	.47	.59	.75							
June 16	3:25 p.m.	4:44 p.m.	.55	3:43 p.m.	4:02 p.m.	.06	.07	.25	.37	.43										
June 23	7:50 a.m.	11:00 a.m.	.50	7:50 a.m.	8:10 a.m.	.00	.17	.23	.35	.49										
July 7	4:55 p.m.	5:38 p.m.	1.55	5:09 p.m.	5:29 p.m.	.05	.32	.72	1.18	1.48										
July 10 [5]	1:47 p.m.	6:31 p.m.	2.58	2:17 p.m.	3:14 p.m.	.02	.25	.43	.63	.79	.95	.98	1.04	1.06	1.16	1.37	1.57			
July 14	7:44 p.m.	11:25 p.m.	1.32	9:13 p.m.	9:32 p.m.	.22	.17	.33	.53	.69										
July 18 [5]	D.N. a.m.	D.N. a.m.	1.20	2:42 a.m.	3:08 a.m.	.12	.11	.26	.43	.66	.84	.91								
Aug. 10	5:38 p.m.	8:50 p.m.	1.12	5:53 p.m.	6:23 p.m.	.02	.28	.48	.60	.74	.84	.91								
Reading, Pa.:																				
June 7	4:50 p.m.	[1]2:00 a.m.	2.50	4:58 p.m.	6:18 p.m.	.01	.23	.30	.31	.31	.32	.73	1.06	1.28	1.42	1.43	1.56	2.08		
June 16	2:00 p.m.	3:25 p.m.	.71	2:28 p.m.	2:53 p.m.	.07	.08	.15	.28	.44	.57									
July 10	1:20 p.m.	1:52 p.m.	.31	1:44 p.m.	1:49 p.m.	.01	.30													
July 14	7:36 p.m.	7:55 p.m.	.39	7:36 p.m.	7:45 p.m.	.00	.22	.39												
July 23	6:20 p.m.	6:50 p.m.	.78	6:25 p.m.	6:47 p.m.	.01	.35	.45	.56	.75	.77									
Aug. 9	3:40 p.m.	5:20 p.m.	.71	3:45 p.m.	4:00 p.m.	.01	.14	.28	.45											
Aug. 10	3:58 p.m.	6:10 p.m.	1.82	4:01 p.m.	4:29 p.m.	.01	.37	.85	1.15	1.34	1.56	1.62								
Oct. 8	12:50 p.m.	9:45 p.m.	1.30	4:31 p.m.	5:01 p.m.	.63	.17	.28	.34	.39	.49	.55								
Scranton, Pa.:																				
June 7	3:20 p.m.	7:45 p.m.	1.33	3:32 p.m.	3:45 p.m.	.01	.46	.92	.98											
July 7	2:08 p.m.	[1]D.N. a.m.	2.75	2:20 p.m.	2:55 p.m.	.05	.06	.13	.21	.35	.54	.72	.85							
July 9	7:06 p.m.	[1]12:05 p.m.	3.17	8:28 p.m.	10:00 p.m.	.05	.08	.14	.21	.29	.36	.46	.53	.61	.68	.74	.93	1.55	1.76	
July 21	8:16 p.m.	D.N. p.m.	.90	9:07 p.m.	9:31 p.m.	.15	.18	.47	.54	.60	.67									
Sept. 2 [5]	8:30 p.m.	D.N. p.m.	.90	8:32 p.m.	9:05 p.m.	.01	.12	.25	.41	.45	.52	.55	.62							
Sept. 15	5:25 p.m.	7:20 p.m.	.57	5:30 p.m.	5:36 p.m.	.01	.29	.36												
Atlantic City, N.J.:																				
July 13	3:07 p.m.	4:55 p.m.	1.47	3:09 p.m.	4:05 p.m.	.01	.17	.39	.46	.52	.57	.66	.72	.88	1.07	1.14	1.27			
Aug. 10	7:33 p.m.	8:50 p.m.	.88	7:35 p.m.	7:48 p.m.	.01	.17	.59	.80											
Aug. 15	7:17 a.m.	9:50 a.m.	1.16	8:56 a.m.	9:36 a.m.	.45	.07	.22	.35	.39	.55	.60	.65	.70						
Do	2:26 p.m.	2:52 p.m.	.59	2:26 p.m.	2:39 p.m.	.00	.27	.50	.59											
Sept. 26	7:31 a.m.	11:35 a.m.	1.30	7:50 a.m.	8:07 a.m.	.07	.17	.39	.61	.66										
Oct. 30	1:46 p.m.	2:33 p.m.	.44	1:48 p.m.	2:07 p.m.	.01	.10	.18	.34	.40										

[1] On following date. [4] On preceding date. [5] From defective record.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
MIDDLE ATLANTIC STATES—continued																				
Sandy Hook, N.J.:																				
May 23	D.N. a.m.	D.N. a.m.	0.92	1:22 a.m.	1:40 a.m.	0.17	0.09	0.26	0.38	0.47										
Aug. 10	6:50 p.m.	8:50 p.m.	1.40	6:54 p.m.	7:18 p.m.	.01	.24	.86	1.11	1.21	1.32									
Trenton, N.J.:																				
July 10	12:09 p.m.	12:55 p.m.	.79	12:29 p.m.	12:42 p.m.	.01	.25	.57	.78											
Do	4:42 p.m.	7:55 p.m.	1.58	5:31 p.m.	6:56 p.m.	.14	.18	.39	.49	.51	.58	0.65	0.67	0.76	0.90	0.86	1.12	1.36	1.43	
Aug. 10	5:23 p.m.	9:12 p.m.	1.95	5:39 p.m.	6:39 p.m.	.06	.38	.77	.96	1.11	1.22	1.26	1.32	1.41	1.54	1.59	1.70			
Baltimore, Md.:																				
May 14	3:25 p.m.	4:40 p.m.	.41	3:56 p.m.	4:06 p.m.	.02	.17	.34												
May 31	2:40 p.m.	[1] 4:25 p.m.	2.33	2:51 p.m.	2:59 p.m.	.01	.12	.42												
Do	2:40 p.m.	[1] 4:25 p.m.	2.33	3:29 p.m.	3:50 p.m.	.49	.10	.23	.42	.62	.65									
June 16	12:39 p.m.	1:22 p.m.	.39	12:45 p.m.	1:00 p.m.	.01	.10	.23	.37											
July 4	D.N. a.m.	5:59 a.m.	1.17	4:11 a.m.	4:47 a.m.	.36	.07	.17	.21	.30	.39	.56	.65	.69						
July 6	4:12 p.m.	10:55 p.m.	1.16	4:41 p.m.	5:31 p.m.	.02	.06	.11	.16	.26	.32	.37	.45	.58	.68	.73				
July 20	2:49 p.m.	6:20 p.m.	1.68	4:15 p.m.	4:57 p.m.	.48	.06	.11	.16	.21	.25	.42	.78	1.08	1.11					
Aug. 10	4:53 p.m.	6:15 p.m.	1.21	5:05 p.m.	5:46 p.m.	.02	.22	.44	.61	.81	.90	.97	1.08	1.15	1.17					
Aug. 15	4:25 a.m.	6:55 a.m.	.66	5:04 a.m.	5:35 a.m.	.01	.10	.22	.26	.32	.46	.53	.56							
Sept. 23	3:47 p.m.	5:55 p.m.	1.21	4:18 p.m.	4:38 p.m.	.02	.25	.53	.88	1.03										
Oct. 15	4:20 p.m.	6:20 p.m.	.73	4:30 p.m.	4:40 p.m.	.01	.30	.64												
Washington, D.C.:																				
May 22	7:50 p.m.	9:40 p.m.	.83	8:23 p.m.	8:36 p.m.	.02	.24	.47	.53											
May 31	4:37 p.m.	[1] 3:25 p.m.	2.52	4:37 p.m.	5:03 p.m.	.00	.21	.57	.86	1.07	1.17	1.21								
June 23	3:55 p.m.	6:05 p.m.	.73	4:09 p.m.	4:39 p.m.	.01	.05	.10	.20	.48	.59	.70								
July 1	5:49 p.m.	7:55 p.m.	.79	5:46 p.m.	6:02 p.m.	.01	.26	.56	.71	.75										
July 10	4:50 a.m.	11:40 a.m.	.52	11:18 a.m.	11:31 a.m.	.05	.17	.42	.47											
Aug. 10	4:40 p.m.	5:30 p.m.	1.03	4:48 p.m.	5:12 p.m.	.04	.07	.18	.53	.81	.96									
Sept. 23	3:11 p.m.	5:23 p.m.	1.68	3:17 p.m.	3:47 p.m.	.01	.22	.48	.77	1.05	1.34	1.48								
Sept. 26	6:30 p.m.	7:10 p.m.	.39	6:37 p.m.	6:45 p.m.	.01	.25	.36												
Cape Henry, Va.:																				
May 22	9:35 p.m.	[1] 1:45 a.m.	.87	10:31 p.m.	10:45 p.m.	.07	.24	.44	.49											
June 16	1:55 p.m.	2:55 p.m.	.61	2:06 p.m.	2:31 p.m.	.04	.25	.36	.38	.53	.59									
June 23	5:50 a.m.	6:50 a.m.	.42	6:04 a.m.	6:18 a.m.	.03	.12	.27	.35											
July 1	9:00 p.m.	9:50 p.m.	.99	9:08 p.m.	9:24 p.m.	.03	.17	.52	.91	.95										
July 15	7:20 p.m.	9:20 p.m.	1.08	7:28 p.m.	7:59 p.m.	.01	.31	.66	.75	.80	.89	.97	1.02							
July 21	5:27 p.m.	5:50 p.m.	.54	5:29 p.m.	5:40 p.m.	.01	.22	.50	.52											
July 24	12:20 p.m.	2:10 p.m.	1.43	12:31 p.m.	1:24 p.m.	.01	.16	.44	.58	.77	.98	.99	1.15	1.17	1.24	1.37	1.41			
Do	4:25 p.m.	5:10 p.m.	.62	4:47 p.m.	4:57 p.m.	.08	.18	.52												
Aug. 9	3:23 p.m.	3:58 p.m.	.55	3:27 p.m.	3:51 p.m.	.01	.16	.21	.33	.43	.51									
Aug. 11	5:18 p.m.	8:50 p.m.	1.30	5:40 p.m.	6:06 p.m.	.06	.11	.33	.43	.56	.62	.66								
Do	5:18 p.m.	8:50 p.m.	1.30	7:42 p.m.	8:00 p.m.	.85	.15	.28	.39	.42										
Aug. 15	9:32 a.m.	10:30 a.m.	.66	9:47 a.m.	10:04 a.m.	.08	.19	.44	.56	.59										
Aug. 20	6:05 p.m.	8:10 p.m.	1.15	6:23 p.m.	7:00 p.m.	.10	.09	.15	.26	.37	.46	.67	.95	1.03						
Sept. 3	2:00 p.m.	4:15 p.m.	1.22	2:02 p.m.	2:23 p.m.	.01	.16	.38	.72	.91	.93									
Sept. 23	6:20 p.m.	11:10 p.m.	.65	6:31 p.m.	6:52 p.m.	.02	.11	.22	.34	.43	.47									
Lynchburg, Va.:																				
Apr. 17	7:30 p.m.	8:35 p.m.	.60	7:47 p.m.	8:06 p.m.	.01	.18	.33	.43	.56										
May 22	5:20 p.m.	7:45 p.m.	.96	5:50 p.m.	6:11 p.m.	.02	.23	.41	.60	.75	.78									
May 31	3:40 p.m.	6:20 p.m.	1.16	3:54 p.m.	4:46 p.m.	.01	.06	.16	.27	.35	.52	.64	.71	.89	.93	.99	1.04			
June 13	7:10 p.m.	7:55 p.m.	.70	7:24 p.m.	7:39 p.m.	.01	.34	.55	.63											
July 18	6:45 p.m.	7:50 p.m.	1.06	5:58 p.m.	6:45 p.m.	.01	.20	.40	.68	1.02	1.29	1.42	1.55	1.68	1.78	1.81				
July 20	2:10 p.m.	2:45 p.m.	.55	2:18 p.m.	2:34 p.m.	.01	.20	.43	.50	.54										
July 24	8:50 a.m.	9:45 a.m.	.58	9:06 a.m.	9:16 a.m.	.01	.38	.52												
Aug. 2	7:05 p.m.	8:10 p.m.	.70	7:11 p.m.	7:28 p.m.	.01	.20	.42	.60	.66										
Sept. 2	6:30 p.m.	7:20 p.m.	.44	6:36 p.m.	6:51 p.m.	.01	.18	.28	.39											
Norfolk, Va.:																				
May 7	D.N. a.m.	11:50 a.m.	1.16	5:26 a.m.	5:44 a.m.	.32	.11	.18	.31	.47										
May 22	9:30 p.m.	[1] D.N. a.m.	.88	10:11 p.m.	10:29 p.m.	.03	.24	.41	.52	.58										
June 15	2:00 p.m.	3:30 p.m.	1.15	2:13 p.m.	2:51 p.m.	.04	.10	.18	.33	.54	.79	.93	1.06	1.10						
Do	6:00 p.m.	9:00 p.m.	1.06	6:22 p.m.	6:47 p.m.	.03	.29	.47	.63	.76	.86									
June 16	1:35 p.m.	2:40 p.m.	.85	1:48 p.m.	2:02 p.m.	.01	.32	.71	.81											
June 22	D.N. a.m.	D.N. a.m.	.55	4:34 a.m.	4:36 a.m.	.01	.20	.36	.42											
July 10	12:02 p.m.	1:25 p.m.	.68	12:49 p.m.	1:09 p.m.	.19	.18	.26	.27	.55										
Aug. 19	4:01 p.m.	5:10 p.m.	.67	4:08 p.m.	4:25 p.m.	.02	.18	.47	.64	.59										
Aug. 20	5:43 p.m.	6:35 p.m.	.89	5:47 p.m.	6:18 p.m.	.01	.24	.37	.49	.65	.67	.80	.82							
Richmond, Va.:																				
May 9	7:04 p.m.	D.N. p.m.	.53	7:51 p.m.	8:10 p.m.	.03	.10	.22	.35	.40										
May 22	7:20 p.m.	[1] 6:15 a.m.	.81	7:58 p.m.	8:07 p.m.	.07	.33	.51												
June 22	1:10 a.m.	D.N. a.m.	.99	1:59 a.m.	2:20 a.m.	.14	.17	.40	.60	.70	.71									
July 15	5:00 p.m.	6:10 p.m.	.50	5:04 p.m.	5:17 p.m.	.01	.30	.39	.46											
July 16	5:15 p.m.	6:40 p.m.	.68	5:24 p.m.	5:50 p.m.	.01	.12	.26	.35	.42	.52	.54								
July 31	3:54 p.m.	7:00 p.m.	1.20	4:08 p.m.	4:57 p.m.	.01	.10	.36	.40	.41	.43	.53	.73	1.00	1.05	1.09				
Aug. 5	1:10 p.m.	2:50 p.m.	1.07	1:18 p.m.	1:56 p.m.	.01	.18	.36	.56	.51	.74	.82	.91	.97						
Aug. 14	7:10 a.m.	11:35 a.m.	.72	9:27 a.m.	9:53 a.m.	.07	.10	.18	.38	.46	.51	.54								
Aug. 20	4:22 p.m.	8:30 p.m.	4.74	4:32 p.m.	5:51 p.m.	.01	.15	.61	1.16	1.72	2.22	2.47	2.71	2.86	2.94	3.03	3.55	4.40		
Sept. 3	3:18 p.m.	8:30 p.m.	.89	6:05 p.m.	6:26 p.m.	.28	.24	.59	.42	.54	.56									
Wytheville, Va.:																				
May 20	5:26 p.m.	[1] D.N. a.m.	1.66	5:36 p.m.	6:32 p.m.	.00	.15	.22	.26	.26	.29	.35	.51	.74	.97	1.16	1.28			
May 22	3:44 p.m.	4:10 p.m.	.33	3:48 p.m.	3:58 p.m.	.01	.18	.31												
July 2	3:22 p.m.	3:43 p.m.	.74	3:22 p.m.	3:35 p.m.	.00	.35	.61	.73											
July 9	5:50 p.m.	8:55 p.m.	.69	6:08 p.m.	6:23 p.m.	.03	.20	.39	.50											
July 14	1:25 p.m.	2:13 p.m.	.58	1:25 p.m.	1:34 p.m.	.00	.17	.37												
Aug. 12	2:09 p.m.	5:30 p.m.	.63	2:33 p.m.	2:43 p.m.	.02	.32	.49												
Aug. 20	12:16 p.m.	1:55 p.m.	.46	12:32 p.m.	12:37 p.m.	.03	.25													

[1] On following date.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
SOUTH ATLANTIC STATES																				
Asheville, N.C.:[7]																				
June 15	3:35 p.m.	4:35 p.m.	1.59	3:46 p.m.	4:29 p.m.	0.01	0.26	0.64	0.89	0.99	1.02	1.09	1.24	1.50	1.58					
June 24	7:20 p.m.	8:50 p.m.	.65	7:40 p.m.	8:01 p.m.	.01	.11	.28	.43	.50	.53									
Aug. 26	5:40 p.m.	6:30 p.m.	.69	5:52 p.m.	6:14 p.m.	.02	.11	.26	.45	.63	.67									
Charlotte, N.C.:[6]																				
May 31	8:05 p.m.	10:20 p.m.	1.31	8:05 p.m.	9:05 p.m.	.00	.05	.10	.21	.23	.42	.55	.66	.70	.73	0.83	1.02			
July 3	3:58 p.m.	10:10 p.m.	2.50	5:06 p.m.	5:41 p.m.	.98	.28	.52	.78	1.08	1.22	1.32	1.40							
July 15	6:10 p.m.	7:29 p.m.	1.55	6:23 p.m.	6:58 p.m.	.01	.20	.44	.96	1.19	1.34	1.44	1.50							
July 19	6:20 p.m.	8:18 p.m.	1.65	6:30 p.m.	7:20 p.m.	T.	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	1.64				
Aug. 6	1:31 p.m.	3:40 p.m.	2.01	1:33 p.m.	2:08 p.m.	.01	.09	.29	.65	.90	1.38	1.77	1.90							
Aug. 11	4:20 a.m.	10:25 a.m.	2.28	4:33 a.m.	5:23 a.m.	.03	.08	.21	.46	.59	.70	.81	.93	1.00	1.05	1.13				
Greensboro, N.C.:[6]																				
Aug. 13	9:55 p.m.	11:20 p.m.	1.43	10:02 p.m.	10:53 p.m.	.01	.11	.27	.52	.61	.77	.98	1.10	1.10	1.14	1.30	1.40			
Hatteras, N.C.:[6]																				
July 5	1:54 p.m.	6:35 p.m.	1.80	3:43 p.m.	4:33 p.m.	.12	.21	.38	.61	.87	1.05	1.08	1.10	1.16	1.31	1.47				
Aug. 29	4:51 p.m.	6:50 p.m.	1.82	4:54 p.m.	5:41 p.m.	.01	.20	.57	.83	1.04	1.20	1.36	1.47	1.56	1.61	1.66				
Dec. 4	D.N. a.m.	11:55 a.m.	2.46	10:38 a.m.	11:40 a.m.	.84	.10	.32	.37	.41	.52	.65	.77	.91	.97	1.08	1.52	1.62		
Raleigh, N.C.:[6]																				
May 21[8]	4:52 a.m.	10:48 a.m.	2.60	7:10 a.m.	8:20 a.m.	.12	.08	.15	.34	.61	.89	1.14	1.32	1.44	1.58	1.62	1.73	1.91		
June 15	9:20 p.m.	10:23 p.m.	1.36	9:20 p.m.	9:47 p.m.	.00	.40	.75	.99	1.16	1.27	1.32								
July 4	8:15 p.m.	D.N. p.m.	4.66	8:25 p.m.	9:15 p.m.	.01	.09	.17	.22	.30	.38	.58	.97	1.37	1.69	1.92				
				9:15 p.m.	10:05 p.m.		2.21	2.45	2.71	2.92	3.02	3.11	3.28	3.49	3.60	3.71				
				10:05 p.m.	10:59 p.m.		3.77	3.83	3.88	3.98	4.13	4.27	4.36	4.45	4.50					
July 18	4:10 p.m.	6:20 p.m.	1.27	4:23 p.m.	5:03 p.m.	.07	.21	.35	.41	.50	.57	.67	.98	1.15						
July 21	4:37 p.m.	D.N. p.m.	2.48	5:44 p.m.	6:32 p.m.	.14	.09	.21	.23	.38	.47	.60	.93	1.41	1.56	1.62				
July 31	8:13 p.m.	[1]D.N. a.m.	2.75	9:57 p.m.	10:48 p.m.	1.06	.28	.39	.40	.45	.54	.67	.82	1.03	1.35	1.52	1.55			
Aug. 4	6:35 p.m.	[1]D.N. a.m.	3.16	7:20 p.m.	8:27 p.m.	.06	.14	.21	.38	.55	.78	1.07	1.29	1.45	1.60	1.84	2.10	2.35		
Aug. 5	7:59 p.m.	10:20 p.m.	2.53	8:10 p.m.	8:50 p.m.	.01	.09	.40	.90	1.29	1.54	1.88	2.07	2.14						
Sept. 3	4:25 p.m.	6:45 p.m.	1.67	4:56 p.m.	5:23 p.m.	.08	.13	.25	.52	.85	1.04	1.18								
Wilmington, N.C.:[7]																				
Mar. 22	[4]8:30 p.m.	3:50 a.m.	1.79	2:36 a.m.	3:08 a.m.	.99	.07	.15	.27	.40	.51	.64	.70							
June 7-8	11:16 p.m.	D.N. a.m.	1.19	11:52 p.m.	12:15 a.m.	.16	.15	.52	.61	.76	.84									
Aug. 14	6:08 a.m.	6:30 p.m.	2.96	8:50 a.m.	9:07 a.m.	.29	.10	.34	.78	.87										
Do	6:08 a.m.	6:30 p.m.	2.96	10:21 a.m.	11:02 a.m.	1.50	.13	.27	.34	.46	.66	.74	.80	.90	.94					
Charleston, S.C.:[6]																				
Aug. 27	3:13 p.m.	6:13 p.m.	1.18	3:25 p.m.	4:17 p.m.	.01	.05	.29	.38	.43	.50	.53	.63	.78	.88	.90	1.00			
Columbia, S.C.:[6]																				
July 20	5:10 p.m.	10:22 p.m.	1.91	6:08 p.m.	6:35 p.m.	.17	.12	.35	.55	.77	.94	1.01								
Due West, S.C.:[7]																				
June 30	8:50 p.m.	D.N. p.m.	.92	8:55 p.m.	9:23 p.m.	.01	.12	.26	.50	.70	.82	.88								
July 5	3:50 p.m.	6:55 p.m.	.91	4:04 p.m.	4:23 p.m.	.04	.27	.55	.75	.82										
July 28	7:13 p.m.	9:15 p.m.	.82	7:31 p.m.	8:00 p.m.	.01	.09	.27	.44	.49	.69	.75								
Aug. 1	4:17 p.m.	5:10 p.m.	.55	4:25 p.m.	4:45 p.m.	.02	.14	.32	.42	.50										
Aug. 6	1:32 p.m.	3:50 p.m.	.79	1:56 p.m.	2:21 p.m.	.01	.11	.24	.42	.54	.62									
Greenville, S.C.:[6]																				
Aug. 6	1:50 p.m.	4:00 p.m.	2.06	1:59 p.m.	2:29 p.m.	.01	.30	.87	1.31	1.68	1.87	1.98								
Augusta, Ga.:[6]																				
Aug. 5	6:00 p.m.	D.N. p.m.	1.72	6:50 p.m.	7:12 p.m.	.49	.38	.74	.89	.94	1.01									
Aug. 18	2:10 p.m.	3:50 p.m.	1.22	2:35 p.m.	3:01 p.m.	.04	.08	.20	.45	.75	.99	1.04								
Savannah, Ga.:[7]																				
June 16	7:19 p.m.	9:00 p.m.	.97	7:23 p.m.	7:54 p.m.	.02	.11	.27	.55	.71	.81	.87	.89							
July 14	9:55 a.m.	10:43 a.m.	.80	10:07 a.m.	10:23 a.m.	.03	.17	.44	.70	.76										
July 27	5:45 p.m.	8:50 p.m.	.79	7:12 p.m.	7:38 p.m.	.02	.11	.16	.34	.47	.59	.65								
Jacksonville, Fla.:[6]																				
May 12	D.N. a.m.	9:15 a.m.	1.81	5:38 a.m.	6:26 a.m.	.13	.06	.14	.21	.28	.41	.67	1.11	1.19	1.23	1.36				
June 6	5:50 p.m.	8:50 p.m.	1.62	6:03 p.m.	6:49 p.m.	.02	.22	.47	.76	.82	1.01	1.25	1.40	1.48						
Aug. 29	3:30 p.m.	7:55 p.m.	1.40	3:39 p.m.	4:03 p.m.	.01	.12	.43	.73	.99	1.05									
FLORIDA PENINSULA																				
Key West, Fla.:[6]																				
Jan. 5	2:52 p.m.	8:14 p.m.	1.49	3:35 p.m.	4:07 p.m.	.09	.33	.56	.65	.81	1.03	1.18	1.23							
May 8	10:25 p.m.	[1]D.N. a.m.	1.67	10:45 p.m.	11:44 p.m.	.08	.09	.22	.40	.56	.74	.88	1.00	1.17	1.28	1.36	1.47			
July 12	4:50 p.m.	9:20 p.m.	1.56	4:54 p.m.	5:19 p.m.	.04	.05	.21	.70	1.01	1.06									
Sept. 23	11:08 a.m.	1:20 p.m.	1.76	11:53 a.m.	12:25 p.m.	.18	.09	.14	.23	.34	.54	1.09	1.23							
Oct. 17	7:30 p.m.	[1]6:00 a.m.	1.96	10:58 p.m.	11:32 p.m.	.29	.12	.32	.47	.82	1.16	1.29	1.35							
Miami, Fla.:[6]																				
Mar. 2	D.N. a.m.	D.N. a.m.	2.29	4:04 a.m.	4:31 a.m.	.22	.27	.69	1.20	1.77	2.00	2.04								
May 12	4:23 p.m.	5:12 p.m.	1.04	4:32 p.m.	4:54 p.m.	.01	.10	.39	.68	.97	1.02									
Aug. 3	D.N. a.m.	8:20 a.m.	2.29	5:48 a.m.	6:42 a.m.	.18	.10	.17	.22	.31	.40	.50	.67	.87	.96	1.11	1.23			
Sept. 6	D.N. a.m.	1:05 p.m.	5.26	9:42 a.m.	10:28 a.m.	2.91	.21	.57	.97	1.22	1.40	1.54	1.66	1.89	2.02	2.06				
Do	6:05 p.m.	[1]D.N. a.m.	5.27	6:07 p.m.	7:06 p.m.	.01	.15	.21	.28	.36	.41	.48	.59	.80	1.07	1.31	1.57			
Do	6:05 p.m.	[1]D.N. a.m.	5.27	7:37 p.m.	8:54 p.m.	1.71	.25	.53	.66	.83	.86	.91	1.02	1.16	1.26	1.45	1.87	2.39		
Sept. 22	8:40 a.m.	9:32 a.m.	1.14	8:50 a.m.	9:13 a.m.	.06	.33	.55	.64	.90	1.07									
Tampa, Fla.:[9]																				
Jan. 5	9:30 a.m.	2:10 p.m.	1.09	9:40 a.m.	10:19 a.m.	.01	.07	.15	.29	.45	.73	.90	.96	1.01						
Apr. 5	D.N. a.m.	9:10 a.m.	2.29	6:36 a.m.	7:22 a.m.	.34	.21	.43	.63	1.02	1.29	1.39	1.46	1.57	1.65	1.69				
Apr. 15	[4]4:15 p.m.	10:15 a.m.	4.21	3:15 a.m.	4:33 a.m.	1.63	.08	.21	.30	.45	.63	.88	1.04	1.27	1.46	1.65	1.89	2.27		
July 5	3:20 a.m.	8:35 a.m.	1.60	5:57 a.m.	7:43 a.m.	.27	.18	.35	.44	.56	.60	.64	.65	.69	.72	.77	.94	1.28		
July 13	5:02 p.m.	8:10 p.m.	1.18	5:08 p.m.	5:23 p.m.	.02	.14	.41	.66	.90	1.05	1.09								
Sept. 10	5:10 p.m.	10:20 p.m.	3.96	6:29 p.m.	7:58 p.m.	.16	.21	.55	.73	.76	.76	.78	.82	.89	1.02	1.18	1.91	3.30	3.59	

[1] On following date.
[4] On preceding date.
[5] From defective record.
[6] Only storms attaining 1 inch or more in 1 hour or less.
[7] Only storms attaining 0.50 inch or more in 30 minutes or less.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
EAST GULF STATES																				
Atlanta, Ga.:[7]																				
July 15	2:40 p.m.	3:30 p.m.	0.57	2:42 p.m.	3:09 p.m.	0.01	0.13	0.30	0.36	0.46	0.52	0.56								
July 18	2:50 p.m.	5:46 p.m.	.96	3:35 p.m.	3:55 p.m.	.18	.14	.32	.45	.54										
July 28	5:07 p.m.	7:20 p.m.	.95	5:58 p.m.	6:20 p.m.	.01	.13	.53	.76	.88	.91									
Aug. 10	2:22 p.m.	D.N. p.m.	1.81	2:28 p.m.	2:51 p.m.	.02	.19	.35	.43	.56	.62									
Do	2:22 p.m.	D.N. p.m.	1.81	7:49 p.m.	8:29 p.m.	.86	.21	.31	.48	.60	.69	.75	0.80	0.87						
Sept. 19	4:36 p.m.	7:05 p.m.	.64	4:44 p.m.	4:58 p.m.	.04	.32	.53	.58											
Macon, Ga.:[6]																				
July 26	2:28 p.m.	7:05 p.m.	1.72	2:39 p.m.	3:18 p.m.	.01	.24	.58	.85	1.04	1.22	1.30	1.48	1.59						
Aug. 10	12:36 p.m.	2:00 p.m.	1.08	12:42 p.m.	1:12 p.m.	.01	.15	.29	.46	.67	.90	1.02								
Aug. 27	2:07 p.m.	3:38 p.m.	1.79	2:22 p.m.	3:13 p.m.	.05	.15	.63	1.13	1.17	1.20	1.30	1.33	1.50	1.60	1.64	1.70			
Thomasville, Ga.:[6]																				
May 4	9:55 p.m.	[1] D.N. a.m.	2.12	10:32 p.m.	11:33 p.m.	.10	.14	.20	.28	.40	.60	.80	.95	1.19	1.40	1.48	1.67	1.75		
June 15	2:27 p.m.	4:15 p.m.	1.80	2:39 p.m.	3:29 p.m.	.03	.14	.42	.83	1.06	1.08	1.09	1.11	1.20	1.30	1.43				
July 10	3:15 p.m.	6:55 p.m.	1.56	3:39 p.m.	4:27 p.m.	.10	.13	.29	.48	.65	.95	1.09	1.22	1.24	1.31	1.37				
July 27	3:05 p.m.	5:55 p.m.	2.24	3:25 p.m.	4:25 p.m.	.02	.19	.57	.81	.90	1.05	1.22	1.60	1.78	1.84	1.94	2.13			
Aug. 8	1:33 p.m.	4:36 p.m.	2.07	1:38 p.m.	2:32 p.m.	.01	.13	.35	.68	.96	1.15	1.29	1.43	1.50	1.58	1.69	1.78			
Dec. 9	[4] 9:05 p.m.	4:50 p.m.	4.54	3.32 p.m.	4:04 p.m.	3.37	.10	.27	.46	.69	.92	1.04	1.09							
Dec. 31	7:15 a.m.	12:15 p.m.	1.67	8:16 a.m.	8:50 a.m.	.17	.12	.29	.40	.60	.82	.94	1.02							
Apalachicola, Fla.:[6]																				
July 23	7:59 a.m.	9:50 a.m.	1.29	8:04 a.m.	8:24 a.m.	.02	.33	.73	1.02	1.22										
Aug. 4	3:40 p.m.	5:00 p.m.	1.11	3:52 p.m.	4:37 p.m.	.03	.10	.17	.26	.35	.44	.63	.88	.98	1.06					
Aug. 10	D.N. a.m.	8:25 a.m.	2.38	3:09 a.m.	3:44 a.m.	.01	.12	.35	.64	.85	.97	1.08	1.18							
Aug. 14	D.N. a.m.	D.N. a.m.	1.68	1:23 a.m.	2:17 a.m.	.01	.09	.18	.30	.46	.63	.76	.92	1.05	1.16	1.47	1.62			
Aug. 15–16	9:10 p.m.	D.N. a.m.	4.60	11:01 p.m.	11:51 p.m.	.84	.30	.48	.67	.73	.81	.93	1.12	1.43	1.70	1.75				
				11:51 p.m.	12:41 a.m.		1.80	1.88	1.91	1.93	1.94	1.96	1.98	2.15	2.44	2.61				
				12:41 a.m.	1:31 a.m.		2.70	2.78	2.81	2.84	2.89	2.89	2.92	3.00	3.11	3.22				
				1:31 a.m.	1:41 a.m.		3.29	3.36												
Dec. 9	D.N. a.m.	1:50 p.m.	4.08	2:18 a.m.	3:35 a.m.	.17	.11	.24	.42	.55	.64	.67	.71	.76	.84	.88	1.00	1.20		
Dec. 31	4:00 a.m.	11:45 a.m.	2.66	5:24 a.m.	6:19 a.m.	.23	.09	.15	.22	.23	.27	.59	.71	.90	1.36	1.56	1.69			
Pensacola, Fla.:[6]																				
July 7	7:20 a.m.	1:50 p.m.	2.00	8:29 a.m.	9:17 a.m.	.11	.05	.32	.70	.95	1.03	1.10	1.26	1.44	1.52	1.57				
July 22	7:24 a.m.	7:14 p.m.	4.92	8:00 a.m.	9:20 a.m.	.11	.12	.32	.54	.78	.95	1.12	1.21	1.28	1.41	1.44	1.46	1.82		
Do	7:24 a.m.	7:14 p.m.	4.92	12:22 p.m.	1:18 p.m.	2.22	.22	.52	.79	1.07	1.40	1.63	1.70	1.83	1.95	2.09	2.18			
Aug. 15[5]	D.N. a.m.	6:33 p.m.	4.41	6:07 a.m.	6:57 a.m.	.18	.09	.15	.21	.31	.47	.62	.76	.90	1.02	1.14				
				6:57 a.m.	7:47 a.m.		1.25	1.34	1.41	1.47	1.53	1.61	1.70	1.80	1.88	1.88				
				7:47 a.m.	8:21 a.m.		1.88	1.90	1.99	2.06	2.16	2.21	2.28							
Do[5]	D.N. a.m.	6:33 p.m.	4.41	11:27 a.m.	11:58 a.m.	2.69	.05	.11	.41	.64	.83	.99	1.03							
Oct. 4	[4] 7:48 p.m.	4:55 p.m.	2.87	5:52 a.m.	6:52 a.m.	.44	.13	.43	.56	.66	.77	.86	.93	1.03	1.11	1.22	1.47			
Oct. 7	6:36 a.m.	12:30 p.m.	1.99	9:08 a.m.	9:33 a.m.	.25	.12	.34	.82	.97	1.04									
Dec. 19	[4] 11:10 p.m.	6:00 a.m.	2.01	12:29 a.m.	1:30 a.m.	.15	.13	.15	.19	.23	.26	.37	.52	.64	.72	.79	1.05	1.15		
Dec. 21	9:06 a.m.	12:35 p.m.	1.90	9:56 a.m.	10:43 a.m.	.18	.06	.14	.21	.40	.66	.75	.96	1.22	1.43	1.47				
Birmingham, Ala.:[6]																				
Nov. 30	6:55 a.m.	3:00 p.m.	1.90	9:19 a.m.	9:55 a.m.	.33	.30	.59	.75	1.04	1.16	1.29	1.34	1.38						
Mobile, Ala.:[6]																				
July 4	4:15 p.m.	7:10 p.m.	2.55	4:23 p.m.	5:13 p.m.	.01	.19	.50	1.06	1.43	1.74	1.98	2.18	2.35	2.43	2.49				
July 7	11:25 a.m.	12:30 p.m.	1.28	11:46 a.m.	12:13 p.m.	.02	.15	.44	.85	1.03	1.14	1.23								
July 15	5:58 p.m.	[1] 2:25 p.m.	7.83	10:43 p.m.	11:19 p.m.	.92	.06	.28	.54	.80	1.01	1.22	1.42	1.45						
July 16	[4] 5:58 p.m.	2:25 p.m.	7.83	12:19 a.m.	1:31 a.m.	2.78	.06	.21	.27	.33	.40	.42	.45	.58	.67	.71	.98	1.29		
Do	[4] 5:58 p.m.	2:25 p.m.	7.83	4:08 a.m.	4:59 a.m.	4.73	.17	.35	.45	.65	.82	.93	1.00	1.04	1.07	1.17	1.26			
Do	[4] 5:58 p.m.	2:25 p.m.	7.83	6:39 a.m.	7:26 a.m.	6.34	.15	.29	.49	.56	.60	.63	.76	.89	.97	1.10				
July 22	1:18 p.m.	7:37 p.m.	3.10	1:19 p.m.	2:50 p.m.	T	.14	.32	.56	.93	1.24	1.47	1.59	1.72	1.83	1.92	2.02	2.48	2.94	
Dec. 20	D.N. a.m.	9:30 a.m.	1.85	7:23 a.m.	8:19 a.m.	.08	.29	.36	.37	.40	.44	.65	.90	1.03	1.23	1.45	1.54			
Montgomery, Ala.:[6]																				
Aug. 8	3:24 p.m.	7:15 p.m.	1.55	3:31 p.m.	4:02 p.m.	.01	.13	.38	.67	.91	1.01	1.10	1.14							
Meridian, Miss.:[6]																				
Apr. 4	[4] 11:55 p.m.	9:45 a.m.	2.53	2:48 a.m.	3:44 a.m.	.51	.08	.16	.21	.27	.38	.52	.58	.69	.87	1.08	1.22			
June 24	1:02 p.m.	2:23 p.m.	1.98	1:03 p.m.	1:53 p.m.	.01	.21	.65	1.09	1.33	1.38	1.44	1.55	1.84	1.90	1.96				
July 4	12 Noon	6:25 p.m.	1.44	12 Noon	12:50 p.m.	.00	.18	.36	.41	.45	.58	.81	1.05	1.14	1.18	1.27				
Aug. 1	4:15 p.m.	7:20 p.m.	2.66	4:52 p.m.	5:21 p.m.	.04	.48	.93	1.15	1.31	1.35	1.42								
Aug. 6	8:15 p.m.	11:40 p.m.	3.15	8:45 p.m.	9:48 p.m.	.12	.36	.78	.91	1.02	1.17	1.38	1.67	1.98	2.31	2.60	2.77	2.91		
Dec. 3	5:40 a.m.	9:10 a.m.	2.02	7:15 a.m.	7:44 a.m.	.26	.11	.26	.50	.84	1.17	1.31								
Vicksburg, Miss.:[6]																				
May 19	2:10 p.m.	4:30 p.m.	1.16	3:04 p.m.	3:32 p.m.	.01	.11	.11	.45	.77	1.05	1.13								
June 30	3:46 p.m.	5:15 p.m.	1.79	3:57 p.m.	4:24 p.m.	.01	.34	.88	1.39	1.59	1.67	1.73								
July 23	3:16 p.m.	D.N. p.m.	1.70	3:48 p.m.	4:14 p.m.	.02	.28	.73	1.02	1.17	1.27	1.29								
New Orleans, La.:[6]																				
June 30[5]	6:19 a.m.	1:30 p.m.	1.58	6:19 a.m.	7:01 a.m.	.00	.17	.33	.46	.51	.54	.63	.83	1.01	1.07					
July 15[5]	[4] 9:00 a.m.	9:00 a.m.	5.48	5:10 a.m.	6:44 a.m.	3.33	.11	.18	.26	.35	.42	.57	.74	.84	.89	1.00	1.11	1.33	1.56	
Oct. 6	3:45 p.m.	9:10 p.m.	1.90	7:04 p.m.	8:33 p.m.	.33	.06	.13	.26	.37	.48	.53	.56	.57	.58	.59	.69	1.38	1.52	
WEST GULF STATES																				
Shreveport, La.:[6]																				
Aug. 3	4:15 p.m.	6:20 p.m.	1.73	4:29 p.m.	5:14 p.m.	.01	.23	.55	.86	1.12	1.25	1.36	1.45	1.51	1.70					
Oct. 28	12:50 a.m.	4:50 a.m.	2.17	1:43 a.m.	2:34 a.m.	.38	.11	.22	.43	.65	.75	.76	.78	.87	.96	1.20	1.22			
Nov. 19	5:25 p.m.	9:50 p.m.	2.10	6:10 p.m.	6:41 p.m.	.07	.08	.13	.26	.52	.90	1.18	1.22							
Fort Smith, Ark.:[6]																				
July 20	8:50 p.m.	10:40 p.m.	1.31	9:07 p.m.	9:32 p.m.	.02	.25	.60	.84	1.00	1.07									
Aug. 4	3:50 a.m.	1:20 p.m.	4.35	4:39 a.m.	5:23 a.m.	.18	.10	.16	.26	.44	.59	.78	.95	1.08	1.13					
Oct. 22	7:30 p.m.	[1] 7:05 a.m.	3.24	10:55 p.m.	12 midnt.	.20	.15	.25	.39	.50	.58	.60	.62	.67	.73	.76	1.04	1.17		
Oct. 23	[4] 7:30 p.m.	7:05 a.m.	3.24	12:42 a.m.	1:30 a.m.	1.62	.15	.28	.40	.44	.49	.59	.65	.87	.98	1.04				

[1] On following date.
[4] On preceding date.
[5] From defective record.
[6] Only storms attaining 1 inch or more in 1 hour or less.
[7] Only storms attaining 0.50 inch or more in 30 minutes or less.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
WEST GULF STATES—continued																				
Little Rock, Ark.:[6]																				
Apr. 30	5:45 p.m.	D.N. p.m.	2.77	6:41 p.m.	7:31 p.m.	0.09	0.20	0.34	0.39	0.41	0.47	0.69	0.86	1.28	1.72	1.88				
July 24	6:03 p.m.	8:48 p.m.	1.27	6:11 p.m.	6:55 p.m.	.01	.05	.12	.29	.42	.67	.86	.93	1.05	1.13					
Dec. 12	6:55 p.m.	[1]D.N. a.m.	3.35	9:10 p.m.	10:00 p.m.	.17	.05	.11	.25	.40	.49	.61	.68	.72	.72	.87				
				10:00 p.m.	10:50 p.m.		1.06	1.18	1.29	1.29	1.29	1.38	1.44	1.54	1.57	1.60				
				10:50 p.m.	11:30 p.m.		1.62	1.63	1.65	1.75	1.81	1.95	2.00	2.07						
Austin, Tex.:[6]																				
Feb. 22	9:10 a.m.	1:50 p.m.	2.44	11:04 a.m.	11:52 a.m.	.14	.10	.46	.80	.95	1.26	1.62	1.73	1.74	1.89	2.00				
Apr. 29	D.N. a.m.	3:10 p.m.	2.88	9:10 a.m.	9:53 a.m.	.14	.10	.35	.63	.91	1.14	1.40	1.54	1.63	1.69					
July 15	12:43 p.m.	2:15 p.m.	1.95	12:56 p.m.	1:35 p.m.	.01	.14	.25	.40	.53	.84	1.37	1.76	1.85						
Aug. 21	7:10 p.m.	D.N. p.m.	1.61	7.32 p.m.	8:22 p.m.	.01	.27	.43	.53	.58	.64	.70	.85	1.09	1.31	1.43				
Brownsville, Tex.:[6]																				
Oct. 29	2:35 p.m.	6:10 p.m.	2.81	4:25 p.m.	5:48 p.m.	.06	.08	.22	.52	.68	.79	.88	.98	1.12	1.37	1.65	2.18	2.66	2.74	
Corpus Christi, Tex.:[6]																				
June 27	[4]9:37 p.m.	6:35 p.m.	8.03	11:21 a.m.	12:11 p.m.	1.58	.07	.18	.28	.36	.53	.60	.66	.71	.73	.85				
				12:11 p.m.	1:01 p.m.		.98	1.00	1.06	1.15	1.18	1.30	1.54	1.64	1.65	1.68				
				1:01 p.m.	1:51 p.m.		1.74	1.94	2.02	2.08	2.16	2.21	2.28	2.42	2.54	2.72				
				1:51 p.m.	2:41 p.m.		2.82	2.85	2.94	3.12	3.35	3.58	3.92	4.30	4.57	4.80				
				2:41 p.m.	3:31 p.m.		5.06	5.16	5.20	5.21	5.23	5.25	5.40	5.57	5.63	5.69				
				3:31 p.m.	3:46 p.m.		5.77	5.90	5.98											
July 16	11:32 a.m.	2:10 p.m.	3.05	11:46 a.m.	1:35 p.m.	.01	.09	.13	.16	.20	.27	.37	.71	.89	.76	1.23	1.95	2.41	2.84	3.03
July 18	1:05 a.m.	12:45 p.m.	6.39	3:34 a.m.	4:19 a.m.	.78	.19	.56	.83	1.01	1.08	1.13	1.29	1.39	1.46					
Do	1:05 a.m.	12:45 p.m.	6.39	10:58 a.m.	11:50 a.m.	5.02	.24	.40	.45	.47	.52	.69	.93	1.14	1.18	1.24	1.34			
Dallas, Tex.:[6]																				
Sept. 11	11:56 a.m.	4:15 p.m.	2.74	12:10 p.m.	1:12 p.m.	.04	.21	.35	.81	1.19	1.45	1.61	1.73	1.89	2.10	2.19	2.47	2.62		
Fort Worth, Tex.:[6]																				
Aug. 18	12:09 p.m.	1:05 p.m.	1.21	12:23 p.m.	12:52 p.m.	.03	.13	.22	.35	.56	.97	1.18								
Sept. 11	2:19 p.m.	3:24 p.m.	1.24	2:27 p.m.	3:02 p.m.	.03	.17	.41	.62	.78	.91	1.04	1.14							
Galveston, Tex.:[6]																				
Jan. 11	[4]7:06 p.m.	[1]6:39 a.m.	2.63	7:05 a.m.	8:07 a.m.	.47	.16	.21	.33	.41	.50	.65	.75	.80	.81	.87	1.05	1.12		
Apr. 30	1:53 p.m.	5:40 p.m.	1.66	2:03 p.m.	2:33 p.m.	.02	.30	.70	.99	1.04	1.14	1.28								
May 18	1:52 p.m.	5:19 p.m.	1.73	2:53 p.m.	3:48 p.m.	.20	.19	.34	.41	.59	.74	1.00	1.04	1.18	1.21	1.27	1.36			
Aug. 18	D.N. a.m.	7:44 a.m.	2.32	3:54 a.m.	5:01 a.m.	.16	.21	.34	.35	.40	.56	.57	.59	.79	1.09	1.25	1.49	1.74		
Oct. 6	8:51 a.m.	12:04 p.m.	1.52	10:39 a.m.	11:29 a.m.	.25	.07	.27	.42	.65	.76	.87	.89	.97	1.09	1.18				
Groesbeck, Tex.:[6][8]																				
May 19	7:15 a.m.	11:15 a.m.	1.84	7:15 a.m.	7:42 a.m.	.00	.22	.53	.85	1.12	1.18	1.22								
Houston, Tex.:[6]																				
Apr. 19	11:15 a.m.	5:47 p.m.	2.77	3:38 p.m.	5:19 p.m.	.23	.27	.53	.80	1.14	1.26	1.29	1.32	1.46	1.54	1.64	1.83	2.19	2.44	2.53
Apr. 30	11:30 a.m.	1:55 p.m.	1.37	12:25 p.m.	12:54 p.m.	.23	.30	.48	.69	.92	1.04	1.09								
Aug. 25	1:32 p.m.	3:15 p.m.	1.90	1:37 p.m.	2:43 p.m.	.01	.09	.29	.33	.39	.45	.57	.66	.74	.86	1.13	1.71	1.89		
Palestine, Tex.:[6]																				
May 22	12:02 a.m.	D.N. a.m.	1.12	12:10 a.m.	12:35 a.m.	.02	.18	.53	.74	.89	1.06									
July 12	5:00 p.m.	[1]D.N. a.m.	4.40	9:36 p.m.	10:38 p.m.	1.15	.10	.21	.33	.59	.92	1.20	1.53	1.92	2.19	2.44	2.89	3.04		
Aug. 29	D.N. a.m.	9:00 a.m.	2.44	4:42 a.m.	5:35 a.m.	.04	.19	.51	.84	1.16	1.36	1.53	1.66	1.77	1.83	1.92	1.99			
Port Arthur, Tex.:[6]																				
Oct. 6	3:25 a.m.	11:26 a.m.	2.82	5:48 a.m.	7:28 a.m.	.89	.27	.44	.51	.58	.62	.68	.79	.82	.87	.99	1.02	1.22	1.58	
Oct. 23	D.N. a.m.	11:50 a.m.	1.88	6:47 a.m.	7:57 a.m.	.03	.05	.13	.23	.47	.60	.76	.86	.93	1.05	1.15	1.26	1.41		
San Antonio, Tex.:[6]																				
Jan. 11	[4]5:10 a.m.	8:05 a.m.	2.22	2:12 a.m.	3:32 a.m.	.52	.18	.27	.31	.38	.45	.52	.61	.66	.67	.68	.98	1.43		
Taylor, Tex.:[6]																				
June 17	2:33 p.m.	4:14 p.m.	1.32	2:46 p.m.	3:24 p.m.	.01	.11	.34	.50	.54	.65	.86	1.17	1.30						
Sept. 10	4:28 p.m.	7:20 p.m.	2.29	4:38 p.m.	6:22 p.m.	.01	.12	.33	.63	.74	.91	.99	1.01	1.02	1.04	1.05	1.15	1.57	2.16	2.27
OHIO VALLEY AND TENNESSEE																				
Chattanooga, Tenn.:[7]																				
July 14	6:06 p.m.	8:19 p.m.	.84	6:16 p.m.	6:44 p.m.	.01	.16	.27	.42	.57	.67	.72								
Aug. 1	1:15 p.m.	5:05 p.m.	.85	2:45 p.m.	3:19 p.m.	.14	.07	.13	.20	.36	.50	.61	.67							
Dec. 13	7:40 a.m.	11:31 p.m.	2.41	10:56 a.m.	11:55 a.m.	.22	.16	.31	.38	.40	.43	.50	.59	.62	.64	.71	.83			
Knoxville, Tenn.:[6]																				
July 16	4:45 p.m.	6:25 p.m.	2.67	5:02 p.m.	5:48 p.m.	.01	.17	.71	1.14	1.48	1.81	2.18	2.36	2.47	2.54	2.57				
Aug. 20	4:31 p.m.	7:36 p.m.	1.15	5:01 p.m.	6:01 p.m.	.01	.13	.14	.21	.33	.52	.55	.59	.69	.74	.83	1.01			
Memphis, Tenn.:[7]																				
Aug. 19	12:22 p.m.	1:30 p.m.	.76	12:27 p.m.	12:46 p.m.	.01	.22	.36	.45	.66										
Nov. 17	10:35 a.m.	6:01 p.m.	1.63	1:41 p.m.	1:57 p.m.	.19	.31	.54	.69	.73										
Dec. 13	[4]10:35 a.m.	6:10 a.m.	2.51	3:13 a.m.	3:34 a.m.	1.10	.17	.35	.54	.77	.80									
Dec. 30	11:17 a.m.	[1]3:20 a.m.	3.65	2:13 p.m.	2:55 p.m.	1.10	.25	.43	.55	.57	.60	.78	.88	.94	.97					
Nashville, Tenn.:[7]																				
June 15	3:55 p.m.	4:35 p.m.	.61	4:07 p.m.	4:25 p.m.	.02	.15	.30	.51	.58										
June 23	2:45 p.m.	8:45 p.m.	.92	2:53 p.m.	3:16 p.m.	.01	.22	.25	.36	.44	.50									
July 21	7:10 a.m.	10:50 a.m.	.97	8:29 a.m.	8:46 a.m.	.04	.30	.57	.79	.82										
Sept. 13	4:30 p.m.	5:45 p.m.	.77	4:36 p.m.	4:47 p.m.	.01	.38	.64	.69											
Nov. 17	4:30 p.m.	10:15 p.m.	1.37	7:44 p.m.	8:31 p.m.	.19	.05	.15	.26	.38	.58	.69	.73	.79	.84	.88				
Lexington, Ky.:[6]																				
July 3	5:39 p.m.	D.N. p.m.	3.40	5:39 p.m.	6:45 p.m.	.00	.06	.35	.82	1.48	1.89	2.16	2.40	2.60	2.91	3.02	3.15	3.26		
July 16	1:35 p.m.	2:40 p.m.	1.23	1:35 p.m.	2:20 p.m.	.00	.06	.10	.17	.38	.61	.68	97	1.08	1.16					
July 18	1:15 p.m.	5:45 p.m.	1.96	1:17 p.m.	2:31 p.m.	.01	.19	.35	.41	.50	.71	.98	1.19	1.28	1.36	1.41	1.62	1.88		
Louisville, Ky.:[7]																				
June 23	9:55 a.m.	11:05 a.m.	.58	10:11 a.m.	10:20 a.m.	.04	.18	.52												
June 29	1:35 p.m.	4:20 p.m.	.68	1:41 p.m.	2:06 p.m.	.01	.07	.14	.25	.47	.56									
Sept. 19	9:18 p.m.	10:45 p.m.	.58	9:55 p.m.	10:11 p.m.	.02	.08	.23	.47	.50										

[1] On following date.
[4] On preceding date.
[6] Only storms attaining 1 inch or more in 1 hour or less.
[7] Only storms attaining 0.50 inch or more in 30 minutes or less.
[8] Record from January to May, inclusive.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated												
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
OHIO VALLEY AND TENNESSEE—con.																				
Evansville, Ind.:																				
Apr. 3	9:30 a.m.	10:15 a.m.	0.41	9:30 a.m.	9:43 a.m.	0.00	0.17	0.33	0.37											
May 30	6:29 p.m.	6:45 p.m.	.35	6:32 p.m.	6:42 p.m.	.01	.21	.33												
June 6-7	10:55 p.m.	1:12 a.m.	1.39	11:40 p.m.	12:15 a.m.	.15	.27	.59	.65	0.83	0.94	1.06	1.11							
June 12	12:39 p.m.	4:33 p.m.	.54	2:20 p.m.	2:30 p.m.	.12	.25	.36												
June 24	5:22 p.m.	9:45 p.m.	.85	5:36 p.m.	5:51 p.m.	.01	.11	.37	.39											
Aug. 20	9:28 a.m.	3:12 p.m.	2.78	9:40 a.m.	11:12 a.m.	.01	.10	.33	.50	.61	.73	.85	1.02	1.21	1.32	1.48	1.72	2.10	2.40	
Aug. 28	3:20 a.m.	7:05 a.m.	.90	3:35 a.m.	3:55 a.m.	.04	.19	.42	.57	.63										
Sept. 1	6:28 p.m.	11:30 p.m.	1.35	9:20 p.m.	10:07 p.m.	.41	.10	.18	.27	.40	.45	.50	.55	.56	.66	.73				
Sept. 2	12:15 a.m.	5:40 a.m.	1.63	1:21 a.m.	1:51 a.m.	.05	.16	.24	.29	.38	.51	.60								
Nov. 17	2:37 p.m.	9:20 p.m.	1.16	5:03 p.m.	5:15 p.m.	.30	.18	.33	.38											
Indianapolis, Ind.:																				
June 13	2:11 p.m.	4:16 p.m.	.46	2:20 p.m.	2:35 p.m.	.01	.11	.29	.36											
July 2	2:36 p.m.	3:29 p.m.	.61	2:46 p.m.	3:10 p.m.	.01	.06	.15	.26	.51	.57									
July 18	8:43 p.m.	9:56 p.m.	.94	8:50 p.m.	9:25 p.m.	.01	.23	.44	.62	.72	.77	.80	.88							
Aug. 9	6:14 p.m.	8:30 p.m.	1.08	6:17 p.m.	6:35 p.m.	.01	.14	.39	.55	.61										
Do	8:14 p.m.	8:30 p.m.	1.08	7:09 p.m.	7:24 p.m.	.65	.06	.26	.35											
Do	9:10 p.m.	11:30 p.m.	.80	10:14 p.m.	10:29 p.m.	.33	.21	.36	.45											
Aug. 26	12:35 a.m.	3:24 a.m.	.90	12:53 a.m.	1:18 a.m.	.03	.13	.46	.65	.77	.82									
Sept. 3	4:46 p.m.	6:29 p.m.	.75	4:54 p.m.	5:24 p.m.	.01	.21	.37	.45	.46	.52	.60								
Dec. 11	[4] 9:26 p.m.	7:59 a.m.	2.11	1:00 a.m.	1:57 a.m.	.57	.07	.19	.26	.32	.37	.44	.50	.57	.62	.70	.80			
Royal Center, Ind.:																				
May 19	6:17 p.m.	[1] D.N. a.m.	1.54	6:58 p.m.	7:32 p.m.	.32	.08	.20	.30	.37	.47	.54	.60							
June 6	D.N. a.m.	D.N. a.m.	1.55	1:28 a.m.	2:32 a.m.	.04	.12	.38	.58	.59	.60	.68	.77	.81	.82	.89	1.35	1.51		
June 13	1:00 p.m.	3:15 p.m.	1.30	1:25 p.m.	2:00 p.m.	.01	.06	.21	.47	.72	.91	1.02	1.13							
June 21	11:15 a.m.	12:05 p.m.	.69	11:24 a.m.	11:38 a.m.	.01	.27	.52	.64											
June 24	8:26 a.m.	10:25 a.m.	1.14	8:29 a.m.	9:02 a.m.	.01	.20	.30	.55	.79	.99	1.08	1.12							
June 29	8:52 a.m.	2:08 p.m.	2.36	9:18 a.m.	9:55 a.m.	.03	.11	.17	.24	.37	.47	.53	.59	.62						
Do	8:52 a.m.	2:08 p.m.	2.36	11:08 a.m.	11:37 a.m.	.78	.09	.18	.30	.38	.44	.55								
Do	8:52 a.m.	2:08 p.m.	2.36	12:25 p.m.	12:44 p.m.	1.66	.20	.47	.63	.68										
July 19-20	10:00 p.m.	D.N. a.m.	1.00	11:53 p.m.	12:13 a.m.	.20	.14	.18	.36	.43										
Aug. 8	10:45 p.m.	[1] D.N. a.m.	1.14	10:47 p.m.	11:16 p.m.	.01	.09	.28	.53	.64	.69	.77								
Aug. 27	8:26 p.m.	[1] D.N. a.m.	1.04	11:04 p.m.	11:26 p.m.	.27	.24	.32	.40	.48	.52									
Sept. 16	[4] 3:25 p.m.	D.N. a.m.	2.23	2:59 a.m.	3:49 a.m.	1.17	.10	.20	.23	.30	.40	.48	.60	.66	.77	.98				
Oct. 7	6:11 a.m.	6:35 a.m.	.42	6:18 a.m.	6:28 a.m.	.01	.22	.41												
Terre Haute, Ind.:																				
June 13	11:03 a.m.	11:58 a.m.	1.04	11:03 a.m.	11:37 a.m.	.00	.17	.30	.44	.63	.83	.95	1.02							
June 22	8:48 p.m.	11:30 p.m.	1.48	9:27 p.m.	10:23 p.m.	.01	.11	.27	.47	.64	.72	.76	.90	1.09	1.29	1.33	1.46			
July 3	1:25 p.m.	7:05 p.m.	2.59	2:44 p.m.	4:09 p.m.	.17	.25	.45	.58	.75	.94	1.17	1.29	1.40	1.56	1.68	1.87	2.09	2.19	
Aug. 28	12:10 a.m.	7:15 a.m.	1.37	12:52 a.m.	1:27 a.m.	.02	.12	.24	.44	.73	.94	1.06	1.14							
Sept. 2	8:30 a.m.	12:45 p.m.	1.41	10:02 a.m.	11:22 a.m.	.07	.08	.19	.25	.32	.37	.43	.48	.55	.60	.69	.82	1.12		
Sept. 3	5:03 p.m.	6:35 p.m.	.69	5:56 p.m.	6:04 p.m.	.10	.33	.51												
Sept. 14	8:32 p.m.	[1] 9:52 a.m.	5.60	10:31 p.m.	11:08 p.m.	.39	.08	.24	.48	.58	.67	.79	.89	.95						
Sept. 15	[4] 8:32 p.m.	9:52 a.m.	5.60	12:33 a.m.	1:12 a.m.	1.72	.07	.14	.25	.42	.48	.54	.58	.63						
Do	[4] 8:32 p.m.	9:52 a.m.	5.60	3:06 a.m.	3:46 a.m.	2.75	.11	.21	.29	.37	.40	.48	.52	.64						
Do	[4] 8:32 p.m.	9:52 a.m.	5.60	4:17 a.m.	4:35 a.m.	3.48	.22	.24	.45	.51										
Do	[4] 8:32 p.m.	9:52 a.m.	5.60	6:57 a.m.	7:16 a.m.	4.87	.15	.30	.50	.67										
Oct. 6	3:32 p.m.	6:30 p.m.	1.38	3:47 p.m.	4:07 p.m.	.03	.22	.65	1.04	1.19										
Oct. 7	5:30 p.m.	11:30 p.m.	1.85	6:42 p.m.	7:25 p.m.	.05	.33	.57	.66	.76	.81	.88	.94	1.10	1.21					
Oct. 14	2:40 a.m.	4:10 a.m.	.48	3:18 a.m.	3:28 a.m.	.01	.15	.44												
Dec. 11	[4] 7:25 p.m.	6:25 a.m.	1.61	12:02 a.m.	12:32 a.m.	.61	.13	.27	.30	.36	.45	.53								
Cincinnati, Ohio:																				
May 12	9:55 a.m.	3:00 p.m.	1.07	10:05 a.m.	11:01 a.m.	.03	.18	.30	.35	.36	.39	.64	.68	.72	.77	.85	.94			
May 25	6:01 p.m.	6:50 p.m.	.64	6:07 p.m.	6:22 p.m.	.01	.19	.35	.62											
June 4	11:21 p.m.	[1] 12:15 a.m.	.79	11:21 p.m.	11:41 p.m.	.00	.26	.43	.58	.68										
June 7	1:14 a.m.	5:30 a.m.	.94	2:06 a.m.	2:35 a.m.	.02	.12	.22	.23	.35	.41	.53								
July 18	2:30 a.m.	4:30 a.m.	.63	2:33 a.m.	2:46 a.m.	.01	.16	.44	.49											
July 21	4:10 a.m.	9:25 a.m.	2.16	5:33 a.m.	5:55 a.m.	.45	.21	.38	.51	.62	.67									
Do	4:10 a.m.	9:25 a.m.	2.16	7:58 a.m.	8:15 a.m.	1.42	.09	.22	.40	.48										
July 23 [5]	4:48 p.m.	5:45 p.m.	.46	4:55 p.m.	5:08 p.m.	.03	.10	.32	.42											
Aug. 3	5:35 p.m.	9:00 p.m.	.44	5:35 p.m.	5:50 p.m.	.00	.18	.31	.42											
Aug. 6	3:30 p.m.	4:50 p.m.	.79	3:49 p.m.	4:08 p.m.	.02	.14	.49	.70	.75										
Sept. 1	5:08 p.m.	[1] 12:15 a.m.	1.59	5:42 p.m.	5:55 p.m.	.07	.24	.32	.37											
Do	5:08 p.m.	[1] 12:15 a.m.	1.59	7:35 p.m.	7:49 p.m.	.53	.13	.31	.37											
Do	5:08 p.m.	[1] 12:15 a.m.	1.59	9:46 p.m.	10:07 p.m.	.95	.16	.25	.37	.48	.50									
Sept. 25	5:17 p.m.	9:55 p.m.	1.45	5:50 p.m.	6:03 p.m.	.25	.34	.58	.63											
Columbus, Ohio:																				
Apr. 20	4:20 p.m.	6:20 p.m.	.46	4:28 p.m.	4:34 p.m.	.02	.27	.29												
June 21	7:42 p.m.	D.N. p.m.	.65	7:44 p.m.	7:54 p.m.	.01	.25	.35												
July 17	5:08 p.m.	[1] D.N. a.m.	2.29	5:14 p.m.	5:53 p.m.	.01	.22	.54	1.02	1.36	1.54	1.69	1.77	1.84						
Aug. 1	2:35 p.m.	3:03 p.m.	.35	2:45 p.m.	2:54 p.m.	.01	.20	.32												
Aug. 10	D.N. a.m.	10:00 a.m.	.69	1:49 a.m.	2:01 a.m.	.20	.10	.39	.44											
Aug. 28	D.N. a.m.	6:15 a.m.	.82	5:11 a.m.	5:25 a.m.	.13	.35	.54	.67											
Sept. 17	6:00 p.m.	8:15 p.m.	.61	6:28 p.m.	6:38 p.m.	.05	.23	.51												
Dayton, Ohio:																				
Apr. 20	7:25 p.m.	10:08 p.m.	.67	7:32 p.m.	7:44 p.m.	.02	.25	.36	.39											
July 5	6:16 p.m.	6:55 p.m.	.40	6:16 p.m.	6:24 p.m.	.00	.27	.39												
July 17	8:51 p.m.	11:06 p.m.	1.25	8:58 p.m.	9:40 p.m.	.01	.06	.15	.24	.36	.44	.44	.78	.91	.93					
July 21	4:00 a.m.	11:55 a.m.	2.97	6:37 a.m.	7:50 a.m.	.13	.11	.26	.40	.57	.79	1.06	1.31	1.61	1.78	2.02	2.26	2.52		
July 31	3:05 p.m.	3:52 p.m.	.73	3:10 p.m.	3:36 p.m.	.02	.07	.23	.33	.43	.63	.66								
Sept. 25	4:38 p.m.	8:22 p.m.	1.09	4:44 p.m.	4:51 p.m.	.03	.31	.42												
Oct. 7	[4] 11:45 p.m.	2:00 a.m.	1.46	12:45 a.m.	1:26 a.m.	.28	.21	.38	.48	.52	.57	.82	.98	1.16	1.17					
Oct. 14	12:18 p.m.	2:02 p.m.	.74	12:30 p.m.	12:52 p.m.	.02	.18	.35	.56	.59	.62									

[1] On following date. [4] On preceding date. [5] From defective record.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
OHIO VALLEY AND TENNESSEE—contd.																				
Elkins, W.Va.:																				
May 19	11:00 a.m.	11:35 a.m.	0.36	11:07 a.m.	11:13 a.m.	0.01	0.27	0.35												
May 20	4:40 p.m.	[1] 4:30 a.m.	1.13	5:38 p.m.	5:59 p.m.	.11	.12	.32	0.43	0.49	0.53									
July 2	1:40 p.m.	4:30 p.m.	1.31	1:47 p.m.	1:57 p.m.	.01	.15	.30												
Do	1:40 p.m.	4:30 p.m.	1.31	2:44 p.m.	3:09 p.m.	.55	.11	.28	.45	.56	.63									
July 30	11:30 p.m.	[1] 12:30 a.m.	.33	11:47 p.m.	11:57 p.m.	.01	.14	.32												
Sept. 15	10:23 a.m.	2:05 p.m.	1.25	1:21 p.m.	1:46 p.m.	.76	.17	.27	.33	.34	.45									
Parkersburg, W.Va.:																				
May 12	10:14 a.m.	10:40 a.m.	.58	10:14 a.m.	10:35 a.m.	.00	.07	.19	.32	.55	.58									
June 4	7:29 p.m.	11:00 p.m.	.96	7:36 p.m.	8:05 p.m.	.01	.10	.20	.38	.45	.49	0.56								
June 26	3:04 p.m.	4:40 p.m.	.67	3:04 p.m.	3:31 p.m.	.00	.11	.23	.40	.53	.60	.64								
July 20	2:50 p.m.	5:12 p.m.	.61	2:59 p.m.	3:12 p.m.	.05	.10	.35	.45											
July 21	1:51 p.m.	5:16 p.m.	.49	2:20 p.m.	2:29 p.m.	.05	.29	.39												
Aug. 1	5:39 p.m.	6:03 p.m.	.45	5:39 p.m.	5:59 p.m.	.00	.19	.19	.26	.45										
Aug. 3	5:04 p.m.	6:45 p.m.	.45	5:04 p.m.	5:14 p.m.	.00	.20	.34												
Aug. 27	5:01 a.m.	7:28 a.m.	.56	5:06 a.m.	5:20 a.m.	.01	.20	.30	.38											
Sept. 25	8:53 p.m.	[1] 2:15 a.m.	1.92	8:53 p.m.	9:48 p.m.	.00	.24	.29	.39	.49	.57	.68	0.73	0.77	0.85	0.92	1.07			
Pittsburgh, Pa.:																				
May 7	6:59 p.m.	[1] D.N. a.m.	1.20	7:00 p.m.	7:04 p.m.	.02	.27													
May 12	2:14 p.m.	2:50 p.m.	.35	2:27 p.m.	2:38 p.m.	.03	.13	.30	.32											
Do	7:15 p.m.	[1] D.N. a.m.	1.32	8:18 p.m.	8:52 p.m.	.24	.06	.10	.16	.30	.48	.58	.64							
June 14	6:30 p.m.	8:45 p.m.	.49	6:47 p.m.	7:02 p.m.	.02	.19	.32	.37											
June 22	7:38 a.m.	11:20 a.m.	.72	9:53 a.m.	10:11 a.m.	.18	.08	.23	.35	.37										
June 26	2:55 a.m.	D.N. a.m.	1.45	2:59 a.m.	3:23 a.m.	.01	.26	.96	1.23	1.35	1.41									
July 2	5:43 p.m.	7:55 p.m.	1.24	6:51 p.m.	7:16 p.m.	.37	.26	.49	.59	.71	.80									
July 19	5:15 p.m.	8:15 p.m.	1.53	7:35 p.m.	8:00 p.m.	.50	.16	.56	.73	.95	1.02									
July 21	12:07 p.m.	5:20 p.m.	1.67	11:47 p.m.	1:27 p.m.	.09	.14	.33	.49	.61	.75	.90	1.01	1.06						
Aug. 18	3:20 p.m.	6:05 p.m.	1.40	3:22 p.m.	4:04 p.m.	.01	.10	.18	.29	.55	.73	.96	1.09	1.15	1.19					
LOWER LAKE REGION																				
Buffalo, N.Y.:																				
June 25	6:30 p.m.	7:50 p.m.	.49	6:44 p.m.	7:03 p.m.	.02	.14	.24	.38	.45										
July 20	12:02 a.m.	5:30 a.m.	1.57	12:35 a.m.	12:56 a.m.	.04	.19	.48	.64	.70	.71									
Do	12:02 a.m.	5:30 a.m.	1.57	4:58 a.m.	5:04 a.m.	1.23	.32	.34												
Aug. 9	D.N. a.m.	6:05 a.m.	1.21	4:38 a.m.	4:47 a.m.	.67	.23	.30												
Do	D.N. a.m.	6:05 a.m.	1.21	3:27 a.m.	3:35 a.m.	.26	.29	.36												
Aug. 30	6:25 a.m.	7:25 a.m.	.51	6:30 a.m.	6:45 a.m.	.01	.08	.31	.47											
Sept. 25–26	10:00 p.m.	7:10 a.m.	.86	11:48 p.m.	12:12 a.m.	.12	.12	.21	.35	.49	.62									
Canton, N.Y.:																				
June 14	10:26 p.m.	11:08 p.m.	.54	10:26 p.m.	10:46 p.m.	.00	.12	.23	.40	.51										
June 15	7:36 a.m.	8:30 a.m.	.62	7:36 a.m.	8:04 a.m.	.00	.09	.21	.29	.42	.50	.56								
July 23	4:10 p.m.	5:38 p.m.	.37	5:04 p.m.	5:09 p.m.	.06	.25													
July 29	4:03 p.m.	4:55 p.m.	.78	4:05 p.m.	4:37 p.m.	T	.26	.45	.51	.58	.62	.69	.75							
Sept. 15	D.N. a.m.	D.N. a.m.	.70	3:40 a.m.	3:56 a.m.	.08	.21	.32	.37	.40										
Ithaca, N.Y.:																				
May 10	D.N. a.m.	6:54 a.m.	.88	5:20 a.m.	5:29 a.m.	.26	.27	.34												
June 20	5:52 p.m.	7:39 p.m.	.43	6:06 p.m.	6:16 p.m.	.03	.21	.36												
Sept. 2	1:40 p.m.	[1] D.N. a.m.	1.33	8:50 p.m.	9:28 p.m.	.37	.11	.19	.28	.37	.49	.60	.74	.80						
Sept. 17	12:50 p.m.	1:25 p.m.	.35	12:56 p.m.	1:06 p.m.	.01	.06	.30												
Oswego, N.Y.:																				
May 20	7:13 p.m.	8:30 p.m.	1.15	7:18 p.m.	7:48 p.m.	.01	.06	.24	.35	.63	.55	.98								
Do	9:56 p.m.	[1] D.N. a.m.	.66	9:56 p.m.	10:12 p.m.	.00	.13	.28	.36	.38										
May 30	9:50 p.m.	10:50 p.m.	.50	10:09 p.m.	10:24 p.m.	.03	.05	.33	.38											
July 20	3:49 p.m.	5:10 p.m.	.76	4:11 p.m.	4:31 p.m.	.07	.07	.11	.33	.52										
Sept. 20	2:47 p.m.	3:45 p.m.	.50	3:01 p.m.	3:17 p.m.	.04	.14	.30	.38	.43										
Rochester, N.Y.:																				
May 19	4:20 p.m.	5:40 p.m.	.54	4:29 p.m.	4:52 p.m.	.02	.06	.28	.32	.45	.50									
May 30	8:30 p.m.	9:40 p.m.	.63	8:38 p.m.	9:01 p.m.	.01	.11	.31	.49	.55	.59									
June 14	4:23 p.m.	7:10 p.m.	.82	4:35 p.m.	4:45 p.m.	.01	.16	.38												
Aug. 3	10:07 a.m.	10:35 a.m.	.57	10:17 a.m.	10:31 a.m.	.01	.25	.40	.56											
Syracuse, N.Y.:																				
Aug. 9	2:55 p.m.	3:43 p.m.	.80	3:11 p.m.	3:37 p.m.	.03	.33	.51	.53	.62	.75	.77								
Erie, Pa.:																				
July 6	[4] 9:20 p.m.	D.N. a.m.	1.67	12:17 a.m.	12:51 a.m.	.70	.07	.19	.22	.28	.38	.62	.73							
July 10	1:45 p.m.	4:50 p.m.	1.19	1:54 p.m.	2:41 p.m.	.02	.07	.50	.69	.73	.78	.84	.88	.97	1.05	1.09				
Nov. 12	2:50 a.m.	7:10 a.m.	.81	3:10 a.m.	3:32 a.m.	.03	.12	.16	.27	.45	.52									
Cleveland, Ohio:																				
June 14	3:15 p.m.	4:05 p.m.	.46	3:25 p.m.	3:42 p.m.	.02	.16	.25	.39	.44										
June 26	8:29 a.m.	1:48 p.m.	1.23	11:36 a.m.	11:41 a.m.	.14	.25													
Do	8:29 a.m.	1:48 p.m.	1.23	11:51 a.m.	12:06 p.m.	.76	.14	.33	.41											
July 17	7:14 p.m.	7:43 p.m.	.37	7:16 p.m.	7:30 p.m.	.01	.08	.24	.36											
July 19	3:35 p.m.	4:55 p.m.	1.07	3:58 p.m.	4:24 p.m.	.07	.19	.44	.58	.71	.95	.97								
Nov. 20	2:00 a.m.	4:30 a.m.	.81	3:21 a.m.	3:45 a.m.	.16	.07	.15	.27	.39	.49									
Sandusky, Ohio:																				
June 20	3:30 p.m.	3:55 p.m.	.33	3:38 p.m.	3:45 p.m.	.01	.29	.32												
June 26	11:25 a.m.	12:35 p.m.	.66	11:34 a.m.	11:54 a.m.	.02	.07	.21	.33	.55										
Aug. 10	5:05 a.m.	9:30 a.m.	1.20	5:23 a.m.	6:33 a.m.	.04	.08	.34	.55	.62	.67	.72	.77	.81	.84	.85	1.00	1.22		
Aug. 11	4:50 p.m.	[1] 11:15 a.m.	2.30	7:26 p.m.	7:51 p.m.	.10	.14	.41	.57											
Oct. 14	8:00 p.m.	10:00 p.m.	.55	8:06 p.m.	8:23 p.m.	.03	.08	.17	.43											

[1] On following date.

[4] On preceding date.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
LOWER LAKE REGION—contd.																				
Toledo, Ohio:																				
June 4	7:51 a.m.	9:11 a.m.	0.54	8:06 a.m.	8:14 a.m.	0.03	0.33	0.45												
June 6	3:06 p.m.	4:40 p.m.	.54	3:58 p.m.	4:05 p.m.	.17	.26	.32												
June 26	11:06 a.m.	11:40 a.m.	.84	11:12 a.m.	11:32 a.m.	.05	.33	.66	0.70	0.78										
June 29	10:55 p.m.	11:38 p.m.	.52	11:03 p.m.	11:14 p.m.	.01	.23	.45	.48											
July 19	3:54 p.m.	4:40 p.m.	.65	4:03 p.m.	4:21 p.m.	.01	.12	.34	.51	.57										
Aug. 10	D.N. a.m.	10:00 a.m.	1.46	4:32 a.m.	5:07 a.m.	.13	.17	.32	.41	.53	0.62	0.71	0.78							
Sept. 14	8:57 a.m.	10:48 a.m.	.70	8:59 a.m.	9:19 a.m.	.01	.19	.44	.54	.62										
Nov. 11	10:55 p.m.	[1] D.N. a.m.	1.39	11:06 p.m.	11:59 p.m.	.02	.16	.23	.27	.40	.59	.79	.85	0.89	0.94	1.02	1.10			
Fort Wayne, Ind.:																				
June 29	6:36 a.m.	10:20 a.m.	1.07	6:46 a.m.	7:30 a.m.	.03	.07	.14	.18	.30	.40	.61	.77	.88	.93					
July 1	12:25 p.m.	1:55 p.m.	.78	1:13 p.m.	1:28 p.m.	.34	.16	.31	.39											
July 5	2:04 p.m.	3:10 p.m.	.41	2:08 p.m.	2:20 p.m.	.01	.23	.30	.37											
Aug. 1	5:05 p.m.	5:55 p.m.	.44	5:25 p.m.	5:35 p.m.	.07	.21	.34												
Detroit, Mich.:																				
July 5	4:30 p.m.	5:10 p.m.	.37	4:36 p.m.	4:46 p.m.	.01	.18	.35												
July 18	1:50 a.m.	2:35 a.m.	.66	1:54 a.m.	2:16 a.m.	.01	.21	.42	.54	.60	.63									
UPPER LAKE REGION																				
Alpena, Mich.:																				
June 20	10:41 a.m.	11:40 a.m.	.60	10:41 a.m.	10:58 a.m.	.00	.12	.34	.54	.59										
Sept. 21	3:40 p.m.	4:05 p.m.	.40	3:46 p.m.	3:52 p.m.	.01	.26	.35												
Escanaba, Mich.:																				
May 18	12:12 p.m.	3:10 p.m.	.83	1:33 p.m.	1:43 p.m.	.21	.17	.32												
June 10	11:43 a.m.	4:52 p.m.	1.28	3:13 p.m.	3:26 p.m.	.78	.12	.26	.36											
July 19	2:53 p.m.	5:45 p.m.	1.41	3:05 p.m.	3:46 p.m.	.02	.14	.34	.63	.84	.91	1.04	1.12	1.26	1.29					
Sept. 16	8:02 p.m.	9:15 p.m.	.40	8:24 p.m.	8:29 p.m.	.03	.36													
Sept. 19-20	3:29 p.m.	6:10 a.m.	2.95	11:20 p.m.	12:22 a.m.	1.26	.05	.14	.23	.34	.38	.39	.55	.65	.68	.82	1.18	1.31		
Grand Haven, Mich.:																				
July 2	5:20 a.m.	8:45 a.m.	1.32	6:10 a.m.	6:45 a.m.	.08	.16	.32	.51	.69	.85	.92	.99							
Sept. 13	4:08 p.m.	6:45 p.m.	.70	4:45 p.m.	5:01 p.m.	.08	.33	.41	.52	.56										
Grand Rapids, Mich.:																				
July 2	7:38 a.m.	11:55 a.m.	.83	10:53 a.m.	11:15 a.m.	.27	.09	.16	.28	.43	.48									
July 15	5:00 a.m.	6:48 a.m.	.51	6:09 a.m.	6:19 a.m.	.14	.18	.32												
Sept. 4	6:03 a.m.	7:35 a.m.	.58	6:12 a.m.	6:26 a.m.	T	.22	.30	.39											
Oct. 6	1:45 p.m.	3:00 p.m.	.86	2:06 p.m.	2:26 p.m.	T	.30	.60	.64	.74										
Houghton, Mich.:																				
Aug. 17	11:22 p.m.	11:55 p.m.	.46	11:23 p.m.	11:35 p.m.	T	.13	.37	.42											
Lansing, Mich.:																				
Apr. 20	4:05 p.m.	6:45 p.m.	1.07	4:23 p.m.	5:05 p.m.	.01	.21	.32	.49	.57	.65	.67	.74	.89	.93					
June 26	8:00 p.m.	9:10 p.m.	.52	8:31 p.m.	8:45 p.m.	.02	.10	.40	.47											
July 5	3:18 p.m.	3:50 p.m.	.46	3:18 p.m.	3:27 p.m.	.00	.27	.44												
Aug. 4 [5]	1:12 p.m.	2:22 p.m.	.68	1:31 p.m.	2:03 p.m.	.01	(5)	(5)	.20	.33	.37	.55	.62							
Oct. 4	4:30 p.m.	5:05 p.m.	.40	4:42 p.m.	4:55 p.m.	.01	.20	.34	.38											
Dec. 24	5:31 a.m.	10:20 a.m.	1.13	5:39 a.m.	5:52 a.m.	.01	.18	.56	.66											
Ludington, Mich.:																				
June 26	5:38 a.m.	8:28 a.m.	1.87	5:43 a.m.	6:18 a.m.	.01	.28	.80	1.10	1.24	1.32	1.38	1.42							
Aug. 2	D.N. a.m.	D.N. a.m.	1.24	3:39 a.m.	3:57 a.m.	.53	.20	.30	.52	.61										
Sept. 4	D.N. a.m.	D.N. a.m.	.73	3:12 a.m.	3:32 a.m.	.02	.15	.34	.54	.62										
Sept. 13	8:50 p.m.	[1] D.N. a.m.	3.76	9:29 p.m.	10:19 p.m.	.01	.16	.22	.29	.39	.53	.85	1.10	1.19	1.24	1.30				
				10:19 p.m.	11:09 p.m.		1.40	1.64	1.84	1.96	2.14	2.28	2.50	2.67	2.71	2.73				
				11:09 p.m.	11:51 p.m.		2.80	2.94	3.07	3.22	3.37	3.48	3.54	3.66	3.70					
Oct. 6	1:45 p.m.	3:30 p.m.	.72	2:07 p.m.	2:39 p.m.	.04	.12	.15	.40	.52	.52	.61	.67							
Oct. 7	5:30 a.m.	6:58 a.m.	.55	5:58 a.m.	6:05 a.m.	.01	.42	.47												
Oct. 10	1:00 p.m.	6:20 p.m.	1.12	4:43 p.m.	5:04 p.m.	.34	.09	.29	.39	.63	.64									
Marquette, Mich.:																				
June 10	11:50 p.m.	[1] 1:30 a.m.	.66	12:03 p.m.	12:15 p.m.	.01	.15	.32	.36											
June 20	12:02 a.m.	6:00 a.m.	.78	12:12 a.m.	12:24 a.m.	.01	.25	.30	.36											
Sept. 13	11:50 a.m.	12:02 p.m.	.37	11:55 a.m.	11:59 a.m.	.01	.36													
Port Huron, Mich.:																				
July 20	6:58 a.m.	8:14 a.m.	.59	7:18 a.m.	7:43 a.m.	.08	.15	.22	.30	.40	.46									
Do	6:23 p.m.	7:11 p.m.	.66	6:26 p.m.	6:37 p.m.	.01	.33	.63	.65											
July 21	7:21 p.m.	8:20 p.m.	.40	7:26 p.m.	7:36 p.m.	.02	.21	.33												
Aug. 18	2:46 p.m.	3:35 p.m.	.61	3:06 p.m.	3:22 p.m.	.02	.18	.38	.55	.59										
Sept. 14	2:55 a.m.	8:21 a.m.	.133	3:03 a.m.	3:50 a.m.	.01	.12	.25	.39	.40	.40	.41	.45	.51	.66	.72				
Sault Ste. Marie, Mich.:																				
June 25	3:00 a.m.	5:45 a.m.	1.03	3:17 a.m.	3:57 a.m.	T.	.07	.12	.17	.23	.39	.55	.61	.66						
Sept. 16	11:50 a.m.	8:15 p.m.	1.49	7:26 p.m.	7:48 p.m.	.48	.08	.37	.80	.94	1.01									
Chicago University, Ill.:																				
June 23	2:03 a.m.	6:51 a.m.	1.72	2:15 a.m.	2:46 a.m.	.01	.18	.41	.67	.76	.88	.96	.99							
July 19	9:12 p.m.	10:56 p.m.	1.49	9:24 p.m.	10:13 p.m.	.01	.15	.36	.68	.91	.98	1.04	1.17	1.24	1.31	1.40				
July 21	4:22 p.m.	5:08 p.m.	.73	4:29 p.m.	4:49 p.m.	.04	.16	.26	.54	.66										
Aug. 10-11	8:47 p.m.	7:45 a.m.	3.84	11:17 p.m.	12:10 a.m.	.28	.12	.25	.37	.39	.44	.54	.62	.74	.80	1.17	1.27			
Aug. 11	[4] 8:47 p.m.	7:45 a.m.	3.84	5:44 a.m.	6:04 a.m.	2.41	.26	.71	1.22	1.39										
Aug. 27	8:04 p.m.	10:46 p.m.	1.45	9:00 p.m.	9:23 p.m.	.06	.32	.74	.96	1.21	1.27									
Sept. 2	3:58 p.m.	5:55 p.m.	1.23	4:01 p.m.	4:40 p.m.	.01	.05	.12	.21	.24	.35	.57	.78	.90						
Sept. 25	4:02 a.m.	8:54 a.m.	1.63	7:09 a.m.	7:39 a.m.	.71	.07	.11	.19	.34	.57	.81								

[1] On following date. [4] On preceding date. [5] From defective record.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
UPPER LAKE REGION—con.																				
Green Bay, Wis.:																				
June 4	12:15 a.m.	1:00 a.m.	0.61	12:26 a.m.	12:46 a.m.	0.01	0.14	0.42	0.53	0.58										
July 1	10:40 p.m.	[1] 1:00 a.m.	.60	10:44 p.m.	11:02 p.m.	.01	.15	.31	.38	.44										
July 17	4:40 p.m.	5:10 p.m.	.48	4:45 p.m.	4:59 p.m.	.01	.21	.40	.47											
July 19	6:20 p.m.	7:30 p.m.	.96	6:26 p.m.	6:45 p.m.	.01	.26	.44	.62	.85										
Aug. 8	10:15 a.m.	1:00 p.m.	.44	12:07 p.m.	12:12 p.m.	.15	.27													
Aug. 31	8:20 p.m.	[1] 4:00 a.m.	.98	11:06 p.m.	11:22 p.m.	.08	.22	.32	.40	.44										
Sept. 16	1:50 a.m.	8:30 a.m.	1.11	7:21 a.m.	7:44 a.m.	.54	.11	.20	.37	.41	0.47									
Do	7:00 p.m.	9:50 p.m.	.49	7:27 p.m.	7:48 p.m.	.01	.20	.30	.33	.42	.45									
Oct. 6	9:16 a.m.	9:50 a.m.	.38	9:23 a.m.	9:30 a.m.	.01	.28	.35												
Oct. 7	12:35 a.m.	5:15 a.m.	1.00	3:59 a.m.	4:07 a.m.	.44	.20	.30												
Oct. 10	11:10 a.m.	3:45 p.m.	1.14	1:43 p.m.	1:56 p.m.	.65	.12	.28	.39											
Milwaukee, Wis.:[3]																				
June 15	12:51 p.m.	2:25 p.m.	.85	1:38 p.m.	2:04 p.m.	.09	.11	.25	.43	.54	.69	0.71								
July 1	8:50 p.m.	[1] D.N. a.m.	.68	9:19 p.m.	9:38 p.m.	.02	.16	.41	.53	.60										
Duluth, Minn.:																				
July 12	1:00 a.m.	2:00 a.m.	.68	1:06 a.m.	1:36 a.m.	.04	.10	.17	.33	.41	.47	.56								
Aug. 7–8	7:30 p.m.	11:50 a.m.	2.87	11:46 p.m.	12:07 a.m.	1.28	.18	.41	.50	.65	.67									
NORTH DAKOTA																				
Moorhead, Minn.:																				
July 11	4:38 p.m.	8:50 p.m.	1.53	5:11 p.m.	6:13 p.m.	.01	.13	.17	.23	.29	.32	.34	0.38	0.43	0.55	0.86	1.20	1.29		
Sept. 12	5:22 p.m.	6:24 p.m.	.75	5:49 p.m.	6:14 p.m.	.08	.10	.33	.40	.46	.65									
Bismarck, N. Dak.:																				
June 21	7:20 a.m.	8:55 a.m.	.85	7:35 a.m.	8:07 a.m.	.01	.25	.39	.47	.51	.64	.70	.73							
Aug. 7	11:54 a.m.	1:05 p.m.	.77	12:05 p.m.	12:29 p.m.	.01	.10	.34	.59	.67	.70									
Sept. 29	7:45 p.m.	8:40 p.m.	.38	8:08 p.m.	8:14 p.m.	.01	.31	.35												
Devils Lake, N. Dak.:																				
June 30	5:25 p.m.	6:25 p.m.	.67	5:55 p.m.	6:09 p.m.	.04	.19	.41	.61											
Aug. 19	6:23 a.m.	7:20 a.m.	.50	6:41 a.m.	6:51 a.m.	.03	.21	.40												
Aug. 26	10:45 p.m.	[1] D.N. a.m.	1.65	10:49 p.m.	11:43 p.m.	.01	.13	.25	.32	.46	.62	.67	.71	.77	.81	.92	1.05			
Aug. 27	5:40 a.m.	8:45 a.m.	.76	6:59 a.m.	7:24 a.m.	.09	.09	.21	.30	.38	.45									
Sept. 16	12:40 a.m.	D.N. a.m.	.98	1:47 a.m.	2:32 a.m.	.15	.06	.15	.26	.37	.43	.47	.50	.57	.66					
Ellendale, N. Dak.:																				
June 9	8:10 p.m.	[1] 5:10 a.m.	1.29	10:27 p.m.	11:03 p.m.	.17	.08	.16	.24	.37	.58	.78	.90	.94						
June 22	D.N. a.m.	D.N. a.m.	.74	2:56 a.m.	3:18 a.m.	.04	.21	.46	.54	.63	.66									
Aug. 27	D.N. a.m.	D.N. a.m.	1.00	1:57 a.m.	2:14 a.m.	.04	.27	.37	.47	.51										
Williston, N. Dak.:																				
June 6	4:35 a.m.	5:50 a.m.	.36	4:40 a.m.	4:50 a.m.	.01	.25	.31												
Aug. 6	10:30 a.m.	12:30 p.m.	.53	11:52 a.m.	12:12 p.m.	.02	.09	.22	.34	.41										
UPPER MISSISSIPPI VALLEY																				
Minneapolis, Minn.:																				
June 3	7:04 p.m.	8:10 p.m.	1.02	7:19 p.m.	7:54 p.m.	.01	.17	.28	.31	.44	.69	.87	.98							
June 11	12:10 p.m.	1:15 p.m.	.73	12:26 p.m.	12:38 p.m.	.03	.35	.58	.64											
June 19	8:20 p.m.	D.N. p.m.	.77	8:20 p.m.	8:45 p.m.	.00	.17	.38	.48	.56	.68									
July 28	5:40 p.m.	7:07 p.m.	.54	5:54 p.m.	6:09 p.m.	.01	.08	.28	.49											
Aug. 31	D.N. a.m.	7:50 a.m.	.86	6:13 a.m.	6:36 a.m.	.06	.05	.22	.55	.71	.76									
St. Paul, Minn.:																				
Apr. 18	5:40 p.m.	6:20 p.m.	.45	5:56 p.m.	6:14 p.m.	.01	.21	.34	.40	.44										
June 3	7:30 p.m.	8:30 p.m.	1.12	7:34 p.m.	8:04 p.m.	.02	.29	.59	.80	.92	1.04	1.09								
June 11[4]	12:10 p.m.	1:20 p.m.	.69	12:28 p.m.	12:58 p.m.	.02	.17	.40	.50	.52	.60	.66								
June 22	8:40 a.m.	10:35 a.m.	.55	8:40 a.m.	8:56 a.m.	.00	.23	.33	.38	.42										
July 28	5:58 p.m.	6:55 p.m.	.64	6:11 p.m.	6:25 p.m.	.01	.16	.41	.47											
Aug. 1	D.N. a.m.	D.N. a.m.	.74	3:28 a.m.	4:07 a.m.	.13	.10	.17	.22	.30	.36	.39	.53	.60						
Aug. 31	6:12 a.m.	7:50 a.m.	1.14	6:36 a.m.	7:21 a.m.	.05	.17	.45	.68	.75	.79	.80	.83	.95	1.08					
La Crosse, Wis.:																				
June 19–20	11:10 p.m.	4:10 a.m.	2.15	11:30 p.m.	12:25 a.m.	.02	.12	.24	.36	.56	.71	.85	1.12	1.35	1.55	1.64	1.72			
June 11	2:18 p.m.	2:40 p.m.	.47	2:18 p.m.	2:24 p.m.	.00	.17	.22	.46	.47										
July 19	1:15 p.m.	4:15 p.m.	.74	1:45 p.m.	1:59 p.m.	.01	.21	.43	.56											
Aug. 4	2:45 a.m.	3:05 a.m.	.44	2:51 a.m.	3:00 a.m.	.01	.28	.43												
Oct. 6–7	9:10 p.m.	3:10 a.m.	2.76	11:29 p.m.	1:09 a.m.	.11	.06	.29	.67	.86	.97	1.03	1.11	1.15	1.22	1.27	1.38	1.81	2.25	
Madison, Wis.:																				
June 23	[4] 10:41 p.m.	D.N. a.m.	1.03	12:43 a.m.	12:54 a.m.	.30	.28	.60	.63											
July 19	3:30 p.m.	7:00 p.m.	1.26	3:42 p.m.	4:42 p.m.	.01	.12	.29	.43	.55	.65	.68	.73	.81	.88	1.02	1.18			
Aug. 1	1:55 p.m.	2:50 p.m.	1.61	2:16 p.m.	2:44 p.m.	.06	.14	.19	.42	.97	1.39	1.54								
Do	4:40 p.m.	6:05 p.m.	.60	4:43 p.m.	4:56 p.m.	.02	.13	.29	.35											
Do	9:35 p.m.	11:00 p.m.	.53	9:42 p.m.	10:00 p.m.	.01	.09	.22	.29	.40										
Sept. 13	1:00 p.m.	1:50 p.m.	.48	1:17 p.m.	1:29 p.m.	.01	.23	.40	.45											
Sept. 19	6:29 a.m.	4:10 p.m.	1.88	12:19 p.m.	12:44 p.m.	.82	.07	.20	.35	.50	.60									
Sept. 21	7:15 p.m.	8:00 p.m.	.45	7:42 p.m.	7:53 p.m.	.01	.19	.42	.44											
Wausau, Wis.:																				
July 1	4:20 p.m.	5:09 p.m.	.46	4:21 p.m.	4:34 p.m.	T	.12	.23	.36											
Sept. 19	10:03 p.m.	[1] D.N. a.m.	.72	10:18 p.m.	10:28 p.m.	.03	.19	.32												
Charles City, Iowa:																				
June 22	3:00 a.m.	7:45 a.m.	1.31	5:38 a.m.	5:56 a.m.	.18	.39	.73	1.02	1.08										
Aug. 27	12:51 p.m.	3:43 p.m.	2.50	12:51 p.m.	1:13 p.m.	.00	.21	.33	.43	.48	.55									
Do	12:51 p.m.	3:43 p.m.	2.50	1:42 p.m.	2:41 p.m.	.59	.13	.19	.22	.27	.39	.79	1.15	1.30	1.41	1.48	1.70			
Sept. 19	[4] 4:45 p.m.	10:15 a.m.	2.56	5:46 a.m.	6:33 a.m.	.96	.05	.10	.14	.27	.35	.46	.72	.85	.96	1.00				
Nov. 14	7:40 p.m.	[1] 12:30 a.m.	1.39	9:38 p.m.	10:08 p.m.	.46	.13	.18	.26	.34	.44	.59								
Nov. 23	[4] 7:45 p.m.	7:45 p.m.	3.81	2:29 p.m.	3:29 p.m.	1.67	.10	.19	.32	.45	.53	.60	.68	.83	.89	.96	1.11			

[1] On following date. [3] Record looking during a few intense rainfalls. [4] On preceding date. [5] From defective record.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated												
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
UPPER MISSISSIPPI VALLEY—con.																				
Davenport, Iowa:																				
July 19	7:06 p.m.	11:10 p.m.	0.56	7:18 p.m.	7:33 p.m.	0.02	0.24	0.32	0.41											
Aug. 18	11:41 a.m.	6:25 p.m.	.76	12:01 p.m.	12:24 p.m.	.01	.14	.41	.57	0.62	0.67									
Aug. 31	[4]11:35 p.m.	1:29 a.m.	.68	12:15 a.m.	12:46 a.m.	.07	.06	.19	.27	.32	.41	0.59	0.60							
Do	10:10 p.m.	[1]5:00 a.m.	1.64	10:35 p.m.	10:55 p.m.	.03	.20	.42	.47	.56										
Nov. 11	12:08 p.m.	11:00 p.m.	1.37	8:31 p.m.	8:52 p.m.	.64	.18	.29	.34	.43	.44									
Des Moines, Iowa:																				
Apr. 18	8:20 p.m.	10:45 p.m.	.58	8:33 p.m.	8:45 p.m.	.01	.24	.48	.51											
June 20	6:50 a.m.	8:20 a.m.	.47	6:55 a.m.	7:05 a.m.	.01	.20	.35												
Do	8:55 p.m.	[1]2:00 a.m.	1.70	9:23 p.m.	9:58 p.m.	.01	.11	.38	.62	.92	1.16	1.35	1.44							
July 4	4:32 p.m.	[4]D.N. a.m.	.99	9:31 p.m.	9:53 p.m.	.07	.18	.40	.67	.79	.85									
July 12	5:40 p.m.	8:15 p.m.	.55	6:22 p.m.	6:32 p.m.	.07	.21	.31												
Aug. 1	6:02 p.m.	11:10 p.m.	1.04	7:28 p.m.	7:45 p.m.	.02	.16	.27	.49	.57										
Aug. 19	5:12 p.m.	5:37 p.m.	.36	5:16 p.m.	5:21 p.m.	.03	.31													
Sept. 24	9:05 p.m.	[1]2:15 a.m.	1.92	11:16 p.m.	11:32 p.m.	.82	.22	.32	.39	.42										
Oct. 5	9:30 p.m.	[1]9:50 a.m.	1.73	11:09 p.m.	11:44 p.m.	.04	.05	.16	.24	.29	.38	.50	.66							
Nov. 11	10:58 a.m.	11:50 p.m.	1.90	8:57 p.m.	9:36 p.m.	.42	.10	.28	.34	.40	.57	.71	.89	1.00						
Dubuque, Iowa:																				
June 11	2:10 p.m.	3:15 p.m.	.65	2:16 p.m.	2:46 p.m.	.01	.06	.28	.31	.31	.41	.61								
June 22	2:05 p.m.	2:45 p.m.	.56	2:15 p.m.	2:33 p.m.	.01	.25	.37	.50	.54										
July 19	4:50 p.m.	8:55 p.m.	.48	4:56 p.m.	5:05 p.m.	.01	.23	.40												
Aug. 27	5:03 p.m.	6:50 p.m.	1.24	5:15 p.m.	5:47 p.m.	.01	.08	.28	.48	.69	.91	1.12	1.19							
Sept. 19	3:40 a.m.	8:20 a.m.	1.48	7:35 a.m.	7:45 a.m.	1.11	.21	.35												
Sept. 21	5:46 p.m.	D.N. p.m.	.93	5:57 p.m.	6:17 p.m.	.04	.14	.52	.59	.71										
Sept. 25	[4]4:25 p.m.	8:45 a.m.	2.36	2:55 a.m.	3:11 a.m.	1.74	.15	.27	.35	.38										
Keokuk, Iowa:																				
May 18	4:30 p.m.	[1]2:35 p.m.	1.60	8:29 p.m.	8:48 p.m.	.41	.07	.21	.32	.41										
June 5	6:40 p.m.	[4]D.N. a.m.	1.80	9:49 p.m.	11:11 p.m.	.32	.23	.30	.35	.36	.37	.39	.41	0.49	0.66	0.72	1.09	1.24	1.25	
June 11	4:20 p.m.	[1]7:45 a.m.	2.01	7:30 p.m.	8:13 p.m.	.12	.17	.34	.49	.75	.87	.95	1.01	1.06	1.11					
June 21	8:12 a.m.	11:55 a.m.	1.12	10:38 a.m.	10:57 a.m.	.49	.06	.19	.40	.49										
Aug. 27	7:40 p.m.	D.N. p.m.	1.29	7:51 p.m.	8:32 p.m.	.01	.19	.34	.44	.76	1.02	1.10	1.13	1.24	1.28					
Sept. 1	[4]11:50 p.m.	6:15 a.m.	2.56	1:45 a.m.	2:35 a.m.	.11	.30	.47	.77	.88	1.09	1.18	1.28	1.38	1.48	1.60				
Sept. 14	3:45 p.m.	7:10 p.m.	.89	4:08 p.m.	4:28 p.m.	.03	.21	.50	.68	.75										
Do	8:00 p.m.	9:10 p.m.	.94	8:17 p.m.	8:52 p.m.	.06	.09	.22	.45	.59	.70	.79	.87							
Oct. 7	3:30 a.m.	6:10 a.m.	.86	3:33 a.m.	3:53 a.m.	.01	.12	.28	.47	.61										
Nov. 11	4:00 p.m.	6:00 p.m.	.79	4:52 p.m.	5:04 p.m.	.16	.13	.31	.43											
Cairo, Ill.:																				
Apr. 25	11:18 a.m.	D.N. p.m.	1.35	9:36 p.m.	10:07 p.m.	.68	.17	.22	.32	.40	.45	.50	.55							
June 6-7	10:12 p.m.	D.N. a.m.	1.09	11:50 p.m.	12:17 a.m.	.05	.16	.23	.32	.53	.78	.83								
June 21	5:11 p.m.	6:28 p.m.	.49	5:17 p.m.	5:35 p.m.	.01	.15	.26	.40	.47										
June 24	6:30 a.m.	8:12 a.m.	.91	6:57 a.m.	7:23 a.m.	.01	.16	.42	.54	.69	.83	.88								
Aug. 3	3:42 a.m.	5:20 a.m.	1.03	3:46 a.m.	4:45 a.m.	.01	.09	.26	.27	.27	.28	.33	.42	.49	.59	.71	.98			
Do	11:54 a.m.	2:43 p.m.	1.24	12:19 p.m.	12:51 p.m.	.04	.22	.48	.64	.75	.95	1.15	1.13							
Aug. 4	2:04 p.m.	3:37 p.m.	1.00	2:07 p.m.	2:42 p.m.	.01	.17	.31	.51	.67	.86	.89	.98							
Aug. 18	12:19 p.m.	12:58 p.m.	.53	12:25 p.m.	12:49 p.m.	.01	.06	.27	.33	.46	.51									
Aug. 28	2:45 a.m.	10:53 a.m.	1.45	3:46 a.m.	4:34 a.m.	.02	.05	.28	.32	.35	.41	.56	.72	.90	.97	1.02				
Oct. 14	3:00 a.m.	5:35 a.m.	.57	3:40 a.m.	3:54 a.m.	.03	.12	.31	.41											
Nov. 19	8:31 p.m.	[1]D.N. a.m.	.97	10:22 p.m.	10:36 p.m.	.39	.15	.29	.41											
Peoria, Ill.:																				
June 5	9:36 p.m.	[1]7:20 a.m.	1.37	9:50 p.m.	10:00 p.m.	.03	.20	.38												
July 2	4:11 p.m.	5:17 p.m.	2.60	4:12 p.m.	5:01 p.m.	T	.13	.50	.73	1.06	1.57	1.92	2.23	2.45	2.33	2.57				
July 19	2:34 p.m.	3:06 p.m.	.51	2:38 p.m.	2:56 p.m.	.02	.28	.39	.44	.48										
Do	9:08 p.m.	[1]D.N. a.m.	1.21	9:11 p.m.	9:34 p.m.	.01	.11	.34	.47	.66	.74									
Sept 14	9:27 p.m.	[1]6:00 a.m.	1.47	10:16 p.m.	10:55 p.m.	.14	.07	.20	.23	.33	.38	.45	.61	.67						
Oct. 7	4:44 a.m.	8:18 a.m.	.91	4:49 a.m.	5:15 a.m.	.01	.17	.34	.41	.47	.62	.66								
Oct. 14	1:05 a.m.	3:10 a.m.	.51	1:57 a.m.	2:02 a.m.	.05	.44													
Nov. 11	3:06 p.m.	7:51 p.m.	.75	6:55 p.m.	7:31 p.m.	.13	.09	.17	.22	.37	.44	.53	.58	.61						
Nov. 22	5:20 a.m.	11:47 a.m.	2.27	6:25 a.m.	6:32 a.m.	.13	.27	.38												
Springfield, Ill.:																				
May 5	5:40 p.m.	[1]6:10 a.m.	1.02	5:54 p.m.	6:13 p.m.	.01	.17	.28	.39	.44										
June 21	[4]11:45 p.m.	D.N. a.m.	1.72	2:36 a.m.	3:11 a.m.	.51	.12	.29	.55	.68	.83	.99	1.08							
June 23	9:25 a.m.	10:22 a.m.	.82	9:33 a.m.	9:54 a.m.	.01	.22	.39	.66	.76	.80									
June 24	3:56 p.m.	5:20 p.m.	.75	4:00 p.m.	4:39 p.m.	.01	.06	.19	.31	.34	.37	.47	.66	.72						
July 20	[4]11:25 p.m.	6:08 a.m.	2.03	12:08 a.m.	1:09 a.m.	.22	.09	.28	.38	.62	.84	.94	1.09	1.29	1.41	1.45	1.59	1.65		
Aug. 5	5:13 p.m.	7:20 p.m.	1.97	5:13 p.m.	5:54 p.m.	.00	.13	.45	.89	1.36	1.64	1.72	1.75	1.83	1.86					
Oct. 11	D.N. a.m.	9:40 a.m.	1.38	1:34 a.m.	2:10 a.m.	.04	.08	.19	.33	.42	.50	.69	.88	.92						
Nov. 11	2:42 p.m.	4:25 p.m.	1.04	4:02 p.m.	4:19 p.m.	.13	.05	.34	.70	.91										
Hannibal, Mo.:																				
Apr. 2	7:30 p.m.	D.N. p.m.	.82	9:32 p.m.	9:46 p.m.	.24	.19	.37	.40											
May 18	2:05 p.m.	[1]2:20 p.m.	2.31	8:46 p.m.	8:59 p.m.	.59	.11	.31	.36											
June 5	8:58 a.m.	9:55 a.m.	.40	9:04 a.m.	9:18 a.m.	.02	.13	.29	.36											
June 10	D.N. a.m.	6:38 a.m.	.95	5:55 a.m.	6:16 a.m.	.30	.10	.34	.53	.57	.61									
June 11	4:24 p.m.	D.N. p.m.	2.77	4:33 p.m.	5:06 p.m.	.01	.26	.58	.77	.93	1.16	1.39	1.55							
Do	4:24 p.m.	D.N. p.m.	2.77	7:17 p.m.	7:33 p.m.	1.88	.12	.37	.52	.56										
July 23	11:06 a.m.	12:03 p.m.	.53	11:11 a.m.	11:33 a.m.	.01	.09	.21	.38	.45	.50									
Aug. 8	10:44 p.m.	[1]7:15 a.m.	2.11	10:51 p.m.	11:33 p.m.	.01	.22	.43	.67	.90	1.01	1.29	1.41	1.46	1.51					
Sept. 1	2:30 a.m.	6:08 a.m.	1.36	3:32 a.m.	3:58 a.m.	.19	.15	.29	.36	.45	.56	.69								
Sept. 21	7:32 p.m.	D.N. p.m.	1.09	8:28 p.m.	8:57 p.m.	.28	.09	.11	.18	.26	.42	.56								
Nov. 22	2:00 a.m.	1:25 p.m.	2.45	3:33 a.m.	4:33 a.m.	.35	.06	.17	.19	.23	.37	.39	.41	.46	.51	.57	.83			

[1] On following date. [4] On preceding date.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
UPPER MISSISSIPPI VALLEY—con.																				
St. Louis, Mo.:																				
Apr. 20	2:58 p.m.	[1]D.N. a.m.	1.66	6:41 p.m.	6:57 p.m.	0.59	0.25	0.34	0.40	0.43										
June 24	12:20 p.m.	1:05 p.m.	.46	12:30 p.m.	12:48 p.m.	.01	.09	.23	.37	.40										
July 2	8:40 p.m.	10:00 p.m.	1.13	8:47 p.m.	9:14 p.m.	.01	.15	.40	.75	.97	1.06	1.10								
July 23	[4]8:20 p.m.	D.N. a.m.	.80	12:41 a.m.	12:58 a.m.	.18	.09	.26	.49	.55										
Aug. 17	1:50 p.m.	8:15 p.m.	.80	2:32 p.m.	2:52 p.m.	.13	.07	.19	.36	.43										
Aug. 18	D.N. a.m.	5:15 a.m.	.50	4:46 a.m.	5:04 a.m.	.08	.06	.18	.34	.41										
Aug. 20	6:43 p.m.	7:20 p.m.	.40	6:45 p.m.	6:54 p.m.	.01	.23	.37												
Sept. 1	11:45 a.m.	[1]7:50 a.m.	3.81	2:13 p.m.	2:42 p.m.	.27	.14	.24	.38	.56	.71	.80								
Do	11:45 a.m.	[1]7:50 a.m.	3.81	5:52 p.m.	6:31 p.m.	1.21	.07	.28	.76	.90	.98	1.16	1.28	1.39						
Do	11:45 a.m.	[1]7:50 a.m.	3.81	7:38 p.m.	7:53 p.m.	2.70	.17	.36	.49											
Sept. 22	10:50 p.m.	[1]1:00 a.m.	.71	10:57 p.m.	11:12 p.m.	.01	.22	.41	.48											
Dec. 21	[4]8:35 p.m.	5:40 a.m.	.74	3:11 a.m.	3:31 a.m.	.14	.16	.28	.41	.51										
MISSOURI VALLEY																				
Columbia, Mo.:																				
Feb. 6	6:38 p.m.	[1]D.N. a.m.	1.36	7:21 p.m.	7:40 p.m.	.05	.29	.33	.39	.45										
May 18	2:36 p.m.	4:45 p.m.	1.61	2:44 p.m.	3:47 p.m.	.01	.30	.40	.41	.41	.41	.41	.63	.80	0.89	0.96	1.17	1.29		
June 11	5:04 p.m.	7:00 p.m.	.54	6:05 p.m.	6:13 p.m.	.09	.25	.43												
July 4	7:20 p.m.	D.N. p.m.	.60	7:38 p.m.	7:52 p.m.	.02	.14	.30	.37											
July 20	12:20 a.m.	5:25 a.m.	1.52	1:15 a.m.	2:04 a.m.	.06	.16	.33	.42	.52	.53	.57	.66	.76	.87	.95				
Aug. 9	12:54 a.m.	D.N. a.m.	2.02	1:53 a.m.	3:00 a.m.	.06	.23	.49	.77	.87	.90	.93	.93	1.00	1.04	1.25	1.74	1.96		
Do	1:17 p.m.	7:45 p.m.	1.73	2:45 p.m.	3:06 p.m.	.01	.22	.93	1.15	1.26	1.29									
Aug. 18 [5]	12:45 p.m.	1:37 p.m.	.58	1:04 p.m.	1:25 p.m.	.01	(3)	(3)	(3)	(3)	.57									
Aug. 24	3:17 p.m.	4:49 p.m.	1.61	3:43 p.m.	4:29 p.m.	.12	.22	.43	.44	.45	.47	.51	.78	1.16	1.42	1.46				
Aug. 27	10:12 p.m.	10:48 p.m.	.38	10:17 p.m.	10:28 p.m.	.01	.21	.35	.37											
Aug. 31	[4]10:17 p.m.	D.N. a.m.	1.64	12:44 a.m.	1:01 a.m.	.14	.21	.67	1.01	1.07										
Sept. 1	12:45 p.m.	6:34 p.m.	3.08	3:33 p.m.	5:18 p.m.	.72	.22	.24	.24	.27	.48	.70	.95	1.12	1.35	1.51	1.69	1.86	2.08	2.32
Sept. 21	6:46 p.m.	D.N. p.m.	1.28	7:56 p.m.	8:05 p.m.	.26	.26	.41												
Do	6:46 p.m.	D.N. p.m.	1.28	9:13 p.m.	9:21 p.m.	.88	.15	.31												
Sept. 22	1:30 p.m.	2:11 p.m.	.37	1:43 p.m.	1:50 p.m.	.01	.29	.35												
Kansas City, Mo.:																				
May 25	1:05 a.m.	2:15 a.m.	.61	1:21 a.m.	1:41 a.m.	.02	.14	.28	.39	.47										
May 29 [5]	12:15 p.m.	1:15 p.m.	.51	12:17 p.m.	12:30 p.m.	.01	.14	.36	.45											
June 11	1:15 p.m.	4:25 p.m.	.77	2:08 p.m.	2:36 p.m.	.02	.09	.19	.28	.37	.43	.56								
July 4 [5]	4:30 p.m.	6:10 p.m.	.70	4:33 p.m.	5:08 p.m.	.01	.06	.18	.33	.40	.46	.55	.62							
Aug. 8	9:48 p.m.	D.N. p.m.	.67	9:58 p.m.	10:13 p.m.	.02	.13	.39	.60											
Sept. 3	10:28 a.m.	12:50 p.m.	.62	11:54 a.m.	12:10 p.m.	.19	.18	.28	.35	.38										
Sept. 24	8:44 a.m.	10:35 a.m.	.71	9:18 a.m.	9:45 a.m.	.16	.11	.16	.21	.38	.48	.52								
Nov. 14	2:35 a.m.	10:15 a.m.	2.41	5:24 a.m.	6:16 a.m.	1.04	.12	.26	.35	.39	.47	.53	.59	.65	.68	.76	.83			
St. Joseph, Mo.:																				
May 18	4:00 a.m.	7:12 a.m.	1.70	4:04 a.m.	5:34 a.m.	.01	.13	.24	.28	.30	.30	.32	.35	.48	.58	.62	.76	1.07	1.39	
Do	11:57 a.m.	10:30 p.m.	1.31	2:44 p.m.	3:09 p.m.	.36	.17	.21	.30	.40	.45									
June 5	1:33 p.m.	1:47 p.m.	.39	1:37 p.m.	1:44 p.m.	.01	.28	.38												
June 11	5:20 p.m.	6:46 p.m.	.37	5:27 p.m.	5:32 p.m.	.01	.27													
June 20	7:54 p.m.	[1]12:20 a.m.	.93	8:00 p.m.	8:18 p.m.	.01	.11	.32	.49	.56										
July 2	5:50 a.m.	9:08 a.m.	.87	5:50 a.m.	6:07 a.m.	.00	.12	.25	.38	.42										
July 19	8:56 p.m.	9:54 p.m.	1.21	9:01 p.m.	9:26 p.m.	.01	.09	.32	.59	.95	1.12									
July 31	9:33 p.m.	12:30 a.m.	1.05	9:33 p.m.	9:51 p.m.	.00	.20	.42	.60	.65										
Aug. 8	8:40 p.m.	[1]9:27 a.m.	1.43	9:04 p.m.	9:16 p.m.	.01	.15	.35	.38											
Aug. 17	3:07 p.m.	3:42 p.m.	.51	3:11 p.m.	3:25 p.m.	.01	.16	.40	.49											
Sept. 1	7:17 a.m.	12:23 p.m.	1.46	9:52 a.m.	10:14 a.m.	.47	.15	.38	.60	.71	.77									
Sept. 20	9:05 p.m.	[1]5:20 a.m.	1.66	9:24 p.m.	9:52 p.m.	.03	.05	.12	.21	.37	.50	.54								
Sept. 24	10:30 p.m.	[1]3:35 a.m.	1.14	11:37 p.m.	11:51 p.m.	.02	.47	.73	.83											
Springfield, Mo.:																				
Apr. 9	12:47 p.m.	[1]1:15 a.m.	1.70	2:24 p.m.	2:49 p.m.	.16	.09	.20	.31	.40	.50									
July 4	8:08 p.m.	[1]1:33 a.m.	1.66	8:26 p.m.	9:20 p.m.	.01	.26	.44	.58	.69	.76	.82	.87	.97	1.08	1.21	1.35			
Aug. 5	12:58 a.m.	6:34 a.m.	1.98	3:33 a.m.	5:00 a.m.	.15	.07	.18	.26	.36	.42	.46	.49	.56	.64	.80	.93	1.58	1.77	
Aug. 5-6	9:32 p.m.	2:35 a.m.	2.65	11:00 p.m.	12:24 a.m.	.09	.12	.23	.33	.41	.49	.59	.69	.76	.93	1.14	1.49	2.14	2.33	
Aug. 19	5:23 p.m.	8:12 p.m.	.85	5:26 p.m.	5:47 p.m.	.01	.12	.34	.53	.72	.79									
Aug. 27	6:31 a.m.	7:12 a.m.	.51	6:31 a.m.	6:47 a.m.	.00	.21	.31	.49	.51										
Iola, Kans.:																				
June 5	3:40 p.m.	4:05 p.m.	.47	3:47 p.m.	4:01 p.m.	.01	.07	.21	.46											
Do	8:10 p.m.	10:00 p.m.	.57	9:18 p.m.	9:31 p.m.	.09	.23	.40	.45											
June 10	9:20 p.m.	[1]2:40 a.m.	1.20	9:27 p.m.	9:52 p.m.	.01	.08	.23	.36	.47	.53									
Aug. 17	1:50 p.m.	4:00 p.m.	1.57	2:08 p.m.	2:38 p.m.	.04	.19	.45	.70	.94	1.16	1.22								
Aug. 18 [5]	1:00 p.m.	2:00 p.m.	2.04	1:07 p.m.	1:45 p.m.	.01	.16	.45	.80	1.31	1.68	1.84	1.90	1.96						
Sept. 21	2:45 p.m.	5:55 p.m.	1.04	3:23 p.m.	3:33 p.m.	.14	.16	.31												
Nov. 16	6:15 p.m.	[1]5:30 a.m.	2.91	10:20 p.m.	10:33 p.m.	.61	.25	.35	.44											
Nov. 17	[4]6:15 p.m.	5:30 a.m.	2.91	2:15 a.m.	2:55 a.m.	1.76	.10	.15	.24	.33	.41	.51	.56	.66						
Topeka, Kans.:																				
June 11	1:09 p.m.	5:15 p.m.	1.08	1:24 p.m.	1:37 p.m.	.07	.14	.32	.48											
June 15	1:05 a.m.	7:45 a.m.	.99	5:25 a.m.	6:00 a.m.	.03	.05	.11	.24	.53	.73	.87	.92							
July 1	9:14 p.m.	[1]7:35 a.m.	1.50	9:22 p.m.	10:12 p.m.	.02	.23	.50	.64	.69	.71	.77	.85	.88	1.06	1.14				
Aug. 1	[4]7:44 p.m.	D.N. a.m.	.57	1:39 a.m.	1:53 a.m.	.11	.15	.36	.41											
Aug. 4	3:48 p.m.	4:18 p.m.	.51	3:51 p.m.	4:02 p.m.	.01	.24	.45	.48											
Aug. 31	8:14 p.m.	[1]D.N. a.m.	1.93	9:06 p.m.	9:38 p.m.	.11	.20	.28	.39	.50	.77	.89	.96							
Do	8:14 p.m.	[1]D.N. a.m.	1.93	10:11 p.m.	10:37 p.m.	1.33	.06	.12	.26	.40	.50	.58								
Sept. 20	8:21 p.m.	[1]4:05 p.m.	3.19	10:51 p.m.	11:01 p.m.	.47	.36	.48												
Sept. 21	[4]8:21 p.m.	4:05 p.m.	3.19	12:44 a.m.	1:11 a.m.	1.12	.11	.27	.38	.44	.51	.56								

[1] On following date. [4] On preceding date. [5] From defective record.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated												
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
MISSOURI VALLEY—continued																				
Lincoln, Nebr.:																				
May 18	1:03 a.m.	2:40 a.m.	1.45	1:09 a.m.	1:51 a.m.	0.02	0.09	0.14	0.29	0.45	0.56	0.67	0.90	1.05	1.08					
May 27	9:45 p.m.	[1] 6:42 a.m.	1.16	10:08 p.m.	10:55 p.m.	.07	.07	.17	.22	.27	.36	.37	.48	.57	.67	0.71				
June 5	10:06 a.m.	4:10 p.m.	1.28	1:05 p.m.	2:04 p.m.	.37	.06	.13	.19	.25	.34	.44	.53	.55	.60	.68	0.83			
June 6	5:35 p.m.	6:15 p.m.	.44	5:40 p.m.	5:49 p.m.	.01	.17	.36												
June 20	4:57 p.m.	7:55 p.m.	1.76	5:18 p.m.	6:26 p.m.	.01	.09	.16	.25	.47	.71	.81	.85	.88	.91	1.03	1.37	1.61		
July 12	1:29 p.m.	3:45 p.m.	.96	1:55 p.m.	2:18 p.m.	.03	.16	.34	.57	.74	.80									
Aug. 1	3:33 p.m.	5:40 p.m.	.64	3:54 p.m.	4:21 p.m.	.03	.14	.33	.38	.45	.52	.56								
Aug. 9	5:52 a.m.	10:40 a.m.	1.69	6:01 a.m.	7:15 a.m.	.01	.05	.14	.22	.32	.37	.41	.46	.55	.72	.87	.99	1.25		
Sept. 18	4:40 p.m.	5:23 p.m.	.52	4:57 p.m.	5:12 p.m.	.09	.06	.22	.41											
Sept. 24	7:11 p.m.	8:07 p.m.	1.32	7:13 p.m.	7:41 p.m.	.01	.09	.26	.55	.93	1.20	1.27								
Omaha, Nebr.:																				
June 5	1:00 a.m.	4:10 a.m.	1.83	1:02 a.m.	2:16 a.m.	.01	.27	.40	.52	.60	.74	.82	.83	.85	.91	1.09	1.44	1.70		
June 15	12:10 a.m.	2:15 a.m.	1.36	12:16 a.m.	12:36 a.m.	.02	.33	.83	1.06	1.22										
July 1	12:53 p.m.	4:55 p.m.	1.41	1:14 p.m.	1:48 p.m.	.03	.11	.35	.48	.50	.66	1.05	1.15							
Aug. 8	6:03 a.m.	7:12 a.m.	.90	6:03 a.m.	6:28 a.m.	.00	.17	.34	.55	.64	.77									
Aug. 31	3:58 p.m.	9:15 p.m.	2.08	4:02 p.m.	4:27 p.m.	.02	.22	.53	.86	.98	1.14									
Do	3:58 p.m.	9:15 p.m.	2.08	7:34 p.m.	7:53 p.m.	1.35	.18	.38	.56	.68										
Sept. 17	9:50 p.m.	[1] D.N. a.m.	1.32	10:40 p.m.	10:52 p.m.	.14	.16	.38	.44											
Nov. 23	[4] 10:50 p.m.	5:30 p.m.	2.18	12:21 a.m.	12:44 a.m.	.32	.23	.28	.33	.42	.49									
Valentine, Nebr.:																				
July 31	6:20 p.m.	[1] 12:24 a.m.	1.20	6:51 p.m.	7:10 p.m.	.04	.19	.41	.54	.62										
Aug. 20	11:15 p.m.	[1] 7:42 a.m.	2.21	11:21 p.m.	11:50 p.m.	T	.11	.30	.54	.67	.79	.87								
Aug. 21	[4] 11:15 p.m.	7:42 a.m.	2.21	12:45 a.m.	1:13 a.m.	1.17	.06	.12	.22	.40	.54	.61								
Sioux City, Iowa:																				
July 1	11:03 a.m.	2:05 p.m.	.48	11:06 a.m.	11:11 a.m.	.01	.27													
July 11	8:20 p.m.	9:10 p.m.	.65	8:23 p.m.	8:38 p.m.	.01	.22	.53	.62											
Aug. 1	12:20 p.m.	3:08 p.m.	.77	2:07 p.m.	2:42 p.m.	.07	.12	.16	.17	.32	.43	.54	.66							
Aug. 8	2:23 a.m.	7:05 a.m.	1.06	3:20 a.m.	3:29 a.m.	.19	.16	.30												
Do	2:23 a.m.	7:05 a.m.	1.06	4:42 a.m.	4:53 a.m.	.53	.13	.31	.35											
Aug. 31	3:54 p.m.	4:50 p.m.	.71	3:57 p.m.	4:20 p.m.	.01	.09	.23	.41	.65	.69									
Oct. 6	8:16 p.m.	9:50 p.m.	.66	8:31 p.m.	8:59 p.m.	.03	.10	.19	.27	.34	.45	.51								
Huron, S. Dak.:																				
June 14	5:45 p.m.	7:15 p.m.	.44	5:47 p.m.	5:57 p.m.	.01	.25	.38												
Pierre, S. Dak.:																				
May 26	6:30 p.m.	[1] D.N. a.m.	1.23	7:04 p.m.	7:32 p.m.	.05	.05	.18	.36	.51	.63	.68								
June 12	1:55 p.m.	2:30 p.m.	.60	2:02 p.m.	2:22 p.m.	.01	.07	.29	.49	.57										
Yankton, S. Dak.:																				
June 2	8:30 p.m.	9:45 p.m.	.62	8:58 p.m.	9:07 p.m.	.02	.21	.50												
Sept. 18	7:40 p.m.	[1] 4:00 a.m.	1.17	9:51 p.m.	10:00 p.m.	.20	.15	.37												
Oct. 6	6:40 p.m.	7:20 p.m.	.41	7:00 p.m.	7:14 p.m.	.05	.14	.24	.35											
Oct. 21	8:40 p.m.	9:25 p.m.	.41	9:02 p.m.	9:12 p.m.	.08	.16	.31												
NORTHERN SLOPE																				
Havre, Mont.[9]																				
Helena, Mont.[9]																				
Kalispell, Mont.:																				
June 16	4:33 p.m.	4:42 p.m.	.60	4:33 p.m.	4:42 p.m.	.00	.42	.60												
Miles City, Mont.[9]																				
Rapid City, S.Dak.[9]																				
Cheyenne, Wyo.:																				
Aug. 15	4:32 p.m.	9:50 p.m.	1.00	4:47 p.m.	5:10 p.m.	.03	.14	.21	.34	.59	.65									
Aug. 19	4:10 p.m.	5:25 p.m.	.94	4:25 p.m.	4:58 p.m.	.02	.08	.15	.29	.55	.74	.82	.87							
Lander, Wyo.:																				
July 31	8:03 p.m.	10:10 p.m.	1.46	8:03 p.m.	8:37 p.m.	.00	.13	.15	.29	.59	1.04	1.31	1.39							
Sheridan, Wyo.[9]																				
Yellowstone Park, Wyo.[10]																				
North Platte, Nebr.:																				
June 4	10:39 p.m.	[1] 2:58 p.m.	2.00	10:45 p.m.	11:04 p.m.	.01	.23	.41	.52	.59										
MIDDLE SLOPE																				
Denver, Colo.:																				
Apr. 30	12:15 p.m.	5:55 p.m.	1.19	12:23 p.m.	1:34 p.m.	.01	.05	.10	.16	.28	.41	.50	.56	.61	.65	.71	.76	1.04		
May 2	3:50 p.m.	5:25 p.m.	1.08	4:10 p.m.	4:46 p.m.	.02	.05	.23	.46	.70	.79	.88	.94	.97						
Aug. 16	2:12 p.m.	6:55 p.m.	1.12	2:26 p.m.	2:49 p.m.	.01	.28	.61	.70	.76	.82									
Pueblo, Colo.:																				
July 3	1:44 p.m.	2:47 p.m.	.55	1:52 p.m.	2:07 p.m.	.01	.21	.32	.37											
Concordia, Kans.:																				
May 29	7:30 p.m.	11:55 p.m.	1.26	7:33 p.m.	8:06 p.m.	.01	.16	.35	.53	.76	.92	.99	1.05							
July 4	9:30 a.m.	4:10 p.m.	1.88	9:37 a.m.	10:29 a.m.	.01	.10	.24	.57	.74	.78	.81	.86	.90	.93	1.03	1.06			
Aug. 1	12:29 a.m.	5:55 a.m.	.81	1:05 a.m.	1:22 a.m.	.01	.08	.22	.44	.50										
Aug. 5	1:30 a.m.	2:45 a.m.	.44	1:55 a.m.	2:01 a.m.	.03	.36	.40												
Aug. 18	5:20 p.m.	6:00 p.m.	.46	5:26 p.m.	5:46 p.m.	.02	.10	.21	.33	.42										
Aug. 31	4:19 p.m.	4:45 p.m.	.44	4:22 p.m.	4:28 p.m.	.01	.33	.37												
Sept. 24	7:32 p.m.	8:35 p.m.	.85	7:59 p.m.	8:08 p.m.	.06	.50	.65												
Oct. 3	5:30 p.m.	6:10 p.m.	.47	5:33 p.m.	5:42 p.m.	.01	.23	.35												
Dodge City, Kans.:																				
June 13	D.N. a.m.	6:25 a.m.	.93	3:06 a.m.	3:16 a.m.	.02	.35	.61												
July 10	12:40 a.m.	4:40 a.m.	.61	1:01 a.m.	1:13 a.m.	.02	.21	.30	.33											
Sept. 20	3:52 p.m.	5:00 p.m.	.50	3:56 p.m.	4:07 p.m.	.01	.24	.37	.40											

[1] On following date.
[4] On preceding date.
[9] No excessive precipitation during 1931.
[10] No excessive precipitation July to October, inclusive, or during December.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
MIDDLE SLOPE—con.																				
Wichita, Kans.:																				
June 14-15	11:25 p.m.	D.N. a.m.	2.52	11:30 p.m.	12:05 a.m.	0.01	0.26	0.77	1.36	1.73	1.90	2.00	2.05							
Sept. 21	[4] 6:35 p.m.	10:45 a.m.	4.30	8:21 a.m.	9:51 a.m.	2.86	.08	.17	.29	.41	.50	.52	.58	0.64	0.68	0.75	0.85	1.02	1.22	
Broken Arrow, Okla.:[11]																				
Apr. 13	4:12 p.m.	5:55 p.m.	.50	5:22 p.m.	5:44 p.m.	.02	.07	.15	.36	.45	.48									
Apr. 20	11:10 a.m.	3:15 p.m.	.63	12:41 p.m.	12:56 p.m.	.11	.12	.25	.35											
Oklahoma City, Okla.:																				
Apr. 20	9:45 a.m.	5:45 p.m.	1.57	10:07 a.m.	10:33 a.m.	.09	.06	.18	.36	.48	.56	.60								
June 7	[4] 11:46 p.m.	D.N. a.m.	.39	12:07 a.m.	12:20 a.m.	.01	.17	.30	.36											
Aug. 9	1:12 p.m.	2:58 p.m.	.93	2:32 p.m.	2:42 p.m.	.38	.22	.54												
Nov. 16	1:48 p.m.	[1] 4:35 a.m.	4.29	4:37 p.m.	5:27 p.m.	.24	.12	.43	.74	.92	.94	.95	.96	.96	1.16	1.28				
				5:27 p.m.	6:17 p.m.		1.45	1.51	1.53	1.58	1.62	1.65	1.86	1.97	2.03	2.14				
				6:17 p.m.	7:07 p.m.		2.21	2.23	2.25	2.28	2.61	2.73	2.75	2.76	2.76	2.76				
				7:07 p.m.	7:24 p.m.		2.76	3.07	3.21	3.26										
SOUTHERN SLOPE																				
Abilene, Tex.:																				
Apr. 29	D.N. a.m.	7:05 a.m.	.84	5:40 a.m.	5:50 a.m.	.21	.16	.30												
June 9	8:05 p.m.	D.N. p.m.	1.10	8:11 p.m.	8:37 p.m.	.02	.19	.49	.76	.91	1.01	1.04								
Oct. 13	5:30 p.m.	7:50 p.m.	1.93	5:54 p.m.	6:41 p.m.	.10	.09	.21	.42	.70	.87	1.08	1.15	1.35	1.60	1.67				
Oct. 14	12:55 a.m.	8:00 a.m.	1.00	3:46 a.m.	3:58 a.m.	.22	.20	.43	.47											
Oct. 21	2:55 p.m.	6:50 p.m.	1.64	3:26 p.m.	4:12 p.m.	.02	.16	.53	.56	.57	.57	.58	.66	.89	1.00	1.05				
Oct. 22	[4] D.N. p.m.	D.N. a.m.	.53	1:01 a.m.	1:08 a.m.	.06	.28	.35												
Do	6:35 a.m.	10:45 a.m.	1.20	7:12 a.m.	7:44 a.m.	.06	.05	.16	.28	.45	.59	.70	.77							
Do	12:33 p.m.	10:30 p.m.	1.71	4:35 p.m.	4:52 p.m.	.49	.20	.47	.68	.73										
Nov. 16	9:50 p.m.	[1] D.N. a.m.	2.15	9:52 p.m.	10:41 p.m.	.01	.31	.72	.97	1.08	1.12	1.18	1.26	1.42	1.54	1.62				
Amarillo, Tex.:																				
May 16	5:48 p.m.	6:05 p.m.	.47	5:50 p.m.	6:02 p.m.	.01	.20	.41	.46											
May 28	7:20 p.m.	9:05 p.m.	1.19	7:28 p.m.	7:52 p.m.	.01	.16	.58	.82	.99	1.05									
July 31	5:35 p.m.	6:30 p.m.	.85	5:44 p.m.	6:02 p.m.	.01	.15	.31	.62	.82										
Nov. 13	4:00 a.m.	7:32 a.m.	.97	4:33 a.m.	4:48 a.m.	.04	.07	.27	.56											
Del Rio, Tex:																				
Apr. 26	6:25 a.m.	9:10 a.m.	.79	7:53 a.m.	8:39 a.m.	.10	.13	.26	.32	.38	.40	.42	.43	.48	.66	.68				
Apr. 29	[4] D.N. p.m.	6:00 a.m.	.50	4:40 a.m.	4:49 a.m.	.01	.28	.44												
May 1	9:40 p.m.	11:10 p.m.	.52	10:02 p.m.	10:31 p.m.	.01	.09	.17	.21	.28	.41	.47								
May 2	12:40 a.m.	2:50 a.m.	1.82	12:50 a.m.	1:40 a.m.	.02	.08	.22	.44	.80	.92	1.03	1.26	1.43	1.53	1.59				
May 4	7:02 p.m.	8:55 p.m.	.80	8:06 p.m.	8:30 p.m.	.01	.08	.31	.59	.70	.75									
June 9	8:16 p.m.	9:05 p.m.	1.22	8:18 p.m.	8:58 p.m.	.01	.10	.25	.43	.64	.75	.85	.96	1.20						
June 28	7:58 p.m.	11:50 p.m.	.96	8:28 p.m.	8:50 p.m.	.04	.12	.29	.52	.72	.75									
July 10	2:22 p.m.	3:30 p.m.	1.01	2:22 p.m.	3:02 p.m.	.00	.12	.20	.34	.43	.61	.75	.85	.94						
July 17	1:44 p.m.	3:10 p.m.	.75	2:02 p.m.	2:32 p.m.	.02	.08	.10	.27	.50	.58	.63								
Aug. 10	5:36 p.m.	6:58 p.m.	.63	6:09 p.m.	6:39 p.m.	.06	.10	.20	.37	.42	.48	.53								
Aug. 10	8:40 p.m.	[1] 1:45 a.m.	1.89	9:27 p.m.	10:35 p.m.	.11	.13	.24	.38	.47	.50	.51	.56	.62	.68	.88	1.18	1.41		
Roswell, N.Mex.:																				
Apr. 16 [5]	7:16 p.m.	[1] 12:48 p.m.	2.20	9:51 p.m.	11:50 p.m.	.11	.13	.21	.28	.37	.40	.57	.66	.69	.70	.78	.98	1.41	1.72	1.91
May 3	5:39 p.m.	6:28 p.m.	.41	5:45 p.m.	5:58 p.m.	T	.11	.23	.40											
June 8	5:32 p.m.	6:10 p.m.	.55	5:45 p.m.	5:58 p.m.	.03	.20	.47	.52											
Aug. 9	10:40 p.m.	[1] 8:35 a.m.	1.56	11:06 p.m.	11:29 p.m.	.01	.11	.21	.33	.55	.65									
SOUTHERN PLATEAU																				
El Paso, Tex.:																				
June 3	5:10 p.m.	7:45 p.m.	.93	5:16 p.m.	5:38 p.m.	.01	.11	.43	.67	.75	.82									
Albuquerque, N.Mex.:[12]																				
Sept. 23	5:15 p.m.	6:19 p.m.	.93	5:38 p.m.	6:05 p.m.	.06	.09	.21	.40	.56	.80	.85								
Santa Fe, N.Mex.[9]																				
Phoenix, Ariz.:																				
Feb. 14	5:07 p.m.	10:30 p.m.	.41	5:22 p.m.	5:31 p.m.	.01	.23	.33												
Aug. 5	1:55 p.m.	3:10 p.m.	.90	1:58 p.m.	2:26 p.m.	.01	.25	.43	.51	.59	.71	.86								
Nov. 10	1:15 a.m.	1:40 a.m.	.40	1:17 a.m.	1:22 a.m.	.01	.36													
MIDDLE PLATEAU																				
Reno, Nev.:																				
Aug. 13	1:30 p.m.	4:25 p.m.	.95	1:52 p.m.	2:08 p.m.	.04	.27	.54	.69	.73										
Winnemucca, Nev.[9]																				
Modena, Utah [9]																				
Salt Lake City, Utah:																				
Aug. 13	7:40 p.m.	D.N. p.m.	.86	7:49 p.m.	8:04 p.m.	T	.30	.66	.77											
Grand Junction, Colo.[9]																				
NORTHERN PLATEAU																				
Baker, Oreg.[9]																				
Boise, Idaho [9]																				
Lewiston, Idaho [9]																				
Pocatello, Idaho:																				
July 29	12:35 p.m.	3:50 p.m.	.42	12:48 p.m.	1:02 p.m.	.01	.12	.26	.38											
Spokane, Wash.[9]																				
Walla Walla, Wash.:																				
Sept. 18	12:28 p.m.	1:40 p.m.	.46	12:33 p.m.	12:53 p.m.	.01	.21	.29	.34	.41										
Yakima, Wash.[9]																				

[1] On following date.
[4] On preceding date.
[5] From defective record.
[9] No excessive precipitation during 1931.
[11] Record from January to April, inclusive.
[12] Record from May to December, inclusive.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1931 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	60 min.	60 min.	80 min.	100 min.	120 min.
NORTH PACIFIC COAST REGION																				
North Head, Wash.[9]																				
Port Angeles, Wash.[13]																				
Seattle, Wash.[9]																				
Tacoma, Wash.[9]																				
Tatoosh Island, Wash.[9]																				
Portland, Oreg.[9]																				
Roseburg, Oreg.:																				
June 17	6:28 p.m.	7:10 p.m.	0.86	6:28 p.m.	6:48 p.m.	0.00	0.28	0.67	0.78	0.83										
MIDDLE PACIFIC COAST REGION																				
Eureka, Calif.:																				
Jan. 1	1:50 p.m.	7:10 p.m.	.51	6:53 p.m.	7:03 p.m.	.11	.19	.37												
Red Bluff, Calif.:																				
Jan. 1	3:15 p.m.	11:12 p.m.	1.94	6:29 p.m.	7:00 p.m.	.42	.08	.35	.53	.63	0.92	1.01	1.05							
Dec. 23	4:00 a.m.	[1] 1:15 a.m.	1.38	9:56 p.m.	10:01 p.m.	1.02	.25													
Sacramento, Calif.[9]																				
San Francisco, Calif.:																				
Jan. 1	[4] 6:40 a.m.	D.N. a.m.	1.18	12 midnt.	12:10 a.m.	.74	.28	.36												
San Jose, Calif.[9]																				
SOUTH PACIFIC COAST REGION																				
Fresno, Calif.:																				
May 13	3:22 p.m.	6:25 p.m.	1.00	3:34 p.m.	4:09 p.m.	.03	.10	.33	.43	.47	.52	.62	.71							
June 7	5:45 p.m.	[1] 1:00 a.m.	1.10	10:23 p.m.	11:03 p.m.	.07	.08	.22	.39	.55	.65	.76	.83	0.89						
Los Angeles, Calif.[9]																				
San Diego, Calif.:																				
Feb. 3	8:00 p.m.	9:50 p.m.	.61	8:24 p.m.	8:39 p.m.	.02	.18	.32	.42											
ALASKA																				
Fairbanks, Alaska:																				
June 18	3:05 p.m.	4:15 p.m.	.64	3:06 p.m.	3:21 p.m.	.01	.27	.46	.52											
Juneau, Alaska[9]																				
ISLAND POSSESSIONS																				
San Juan, P.R.:[6]																				
Mar. 21	4:02 p.m.	7:40 p.m.	1.90	4:04 p.m.	5:09 p.m.	.01	.23	.43	.53	.63	.77	.87	.99	1.10	1.17	1.29	1.55	1.74		
May 3	12 noon	3:00 p.m.	1.42	12:44 p.m.	1:29 p.m.	.03	.10	.27	.39	.70	.87	.95	1.05	1.15	1.20					
July 29	11:10 a.m.	3:45 p.m.	2.92	12:14 p.m.	1:46 p.m.	.32	.08	.11	.28	.52	.66	.87	1.15	1.50	1.85	2.05	2.09	2.14	2.55	
Nov. 1	1:35 p.m.	2:45 p.m.	1.12	1:37 p.m.	2:07 p.m.	.01	.19	.41	.67	.86	.98	1.04								
Nov. 11	1:52 p.m.	[1] D.N. a.m.	8.06	2:35 p.m.	4:16 p.m.	.39	.11	.19	.29	.37	.49	.81	1.27	1.51	1.86	2.25	3.06	3.69	4.51	4.67
Do	1:52 p.m.	[1] D.N. a.m.	8.06	8:49 p.m.	9:22 p.m.	6.37	.18	.35	.52	.73	.93	1.16	1.33							
Honolulu, Hawaii:																				
May 18[5]	D.N. a.m.	9:40 a.m.	2.14	6:16 a.m.	7:34 a.m.	.14	.11	.21	.31	.44	.60	.70	.77	.82	.89	1.02	1.38	1.78		
Oct. 12	D.N. a.m.	8:20 a.m.	1.27	4:05 a.m.	4:40 a.m.	.03	.09	.13	.23	.36	.47	.55	.69							
Dec. 14	3:39 p.m.	4:45 p.m.	1.02	3:41 p.m.	4:05 p.m.	.01	.20	.56	.75	.90	.98									

[1] On following date.
[4] On preceding date.
[5] From defective record.
[6] Only storms attaining 1 inch or more in 1 hour or less.
[9] No excessive precipitation during 1931.
[13] No excessive precipitation February to August, inclusive.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated												
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
NEW ENGLAND STATES																				
Eastport, Maine:																				
Aug. 28	1:30 a.m.	6:15 a.m.	0.39	1:42 a.m.	1:52 a.m.	0.02	0.05	0.30												
Portland, Maine:																				
July 31	3:25 p.m.	4:05 p.m.	.50	3:42 p.m.	3:53 p.m.	.01	.21	.46	0.48											
Concord, N.H.:																				
May 26	7:08 p.m.	7:25 p.m.	.50	7:12 p.m.	7:21 p.m.	T	.28	.50												
Sept. 16	7:10 a.m.	[1] 2:17 a.m.	5.97	7:07 p.m.	7:56 p.m.	4.15	.08	.13	.18	0.24	0.30	0.38	0.59	0.79	0.92	0.97				
Burlington, Vt.:																				
May 27 [2]	1:44 p.m.	3:00 p.m.	.54	1:53 p.m.	2:04 p.m.	.01	.22	.37	.42											
July 8	[3] 11:00 p.m.	D.N. a.m.	1.03	2:41 a.m.	3:00 a.m.	.35	.05	.19	.37	.45										
July 9	6:21 p.m.	9:10 p.m.	.75	7:41 p.m.	8:00 p.m.	.07	.22	.48	.61	.66										
July 27	4:01 p.m.	10:25 p.m.	1.29	4:06 p.m.	4:43 p.m.	.01	.17	.32	.44	.60	.81	.97	1.12	1.17						
Sept. 1	[3] 9:30 p.m.	D.N. a.m.	.94	2:01 a.m.	2:18 a.m.	.33	.15	.35	.45	.50										
Oct. 27	12:50 a.m.	6:35 a.m.	.81	1:35 a.m.	1:56 a.m.	.06	.06	.30	.41	.49	.52									
Northfield, Vt.: [4]																				
July 1	3:45 p.m.	7:14 p.m.	1.13	4:42 p.m.	5:10 p.m.	.20	.07	.12	.14	.24	.50	.54								
Boston, Mass.:																				
May 26	3:15 p.m.	4:00 p.m.	.66	3:28 p.m.	3:34 p.m.	.03	.55	.61												
July 29	9:32 a.m.	9:42 a.m.	.26	9:32 a.m.	9:38 a.m.	.00	.25	.26												
Sept. 2	1:45 a.m.	2:40 a.m.	.56	1:56 a.m.	2:11 a.m.	.05	.12	.35	.45											
Nov. 1	12:30 p.m.	5:10 p.m.	.94	3:11 p.m.	3:38 p.m.	.30	.13	.20	.26	.39	.55	.60								
Nantucket, Mass.:																				
Aug. 11	12:01 p.m.	12:25 p.m.	.72	12:01 p.m.	12:17 p.m.	.00	.24	.51	.69	.72										
Oct. 18	1:30 a.m.	[1] 9:00 a.m.	4.31	5:52 p.m.	6:34 p.m.	2.09	.05	.11	.19	.28	.41	.53	.61	.66	.70					
Block Island, R.I.:																				
Apr. 12	[5] 7:45 p.m.	8:14 a.m.	1.88	1:46 a.m.	2:04 a.m.	.73	.08	.22	.49	.63										
July 2 [6]	D.N. a.m.	D.N. a.m.	2.15	4:19 a.m.	5:17 a.m.	.38	.27	.47	.56	.69	.80	.89	1.05	1.29	1.42	1.51	1.76			
July 27 [6]	8:05 a.m.	11:52 a.m.	2.40	8:36 a.m.	9:06 a.m.	.32	.09	.18	.27	.47	.80	1.01								
Do	8:05 a.m.	11:52 a.m.	2.40	9:55 a.m.	10:10 a.m.	1.59	.21	.51	.57											
Do	9:47 p.m.	[1] D.N. a.m.	1.82	9:54 p.m.	10:47 p.m.	.01	.14	.24	.33	.62	.82	1.03	1.22	1.39	1.50	1.66	1.74			
Aug. 11	6:50 a.m.	8:12 a.m.	.84	7:14 a.m.	7:44 a.m.	.01	.08	.21	.45	.67	.68	.79								
Aug. 18	7:28 p.m.	[1] 7:15 a.m.	1.63	10:15 p.m.	11:20 p.m.	.02	.22	.29	.35	.41	.47	.51	.58	.64	.68	.69	.83	0.94		
Sept. 5	D.N. a.m.	1:03 p.m.	.96	12:37 p.m.	12:54 p.m.	.45	.07	.29	.46	.49										
Sept. 6	1:45 a.m.	7:34 a.m.	.78	5:59 a.m.	6:15 a.m.	.17	.10	.29	.38	.44										
Sept. 16	D.N. a.m.	7:10 p.m.	3.53	11:43 a.m.	12:04 p.m.	2.12	.15	.37	.52	.62	.64									
Do	7:50 p.m.	[1] D.N. a.m.	.80	8:29 p.m.	8:59 p.m.	.07	.08	.23	.35	.53	.60	.66								
Providence, R.I.:																				
June 27	3:57 p.m.	5:14 p.m.	1.10	4:10 p.m.	5:05 p.m.	.01	.13	.19	.23	.37	.46	.46	.47	.47	.56	.79	1.09			
July 23	7:52 p.m.	8:24 p.m.	.64	7:58 p.m.	8:10 p.m.	.02	.32	.57	.61											
Sept. 2	3:35 a.m.	D.N. a.m.	1.16	3:38 a.m.	4:16 a.m.	.02	.13	.26	.42	.63	.81	.90	1.02	1.11						
Sept. 16	D.N. a.m.	D.N. p.m.	6.17	11:30 a.m.	12:20 p.m.	1.55	.06	.11	.18	.29	.36	.44	.52	.59	.68	.71				
				12:20 p.m.	1:10 p.m.	.....	.80	1.01	1.18	1.37	1.54	1.64	1.72	1.77	1.82	1.84				
				1:10 p.m.	2:00 p.m.	.....	1.89	1.96	2.07	2.27	2.40	2.48	2.55	2.63	2.73	2.77				
				2:00 p.m.	2:25 p.m.	.....	2.89	2.92	2.94	2.98	3.09									
Nov. 1	11:24 a.m.	4:40 p.m.	.82	2:34 p.m.	2:59 p.m.	.25	.05	.11	.19	.27	.47									
Hartford, Conn.:																				
June 16 [6]	9:12 p.m.	[1] 12:49 a.m.	1.29	10:01 p.m.	10:44 p.m.	.05	.05	.18	.27	.38	.51	.73	.87	.99	1.08					
July 23	3:36 p.m.	4:17 p.m.	.51	3:54 p.m.	4:14 p.m.	.02	.06	.21	.40	.49										
July 27 [6]	7:52 p.m.	9:33 p.m.	.56	7:54 p.m.	8:09 p.m.	.01	.16	.25	.36											
Aug. 11	[3] 7:15 p.m.	3:57 a.m.	1.67	2:05 a.m.	2:40 a.m.	.89	.09	.22	.33	.37	.40	.50	.61							
New Haven, Conn.:																				
May 27	5:20 p.m.	[1] 2:50 a.m.	.50	10:58 p.m.	11:07 p.m.	.16	.22	.30												
July 23	7:34 p.m.	8:16 p.m.	.59	7:46 p.m.	7:58 p.m.	.01	.32	.55	.58											
July 27	5:12 a.m.	8:20 a.m.	.52	5:36 a.m.	6:01 a.m.	.02	.05	.14	.23	.26	.48									
MIDDLE ATLANTIC STATES																				
Albany, N.Y.:																				
July 1	4:35 p.m.	9:10 p.m.	1.07	5:07 p.m.	5:25 p.m.	.01	.38	.61	.71	.77										
July 27	5:08 p.m.	6:35 p.m.	1.02	5:08 p.m.	5:33 p.m.	.00	.20	.44	.61	.79	.89									
Aug. 31	3:55 a.m.	6:40 a.m.	.81	4:55 a.m.	5:17 a.m.	.10	.08	.23	.38	.51	.58									
Sept. 5	1:35 p.m.	2:15 p.m.	.59	1:43 p.m.	2:02 p.m.	.02	.14	.22	.41	.57										
Binghamton, N.Y.:																				
June 21	8:00 p.m.	9:57 p.m.	.79	9:34 p.m.	9:51 p.m.	.39	.10	.15	.35	.40										
July 1	2:19 p.m.	6:30 p.m.	.93	3:44 p.m.	4:00 p.m.	.17	.20	.34	.46	.49										
July 22	3:35 p.m.	4:50 p.m.	1.64	3:42 p.m.	4:21 p.m.	.01	.07	.37	.50	.51	.58	.87	1.30	1.53						
July 27	3:02 p.m.	4:17 p.m.	.69	3:15 p.m.	3:25 p.m.	.01	.43	.60												
Sept. 1	8:05 p.m.	D.N. p.m.	.60	8:46 p.m.	8:59 p.m.	.09	.18	.36	.40											
New York, N.Y.:																				
June 22	1:40 a.m.	2:20 a.m.	.74	1:47 a.m.	2:05 a.m.	.02	.16	.55	.66	.71										
June 27	7:50 p.m.	9:40 p.m.	1.07	9:02 p.m.	9:18 p.m.	.28	.31	.48	.69	.77										
Aug. 6	6:17 p.m.	7:32 p.m.	.60	6:59 p.m.	7:19 p.m.	.10	.18	.29	.42	.49										
Aug. 27	5:20 p.m.	8:40 p.m.	1.04	5:41 p.m.	5:57 p.m.	T	.17	.22	.35	.42										
Do	5:20 p.m.	8:40 p.m.	1.04	6:54 p.m.	7:06 p.m.	.47	.07	.38	.42											
Sept. 5-6	11:45 p.m.	1:15 a.m.	.59	11:52 p.m.	12:05 a.m.	T	.19	.47	.58											
Harrisburg, Pa.:																				
June 26	2:42 p.m.	3:32 p.m.	.71	2:48 p.m.	3:20 p.m.	.01	.15	.31	.42	.45	.53	.67	.70							
Oct. 4	3:45 p.m.	[1] 12:27 a.m.	1.10	10:58 p.m.	11:30 p.m.	.32	.26	.43	.55	.56	.58	.74	.77							
Oct. 5	2:55 a.m.	[1] 12:30 p.m.	3.19	7:25 p.m.	7:45 p.m.	.41	.25	.53	.68	.76										
Philadelphia, Pa.:																				
May 1	9:05 a.m.	1:25 p.m.	.92	10:00 a.m.	10:34 a.m.	.21	.05	.12	.20	.34	.43	.50	.55							
May 27	4:43 p.m.	7:06 p.m.	1.00	4:58 p.m.	5:28 p.m.	.07	.12	.22	.36	.38	.53	.73								
June 15	4:09 p.m.	5:26 p.m.	.81	4:11 p.m.	5:00 p.m.	.01	.07	.18	.30	.31	.31	.35	.43	.44	.71	.78				
June 17	2:04 p.m.	7:06 p.m.	1.27	2:11 p.m.	2:31 p.m.	.01	.25	.42	.61	.81										
July 22	10:07 p.m.	[1] D.N. a.m.	1.21	10:11 p.m.	10:38 p.m.	.01	.26	.47	.69	.84	.96	1.03								
Aug. 10	10:10 p.m.	[1] D.N. a.m.	.84	11:02 p.m.	11:12 p.m.	.29	.15	.30												
Aug. 27	6:22 p.m.	7:09 p.m.	.41	6:47 p.m.	6:57 p.m.	.01	.14	.37												
Nov. 1	D.N. a.m.	11:40 a.m.	1.75	10:13 a.m.	10:28 a.m.	1.17	.06	.32	.45											

[1] On following date.
[2] Record defective after 2:04 p.m.
[3] On preceding date.
[4] No record for April, August, September, and October.
[5] On second preceding date.
[6] From defective record.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
MIDDLE ATLANTIC STATES—continued																				
Reading, Pa.:																				
May 21	5:40 p.m.	8:20 p.m.	.51	7:04 p.m.	7:18 p.m.	0.01	0.18	0.36	0.49											
May 27	2:40 p.m.	3:10 p.m.	.78	2:45 p.m.	2:59 p.m.	.01	.25	.54	.76											
June 26	3:25 p.m.	6:50 p.m.	1.38	4:15 p.m.	4:35 p.m.	.02	.10	.55	.97	1.20										
June 27	8:15 p.m.	11:40 p.m.	.90	8:49 p.m.	9:26 p.m.	.01	.07	.13	.24	.38	0.50	0.59	0.74	0.77						
July 1	8:53 p.m.	9:40 p.m.	.44	8:57 p.m.	9:03 p.m.	.01	.40	.42												
July 22	9:20 p.m.	11:40 p.m.	1.41	9:35 p.m.	10:06 p.m.	.04	.21	.49	.68	.87	.92	1.04	1.06							
July 27 [6]	3:08 p.m.	4:40 p.m.	1.08	3:46 p.m.	4:11 p.m.	.08	.11	.27	.71	.92	.99									
Aug. 7 [6]	1:20 p.m.	2:20 p.m.	1.34	1:27 p.m.	1:48 p.m.	.01	.20	.48	.81	1.20	1.33									
Do	6:25 p.m.	7:20 p.m.	2.29	6:27 p.m.	7:09 p.m.	.01	.35	.77	1.28	1.74	1.92	2.05	2.11	2.20	2.28					
Aug. 10	5:06 p.m.	5:36 p.m.	.36	5:18 p.m.	5:31 p.m.	.01	.14	.30	.34											
Aug. 27	2:10 p.m.	2:40 p.m.	.41	2:21 p.m.	2:36 p.m.	.01	.16	.32	.40											
Do	4:20 p.m.	5:05 p.m.	.73	4:41 p.m.	4:58 p.m.	.01	.21	.30	.63	.72										
Aug. 31	8:00 p.m.	10:45 p.m.	.50	8:16 p.m.	8:36 p.m.	.01	.14	.26	.38	.42										
Oct. 5	8:00 p.m.	[1] 1:25 p.m.	2.55	10:13 p.m.	10:35 p.m.	.04	.11	.25	.32	.43	.49									
Oct. 26	7:50 p.m.	[1] 5:30 a.m.	.62	11:38 p.m.	11:46 p.m.	.09	.25	.30												
Scranton, Pa.:																				
Feb. 10	5:50 p.m.	[1] D.N. a.m.	1.97	10:54 p.m.	11:49 p.m.	.71	.08	.17	.32	.44	.51	.63	.75	.81	.88	0.95	1.05			
July 22	5:52 p.m.	7:05 p.m.	.51	6:07 p.m.	6:30 p.m.	.02	.05	.16	.30	.38	.46									
Aug. 7	4:07 p.m.	5:05 p.m.	.47	4:20 p.m.	4:38 p.m.	.01	.05	.20	.39	.44										
Aug. 10	4:45 p.m.	8:10 p.m.	.66	5:12 p.m.	5:24 p.m.	.04	.25	.37	.40											
Atlantic City, N.J.:																				
June 7	[2] 10:30 p.m.	3:40 a.m.	0.60	2:29 a.m.	2:40 a.m.	.15	.25	.43	.44											
June 17	1:58 p.m.	8:00 p.m.	1.38	2:33 p.m.	3:06 p.m.	.01	.07	.18	.60	.86	1.4	1.14	1.20							
July 17	9:05 p.m.	10:30 p.m.	.96	9:13 p.m.	9:40 p.m.	.01	.08	.22	.44	.62	.75	.80								
July 23	12:10 a.m.	2:45 a.m.	1.15	12:12 a.m.	12:39 a.m.	.01	.09	.34	.56	.81	.92	.95								
Aug. 7	2:02 p.m.	2:40 p.m.	.80	2:04 p.m.	2:21 p.m.	.01	.20	.49	.70	.77										
Sandy Hook, N.J.:																				
May 27	5:11 p.m.	7:58 p.m.	1.25	5:20 p.m.	5:45 p.m.	.06	.14	.44	.74	.82	.96									
June 22	1:50 a.m.	2:15 a.m.	.37	1:52 a.m.	1:57 a.m.	.01	.29													
June 27	3:52 p.m.	5:30 p.m.	.98	3:55 p.m.	4:47 p.m.	.01	.07	.24	.35	.43	.52	.55	.60	.70	.75	.84	.90			
Sept. 2	1:55 a.m.	5:45 a.m.	.66	2:13 a.m.	2:35 a.m.	.05	.09	.30	.44	.52	.55									
Trenton, N.J.:																				
June 27	3:39 p.m.	4:42 p.m.	.34	4:31 p.m.	4:34 p.m.	.09	.25													
Do	9:40 p.m.	[1] D.N. a.m.	1.20	10:03 p.m.	10:26 p.m.	.02	.26	.65	.89	1.02	1.10									
July 21	10:45 p.m.	[1] D.N. a.m.	.94	11:27 p.m.	11:56 p.m.	.01	.14	.42	.55	.66	.77	.83								
July 27	4:36 p.m.	6:15 p.m.	.85	4:50 p.m.	4:59 p.m.	.04	.21	.51												
July 29	1:35 a.m.	D.N. a.m.	.79	1:37 a.m.	1:47 a.m.	.01	.33	.61												
Aug. 18 [6]	5:40 p.m.	9:40 p.m.	2.78	7:53 p.m.	8:58 p.m.	.48	.14	.23	.36	.61	.86	1.13	1.31	1.31	1.33	1.37	1.90	2.16		
Aug. 31	4:52 p.m.	7:13 p.m.	1.49	5:10 p.m.	5:40 p.m.	.03	.17	.53	.79	.96	1.01	1.08								
Sept. 2	2:18 a.m.	3:23 a.m.	1.54	2:24 a.m.	2:51 a.m.	.01	.28	.63	.87	1.11	1.45	1.50								
Nov. 1	3:13 a.m.	12:24 p.m.	2.19	9:53 a.m.	10:45 a.m.	1.05	.07	.20	.27	.33	.38	.44	.52	.58	.70	.96	1.06			
Baltimore, Md.:																				
Mar. 28	[3] 1:50 p.m.	8:05 a.m.	2.48	2:27 a.m.	3:00 a.m.	1.78	.07	.13	.22	.36	.47	.62	.66							
May 1	[3] 8:10 p.m.	11:20 a.m.	.86	7:29 a.m.	8:02 a.m.	.09	.13	.29	.37	.42	.44	.52	.58							
May 21	10:50 p.m.	[1] 1:15 a.m.	.47	11:17 p.m.	11:33 p.m.	.01	.15	.32	.38	.40										
May 27	3:00 p.m.	5:32 p.m.	1.01	3:19 p.m.	3:38 p.m.	.01	.19	.51	.75	.85										
July 22	6:15 p.m.	7:48 p.m.	.46	6:36 p.m.	6:56 p.m.	.03	.11	.21	.28	.41										
July 27	3:05 p.m.	3:25 p.m.	.37	3:12 p.m.	3:20 p.m.	.01	.24	.36												
Aug. 7	4:05 p.m.	4:42 p.m.	.60	4:16 p.m.	4:37 p.m.	.01	.21	.33	.43	.56	.59									
Aug. 8	9:05 p.m.	9:50 p.m.	.53	9:17 p.m.	9:34 p.m.	.02	.11	.29	.45	.50										
Aug. 30	12:50 a.m.	4:20 a.m.	1.42	2:44 a.m.	3:41 a.m.	.26	.06	.20	.37	.50	.52	.62	.68	.70	.80	.98	1.13			
Sept. 5	9:00 p.m.	10:20 p.m.	.48	9:35 p.m.	9:46 p.m.	.08	.16	.37	.39											
Oct. 5	7:35 p.m.	[1] 11:55 a.m.	2.90	9:51 p.m.	10:36 p.m.	.20	.11	.15	.22	.34	.50	.54	.62	.69	.81					
Oct. 6	[3] 7:35 p.m.	11:55 a.m.	2.90	12:31 a.m.	1:15 a.m.	1.46	.07	.27	.30	.31	.35	.41	.53	.65	.70					
Nov. 1	[3] 11:40 p.m.	11:30 a.m.	1.76	8:23 a.m.	8:38 a.m.	1.18	.22	.31	.36											
Washington, D.C.:																				
Mar. 22	[3] 11:55 a.m.	8:20 a.m.	1.06	7:20 a.m.	7:40 a.m.	.52	.10	.22	.36	.44										
May 1	6:10 a.m.	10:55 a.m.	.80	6:51 a.m.	7:07 a.m.	.03	.18	.33	.51	.53										
May 27	2:10 p.m.	3:55 p.m.	.61	2:51 p.m.	3:16 p.m.	.02	.09	.12	.24	.45	.55									
June 16	3:20 p.m.	5:10 p.m.	1.33	3:43 p.m.	4:11 p.m.	.01	.19	.44	.76	.84	.92	1.03								
July 7	7:25 p.m.	9:15 p.m.	.64	7:29 p.m.	7:44 p.m.	.01	.16	.35	.43											
July 27	3:43 p.m.	4:45 p.m.	.40	3:48 p.m.	3:55 p.m.	.01	.23	.38												
Sept. 4	3:20 p.m.	6:00 p.m.	.51	3:51 p.m.	3:57 p.m.	.02	.28	.33												
Sept. 5	9:05 p.m.	10:10 p.m.	1.59	9:11 p.m.	9:49 p.m.	.01	.22	.48	.73	.95	1.07	1.31	1.47	1.57						
Sept. 23	4:07 p.m.	7:45 p.m.	1.54	4:09 p.m.	5:17 p.m.	.01	.15	.39	.42	.49	.87	.98	1.00	1.05	1.06	1.08	1.36	1.49		
Oct. 5	7:10 p.m.	[1] 12:20 p.m.	3.64	8:33 p.m.	9:54 p.m.	.33	.09	.21	.26	.31	.40	.46	.58	.65	.73	.77	.92	1.23	1.36	
Nov. 1	[3] 10:15 p.m.	9:55 a.m.	1.84	7:44 a.m.	8:06 a.m.	1.12	.24	.33	.37	.44	.49									
Cape Henry, Va.:																				
Feb. 12	1:55 p.m.	3:00 p.m.	.45	2:05 p.m.	2:20 p.m.	.01	.10	.28	.37											
April 9	3:55 p.m.	9:20 p.m.	1.96	5:25 p.m.	6:49 p.m.	.04	.12	.26	.35	.44	.51	.56	.74	.81	.86	.91	1.05	1.23	1.34	
July 16	2:55 a.m.	9:30 a.m.	2.39	3:37 a.m.	4:03 a.m.	.19	.23	.45	.58	.69	.76	.81								
Do	2:55 a.m.	9:30 a.m.	2.39	7:51 a.m.	8:15 a.m.	1.35	.16	.37	.58	.73	.80									
July 29	3:05 p.m.	4:25 p.m.	1.29	3:33 p.m.	4:04 p.m.	.01	.19	.34	.65	.93	1.19	1.25	1.28							
Nov. 9	7:05 p.m.	9:20 p.m.	.83	8:33 p.m.	8:43 p.m.	.04	.41	.66												
Lynchburg, Va.:																				
Mar. 22	[3] 9:05 p.m.	7:30 a.m.	1.12	3:37 a.m.	3:52 a.m.	.47	.19	.28	.38											
June 13	4:15 p.m.	7:35 p.m.	.97	5:02 p.m.	5:44 p.m.	.10	.11	.22	.32	.41	.45	.49	.58	.67	.72					
Sept. 23	4:05 p.m.	5:10 p.m.	.48	4:11 p.m.	4:26 p.m.	.01	.22	.33	.38											
Norfolk, Va.:																				
July 16	2:15 a.m.	5:40 a.m.	1.03	2:33 a.m.	3:14 a.m.	.02	.08	.19	.35	.37	.41	.49	.60	.69	.74					
Do	7:15 a.m.	9:05 a.m.	.73	7:48 a.m.	8:09 a.m.	.02	.21	.36	.61	.67	.69									
July 27	7:55 p.m.	11:25 p.m.	.78	8:05 p.m.	8:32 p.m.	.01	.14	.17	.24	.43	.57	.62								

[1] On following date. [2] On preceding date. [6] From defective record.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
MIDDLE ATLANTIC STATES—continued																				
Richmond, Va.:																				
May 17	5:15 p.m.	9:55 p.m.	1.72	5:25 p.m.	6:05 p.m.	0.03	0.09	0.25	0.31	0.44	0.59	0.85	1.02	1.17						
June 15	5:40 p.m.	6:05 p.m.	.34	5:47 p.m.	5:56 p.m.	.02	.10	.31												
July 7	9:35 p.m.	11:15 p.m.	1.15	9:51 p.m.	10:21 p.m.	.02	.15	.46	.78	.89	.95	1.07								
Aug. 11	7:30 p.m.	9:15 p.m.	.67	7:30 p.m.	8:05 p.m.	.00	.06	.10	.21	.27	.38	.50	.60							
Nov. 1	[3] 8:35 p.m.	9:30 a.m.	1.14	7:40 a.m.	7:45 a.m.	.81	.26													
Wytheville, Va.:																				
May 24	4:39 p.m.	6:40 p.m.	.94	5:05 p.m.	5:43 p.m.	.11	.17	.28	.29	.34	.39	.57	.70	.81						
June 13	7:36 p.m.	8:14 p.m.	.50	7:44 p.m.	7:53 p.m.	.01	.27	.45												
June 18	5:34 p.m.	6:25 p.m.	.56	5:45 p.m.	6:05 p.m.	.01	.08	.20	.36	.53										
Aug. 3	9:16 p.m.	[1] D.N. a.m.	.63	9:20 p.m.	9:33 p.m.	.01	.19	.35	.39											
SOUTH ATLANTIC STATES																				
Asheville, N.C. [7]																				
Charlotte, N.C.: [8]																				
June 12	3:35 p.m.	6:50 p.m.	1.80	3:39 p.m.	4:32 p.m.	.01	.08	.25	.38	.54	.73	.91	.99	1.11	1.30	1.50	1.65			
June 18	4:50 p.m.	5:55 p.m.	1.24	5:12 p.m.	5:31 p.m.	.02	.32	.66	1.05	1.14										
Greensboro, N.C.: [8]																				
June 11	6:01 a.m.	2:25 p.m.	1.65	12:27 p.m.	1:10 p.m.	.54	.10	.27	.45	.51	.55	.65	.77	.97	1.10					
Hatteras, N.C.: [8]																				
Mar. 6	D.N. a.m.	7:15 a.m.	2.78	5:38 a.m.	6:53 a.m.	1.12	0.11	0.22	0.41	0.60	0.72	0.91	0.98	1.02	1.12	1.22	1.27	1.65		
Nov. 18	6:45 p.m.	D.N. p.m.	1.99	7:50 p.m.	9:06 p.m.	.16	.08	.13	.21	.38	.43	.59	.66	.70	.74	.83	1.25	1.76		
Nov. 26	D.N. a.m.	9:25 a.m.	3.17	5:47 a.m.	7:08 a.m.	.22	.07	.18	.24	.29	.37	.44	.51	.56	.71	1.03	1.46	2.16	2.42	
Raleigh, N.C.: [8]																				
Mar. 6	[3] 9:45 p.m.	7:58 a.m.	3.05	6:40 a.m.	7:41 a.m.	1.46	.06	.33	.39	.58	.71	.81	.92	.94	1.05	1.29	1.56	1.59		
Apr. 8	3:01 p.m.	7:30 p.m.	1.61	5:19 p.m.	5:57 p.m.	.29	.16	.28	.28	.38	.65	1.00	1.23	1.30						
May 27	7:46 p.m.	[1] D.N. a.m.	3.69	7:55 p.m.	8:23 p.m.	.01	.29	.59	.82	.98	1.17	1.26								
Do	7:46 p.m.	[1] D.N. a.m.	3.69	10:28 p.m.	11:02 p.m.	1.76	.07	.31	.56	.97	1.21	1.40	1.50							
June 6	5:08 p.m.	6:05 p.m.	1.71	5:10 p.m.	5:46 p.m.	.01	.28	.82	.94	1.09	1.19	1.40	1.60	1.64						
June 28	6:20 p.m.	7:55 p.m.	1.87	7:02 p.m.	7:36 p.m.	.23	.07	.27	.62	.98	1.27	1.49	1.63							
Oct. 27 [6]	D.N. a.m.	D.N. a.m.	1.51	2:41 a.m.	3:26 a.m.	.02	.11	.31	.45	.66	.83	.94	1.05	1.13	1.23					
Wilmington, N.C.: [8]																				
June 26	4:20 a.m.	6:45 a.m.	1.45	5:08 a.m.	5:30 a.m.	.22	.21	.63	.95	1.13	1.15									
July 16	1:45 p.m.	4:00 p.m.	1.47	2:57 p.m.	3:28 p.m.	.34	.09	.22	.44	.73	.99	1.10	1.13							
July 25	1:11 p.m.	4:10 p.m.	1.31	1:16 p.m.	1:33 p.m.	.01	.27	.64	.95	1.01										
Sept. 14	[3] 8:05 p.m.	D.N. a.m.	2.28	12:05 a.m.	1:15 a.m.	.75	.17	.35	.37	.43	.49	.53	.54	.55	.57	.64	1.13	1.46		
Charleston, S.C.: [8]																				
June 14	[3] 1:55 p.m.	6:02 a.m.	2.56	2:02 a.m.	3:02 a.m.	1.24	.09	.20	.32	.43	.58	.70	.82	.92	1.02	1.11	1.24			
July 25	2:10 p.m.	5:00 p.m.	2.31	2:27 p.m.	3:53 p.m.	.01	.18	.19	.24	.41	.51	.62	.85	.99	1.16	1.31	1.43	1.95	2.18	
July 31	12:25 a.m.	D.N. a.m.	1.01	12:27 a.m.	12:48 a.m.	.01	.41	.70	.92	.97	1.00									
Sept. 14	8:51 a.m.	7:12 p.m.	2.20	12:26 p.m.	2:09 p.m.	.29	.08	.16	.26	.32	.35	.45	.51	.56	.61	.68	.76	1.23	1.70	1.78
Oct. 31	9:01 p.m.	[1] 4:20 a.m.	2.68	10:27 p.m.	11:47 p.m.	.09	.11	.14	.45	.63	.74	.81	.89	.97	1.03	1.10	1.25	1.83		
Columbia, S.C.: [7]																				
June 12	2:10 p.m.	[1] 6:30 a.m.	2.44	2:30 p.m.	3:38 p.m.	.02	.10	.13	.20	.33	.44	.58	.76	.89	.97	1.04	1.58	1.85		
June 28	6:07 p.m.	7:00 p.m.	.76	6:09 p.m.	6:24 p.m.	.01	.28	.51	.74											
July 28	5:14 p.m.	9:30 p.m.	1.76	6:26 p.m.	7:16 p.m.	.06	.16	.39	.58	.67	.76	.93	1.06	1.34	1.44	1.53				
July 29	7:30 p.m.	9:15 p.m.	.85	7:59 p.m.	8:21 p.m.	.01	.14	.31	.60	.69	.74									
Aug. 4	7:08 p.m.	[1] D.N. a.m.	.96	8:25 p.m.	8:45 p.m.	.01	.09	.25	.43	.54										
Aug. 5	3:38 p.m.	7:35 p.m.	1.33	5:02 p.m.	5:27 p.m.	.08	.17	.44	.69	.89	1.00									
Aug. 7	[3] 7:40 p.m.	8:25 a.m.	4.10	12:25 a.m.	1:23 a.m.	.53	.07	.16	.28	.43	.54	.74	.87	.98	1.05	1.18	1.33			
Do	[3] 7:40 p.m.	8:25 a.m.	4.10	2:08 a.m.	2:59 a.m.	2.07	.10	.21	.32	.52	.76	.95	1.16	1.29	1.50	1.77	1.83			
Oct. 5	12:40 p.m.	[1] D.N. a.m.	1.91	3:22 p.m.	3:53 p.m.	.35	.11	.23	.39	.69	1.03	1.20	1.23							
Greenville, S.C.: [8]																				
June 19	12:25 a.m.	D.N. a.m.	1.26	12:35 a.m.	1:04 a.m.	.03	.17	.58	.87	1.04	1.13	1.18								
Aug. 8	3:36 p.m.	4:06 p.m.	1.24	3:40 p.m.	4:00 p.m.	.01	.17	.50	1.06	1.23										
Augusta, Ga.: [8]																				
Aug. 19	5:15 p.m.	7:00 p.m.	2.12	5:17 p.m.	5:53 p.m.	.01	.29	.62	.85	1.11	1.53	1.81	1.99	2.04						
Savannah, Ga.: [8]																				
Aug. 20	12:32 p.m.	5:40 p.m.	2.39	12:39 p.m.	1:40 p.m.	.03	.05	.11	.17	.31	.44	.50	.55	.63	.81	.95	1.10	1.20		
Aug. 21	[3] 7:00 p.m.	D.N. a.m.	3.29	1:38 a.m.	3:00 a.m.	1.38	.23	.37	.42	.47	.54	.62	.71	.76	.81	.87	1.06	1.69	1.81	
Sept. 15	[3] 10:05 a.m.	7:05 a.m.	2.01	4:38 a.m.	5:34 a.m.	.86	.26	.46	.62	.68	.69	.71	.77	.89	.99	1.05	1.13			
Sept. 23	1:28 p.m.	2:55 p.m.	2.09	1:35 p.m.	2:13 p.m.	.01	.27	.83	1.24	1.56	1.70	1.85	1.93	1.99						
Sept. 26	4:05 p.m.	8:35 p.m.	1.47	5:29 p.m.	6:25 p.m.	.12	.14	.39	.66	.73	.76	.81	.90	.98	1.06	1.13	1.24			
Oct. 31	5:53 p.m.	[1] 2:35 a.m.	2.67	8:50 p.m.	10:01 p.m.	.05	.12	.29	.42	.61	.79	.89	.93	1.04	1.17	1.43	1.68	2.02		
Jacksonville, Fla.: [8]																				
June 3	[3] 6:20 p.m.	7:10 a.m.	4.01	4:13 a.m.	4:59 a.m.	1.22	.06	.18	.44	.80	1.10	1.39	1.64	1.82	2.20	2.26				
June 4	12:40 p.m.	D.N. p.m.	5.66	12:46 p.m.	1:36 a.m.	.01	.32	.63	.91	1.04	1.08	1.10	1.12	1.18	1.31	1.73				
				1:36 p.m.	2:26 p.m.		2.14	2.32	2.53	2.66	2.72	2.83	2.91	2.94	2.99	3.05				
				2:26 p.m.	3:00 p.m.		3.09	3.14	3.18	3.26	3.35	3.42	3.46							
June 9	4:10 p.m.	7:55 p.m.	1.87	4:12 p.m.	4:42 p.m.	.01	.42	.80	.97	1.18	1.32	1.44								
June 24–25	D.N. p.m.	D.N. a.m.	1.87	11:56 p.m.	12:31 a.m.	.02	.18	.40	.52	.87	1.27	1.59	1.70							
June 28	9:55 a.m.	1:20 p.m.	1.34	10:22 a.m.	10:50 a.m.	.05	.25	.57	.81	.99	1.04	1.08								
July 26	2:22 p.m.	4:55 p.m.	2.57	2:24 p.m.	3:14 p.m.	.01	.12	.53	.81	1.28	1.51	1.70	1.96	2.15	2.29	2.37				
July 27	3:36 p.m.	5:15 p.m.	1.72	3:38 p.m.	4:13 p.m.	.01	.25	.36	.77	1.06	1.28	1.52	1.65							
July 30	5:05 p.m.	7:55 p.m.	1.07	5:43 p.m.	6:26 p.m.	.02	.09	.10	.18	.55	.66	.70	.84	.94	1.00					
Sept. 13	12:25 p.m.	8:10 p.m.	2.92	12:35 p.m.	1:15 p.m.	.01	.24	.51	.69	.78	.86	.96	1.03	1.08						

[1] On following date.
[3] On preceding date.
[6] From defective record.
[7] Only storms attaining 0.50 inch or more in 30 minutes or less.
[8] Only storms attaining 1 inch or more in 1 hour or less.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
FLORIDA PENINSULA																				
Key West, Fla.:[8]																				
Jan. 1	D.N. a.m.	7:15 a.m.	2.34	4:24 a.m.	5:43 a.m.	0.18	0.08	0.22	0.43	0.60	0.71	0.79	0.89	0.93	0.97	0.99	1.02	1.64	----	----
Feb. 23	5:45 a.m.	8:15 a.m.	1.70	6:34 a.m.	7:29 a.m.	.13	.13	.26	.26	.43	.57	.62	.67	.95	1.09	1.29	1.36	----	----	----
May 20	11:05 a.m.	4:15 p.m.	3.77	11:35 a.m.	12:25 p.m.	.02	.15	.28	.44	.49	.59	.62	.66	.68	.72	.75	----	----	----	----
				12:25 p.m.	1:15 p.m.	----	.94	1.11	1.24	1.38	1.51	1.64	1.76	1.83	2.09	2.27	----	----	----	----
				1:15 p.m.	2:05 p.m.	----	2.41	2.53	2.71	2.85	2.96	3.02	3.10	3.12	3.13	3.15	----	----	----	----
				2:05 p.m.	2:22 p.m.	----	3.18	3.28	3.43	3.49	----	----	----	----	----	----	----	----	----	----
June 1–2	D.N. p.m.	D.N. a.m.	1.14	11:54 p.m.	12:21 a.m.	.01	.13	.38	.49	.90	1.06	1.09	----	----	----	----	----	----	----	----
Aug. 31	[3] 7:30 p.m.	D.N. a.m.	1.90	12:04 a.m.	12:53 a.m.	.82	.12	.23	.37	.47	.55	.62	.65	.81	.95	1.08	----	----	----	----
Oct. 15	6:05 p.m.	D.N. p.m.	3.66	7:03 p.m.	7:50 p.m.	.06	.23	.43	.59	.66	.77	.88	.89	.92	1.09	1.15	----	----	----	----
Do	6:05 p.m.	D.N. p.m.	3.66	10:14 p.m.	10:34 p.m.	1.55	.19	.50	.93	1.33	----	----	----	----	----	----	----	----	----	----
Miami, Fla.:[8]																				
May 19	[3] D.N. p.m.	D.N. a.m.	1.54	12:09 a.m.	1:08 a.m.	.45	.08	.19	.29	.42	.49	.59	.71	.77	.81	.90	1.03	----	----	----
May 23	6:40 p.m.	D.N. p.m.	1.37	6:50 p.m.	7:47 p.m.	.01	.24	.52	.73	.83	.89	.94	1.01	1.07	1.06	1.15	1.26	----	----	----
June 2	9:47 a.m.	2:12 p.m.	2.49	10:10 a.m.	11:11 a.m.	.04	.20	.42	.64	.75	1.15	1.39	1.58	1.75	1.87	2.08	2.28	2.38	----	----
Aug. 18	D.N. a.m.	D.N. a.m.	1.39	2:26 a.m.	3:05 a.m.	.10	.08	.13	.23	.27	.37	.65	1.07	1.20	----	----	----	----	----	----
Aug. 29–30	6:01 p.m.	D.N. a.m.	7.99	8:05 p.m.	8:55 p.m.	.31	.18	.45	.71	.92	1.01	1.07	1.15	1.25	1.42	1.54	----	----	----	----
				8:55 p.m.	9:45 p.m.	----	1.60	1.66	1.76	1.78	1.82	1.87	2.09	2.42	2.67	2.76	----	----	----	----
				9:45 p.m.	10:35 p.m.	----	2.91	3.09	3.21	3.27	3.29	3.32	3.39	3.42	3.46	3.57	----	----	----	----
				10:35 p.m.	11:25 p.m.	----	3.64	3.77	3.89	3.96	4.17	4.41	4.55	4.73	4.94	5.10	----	----	----	----
				11:25 p.m.	12:13 a.m.	----	5.17	5.49	5.68	5.93	6.11	6.37	6.77	7.16	7.53	7.59	----	----	----	----
Sept. 10	D.N. a.m.	9:00 a.m.	1.95	7:35 a.m.	7:59 a.m.	.82	.14	.51	.80	.97	1.05	----	----	----	----	----	----	----	----	----
Oct. 8	4:55 p.m.	D.N. p.m.	2.56	6:26 p.m.	7:27 p.m.	.35	.08	.21	.25	.28	.50	.68	.79	.91	1.01	1.08	1.20	1.31	----	----
Oct. 16	D.N. a.m.	11:05 a.m.	3.74	7:38 a.m.	8:57 a.m.	.79	.12	.21	.26	.33	.44	.70	.93	1.11	1.24	1.47	2.12	2.60	----	----
Oct. 29	D.N. a.m.	12:30 p.m.	7.42	3:17 a.m.	4:51 a.m.	.99	.13	.27	.63	.89	1.04	1.17	1.24	1.37	1.48	1.60	1.72	2.02	2.26	----
Do	D.N. a.m.	12:30 p.m.	7.42	8:58 a.m.	10:17 a.m.	4.54	.12	.19	.25	.29	.40	.51	.63	.79	.90	1.15	1.74	2.49	----	----
Tampa, Fla.:[8]																				
May 25	3:12 p.m.	6:55 p.m.	1.34	3:17 p.m.	4:12 p.m.	.02	.07	.13	.28	.45	.57	.60	.66	.75	.91	1.06	1.18	----	----	----
May 27	4:50 p.m.	6:20 p.m.	1.56	4:59 p.m.	5:45 p.m.	.01	.10	.26	.55	.84	1.08	1.21	1.34	1.39	1.47	1.50	----	----	----	----
May 29	12:40 p.m.	2:00 p.m.	1.25	1:13 p.m.	1:35 p.m.	.02	.14	.56	1.00	1.15	1.19	----	----	----	----	----	----	----	----	----
June 3	1:44 p.m.	6:55 p.m.	2.33	1:57 p.m.	3:05 p.m.	.04	.17	.23	.25	.40	.53	.65	.80	1.06	1.25	1.58	1.98	2.15	----	----
June 27	2:30 p.m.	5:00 p.m.	2.09	3:03 p.m.	4:11 p.m.	.07	.19	.49	.78	1.06	1.19	1.26	1.30	1.37	1.40	1.54	1.86	2.02	----	----
Aug. 13	7:38 p.m.	9:05 p.m.	3.56	7:38 p.m.	8:32 p.m.	.00	.18	.42	.70	1.22	1.60	2.26	2.71	3.05	3.29	3.42	3.54	----	----	----
Aug. 15	3:32 p.m.	6:20 p.m.	1.76	3:35 p.m.	4:18 p.m.	.01	.18	.36	.60	.86	1.07	1.33	1.49	1.56	1.62	----	----	----	----	----
Aug. 23	6:20 p.m.	8:00 p.m.	1.09	7:07 p.m.	7:37 p.m.	.01	.21	.41	.71	.88	1.10	1.06	----	----	----	----	----	----	----	----
Sept. 10	1:25 p.m.	[1] D.N. a.m.	2.69	1:59 p.m.	3:25 p.m.	.01	.08	.25	.35	.51	.64	.70	.82	.86	.95	.98	1.87	2.01	----	----
EAST GULF STATES																				
Atlanta, Ga.:[7]																				
June 18–19	9:00 p.m.	D.N. a.m.	2.36	11:34 p.m.	12:32 a.m.	.20	.15	.44	.75	.92	.97	1.18	1.40	1.54	1.72	1.90	2.11	----	----	----
Sept. 24	12:15 p.m.	3:00 p.m.	1.38	12:27 p.m.	12:56 p.m.	.01	.25	.63	.92	1.10	1.26	1.34	----	----	----	----	----	----	----	----
Macon, Ga.:[8]																				
July 30	6:10 p.m.	9:30 p.m.	1.59	6:31 p.m.	7:08 p.m.	.04	.15	.42	.69	.82	.95	1.06	1.14	1.18	----	----	----	----	----	----
Aug. 14	12:08 a.m.	8:05 a.m.	1.78	12:15 a.m.	12:59 a.m.	.01	.24	.44	.66	.82	.90	1.17	1.29	1.35	1.44	----	----	----	----	----
Sept. 3–4	4:05 p.m.	1:05 a.m.	1.73	11:44 p.m.	12:33 a.m.	.03	.29	.49	.72	.97	1.17	1.33	1.50	1.54	1.61	1.66	----	----	----	----
Thomasville, Ga.:[8]																				
July 10	1:14 p.m.	2:24 p.m.	1.94	1:18 p.m.	1:49 p.m.	.01	.18	.46	.81	1.30	1.60	1.84	1.89	----	----	----	----	----	----	----
July 27	1:00 p.m.	4:26 p.m.	2.05	1:27 p.m.	2:23 p.m.	.01	.33	.56	.76	.92	1.05	1.13	1.29	1.57	1.70	1.75	1.89	----	----	----
Sept. 23	3:46 p.m.	5:45 p.m.	1.16	3:58 p.m.	4:26 p.m.	.01	.18	.41	.66	.91	1.01	1.07	----	----	----	----	----	----	----	----
Oct. 31	3:52 p.m.	9:20 p.m.	4.25	4:46 p.m.	5:40 p.m.	.17	.07	.21	.46	.70	1.10	1.56	1.88	1.94	1.98	2.14	2.26	----	----	----
Do	3:52 p.m.	9:20 p.m.	4.25	8:02 p.m.	8:50 p.m.	2.94	.17	.21	.25	.50	.85	.98	1.06	1.16	1.24	1.29	----	----	----	----
Apalachicola, Fla.:[8]																				
June 19	11:55 a.m.	2:35 p.m.	1.17	12:25 p.m.	12:46 p.m.	.02	.24	.49	.79	1.00	1.07	----	----	----	----	----	----	----	----	----
July 16	12:58 p.m.	5:05 p.m.	1.62	1:02 p.m.	1:42 p.m.	.01	.05	.22	.49	.74	1.10	1.24	1.37	1.45	----	----	----	----	----	----
July 29	9:05 a.m.	1:45 p.m.	1.28	9:13 a.m.	9:43 a.m.	.01	.18	.49	.74	.91	1.04	1.13	----	----	----	----	----	----	----	----
Sept. 13	D.N. a.m.	[1] 6:20 p.m.	15.15	11:27 a.m.	12:35 p.m.	.52	.21	.43	.60	.80	1.00	1.17	1.48	1.65	1.79	1.82	1.95	2.11	----	----
Do	D.N. a.m.	[1] 6:20 p.m.	15.15	7:43 p.m.	8:33 p.m.	3.97	.07	.16	.33	.45	.53	.64	.82	1.03	1.19	1.25	----	----	----	----
Sept. 13–14	D.N. a.m.	6:20 p.m.	15.15	10:19 p.m.	11:09 p.m.	5.49	.07	.12	.19	.24	.33	.45	.56	.64	.73	.82	----	----	----	----
				11:09 p.m.	11:59 p.m.	----	.91	1.00	1.02	1.05	1.09	1.13	1.18	1.23	1.30	1.36	----	----	----	----
				11:59 p.m.	12:41 a.m.	----	1.43	1.52	1.60	1.68	1.77	1.84	1.93	2.02	2.07	----	----	----	----	----
Sept. 14	[3] D.N. a.m.	6:20 p.m.	15.15	2:14 p.m.	3:04 p.m.	10.54	.08	.17	.23	.30	.40	.45	.49	.53	.64	.78	----	----	----	----
				3:04 p.m.	3:54 p.m.	----	.87	.93	1.00	1.07	1.13	1.22	1.38	1.55	1.71	1.91	----	----	----	----
				3:54 p.m.	4:44 p.m.	----	2.02	2.12	2.19	2.23	2.27	2.32	2.45	2.59	2.75	2.91	----	----	----	----
				4:44 p.m.	5:34 p.m.	----	3.05	[6] 3.20	[6] 3.34	[6] 3.49	[6] 3.62	3.81	4.00	4.18	4.30	4.41	----	----	----	----
				5:34 p.m.	5:44 p.m.	----	4.52	4.59	----	----	----	----	----	----	----	----	----	----	----	----
Sept. 20	D.N. a.m.	7:40 a.m.	2.05	6:23 a.m.	7:08 a.m.	.37	.13	.35	.62	.99	1.15	1.30	1.38	1.47	1.60	----	----	----	----	----
Pensacola, Fla.:[8]																				
Jan. 12–13	8:39 p.m.	5:15 a.m.	8.00	11:02 p.m.	11:52 p.m.	1.03	.24	.33	.44	.64	.86	1.12	1.79	2.18	2.54	2.92	----	----	----	----
				11:52 p.m.	12:42 a.m.	----	2.26	3.34	3.50	3.74	3.79	3.82	3.84	3.89	3.91	3.92	----	----	----	----
				12:42 a.m.	1:32 a.m.	----	4.06	4.34	4.53	4.55	4.66	4.76	4.83	4.99	5.01	5.02	----	----	----	----
				1:32 a.m.	2:22 a.m.	----	5.09	5.04	5.05	5.25	5.30	5.43	5.62	5.66	5.70	5.77	----	----	----	----
				2:22 a.m.	2:57 a.m.	----	5.85	5.95	6.09	6.30	6.44	6.60	6.73	----	----	----	----	----	----	----
Apr. 30	6:20 a.m.	12:30 p.m.	1.65	7:48 a.m.	8:13 a.m.	.12	.55	.69	.89	1.12	1.22	----	----	----	----	----	----	----	----	----
Aug. 19	12:56 p.m.	4:56 p.m.	1.32	3:12 p.m.	4:08 p.m.	.08	.13	.21	.36	.49	.62	.73	.84	.94	.98	1.02	1.15	----	----	----
Birmingham, Ala.:[8]																				
July 30	1:45 p.m.	4:05 p.m.	1.47	2:30 p.m.	3:11 p.m.	.08	.14	.38	.57	.70	.79	.92	1.07	1.15	1.18	----	----	----	----	----
Aug. 5	2:33 p.m.	3:32 p.m.	1.46	2:38 p.m.	3:11 p.m.	.02	.17	.54	.72	1.01	1.25	1.37	1.43	----	----	----	----	----	----	----
Aug. 26	5:10 p.m.	8:30 p.m.	1.75	5:17 p.m.	6:15 p.m.	.03	.13	.38	.62	.89	1.09	1.28	1.36	1.40	1.43	1.51	1.61	----	----	----
Mobile, Ala.:[8]																				
July 27	1:05 p.m.	2:35 p.m.	1.21	1:33 p.m.	2:08 p.m.	.05	.32	.65	.73	.86	1.01	1.08	1.13	----	----	----	----	----	----	----
July 31	11:52 a.m.	2:20 p.m.	2.41	11:55 a.m.	1:22 p.m.	.01	.28	.44	.56	.57	.62	.70	1.07	1.25	1.51	1.65	1.80	2.17	2.36	----
Aug. 15	2:28 p.m.	4:18 p.m.	1.40	2:28 p.m.	2:46 p.m.	.00	.30	.94	1.20	1.30	----	----	----	----	----	----	----	----	----	----
Sept. 1	6:55 p.m.	[1] 1:05 a.m.	3.55	7:00 p.m.	8:00 p.m.	T	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	1.27	----	----	----
				8:00 p.m.	9:00 p.m.	----	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	2.31	----	----	----
				9:00 p.m.	10:00 p.m.	----	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	3.35	----	----	----
Oct. 26	[3] 10:55 p.m.	8:40 a.m.	3.09	1:17 a.m.	2:48 a.m.	.16	.12	.23	.24	.38	.44	.45	.49	.51	.57	.71	.79	1.79	2.26	----

[1] On following date.
[3] On preceding date.
[6] From defective record.
[7] Only storms attaining 0.50 inch or more in 30 minutes or less.
[8] Only storms attaining 1 inch or more in 1 hour or less.

***Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages*—Continued**

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
EAST GULF STATES—continued																				
Montgomery, Ala.:[3]																				
Jan. 12	2:27 p.m.	10:05 p.m.	1.49	8:10 p.m.	8:40 p.m.	0.14	0.14	0.31	0.58	1.01	1.13	1.26								
Feb. 21	2:35 p.m.	[1] 5:20 a.m.	1.96	3:34 p.m.	4:26 p.m.	.01	.18	.26	.31	.35	.45	.65	0.82	0.89	0.90	1.05	1.12			
June 28	4:24 p.m.	9:30 p.m.	2.91	4:54 p.m.	5:14 p.m.	.09	.13	.59	.91	1.16										
Aug. 16	1:25 p.m.	4:55 p.m.	1.53	2:24 p.m.	3:21 p.m.	.03	.24	.31	.44	.69	.95	1.10	1.15	1.17	1.22	1.29	1.40			
Meridian, Miss.:[3]																				
Aug. 8	2:59 p.m.	7:20 p.m.	3.12	3:09 p.m.	4:09 p.m.	.03	.30	.74	1.10	1.40	1.66	2.00	2.32	2.55	2.68	2.75	2.87			
Vicksburg, Miss.:[3]																				
Jan. 12	[2] 5:45 p.m.	2:30 p.m.	4.66	2:56 a.m.	4:23 a.m.	.24	.12	.25	.37	.42	.49	.65	.80	.88	.92	.93	1.01	1.25	1.46	
Sept. 19	4:45 a.m.	6:20 p.m.	3.05	3:21 p.m.	4:08 p.m.	1.80	.13	.17	.29	.48	.61	.71	.80	.92	1.07	1.12				
New Orleans, La.:[3]																				
Apr. 29	8:54 a.m.	2:30 p.m.	3.76	10:40 a.m.	11:30 a.m.	.10	.11	.28	.46	.82	1.14	1.38	1.43	1.46	1.49	1.72				
				11:30 a.m.	12:20 p.m.		2.05	2.29	2.36	2.41	2.43	2.45	2.46	2.48	2.55	2.65				
				12:20 p.m.	12:59 p.m.		2.86	2.99	3.04	3.07	3.09	3.17	3.31	3.36						
May 17	[2] 2:15 p.m.	[1] 4:05 p.m.	9.99	10:26 a.m.	11:53 a.m.	3.13	.07	.16	.23	.29	.44	.58	.64	.72	.84	.93	1.08	1.52	1.73	
May 27	[2] 5:24 p.m.	7:00 a.m.	3.01	4:58 a.m.	5:43 a.m.	1.29	.05	.17	.40	.73	1.06	1.36	1.45	1.52	1.57					
July 21 [5]	3:13 p.m.	4:15 p.m.	1.27	3:21 p.m.	4:09 p.m.	.01	.15	.18	.22	.44	.63	.76	.86	.96	1.18	1.26				
July 23	4:23 p.m.	5:36 p.m.	1.14	4:35 p.m.	5:26 p.m.	.01	.20	.44	.59	.74	.85	.87	.87	.93	1.05	1.10	1.13			
Aug. 23	9:00 a.m.	1:30 p.m.	1.67	11:34 a.m.	12:06 p.m.	.27	.12	.27	.52	.85	1.02	1.12	1.21							
Sept. 27	10:50 p.m.	[1] 1:40 a.m.	1.34	10:59 p.m.	11:23 p.m.	.01	.11	.50	.74	.90	1.00									
Oct. 25	8:27 p.m.	[1] 7:12 a.m.	4.05	10:02 p.m.	11:44 p.m.	.20	.24	.54	.89	1.00	1.17	1.31	1.45	1.56	1.67	1.78	2.16	2.75	3.55	3.63
WEST GULF STATES																				
Shreveport, La.:[3]																				
Jan. 4–5	5:56 p.m.	5:50 a.m.	3.08	10:43 p.m.	12:08 a.m.	.18	.14	.45	.55	0.72	.74	0.84	.95	1.07	1.20	1.33	1.43	1.69	1.84	
Mar. 30	7:48 a.m.	9:10 p.m.	3.72	8:32 a.m.	9:34 a.m.	.35	.06	.24	.33	.41	.48	.61	.72	.81	.92	1.04	1.21	1.30		
June 25	2:20 p.m.	6:15 p.m.	2.47	3:07 p.m.	3:34 p.m.	.37	.06	.13	.62	1.31	1.86	1.93								
Fort Smith, Ark.:[3]																				
June 1	2:00 a.m.	8:20 a.m.	2.48	3:13 a.m.	4:38 a.m.	.09	.11	.46	.63	.70	.71	.72	.90	1.00	1.02	1.03	1.12	1.96	2.11	
Little Rock, Ark.:[3]																				
May 26	11:20 p.m.	[1] 6:50 a.m.	1.53	11:34 p.m.	11:57 p.m.	.01	.26	.69	.87	.94	1.00									
June 14	3:35 p.m.	4:47 p.m.	1.12	4:17 p.m.	4:39 p.m.	.07	.37	.55	.65	.94	1.01									
July 3–4	7:50 p.m.	4:20 a.m.	3.17	11:21 p.m.	12:01 a.m.	.91	.15	.44	.83	1.08	1.27	1.34	1.45	1.57						
Austin, Tex.:[3]																				
Aug. 18	2:39 p.m.	D.N. p.m.	2.08	2:49 p.m.	3:16 p.m.	.02	.22	.61	.92	1.20	1.42	1.47								
Brownsville, Tex.:[3]																				
Mar. 5	D.N. a.m.	5:45 a.m.	1.64	1:27 a.m.	2:00 a.m.	.15	.10	.17	.40	.79	1.06	1.28	1.34							
Apr. 27	D.N. a.m.	7:05 a.m.	5.92	3:43 a.m.	5:06 a.m.	.06	.29	.56	.92	1.18	1.49	1.81	2.29	2.67	3.06	3.47	4.75	5.63	5.76	
Sept. 3	12:05 p.m.	2:45 p.m.	3.89	12:15 p.m.	1:16 p.m.	T	.25	.42	.68	1.04	1.54	2.08	2.58	2.93	3.16	3.33	3.77	3.83		
Oct. 14	[2] 9:40 p.m.	2:46 p.m.	5.47	7:50 a.m.	9:10 a.m.	2.44	.10	.32	.51	.57	.61	.67	.74	[6] .93	[6] 10.2	1.13	1.35	1.71		
Corpus Christi, Tex.:[3]																				
Apr. 29	7:25 a.m.	12:12 p.m.	1.90	8:27 a.m.	9:12 a.m.	.32	.20	.39	.50	.61	.78	.87	.94	1.06	1.12					
May 16	5:05 a.m.	8:00 a.m.	1.26	5:08 a.m.	5:44 a.m.	.02	.21	.50	.66	.67	.68	.81	.93	1.02						
Sept. 24	12:10 a.m.	3:45 a.m.	1.66	12:13 a.m.	1:01 a.m.	.01	.16	.25	.33	.41	.42	.43	.80	1.14	1.34	1.39				
Dallas, Tex.:[3]																				
May 28	2:31 p.m.	9:20 p.m.	1.29	3:30 p.m.	3:56 p.m.	.06	.13	.35	.69	.88	.99	1.04								
Sept. 3	4:45 p.m.	9:15 p.m.	1.72	5:09 p.m.	5:53 p.m.	.08	.13	.28	.48	.71	.87	.96	1.04	1.23	1.31					
Sept. 5	[2] 3:20 p.m.	9:40 a.m.	4.14	4:43 a.m.	6:34 a.m.	1.18	.21	.24	.32	.41	.74	.83	.87	.88	.89	.90	1.24	1.97	2.53	2.74
Fort Worth, Tex.:[3]																				
Sept. 4–5	1:47 p.m.	7:59 a.m.	9.49	11:45 p.m.	12:35 a.m.	1.46	.07	.13	.30	.49	.67	.96	1.29	1.52	1.77	2.12				
				12:35 a.m.	1:25 a.m.		2.44	2.73	3.00	3.28	3.56	3.79	4.04	4.31	4.59	4.87				
				1:25 a.m.	2:11 a.m.		4.94	5.03	5.25	5.45	5.55	5.60	5.68	5.82	5.88	5.92				
Nov. 23	4:20 a.m.	9:50 a.m.	1.42	7:01 a.m.	7:48 a.m.	.28	.07	.16	.31	.40	.43	.57	.71	.87	.92	1.00				
Galveston, Tex.:[3]																				
Houston, Tex.:[3]																				
Aug. 4	11:28 a.m.	1:05 p.m.	1.34	11:34 a.m.	12:02 p.m.	.01	.54	.82	.97	1.16	1.21	1.27								
Palestine, Tex.:[3]																				
Jan. 4	6:20 p.m.	[1] D.N. a.m.	2.56	8:18 p.m.	9:21 p.m.	.06	.19	.50	.77	1.01	1.25	1.46	1.57	1.66	1.71	1.77	1.91	2.02		
Sept. 4	[2] 8:00 p.m.	11:53 p.m.	6.61	6:06 a.m.	7:56 a.m.	1.09	.11	.33	.39	.46	.48	.50	.53	.64	.78	.96	1.23	1.33	1.68	1.96
Do	[2] 8:00 p.m.	11:53 p.m.	6.61	8:48 a.m.	10:38 a.m.	3.26	.24	.46	.59	.78	.83	.85	.88	.94	.99	1.19	1.28	1.52	1.78	1.95
Dec. 23	2:19 p.m.	D.N. p.m.	1.68	5:48 p.m.	6:14 p.m.	.31	.29	.43	.60	.88	1.10	1.17								
Port Arthur, Tex.:[3]																				
Apr. 29	[2] 7:34 p.m.	6:18 a.m.	6.21	1:27 a.m.	2:17 a.m.	1.49	.08	.17	.21	.26	.35	.46	.58	.64	.67	.71				
				2:17 a.m.	3:07 a.m.		.79	.87	.94	1.04	1.15	1.31	1.60	2.01	2.43	2.88				
				3:07 a.m.	3:57 a.m.		3.18	3.44	3.71	3.80	3.84	3.94	4.00	4.05	4.18	4.29				
				3:57 a.m.	4:07 a.m.		4.45	4.60												
July 19	D.N. a.m.	9:08 a.m.	2.91	4:22 a.m.	5:16 a.m.	.26	.24	.35	.43	.49	.57	.61	.72	.88	.97	1.07	1.21			
Do	D.N. a.m.	9:08 a.m.	2.91	6:49 a.m.	7:46 a.m.	1.69	.11	.14	.30	.44	.61	.73	.77	.79	.81	.90	1.17			
Aug. 7	3:02 p.m.	4:35 p.m.	2.13	3:07 p.m.	3:58 p.m.	.01	.27	.49	.70	.88	1.10	1.38	1.56	1.77	1.88	1.95	2.02			
Aug. 13	4:37 p.m.	7:05 p.m.	1.30	5:00 p.m.	5:38 p.m.	.04	.14	.34	.40	.53	.76	1.02	1.20	1.26						
San Antonio, Tex.:[3]																				
July 1	4:12 p.m.	[1] 11:58 a.m.	4.41	5:04 p.m.	5:54 p.m.	.04	.08	.10	.17	.25	.31	.36	.41	.52	.63	.79				
				5:54 p.m.	6:44 p.m.		.93	1.17	1.34	1.39	1.49	1.62	1.76	2.03	2.04	2.05				
				6:44 p.m.	7:34 p.m.		2.05	2.07	2.09	2.17	2.23	2.36	2.70	3.06	3.38	3.46				
				7:34 p.m.	7:44 p.m.		3.49	3.58												
Aug. 18	4:38 p.m.	[1] 2:23 a.m.	4.05	10:19 p.m.	11:59 p.m.	.87	.08	.18	.26	.38	.61	.87	1.10	1.26	1.33	1.38	1.50	2.06	2.97	
Sept. 22	7:47 p.m.	[1] 1:50 a.m.	5.27	8:14 p.m.	10:06 p.m.	.01	.06	.40	.69	.95	1.31	1.43	1.68	1.85	1.90	1.93	2.04	2.75	3.12	3.55
Do	7:47 p.m.	[1] 1:50 a.m.	5.27	10:49 p.m.	11:56 p.m.	3.70	.07	.11	.15	.20	.41	.50	.61	.86	.95	1.00	1.20	1.39		
Taylor, Tex.:[3]																				
June 10	D.N. a.m.	9:00 a.m.	1.82	5:21 a.m.	6:00 a.m.	.01	.23	.53	.93	1.17	1.31	1.39	1.45	1.50						
Sept. 3	D.N. a.m.	D.N. p.m.	5.69	6:55 p.m.	8:13 p.m.	1.86	.08	.27	.39	.53	.76	.97	1.28	1.50	1.83	2.16	2.62	3.43		
Sept. 6	5:12 p.m.	D.N. p.m.	1.71	5:14 p.m.	6:16 p.m.	.01	.12	.27	.37	.43	.51	.54	.57	.65	.77	.93	1.19	1.29		

[1] On following date.
[2] On preceding date.
[5] From defective record.
[6] Only storms attaining 1 inch or more in 1 hour or less.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
OHIO VALLEY AND TENNESSEE																				
Chattanooga, Tenn.:[7]																				
Mar. 21	12:30 p.m.	9:30 p.m.	2.05	8:41 p.m.	9:13 p.m.	0.73	0.29	0.57	0.82	0.89	1.03	1.27	1.31							
Mar. 27	10:25 a.m.	7:35 p.m.	1.41	2:13 p.m.	2:32 p.m.	.07	.26	.45	.58	.72										
June 20	12:27 p.m.	1:40 p.m.	.61	12:59 p.m.	1:09 p.m.	.02	.37	.53												
July 6	12:35 p.m.	2:30 p.m.	.82	12:44 p.m.	1:04 p.m.	.02	.33	.60	.70	.76										
Aug. 16	12:43 p.m.	1:40 p.m.	.94	12:45 p.m.	1:22 p.m.	.01	.07	.24	.39	.54	.64	.75	.80	0.85						
Do	7:50 p.m.	[1] 5:35 a.m.	.81	8:12 p.m.	8:42 p.m.	.01	.06	.24	.39	.49	.57	.62								
Aug. 17	9:55 p.m.	[1] 11:06 a.m.	1.63	10:23 p.m.	10:50 p.m.	.01	.08	.11	.28	.43	.58	.61								
Knoxville, Tenn.[8]																				
Memphis, Tenn.:[7]																				
June 21	2:20 a.m.	7:15 a.m.	1.43	3:00 a.m.	3:40 a.m.	.04	.16	.44	.72	.98	1.09	1.17	1.23	1.31						
June 25	11:28 a.m.	12:38 p.m.	.78	11:32 a.m.	11:53 a.m.	.02	.14	.30	.52	.64	.70									
Aug. 3	1:55 a.m.	D.N. a.m.	.84	2:04 a.m.	2:30 a.m.	.03	.10	.27	.45	.61	.72	.78								
Sept. 27	7:46 p.m.	8:50 p.m.	.67	7:50 p.m.	8:18 p.m.	.01	.11	.23	.36	.44	.56	.63								
Nov. 6	12:30 a.m.	6:10 a.m.	1.83	1:26 a.m.	2:24 a.m.	.15	.07	.12	.16	.22	.28	.35	.43	0.55	0.74	0.86	1.05			
Nashville, Tenn.:[7]																				
Jan. 29	1:20 p.m.	8:45 p.m.	1.68	1:58 p.m.	2:22 p.m.	.07	.06	.24	.35	.50	.58									
Feb. 3	D.N. a.m.	11:20 a.m.	1.80	5:09 a.m.	5:51 a.m.	.50	.14	.22	.29	.53	.64	.67	.74	.84	.91					
July 6	7:40 a.m.	3:40 p.m.	.96	11:15 a.m.	11:46 a.m.	.24	.12	.15	.16	.20	.42	.54	.57							
Sept. 26	[2] 7:50 p.m.	11:00 a.m.	2.50	5:38 a.m.	6:08 a.m.	.86	.07	.14	.21	.32	.41	.50								
Lexington, Ky.:[8]																				
June 14	4:50 p.m.	9:30 p.m.	1.29	5:30 p.m.	5:53 p.m.	.01	.30	.56	.87	1.06	1.15									
June 15	5:04 p.m.	6:00 p.m.	2.00	5:04 p.m.	5:57 p.m.	.00	.07	.29	.62	.96	1.06	1.26	1.37	1.54	1.68	1.81	2.00			
Aug. 2	D.N. a.m.	9:10 a.m.	7.48	3:46 a.m.	4:36 a.m.	.35	.16	.30	.59	.98	1.27	1.49	1.57	1.67	1.72	1.82				
				4:36 a.m.	5:26 a.m.	------	2.03	2.27	2.52	2.75	2.87	3.07	3.25	3.36	3.49	3.73				
				5:26 a.m.	6:16 a.m.	------	3.95	4.07	4.16	4.10	4.13	4.17	4.25	4.37	4.56	4.76				
				6:16 a.m.	7:06 a.m.	------	4.96	5.15	5.47	5.90	6.07	6.17	6.26	6.38	6.50	6.59				
				7:06 a.m.	7:25 a.m.	------	6.68	6.73	6.82	6.87										
Louisville, Ky.:[7]																				
Feb. 3	6:20 p.m.	D.N. p.m.	.74	8:57 p.m.	9:27 p.m.	.14	.11	.18	.35	.43	.48	.58								
June 20	8:05 a.m.	9:00 a.m.	.59	8:08 a.m.	8:28 a.m.	.01	.18	.46	.49	.57										
Aug. 2	7:15 p.m.	9:20 p.m.	1.62	7:18 p.m.	7:53 p.m.	.01	.32	.52	.78	1.04	1.19	1.39	1.50							
Aug. 17	4:00 p.m.	5:50 p.m.	.72	4:31 p.m.	4:56 p.m.	.05	.08	.30	.42	.51	.58									
Evansville, Ind.:																				
Mar. 21	2:52 p.m.	7:10 p.m.	.83	4:09 p.m.	4:17 p.m.	.01	.33	.43												
Do	2:52 p.m.	7:10 p.m.	.83	6:19 p.m.	6:23 p.m.	.45	.35													
June 1	3:36 p.m.	5:15 p.m.	1.04	3:45 p.m.	4:13 p.m.	.01	.11	.52	.74	.82	.86	.94								
July 5	1:43 p.m.	10:03 p.m.	2.52	1:48 p.m.	2:39 p.m.	.01	.28	.42	.52	.63	.66	.87	1.17	1.23	1.29	1.42	1.46			
Sept. 1	6:48 p.m.	10:03 p.m.	.48	6:57 p.m.	7:10 p.m.	.01	.11	.27	.36											
Sept. 20	[2] 5:23 p.m.	3:32 p.m.	2.82	4:58 a.m.	5:56 a.m.	.48	.05	.11	.18	.22	.32	.40	.49	.56	.64	.71	.83			
Sept. 27	3:28 a.m.	8:10 a.m.	.66	5:06 a.m.	5:21 a.m.	.13	.11	.24	.35											
Oct. 4	2:01 a.m.	12:55 p.m.	1.50	9:01 a.m.	9:42 a.m.	.70	.09	.13	.18	.26	.40	.52	.59	.65	.68					
Dec. 30	[2] 9:43 p.m.	[1] D.N. a.m.	4.91	12:38 p.m.	2:23 p.m.	2.56	.07	.13	.19	.27	.32	.36	.43	.50	.65	.72	.86	1.09	1.31	1.45
Indianapolis, Ind.:																				
June 1	3:13 a.m.	6:09 a.m.	.93	4:39 a.m.	5:19 a.m.	.25	.12	.21	.34	.36	.43	.49	.55	.62						
June 16	11:28 a.m.	12:32 p.m.	.55	11:35 a.m.	11:58 a.m.	.01	.13	.30	.42	.47	.51									
June 27	[2] 11:38 p.m.	6:03 a.m.	1.85	1:07 a.m.	1:58 a.m.	.05	.09	.19	.34	.48	.55	.59	.72	.82	.91	1.02	1.06			
July 27	[2] 11:45 p.m.	2:00 a.m.	.72	12:31 a.m.	12:51 a.m.	.04	.17	.38	.52	.57										
Aug. 2	2:00 a.m.	9:27 a.m.	1.48	6:08 a.m.	7:14 a.m.	.17	.06	.16	.43	.56	.65	.72	.78	.79	.80	.81	.89	1.15		
Aug. 28	3:49 p.m.	4:56 p.m.	.66	3:52 p.m.	4:12 p.m.	.01	.26	.38	.46	.54										
Sept. 27	6:36 a.m.	11:14 a.m.	1.19	7:44 a.m.	7:58 a.m.	.10	.10	.26	.35											
Do	3:21 p.m.	3:58 p.m.	.35	3:40 p.m.	3:47 p.m.	.02	.17	.31												
Terre Haute, Ind.:																				
June 14	6:27 p.m.	6:58 p.m.	.66	6:36 p.m.	6:56 p.m.	.02	.16	.32	.40	.64										
June 15	2:09 p.m.	4:50 p.m.	1.58	3:20 p.m.	3:50 p.m.	.01	.26	.64	.94	1.18	1.38	1.48								
June 25	12:20 p.m.	1:05 p.m.	.63	12:30 p.m.	12:55 p.m.	.04	.20	.37	.39	.45	.58									
June 27	[2] 11:12 p.m.	9:50 a.m.	2.33	1:27 a.m.	1:49 a.m.	.17	.26	.44	.54	.76	.89									
Do	[2] 11:12 p.m.	9:50 a.m.	2.33	6:03 a.m.	6:58 a.m.	1.25	.15	.24	.37	.47	.52	.54	.55	.64	.65	.85	.96			
Do	12:35 p.m.	2:15 p.m.	.40	12:48 p.m.	12:57 p.m.	.02	.21	.36												
July 26	11:25 p.m.	[1] 12:10 a.m.	.91	11:39 p.m.	11:54 p.m.	.03	.38	.66	.87											
Aug. 2	[2] 9:43 p.m.	5:45 a.m.	3.75	1:27 a.m.	3:02 a.m.	.17	.06	.25	.42	.71	1.19	1.48	1.57	1.67	1.77	1.92	2.17	2.46	2.84	
Do	[2] 9:43 p.m.	5:45 a.m.	3.75	3:53 a.m.	4:06 a.m.	3.32	.11	.31	.34											
Do	2:10 p.m.	5:55 p.m.	1.56	2:21 p.m.	3:10 p.m.	.02	[6] .23	[6] .47	.47	.48	.52	.67	1.03	1.28	1.40	1.44				
Sept. 2	1:40 a.m.	2:30 a.m.	.55	1:49 a.m.	2:03 a.m.	.02	.20	.42	.52											
Do	7:05 p.m.	[1] 12:48 p.m.	4.45	8:36 p.m.	8:51 p.m.	.02	.51	1.02	1.14											
Sept. 3	[2] 7:05 p.m.	12:48 p.m.	4.45	7:39 a.m.	8:17 a.m.	2.45	.11	.27	.34	.41	.49	.55	.64	.68						
Cincinnati, Ohio:																				
June 6	1:45 p.m.	2:50 p.m.	.54	1:53 p.m.	2:03 p.m.	.01	.26	.48												
June 14	3:30 p.m.	4:25 p.m.	.67	3:59 p.m.	4:13 p.m.	.25	.13	.30	.40											
July 4	[2] 7:57 p.m.	8:38 a.m.	2.41	7:15 a.m.	8:00 a.m.	1.24	.05	.11	.17	.24	.33	.44	.72	.90	.98					
July 10–11	10:10 p.m.	1:50 a.m.	1.03	11:53 p.m.	12:05 a.m.	.33	.18	.59	.69											
Aug. 2	5:10 a.m.	1:50 p.m.	2.46	8:14 a.m.	9:13 a.m.	.28	.08	.33	.68	.91	1.02	1.07	1.13	1.22	1.33	1.44	1.61			
Sept. 2	9:55 p.m.	12 mdn't.	.83	9:55 p.m.	10:15 p.m.	.00	.19	.38	.51	.56										
Sept. 27	3:43 p.m.	4:40 p.m.	.46	3:46 p.m.	3:56 p.m.	.01	.16	.32												
Columbus, Ohio:																				
June 27	[2] 11:45 p.m.	8:40 a.m.	2.24	7:10 a.m.	7:33 a.m.	1.23	.10	.40	.64	.81	.88									
July 7	1:40 p.m.	2:50 p.m.	.64	1:59 p.m.	2:27 p.m.	.05	.13	.21	.33	.44	.52	.56								
July 27	5:20 a.m.	6:50 a.m.	.79	5:41 a.m.	6:03 a.m.	.01	.07	.37	.52	.71	.76									

[1] On following date.
[2] On preceding date.
[6] From defective record.
[7] Only storms attaining 0.50 inch or more in 30 minutes or less.
[8] Only storms attaining 1 inch or more in 1 hour or less.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
OHIO VALLEY AND TENNESSEE—Con.																				
Dayton, Ohio:																				
Feb. 11	1:08 p.m.	2:30 p.m.	0.42	1:24 p.m.	1:30 p.m.	0.04	0.27	0.30												
Mar. 21	9:30 p.m.	D.N. p.m.	.64	10.07 p.m.	10:17 p.m.	.05	.28	.48												
May 26	7:25 p.m.	[1]D.N. a.m.	1.11	7:27 p.m.	8:02 p.m.	.01	.12	.33	0.40	0.53	0.72	0.86	0.94							
June 2	2:56 p.m.	3:38 p.m.	.49	3:05 p.m.	3:20 p.m.	.03	.15	.38	.44											
June 7	12:40 a.m.	1:50 a.m.	.52	1:00 a.m.	1:20 a.m.	.03	.08	.19	.38	.44										
June 18	3:35 p.m.	5:15 p.m.	1.16	3:48 p.m.	4:16 p.m.	.05	.10	.29	.55	.82	1.03	1.09								
June 27	D.N. a.m.	8:05 a.m.	1.63	5:52 a.m.	7:01 a.m.	.43	.11	.28	.37	.40	.52	.58	.61	0.66	0.68	0.70	0.94	1.14		
Do	9:41 a.m.	2:56 p.m.	1.60	10:07 a.m.	11:02 a.m.	.03	.08	.11	.25	.40	.56	.66	.72	.75	.79	.86	.95			
July 4	D.N. a.m.	4:55 a.m.	1.36	12:47 a.m.	1:06 a.m.	.10	.23	.40	.59	.66										
July 5	7:20 a.m.	9:38 a.m.	.47	7:48 a.m.	7:58 a.m.	.01	.24	.34												
July 7	1:03 p.m.	1:53 p.m.	.58	1:38 p.m.	1:49 p.m.	.02	.32	.54	.55											
Elkins, W.Va.:																				
July 1	6:55 p.m.	8:45 p.m.	.82	7:17 p.m.	7:53 p.m.	.04	.10	.18	.37	.46	.52	.55	.68	.72						
July 5	8:30 p.m.	[1]11:50 a.m.	1.32	9:38 p.m.	10:20 p.m.	.10	.16	.36	.58	.70	.73	.79	.85	.90	.95					
July 17	8:42 p.m.	9:00 p.m.	.74	8:12 p.m.	8:43 p.m.	.00	.12	.13	.20	.37	.62	.71	.73							
July 27	9:05 a.m.	9:35 a.m.	.54	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	.54								
Do	12:05 p.m.	1:15 p.m.	1.09	12:10 p.m.	12:36 p.m.	.01	.05	.28	.50	.73	.92	.96								
Aug. 3	5:30 a.m.	8:45 a.m.	.80	7:44 a.m.	8:12 a.m.	.21	.10	.18	.22	.26	.40	.58								
Aug. 10	9:13 p.m.	[1]1:00 a.m.	.75	9:26 p.m.	9:46 p.m.	.01	.08	.16	.46	.70										
Aug. 18	1:00 a.m.	9:00 a.m.	1.62	8:03 a.m.	8:19 a.m.	1.05	.25	.32	.41	.46										
Parkersburg, W.Va.:																				
June 18	7:29 p.m.	10:08 p.m.	1.28	7:29 p.m.	8:01 p.m.	.00	.08	.31	.51	.68	.81	.97	1.01							
June 20	2:26 p.m.	3:35 p.m.	.53	2:41 p.m.	3:09 p.m.	.02	.05	.12	.22	.38	.46	.50								
July 7	4:12 p.m.	4:37 p.m.	.06	4:12 p.m.	4:32 p.m.	.00	.12	.29	.46	.59										
July 10	5:08 p.m.	8:20 p.m.	1.51	5:08 p.m.	5:45 p.m.	.01	.15	.42	.86	.95	.96	1.01	1.11	1.14						
Do	5:08 p.m.	8:20 p.m.	1.51	7:33 p.m.	7:38 p.m.	1.23	.26													
July 21	4:50 p.m.	6:12 p.m.	.47	4:50 p.m.	5:02 p.m.	.00	.13	.40	.46											
Do	11:16 p.m.	[1]1:10 a.m.	.94	11:18 p.m.	11:50 p.m.	.01	.14	.26	.36	.38	.45	.59	.68							
July 28	10:07 p.m.	10:48 p.m.	.40	10:07 p.m.	10:18 p.m.	.00	.23	.36	.39											
Aug. 18	8:42 p.m.	5:50 a.m.	1.50	3:32 a.m.	4:01 a.m.	.61	.15	.18	.26	.35	.55	.65								
Sept. 3	6:03 p.m.	6:30 p.m.	.42	6:03 p.m.	6:19 p.m.	.00	.27	.35	.41	.42										
Pittsburgh, Pa.:																				
May 8 [6]	7:10 p.m.	7:43 p.m.	.84	7:20 p.m.	7:40 p.m.	.01	.14	.45	.73	.82										
July 7	2:18 p.m.	3:09 p.m.	.33	2:59 p.m.	3:05 p.m.	.01	.27	.32												
LOWER LAKE REGION																				
Buffalo, N.Y.:																				
May 6	10:10 p.m.	[1]D.N. a.m.	.68	10:38 p.m.	11:06 p.m.	.01	.21	.21	.34	.43	.49	.57								
May 7	6:40 p.m.	[1]D.N. a.m.	1.09	10:42 p.m.	11:22 p.m.	.23	.10	.20	.28	.33	.42	.53	.65	.73						
July 13	4:10 p.m.	7:55 p.m.	.70	5:23 p.m.	5:40 p.m.	.18	.07	.20	.42	.45										
Canton, N.Y.:																				
Aug. 8	1:20 p.m.	1:42 p.m.	.60	1:25 p.m.	1:36 p.m.	.01	.22	.53	.59											
Ithaca, N.Y.:																				
June 16	4:14 p.m.	8:15 p.m.	1.54	4:16 p.m.	5:12 p.m.	.02	.06	.15	.43	.57	.69	.82	.92	1.07	1.29	1.36	1.47			
July 1	1:44 p.m.	4:40 p.m.	.72	2:32 p.m.	2:42 p.m.	.09	.32	.49												
July 7	6:00 p.m.	7:45 p.m.	.58	6:28 p.m.	6:43 p.m.	.04	.20	.34	.40											
July 22	2:19 p.m.	3:45 p.m.	.92	2:27 p.m.	2:52 p.m.	.01	.16	.25	.35	.44	.55									
Aug. 3	8:46 p.m.	9:25 p.m.	.60	8:50 p.m.	9:05 p.m.	.01	.27	.36	.52											
Oswego, N.Y.:																				
June 21	3:19 p.m.	3:38 p.m.	.70	3:19 p.m.	3:34 p.m.	.00	.27	.55	.70											
Rochester, N.Y.:																				
June 21	3:59 p.m.	4:34 p.m.	.46	4:07 p.m.	4:13 p.m.	.01	.40	.45												
July 1	12:19 p.m.	3:00 p.m.	.49	12:28 p.m.	12:41 p.m.	.01	.26	.38	.43											
July 10	5:12 p.m.	6:00 p.m.	.52	5:41 p.m.	5:57 p.m.	.09	.05	.21	.41	.43										
Syracuse, N.Y.:																				
June 21	4:22 p.m.	5:25 p.m.	1.88	4:31 p.m.	5:01 p.m.	.05	.34	.66	.88	1.27	1.72	1.83								
July 1	1:37 p.m.	4:05 p.m.	1.40	2:09 p.m.	2:44 p.m.	.04	.57	.75	.82	.91	.96	1.07	1.13							
Aug. 7	1:00 p.m.	4:07 p.m.	.58	1:48 p.m.	1:52 p.m.	.01	.29													
Aug. 18	3:03 p.m.	3:55 p.m.	.72	3:07 p.m.	3:19 p.m.	.02	.35	.63	.68											
Aug. 27	2:00 p.m.	4:25 p.m.	.53	2:05 p.m.	2:16 p.m.	.01	.19	.49	.51											
Oct. 26	8:10 p.m.	[1]D.N. a.m.	1.11	8:50 p.m.	9:00 p.m.	.02	.15	.30												
Erie, Pa.:																				
June 21	11:43 a.m.	11:58 a.m.	.36	11:47 a.m.	11:57 a.m.	T	.13	.34												
Aug. 18	D.N. a.m.	6:10 a.m.	.45	5:38 a.m.	5:54 a.m.	.02	.20	.31	.39	.41										
Cleveland, Ohio:																				
May 10	5:01 p.m.	5:26 p.m.	.38	5:08 p.m.	5:14 p.m.	.02	.33	.35												
May 16	5:14 p.m.	9:12 p.m.	.58	5:22 p.m.	5:40 p.m.	.01	.07	.23	.40	.45										
June 2	4:49 p.m.	6:13 p.m.	.53	4:52 p.m.	4:58 p.m.	.01	.46	.50												
July 13	7:46 p.m.	10:15 p.m.	.75	9:09 p.m.	9:25 p.m.	.16	.25	.41	.55	.56										
Aug. 3	6:20 a.m.	9:44 a.m.	1.32	8:33 a.m.	9:22 a.m.	.12	.05	.21	.38	.56	.63	.77	.91	1.01	1.08	1.15				
Aug. 26	2:16 p.m.	3:17 p.m.	.47	2:18 p.m.	2:31 p.m.	.01	.16	.34	.37											
Sandusky, Ohio:																				
July 7	10:12 a.m.	1:45 p.m.	1.05	10:35 a.m.	10:50 a.m.	.05	.23	.46	.56											
July 13	10:15 p.m.	D.N. p.m.	.72	10:17 p.m.	10:44 p.m.	.02	.16	.26	.30	.47	.66	.68								
Aug. 26	1:18 p.m.	4:15 p.m.	.95	1:43 p.m.	1:56 p.m.	.01	.11	.32	.41											
Do	1:18 p.m.	4:15 p.m.	.95	2:24 p.m.	2:42 p.m.	.45	.18	.28	.30	.45										
Toledo, Ohio:																				
July 7	8:52 a.m.	12:50 p.m.	.93	9:31 a.m.	9:45 a.m.	.06	.20	.38	.46											
July 15	6:22 a.m.	7:10 a.m.	.70	6:36 a.m.	6:54 a.m.	.01	.10	.26	.62	.67										
July 21	7:37 p.m.	8:04 p.m.	.48	7:39 p.m.	7:59 p.m.	.01	.13	.20	.30	.47										
Sept. 3	[3]11:42 p.m.	D.N. a.m.	.89	12:26 a.m.	12:42 a.m.	.02	.28	.40	.46	.49										
Do	1:37 p.m.	8:45 p.m.	2.20	4:43 p.m.	5:19 p.m.	.72	.15	.22	.26	.27	.40	.47	.55	.60						

[1] On following date. [3] On previous date. [6] From defective record.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
LOWER LAKE REGION—continued																				
Fort Wayne, Ind.:																				
June 14	7:20 p.m.	D.N. p.m.	0.76	7:20 p.m.	7:37 p.m.	0.00	0.25	0.57	0.66	0.68										
July 10	6:30 a.m.	7:05 a.m.	.32	6:35 a.m.	6:43 a.m.	.01	.25	.31												
Detroit, Mich.:																				
May 26	5:10 p.m.	6:50 p.m.	1.04	5:13 p.m.	5:27 p.m.	.01	.16	.52	.64											
July 13	8:25 p.m.	9:20 p.m.	.40	8:32 p.m.	8:42 p.m.	.01	.25	.37												
July 21	6:45 p.m.	8:10 p.m.	.57	6:52 p.m.	7:02 p.m.	.01	.09	.32												
Aug. 2	10:05 p.m.	[1] 6:10 a.m.	.76	10:21 p.m.	10:35 p.m.	.04	.19	.30	.35											
Aug. 29	6:20 a.m.	11:20 a.m.	2.38	7:32 a.m.	8:42 a.m.	.40	.19	.26	.30	.37	0.45	0.60	0.72	0.75	0.78	0.85	1.06	1.39		
Sept. 4	1:25 p.m.	2:35 p.m.	.40	1:59 p.m.	2:07 p.m.	.06	.24	.31												
UPPER LAKE REGION																				
Alpena, Mich.[5]																				
Escanaba, Mich.:																				
July 20	D.N. a.m.	7:20 a.m.	2.62	3:15 a.m.	3:57 a.m.	.52	.30	.42	.55	.59	.73	.78	.79	.94	1.00					
Do	D.N. a.m.	7:20 a.m.	2.62	4:45 a.m.	5:08 a.m.	1.73	.05	.18	.21	.39	.50									
Grand Haven, Mich.:																				
Aug. 2	8:00 p.m.	9:05 p.m.	.47	8:46 p.m.	8:57 p.m.	.08	.18	.37	.39											
Grand Rapids, Mich.:																				
May 7	9:56 p.m.	[1] 2:35 a.m.	1.40	10:27 p.m.	11:07 p.m.	.04	.07	.29	.41	.51	.82	.93	1.02	1.09						
Aug. 2	8:22 p.m.	11:35 p.m.	.52	10:06 p.m.	10:25 p.m.	.03	.14	.15	.40	.47										
Aug. 29	1:56 a.m.	5:40 a.m.	1.01	2:00 a.m.	2:08 a.m.	T	.30	.43												
Houghton, Mich.:																				
June 21	9:15 p.m.	10:50 p.m.	.54	9:18 p.m.	9:43 p.m.	T	.06	.12	.17	.38	.48									
July 14	8:25 p.m.	D.N. p.m.	2.23	8:32 p.m.	9:07 p.m.	.01	.14	.24	.29	.43	.73	1.00	1.17							
Do	8:25 p.m.	D.N. p.m.	2.23	11:00 p.m.	11:21 p.m.	1.33	.36	.59	.68	.80	.84									
July 19	3:05 p.m.	[1] 5:20 a.m.	2.73	10:42 p.m.	10:55 p.m.	.47	.19	.46	.58											
July 20	[3] 3:05 p.m.	5:20 a.m.	2.73	1:56 a.m.	2:21 a.m.	1.48	.16	.30	.37	.42	.48									
Do	[3] 3:05 p.m.	5:20 a.m.	2.73	3:06 a.m.	3:20 a.m.	2.01	.16	.50	.64											
July 25	1:05 p.m.	6:35 p.m.	1.09	1:10 p.m.	1:15 p.m.	T	.26													
Aug. 2	10:40 a.m.	3:15 p.m.	1.13	10:44 a.m.	11:19 a.m.	T	.15	.30	.36	.45	.57	.68	.76							
Lansing, Mich.:																				
May 26	9:15 a.m.	9:50 a.m.	.41	9:21 a.m.	9:36 a.m.	.01	.12	.25	.38											
Do	11:25 a.m.	1:25 p.m.	.91	11:45 a.m.	12:03 p.m.	.05	.06	.36	.67	.74										
July 26	7:42 a.m.	11:20 a.m.	.71	7:50 a.m.	8:10 a.m.	.01	.12	.22	.34	.42										
Aug. 29	D.N. a.m.	8:35 a.m.	2.56	4:46 a.m.	6:20 a.m.	.25	.09	.18	.23	.27	.36	.44	.57	.84	1.00	1.05	1.09	1.50	2.04	
Ludington, Mich.:																				
June 5	[3] D.N. p.m.	D.N. a.m.	.71	2:28 a.m.	2:44 a.m.	.15	.29	.40	.54	.56										
June 30	2:57 p.m.	9:53 p.m.	.96	8:17 p.m.	8:36 p.m.	.29	.11	.35	.40	.48										
Aug. 2	5:17 p.m.	9:00 p.m.	.69	7:34 p.m.	8:01 p.m.	.06	.07	.12	.21	.33	.50	.53								
Aug. 29	D.N. a.m.	D.N. a.m.	1.36	4:29 a.m.	4:47 a.m.	.61	.13	.40	.67	.74										
Marquette, Mich.:																				
July 15	12:05 a.m.	2:37 a.m.	.91	1:32 a.m.	1:53 a.m.	.19	.07	.28	.53	.67	.70									
Port Huron, Mich.:																				
May 26 [6]	2:40 p.m.	7:40 p.m.	1.50	3:24 p.m.	4:08 p.m.	.04	.05	.12	.30	.68	.85	.88	.90	1.15	1.33					
June 4 [6]	3:06 p.m.	5:45 p.m.	.85	3:19 p.m.	3:51 p.m.	.01	.13	.14	.26	.51	.68	.81	.83							
July 13	3:28 p.m.	3:55 p.m.	.39	3:38 p.m.	3:47 p.m.	.02	.19	.36												
July 15	9:47 a.m.	11:40 a.m.	.51	9:47 a.m.	10:03 a.m.	.00	.13	.26	.38	.41										
Aug. 3	[3] 11:40 p.m.	7:14 a.m.	.78	4:16 a.m.	4:36 a.m.	.09	.11	.26	.37	.49										
Aug. 25	3:38 p.m.	3:55 p.m.	.41	3:38 p.m.	3:46 p.m.	.00	.30	.41												
Do	5:33 p.m.	8:20 p.m.	.69	5:56 p.m.	6:22 p.m.	.03	.13	.24	.31	.38	.48	.58								
Sept. 3	4:20 a.m.	[1] 1:05 a.m.	3.06	7:15 p.m.	8:16 p.m.	.48	.17	.42	.63	.68	.71	.75	.84	.93	.99	1.12	1.38	1.54		
Sault Ste. Marie, Mich.:																				
July 6	12:55 p.m.	3:40 p.m.	.84	1:06 p.m.	1:36 p.m.	.01	.11	.27	.45	.54	.63	.67								
Aug. 7	12:15 p.m.	1:45 p.m.	.49	12:58 p.m.	1:07 p.m.	T	.30	.48												
Chicago University, Ill.:																				
May 7	6:26 p.m.	8:18 p.m.	.78	6:29 p.m.	6:51 p.m.	.01	.06	.21	.43	.54	.59									
June 5	11:41 a.m.	1:02 p.m.	.82	11:47 a.m.	12:12 p.m.	.01	.23	.46	.59	.69	.78									
June 26	4:45 p.m.	8:08 p.m.	1.45	4:50 p.m.	5:05 p.m.	.01	.55	.94	1.16											
June 30	11:28 p.m.	[1] 12:09 a.m.	.46	11:30 p.m.	11:40 p.m.	.01	.24	.43												
July 7	2:13 a.m.	3:01 a.m.	.83	2:24 a.m.	2:39 a.m.	.02	.20	.47	.76											
Do	4:16 a.m.	6:37 a.m.	1.11	5:41 a.m.	5:53 a.m.	.64	.20	.31	.35											
July 26	5:46 p.m.	7:27 p.m.	1.06	5:54 p.m.	6:32 p.m.	.01	.11	.23	.29	.39	.49	.57	.72	.78						
Green Bay, Wis.:																				
July 25	5:50 p.m.	[1] 2:15 a.m.	.99	6:26 p.m.	6:36 p.m.	.18	.24	.31												
Sept. 19	7:30 p.m.	8:50 p.m.	.58	8:21 p.m.	8:32 p.m.	.03	.21	.39	.47											
Milwaukee, Wis.:																				
June 18	12:55 a.m.	D.N. a.m.	.86	1:18 a.m.	1:40 a.m.	.02	.21	.46	.49	.58	.63									
July 10	[3] 9:05 p.m.	4:40 a.m.	.81	2:18 a.m.	2:28 a.m.	.19	.19	.30												
Aug. 31	1:23 p.m.	2:35 p.m.	.38	2:04 p.m.	2:13 p.m.	.02	.28	.35												
Duluth, Minn.:																				
Aug. 24	4:20 p.m.	5:40 p.m.	.84	4:55 p.m.	5:26 p.m.	.11	.05	.12	.18	.36	.47	.69	.73							

[1] On following date.
[3] On preceding date.
[5] From defective record.
[6] No excessive precipitation during 1932.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
NORTH DAKOTA																				
Moorhead, Minn.:																				
Aug. 1-2	D.N. p.m.	D.N. a.m.	0.48	11:57 p.m.	12:06 a.m.	0.02	0.16	0.30												
Aug. 25	4:12 p.m.	6:28 p.m.	.95	5:34 p.m.	6:18 p.m.	.03	.20	.32	0.39	0.43	0.44	0.44	0.60	0.82	0.91					
Bismarck, N.Dak.[5]																				
Devils Lake, N. Dak.:																				
June 5	5:56 p.m.	7:05 p.m.	.79	6:23 p.m.	6:52 p.m.	.03	.05	.14	.23	.42	.58	.73								
June 9	4:45 a.m.	6:25 a.m.	.81	4:48 a.m.	5:10 a.m.	.01	.14	.29	.48	.59	.64									
July 31	9:20 a.m.	1:20 p.m.	.96	10:31 a.m.	10:43 a.m.	.11	.16	.31	.37											
Aug. 24	4:56 p.m.	6:13 p.m.	.73	5:40 p.m.	6:05 p.m.	.01	(6)	(6)	(6)	(6)	.70									
Ellendale, N.Dak.:																				
Apr. 23	D.N. a.m.	D.N. a.m.	2.29	12:59 a.m.	2:02 a.m.	.29	.10	.22	.51	.65	.70	.84	.96	1.08	1.13	1.16	1.36	1.41		
June 6	3:18 p.m.	4:40 p.m.	.92	3:28 p.m.	3:55 p.m.	.02	.09	.39	.42	.48	.65	.74								
Aug. 22	5:34 p.m.	6:50 p.m.	1.35	5:44 p.m.	6:31 p.m.	.02	.06	.12	.48	.67	.69	.70	.73	.90	1.26	1.31				
Williston, N.Dak.:																				
June 9	2:55 p.m.	6:10 p.m.	3.05	4:18 p.m.	5:13 p.m.	.11	.13	.34	.53	.85	1.12	1.50	1.88	.25	2.61	2.80	2.91			
June 16	8:20 p.m.	[1]D.N. a.m.	1.30	9:25 p.m.	10:00 p.m.	.03	.21	.44	.65	.72	.81	.88	.94							
UPPER MISSISSIPPI VALLEY																				
Minneapolis, Minn.:																				
July 9	7:40 p.m.	9:00 p.m.	1.37	8:11 p.m.	8:44 p.m.	.24	.15	.27	.30	.40	.84	1.05	1.12							
Aug. 16	12:20 p.m.	1:18 p.m.	.99	12:47 p.m.	1:08 p.m.	.04	.19	.56	.80	.90	.94									
Aug. 24	3:45 p.m.	5:30 p.m.	.64	4:34 p.m.	4:55 p.m.	.02	.16	.39	.46	.51	.53									
Aug. 25	3:01 p.m.	4:55 p.m.	.91	3:55 p.m.	4:13 p.m.	.04	.10	.30	.54	.85										
St. Paul, Minn.:																				
June 7[6]	1:58 p.m.	3:18 p.m.	.67	2:02 p.m.	2:16 p.m.	.01	.19	.31	.41											
July 9	5:10 p.m.	11:10 p.m.	1.45	8:21 p.m.	9:04 p.m.	.30	.09	.38	.74	.78	.79	.81	.85	1.06	1.14					
July 21	2:30 a.m.	D.N. a.m.	.41	2:47 a.m.	2:59 a.m.	.02	.19	.36	.38											
Aug. 16	12:30 p.m.	2:40 p.m.	1.02	12:45 p.m.	1:19 p.m.	.02	.15	.20	.35	.48	.64	.76	.86							
Aug. 24	6:30 p.m.	10:48 p.m.	.68	6:56 p.m.	7:11 p.m.	.06	.21	.32	.36											
La Crosse, Wis.:																				
June 5	12:50 a.m.	2:20 a.m.	.78	12:54 a.m.	1:11 a.m.	.02	.24	.47	.59	.64										
June 17	6:55 p.m.	11:15 p.m.	1.48	6:55 p.m.	7:18 p.m.	.00	.20	.34	.45	.59	.67									
July 9	9:27 p.m.	[1]2:00 a.m.	1.01	10:37 p.m.	10:48 p.m.	.06	.30	.41	.44											
Aug. 2	4:40 a.m.	7:30 a.m.	.77	5:27 a.m.	5:44 a.m.	.04	.16	.32	.38	.42										
Aug. 16	2:25 p.m.	6:05 p.m.	1.45	2:55 p.m.	3:32 p.m.	.06	.07	.18	.34	.53	.71	.78	.83	.87						
Madison, Wis.:																				
May 6	7:00 p.m.	8:15 p.m.	.40	7:15 p.m.	7:22 p.m.	.03	.26	.35												
May 7	9:10 p.m.	[1]12:30 a.m.	.78	11:16 p.m.	11:47 p.m.	.03	.06	.16	.37	.45	.56	.72	.74							
May 25	1:04 p.m.	3:58 p.m.	1.01	3:07 p.m.	3:30 p.m.	.08	.42	.77	.82	.88	.92									
June 5	9:54 a.m.	12 noon	.47	9:57 a.m.	10:07 a.m.	.01	.22	.40												
June 17	10:20 p.m.	[1]2:00 a.m.	1.04	10:50 p.m.	11:11 p.m.	.03	.09	.22	.37	.49	.52									
June 25	4:10 a.m.	6:21 a.m.	.94	4:18 a.m.	4:41 a.m.	.01	.07	.20	.42	.57	.66									
July 6	2:24 p.m.	2:57 p.m.	.58	2:30 p.m.	2:54 p.m.	.01	.14	.22	.23	.44	.57									
July 10	[2]11:59 p.m.	3:15 a.m.	1.63	12:21 a.m.	1:34 a.m.	.11	.05	.22	.47	.54	.58	.70	.83	.88	.93	1.03	1.20	1.37		
Aug. 16	5:40 p.m.	8:15 p.m.	1.32	6:00 p.m.	6:25 p.m.	.02	.08	.30	.66	.95	1.01									
Wausau, Wis.:																				
July 27[6]	D.N. p.m.	[1]D.N. a.m.	.38	10:47 p.m.	10:55 p.m.	.01	.24	.31												
Aug. 9[6]	12:58 p.m.	1:50 p.m.	.84	1:21 p.m.	1:46 p.m.	.15	.25	.38	.46	.60	.68									
Charles City, Iowa:																				
May 26	[2]10:45 p.m.	2:00 a.m.	1.30	1:02 a.m.	1:46 a.m.	.30	.11	.12	.21	.22	.30	.40	.62	.84	1.00					
June 17	3:52 p.m.	10:00 p.m.	1.78	4:05 p.m.	4:39 p.m.	.02	.19	.50	.61	.68	.71	.78	.91							
July 9	10:20 p.m.	[1]2:00 a.m.	.94	10:22 p.m.	10:45 p.m.	.01	.23	.48	.62	.70	.74									
July 25	7:58 p.m.	9:15 p.m.	.44	8:09 p.m.	8:28 p.m.	.01	.17	.31	.35	.41										
Aug. 16	4:21 p.m.	7:00 p.m.	.69	4:28 p.m.	4:41 p.m.	.01	.28	.50	.59											
Aug. 25	3:50 p.m.	4:45 p.m.	.89	3:55 p.m.	4:15 p.m.	.01	.19	.51	.64	.77										
Davenport, Iowa:																				
May 8	7:25 p.m.	8:10 p.m.	.48	7:30 p.m.	7:35 p.m.	T	.47													
June 2	3:30 p.m.	7:05 p.m.	.71	3:33 p.m.	3:51 p.m.	.01	.20	.36	.46	.52										
June 6	7:10 p.m.	9:50 p.m.	.63	7:35 p.m.	7:55 p.m.	.02	.17	.30	.43	.52										
June 13	8:00 p.m.	[1]3:30 a.m.	1.27	8:07 p.m.	8:28 p.m.	.01	.15	.24	.35	.47	.49									
June 17	9:30 p.m.	[1]1:45 a.m.	1.78	10:24 p.m.	11:00 p.m.	.13	.14	.48	.92	1.10	1.21	1.28	1.39	1.42						
June 25	4:50 p.m.	6:10 p.m.	.63	5:20 p.m.	5:34 p.m.	.01	.19	.40	.55											
Do	7:05 p.m.	11:50 p.m.	.93	7:49 p.m.	8:26 p.m.	.01	.18	.27	.35	.39	.49	.61	.77	.79						
July 3	11:05 a.m.	12:35 p.m.	.88	11:07 a.m.	11:26 a.m.	T	.09	.22	.42	.52										
Aug. 1	8:40 p.m.	[1]6:15 a.m.	3.72	9:12 p.m.	9:58 p.m.	.04	.09	.17	.29	.37	.44	.56	.62	.72	.79	.81				
Aug. 1-2	8:40 p.m.	6:15 a.m.	3.72	11:51 p.m.	1:06 a.m.	.92	.20	.22	.23	.40	.51	.52	.57	.70	.91	1.07	1.37	1.70		
Aug. 2	[2]8:40 p.m.	6:15 a.m.	3.72	3:13 a.m.	3:27 a.m.	3.00	.17	.31	.37											
Aug. 16	8:00 p.m.	11:15 p.m.	.90	8:07 p.m.	8:23 p.m.	.01	.15	.31	.43	.47										
Des Moines, Iowa:																				
June 2	9:40 a.m.	1:30 p.m.	1.02	9:45 a.m.	10:06 a.m.	.03	.08	.25	.40	.53	.57									
June 17	7:45 p.m.	10:30 p.m.	.68	7:55 p.m.	8:19 p.m.	.01	.18	.38	.51	.58	.62									
July 9	4:15 a.m.	6:30 a.m.	1.12	4:25 a.m.	4:45 a.m.	.01	.13	.43	.81	.92										
Aug. 6	5:15 a.m.	5:45 a.m.	.63	5:21 a.m.	5:37 a.m.	.01	.13	.35	.59	.62										
Aug. 11	7:40 a.m.	10:58 a.m.	1.34	9:04 a.m.	9:26 a.m.	.69	.09	.23	.32	.42	.46									
Dubuque, Iowa:																				
May 25	1:13 p.m.	2:35 p.m.	.67	1:40 p.m.	1:59 p.m.	.03	.16	.34	.43	.55										
May 26	2:30 a.m.	D.N. a.m.	.88	3:07 a.m.	3:29 a.m.	.08	.18	.41	.61	.76	.79									
June 13	4:18 p.m.	5:55 p.m.	.41	4:45 p.m.	4:55 p.m.	.01	.17	.37												
June 17	8:35 p.m.	[1]12:15 a.m.	1.92	8:47 p.m.	9:08 p.m.	.01	.34	.77	1.10	1.24	1.28									
Aug. 17	3:20 p.m.	3:42 p.m.	.32	3:26 p.m.	3:33 p.m.	.01	.22	.30												
Aug. 28	1:58 a.m.	7:12 a.m.	1.71	5:27 a.m.	6:45 a.m.	.65	.08	.14	.20	.28	.30	.33	.42	.53	.62	.74	.87	1.04		

[1] On following date. [2] On preceding date. [6] From defective record. [5] No excessive precipitation during 1932.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
UPPER MISSISSIPPI VALLEY—contd.																				
Keokuk, Iowa:																				
June 3	3:56 p.m.	5:10 p.m.	0.81	4:27 p.m.	4:41 p.m.	0.01	0.15	0.54	0.77											
June 17	10:42 p.m.	[1] 12:15 a.m.	.61	10:46 p.m.	11:11 p.m.	.01	.15	.32	.43	0.49	0.54									
June 27	1:00 a.m.	2:25 a.m.	1.30	1:08 a.m.	1:53 a.m.	.01	.07	.15	.38	.63	.89	0.95	1.02	1.12	1.20					
July 3	3:20 p.m.	5:45 p.m.	.71	3:29 p.m.	3:44 p.m.	.02	.27	.33	.40											
July 21	4:55 p.m.	6:15 p.m.	.70	5:02 p.m.	5:11 p.m.	.02	.26	.30												
July 25	11:26 p.m.	[1] 12:55 a.m.	.66	11:30 p.m.	11:44 p.m.	.01	.17	.43	.62											
Aug. 1	[3] 5:55 p.m.	7:25 a.m.	3.95	12:21 a.m.	1:48 a.m.	.19	.11	.22	.34	.48	.69	1.31	1.74	1.99	2.26	2.37	2.56	2.67	2.96	
Aug. 6	9:35 a.m.	11:25 a.m.	.60	10:06 a.m.	10:16 a.m.	.04	.32	.42												
Aug. 11	6:38 a.m.	8:35 a.m.	.86	6:38 a.m.	7:08 a.m.	.00	.10	.13	.24	.33	.59	.70								
Sept. 18	5:15 a.m.	9:35 a.m.	.85	6:03 a.m.	6:32 a.m.	.04	.13	.31	.34	.39	.46	.51								
Cairo, Ill.:																				
Mar. 21	1:50 p.m.	2:56 p.m.	.63	2:14 p.m.	2:35 p.m.	.01	.16	.19	.33	.58	.60									
July 26	9:05 p.m.	10:20 p.m.	.85	9:11 p.m.	9:52 p.m.	.01	.23	.27	.27	.33	.50	.58	.70	.81	.84					
Aug. 2	6:01 p.m.	[1] D.N. a.m.	1.68	6:07 p.m.	7:05 p.m.	.01	.20	.44	.58	.78	.84	.92	1.04	1.15	1.33	1.48	1.59			
Aug. 26	2:40 a.m.	6:58 a.m.	1.59	4:21 a.m.	5:19 a.m.	.33	.22	.35	.42	.55	.61	.66	.70	.72	.78	.96	1.13			
Sept. 27	4:19 p.m.	5:15 p.m.	.46	4:37 p.m.	4:57 p.m.	.04	.16	.29	.33	.41										
Peoria, Ill.:																				
Jan. 14	2:00 p.m.	10:08 p.m.	.93	9:39 p.m.	9:54 p.m.	.49	.13	.35	.41											
Feb. 11	4:50 a.m.	6:31 a.m.	.76	5:35 a.m.	5:50 a.m.	.09	.17	.46	.52											
May 6	12:30 p.m.	2:08 p.m.	.51	1:12 p.m.	1:26 p.m.	.02	.16	.33	.47											
June 5	9:50 a.m.	12:38 p.m.	2.43	10:20 a.m.	11:54 a.m.	.04	.10	.16	.27	.50	.75	.98	1.22	1.32	1.34	1.35	1.35	1.94	2.33	
Sept. 12	7:29 p.m.	11:05 p.m.	.87	8:37 p.m.	8:51 p.m.	.15	.24	.51	.65											
Springfield, Ill.:																				
May 8	8:34 p.m.	9:55 p.m.	.48	9:27 p.m.	9:39 p.m.	.01	.31	.40	.44											
June 6	1:55 p.m.	2:32 p.m.	.36	2:02 p.m.	2:12 p.m.	.01	.23	.32												
June 7	2:17 p.m.	3:20 p.m.	.88	2:19 p.m.	2:48 p.m.	.01	.17	.27	.48	.70	.80	.86								
June 14	2:54 p.m.	4:40 p.m.	.94	3:10 p.m.	3:50 p.m.	.01	.15	.22	.26	.28	.41	.58	.69	.80						
July 26	1:25 a.m.	6:47 a.m.	1.05	3:06 a.m.	3:20 a.m.	.12	.13	.41	.57											
Aug. 15-16	11:45 p.m.	12:15 a.m.	.47	11:52 p.m.	12:01 a.m.	.01	.29	.46												
Hannibal, Mo.:																				
Feb. 11	3:50 a.m.	5:00 a.m.	.74	4:13 a.m.	4:36 a.m.	.15	.07	.25	.37	.45	.55									
June 2	2:08 p.m.	4:10 p.m.	.73	2:12 p.m.	2:31 p.m.	.01	.22	.36	.44	.50										
June 14	8:34 p.m.	D.N. p.m.	.45	8:36 p.m.	8:49 p.m.	.01	.18	.30	.37											
June 17-18	D.N. p.m.	D.N. a.m.	1.67	11:53 p.m.	12:11 a.m.	.02	.16	.35	.56	.63										
June 18	[3] D.N. p.m.	D.N. a.m.	1.67	1:13 a.m.	1:34 a.m.	.67	.30	.62	.86	.95	.97									
June 19	6:32 p.m.	7:35 p.m.	.70	6:52 p.m.	7:04 p.m.	.05	.27	.56	.62											
July 26	[3] D.N. p.m.	D.N. a.m.	2.03	12:48 a.m.	1:40 a.m.	.05	.09	.27	.50	.77	.95	1.05	1.14	1.20	1.28	1.33	1.37			
Do	[3] D.N. p.m.	D.N. a.m.	2.03	3:29 a.m.	3:45 a.m.	1.59	.05	.23	.40	.43										
Aug. 1	D.N. a.m.	8:32 a.m.	3.63	2:52 a.m.	3:27 a.m.	.20	.20	.39	.49	.67	.89	1.19	1.17							
Do	D.N. a.m.	8:32 a.m.	3.63	3:59 a.m.	5:00 a.m.	1.61	.14	.22	.34	.44	.52	.59	.65	.70	.83	1.07	1.21	1.35		
Aug. 6	5:52 p.m.	D.N. p.m.	.69	6:35 p.m.	6:43 p.m.	.01	.25	.33												
Aug. 11	4:10 a.m.	5:10 a.m.	.63	4:24 a.m.	4:50 a.m.	.01	.12	.25	.28	.35	.55	.60								
Do	2:07 p.m.	4:20 p.m.	2.01	2:37 p.m.	3:17 p.m.	.14	.18	.52	.83	1.13	1.30	1.53	1.68	1.75						
Aug. 14	10:00 a.m.	2:05 p.m.	1.12	11:13 a.m.	11:45 a.m.	.04	.17	.30	.47	.67	.79	.85	.89							
Sept. 12	4:56 p.m.	[1] D.N. a.m.	1.14	5:46 p.m.	6:10 p.m.	.05	.08	.27	.47	.56	.66									
Dec. 22	2:20 p.m.	[1] 8:35 a.m.	2.64	9:02 p.m.	9:44 p.m.	.94	.12	.22	.33	.42	.46	.58	.67	.74	.78					
St. Louis, Mo.:																				
Feb. 11	5:10 a.m.	7:35 a.m.	1.05	6:09 a.m.	6:47 a.m.	.22	.07	.17	.44	.49	.56	.61	.71	.75						
May 21	2:00 p.m.	4:00 p.m.	.64	2:47 p.m.	2:59 p.m.	.02	.27	.46	.53											
July 3	6:12 p.m.	8:20 p.m.	1.40	6:55 p.m.	7:53 p.m.	.07	.06	.12	.23	.49	.71	.88	1.03	1.05	1.14	1.21	1.32			
July 22	4:35 p.m.	7:30 p.m.	1.03	4:49 p.m.	5:23 p.m.	.02	.07	.35	.54	.59	.70	.76	.81							
July 26	4:40 a.m.	10:00 a.m.	1.78	5:18 a.m.	6:03 a.m.	.14	.09	.21	.26	.44	.54	.67	.84	1.04	1.26					
Aug. 1	6:02 a.m.	11:10 a.m.	2.06	8:24 a.m.	9:14 a.m.	.77	.14	.22	.47	.64	.79	.83	.89	.99	1.04	1.09				
Aug. 11	4:30 p.m.	8:00 p.m.	.69	5:32 p.m.	6:02 p.m.	.06	.09	.20	.27	.35	.43	.50								
Aug. 12	2:21 p.m.	4:01 p.m.	1.78	2:26 p.m.	3:41 p.m.	.01	.07	.21	.33	.51	.63	.68	.70	.76	.95	1.07	1.45	1.77		
Aug. 13	2:10 a.m.	8:35 a.m.	1.60	2:38 a.m.	3:10 a.m.	.04	.07	.15	.33	.54	.73	.90	.93							
Aug. 17	11:35 a.m.	1:15 p.m.	1.33	11:48 a.m.	12:21 p.m.	.03	.16	.44	.59	.64	.84	1.13	1.20							
Sept 27	3:50 a.m.	4:50 a.m.	.54	4:16 a.m.	4:35 a.m.	.07	.10	.18	.34	.45										
Oct. 10	7:05 a.m.	12:45 p.m.	.70	8:19 a.m.	8:30 a.m.	.13	.15	.30	.33											
MISSOURI VALLEY																				
Columbia, Mo.:																				
June 2	9:04 p.m.	[1] D.N. a.m.	1.08	9:53 p.m.	10:28 p.m.	.22	.05	.18	.37	.53	.54	.61	.73							
June 15	4:36 p.m.	5:05 p.m.	.55	4:38 p.m.	5:00 p.m.	.01	.05	.12	.23	.44	.54									
June 19	8:16 p.m.	9:30 p.m.	.54	8:26 p.m.	8:42 p.m.	.03	.24	.38	.47	.48										
July 3	10:40 a.m.	12:25 p.m.	.58	10:58 a.m.	11:07 a.m.	.01	.26	.46												
July 4	10:30 p.m.	D.N. a.m.	1.24	10:35 p.m.	10:56 p.m.	.01	.21	.49	.70	.75	.78									
July 26	D.N. a.m.	5:50 a.m.	.58	5:11 a.m.	5:24 a.m.	.15	.11	.28	.39											
Aug. 12	1:25 p.m.	2:53 p.m.	1.59	1:29 p.m.	2:10 p.m.	.01	.07	.21	.36	.49	.78	1.08	1.24	1.44	1.48					
Do	8:57 p.m.	[1] D.N. a.m.	.78	9:00 p.m.	9:27 p.m.	.01	.16	.32	.40	.51	.60	.63								
Aug. 16	8:52 a.m.	9:34 a.m.	.47	8:52 a.m.	9:07 a.m.	.00	.16	.32	.41											
Sept. 12	8:34 p.m.	D.N. p.m.	1.39	8:44 p.m.	9:30 p.m.	.03	.33	.57	.66	.70	.71	.71	.73	.94	1.19	1.20				
Kansas City, Mo.:																				
May 6	10:00 p.m.	[1] 1:25 a.m.	.87	11:13 p.m.	11:32 p.m.	.06	.17	.27	.62	.72										
July 4	9:05 p.m.	[1] 1:15 a.m.	1.42	9:07 p.m.	9:51 p.m.	.01	.10	.30	.44	.56	.66	.72	.77	.86	.93					
Aug. 6	5:00 p.m.	9:30 p.m.	.92	5:22 p.m.	5:56 p.m.	.04	.11	.20	.31	.39	.53	.66	.71							
Aug. 25	6:10 p.m.	8:00 p.m.	.40	7:10 p.m.	7:19 p.m.	.03	.22	.32												
Aug. 25-26	10:15 p.m.	3:05 a.m.	1.56	11:44 p.m.	12:14 a.m.	.03	.20	.23	.24	.32	.46	.75								
Aug. 26	[2] 10:15 p.m.	3:05 a.m.	1.56	1:46 a.m.	1:54 a.m.	1.17	.21	.31												

[1] On following date. [2] On preceding date.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
MISSOURI VALLEY—continued																				
St. Joseph, Mo.:																				
May 15	5:24 p.m.	10:55 p.m.	0.79	5:34 p.m.	5:51 p.m.	0.01	0.20	0.36	0.41	0.46										
June 2	9:16 a.m.	11:10 a.m.	1.42	9:44 a.m.	10:28 a.m.	.02	.12	.19	.26	.34	0.40	0.64	0.99	1.24	1.33					
June 9	1:31 p.m.	2:50 p.m.	1.00	1:33 p.m.	2:16 p.m.	.01	.05	.22	.39	.52	.65	.77	.86	.91	.95					
June 19	12:36 p.m.	7:13 p.m.	.80	1:58 p.m.	2:11 p.m.	.16	.23	.32	.37											
July 3	2:03 p.m.	4:00 p.m.	1.01	2:58 p.m.	3:31 p.m.	.15	.11	.31	.45	.68	.71	.78	.81							
July 23	8:25 a.m.	10:25 a.m.	1.12	9:49 a.m.	10:19 a.m.	.23	.11	.27	.51	.64	.80	.88								
Aug. 6	4:49 p.m.	5:30 p.m.	.45	4:55 p.m.	5:06 p.m.	.01	.13	.41	.44											
Aug. 25	1:18 p.m.	2:12 p.m.	.70	1:18 p.m.	1:49 p.m.	.00	.25	.30	.39	.50	.55	.65	.66							
Sept. 18	2:45 a.m.	4:15 a.m.	.35	3:32 a.m.	3:40 a.m.	.04	.18	.30												
Springfield, Mo.:																				
May 31	6:35 p.m.	[1] 7:54 a.m.	3.28	6:45 p.m.	7:35 p.m.	.02	.20	.34	.49	.53	.55	.56	.58	.65	.77	0.88				
June 13	5:05 p.m.	6:10 p.m.	.36	5:09 p.m.	5:19 p.m.	.01	.18	.33												
June 26	4:55 p.m.	[1] 1:20 a.m.	5.21	5:17 p.m.	5:57 p.m.	.02	.34	.53	.60	.81	1.00	1.09	1.14	1.27						
Do	4:55 p.m.	1:20 a.m.	5.21	9:12 p.m.	11:07 p.m.	1.84	.10	.20	.29	.47	.53	.63	.81	.99	1.10	1.42	1.91	2.35	2.98	3.25
July 5 [6]	6:38 a.m.	12:30 p.m.	1.96	8:51 a.m.	9:50 a.m.	.14	.09	.21	.29	.46	.74	1.01	1.24	1.42	1.52	1.56	1.73			
Aug. 7 [6]	[2] 9:34 p.m.	4:20 a.m.	.78	2:13 a.m.	2:53 a.m.	.05	.16	.31	.37	.44	.52	.57	.60	.68						
Aug. 15 [6]	1:12 p.m.	2:30 p.m.	1.53	1:12 p.m.	1:53 p.m.	.00	.22	.43	.60	.82	1.04	1.29	1.38	1.48	1.52					
Aug. 31 [6]	3:47 p.m.	6:40 p.m.	.67	4:13 p.m.	4:25 p.m.	.06	.22	.52	.57											
Oct. 3	8:35 p.m.	[1] 7:50 a.m.	1.28	8:49 p.m.	9:07 p.m.	.01	.53	.71	.85	.90										
Iola, Kans.: [10]																				
Apr. 16 [6]	6:50 p.m.	9:00 p.m.	0.52	7:03 p.m.	7:15 p.m.	.01	.16	.33	.39											
June 8	1:30 p.m.	4:40 p.m.	1.56	2:00 p.m.	3:00 p.m.	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)			
June 9	8:40 p.m.	10:45 p.m.	.86	8:42 p.m.	9:10 p.m.	.01	.25	.38	.47	.52	.59	.63								
June 19	6:50 p.m.	9:40 p.m.	.42	7:17 p.m.	7:27 p.m.	.03	.18	.36												
July 5	4:35 a.m.	7:15 a.m.	1.03	4:35 a.m.	5:10 a.m.	.00	.05	.13	.22	.41	.58	.66	0.72							
Topeka, Kans.:																				
June 19	2:51 p.m.	9:35 p.m.	1.02	3:53 p.m.	4:06 p.m.	.01	.39	.61	.66											
June 26	8:15 a.m.	3:30 p.m.	1.02	11:19 a.m.	11:36 a.m.	.08	.37	.59	.77	.80										
July 3	5:40 p.m.	8:30 p.m.	1.12	6:19 p.m.	6:47 p.m.	.01	.16	.38	.63	.79	.90	.94								
Aug. 12	11:01 p.m.	[1] 5:45 a.m.	1.23	11:07 p.m.	11:13 p.m.	.01	.39	.44												
Aug. 14	6:14 p.m.	9:52 p.m.	1.21	6:18 p.m.	6:45 p.m.	.01	.19	.31	.37	.54	.69	.74								
Do	6:14 p.m.	9:52 p.m.	1.21	7:16 p.m.	7:27 p.m.	.82	.17	.33	.35											
Aug. 17	2:37 p.m.	3:18 p.m.	.44	2:50 p.m.	3:04 p.m.	.01	.13	.29	.42											
Aug. 31	4:40 a.m.	3:43 p.m.	3.24	5:02 a.m.	6:40 a.m.	.11	.17	.30	.32	.40	.42	.51	.54	.60	.73	.89	1.19	1.39	1.61	
Sept. 21	3:15 p.m.	10:50 p.m.	.83	4:42 p.m.	4:58 p.m.	.03	.24	.31	.41	.45										
Lincoln, Nebr.:																				
June 2	[2] 10:48 p.m.	6:24 a.m.	1.89	4:00 a.m.	4:24 a.m.	1.12	.18	.32	.48	.58	.64									
June 17	1:02 a.m.	4:12 a.m.	.65	2:38 a.m.	2:46 a.m.	.14	.27	.34												
June 24	3:48 p.m.	4:50 p.m.	.46	4:02 p.m.	4:11 p.m.	.02	.20	.35												
June 30	4:32 p.m.	5:14 p.m.	.35	4:32 p.m.	4:44 p.m.	.00	.21	.32	.34											
July 4	5:45 p.m.	6:26 p.m.	.75	5:53 p.m.	6:06 p.m.	.01	.12	.55	.72											
July 23	2:42 a.m.	6:50 a.m.	1.53	2:46 a.m.	3:20 a.m.	.01	.21	.47	.73	.87	1.08	1.19	1.27							
July 25	4:38 a.m.	5:55 a.m.	1.14	4:52 a.m.	5:30 a.m.	.04	.15	.34	.55	.68	.70	.81	.94	1.08						
July 31	1:46 a.m.	7:58 a.m.	1.23	4:13 a.m.	5:15 a.m.	.29	.16	.22	.31	.34	.37	.47	.51	.55	.62	.66	.81	.93		
Aug. 12	11:40 p.m.	6:52 a.m.	1.31	2:56 a.m.	3:18 a.m.	.17	.07	.24	.33	.41	.45									
Do	[2] 11:40 p.m.	6:52 a.m.	1.31	4:52 a.m.	5:08 a.m.	.74	.17	.35	.44	.47										
Omaha, Nebr.:																				
May 6	D.N. a.m.	10:35 a.m.	1.22	7:09 a.m.	8:08 a.m.	.02	.23	.33	.35	.36	.52	.66	.69	.71	.73	.80	1.03			
May 23	8:00 p.m.	[1] D.N. a.m.	1.30	8:33 p.m.	8:59 p.m.	.02	.25	.28	.36	.55	.71	.72								
June 2	D.N. a.m.	7:45 a.m.	1.23	5:06 a.m.	5:30 a.m.	.16	.31	.69	.84	.87	.93									
June 8	8:44 a.m.	10:05 a.m.	.47	8:53 a.m.	9:03 a.m.	.03	.16	.34												
June 24	4:10 p.m.	6:20 p.m.	.76	4:54 p.m.	5:23 p.m.	.01	.16	.28	.37	.48	.69	.75								
July 23	4:30 a.m.	6:55 a.m.	1.53	4:32 a.m.	5:09 a.m.	.01	.12	.29	.60	.90	1.10	1.21	1.29	1.35						
Aug. 12	[2] 10:05 p.m.	7:10 a.m.	6.56	12:33 a.m.	1:31 a.m.	.69	.11	.24	.43	.58	.79	.94	1.04	1.08	1.10	1.16	1.34			
Aug. 12 [11]	[2] 10:05 p.m.	7:10 a.m.	6.56	3:08 a.m.	4:19 a.m.	2.72	.11	.25	.44	.63	.79	.98	1.07	1.14	1.25	1.34	1.52	1.75		
Aug. 15	2:55 a.m.	7:50 a.m.	1.45	3:03 a.m.	3:43 a.m.	.02	.12	.29	.40	.50	.55	.62	.78	.86						
Aug. 17	3:15 a.m.	4:35 a.m.	1.14	3:31 a.m.	4:12 a.m.	.08	.15	.35	.55	.79	.81	.81	.88	1.01	1.04					
Aug. 25	10:42 a.m.	11:30 a.m.	.81	10:54 a.m.	11:10 a.m.	.01	.19	.50	.73	.77										
Sept. 21	7:18 a.m.	8:45 p.m.	1.72	12:10 p.m.	12:35 p.m.	.76	.12	.25	.35	.44	.51									
Valentine, Nebr.:																				
Apr. 23	7:19 a.m.	9:20 a.m.	.64	7:27 a.m.	7:47 a.m.	.01	.09	.24	.30	.47										
June 7	8:56 p.m.	10:45 p.m.	.74	8:57 p.m.	9:28 p.m.	T	.10	.17	.33	.43	.49	.54	.57							
July 3	8:15 p.m.	9:43 p.m.	.58	8:45 p.m.	9:03 p.m.	.11	.06	.16	.34	.42										
Aug. 5 [6]	11:00 p.m.	[1] 12:10 a.m.	.90	11:13 p.m.	11:47 p.m.	.01	.05	.13	.23	.39	.58	.70	.88							
Sioux City, Iowa:																				
May 25	2:41 a.m.	4:20 a.m.	.65	3:24 a.m.	3:42 a.m.	.06	.06	.11	.42	.48										
June 9	2:01 p.m.	7:05 p.m.	.97	2:17 p.m.	2:33 p.m.	.02	.18	.50	.66	.71										
June 11 [6]	12:05 p.m.	1:50 p.m.	.78	12:24 p.m.	12:56 p.m.	.12	.08	.17	.24	.36	.48	.61	.63							
June 13 [6]	12:06 p.m.	2:50 p.m.	.76	2:07 p.m.	2:22 p.m.	.37	.21	.29	.35											
June 25	5:09 p.m.	6:35 p.m.	.50	5:16 p.m.	5:31 p.m.	.03	.15	.27	.41											
July 3	[2] 8:52 p.m.	2:50 a.m.	.97	1:14 a.m.	1:34 a.m.	.40	.24	.41	.46	.52										
Huron, S.Dak.:																				
May 3	[2] 11:55 p.m.	2:05 a.m.	.61	12:03 a.m.	12:13 a.m.	.03	.26	.45												
Aug. 11	2:56 p.m.	[1] 12:45 a.m.	1.05	3:32 p.m.	3:47 p.m.	.13	.06	.21	.36											
Aug. 22	8:40 p.m.	9:50 p.m.	.36	9:18 p.m.	9:27 p.m.	.02	.23	.32												
Pierre, S.Dak.:																				
May 5	5:30 a.m.	7:20 a.m.	1.06	5:42 a.m.	6:28 a.m.	.01	.18	.22	.35	.43	.52	.69	.85	.96	1.01	1.04				
Aug. 1	10:20 p.m.	10:50 p.m.	.48	10:20 p.m.	10:36 p.m.	.00	.10	.37	.46	.48										
Aug. 14	10:20 p.m.	[1] D.N. a.m.	.68	10:44 p.m.	11:03 p.m.	.08	.06	.22	.36	.43										
Yankton, S.Dak.:																				
May 5	10:20 p.m.	[2] 2:15 p.m.	.74	10:28 p.m.	10:42 p.m.	.02	.18	.33	.41											
May 25	12:45 a.m.	3:30 a.m.	1.15	12:58 a.m.	1:18 a.m.	.03	.16	.29	.38	.47										
Do	6:35 p.m.	10:35 p.m.	1.52	7:54 p.m.	8:17 p.m.	.14	.41	.67	.76	.84	.92									
Aug. 11 [6]	10:30 p.m.	[1] D.N. a.m.	1.04	10:53 p.m.	11:18 p.m.	.07	.18	.32	.44	.56	.63									
Sept. 11 [6]	2:40 p.m.	4:20 p.m.	.67	2:43 p.m.	3:01 p.m.	.01	.31	.42	.51	.58										

[6] On following date. [2] On preceding date. [6] From defective record. [10] Record discontinued July 8. [11] Record defective after 4:19 a.m.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
NORTHERN SLOPE																				
Havre, Mont.:																				
June 11	2:50 p.m.	4:51 p.m.	0.67	3:05 p.m.	3:24 p.m.	0.03	0.10	0.28	0.43	0.53										
Helena, Mont.:																				
Aug. 16	6:52 p.m.	8:00 p.m.	.79	6:59 p.m.	7:21 p.m.	.03	.26	.48	.57	.62	0.68									
Kalispell, Mont.:																				
Aug. 20	8:00 p.m.	11:00 p.m.	.65	8:22 p.m.	8:37 p.m.	.05	.14	.33	.40											
Miles City, Mont.:																				
Apr. 21	8:08 p.m.	[1]D.N. a.m.	.88	9:08 p.m.	9:36 p.m.	.06	.13	.26	.37	.51	.56	0.62								
June 7	3:57 p.m.	6:09 p.m.	.70	5:07 p.m.	5:19 p.m.	.19	.22	.32	.36											
July 19	5:42 p.m.	7:45 p.m.	.75	5:42 p.m.	6:20 p.m.	.00	.06	.10	.15	.31	.46	.55	0.64	0.70						
Aug. 16	5:26 a.m.	7:04 a.m.	.84	5:44 a.m.	6:19 a.m.	.04	.11	.18	.36	.54	.60	.65	.71							
Rapid City, S.Dak.:																				
May 30	5:55 p.m.	7:25 p.m.	.47	5:58 p.m.	6:13 p.m.	.01	.17	.270	.37											
June 15	9:32 p.m.	[1] 1:05 a.m.	.82	9:53 p.m.	10:15 p.m.	.01	.22	.28	.33	.42	.46									
July 21	11:58 a.m.	12:32 p.m.	.32	12:09 p.m.	12:17 p.m.	.01	.19	.30												
July 24	2:00 p.m.	3:30 p.m.	.99	2:21 p.m.	3:09 p.m.	.06	.09	.27	.57	.61	.64	.65	.68	.74	0.84	0.93				
Aug. 12	10:00 a.m.	12:11 p.m.	.64	11:17 a.m.	11:44 a.m.	.02	.06	.13	.31	.43	.52	.56								
Aug. 14	5:52 p.m.	8:10 p.m.	1.09	7:06 p.m.	7:34 p.m.	.03	.13	.35	.50	.82	.93	.98								
Cheyenne, Wyo.:																				
June 9 [5]	3:20 p.m.	3:55 p.m.	.41	3:28 p.m.	3:43 p.m.	.01	.18	.31	.38											
Sept. 24	3:01 p.m.	11:10 p.m.	1.09	3:57 p.m.	4:40 p.m.	.11	.08	.21	.30	.39	.58	.67	.74	.80	.87					
Lander, Wyo.[6]																				
Sheridan, Wyo.:																				
June 25	3:24 p.m.	6:45 p.m.	1.58	3:24 p.m.	3:56 p.m.	.00	.23	.56	.70	.97	1.22	1.30	1.33							
Aug. 28	8:33 p.m.	9:30 p.m.	.41	8:35 p.m.	8:47 p.m.	.01	.22	.32	.37											
Yellowstone Park, Wyo.[6]																				
North Platte, Nebr.:																				
June 18	9:48 p.m.	[1] 1:08 a.m.	1.47	9:52 p.m.	10:10 p.m.	.01	.36	.81	.94	.99										
July 2	3:39 p.m.	5:20 p.m.	2.68	3:48 p.m.	4:49 p.m.	.02	.35	.78	1.01	1.35	1.52	1.61	1.69	1.78	2.01	2.21	2.54	2.62		
July 30	5:20 p.m.	[1] 5:00 a.m.	.94	11:26 p.m.	11:41 p.m.	.01	.25	.71	.81											
Aug. 5	4:58 p.m.	5:32 p.m.	.92	5:07 p.m.	5:26 p.m.	.02	.19	.57	.80	.89										
MIDDLE SLOPE																				
Denver, Colo.:																				
June 9	11:36 p.m.	[1] 12:10 a.m.	.32	11:36 p.m.	11:46 p.m.	.00	.16	.30												
Aug. 15	4:57 p.m.	6:39 p.m.	.80	5:27 p.m.	5:55 p.m.	.01	.19	.42	.52	.72	.78	.83								
Pueblo, Colo.:																				
July 29	8:35 p.m.	10:24 p.m.	.89	9:49 p.m.	10:03 p.m.	.19	.25	.48	.68											
Concordia, Kans.:																				
May 25	10:05 p.m.	[1] 1:32 a.m.	.76	10:18 p.m.	10:38 p.m.	.04	.19	.37	.45	.53										
June 9	3:52 p.m.	5:35 p.m.	2.36	4:05 p.m.	4:42 p.m.	.05	.15	.36	.73	.92	1.32	1.90	2.20	2.25						
June 24	2:08 p.m.	4:15 p.m.	1.29	2:22 p.m.	3:11 p.m.	.02	.27	.40	.51	.62	.65	.71	.87	1.06	1.15	1.22				
June 26	12:08 p.m.	5:40 p.m.	1.02	2:46 p.m.	3:10 p.m.	.01	.28	.51	.60	.68	.74									
July 25	3:15 p.m.	4:10 p.m.	.77	3:31 p.m.	4:08 p.m.	.11	.11	.24	.25	.33	.38	.48	.59	.66						
July 28	9:05 p.m.	10:35 p.m.	1.09	9:36 p.m.	10:10 p.m.	.12	.05	.17	.33	.50	.69	.82	.94							
Aug. 12	4:55 a.m.	10:55 a.m.	1.53	6:40 a.m.	7:05 a.m.	.43	.17	.25	.29	.42	.49									
Aug. 31	[3] 4:20 p.m.	10:35 a.m.	3.84	12:22 a.m.	1:17 a.m.	1.30	.05	.19	.24	.28	.30	.36	.44	.54	.64	.73	.82			
Sept. 17	8:50 p.m.	10:30 p.m.	.68	9:16 p.m.	9:55 p.m.	.02	.10	.13	.22	.35	.45	.49	.59	.65						
Oct. 22	4:25 p.m.	7:05 p.m.	1.30	5:20 p.m.	6:04 p.m.	.12	.08	.24	.44	.62	.83	.94	1.01	1.10	1.15					
Dodge City, Kans.:																				
June 18	5:28 p.m.	7:10 p.m.	.81	6:50 p.m.	7:02 p.m.	.31	.14	.44	.50											
June 25	4:16 p.m.	5:10 p.m.	.54	4:16 p.m.	4:36 p.m.	.00	.08	.23	.41	.49										
July 26	4:16 p.m.	4:48 p.m.	.82	4:22 p.m.	4:40 p.m.	.01	.23	.49	.64	.80										
Sept. 11	2:45 a.m.	4:20 a.m.	1.19	2:54 a.m.	3:34 a.m.	.01	.05	.10	.23	.36	.51	.69	.80	.99						
Wichita, Kans.:																				
Apr. 6	7:08 p.m.	7:55 p.m.	.48	7:16 p.m.	7:40 p.m.	.01	.10	.23	.32	.39	.45									
May 6	8:06 p.m.	[1] 6:10 a.m.	1.28	8:52 p.m.	9:15 p.m.	.08	.11	.17	.30	.66	.75									
June 8	11:08 a.m.	12:08 p.m.	1.34	11:16 a.m.	11:46 a.m.	.01	.12	.39	.81	.96	1.16	1.31								
June 18	7:50 p.m.	D.N. p.m.	.53	8:16 p.m.	8:31 p.m.	.01	.23	.36	.41											
June 26	9:25 a.m.	10:40 a.m.	1.30	9:25 a.m.	10:09 a.m.	.00	.07	.24	.44	.56	.65	.75	.96	1.15	1.26					
July 5	3:25 a.m.	D.N. a.m.	.71	3:38 a.m.	4:00 a.m.	.06	.12	.23	.38	.45	.49									
July 24	3:45 p.m.	5:15 p.m.	.49	3:51 p.m.	4:06 p.m.	.01	.22	.34	.45											
Aug. 1	6:37 p.m.	[1]D.N. a.m.	1.16	9:55 p.m.	10:21 p.m.	.09	.06	.22	.42	.55	.62	.65								
Aug. 31	D.N. a.m.	4:40 a.m.	.74	4:11 a.m.	4:27 a.m.	.06	.06	.45	.65	.67										
Sept. 21	5:45 p.m.	D.N. p.m.	.60	6:25 p.m.	6:43 p.m.	.01	.12	.28	.40	.44										
Oklahoma City, Okla.:																				
May 6	6:12 p.m.	8:10 p.m.	.71	6:59 p.m.	7:34 p.m.	.01	.05	.16	.26	.28	.36	.50	.69							
May 28	7:43 a.m.	5:00 p.m.	2.18	8:32 a.m.	8:47 a.m.	.07	.29	.60	.80											
Do	7:43 a.m.	5:00 p.m.	2.18	10:53 a.m.	11:36 a.m.	.96	.14	.23	.29	.35	.40	.53	.68	.79	.83					
May 31	7:25 p.m.	[3] 3:00 a.m.	1.46	9:52 p.m.	10:22 p.m.	.03	.08	.16	.31	.36	.40	.52								
May 31-June 1-2	7:25 p.m.	3:00 a.m.	1.46	11:40 p.m.	12:05 a.m.	.63	.05	.19	.36	.72	.81									
June 3	[3] 8:45 p.m.	11:40 a.m.	6.93	1:15 a.m.	2:35 a.m.	.35	.16	.28	.60	.90	1.13	1.47	1.76	2.08	2.37	2.60	3.06	3.63		
Do	[3] 8:45 p.m.	11:40 a.m.	6.93	3:04 a.m.	3:18 a.m.	4.12	.13	.26	.38											
Do	[3] 8:45 p.m.	11:40 a.m.	6.93	4:08 a.m.	4:53 a.m.	4.83	.17	.44	.64	.85	1.11	1.22	1.34	1.49	1.56					
June 4	4:30 a.m.	5:45 a.m.	.73	4:36 a.m.	5:00 a.m.	.01	.22	.37	.48	.54	.62									
June 11	2:38 p.m.	7:20 p.m.	1.14	4:18 p.m.	4:40 p.m.	.12	.07	.24	.55	.74	.78									
June 20	7:00 p.m.	[1] 12:45 a.m.	1.00	8:33 p.m.	8:49 p.m.	.02	.26	.57	.71	.75										
June 25	12:47 p.m.	3:15 p.m.	.97	12:54 p.m.	1:10 p.m.	.02	.17	.33	.54	.59										
Do	12:47 p.m.	3:15 p.m.	.97	1:35 p.m.	1:44 p.m.	.62	.12	.32												
June 29	8:53 p.m.	D.N. p.m.	1.05	9:02 p.m.	9:23 p.m.	.01	.48	.68	.79	.87	.91									
July 5	1:43 p.m.	3:48 p.m.	1.77	1:46 p.m.	2:43 p.m.	.01	.09	.29	.72	.98	1.08	1.18	1.24	1.28	1.40	1.50	1.68			
Aug. 15	5:20 p.m.	6:22 p.m.	.34	5:36 p.m.	5:45 p.m.	.01	.19	.32												
Dec. 22	12:10 p.m.	[1] 11:00 a.m.	2.55	5:30 p.m.	6:00 p.m.	.16	.08	.15	.26	.30	.47	.59								

[1] On following date. [3] On preceding date. [5] From defective record. [6] No excessive precipitation during 1932.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
SOUTHERN SLOPE																				
Abilene, Tex.:																				
Feb. 16	1:45 a.m.	5:20 a.m.	1.61	2:03 a.m.	2:26 a.m.	0.03	0.12	0.16	0.41	0.56	0.66									
May 6	4:35 p.m.	6:40 p.m.	2.31	4:54 p.m.	5:16 p.m.	.05	.08	.48	.78	1.06	1.12									
Do	4:35 p.m.	6:40 p.m.	2.31	5:58 p.m.	6:17 p.m.	1.28	.15	.77	.98	1.02										
Do	7:07 p.m.	8:00 p.m.	.78	7:13 p.m.	7:27 p.m.	.01	.11	.44	.59											
Do	D.N. p.m.	[1]D.N. a.m.	1.68	11:06 p.m.	11:20 p.m.	.04	.28	.62	.94											
May 10	D.N. a.m.	D.N. a.m.	1.18	1:41 a.m.	2:03 a.m.	.21	.09	.21	.43	.60	.65									
May 24	12:24 p.m.	3:35 p.m.	1.48	1:13 p.m.	1:39 p.m.	.06	.43	.60	.78	1.18	1.38	1.40								
May 28	1:25 p.m.	3:04 p.m.	.79	1:40 p.m.	2:06 p.m.	.02	.17	.37	.51	.61	.68	.73								
May 29	[2]11:33 p.m.	D.N. a.m.	1.13	12:30 a.m.	12:52 a.m.	.07	.18	.39	.59	.71	.77									
June 8	7:53 p.m.	D.N. p.m.	.79	8:07 p.m.	8:26 p.m.	.06	.13	.36	.50	.61										
June 28	[2]9:43 p.m.	9:45 a.m.	1.55	12:07 a.m.	12:17 a.m.	.14	.14	.31												
July 3	D.N. a.m.	8:50 a.m.	3.20	1:58 a.m.	2:58 a.m.	.02	.08	.32	.56	.66	.84	.91	0.92	0.92	0.93	0.99	1.21			
Do	D.N. a.m.	8:50 a.m.	3.20	3:30 a.m.	4:13 a.m.	1.26	.25	.32	.47	.55	.63	.73	.74	.83	.89					
Do	D.N. a.m.	8:50 a.m.	3.20	6:30 a.m.	6:55 a.m.	2.42	.11	.21	.33	.54	.60									
Aug. 31	4:44 p.m.	[1]D.N. a.m.	2.09	7:11 p.m.	7:27 p.m.	.14	.07	.17	.36	.37										
Sept. 1	6:27 a.m.	11:57 a.m.	2.02	7:18 a.m.	7:57 a.m.	.35	.09	.13	.24	.44	.78	.93	1.01	1.14						
Sept. 5	8:33 p.m.	[1]D.N. a.m.	1.90	10:06 p.m.	10:23 p.m.	.55	.16	.41	.52	.56										
Sept. 6	7:15 a.m.	[1]7:00 a.m.	3.97	10:42 a.m.	10:59 a.m.	.45	.12	.27	.37	.41										
Do	7:15 a.m.	[1]7:00 a.m.	3.97	2:33 p.m.	3:09 p.m.	1.66	.11	.27	.39	.51	.56	.59	.66	.70						
Amarillo, Tex.:																				
May 24	3:06 p.m.	6:08 p.m.	.75	4:19 p.m.	4:35 p.m.	.26	.07	.26	.43	.45										
June 3	7:39 p.m.	8:40 p.m.	.44	7:52 p.m.	8:00 p.m.	.03	.27	.38												
June 4–5	10:12 p.m.	D.N. a.m.	1.70	11:51 p.m.	12:36 a.m.	.05	.17	.43	.63	.73	.76	.90	1.18	1.42	1.50					
June 5	8:10 a.m.	12:18 p.m.	.41	9:47 a.m.	9:52 a.m.	.13	.27													
June 9	7:30 p.m.	9:58 p.m.	1.24	7:44 p.m.	8:16 p.m.	.01	.18	.54	.80	.96	1.05	1.13	1.19							
June 13	12:01 a.m.	12:57 a.m.	.49	12:04 a.m.	12:23 a.m.	.01	.09	.28	.37	.44										
June 20	4:35 p.m.	7:12 p.m.	2.06	4:40 p.m.	5:18 p.m.	.01	.20	.28	.67	1.01	1.46	1.70	1.87	1.93						
Del Rio, Tex.:																				
Mar. 2	3:25 p.m.	4:15 p.m.	.34	3:26 p.m.	3:36 p.m.	.01	.12	.26												
May 6	10:50 p.m.	[1]1:30 a.m.	.67	11:41 p.m.	11:51 p.m.	.07	.35	.43												
Do	5:17 p.m.	5:50 p.m.	.94	5:19 p.m.	5:36 p.m.	.02	.22	.56	.85	.92										
May 8	6:27 p.m.	7:50 p.m.	1.31	6:34 p.m.	7:32 p.m.	.02	.07	.15	.23	.32	.35	.46	.68	.88	.98	1.10	1.28			
Aug 10	7:01 p.m.	[1]12:30 a.m.	.99	7:01 p.m.	7:27 p.m.	.00	.10	.20	.44	.67	.83	.87								
Aug. 30	7:07 p.m.	[1]6:15 a.m.	3.34	8:22 p.m.	8:41 p.m.	.20	.23	.34	.46	.51										
Aug. 31	[2]7:07 p.m.	6:15 a.m.	3.34	5:01 a.m.	5:41 a.m.	2.51	.11	.24	.33	.41	.52	.58	.63	.68						
Sept. 1	8:20 a.m.	6:00 p.m.	.66	11:15 a.m.	11:29 a.m.	.04	.07	.26	.38											
Sept. 22	[2]11:37 p.m.	3:04 a.m.	1.30	12:49 a.m.	1:47 a.m.	.01	.11	.27	.38	.46	.64	.76	.81	.84	.88	.97	1.15			
Nov. 5	1:45 a.m.	5:05 a.m.	1.37	1:55 a.m.	2:54 a.m.	.01	.18	.26	.28	.32	.42	.48	.58	.78	.83	.85	1.03			
Roswell, N.Mex.:																				
June 23	11:16 p.m.	[1]12:27 a.m.	.65	11:47 p.m.	12:00 midt.	.15	.19	.38	.47											
Aug. 27	6:11 p.m.	6:44 p.m.	.54	6:14 p.m.	6:39 p.m.	.01	.09	.20	.35	.46	.53									
Do	7:50 p.m.	10:05 p.m.	.96	8:32 p.m.	8:52 p.m.	.36	.13	.29	.40	.50										
SOUTHERN PLATEAU																				
El Paso, Tex.:																				
May 11	7:00 p.m.	9:20 p.m.	1.46	7:12 p.m.	8:01 p.m.	.01	.13	.25	.36	.52	.67	.81	.95	1.08	1.17	1.23				
July 8	12:25 p.m.	1:35 p.m.	.82	12:29 p.m.	12:46 p.m.	.01	.21	.56	.73	.77										
July 11	5:55 p.m.	7:20 p.m.	.69	6:25 p.m.	6:53 p.m.	.06	.13	.28	.33	.45	.51	.62								
Aug. 9	9:55 a.m.	11:45 a.m.	1.35	10:15 a.m.	11:02 a.m.	.05	.10	.26	.39	.65	.84	.93	1.06	1.13	1.21	1.25				
Sept. 28	1:20 p.m.	[12]4:30 a.m.	2.47	3:07 p.m.	3:23 p.m.	.05	.12	.18	.35	.40										
Albuquerque, N.Mex.[9]																				
Santa Fe, N.Mex.:																				
June 29	8:00 p.m.	8:55 p.m.	.46	8:17 p.m.	8:21 p.m.	.03	.41													
Aug. 27	3:45 p.m.	7:30 p.m.	1.01	3:52 p.m.	4:21 p.m.	.01	.17	.28	.47	.51	.58	.63								
Phoenix, Ariz.:																				
Oct. 8	10:20 a.m.	11:20 a.m.	.65	10:35 a.m.	11:02 a.m.	.06	.18	.30	.42	.47	.54	.58								
MIDDLE PLATEAU																				
Reno Nev.:																				
June 25	7:00 p.m.	8:20 p.m.	.60	7:13 p.m.	7:25 p.m.	.02	.16	.32	.37											
Winnemucca, Nev.[9]																				
Modena, Utah [9]																				
Salt Lake City, Utah [9]																				
Grand Junction, Colo.[9]																				
NORTHERN PLATEAU																				
Baker, Oreg.[9]																				
Boise, Idaho [9]																				
Lewiston, Idaho [9]																				
Pocatello, Idaho [9]																				
Spokane, Wash.[9]																				
Walla Walla, Wash.[9]																				
Yakima, Wash.[9]																				

[1] On following date.
[2] On preceding date.
[9] No excessive precipitation during 1932.
[12] On second following date.

Accumulated amounts of precipitation for each 5 minutes for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes or 0.80 in 1 hour during 1932 at all stations furnished with self-registering gages—Continued

Station and date	Total duration		Total amount of precipitation	Excessive rate		Amount before excessive rate began	Depths of precipitation (in inches) during periods of time indicated													
	From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
NORTH PACIFIC COAST REGION																				
North Head, Wash.:																				
Aug. 8	7:40 p.m.	[1]D.N. a.m.	1.04	11:10 p.m.	11:48 p.m.	0.34	0.14	0.27	0.38	0.42	0.47	0.53	0.56	0.63						
Nov. 5	4:55 a.m.	12:35 p.m.	1.54	9:56 a.m.	10:25 a.m.	.57	.19	.32	.35	.30	.43	.53								
Port Angeles, Wash.[9]																				
Seattle, Wash.[9]																				
Tacoma, Wash.[9]																				
Tatoosh Island, Wash.[9]																				
Portland, Oreg.[9]																				
Roseburg, Oreg.[9]																				
MIDDLE PACIFIC COAST REGION																				
Eureka, Calif.[9]																				
Red Bluff, Calif.[9]																				
Sacramento, Calif.[9]																				
San Francisco, Calif.[9]																				
San Jose, Calif.[9]																				
SOUTH PACIFIC COAST REGION																				
Fresno, Calif.:																				
Mar. 14	4:30 p.m.	9:30 p.m.	.58	5:59 p.m.	6:14 p.m.	.03	.17	.31	.41											
Los Angeles, Calif.[9]																				
San Diego, Calif.[9]																				
ALASKA																				
Fairbanks, Alaska[9]																				
Juneau, Alaska[9]																				
ISLAND POSSESSIONS																				
San Juan, P.R.:[8]																				
Apr. 29[6]	[2]9:40 p.m.	D.N. a.m.	2.68	2:47 a.m.	4:01 a.m.	.78	.32	.61	.82	.96	1.07	1.21	1.32	1.40	1.49	1.57	1.65	1.90		
June 27	1:09 p.m.	4:30 p.m.	1.34	3:14 p.m.	4:04 p.m.	.08	.28	.54	.61	.64	.66	.70	.73	.90	1.15	1.25				
Oct. 12	5:10 a.m.	1:15 p.m.	1.34	5:31 a.m.	5:53 a.m.	.07	.24	.45	.80	.99	1.03									
Oct. 30	D.N. a.m.	7:40 a.m.	1.88	12:18 a.m.	12:54 a.m.	.04	.10	.39	.71	.99	1.09	1.16	1.25	1.28						
Honolulu, Hawaii:																				
Feb. 5	6:35 a.m.	8:01 a.m.	.71	6:41 a.m.	6:59 a.m.	.01	.25	.45	.56	.65										
Feb. 28	D.N. a.m.	4:15 p.m.	1.79	11:20 a.m.	11:35 a.m.	1.00	.09	.26	.43											
Apr. 30	6:03 p.m.	[1]D.N. a.m.	2.21	9:19 p.m.	10:09 p.m.	.71	.10	.24	.32	.41	.50	.56	.59	.64	.75	.85				
Do	6:03 p.m.	[1]D.N. a.m.	2.21	11:30 p.m.	11:50 p.m.	1.73	.06	.17	.29	.41										
Aug. 17	10:44 a.m.	1:14 p.m.	1.23	11:56 a.m.	12:37 p.m.	.25	.14	.27	.40	.47	.59	.72	.86	.95	.97					

[1] On following date.
[2] On preceding date.
[6] From defective record.
[8] Only storms attaining 1 inch or more in 1 hour or less.
[9] No excessive precipitation during 1932.

[Excessive precipitation data for 1933 and 1934 will appear in the 1934–35 issue of this report. R. J. M.]

MONTHLY AND ANNUAL EVAPORATION, 1933

The monthly and annual amounts of evaporation during the year 1933 appear below. The number of these reports at the present time is small, records appearing from only about half of the States.

The evaporation measurements are all made from cylindrical pans, 4 feet in diameter, 10 inches deep, placed on framework laid on the ground, and exposed as far as possible to full sunshine. A description of equipment and methods of observation appeared in the Monthly Weather Review of December 1916, pages 674 to 677.

Monthly and annual evaporation at class A stations (in inches and hundredths) for 1933

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
ALASKA													
Fairbanks					3.74	5.06	4.42	2.76	1.38				
Matanuska [1]													
ALABAMA													
Silverhill [1]													
ARIZONA													
Lee's Ferry		2.43	6.46	8.43	11.24	15.09	14.32	12.54	10.78	5.43	3.67	1.64	
Mesa		3.77	5.81	6.83	8.58	10.14	11.14	10.01	8.43	5.82	3.85	2.27	
Roosevelt	1.76	2.43	4.57	5.93	8.51	10.84	11.51	9.26	6.25	3.98	2.47	1.02	68.54
Wilcox		4.79	8.07	10.17	11.68	9.94	10.04	7.93	6.90	5.87	4.53	3.00	
Yuma Citrus	3.60	5.10	8.98	10.55	13.76	15.61	18.41	15.83	12.46	8.83	6.45	4.37	123.95
Yuma Valley	3.35	4.90	7.99	9.42	11.12	12.29	14.62	12.49	10.21	7.38	5.11	3.55	102.44
CALIFORNIA													
Alvarado (near)	1.49	2.20	3.77	5.26	6.44	7.09	7.37	6.55	5.34	3.29	2.04	1.45	52.30
Chula Vista	2.72	3.57	5.16	5.91	6.31	6.65	7.00	7.02	5.14	4.13	3.87	2.35	59.83
Fall River Mills			2.58	5.51	5.69	9.98	12.80	11.22	7.41	5.03			
Lodi	.92	2.29	4.04	6.78	8.52	11.04	13.38	11.70	8.01	5.72	2.18	.71	75.29
Oakdale (near)	1.30	2.01	3.06	5.40	7.42	11.47	14.87	12.20	8.16	6.72	2.50	.86	75.97
Tahoe (land pan)						4.83	6.31	6.17	4.72	2.66			
HAWAII													
Hoseae (Upper)	4.30	4.70	5.63	6.29	6.21	6.13	6.35	6.72	6.57	5.24	4.50	4.51	67.15
Pahala	4.73	3.72	5.00	4.62	5.59	5.31	6.69	6.39	6.84	5.12	3.67	5.76	63.44
IDAHO													
Arrowrock					4.52	7.93	10.39	9.11	5.29				
Milner Dam					5.42	8.63	9.99	8.49	6.26	3.84	1.24		
IOWA													
Ames [2]				5.04	5.09	11.65	9.19	6.00	6.45	3.22			
KANSAS													
Tribune				8.18	10.17	16.19	15.72		10.48				
MISSOURI													
Lakeside	2.52		3.48	4.26	6.06	8.94	9.36	6.36	5.28	3.89	3.02	1.72	
NEBRASKA													
Lincoln				6.17	7.54	13.94	9.64	7.21	7.92	5.41			
MONTANA													
Agriculture College				3.24	5.39	8.97	11.39	7.53	5.64	3.65			
Malta				4.32	6.48	9.66	11.63		4.64				
Sherburne Lake					7.47	8.03	10.60	7.90	4.28				
Valier					5.56	7.15	9.68	8.63	5.73				
NEVADA													
Lahontan						10.35							
Lamoille						9.26	10.89	9.94	7.26	5.37			
NEW MEXICO													
Agricultural College	2.75	4.16	9.41	10.28	14.15	12.28	13.54	11.08	9.79	6.20	4.14	3.54	101.32
Elephant Butte Dam	2.34	3.18	7.22	8.29	11.77	9.93	13.10	11.17	9.89	6.65	4.51	3.84	91.89
Santa Fe			4.35	4.90	7.66	8.36	8.89	7.65	6.39	3.91			
NEW YORK													
Ithaca					4.89	5.95	6.62	4.53	2.87	2.41			
Albany					5.21	6.74	6.92	5.10	3.47	2.55			
NORTH CAROLINA													
Chapel Hill	1.69	2.08	3.63	4.43	6.25	7.65	6.68	5.09	4.51	3.72	2.05	1.56	49.34

[1] Evaporation reports not received.

[2] Opened Apr. 1933.

Monthly and annual evaporation at class A stations (in inches and hundredths) for 1933—Continued

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
OHIO													
Ohio State University				3.34	3.83	6.29	5.60	4.80	3.25	1.79			
Wooster					4.35	6.56	6.90	5.61	3.64	2.11			
OREGON													
Corvallis				3.43	2.48	4.78	7.35	6.28	2.75				
Fish Lake							7.62	6.69	3.69				
Warm Springs				5.81	7.07	11.95	15.65	11.75	8.05				
PUERTO RICO													
San Juan	4.82	6.49	7.34	7.61	7.09	7.22	8.27	6.70	5.43	5.09	4.40	5.36	75.82
TEXAS													
Dilley	2.46	2.40	5.61	8.09	9.51	10.37	11.37	8.77	6.62	5.86	3.80	3.80	78.68
Austin	2.25	2.02	4.68	6.43	7.92	8.97	9.47	8.17	6.46	5.25	3.17	3.27	68.07
UTAH [3]													
Myton						10.56	8.86	7.74	6.33				
Piute Dam						12.50	10.51	10.51	8.76				
Utah Lake				5.40	6.76	11.91	10.88	9.83	8.68	5.53			
VIRGIN ISLANDS													
St. Croix	4.48	5.53	6.28	6.56	6.61	6.36	6.31	6.43	5.58	5.08	4.35	4.05	67.62
WASHINGTON													
Lake Kachess						4.50	6.14	4.88	2.48				
Walla Walla			2.42	5.27	5.10	7.70	11.33	9.84	5.21	3.15			
WEST VIRGINIA													
Clarksburg				4.01	4.21	6.16	6.25	5.27	4.16	2.06			

[3] Evaporation station at Salt Lake Airport closed May 31, 1933; and station at Sevier Bridge Dam closed Jan. 20, 1933.

PART III. ANNUAL METEOROLOGICAL SUMMARIES FOR ONE HUNDRED AND EIGHTY STATIONS DURING 1933

EXPLANATION OF THE TABLES

For a detailed account of the method of reducing the observed barometric pressures the reader is referred to the report on the barometry of the United States, Canada, and the West Indies, to be found in the Annual Report of the Chief of the Weather Bureau, 1900-1901, volume II.

Pressure.—Two mercurial barometers of the well-known Fortin cistern pattern, or a modified form thereof, are furnished each station. One of these, the station barometer, is used in making all regular observations; the other, the extra, is held in reserve for use in case of emergency, except that monthly comparative readings are made on the two instruments for purpose of check upon the deterioration of either instrument.

Each barometer, before issue to station, is compared with the substandard at Washington, and a certificate of correction card furnished showing the several constant corrections that must be applied to the readings of the instrument in order to derive therefrom the actual pressure of the air in standard units at a specified elevation. Each observation as made, therefore, is corrected by the application of the following:

(1) Correction for scale error, capillarity, etc.

(2) Correction to standard gravity, comprising both latitude and altitude terms.

(3) Correction for removal—a correction applied if any change has been made in the elevation of the barometer, to reduce the readings to the elevation adopted in 1900. (However, at a very few stations the elevation of 1900, or the original elevation of a station opened since 1900, has been replaced as the "station elevation" by an actual elevation since established.)

Corrections 1, 2, and 3 are constant for any one station and are combined in a single sum.

(4) Correction for the temperature of the scale and mercurial column.

In the pressure columns of this part the values presented are those at the station elevations of the barometer cisterns, which are at various heights above the ground level, but usually less than 100 feet. On the other hand, daily weather maps and most other pressure data issued by the Bureau indicate sea-level pressures.

The monthly mean pressures given in the summary are deduced from the corrected observations of pressure at 8 a.m. and 8 p.m., seventy-fifth meridian time, by taking the mean thereof and applying thereto a correction to reduce to the mean of 24-hourly observations. At several Alaska stations and at Honolulu the mean is printed uncorrected. The extremes are determined, wherever possible, from the barograph trace.

Temperature.—The temperature of the air at 8 a.m. and 8 p.m., seventy-fifth meridian time, and at noon, local time, is obtained by the use of the whirled dry-bulb thermometer. The latter is a part of the whirled psychrometer and is mounted in the thermometer shelter adopted in 1885. The means of these observations are given in the columns headed 8 a.m., 8 p.m., and noon, respectively.

The maximum temperature is obtained by the use of the Negretti and Zambra mercurial thermometer, having a constriction in the bore of the tube below the scale. The minimum temperature is obtained by the use of the ordinary Rutherford alcohol minimum thermometer. Both instruments are read and the values recorded twice daily, at 8 a.m. and 8 p.m., seventy-fifth meridian time, and are set twice daily at 8 a.m. and 8 p.m. The extremes given in the summaries are for the civil day, midnight to midnight, normal standard time. The monthly means have been obtained by dividing the sum of the mean maximum and mean minimum temperatures by 2.

Moisture.—The monthly means of the dew point, relative humidity, and vapor pressure are given as computed directly from the original daily observations.

The rain gages used at the regular Weather Bureau stations have a circular catchment area of about 8 inches diameter, and the snow, hail, or sleet caught within them is melted and measured as water. The rain gage proper is set within an enclosing cylinder, which serves as an overflow attachment in the case of heavy rains and as a snow gage in the winter season.

The sum total of the depth of rain and melted snow is measured to within 0.01 inch at 8 a.m. and 8 p.m., seventy-fifth meridian time, daily. The total precipitation is determined from the amounts recorded daily, midnight to midnight, standard of time in local use.

The snow caught and retained in the gage is melted and measured as water. No correction is applied for snow that is lost out of the gage by the eddying action of the wind; consequently in some cases the record is less that would be given if the observer had measured cylinders of snow cut from the spots representing the average snowfall on the ground. When it is known that the catch of the snow gage is markedly at fault, an independent ground measurement is made and used as the official record. The loss of both rain and snow

caused by high winds, from gages exposed on the roofs of tall buildings in which some of the regular stations of the Weather Bureau are located is undoubtedly larger than is the case at the cooperative stations where the gages are located in the open country and near the ground, but this loss does not appear to be sufficient to make the monthly sums derived from these two classes of stations wholly inconsistent with each other.

By the maximum precipitation in 24 hours is meant the greatest measurement for any 24 consecutive hours; it does not refer to the rate of rainfall for 24 hours, as deduced from short, heavy showers.

The number of days with precipitation amounting to 0.01 and 0.04 inch, respectively, relates to the rainfall from midnight to midnight, standard of time in local use. No record is made of deposits of dew.

The total snowfall column presents the depth as unmelted snow. The month in this instance runs from the last observation of the preceding month to the last of the month itself.

The cloudiness recorded in the summaries is derived from personal observations. The proportion of sky covered by clouds is estimated by the observer at 8 a.m., 8 p.m., and noon, on a scale of 0–10. These observations cannot be combined into a daily mean in the present state of our knowledge of the diurnal variations in cloudiness, and are therefore given separately. In order, however, to obtain a general record of the sunshine as affecting the growth of plants, the observer keeps some memoranda of the cloudiness, sufficient to enable him at the end of the day to determine the average cloudiness on the scale given above from sunrise to sunset; the resulting average for each month is given in the column of "daylight" cloudiness.

The number of days that were clear, as given under "Number of days, etc.", includes those on which the daylight cloudiness was 0, 1, 2, or 3 tenths; the days partly cloudy were those on which the daylight cloudiness was 4, 5, 6, or 7 tenths; the cloudy days were those having 8, 9, or 10 tenths of cloudiness during daylight.

Wind.—The direction and velocity of the wind are recorded at nearly all the stations on what is known as the "triple register." On these instruments the direction of the wind is recorded every minute. The maximum velocities given are for 5-minute periods

Beginning with January 1, 1932, the Weather Bureau began the practice of applying corrections to all records of wind velocity obtained from rotating cup anemometers. Correction tables for both 3-cup and 4-cup anemometers have been made available to stations and hence values furnished to the public are on a comparable basis, regardless of the particular instrument employed.

Number of days.—The number of days with hail includes all of those on which at least a trace of hail fell.

The number of days with dense fog includes all of those on which fog was dense enough to obscure objects 1,000 feet distant. Fog of less density is recorded as light.

Time.—8 a.m. and 8 p.m., in this part, indicate seventy-fifth meridian time, except in a few instances, where footnotes specify otherwise.

References and abbreviations.—H_b=height of barometer cistern above mean sea level on January 1, 1900, or when the station was established, if it was established since January 1, 1900, that being the elevation to which all previous readings have been reduced. It is designated as the "station, or adopted elevation." At almost all stations where a change has been made in the elevation of the barometer since January 1, 1900, a corresponding correction has been applied to the observed reading, thereby reducing all values to the "station, or adopted elevation." The actual elevation and the station, or adopted elevation, are identical, except at stations where the barometer has been moved since January 1, 1900; h_t=height of thermometer above ground; h_r=height of rain gage above ground; h_a=height of anemometer above ground.

ANNUAL METEOROLOGICAL SUMMARIES, 1933

Annual meteorological summaries for the year ending Dec. 31, 1933

ABILENE, TEX.

[ϕ=32°23′ N.; λ=99°40′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.20	28.66	27.86	43.8	59.5	55.8	63.6	40.5	52.0	80	26	35	33	34	71	40	46	0.220	0.214	0.210	0.34	0.34	0.0	5.1	5.8	4.5	5.3
February	28.27	28.72	27.76	36.0	50.9	50.6	57.7	32.3	45.0	84	−5	28	27	27	73	43	43	.173	.161	.160	1.41	.64	1.3	6.4	5.5	5.8	6.2
March	28.15	28.54	27.80	49.4	66.1	65.3	71.9	47.1	59.5	89	31	40	36	36	71	37	37	.276	.240	.230	.70	.42	T	5.8	6.4	6.3	6.2
April	28.05	28.41	27.58	53.9	74.0	73.5	79.7	51.5	65.6	93	38	36	34	30	54	25	22	.236	.215	.178	.43	.41	.0	3.8	3.1	3.4	3.4
May	28.04	28.31	27.50	64.8	80.9	80.9	86.2	62.5	74.4	98	48	54	53	52	72	44	43	.462	.442	.427	7.85	3.44	.0	4.7	4.6	3.5	4.0
June	28.17	28.46	27.98	70.4	89.1	89.4	93.2	68.6	80.9	101	56	59	58	54	69	36	32	.515	.490	.431	.32	.32	.0	3.4	4.2	3.0	3.5
July	28.13	28.32	27.93	74.5	91.7	92.3	97.5	72.7	85.1	109	62	64	62	60	71	39	37	.609	.561	.532	.94	.41	.0	3.0	4.5	3.3	3.8
August	28.15	28.34	27.95	73.7	91.0	89.4	95.8	72.9	84.4	101	66	64	63	60	73	42	40	.603	.588	.525	.60	.30	.0	5.9	4.6	4.0	5.0
September	28.11	28.32	27.86	72.6	90.1	86.8	94.0	72.3	83.2	98	68	66	64	62	79	43	44	.636	.603	.555	.40	.34	.0	2.7	4.1	2.3	3.2
October	28.22	28.49	27.95	59.8	79.4	74.5	83.5	58.7	71.1	93	49	51	52	50	74	40	44	.395	.403	.375	.39	.37	.0	3.1	2.1	2.2	2.6
November	28.31	28.66	27.89	48.5	65.0	59.7	69.5	45.7	57.6	82	35	41	40	41	78	45	53	.275	.265	.266	2.70	1.92	.0	3.9	2.9	1.9	3.1
December	28.23	28.56	27.94	43.0	59.2	54.8	64.7	39.2	52.0	83	19	28	30	30	59	38	43	.167	.178	.174	1.64	1.42	.3	4.0	4.0	2.8	3.9
Year	28.17	28.72	27.50	57.5	74.7	72.8	79.8	55.3	67.6	109	−5	47	46	45	70	39	40	.381	.363	.339	17.72	3.44	1.6	4.3	4.3	3.6	4.2

ALBANY, N.Y

[ϕ=42°39′ N.; λ=73°45′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	29.91	30.57	29.30	30.5	36.5	36.0	41.9	27.2	34.6	56	5	23	23	26	73	58	66	0.127	0.128	0.146	1.49	0.75	3.7	5.9	5.6	6.4	6.2
February	29.88	30.58	29.29	26.5	31.9	30.4	36.4	21.8	29.1	57	3	19	20	19	72	59	61	.115	.113	.109	2.52	1.21	22.7	5.6	5.4	5.8	6.0
March	29.85	30.30	28.91	30.1	35.3	34.5	39.1	27.0	33.0	57	8	22	25	26	72	67	69	.128	.137	.140	4.02	.92	7.6	6.3	7.3	7.4	7.1
April	29.89	30.40	29.29	44.1	51.8	51.3	57.2	39.9	48.6	79	29	35	35	36	72	56	58	.213	.217	.222	3.92	1.55	2.7	7.0	6.3	6.1	6.5
May	29.84	30.18	29.42	58.0	66.8	64.6	72.2	51.7	62.0	87	37	49	49	49	72	57	59	.369	.390	.364	2.41	.71	.0	5.1	5.6	6.8	5.9
June	29.81	30.08	29.47	66.4	76.2	74.1	82.1	60.6	71.4	100	43	60	63	58	79	64	59	.537	.608	.516	2.21	.73	.0	5.4	4.3	5.9	5.2
July	29.89	30.27	29.50	68.5	80.1	77.5	85.6	63.5	74.6	100	54	61	60	60	76	52	57	.537	.530	.529	1.83	.92	.0	6.0	4.9	5.3	5.5
August	29.90	30.24	29.36	66.6	75.3	72.3	79.6	62.3	71.0	101	51	59	60	61	78	61	70	.514	.532	.550	5.95	1.66	.0	5.2	6.0	5.7	5.7
September	29.83	30.20	29.30	60.2	69.3	66.1	73.2	56.4	64.8	83	41	56	58	57	87	69	74	.466	.498	.483	6.28	1.66	.0	5.5	6.6	5.0	6.0
October	30.02	30.54	29.47	46.0	55.2	51.8	59.6	42.3	51.0	72	27	40	40	41	81	58	68	.263	.262	.275	3.14	1.21	.0	5.2	4.9	5.0	5.2
November	29.86	30.36	29.11	31.7	37.4	36.0	42.4	27.5	35.0	67	9	25	24	27	74	58	68	.140	.140	.154	1.02	.27	6.7	6.9	6.3	6.7	6.7
December	30.02	30.86	29.48	21.6	25.3	25.0	32.7	16.7	24.7	47	−21	16	17	17	76	70	73	.109	.114	.114	3.39	1.04	17.2	7.9	7.0	6.5	7.2
Year	29.89	30.86	28.91	45.8	53.4	51.6	58.5	41.4	50.0	101	−21	39	40	40	76	61	65	.293	.306	.300	38.18	1.66	60.6	6.0	5.8	6.0	6.1

ALBUQUERQUE, N.MEX.

[ϕ=35°05′ N.; λ=106°43′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	25.04	25.35	24.72	22.9	38.5	39.1	45.2	19.7	32.4	54	10	16	17	18	74	40	40	0.090	0.094	0.096	0.08	0.05	0.6	3.6	4.4	3.5	4.2
February	25.05	25.43	24.54	21.3	40.4	41.0	47.2	16.6	31.9	63	−4	8	6	7	53	23	25	.064	.064	.065	.01	.01	T	2.4	3.8	3.8	3.5
March	25.00	25.25	24.61	33.2	57.1	59.4	64.0	30.4	47.2	76	22	18	15	10	52	20	15	.098	.087	.070	.09	.09	.9	3.9	3.5	5.0	4.2
April	24.94	25.35	24.45	35.2	59.3	60.1	65.1	32.2	48.6	76	20	18	19	14	50	22	20	.106	.107	.089	.39	.16	.6	3.7	4.3	5.0	4.2
May	24.94	25.18	24.47	46.0	70.3	72.3	76.4	43.1	59.8	89	33	25	22	18	45	18	14	.139	.120	.102	.23	.22	.0	2.1	2.8	4.0	3.4
June	25.07	25.33	24.83	60.1	81.9	83.6	87.0	57.5	72.2	97	44	43	42	38	57	29	25	.302	.287	.252	3.81	2.18	.0	4.9	3.3	5.7	4.5
July	25.09	25.32	24.84	65.6	85.3	84.9	91.6	64.0	77.8	98	58	54	51	50	68	32	34	.425	.379	.367	2.04	.71	.0	2.9	2.0	6.3	3.6
August	25.09	25.25	24.90	61.6	81.8	79.9	86.8	59.9	73.4	93	53	55	54	52	79	39	42	.433	.421	.401	2.42	.77	.0	3.4	3.1	6.6	4.5
September	25.04	25.28	24.77	58.2	80.4	79.9	85.3	56.3	70.8	92	50	49	50	47	73	36	35	.357	.368	.337	1.12	.30	.0	2.2	2.4	2.9	2.5
October	25.12	25.35	24.83	44.6	69.3	65.5	74.1	42.2	58.2	79	34	35	36	36	71	32	37	.219	.223	.225	.24	.07	.0	2.5	2.6	3.2	2.9
November	25.17	25.53	24.72	31.8	53.7	47.6	59.5	28.7	44.1	69	24	26	29	30	75	40	52	.140	.158	.165	.91	.31	.2	1.9	2.8	3.1	2.9
December	25.14	25.39	24.85	26.7	48.6	42.2	54.6	23.1	38.8	65	16	20	24	23	73	37	45	.104	.125	.120	.05	.05	.2	1.5	2.8	3.5	2.5
Year	25.06	25.53	24.45	42.3	63.9	63.0	69.7	39.5	54.6	98	−4	31	30	29	64	31	32	.206	.203	.191	11.39	2.18	2.5	2.9	3.2	4.4	3.6

ALPENA, MICH.

[ϕ=45°05′ N.; λ=83°30′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	29.23	29.77	28.38	25.5	30.7	29.1	35.9	20.1	28.0	50	2	23	23	24	89	73	81	0.126	0.126	0.132	1.17	0.51	5.7	7.0	7.0	5.3	6.9
February	29.26	29.70	28.61	16.1	23.0	20.6	27.5	12.0	19.8	46	−9	13	15	15	88	69	78	.084	.092	.093	1.50	.57	15.0	5.9	6.5	5.7	6.1
March	29.33	29.93	28.52	24.7	29.9	28.8	33.3	21.5	27.4	49	4	21	23	23	85	73	78	.117	.125	.126	1.53	.61	5.2	7.3	7.3	5.6	7.0
April	29.26	29.84	28.65	37.0	42.1	39.6	47.0	31.7	39.4	73	25	31	30	31	78	66	71	.172	.173	.174	3.41	1.03	1.1	6.2	7.5	6.4	7.0
May	29.29	29.64	28.81	51.2	55.3	52.6	61.2	44.1	52.6	85	33	43	43	42	76	65	70	.300	.292	.284	3.51	1.00	.0	5.8	5.1	4.9	5.2
June	29.29	29.62	29.02	63.4	69.7	66.6	75.3	54.8	65.0	100	40	55	56	55	76	64	63	.452	.467	.456	2.02	1.03	.0	5.2	3.5	3.0	3.7
July	29.36	29.84	29.06	67.6	76.9	71.7	80.6	59.0	69.8	98	48	58	59	59	73	55	66	.493	.504	.507	2.10	1.05	.0	4.0	3.8	3.9	3.9
August	29.37	29.70	28.98	61.8	72.9	67.3	75.4	54.2	64.8	86	45	55	56	56	82	56	68	.455	.456	.455	.76	.29	.0	2.4	3.7	2.1	3.1
September	29.25	29.63	28.76	58.4	67.2	61.7	70.0	52.8	61.4	86	39	53	52	55	84	62	80	.419	.415	.451	3.77	.93	.0	4.7	4.7	4.0	4.7
October	29.37	29.79	28.91	42.7	49.7	46.3	53.5	38.1	45.8	74	21	38	39	39	83	68	76	.237	.247	.250	3.11	.72	2.0	6.0	7.8	6.0	7.3
November	29.26	29.92	28.70	27.3	32.4	30.0	36.8	22.5	29.6	76	−1	23	24	23	83	71	75	.131	.138	.133	1.59	.27	13.7	7.9	7.8	7.3	8.2
December	29.40	30.24	28.80	20.5	23.8	22.3	28.2	15.8	22.0	45	−14	17	18	18	85	76	82	.105	.108	.111	2.85	.57	28.2	7.5	7.0	7.2	7.8
Year	29.31	30.24	28.38	41.4	47.8	44.7	52.1	35.5	43.8	100	−14	36	36	37	82	66	74	.258	.262	.264	27.32	1.05	70.9	5.8	6.0	5.1	5.9

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

ABILENE, TEX.

[H_b=1,738 ft.; h_t=10 ft.; h_r=3 ft.; h_a=52 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																										
January	9.9	S.	34	W.	2	2	3	2	3	30	9	8	4	1	13	4	14	2	1	0	0	0	1	0	0	0	6	1	0
February	10.3	S.	25	SW.	0	10	2	4	5	15	8	4	8	0	7	7	14	5	4	3	2	0	0	0	2	0	10	0	0
March	11.6	S.	30	S.	0	4	4	2	10	16	8	9	8	1	6	13	12	3	2	1	0	1	1	0	0	6	1	1	0
April	11.5	S.	35	SW.	2	8	2	2	1	24	7	10	5	1	18	7	5	3	1	0	0	2	0	0	0	2	0	4	0
May	10.8	S.	32	SE.	1	6	3	6	9	26	3	7	2	0	16	9	6	7	7	0	0	4	0	0	0	11	0	8	0
June	10.4	S.	25	S.	0	0	4	3	16	34	3	0	0	0	17	10	3	2	2	0	0	0	0	0	0	21	0	2	0
July	8.5	S.	27	SW.	0	5	10	6	11	21	6	1	1	1	16	12	3	6	6	0	0	0	0	0	0	31	0	6	0
August	8.3	S.	21	S.	0	2	4	8	17	22	5	1	3	0	12	10	9	6	3	0	0	0	0	0	0	26	0	6	0
September	9.4	S.	22	S.	0	3	3	5	11	35	1	1	1	0	16	11	3	3	2	0	0	0	0	0	0	27	0	2	0
October	9.1	S.	25	SW.	0	8	4	9	14	15	4	2	6	0	16	10	2	2	1	0	0	0	0	0	0	2	0	2	0
November	9.1	S.	30	SW.	0	11	2	5	4	18	7	5	8	0	19	6	5	5	3	0	0	1	1	0	0	0	0	2	0
December	9.1	S.	26	S.	0	7	3	3	5	20	9	8	7	0	16	8	7	5	4	1	1	0	0	0	0	0	7	2	0
Year	9.8	S.	35	SW.	5	66	44	55	106	276	70	56	53	4	175	107	83	49	36	5	3	8	3	0	2	120	24	36	0

ALBANY, N.Y.

[H_b=97 ft.; h_t=107 ft.; h_r=100 ft.; h_a=115 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.8	S.	27	SE.	0	13	0	0	3	27	5	7	7	0	8	12	13	7	5	7	2	0	7	0	3	0	24	1	0
February	8.6	S.	23	SE.	0	8	0	0	1	27	0	14	6	0	6	12	10	9	6	15	6	0	9	0	9	0	24	0	0
March	8.4	N.	22	W.	0	17	3	2	1	10	6	9	14	0	7	6	18	16	13	17	10	0	10	0	3	0	22	1	1
April	8.0	S.	23	SE.	0	11	2	1	1	27	2	8	8	0	7	9	14	13	10	4	1	0	10	0	0	0	2	0	0
May	8.0	S.	24	SE.	0	10	2	5	0	26	5	7	7	0	7	14	10	14	11	0	0	1	8	1	0	0	0	2	4
June	7.6	S.	22	N.	0	13	2	4	2	22	0	9	8	0	6	20	4	9	6	0	0	1	10	0	0	4	0	7	3
July	7.4	S.	24	E.	0	13	1	2	0	34	4	4	4	0	9	13	9	11	7	0	0	0	7	1	0	10	0	10	2
August	7.4	S.	24	S.	0	18	4	4	0	29	0	5	2	0	9	9	13	16	15	0	0	1	9	0	0	1	0	3	2
September	6.0	S.	16	NW.	0	9	0	1	3	26	3	6	12	0	7	12	11	15	12	0	0	1	16	2	0	0	0	6	5
October	7.5	S.	24	S.	0	11	2	2	0	24	3	8	12	0	11	11	9	10	6	0	0	0	14	0	0	0	3	1	2
November	6.2	S.	24	SE.	0	11	0	1	1	24	5	9	9	0	5	8	17	12	7	18	6	0	9	1	3	0	23	0	0
December	7.8	S.	21	NW.	0	11	3	3	1	22	1	7	14	0	6	5	20	15	14	16	9	0	14	0	16	0	27	0	0
Year	7.8	S.	27	SE.	0	145	19	25	13	298	34	93	103	0	86	131	148	147	112	77	34	4	123	5	28	15	125	31	19

ALBUQUERQUE, N.MEX.

[H_b=4,972 ft.; h_t=5 ft.; h_r=3 ft.; h_a=39 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	5.5	NE.	35	NW.	1	9	20	0	3	5	12	8	4	1	15	7	9	3	1	11	2	0	2	0	0	0	30	0	0
February	9.6	N.	36	W.	3	15	6	1	6	5	5	4	14	0	16	8	4	1	0	3	0	0	0	0	3	0	26	0	0
March	10.7	NW.	41	W.	4	13	3	0	4	8	5	12	17	0	15	11	5	2	1	0	0	0	0	0	0	0	24	0	0
April	11.1	W.	41	S.	6	14	3	2	3	8	3	15	12	0	16	6	8	5	4	4	2	0	1	0	0	0	12	0	0
May	11.3	W.	49	W.	9	14	3	3	4	6	5	15	12	0	16	13	2	2	1	0	0	1	0	0	0	0	0	1	0
June	8.8	SE.	42	S.	4	16	6	3	11	6	2	10	6	0	12	13	5	12	10	0	0	0	0	0	0	0	14	0	8
July	8.3	SE.	36	NW.	5	17	6	3	10	9	5	3	8	1	15	15	1	11	8	0	0	0	0	0	0	0	23	0	14
August	7.2	N.	35	NW.	2	16	7	0	7	11	8	4	8	1	11	18	2	12	12	0	0	2	0	0	0	9	0	16	0
September	7.3	SE.	27	SE.	0	14	4	5	7	11	3	5	11	0	20	8	2	8	5	0	0	0	1	0	0	5	0	7	0
October	7.1	N.	29	NW.	0	16	4	1	6	6	5	7	17	0	19	7	5	5	4	0	0	0	0	0	0	0	0	5	0
November	6.5	N.	29	S.	0	18	5	2	0	3	12	10	10	0	19	6	5	6	5	1	1	0	1	1	0	0	26	0	0
December	6.6	N.	43	W.	2	14	3	1	1	1	9	14	19	0	20	10	1	1	1	2	1	0	0	0	0	0	29	0	0
Year	8.4	N.	49	W.	36	176	70	21	62	79	74	107	138	3	194	122	49	68	52	21	6	3	5	1	3	51	147	51	0

ALPENA, MICH.

[H_b=609 ft.; h_t=13 ft.; h_r=4 ft.; h_a=89 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.6	NW.	34	NW.	4	3	3	3	5	11	16	9	12	0	5	11	15	12	6	14	9	0	1	1	10	0	31	0	1
February	13.1	NW.	35	NW.	2	4	1	0	4	9	10	9	19	0	7	10	11	11	5	18	10	0	0	0	17	0	28	0	1
March	13.4	NW.	37	NW.	1	7	10	2	8	5	4	5	21	0	6	8	17	13	10	21	10	0	2	2	10	0	30	0	0
April	11.5	NW.	31	E.	0	5	9	10	9	2	7	5	13	0	5	7	18	14	12	6	3	0	4	2	0	0	19	2	0
May	10.8	SE.	34	W.	1	5	12	7	13	8	3	4	10	0	10	13	8	12	7	0	0	0	4	2	0	0	6	7	0
June	9.1	SE.	41	NW.	2	4	3	4	13	12	4	3	12	0	13	14	3	9	9	0	0	0	2	3	0	5	0	7	0
July	8.8	NW.	32	SW.	1	3	3	6	8	13	3	10	16	0	13	14	4	9	7	0	0	1	0	0	0	5	0	9	0
August	9.4	NW.	27	NW.	0	7	5	4	7	5	4	6	24	0	19	10	2	5	4	0	0	0	2	1	0	0	0	4	0
September	10.9	NW.	27	SW.	0	3	8	5	4	11	9	6	14	0	10	12	8	16	12	0	0	1	2	0	0	0	0	7	1
October	11.3	NW.	37	S.	1	5	2	5	4	10	13	12	11	0	2	13	16	13	12	6	2	0	2	2	1	0	0	1	1
November	11.9	NW.	31	NW.	0	6	2	2	3	8	10	10	19	0	1	10	19	17	14	21	14	0	2	2	8	0	26	0	0
December	11.6	NW.	37	SE.	4	4	2	4	4	9	10	9	20	0	2	11	18	20	14	22	16	1	4	4	21	0	29	1	0
Year	11.1	NW.	41	NW.	16	56	60	52	82	103	93	93	191	0	93	133	139	151	112	108	64	3	25	19	67	10	169	38	4

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

AMARILLO, TEX.

[ϕ=35°13′ N.; λ=110°50′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	26.19	26.60	25.85	33.6	51.4	47.1	56.8	30.8	43.8	66	21	19	19	18	52	28	31	0.104	0.107	0.100	0.02	0.02	0.0	2.8	3.0	2.7	3.2
February	26.26	26.61	25.77	26.5	44.8	42.9	51.1	22.7	36.9	74	−8	13	11	10	56	29	31	.081	.079	.076	.29	.15	2.8	4.1	3.4	4.2	4.1
March	26.21	26.60	25.79	39.2	58.9	57.5	64.8	36.8	50.8	82	26	24	23	22	54	26	27	.134	.128	.123	.56	.47	T	4.2	3.8	4.0	4.2
April	26.13	26.50	25.71	43.5	63.2	63.0	70.2	41.4	55.8	85	24	26	26	24	53	28	26	.146	.149	.134	.64	.35	.1	3.1	3.0	3.7	3.5
May	26.14	26.50	25.70	54.7	75.3	74.8	80.2	52.8	66.5	95	40	41	37	35	64	29	30	.280	.241	.222	2.01	.72	.0	2.8	2.9	3.5	3.0
June	26.27	26.58	26.06	66.7	88.5	88.1	93.0	65.3	79.2	104	56	49	46	44	54	24	24	.354	.322	.304	.05	.05	.0	3.0	2.4	3.8	3.1
July	26.29	26.54	26.11	70.6	90.6	88.3	95.1	69.5	82.3	104	63	57	54	54	65	31	35	.481	.428	.436	.66	.37	.0	3.2	4.2	4.5	4.2
August	26.29	26.45	26.02	66.8	83.8	82.8	88.6	65.7	77.2	101	60	59	58	57	78	45	47	.508	.489	.477	6.02	1.90	.0	5.2	4.2	5.0	4.7
September	26.23	26.50	25.99	65.0	82.6	81.5	87.7	63.7	75.7	97	55	57	55	54	77	40	41	.476	.444	.431	.88	.83	.0	3.3	2.6	2.0	2.8
October	26.32	26.66	26.05	50.4	69.6	67.3	75.9	49.0	62.4	86	38	42	41	42	72	38	42	.273	.268	.274	.49	.48	.0	3.5	2.7	2.0	3.1
November	26.37	26.74	25.89	39.4	58.0	53.6	63.2	37.6	50.4	78	24	29	31	30	67	40	45	.161	.176	.175	.58	.42	T	3.4	2.5	3.1	3.3
December	26.28	26.62	25.96	36.5	54.7	49.6	61.6	33.1	47.4	80	15	22	22	21	56	30	33	.121	.118	.111	.02	.02	.0	2.5	1.6	1.5	2.1
Year	26.25	26.74	25.70	49.4	68.4	66.4	74.0	47.4	60.7	104	−8	36	35	34	62	32	34	.260	.246	.239	12.22	1.90	2.9	3.4	3.0	3.3	3.4

ASHEVILLE, N.C.

[ϕ=35°36′ N.; λ=82°32′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	27.72	28.09	27.03	38.0	51.1	46.7	55.8	35.9	45.8	72	18	35	43	41	90	75	82	0.219	0.295	0.275	1.54	0.82	0.4	4.7	6.0	5.4	5.6
February	27.71	28.15	27.26	33.8	44.5	40.6	49.7	28.9	39.3	72	0	30	37	35	87	76	80	.183	.236	.224	2.90	.95	.8	5.8	6.9	6.7	6.1
March	27.66	27.96	27.06	39.5	52.0	48.3	57.7	35.1	46.4	79	22	34	39	39	80	63	71	.212	.251	.252	2.29	.66	T	4.9	5.2	6.0	5.2
April	27.60	27.98	27.21	48.1	62.0	57.6	66.8	42.9	54.8	81	32	40	42	42	75	50	58	.255	.275	.276	2.59	1.10	.0	4.8	5.6	5.4	5.4
May	27.68	27.96	27.34	62.0	75.1	69.1	79.8	55.7	67.8	90	44	56	55	56	81	51	66	.453	.438	.463	4.23	1.51	.0	3.8	6.0	6.2	5.3
June	27.73	27.94	27.56	66.6	80.7	75.5	85.1	59.5	72.3	97	42	58	56	58	75	46	56	.502	.481	.499	3.28	1.77	.0	4.2	4.9	5.9	5.0
July	27.76	27.97	27.50	67.2	80.2	74.2	84.8	62.1	73.4	91	46	62	61	63	84	54	69	.568	.546	.579	3.50	.95	.0	5.9	6.4	6.2	6.1
August	27.73	27.98	27.45	65.4	77.6	71.5	82.3	62.0	72.2	90	54	62	63	64	90	61	79	.565	.576	.606	4.34	.92	.0	7.0	6.6	7.7	6.5
September	27.71	27.89	27.50	63.9	79.6	71.9	83.0	60.6	71.8	89	42	60	59	62	88	52	71	.533	.523	.562	1.79	1.08	.0	5.1	4.9	5.8	4.7
October	27.78	28.05	27.35	47.3	65.9	58.5	69.7	44.2	57.0	84	30	44	44	46	87	48	65	.296	.309	.325	1.61	.95	.0	3.4	2.7	2.5	4.0
November	27.72	28.10	27.25	37.6	53.6	47.5	57.2	33.9	45.6	74	15	30	32	34	76	46	61	.190	.205	.214	1.19	.53	T	3.6	4.0	3.4	4.2
December	27.78	28.19	27.38	40.7	52.9	48.2	57.5	36.2	46.8	71	17	35	36	37	81	55	66	.222	.233	.228	1.04	.46	T	6.0	5.2	4.5	5.6
Year	27.72	28.19	27.03	50.8	64.6	59.1	69.1	46.4	57.8	97	0	46	47	48	83	56	69	.350	.364	.375	30.30	1.77	1.2	4.9	5.4	5.5	5.3

ATLANTA, GA.

[ϕ=33°45′ N.; λ=34°23′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.87	29.25	28.27	45.1	53.8	52.5	57.7	42.8	50.2	73	25	39	40	41	79	61	67	0.255	0.272	0.282	2.43	1.17	0.0	5.3	6.5	4.9	6.1
February	28.88	29.33	28.35	41.0	46.2	46.0	52.3	36.4	44.4	72	6	35	36	36	80	70	70	.229	.232	.233	5.66	1.77	T	7.0	7.8	5.5	7.1
March	28.81	29.15	28.23	45.2	56.8	56.2	62.5	42.3	52.4	79	27	36	36	38	71	48	52	.238	.245	.248	4.42	2.44	T	4.8	4.3	3.6	4.3
April	28.72	29.06	28.40	53.7	64.5	62.9	69.2	50.0	59.6	79	41	45	45	48	74	52	60	.312	.317	.341	2.47	.98	.0	5.1	5.9	5.0	5.4
May	28.77	29.05	28.47	69.0	79.3	77.4	83.5	64.7	74.1	91	53	60	58	59	74	51	54	.522	.497	.503	3.22	1.30	.0	4.2	5.6	3.4	4.5
June	28.79	29.04	28.63	71.5	83.4	81.8	88.3	67.7	78.0	99	56	59	58	60	67	44	50	.530	.505	.529	5.65	2.72	.0	4.2	5.4	4.4	4.6
July	28.82	29.02	28.57	72.5	81.4	78.4	85.8	68.9	77.4	94	59	66	64	66	81	56	67	.646	.613	.640	3.22	.67	.0	5.7	7.0	6.1	6.3
August	28.79	29.03	28.53	71.2	81.6	78.8	86.0	68.8	77.4	93	62	66	66	68	85	61	70	.651	.650	.676	1.81	.75	.0	4.7	7.3	5.8	6.1
September	28.77	28.93	28.58	70.2	82.4	79.2	86.8	68.3	77.6	93	57	63	63	64	81	55	63	.602	.603	.620	1.25	.48	.0	3.1	5.0	3.4	4.2
October	28.86	29.13	28.50	56.9	68.1	65.6	72.4	55.1	63.8	86	42	48	50	52	74	55	64	.350	.387	.406	2.44	1.21	.0	4.7	3.9	3.4	4.1
November	28.87	29.29	28.51	45.0	57.0	54.9	60.9	42.3	51.6	76	26	37	39	40	74	52	60	.241	.260	.271	.80	.62	.0	4.1	3.7	2.5	3.4
December	28.91	29.32	28.45	47.4	55.5	53.7	60.2	43.6	51.9	75	22	43	46	46	84	72	78	.295	.337	.330	2.46	1.39	.0	4.8	5.6	4.5	5.5
Year	28.82	29.33	28.23	57.4	67.5	65.6	72.1	54.2	63.2	99	6	50	50	52	77	57	63	.407	.410	.423	35.83	2.72	T	4.8	5.7	4.4	5.1

ATLANTIC CITY, N.J.

[ϕ=39°22′ N.; λ=74°25′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.97	30.55	29.19	39.7	44.9	43.6	48.6	36.4	42.5	64	19	34	35	34	79	69	71	0.201	0.208	0.205	3.37	1.92	T	6.6	6.3	5.9	6.4
February	29.98	30.75	29.34	34.6	40.7	38.3	44.8	29.6	37.2	64	15	26	27	26	70	60	63	.156	.162	.158	4.72	1.42	7.6	5.4	6.0	4.9	5.6
March	29.90	30.40	29.12	37.5	43.5	41.2	47.7	34.2	41.0	61	18	28	29	31	70	60	67	.166	.175	.179	3.44	.89	T	6.0	7.3	5.9	6.7
April	29.93	30.30	29.38	47.4	52.1	48.0	55.4	43.2	49.3	67	33	41	41	42	80	69	81	.207	.266	.271	3.79	1.14	.0	6.5	5.8	6.0	6.2
May	29.90	30.26	29.53	60.6	64.0	59.9	67.4	54.9	61.2	87	46	54	55	55	82	74	86	.440	.441	.444	4.32	.93	.0	5.9	7.0	8.0	6.9
June	29.88	30.13	29.67	68.8	72.6	68.3	76.8	62.9	69.8	91	47	60	60	61	74	66	78	.536	.544	.551	1.84	1.12	.0	4.0	5.4	5.8	5.0
July	29.96	30.24	29.68	70.9	75.1	71.4	78.4	66.4	72.4	94	54	65	65	66	82	73	84	.626	.637	.645	2.80	1.18	.0	6.2	6.6	7.6	6.9
August	29.92	30.29	29.42	73.3	77.0	74.0	79.7	69.3	74.5	92	61	68	68	68	84	76	81	.686	.703	.681	14.50	8.16	.0	6.4	5.9	7.1	6.4
September	29.88	30.16	29.48	68.4	75.1	71.7	78.1	65.0	71.6	91	52	64	64	64	85	70	78	.601	.604	.614	4.71	1.38	.0	5.2	6.0	6.0	5.7
October	30.06	30.48	29.55	54.5	62.7	59.2	66.0	49.4	57.7	76	31	48	49	50	78	63	73	.350	.370	.385	1.64	.86	.0	3.8	4.3	3.8	4.1
November	30.06	30.53	29.26	41.2	48.3	46.3	51.6	37.8	44.7	73	17	34	36	37	74	65	69	.208	.233	.236	1.89	1.16	T	5.8	5.6	6.0	5.9
December	30.08	30.81	29.52	34.8	39.9	37.5	44.8	29.6	37.2	58	3	28	30	29	76	67	71	.176	.182	.179	4.25	1.55	3.9	6.8	6.8	6.0	6.7
Year	29.95	30.81	29.12	52.6	58.0	55.0	61.6	43.2	54.9	94	3	46	47	47	78	68	75	.363	.377	.379	51.27	8.16	11.5	5.7	6.1	6.1	6.0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

AMARILLO, TEX.

[H_b=3,676 ft.; h_t=10 ft.; h_r=3 ft.; h_a=49 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	10.4	SW.	40	SW.	1	5	3	0	3	11	29	6	5	0	19	9	3	2	0	0	0	0	1	1	0	0	19	0	0
February	9.6	SW.	27	S.	0	6	1	[illegible]	7	10	11	12	6	0	14	9	5	3	3	5	3	0	1	0	4	0	22	0	0
March	11.5	SE.	30	SW.	0	4	1	6	11	9	8	8	15	0	14	14	3	3	3	1	0	0	1	1	0	0	10	2	0
April	11.3	SW.	32	SW.	1	9	2	1	3	12	17	5	11	0	17	8	5	7	3	3	1	1	0	0	0	0	5	1	0
May	11.3	S.	37	NE.	1	3	5	4	9	16	15	6	4	0	17	13	1	7	5	0	0	1	0	0	0	6	0	5	0
June	10.6	S.	34	E.	1	0	0	3	8	27	16	6	0	0	18	12	0	1	1	0	0	0	0	0	0	21	0	1	0
July	8.9	S.	29	SE.	0	1	3	9	16	13	11	4	5	0	14	15	2	6	5	0	0	0	0	0	0	23	0	5	0
August	9.3	S.	24	S.	0	1	2	5	11	20	15	6	2	0	11	17	3	14	10	0	0	0	0	0	0	17	0	14	0
September	9.8	S.	21	S.	0	2	5	3	4	17	22	4	3	0	19	9	2	2	2	0	0	0	2	2	0	13	0	1	0
October	9.2	S.	19	S.	0	6	6	6	12	11	11	2	8	0	20	9	2	2	1	0	0	0	1	1	0	0	0	1	0
November	9.2	SW.	22	N.	0	9	7	2	4	10	12	10	6	0	19	7	4	4	4	3	0	0	2	1	1	0	5	1	0
December	9.1	W.	30	W.	0	6	3	7	6	6	12	16	6	0	24	5	2	1	0	0	0	0	3	1	0	0	13	0	0
Year	10.0	SW.	40	SW.	4	52	38	49	94	162	179	85	71	0	206	127	32	52	37	12	4	2	11	7	5	80	74	31	0

ASHEVILLE, N.C.

[H_b=2,253 ft.; h_t=89 ft.; h_r=87 ft.; h_a=104 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.5	NW.	28	NW.	0	17	1	3	15	4	0	4	16	2	8	13	10	6	5	1	1	0	4	1	0	0	13	0	0
February	10.3	NW.	32	N.	1	5	0	1	12	9	1	0	24	4	7	8	13	13	8	6	3	0	6	2	3	0	15	0	0
March	11.3	NW.	34	E.	1	8	0	0	16	4	3	1	28	2	10	12	9	11	11	5	0	0	1	0	0	0	12	2	0
April	9.8	SE.	30	S.	0	7	0	6	19	5	4	2	14	3	8	14	8	11	8	0	0	0	2	0	0	0	0	4	0
May	7.5	NW.	29	NW.	0	15	0	2	8	10	2	5	15	5	8	15	8	13	10	0	0	0	6	1	0	1	0	14	0
June	6.4	NW.	21	N.	0	12	0	1	6	7	2	1	29	2	10	14	6	7	6	0	0	0	1	0	0	11	0	11	0
July	5.9	S.	30	E.	0	7	3	4	16	17	5	1	7	2	6	12	13	14	11	0	0	0	8	0	0	2	0	12	0
August	5.8	NW.	23	SE.	0	13	2	4	10	6	1	4	15	7	2	16	13	16	15	0	0	0	23	3	0	2	0	10	0
September	6.2	NW.	21	NW.	0	12	0	7	10	7	2	0	15	7	7	19	4	8	4	0	0	0	12	5	0	0	0	4	0
October	6.8	NW.	29	NW.	0	13	0	5	14	8	1	4	15	2	17	9	5	4	3	0	0	0	11	4	0	0	2	1	0
November	8.8	NW.	29	NW.	0	17	0	2	5	11	0	2	21	2	16	6	8	4	3	1	0	0	4	0	0	0	16	1	0
December	9.0	NW.	28	NW.	0	14	0	0	20	9	3	2	10	4	12	7	12	7	4	1	0	0	3	1	0	0	10	0	0
Year	8.0	NW.	34	E.	2	140	6	35	151	97	24	26	209	42	111	145	109	114	88	14	4	0	81	17	3	16	58	59	0

ATLANTA, GA.

[H_b=1,173 ft.; h_t=190 ft.; h_r=182 ft.; h_a=198 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.0	NW.	37	W.	2	3	5	10	4	4	15	7	12	2	7	10	14	8	6	0	0	0	8	6	0	0	5	0	0
February	11.3	NW.	38	NW.	1	0	0	15	9	2	6	8	16	0	4	8	16	14	10	1	0	0	14	5	3	0	8	1	0
March	11.8	NW.	32	W.	1	0	2	11	7	2	12	11	17	0	16	5	10	9	8	1	0	0	4	0	0	0	5	3	0
April	10.9	W.	37	SE.	2	0	1	12	15	3	6	19	4	0	12	7	11	10	8	0	0	0	0	0	0	0	0	3	0
May	8.3	W.	30	NW.	0	2	0	9	9	9	8	16	9	0	13	12	6	8	8	0	0	0	0	0	0	4	0	9	0
June	8.2	W.	23	SE.	0	1	3	7	7	4	1	18	19	0	12	11	7	7	6	0	0	0	1	0	0	13	0	7	0
July	7.5	W.	38	SW.	1	3	3	13	14	5	6	13	5	0	4	14	13	17	13	0	0	0	0	0	0	8	0	10	0
August	8.1	W.	28	NW.	0	2	3	10	1	6	5	19	7	0	3	18	10	10	7	0	0	1	2	2	0	5	0	9	0
September	8.2	W.	25	E.	0	0	7	9	5	5	5	13	16	0	12	12	6	7	5	0	0	0	6	2	0	6	0	2	0
October	9.6	E.	27	NW.	0	0	8	26	1	2	2	6	17	0	10	4	8	6	5	0	0	0	1	0	0	0	0	3	0
November	11.4	W.	35	NW.	1	0	2	12	0	2	5	22	17	0	18	5	7	5	3	0	0	0	1	0	0	0	4	1	0
December	10.3	W.	30	NW.	0	0	1	14	7	5	7	15	13	0	12	6	13	12	7	0	0	0	9	6	0	0	4	0	0
Year	9.6	W.	38	NW.	8	11	35	157	79	49	78	167	152	2	132	112	121	113	86	2	0	1	46	21	3	36	26	48	0

ATLANTIC CITY, N.J.

[H_b=52 ft.; h_t=37 ft.; h_r=33 ft.; h_a=172 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	17.8	NW.	65	NE.	12	4	6	5	2	9	11	12	13	0	9	5	17	8	8	1	0	0	1	0	0	0	8	0	0
February	18.0	W.	51	NW.	13	5	1	1	3	7	8	20	11	0	11	4	13	12	10	4	3	0	5	2	4	0	17	0	0
March	17.6	NW.	47	W.	8	5	6	1	1	7	5	20	17	0	8	6	17	15	11	3	2	1	4	1	1	0	10	1	0
April	18.6	S.	49	NE.	14	3	13	7	5	11	6	10	5	0	9	8	13	12	8	0	0	0	12	0	0	0	0	3	0
May	14.1	S.	37	S.	5	4	8	8	7	12	11	6	6	0	4	10	17	13	11	0	0	0	13	3	0	0	0	7	0
June	13.7	S.	38	SE.	4	3	5	5	10	8	14	3	12	0	13	9	8	6	5	0	0	0	6	4	0	1	0	4	0
July	14.1	S.	50	NE.	2	2	16	4	6	13	11	10	0	0	6	9	16	10	8	0	0	0	8	3	0	2	0	5	0
August	15.8	S.	55	E.	6	9	8	7	2	18	7	5	6	0	8	8	15	14	14	0	0	0	3	1	0	3	0	4	0
September	15.3	W.	47	N.	5	6	5	3	5	9	10	17	5	0	7	14	9	8	7	0	0	0	3	0	0	1	0	1	0
October	14.8	NW.	42	NW.	4	7	4	2	9	5	7	12	16	0	17	8	6	6	4	0	0	0	2	0	0	0	1	0	0
November	16.3	W.	41	W.	11	10	2	1	5	4	10	24	4	0	10	8	12	9	6	2	1	0	2	1	1	0	6	0	0
December	15.5	W.	42	W.	8	7	2	3	2	5	14	17	12	0	7	10	14	12	10	4	3	0	8	2	8	0	16	0	0
Year	16.0	W.	65	E.	92	65	76	47	57	108	114	156	107	0	109	99	157	125	102	14	9	1	65	17	14	7	58	25	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

AUGUSTA, GA.

[ϕ=33°28′ N.; λ=81°54′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.92	30.37	29.30	46.3	58.9	56.1	63.6	43.9	53.8	77	27	43	45	44	88	62	65	0.297	0.321	0.307	1.86	0.68	0.0	6.4	6.4	4.6	6.5
February	29.93	30.44	29.52	45.0	55.2	53.2	60.0	40.9	50.4	77	18	38	40	39	78	60	60	.257	.277	.262	4.20	1.22	.0	6.4	7.2	6.0	6.9
March	29.86	30.25	29.25	49.2	63.1	61.9	69.3	45.8	57.6	85	32	41	38	41	73	40	48	.281	.253	.282	2.57	1.41	.0	4.6	3.1	3.5	4.1
April	29.76	30.15	29.41	58.0	69.8	67.8	74.8	53.0	63.9	84	46	48	46	49	71	46	53	.353	.331	.363	1.01	.81	.0	5.7	5.5	3.5	5.4
May	29.78	30.06	29.45	72.0	84.9	80.2	89.6	66.1	77.8	97	60	64	60	63	77	45	54	.606	.540	.544	2.08	1.00	.0	4.2	4.3	4.3	4.5
June	29.79	30.04	29.55	75.6	88.6	83.5	92.8	69.1	81.0	103	53	65	64	65	71	45	56	.645	.613	.631	.90	.29	.0	4.2	4.3	4.7	4.5
July	29.83	30.05	29.55	75.7	86.6	81.4	90.1	70.8	80.4	100	61	70	68	69	83	56	68	.743	.704	.713	4.82	3.09	.0	6.6	5.0	5.8	5.9
August	29.78	30.04	29.48	76.1	87.1	82.3	90.9	72.1	81.5	99	68	70	68	69	83	55	65	.744	.695	.705	3.89	2.61	.0	4.6	4.4	5.4	5.2
September	29.76	29.94	29.51	73.1	86.9	80.6	90.0	69.5	79.8	95	57	68	66	70	84	52	71	.695	.658	.735	3.57	1.96	.0	3.4	.3	2.3	3.8
October	29.88	30.16	29.46	58.7	73.7	67.9	77.4	55.8	66.6	90	43	53	52	55	82	49	65	.422	.415	.447	1.80	1.31	.0	4.5	4.2	2.7	4.1
November	29.90	30.40	29.50	44.3	62.5	56.7	66.4	41.8	54.1	81	26	39	38	39	80	44	54	.258	.262	.267	.52	22	.0	3.3	3.0	1.8	3.1
December	29.97	30.42	29.46	47.9	61.4	57.8	66.2	44.5	55.4	79	29	42	43	44	81	54	61	.287	.307	.310	.83	.29	.0	4.6	4.9	3.4	5.1
Year	29.85	30.44	29.25	60.2	73.2	69.1	77.6	56.1	66.9	103	18	53	52	54	79	51	60	.466	.448	.464	28.05	3.09	.0	4.9	4.4	4.0	4.9

AUSTIN, TEX.

[ϕ=30°17′ N.; λ=97°44′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.40	29.94	29.10	51.5	62.8	62.3	67.6	48.6	58.1	80	22	45	47	47	80	60	60	0.336	0.354	0.352	5.10	2.25	0.0	6.4	6.8	6.3	6.7
February	29.47	29.96	28.99	44.4	54.4	54.0	60.4	40.6	50.5	82	11	40	42	42	83	66	66	.276	.300	.297	2.22	1.14	T	6.6	6.7	5.8	6.6
March	29.34	29.65	28.94	56.6	68.8	69.4	74.3	54.0	64.2	87	37	50	49	49	80	53	52	.392	.386	.383	1.64	.93	.0	7.0	5.7	5.7	6.2
April	29.23	29.54	28.88	59.3	76.5	76.6	82.0	56.7	69.4	95	42	50	49	48	74	41	40	.402	.379	.366	1.30	.75	.0	5.3	4.3	4.3	4.5
May	29.21	29.44	28.74	70.1	85.0	84.5	89.3	68.3	78.8	94	57	65	62	62	84	48	50	.629	.569	.582	3.63	2.50	.0	5.9	4.4	3.0	4.5
June	29.34	29.60	29.12	71.8	87.4	88.0	91.9	69.0	80.4	101	57	64	60	60	78	41	40	.616	.522	.521	.41	.41	.0	3.2	2.7	2.2	2.6
July	29.28	29.44	29.11	76.8	89.7	91.1	94.8	75.0	84.9	104	68	71	68	66	84	51	46	.770	.689	.651	7.16	3.38	.0	4.8	4.9	4.6	4.8
August	29.31	29.49	29.11	75.2	89.5	87.1	93.7	73.8	83.8	101	71	71	68	68	88	50	55	.765	.692	.680	.93	.46	.0	3.7	4.1	3.9	4.0
September	29.27	29.43	29.05	74.7	88.8	86.4	92.9	73.8	83.4	98	70	72	68	67	90	52	54	.777	.687	.668	3.08	2.10	.0	4.6	5.4	3.6	4.9
October	29.37	29.57	29.15	64.9	80.6	78.2	84.9	63.4	74.2	95	54	59	59	58	84	50	52	.522	.521	.501	3.05	2.22	.0	5.5	3.8	2.2	4.3
November	29.50	29.78	29.08	54.1	70.0	66.1	73.8	51.1	62.4	84	35	47	49	48	89	50	55	.352	.370	.361	.68	.37	.0	4.9	3.8	2.7	4.5
December	29.42	29.73	29.11	51.4	66.0	64.5	71.5	47.6	59.6	83	31	44	44	42	78	50	49	.337	.327	.302	1.24	.94	.0	5.7	4.4	2.9	4.5
Year	29.34	29.96	28.74	62.6	76.6	75.7	81.4	60.2	70.8	104	11	56	55	55	82	51	52	.514	.483	.472	30.44	3.38	T	5.3	4.8	3.9	4.8

BAKER, OREG.

[ϕ=44°46′ N.; λ=117°50′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	26.34	26.93	25.94	19.8	28.6	27.4	31.9	13.5	22.7	47	−7	14	21	21	79	71	75	0.087	0.113	0.112	1.91	0.36	17.1	6.5	7.5	7.3	7.5
February	26.54	26.88	26.20	14.1	23.4	23.0	27.1	7.5	17.3	42	−25	8	14	14	76	66	67	.070	.091	.090	1.33	.50	14.8	5.7	7.5	6.6	7.0
March	26.46	26.93	26.02	30.2	40.2	40.4	43.3	26.5	34.9	53	13	24	28	28	77	62	62	.131	.155	.155	1.00	.43	3.7	6.2	7.7	7.2	7.0
April	26.43	26.87	25.93	33.7	50.4	52.6	55.3	30.9	43.1	74	20	26	28	28	71	44	41	.140	.157	.156	1.01	.86	1.1	5.2	5.5	6.1	5.5
May	26.39	26.68	26.06	38.4	54.2	55.5	58.7	36.6	47.6	83	29	32	32	34	79	45	47	.183	.178	.195	1.59	.49	1.2	5.0	6.2	6.5	5.7
June	26.42	26.73	26.18	49.9	68.8	71.6	75.1	48.5	61.8	96	41	41	44	45	72	43	42	.259	.297	.304	1.25	.59	.0	4.3	5.1	4.9	4.8
July	26.46	26.68	26.21	52.8	78.5	82.9	85.1	51.3	68.2	101	43	38	42	43	59	28	26	.235	.273	.286	T	T	.0	1.0	1.3	1.2	1.2
August	26.48	26.63	26.24	52.5	76.3	78.9	81.7	49.9	65.8	94	38	37	42	43	58	32	30	.222	.277	.283	.71	.47	.0	2.4	3.4	2.8	2.7
September	26.38	26.68	26.07	43.6	62.9	65.7	69.1	39.4	54.2	88	27	34	36	36	70	39	37	.194	.216	.214	.75	.33	.7	3.9	4.1	4.0	4.3
October	26.50	26.78	25.88	40.0	61.9	62.3	66.7	37.0	51.8	83	20	30	40	41	68	49	51	.173	.261	.263	.44	.14	T	3.3	4.1	3.9	3.9
November	26.69	27.00	26.02	30.4	45.6	43.4	49.3	27.2	38.2	59	14	26	35	36	84	67	74	.143	.207	.212	.41	.26	1.5	2.7	4.8	4.7	4.1
December	26.40	26.71	25.89	35.4	40.7	39.1	43.9	30.9	37.4	57	8	28	31	32	74	68	74	.156	.175	.180	1.50	.54	6.5	8.1	8.5	8.6	8.2
Year	26.46	27.00	25.88	36.7	52.6	53.6	57.3	33.3	45.2	101	−25	28	33	33	72	51	52	.166	.200	.204	11.91	.86	46.6	4.5	5.5	5.3	5.2

BALTIMORE, MD.

[ϕ=39°17′ N.; λ=76°37′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.91	30.48	29.19	38.2	45.9	44.5	50.9	36.1	43.5	65	20	31	33	33	74	60	65	0.176	0.191	0.195	3.37	1.87	0.1	5.8	5.6	4.9	5.9
February	29.92	30.63	29.29	33.4	42.0	39.2	46.0	29.9	38.0	68	15	25	26	25	69	54	58	.143	.155	.144	2.95	.81	10.6	6.0	5.0	4.4	5.2
March	29.85	30.35	29.06	39.1	45.6	43.9	49.9	35.8	42.8	76	20	29	28	30	66	52	59	.167	.167	.178	4.60	1.29	2.5	6.4	6.9	4.6	6.5
April	29.85	30.28	29.32	50.4	58.5	56.4	63.4	46.0	54.7	76	34	40	40	42	70	55	60	.262	.272	.278	7.58	1.94	T	4.9	5.1	4.2	5.4
May	29.83	30.16	29.46	64.7	71.9	67.7	75.3	58.9	67.1	93	46	55	55	56	72	58	68	.446	.454	.468	5.17	1.95	.0	7.6	6.7	6.8	7.0
June	29.81	30.12	29.55	73.0	81.7	78.1	85.5	66.4	76.0	98	50	59	56	62	62	47	60	.526	.527	.592	3.09	.96	.0	4.3	4.7	4.9	4.6
July	29.89	30.22	29.59	74.0	82.4	79.3	85.6	68.8	77.2	100	54	63	62	65	69	52	63	.582	.573	.623	3.90	2.64	.0	5.4	4.9	5.5	5.0
August	29.84	30.21	28.95	73.8	81.9	78.4	84.8	69.3	77.0	99	62	65	64	66	75	57	66	.625	.611	.637	13.53	7.62	.0	5.9	6.2	5.5	5.0
September	29.82	30.09	29.40	68.5	77.6	73.7	80.7	65.2	73.9	94	55	60	60	62	76	57	69	.530	.529	.507	3.23	.98	.0	5.4	5.7	4.5	5.4
October	30.00	30.40	29.47	52.6	63.2	59.3	67.4	48.5	58.0	87	32	43	45	48	71	53	66	.264	.320	.347	1.76	.75	.0	4.5	4.1	1.8	3.7
November	29.89	30.48	29.19	40.3	48.9	45.9	52.2	38.1	45.2	74	19	31	32	33	70	52	61	.189	.197	.205	.96	.78	.8	5.5	5.2	4.9	5.5
December	30.01	30.76	29.49	34.6	40.5	38.7	45.8	30.5	38.2	63	6	26	28	28	73	61	65	.161	.179	.171	2.47	.98	7.2	6.4	6.7	4.9	5.4
Year	29.88	30.76	28.95	53.6	61.7	58.8	65.6	49.5	57.6	100	6	44	44	46	70	55	63	.342	.347	.367	52.96	7.62	21.2	5.7	5.6	4.7	5.5

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

AUGUSTA, GA.

[H_b=180 ft.; h_t=62 ft.; h_r=54 ft.; h_a=77 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	6.1	NW.	28	NW.	0	4	7	1	7	8	6	4	15	10	7	8	16	8	7	0	0	0	8	4	0	0	2	0	0
February	6.4	NW.	24	S.	0	4	11	2	5	4	5	4	18	3	4	9	15	13	10	0	0	0	8	5	0	0	6	0	0
March	7.9	NW.	25	W.	0	2	4	4	8	11	6	9	12	6	14	11	6	6	6	0	0	0	1	0	0	0	3	1	0
April	7.2	SE.	27	NW.	0	4	6	8	10	7	6	9	9	1	9	10	11	5	2	0	0	0	0	0	0	0	0	2	0
May	6.1	S.	24	NW.	0	4	7	5	8	13	12	5	8	0	12	13	6	9	8	0	0	0	1	0	0	16	0	7	0
June	5.9	S.	18	NW.	0	6	8	3	5	17	6	4	10	1	11	14	5	9	4	0	0	0	0	0	0	23	0	6	0
July	5.7	S.	32	NE.	1	2	10	6	12	14	8	4	3	3	4	16	11	13	11	0	0	0	2	1	0	18	0	8	0
August	5.8	S.	21	W.	0	6	15	0	6	7	13	4	8	3	8	15	8	9	7	0	0	0	0	0	0	22	0	8	0
September	4.8	SE.	23	NE.	0	3	9	2	13	6	4	5	8	10	14	13	3	7	7	0	0	0	3	0	0	20	0	3	0
October	5.7	NE.	20	W.	0	8	16	5	2	1	2	2	13	13	16	10	5	3	3	0	0	0	0	0	0	1	0	0	0
November	5.7	NW.	24	W.	0	2	8	3	2	5	6	9	17	8	18	7	5	5	4	0	0	0	4	1	0	0	4	1	0
December	5.4	NW.	21	SW.	0	4	8	5	6	7	6	3	13	10	12	10	9	8	6	0	0	0	7	5	0	0	2	0	0
Year	6.1	NW.	32	NE.	1	49	109	44	84	100	80	62	134	68	129	136	100	95	75	0	0	0	34	16	0	100	17	36	0

AUSTIN, TEX.

[H_b=605 ft.; h_t=136 ft.; h_r=129 ft.; h_a=148 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.9	S.	27	NW.	0	9	3	6	15	15	0	1	13	0	8	3	20	14	7	0	0	0	11	3	0	0	2	0	0
February	9.1	N.	28	N.	0	13	7	5	9	11	1	0	9	1	5	9	14	12	9	1	0	0	13	1	1	0	6	0	0
March	9.5	SE.	38	NW.	1	9	7	4	19	11	3	2	5	2	8	7	16	11	4	0	0	0	6	1	0	0	0	6	0
April	9.1	S.	38	W.	1	10	6	4	20	10	0	3	7	0	13	9	8	9	6	0	0	1	3	1	0	4	0	8	0
May	9.2	SE.	34	NW.	1	6	2	7	32	9	0	2	4	0	13	13	5	5	4	0	0	1	0	0	0	20	0	6	0
June	7.8	SE.	21	S.	0	2	5	6	28	13	2	0	1	3	21	7	2	2	2	0	0	0	1	0	0	19	0	2	0
July	8.0	SE.	32	NE.	1	3	6	9	23	15	2	2	2	0	12	13	6	8	6	0	0	0	1	0	0	28	0	7	0
August	6.2	S.	27	NW.	0	1	6	4	20	22	5	2	1	1	13	14	4	6	4	0	0	0	2	0	0	29	0	6	0
September	7.0	SE.	21	SE.	0	1	4	5	22	23	2	1	2	0	11	13	6	5	4	0	0	0	7	1	0	24	0	0	0
October	6.5	S.	29	NE.	0	7	14	11	13	13	1	1	2	0	11	16	4	7	3	0	0	1	7	2	0	4	0	3	0
November	8.0	S.	27	N.	0	17	7	5	9	11	3	3	5	0	12	10	8	5	2	0	0	0	8	2	0	0	0	0	0
December	9.0	S.	36	NW.	1	13	5	2	9	18	3	3	9	0	13	9	9	6	5	0	0	0	6	2	0	0	1	2	0
Year	8.1	S.	38	W.	5	91	72	68	219	171	22	20	60	7	140	123	102	90	56	1	0	3	65	13	1	128	9	40	0

BAKER, OREG.

[H_b=3,471 ft.; h_t=48 ft.; h_r=44 ft.; h_a=53 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.1	SE.	22	W.	0	4	2	3	23	17	4	4	5	0	3	9	19	16	9	22	16	0	13	4	16	0	31	0	0
February	7.6	SE.	21	SE.	0	7	3	4	20	13	2	5	2	0	5	8	15	15	8	21	15	0	10	0	18	0	27	0	0
March	7.2	SE.	21	SE.	0	5	2	3	25	15	1	8	3	0	2	17	12	14	6	16	8	0	1	0	0	0	24	0	0
April	7.7	N.	22	N.	0	19	1	2	18	5	5	5	5	0	11	7	12	8	2	8	4	0	2	0	0	0	16	0	0
May	7.1	SE.	21	N.	0	15	3	0	20	5	5	6	8	0	8	13	10	14	10	5	3	2	4	1	0	0	6	3	0
June	6.4	N.	35	SW.	1	14	1	1	20	6	4	4	9	1	12	11	7	10	6	0	0	2	0	0	0	3	0	7	0
July	6.9	N.	17	SW.	0	13	1	1	23	7	2	3	12	0	28	3	0	0	0	0	0	0	0	0	0	6	0	1	0
August	6.7	N.	27	SW.	0	12	1	0	24	6	0	7	12	0	20	8	3	5	3	0	0	2	0	0	0	8	0	4	0
September	6.5	SE.	22	SW.	0	8	3	2	18	7	7	7	7	1	11	13	6	8	4	2	2	0	0	0	0	0	1	1	1
October	6.8	SE.	22	W.	0	7	3	4	22	6	3	7	7	0	14	10	7	7	6	2	0	0	0	0	0	0	4	0	0
November	6.7	SE.	18	N.	0	7	2	2	22	12	2	9	2	1	16	8	6	6	2	3	2	0	6	3	0	0	27	0	0
December	7.6	SE.	26	SW.	0	0	1	4	26	19	8	2	1	1	1	7	23	18	12	13	9	0	5	2	1	0	16	0	0
Year	7.0	SE.	35	SW.	1	111	23	26	265	118	43	67	73	4	131	114	120	121	68	92	59	6	41	10	35	17	152	16	1

BALTIMORE, MD.

[H_b=123 ft.; h_t=100 ft.; h_r=90 ft.; h_a=215 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.0	SW.	43	NE.	6	10	11	5	4	9	13	2	8	0	11	5	15	6	6	2	1	0	14	1	0	0	7	0	0
February	11.8	SW.	44	SW.	6	6	5	3	5	6	19	5	7	0	12	6	10	12	10	7	4	0	11	0	4	0	16	0	0
March	12.6	NW.	46	SW.	4	2	12	2	3	10	10	4	19	0	8	7	16	11	10	7	1	1	10	0	0	0	5	4	0
April	11.9	SE.	32	SE.	2	2	11	8	11	9	12	1	6	0	11	9	10	12	11	1	0	1	7	3	0	0	0	2	0
May	9.8	SW.	37	N.	2	6	13	4	7	11	8	3	10	0	3	12	16	17	14	0	0	0	5	1	0	2	0	7	0
June	9.8	SW.	41	NW.	3	5	7	1	6	13	17	1	10	0	13	11	6	10	8	0	0	1	0	0	0	12	0	9	0
July	9.5	SW.	33	NW.	1	4	11	6	5	15	19	0	2	0	14	8	9	7	7	0	0	0	10	1	0	10	0	4	0
August	10.4	SW.	50	NE.	2	13	12	8	6	13	7	1	4	0	10	8	13	13	12	0	0	0	5	1	0	8	0	5	0
September	9.5	SW.	43	NW.	1	7	12	2	3	11	15	3	7	0	10	10	10	12	12	0	0	0	7	0	0	5	0	3	0
October	9.3	N.	34	NW.	1	16	9	2	1	9	11	1	13	0	20	3	8	8	4	0	0	0	12	0	0	0	1	1	0
November	11.0	SW.	38	SW.	3	4	9	1	4	11	21	2	8	0	11	7	12	8	4	4	1	0	13	2	1	0	8	0	0
December	9.6	SW.	37	NW.	1	6	12	3	6	4	20	0	11	0	8	7	16	13	6	5	3	0	16	4	6	0	13	0	0
Year	10.5	SW.	50	NE.	32	81	124	42	61	121	172	22	105	0	131	93	141	129	104	26	10	3	110	13	11	37	50	35	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

BELLEFONTE, PA.

[ϕ=40° 54′ N.; λ=77° 43′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.89	29.43	28.33	29.8	39.1	36.3	43.6	26.2	34.9	62	8	25	29	27	83	65	69	0.139	0.163	0.154	1.72	0.57	2.1	6.7	6.4	6.3	6.6
February	28.88	29.47	28.35	24.1	33.1	30.2	38.2	19.4	28.8	57	−1	19	20	20	79	59	64	.108	.117	.113	1.09	.23	5.0	5.3	6.0	5.0	5.6
March	28.83	29.27	28.09	31.2	37.8	35.7	45.5	26.9	36.2	71	10	26	27	27	80	65	69	.148	.153	.151	4.33	.87	2.5	7.8	7.8	8.7	8.0
April	28.84	29.26	28.35	44.6	54.5	51.3	59.5	37.2	48.4	78	23	36	37	38	74	54	63	.226	.236	.244	4.53	1.18	T	6.6	6.7	7.5	6.7
May	28.84	29.14	28.51	57.5	65.5	60.3	69.4	49.1	59.2	83	35	52	51	53	82	64	78	.403	.396	.413	5.46	1.03	.0	7.5	8.1	8.1	8.2
June	28.86	29.12	28.58	66.1	77.6	71.0	81.6	55.0	68.3	93	38	58	60	60	77	56	70	.516	.554	.551	2.87	1.08	.0	5.4	5.5	5.9	5.6
July	28.93	29.28	28.62	67.5	79.9	72.7	83.5	56.8	70.2	95	46	60	60	61	78	52	67	.533	.522	.542	2.94	2.18	.0	3.8	5.0	5.4	4.7
August	28.90	29.21	28.22	64.9	74.6	68.8	78.9	57.8	68.4	91	44	60	60	61	84	62	76	.522	.522	.537	7.14	3.92	.0	5.2	6.2	7.3	6.3
September	28.86	29.09	28.47	59.1	70.1	64.0	73.2	53.2	63.2	86	40	55	59	59	91	68	84	.461	.507	.509	5.49	2.56	.0	5.9	6.3	5.7	6.2
October	29.00	29.35	28.50	41.8	56.4	48.3	60.0	35.5	47.8	76	19	38	42	41	89	60	78	.245	.289	.272	2.03	.82	T	5.4	4.7	4.5	5.1
November	28.85	29.34	28.14	33.4	40.4	36.0	43.2	27.5	35.4	70	9	29	31	28	82	68	74	.170	.184	.164	.82	.38	2.1	8.3	7.7	7.1	7.6
December	28.96	29.68	28.43	24.8	32.2	29.4	37.0	19.2	28.1	64	−6	22	24	24	90	71	79	.129	.139	.141	2.35	.45	7.2	7.3	7.0	7.2	7.4
Year	28.89	29.68	28.09	45.4	55.1	50.3	59.5	38.6	49.1	95	−6	40	42	42	82	62	73	.300	.315	.316	40.77	3.92	18.9	6.3	6.4	6.6	6.5

BIG SPRING, TEX.

[ϕ=32°14′ N.; λ=101°30′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	27.38	27.79	27.09	38.7	57.9	50.3	61.3	35.6	48.4	73	24	34	33	32	81	43	51	0.206	0.203	0.191	0.19	0.18	0.0	4.2	4.3	4.1	4.6
February	27.43	27.85	26.97	32.3	51.7	48.4	58.8	29.7	44.2	80	−7	26	28	29	76	45	50	.156	.167	.173	.61	.40	.9	5.9	5.0	4.3	5.7
March	27.34	27.72	26.97	46.7	66.4	64.0	71.7	44.5	58.1	85	28	37	34	33	72	33	34	.248	.206	.202	.11	.10	T	4.6	5.0	5.7	5.1
April	27.26	27.66	26.81	48.9	72.4	71.2	77.8	46.9	62.4	90	32	34	31	30	60	24	23	.216	.179	.171	.10	.10	.0	2.4	2.9	2.5	2.6
May	27.24	27.50	26.71	61.6	82.8	82.1	87.7	58.2	73.0	97	42	47	44	42	62	31	29	.362	.323	.302	.46	.41	.0	3.5	3.3	3.2	3.3
June	27.36	27.62	27.18	70.7	90.1	89.8	94.0	68.2	81.1	103	60	58	56	55	64	33	32	.483	.466	.439	.01	.01	.0	3.3	2.9	3.2	3.2
July	27.34	27.55	27.15	72.9	91.1	90.6	96.1	70.5	83.3	108	63	62	60	57	70	37	36	.567	.517	.481	1.51	.97	.0	2.5	4.1	3.9	3.5
August	27.36	27.53	27.14	71.1	88.0	87.8	92.5	70.0	81.2	100	64	62	62	59	74	44	40	.560	.553	.503	5.99	4.76	.0	5.6	4.8	5.0	5.1
September	27.32	27.54	27.07	69.3	86.2	82.7	90.1	68.4	79.2	96	64	65	64	63	85	49	53	.610	.598	.574	.70	.40	.0	2.5	3.2	2.9	3.2
October	27.40	27.69	27.15	56.9	77.2	71.7	81.9	55.7	68.8	90	44	50	51	50	80	42	48	.378	.385	.365	.45	.38	.0	3.2	2.4	2.4	2.5
November	27.49	27.87	27.05	45.3	63.9	57.0	68.6	42.6	55.6	81	35	38	39	40	77	43	56	.244	.243	.253	.87	.48	.0	3.3	2.8	4.3	3.3
December	27.42	27.71	27.17	36.8	60.7	52.6	66.1	33.7	49.9	82	18	25	27	25	62	32	37	.140	.148	.135	.33	.33	.0	2.7	2.6	2.1	2.5
Year	27.36	27.87	26.71	54.3	74.0	70.7	78.9	52.0	65.4	108	−7	45	44	43	72	38	41	.404	.332	.316	11.33	4.76	.9	3.6	3.6	3.6	3.7

BINGHAMTON, N.Y.

[ϕ=42°06′ N.; λ=75°55′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.07	29.63	28.49	30.3	36.9	.....	42.1	26.2	34.2	56	7	24	27	...	76	66	...	0.129	0.149	.....	1.05	0.30	5.0	7.4	8.0	.....	7.6
February	29.04	29.68	28.45	25.4	31.6	.....	36.9	19.9	28.4	54	0	20	21	...	79	64	...	.116	.119	.....	1.72	.55	18.4	7.4	7.4	.....	7.3
March	28.99	29.46	28.18	30.9	38.2	.....	39.9	27.2	33.6	66	10	25	27	...	79	69	...	.140	.151	.....	3.17	.61	6.9	7.9	8.9	.....	8.5
April	29.04	29.48	28.49	43.7	53.1	.....	58.5	38.8	48.6	79	25	36	43	...	75	69	...	.224	.289	.....	3.27	.78	.8	8.4	7.9	.....	7.8
May	29.03	29.34	28.65	56.4	66.5	.....	70.7	49.5	60.1	84	32	50	54	...	79	64	...	.375	.429	.....	3.32	.63	.0	7.3	8.0	.....	8.1
June	29.03	29.28	28.73	65.1	76.8	.....	80.6	56.9	68.8	98	39	57	61	...	75	60	...	.482	.570	.....	1.91	1.15	.0	5.4	6.5	.....	6.5
July	29.11	29.48	28.75	66.9	79.7	.....	84.2	59.2	71.7	96	47	59	63	...	78	58	...	.514	.588	.....	5.23	2.60	.0	4.9	5.3	.....	5.5
August	29.09	29.42	28.40	62.6	74.6	.....	78.2	58.2	68.2	94	45	58	61	...	85	65	...	.486	.554	.....	7.28	2.29	.0	6.4	6.6	.....	6.8
September	29.02	29.34	28.55	58.0	69.8	.....	72.9	53.5	63.2	86	38	55	55	...	99	60	...	.440	.444	.....	4.73	1.61	.0	6.6	8.4	.....	7.7
October	29.19	29.59	28.68	43.3	55.3	.....	59.3	37.8	48.6	75	23	38	39	...	83	55	...	.241	.248	.....	2.49	.88	T	5.1	6.9	.....	6.5
November	29.02	29.49	28.29	32.0	38.5	.....	42.4	27.0	34.7	73	9	26	27	...	77	63	...	.150	.160	.....	1.18	.46	10.1	7.8	7.8	.....	7.8
December	29.14	29.96	28.58	24.4	29.6	.....	35.0	19.1	27.0	59	−17	19	21	...	80	69	...	.117	.127	.....	2.16	.40	10.4	8.6	8.1	.....	8.2
Year	29.06	29.96	28.18	44.9	54.2	.....	58.4	39.4	48.9	98	−17	39	42	...	80	64	...	.284	.319	.....	37.51	2.60	51.6	6.9	7.5	.....	7.4

BIRMINGHAM, ALA.

[ϕ=33°32′ N.; λ=86°50′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.35	29.79	28.82	46.5	56.0	54.3	60.0	43.5	51.8	70	21	41	41	43	81	61	66	0.279	0.289	0.297	3.09	1.43	0.0	5.9	5.8	5.1	6.3
February	29.37	29.88	28.83	43.4	50.4	48.7	55.8	38.0	46.9	76	7	38	38	38	81	64	68	.254	.258	.261	5.64	2.21	T	7.7	7.4	6.0	7.4
March	29.29	29.60	28.71	46.9	60.1	57.9	65.9	43.9	54.9	81	28	38	41	40	73	52	55	.257	.280	.273	6.18	3.22	T	5.2	4.7	4.0	4.9
April	29.17	29.48	28.91	55.9	67.1	63.7	71.5	51.6	61.6	83	39	50	50	50	81	57	63	.372	.379	.374	2.86	.70	.0	5.6	5.9	4.7	5.8
May	29.21	29.46	28.92	69.2	82.3	78.4	86.2	65.4	75.8	93	51	62	61	60	79	50	55	.569	.547	.534	3.03	1.23	.0	3.7	4.4	2.4	3.6
June	29.26	29.49	29.06	71.0	86.4	80.6	91.0	66.3	78.6	102	52	61	61	60	73	44	54	.563	.550	.545	2.65	1.40	.0	3.8	4.2	4.3	4.2
July	29.28	29.47	29.00	73.9	84.2	79.4	88.7	70.5	79.6	96	64	68	68	68	84	61	71	.698	.699	.695	4.64	1.69	.0	5.0	6.6	7.3	6.3
August	29.24	29.46	28.98	73.2	85.5	79.8	89.5	70.2	79.8	95	65	68	68	68	85	58	69	.695	.695	.687	5.23	.94	.0	4.4	6.6	5.8	5.6
September	29.22	29.35	29.02	71.1	87.0	79.3	90.9	68.5	79.7	96	53	66	66	65	85	52	64	.655	.656	.642	2.74	1.23	.0	2.0	4.9	3.9	3.6
October	29.32	29.54	28.98	57.9	73.7	67.1	77.6	55.5	66.6	88	41	50	52	51	78	50	56	.386	.415	.395	1.86	1.36	.0	4.5	2.9	3.0	3.7
November	29.37	29.76	29.07	47.0	61.6	56.3	65.1	44.1	54.6	80	28	40	40	39	77	47	55	.278	.278	.271	2.57	1.64	.0	4.0	3.7	2.5	3.5
December	29.37	29.77	28.92	50.2	60.4	57.1	65.2	46.9	56.0	76	21	45	48	46	84	64	69	.333	.357	.336	3.09	.93	.0	6.4	5.3	3.6	5.5
Year	29.28	29.88	28.71	58.8	71.2	66.9	75.6	55.4	65.5	102	7	52	53	52	80	55	62	.445	.450	.442	43.58	3.22	T	4.8	5.2	4.4	5.0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

BELLEFONTE, PA.

[H_b=1,050 ft.; h_t=5 ft.; h_r=4 ft.; h_a=42 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																										
January	----	------	----	------	2	2	1	1	4	3	18	15	3	15	7	7	17	11	7	4	2	1	4	1	3	0	24	0	0
February	----	------	----	------	0	1	1	1	2	5	14	20	5	7	8	11	9	13	9	11	6	0	9	3	8	0	26	0	0
March	----	------	----	------	1	3	4	2	2	2	13	23	6	7	3	7	21	14	12	18	3	1	10	1	2	0	27	3	0
April	----	------	----	------	0	1	5	3	15	5	11	10	1	9	7	8	15	15	13	3	0	0	6	1	0	0	10	3	0
May	----	------	----	------	0	4	7	0	4	5	21	7	1	13	1	9	21	23	16	0	0	0	11	4	0	0	0	11	0
June	----	------	----	------	0	5	1	1	1	5	16	8	6	17	5	20	5	10	7	0	0	1	7	3	0	7	0	14	0
July	----	------	----	------	0	0	13	4	4	1	11	14	1	14	12	13	6	7	5	0	0	0	6	2	0	9	0	6	0
August	----	------	----	------	1	8	11	6	5	2	14	3	1	12	6	13	12	13	10	0	0	1	12	2	0	1	0	5	0
September	----	------	----	------	0	4	6	2	1	2	20	9	4	12	7	10	13	14	12	0	0	0	16	5	0	0	0	2	1
October	----	------	----	------	0	6	6	1	2	8	15	5	0	19	11	12	8	8	7	1	0	0	13	5	0	0	9	2	0
November	----	------	----	------	0	3	4	1	1	4	23	20	1	3	3	9	18	11	5	17	6	0	8	2	5	0	23	0	0
December	----	------	----	------	0	4	4	0	1	1	19	19	5	9	4	8	19	11	8	9	3	0	12	2	10	0	28	2	0
Year	----	------	----	------	4	41	63	22	42	43	195	153	34	137	74	127	164	150	111	63	20	4	114	31	28	17	147	48	1

BIG SPRING, TEX.

[H_b=2,537 ft.; h_t=5 ft.; h_r=3 ft.; h_a=62 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	----	S.	----	------	----	2	5	2	7	24	13	6	2	1	14	9	8	3	1	0	0	0	5	1	0	0	12	0	0
February	----	S.	----	------	----	7	8	3	6	17	5	2	7	1	8	8	12	6	5	3	3	1	7	0	1	0	15	1	0
March	----	S.	----	------	----	6	6	7	6	15	13	3	6	0	8	17	6	3	1	1	0	1	4	1	0	0	2	3	0
April	----	S.	----	------	----	4	6	2	6	16	13	10	3	0	23	3	4	1	1	0	0	0	2	1	0	0	1	2	0
May	----	S.	----	------	----	2	4	5	10	20	9	7	5	0	16	12	3	3	3	0	0	2	2	1	0	16	0	6	0
June	----	S.	----	------	----	1	3	6	13	33	4	0	0	0	18	11	1	1	0	0	0	0	0	0	0	23	0	2	0
July	----	S.	----	------	----	2	9	11	11	25	2	1	1	0	19	8	4	7	4	0	0	0	0	0	0	30	0	9	0
August	----	S.	----	------	----	0	10	8	18	22	2	1	1	0	10	14	7	6	6	0	0	0	3	0	0	23	0	5	0
September	----	S.	----	------	----	0	7	6	10	32	5	0	0	0	21	6	3	4	4	0	0	0	3	0	0	20	0	4	0
October	----	S.	----	------	----	2	13	11	7	18	5	4	1	1	23	5	3	3	2	0	0	0	3	1	0	1	0	3	0
November	----	S.	----	------	----	3	13	7	4	18	7	4	2	2	20	4	6	7	3	0	0	2	5	0	0	0	0	3	0
December	----	S.	----	------	----	3	6	3	5	24	7	12	2	0	21	6	4	2	1	0	0	0	3	2	0	0	12	1	0
Year	----	S.	----	------	----	32	90	71	103	264	85	50	30	5	201	103	61	46	31	4	3	6	37	7	1	113	42	39	0

BINGHAMTON, N.Y.

[H_b= 871 ft.; h_t=60 ft.; h_r=53 ft.; h_a=68 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.1	NW.	24	SW.	0	0	5	8	1	2	3	4	8	0	5	5	21	12	4	13	6	0	17	0	4	0	26	0	0
February	8.0	NW.	23	NW.	0	2	3	4	0	1	6	4	8	0	5	7	16	10	7	14	7	0	12	1	8	0	23	0	0
March	7.9	NW.	25	NW.	0	3	4	3	4	1	2	4	10	0	3	4	24	17	13	24	10	0	9	1	3	0	25	1	0
April	6.8	NW.	24	SW.	0	2	5	4	6	3	0	4	6	0	6	3	21	14	9	5	2	0	13	1	0	0	7	1	0
May	5.7	NW.	20	SW.	0	3	7	6	1	1	4	4	5	0	2	6	23	12	12	0	0	0	20	4	0	0	1	5	0
June	5.5	NW.	21	SW.	0	5	3	6	1	3	1	6	5	0	7	8	15	11	8	0	0	0	18	4	0	5	0	12	0
July	4.9	NE.	22	W.	0	5	9	5	2	0	1	4	5	0	7	17	7	10	9	0	0	1	23	5	0	8	0	10	0
August	5.2	NE.	21	E.	0	3	11	7	2	0	0	3	4	1	9	5	17	12	8	0	0	0	22	7	0	1	0	7	0
September	4.7	NW.	17	NW.	0	2	7	5	3	0	3	5	5	0	4	5	21	11	8	0	0	0	21	11	0	0	0	1	0
October	5.6	NW.	20	NW.	0	2	6	7	2	3	2	4	5	0	8	8	15	9	7	1	1	0	23	8	0	0	7	0	0
November	6.7	W.	21	NW.	0	1	3	4	1	0	4	8	9	0	2	10	18	14	8	17	8	0	15	0	4	0	21	0	0
December	6.7	NW.	24	NW.	0	5	5	9	2	0	2	3	5	0	3	5	23	15	12	17	7	0	15	3	11	0	26	0	0
Year	6.2	NW.	25	NW.	0	33	68	68	25	14	28	53	75	1	61	83	221	147	105	91	41	1	208	45	30	14	136	37	0

BIRMINGHAM, ALA.

[H_b=700 ft.; h_t=11 ft.; h_r=3 ft.; h_a=48 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.5	S.	22	NW.	0	9	3	5	5	19	8	3	8	2	8	8	15	8	7	0	0	0	1	1	0	0	6	1	0
February	8.3	N.	30	S.	0	15	4	4	10	11	2	3	7	0	4	5	19	17	14	1	0	0	3	1	1	0	7	3	0
March	9.4	N.	40	SE.	1	15	4	7	10	10	3	8	2	1	12	10	9	13	11	1	1	0	0	0	0	0	4	3	0
April	7.8	SE.	28	SE.	0	3	2	6	18	9	6	11	5	0	8	11	11	15	11	0	0	0	3	1	0	0	0	5	0
May	7.3	S.	27	SE.	0	10	4	6	9	21	8	1	2	1	19	9	3	9	8	0	0	2	0	0	0	6	0	7	0
June	5.5	N.	21	SE.	0	16	4	1	8	11	5	9	12	0	14	9	7	9	6	0	0	0	1	0	0	21	0	11	0
July	6.3	S.	23	S.	0	3	6	11	14	14	9	1	4	0	4	15	12	15	10	0	0	0	1	1	0	15	0	11	0
August	5.1	E.	17	S.	0	8	10	12	3	7	13	3	6	0	7	16	8	11	10	0	0	0	2	1	0	19	0	11	0
September	5.1	SE.	25	NW.	0	8	9	10	9	5	6	3	10	0	16	9	5	8	6	0	0	0	2	0	0	21	0	9	0
October	6.5	E.	18	SE.	0	17	14	13	5	1	1	3	8	0	17	8	6	3	3	0	0	0	4	1	0	0	0	3	0
November	7.0	NW.	21	NW.	0	4	7	3	7	7	5	7	20	0	19	4	7	3	3	0	0	1	3	0	0	0	2	1	0
December	8.5	S.	24	SE.	0	5	3	8	12	12	6	7	8	1	10	10	11	9	7	0	0	0	2	0	0	0	4	1	0
Year	7.0	S.	40	SE.	1	113	70	86	104	127	74	59	92	5	138	114	113	120	96	2	1	3	22	6	1	82	23	68	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

BISMARCK, N.DAK.

[ϕ=46°48′ N.; λ=100°48′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.00	28.46	27.51	11.7	17.9	17.0	25.9	3.5	14.2	52	−20	8	12	12	84	77	79	0.068	0.079	0.077	0.83	0.40	12.5	5.0	6.7	5.8	6.1
February	28.16	28.65	27.72	6.7	13.9	13.4	20.7	.4	10.6	54	−38	3	7	7	83	74	75	.062	.073	.074	.22	.10	3.3	5.8	3.8	4.1	4.3
March	28.22	28.65	27.59	23.1	35.9	36.1	41.5	20.6	31.0	64	−2	19	22	22	82	57	57	.106	.124	.124	.68	.34	7.1	4.9	5.6	5.7	5.5
April	28.13	28.74	27.68	33.5	48.8	48.8	53.2	31.8	42.5	82	14	27	29	28	73	50	48	.153	.165	.156	.73	.53	6.7	6.1	5.9	6.0	5.8
May	28.08	28.42	27.49	48.1	61.6	62.7	66.3	44.9	55.6	91	30	41	40	40	76	48	48	.265	.260	.269	2.38	.91	.0	6.5	8.3	7.7	6.8
June	28.10	28.75	27.79	63.4	80.5	82.8	86.5	60.0	73.2	106	46	54	52	52	73	40	37	.419	.394	.403	1.95	.91	.0	5.4	4.7	3.1	4.3
July	28.17	28.48	27.87	64.0	80.6	84.2	86.8	61.0	73.9	102	48	56	55	52	76	45	36	.451	.442	.402	1.61	.54	.0	4.3	3.4	2.3	3.2
August	28.29	28.52	27.86	58.2	77.6	78.6	82.6	56.0	69.3	96	40	50	49	47	75	49	37	.364	.361	.332	.48	.21	.0	3.6	4.4	3.7	4.0
September	28.05	28.41	27.60	51.9	71.2	71.1	76.6	49.2	62.9	97	30	42	44	42	71	40	38	.286	.302	.285	.37	.25	.0	4.2	4.1	4.2	4.1
October	28.22	28.73	27.63	33.2	50.9	49.0	56.4	30.5	43.4	78	17	27	32	30	76	50	50	.144	.183	.170	.44	.22	3.1	4.8	5.4	5.5	5.3
November	28.23	28.72	27.68	28.2	34.2	31.5	40.2	22.5	31.4	61	8	24	25	24	84	69	74	.130	.135	.131	.74	.38	7.8	6.5	6.6	5.0	6.3
December	28.22	28.82	27.69	8.4	16.0	12.6	22.5	1.6	12.0	56	−23	5	7	7	82	67	75	.061	.073	.068	.43	.29	7.0	6.8	8.3	6.4	7.2
Year	28.15	28.82	27.49	35.9	49.1	49.0	54.9	31.8	43.3	106	−38	30	31	30	78	55	54	.209	.216	.208	10.86	.91	47.5	5.3	5.6	5.0	5.2

BLOCK ISLAND, R. I.

[ϕ=41°10′ N; λ=71°36′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.95	30.62	29.22	37.3	40.3	39.4	44.1	33.3	38.7	54	14	32	34	34	80	79	81	0.188	0.204	0.202	1.93	0.74	0.9	6.2	5.8	4.9	5.8
February	29.92	30.68	29.17	32.5	35.8	34.4	39.5	27.7	33.6	51	13	27	29	28	78	76	78	.159	.173	.165	4.24	1.14	10.5	6.0	5.3	4.8	5.8
March	29.87	30.37	28.92	34.8	38.1	36.7	41.6	31.1	36.4	52	13	29	32	31	79	78	81	.166	.184	.175	4.95	1.20	3.5	6.2	5.5	5.7	6.2
April	29.95	30.43	29.32	43.3	46.4	44.3	49.1	39.6	44.4	64	32	40	42	41	88	85	89	.251	.271	.262	5.56	3.05	.0	6.4	5.6	5.0	6.3
May	29.92	30.24	29.53	54.9	60.1	53.9	62.1	49.0	55.6	77	43	50	53	50	86	80	88	.374	.414	.366	1.59	.76	.0	5.0	5.2	5.5	6.3
June	29.89	30.16	29.57	62.9	66.5	62.3	69.3	57.6	63.4	78	49	58	60	59	84	81	89	.492	.531	.511	3.13	1.51	.0	3.8	4.8	4.9	5.7
July	29.97	30.28	29.57	66.2	70.2	65.1	72.3	61.4	66.8	82	54	62	64	62	88	83	90	.575	.616	.562	1.16	.46	.0	5.2	5.2	5.8	5.5
August	29.98	30.35	29.58	68.8	72.4	68.5	74.7	64.6	69.6	84	60	66	66	66	90	83	91	.636	.654	.639	4.68	1.39	.0	5.7	5.4	6.1	6.0
September	29.89	30.25	29.39	64.2	67.9	65.1	70.2	60.9	65.6	79	54	60	62	61	87	81	87	.530	.558	.544	8.54	3.72	.0	5.3	5.8	5.4	6.7
October	30.06	30.60	29.50	53.8	57.1	55.3	60.3	49.0	54.6	71	31	48	48	48	80	74	79	.343	.359	.358	3.15	1.18	.0	4.7	4.3	4.1	4.2
November	29.92	30.47	29.14	40.8	43.4	42.0	48.0	35.3	41.6	64	19	34	35	35	76	72	76	.206	.219	.220	2.32	.79	1.5	6.1	5.5	5.3	5.7
December	30.04	30.80	29.28	31.1	34.0	34.1	39.1	26.1	32.6	53	−4	24	27	28	77	76	76	.148	.168	.168	3.30	1.00	13.3	7.5	7.2	4.8	7.1
Year	29.95	30.80	28.92	49.2	52.7	50.1	55.9	44.6	50.2	84	−4	44	46	45	83	79	84	.339	.363	.348	44.55	3.72	29.7	5.7	5.5	5.2	5.9

BOISE, IDAHO

[ϕ=43°37′ N.; λ=116°13′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	27.12	27.72	26.64	28.8	34.6	34.4	38.3	25.2	31.8	48	14	23	24	25	78	65	67	0.120	0.128	0.131	1.06	0.30	15.1	8.5	7.8	8.1	8.3
February	27.32	27.74	26.90	17.7	27.1	28.4	31.5	14.0	22.8	57	−13	15	17	19	88	66	66	.088	.101	.103	1.51	.47	18.2	6.6	7.0	6.6	6.9
March	27.20	27.68	26.78	34.0	46.3	47.7	50.6	31.7	41.2	65	22	28	28	26	77	45	43	.153	.142	.142	.59	.29	.8	7.8	8.4	7.1	7.6
April	27.12	27.63	26.62	39.0	55.0	57.5	60.4	36.7	48.6	76	25	29	28	28	69	37	35	.164	.156	.156	.74	.56	T	5.9	5.0	5.5	5.3
May	27.09	27.40	26.84	44.5	59.5	62.7	65.0	42.9	54.0	90	31	35	33	32	72	39	34	.206	.185	.163	1.54	.49	.1	5.8	5.5	5.7	5.7
June	27.07	27.39	26.79	56.6	77.7	82.4	84.3	55.1	69.7	101	44	43	42	38	62	29	22	.280	.268	.230	.14	.09	.0	4.5	4.0	4.3	4.7
July	27.10	27.31	26.87	60.9	86.1	91.7	93.3	59.5	76.4	108	53	40	41	40	49	22	17	.257	.266	.255	T	T	.0	.9	.8	1.4	1.2
August	27.12	27.32	26.90	60.8	81.0	85.7	87.5	58.4	73.0	100	45	40	42	39	49	26	21	.252	.273	.245	.01	.01	.0	2.7	1.5	1.6	1.9
September	27.08	27.41	26.75	51.5	69.8	72.8	75.7	46.6	61.2	91	33	33	35	34	52	31	27	.192	.207	.196	.12	.12	.0	2.9	2.6	2.3	3.0
October	27.22	27.52	26.59	45.5	65.0	67.0	70.8	42.1	56.4	84	24	31	32	34	57	32	31	.176	.189	.197	.88	.56	.0	2.5	3.6	3.9	3.6
November	27.43	27.77	26.71	35.0	48.5	47.8	53.2	31.5	42.4	62	21	30	32	32	80	50	54	.164	.173	.180	.24	.20	T	2.2	3.6	3.6	4.2
December	27.19	27.51	26.68	39.4	45.9	44.8	49.4	35.4	42.4	63	20	30	30	30	70	54	58	.170	.164	.170	1.10	.32	.6	3.9	7.6	8.4	8.5
Year	27.17	27.77	26.59	42.8	58.0	60.2	63.3	39.9	51.7	108	−13	31	32	31	67	41	40	.185	.188	1.82	7.95	.56	24.8	4.9	4.8	4.9	5.1

BOSTON, MASS.

[ϕ=42°21′ N; λ=71°04′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.84	30.55	29.15	35.0	40.2	38.8	45.0	30.7	37.8	60	9	26	27	28	67	59	65	0.145	0.152	0.160	2.04	0.91	1.3	6.5	5.5	4.6	5.3
February	29.80	30.54	29.00	30.6	37.0	35.4	41.9	25.5	33.7	66	9	21	23	23	66	57	60	.129	.140	.135	3.77	.98	20.6	5.2	5.9	3.4	5.0
March	29.76	30.21	28.83	33.2	38.7	36.5	41.6	29.8	35.7	60	11	23	24	25	66	58	63	.134	.141	.141	6.80	2.27	5.1	6.0	6.6	5.8	6.0
April	29.85	30.41	29.20	44.2	49.5	47.1	53.3	39.7	46.5	76	29	36	38	36	75	67	68	.219	.233	.221	7.37	2.63	5.0	6.7	6.8	5.8	6.5
May	29.81	30.11	29.41	58.1	65.3	61.9	70.8	52.5	61.6	90	40	46	46	48	65	53	64	.319	.322	.358	2.74	1.33	.0	5.7	5.7	6.0	5.3
June	29.76	30.04	29.40	66.2	73.6	70.8	79.5	59.7	69.6	99	47	55	55	55	68	54	60	.448	.451	.458	1.22	.61	.0	5.8	5.7	4.8	5.1
July	29.87	30.20	29.38	68.8	75.0	71.1	79.1	62.4	70.8	98	52	58	59	60	71	60	70	.499	.511	.531	2.63	1.10	.0	5.7	5.8	6.1	5.7
August	29.86	30.24	29.42	69.0	75.5	71.5	79.5	64.0	71.8	95	55	60	61	61	76	63	72	.535	.549	.546	3.41	.81	.0	6.9	6.7	5.5	6.2
September	29.78	30.20	29.30	62.6	68.9	65.3	73.5	58.1	65.8	86	47	55	55	56	78	66	75	.452	.457	.469	10.94	5.63	.0	5.2	6.3	4.6	6.0
October	29.96	30.55	29.36	49.2	56.2	53.6	60.9	44.5	52.7	75	27	42	42	44	76	59	71	.278	.278	.307	3.11	1.08	.0	4.5	5.0	4.8	4.6
November	29.80	30.32	28.97	34.5	41.0	38.4	46.7	29.9	38.3	70	12	26	26	27	71	55	64	.152	.155	.168	.65	.22	2.9	5.1	5.8	5.6	5.7
December	29.93	30.63	29.18	24.6	28.1	27.9	34.9	18.8	26.8	50	−17	15	14	18	65	57	66	.103	.103	.112	2.93	.92	15.6	7.8	7.1	4.5	7.1
Year	29.84	30.63	28.83	48.0	54.1	51.5	58.9	43.0	50.9	99	−17	39	39	40	70	59	66	.284	.291	.300	47.61	5.63	50.5	5.8	6.1	5.1	5.7

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

BISMARCK, N.DAK.

[H_b=1,674 ft.; h_t=8 ft.; h_r=3 ft.; h_a=57 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	7.9	NW.	34	NW.	2	7	7	10	6	7	2	10	11	2	9	8	14	8	5	13	8	0	5	1	21	0	31	0	0
February	9.9	NW.	31	NW.	0	3	4	5	3	3	5	12	18	3	13	10	5	5	3	8	5	0	2	1	18	0	28	0	0
March	9.4	E.	37	NW.	2	8	11	15	8	2	2	3	11	2	9	13	9	2	2	5	2	0	4	1	4	0	28	0	0
April	11.4	NE.	30	SE.	0	7	12	6	11	3	0	8	12	1	9	8	13	4	3	8	3	0	0	0	2	0	16	0	1
May	10.1	SE.	28	W.	0	4	7	11	11	4	3	5	14	3	4	13	14	8	7	0	0	2	1	0	0	1	2	5	1
June	8.4	SE.	29	W.	0	9	10	7	11	1	2	6	12	2	11	17	2	11	10	0	0	1	0	0	0	11	0	12	3
July	8.9	SE.	38	S.	1	8	9	12	16	0	6	1	8	2	17	10	4	9	6	0	0	1	2	2	0	13	0	11	0
August	8.6	SE.	28	SE.	0	7	4	8	19	2	2	3	15	2	17	8	6	7	3	0	0	0	1	1	0	6	0	5	2
September	9.7	W.	35	NW.	3	2	4	7	14	2	4	12	12	3	16	8	6	6	3	0	0	0	4	2	0	3	2	3	4
October	9.6	NW.	35	W.	3	7	7	7	7	0	5	7	20	2	10	12	9	5	3	2	1	0	0	0	1	0	18	0	1
November	10.6	NW.	50	NW.	3	4	4	5	2	6	5	10	23	1	8	8	14	6	4	13	5	0	0	0	8	0	29	0	0
December	8.1	E.	29	NW.	0	9	9	16	9	0	1	2	13	3	6	7	18	7	4	15	7	0	3	0	22	0	31	0	0
Year	9.4	NW.	50	NW.	14	75	88	109	117	30	37	79	169	26	129	122	114	78	53	64	31	4	22	8	76	34	185	36	12

BLOCK ISLAND, R.I.

[H_b=26 ft.; h_t=11 ft.; h_r=3 ft.; h_a=46 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	19.9	SW.	44	NW.	17	8	4	3	4	4	12	11	15	1	10	8	13	10	6	4	3	0	7	2	2	0	12	0	0
February	19.7	W.	58	W.	16	3	1	3	2	5	14	14	14	0	10	8	10	13	12	7	5	0	7	3	5	0	20	0	0
March	20.7	W.	47	NW.	15	5	9	6	0	4	6	15	17	0	7	11	13	14	13	7	3	0	6	3	1	0	14	0	0
April	17.3	W.	47	N.	8	4	8	12	5	10	7	10	4	0	8	7	15	14	9	0	0	0	17	10	0	0	0	2	0
May	13.1	S.	36	S.	1	4	2	10	4	14	14	9	5	0	6	11	14	6	5	0	0	0	18	8	0	0	0	1	0
June	12.2	S.	32	SW.	1	3	6	4	6	13	15	5	8	0	11	9	10	11	7	0	0	1	13	8	0	0	0	5	0
July	14.0	SW.	49	N.	4	4	8	8	5	7	21	6	3	0	8	13	10	7	6	0	0	0	21	11	0	0	0	2	0
August	12.8	S.	32	N.	1	3	14	5	5	12	13	8	2	0	6	11	14	16	14	0	0	0	20	9	0	0	0	5	0
September	14.2	W.	50	N.	4	4	5	6	1	9	10	16	8	1	9	9	12	12	7	0	0	0	10	3	0	0	0	1	0
October	16.1	NW.	49	NW.	4	12	5	4	4	10	8	7	12	0	15	7	9	12	7	0	0	0	7	2	0	0	1	1	0
November	18.5	W.	46	NW.	11	6	3	3	1	9	7	16	15	0	9	10	11	12	9	4	4	0	6	1	1	0	11	2	0
December	19.1	NW.	60	NW.	15	13	6	4	1	5	7	12	14	0	7	7	17	14	12	7	6	0	13	4	9	0	20	0	0
Year	16.5	W.	60	NW.	97	69	71	68	38	102	134	120	117	2	106	111	148	141	107	29	21	1	150	64	18	0	78	19	0

BOISE, IDAHO

[H_b=2,739 ft.; h_t=79 ft.; h_r=72 ft.; h_a=87 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.8	SE.	25	SE.	0	2	0	4	37	1	0	1	12	5	3	5	23	13	7	20	12	0	9	5	2	0	27	0	0
February	5.6	SE.	24	N.	0	8	1	3	23	1	2	4	11	3	5	6	17	12	9	16	12	0	7	2	13	0	27	0	0
March	6.9	SE.	27	NW.	0	8	1	3	29	1	0	1	15	4	0	16	15	8	3	6	1	1	0	0	0	0	17	1	0
April	6.4	NW.	29	NW.	0	6	1	1	10	3	1	3	24	11	12	8	10	5	2	4	0	0	2	1	0	0	9	1	0
May	6.4	NW.	21	NW.	0	5	0	3	21	3	0	1	23	6	9	10	12	9	3	3	1	1	1	1	0	2	3	4	0
June	5.9	NW.	18	SE.	0	2	1	8	14	3	4	1	24	5	11	10	9	4	2	0	0	0	0	0	0	6	0	1	0
July	5.5	NW.	16	NW.	0	4	2	3	20	2	0	3	24	4	26	5	0	0	0	0	0	0	0	0	0	23	0	1	0
August	5.6	NW.	20	NW.	0	2	0	8	12	5	5	4	25	1	24	5	2	1	0	0	0	0	0	0	0	15	0	1	0
September	5.3	NW.	18	NW.	0	5	3	3	11	3	1	4	28	2	20	4	6	2	1	0	0	0	0	0	0	2	0	0	0
October	4.8	SE.	25	NW.	0	3	2	7	12	2	3	5	23	5	17	7	7	3	2	0	0	0	0	0	0	0	1	1	0
November	4.3	NW.	22	NW.	0	12	0	7	14	2	1	5	18	1	12	13	5	3	2	1	0	0	1	0	0	0	16	0	0
December	6.7	SE.	24	SE.	0	10	0	3	31	2	2	2	11	1	2	3	26	13	6	6	2	0	3	2	1	0	11	0	0
Year	5.8	SE.	29	NW.	0	67	11	51	234	28	19	34	238	48	141	92	132	73	42	56	28	2	23	11	16	48	111	10	0

BOSTON, MASS.

[H_b=124 ft.; h_t=336 ft.; h_r=329 ft.; h_a=360 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.5	NW.	28	NW.	0	8	6	1	3	2	18	10	14	0	10	10	11	8	7	9	4	0	3	2	3	0	17	0	0
February	10.0	NW.	30	NW.	0	2	2	1	1	7	11	19	13	0	11	10	7	13	10	9	5	0	4	0	6	0	22	0	0
March	10.6	NW.	26	W.	0	4	6	9	1	4	4	11	23	0	11	7	13	14	14	11	8	0	8	2	2	0	17	0	0
April	9.8	E.	32	N.	1	3	11	16	1	4	5	11	9	0	7	9	14	14	11	3	1	0	10	3	0	0	3	2	0
May	8.6	SW.	27	NW.	0	6	6	4	4	13	13	8	8	0	9	15	7	9	6	0	0	0	4	0	0	0	0	3	0
June	8.8	SW.	29	SW.	0	6	2	2	2	7	21	7	13	0	8	16	6	10	8	0	0	0	8	1	0	0	0	7	0
July	8.0	SW.	28	NE.	0	4	8	8	4	11	16	5	6	0	8	13	10	10	6	0	0	0	4	1	0	5	0	7	0
August	7.9	SW.	24	S.	0	6	8	5	5	11	11	9	7	0	7	14	10	15	9	0	0	0	9	3	0	3	0	3	0
September	8.2	W.	26	N.	0	2	4	8	4	1	15	12	13	0	7	11	12	15	11	0	0	0	2	2	0	0	0	3	1
October	14.5	W.	46	NW.	1	12	6	7	1	7	9	8	12	0	12	10	8	12	10	0	0	0	4	1	0	0	3	0	0
November	13.1	W.	47	W.	7	8	0	2	4	5	10	16	13	0	5	16	9	10	7	10	4	0	6	0	2	0	19	0	0
December	15.7	W.	47	E.	12	11	1	5	1	3	7	22	12	0	4	10	17	13	10	11	5	0	9	4	11	0	26	0	0
Year	10.6	W.	47	W.	21	72	60	68	31	75	140	141	143	0	100	141	124	143	109	53	27	0	76	19	28	14	107	25	1

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

BROWNSVILLE, TEX.

[ϕ=25°54′ N.; λ=97°30′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.95	30.55	29.70	61.7	69.7	66.4	72.0	59.7	65.8	78	38	58	58	60	89	69	81	0.510	0.512	0.544	0.22	0.10	0.0	7.2	7.3	6.8	7.1
February	29.99	30.54	29.61	59.1	67.0	63.5	71.5	55.6	63.6	83	29	56	55	56	88	68	78	.487	.473	.482	.84	.57	.0	7.8	6.3	5.9	6.5
March	29.88	30.21	29.42	64.8	74.4	70.4	77.0	62.9	70.0	85	44	62	60	62	90	62	75	.575	.546	.575	.40	.25	.0	7.2	5.8	4.5	5.8
April	29.76	30.16	29.47	69.7	79.6	75.2	82.8	67.5	75.2	98	49	66	62	64	87	60	72	.633	.606	.633	.53	.41	.0	7.2	5.9	6.1	5.5
May	29.74	29.97	29.28	76.4	86.2	80.8	88.4	73.8	81.1	96	65	73	70	72	91	61	76	.825	.757	.798	4.85	2.36	.0	4.7	5.9	4.9	4.4
June	29.88	30.06	29.71	75.5	86.5	82.6	89.2	73.3	81.2	97	68	71	68	70	86	55	65	.755	.680	.724	.41	.32	.0	2.5	5.1	3.1	3.3
July	29.82	29.95	29.54	78.2	86.4	83.2	88.8	76.2	82.5	93	70	75	72	74	90	64	75	.874	.800	.841	4.50	1.77	.0	4.3	6.0	5.9	5.3
August	29.81	30.02	28.92	77.1	85.6	82.6	88.5	75.3	81.9	94	72	74	73	74	92	67	76	.854	.804	.842	8.06	2.73	.0	3.4	5.7	3.9	4.4
September	29.75	29.96	27.96	77.5	85.7	81.8	87.5	76.2	81.8	91	72	75	74	75	93	68	81	.875	.834	.872	13.58	10.15	.0	4.0	5.4	3.4	4.2
October	29.89	30.05	29.71	72.1	82.6	77.7	84.6	71.2	77.9	91	66	69	68	70	91	63	78	.714	.697	.739	3.10	2.28	.0	2.9	4.4	2.5	3.3
November	30.02	30.24	29.63	64.8	74.2	69.8	76.6	62.8	69.7	86	49	61	61	63	89	66	79	.561	.558	.580	2.42	1.04	.0	3.8	5.1	3.7	4.5
December	29.98	30.26	29.71	63.1	73.9	69.3	76.5	61.2	68.8	85	44	58	59	60	86	62	75	.529	.530	.555	.05	.04	.0	2.4	3.6	2.6	3.3
Year	29.87	30.55	27.96	70.0	79.3	75.3	82.0	68.0	75.0	98	29	66	65	67	89	64	76	.683	.650	.682	38.96	10.15	.0	4.8	5.5	4.4	4.8

BUFFALO, N.Y.

[ϕ=42°53′ N.; λ=78°53′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.13	29.67	28.41	32.4	35.2	34.6	40.7	28.5	34.6	60	9	27	27	27	79	72	74	0.153	0.152	0.151	1.61	0.68	0.7	6.9	7.7	5.6	7.2
February	29.12	29.69	28.46	23.8	28.1	27.7	35.0	19.8	27.4	53	−4	19	21	20	82	74	72	.109	.118	.114	2.48	.54	17.7	6.2	6.8	5.7	6.7
March	29.11	29.64	28.36	28.8	32.1	31.1	35.9	25.8	30.8	57	9	25	26	27	84	79	82	.137	.147	.148	2.85	.58	10.5	7.3	8.0	7.9	7.9
April	29.10	29.53	28.68	42.8	48.0	44.8	52.8	36.9	44.8	75	28	35	36	36	74	66	76	.208	.227	.223	2.05	.58	1.0	6.4	5.8	6.9	6.5
May	29.11	29.44	28.72	54.3	58.8	56.1	63.4	48.6	56.0	80	37	46	47	47	76	67	73	.329	.338	.337	3.00	1.08	.0	6.5	7.1	6.1	6.9
June	29.12	29.39	28.79	65.0	69.4	68.3	74.6	59.6	67.1	97	44	56	57	57	75	67	68	.474	.489	.481	1.51	.91	.0	3.5	4.8	4.6	4.7
July	29.19	29.63	28.92	69.7	74.5	73.6	78.0	65.3	71.6	93	57	59	60	59	70	62	62	.512	.520	.508	.15	.08	.0	3.9	3.6	3.5	4.0
August	29.18	29.50	28.68	66.5	71.9	70.2	75.2	62.5	68.8	82	55	57	58	57	73	63	66	.481	.490	.484	2.41	.90	.0	4.9	4.6	4.2	4.8
September	29.10	29.41	28.67	61.3	67.1	65.9	71.1	57.9	64.5	85	47	54	55	55	78	66	70	.436	.445	.457	.98	.36	.0	6.2	5.7	3.9	6.1
October	29.24	29.62	28.78	46.8	53.5	50.9	58.0	43.0	50.5	74	28	40	39	40	77	60	67	.252	.248	.257	1.62	.52	T	5.6	5.5	3.5	5.9
November	29.09	29.63	28.42	32.3	36.1	34.5	41.3	27.1	34.2	72	8	28	30	29	83	77	79	.164	.172	.168	2.68	.52	17.9	7.3	7.4	6.5	7.5
December	29.22	30.08	28.66	26.9	29.2	27.6	33.9	20.3	27.1	53	−7	23	25	24	84	83	85	.137	.147	.143	3.76	.76	19.3	8.2	7.8	7.1	8.0
Year	29.14	30.08	28.36	45.9	50.3	48.8	55.0	41.3	48.1	97	−7	39	40	40	78	70	73	.283	.291	.289	25.10	1.08	67.1	6.1	6.2	5.5	6.4

BURLINGTON, VT.

[ϕ=44°29′ N.; λ=73°12′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.53	30.23	28.84	26.0	30.7	-----	36.7	21.5	29.1	48	−2	20	21	---	76	67	---	0.110	0.118	-----	0.75	0.26	5.4	7.4	7.8	----	7.1
February	29.48	30.11	28.96	21.5	26.1	-----	31.4	16.4	23.9	48	−7	16	18	---	78	70	---	.098	.107	-----	1.67	.54	21.9	7.3	7.6	----	7.7
March	29.48	29.93	28.48	24.3	30.3	-----	33.5	19.5	26.5	47	2	18	20	---	76	63	---	.104	.110	-----	2.92	.98	11.8	7.3	7.1	----	7.1
April	29.53	30.09	28.96	41.6	47.9	-----	51.9	35.8	43.8	79	24	35	35	---	78	66	---	.211	.215	-----	3.89	.85	.8	7.3	7.6	----	7.4
May	29.51	29.81	29.03	54.8	63.5	-----	66.9	44.7	55.8	80	29	45	44	---	72	53	---	.327	.324	-----	2.16	.77	.0	5.7	5.9	----	6.0
June	29.48	29.73	28.96	65.1	73.3	-----	77.0	56.0	66.5	94	37	56	55	---	74	54	---	.473	.467	-----	2.59	1.16	.0	4.6	5.6	----	5.5
July	29.56	29.97	29.06	68.0	76.1	-----	80.5	58.5	69.5	92	47	58	58	---	71	54	---	.490	.489	-----	.58	.22	.0	5.7	5.2	----	5.8
August	29.56	29.93	28.97	64.9	73.1	-----	76.6	57.0	66.8	91	47	58	58	---	78	60	---	.482	.486	-----	4.47	1.88	.0	6.5	6.3	----	6.1
September	29.47	29.92	29.02	58.0	66.4	-----	69.9	52.0	61.0	81	38	53	54	---	85	65	---	.421	.433	-----	2.86	1.00	.0	7.6	6.1	----	6.7
October	29.65	30.18	29.06	45.0	51.4	-----	54.2	38.4	46.3	69	23	40	39	---	81	63	---	.253	.248	-----	4.26	1.22	1.0	6.6	6.7	----	7.0
November	29.48	30.01	28.69	26.9	30.9	-----	36.3	19.3	27.8	59	1	21	22	---	78	68	---	.124	.126	-----	1.33	.30	11.8	8.2	8.5	----	8.3
December	29.63	30.47	28.98	14.8	18.0	-----	25.3	7.2	16.2	43	−29	9	12	---	77	75	---	.083	.092	-----	2.42	.50	17.0	8.5	8.3	----	8.3
Year	29.53	30.47	28.48	42.6	49.0	-----	53.4	35.5	44.4	94	−29	36	36	---	77	63	---	.265	.268	-----	29.90	1.88	69.7	6.9	6.9	----	6.9

CAIRO, ILL.

[ϕ=37°00′ N.; λ=89°10′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.67	30.20	29.01	42.0	48.9	48.2	53.5	38.2	45.8	65	20	37	37	36	83	65	64	0.237	0.239	0.230	3.78	1.03	T	6.9	6.4	5.9	5.3
February	29.75	30.38	29.10	33.3	40.6	40.5	46.1	29.5	37.8	70	1	27	27	27	77	59	61	.168	.168	.169	3.77	1.53	3.8	6.4	5.8	5.9	6.1
March	29.64	30.13	29.06	42.8	50.1	50.3	55.7	39.5	47.6	78	22	37	38	39	80	65	68	.238	.233	.254	6.39	1.76	T	6.8	7.5	6.7	7.0
April	29.50	29.87	29.19	52.4	60.6	61.8	66.4	50.6	58.5	84	42	48	50	52	85	69	72	.341	.364	.395	3.68	1.27	.0	6.4	6.1	6.2	6.1
May	29.52	29.78	29.13	65.3	73.5	73.5	78.0	62.6	70.3	88	51	62	64	66	89	74	78	.563	.618	.646	9.02	2.81	.0	7.2	7.4	6.2	6.8
June	29.62	29.94	29.41	73.1	85.7	84.6	89.7	69.6	79.6	98	54	65	62	63	76	47	50	.635	.597	.598	.91	.54	.0	3.5	3.2	4.6	3.9
July	29.60	29.82	29.42	74.2	83.4	84.1	87.4	71.4	79.4	100	65	68	66	67	81	60	59	.686	.665	.672	7.49	2.49	.0	5.5	6.2	5.0	5.3
August	29.60	29.82	29.42	70.6	81.8	80.3	85.0	68.6	76.8	92	63	66	65	67	85	59	66	.638	.638	.679	4.41	1.83	.0	5.5	5.1	6.4	5.3
September	29.56	29.76	29.33	70.1	81.3	78.5	85.2	69.0	77.1	93	54	67	66	69	89	63	74	.663	.662	.721	7.81	2.41	.0	4.1	5.0	4.9	4.5
October	29.71	30.00	29.32	52.0	64.3	61.9	69.2	50.1	59.6	83	38	47	46	50	85	54	64	.340	.324	.367	2.75	1.10	.0	5.5	4.9	4.2	5.0
November	29.72	30.18	29.30	42.2	52.7	51.6	57.5	39.3	48.4	78	25	35	36	35	76	54	55	.217	.230	.225	1.23	1.00	.0	5.3	5.6	5.3	5.2
December	29.73	30.28	29.37	40.2	47.8	46.4	53.3	35.7	44.5	72	8	34	36	35	79	66	66	.221	.240	.232	2.60	1.61	T	6.7	7.5	6.7	6.9
Year	29.64	30.38	29.01	54.8	64.2	63.5	68.9	52.0	60.4	100	1	49	49	50	82	61	65	.413	.416	.432	53.84	2.81	3.8	5.8	5.9	5.7	5.7

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

BROWNSVILLE, TEX.

[H_b=57 ft.; h_t=88 ft.; h_r=80 ft.; h_a=96 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																											
January	10.7	SE.	32	S.	1	6	5	11	23	7	1	0	8	1	2	14	15	8	1	0	0	0	10	4	0	0	0	0	0
February	11.5	SE.	31	NW.	0	14	3	6	19	3	0	0	11	0	5	13	10	8	7	0	0	0	8	3	0	0	1	0	0
March	13.0	SE.	35	SE.	1	6	5	11	28	7	0	0	5	0	7	14	10	7	2	0	0	0	11	3	0	0	0	0	0
April	11.2	SE.	32	N.	1	2	5	11	20	17	0	1	4	0	6	19	5	7	3	0	0	0	9	0	0	4	0	4	0
May	11.7	SE.	29	N.	0	1	3	10	46	2	0	0	0	0	12	18	1	6	5	0	0	0	7	0	0	5	0	5	0
June	9.3	SE.	21	E.	0	5	3	11	32	7	0	1	1	0	21	6	3	2	2	0	0	0	4	2	0	14	0	2	0
July	10.9	SE.	35	NE.	1	2	4	15	26	10	0	0	5	0	8	15	8	11	8	0	0	0	2	0	0	13	0	5	0
August	9.5	E.	66	N.	2	8	0	26	18	4	1	2	3	0	16	8	7	9	8	0	0	0	1	0	0	11	0	7	0
September	10.1	E.	80	NW.	2	11	3	29	14	1	0	0	2	0	15	10	5	13	10	0	0	0	0	0	0	1	0	4	0
October	7.7	E.	26	SE.	0	5	8	26	8	2	3	0	10	0	20	9	2	8	7	0	0	0	4	0	0	1	0	3	0
November	9.5	SE.	26	NW.	0	6	5	11	18	4	1	1	14	0	15	6	9	10	5	0	0	0	7	3	0	0	0	0	0
December	10.8	S.	30	S.	0	2	1	2	24	18	2	1	12	0	20	7	4	2	1	0	0	0	12	4	0	0	0	0	0
Year	10.5	SE.	80	NW.	8	68	45	169	276	82	8	6	75	1	147	139	79	91	59	0	0	0	75	19	0	49	1	30	0

BUFFALO, N.Y.

[H_b=767 ft.; h_t=243 ft.; h_r=238 ft.; h_a=280 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	19.4	SW.	61	W.	13	0	3	3	5	8	26	9	8	0	4	10	17	9	5	9	2	0	8	1	5	0	22	0	0
February	20.0	SW.	54	SW.	17	0	4	2	4	5	18	16	7	0	6	10	12	17	12	16	15	0	3	1	11	0	27	0	0
March	16.5	SW.	54	W.	6	1	7	5	6	4	15	11	13	0	4	5	22	23	17	18	16	0	3	2	7	0	27	0	0
April	15.1	SW.	40	SW.	5	0	10	8	2	8	22	7	3	0	8	6	16	17	13	7	3	0	12	0	0	0	8	0	0
May	12.5	SW.	42	SW.	4	1	9	8	5	8	25	4	2	0	4	13	14	12	9	0	0	0	9	1	0	0	0	8	1
June	11.7	SW.	54	W.	4	4	5	2	1	8	28	6	6	0	14	9	7	8	6	0	0	1	4	0	0	1	0	6	0
July	12.8	SW.	31	SW.	0	3	12	4	0	7	28	4	4	0	16	11	4	5	1	0	0	0	0	0	0	1	0	2	0
August	12.2	SW.	34	SW.	2	2	18	2	3	7	18	6	6	0	11	13	7	9	6	0	0	0	2	0	0	0	0	3	0
September	13.4	SW.	45	SW.	6	1	9	8	2	9	12	12	7	0	6	12	12	10	8	0	0	0	2	0	0	0	0	2	0
October	14.7	SW.	54	SW.	12	3	6	6	5	16	5	9	12	0	8	11	12	14	10	2	0	0	3	2	0	0	4	2	0
November	17.8	W.	49	SW.	15	1	5	8	4	9	7	17	9	0	4	8	18	19	12	18	14	0	2	0	5	0	24	2	0
December	16.9	W.	49	SW.	14	1	4	10	4	3	15	17	8	0	4	6	21	20	13	14	12	0	6	0	11	0	26	0	0
Year	15.2	SW.	61	W.	98	17	92	66	41	92	219	118	85	0	89	114	162	163	112	84	62	1	54	7	39	2	138	25	1

BURLINGTON, VT.

[H_b=403 ft.; h_t=11 ft.; h_r=3 ft.; h_a=48 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.8	S.	41	S.	4	5	2	2	3	13	1	1	4	0	4	9	18	5	4	10	4	0	0	0	8	0	27	0	1
February	11.1	S.	37	S.	4	1	2	1	1	12	1	2	8	0	3	8	17	12	9	18	10	0	2	0	14	0	26	0	0
March	8.8	N	30	SW.	0	7	5	1	5	5	1	2	4	1	9	2	20	12	8	20	11	0	2	1	11	0	30	0	1
April	10.3	SE.	34	SE.	1	2	2	1	8	10	0	3	3	1	5	7	18	17	14	6	4	0	11	3	0	0	7	0	0
May	10.0	S.	32	S.	1	5	2	0	0	15	1	1	7	0	9	7	15	13	12	0	0	0	3	0	0	0	2	4	2
June	8.5	S.	32	SE.	1	1	0	0	1	12	5	1	10	0	9	12	9	9	7	0	0	1	1	0	0	3	0	8	2
July	8.0	S.	21	SE.	0	7	2	0	4	16	0	1	1	0	7	14	10	8	4	0	0	0	1	0	0	2	0	12	1
August	8.3	S.	27	S.	0	5	3	1	2	13	1	0	5	1	9	7	15	12	10	0	0	0	4	0	0	1	0	2	0
September	7.8	S.	30	SE.	0	5	1	2	9	7	2	1	3	0	6	7	17	13	12	0	0	0	9	0	0	0	0	4	0
October	10.5	S.	35	S.	6	3	0	2	5	9	1	4	7	0	5	8	18	9	8	2	2	0	3	0	0	0	7	0	0
November	12.3	S.	35	S.	6	3	1	2	3	11	0	2	8	0	2	7	21	14	11	19	10	0	2	0	12	0	27	0	0
December	11.9	S.	38	NW.	3	5	1	2	4	11	1	0	7	0	1	8	22	22	16	25	14	0	4	1	15	0	31	0	0
Year	9.8	S.	41	S.	26	49	21	14	45	134	14	18	67	3	69	96	200	146	115	100	55	1	42	5	60	6	157	30	7

CAIRO, ILL.

[H_b=356 ft.; h_t=87 ft.; h_r=80 ft.; h_a=93 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.9	S.	28	SW.	0	8	1	3	11	21	8	5	5	0	8	9	14	11	8	1	0	0	1	0	0	0	7	5	0
February	9.9	S.	31	S.	0	11	5	3	4	15	6	5	7	0	8	7	13	12	11	6	2	0	5	2	5	0	12	1	0
March	10.6	N.	33	N.	2	11	7	11	4	11	6	4	8	0	6	8	17	14	11	3	1	1	0	0	0	0	7	6	0
April	9.7	S.	30	SW.	0	9	8	2	10	13	7	7	4	0	8	10	12	12	11	0	0	0	0	0	0	0	0	3	0
May	8.6	S.	40	SE.	2	8	8	1	9	18	8	4	6	0	5	8	18	19	16	0	0	2	0	0	0	0	0	18	0
June	6.7	S.	28	NE.	0	6	10	3	8	17	9	4	3	0	18	4	8	3	3	0	0	0	0	0	0	20	0	8	0
July	6.9	S.	24	SW.	0	13	12	4	5	15	8	0	4	1	12	7	12	9	7	0	0	0	0	0	0	10	0	6	0
August	6.2	NE.	25	SE.	0	13	15	5	2	15	6	0	3	3	11	10	10	7	7	0	0	0	1	0	0	7	0	6	0
September	6.3	S.	31	SW.	0	10	3	3	5	22	7	7	1	2	14	7	9	10	9	0	0	0	1	0	0	7	0	13	0
October	7.9	S.	30	NW.	0	12	12	5	8	14	2	5	4	0	13	6	12	9	7	0	0	0	0	0	0	0	0	5	0
November	9.8	NW.	27	N.	0	9	4	1	6	15	10	6	9	0	12	7	11	7	4	0	0	0	3	3	0	0	6	1	0
December	10.7	S.	26	N.	0	9	15	4	4	15	12	1	2	0	4	12	15	8	7	2	0	0	0	0	1	0	10	3	0
Year	8.6	S.	40	SE.	4	119	100	45	76	191	89	48	56	6	119	95	151	121	101	12	3	3	11	5	6	44	42	75	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

CANTON, N.Y.

[ϕ=44°36′ N.; λ=75°10′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.46	30.13	28.77	26.4	32.0	29.3	37.6	19.9	28.8	51	−7	20	23	---	78	69	---	0.115	0.130	-----	1.51	0.42	5.8	7.9	7.0	----	7.0
February	29.44	30.03	28.86	20.7	26.9	23.8	32.4	14.4	23.4	47	−13	16	19	---	82	69	---	.100	.108	-----	2.18	.51	12.8	7.4	7.4	----	7.3
March	29.45	29.90	28.57	24.0	29.4	26.8	33.0	18.2	25.6	51	−4	19	20	---	81	68	---	.110	.115	-----	2.59	.95	12.1	6.7	7.3	----	7.0
April	29.46	30.02	28.97	41.0	47.8	44.9	53.1	34.6	43.8	76	22	35	35	---	80	65	---	.208	.211	-----	3.99	.68	1.1	6.8	7.6	----	6.9
May	29.44	29.79	29.05	56.1	64.0	57.2	67.7	46.6	57.2	80	30	46	46	---	70	53	---	.336	.331	-----	5.24	1.52	.0	5.6	5.8	----	5.8
June	29.42	29.66	28.96	65.8	74.3	68.3	78.7	54.8	66.8	95	39	55	54	---	69	51	---	.452	.449	-----	2.11	1.17	.0	4.3	4.8	----	4.6
July	29.50	29.94	29.11	67.7	76.5	70.9	81.2	56.9	69.0	92	46	58	57	---	73	52	---	.494	.472	-----	1.99	.96	.0	4.5	4.9	----	5.1
August	29.51	29.88	28.91	64.5	74.2	68.2	77.9	55.0	66.4	91	44	56	56	---	76	55	---	.461	.459	-----	3.27	1.51	.0	5.9	6.4	----	5.7
September	29.42	29.85	28.90	58.7	68.0	60.3	71.9	50.6	61.2	83	34	54	53	---	84	61	---	.426	.427	-----	2.70	.96	.0	5.5	6.6	----	6.0
October	29.59	30.07	29.14	43.9	51.2	44.5	54.0	35.2	44.6	72	14	37	37	---	77	60	---	.233	.232	-----	2.58	.76	6.3	6.5	6.2	----	6.5
November	29.42	29.99	28.72	25.1	29.6	26.5	36.3	15.4	25.8	68	−2	21	23	---	84	74	---	.123	.131	-----	2.64	.53	16.2	7.6	7.8	----	7.9
December	29.58	30.52	28.94	12.8	16.5	13.4	23.0	3.6	13.3	46	−34	10	11	---	90	80	---	.086	.087	-----	3.49	1.23	17.6	7.9	7.2	----	7.3
Year	29.47	30.52	28.57	42.2	49.2	44.5	53.9	33.8	43.8	95	−34	36	36	---	79	63	---	.262	.263	-----	34.29	1.52	71.9	6.4	6.6	----	6.4

CAPE HENRY, VA.

[ϕ=36°56′ N; λ=76°00′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	30.03	30.60	28.99	45.4	51.4	48.6	55.2	41.8	48.5	75	31	39	40	40	79	68	74	0.254	0.266	0.260	3.04	1.01	T	6.7	6.5	5.3	6.6
February	30.05	30.72	29.45	42.0	47.0	45.4	52.8	36.5	44.6	71	22	33	34	36	72	64	70	.211	.221	.233	2.90	1.11	0.2	5.4	6.0	5.0	6.1
March	29.98	30.47	29.26	45.6	51.3	47.3	56.3	40.2	48.2	83	27	36	37	36	71	60	67	.231	.241	.226	2.10	.47	T	5.0	5.9	4.5	5.8
April	29.94	30.32	29.47	55.5	58.2	54.7	62.4	48.6	55.5	78	39	47	48	48	75	70	79	.235	.344	.341	2.07	.84	.0	4.8	5.1	4.6	5.3
May	29.94	30.28	29.52	67.8	73.2	67.9	76.3	61.5	68.9	94	47	61	61	61	80	68	79	.546	.551	.539	2.51	1.04	.0	4.8	5.0	5.4	5.7
June	29.93	30.20	29.68	73.5	77.8	73.3	81.7	67.0	74.4	95	51	64	64	64	74	64	74	.627	.625	.627	2.03	1.05	.0	5.0	4.3	5.0	4.7
July	29.99	30.27	29.77	74.5	78.7	74.5	81.0	68.9	75.0	94	60	69	69	68	83	74	80	.708	.721	.694	2.44	.91	.0	6.2	5.1	6.0	6.0
August	29.93	30.27	28.65	77.3	81.7	76.1	83.6	72.1	77.8	97	68	71	71	70	81	71	82	.756	.762	.740	8.68	3.39	.0	5.3	5.2	5.6	5.3
September	29.92	30.19	29.26	75.1	80.7	75.5	85.1	70.7	76.9	93	61	67	68	68	78	65	78	.687	.691	.697	2.29	1.76	.0	5.1	4.1	4.8	4.7
October	30.08	30.45	29.60	62.2	67.2	61.8	69.5	57.6	63.6	84	44	55	56	55	79	69	78	.452	.469	.442	.30	.19	.0	3.5	4.0	3.2	4.0
November	30.02	30.61	29.38	46.6	53.8	50.7	56.8	43.4	50.1	74	29	38	40	39	72	62	66	.248	.270	.259	1.22	1.05	.0	4.2	4.4	3.5	4.6
December	30.13	30.80	29.68	44.2	50.6	46.4	54.7	39.9	47.3	75	20	38	39	38	81	66	72	.250	.260	.242	1.18	.57	T	6.8	5.5	4.3	6.1
Year	30.00	30.80	28.65	59.1	64.3	60.2	67.8	54.0	60.9	97	20	52	52	52	77	67	75	.442	.452	.442	30.76	3.39	.2	5.2	5.1	4.8	5.4

CHARLES CITY, IOWA

[ϕ=43°4′ N.; λ=92°38′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.79	29.15	28.03	24.5	33.8	30.6	38.1	19.7	23.9	51	−4	21	24	26	85	68	81	0.117	0.135	0.142	1.03	0.67	0.7	6.6	5.9	4.5	5.8
February	28.95	29.34	28.26	11.8	23.9	20.5	28.8	7.1	18.0	56	−25	9	13	13	88	61	72	.080	.086	.092	.31	.15	3.0	4.5	3.6	3.4	4.0
March	28.93	29.36	28.27	26.7	37.1	34.7	40.7	23.4	32.0	65	0	23	25	28	86	60	70	.131	.145	.149	4.32	1.87	10.1	6.2	5.0	6.6	5.6
April	28.82	29.32	28.35	39.9	52.6	50.9	56.5	36.1	46.3	78	27	32	32	34	74	50	66	.188	.193	.208	2.49	.93	T	4.9	4.6	4.7	5.1
May	28.80	29.10	28.39	53.6	65.2	62.6	68.8	49.2	58.0	83	35	47	48	49	75	56	64	.332	.347	.362	3.95	1.10	.0	6.9	6.6	6.9	6.5
June	28.87	29.30	28.58	70.3	85.7	82.4	89.9	62.5	76.2	101	42	59	60	60	69	44	48	.519	.542	.544	1.74	1.95	.0	3.8	3.9	3.1	3.5
July	28.93	29.27	28.55	69.6	82.9	80.8	86.5	63.7	75.1	95	52	62	61	62	76	49	55	.552	.547	.580	2.87	.44	.0	3.7	5.1	3.5	4.2
August	28.96	29.22	28.65	61.9	77.4	74.6	81.2	56.7	69.0	91	48	55	54	54	79	46	50	.446	.421	.433	1.40	.95	.0	3.5	5.8	4.9	4.8
September	28.83	29.12	28.48	59.6	75.1	68.4	77.9	55.0	66.4	95	35	55	53	54	84	49	61	.448	.427	.436	3.92	.97	.0	5.0	3.9	3.5	4.1
October	28.97	29.20	28.58	39.7	54.7	49.3	58.2	35.7	47.0	78	22	34	35	37	82	49	63	.209	.219	.235	2.01	1.93	.1	4.0	4.5	2.6	4.4
November	28.95	29.46	28.41	27.5	38.4	33.4	42.8	23.4	33.1	78	2	24	24	24	83	57	67	.133	.138	.131	.23	.16	1.4	6.7	6.3	5.0	6.1
December	29.00	29.73	28.39	19.2	26.6	22.8	31.2	12.4	21.8	51	−25	16	18	17	84	69	76	.106	.118	.109	1.10	.47	6.4	7.7	7.2	6.2	7.0
Year	28.90	29.73	28.03	42.0	54.4	50.9	58.4	37.1	47.7	101	−25	36	37	38	81	55	64	.272	.277	.285	25.37	1.95	21.7	5.3	5.2	4.6	5.1

CHARLESTON, S.C.

[ϕ=32°47′ N.; λ=79°56′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	30.06	30.48	29.35	51.0	61.0	55.0	63.5	48.1	55.8	75	35	46	48	46	84	64	74	0.334	0.355	0.335	3.85	1.10	0.0	6.6	5.8	3.9	5.9
February	30.08	30.59	29.62	50.1	58.4	55.0	61.5	46.0	53.8	76	26	44	47	46	81	69	75	.322	.355	.338	5.93	2.15	.0	6.4	7.0	4.9	6.8
March	30.02	30.37	29.44	53.2	62.6	59.0	65.9	50.5	58.2	83	38	43	44	47	79	52	67	.310	.316	.349	.99	.69	.0	3.4	3.2	2.3	3.7
April	29.92	30.26	29.58	61.7	69.2	64.9	71.8	57.5	64.5	83	49	53	52	55	74	56	72	.416	.404	.445	2.29	.92	.0	6.4	6.6	4.9	6.1
May	29.95	30.17	29.40	75.6	82.8	75.8	85.3	70.5	77.9	95	62	68	67	69	78	60	80	.692	.675	.713	1.76	1.16	.0	3.9	3.5	2.5	3.6
June	29.94	30.18	29.66	77.2	84.5	78.1	87.1	72.0	79.6	99	59	67	67	70	71	58	77	.678	.693	.750	2.72	1.30	.0	4.2	4.6	5.8	4.6
July	29.99	30.19	29.73	78.7	84.0	79.5	86.1	74.5	80.3	97	61	72	72	74	89	68	82	.799	.784	.827	8.12	2.38	.0	5.7	6.2	5.9	5.9
August	29.93	30.14	29.62	79.0	85.7	80.0	88.0	74.8	81.4	95	71	73	73	74	82	67	83	.813	.820	.841	8.69	2.49	.0	5.2	5.4	5.5	5.5
September	29.91	30.10	29.64	73.7	85.9	81.2	87.9	74.4	81.2	95	65	73	73	75	89	66	81	.818	.829	.865	13.04	10.57	.0	3.8	3.3	2.3	3.8
October	30.01	30.20	29.61	64.9	74.0	69.4	75.4	61.8	68.6	84	49	59	60	62	81	63	76	.509	.530	.569	2.81	1.61	.0	4.8	4.6	2.8	4.7
November	30.05	30.54	29.63	51.8	63.1	57.9	64.9	49.2	57.0	77	35	44	44	47	77	52	70	.321	.318	.352	2.26	1.71	.0	3.4	3.4	2.8	3.3
December	30.12	30.56	29.63	52.1	62.7	57.5	66.1	49.9	58.0	78	35	47	48	51	85	62	81	.348	.363	.393	.40	.20	.0	4.3	4.5	3.6	4.5
Year	30.00	30.59	29.35	64.5	72.8	67.8	75.3	60.8	68.0	99	26	57	58	60	79	61	77	.529	.536	.568	52.85	10.57	.0	4.8	4.8	3.9	4.9

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

CANTON, N.Y.

[H_b=448 ft.; h_t=10 ft.; h_r=4 ft.; h_a=61 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp. 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	11.6	SW.	38	W.	3	5	0	6	0	1	12	6	1	0	4	11	16	11	8	14	5	0	2	0	8	0	28	1	0
February	11.7	SW.	38	W.	2	1	1	1	1	1	13	6	4	0	3	9	16	19	12	20	14	0	3	2	12	0	26	0	0
March	10.2	W.	35	W.	1	3	1	10	1	2	2	9	3	0	6	7	18	14	11	20	13	0	4	0	9	0	31	0	3
April	9.8	E.	30	W.	0	1	3	8	1	0	6	8	3	0	4	11	15	16	13	6	4	0	5	0	0	0	12	0	1
May	8.4	SW.	35	SW.	1	3	4	7	0	0	10	7	0	0	8	11	12	15	12	0	0	0	2	2	0	0	2	7	1
June	7.2	SW.	39	NW.	1	5	1	2	2	1	12	6	0	0	12	12	6	7	5	0	0	0	0	0	0	2	0	5	2
July	7.0	SW.	27	SW.	0	3	1	7	0	0	8	5	1	0	9	14	8	6	4	0	0	1	3	0	0	1	0	8	1
August	7.2	W.	28	E.	0	3	4	5	0	2	12	3	2	0	9	10	12	10	8	0	0	0	1	1	0	1	0	3	3
September	6.5	SW.	25	W.	0	1	1	2	2	3	11	8	2	0	6	13	11	11	9	0	0	0	7	4	0	0	0	2	3
October	9.0	SW.	29	SW.	0	1	0	8	0	3	9	8	2	0	5	12	14	11	7	3	2	0	2	0	2	0	13	1	0
November	8.8	SW.	30	SW.	0	5	4	1	0	1	7	6	5	1	2	8	20	19	15	18	12	0	2	0	10	0	25	0	0
December	9.4	W.	29	W.	0	3	2	5	1	2	9	5	3	1	6	4	21	18	16	20	11	0	2	0	17	0	31	0	0
Year	8.9	SW.	39	NW.	8	34	22	63	8	22	111	77	26	2	74	122	169	157	120	101	61	1	33	9	58	4	168	27	14

CAPE HENRY, VA.

[H_b=18 ft.; h_t=8 ft.; h_r=3 ft.; h_a=54 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	14.5	SW.	64	N.	9	10	8	1	5	9	14	5	9	1	6	10	15	10	8	1	0	0	3	4	0	0	1	0	0
February	14.0	NW.	43	NW.	9	4	4	4	3	7	13	6	14	1	9	5	14	14	10	1	1	0	4	4	0	0	7	0	0
March	14.7	NW.	40	N.	7	10	3	2	6	8	11	6	16	0	7	16	8	11	11	2	0	0	1	3	0	0	4	3	0
April	13.4	SE.	48	NE.	4	6	11	6	16	8	7	5	1	0	12	6	12	8	8	0	0	1	4	1	0	0	0	2	0
May	10.8	SE.	34	N.	1	9	6	4	13	10	11	7	1	1	5	18	8	6	6	0	0	1	3	4	0	3	0	6	0
June	10.6	SE.	41	N.	3	8	8	4	12	9	6	5	8	1	9	17	4	6	5	0	0	1	2	2	0	3	0	5	0
July	10.3	SW.	44	NE.	2	2	12	5	5	14	11	8	4	1	10	8	13	12	10	0	0	0	1	2	0	3	0	11	0
August	12.5	SW.	66	NE.	3	4	11	11	6	7	16	4	3	0	8	15	8	13	11	0	0	0	0	0	0	4	0	10	0
September	12.1	SW.	65	NE.	3	4	4	5	12	8	17	5	5	0	12	11	7	7	4	0	0	0	1	0	0	5	0	3	0
October	13.2	N.	41	N.	2	18	11	3	10	9	3	5	2	1	19	5	7	4	2	0	0	0	1	2	0	0	0	1	0
November	13.4	SW.	42	NW.	9	5	6	3	3	8	17	2	15	1	15	6	9	8	4	0	0	0	3	2	0	0	4	1	0
December	12.6	SW.	44	NW.	4	15	9	3	0	13	13	6	3	0	6	13	12	7	6	2	0	0	1	2	0	0	6	0	0
Year	12.7	SW.	66	NE.	56	95	93	51	91	110	138	64	81	7	118	130	117	106	85	6	1	3	24	26	0	18	22	42	0

CHARLES CITY, IOWA

[H_b=1,015 ft.; h_t=10 ft.; h_r=4 ft.; h_a=51 ft.

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.1	SE.	25	W.	0	0	5	1	23	5	7	8	11	2	13	3	15	6	3	9	2	0	2	1	8	0	31	1	0
February	9.0	NW.	24	W.	0	6	1	0	12	3	5	13	15	1	14	8	6	5	4	9	5	0	0	0	12	0	27	0	0
March	8.4	NW.	25	NW.	0	9	8	1	14	5	3	5	16	1	11	8	12	9	9	6	4	0	1	1	4	0	25	2	0
April	8.3	SE.	24	SE.	0	9	8	6	12	2	2	8	12	1	11	9	10	9	8	3	0	0	0	0	0	0	12	5	0
May	7.9	SE.	30	SW.	0	6	14	2	13	5	5	8	8	1	7	9	15	12	9	0	0	2	1	0	0	0	0	6	0
June	6.9	SE.	20	SW.	0	4	1	2	13	23	10	3	4	0	15	13	2	8	6	0	0	0	0	0	0	19	0	6	0
July	6.2	SE.	27	N.	0	5	4	5	20	6	13	4	5	0	13	12	6	7	7	0	0	0	0	0	0	8	0	8	0
August	5.5	SE.	18	S.	0	10	7	1	20	6	4	3	8	3	15	8	8	7	6	0	0	0	0	0	0	3	0	4	0
September	7.2	SE.	21	W.	0	4	8	2	19	5	5	7	7	3	14	9	7	11	9	0	0	0	0	0	0	2	0	7	0
October	7.6	SE.	22	N.	0	11	1	1	19	7	4	4	12	3	12	11	8	6	2	3	1	0	1	0	1	0	13	1	0
November	8.2	NW.	27	NW.	0	6	4	2	8	0	2	7	21	1	8	6	16	3	2	12	3	0	1	0	4	0	29	0	0
December	7.5	SE.	22	SE.	0	12	6	1	22	5	2	3	11	0	6	4	21	9	6	8	3	0	4	0	12	0	29	0	0
Year	7.6	SE.	30	SW.	0	82	67	24	195	81	62	73	130	16	139	100	126	92	71	50	18	2	10	2	41	32	166	40	0

CHARLESTON, S.C.

[H_b=48 ft.; h_t=11 ft.; h_r=3 ft.; h_a=92 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.8	SW.	32	NW.	1	15	7	3	1	3	17	7	9	0	10	7	14	10	6	0	0	0	7	1	0	0	0	0	0
February	10.8	N.	30	W.	0	2	12	2	3	2	11	6	11	0	7	8	15	11	9	0	0	0	6	5	0	0	2	0	0
March	12.0	SW.	35	S.	1	10	6	3	6	10	12	7	9	0	17	9	5	2	2	0	0	0	5	2	0	0	0	0	0
April	11.9	SW.	32	N.	1	8	7	9	6	3	13	9	5	0	8	8	14	11	9	0	0	0	1	1	0	0	0	4	0
May	10.8	SW.	26	W.	0	3	5	8	3	11	20	10	2	0	18	9	4	6	4	0	0	0	2	0	0	0	8	0	0
June	10.1	SW.	37	N.	2	5	4	3	4	9	23	5	5	0	12	10	8	13	8	0	0	0	2	0	0	12	0	12	0
July	9.7	SW.	30	NE.	0	5	5	8	3	14	16	10	1	0	8	12	11	12	11	0	0	0	1	0	0	7	0	12	0
August	9.9	SW.	50	NE.	0	7	8	5	1	3	14	14	5	0	11	3	12	18	14	0	0	0	1	0	0	13	0	15	0
September	9.5	S.	51	SE.	2	7	9	2	4	14	8	12	4	0	15	12	3	7	6	0	0	0	4	0	0	9	0	4	0
October	11.3	NE.	27	NE.	0	16	22	9	3	4	3	3	2	0	14	3	9	7	6	0	0	0	11	1	0	0	0	1	0
November	10.0	W.	35	NW.	1	10	9	1	1	3	12	11	13	0	20	2	8	3	3	0	0	0	9	0	0	0	0	2	0
December	9.5	SW.	27	E.	0	7	11	3	3	3	12	14	5	0	15	7	9	6	2	0	0	0	14	7	0	0	0	0	0
Year	10.5	SW.	51	SE.	8	102	105	55	37	39	163	108	71	0	155	98	112	104	80	0	0	0	63	17	0	49	2	53	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

CHARLOTTE, N.C.

[ϕ=35°13′ N.; λ=80°51′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.26	29.72	28.48	44.2	52.1	52.1	56.5	41.9	49.2	72	26	38	39	39	80	62	60	0.246	0.253	0.253	1.37	0.74	0.4	5.5	6.4	4.8	6.2
February	29.28	29.78	28.81	39.5	48.2	47.0	53.0	35.7	44.4	73	12	33	34	34	76	62	63	.205	.223	.208	2.37	.67	.3	4.8	6.5	5.1	6.5
March	29.20	29.57	28.61	45.1	55.0	55.0	60.7	41.7	51.2	78	28	36	36	35	69	50	49	.231	.231	.228	2.52	1.18	.0	4.8	4.0	3.2	4.4
April	29.13	29.55	28.68	53.1	64.2	63.5	69.2	50.3	59.8	82	38	44	42	42	74	46	49	.302	.281	.283	2.02	.66	.0	4.8	5.3	5.1	5.1
May	29.16	29.48	28.83	67.1	78.3	75.6	82.8	63.1	73.0	92	52	60	58	58	78	52	56	.522	.496	.486	2.46	.88	.0	5.0	4.4	5.4	4.9
June	29.17	29.45	28.97	73.5	83.7	80.7	88.1	68.5	78.3	98	51	59	58	58	63	42	50	.532	.500	.514	1.31	.49	.0	3.3	4.4	4.4	4.1
July	29.22	29.50	28.96	72.2	82.4	78.7	86.7	68.4	77.6	94	55	66	62	63	80	53	62	.542	.582	.596	2.08	.68	.0	4.2	5.3	6.2	5.3
August	29.18	29.48	28.83	71.5	80.9	76.5	84.8	68.6	76.7	93	62	67	66	66	86	62	71	.662	.642	.630	5.27	1.68	.0	6.2	6.1	6.7	6.3
September	29.16	29.38	28.90	70.5	81.0	79.5	84.8	68.6	76.7	93	61	64	62	63	81	57	60	.614	.584	.593	4.69	4.12	.0	3.6	4.5	2.9	4.1
October	29.28	29.60	28.83	54.2	66.7	66.2	71.3	52.4	61.8	88	35	47	47	48	78	50	52	.341	.341	.346	2.97	2.29	.0	3.5	3.4	2.6	3.3
November	29.24	29.73	28.74	44.8	55.7	53.9	59.9	42.2	51.0	78	28	33	34	33	63	46	48	.209	.219	.212	1.03	.54	.0	3.3	3.5	3.0	3.6
December	29.32	29.82	28.86	43.9	51.2	50.5	55.7	40.3	48.0	70	20	36	38	37	77	64	63	.233	.250	.240	1.79	.82	.0	4.4	5.7	4.7	6.2
Year	29.22	29.82	28.48	56.6	66.6	64.9	71.1	53.5	62.3	98	12	49	48	48	75	54	57	.395	.384	.382	29.88	4.12	.7	4.4	5.0	4.5	5.0

CHATTANOOGA, TENN.

[ϕ=35°4′ N.; λ=85°18′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.31	29.77	28.68	44.5	51.2	51.9	55.9	41.1	48.5	69	25	37	37	38	76	59	61	0.244	0.239	0.250	2.80	1.53	T	6.4	7.8	5.6	6.5
February	29.33	29.88	28.80	39.2	45.6	45.8	52.2	35.0	43.6	71	4	32	29	30	75	55	56	.202	.178	.189	6.52	2.61	1.6	7.6	7.2	6.2	6.8
March	29.26	29.62	28.66	44.7	54.6	54.7	60.6	41.4	51.0	78	27	36	36	36	73	51	53	.233	.235	.235	6.19	1.42	T	5.5	5.6	4.6	5.2
April	29.14	29.48	28.85	53.9	65.0	63.7	69.4	49.8	59.6	79	40	45	46	45	72	52	52	.307	.321	.306	2.70	.89	.0	5.4	6.4	4.7	5.6
May	29.18	29.48	28.84	67.1	78.3	76.4	82.9	62.2	72.6	91	52	60	62	60	78	59	58	.522	.573	.526	7.64	1.99	.0	4.6	5.3	4.1	4.6
June	29.22	29.51	29.01	71.2	83.9	81.2	88.6	66.6	77.6	100	54	60	60	62	69	46	54	.541	.533	.566	1.44	.80	.0	3.8	4.3	4.7	4.5
July	29.23	29.47	28.95	73.2	83.9	81.5	87.8	69.4	78.6	97	62	66	64	65	78	53	60	.640	.604	.638	7.28	5.03	.0	5.6	5.7	6.1	5.9
August	29.21	29.49	28.94	71.6	81.6	79.0	85.4	68.2	76.8	92	62	66	67	66	83	62	67	.642	.664	.657	8.21	2.07	.0	5.4	6.4	5.1	5.7
September	29.19	29.36	28.98	69.5	83.5	78.8	87.4	66.6	77.0	92	53	64	64	65	84	53	64	.612	.616	.633	1.20	.40	.0	3.3	4.2	3.9	4.0
October	29.30	29.57	28.92	55.1	68.6	65.5	73.0	52.5	62.8	87	38	48	49	49	77	52	57	.346	.370	.367	1.25	.68	.0	3.5	3.4	3.3	3.7
November	29.32	29.73	28.96	44.6	56.1	53.8	61.1	41.0	51.0	77	26	36	37	35	72	50	52	.233	.244	.231	1.44	.58	.0	4.0	3.8	3.1	3.7
December	29.34	29.77	28.93	46.4	54.3	53.3	59.6	42.6	51.1	72	21	40	41	41	78	62	65	.268	.280	.281	3.57	1.18	.0	6.5	6.5	4.7	6.2
Year	29.25	29.88	28.66	56.8	67.2	65.5	72.0	53.0	62.5	100	4	49	49	49	76	54	58	.399	.405	.407	50.24	5.03	1.6	5.1	5.6	4.7	5.2

CHEYENNE, WYO.

[ϕ=41°08′ N.; λ=104°48′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	23.81	24.15	23.27	26.0	36.3	31.5	39.4	19.2	29.3	52	6	8	10	11	45	31	40	0.060	0.064	0.069	0.24	0.24	4.0	3.3	5.3	3.7	4.4
February	23.87	24.19	23.54	15.9	27.4	24.9	33.6	9.5	21.6	54	−22	2	4	6	54	39	46	.046	.052	.057	.30	.15	4.9	2.3	5.1	4.4	4.8
March	23.91	24.17	23.58	28.6	42.4	41.1	46.5	24.3	35.4	65	11	16	18	19	60	39	43	.090	.095	.102	.88	.34	9.1	6.5	6.7	6.9	6.5
April	23.88	24.24	23.49	31.1	44.7	43.0	49.1	26.4	37.8	68	8	21	22	23	67	47	51	.119	.124	.125	4.79	1.66	28.4	4.7	5.5	7.2	5.9
May	23.91	24.18	23.40	41.5	55.1	54.8	59.0	37.6	48.3	81	26	32	28	31	70	43	47	.181	.160	.177	3.44	1.10	16.9	5.5	6.3	7.1	6.4
June	24.06	24.40	23.86	57.8	76.8	74.9	79.6	53.5	66.6	89	42	41	38	40	57	28	32	.265	.237	.251	1.03	.53	.0	3.9	5.5	7.1	5.3
July	24.13	24.31	23.98	61.1	80.0	77.2	83.3	57.0	70.2	93	48	47	43	46	63	31	37	.330	.289	.316	1.31	.47	.0	4.3	4.2	5.8	4.6
August	24.11	24.26	23.90	55.9	72.5	71.7	76.9	53.1	65.0	87	45	46	44	46	71	42	45	.311	.306	.321	2.02	.92	.0	5.4	6.3	6.1	5.7
September	24.02	24.27	23.65	52.1	69.2	66.4	73.4	48.3	60.8	89	37	38	39	42	63	38	45	.243	.250	.274	2.06	1.07	.0	3.6	4.2	4.9	4.4
October	24.06	24.31	23.72	42.5	61.2	56.5	65.1	36.9	51.0	74	24	24	26	26	52	28	33	.132	.141	.144	T	T	T	3.2	3.8	3.2	3.5
November	24.09	24.39	23.61	35.2	48.2	42.9	52.8	27.6	40.2	66	7	19	20	21	55	37	44	.103	.109	.110	.27	.22	2.7	3.3	4.7	5.1	4.7
December	23.94	24.19	23.50	35.0	46.2	40.2	50.6	28.0	39.0	63	7	18	20	21	52	37	47	.100	.108	.110	.54	.50	4.6	4.0	6.4	4.5	5.6
Year	23.98	24.40	23.27	40.2	55.0	52.1	59.1	35.1	47.1	93	−22	26	26	28	59	37	42	.165	.161	.171	16.88	1.66	70.6	4.2	5.3	5.5	5.2

CHICAGO, ILL.

[ϕ=41°47′ N.; λ=87°35′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.22	29.77	28.49	33.6	37.9	37.8	43.3	30.1	36.7	57	16	27	27	28	75	65	68	0.151	0.153	0.162	2.32	1.50	0.9	5.1	6.8	5.0	6.7
February	29.30	29.86	28.72	22.9	28.4	28.5	34.0	18.4	26.2	56	−19	15	16	19	76	59	66	.101	.102	.114	1.22	1.09	12.7	5.3	4.9	4.1	4.9
March	29.28	29.80	28.55	32.7	38.8	36.3	41.0	29.9	35.4	69	6	27	28	28	77	66	72	.156	.167	.165	4.05	1.40	6.5	6.6	8.1	6.5	7.2
April	29.18	29.67	28.75	42.8	49.5	47.9	53.7	39.9	46.8	80	33	35	36	36	76	63	67	.209	.222	.222	2.61	1.03	.1	5.3	6.7	5.8	6.1
May	29.18	29.49	28.77	56.9	63.1	60.2	66.7	53.3	60.0	86	40	51	51	50	81	67	71	.382	.383	.375	5.03	1.49	.0	7.1	7.0	6.9	6.8
June	29.25	29.66	29.02	71.3	80.7	78.0	85.7	66.6	76.2	100	51	58	59	59	65	50	55	.513	.520	.519	3.44	2.81	.0	3.9	3.0	3.9	3.3
July	29.30	29.71	29.00	71.6	80.8	76.8	83.0	68.3	75.6	94	60	61	61	63	70	53	64	.538	.540	.583	2.70	1.70	.0	3.9	3.8	3.7	3.6
August	29.31	29.55	28.95	67.1	76.2	72.7	78.1	64.8	71.4	91	56	59	59	60	74	56	65	.500	.504	.517	1.14	.72	.0	4.3	4.5	3.7	4.0
September	29.26	29.46	28.90	64.2	75.0	70.9	77.6	62.0	69.8	90	48	57	59	59	78	59	69	.480	.512	.514	3.78	2.71	.0	5.1	5.3	4.4	5.2
October	29.36	29.76	28.92	46.9	57.3	54.6	60.4	45.1	52.8	78	32	39	40	42	75	55	63	.253	.266	.276	3.64	2.52	T	4.5	5.2	4.6	5.0
November	29.28	29.83	28.72	35.3	41.1	39.5	44.0	31.1	38.0	77	9	28	29	29	74	61	66	.167	.176	.173	.88	.19	1.4	7.8	6.7	5.6	7.0
December	29.36	30.08	28.81	29.5	32.0	32.7	37.6	25.0	31.3	58	−9	24	23	26	79	70	74	.156	.144	.157	1.39	.78	7.1	7.8	8.2	7.6	8.4
Year	29.27	30.08	28.49	47.9	55.1	53.0	58.8	44.5	51.7	100	−19	40	41	42	74	60	67	.300	.307	.315	32.00	2.81	28.7	5.5	5.8	5.2	5.7

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

CHARLOTTE, N.C.

[H_b=779 ft.; h_t=244 ft.; h_r=236 ft.; h_a=267 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	12.1	W.	40	W.	3	5	9	4	1	5	12	19	7	0	7	8	16	8	4	1	1	0	5	1	0	0	5	0	0
February	11.6	SW.	38	W.	3	9	11	5	4	1	12	9	5	0	5	8	15	10	10	2	1	0	11	6	2	0	8	.0	0
March	13.8	SW.	43	SE.	5	14	4	2	6	3	16	10	7	0	11	13	7	10	6	0	0	0	4	0	0	0	4	4	0
April	12.8	W.	32	SW.	2	2	10	2	8	8	12	15	3	0	11	8	11	10	6	0	0	0	0	0	0	0	0	4	0
May	11.1	SW.	45	N.	4	8	7	5	6	4	14	13	4	1	11	14	6	6	6	6	0	2	5	4	0	4	0	11	0
June	10.0	N.	32	N.	2	13	4	7	2	7	7	16	4	0	12	16	2	9	6	0	0	0	2	0	0	16	0	9	0
July	9.5	SW.	31	NE.	0	7	5	3	8	3	20	8	6	2	8	15	8	10	10	0	0	0	3	2	0	12	0	10	0
August	9.9	NE.	29	SW.	0	13	15	1	6	4	7	11	3	2	5	12	14	13	13	0	0	0	6	0	0	10	0	12	0
September	10.3	SW.	32	NE.	2	8	12	2	5	3	17	7	4	2	16	8	6	5	4	0	0	0	5	2	0	4	0	3	0
October	10.9	N.	34	SW.	2	18	15	9	3	2	7	7	1	0	20	6	5	3	3	0	0	0	3	3	0	0	0	2	0
November	11.8	SW.	38	NW.	3	4	11	4	1	4	20	8	8	0	17	6	7	4	4	0	0	1	4	2	0	0	3	2	0
December	11.3	SW.	30	NW.	0	13	12	4	1	3	18	9	2	0	7	11	13	11	8	0	0	0	13	10	0	0	5	0	0
Year	11.3	SW.	45	N.	26	114	115	48	51	47	162	132	54	7	130	125	110	99	80	3	2	3	61	30	2	46	25	57	0

CHATTANOOGA, TENN.

[H_b=762 ft.; h_t=190 ft.; h_r=167 feet.; h_a=215 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.9	SW.	35	SW.	2	3	9	0	12	4	15	4	9	6	5	12	14	9	8	1	0	0	7	4	0	0	7	0	0
February	9.1	SE.	30	NW.	0	1	12	0	16	2	4	4	17	0	5	8	15	15	12	4	3	0	6	2	1	0	7	0	0
March	9.8	SW.	38	SW.	1	6	9	1	8	4	14	5	12	3	12	9	10	14	11	1	0	1	5	0	0	0	4	4	0
April	8.8	SW.	32	W.	1	1	8	2	16	4	18	2	5	4	6	15	9	10	8	0	0	0	3	0	0	0	0	5	0
May	7.9	SW.	34	W.	1	4	8	1	12	5	22	3	7	0	12	15	4	14	13	0	0	2	3	0	0	3	0	11	0
June	6.7	SW.	30	SE.	0	4	9	1	4	0	17	9	11	5	11	13	6	7	5	0	0	0	0	0	0	13	0	9	0
July	6.2	SE.	38	NW.	1	1	11	1	16	3	15	7	3	5	4	17	10	11	9	0	0	0	3	0	0	12	0	8	0
August	5.5	SW.	30	W.	0	6	10	2	11	0	10	6	10	7	8	12	11	11	10	0	0	0	12	0	0	3	0	11	0
September	6.1	SW.	23	SE.	0	3	9	1	6	1	15	9	6	10	13	13	4	6	5	0	0	0	10	1	0	10	0	4	0
October	6.4	NE.	25	W.	0	4	8	1	10	4	7	3	13	12	17	9	5	3	3	0	0	0	5	0	0	0	0	1	0
November	7.9	SW.	30	NW.	0	4	5	1	5	3	10	11	14	7	17	5	8	3	3	0	0	0	5	2	0	0	7	1	0
December	8.1	SE.	27	SW.	0	1	14	4	10	5	5	11	7	5	10	7	14	12	10	0	0	0	8	3	1	0	4	0	0
Year	7.5	SW.	38	SW.	6	38	112	15	126	35	152	74	114	64	120	135	110	115	97	6	3	3	67	12	2	41	29	54	0

CHEYENNE, WYO.

[H_b=6,094 ft.; h_t=50 ft.; h_r=42 ft.; h_a=71 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	17.0	W.	65	W.	22	3	1	1	3	1	10	39	4	0	13	15	3	1	1	6	1	0	1	0	4	0	31	0	0
February	16.4	W.	56	W.	15	5	0	1	2	3	10	25	10	0	10	12	6	6	3	12	6	0	1	0	9	0	28	0	0
March	14.8	W.	47	W.	12	7	3	0	5	5	6	13	23	0	4	16	11	10	5	13	8	0	0	0	3	0	28	0	0
April	14.4	N.	46	W.	8	15	0	1	3	2	6	20	13	0	8	12	10	13	10	16	10	1	4	3	5	0	21	1	0
May	12.2	W.	51	W.	4	1	5	7	12	8	2	16	11	0	5	16	10	12	9	7	3	1	6	2	0	0	6	0	0
June	9.6	S.	30	S.	0	4	4	6	6	12	1	17	10	0	5	22	3	7	4	0	0	1	0	0	0	0	0	13	0
July	9.8	S.	40	W.	1	9	4	2	10	11	2	13	11	0	12	12	7	8	5	0	0	1	3	0	0	3	0	10	0
August	9.4	S.	30	W.	0	6	1	7	7	12	6	10	13	0	8	13	10	12	11	0	0	1	3	3	0	0	0	11	0
September	10.5	W.	38	W.	3	7	4	4	3	13	7	14	8	0	12	13	5	9	8	0	0	0	2	0	0	0	0	6	0
October	11.4	W.	39	W.	7	6	4	2	3	13	9	12	13	0	17	9	5	0	0	1	0	0	0	0	0	0	6	0	0
November	14.1	W.	46	W.	8	10	0	3	1	3	7	20	16	0	13	12	5	4	1	6	3	0	1	1	2	0	23	0	0
December	15.0	W.	45	W.	10	1	1	0	4	5	12	28	11	0	6	17	8	3	3	7	3	0	0	0	0	0	20	0	0
Year	12.9	W.	65	W.	90	74	27	34	59	88	78	227	143	0	113	169	83	85	60	68	34	5	21	9	23	3	163	41	0

CHICAGO, ILL

[H_b=673 ft.; h_t=7 ft.; h_r=3 ft; h_a=131 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	12.3	SW.	35	W.	3	1	2	1	6	19	16	6	11	0	8	6	17	7	5	6	2	0	3	1	2	0	21	1	0
February	12.8	SW.	35	SW.	1	4	4	1	5	7	14	11	10	0	12	8	8	4	3	8	2	0	1	0	11	0	22	0	0
March	11.9	NE.	38	NW.	1	11	11	3	9	9	4	4	11	0	6	5	20	15	10	12	6	0	5	2	3	0	21	3	0
April	12.3	NE.	30	SW.	0	10	14	5	6	4	5	12	4	0	9	8	13	16	13	5	1	0	3	2	0	0	0	4	0
May	10.8	E.	35	SW.	1	5	12	12	6	7	7	10	3	0	4	15	12	18	13	0	0	0	8	1	0	0	0	7	0
June	9.3	SW.	37	W.	1	2	8	6	5	7	19	10	3	0	18	7	5	4	3	0	0	0	2	0	0	10	0	6	0
July	9.0	NE.	38	NW.	2	1	17	8	7	2	13	10	3	1	16	9	6	7	6	0	0	1	1	0	0	7	0	5	0
August	9.2	NE.	30	NW.	0	6	19	8	6	4	10	3	5	1	16	10	5	7	5	0	0	0	1	0	0	1	0	4	0
September	10.1	S.	30	W.	0	1	10	10	3	16	7	8	4	1	14	3	13	10	8	0	0	0	3	2	0	2	0	6	1
October	10.7	SW.	33	NW.	1	0	3	1	6	14	15	9	14	0	13	7	11	7	6	1	1	0	2	0	0	0	2	1	0
November	12.5	NW.	32	NW.	1	0	4	4	1	7	17	6	21	0	5	7	18	9	5	9	4	0	2	0	3	0	14	1	0
December	10.8	NW.	26	SE.	0	4	7	3	9	6	12	6	15	0	0	9	22	9	4	10	4	0	8	1	9	0	20	0	0
Year	11.0	SW.	38	NW.	11	45	111	62	69	102	139	95	104	3	121	94	150	113	81	51	20	1	39	9	28	20	100	38	1

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

CINCINNATI, OHIO

[ϕ=39°09′ N.; λ=84°31′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.37	29.91	28.62	37.0	44.6	42.9	48.6	32.7	40.6	69	17	33	33	33	84	67	69	0.199	0.204	0.198	3.18	0.91	T	6.7	6.7	5.7	6.5
February	29.42	30.00	28.67	28.8	38.8	37.1	43.5	24.9	34.2	66	−6	23	24	24	81	58	60	.140	.145	.140	1.99	.93	4.1	5.8	5.0	4.1	5.4
March	29.34	29.85	28.65	36.5	45.3	44.7	50.2	33.2	41.7	75	14	32	33	33	82	63	66	.194	.210	.212	8.00	3.76	.1	7.0	6.9	7.1	7.3
April	29.24	29.61	28.86	47.4	56.8	56.3	62.8	43.0	52.9	81	31	41	42	42	79	61	63	.262	.275	.282	4.46	1.69	.0	6.3	7.1	6.0	6.5
May	29.27	29.57	28.88	61.6	70.7	67.4	75.6	56.7	66.2	87	42	56	58	57	84	67	71	.466	.505	.481	8.81	4.77	.0	7.3	7.2	7.3	7.3
June	29.33	29.66	29.13	71.8	85.1	79.9	89.1	66.1	77.6	98	46	60	62	61	68	46	55	.556	.583	.571	3.30	1.36	.0	2.8	3.1	3.9	2.5
July	29.35	29.71	29.14	71.2	83.3	79.9	87.5	65.5	76.5	101	56	63	62	61	76	51	56	.588	.570	.560	1.50	.65	.0	4.4	6.0	4.7	5.3
August	29.34	29.57	29.11	67.7	81.8	76.3	85.7	63.4	74.6	98	56	61	60	60	79	50	60	.544	.535	.539	2.79	1.21	.0	4.0	4.9	4.5	4.5
September	29.29	29.47	29.00	65.3	79.8	74.2	83.7	62.4	73.0	96	50	61	61	61	86	57	66	.545	.560	.558	4.72	1.61	.0	5.1	4.6	4.2	5.1
October	29.44	29.76	28.97	47.6	61.1	56.8	65.3	44.4	54.8	81	32	43	43	42	83	54	60	.287	.293	.284	1.40	.88	.0	6.0	4.5	3.2	5.0
November	29.38	29.88	28.80	36.8	45.6	43.6	51.8	33.1	42.4	79	15	31	32	31	81	61	62	.187	.196	.186	1.28	.93	1.5	6.2	6.5	6.0	6.5
December	29.45	30.08	28.98	35.5	41.1	40.0	46.5	30.7	38.6	67	−4	31	32	32	83	70	74	.193	.201	.202	2.95	1.20	4.0	8.2	8.1	7.6	8.0
Year	29.35	30.08	28.62	50.6	61.2	58.3	65.9	46.3	56.1	101	−6	45	45	45	80	59	64	.347	.356	.351	44.38	4.77	9.7	5.8	5.9	5.4	5.9

CLEVELAND, OHIO

[ϕ=41°30′ N.; λ=81°42′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.16	29.72	28.44	35.9	40.4	38.5	45.4	30.7	38.0	68	15	28	28	28	72	63	66	0.162	0.162	0.157	1.40	0.56	3.2	7.3	7.3	7.0	7.5
February	29.18	29.77	28.48	26.4	31.7	32.3	39.3	23.0	31.2	60	−5	19	20	20	72	62	61	.113	.117	.119	1.99	.50	8.4	5.8	6.5	5.4	6.2
March	29.15	29.70	28.48	32.6	36.4	37.1	42.0	29.7	35.8	68	10	26	26	29	76	68	72	.149	.154	.167	3.51	1.15	5.0	7.8	7.6	8.1	8.2
April	29.10	29.48	28.64	46.3	50.2	51.2	58.5	41.1	49.8	80	31	36	36	36	68	62	60	.219	.222	.221	2.42	.69	T	7.0	7.1	7.1	6.9
May	29.12	29.43	28.74	57.7	62.1	62.6	68.5	53.1	60.8	84	39	50	50	49	76	68	65	.369	.379	.366	2.86	.88	.0	8.2	7.9	5.9	7.3
June	29.16	29.43	28.95	66.5	74.3	76.7	81.1	65.0	73.0	98	47	57	56	56	65	55	50	.439	.471	.464	.39	.21	.0	4.9	4.7	4.0	4.4
July	29.21	29.63	28.99	71.3	76.0	78.2	81.7	67.3	74.5	96	60	58	58	56	63	57	49	.486	.497	.465	1.26	1.04	.0	3.9	3.7	3.8	3.8
August	29.19	29.47	28.88	68.2	72.9	73.6	77.5	65.2	71.4	88	60	57	59	57	69	63	57	.476	.504	.468	1.98	1.20	.0	3.8	3.6	3.9	3.8
September	29.13	29.33	28.80	64.2	71.4	69.8	74.9	61.4	68.2	90	51	55	55	56	73	60	63	.449	.450	.460	2.73	.74	.0	5.7	5.5	4.7	5.3
October	29.27	29.61	28.77	48.6	56.0	55.1	60.5	46.4	53.4	76	32	39	38	39	70	54	56	.249	.245	.254	.97	.36	T	6.7	5.5	5.7	5.8
November	29.14	29.67	28.45	36.0	39.4	39.2	46.1	31.9	39.0	75	12	28	30	30	73	68	70	.168	.174	.181	3.06	.45	15.2	7.8	8.0	8.0	8.1
December	29.26	30.00	28.74	31.8	35.1	34.3	40.8	26.4	33.6	66	3	25	27	27	76	71	73	.150	.165	.163	1.60	.31	9.5	8.4	8.6	8.5	8.6
Year	29.17	30.00	28.44	49.0	53.8	54.0	59.7	45.1	52.4	98	−5	40	40	40	71	63	62	.290	.295	.290	24.17	1.20	41.3	6.4	6.3	5.9	6.3

COLUMBIA, MO.

[ϕ=38°57′ N.; λ=92°20′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.15	29.66	28.49	35.6	45.5	-----	52.3	31.9	42.1	65	18	29	31	---	77	58	---	0.165	0.185	-----	1.87	0.97	T	4.3	5.5	----	4.7
February	29.26	29.86	28.80	24.8	35.0	-----	41.2	21.9	31.6	73	−10	18	19	---	76	53	---	.113	.120	-----	.97	.47	4.5	4.7	4.4	----	4.0
March	29.16	29.67	28.53	37.6	47.7	-----	53.1	34.8	44.0	79	15	32	32	---	81	58	---	.200	.197	-----	3.27	1.01	1.1	6.2	6.8	----	5.9
April	29.04	29.38	28.57	47.8	59.4	-----	64.2	44.5	54.4	87	32	40	39	---	77	50	---	.258	.251	-----	1.72	.44	T	6.7	6.2	----	5.1
May	29.03	29.33	28.59	60.0	70.6	-----	74.5	56.2	65.4	89	42	55	57	---	86	64	---	.452	.481	-----	7.30	2.27	.0	6.2	6.8	----	4.8
June	29.16	29.50	28.95	72.0	86.0	-----	90.0	66.1	78.0	99	48	62	62	---	72	47	---	.578	.583	-----	2.18	1.57	.0	2.7	2.7	----	2.2
July	29.16	29.42	28.94	72.6	87.1	-----	90.8	68.6	79.7	100	58	64	63	---	76	46	---	.614	.579	-----	1.02	.34	.0	3.7	4.5	----	3.3
August	29.18	29.36	28.97	67.7	81.1	-----	85.3	65.3	75.3	96	56	62	61	---	81	53	---	.560	.549	-----	2.86	1.73	.0	6.0	5.3	----	4.4
September	29.10	29.31	28.81	66.9	82.5	-----	86.1	62.7	74.4	96	49	62	63	---	89	54	---	.572	.588	-----	3.92	1.21	.0	3.9	4.1	----	3.5
October	29.26	29.61	28.93	47.5	62.2	-----	66.3	45.2	55.8	80	30	42	43	---	82	52	---	.278	.293	-----	2.97	.88	.0	4.8	4.2	----	4.1
November	29.25	29.76	28.84	39.3	49.8	-----	55.4	34.3	44.8	78	18	32	31	---	76	49	---	.194	.188	-----	.80	.26	T	4.6	4.9	----	3.8
December	29.25	29.82	28.76	33.8	40.3	-----	47.9	28.2	38.0	70	4	28	28	---	79	63	---	.167	.171	-----	1.94	.56	.2	6.6	6.4	----	5.6
Year	29.17	29.86	28.49	50.4	62.3	-----	67.3	46.6	57.0	100	−10	44	44	---	79	54	---	.346	.349	-----	30.82	2.27	5.8	5.0	5.2	----	4.3

COLUMBIA, S.C.

[ϕ=34°00′ N.; λ=81°02′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.73	30.17	29.03	45.3	57.3	55.1	62.0	43.2	52.6	76	26	42	44	44	88	62	68	0.282	0.303	0.313	2.01	0.63	0.0	5.0	5.8	5.1	5.8
February	29.75	30.26	29.33	43.9	53.2	51.3	57.9	40.1	49.0	75	17	38	40	41	80	63	69	.253	.275	.275	3.71	1.26	.0	7.0	7.3	5.2	5.9
March	29.67	30.05	29.09	48.2	61.0	59.6	66.6	45.0	55.8	84	29	39	38	41	71	44	53	.267	.267	.255	2.35	1.19	.0	4.1	3.6	2.4	3.8
April	29.58	29.99	29.17	56.2	68.5	66.2	73.4	52.5	63.0	83	45	47	44	46	73	43	52	.336	.298	.328	.80	.31	.0	5.6	5.4	4.8	5.1
May	29.61	29.89	29.27	70.6	83.5	78.8	88.3	65.6	77.0	96	56	63	59	59	77	48	54	.582	.618	.616	5.82	2.81	.0	3.9	3.7	5.1	4.0
June	29.62	29.89	29.49	73.9	86.7	81.2	91.5	68.8	80.2	100	58	63	61	61	76	43	54	.602	.562	.565	1.21	1.04	.0	3.1	4.3	4.6	4.2
July	29.66	29.92	29.37	74.6	84.6	80.1	89.1	69.8	79.4	96	59	69	66	67	82	55	67	.715	.657	.676	2.92	.82	.0	5.2	4.9	6.1	5.4
August	29.61	29.87	29.28	74.3	84.7	80.4	89.3	71.3	80.3	99	66	70	69	70	86	61	72	.731	.712	.733	3.85	1.84	.0	5.1	6.0	6.8	5.6
September	29.60	29.80	29.37	72.9	85.7	80.6	89.4	69.6	79.5	96	58	68	66	68	85	54	67	.693	.656	.691	2.19	1.38	.0	3.4	3.4	2.5	3.2
October	29.71	30.02	29.27	58.0	72.0	67.9	75.7	55.3	65.5	88	40	53	53	53	82	53	60	.413	.421	.415	1.05	.63	.0	4.1	3.4	2.8	3.4
November	29.72	30.22	29.26	45.4	61.0	56.3	65.1	42.5	53.8	78	27	39	39	39	80	46	55	.262	.263	.260	.40	.18	.0	2.8	2.9	2.7	3.1
December	29.79	30.28	29.29	48.9	59.1	56.1	64.5	44.3	54.4	78	20	41	43	43	81	57	64	.279	.299	.302	.80	.34	.0	5.2	4.9	4.3	5.1
Year	29.67	30.28	29.03	59.2	71.4	67.8	76.1	55.7	65.9	100	17	53	52	53	80	52	61	.451	.435	.447	27.11	2.81	.0	4.5	4.6	4.4	4.6

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

CINCINNATI, OHIO

[H_b=627 ft.; h_t=11 ft.; h_r=3 ft.; h_a=51 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																										
January	8.7	S.	32	SW.	1	4	2	5	4	24	8	8	7	0	9	7	15	12	8	4	0	0	8	2	3	0	17	0	0
February	9.7	S.	30	SW.	0	3	4	3	3	15	12	8	8	0	12	4	12	13	8	7	5	0	2	1	6	0	18	1	0
March	9.3	NW.	32	SW.	1	5	6	3	7	12	8	8	13	0	3	9	19	13	12	10	2	1	4	2	1	0	17	5	0
April	8.8	S.	27	S.	0	5	11	3	3	16	15	2	6	0	7	10	13	15	13	0	0	0	3	0	0	0	1	2	0
May	7.6	SW.	29	SW.	0	6	8	5	3	13	19	4	4	0	3	8	20	19	18	0	0	1	3	1	0	0	0	14	0
June	6.7	SW.	30	NW.	0	5	5	5	1	13	21	7	3	0	16	10	4	6	6	0	0	1	0	0	0	19	0	10	0
July	5.8	SW.	21	NE.	0	4	15	4	5	16	12	2	2	2	13	6	12	8	8	0	0	0	2	1	0	11	0	7	0
August	6.4	NE.	21	W.	0	13	22	3	2	4	8	5	4	1	14	9	8	11	9	0	0	0	3	0	0	5	0	10	0
September	5.9	SW.	23	NW.	0	6	8	4	5	19	11	6	1	0	13	5	12	12	12	0	0	0	12	3	0	5	0	9	0
October	6.7	SW.	23	NW.	0	11	10	2	8	12	10	2	5	2	15	5	11	6	5	0	0	0	8	2	0	0	0	1	0
November	9.6	SW.	26	NW.	0	2	5	1	1	14	16	9	10	2	6	8	16	10	4	8	2	0	4	1	1	0	15	1	0
December	8.6	SW.	24	NW.	0	7	12	6	3	13	12	3	6	0	3	5	23	13	7	3	3	0	3	2	6	0	15	1	0
Year	7.8	SW.	32	SW.	2	71	108	44	45	170	152	64	69	7	114	86	165	138	110	32	12	3	52	15	17	40	83	61	0

CLEVELAND, OHIO

[H_b=762 ft.; h_t=267 ft.; h_r=264 ft.; h_a=338 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	15.6	S.	51	SW.	6	1	0	2	7	21	14	13	4	0	5	9	17	9	7	8	4	0	4	0	4	0	17	0	0
February	17.4	W.	53	W.	10	3	0	1	4	12	15	16	5	0	7	9	12	12	11	13	7	0	2	1	8	0	24	1	1
March	15.6	W.	43	W.	8	3	3	1	10	5	13	15	12	0	2	8	21	16	11	17	7	0	5	0	4	0	24	2	0
April	13.7	SE.	40	S.	3	6	6	3	16	11	4	13	1	0	8	4	18	12	10	5	1	0	3	1	0	0	1	2	0
May	12.1	W.	41	SW.	8	10	5	3	8	10	10	12	4	0	4	11	16	15	12	0	0	0	7	1	0	0	0	8	0
June	11.3	W.	36	SW.	2	9	4	0	4	13	12	9	9	0	11	15	4	5	3	0	0	0	0	0	0	6	0	7	0
July	11.5	N.	48	N.	2	12	11	3	7	4	16	5	4	0	17	7	7	4	2	0	0	0	0	0	0	5	0	4	0
August	12.0	N.	39	W.	5	15	11	2	10	7	7	3	7	0	18	7	6	3	3	0	0	0	0	0	0	0	0	3	0
September	13.1	S.	43	W.	5	5	7	5	6	17	7	12	1	0	11	8	11	10	9	0	0	0	1	0	0	1	0	3	2
October	13.7	S.	49	W.	3	8	2	2	9	16	10	8	7	0	10	7	14	7	6	1	0	1	0	0	0	0	1	4	0
November	17.0	SW.	51	W.	12	5	3	2	3	12	17	16	2	0	6	1	23	19	17	13	12	1	2	0	4	0	17	4	0
December	14.5	W.	46	W.	6	4	3	2	10	10	12	14	6	0	1	6	24	14	9	12	5	0	4	1	9	0	20	3	0
Year	14.0	W.	53	W.	70	81	55	27	94	138	137	136	62	0	100	92	173	126	100	69	36	2	28	4	29	12	104	41	3

COLUMBIA, MO.

[H_b=784 ft.; h_t=6 ft.; h_r=3 ft.; h_a=84 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.9	SW.	31	SW.	0	0	0	1	6	5	9	4	5	1	12	12	7	8	6	1	1	0	3	1	0	0	15	2	0
February	9.1	W.	27	W.	0	2	1	1	4	5	4	5	5	1	13	8	7	6	5	6	4	0	1	0	8	0	21	1	0
March	9.7	SE.	27	N.	0	9	2	2	9	2	0	6	1	0	8	9	14	11	9	4	2	0	0	0	2	0	15	3	0
April	9.7	N.	30	S.	0	7	3	2	4	6	0	6	2	0	13	6	11	12	11	1	0	0	0	0	0	0	0	1	0
May	8.3	S.	32	SW.	1	5	1	4	6	6	2	6	1	0	9	14	8	14	13	0	0	2	0	0	0	0	0	10	0
June	6.9	S.	18	N.	0	3	0	1	2	12	10	2	0	0	22	8	0	5	5	0	0	0	0	0	0	17	0	5	0
July	7.1	S.	18	N.	0	3	7	6	5	7	2	1	0	0	19	11	1	6	5	0	0	0	0	1	0	18	0	5	0
August	6.5	N.	23	SW.	0	3	7	4	6	5	3	1	2	0	14	12	5	10	8	0	0	0	0	0	0	4	0	6	0
September	7.1	SW.	24	SW.	0	3	3	1	3	9	6	4	0	1	15	10	5	10	8	0	0	0	2	0	0	13	0	8	0
October	7.9	S.	24	NW.	0	5	3	3	6	5	3	3	3	0	17	6	8	9	8	0	0	0	3	0	0	0	1	7	0
November	10.0	SW.	34	NW.	2	5	1	1	0	6	7	2	8	0	17	5	8	5	4	1	0	0	0	0	0	0	12	0	0
December	9.2	SW.	25	SW.	0	3	2	4	5	3	6	8	5	0	12	6	13	6	5	3	1	0	1	1	6	0	19	2	0
Year	8.4	S.	34	NW.	3	48	30	30	56	71	52	43	32	3	171	107	87	102	85	16	8	2	10	3	16	52	83	50	0

COLUMBIA, S.C.

[H_b=351 ft.; h_t=41 ft.; h_r=32 ft.; h_a=57 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.5	SW.	33	SW.	1	3	15	4	1	4	19	8	6	2	7	13	11	7	4	0	0	0	4	4	0	0	6	0	0
February	7.4	NE.	30	SW.	0	10	14	3	2	0	15	4	6	2	5	7	16	12	10	0	0	0	7	5	0	0	7	0	0
March	9.1	SW.	31	SW.	0	9	9	4	5	8	15	5	4	3	15	12	4	5	5	0	0	0	0	0	0	0	4	1	0
April	8.2	SW.	30	SW.	0	3	14	4	7	6	14	10	1	1	11	10	9	7	5	0	0	0	0	0	0	0	0	2	0
May	7.2	SW.	23	SW.	0	2	9	3	4	6	26	7	4	1	17	10	4	9	8	0	0	0	1	0	0	14	0	12	0
June	5.9	SW.	22	NE.	0	7	7	6	7	12	8	8	4	1	13	13	4	6	3	0	0	0	0	0	0	21	0	8	0
July	6.6	SW.	25	NW.	0	1	12	5	7	11	21	3	2	0	11	9	11	16	14	0	0	0	0	0	0	18	0	12	0
August	6.7	NE.	21	S.	0	2	22	2	4	6	16	5	4	1	8	14	9	12	7	0	0	0	2	0	0	19	0	9	0
September	6.0	NE.	28	NE.	0	3	10	2	10	6	7	13	5	4	16	11	3	5	4	0	0	0	3	0	0	15	0	5	0
October	6.7	NE.	25	SW.	0	11	28	1	4	3	4	2	0	3	19	6	6	5	4	0	0	0	0	0	0	0	0	2	0
November	7.1	SW.	27	SW.	0	6	13	0	0	4	19	5	11	2	19	5	6	5	4	0	0	0	3	1	0	0	4	1	0
December	7.1	SW.	25	SW.	0	7	15	2	2	8	12	11	1	4	12	9	10	12	5	0	0	0	9	6	0	0	4	0	0
Year	7.1	SW.	32	SW.	1	64	168	36	53	74	176	81	54	24	153	119	93	101	73	0	0	0	29	16	0	87	25	52	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

COLUMBUS, OHIO

[ϕ=39°58′ N.; λ=83°00′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.16	29.69	28.48	35.2	41.2	40.9	46.3	30.8	38.6	67	16	30	32	31	81	69	69	0.178	0.187	0.183	1.36	0.64	0.2	6.4	6.6	6.2	6.6
February	29.19	29.75	28.50	27.1	35.9	35.4	41.1	23.6	32.4	60	−6	21	23	23	77	60	61	.125	.136	.132	1.37	.58	2.7	5.0	5.9	4.0	5.4
March	29.13	29.66	28.44	34.8	41.8	41.5	46.9	32.0	39.4	70	12	28	31	32	76	66	69	.168	.189	.197	5.44	1.72	3.3	7.4	7.9	7.5	7.6
April	29.05	29.44	28.67	46.9	55.8	54.1	61.0	42.8	51.9	80	31	38	39	40	74	57	63	.243	.252	.264	3.15	.98	T	5.9	6.5	6.4	6.1
May	29.08	29.38	28.71	59.9	68.0	67.5	73.1	56.3	64.7	85	42	53	55	55	81	65	66	.423	.444	.447	6.95	1.74	.0	7.5	6.8	6.5	6.6
June	29.13	29.43	28.92	70.5	82.6	80.1	87.3	64.9	76.1	98	47	59	57	57	68	43	49	.533	.493	.502	1.71	.54	.0	3.1	4.0	3.8	3.5
July	29.16	29.55	28.93	70.9	82.3	80.4	86.6	66.4	76.5	99	59	61	58	58	71	45	49	.538	.489	.491	.85	.34	.0	4.7	5.7	4.3	4.7
August	29.14	29.40	28.80	67.6	79.0	76.1	82.8	63.9	73.4	95	58	59	58	60	75	52	60	.511	.505	.531	2.07	1.06	.0	4.2	5.7	4.3	5.0
September	29.10	29.30	28.84	64.1	75.4	71.8	79.4	61.4	70.4	93	49	58	59	60	80	59	68	.490	.510	.531	4.45	1.10	.0	4.4	5.6	4.7	5.0
October	29.24	29.54	28.78	47.1	58.8	55.9	62.9	44.2	53.6	78	31	41	42	42	80	55	60	.270	.277	.275	1.20	.79	.0	5.5	5.9	4.5	5.2
November	29.15	29.65	28.54	36.5	42.8	41.5	48.8	32.5	40.6	78	13	31	32	30	80	65	65	.184	.188	.183	1.02	.51	2.7	6.6	6.9	6.5	6.8
December	29.24	29.90	28.78	32.8	38.6	37.2	43.1	28.0	35.6	64	−2	28	30	30	82	72	75	.170	.191	.187	2.45	1.17	7.8	6.8	7.2	6.9	7.5
Year	29.15	29.90	28.44	49.4	58.5	56.9	63.3	45.6	54.4	99	−6	42	43	43	77	59	63	.319	.322	.327	32.02	1.74	16.7	5.6	6.2	5.5	5.8

CONCORDIA, KANS.

[ϕ=39°35′ N.; λ=97°41′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	28.45	28.99	27.78	29.3	43.4	42.4	50.5	26.6	38.6	62	15	23	24	25	77	47	50	0.124	0.131	0.133	0.19	0.15	T	3.4	4.2	3.0	3.7
February	28.61	29.12	28.09	21.5	36.6	35.2	42.9	18.0	30.4	67	−17	13	16	14	71	48	48	.081	.093	.088	.11	.08	1.1	3.3	3.5	3.4	3.6
March	28.52	28.97	27.89	35.2	46.4	47.6	53.1	32.8	43.0	76	15	30	31	32	84	60	60	.184	.183	.195	1.97	.91	4.7	6.0	5.9	5.7	5.9
April	28.41	28.82	27.76	44.8	58.4	59.7	63.8	41.9	52.8	80	28	34	36	35	68	46	43	.215	.227	.214	2.48	1.77	T	5.0	5.1	4.7	5.2
May	28.41	28.69	27.95	56.0	68.2	70.2	73.1	52.8	63.0	90	43	49	48	48	77	53	49	.355	.349	.348	1.55	.72	.0	6.1	6.1	5.3	5.9
June	28.48	28.96	28.16	72.1	80.4	80.8	95.2	68.7	82.0	107	53	56	53	53	60	29	29	.472	.423	.418	1.34	.52	.0	4.9	3.6	4.6	4.0
July	28.52	28.83	28.18	71.8	87.1	87.1	91.8	69.4	80.6	110	58	64	63	63	78	47	47	.608	.588	.594	3.94	2.19	.0	5.2	3.4	3.0	3.8
August	28.54	28.76	28.33	68.2	82.0	82.1	86.7	66.2	76.4	104	56	61	60	60	80	52	52	.551	.540	.544	3.30	1.59	.0	5.9	6.2	4.7	5.7
September	28.44	28.79	28.03	64.3	80.7	77.5	84.6	61.3	73.0	97	42	58	58	59	82	50	55	.499	.505	.510	3.47	2.42	.0	3.7	2.7	2.4	2.9
October	28.61	28.99	28.21	46.5	64.8	60.5	69.2	43.2	56.2	81	28	38	38	40	72	39	47	.241	.253	.266	.06	.06	.0	2.7	2.1	2.8	3.2
November	28.64	29.02	28.17	38.0	53.2	48.4	58.2	34.4	46.3	80	23	27	31	29	65	43	50	.151	.177	.164	.84	1.19	.2	3.2	3.3	2.5	3.0
December	28.60	29.18	27.93	29.5	41.8	38.0	48.2	25.6	36.9	71	4	22	26	26	74	54	61	.131	.148	.146	.74	T	.0	4.2	5.1	4.0	4.5
Year	28.52	29.18	27.76	48.1	62.8	61.6	68.1	45.1	56.6	110	−17	40	40	40	74	47	49	.301	.301	.302	19.99	2.42	6.0	4.5	4.3	3.8	4.3

CORPUS CHRISTI, TEX.

[ϕ=27°49′ N.; λ=97°25′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	30.03	30.63	29.76	59.4	65.6	63.4	67.7	57.2	62.4	78	41	55	58	59	88	78	87	0.464	0.502	0.521	0.70	0.34	0.0	6.8	7.7	7.1	7.8
February	30.07	30.62	29.63	54.2	59.2	58.4	63.2	50.1	56.6	76	22	51	52	53	90	78	84	.420	.425	.440	1.89	.80	.0	7.1	7.5	7.3	8.2
March	29.96	30.31	29.57	63.2	70.8	68.2	73.5	61.5	67.5	84	45	59	60	61	88	71	80	.533	.547	.564	.47	.21	.0	6.9	6.5	5.0	6.5
April	29.85	30.21	29.47	67.9	76.3	74.3	79.1	66.7	72.9	97	44	61	62	64	81	66	74	.575	.601	.637	.44	.26	.0	7.6	6.7	6.1	6.8
May	29.83	30.06	29.39	76.4	82.8	80.1	84.6	74.2	79.4	90	63	72	72	73	87	71	80	.789	.792	.817	3.69	3.41	.0	7.1	5.7	5.4	6.1
June	29.96	30.17	29.78	77.0	84.4	82.7	86.6	74.6	80.6	95	69	71	70	71	82	63	68	.757	.744	.755	2.72	1.55	.0	4.7	4.3	3.4	4.0
July	29.91	30.05	29.74	79.0	87.3	84.1	89.4	76.9	83.2	94	72	76	75	75	89	67	75	.882	.870	.875	2.54	1.36	.0	5.0	6.6	4.6	5.5
August	29.92	30.10	29.74	79.3	86.6	83.7	88.6	77.6	83.1	93	74	75	75	74	87	68	74	.863	.855	.850	2.27	.80	.0	4.5	5.7	4.3	4.9
September	29.87	30.05	29.56	78.9	85.7	83.4	87.6	77.2	82.4	94	73	76	75	76	90	72	79	.889	.540	.899	4.71	1.31	.0	5.6	6.5	4.1	5.6
October	29.98	30.15	29.81	72.2	81.1	78.6	82.5	71.2	76.8	88	64	68	69	70	88	68	76	.702	.717	.740	1.99	.90	.0	4.2	5.3	2.5	4.4
November	30.11	30.38	29.70	61.7	72.5	69.2	74.2	60.6	67.4	87	51	57	58	60	87	62	75	.498	.501	.549	1.33	1.14	.0	4.0	4.9	3.3	4.4
December	30.06	30.30	29.75	61.1	73.3	69.3	75.7	58.9	67.3	87	43	56	56	59	85	58	74	.495	.488	.549	.31	.17	.0	3.5	5.0	3.9	4.7
Year	29.96	30.63	29.39	69.2	77.1	74.6	79.4	67.2	73.3	97	22	65	65	66	87	68	77	.656	.632	.683	23.06	3.41	.0	5.6	6.0	4.8	5.7

DALLAS, TEX.

[ϕ=32°46′ N.; λ=96°47′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	29.50	30.02	29.11	48.0	57.2	-----	62.2	45.3	53.8	73	28	40	42	---	76	60	---	0.278	0.296	-----	2.67	1.43	0.0	5.4	6.1	-----	4.9
February	29.56	30.07	29.04	39.9	47.5	-----	55.4	36.0	45.7	79	2	33	34	---	78	53	---	.223	.226	-----	2.62	1.56	2.3	5.1	5.6	-----	5.3
March	29.44	29.81	29.03	51.6	61.2	-----	67.7	48.6	58.2	88	30	43	44	---	73	57	---	.306	.320	-----	2.86	1.12	.0	5.8	5.5	-----	5.1
April	29.31	29.64	28.93	56.8	71.2	-----	75.4	54.6	65.0	90	38	45	44	---	68	42	---	.332	.321	-----	4.38	3.42	.0	4.6	4.3	-----	3.8
May	29.31	29.55	28.93	67.9	79.2	-----	83.3	66.2	74.8	92	54	62	60	---	83	55	---	.579	.530	-----	6.65	3.12	.0	5.0	4.1	-----	3.7
June	29.44	29.74	29.19	72.4	86.8	-----	90.5	71.6	81.0	101	62	61	60	---	70	41	---	.556	.514	-----	T	T	.0	1.5	1.7	-----	1.5
July	29.38	29.54	29.15	76.6	88.5	-----	92.2	75.1	83.6	104	69	70	67	---	80	52	---	.727	.674	-----	3.49	2.24	.0	3.6	5.2	-----	4.3
August	29.39	29.56	29.22	75.1	87.8	87.5	92.2	74.2	83.2	97	69	70	68	67	85	53	53	.738	.690	.673	1.18	.54	.0	4.9	4.0	4.2	3.4
September	29.36	29.55	29.17	74.3	87.4	86.8	90.7	73.6	82.2	96	68	69	67	66	84	53	52	.718	.671	.647	1.84	1.43	.0	4.3	4.4	2.6	3.5
October	29.48	29.73	29.19	61.1	75.1	75.1	79.8	59.3	69.6	88	47	54	56	54	79	54	50	.442	.468	.433	.60	.54	.0	3.6	3.6	1.8	3.2
November	29.58	29.89	29.16	51.6	62.9	63.8	68.1	48.5	58.4	80	37	42	44	42	74	54	49	.299	.314	.290	.79	.50	.0	3.4	4.1	2.3	3.9
December	29.50	29.90	29.20	47.5	58.9	58.1	64.2	43.2	53.7	80	25	40	41	40	77	56	54	.275	.278	.264	3.61	1.77	.0	4.6	4.9	3.3	4.1
Year	29.44	30.07	28.93	60.2	72.0	-----	76.8	58.0	67.4	104	2	52	52	---	77	53	---	.456	.442	-----	30.69	3.42	2.3	4.3	4.5	-----	3.9

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

COLUMBUS, OHIO

[H_b=822 ft.; h_t=216 ft.; h_r=209 ft.; h_a=230 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp. 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	12.7	S.	41	SW.	3	1	0	6	13	16	10	6	10	0	8	7	16	7	6	5	1	0	3	1	3	0	17	1	0
February	14.0	SW.	46	W.	7	2	1	1	7	9	19	10	7	0	8	12	8	11	9	9	4	0	4	1	6	0	21	0	0
March	13.2	NW.	54	W.	5	2	6	7	11	6	7	8	15	0	2	11	18	13	11	13	3	2	3	0	2	0	19	7	0
April	11.6	SW.	35	SW.	2	4	9	5	8	13	7	11	3	0	7	9	14	15	13	2	0	0	1	0	0	0	1	2	0
May	10.7	S.	33	S.	1	3	8	5	7	11	10	7	11	0	4	12	15	15	13	0	0	1	1	0	0	0	0	12	0
June	9.4	SW.	32	NW.	1	4	6	2	10	7	17	10	4	0	15	14	1	11	8	0	0	0	1	0	0	14	0	11	0
July	8.6	NE.	31	W.	0	3	19	2	5	16	10	5	2	0	13	11	7	5	5	0	0	0	0	0	0	7	0	6	0
August	9.4	NE.	32	SE.	1	13	14	3	3	11	8	3	6	1	10	14	7	9	6	0	0	0	1	0	0	2	0	6	0
September	9.3	S.	31	W.	0	4	12	3	7	18	7	6	3	0	11	6	13	10	8	0	0	0	6	1	0	3	0	7	0
October	10.2	S.	35	NW.	1	9	6	3	12	13	5	7	7	0	9	13	9	6	6	0	0	1	6	1	0	0	1	1	0
November	13.4	SW.	40	W.	5	2	4	1	4	12	15	13	9	0	6	7	17	10	6	6	5	0	3	0	2	0	16	1	0
December	11.6	S.	37	W.	3	3	10	7	6	12	10	7	7	0	3	9	19	10	7	5	2	0	4	3	8	0	17	1	0
Year	11.2	S.	54	W.	29	50	95	45	93	144	125	93	84	1	96	125	144	122	98	40	15	4	33	7	21	26	92	55	0

CONCORDIA, KANS.

[H_b=1,392 ft.; h_t=50 ft.; h_r=42 ft.; h_a=58 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.4	SW.	25	SW.	0	9	1	3	6	12	12	13	5	1	15	12	4	4	1	2	0	0	3	0	1	0	27	1	0
February	9.3	N.	37	NW.	1	11	7	0	2	10	7	9	9	1	16	5	7	4	1	6	4	0	0	0	6	0	24	0	0
March	10.2	N.	27	S.	0	14	6	9	7	14	2	0	9	1	9	9	13	7	4	5	3	1	5	1	4	0	14	1	0
April	9.7	N.	32	S.	1	8	6	13	6	4	6	7	10	0	14	3	13	6	5	2	0	0	2	0	0	0	3	5	0
May	9.3	N.	28	NW.	0	11	9	11	6	8	2	10	3	2	7	12	12	8	5	0	0	1	2	0	0	2	0	7	0
June	8.9	S.	24	N.	0	1	6	14	4	18	14	2	0	1	13	12	5	8	8	0	0	2	0	0	0	24	0	7	0
July	7.6	S.	34	NW.	1	4	8	18	13	13	4	1	1	0	12	17	2	6	5	0	0	0	0	0	0	20	0	5	0
August	7.0	E.	20	SW.	0	1	10	19	11	5	3	4	7	2	7	15	9	8	7	0	0	0	0	0	0	11	0	6	0
September	8.6	S.	25	SW.	0	5	8	5	6	24	4	4	2	2	22	4	4	5	4	0	0	0	2	1	0	12	0	4	0
October	8.1	S.	26	S.	0	5	9	9	6	16	6	3	6	2	15	15	1	1	1	0	0	0	0	0	0	0	1	1	0
November	9.3	W.	37	NW.	2	10	5	5	3	4	12	13	7	1	18	8	4	5	3	1	1	0	0	0	0	0	11	2	0
December	8.0	SW.	27	N.	0	8	4	9	7	5	15	9	5	0	14	10	7	1	1	0	0	0	2	2	5	0	23	0	0
Year	8.7	S.	37	NW.	5	87	79	115	77	133	87	75	64	13	162	122	81	63	45	16	8	4	16	4	16	69	103	39	0

CORPUS CHRISTI, TEX.

[H_b=20 ft.; h_t=11 ft.; h_r=63 ft.; h_a=78 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.7	SE.	30	S.	0	10	2	10	19	20	0	0	1	0	5	4	22	9	5	0	0	0	16	10	0	0	0	1	0
February	10.8	N.	29	N.	0	16	9	10	8	7	2	0	3	1	3	3	22	15	9	0	0	0	17	10	0	0	4	3	0
March	13.4	S.	43	S.	1	7	4	13	14	18	2	1	3	0	4	15	12	6	5	0	0	1	18	5	0	0	0	3	0
April	12.2	S.	32	N.	1	6	3	10	17	15	3	5	0	1	6	7	17	4	3	0	0	0	10	2	0	1	0	3	0
May	12.5	SE.	35	N.	1	3	1	2	33	16	3	3	1	0	7	14	10	5	4	0	0	0	0	0	0	1	0	6	0
June	10.5	SE.	21	SE.	0	1	6	11	20	14	5	3	0	0	18	5	7	6	5	0	0	0	2	0	0	5	0	6	0
July	11.3	S.	30	NE.	0	2	1	8	13	26	5	4	2	1	9	16	6	7	6	0	0	0	0	0	0	11	0	5	0
August	9.7	SE.	35	E.	1	4	2	7	25	11	10	2	1	0	13	9	9	7	7	0	0	0	0	0	0	7	0	6	0
September	10.7	SE.	49	E.	2	1	5	12	19	17	1	5	0	0	6	18	6	17	12	0	0	0	3	0	0	3	0	8	0
October	9.2	SE.	28	NE.	0	9	6	10	18	11	4	2	2	0	13	11	7	9	6	0	0	0	4	3	0	0	0	4	0
November	9.5	S.	30	S.	0	14	6	7	9	16	1	4	3	0	14	9	7	5	3	0	0	0	8	3	0	0	0	2	0
December	11.2	S.	30	S.	0	8	2	2	5	31	6	4	4	0	13	10	8	7	3	0	0	0	10	9	0	0	0	0	0
Year	10.9	S.	49	E.	6	81	47	102	200	202	42	33	20	3	111	121	133	97	68	0	0	1	88	42	0	28	4	47	0

DALLAS, TEX.

[H_b=512 ft.; h_t=220 ft.; h_r=194 ft.; h_a=227 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	12.1	SE.	47	SW.	6	4	0	1	11	6	2	3	3	1	12	8	11	10	6	0	0	0	3	0	0	0	3	3	0
February	13.2	SE.	40	NW.	2	5	5	1	7	4	1	1	4	0	10	8	10	8	6	3	2	0	3	2	3	0	7	0	0
March	14.0	SE.	36	N.	4	3	2	7	8	2	3	0	6	0	12	7	12	8	4	0	0	2	2	1	0	0	1	5	0
April	13.5	SE.	49	N.	4	3	1	6	10	3	1	0	6	0	13	10	7	8	6	0	0	4	0	0	0	1	0	8	0
May	12.9	SE.	42	NE.	4	3	3	5	11	4	4	0	1	0	17	5	9	8	8	0	0	1	0	0	0	4	0	10	0
June	10.5	SE.	38	NE.	1	1	2	4	6	11	6	0	0	0	27	2	1	0	0	0	0	0	0	0	0	18	0	2	0
July	11.2	SE.	38	NE.	2	2	2	7	9	8	0	0	3	0	15	9	7	6	4	0	0	0	0	0	0	20	0	4	0
August	8.7	SE.	31	S.	0	8	4	11	17	13	3	2	3	1	17	10	4	8	4	0	0	0	0	0	0	24	0	6	0
September	9.7	SE.	29	S.	0	3	5	10	27	12	3	0	0	0	15	9	6	5	3	0	0	0	0	0	0	21	0	5	0
October	10.7	SE.	31	N.	0	14	13	14	9	3	3	1	5	0	19	11	1	5	2	0	0	0	3	0	0	0	0	5	0
November	11.8	S.	37	NW.	1	13	3	5	10	9	7	7	6	0	17	5	8	4	3	0	0	0	2	1	0	0	0	6	0
December	11.9	S.	34	NW.	1	7	6	4	14	9	4	12	6	0	15	5	11	7	6	0	0	0	2	2	0	0	2	4	0
Year	11.7	SE.	49	N.	25	66	46	75	139	84	37	26	43	2	189	89	87	74	52	3	2	7	15	6	3	88	13	52	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

DAVENPORT, IOWA

[ϕ=41°30′ N.; λ=90°38′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.27	29.76	28.54	30.6	38.3	38.3	44.9	27.8	36.4	55	11	25	28	29	78	66	69	0.137	0.157	0.165	1.87	1.42	1.1	4.5	6.2	6.0	6.1
February	29.40	29.92	28.80	19.0	28.3	28.3	34.6	15.8	25.2	63	−20	14	17	17	85	62	63	.093	.103	.104	.64	.56	6.6	4.8	4.4	3.6	4.6
March	29.85	29.82	28.89	32.3	40.9	40.4	45.1	29.6	37.4	67	6	27	29	30	81	63	67	.159	.173	.183	2.86	.84	2.0	6.8	7.2	7.2	7.1
April	29.23	29.66	28.77	48.2	53.7	53.8	58.9	40.3	49.6	77	32	36	37	38	76	56	58	.220	.234	.240	2.56	1.23	.4	6.2	6.7	5.8	6.3
May	29.23	29.50	28.81	56.4	66.5	66.3	70.9	53.6	62.2	84	36	51	52	53	81	61	64	.381	.394	.416	6.31	1.84	.0	6.5	7.6	7.2	7.1
June	29.31	29.71	29.07	72.3	86.7	85.5	90.9	68.3	79.6	100	49	60	60	60	67	43	45	.545	.549	.549	3.12	1.76	.0	3.2	3.9	3.6	3.6
July	29.35	29.73	29.06	71.0	83.0	83.3	87.7	67.6	77.6	95	58	61	61	62	72	49	50	.549	.543	.559	1.56	.45	.0	4.2	4.4	3.7	4.2
August	29.38	29.61	29.06	65.0	78.8	77.1	83.6	62.7	72.8	89	55	58	57	59	78	49	55	.487	.480	.505	2.51	1.02	.0	4.7	5.3	4.4	5.4
September	29.25	29.54	29.00	64.3	78.4	74.2	82.6	61.6	72.1	98	45	58	58	57	89	53	58	.493	.500	.480	3.04	2.39	.0	4.8	4.9	4.4	4.7
October	29.42	29.82	28.95	45.5	57.4	54.2	61.9	42.8	52.4	79	27	39	42	42	78	58	64	.251	.280	.277	1.72	.77	T	5.2	4.6	3.8	5.2
November	29.38	29.94	28.91	34.1	42.4	40.4	48.1	29.4	38.8	79	7	27	29	26	74	59	64	.156	.174	.164	.26	.18	.5	6.1	6.1	4.9	6.1
December	29.44	30.16	28.83	26.9	32.2	31.2	38.4	21.7	30.0	60	−11	22	24	24	82	72	76	.135	.146	.149	1.84	1.23	4.1	7.5	8.8	5.3	8.1
Year	29.33	30.16	28.54	46.7	57.2	56.1	62.2	43.4	52.8	100	−20	40	41	42	77	58	61	.300	.312	.316	28.31	2.39	14.7	5.4	5.8	5.0	5.7

DEL RIO, TEX.

[ϕ=29°20′ N.; λ=100°53′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.00	29.54	28.67	48.8	61.2	61.9	66.9	40.5	56.7	83	27	43	45	44	82	59	57	0.305	0.323	0.316	0.40	0.13	0.0	5.3	6.4	6.8	6.3
February	29.05	29.60	28.64	45.2	56.4	59.4	64.2	42.0	53.1	82	14	40	39	38	81	56	49	.268	.261	.255	.61	.28	.0	6.2	6.1	5.2	5.9
March	28.92	29.28	28.58	55.3	69.4	73.2	76.6	54.3	65.4	92	37	47	45	43	74	48	40	.359	.334	.314	.10	.04	.0	5.9	6.0	6.0	5.9
April	28.82	29.27	28.47	59.5	77.9	80.9	84.0	58.2	71.1	96	42	46	44	43	63	34	29	.347	.325	.301	.19	.14	.0	5.1	4.8	4.6	4.7
May	28.79	29.05	28.21	70.2	84.8	88.1	91.6	68.3	80.0	102	55	60	58	56	73	45	38	.561	.523	.476	.20	.10	.0	6.6	3.5	4.3	4.6
June	28.93	29.21	28.72	72.6	87.2	89.8	92.1	71.1	81.6	99	61	65	61	58	77	43	37	.616	.541	.492	1.28	.95	.0	5.9	4.2	4.4	4.5
July	28.87	29.05	28.73	77.3	91.0	92.8	96.8	76.6	86.7	103	69	68	67	62	75	46	38	.700	.661	.566	.11	.06	.0	4.9	5.6	5.8	5.4
August	28.90	29.07	28.70	75.9	88.8	90.1	93.4	74.9	84.2	98	70	69	66	63	80	48	43	.708	.641	.587	.49	.24	.0	4.9	5.6	4.4	4.5
September	28.85	29.05	28.63	75.3	88.3	86.6	92.1	74.9	83.5	96	70	70	66	64	84	49	46	.736	.645	.611	1.35	.40	.0	5.1	5.8	4.0	4.7
October	28.97	29.18	28.76	66.3	80.1	79.6	85.2	65.5	75.4	91	59	60	59	58	82	52	50	.535	.522	.493	1.43	.83	.0	5.6	4.3	3.2	4.2
November	29.09	29.41	28.54	54.3	68.6	68.4	73.8	53.0	63.4	81	42	48	48	47	79	50	50	.351	.354	.343	.33	.17	.0	5.2	4.4	3.0	4.3
December	29.04	29.34	28.80	47.6	65.2	65.9	71.9	45.4	58.6	84	33	37	39	36	76	45	40	.245	.276	.239	.21	.19	.0	4.3	4.2	3.5	4.0
Year	28.94	29.60	28.21	62.4	76.7	78.1	82.4	60.9	71.6	103	14	54	53	51	77	48	43	.478	.450	.416	6.79	.96	.0	5.4	5.1	4.6	4.9

DENVER, COLO.

[ϕ=39°45′ N.; λ=105°00′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	24.55	24.94	24.07	28.9	42.9	41.2	47.4	24.6	36.0	65	14	14	9	9	53	24	26	0.079	0.064	0.065	0.01	0.01	0.2	1.9	4.6	2.9	3.7
February	24.63	24.92	24.20	21.8	35.7	34.9	42.1	16.4	29.2	67	−16	2	2	2	44	29	30	.042	.051	.050	.23	.15	5.4	1.6	3.7	3.4	3.2
March	24.63	24.90	24.29	33.7	49.4	50.5	54.9	31.2	43.0	70	20	19	15	16	55	28	28	.100	.084	.092	1.22	.69	9.0	5.1	5.9	6.0	5.7
April	24.59	25.01	24.14	35.8	51.2	51.2	57.0	33.5	45.2	75	15	24	21	23	64	38	41	.131	.116	.128	4.09	.96	33.8	4.2	4.8	5.7	5.1
May	24.62	24.94	24.08	46.5	61.2	61.4	65.7	44.6	55.2	86	32	32	25	28	62	32	36	.186	.141	.159	2.34	1.31	3.2	4.7	5.1	6.2	5.4
June	24.76	25.11	24.50	61.8	81.5	80.6	85.4	60.2	72.8	96	53	42	35	36	50	22	24	.272	.219	.226	.16	.10	.0	3.1	4.6	7.1	4.9
July	24.82	25.04	24.64	65.3	82.6	81.5	87.3	63.2	75.2	97	55	49	45	45	58	31	34	.359	.319	.324	.90	.42	.0	2.6	3.4	5.5	3.6
August	24.80	24.97	24.57	61.3	77.3	77.0	81.9	59.4	70.6	91	50	50	46	46	68	36	37	.361	.316	.320	.34	.43	.0	4.6	4.5	5.2	4.8
September	24.71	25.01	24.32	57.5	75.7	75.6	80.6	54.8	67.7	96	43	42	37	39	59	30	32	.274	.237	.248	1.17	.99	.0	3.0	3.6	4.0	3.2
October	24.78	25.07	24.39	46.5	66.5	65.6	71.4	43.3	57.4	80	31	27	25	27	48	23	24	.149	.139	.147	.01	.01	.0	1.9	2.9	3.5	2.8
November	24.82	25.26	24.31	38.0	53.3	51.2	59.3	33.1	46.2	74	12	21	21	20	53	32	32	.110	.110	.108	.16	.11	2.5	2.4	2.9	4.0	3.2
December	24.68	24.94	24.22	38.6	49.9	48.5	55.4	32.1	43.8	69	13	20	19	21	49	32	35	.105	.103	.110	.82	.68	8.4	3.0	5.3	4.1	4.6
Year	24.70	25.26	24.07	44.6	60.6	59.9	65.7	41.4	53.5	97	−16	28	25	26	55	30	32	.181	.158	.165	12.07	1.31	62.5	3.2	4.2	4.8	4.2

DES MOINES, IOWA

[ϕ=41°35′ N.; λ=93°37′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	28.99	29.40	28.22	29.0	37.9	37.3	43.7	24.7	34.2	55	10	24	26	28	81	65	70	0.132	0.148	0.159	1.06	0.44	2.8	4.3	6.7	4.6	6.0
February	29.15	29.63	28.58	17.6	28.7	28.3	34.5	14.1	24.3	63	−19	12	13	16	76	53	59	.087	.089	.101	.16	.13	2.8	4.6	4.4	3.4	4.2
March	29.10	29.56	28.41	31.5	40.9	41.2	46.6	28.3	37.4	73	7	27	27	29	82	59	62	.155	.163	.171	2.19	.96	1.8	6.3	7.1	6.3	6.7
April	28.97	29.43	28.44	42.0	55.6	56.3	60.4	40.1	50.2	76	20	36	35	36	76	48	49	.219	.214	.227	.93	.32	T	6.6	6.3	5.0	5.9
May	28.96	29.21	28.50	55.7	66.9	67.0	70.9	52.7	61.8	87	40	49	50	50	80	58	53	.364	.371	.377	2.65	1.07	.0	6.6	7.5	6.9	6.8
June	29.03	29.48	28.76	71.1	88.4	88.2	92.6	67.0	79.8	103	47	55	56	56	67	36	35	.526	.479	.467	.23	.12	.0	6.6	4.0	3.8	4.0
July	29.08	29.40	28.68	70.3	83.7	85.6	88.8	67.2	78.0	99	58	63	61	62	76	49	49	.582	.537	.573	4.06	2.50	.0	4.2	4.9	3.8	4.3
August	29.11	29.35	28.85	64.4	78.0	77.5	81.8	61.8	71.8	92	53	58	59	59	80	54	55	.491	.505	.512	1.85	1.02	.0	5.7	6.4	5.4	5.9
September	28.99	29.24	28.67	62.2	77.9	74.8	82.0	59.0	70.5	98	39	57	56	58	85	49	58	.491	.464	.501	2.40	1.25	.0	5.0	4.6	2.8	4.0
October	29.16	29.56	28.80	43.3	57.5	55.2	62.0	39.9	51.0	79	26	38	38	40	82	51	57	.239	.249	.261	3.15	2.64	T	3.8	5.2	4.0	4.1
November	29.14	29.66	28.64	34.2	44.3	41.9	50.8	28.9	39.8	78	11	27	27	28	78	54	59	.156	.156	.159	.22	.16	.1	5.1	5.6	4.3	5.7
December	29.17	29.85	28.56	24.7	33.7	30.8	38.9	18.7	28.8	64	−6	20	23	22	80	64	70	.123	.140	.137	.77	.57	.8	5.9	7.6	4.3	6.5
Year	29.07	29.85	28.22	45.5	57.8	57.0	62.8	41.9	52.3	103	−19	32	33	40	78	53	57	.296	.295	.304	19.67	2.64	7.2	5.0	5.8	4.3	5.3

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

DAVENPORT, IOWA

[H_b=606 ft.; h_t=66 ft.; h_r=60 ft.; h_a=53 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																										
January	12.5	SW.	41	W.	5	3	0	8	6	10	13	12	10	0	7	11	13	8	4	5	3	1	5	1	2	0	22	1	0
February	13.0	NW.	45	SW.	3	4	3	2	6	8	9	11	13	0	14	7	7	4	3	8	4	0	0	0	12	0	22	0	0
March	11.3	NW.	40	NW.	3	5	9	7	9	4	5	11	11	1	6	7	18	12	8	7	4	3	6	2	3	0	22	5	0
April	12.7	NE.	46	S.	2	5	13	11	3	4	5	10	9	0	9	7	14	12	8	3	3	1	5	0	0	0	0	4	0
May	11.3	NE.	38	S.	4	3	12	7	4	10	9	9	6	2	2	14	15	21	19	0	0	1	1	1	0	0	0	14	0
June	9.1	SW.	38	N.	2	4	2	13	2	3	22	7	5	2	17	9	4	7	6	0	0	0	0	0	0	19	0	6	0
July	7.8	SW.	37	NW.	3	3	9	12	7	6	15	5	5	0	16	8	7	7	6	0	0	0	0	0	0	13	0	5	0
August	7.2	E.	37	NW.	1	4	14	13	4	3	9	8	2	5	10	13	8	9	7	0	0	0	4	0	0	0	0	4	0
September	9.8	SW.	35	SW.	1	3	10	7	2	11	11	7	6	3	14	8	8	8	4	0	0	0	4	1	0	7	0	4	3
October	9.5	NW.	30	NW.	0	1	1	5	3	12	12	13	11	4	13	6	12	9	7	1	0	0	1	0	0	0	2	1	0
November	12.7	NW.	43	NW.	6	3	6	3	3	6	8	13	18	0	7	11	12	5	2	11	2	0	0	0	2	0	20	1	0
December	10.2	NW.	28	NW.	0	3	9	13	4	6	8	7	11	1	3	7	21	9	5	11	3	0	7	2	9	0	25	2	0
Year	10.6	SW.	46	S.	30	41	88	101	53	83	126	113	107	18	118	106	139	111	79	46	19	6	33	7	28	39	113	47	3

DEL RIO, TEX.

[H_b=944 ft.; h_t=64 ft.; h_r=58 ft.; h_a=71 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.6	SE.	27	NW.	0	4	3	11	19	3	0	6	9	7	8	5	18	9	4	0	0	0	11	6	0	0	3	0	0
February	9.2	SE.	28	N.	0	8	3	10	12	5	1	4	10	3	8	7	13	7	6	0	0	0	5	0	0	0	5	0	0
March	9.9	SE.	30	NW.	0	8	4	14	23	3	0	1	8	1	9	8	14	5	1	0	0	0	4	2	0	4	0	0	0
April	9.6	SE.	34	NW.	1	5	2	9	18	7	0	4	11	4	13	8	9	2	2	0	0	1	0	0	0	6	0	2	0
May	10.4	SE.	40	SE.	2	1	2	10	34	3	1	4	4	3	13	11	7	5	4	0	0	0	0	0	0	23	0	4	0
June	10.5	SE.	22	SE.	0	2	1	19	25	11	0	0	0	2	13	12	5	5	4	0	0	0	0	0	0	21	0	1	0
July	9.6	SE.	28	SE.	0	0	2	26	24	5	0	1	2	2	9	15	7	3	2	0	0	0	0	0	0	30	0	4	0
August	9.8	SE.	25	SE.	0	0	0	25	30	5	0	0	0	1	11	16	4	7	2	0	0	0	0	0	0	27	0	2	0
September	9.8	SE.	26	SE.	0	1	1	14	35	8	0	0	0	1	12	14	4	6	5	0	0	0	0	0	0	26	0	1	0
October	7.8	SE.	24	E.	0	2	1	14	19	15	0	4	3	4	13	13	5	5	4	0	0	0	6	0	0	3	0	4	0
November	8.0	SE.	26	N.	0	8	1	12	20	3	0	5	6	5	13	12	5	4	3	0	0	0	0	0	0	0	0	0	0
December	7.1	NW.	30	NW.	0	8	2	4	12	10	0	7	13	6	17	5	9	4	2	0	0	0	5	1	0	0	0	0	0
Year	9.1	SE.	40	SE.	3	47	22	168	271	79	2	36	66	39	139	126	100	62	40	0	0	1	25	9	0	139	8	18	0

DENVER, COLO.

[H_b=5,292 ft.; h_t=106 ft.; h_r=98 ft.; h_a=113 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.1	S.	32	W.	1	7	2	2	5	17	10	13	5	1	16	13	2	1	0	4	1	0	0	0	1	0	28	0	0
February	9.3	S.	28	NE.	0	5	8	2	4	10	9	13	5	0	17	7	4	4	2	5	4	0	0	0	6	0	25	0	0
March	9.3	S.	38	N.	1	11	3	4	4	12	10	8	7	1	5	18	8	9	9	11	7	0	0	0	0	0	19	0	0
April	9.7	S.	38	NE.	3	14	4	1	4	18	5	5	9	0	12	11	7	11	11	9	8	0	0	1	1	0	12	2	0
May	8.5	S.	38	W.	1	7	6	6	3	15	0	8	10	1	9	13	9	9	5	6	3	0	1	1	0	0	1	2	0
June	7.9	S.	30	SE.	0	7	3	2	4	22	8	4	10	0	9	18	3	4	1	0	0	0	0	0	0	6	0	9	0
July	7.6	S.	37	NW.	1	7	2	6	9	19	10	5	4	0	14	15	2	9	5	0	0	0	0	0	0	12	0	11	0
August	7.5	S.	25	NE.	0	7	2	5	5	16	10	7	10	0	10	17	4	10	5	0	0	0	0	0	0	1	0	11	0
September	7.9	S.	27	N.	0	9	7	5	4	17	6	4	7	1	19	7	4	5	3	0	0	0	0	0	0	4	0	2	0
October	7.6	S.	27	N.	0	10	4	6	2	22	8	6	4	0	17	13	1	1	0	0	0	0	0	0	0	0	2	0	0
November	8.4	S.	30	N.	0	7	6	5	3	15	5	7	7	0	19	9	2	3	2	5	2	0	0	0	1	0	9	0	0
December	8.3	S.	29	W.	0	2	4	4	12	19	7	8	5	1	11	15	5	2	2	6	2	0	0	0	0	0	16	0	0
Year	8.3	S.	38	W.	7	93	53	48	64	202	94	88	83	5	159	156	51	68	45	46	27	0	1	2	9	23	112	37	0

DES MOINES, IOWA

[H_b=861 ft.; h_t=5 ft.; h_r=3 ft.; h_a=99 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.3	S.	31	W.	0	1	0	6	16	13	11	5	10	0	10	6	15	8	7	5	3	2	13	5	4	0	27	3	0
February	11.7	NW.	32	W.	2	8	1	3	7	10	5	5	16	1	15	7	6	4	1	11	4	0	1	0	11	0	25	0	0
March	10.9	N.	35	NW.	1	13	1	7	11	6	0	2	17	0	7	7	17	9	8	7	3	2	7	1	3	0	22	6	0
April	11.1	E.	32	S.	1	8	9	6	12	4	4	5	12	0	10	7	13	8	5	2	0	2	5	1	0	0	5	4	0
May	10.3	SE.	35	S.	2	11	4	7	12	8	6	5	8	1	3	14	14	16	10	6	0	1	4	0	0	0	0	8	0
June	9.4	S.	28	NW.	0	9	1	4	16	16	10	1	1	2	14	11	5	4	2	0	0	0	0	0	0	22	0	4	0
July	9.3	S.	27	E.	0	12	2	9	13	15	7	0	4	0	15	10	6	9	7	0	0	1	3	0	0	15	0	7	0
August	7.8	SE.	24	NW.	0	10	2	9	13	11	4	3	4	0	10	7	14	7	6	0	0	0	4	0	0	1	0	5	0
September	9.8	S.	32	S.	1	5	2	8	10	16	8	5	6	0	13	11	6	7	6	8	0	1	8	0	0	8	0	4	0
October	9.8	NW.	28	NW.	0	6	5	2	19	14	5	2	16	2	14	10	7	4	3	1	0	0	8	0	0	0	4	3	0
November	11.0	NW.	41	W.	2	5	3	0	3	8	8	3	16	0	9	7	14	3	2	8	2	0	4	0	0	0	21	0	0
December	9.7	N.	27	SE.	0	11	4	0	13	5	5	3	12	0	7	11	13	5	4	7	2	0	6	0	3	0	29	1	0
Year	10.0	S.	41	W.	9	110	34	79	136	126	73	44	122	6	127	108	130	84	61	41	14	9	63	7	27	46	133	45	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

DETROIT, MICH.

[ϕ=42°20′ N.; λ=83°03′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.18	29.72	28.47	32.3	36.2	35.1	41.2	28.2	34.7	58	11	27	30	28	80	77	76	0.155	0.171	0.158	1.18	0.56	0.4	6.7	7.1	7.0	7.2
February	29.20	29.74	28.55	23.3	30.1	29.4	35.8	19.0	27.4	55	−12	18	21	21	79	69	70	.110	.123	.120	1.49	.80	4.4	5.7	6.1	5.9	5.7
March	29.20	29.75	28.51	30.5	36.1	34.7	40.0	28.0	34.0	57	8	26	29	29	81	75	79	.142	.167	.166	2.25	.55	7.0	6.8	8.0	7.9	7.7
April	29.14	29.57	28.64	43.6	50.2	49.2	55.4	39.2	47.3	73	28	36	39	36	77	68	63	.225	.247	.224	2.61	1.26	T	6.6	7.2	6.9	6.5
May	29.16	29.46	28.77	56.2	64.6	62.5	68.2	52.3	60.2	87	36	49	52	49	79	67	64	.366	.418	.365	3.29	1.00	.0	7.6	7.3	6.7	7.0
June	29.19	29.49	28.92	69.6	80.2	77.1	85.3	63.9	74.6	100	48	56	57	57	63	48	53	.472	.489	.498	1.19	.56	.0	4.1	4.9	5.1	4.4
July	29.26	29.69	29.02	70.7	81.4	78.6	85.0	65.8	75.4	98	57	58	58	56	67	47	48	.500	.494	.464	2.47	1.07	.0	3.3	4.8	4.2	4.1
August	29.25	29.50	28.92	66.7	76.8	74.3	80.4	63.5	72.0	90	55	57	56	56	72	51	54	.476	.468	.461	2.24	1.83	.0	3.1	5.3	3.8	4.6
September	29.16	29.39	28.82	62.4	72.5	69.9	76.6	60.4	68.5	97	50	56	55	55	80	58	63	.459	.450	.455	1.94	.64	.0	5.5	5.2	5.4	5.0
October	29.30	29.67	28.82	47.2	55.5	53.3	60.1	44.3	52.2	79	29	40	41	40	77	60	62	.257	.274	.265	1.45	.65	.0	5.5	5.6	4.2	5.3
November	29.18	29.69	28.51	33.3	37.4	36.9	42.7	29.3	36.0	75	8	28	30	29	81	75	72	.164	.179	.170	1.63	.38	10.5	7.4	8.0	6.8	7.9
December	29.30	30.07	28.79	27.3	30.7	29.7	36.3	23.2	29.8	61	−2	23	26	25	83	82	82	.135	.153	.146	1.38	.31	6.6	7.5	8.8	7.5	8.4
Year	29.21	30.07	28.47	46.9	54.3	52.6	58.9	43.1	51.0	100	−12	40	41	40	77	65	66	.288	.303	.291	23.17	1.83	28.9	5.9	6.5	6.0	6.2

DEVILS LAKE, N.DAK.

[ϕ=48°07′ N.; λ=98°52′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	28.22	28.67	27.58	7.6	12.4	8.9	18.6	0.4	9.5	39	−13	6	8	7	92	81	91	0.065	0.067	0.063	0.88	0.32	9.8	5.8	6.6	5.2	6.7
February	28.34	28.82	27.85	1.3	9.0	8.1	15.4	−3.8	5.8	44	−35	−1	0	5	90	78	88	.053	.064	.070	.11	.04	1.1	5.1	5.1	5.0	6.0
March	28.46	28.97	27.76	18.7	30.5	29.7	35.1	16.5	25.8	60	−8	16	20	22	90	65	73	.097	.116	.127	.27	.25	3.6	5.8	6.1	5.5	6.0
April	28.36	29.02	27.93	31.3	43.3	43.3	47.4	29.4	38.4	73	11	26	29	30	80	58	61	.142	.165	.168	.62	.27	6.9	5.6	6.5	6.7	6.2
May	28.30	28.64	27.67	47.1	62.8	62.0	66.4	43.7	55.0	85	29	40	38	39	76	45	47	.260	.254	.258	2.22	.98	.0	6.6	6.9	7.0	6.8
June	28.32	28.96	28.04	62.2	78.0	77.9	83.3	57.0	70.2	103	42	53	53	53	72	44	44	.406	.417	.404	.96	.26	.0	5.2	4.0	3.1	4.4
July	28.39	28.68	28.05	62.1	79.2	78.6	83.8	57.8	70.8	98	49	55	54	53	78	44	44	.437	.424	.422	2.56	1.61	.0	3.6	3.7	3.2	3.9
August	28.42	28.75	28.05	57.7	77.8	76.3	82.0	54.5	68.2	96	40	49	48	47	74	36	37	.361	.340	.330	.27	.13	.0	3.8	4.2	3.7	3.9
September	28.25	28.62	27.78	49.9	68.9	65.7	74.1	47.2	60.6	93	31	41	41	42	73	40	44	.269	.282	.280	.60	.46	.0	4.1	4.4	5.0	4.8
October	28.43	28.98	27.88	30.1	45.2	42.1	49.8	26.7	38.2	75	9	24	27	26	80	52	57	.132	.146	.143	.62	.22	2.4	5.7	6.0	5.8	6.0
November	28.42	28.92	27.69	22.7	26.9	24.5	33.0	15.7	24.4	54	2	20	21	21	91	79	85	.111	.116	.116	.73	.23	5.4	4.7	7.4	6.2	7.4
December	28.46	29.18	27.83	1.4	7.5	3.3	14.1	−6.5	3.8	47	−30	0	2	0	92	80	87	.050	.059	.053	1.06	.29	9.9	6.6	6.8	6.2	6.8
Year	28.36	29.18	27.58	32.7	45.1	43.4	50.2	28.2	39.2	103	−35	27	28	29	82	58	63	.199	.204	.203	10.91	1.61	39.1	5.2	5.6	5.2	5.7

DODGE CITY, KANS.

[ϕ=37°45′ N.; λ=100°00′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	27.31	27.78	26.69	27.7	48.4	43.6	53.5	24.2	38.8	64	14	16	20	18	60	32	35	0.091	0.107	0.097	T	T	0.0	1.6	2.4	2.1	2.5
February	27.43	27.81	26.91	21.0	39.9	38.6	46.5	16.5	31.5	69	−17	10	11	11	64	36	38	.071	.076	.074	0.17	0.10	.8	3.6	2.4	2.5	3.5
March	27.35	27.74	26.93	35.6	54.5	53.8	60.4	32.2	46.3	77	16	26	28	25	68	40	36	.144	.155	.144	.09	.04	.6	4.7	3.1	4.2	3.7
April	27.27	27.67	26.64	43.1	61.2	61.5	67.2	39.9	53.6	89	21	30	31	31	63	38	36	.185	.186	.187	4.06	2.23	T	4.2	2.9	4.1	3.6
May	27.27	27.57	26.80	54.6	71.6	71.9	76.7	51.6	64.2	98	39	47	44	42	76	44	40	.328	.303	.278	3.16	1.01	.0	4.5	3.4	4.1	3.5
June	27.37	27.76	27.03	69.5	89.2	88.7	94.3	65.5	79.9	107	52	52	48	45	56	28	25	.408	.354	.318	1.26	.84	.0	3.0	3.0	4.1	3.1
July	27.40	27.68	27.14	71.4	90.8	88.6	95.2	68.6	81.9	108	56	60	58	57	70	36	37	.537	.502	.475	1.76	.58	.0	2.1	1.2	3.0	1.9
August	27.42	27.63	27.18	67.9	84.2	83.1	88.0	65.6	76.8	102	58	60	59	58	77	46	47	.516	.504	.492	4.79	2.70	.0	5.2	3.7	3.4	3.7
September	27.33	27.65	27.02	64.0	82.1	80.2	86.8	61.7	74.2	97	48	55	55	54	76	43	44	.453	.456	.446	1.01	.66	.0	1.6	2.1	1.8	1.9
October	27.47	27.82	27.13	47.9	67.3	63.0	71.7	45.4	58.6	80	32	38	39	39	70	37	43	.244	.260	.254	1.27	1.01	.0	2.6	2.2	2.4	2.2
November	27.51	27.85	27.04	37.1	56.3	49.3	60.3	33.7	47.0	81	23	29	31	30	72	41	49	.161	.177	.166	.38	.30	.3	2.1	2.6	2.9	2.3
December	27.43	27.88	26.95	29.9	48.3	41.9	53.5	27.2	40.4	72	8	22	25	26	73	43	55	.127	.146	.148	.75	.75	.0	2.1	3.0	3.0	2.7
Year	27.38	27.88	26.64	47.5	66.2	63.7	71.2	44.3	57.8	108	−17	37	37	36	69	39	40	.272	.270	.257	18.66	2.70	1.7	3.1	2.7	3.1	2.9

DUBUQUE, IOWA

[ϕ=42°30′ N.; λ=90°40′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.15	29.64	28.39	28.3	36.3	35.7	41.9	24.1	33.0	54	7	23	26	27	80	67	71	0.129	0.147	0.154	0.58	0.30	1.1	5.5	7.2	6.1	6.6
February	29.29	29.77	28.63	15.6	25.2	25.5	31.1	11.7	21.4	60	−23	10	13	16	77	58	66	.080	.089	.099	.54	.40	5.2	3.6	5.4	4.0	4.5
March	29.27	29.74	28.53	30.1	38.6	37.8	42.4	27.6	35.0	67	4	25	26	27	80	58	65	.142	.147	.157	4.76	2.50	7.8	6.5	6.6	7.3	6.8
April	29.14	29.64	28.57	41.7	51.2	51.6	56.2	39.3	47.8	78	31	33	33	36	73	54	58	.197	.203	.222	1.53	.49	1.4	6.1	6.8	7.1	6.9
May	29.13	29.43	28.76	55.1	65.1	64.1	68.8	52.6	60.7	84	36	49	50	52	80	60	66	.362	.373	.399	7.24	1.96	.0	6.0	7.1	8.0	7.2
June	29.20	29.61	28.94	70.6	84.0	83.6	88.4	66.3	77.4	98	47	60	60	61	69	47	48	.530	.559	.564	1.74	.84	.0	4.2	4.3	3.9	4.3
July	29.26	29.64	28.93	69.3	81.8	81.6	85.5	65.8	75.6	95	57	60	60	62	73	49	54	.525	.523	.568	3.84	2.46	.0	3.8	4.2	3.6	4.3
August	29.28	29.54	28.97	62.7	77.6	76.6	80.8	60.2	70.5	90	52	56	54	56	79	46	50	.454	.434	.455	2.32	1.24	.0	4.3	4.1	4.1	4.4
September	29.16	29.48	28.88	61.2	75.0	71.2	78.6	58.2	68.4	95	42	56	55	55	82	53	59	.463	.450	.448	3.28	1.01	.0	4.6	5.2	4.5	5.0
October	29.30	29.73	28.88	43.5	56.0	53.0	59.3	40.4	49.8	79	26	38	38	38	80	52	58	.236	.240	.246	.97	.45	.0	4.8	4.6	4.5	4.8
November	29.26	29.83	28.79	32.0	39.7	37.0	45.0	27.9	36.4	78	6	25	26	25	75	58	62	.144	.154	.144	.28	.13	2.7	6.7	6.5	5.1	6.4
December	29.34	30.09	28.73	23.8	28.5	28.2	33.8	18.2	26.0	57	−18	20	20	21	82	68	74	.124	.125	.133	1.62	1.06	6.2	7.6	8.3	6.9	8.3
Year	29.23	30.09	28.39	44.5	54.9	53.8	59.3	41.0	50.2	98	−23	38	38	40	78	56	61	.282	.287	.299	28.70	2.50	24.4	5.8	5.9	5.4	5.8

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

DETROIT, MICH.

[H_b=730 ft.; h_a=218 ft.; h_r=214 ft.; h_a=258 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	11.8	SW.	47	SW.	2	1	3	8	4	7	23	10	6	0	5	6	20	7	6	3	1	0	3	3	4	0	25	0	0
February	13.2	SW.	38	SW.	2	2	1	3	4	3	26	9	8	0	9	8	11	9	5	10	6	0	2	1	8	0	25	1	0
March	11.4	NW.	32	W.	1	1	7	2	10	0	13	11	18	0	3	7	21	15	9	16	8	0	3	2	4	0	26	2	0
April	10.8	SW.	25	N.	0	4	11	12	7	5	10	10	1	0	6	8	16	14	12	2	0	0	1	1	0	0	4	3	0
May	9.8	SW.	29	SW.	0	10	7	14	5	4	13	8	1	0	3	13	15	15	12	0	0	1	0	0	0	0	7	7	2
June	8.8	SW.	28	NW.	0	4	7	3	7	0	20	12	7	0	11	14	5	9	7	0	0	0	1	0	0	11	0	10	1
July	9.1	SW.	22	NE.	0	5	18	6	5	2	12	13	1	0	13	17	1	6	6	0	0	0	0	0	0	10	0	6	0
August	8.9	NE.	28	SW.	0	13	9	9	6	1	10	7	7	0	9	17	5	7	6	0	0	0	0	0	0	0	0	5	0
September	9.8	SW.	30	SW.	0	2	15	5	7	1	16	9	5	0	10	11	9	13	8	0	0	0	4	0	0	2	0	3	3
October	9.5	SW.	27	SW.	0	2	2	1	9	3	19	10	15	1	12	8	11	8	6	0	0	0	4	2	0	0	2	5	0
November	11.8	SW.	32	SW.	1	2	5	2	4	3	18	18	8	0	4	6	20	13	9	14	10	0	2	1	4	0	21	0	0
December	10.5	SW.	32	SW.	1	5	6	6	9	4	15	11	6	0	1	6	24	11	8	12	3	0	8	4	11	0	26	0	0
Year	10.4	SW.	47	SW.	7	51	91	71	77	33	195	128	83	1	86	121	158	127	94	57	28	1	28	14	31	23	129	42	6

DEVILS LAKE, N.DAK.

[H_b=1,478 ft.; h_a=11 ft.; h_r=4 ft.; h_a=44 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.0	W.	32	SE.	1	2	9	1	12	5	12	8	11	2	9	3	19	10	5	22	10	0	3	2	24	0	31	0	0
February	10.9	W.	31	NW.	0	4	3	1	2	7	9	17	13	0	7	10	11	6	1	15	6	0	2	2	21	0	28	0	3
March	10.0	SE.	43	NW.	2	4	12	4	12	10	4	6	10	0	8	9	14	4	1	7	3	0	6	3	12	0	29	0	5
April	12.7	NE.	31	N.	0	9	14	6	10	2	2	9	8	0	9	4	17	8	3	8	6	0	0	0	4	0	21	0	4
May	10.1	SE.	31	E.	0	3	7	9	16	4	0	8	13	2	7	9	15	10	7	0	0	0	0	0	0	0	0	4	1
June	8.5	S.	30	NW.	0	7	4	3	8	10	10	6	11	1	13	12	5	10	8	0	0	1	0	0	0	5	0	9	2
July	8.8	S.	31	NW.	0	8	5	4	9	12	7	3	11	3	12	16	3	14	8	0	0	0	1	0	0	7	0	11	1
August	8.5	S.	24	SE.	0	7	1	0	14	18	3	6	11	2	14	11	6	7	2	0	0	0	0	0	0	7	0	4	1
September	10.6	W.	41	NW.	2	4	6	5	12	0	10	17	6	0	12	9	9	5	3	0	0	0	2	2	0	2	1	1	5
October	10.3	NW.	30	W.	0	8	8	4	7	6	4	14	10	1	8	9	14	6	5	9	5	0	2	0	3	0	25	0	1
November	11.2	NW.	40	NW.	2	8	4	4	4	3	9	9	19	0	5	8	17	10	5	23	9	0	3	0	15	0	30	0	0
December	9.8	NW.	32	NW.	1	7	5	7	9	8	9	5	12	0	8	4	19	14	9	20	14	0	0	0	25	0	31	0	0
Year	10.1	NW.	43	NW.	8	71	78	48	115	85	79	108	135	11	112	104	149	104	57	104	53	1	19	9	104	21	196	29	23

DODGE CITY, KANS.

[H_b=2,509 ft.; h_a=10 ft.; h_r=3 ft.; h_a=86 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.7	SW.	38	SW.	3	9	5	0	4	12	11	13	8	0	23	4	4	0	0	0	0	0	2	1	1	0	29	0	0
February	12.6	W.	39	SW.	4	10	6	1	4	11	7	8	9	0	15	8	5	5	2	8	3	0	1	0	4	0	25	0	0
March	15.3	S.	36	SE.	4	12	8	3	5	16	5	5	8	0	15	13	3	5	0	5	4	0	1	0	0	0	16	0	0
April	13.5	N.	41	NE.	7	12	5	6	7	7	5	7	10	1	18	5	7	7	6	1	0	1	6	0	0	0	6	6	0
May	13.0	S.	49	SE.	4	10	8	6	4	14	4	9	7	0	17	10	4	11	8	0	0	1	4	0	0	4	0	6	0
June	13.0	S.	35	S.	4	0	3	6	5	32	8	4	1	1	17	10	3	7	3	0	0	0	0	0	0	23	0	9	0
July	10.7	S.	31	SE.	0	6	7	12	13	19	3	2	0	0	26	5	0	10	6	0	0	0	1	0	0	24	0	9	0
August	11.0	S.	30	E.	0	3	8	9	15	20	2	2	3	0	19	5	7	12	3	0	0	1	4	0	0	15	0	10	0
September	12.7	S.	35	S.	2	5	7	2	7	29	5	3	2	0	22	6	2	4	2	0	0	0	4	2	0	14	0	5	1
October	11.5	S.	30	NE.	0	8	12	5	12	18	3	1	2	1	22	8	1	4	3	0	0	0	2	1	0	0	1	4	0
November	11.5	W.	32	N.	2	14	6	2	3	6	8	16	5	0	24	2	4	6	1	3	1	0	1	0	1	0	12	1	0
December	10.9	W.	33	SW.	2	12	6	6	8	7	5	13	5	0	20	8	3	1	1	0	0	0	4	2	1	0	21	1	0
Year	12.3	S.	49	SE.	32	101	81	58	87	191	66	83	60	3	238	84	43	72	35	17	8	3	30	6	7	80	110	51	1

DUBUQUE, IOWA

[H_b=700 ft.; h_a=81 ft.; h_r=76 ft.; h_a=96 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.7	S.	23	NW.	0	3	2	0	10	21	8	3	14	1	6	9	16	4	3	8	1	0	7	3	5	0	28	1	0
February	8.8	NW.	27	NW.	0	7	1	1	5	7	8	2	22	3	15	4	9	4	3	7	3	0	0	0	12	0	25	0	0
March	7.5	NW.	26	NW.	0	10	5	5	11	6	2	2	19	2	8	7	16	8	7	7	4	2	3	1	4	0	24	3	0
April	8.0	NW.	20	SW.	0	14	10	5	8	1	6	1	15	0	5	7	18	8	7	5	1	1	1	0	0	0	2	3	0
May	7.6	S.	28	NW.	0	8	13	6	7	12	7	4	5	0	3	13	15	18	16	0	0	2	0	0	0	0	0	12	0
June	6.5	SW.	22	NW.	0	5	0	1	8	21	18	1	4	2	14	9	7	7	6	0	0	0	1	1	0	15	0	6	0
July	5.9	S.	28	NW.	0	5	7	4	13	18	8	1	6	0	15	7	9	7	6	0	0	1	1	0	0	3	0	7	0
August	5.5	N.	23	SW.	0	19	6	2	10	14	2	1	7	1	14	11	6	4	4	0	0	1	4	4	0	1	0	6	0
September	6.6	S.	35	NE.	1	2	8	4	6	17	5	2	10	6	12	8	10	13	10	0	0	1	5	4	0	5	0	8	0
October	7.2	S.	26	NW.	0	7	1	0	4	19	4	5	17	5	13	8	10	9	6	0	0	0	6	5	0	0	5	1	0
November	8.3	NW.	28	N.	0	1	4	2	3	11	7	1	30	1	8	7	15	6	2	10	3	0	1	0	3	0	23	0	0
December	7.2	SE.	21	NW.	0	10	6	3	10	12	5	2	14	0	4	2	25	5	3	8	2	0	6	2	9	0	27	0	0
Year	7.2	S.	35	NE.	1	91	63	33	95	159	80	25	163	21	117	92	156	93	73	45	14	8	35	20	33	24	134	47	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

DULUTH, MINN.

[ϕ=46°47′ N.; λ=92°6′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.60	29.05	27.94	14.7	20.8	19.4	26.6	8.6	17.6	42	−15	13	16	16	93	81	86	0.084	0.094	0.092	0.74	0.18	11.4	7.0	7.3	6.1	7.6
February	28.69	29.11	28.11	1.6	11.6	10.1	16.6	−3.1	6.8	39	−33	−1	6	6	86	78	82	.053	.068	.067	.90	.33	10.9	5.4	6.8	4.2	6.2
March	28.81	29.26	28.04	19.4	27.5	25.6	31.5	16.6	24.0	44	−13	16	20	20	87	71	79	.097	.109	.115	.79	.49	3.1	5.2	6.3	6.1	6.2
April	28.70	29.30	28.23	32.5	41.0	38.6	44.3	28.7	36.5	73	19	27	29	28	80	65	66	.146	.161	.150	2.15	.95	11.1	5.4	5.2	4.7	5.3
May	28.69	29.10	28.27	45.9	54.2	51.2	58.8	40.5	49.6	76	29	39	39	39	78	59	64	.254	.255	.250	2.15	.78	.6	6.0	6.1	6.8	6.2
June	28.70	29.15	28.29	59.2	69.2	66.0	75.6	50.8	63.2	95	40	53	53	53	80	60	64	.410	.430	.414	2.99	.86	.0	4.9	4.2	4.2	4.6
July	28.77	29.14	28.52	61.3	70.5	67.4	75.3	55.3	65.3	89	47	56	58	56	82	66	70	.449	.485	.463	4.09	1.27	.0	4.5	5.0	4.3	4.7
August	28.80	29.10	28.48	58.0	71.0	66.3	74.0	53.9	64.0	85	46	53	54	54	83	57	65	.403	.427	.419	.99	.60	.0	4.1	5.1	3.5	4.4
September	28.64	29.07	28.14	55.0	65.6	60.5	69.1	51.1	60.1	80	37	50	52	50	85	64	71	.378	.390	.381	5.14	2.05	.0	6.5	4.6	6.3	5.8
October	28.76	29.25	28.36	35.9	45.6	40.8	49.0	32.4	40.7	72	10	32	34	34	86	66	76	.187	.207	.201	3.43	1.85	14.0	6.3	6.0	5.8	6.2
November	28.72	29.32	27.98	20.7	26.6	24.4	30.3	16.8	23.6	50	−10	18	22	21	90	82	85	.107	.123	.115	.88	.17	13.7	7.9	7.8	7.7	8.0
December	28.82	29.60	28.22	7.1	13.0	11.2	18.5	−1.4	8.6	38	−32	5	8	8	91	81	86	.069	.076	.074	1.34	.44	21.0	7.7	7.1	6.2	6.9
Year	28.73	29.60	27.94	34.3	43.0	40.1	47.5	29.2	38.3	95	−33	30	33	32	85	69	74	.220	.236	.228	25.50	2.05	55.8	5.9	6.0	5.6	6.0

EASTPORT, MAINE

[ϕ=44°54′ N.; λ=66°59′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.84	30.72	28.97	23.7	31.0	30.3	36.8	22.1	29.4	49	1	25	26	25	85	82	80	0.143	0.151	0.145	2.51	0.79	11.4	6.9	7.8	5.1	7.3
February	29.77	30.54	28.85	25.7	29.6	29.4	35.6	21.2	28.4	49	4	22	23	24	85	76	80	.128	.139	.139	2.72	1.10	5.6	6.5	6.1	6.1	6.2
March	29.77	30.22	28.77	26.8	31.5	29.8	35.6	22.7	29.2	45	5	21	23	23	77	69	74	.116	.129	.128	1.46	.53	4.1	6.3	6.2	6.8	6.4
April	29.92	30.50	29.01	38.5	41.4	39.2	45.3	33.8	39.6	60	22	34	36	35	84	83	84	.199	.218	.204	3.20	.75	.7	7.6	7.8	6.9	7.4
May	29.84	30.20	29.38	47.9	52.6	48.7	57.5	39.2	48.4	76	29	41	44	40	79	73	79	.269	.292	.280	3.74	1.55	.0	5.2	5.4	5.7	5.3
June	29.80	30.03	29.45	54.6	60.4	54.1	64.0	47.5	55.8	83	39	49	51	48	83	74	83	.351	.385	.345	3.17	1.06	.0	5.3	5.5	6.3	6.3
July	29.94	30.31	29.28	58.7	64.2	58.7	68.2	51.8	60.0	81	47	55	57	56	87	79	86	.432	.466	.424	1.30	.64	.0	5.7	4.9	5.6	6.1
August	29.94	30.23	29.57	60.0	65.6	60.2	69.0	54.3	61.6	85	50	56	58	57	89	79	91	.460	.492	.472	4.46	1.66	.0	6.0	6.3	5.0	7.0
September	29.82	30.34	29.17	54.9	59.4	55.2	62.4	49.8	56.1	73	41	51	52	52	88	80	90	.386	.402	.395	5.04	3.65	.0	5.0	6.0	4.1	7.0
October	29.99	30.57	29.11	46.9	50.8	47.4	53.8	41.8	47.8	66	28	42	43	42	84	76	83	.281	.292	.281	6.02	2.89	T	5.7	5.8	5.1	6.1
November	29.81	30.35	28.92	30.2	32.4	31.8	39.0	23.8	31.4	54	10	25	26	25	82	76	77	.148	.153	.147	3.32	1.01	14.8	6.9	7.4	7.0	7.3
December	29.94	30.55	29.12	16.0	18.6	17.5	25.3	9.5	17.6	44	−23	14	14	14	89	82	83	.095	.096	.091	2.78	.63	28.2	7.2	6.9	6.5	7.3
Year	29.89	30.72	28.77	40.7	44.8	41.7	49.4	34.8	42.1	85	−23	36	38	37	84	77	82	.251	.268	.262	39.75	3.65	54.8	6.2	6.3	5.8	6.6

ELKINS, W.VA.

[ϕ=38°53′ N.; λ=79°49′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.00	28.45	27.29	34.0	42.5	39.3	48.5	28.7	38.6	69	11	28	29	30	80	62	70	0.160	0.175	0.176	2.79	0.57	2.2	6.4	7.3	5.3	6.7
February	28.00	28.50	27.53	28.0	35.6	35.1	43.6	22.0	32.8	60	−4	23	23	21	82	65	57	.133	.133	.127	3.38	.65	7.5	6.7	6.5	4.7	6.5
March	27.94	28.38	27.29	32.8	39.5	39.7	47.1	28.2	37.6	69	4	28	28	30	83	66	70	.167	.170	.185	6.38	1.22	12.3	7.6	7.6	7.5	7.3
April	27.92	28.34	27.54	43.9	57.8	52.6	62.6	37.9	50.1	83	25	36	31	37	75	41	59	.219	.188	.231	4.01	.93	T	6.0	5.6	6.0	6.5
May	27.97	28.26	27.59	59.4	67.8	63.8	72.7	52.8	62.6	84	41	54	54	54	83	63	73	.424	.422	.423	9.18	1.56	.0	8.0	8.0	7.7	8.1
June	28.03	28.27	27.82	61.6	75.9	70.3	80.4	54.9	67.6	93	38	56	56	60	82	51	71	.461	.474	.542	5.02	1.75	.0	5.3	5.9	5.8	5.8
July	28.07	28.37	27.88	63.4	76.8	71.1	80.8	58.1	69.4	92	41	59	58	62	88	54	74	.514	.499	.563	4.92	1.78	.0	5.6	5.9	5.0	5.9
August	28.03	28.31	27.56	61.9	74.5	68.1	77.7	58.1	67.9	85	47	59	59	62	92	61	82	.510	.515	.565	5.73	2.00	.0	5.9	6.2	5.3	6.6
September	28.00	28.18	27.72	60.5	74.1	67.1	77.5	56.4	67.0	86	44	58	58	61	92	60	82	.492	.496	.547	5.63	1.60	.0	4.3	4.6	5.4	6.0
October	28.10	28.36	27.62	43.2	59.3	50.5	62.9	38.0	50.4	81	20	40	42	44	89	54	78	.256	.276	.293	1.98	.95	.0	5.4	5.7	3.7	6.3
November	27.98	28.45	27.37	35.2	43.2	39.5	49.2	29.3	39.2	75	−2	29	31	31	79	64	73	.171	.186	.179	3.12	1.05	9.6	7.9	7.2	6.7	8.0
December	28.06	28.60	27.60	33.9	40.6	39.0	48.6	27.7	38.2	69	2	29	29	31	83	64	73	.181	.179	.191	4.51	1.40	6.5	7.9	7.5	7.1	7.8
Year	28.01	28.60	27.29	46.5	57.3	53.0	62.6	41.6	51.8	93	−4	42	42	44	84	59	72	.307	.316	.335	56.57	2.00	38.1	6.5	6.5	5.8	6.8

EL PASO, TEX.

[ϕ=31°47′ N.; λ=106°30′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	26.19	26.48	25.97	35.3	48.9	50.8	55.5	31.9	43.7	65	24	24	25	28	63	39	42	0.132	0.135	0.153	0.19	0.11	T	1.8	3.4	3.0	3.5
February	26.19	26.55	25.85	36.7	51.9	55.2	59.1	34.0	46.6	72	14	22	21	23	56	33	31	.126	.124	.129	.22	.11	0.1	2.5	3.1	3.4	3.4
March	26.14	26.36	25.83	47.5	65.2	69.5	72.4	45.4	58.9	83	31	21	20	17	35	17	14	.116	.109	.096	T	T	.0	1.8	3.0	2.6	3.1
April	26.08	26.48	25.71	49.1	67.0	71.0	73.9	47.1	60.5	81	33	26	21	20	42	18	16	.143	.115	.110	.09	.09	T	1.6	1.6	1.9	2.1
May	26.07	26.27	25.75	58.9	77.8	81.6	84.3	56.9	70.6	96	44	28	24	20	33	15	11	.176	.141	.121	.04	.03	.0	.9	1.0	2.0	1.3
June	26.16	26.42	25.98	69.9	86.4	88.6	92.7	67.3	80.0	102	59	47	44	42	50	28	27	.354	.321	.309	2.14	.65	.0	2.9	2.8	4.2	3.3
July	26.16	26.40	26.00	74.3	89.4	90.7	95.6	72.4	84.0	104	66	56	54	52	54	32	29	.451	.423	.398	1.34	.97	.0	3.1	2.6	4.4	3.4
August	26.16	26.33	25.99	72.2	87.1	87.1	92.9	71.1	82.0	99	66	57	55	54	60	35	33	.468	.439	.417	.27	.13	.0	4.2	2.8	5.1	4.2
September	26.12	26.34	25.93	69.7	85.5	85.9	90.9	68.6	79.8	96	63	57	55	54	65	36	35	.473	.433	.416	.99	.94	.0	2.1	1.7	2.2	2.1
October	26.22	26.44	26.00	59.0	74.2	74.6	79.7	57.4	68.6	86	59	45	44	43	61	37	35	.310	.303	.291	.60	.27	.0	3.0	2.1	2.2	2.4
November	26.30	26.65	25.98	44.7	63.2	62.7	68.8	42.0	55.4	78	35	28	29	31	53	29	32	.157	.162	.174	.04	.03	.0	1.7	1.8	1.7	1.9
December	26.28	26.53	26.06	38.7	56.1	58.8	64.0	36.2	50.1	75	24	19	21	22	44	28	24	.101	.112	.116	.00	.00	.0	.4	.6	.3	.7
Year	26.17	26.65	25.71	54.7	71.1	73.0	77.5	52.5	65.0	104	14	36	34	34	51	29	27	.250	.236	.227	5.93	.97	.1	2.2	2.2	2.8	2.6

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

DULUTH, MINN.

[H_b=1,133 ft.; h_t=5 ft.; h_r=3 ft.; h_a=47 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp. 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	12.3	W.	32	NW.	4	1	11	8	4	2	14	16	6	0	4	6	21	13	7	15	13	0	2	2	24	0	31	0	0
February	14.9	W.	41	NW.	5	3	5	3	0	2	8	23	12	0	8	5	15	8	6	14	8	0	2	0	21	0	28	0	1
March	13.8	NE.	51	NW.	4	4	24	3	2	1	5	7	16	0	10	4	17	11	3	13	8	0	3	3	15	0	30	0	1
April	14.7	NE.	38	NE.	3	2	30	0	0	0	7	8	13	0	14	3	13	9	6	9	7	1	3	4	4	0	21	1	0
May	12.5	NE.	41	W.	4	3	41	0	0	1	5	3	8	1	9	7	15	10	7	1	1	1	2	2	0	0	4	4	1
June	10.0	NE.	29	NW.	0	6	30	1	0	1	8	5	9	0	11	14	5	12	9	0	0	1	7	5	0	1	0	12	2
July	10.3	NE.	29	SW.	0	4	28	1	2	0	11	8	8	0	11	14	6	9	7	0	0	0	5	4	0	0	0	9	1
August	10.4	NE.	27	NW.	0	1	21	3	0	5	2	14	16	0	15	11	5	4	4	0	0	1	4	3	0	0	0	5	1
September	12.4	NE.	37	W.	5	2	25	1	0	0	8	18	6	0	7	13	10	13	9	0	0	0	6	5	0	0	0	7	2
October	10.0	W.	34	NW.	1	6	12	3	3	1	11	15	11	0	5	14	12	12	7	6	3	0	7	4	5	0	13	0	2
November	12.9	NW.	46	NW.	6	1	4	5	4	4	5	15	22	0	3	6	21	14	9	20	14	0	3	1	18	0	29	0	0
December	13.2	NW.	49	NW.	6	3	5	5	5	2	7	15	20	0	5	8	18	12	11	17	10	0	4	4	25	0	30	0	0
Year	12.3	NE.	51	NW.	38	36	236	33	20	19	91	147	147	1	102	105	158	127	85	95	64	4	48	37	112	1	186	38	11

EASTPORT, MAINE

[H_b=76 ft.; h_t=67 ft.; h_r=62 ft.; h_a=85 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	14.4	NW.	38	SW.	7	4	10	5	2	2	15	9	15	0	5	8	18	13	10	13	9	0	4	3	5	0	26	0	1
February	13.2	NW.	40	SW.	3	5	5	0	2	4	12	11	17	0	7	7	14	10	7	15	4	0	5	3	8	0	25	0	2
March	14.9	NW.	46	E.	5	12	9	7	2	2	5	9	16	0	8	6	17	13	6	16	12	0	3	0	10	0	29	0	3
April	11.6	SW.	35	E.	2	3	8	9	8	8	13	5	6	0	5	7	18	15	10	5	2	0	8	2	0	0	8	1	1
May	10.8	SW.	27	NW.	0	10	4	2	3	6	25	1	10	1	10	11	10	11	11	0	0	0	7	7	0	0	2	3	1
June	9.1	SW.	30	E.	0	10	3	4	1	6	26	4	5	1	6	13	11	14	11	0	0	0	9	5	0	0	0	4	0
July	7.7	SW.	28	SW.	0	7	7	2	2	4	29	7	3	1	10	9	12	13	9	0	0	0	12	9	0	0	0	3	0
August	7.9	SW.	29	E.	0	8	1	7	2	5	27	5	6	1	6	7	18	12	9	0	0	0	11	10	0	0	0	3	0
September	8.5	SW.	30	E.	0	3	1	6	4	7	14	15	7	3	7	5	18	12	9	0	0	0	12	9	0	0	0	1	2
October	11.7	SW.	37	NE.	3	12	9	2	4	1	17	5	11	1	8	10	13	14	12	1	0	0	4	1	0	0	3	2	2
November	12.0	NW.	32	S.	3	9	3	2	2	6	8	7	21	2	3	11	16	15	11	13	9	0	2	0	7	0	25	0	0
December	13.6	NW.	46	E.	6	9	6	2	5	0	4	13	22	1	5	8	18	17	13	17	14	0	3	3	17	0	29	0	0
Year	11.3	SW.	46	E.	29	92	66	48	37	51	195	91	139	11	80	102	183	159	118	80	50	0	80	52	47	0	147	17	12

ELKINS, W.VA.

[H_b=1,947 ft.; h_t=59 ft.; h_r=52 ft.; h_a=78 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.6	W.	29	W.	0	4	8	2	5	13	8	9	7	6	7	8	16	15	11	7	5	0	9	3	2	0	23	0	0
February	8.6	W.	32	W.	1	4	1	8	10	7	6	11	7	2	6	8	14	16	13	10	8	0	5	0	4	0	21	0	0
March	8.4	NW.	34	W.	1	5	5	4	10	4	7	17	9	1	2	11	18	22	18	15	14	0	2	0	8	0	23	6	0
April	7.6	W.	29	W.	0	10	6	6	8	11	4	12	1	2	6	9	15	18	15	3	2	0	1	0	0	0	10	3	0
May	6.2	W.	30	NW.	0	10	5	6	10	9	4	11	4	3	1	7	23	23	21	0	0	0	6	3	0	0	0	16	0
June	4.8	NW.	30	NW.	0	13	4	2	12	11	0	7	6	5	7	14	9	15	11	0	0	1	8	7	0	4	0	13	0
July	4.4	SE.	18	SE.	0	11	7	5	16	4	3	3	3	10	7	13	11	13	11	0	0	0	13	7	0	2	0	10	0
August	4.8	SE.	25	NW.	0	8	7	7	17	6	0	4	4	9	3	12	16	14	10	0	0	0	16	14	0	0	0	4	1
September	4.9	W.	21	SW.	0	8	6	6	9	4	6	10	4	7	5	14	11	14	11	0	0	0	11	8	0	0	0	8	0
October	5.3	S.	26	NW.	0	13	8	6	12	5	7	7	2	2	8	8	15	10	7	0	0	0	16	10	0	0	7	2	0
November	8.1	W.	28	NW.	0	3	5	1	8	10	7	19	4	3	3	6	21	18	13	12	10	0	7	1	4	0	18	0	0
December	6.8	W.	32	W.	1	6	6	6	9	9	5	13	7	1	3	6	22	14	11	5	3	0	5	3	4	0	18	0	0
Year	6.4	W.	34	W.	3	95	68	59	126	93	57	123	58	51	58	116	191	192	152	52	42	1	99	56	20	6	120	62	1

EL PASO, TEX.

[H_b=3,778 ft.; h_t=152 ft.; h_r=145 ft.; h_a=175 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.1	NW.	38	NW.	3	0	4	2	2	0	4	25	24	1	15	11	5	3	3	1	0	0	0	0	0	0	17	0	0
February	10.8	NW.	50	W.	5	3	5	5	0	0	4	19	20	0	16	7	5	5	3	1	1	0	0	0	0	0	12	0	0
March	11.4	W.	39	W.	7	5	6	5	1	1	3	27	12	2	21	7	3	0	0	0	0	0	0	0	0	0	1	0	0
April	13.4	W.	48	W.	12	1	8	7	1	1	1	19	20	2	23	5	2	1	1	1	0	0	0	0	0	0	1	0	0
May	12.9	W.	44	W.	9	3	4	9	1	1	2	25	16	1	27	4	0	2	0	0	0	0	0	0	0	10	0	3	0
June	8.2	E.	34	SW.	5	4	7	15	6	1	3	11	10	3	17	9	4	8	7	0	0	0	0	0	0	19	0	8	0
July	8.5	E.	40	NE.	4	2	13	19	15	1	0	8	3	1	18	10	3	7	7	0	0	0	0	0	0	28	0	10	0
August	8.4	E.	45	NE.	3	1	11	26	6	1	1	4	11	1	14	11	6	5	2	0	0	0	0	0	0	25	0	11	0
September	7.6	E.	41	S.	2	0	7	22	7	1	1	7	11	4	23	5	2	2	2	0	0	1	0	0	0	22	0	6	0
October	7.9	NW.	29	E.	0	0	5	13	6	2	3	14	17	2	23	4	4	7	3	0	0	0	0	0	0	0	0	5	0
November	7.1	NW.	38	W.	1	0	10	9	2	3	2	10	23	1	22	6	2	4	0	0	0	0	0	0	0	0	0	0	0
December	8.8	NW.	38	W.	1	2	6	3	0	3	8	16	32	0	29	2	0	0	0	0	0	0	0	0	0	0	7	0	0
Year	9.5	NW.	50	W.	52	21	86	135	47	15	24	185	199	18	248	81	36	44	28	3	1	1	0	0	0	104	37	44	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

ERIE, PA.

[ϕ=42°7′ N.; λ=80°5′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.22	29.77	28.50	34.8	38.9	36.8	43.5	30.0	36.8	66	12	28	31	29	76	73	74	0.160	0.179	0.161	1.13	0.50	0.4	7.4	6.4	6.1	6.9
February	29.22	29.82	28.54	25.6	30.9	31.0	37.3	21.8	29.6	58	−3	20	23	23	78	71	73	.115	.134	.134	1.31	.49	3.8	5.9	5.8	6.0	5.9
March	29.19	29.75	28.46	31.1	34.8	34.4	39.5	27.7	33.6	62	10	26	28	28	79	75	78	.143	.156	.164	2.74	.71	8.6	7.6	8.1	8.6	8.0
April	29.17	29.57	28.71	45.6	49.9	46.7	56.0	38.9	47.4	77	30	37	40	38	72	71	74	.227	.257	.236	2.80	.73	.2	6.0	5.5	5.4	5.6
May	29.18	29.51	28.79	58.2	62.2	60.2	67.8	51.6	59.7	82	39	49	52	52	74	70	75	.365	.398	.402	2.35	.68	.0	7.6	7.1	5.6	6.7
June	29.20	29.47	28.95	69.8	74.5	73.5	79.8	62.2	71.0	95	44	61	64	63	74	72	71	.561	.622	.597	1.75	1.18	.0	3.5	3.6	3.5	3.7
July	29.26	29.71	29.02	72.3	77.2	76.4	81.6	65.6	73.6	97	58	60	64	64	68	66	66	.535	.605	.596	1.12	.76	.0	2.2	2.7	1.8	2.5
August	29.25	29.53	28.83	68.1	73.8	72.3	77.5	62.9	70.2	88	55	58	61	59	71	66	65	.494	.543	.511	2.45	.97	.0	4.1	3.1	3.1	3.3
September	29.17	29.42	28.79	63.5	70.9	68.1	74.7	59.3	67.0	90	49	56	60	58	78	70	72	.469	.525	.497	3.82	2.26	.0	5.5	4.4	3.6	4.8
October	29.31	29.66	28.85	48.4	55.9	52.7	60.4	44.6	52.5	76	27	39	43	42	70	62	69	.249	.281	.281	2.31	.71	1.2	6.2	5.0	4.2	5.2
November	29.18	29.69	28.52	35.7	38.6	37.4	44.2	30.9	37.6	76	14	30	31	31	78	75	76	.176	.188	.182	2.55	.38	11.2	8.7	7.4	7.7	8.1
December	29.31	30.10	28.75	30.4	33.6	32.2	38.8	24.6	31.7	61	0	24	27	26	77	76	77	.140	.162	.158	2.67	.80	8.1	8.6	8.7	9.2	8.4
Year	29.22	30.10	28.46	48.6	53.4	51.8	58.4	43.3	50.9	97	−3	41	44	43	75	71	72	.303	.338	.327	27.00	2.26	33.5	6.1	5.6	5.4	5.8

ESCANABA, MICH.

[ϕ=45°48′ N.; λ=87°05′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.22	29.65	28.37	21.0	26.0	25.3	30.7	15.9	23.3	40	−3	18	20	20	87	77	80	0.101	0.111	0.112	2.06	1.25	5.5	7.6	8.0	6.0	7.2
February	29.27	29.72	28.54	11.1	18.4	18.1	23.1	7.0	15.0	47	−26	8	10	12	85	70	75	.073	.079	.084	1.59	.71	14.1	5.4	6.7	6.4	6.0
March	29.38	29.93	28.53	22.3	29.2	26.5	31.3	18.5	24.9	51	−4	18	21	20	83	70	76	.104	.116	.113	1.46	.43	9.5	7.3	7.3	7.3	7.5
April	29.26	29.88	28.62	34.7	41.3	39.3	45.3	30.8	38.0	65	22	29	29	28	78	63	66	.159	.164	.159	3.93	1.43	.7	6.7	5.9	5.8	6.1
May	29.28	29.67	28.74	48.8	53.9	53.9	59.3	44.3	51.8	79	32	41	42	42	76	66	66	.275	.278	.283	2.39	1.52	.0	5.8	6.2	6.0	6.0
June	29.28	29.64	28.86	63.1	68.8	68.6	74.6	58.0	66.3	93	40	56	58	57	76	69	69	.462	.496	.488	2.34	.66	.0	4.3	3.8	4.2	4.5
July	29.35	29.81	29.08	65.5	72.8	71.6	77.0	59.3	68.2	87	45	58	60	59	77	64	64	.492	.525	.509	3.04	1.55	.0	5.0	4.6	4.9	5.1
August	29.38	29.67	28.96	60.0	70.5	69.0	74.2	55.7	65.0	92	46	54	55	55	82	59	62	.426	.444	.436	1.32	.47	.0	2.8	3.9	2.2	3.6
September	29.24	29.67	28.75	56.1	65.4	63.5	69.8	52.3	61.0	82	39	51	52	52	83	66	68	.326	.412	.406	2.74	.66	.0	5.6	5.8	4.9	5.9
October	29.35	29.80	28.81	41.2	48.2	45.7	51.5	37.4	44.4	65	19	36	38	37	83	66	74	.225	.237	.235	2.32	.67	2.2	6.0	8.2	5.5	7.3
November	29.28	29.95	28.64	27.3	31.3	29.5	34.5	22.5	28.5	57	3	23	24	24	82	73	78	.131	.136	.135	1.30	.38	11.5	7.5	8.0	8.2	8.1
December	29.42	30.22	28.72	15.7	20.2	19.5	24.2	10.8	17.5	41	−17	13	14	14	86	75	79	.089	.103	.095	2.23	.65	20.3	6.6	6.8	7.1	7.4
Year	29.31	30.22	28.37	38.9	45.5	44.2	49.6	34.4	42.0	93	−26	34	35	35	82	68	71	.239	.258	.255	26.72	1.55	63.8	5.9	6.3	5.7	6.2

EUREKA, CALIF.

[ϕ=40°48′ N.; λ=124°11′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	30.00	30.39	29.48	40.6	46.8	46.8	49.9	37.2	43.6	64	28	38	42	41	92	83	82	0.234	0.267	0.263	7.04	1.24	T	5.5	6.8	5.6	6.2
February	30.21	30.52	29.81	41.5	48.5	48.2	50.9	38.0	44.4	63	32	40	45	44	93	87	87	.246	.295	.291	2.98	.69	0.9	5.0	5.1	5.6	5.2
March	30.04	30.38	29.59	46.0	52.6	51.7	54.8	43.3	49.0	63	36	44	46	46	92	79	83	.288	.314	.317	7.20	1.61	.0	7.0	7.6	7.6	7.5
April	30.03	30.32	29.68	44.9	51.0	50.6	53.2	43.2	48.2	69	34	43	45	46	94	82	83	.283	.307	.307	.97	.46	T	5.9	4.5	4.9	5.3
May	30.06	30.28	29.73	48.1	52.8	52.8	55.4	46.7	51.0	64	41	46	49	48	93	87	85	.313	.346	.339	4.23	.92	.0	8.3	7.3	7.3	7.4
June	30.02	30.19	29.83	52.6	57.4	57.5	59.7	51.6	55.6	67	46	51	53	53	94	86	85	.372	.405	.402	.30	.26	.0	8.6	5.2	4.6	5.7
July	29.96	30.15	29.73	51.2	55.8	56.4	58.2	50.6	54.4	62	49	50	51	52	96	85	84	.361	.378	.381	T	T	.0	7.4	4.3	3.4	5.1
August	29.92	30.04	29.69	51.9	56.8	57.0	59.5	51.1	55.3	67	46	51	52	53	98	86	87	.378	.394	.400	.05	.02	.0	6.2	6.8	6.0	6.7
September	29.92	30.11	29.69	51.8	58.6	58.4	60.8	49.9	55.4	70	46	50	52	53	95	79	84	.368	.388	.407	.70	.23	.0	6.3	5.7	5.5	6.0
October	29.99	30.33	29.33	50.3	55.3	54.4	57.5	48.2	52.8	66	43	50	51	51	97	85	89	.355	.371	.377	2.08	1.21	.0	5.5	6.5	6.9	7.2
November	30.16	30.31	29.93	46.3	53.5	52.6	56.5	43.1	49.8	76	35	44	46	47	92	78	84	.288	.314	.328	.38	.30	.0	3.5	4.2	3.8	5.4
December	29.99	30.32	29.37	48.7	53.8	52.5	56.1	44.4	50.2	63	34	43	45	46	84	75	81	.285	.308	.319	6.50	1.47	.0	6.8	6.9	7.4	7.5
Year	30.02	30.52	29.33	47.8	53.6	53.2	56.0	45.6	50.8	76	28	46	48	48	93	83	84	.314	.341	.344	32.43	1.61	T	6.3	5.9	5.7	6.3

EVANSVILLE, IND.

[ϕ=37°58′ N.; λ=87°33′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.58	30.13	28.88	40.3	45.9	45.9	52.0	35.7	43.8	65	21	34	35	35	80	67	66	0.212	0.220	0.217	3.15	0.97	T	5.5	6.2	5.4	5.8
February	29.66	30.28	28.91	31.7	39.3	38.6	44.0	27.9	36.0	66	0	24	24	25	74	55	59	.151	.144	.147	3.10	1.36	4.2	5.0	5.4	5.2	5.3
March	29.57	30.05	28.95	40.3	48.0	48.0	53.2	37.0	45.1	75	17	34	35	35	76	57	62	.213	.212	.222	5.01	1.24	T	5.8	7.2	6.9	6.4
April	29.44	29.82	29.07	50.9	60.1	60.0	65.0	47.6	56.3	80	39	42	42	43	73	53	57	.279	.276	.297	5.10	1.27	.0	5.6	6.3	5.8	5.9
May	29.46	29.73	29.07	63.9	72.6	71.4	76.6	60.6	68.6	89	47	58	58	59	81	63	69	.487	.507	.510	6.75	3.00	.0	6.4	6.5	6.3	6.5
June	29.54	29.87	29.35	73.7	86.8	85.6	91.4	69.6	80.5	100	50	62	58	60	67	39	44	.577	.521	.545	.38	.37	.0	2.6	2.8	3.5	3.0
July	29.53	29.79	29.34	74.1	84.3	84.3	88.7	71.3	80.0	101	64	64	63	63	72	52	53	.604	.589	.601	5.61	2.95	.0	4.5	5.1	4.0	4.6
August	29.53	29.76	29.34	70.3	81.5	80.6	85.6	67.8	76.7	92	61	62	62	63	77	53	58	.578	.567	.593	2.27	1.26	.0	4.1	4.9	4.5	4.6
September	29.49	29.66	29.25	69.5	81.9	78.4	86.5	68.1	77.3	95	54	63	63	65	81	55	66	.597	.599	.645	2.52	.77	.0	4.0	4.8	4.4	4.4
October	29.64	29.97	29.20	50.6	63.8	61.0	69.4	48.5	58.4	84	36	44	42	44	80	47	56	.303	.282	.306	3.11	1.45	.0	4.8	4.9	4.2	4.5
November	29.62	30.10	29.22	40.4	50.0	48.7	55.0	36.9	46.0	81	21	33	33	33	75	53	55	.197	.206	.203	.72	.68	T	5.4	5.3	4.8	5.3
December	29.65	30.24	29.27	38.6	45.3	44.1	50.4	33.6	42.0	70	1	32	34	34	78	65	68	.201	.228	.218	2.69	1.30	4.0	7.3	8.0	6.7	7.6
Year	29.56	30.28	28.88	53.7	63.3	62.2	68.1	50.4	59.2	101	0	46	46	47	76	55	59	.367	.363	.375	40.41	3.00	8.2	5.1	5.6	5.1	5.3

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

ERIE, PA.

[H_b=714 ft.; h_t=130 ft.; h_r=122 ft.; h_a=166 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	16.2	S.	47	S.	10	2	3	0	4	18	17	14	4	0	5	8	18	8	5	5	2	0	2	1	4	0	21	0	0
February	17.1	W.	46	SW.	9	3	1	0	2	14	14	17	5	0	10	5	13	13	8	14	10	0	1	1	9	0	24	0	0
March	13.4	NW.	38	W.	4	8	5	1	5	5	7	14	17	0	4	4	23	16	12	17	8	0	2	1	3	0	26	1	0
April	13.4	W.	34	SE.	3	4	12	4	3	10	5	17	5	0	10	6	14	13	11	1	1	0	5	2	0	0	2	1	0
May	11.3	W.	35	SW.	1	10	7	4	2	11	10	13	5	0	6	10	15	15	9	0	0	0	5	3	0	0	0	6	0
June	11.0	W.	38	N.	2	7	3	0	2	12	8	15	13	0	17	8	5	6	3	0	0	1	0	0	0	6	0	7	0
July	11.1	W.	39	E.	1	4	13	5	1	9	10	10	10	0	23	5	3	5	3	0	0	0	0	0	0	4	0	4	0
August	11.4	NW.	32	N.	2	11	14	2	5	6	6	6	10	2	20	7	4	5	5	0	0	0	0	0	0	0	0	4	0
September	12.4	S.	31	SW.	0	6	6	6	3	15	4	10	10	0	14	7	9	11	9	0	0	0	1	0	0	1	0	4	0
October	13.1	S.	36	S.	4	15	2	1	1	21	7	8	7	0	12	10	9	12	12	1	1	3	0	0	0	0	1	4	0
November	16.4	SW.	40	S.	6	3	6	2	0	15	15	6	12	1	4	7	19	18	15	15	11	0	5	1	3	0	18	1	0
December	14.3	S.	41	NW.	6	2	5	3	3	16	10	12	11	0	1	5	25	19	16	14	11	0	5	4	10	0	23	1	0
Year	13.4	W.	47	S.	48	75	77	28	31	152	113	142	109	3	126	82	157	141	108	67	44	4	26	13	29	11	115	33	0

ESCANABA, MICH.

[H_b=612 ft.; h_t=54 ft.; h_r=44 ft.; h_a=60 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.1	N.	31	SW.	0	18	3	1	2	10	12	8	8	0	5	7	19	8	6	18	5	0	0	0	15	0	31	0	1
February	11.0	NW.	28	NE.	0	7	1	2	1	9	13	7	16	0	6	11	11	11	8	17	11	0	3	2	19	0	28	0	0
March	11.6	N.	30	NW.	0	21	10	3	5	6	2	1	14	0	6	6	19	11	7	19	8	0	3	1	17	0	29	0	1
April	10.2	N.	29	N.	0	16	9	9	2	6	6	5	7	0	8	9	13	10	7	12	5	0	2	1	1	0	21	2	3
May	10.6	S.	31	N.	0	11	11	7	1	19	6	1	4	2	6	14	11	10	8	0	0	1	5	4	0	0	1	3	1
June	8.6	S.	28	NE.	0	12	9	4	5	19	5	4	2	0	11	14	5	11	8	0	0	0	1	3	0	3	0	12	3
July	9.0	S.	35	N.	1	10	13	3	3	22	6	3	2	0	8	16	7	7	4	0	0	0	0	0	0	0	0	9	1
August	8.8	S.	22	S.	0	16	9	2	0	14	6	4	10	1	13	13	5	6	6	0	0	0	4	2	0	1	0	4	2
September	10.0	S.	35	NW.	2	10	9	2	4	14	5	6	10	0	5	17	8	8	8	0	0	0	7	4	0	0	0	5	5
October	11.3	S.	32	N.	1	7	5	2	2	16	7	6	17	0	4	9	18	12	9	6	3	0	8	1	0	0	9	0	1
November	11.2	NW.	35	N.	4	4	6	1	2	6	9	6	25	1	3	5	22	17	9	22	15	0	5	2	10	0	29	0	0
December	10.5	NW.	31	N.	0	11	4	1	3	5	14	7	17	0	7	4	20	16	11	22	12	0	7	4	22	0	29	0	0
Year	10.2	S.	35	N.	8	143	89	37	30	146	91	58	132	4	82	125	158	127	91	116	59	1	45	24	84	4	177	35	18

EUREKA, CALIF.

[H_b=62 ft.; h_t=73 ft.; h_r=65 ft.; h_a=89 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.4	SE.	27	N.	0	12	7	4	14	13	8	1	3	0	7	8	16	18	16	1	0	3	7	5	0	0	3	1	0
February	6.8	SE.	22	N.	0	16	2	5	13	6	8	3	3	0	11	6	11	13	9	0	0	1	3	1	0	0	1	0	0
March	9.1	SE.	30	SW.	0	9	3	1	14	16	10	5	3	1	3	9	19	25	17	0	0	1	4	0	0	0	0	1	0
April	8.5	N.	24	N.	0	30	2	1	8	4	3	7	4	1	11	9	10	10	7	1	0	2	4	1	0	0	0	0	0
May	9.1	N.	26	SE.	0	16	2	2	11	8	8	4	9	2	3	7	21	16	13	0	0	1	2	0	0	0	0	0	0
June	8.0	N.	30	SW.	0	22	4	2	10	0	5	4	12	1	7	16	7	3	1	0	0	0	5	0	0	0	0	0	0
July	6.9	NW.	19	SW.	0	19	0	1	5	10	12	3	12	0	10	12	9	0	0	0	0	0	12	0	0	0	0	0	0
August	6.1	N.	23	N.	0	17	5	2	5	3	9	9	11	1	5	10	16	4	0	0	0	0	20	3	0	0	0	0	0
September	6.7	N.	25	NW.	0	14	5	4	10	4	9	4	9	1	9	6	15	8	5	0	0	0	8	3	0	0	0	0	0
October	5.5	N.	22	S.	0	18	5	9	7	4	6	5	3	5	5	8	18	10	6	0	0	0	19	14	0	0	0	0	0
November	4.8	N.	26	N.	0	19	9	9	5	3	5	2	5	3	12	5	13	4	3	0	0	1	14	18	0	0	0	0	0
December	8.2	SE.	27	SE.	0	6	2	3	17	20	8	3	3	0	4	9	18	14	13	0	0	1	8	5	0	0	0	0	0
Year	7.3	N.	30	SW.	0	198	46	43	119	91	91	50	77	15	87	105	173	125	90	2	0	10	106	50	0	0	4	2	0

EVANSVILLE, IND.

[H_b=431 ft.; h_t=76 ft.; h_r=74 ft.; h_a=116 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.5	S.	33	SW.	3	5	1	7	9	21	7	6	6	0	10	7	14	11	8	2	0	0	5	3	0	0	9	1	0
February	10.5	S.	37	S.	2	5	3	5	3	13	8	5	13	1	12	4	12	13	11	6	5	0	3	1	5	0	14	0	0
March	10.8	N.	37	SW.	2	12	3	10	5	9	4	6	13	0	8	8	15	14	12	3	0	0	0	0	1	0	9	5	0
April	10.1	S.	34	SW.	1	6	13	1	10	11	5	8	5	0	8	10	12	14	12	0	0	1	0	0	0	0	0	5	0
May	9.5	S.	30	SW.	0	6	5	9	9	13	7	9	4	0	6	9	16	19	14	0	0	2	0	0	0	0	0	18	0
June	7.6	SW.	23	NW.	0	5	6	5	4	9	20	10	0	1	17	12	1	2	1	0	0	0	0	0	0	21	0	4	0
July	7.8	SW.	22	S.	0	6	13	13	4	9	13	1	2	1	15	8	8	6	5	0	0	0	0	6	0	13	0	3	0
August	7.3	NE.	27	SW.	0	11	15	6	3	11	9	2	4	1	13	12	6	6	4	0	0	0	0	0	0	5	0	6	0
September	7.2	S.	27	SW.	0	8	3	0	4	23	12	2	6	2	14	5	11	9	7	0	0	0	3	1	0	9	0	6	0
October	8.4	NE.	24	N.	0	10	12	9	7	8	6	6	4	0	14	7	10	9	9	0	0	0	1	0	0	0	0	5	0
November	10.3	SW.	29	NW.	0	6	3	2	3	16	8	8	14	0	14	3	13	4	2	1	0	0	4	1	0	0	11	0	0
December	10.3	S.	30	SW.	0	9	13	6	3	14	8	5	4	0	2	11	18	9	6	3	1	0	4	0	3	0	11	3	0
Year	9.2	S.	37	SW.	8	89	90	73	54	157	107	68	76	6	133	96	136	116	91	15	6	3	20	5	9	48	54	56	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

FORT SMITH, ARK.

[ϕ=35°22′ N.; λ=94°24′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.53	30.09	29.01	42.0	52.4	52.4	57.6	39.3	48.4	71	23	36	42	38	81	68	61	0.229	0.276	0.251	2.08	0.74	T	5.2	5.9	6.5	6.0
February	29.63	30.17	29.16	33.8	43.9	45.2	51.8	30.9	41.4	78	−3	27	33	31	77	66	60	.164	.206	.190	1.89	.74	1.1	5.8	4.8	5.1	5.4
March	29.50	29.96	29.03	46.1	55.2	56.5	62.7	42.6	52.6	85	26	39	41	40	76	62	58	.252	.277	.266	2.56	1.17	T	7.2	6.4	5.1	6.0
April	29.37	29.72	29.05	53.2	67.1	66.4	73.0	50.4	61.7	89	33	45	37	46	76	53	53	.315	.347	.337	3.98	.89	.7	4.3	4.9	5.2	4.9
May	29.38	29.67	28.99	64.7	77.0	76.4	81.8	61.7	71.8	92	48	59	62	61	82	62	61	.510	.561	.550	6.26	2.55	.0	5.5	5.6	4.5	5.4
June	29.50	29.82	29.25	71.6	88.1	88.2	93.2	68.5	80.8	104	57	63	63	61	75	45	42	.590	.592	.552	.72	.46	.0	2.2	2.5	2.4	2.8
July	29.46	29.63	29.24	76.6	87.5	88.4	93.9	74.3	84.1	104	69	68	67	67	75	57	53	.679	.724	.672	2.95	1.35	.0	5.0	6.8	6.0	6.2
August	29.48	29.66	29.29	73.3	84.6	83.0	89.6	71.6	80.6	97	65	68	70	70	85	63	66	.695	.733	.732	6.19	1.82	.0	6.8	6.4	6.3	6.4
September	29.44	29.66	29.21	70.8	84.9	82.4	89.5	69.9	79.7	97	56	67	69	69	88	63	64	.673	.713	.705	7.16	4.03	.0	3.3	4.6	4.1	4.3
October	29.58	29.86	29.34	54.7	69.1	67.0	74.1	53.4	63.8	84	42	50	53	53	84	58	62	.375	.418	.413	2.35	1.07	.0	3.3	4.0	3.5	3.9
November	29.64	30.02	29.25	45.6	59.0	57.2	64.6	43.7	54.2	78	32	38	38	40	74	48	55	.239	.253	.270	1.62	.83	.0	4.7	4.0	3.9	4.4
December	29.58	30.09	29.26	41.9	52.6	51.5	57.9	38.8	48.4	78	21	36	37	36	78	58	59	.225	.237	.227	1.92	.75	.0	5.2	5.3	4.6	5.2
Year	29.51	30.17	28.99	56.2	68.4	67.9	74.1	53.8	64.0	104	−3	50	51	51	79	59	58	.412	.445	.430	39.68	4.03	1.8	4.9	5.1	4.8	5.1

FORT WAYNE, IND.

[ϕ=41°05′ N.; λ=85°10′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.05	29.56	28.40	33.3	37.9	37.0	43.6	28.7	36.2	62	16	29	28	29	82	69	72	0.164	0.159	0.163	1.83	1.06	0.7	6.9	7.0	6.5	7.1
February	29.10	29.64	28.35	24.5	31.7	30.1	36.5	19.6	28.0	58	−14	18	18	20	74	57	65	.112	.110	.119	1.68	.84	2.1	5.2	5.0	4.2	5.0
March	29.07	29.60	28.36	31.6	38.4	37.8	41.8	29.4	35.6	60	10	27	28	29	82	67	70	.154	.167	.172	4.00	1.49	4.8	7.7	8.4	7.8	8.2
April	28.98	29.37	28.49	43.7	52.5	51.9	57.5	40.3	48.9	79	32	37	38	39	78	62	64	.226	.243	.248	2.97	1.22	.1	6.9	7.0	7.0	7.0
May	29.00	29.29	28.63	58.3	65.7	64.5	69.4	53.5	61.4	84	36	52	52	53	80	63	69	.401	.398	.420	7.06	1.20	.0	6.8	7.1	6.5	7.1
June	29.06	29.37	28.85	69.9	83.7	82.0	87.8	64.2	76.0	97	44	58	56	58	68	40	45	.515	.475	.502	.50	.29	.0	3.7	3.4	3.3	3.6
July	29.11	29.50	28.87	69.4	82.6	80.6	86.0	64.8	75.4	98	55	60	56	57	72	43	47	.523	.468	.485	3.39	1.98	.0	3.8	4.6	3.8	4.3
August	29.10	29.34	28.81	65.1	77.9	75.3	81.3	60.4	70.8	88	53	58	57	56	78	50	53	.489	.473	.464	2.43	.99	.0	3.8	5.4	3.5	4.6
September	29.02	29.22	28.75	62.6	74.6	71.3	78.1	59.9	69.0	95	48	57	59	60	84	61	69	.484	.513	.531	7.44	1.85	.0	5.5	5.3	5.2	5.5
October	29.17	29.52	28.68	45.2	56.6	53.2	59.9	42.0	51.0	78	31	39	40	41	80	54	64	.251	.262	.273	1.58	.79	.0	4.7	4.9	3.6	4.7
November	29.08	29.59	28.47	33.9	40.6	39.2	45.4	29.9	37.6	77	10	29	30	31	80	68	72	.167	.181	.182	1.17	.31	6.8	7.3	7.0	7.1	7.1
December	29.16	29.86	28.66	29.4	34.1	32.6	38.2	24.1	31.2	64	−4	26	28	27	85	77	79	.156	.170	.161	1.14	.28	6.1	7.7	8.4	6.3	8.1
Year	29.08	29.86	28.35	47.2	56.4	54.6	60.5	43.1	51.8	98	−14	41	41	42	79	59	64	.304	.302	.310	35.19	1.98	20.6	5.8	6.1	5.4	6.0

FORT WORTH, TEX.

[ϕ=32°43′ N.; λ=97°15′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.31	29.85	28.91	47.4	58.3	58.3	64.7	44.5	54.6	75	29	39	41	41	74	56	56	0.265	0.285	0.286	1.96	1.06	0.0	6.1	7.1	5.4	6.3
February	29.39	29.92	28.85	39.8	48.8	50.4	57.5	36.2	46.8	86	2	32	33	33	74	58	56	.214	.212	.215	2.47	1.56	.3	6.4	6.0	5.8	6.1
March	29.26	29.67	28.81	51.5	62.3	64.6	69.6	48.9	59.2	92	31	43	41	42	73	51	48	.304	.292	.299	2.18	1.60	.0	7.3	6.5	6.5	6.9
April	29.14	29.51	28.73	56.5	71.9	72.9	78.4	53.7	66.0	91	40	44	41	41	65	36	35	.323	.288	.292	1.57	1.15	.0	5.4	4.3	4.4	4.8
May	29.13	29.43	28.75	68.7	80.2	81.4	85.3	65.7	75.5	96	54	62	58	56	80	50	48	.566	.518	.502	4.67	2.12	.0	5.9	5.6	4.0	4.9
June	29.26	29.56	29.02	72.7	87.7	89.3	92.8	70.5	81.6	104	59	62	59	56	68	39	35	.555	.513	.465	.03	.03	.0	2.8	2.9	2.5	2.8
July	29.20	29.36	29.01	77.8	90.1	91.1	95.2	75.6	85.4	106	68	68	65	65	73	47	45	.686	.632	.621	5.70	5.27	.0	4.2	5.0	3.9	4.6
August	29.25	29.41	29.02	75.6	88.6	-----	92.7	73.9	83.3	98	66	69	66	---	81	49	---	.709	.649	-----	2.25	1.26	.0	4.4	3.7	----	3.2
September	29.21	29.40	28.97	74.5	87.2	-----	91.7	73.8	82.8	98	68	69	67	---	83	53	---	.703	.668	-----	4.94	3.46	.0	3.6	4.2	----	3.3
October	29.33	29.58	29.01	60.4	75.5	-----	81.0	59.5	70.2	90	47	54	55	---	81	51	---	.435	.451	-----	1.24	.63	.0	3.1	3.1	----	2.8
November	29.43	29.76	28.93	51.1	63.8	-----	69.8	48.3	59.0	94	36	43	42	---	75	49	---	.299	.289	-----	.66	.61	.0	3.6	3.8	----	4.0
December	29.34	29.75	29.02	46.3	59.1	-----	65.9	42.0	54.0	83	25	36	38	---	70	50	---	.235	.247	-----	2.13	1.78	.0	4.1	4.0	----	3.9
Year	29.27	29.92	28.73	60.2	72.8	-----	78.7	57.7	68.2	106	2	52	50	---	75	49	---	.441	.420	-----	29.80	5.27	.3	4.7	4.7	----	4.5

FRESNO, CALIF.

[ϕ=36°43′ N.; λ=119°49′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.74	30.04	29.23	38.9	46.0	46.7	49.5	36.5	43.0	63	32	36	37	36	88	72	70	0.211	0.220	0.215	2.18	0.54	0.0	6.5	7.7	5.6	7.4
February	29.83	30.12	29.55	39.9	54.3	57.9	60.2	37.8	49.0	70	30	33	35	34	78	51	42	.192	.210	.197	.45	.33	.0	3.8	3.2	2.6	3.2
March	29.74	29.95	29.50	46.1	63.0	65.7	67.8	44.6	56.2	79	37	40	41	39	79	46	40	.247	.289	.246	1.38	.67	.0	3.5	4.9	4.1	4.9
April	29.60	29.87	29.27	49.5	68.6	72.2	74.2	47.8	61.0	88	36	41	40	38	72	37	30	.260	.260	.236	.12	.11	.0	1.6	2.9	3.0	2.9
May	29.64	29.87	29.33	51.2	69.4	73.8	75.6	50.0	62.8	103	39	42	41	37	72	38	29	.265	.267	.224	.34	.23	.0	2.8	3.9	3.9	3.8
June	29.55	29.73	29.35	59.2	81.0	87.3	88.5	58.5	73.5	108	48	45	45	41	61	30	22	.302	.306	.262	.07	.07	.0	2.3	2.1	1.7	2.0
July	29.44	29.70	29.26	69.7	94.4	101.4	102.5	68.7	85.6	114	59	48	49	42	46	22	13	.331	.347	.267	T	T	.0	.9	.4	.7	.6
August	29.46	29.66	29.26	67.6	90.3	97.0	98.4	66.1	82.2	112	58	48	50	46	51	26	18	.335	.362	.313	T	T	.0	.4	.1	.7	.3
September	29.49	29.76	29.30	58.5	80.8	86.6	88.2	56.7	72.4	97	53	48	49	44	69	34	23	.339	.348	.287	.00	.00	.0	.2	.6	.3	.5
October	29.59	29.87	29.32	59.2	80.1	83.9	86.3	56.4	71.4	100	47	47	48	45	65	34	28	.325	.336	.305	.53	.53	.0	1.6	2.0	1.7	1.8
November	29.78	30.00	29.20	47.4	65.3	67.5	70.9	44.1	57.5	79	37	38	41	39	72	42	36	.234	.258	.242	.00	.00	.0	.2	1.7	2.2	1.7
December	29.80	30.16	29.36	40.8	50.0	51.5	54.4	38.3	46.4	69	31	38	41	40	90	73	70	.234	.257	.256	1.69	.66	.0	3.9	5.2	5.5	7.0
Year	29.64	30.16	29.20	52.3	70.3	74.3	76.4	50.5	63.4	114	30	42	43	40	70	42	33	.275	.285	.254	6.60	.67	.0	2.3	2.9	2.8	3.1

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

FORT SMITH, ARK.

[H_b=457 ft.; h_t=79 ft.; h_r=72 ft.; h_a=94 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	32° Minimum temperature or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	8.5	E.	32	SW.	3	7	3	23	8	7	4	5	4	1	10	7	14	12	8	1	0	0	3	1	0	0	6	4	0
February	9.1	E.	30	NW.	0	6	4	18	1	6	5	6	10	0	12	5	11	8	5	3	1	0	1	1	3	0	11	2	0
March	10.5	E.	31	NW.	0	5	3	26	4	5	4	5	9	1	8	9	14	9	8	1	0	0	2	0	0	0	4	6	0
April	9.2	NW.	29	SE.	0	5	11	8	6	5	5	10	10	0	11	9	10	9	8	1	1	0	1	0	0	0	0	8	0
May	8.8	E.	32	S.	1	3	16	12	12	4	5	6	4	0	10	10	11	11	11	0	0	0	2	1	0	5	0	10	0
June	6.7	NE.	31	SW.	0	3	24	9	9	8	5	2	0	0	20	6	4	4	4	0	0	0	0	0	0	21	0	4	0
July	7.2	E.	27	S.	0	9	11	15	6	10	4	5	2	0	5	14	12	10	9	0	0	0	0	0	0	20	0	5	0
August	6.4	E.	24	SW.	0	9	15	19	4	6	4	1	3	1	5	14	12	11	9	0	0	0	0	0	0	17	0	10	0
September	6.4	E.	29	S.	0	4	12	19	6	7	8	1	3	0	13	12	5	9	9	0	0	0	3	1	0	18	0	7	0
October	7.6	E.	23	SW.	0	6	12	21	7	3	5	3	5	0	16	9	6	9	5	0	0	0	1	1	0	0	0	7	0
November	7.9	E.	28	SW.	0	5	4	15	4	3	15	3	11	0	15	9	6	3	2	0	0	0	1	1	0	0	1	1	0
December	9.0	E.	24	S.	0	2	8	29	3	2	9	3	6	0	12	10	9	7	7	0	0	0	5	1	0	0	5	3	0
Year	8.1	E.	32	SW.	4	64	123	214	70	66	73	50	67	3	137	114	114	102	85	6	2	0	19	7	3	81	27	67	0

FORT WAYNE, IND.

[H_b=857 ft.; h_t=69 ft.; h_r=63 ft.; h_a=84 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.9	S.	35	W.	2	1	2	4	4	20	10	12	9	0	7	6	18	7	6	4	2	0	9	3	3	0	25	0	0
February	12.1	W.	33	W.	2	3	2	2	3	8	12	15	10	1	13	5	10	8	7	7	3	0	3	1	8	0	22	0	0
March	10.7	NW.	35	NW.	1	5	8	4	8	7	4	6	19	1	0	12	19	11	8	11	4	1	6	2	4	0	25	2	0
April	10.2	NE.	30	S.	0	2	13	7	3	8	4	11	12	0	5	8	17	16	11	3	1	1	3	0	0	0	2	2	0
May	8.8	NE.	28	SW.	0	3	10	8	7	12	9	9	4	0	4	11	16	16	12	0	0	0	3	2	0	0	0	7	0
June	8.0	SW.	28	NW.	0	5	9	4	3	4	17	12	5	1	15	11	4	6	3	0	0	0	0	0	0	14	0	7	0
July	7.3	NE.	21	NE.	0	3	18	8	3	4	12	6	8	0	14	13	4	6	6	0	0	0	0	0	0	9	0	4	0
August	7.2	NE.	21	SW.	0	6	24	5	2	3	12	3	7	0	12	13	6	9	8	0	0	0	1	0	0	0	0	5	0
September	8.3	SW.	25	W.	0	3	9	5	7	8	13	4	10	1	10	9	11	15	12	0	0	0	4	0	0	4	0	8	0
October	8.6	W.	30	NW.	0	5	8	4	4	13	7	11	9	1	10	15	6	8	6	0	0	0	9	2	0	0	2	1	0
November	11.4	W.	30	SW.	0	2	4	1	1	6	15	22	9	0	5	7	18	15	9	8	6	0	3	0	3	0	19	1	0
December	9.5	SW.	27	SW.	0	0	9	7	6	3	17	8	12	0	1	7	23	10	5	9	4	0	9	3	9	0	22	0	0
Year	9.4	W.	35	NW.	5	38	116	59	51	96	132	119	114	5	96	117	152	127	93	42	20	2	50	13	27	27	117	37	0

FORT WORTH, TEX.

[H_b=670 ft.; h_t=106 ft.; h_r=51 ft.; h_a=114 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.3	S.	26	W.	0	4	4	5	6	16	11	9	3	4	9	6	16	9	7	0	0	0	2	0	0	0	3	3	0
February	9.5	NW.	32	NW.	1	5	8	4	5	11	8	1	14	0	10	3	15	6	6	3	1	0	2	0	3	0	7	1	0
March	10.5	NW.	28	E.	0	4	6	6	14	10	6	4	12	0	5	7	19	4	3	0	0	1	2	0	0	1	1	3	0
April	10.3	SW.	29	NW.	0	4	3	2	12	5	16	3	13	2	12	8	10	6	4	0	0	1	0	0	0	2	0	7	0
May	10.2	SE.	27	SE.	0	3	5	8	13	8	8	11	5	1	14	7	10	9	8	0	0	0	0	0	0	9	0	9	0
June	9.1	S.	22	NE.	0	2	7	5	11	15	15	4	0	1	21	7	2	2	0	0	0	0	0	0	0	21	0	2	0
July	9.3	SE.	30	E.	0	2	10	7	19	8	10	2	4	0	14	10	7	3	3	0	0	0	0	0	0	26	0	1	0
August	7.6	SE.	26	S.	0	2	1	4	3	5	11	3	2	0	15	15	1	6	4	0	0	0	0	0	0	26	0	8	0
September	8.6	SE.	27	SE.	0	1	3	5	4	6	11	0	0	0	15	11	4	8	7	0	0	0	0	0	0	23	0	4	0
October	8.1	NE.	24	SW.	0	6	3	1	6	4	1	2	8	0	20	8	3	4	2	0	0	0	1	1	0	0	0	4	0
November	8.3	SW.	27	SW.	0	3	3	1	2	4	6	5	6	0	17	3	10	2	2	0	0	0	1	0	0	0	0	0	0
December	8.4	SW.	25	SW.	0	1	4	0	1	3	11	6	5	0	17	6	8	5	3	0	0	0	2	0	0	0	2	1	0
Year	9.1	SW.	32	NW.	1	37	57	43	96	95	114	50	72	8	169	91	105	64	49	3	1	2	10	1	3	108	13	43	0

FRESNO, CALIF.

[H_b=327 ft.; h_t=97 ft.; h_r=89 ft.; h_a=105 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	5.8	NW.	23	NW.	0	3	6	13	8	6	1	1	16	8	4	8	19	11	10	0	0	1	8	3	0	0	2	0	0
February	5.9	NW.	25	NW.	0	3	2	11	1	5	0	2	28	4	16	9	3	2	2	0	0	0	4	3	0	0	2	0	0
March	6.7	NW.	23	NW.	0	2	3	14	7	3	1	1	29	2	12	11	8	4	4	0	0	0	1	1	0	0	0	1	0
April	7.8	NW.	30	NW.	0	2	0	0	0	0	2	2	45	9	16	12	2	2	1	0	0	0	0	0	0	0	0	1	0
May	9.9	NW.	23	NW.	0	3	1	3	0	1	0	2	49	3	15	11	5	6	2	0	0	0	0	0	0	4	0	2	0
June	9.3	NW.	22	NW.	0	1	1	1	2	0	1	3	51	0	23	4	3	1	1	0	0	0	0	0	0	15	0	0	0
July	8.0	NW.	21	NW.	0	0	1	0	1	0	0	4	50	6	29	2	0	0	0	0	0	6	0	0	0	31	0	0	0
August	8.0	NW.	17	NW.	0	0	0	0	0	1	0	5	55	0	30	1	0	0	0	0	0	0	0	0	0	9	0	0	0
September	6.4	NW.	18	SW.	0	5	2	0	0	1	1	5	43	3	28	2	0	0	0	0	0	0	0	0	0	6	0	1	0
October	5.2	NW.	22	SE.	0	2	2	7	3	0	1	5	29	13	24	5	2	1	1	0	0	0	1	1	0	0	0	0	0
November	4.1	NW.	21	NW.	0	4	3	11	2	1	2	4	18	15	24	4	2	0	0	0	0	0	6	12	0	0	3	0	0
December	4.6	E.	25	S.	0	3	3	13	6	5	4	1	9	16	5	8	18	8	7	0	0	1	6	12	0	0	3	0	0
Year	6.8	NW.	30	NW.	0	28	24	73	30	23	13	35	423	81	226	77	62	35	28	0	0	2	20	20	0	95	7	5	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

GALVESTON, TEX.

[ϕ=29°18′ N.; λ=94°50′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	30.01	30.57	29.68	58.1	62.3	60.5	64.5	56.1	60.3	72	39	54	54	55	86	77	84	0.434	0.446	0.454	3.32	1.61	0.0	7.1	6.4	6.7	6.8
February	30.05	30.55	29.59	52.9	56.6	55.3	61.4	48.5	55.0	74	19	50	51	51	91	82	87	.396	.406	.405	4.34	1.78	T	8.5	7.3	7.5	7.8
March	29.95	30.22	29.56	60.5	65.2	64.4	67.7	58.6	63.2	80	41	56	56	58	87	75	82	.477	.480	.503	5.52	3.58	.0	6.2	5.9	6.0	5.9
April	29.82	30.13	29.50	67.3	72.0	70.7	75.2	65.8	70.5	86	47	61	60	62	82	70	78	.566	.565	.596	.46	.39	.0	5.9	5.5	5.0	5.3
May	29.82	30.04	29.39	75.9	80.9	79.0	83.2	74.7	79.0	92	65	71	70	72	84	72	80	.757	.756	.785	1.43	1.19	.0	5.7	5.4	4.5	5.3
June	29.94	30.14	29.74	78.4	83.6	82.2	86.3	76.7	81.5	96	68	68	68	68	72	59	63	.703	.689	.699	.98	.69	.0	2.4	2.1	2.8	2.3
July	29.88	30.03	29.70	80.0	84.2	82.5	86.7	78.4	82.6	93	71	75	74	75	85	72	78	.870	.846	.861	8.66	4.19	.0	5.4	5.5	5.1	5.4
August	29.89	30.07	29.70	80.7	85.8	83.8	87.9	79.3	83.6	93	74	74	74	74	82	68	72	.853	.830	.824	2.06	.80	.0	4.5	4.2	4.3	4.3
September	21.85	30.02	29.71	80.9	85.6	83.4	87.9	79.7	83.8	93	72	75	74	74	82	68	74	.861	.828	.840	3.65	1.81	.0	3.6	4.0	4.2	4.1
October	29.95	30.14	29.76	71.9	77.4	75.9	80.1	71.0	75.6	88	61	66	66	66	82	69	74	.646	.647	.662	4.80	4.75	.0	3.9	4.2	2.8	3.8
November	30.08	30.37	29.69	62.6	68.4	67.2	71.4	61.3	66.4	78	50	57	56	60	84	68	79	.484	.477	.534	4.76	3.35	.0	3.9	3.7	2.6	3.2
December	30.03	30.30	29.75	62.9	68.6	65.5	70.7	60.5	65.6	78	45	58	60	60	85	75	85	.514	.539	.553	5.54	2.10	.0	4.6	3.5	3.8	3.9
Year	29.94	30.57	29.39	69.3	74.2	72.5	76.9	67.6	72.3	96	19	64	64	65	84	71	78	.630	.626	.643	45.52	4.75	T	5.1	4.8	4.6	4.8

GRAND JUNCTION, COLO.

[ϕ=39°04′ N.; λ=108°34′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	25.38	25.79	24.78	12.4	26.7	27.0	32.0	8.5	20.2	44	−6	10	16	19	90	63	69	0.068	0.090	0.102	0.54	0.19	4.5	3.5	4.6	5.2	4.6
February	25.44	25.80	24.88	7.1	24.8	25.6	30.4	2.6	16.5	55	−21	6	12	14	93	58	60	.057	.076	.084	.27	.16	3.4	2.7	4.6	3.9	3.8
March	25.34	25.70	24.94	33.8	49.9	51.1	55.6	31.2	43.4	74	22	22	20	21	61	31	34	.116	.108	.116	.31	.16	T	4.3	5.4	5.4	5.0
April	25.26	25.76	24.84	38.1	54.9	56.1	60.8	35.3	48.0	73	21	23	20	20	55	26	26	.125	.107	.110	.32	.13	1.9	4.6	5.1	5.6	5.0
May	25.25	25.54	24.87	47.5	64.4	66.7	70.1	44.8	57.4	89	35	30	25	24	54	26	26	.165	.134	.132	.54	.21	T	3.5	4.6	5.2	4.3
June	25.34	25.55	25.17	65.3	85.9	87.5	91.1	63.2	77.2	97	54	37	33	30	36	16	14	.224	.197	.176	.25	.25	.0	2.4	2.4	5.2	3.1
July	25.39	25.62	25.22	68.6	87.6	90.5	94.9	66.9	80.9	102	61	48	46	44	51	26	23	.351	.322	.297	1.50	.48	.0	2.8	2.6	4.1	2.9
August	25.38	25.56	25.14	64.0	83.0	86.6	90.2	62.7	76.4	100	51	44	43	39	51	27	21	.302	.288	.248	.43	.25	.0	3.5	3.8	4.4	3.5
September	25.32	25.60	24.90	59.6	78.0	80.6	84.4	57.9	71.2	95	49	42	42	40	56	32	28	.284	.286	.260	1.04	.75	.0	3.4	3.7	2.6	3.2
October	25.43	25.68	25.06	46.2	67.9	68.9	73.8	43.6	58.7	84	34	32	31	32	59	27	28	.188	.185	.187	.32	.26	.0	2.2	2.0	2.9	2.4
November	25.55	25.91	24.90	31.6	49.6	46.8	54.8	28.1	41.4	65	22	25	27	28	75	44	49	.132	.148	.152	.66	.32	1.8	2.2	3.6	3.0	2.8
December	25.50	25.86	24.99	25.1	39.1	37.2	43.4	21.9	32.6	59	8	21	24	26	86	55	62	.114	.130	.137	.34	.12	1.6	2.7	5.1	5.2	4.8
Year	25.38	25.91	24.78	41.6	59.3	60.2	65.1	38.9	52.0	102	−21	28	28	28	64	36	37	.177	.173	.167	6.52	.75	13.2	3.2	4.0	4.4	3.8

GRAND RAPIDS, MICH.

[ϕ=42°58′ N.; λ=85°40′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.14	29.71	28.40	31.5	35.5	35.0	41.2	26.9	34.0	56	12	27	27	27	81	70	73	0.148	0.147	0.151	0.87	0.46	0.8	7.0	8.6	6.4	8.2
February	29.20	29.64	28.66	21.8	27.1	26.7	32.3	17.4	24.8	54	−11	17	18	20	81	69	74	.102	.108	.113	1.97	.51	21.1	6.4	7.0	6.4	6.9
March	29.22	29.77	28.50	29.9	35.3	34.5	39.1	27.1	33.1	59	6	25	28	27	80	73	73	.140	.157	.155	2.13	.58	8.2	8.3	8.7	7.5	8.5
April	29.15	29.65	28.62	42.1	50.7	49.6	55.1	38.3	46.7	80	27	36	38	37	79	64	64	.216	.241	.234	3.88	1.05	.9	7.5	8.0	7.2	7.5
May	29.16	29.45	28.77	55.4	64.7	62.7	68.9	50.5	59.7	85	38	49	50	50	80	62	64	.363	.381	.368	5.31	1.24	.0	7.3	7.0	6.3	6.7
June	29.21	29.56	28.92	68.6	81.1	79.6	85.0	63.0	74.0	97	42	58	62	61	70	53	54	.511	.574	.566	2.05	1.04	.0	4.1	4.5	4.3	4.1
July	29.27	29.70	29.04	70.7	82.6	80.6	86.3	64.8	75.6	96	55	60	61	59	70	50	50	.528	.553	.514	2.78	1.38	.0	3.4	4.6	3.7	3.8
August	29.27	29.51	28.93	63.5	77.4	75.5	81.4	59.1	70.2	87	48	56	58	58	77	51	49	.460	.479	.434	1.41	.67	.0	3.4	4.8	2.6	3.8
September	29.16	29.42	28.84	61.5	73.7	70.1	77.5	58.6	68.0	93	47	55	55	56	80	54	62	.448	.442	.459	3.59	.98	.0	4.3	5.7	4.9	5.2
October	29.30	29.71	28.86	45.6	55.0	51.0	53.1	41.8	50.0	78	27	39	38	40	78	56	66	.248	.250	.259	4.67	2.24	T	4.5	5.6	4.5	5.5
November	29.20	29.70	28.60	32.4	37.1	36.0	41.2	28.8	35.0	72	10	27	29	29	80	70	75	.154	.170	.172	2.83	1.10	11.2	7.5	8.5	7.8	8.3
December	29.32	30.09	28.79	26.8	29.7	28.6	33.8	22.2	28.0	55	1	22	23	23	82	76	79	.135	.139	.137	1.74	.36	14.0	8.6	9.0	7.4	9.0
Year	29.22	30.09	28.40	45.8	54.2	52.5	58.3	41.5	49.9	97	−11	39	41	40	78	62	65	.288	.303	.297	33.23	2.24	56.2	6.0	6.8	5.8	6.5

GREEN BAY, WIS.

[ϕ=44°31′ N.; λ=88°00′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.21	29.69	28.39	24.7	29.0	28.7	35.1	20.0	27.6	51	0	19	20	22	78	68	74	0.109	0.112	0.122	1.43	0.72	2.8	8.2	8.4	5.4	7.9
February	29.29	29.75	28.60	13.9	20.6	20.3	26.0	10.0	18.0	47	−26	7	6	12	72	52	69	.079	.084	.092	.75	.55	4.1	6.0	7.1	5.1	6.7
March	29.35	29.90	28.63	25.5	31.2	30.5	35.3	22.5	28.9	55	−1	20	21	22	80	66	70	.117	.120	.125	2.26	.67	18.5	7.5	7.2	7.7	7.5
April	29.23	29.82	28.69	38.0	44.4	43.4	49.2	34.5	41.8	72	26	32	30	33	80	60	69	.187	.176	.194	2.54	.81	.3	7.7	7.6	6.8	7.4
May	29.24	29.62	28.82	53.0	61.4	59.5	66.2	48.3	57.2	83	33	46	45	46	77	56	64	.325	.310	.332	2.40	.49	T	6.9	7.5	7.1	7.1
June	29.26	29.69	28.91	67.6	78.8	77.3	84.8	61.0	72.9	98	42	59	59	61	74	53	60	.509	.529	.567	5.07	1.34	.0	5.4	5.0	5.0	5.1
July	29.33	29.78	29.07	68.4	79.0	76.7	83.3	62.8	73.0	97	53	60	59	60	75	52	58	.528	.505	.532	3.43	1.94	.0	3.9	6.4	5.7	5.5
August	29.36	29.64	29.01	61.5	74.3	72.9	78.7	57.7	68.2	90	49	55	53	53	79	50	52	.438	.419	.410	1.10	.44	.0	4.0	4.7	2.9	4.3
September	29.27	29.58	28.84	59.7	71.1	68.0	75.8	55.7	65.8	96	41	53	54	52	80	58	60	.425	.440	.419	2.01	.67	.9	5.5	5.9	5.5	6.2
October	29.35	29.81	28.87	42.1	51.0	47.8	54.7	38.2	46.4	73	24	37	38	36	84	62	69	.233	.239	.238	3.59	1.83	3.8	4.8	6.9	5.5	6.6
November	29.29	29.85	28.71	28.5	33.3	31.8	37.5	24.5	31.0	74	1	22	23	24	76	65	71	.130	.139	.137	.70	.17	7.7	7.3	7.3	6.4	7.8
December	29.41	30.21	28.73	18.8	22.7	22.8	27.5	13.2	20.4	45	−17	14	14	16	79	69	76	.101	.106	.109	1.19	.46	7.3	7.4	7.7	8.3	7.8
Year	29.30	30.21	28.39	41.8	49.7	48.3	54.5	37.4	45.9	98	−26	35	35	37	78	59	66	.265	.265	.273	26.47	1.94	44.9	6.2	6.8	6.0	6.7

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

GALVESTON, TEX.

[H_b=54 ft.; h_t=106 ft.; h_r=98 ft.; h_a=114 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	10.2	SE.	24	NW.	0	6	4	9	25	10	2	1	5	0	7	4	20	14	9	0	0	0	10	0	0	0	0	1	0
February	11.8	N.	34	SW.	1	13	3	10	17	5	1	0	7	0	3	8	17	13	10	1	0	0	12	0	0	0	3	2	0
March	12.4	SE.	34	NW.	1	3	3	12	18	15	0	1	9	1	8	11	12	11	7	0	0	0	4	1	0	0	0	3	0
April	11.8	SE.	30	NW.	0	5	4	7	21	16	3	1	3	0	8	13	9	4	3	0	0	0	1	0	0	0	0	3	0
May	11.8	SE.	29	N.	0	2	1	3	33	13	3	2	5	0	10	11	10	4	3	0	0	0	0	0	0	2	0	2	0
June	9.6	S.	26	NW.	0	2	6	6	15	24	1	1	4	1	22	6	2	5	4	0	0	0	0	0	0	3	0	3	0
July	11.7	S.	35	S.	1	1	3	5	8	27	10	4	4	0	9	16	6	9	9	0	0	0	0	0	0	2	0	6	0
August	8.3	S.	27	SE	0	1	2	4	11	28	5	3	8	0	15	11	5	11	7	0	0	0	0	0	0	3	0	9	0
September	10.1	S.	31	SE.	0	2	4	7	17	21	3	2	3	1	14	12	4	7	5	0	0	0	0	0	0	5	0	3	0
October	9.0	SE.	23	NE.	0	9	9	11	10	16	3	1	3	0	19	6	6	2	2	0	0	0	1	0	0	0	0	1	0
November	10.1	S.	26	N.	0	12	3	7	6	16	5	2	9	0	17	7	6	6	4	0	0	0	1	0	0	0	0	1	0
December	10.9	S.	32	NW.	1	3	7	4	6	33	2	1	6	0	17	5	9	9	9	0	0	0	4	0	0	0	0	2	0
Year	10.6	S.	35	S.	4	59	49	85	187	224	38	19	66	3	149	110	106	95	72	1	0	0	33	1	0	15	3	36	0

GRAND JUNCTION, COLO.

[H_b=4,602 ft.; h_t=60 ft.; h_r=52 ft.; h_a=68 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	4.7	NW.	28	SW.	0	17	4	0	4	5	5	7	18	2	14	9	8	9	5	10	8	0	9	2	15	0	31	0	0
February	4.5	NW.	17	SE.	0	17	2	4	6	1	4	3	19	0	15	7	6	4	3	7	4	0	4	2	18	0	28	0	0
March	6.9	N.	32	NW.	1	17	0	3	13	6	2	4	17	0	10	13	8	5	3	2	0	0	0	0	0	0	18	1	0
April	8.0	SE.	28	NW.	0	12	5	1	9	11	2	6	14	0	10	10	10	7	3	5	4	0	0	0	0	0	8	0	0
May	7.7	SE.	32	S.	1	11	2	5	13	7	4	7	12	1	11	13	7	10	3	3	2	0	0	0	0	0	0	4	0
June	8.6	SE.	29	S.	0	7	1	12	19	12	3	2	4	0	18	9	3	1	1	0	0	1	0	0	0	18	0	5	0
July	6.9	SE.	28	S.	0	8	3	8	25	4	0	7	7	0	22	6	3	11	8	0	0	0	0	0	0	25	0	10	0
August	6.9	SE.	27	S.	0	12	2	6	22	9	2	2	7	0	18	8	5	7	4	0	0	0	0	0	0	16	0	6	0
September	6.9	SE.	23	SE.	0	8	5	6	19	10	3	6	3	0	18	9	3	8	4	0	0	0	0	0	0	8	0	1	0
October	5.5	SE.	24	S.	0	12	3	6	19	4	2	6	8	2	24	4	3	3	2	0	0	0	0	0	0	0	0	0	0
November	5.0	SE.	23	S.	0	9	0	3	15	3	0	8	21	1	20	6	4	5	4	2	2	0	0	0	0	0	25	0	0
December	4.8	NW.	22	W.	0	10	0	6	7	6	2	7	23	1	12	9	10	7	2	4	4	0	2	1	3	0	28	0	0
Year	6.4	SE.	32	NW.	2	140	27	60	171	78	29	65	153	7	192	103	70	77	42	33	24	1	15	5	36	67	138	27	0

GRAND RAPIDS, MICH.

[H_b=707 ft.; h_t=70 ft.; h_r=70 ft.; h_a=244 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	14.0	SW.	50	SW.	6	6	2	4	10	11	18	9	2	0	2	7	22	11	6	10	5	0	15	4	5	0	25	1	0
February	14.4	W.	45	W.	7	4	6	2	3	6	13	13	9	0	5	5	18	14	10	17	10	0	2	0	13	0	25	1	0
March	12.7	N.	41	W.	4	10	9	6	9	5	6	6	11	0	2	7	22	13	10	15	7	0	8	1	7	0	27	0	0
April	13.1	NE.	40	SW.	3	4	16	8	5	8	7	10	2	0	4	8	18	15	13	5	1	2	6	0	0	0	5	4	0
May	12.1	E.	41	W.	5	0	7	10	10	11	13	10	1	0	3	17	11	18	16	0	0	2	7	0	0	0	0	7	0
June	10.0	SW.	32	SW.	1	6	0	3	8	6	24	11	2	0	13	11	6	8	5	0	0	0	0	0	0	11	0	5	0
July	9.7	SW.	36	NW.	1	1	5	12	6	5	20	8	5	0	14	13	4	6	5	0	0	1	2	0	0	10	0	5	0
August	9.6	NE.	30	SW.	0	10	13	10	3	6	6	8	6	0	16	10	5	7	5	0	0	0	4	1	0	0	0	3	0
September	11.5	SW.	43	SW.	6	5	5	7	6	13	10	8	6	0	12	6	12	13	12	0	0	0	7	0	0	3	0	9	0
October	11.6	S.	41	SW.	2	7	2	3	7	18	12	7	8	0	8	13	10	11	9	3	0	0	6	0	0	0	4	2	0
November	12.3	NW.	35	SW.	2	10	7	3	3	9	11	10	7	0	3	4	23	15	12	16	9	1	7	0	5	0	21	2	0
December	11.0	SW.	32	SW.	1	11	5	12	5	9	10	5	5	0	0	5	26	19	11	15	9	0	10	5	11	0	26	0	0
Year	11.8	SW.	50	SW.	38	74	77	80	75	105	150	105	64	0	82	106	177	150	115	81	41	6	74	11	41	24	133	39	0

GREEN BAY, WIS.

[H_b=617 ft.; h_t=109 ft.; h_r=101 ft.; h_a=141 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	12.0	S.	38	S.	2	5	13	2	6	10	11	12	3	0	3	5	23	7	6	14	4	0	7	1	10	0	30	0	0
February	13.1	W.	35	NE.	3	5	4	1	5	8	9	18	6	0	6	8	14	9	5	12	5	0	3	0	17	0	25	1	0
March	13.3	N.	40	NE.	5	10	11	1	7	8	5	7	13	0	7	4	20	7	6	11	5	0	5	2	9	0	29	1	0
April	11.9	NE.	30	NE.	0	5	18	3	5	5	7	10	5	0	6	4	20	14	9	7	3	0	5	1	0	0	9	4	1
May	12.0	NE.	35	NE.	2	2	21	2	11	10	10	5	1	0	3	12	16	11	10	1	0	0	1	0	0	0	0	3	1
June	9.5	SW.	37	NE.	3	0	2	4	13	16	13	6	6	0	10	11	9	12	9	0	0	3	2	2	0	7	0	8	1
July	9.6	SW.	29	NE.	0	7	5	9	7	13	13	2	6	0	10	10	11	10	7	0	0	1	1	0	0	4	0	8	0
August	8.6	S.	25	S.	0	7	6	7	9	9	11	5	7	1	14	11	6	4	3	0	0	0	1	1	0	1	0	4	0
September	11.1	S.	35	NW.	2	6	7	5	7	11	10	9	4	1	5	11	14	10	7	6	0	1	6	1	0	1	0	5	1
October	12.0	S.	38	NE.	2	6	2	4	4	18	11	7	10	0	8	6	17	10	8	3	1	0	5	2	0	0	7	2	0
November	11.5	W.	35	NW.	1	4	4	3	1	11	10	15	12	0	3	5	22	9	5	16	7	0	2	1	8	0	24	0	0
December	10.9	W.	30	NW.	0	8	6	1	6	7	10	12	12	0	5	5	21	16	10	16	10	0	9	3	16	0	29	0	0
Year	11.3	S.	40	NE.	20	65	99	44	81	126	120	108	85	2	80	92	193	119	85	80	35	1	48	14	60	13	153	36	4

Annual meteorological summaries for the year ending Dec. 31, 1938—Continued

GREENSBORO, N.C.

[ϕ=36°05′ N.; λ=79°57′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.13	29.64	28.34	39.1	51.9	45.7	55.5	35.7	45.6	72	15	35	37	38	84	58	74	0.214	0.233	0.243	2.65	1.29	T	6.5	6.3	5.5	6.6
February	29.15	29.68	28.63	34.6	46.2	41.8	51.2	30.3	40.8	72	9	30	30	31	84	58	66	.181	.190	.185	3.31	.74	0.2	5.6	5.4	5.4	6.3
March	29.07	29.48	28.42	40.4	53.7	48.9	58.7	34.8	46.8	77	21	33	32	33	74	46	56	.207	.209	.206	2.50	1.22	T	5.5	5.0	4.5	5.0
April	29.01	29.46	28.55	51.1	64.2	58.2	68.7	43.9	56.3	84	34	43	41	44	76	45	63	.292	.263	.302	2.95	1.16	.0	5.1	5.6	4.9	5.3
May	29.04	29.35	28.70	65.8	77.9	72.0	82.3	57.8	70.0	94	45	60	58	58	82	53	64	.522	.500	.498	3.38	.65	.0	4.9	5.1	4.5	5.1
June	29.08	29.33	28.83	72.7	84.9	77.8	89.4	62.0	75.7	100	42	60	58	60	66	42	57	.539	.507	.547	.32	.12	.0	3.8	5.0	4.9	4.5
July	29.10	29.40	28.87	72.6	83.4	76.9	88.1	65.2	76.6	97	48	65	62	65	78	52	69	.629	.583	.630	3.81	1.32	.0	5.0	5.7	5.1	5.6
August	29.07	29.37	28.65	71.0	81.6	73.8	84.9	65.9	75.4	94	57	67	66	68	87	61	84	.661	.644	.694	3.99	2.11	.0	6.0	6.5	6.6	6.4
September	29.05	29.28	28.73	67.9	82.7	72.9	86.2	63.0	74.6	95	44	64	62	65	87	54	78	.602	.588	.638	.69	.27	.0	4.0	5.1	3.6	4.6
October	29.18	29.52	28.71	50.6	68.1	56.6	72.1	44.4	58.2	90	30	46	48	48	86	48	74	.331	.335	.347	1.04	.49	.0	4.1	3.5	2.8	3.7
November	29.12	29.61	28.57	38.2	55.2	45.7	59.1	33.8	46.4	78	15	32	34	36	77	48	70	.194	.220	.226	1.16	.46	.0	4.2	3.9	3.3	4.2
December	29.20	29.74	28.75	38.4	49.5	44.2	53.9	34.5	44.2	68	14	34	35	36	86	61	74	.211	.223	.226	2.35	1.02	.0	6.6	6.5	5.6	6.5
Year	29.10	29.74	28.34	53.5	66.6	59.5	70.8	47.6	59.2	100	9	47	47	48	81	52	69	.382	.375	.395	33.15	2.11	.2	5.1	5.4	4.7	5.3

HARRISBURG, PA.

[ϕ=40°16′ N.; λ=76°52′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.63	30.20	29.03	34.4	40.0	40.9	45.6	32.2	38.9	59	15	25	27	30	68	59	65	0.138	0.149	0.171	1.62	0.55	1.9	5.8	6.2	5.0	6.2
February	29.63	30.33	29.03	28.5	35.4	34.1	40.3	25.2	32.8	62	10	19	19	20	66	52	55	.113	.110	.111	2.40	.84	9.9	5.1	5.4	4.7	5.4
March	29.57	30.04	28.77	34.5	40.0	40.2	44.9	32.5	38.7	63	17	24	24	27	67	54	60	.138	.137	.152	5.65	1.27	4.1	7.0	7.7	6.4	6.8
April	29.56	29.99	29.02	47.0	55.7	55.4	61.6	43.0	52.3	81	33	37	36	39	68	59	56	.229	.229	.252	5.17	1.34	.0	5.6	5.5	5.5	5.1
May	29.55	29.87	29.19	60.4	68.0	65.1	72.6	55.7	64.2	88	43	52	52	54	76	59	69	.407	.403	.428	5.53	1.04	.0	7.0	8.1	6.3	7.0
June	29.54	29.82	29.27	68.5	78.3	77.0	83.7	63.2	73.4	97	48	58	59	59	71	52	56	.517	.522	.536	3.46	1.00	.0	5.3	5.3	4.6	5.1
July	29.62	29.97	29.31	70.3	80.4	77.4	84.9	65.2	75.0	98	54	61	60	61	73	52	59	.545	.534	.555	4.64	2.57	.0	4.5	4.6	5.5	4.9
August	29.58	29.92	28.77	68.9	77.2	74.6	81.3	65.0	73.2	97	56	62	60	62	78	57	67	.561	.528	.569	10.67	5.28	.0	5.4	5.9	5.4	5.6
September	29.55	29.81	29.13	63.2	72.8	70.0	76.5	60.6	68.6	88	50	57	57	59	82	59	70	.478	.478	.515	3.59	1.44	.0	5.8	6.7	4.2	6.1
October	29.72	30.13	29.20	47.5	59.0	55.8	63.3	44.2	53.8	83	30	40	41	44	76	53	64	.257	.277	.300	2.25	1.16	.0	4.5	3.7	3.3	4.3
November	29.60	30.14	28.88	36.4	42.8	41.3	46.4	33.6	40.0	72	16	28	29	28	70	59	60	.164	.176	.152	.70	.42	1.2	5.9	6.3	5.6	6.3
December	29.73	30.48	29.19	29.4	34.3	33.3	39.9	25.6	32.8	57	2	22	21	22	74	59	65	.134	.129	.137	1.56	.56	7.2	6.7	7.0	6.3	7.1
Year	29.61	30.48	28.77	49.1	57.0	55.4	61.8	45.5	53.6	98	2	40	40	42	72	55	62	.307	.306	.324	47.24	5.28	24.3	5.7	6.0	5.2	5.8

HATTERAS, N.C.

[ϕ=35°15′ N.; λ=75°40′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	30.04	30.50	29.16	51.5	50.3	52.7	59.2	47.7	53.4	69	38	46	50	47	81	80	81	0.325	0.380	0.332	1.95	0.75	0.0	7.0	6.6	5.3	6.3
February	30.06	30.69	29.50	48.2	55.6	49.8	57.8	43.1	50.4	68	26	42	46	43	78	76	79	.282	.332	.301	5.72	2.66	T	5.9	6.2	5.5	6.0
March	30.02	30.43	29.41	51.5	57.6	52.6	59.5	46.8	52.6	72	34	44	48	45	75	71	75	.310	.360	.316	2.63	1.39	.0	4.3	4.0	3.3	4.1
April	29.94	30.28	29.51	61.7	65.6	60.9	67.2	55.1	61.2	77	42	54	58	55	78	78	82	.434	.495	.445	4.72	1.35	.0	4.9	5.4	4.8	4.8
May	29.96	30.26	29.61	73.1	76.5	71.3	77.9	66.8	72.4	86	60	66	68	66	79	77	84	.648	.699	.649	6.52	3.65	.0	5.0	3.6	4.6	3.7
June	29.94	30.19	29.70	76.1	80.3	73.5	80.8	69.4	75.1	88	58	68	71	68	77	74	82	.709	.790	.703	.77	.55	.0	4.9	4.1	5.3	4.3
July	30.01	30.21	29.79	77.2	80.2	75.2	81.4	71.5	76.4	88	56	72	72	70	83	77	86	.779	.798	.752	13.59	7.11	.0	6.4	5.6	3.7	5.6
August	29.95	30.23	28.66	80.1	83.3	79.1	84.7	74.8	79.8	89	72	74	75	73	82	77	83	.842	.873	.820	9.41	3.56	.0	5.5	5.4	5.9	5.4
September	29.92	30.19	28.25	79.3	83.0	78.2	84.0	74.4	79.2	90	64	72	73	73	80	74	84	.804	.829	.821	13.63	11.99	.0	3.7	3.6	2.9	3.4
October	30.06	30.43	29.66	68.0	72.9	66.8	74.0	62.8	68.4	85	52	61	63	61	79	71	82	.556	.589	.550	.60	.39	.0	4.5	3.8	3.6	4.1
November	30.05	30.60	29.49	52.3	58.9	55.3	61.2	48.7	55.0	77	33	45	48	48	77	68	78	.322	.357	.359	1.84	.76	.0	5.1	3.5	3.7	4.6
December	30.15	30.71	29.73	51.3	57.1	52.8	59.6	47.0	53.3	72	31	46	48	47	81	73	79	.325	.360	.337	.37	.20	T	5.8	5.3	4.3	5.0
Year	30.01	30.71	28.25	64.2	68.8	64.0	70.6	58.9	64.8	90	26	58	60	58	79	75	81	.528	.572	.532	61.75	11.99	T	5.3	4.8	4.4	4.8

HAVRE, MONT.

[ϕ=48°34′ N.; λ=109°40′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	27.10	27.55	26.68	16.8	27.1	24.4	32.2	11.1	21.6	53	−21	12	18	17	81	70	74	0.079	0.105	0.098	0.35	0.19	4.6	5.0	6.8	5.9	6.4
February	27.31	27.89	26.78	11.9	22.4	19.9	26.7	5.4	16.0	59	−32	8	13	13	84	70	75	.072	.082	.087	.27	.17	3.9	4.4	5.1	6.5	6.0
March	27.31	27.85	26.75	26.0	46.7	43.0	47.7	22.2	35.0	68	−16	21	24	24	81	54	48	.116	.132	.128	.39	.14	5.4	5.4	5.3	5.3	5.1
April	27.32	27.96	26.67	33.4	47.8	48.8	53.0	31.0	42.0	73	17	29	30	28	83	53	48	.160	.166	.154	1.44	.60	14.2	6.4	6.3	6.5	6.3
May	27.25	27.54	26.96	44.7	60.5	63.1	65.8	43.0	54.4	92	32	38	36	35	80	45	40	.233	.220	.213	2.26	.87	.0	6.0	6.1	6.4	5.3
June	27.27	27.77	26.88	56.9	76.3	79.5	82.8	54.6	68.7	104	38	45	43	40	66	34	28	.311	.289	.261	2.47	1.04	.0	4.1	3.7	5.3	4.2
July	27.33	27.68	27.02	58.3	82.2	85.7	88.7	56.7	72.7	107	45	44	42	39	61	26	21	.296	.275	.248	.37	.20	.0	2.9	3.5	2.8	2.3
August	27.36	27.59	27.01	55.8	77.8	78.0	82.6	54.8	68.7	98	47	46	46	46	72	38	39	.315	.330	.315	3.90	2.23	.0	4.1	3.3	4.2	3.6
September	27.22	27.57	26.84	45.9	68.8	65.7	70.5	44.0	57.2	89	30	39	39	38	77	39	38	.242	.244	.237	.45	.22	.0	3.8	3.5	3.0	2.6
October	27.36	27.82	26.79	37.1	51.6	48.9	56.1	32.7	44.4	84	19	31	32	32	80	53	58	.175	.184	.186	.84	.44	2.2	5.4	6.1	6.5	5.7
November	27.44	27.89	26.95	33.4	41.8	39.7	45.8	27.0	36.4	69	2	25	27	28	74	58	66	.137	.151	.156	.53	.37	4.5	5.2	6.8	6.2	6.4
December	27.27	27.84	26.88	13.3	16.9	14.0	27.4	5.2	16.3	56	−18	9	12	8	84	74	81	.075	.071	.070	.92	.35	14.1	7.4	7.9	6.5	7.7
Year	27.30	27.96	26.67	36.1	50.9	50.9	56.6	32.3	44.4	107	−32	29	30	29	77	51	51	.184	.187	.179	14.19	2.23	48.9	5.6	5.4	5.4	5.3

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

GREENSBORO, N.C.

[H_b=886 ft.; h_t=6 ft.; h_r=3 ft.; h_a=56 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																										
January	8.6	SW.	29	NW.	0	9	8	3	4	3	22	5	8	0	6	9	16	6	5	2	0	1	7	1	0	0	12	0	0
February	8.6	SW.	34	SW.	2	5	7	4	0	7	14	7	11	1	8	5	15	13	12	3	1	0	11	2	2	0	14	1	0
March	10.3	SW.	35	SW.	2	6	8	2	2	7	16	10	11	0	10	13	8	9	7	2	1	0	6	3	0	0	12	5	0
April	9.2	SW.	31	SW.	0	7	11	6	7	6	14	7	2	0	11	5	14	12	9	0	0	0	8	2	0	0	0	6	0
May	7.9	SW.	32	NW.	1	5	8	6	5	10	14	9	5	0	9	15	7	10	9	0	0	0	10	6	0	5	0	11	0
June	6.7	N.	29	NW.	0	12	10	5	2	3	15	7	6	0	10	16	4	5	4	0	0	0	6	1	0	19	0	11	0
July	6.8	SW.	33	NE.	1	3	11	4	3	6	19	10	6	0	9	12	10	11	10	0	0	0	4	1	0	15	0	10	0
August	6.9	NE.	26	NW.	0	6	18	6	2	10	12	4	4	0	6	9	16	14	11	0	0	0	6	1	0	10	0	11	0
September	7.0	SW.	22	N.	0	9	10	1	4	9	19	7	1	0	14	10	6	5	4	0	0	0	9	6	0	8	0	5	0
October	6.9	NE.	26	SW.	0	14	25	4	3	4	4	5	3	0	17	8	6	4	3	0	0	0	12	0	0	1	2	1	0
November	8.4	SW.	33	W.	2	5	11	2	1	7	15	11	8	0	14	7	9	5	4	0	0	0	6	2	0	0	14	2	0
December	8.1	SW.	26	N.	0	8	14	3	1	4	20	8	4	0	8	8	15	11	8	0	0	0	15	5	0	0	9	0	0
Year	8.0	SW.	35	SW.	8	89	141	46	34	76	184	90	69	1	122	117	126	105	86	7	2	1	100	30	2	58	63	63	0

HARRISBURG, PA.

[H_b=374 ft.; h_t=94 ft.; h_r=42 ft.; h_a=104 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.8	NW.	32	W.	1	3	11	10	2	3	8	10	15	0	9	7	15	9	7	3	2	0	3	3	2	0	12	0	0
February	9.3	NW.	35	NW.	1	2	4	10	5	4	5	13	13	0	12	4	12	12	8	8	5	0	3	1	8	0	21	0	0
March	9.8	NW.	37	NW.	1	3	10	4	2	4	3	16	20	0	5	10	16	14	11	8	4	0	2	0	0	0	12	2	0
April	8.6	E.	24	NW.	0	2	11	14	5	6	4	6	12	0	11	12	7	14	12	0	0	0	3	0	0	0	0	2	0
May	6.9	W.	31	NE.	0	5	10	6	8	8	6	13	6	0	4	12	15	19	15	0	0	0	3	0	0	0	0	8	0
June	6.8	W.	37	W.	1	3	8	3	5	4	14	11	12	0	7	15	8	12	10	0	0	1	3	1	0	10	0	12	0
July	6.4	W.	34	NW.	1	2	8	8	7	9	8	11	9	0	11	14	6	9	7	0	0	0	3	0	0	10	0	6	0
August	7.1	NE.	34	NE.	1	8	18	6	4	6	5	10	4	1	10	11	10	14	11	0	0	0	2	1	0	3	0	4	0
September	6.6	W.	22	SW.	0	3	13	4	2	3	8	20	7	0	7	11	12	10	10	0	0	0	5	1	0	0	0	1	0
October	6.4	N.	21	NW.	0	16	7	5	7	6	4	8	8	1	15	10	6	9	6	0	0	0	5	0	0	0	2	2	0
November	8.0	W.	29	NW.	0	3	8	5	5	4	5	19	11	0	8	8	14	7	5	6	2	0	3	0	2	0	13	0	0
December	7.5	W.	30	NW.	0	2	17	3	7	2	9	11	11	0	6	6	19	9	7	6	3	0	11	4	9	0	20	0	0
Year	7.6	W.	37	NW.	6	52	125	78	59	59	79	148	128	2	105	120	140	138	109	31	16	1	46	11	21	23	80	38	0

HATTERAS, N.C.

[H_b=11 ft.; h_t=5 ft.; h_r=4 ft.; h_a=50 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	15.9	N.	49	NW.	10	15	9	2	1	2	12	10	11	0	6	10	15	8	5	0	0	0	0	0	0	0	0	1	0
February	15.1	NW.	43	SE.	8	11	9	1	3	1	12	7	12	0	7	8	13	13	9	1	0	0	2	1	0	0	3	1	0
March	14.9	SW.	37	SE.	3	10	6	5	1	7	15	6	12	0	13	12	6	8	7	0	0	0	1	1	0	0	0	2	0
April	13.7	SW.	38	N.	5	3	13	9	4	6	14	9	2	0	12	10	8	11	10	0	0	0	1	0	0	0	0	1	0
May	11.8	SW.	41	W.	3	3	15	4	6	4	18	11	1	0	16	9	6	12	11	0	0	0	0	0	0	0	0	6	0
June	12.1	SW.	32	N.	2	6	8	4	1	6	24	8	3	0	15	9	6	4	3	0	0	0	0	0	0	0	0	3	0
July	12.0	SW.	32	NE.	1	6	13	1	3	6	20	7	6	0	10	10	11	14	12	0	0	0	0	0	0	0	0	7	0
August	12.4	SW.	62	NE.	3	2	13	7	2	5	24	6	3	0	9	13	9	17	14	0	0	0	0	0	0	0	0	6	0
September	12.6	SW.	76	NW.	2	1	10	8	2	3	17	12	7	0	18	7	5	6	5	0	0	0	0	0	0	0	0	1	0
October	11.7	NE.	32	N.	1	8	27	4	2	4	5	2	5	5	15	9	7	5	3	0	0	0	0	0	0	0	0	0	0
November	12.9	NW.	37	NW.	3	11	14	0	0	0	10	12	12	1	14	6	10	7	6	0	0	0	2	2	0	0	0	1	0
December	13.2	SW.	35	NW.	1	8	16	0	1	2	14	14	7	0	10	13	8	5	3	1	0	0	0	1	0	0	2	0	0
Year	13.2	SW.	76	NW.	42	84	153	45	26	46	185	104	81	6	145	116	104	110	88	2	0	0	6	5	0	0	5	29	0

HAVRE, MONT.

[H_b=2,505 ft.; h_t=11 ft.; h_r=3 ft.; h_a=67 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.7	SW.	41	SW.	4	1	8	6	0	0	26	10	10	1	4	14	13	4	3	10	3	0	1	0	11	0	29	0	3
February	12.5	SW.	35	SW.	3	2	5	3	0	0	30	11	4	1	5	15	8	4	3	9	4	0	1	0	15	0	27	0	6
March	8.6	SW.	35	W.	1	1	10	6	1	2	13	15	11	3	9	16	6	7	5	10	7	0	0	0	4	0	27	0	5
April	10.6	SW.	34	NW.	2	3	6	13	7	1	11	8	9	2	7	10	13	9	6	7	4	0	0	0	2	0	15	1	3
May	9.3	SW.	27	W.	0	4	1	13	9	1	16	10	6	2	6	12	13	13	7	0	0	1	0	0	0	1	1	4	10
June	8.9	SW.	38	SW.	2	0	4	7	7	4	14	11	12	1	13	12	5	12	9	0	0	0	0	0	0	6	0	9	2
July	8.6	E.	33	NW.	2	3	5	20	5	1	6	11	9	2	22	8	1	4	4	0	0	0	0	0	0	14	0	8	5
August	8.6	E.	35	SW.	1	6	7	15	2	3	10	6	13	0	18	7	6	10	7	0	0	0	0	0	0	11	0	6	1
September	10.3	SW.	40	W.	1	3	2	9	1	2	23	10	9	1	13	14	3	7	4	0	0	0	0	0	0	0	1	3	6
October	8.5	W.	32	W.	1	2	6	16	1	0	9	15	11	2	9	10	12	7	5	5	3	0	1	0	1	0	16	1	3
November	11.6	SW.	36	NW.	3	3	5	5	2	0	23	15	7	0	4	14	12	6	8	7	5	0	2	0	6	0	19	0	1
December	10.4	E.	38	SW.	5	2	15	15	1	0	15	10	4	0	3	9	19	11	7	19	11	0	2	0	15	0	30	0	2
Year	9.9	SW.	41	SW.	25	30	74	128	36	14	196	132	105	15	113	141	111	94	63	67	37	1	7	0	54	32	165	32	47

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Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

HELENA, MONT.

[ϕ=46°34′ N.; λ=112°4′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In	In.	In.				
January	25.58	26.07	25.17	23.4	29.3	27.8	34.0	18.5	26.2	51	−8	13	17	19	62	59	67	0.080	0.097	0.107	0.55	0.19	9.1	7.3	8.6	6.5	7.7
February	25.75	26.15	25.32	15.4	21.7	21.7	27.5	9.6	18.6	51	−35	7	9	12	67	58	65	.067	.076	.084	.82	.46	16.9	7.6	8.5	6.7	7.7
March	25.74	26.22	25.29	30.3	40.3	41.8	45.9	27.0	36.4	60	6	20	24	22	66	51	47	.110	.124	.121	.22	.11	4.9	6.0	7.5	6.7	7.1
April	25.75	26.22	25.32	33.6	46.4	47.3	51.4	30.8	41.1	70	14	25	29	27	69	53	50	.135	.158	.147	1.50	.75	5.4	6.7	7.9	7.6	7.4
May	25.71	26.03	25.34	41.0	55.7	56.3	60.1	39.1	49.6	87	30	32	32	32	71	44	44	.183	.186	.188	1.41	.43	.2	5.5	7.8	7.3	6.9
June	25.75	26.14	25.46	55.1	74.4	76.1	80.0	52.3	66.2	98	43	42	48	41	62	40	31	.266	.337	.259	.73	.31	.0	4.0	4.8	7.1	5.5
July	25.81	26.08	25.55	60.0	80.4	83.7	86.1	57.3	71.7	99	46	41	44	40	51	28	23	.261	.287	.258	.41	.33	.0	1.7	2.5	3.1	2.8
August	25.84	26.02	25.57	55.7	72.1	74.1	77.2	53.4	65.3	94	38	41	44	41	61	42	38	.263	.291	.266	3.06	2.86	.0	5.2	4.8	5.7	5.2
September	25.70	26.02	25.36	46.3	59.3	62.8	66.8	43.2	55.0	87	28	36	39	37	70	50	41	.218	.248	.228	.66	.36	T	4.4	4.6	3.6	4.5
October	25.81	26.17	25.28	41.9	53.0	52.7	59.5	38.2	48.8	77	24	32	35	34	68	53	54	.182	.206	.199	1.01	.34	3.3	4.5	5.0	6.5	5.4
November	25.94	26.26	25.38	36.0	41.8	42.2	48.7	30.5	39.6	67	8	26	29	27	68	61	58	.144	.162	.150	.73	.36	9.7	4.6	6.8	6.9	6.6
December	25.66	26.02	25.26	27.7	31.3	31.9	38.5	21.9	30.2	60	−3	19	21	22	69	65	66	.107	.118	.122	.60	.26	5.2	7.4	8.6	8.3	8.2
Year	25.75	26.26	25.17	38.9	50.5	51.5	56.3	35.2	45.7	99	−35	28	31	30	65	50	49	.168	.191	.177	11.70	2.86	54.7	5.4	6.4	6.3	6.2

HONOLULU, HAWAII

[ϕ=21°19′ N.; λ=157°52′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.99	30.16	29.78	71.6	75.2	71.8	76.6	68.2	72.4	80	65	62	61	62	72	62	71	0.552	0.540	0.552	2.63	1.16	0.0	5.7	5.8	4.9	5.6
February	29.96	30.12	29.71	70.6	74.1	70.9	75.7	67.2	71.4	78	63	63	64	63	77	70	77	.572	.591	.583	5.92	3.28	.0	7.0	6.4	5.6	6.8
March	30.03	30.18	29.68	70.9	73.9	71.0	75.5	67.1	71.3	78	65	61	61	61	72	64	71	.543	.534	.533	3.88	2.50	.0	6.7	7.1	5.2	6.5
April	30.01	30.11	29.82	71.6	75.0	71.5	76.8	67.0	71.9	80	59	61	61	61	70	63	71	.535	.543	.546	.29	.11	.0	4.8	5.3	5.0	5.1
May	30.05	30.14	29.94	74.0	76.1	73.0	77.8	69.8	73.8	80	67	63	63	63	68	64	71	.572	.577	.575	.58	.32	.0	4.9	4.9	4.7	4.7
June	30.03	30.12	29.89	74.6	77.6	74.2	78.9	70.8	74.8	81	68	64	63	63	69	62	69	.591	.580	.579	.57	.20	.0	6.5	6.3	6.3	6.0
July	30.03	30.12	29.93	74.8	77.6	74.6	79.5	71.1	75.3	81	69	65	65	65	72	66	73	.617	.621	.622	.88	.21	.0	6.0	5.3	5.9	4.9
August	30.03	30.11	29.92	75.5	78.6	75.1	80.4	71.4	75.9	82	69	66	66	66	72	66	74	.636	.639	.637	.61	.13	.0	5.4	4.7	4.5	4.8
September	30.02	30.11	29.90	76.4	78.9	75.6	80.7	72.3	76.5	83	69	64	64	64	66	60	67	.596	.590	.596	.44	.10	.0	4.8	6.0	3.9	5.1
October	29.98	30.10	29.83	75.8	78.9	75.1	80.6	70.7	75.6	84	66	65	65	65	70	64	71	.620	.628	.620	.06	.03	.0	3.8	4.5	4.3	4.7
November	29.96	30.11	29.75	72.8	77.0	72.4	78.8	67.3	73.0	85	62	63	64	63	72	64	73	.585	.590	.583	.77	.40	.0	3.6	4.3	3.1	3.9
December	29.96	30.15	29.64	73.1	77.1	73.2	78.9	68.8	73.8	82	65	66	67	66	80	72	80	.651	.663	.653	3.33	1.67	.0	4.8	6.4	4.8	5.5
Year	30.00	30.18	29.64	73.5	76.7	73.2	78.4	69.3	73.8	85	59	64	64	64	72	65	72	.589	.591	.590	19.96	3.28	.0	5.3	5.7	4.8	5.3

HOUSTON, TEX.

[ϕ=29°47′ N.; λ=95°24′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.92	30.49	29.58	56.3	64.0	-----	67.9	54.1	61.0	79	35	50	51	---	82	67	---	0.394	0.419	-----	3.88	1.02	0.0	6.7	6.7	----	6.9
February	29.97	30.47	29.49	50.0	56.6	-----	61.9	45.5	53.7	79	13	46	46	---	88	71	---	.363	.362	-----	3.28	.71	.0	8.3	6.9	----	7.4
March	29.87	30.14	29.48	57.9	67.3	-----	71.1	56.0	63.6	85	38	53	52	---	85	62	---	.440	.431	-----	3.07	2.48	.0	6.2	6.3	----	6.3
April	29.74	30.05	29.42	63.0	75.4	-----	80.3	61.2	70.8	93	41	56	53	---	79	50	---	.482	.447	-----	.63	.41	.0	6.3	5.1	----	5.0
May	29.73	29.94	29.31	73.1	83.1	-----	87.0	71.2	79.1	93	60	69	67	---	88	59	---	.721	.664	-----	1.83	.80	.0	5.0	5.9	----	5.4
June	29.86	30.05	29.66	73.5	86.4	-----	90.0	71.5	80.8	98	61	65	61	---	76	44	---	.633	.556	-----	1.85	.99	.0	2.1	2.9	----	3.0
July	29.79	29.95	29.64	76.3	85.9	-----	90.2	74.9	82.6	98	71	74	70	---	92	62	---	.836	.739	-----	7.97	3.77	.0	5.5	6.5	----	6.0
August	29.81	29.99	29.61	76.0	87.3	-----	90.8	75.1	83.0	94	68	73	71	---	90	58	---	.815	.752	-----	6.36	2.44	.0	3.8	5.9	----	5.4
September	29.78	29.95	29.61	76.1	87.0	-----	90.1	75.0	82.6	95	72	74	71	---	92	60	---	.826	.761	-----	4.47	2.22	.0	2.9	5.3	----	4.7
October	29.87	30.06	29.69	66.5	78.2	-----	82.2	64.6	73.4	92	49	62	62	---	86	60	---	.575	.569	-----	1.92	.73	.0	4.2	4.5	----	4.4
November	29.99	30.30	29.59	58.5	69.5	-----	73.0	56.6	64.8	82	45	52	51	---	81	55	---	.417	.407	-----	2.03	1.36	.0	3.8	4.0	----	3.7
December	29.94	30.22	29.64	59.3	68.9	-----	72.7	56.1	64.4	84	40	55	55	---	86	64	---	.465	.464	-----	3.27	1.55	.0	5.0	5.2	----	5.3
Year	29.86	30.49	29.31	65.6	75.8	-----	79.8	63.5	71.6	98	13	61	59	---	85	59	---	.581	.548	-----	40.56	3.77	.0	5.0	5.4	----	5.3

HURON, S.DAK.

[ϕ=44°21′ N.; λ=98°14′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	28.44	28.87	27.83	19.7	31.7	27.7	36.5	14.5	25.5	52	−9	16	21	20	85	65	72	0.089	0.114	0.109	0.18	0.14	0.6	3.5	4.9	5.9	5.2
February	28.62	29.05	28.15	9.2	22.6	20.5	29.0	4.8	16.9	57	−25	4	11	10	82	62	67	.061	.078	.078	.21	.11	3.3	4.1	5.2	3.6	4.1
March	28.62	29.10	27.94	25.7	37.7	35.1	43.5	24.1	33.8	67	−4	22	26	26	84	63	65	.121	.142	.152	1.49	.85	9.0	5.5	5.4	4.3	5.3
April	28.51	29.00	28.01	37.1	53.0	53.8	57.7	34.6	46.2	75	20	29	29	29	73	42	42	.166	.167	.170	.31	.23	T	5.5	4.5	4.7	5.0
May	28.47	28.82	27.78	50.7	64.1	64.5	68.0	46.9	57.4	91	35	44	46	45	79	55	54	.300	.320	.314	1.55	.42	.0	6.1	6.1	5.5	5.2
June	28.49	29.08	28.08	68.5	88.1	89.2	93.3	63.4	78.4	108	45	54	54	50	63	34	27	.436	.431	.371	2.04	1.02	.0	3.1	2.3	3.7	3.1
July	28.56	28.93	28.25	67.3	84.6	84.9	90.6	63.4	77.0	110	55	58	58	56	75	42	42	.500	.497	.469	2.12	.79	.0	3.4	3.6	3.7	4.1
August	28.62	28.88	28.34	61.4	78.5	78.9	82.9	59.2	71.0	101	49	53	53	53	74	45	45	.408	.421	.418	2.22	1.24	.0	3.4	4.5	3.9	4.3
September	28.47	28.80	27.90	57.3	75.5	73.6	80.2	54.6	67.4	105	37	49	50	49	75	43	47	.371	.384	.380	1.56	1.48	.0	2.8	3.1	3.9	3.9
October	28.64	29.10	28.10	37.6	55.9	54.2	61.9	34.6	48.2	85	22	29	31	30	70	41	42	.161	.178	.173	.05	.05	.5	3.9	3.8	3.3	4.1
November	28.60	29.06	28.10	29.9	39.2	37.0	47.0	23.4	35.2	65	8	22	23	24	72	55	58	.121	.125	.127	.22	.19	2.6	6.7	5.5	5.3	5.9
December	28.65	29.33	28.06	15.7	22.3	20.1	28.8	9.2	19.0	60	−21	11	13	14	81	66	77	.082	.090	.097	.53	.19	5.4	5.5	6.6	6.7	6.6
Year	28.56	29.33	27.78	40.0	54.4	53.5	60.0	36.1	48.0	110	−25	33	35	34	76	51	53	.235	.246	.238	12.48	1.48	21.4	4.5	4.6	4.6	4.7

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

HELENA, MONT.

[H_b=4,124 ft.; h_t=85 ft.; h_r=78 ft.; h_a=111 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp. 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	9.3	SW.	38	SW.	5	3	1	0	1	13	30	7	7	0	2	8	21	6	4	17	6	0	0	0	11	0	26	0	0
February	9.4	SW.	38	SW.	2	2	0	0	0	7	33	5	9	0	1	9	18	9	6	22	9	0	3	1	15	0	27	0	5
March	8.2	SW.	28	SW.	0	2	1	2	2	7	32	10	4	2	3	11	17	4	2	13	2	0	0	0	1	0	20	1	3
April	9.2	SW.	32	W.	1	6	2	2	2	6	19	10	13	0	3	11	16	9	7	13	7	1	0	0	2	0	16	0	2
May	9.8	SW.	31	SW.	0	3	5	1	2	13	22	12	4	0	2	16	13	11	9	6	2	0	0	0	0	0	1	9	4
June	9.1	SW.	32	SW.	1	2	6	1	0	12	22	9	8	0	8	15	7	5	5	0	0	1	0	0	0	5	0	8	8
July	8.7	SW.	43	SW.	4	3	6	0	2	3	26	8	14	0	19	11	1	3	2	0	0	1	0	0	0	8	0	9	4
August	8.2	SW.	35	S.	1	4	5	4	1	4	21	13	10	0	9	13	9	6	4	0	0	0	1	1	0	4	0	10	0
September	8.5	SW.	30	SW.	0	3	1	4	1	3	27	12	9	0	12	10	8	9	6	1	0	0	1	0	0	0	2	3	0
October	7.3	SW.	33	SW.	1	5	3	4	5	6	16	17	5	1	11	9	11	9	7	6	4	0	2	0	0	0	8	0	0
November	8.5	SW.	39	SW.	5	2	0	1	1	7	22	17	10	0	4	13	13	6	4	4	4	0	0	0	4	0	14	0	0
December	8.1	SW.	48	SW.	5	4	5	2	3	4	24	12	7	1	2	5	24	11	7	16	7	0	6	4	11	0	24	0	2
Year	8.7	SW.	48	SW.	25	39	35	21	20	85	294	132	100	4	76	131	158	88	63	98	41	3	13	6	44	17	138	40	28

HONOLULU, HAWAII

[H_b=38 ft.; h_t=86 ft.; h_r=68 ft.; h_a=100 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	12.0	E.	29	E.	0	0	5	52	1	0	0	0	0	4	8	13	10	18	10	0	0	0	0	0	0	0	0	1	0
February	9.8	E.	30	W.	0	3	4	30	4	3	2	2	3	5	5	9	14	19	9	0	0	0	0	0	0	0	0	2	0
March	10.7	E.	35	SW.	1	0	14	39	0	4	4	0	0	1	6	12	13	16	10	0	0	0	0	0	0	0	0	1	0
April	9.7	E.	25	NE.	0	2	13	32	6	0	2	0	2	3	8	16	6	10	3	0	0	0	0	0	0	0	0	0	0
May	10.2	E.	27	E.	0	5	7	42	3	1	1	1	0	2	11	17	3	11	3	0	0	0	0	0	0	0	0	1	0
June	10.9	E.	30	NE.	0	2	6	49	1	2	0	0	0	0	4	16	10	12	5	0	0	0	0	0	0	0	0	0	0
July	10.0	E.	25	E.	0	0	12	49	0	0	0	0	0	1	7	22	2	21	6	0	0	0	0	0	0	0	0	0	0
August	9.8	E.	24	NE.	0	1	11	49	0	1	0	0	0	0	9	20	2	13	7	0	0	0	0	0	0	0	0	0	0
September	11.0	E.	24	E.	0	0	7	51	1	0	0	0	0	1	6	18	6	11	5	0	0	0	0	0	0	0	0	0	0
October	7.8	E.	21	E.	0	2	19	23	2	3	3	0	2	8	12	13	6	3	0	0	0	0	0	0	0	0	0	0	0
November	6.9	NE.	23	E.	0	7	34	9	0	0	0	2	5	3	14	13	3	6	4	0	0	0	0	0	0	0	0	1	0
December	7.4	E.	36	SW.	2	7	19	20	3	2	4	6	1	0	15	5	11	8	6	0	0	0	0	0	0	0	0	1	0
Year	9.7	E.	36	SW.	3	29	151	445	21	16	16	11	13	28	105	174	86	148	68	0	0	0	0	0	0	0	0	7	0

HOUSTON, TEX.

[H_b=138 ft.; h_t=292 ft.; h_r=286 ft.; h_a=314 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	12.5	S.	30	S.	0	5	2	5	9	7	0	2	1	0	9	1	21	12	8	0	0	0	10	3	0	0	0	0	0
February	13.4	N.	38	NW.	3	6	4	4	4	5	2	2	1	0	4	9	15	14	11	0	0	0	8	2	1	0	5	2	0
March	14.3	SE.	38	SE.	3	3	2	5	9	7	0	0	5	0	8	8	15	12	8	0	0	0	7	4	0	0	0	7	0
April	13.0	SE.	35	SE.	3	3	2	2	6	9	4	1	3	0	10	11	9	8	5	0	0	0	6	0	0	2	0	4	0
May	12.3	SE.	38	NW.	2	5	2	1	10	7	3	0	2	1	10	12	9	7	6	0	0	0	4	0	0	7	0	6	0
June	10.7	S.	32	SE.	2	4	4	4	1	13	0	3	1	0	20	8	2	6	5	0	0	0	0	0	0	16	0	7	0
July	10.8	S.	35	N.	1	1	5	2	3	10	5	2	3	0	6	15	10	10	9	0	0	0	0	0	0	19	0	8	0
August	8.3	S.	30	SE.	0	1	6	2	3	3	6	4	4	2	4	22	5	13	10	0	0	0	0	0	0	24	0	12	0
September	10.4	SE.	27	SE.	0	2	5	7	3	6	3	0	3	1	11	14	5	6	5	0	0	0	1	0	0	20	0	5	0
October	10.3	SE.	53	N.	1	5	5	7	5	3	1	3	2	0	12	12	7	5	5	0	0	0	11	3	0	1	0	6	0
November	12.1	N.	30	SE.	0	8	5	2	5	4	0	3	3	0	14	12	4	6	4	0	0	0	10	2	0	0	0	2	0
December	12.0	S.	30	NW.	0	3	4	3	5	11	2	2	1	0	13	5	13	10	8	0	0	0	8	2	0	0	0	1	0
Year	11.7	S.	53	N.	15	46	46	44	63	85	26	22	29	4	121	129	115	109	84	0	0	0	65	16	1	89	5	60	0

HURON, S.DAK.

[H_b=1,306 ft.; h_t=60 ft.; h_r=53 ft.; h_a=74 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.2	SE.	38	W.	3	4	6	0	18	10	4	7	13	0	11	13	7	4	1	10	4	0	0	0	10	0	31	0	0
February	10.5	W.	28	N.	0	7	0	4	10	6	8	9	12	0	14	12	2	7	1	12	7	0	0	0	15	0	28	0	0
March	10.5	SE.	25	SE.	0	15	3	7	22	3	1	2	9	0	10	13	8	6	5	10	4	0	8	0	5	0	29	2	0
April	11.5	N.	31	NE.	0	11	5	4	16	5	1	8	10	0	12	11	7	6	1	5	2	0	1	0	0	0	12	3	2
May	10.7	W.	38	W.	2	15	4	8	15	3	1	10	6	0	13	8	10	13	10	0	0	0	2	0	0	2	0	8	0
June	10.3	SE.	31	NW.	0	8	6	7	19	11	2	5	2	0	20	9	1	10	7	0	0	1	0	0	0	23	0	12	1
July	9.8	SE.	44	NW.	2	11	0	8	20	15	3	2	3	0	13	13	5	7	7	0	0	0	2	1	0	16	0	12	2
August	9.0	SE.	26	NW.	0	11	1	7	25	4	2	4	8	0	14	11	6	7	6	0	0	0	2	1	0	6	0	4	0
September	9.8	SE.	34	NW.	2	6	0	7	19	6	4	10	7	1	15	9	6	5	2	0	0	0	1	1	0	7	0	6	3
October	10.5	SE.	31	N.	0	11	2	6	16	6	2	12	7	0	14	12	5	1	1	1	1	0	0	0	1	0	11	0	1
November	10.2	W.	45	W.	1	8	2	5	7	8	9	9	12	0	9	9	12	5	2	8	4	0	0	0	3	0	28	0	0
December	9.2	SE.	25	N.	0	16	5	2	20	8	2	2	7	0	6	9	16	6	4	14	5	0	4	0	18	0	29	0	1
Year	10.2	SE.	45	W.	10	123	34	65	207	85	39	80	96	1	151	129	85	77	47	60	27	1	20	3	52	54	168	47	10

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

INDIANAPOLIS, IND.

[ϕ=39°46′ N.; λ=86°10′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.12	29.64	28.40	36.1	41.5	40.8	46.8	31.5	39.2	63	16	30	29	31	79	63	68	0.178	0.168	0.182	2.02	0.98	0.1	6.1	6.5	5.6	6.4
February	29.18	29.75	28.37	27.2	34.8	34.7	39.7	22.3	31.0	63	−10	19	18	21	72	52	56	.122	.114	.126	1.90	.74	2.6	5.6	5.4	4.1	5.3
March	29.12	29.61	28.47	35.2	42.4	42.8	47.3	32.0	39.6	70	10	29	29	31	78	60	63	.179	.180	.190	6.20	2.07	2.7	7.4	7.5	7.2	7.5
April	29.02	29.38	28.59	46.6	56.6	55.1	61.1	43.1	52.1	81	32	38	38	39	72	52	58	.237	.244	.252	4.16	1.01	T	5.8	6.7	6.1	6.9
May	29.05	29.33	28.66	60.8	69.0	67.5	73.1	56.7	64.9	86	41	54	54	54	79	60	66	.427	.422	.439	7.10	2.03	.0	7.4	7.0	8.0	7.5
June	29.12	29.45	28.92	72.1	84.7	84.6	89.3	67.4	78.4	98	46	59	57	57	64	40	40	.522	.491	.492	2.50	1.92	.0	2.9	3.6	3.9	3.3
July	29.14	29.50	28.90	71.6	83.4	82.9	88.0	67.6	77.8	99	58	60	58	57	68	45	45	.532	.500	.493	5.85	3.34	.0	4.6	5.6	4.4	5.2
August	29.13	29.35	28.88	66.8	80.0	77.6	83.5	63.5	73.5	93	55	59	58	57	76	48	51	.511	.491	.481	1.97	.62	.0	4.2	5.2	4.1	5.1
September	29.07	29.26	28.77	66.1	77.7	76.1	82.4	63.9	73.2	95	50	59	59	60	79	56	60	.515	.520	.537	5.27	2.11	.0	5.3	5.2	4.2	5.2
October	29.23	29.55	28.75	47.6	60.1	56.8	63.3	44.7	54.0	80	33	41	40	42	78	49	57	.265	.265	.275	1.28	.53	.0	4.9	4.6	4.0	4.7
November	29.16	29.65	28.65	35.9	44.4	43.0	49.6	31.8	40.7	78	12	30	29	30	78	56	59	.178	.173	.174	1.16	.59	.1	6.4	6.0	6.4	6.8
December	29.21	29.86	28.76	34.3	39.1	38.0	44.2	27.9	36.0	69	−3	27	28	28	75	66	67	.171	.180	.173	2.17	1.29	1.8	8.4	7.6	7.9	8.4
Year	29.13	29.86	28.37	50.0	59.5	58.3	64.0	46.0	55.0	99	−10	42	41	42	75	54	58	.320	.312	.318	41.58	3.34	7.3	5.8	5.9	5.5	6.0

ITHACA, N.Y.

[ϕ=42°27′ N.; λ=76°29′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.07	29.65	28.46	31.5	38.4	36.2	43.3	27.2	35.2	63	9	23	25	26	70	58	65	0.129	0.137	0.143	0.44	0.18	1.3	8.5	7.9	5.7	7.7
February	29.05	29.68	28.48	26.2	32.7	29.0	37.5	20.1	28.8	54	−1	19	19	19	72	57	65	.111	.110	.111	1.34	.36	17.0	7.2	6.3	6.0	6.5
March	29.03	29.48	28.22	31.3	36.9	33.2	40.0	27.3	33.6	64	10	26	26	26	79	64	74	.143	.147	.145	3.26	.85	9.8	8.8	8.4	7.3	8.4
April	29.05	29.49	28.53	44.5	54.3	49.7	58.3	38.3	48.3	79	25	35	34	35	70	51	61	.211	.209	.218	2.50	.91	2.4	7.5	7.2	7.0	7.2
May	29.05	29.36	28.68	59.3	67.9	61.3	71.3	49.8	60.6	86	32	49	47	49	70	51	66	.365	.344	.363	2.63	.69	.0	8.0	7.3	6.8	7.6
June	29.04	29.30	28.72	68.0	79.0	70.7	82.8	57.4	70.1	102	39	58	56	57	70	46	64	.494	.470	.492	3.07	1.00	.0	6.3	4.7	5.7	5.4
July	29.12	29.51	28.80	70.4	82.1	72.8	85.7	60.5	73.1	98	50	60	58	58	69	45	62	.516	.490	.500	4.59	.89	.0	5.7	5.2	5.1	5.8
August	29.11	29.44	28.45	65.3	75.8	67.9	78.9	57.9	68.4	94	49	58	58	58	78	57	72	.486	.492	.490	5.38	1.70	.0	5.9	6.3	5.8	6.2
September	29.04	29.35	28.59	60.5	70.2	63.4	73.2	53.3	63.2	87	37	55	55	55	83	62	76	.449	.455	.452	2.77	1.04	.0	6.6	8.1	5.7	7.3
October	29.19	29.58	28.67	45.9	55.8	48.2	59.0	38.7	48.8	78	24	38	40	39	75	56	71	.243	.257	.244	1.84	.57	T	7.3	6.8	4.4	6.9
November	29.03	29.50	28.32	32.3	37.5	34.7	41.8	26.6	34.2	73	8	26	26	27	76	65	73	.149	.152	.154	1.27	.31	11.5	8.4	7.9	7.1	8.2
December	29.16	29.96	28.59	25.7	30.6	28.0	35.4	19.5	27.4	55	−13	20	21	22	77	68	79	.119	.122	.134	2.04	.44	11.7	9.0	8.9	6.9	9.0
Year	29.08	29.96	28.22	46.7	55.1	49.6	58.9	39.7	49.3	102	−13	39	39	39	74	57	69	.285	.282	.287	31.13	1.70	53.7	7.4	7.1	6.1	7.2

JACKSONVILLE, FLA.

[ϕ=30°20′ N.; λ=81°39′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	30.07	30.37	29.55	54.8	63.5	59.8	67.2	51.7	59.4	78	37	50	50	50	84	64	74	0.382	0.382	0.393	2.18	0.78	0.0	6.0	6.6	4.8	6.6
February	30.08	30.55	29.72	55.0	63.8	60.6	68.2	51.5	59.8	83	24	50	50	51	84	65	72	.386	.397	.394	3.23	1.35	.0	5.9	6.9	5.6	6.8
March	30.03	30.34	29.56	56.0	67.5	63.1	71.9	53.8	62.4	84	38	47	45	49	72	46	63	.351	.333	.368	2.97	1.75	.0	3.2	3.9	3.3	3.6
April	29.92	30.20	29.67	63.2	71.3	67.7	74.3	60.5	67.4	81	54	56	54	56	78	57	70	.460	.435	.469	7.16	3.11	.0	6.1	6.4	5.6	6.1
May	29.95	30.12	29.66	74.9	83.7	77.2	86.7	70.6	78.6	91	62	69	66	67	83	56	72	.712	.637	.675	3.04	1.30	.0	3.5	4.0	3.7	4.4
June	29.95	30.14	29.74	75.8	84.3	78.3	87.4	70.6	79.0	94	62	66	64	65	74	52	67	.664	.609	.642	6.84	2.15	.0	3.7	5.3	5.5	5.0
July	29.98	30.13	29.74	78.2	84.4	79.1	88.0	74.0	81.0	95	65	72	70	72	83	64	79	.798	.742	.784	10.30	3.17	.0	5.5	6.6	6.3	6.4
August	29.94	30.13	29.67	77.8	86.5	80.1	89.4	74.5	82.0	95	69	73	70	72	85	60	78	.806	.746	.797	4.68	2.19	.0	3.9	6.7	6.7	6.0
September	29.90	30.08	29.58	77.5	86.5	81.4	89.1	75.1	82.1	95	70	72	69	71	83	58	72	.785	.715	.765	3.76	2.99	.0	3.1	5.6	3.2	4.4
October	29.95	30.21	29.54	68.0	76.5	72.2	78.4	65.5	72.0	86	56	63	62	64	84	63	76	.585	.568	.596	11.99	6.48	.0	5.5	6.7	4.9	6.1
November	30.06	30.49	29.77	54.7	66.6	62.0	69.5	52.6	61.0	78	38	46	44	47	73	48	61	.349	.333	.355	.95	.40	.0	2.7	3.1	2.5	2.9
December	30.13	30.43	29.70	56.3	67.9	63.1	71.6	54.3	63.0	80	39	52	52	53	85	58	74	.402	.401	.429	.72	.32	.0	3.9	4.1	2.9	4.3
Year	30.00	30.55	29.54	65.0	75.2	70.4	78.4	62.9	70.6	95	24	60	58	60	81	58	72	.557	.525	.556	58.32	6.48	.0	4.4	5.5	4.6	5.2

KALISPELL, MONT.

[ϕ=48°10′ N.; λ=114°25′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	26.74	27.31	26.37	23.8	29.7	28.8	33.3	19.6	26.4	49	−1	21	25	24	90	81	83	0.119	0.138	0.140	1.10	0.24	12.9	7.1	9.1	8.0	8.2
February	26.95	27.44	26.47	15.5	23.3	23.2	26.7	11.1	18.9	46	−31	12	16	17	85	75	75	.086	.102	.102	1.25	.32	14.9	6.8	8.3	7.3	7.3
March	26.91	27.41	26.42	29.8	39.1	40.2	43.0	28.0	35.5	50	13	27	31	31	88	73	70	.147	.174	.174	.21	.11	1.6	5.5	7.9	7.0	7.2
April	26.91	27.37	26.44	34.1	48.1	50.2	52.7	32.1	42.4	75	21	30	38	36	87	68	61	.170	.230	.213	1.43	.70	11.0	6.4	6.9	6.5	6.9
May	26.87	27.17	26.49	39.6	54.8	57.3	59.9	37.9	48.9	78	30	36	41	41	86	62	58	.213	.255	.261	2.51	1.06	7.4	6.0	6.8	6.7	5.8
June	26.89	27.28	26.55	51.2	69.5	71.6	74.6	49.2	61.9	94	42	43	45	45	74	44	41	.278	.302	.300	1.37	.43	.0	4.3	5.3	5.1	5.0
July	26.94	27.17	26.68	52.7	77.0	80.4	82.3	51.0	66.6	96	43	43	41	37	69	29	23	.275	.289	.229	.21	.21	.0	2.2	3.0	2.3	2.4
August	26.95	27.16	26.71	51.7	72.9	76.8	78.9	50.2	64.6	91	39	44	46	43	76	41	34	.289	.307	.278	1.77	.70	.0	3.6	3.8	4.2	3.8
September	26.84	27.18	26.51	42.8	59.2	60.6	64.1	40.3	52.2	82	27	38	41	39	84	52	50	.234	.261	.245	1.04	.45	T	5.4	6.0	5.4	5.8
October	26.95	27.30	26.42	38.4	51.7	51.4	55.6	35.5	45.6	71	28	34	38	39	86	63	66	.200	.236	.242	2.70	.68	9.5	3.9	5.9	6.7	6.1
November	27.12	27.85	26.52	32.7	40.1	40.1	44.7	29.8	37.2	62	19	30	33	33	90	76	77	.169	.187	.190	1.31	.86	.6	6.6	7.6	6.9	7.1
December	26.79	27.19	26.36	29.7	33.4	32.2	37.3	25.3	31.3	55	6	27	27	28	88	78	82	.150	.151	.154	3.22	.84	14.5	7.7	8.8	8.1	8.5
Year	26.90	27.45	26.36	36.8	49.9	51.1	54.4	34.2	44.3	96	−31	32	35	34	84	62	60	.194	.217	.211	18.12	1.06	72.4	5.5	6.6	6.2	6.2

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

INDIANAPOLIS, IND.

[H_b=822 ft.; h_t=194 ft.; h_r=188 ft.; h_a=230 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	11.9	S.	35	SW.	1	1	3	1	8	22	11	8	8	0	7	11	13	9	7	5	1	0	7	3	3	0	16	1	0
February	12.4	W.	32	SW.	1	2	1	4	4	9	13	9	14	0	10	7	11	12	8	7	6	0	7	0	7	0	20	1	0
March	12.3	NW.	38	W.	2	9	5	7	8	9	3	9	12	0	3	9	19	15	12	11	6	0	9	1	3	0	19	2	0
April	11.8	S.	34	SW.	1	2	6	6	6	19	3	8	10	0	6	7	17	15	11	2	0	0	3	2	0	0	0	1	0
May	10.9	S.	34	W.	2	4	2	11	6	7	14	10	8	0	2	11	18	21	18	0	0	2	0	0	0	0	0	12	0
June	9.4	SW.	41	NE.	1	5	6	4	4	8	20	13	0	0	16	10	4	6	4	0	0	2	0	0	0	17	0	11	0
July	9.4	SW.	34	SW.	1	1	10	11	7	10	17	3	3	0	13	8	10	9	6	0	0	1	0	0	0	14	0	5	0
August	9.4	NE.	24	SW.	0	11	15	8	4	8	10	6	0	0	8	16	7	8	8	0	0	0	2	1	0	3	0	7	0
September	9.2	S.	30	NW.	0	1	7	4	6	19	11	7	5	0	13	4	13	12	12	0	0	0	5	2	0	6	0	10	0
October	10.4	S.	32	NW.	1	7	8	8	5	16	8	5	5	0	13	12	6	7	6	0	0	0	3	0	0	0	0	1	0
November	12.5	W.	32	NW.	1	5	4	0	3	14	7	18	9	0	6	7	17	10	5	10	3	0	3	0	3	0	15	2	0
December	11.5	S.	29	NW.	0	5	5	12	8	13	6	6	7	0	1	5	25	9	6	8	3	0	5	2	7	0	18	1	0
Year	10.9	S.	41	NE.	11	53	72	76	69	154	123	102	81	0	98	107	160	133	103	43	19	5	44	11	23	40	88	54	0

ITHACA, N.Y.

[H_b=836 ft.; h_t=77 ft.; h_r=49 ft.; h_a=100 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	12.3	SE.	32	W.	2	4	0	3	16	15	2	8	12	2	3	8	20	7	3	10	2	0	2	0	4	0	24	0	0
February	13.5	NW.	32	NW.	2	4	0	1	9	16	5	5	16	0	5	13	10	10	7	14	7	0	2	0	7	0	24	0	0
March	12.0	NW.	35	NW.	2	6	0	4	13	3	1	10	25	0	2	7	22	19	12	20	13	0	5	1	3	0	23	1	0
April	10.9	NW.	35	S.	1	4	1	5	19	6	1	7	17	0	8	3	19	14	12	5	2	0	7	1	0	0	7	0	0
May	8.8	NW.	27	S.	0	2	0	7	10	12	5	4	22	0	5	6	20	11	10	0	0	0	8	3	0	0	0	5	0
June	7.7	NW.	32	NW.	1	3	4	6	9	7	6	3	22	0	9	12	9	10	9	0	0	1	1	0	0	11	0	9	0
July	7.3	NW.	35	NW.	2	12	1	6	7	16	7	5	8	0	7	12	12	15	12	0	0	2	1	0	0	9	0	10	0
August	7.5	NW.	25	NE.	0	10	3	14	8	10	5	1	11	0	9	7	15	13	12	0	0	2	5	0	0	2	0	5	0
September	7.8	NW.	24	S.	0	3	7	9	11	12	3	3	12	0	3	9	18	12	7	0	0	0	5	1	0	0	0	2	0
October	9.8	NW.	30	NW.	0	4	2	6	14	15	3	3	15	0	6	8	17	11	8	1	0	0	6	0	0	0	6	0	0
November	10.9	NW.	31	S.	0	8	0	3	9	11	7	11	11	0	2	7	21	17	10	17	15	0	5	1	5	0	23	0	0
December	11.5	SE.	36	SE.	4	8	3	4	18	6	7	5	11	0	1	4	26	19	9	18	11	0	7	1	12	0	27	1	0
Year	10.0	NW.	36	SE.	14	68	21	68	143	129	52	65	182	2	60	96	209	158	111	85	50	5	54	8	31	22	134	33	0

JACKSONVILLE, FLA.

[H_b=43 ft.; h_t=209 ft.; h_r=198 ft.; h_a=245 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.7	NE.	38	W.	2	12	11	5	9	4	8	5	8	0	6	10	15	8	8	0	0	0	8	6	0	0	0	1	0
February	11.7	N.	35	NW.	2	10	8	8	3	6	9	5	7	0	5	9	14	9	7	0	0	0	10	6	0	0	1	1	0
March	12.3	W.	35	SW.	2	11	9	9	4	7	7	9	6	0	16	10	5	9	5	0	0	0	1	1	0	0	0	3	0
April	11.4	SW.	44	S.	5	5	9	9	7	4	9	8	9	0	8	9	13	12	12	0	0	2	1	0	0	0	0	9	0
May	10.6	S.	30	N.	0	2	6	10	12	11	16	5	0	0	11	17	3	8	5	0	0	0	0	0	0	7	0	10	0
June	10.1	SW.	34	NW.	1	4	7	5	9	11	16	5	3	0	9	13	8	12	10	0	0	1	0	0	0	12	0	12	0
July	10.4	S.	32	W.	1	3	6	11	11	15	13	2	1	0	3	15	13	19	15	0	0	0	0	0	0	10	0	16	0
August	8.8	SW.	37	SW.	1	11	4	8	7	7	14	7	4	0	5	19	7	9	8	0	0	0	0	0	0	16	0	16	0
September	11.1	E.	43	SE.	3	6	0	18	9	2	12	6	7	0	12	15	3	7	5	0	0	0	0	0	0	13	0	2	0
October	11.9	N.	35	E.	2	23	17	10	3	3	1	4	1	0	9	5	17	13	9	0	0	0	1	0	0	0	0	2	0
November	11.0	N.	39	S.	1	11	15	7	1	2	3	9	11	1	20	3	7	8	4	0	0	0	4	0	0	0	0	1	0
December	10.4	SW.	27	W.	0	5	8	7	7	6	13	9	7	0	15	9	7	5	4	0	0	0	10	9	0	0	0	1	0
Year	10.9	SW.	44	S.	20	103	100	107	82	78	121	74	64	1	119	134	112	119	92	0	0	3	35	22	0	58	1	74	0

KALISPELL, MONT.

[H_b=2,973 ft.; h_t=48 ft.; h_r=40 ft.; h_a=56 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.1	NW.	25	SW.	0	3	3	2	13	5	10	13	13	0	1	9	21	17	12	23	15	0	0	0	10	0	27	0	0
February	5.9	NW.	28	SW.	0	2	4	1	3	7	10	10	15	4	2	7	19	11	9	20	11	0	2	0	14	0	27	0	0
March	6.1	NW.	25	SW.	0	2	6	2	12	2	10	15	12	1	3	11	17	8	1	11	4	0	1	0	1	0	23	0	0
April	7.0	NW.	23	NW.	1	1	5	2	10	5	6	14	15	2	3	12	15	11	7	8	6	0	0	0	1	0	17	1	0
May	6.7	W.	32	W.	0	3	4	4	9	1	8	17	14	2	5	16	10	12	10	2	2	0	0	0	0	0	6	1	0
June	6.8	NW.	23	SW.	0	3	2	2	15	3	5	12	17	1	8	16	6	10	7	0	0	0	0	0	0	1	0	6	0
July	6.9	NW.	35	SW.	1	1	2	6	9	1	4	16	23	0	18	12	1	2	2	0	0	0	0	0	0	4	0	4	0
August	6.7	NW.	27	W.	0	2	2	8	9	4	4	12	19	2	17	7	7	9	5	0	0	1	0	0	0	6	0	8	0
September	6.5	NW.	25	NE.	0	0	3	1	7	7	9	13	19	1	9	6	15	9	5	2	0	0	1	0	0	0	3	2	0
October	5.3	NW.	23	SW.	0	3	4	0	11	0	6	9	22	7	10	6	15	12	10	6	2	0	4	2	0	0	8	0	0
November	5.6	NW.	30	SW.	0	8	4	1	1	4	7	14	16	5	5	6	19	6	4	5	2	0	6	2	2	0	20	0	0
December	6.8	NW.	29	SW.	0	7	1	1	12	7	14	6	14	0	0	7	24	21	17	16	13	0	2	0	7	0	23	0	0
Year	6.3	NW.	35	SW.	2	35	40	30	111	46	93	151	199	25	81	115	169	128	89	93	55	1	16	4	35	11	154	22	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

KANSAS CITY, MO.

[ϕ=39°05′ N.; λ=94°37′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.91	29.36	28.25	36.8	46.6	45.3	51.7	33.1	42.4	67	19	27	28	30	67	49	57	0.154	0.161	0.180	1.20	0.65	2.5	3.1	4.2	2.9	3.7
February	29.06	29.62	28.54	26.1	36.7	36.2	41.6	22.6	31.1	73	−13	14	16	17	61	45	49	.098	.105	.101	.93	.81	6.6	3.5	3.9	3.5	3.6
March	28.95	29.44	28.39	38.5	47.6	48.2	52.9	35.6	44.2	78	13	31	32	33	74	57	59	.193	.201	.206	4.25	1.31	2.6	5.6	6.0	5.3	5.5
April	28.83	29.20	28.26	48.2	59.0	59.2	64.7	45.5	55.1	84	31	38	38	40	68	50	52	.240	.258	.265	1.82	.64	2.0	6.1	6.3	5.1	5.4
May	28.83	29.12	28.35	59.8	69.5	70.1	73.9	57.0	65.4	90	43	52	52	54	76	57	59	.399	.405	.428	6.94	1.22	.0	5.6	6.2	5.6	5.6
June	29.94	29.35	28.71	74.4	87.4	89.1	92.2	71.4	81.8	102	54	58	56	57	57	36	35	.488	.471	.488	1.46	1.20	.0	3.9	3.8	1.9	2.6
July	28.96	29.21	28.70	74.4	85.6	86.5	89.8	72.0	80.9	103	62	62	63	61	68	48	45	.576	.585	.559	1.13	.93	.0	4.2	4.8	2.9	3.8
August	28.97	29.17	28.77	69.9	80.4	79.5	84.3	68.1	76.2	95	56	62	61	62	77	54	58	.565	.557	.576	4.00	2.07	.0	6.9	6.4	5.6	6.3
September	28.89	29.15	28.62	68.9	81.3	78.8	85.0	66.4	75.7	95	47	60	61	62	76	53	58	.542	.555	.564	2.69	1.78	.0	3.9	4.0	3.1	3.8
October	29.07	29.43	28.73	51.1	63.6	61.5	68.1	48.0	58.0	80	32	41	41	42	70	45	49	.274	.276	.281	.58	.29	.0	3.7	4.0	3.0	3.9
November	29.06	29.51	28.65	41.5	50.5	50.6	56.5	38.0	47.2	80	22	29	31	31	61	49	50	.170	.185	.184	.31	.22	T	4.4	5.1	3.6	4.5
December	29.04	29.58	28.47	33.6	41.0	41.5	48.5	29.5	39.0	67	6	25	27	26	69	58	56	.149	.164	.161	1.80	1.22	T	5.5	6.8	4.2	6.1
Year	28.96	29.62	28.25	51.9	62.4	62.2	67.4	48.9	58.2	103	−13	42	42	43	69	50	52	.321	.327	.333	27.11	2.07	13.7	4.7	5.1	3.9	4.6

KEOKUK, IOWA

[ϕ=40°22′ N.; λ=91°26′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.29	29.83	28.60	33.9	42.0	41.6	48.5	30.4	39.4	61	14	26	28	30	72	59	64	0.145	0.164	0.176	1.87	1.11	0.6	5.1	6.4	4.9	5.7
February	29.42	30.01	28.86	21.9	31.6	31.1	37.6	18.4	28.0	65	−16	14	15	18	72	50	59	.092	.100	.109	.65	.50	5.8	5.4	4.4	3.0	4.0
March	29.35	29.86	28.63	35.0	44.8	43.0	48.6	31.7	40.2	75	9	29	28	29	78	55	58	.175	.177	.173	2.31	1.17	3.1	6.4	7.0	6.3	6.8
April	29.22	29.62	28.74	45.9	56.0	55.8	61.8	42.2	52.0	80	32	38	37	38	73	52	56	.235	.237	.251	1.59	.53	T	6.3	5.8	5.3	6.3
May	29.21	29.48	28.76	58.9	67.5	67.6	72.1	55.3	63.7	87	38	53	53	50	80	62	68	.412	.418	.469	8.43	2.75	.0	6.7	8.3	6.1	7.2
June	29.31	29.70	29.10	73.5	86.5	86.0	90.7	69.2	80.0	99	55	60	59	61	64	42	45	.536	.531	.571	6.88	5.88	.0	2.4	3.5	3.2	3.0
July	29.34	29.66	29.05	72.9	83.8	83.1	88.1	68.8	78.4	96	62	62	62	63	69	49	53	.561	.571	.587	1.61	1.14	.0	4.4	4.4	3.1	3.9
August	29.36	29.57	29.10	67.3	78.8	77.7	83.3	64.7	74.0	91	56	59	58	60	74	52	57	.504	.499	.537	1.83	.84	.0	4.8	6.4	5.2	5.7
September	29.25	29.48	28.95	66.2	81.2	76.5	84.9	62.3	73.6	97	46	60	59	58	80	50	57	.529	.522	.507	2.25	1.14	.0	3.8	4.5	3.6	4.1
October	29.43	29.81	29.06	47.2	59.7	55.5	64.3	44.2	54.2	80	30	39	39	41	75	49	60	.253	.255	.276	1.07	.54	.0	5.0	4.1	2.9	4.4
November	29.40	29.94	28.97	36.3	46.7	44.2	52.6	31.1	41.8	80	10	27	26	27	68	46	53	.157	.159	.158	.33	.33	T	4.9	5.4	4.2	5.3
December	29.43	30.09	28.85	30.4	36.2	35.3	43.4	24.9	34.2	67	−4	23	25	26	74	63	67	.138	.149	.156	1.74	1.12	.4	7.7	7.7	4.9	7.5
Year	29.33	30.09	28.60	49.1	59.6	58.1	64.7	45.3	55.0	99	−16	41	41	42	73	52	58	.311	.315	.331	30.56	5.88	9.9	5.2	5.7	4.4	5.3

KEY WEST, FLA.

[ϕ=24°33′ N.; λ=81°48′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	30.05	30.24	29.77	69.5	75.4	70.6	77.2	66.7	72.0	82	55	64	65	64	83	70	80	0.610	0.631	0.612	0.28	0.11	0.0	4.1	3.2	2.5	3.9
February	30.08	30.28	29.75	72.1	78.3	73.2	79.9	69.0	74.4	84	60	67	67	66	83	68	78	.662	.664	.642	.75	.51	.0	4.3	3.7	2.1	3.5
March	30.03	30.18	29.70	72.3	76.6	72.3	78.8	68.9	73.8	86	59	63	63	62	72	63	70	.583	.588	.566	2.04	.95	.0	2.3	2.6	2.6	2.9
April	29.93	30.10	29.76	77.9	82.3	76.8	84.4	72.7	78.6	89	69	70	72	69	76	72	78	.732	.796	.719	.59	.51	.0	4.1	3.0	3.2	3.6
May	29.94	30.08	29.76	80.4	84.6	79.8	86.5	77.0	81.8	90	73	73	75	72	78	73	77	.801	.867	.783	1.47	.82	.0	6.2	4.8	4.6	5.2
June	29.94	30.08	29.75	80.8	83.7	80.1	85.9	75.8	80.8	89	69	73	72	72	78	71	77	.820	.805	.793	10.91	4.49	.0	4.9	4.7	5.4	5.0
July	29.97	30.06	29.87	83.4	86.8	82.8	89.0	78.9	84.0	94	75	75	76	74	76	70	76	.868	.888	.851	3.30	1.82	.0	6.6	5.9	6.1	6.8
August	29.92	30.05	29.69	83.2	86.7	82.5	88.7	78.6	83.6	92	72	75	76	75	76	70	77	.863	.886	.857	4.90	1.98	.0	6.3	4.7	5.5	5.8
September	29.88	30.05	29.59	82.7	86.0	81.6	87.7	77.9	82.8	90	71	74	75	74	76	70	78	.847	.867	.838	3.10	1.05	.0	4.8	3.8	4.1	4.8
October	29.85	30.06	29.07	79.0	82.2	78.4	83.9	73.9	78.9	88	69	73	74	72	82	77	81	.805	.846	.786	23.56	13.54	.0	5.2	4.3	3.4	4.8
November	30.03	30.34	29.68	70.9	75.6	71.4	76.8	67.7	72.2	83	59	64	66	64	80	72	78	.615	.646	.602	.75	.47	.0	5.3	2.7	2.5	3.5
December	30.11	30.25	29.87	70.0	75.5	70.9	77.1	67.6	72.4	82	61	65	66	65	84	74	81	.624	.656	.621	.37	.34	.0	2.4	2.2	1.7	2.2
Year	29.98	30.34	29.07	76.8	81.1	76.7	83.0	72.9	77.9	94	55	70	71	69	79	71	78	.736	.762	.722	52.02	13.54	.0	4.7	3.8	3.6	4.3

KNOXVILLE, TENN.

[ϕ=35°58′ N.; λ=83°55′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.03	29.49	28.36	41.9	50.4	49.7	54.6	38.9	46.8	68	25	38	37	38	84	63	66	0.329	0.239	0.246	2.82	1.17	T	5.5	6.9	4.7	6.9
February	29.06	29.60	28.56	35.2	42.9	42.7	50.1	31.5	40.8	70	3	30	28	29	80	60	61	.178	.173	.175	7.11	3.10	4.8	6.3	6.4	5.9	6.4
March	28.98	29.37	28.33	42.5	53.5	52.3	58.8	39.1	49.0	75	26	36	32	34	76	48	52	.227	.211	.218	2.30	1.06	T	4.5	5.4	5.5	5.5
April	28.88	29.25	28.55	52.7	65.6	63.2	70.5	48.1	59.3	83	38	42	40	40	69	41	46	.275	.259	.260	2.56	.93	.0	4.8	4.5	3.9	4.7
May	28.93	29.21	28.61	67.0	77.7	74.8	83.0	61.9	72.4	93	50	58	59	58	75	54	58	.499	.514	.501	4.45	.93	.0	4.9	3.6	3.4	4.0
June	28.98	29.26	28.76	71.9	83.7	81.3	88.7	65.8	77.2	100	51	61	58	60	69	44	52	.554	.511	.545	3.29	2.20	.0	2.0	2.7	4.0	3.2
July	28.98	29.21	28.75	73.9	85.6	81.1	89.6	69.1	79.4	97	61	65	63	63	74	49	58	.626	.591	.595	3.08	1.03	.0	4.5	5.3	5.2	5.3
August	28.97	29.23	28.70	70.7	82.0	77.6	85.8	67.7	76.8	93	62	65	65	65	84	58	68	.628	.621	.627	2.72	2.35	.0	5.7	5.1	4.9	5.5
September	28.95	29.11	28.73	68.5	83.7	77.0	87.4	65.0	76.2	92	52	64	63	64	85	50	60	.600	.584	.614	3.50	2.00	.0	3.2	3.4	3.2	3.6
October	29.06	29.33	28.62	52.3	68.4	63.6	72.9	49.9	61.4	87	38	46	46	48	79	46	58	.317	.326	.353	.99	.36	.0	3.5	3.6	2.6	3.3
November	29.07	29.46	28.65	42.2	54.3	51.4	59.2	39.5	49.4	78	23	34	35	34	73	49	53	.217	.223	.222	1.17	.53	.0	4.5	3.7	4.1	3.9
December	29.08	29.51	28.68	42.9	52.2	50.9	57.4	40.1	48.8	72	18	38	38	39	83	62	65	.251	.251	.257	3.33	.96	T	5.5	5.4	5.8	5.7
Year	29.00	29.60	28.33	55.1	66.7	63.8	71.5	51.4	61.5	100	3	48	47	48	78	52	59	.384	.375	.384	43.72	3.10	4.8	4.6	4.7	4.4	4.8

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

KANSAS CITY, MO.

[H_b=963 ft.; h_t=161 ft.; h_r=141 ft.; h_a=181 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	9.9	S.	31	NW.	0	2	2	5	16	10	13	9	5	0	14	14	3	7	6	4	2	1	5	1	2	0	13	2	0
February	10.5	NW.	32	W.	2	6	2	3	7	7	13	5	13	0	14	9	5	5	3	7	5	0	0	0	6	0	19	0	0
March	11.9	SE.	36	SW.	3	5	6	12	13	6	2	6	12	0	8	11	12	11	8	4	4	2	0	0	2	0	12	3	0
April	11.6	E.	30	SW.	0	9	5	12	7	5	8	7	7	0	10	10	10	7	7	3	1	0	0	0	0	0	1	3	0
May	9.9	SW.	38	SW.	3	11	0	7	5	15	11	4	9	0	11	8	12	12	12	0	0	2	2	0	0	1	0	10	0
June	7.8	S.	34	SW.	1	5	1	4	13	24	8	2	3	0	20	6	4	4	3	0	0	0	0	0	0	21	0	4	0
July	7.9	S.	31	NW.	0	12	8	7	12	17	2	0	4	0	15	12	4	3	2	0	0	0	1	0	0	14	0	1	0
August	7.6	E.	30	NW.	0	11	9	15	11	7	4	2	3	0	7	10	14	11	7	0	0	0	3	1	0	7	0	7	0
September	7.2	S.	24	NW.	0	2	4	4	7	21	11	1	8	2	15	10	5	6	5	0	0	0	4	0	0	9	0	4	1
October	9.1	S.	32	W.	1	7	6	7	9	14	7	5	7	0	16	11	4	5	3	0	0	0	2	2	0	0	1	1	0
November	11.9	SW.	41	W.	3	3	4	6	2	10	11	10	14	0	15	6	9	4	2	1	0	0	0	0	0	0	7	0	0
December	10.1	SW.	31	NW.	0	6	6	8	9	12	9	3	9	0	8	12	11	3	3	2	0	0	4	1	6	0	19	0	0
Year	9.6	S.	41	W.	13	79	53	90	111	148	99	54	94	2	153	119	93	78	61	21	12	5	21	5	16	52	72	35	1

KEOKUK, IOWA

[H_b=614 ft.; h_t=64 ft.; h_r=56 ft.; h_a=78 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.5	SW.	29	W.	0	3	1	3	11	7	18	9	9	1	10	10	11	9	7	3	1	0	4	2	0	0	18	1	0
February	9.4	SW.	27	SW.	0	8	3	1	5	5	10	10	12	2	14	8	6	2	2	4	2	0	0	0	9	0	23	0	0
March	8.9	N.	28	NW.	0	13	6	9	8	7	4	7	8	0	6	8	17	11	7	3	2	0	2	1	3	0	20	5	0
April	9.4	NW.	25	NW.	0	9	7	7	9	4	7	7	9	1	7	9	14	9	6	3	2	0	1	0	0	0	0	3	0
May	8.0	SW.	26	SW.	0	4	6	7	9	11	9	0	3	4	5	7	19	16	12	0	0	3	1	0	0	0	0	11	0
June	7.1	SW.	19	SW.	0	3	0	5	6	14	25	4	2	1	19	8	3	7	5	0	0	0	0	0	0	19	0	6	0
July	6.6	SW.	22	SW.	0	8	8	14	5	5	17	1	1	3	15	11	5	6	3	0	0	0	0	0	0	12	0	4	0
August	6.1	E.	20	NW.	0	11	10	14	5	5	8	3	2	4	9	10	12	8	7	0	0	0	0	0	0	1	0	6	0
September	7.1	SW.	21	SW.	0	2	2	10	6	8	17	6	5	4	14	8	8	8	7	0	0	0	2	0	0	12	0	7	0
October	7.6	SW.	26	NW.	0	8	5	2	9	8	13	2	9	6	16	6	9	9	7	0	0	0	0	0	0	0	1	1	0
November	9.6	NW.	36	NW.	1	5	3	3	4	3	14	5	21	2	11	9	10	1	1	6	0	0	1	0	0	0	14	0	0
December	8.4	SW.	24	W.	0	8	3	11	9	4	14	5	7	1	5	7	19	7	2	3	2	0	4	3	7	0	23	1	0
Year	8.1	SW.	36	NW.	1	82	54	86	86	81	156	68	88	29	131	101	133	93	66	22	9	3	15	6	19	44	99	45	0

KEY WEST, FLA.

[H_b=22 ft.; h_t=10 ft.; h_r= 3 ft.; h_a=64 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.6	E.	30	NW.	0	12	11	22	6	3	1	2	4	1	15	11	5	4	3	0	0	0	0	0	0	0	0	0	0
February	9.4	E.	30	W.	0	8	8	18	15	4	1	0	2	0	17	7	4	4	3	0	0	0	0	0	0	0	0	1	0
March	11.4	E.	30	W.	0	6	10	28	6	4	0	2	6	0	18	12	1	4	3	0	0	0	0	0	0	0	0	3	0
April	8.9	SE.	35	NW.	1	15	3	14	16	6	2	3	1	0	21	4	5	5	3	0	0	0	0	0	0	0	0	10	0
May	10.7	E.	22	SE.	0	3	2	32	18	5	9	1	1	0	10	13	8	13	10	0	0	0	0	0	0	0	0	5	0
June	9.2	E.	19	E.	0	4	13	24	12	4	0	1	2	0	11	11	8	13	11	0	0	0	0	0	0	0	0	11	0
July	9.5	SE.	24	SE.	0	4	4	21	18	6	3	3	3	0	3	13	15	12	9	0	0	0	0	0	0	9	0	10	0
August	9.4	E.	25	SE.	0	1	3	24	19	5	5	2	2	1	7	15	9	13	9	0	0	0	0	0	0	10	0	14	0
September	10.1	E.	42	E.	1	3	4	33	12	3	1	4	0	0	9	16	5	12	9	0	0	0	0	0	0	3	0	4	0
October	11.2	NE.	43	NW.	2	6	25	20	1	1	0	2	6	1	13	9	9	19	12	0	0	0	0	0	0	0	0	7	0
November	10.0	NE.	21	NW.	0	19	31	4	1	0	0	2	3	0	17	8	5	3	2	0	0	0	0	0	0	0	0	1	0
December	9.3	NE.	22	N.	0	9	31	17	2	0	1	1	1	0	24	7	0	3	1	0	0	0	0	0	0	0	0	0	0
Year	9.9	E.	43	NW.	4	90	145	257	126	41	14	23	31	3	165	126	74	105	75	0	0	0	0	0	0	22	0	66	0

KNOXVILLE, TENN.

[H_b=995 ft.; h_t=79 ft.; h_r= 72 ft.; h_a=97 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.7	SW.	26	W.	0	6	12	6	3	3	15	8	7	2	7	7	17	10	7	3	0	0	17	8	0	0	11	0	0
February	7.1	NE.	24	NW.	0	9	16	5	3	3	9	5	6	0	6	7	15	15	13	7	4	0	13	3	3	0	10	0	0
March	8.6	SW.	31	SW.	0	11	8	8	4	8	12	5	6	0	11	7	13	13	11	1	0	0	8	1	0	0	6	6	0
April	6.8	SW.	28	W.	0	4	13	9	4	10	9	7	2	2	11	10	9	11	10	0	0	1	6	1	0	0	0	5	0
May	6.8	S.	30	NW.	0	11	8	10	4	10	13	3	3	0	16	10	5	10	9	0	0	0	5	1	0	3	0	11	0
June	5.7	N.	21	NW.	0	12	5	9	6	5	10	8	5	0	20	6	4	5	4	0	0	1	1	0	0	16	0	8	0
July	5.7	SW.	27	SE.	0	7	14	12	2	10	10	5	1	1	8	14	9	14	9	0	0	1	9	1	0	14	0	13	0
August	5.2	NE.	22	SW.	0	10	16	7	2	7	10	5	5	0	9	14	8	12	11	0	0	0	19	4	0	4	0	10	0
September	4.9	NE.	21	NW.	0	4	14	7	3	4	10	7	3	8	16	10	4	6	6	0	0	0	16	3	0	8	0	5	0
October	5.3	NE.	22	NW.	0	12	13	4	2	5	4	7	4	6	17	12	2	2	1	0	0	0	7	1	0	0	0	1	0
November	7.2	SW.	27	W.	0	9	8	3	0	5	17	12	6	0	15	7	8	7	4	0	0	0	5	2	0	0	9	1	0
December	6.9	NE.	24	SW.	0	9	20	3	1	3	17	4	4	1	10	7	14	12	9	1	0	0	15	4	1	0	9	1	0
Year	6.4	SW.	31	SW.	0	104	152	83	34	73	136	76	52	20	146	111	108	117	94	12	4	3	121	29	4	45	45	61	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

LA CROSSE, WIS.

[ϕ=43°49′ N.; λ=91°15′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.09	29.47	28.32	24.5	32.3	30.8	37.8	19.5	28.6	52	−6	20	23	26	83	68	81	0.114	0.126	0.143	1.44	0.74	3.7	6.9	7.4	6.2	7.1
February	29.24	29.65	28.51	11.9	23.1	21.1	28.2	7.9	18.0	55	−25	9	12	13	87	64	71	.080	.086	.090	.62	.23	5.0	4.9	4.8	4.1	5.4
March	29.24	29.72	28.57	27.1	35.7	35.5	40.1	24.5	32.3	63	2	23	23	27	82	61	69	.128	.132	.150	3.05	1.21	18.7	6.3	7.1	6.5	6.9
April	29.12	29.68	28.62	39.8	51.5	50.6	55.4	37.0	46.2	80	26	31	32	35	73	51	59	.182	.191	.214	2.24	.76	.9	5.9	6.4	5.8	6.2
May	29.10	29.45	28.73	53.8	65.8	63.7	69.5	50.3	59.9	87	36	48	49	49	80	58	62	.347	.364	.365	4.43	1.02	.0	6.8	7.6	6.8	7.3
June	29.14	29.59	28.75	69.4	84.6	82.6	88.7	64.3	76.5	102	42	61	62	63	76	48	53	.555	.586	.610	2.11	2.57	.0	4.2	3.9	3.6	4.0
July	29.21	29.61	28.93	67.8	81.5	79.4	85.2	64.1	74.6	95	52	62	62	64	82	54	59	.560	.569	.595	5.43	1.06	.0	3.9	4.7	3.1	4.2
August	29.24	29.53	28.95	59.8	73.5	74.1	81.5	56.8	69.2	90	48	55	54	55	85	44	52	.441	.422	.443	1.34	.61	.0	3.4	3.4	3.7	3.5
September	29.11	29.44	28.77	58.8	73.2	69.3	77.3	55.0	66.2	96	36	54	55	55	87	56	63	.444	.456	.455	4.63	1.51	.0	5.0	5.3	5.0	5.1
October	29.25	29.69	28.83	41.3	54.7	50.4	58.5	37.5	48.0	79	23	37	36	39	84	52	66	.229	.230	.252	1.75	.99	.1	5.5	5.6	4.5	5.7
November	29.22	29.75	28.67	29.2	36.7	33.9	41.2	25.7	33.9	80	3	24	24	26	79	61	73	.135	.139	.148	.36	.10	.7	7.2	7.4	6.8	7.3
December	29.31	30.10	28.66	19.1	25.2	23.7	30.0	13.5	21.8	52	−22	16	18	18	88	72	78	.108	.115	.115	.59	.21	5.3	7.3	8.0	7.1	7.9
Year	29.19	30.10	28.32	41.9	53.6	51.3	57.9	38.0	47.9	102	−25	37	38	39	82	57	66	.277	.285	.298	27.99	2.57	34.4	5.6	6.0	5.3	5.9

LANDER, WYO.

[ϕ=42°50′ N.; λ=108°45′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	24.44	24.91	23.86	17.0	29.3	27.7	35.7	8.4	22.0	55	−13	11	18	17	78	62	65	0.072	0.099	0.094	0.42	0.22	5.3	1.3	3.1	3.9	2.6
February	24.54	24.85	24.21	7.9	23.5	23.4	30.9	1.4	16.2	50	−38	4	13	13	86	64	67	.058	.082	.085	.38	.16	4.9	1.9	3.3	3.5	2.9
March	24.57	24.93	24.17	27.1	43.7	43.9	48.5	24.0	36.2	63	14	21	24	22	77	48	45	.109	.125	.117	.84	.49	6.6	3.3	4.9	5.5	4.3
April	24.54	24.99	24.09	29.8	44.3	46.5	50.1	26.3	38.2	74	7	23	25	25	76	53	48	.125	.134	.135	4.07	1.24	40.3	4.6	4.2	5.3	4.6
May	24.54	24.86	24.19	39.6	56.8	57.5	61.9	37.6	49.8	85	25	31	30	31	72	40	41	.173	.167	.173	3.78	1.36	29.5	3.5	3.8	5.9	4.0
June	24.64	25.02	24.42	55.6	79.0	79.8	84.4	52.9	68.6	92	45	39	38	34	56	25	21	.246	.241	.204	.02	.02	.0	2.2	2.7	4.3	3.4
July	24.71	24.92	24.51	58.9	83.6	83.9	89.2	55.8	72.5	98	47	42	42	42	56	26	25	.277	.278	.279	.99	.91	.0	1.8	2.7	3.6	2.6
August	24.71	24.90	24.43	53.3	74.2	76.8	80.1	50.9	65.5	93	39	40	40	39	64	34	30	.255	.262	.245	1.67	1.14	.0	3.7	3.4	3.4	3.2
September	24.60	24.88	24.22	47.4	69.7	70.3	75.7	43.1	59.4	90	27	34	34	33	61	29	28	.201	.200	.197	.15	.06	.0	2.0	1.9	2.5	2.1
October	24.68	25.00	24.28	39.2	61.5	59.9	67.8	33.4	50.6	75	18	25	25	26	59	28	28	.132	.132	.142	.01	.01	.0	2.0	2.3	1.8	2.1
November	24.76	25.05	24.12	28.3	47.2	40.6	51.6	22.5	37.0	67	0	20	23	24	73	44	54	.107	.123	.129	.86	.48	13.2	1.5	3.8	3.4	3.5
December	24.57	24.84	24.14	27.0	42.9	38.7	47.6	20.3	34.0	65	6	18	22	26	70	42	48	.096	.118	.109	T	T	.0	1.4	5.2	3.5	4.8
Year	24.61	25.05	23.86	35.9	54.6	54.1	60.3	31.4	45.8	98	−38	26	28	27	69	41	42	.154	.163	1.59	13.19	1.39	99.8	2.4	3.4	3.9	3.3

LANSING, MICH.

[ϕ=42°44′ N.; λ=84°26′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	28.99	29.54	28.27	29.9	35.8	32.8	39.5	24.5	32.0	55	7	28	28	29	91	75	85	0.156	0.159	0.162	1.43	1.08	0.8	6.8	7.4	6.9	7.4
February	29.03	29.50	28.49	20.0	28.2	24.7	31.9	15.0	23.4	53	−14	18	20	21	93	72	85	.109	.117	.121	1.71	.65	8.7	6.2	6.0	5.0	5.7
March	29.04	29.59	28.35	28.5	35.5	32.8	38.0	25.5	31.8	61	6	26	28	30	91	75	88	.147	1.60	.171	2.25	.64	6.3	7.5	8.3	7.5	7.7
April	28.96	29.44	28.44	41.8	51.1	47.5	55.3	36.4	45.8	77	24	38	39	39	85	66	73	.232	.248	.247	3.35	.91	.2	7.0	7.1	6.1	6.7
May	28.99	29.27	28.61	55.3	64.8	60.0	67.5	48.7	58.1	81	32	51	52	52	87	65	78	.394	.400	.404	3.95	.98	.0	6.5	6.4	5.5	6.2
June	29.03	29.35	28.75	67.1	81.7	75.6	83.8	59.3	71.6	96	40	60	61	63	77	52	65	.531	.559	.593	2.56	1.86	.0	4.2	3.5	3.2	3.7
July	29.09	29.54	28.86	67.9	83.1	76.3	84.3	60.0	72.2	96	50	61	60	61	80	48	61	.548	.536	.552	1.43	.60	.0	2.8	3.6	3.4	3.5
August	29.09	29.34	28.74	61.6	78.6	71.5	79.8	55.2	67.5	88	45	57	57	57	86	48	61	.474	.470	.472	2.14	1.34	.0	3.3	4.6	2.9	4.7
September	28.99	29.24	28.64	59.6	74.0	67.9	75.8	55.4	65.6	94	43	56	55	58	89	55	72	.465	.452	.491	5.37	1.62	.0	5.3	5.3	5.1	5.3
October	29.13	29.50	28.66	42.3	55.2	47.7	56.7	38.1	47.4	76	22	40	42	43	92	63	88	.258	.286	.296	3.41	2.28	T	4.8	5.0	4.6	5.6
November	29.01	29.51	28.38	30.8	36.5	34.3	39.8	26.4	33.1	74	5	29	31	31	92	80	88	.165	.189	.188	2.56	.51	0.9	7.2	8.1	7.3	8.5
December	29.13	29.89	28.62	24.8	29.7	26.4	33.0	19.3	26.2	57	−7	24	26	25	95	85	94	.141	.155	.146	1.50	.32	10.4	8.6	8.6	6.3	8.7
Year	29.04	29.89	28.27	44.1	54.5	49.8	57.1	38.6	47.9	96	−14	41	42	42	88	65	78	.302	.311	.319	31.66	2.28	36.3	5.8	6.2	5.3	6.1

LINCOLN, NEBR.

[ϕ=40°49′ N.; λ=96°45′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	28.62	29.13	27.95	30.0	41.1	39.7	47.5	25.8	36.6	60	8	23	26	25	75	55	57	0.126	0.142	0.136	0.37	0.30	0.2	5.0	5.6	3.7	4.7
February	28.78	29.31	28.26	19.6	33.3	31.7	38.8	15.5	27.2	65	−18	12	15	14	71	48	50	.081	.091	.088	.29	.13	3.6	3.2	3.4	3.6	3.6
March	28.71	29.18	28.11	33.6	43.2	43.3	49.1	29.6	39.4	75	5	28	30	31	81	62	64	.167	.176	.182	3.40	1.29	6.8	6.4	5.1	5.7	5.7
April	28.60	28.98	27.95	42.9	57.0	57.6	61.8	40.7	51.2	80	28	34	35	34	72	47	44	.211	.222	.212	1.21	.66	T	5.7	6.1	5.2	5.6
May	28.59	28.85	28.16	54.8	66.8	67.6	71.0	51.4	61.2	93	39	48	48	49	80	56	56	.352	.351	.359	1.58	.46	.0	5.5	6.4	6.0	6.2
June	28.60	29.15	28.32	71.1	88.7	89.2	93.2	67.6	80.4	107	48	57	56	55	68	35	34	.484	.472	.450	2.53	1.74	.0	4.2	3.2	4.1	3.8
July	28.71	29.04	28.30	70.4	85.8	85.3	90.0	67.3	78.6	108	57	64	62	63	80	49	50	.597	.591	.590	5.63	1.76	.0	4.2	4.8	2.9	3.7
August	28.74	28.96	28.54	65.8	79.3	78.4	83.5	63.6	73.6	101	54	60	61	60	84	56	57	.533	.551	.536	4.32	2.94	.0	6.5	6.5	5.2	6.3
September	28.62	28.95	28.19	63.7	78.9	75.4	82.7	60.3	71.5	98	37	58	57	59	81	50	59	.493	.485	.513	4.81	2.45	.0	4.1	3.1	3.4	3.5
October	28.79	29.17	28.39	45.3	62.1	58.5	66.2	41.4	53.8	82	28	37	38	40	73	41	51	.232	.242	.263	.09	.09	.0	3.5	3.7	2.8	3.5
November	28.80	29.20	28.27	36.1	50.6	46.4	55.0	31.0	43.0	80	19	26	29	29	69	45	52	.152	.164	.161	.60	.27	T	4.1	4.0	3.2	4.1
December	28.78	29.40	28.14	28.0	37.8	35.2	43.2	22.5	32.8	70	−4	22	24	23	76	57	60	.130	.139	.137	1.67	1.06	.6	5.5	5.4	4.6	5.6
Year	28.70	29.40	27.95	46.8	60.4	59.0	65.2	43.1	54.1	108	−18	39	40	40	75	50	53	.296	.302	.302	26.50	2.94	13.1	4.8	4.7	4.2	4.7

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

LA CROSSE, WIS.

[H_b=714 ft.; h_t=11 ft.; h_r=3 ft.; h_a=48 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temperature 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																										
January	6.2	S.	18	S.	0	4	3	0	10	21	10	4	10	0	4	13	14	8	7	12	5	0	10	0	8	0	31	0	0
February	7.4	W.	22	SW.	0	2	0	0	7	10	5	19	12	1	9	9	10	8	4	13	8	0	2	0	14	0	27	1	0
March	6.7	NW.	24	NW.	0	12	5	5	6	7	4	5	14	4	7	5	19	8	7	10	6	0	6	1	4	0	25	1	0
April	6.6	NW.	17	W.	0	5	7	9	7	7	4	6	15	0	7	9	14	8	7	3	2	0	3	0	0	0	10	5	0
May	5.9	SE.	17	E.	0	8	7	9	9	9	11	4	4	1	4	10	17	16	11	0	0	1	7	1	0	0	0	8	0
June	4.9	S.	20	SW.	0	0	1	0	11	27	7	8	6	0	12	13	5	8	7	0	0	1	6	1	0	15	0	7	1
July	4.0	S.	14	SW.	0	0	2	6	12	28	6	0	7	1	15	9	7	9	9	0	0	0	5	1	0	6	0	9	0
August	4.1	S.	14	S.	0	5	4	2	8	18	8	1	14	2	19	7	5	4	4	0	0	0	12	0	0	1	0	4	0
September	5.0	S.	15	S.	0	2	6	2	9	16	8	6	11	0	12	8	10	14	12	0	0	0	17	4	0	3	0	8	1
October	6.2	S.	18	NW.	0	4	0	0	8	17	5	7	20	1	9	12	10	8	6	1	1	0	15	3	0	0	9	2	0
November	6.8	NW.	22	NW.	0	4	4	1	4	10	8	9	19	1	6	4	20	5	4	14	4	0	6	0	5	0	28	1	0
December	5.8	S.	16	NW.	0	9	5	3	4	15	3	8	12	3	4	3	24	11	5	11	5	0	9	2	11	0	28	0	0
Year	5.8	S.	24	NW.	0	55	44	37	95	185	79	77	144	14	108	102	155	110	83	64	31	2	98	13	42	25	158	46	2

LANDER, WYO.

[H_b=5,372 ft.; h_t=60 ft.; h_r=54 ft.; h_a=68 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.1	S.	49	SW.	4	5	1	1	7	8	24	10	4	2	21	10	0	4	4	5	4	0	0	0	11	0	31	0	0
February	5.4	SW.	35	SW.	1	2	6	7	8	4	8	10	8	3	19	7	2	6	3	6	6	0	1	0	11	0	28	0	0
March	6.1	SW.	34	W.	1	1	5	2	6	9	13	13	7	6	12	14	5	7	4	9	6	0	0	0	0	0	30	0	0
April	6.1	SW.	46	SW.	1	2	3	6	4	8	16	12	4	5	14	7	9	11	10	10	8	1	2	1	3	0	21	1	0
May	6.4	SW.	33	SW.	1	4	3	6	4	3	13	14	11	4	14	12	5	8	6	5	4	1	0	0	0	0	7	1	0
June	6.4	SW.	26	SW.	0	5	4	1	2	6	22	14	5	1	17	12	1	1	0	0	0	0	0	0	0	7	0	2	0
July	5.5	SW.	35	SW.	2	3	5	3	7	7	15	11	6	5	20	10	1	4	2	0	0	0	0	1	0	19	0	4	0
August	5.3	SW.	26	SW.	0	3	6	8	7	3	18	10	6	1	19	8	4	6	6	0	0	0	1	0	0	3	0	5	0
September	6.6	SW.	47	SW.	3	2	4	6	5	2	22	11	7	1	21	8	1	4	2	0	0	0	0	0	0	0	2	4	0
October	5.7	SW.	46	SW.	1	4	13	4	7	4	21	4	2	3	22	8	1	1	0	0	0	0	0	0	0	0	11	0	0
November	4.8	S.	28	N.	0	2	1	4	3	13	18	8	9	2	18	7	5	3	3	5	3	0	0	0	2	0	30	0	0
December	6.5	SW.	41	SW.	2	2	3	3	7	7	19	14	4	3	11	15	5	0	0	0	0	0	0	0	3	0	28	0	0
Year	5.9	SW.	49	SW.	16	35	54	51	67	74	209	131	73	36	208	118	39	55	40	40	31	2	4	2	30	29	188	17	0

LANSING, MICH.

[H_b=878 ft.; h_t=6 ft.; h_r=3 ft.; h_a=88 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.4	SW.	34	SW.	2	3	3	3	7	16	17	7	6	0	3	10	18	10	6	9	5	0	2	0	4	0	27	0	0
February	12.4	SW.	32	NW.	1	6	1	2	2	10	16	9	10	0	8	10	10	10	8	14	6	0	1	0	13	0	27	0	0
March	10.8	NW.	32	W.	1	9	5	2	7	6	8	10	15	0	4	4	23	12	8	12	5	0	4	2	7	0	28	1	0
April	10.7	N.	29	W.	0	11	7	7	0	10	11	5	9	0	6	6	18	13	11	2	1	2	2	0	0	0	9	4	0
May	9.3	S.	25	SW.	0	10	5	10	6	14	7	9	1	0	6	13	12	17	13	0	0	1	1	0	0	0	0	6	0
June	7.9	S.	29	SW.	0	8	2	2	5	13	15	11	4	0	18	9	3	9	9	0	0	0	0	0	0	10	0	9	0
July	7.1	SW.	27	W.	0	7	6	8	2	10	14	12	2	1	13	16	2	6	4	0	0	0	0	0	0	8	0	4	0
August	7.3	N.	19	W.	0	9	12	7	3	3	11	9	7	1	11	18	2	7	5	0	0	0	1	0	0	0	0	3	0
September	8.7	W.	29	W.	0	3	4	9	8	14	7	13	2	0	9	10	11	12	10	0	0	1	3	1	0	2	0	5	0
October	9.1	S.	32	SW.	1	3	1	3	3	22	13	11	6	0	11	9	11	10	7	2	0	1	5	1	0	0	6	2	0
November	10.9	W.	27	NW.	0	5	3	3	2	11	12	17	7	0	4	1	25	15	14	12	9	0	1	1	5	0	22	2	0
December	9.6	SW.	28	NW.	0	5	6	9	5	8	12	8	9	0	2	4	25	16	9	13	5	0	12	3	12	0	27	0	0
Year	9.6	SW.	34	SW.	5	79	55	65	50	137	143	121	78	2	95	110	160	137	104	64	31	5	32	8	41	20	146	30	0

LINCOLN, NEBR.

[H_b=1,189 ft.; h_t=11 ft.; h_r=4 ft.; h_a=81 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.0	S.	30	NW.	0	4	1	4	7	24	5	7	9	1	13	9	9	5	1	4	2	0	3	2	1	0	27	1	0
February	11.2	S.	37	W.	2	14	2	1	6	11	5	9	7	1	17	5	6	6	4	6	6	0	0	0	9	0	24	0	0
March	11.5	N.	30	NW.	0	18	4	6	9	9	3	1	11	1	11	8	12	8	7	9	6	0	4	1	3	0	19	2	0
April	11.2	N.	30	N.	0	12	5	14	2	6	2	7	11	1	11	9	10	3	2	2	0	1	6	0	0	0	6	1	0
May	10.2	S.	35	SW.	1	10	7	9	5	11	5	8	7	0	9	8	14	8	7	0	0	0	2	0	0	2	0	4	0
June	9.9	S.	38	W.	2	4	7	8	6	30	2	1	1	1	15	11	4	5	4	0	0	1	0	0	0	22	0	5	0
July	8.6	S.	37	E.	1	5	9	14	6	20	2	1	3	2	14	11	6	10	8	0	0	0	0	0	0	16	0	8	0
August	8.1	E.	28	NW.	0	13	11	7	13	9	2	5	2	0	7	9	15	8	7	0	0	0	4	1	0	7	0	5	0
September	10.3	S.	38	W.	1	11	4	4	8	27	0	5	1	0	16	8	6	7	6	0	0	1	3	0	0	12	0	5	0
October	9.6	S.	30	S.	0	13	5	2	7	20	0	12	3	0	14	15	2	1	1	0	0	0	2	0	0	0	3	1	0
November	11.0	NW.	46	NW.	3	11	3	5	2	12	4	9	13	1	14	11	5	5	4	3	2	0	6	1	0	0	16	1	0
December	9.4	S.	30	NW.	0	14	4	7	5	14	4	10	3	1	8	13	10	4	2	4	2	1	9	1	7	0	24	1	0
Year	10.1	S.	46	NW.	10	129	62	81	76	193	34	75	71	9	149	117	99	70	53	28	18	4	39	6	20	59	119	34	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

LITTLE ROCK, ARK.

[ϕ=34°45′ N.; λ=92°16′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.68	30.25	29.18	44.3	53.8	54.3	58.4	41.9	50.2	72	22	37	36	37	75	54	55	0.239	0.242	0.252	3.30	1.22	T	6.0	6.5	6.1	6.7
February	29.76	30.35	29.14	36.8	44.7	46.2	50.7	33.3	42.0	76	4	30	28	30	76	56	57	.188	.183	.191	2.66	.62	2.7	6.4	6.0	6.1	6.4
March	29.65	30.10	29.14	46.0	56.2	56.9	62.2	43.2	52.7	84	27	38	38	38	74	55	54	.253	.263	.257	5.30	2.09	T	6.5	5.9	5.4	6.5
April	29.50	29.91	29.22	54.1	66.6	66.1	71.0	51.8	61.4	89	38	48	46	47	80	51	54	.352	.339	.350	5.10	3.42	.0	5.0	5.2	5.9	6.0
May	29.53	29.76	29.18	66.0	77.5	77.3	81.3	63.2	72.2	90	52	61	60	60	84	57	57	.545	.532	.527	5.93	2.64	.0	5.6	6.7	4.5	5.8
June	29.63	29.96	29.40	71.5	86.7	85.5	90.1	68.6	79.4	100	55	62	59	61	73	41	46	.573	.528	.556	.99	.88	.0	2.2	2.2	3.8	2.9
July	29.59	29.77	29.39	74.8	85.6	84.4	88.8	73.1	81.0	101	67	68	67	68	81	57	61	.697	.673	.693	3.97	1.51	.0	6.4	6.5	6.3	6.3
August	29.60	29.79	29.42	73.0	84.1	82.3	87.6	70.9	79.2	95	65	68	67	69	86	59	66	.697	.678	.711	6.54	2.71	.0	5.5	6.4	4.5	5.5
September	29.57	29.75	29.36	71.5	85.4	81.3	88.2	70.3	79.2	95	59	68	67	69	88	56	69	.689	.685	.729	6.00	3.50	.0	3.2	5.0	4.7	4.1
October	29.70	29.96	29.42	55.3	68.6	66.7	73.3	53.4	63.4	82	42	49	50	51	81	53	58	.370	.379	.386	1.61	.90	.0	4.5	4.9	2.5	3.9
November	29.76	30.19	29.38	46.4	59.1	57.4	63.3	44.0	53.6	77	32	38	38	41	73	49	56	.246	.259	.277	1.68	.90	.0	4.7	5.1	3.2	4.7
December	29.72	30.22	29.35	43.9	51.8	52.1	57.5	40.2	48.8	75	18	38	40	41	79	67	67	.261	.282	.288	3.52	1.47	.0	5.8	7.3	5.3	6.8
Year	29.64	30.35	29.14	57.0	68.3	67.5	72.7	54.5	63.6	101	4	50	50	51	79	55	58	.426	.420	.435	46.60	3.50	2.7	5.2	5.6	4.9	5.5

LOS ANGELES, CALIF.

[ϕ=34°03′ N.; λ=188°15′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.68	29.91	29.25	49.4	59.7	57.2	62.7	46.0	54.4	81	40	33	34	38	60	48	54	0.196	0.207	0.231	8.46	2.72	0.0	2.4	3.8	3.5	3.6
February	29.75	30.03	29.49	49.1	62.1	60.2	65.6	46.5	56.0	75	42	32	30	35	56	33	44	.192	.175	.219	.00	.00	.0	1.6	.8	1.4	1.2
March	29.69	29.89	29.49	52.0	65.9	63.7	69.5	49.9	59.7	82	43	40	40	42	69	43	50	.260	.256	.280	.19	.15	.0	3.2	3.3	2.7	3.3
April	29.62	29.85	29.41	53.0	65.0	61.9	67.2	51.0	59.1	82	42	44	43	45	76	49	57	.301	.288	.307	.56	.42	.0	5.8	4.1	3.7	4.4
May	29.64	29.86	29.45	53.7	65.9	64.1	68.6	52.2	60.4	85	45	46	46	46	78	52	54	.321	.322	.316	.21	.15	.0	4.5	3.1	1.8	3.5
June	29.59	29.75	29.44	57.1	71.6	68.9	74.3	55.7	65.0	85	52	54	54	54	87	54	60	.408	.420	.416	.47	.47	.0	6.8	1.8	1.5	3.4
July	29.54	29.71	29.38	61.8	76.3	72.8	78.5	60.3	69.4	93	55	58	58	58	87	54	61	.480	.488	.489	T	T	.0	7.2	.8	.8	3.0
August	29.52	29.72	29.27	62.1	76.3	72.8	79.4	60.9	70.2	96	56	59	59	59	89	56	62	.498	.504	.494	.01	.01	.0	7.1	.5	.5	2.9
September	29.51	29.66	29.35	57.6	69.5	66.8	72.8	56.3	64.6	81	51	54	54	55	88	60	66	.416	.422	.433	.00	.00	.0	6.4	2.1	1.3	3.8
October	29.60	29.77	29.34	60.1	72.7	67.1	75.8	57.6	66.7	100	51	52	52	53	81	55	66	.400	.406	.417	.34	.34	.0	5.9	3.1	2.5	3.8
November	29.71	29.97	29.16	58.4	75.2	68.5	78.1	54.9	66.5	96	41	33	32	37	46	27	38	.198	.196	.237	.04	.04	.0	2.0	1.5	1.4	1.7
December	29.76	30.09	29.57	51.2	62.9	58.8	65.9	48.9	57.4	85	40	37	38	44	66	48	64	.238	.242	.302	8.48	7.36	.0	4.5	4.7	4.7	4.6
Year	29.63	30.09	29.16	55.5	68.6	65.2	71.5	53.4	62.4	100	40	45	45	47	74	48	56	.326	.327	.345	18.76	7.36	.0	4.8	2.5	2.2	3.3

LOUISVILLE, KY.

[ϕ=38°15′ N.; λ=85°45′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.48	30.01	28.75	39.8	46.3	46.4	51.2	35.0	43.1	69	20	35	38	36	83	75	70	0.219	0.251	0.231	4.63	1.81	T	6.5	6.4	5.1	6.5
February	29.55	30.15	28.73	32.0	40.1	40.1	45.8	27.9	36.8	69	−1	26	28	25	78	63	56	.157	.174	.148	3.00	1.11	3.8	5.8	4.9	4.0	5.2
March	29.46	29.93	28.83	39.7	47.3	48.1	52.8	35.7	44.2	75	16	34	36	35	77	66	62	.216	.235	.226	6.11	1.96	T	5.7	6.4	6.3	6.7
April	29.34	29.71	28.95	49.0	59.1	59.1	64.2	45.6	54.9	83	36	41	41	42	75	55	56	.264	.266	.277	5.81	1.37	.0	6.0	6.2	4.4	6.2
May	29.37	29.65	28.97	63.7	71.5	71.0	76.8	59.6	68.2	88	47	58	60	60	81	70	70	.486	.543	.531	5.98	1.99	.0	7.4	6.8	6.5	7.0
June	29.44	29.77	29.25	72.9	85.2	83.9	89.2	68.8	79.0	98	48	60	60	61	65	44	47	.541	.543	.558	.67	.43	.0	2.8	3.1	3.9	3.6
July	29.45	29.73	29.22	72.1	83.3	82.6	88.8	69.0	77.9	98	60	63	61	61	75	51	53	.592	.558	.566	3.98	1.74	.0	5.3	6.5	3.5	5.6
August	29.44	29.66	29.23	68.8	80.7	78.4	84.6	66.3	75.4	93	59	62	61	62	79	54	59	.563	.556	.559	2.17	.74	.0	5.0	5.4	4.4	5.3
September	29.40	29.57	29.13	68.2	80.2	77.7	84.7	66.5	75.6	94	56	62	61	63	82	55	64	.576	.557	.597	4.66	1.26	.0	4.4	4.6	3.9	4.9
October	29.54	29.85	29.06	50.2	62.4	61.3	67.5	47.8	57.6	82	36	44	44	44	78	53	53	.299	.300	.294	1.82	.91	.0	5.0	4.8	2.4	4.7
November	29.51	29.98	29.03	40.0	49.0	47.4	54.0	36.1	45.0	79	18	32	32	32	72	53	56	.190	.199	.198	1.30	1.03	T	6.4	5.8	4.8	6.2
December	29.56	30.15	29.13	38.5	44.8	43.9	49.8	33.6	41.7	68	0	32	34	33	76	66	66	.202	.220	.216	3.69	1.53	4.3	6.9	8.0	5.7	7.5
Year	29.46	30.15	28.73	52.9	62.5	61.7	67.3	49.3	58.3	98	−1	46	46	46	77	59	59	.359	.367	.367	43.82	1.99	8.1	5.6	5.7	4.6	5.8

MACON, GA.

[ϕ=32°50′ N.; λ=83°38′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.73	30.14	29.15	46.5	58.4	56.0	62.9	43.9	53.4	76	26	43	42	43	86	57	63	0.295	0.296	0.301	3.02	1.29	0.0	7.2	6.3	4.5	6.5
February	29.75	30.26	29.29	44.7	54.0	51.9	58.8	39.7	49.2	76	13	39	38	39	81	59	65	.259	.263	.268	6.50	2.08	.0	6.8	7.8	5.5	7.4
March	29.68	30.04	29.06	48.3	62.8	60.5	68.4	45.3	56.8	81	31	40	38	39	72	41	48	.272	.257	.266	3.17	1.51	.0	4.6	3.8	3.6	4.5
April	29.56	29.92	29.23	56.1	68.8	66.4	73.6	52.4	63.0	82	44	49	47	50	78	48	59	.360	.334	.375	2.42	.82	.0	5.3	5.6	5.4	5.5
May	29.59	29.87	29.29	71.8	82.9	80.0	87.9	65.9	76.9	96	54	64	60	61	78	47	55	.611	.526	.554	1.98	1.02	.0	4.7	5.0	4.5	4.4
June	29.60	29.87	29.38	74.1	85.5	83.5	90.6	67.8	79.2	100	53	63	60	62	70	44	50	.602	.541	.567	1.62	.86	.0	3.9	4.3	5.3	4.5
July	29.64	29.86	29.35	74.0	83.7	80.5	88.0	69.7	78.8	97	60	69	66	68	85	58	68	.718	.663	.695	4.85	2.12	.0	6.8	6.4	6.5	6.6
August	29.60	29.83	29.32	75.0	85.7	80.6	89.5	70.7	80.1	96	64	69	67	68	82	54	68	.712	.657	.701	3.70	1.81	.0	4.1	6.5	6.0	5.8
September	29.57	29.75	29.28	70.4	83.4	80.7	89.2	67.7	78.4	96	51	66	65	67	87	53	65	.662	.631	.679	2.79	1.37	.0	4.3	4.0	3.1	4.0
October	29.68	29.95	29.29	58.3	73.3	68.7	77.3	55.6	66.4	89	44	52	52	54	81	50	61	.409	.417	.434	1.68	1.21	.0	4.9	3.7	3.0	4.5
November	29.73	30.18	29.38	43.8	61.6	57.1	65.9	41.2	53.6	79	25	37	35	38	78	41	51	.247	.243	.260	1.66	.69	.0	3.2	3.5	2.1	3.0
December	29.77	30.18	29.21	47.4	61.8	58.2	66.5	44.5	55.5	78	29	43	45	45	85	58	63	.294	.331	.324	2.10	1.19	.0	5.2	4.8	3.4	5.5
Year	29.66	30.26	29.06	59.2	72.0	68.7	76.6	55.4	65.9	100	13	53	51	53	80	51	60	.453	.430	.452	34.89	2.12	.0	5.1	5.1	4.4	5.2

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

LITTLE ROCK, ARK.

[H_b=357 ft.; h_t=94 ft.; h_r=87 ft.; h_a=102 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	8.5	S.	29	W.	0	2	7	3	10	17	10	6	6	1	8	5	18	12	9	1	0	0	6	0	0	0	4	4	0
February	8.6	E.	24	NW.	0	6	8	9	6	11	4	5	7	0	8	5	15	11	9	4	3	0	7	2	4	0	9	0	0
March	9.5	E.	29	SW.	0	2	4	18	11	7	5	13	2	0	8	8	15	12	8	2	0	2	3	0	0	0	3	3	0
April	9.1	S.	34	SE.	1	8	3	5	7	15	7	7	7	1	10	8	12	14	10	0	0	0	6	0	0	0	0	9	0
May	8.5	S	27	SE.	0	8	5	10	5	16	6	8	3	1	9	11	11	15	11	0	0	0	4	0	0	0	0	11	0
June	7.0	SW.	21	S.	0	3	8	8	3	6	19	8	4	1	19	8	3	4	2	0	0	0	0	0	0	17	0	6	0
July	7.3	E.	20	NE.	0	3	4	20	8	16	6	4	1	0	10	5	16	12	10	0	0	0	4	0	0	17	0	4	0
August	5.9	E.	23	SW.	0	3	8	17	8	12	6	1	6	1	11	8	12	8	7	0	0	1	5	1	0	10	0	5	0
September	6.5	S.	22	NW.	0	5	3	10	4	16	13	4	5	0	16	7	7	11	7	0	0	0	3	2	0	7	0	7	0
October	7.3	E.	21	S.	0	6	12	13	4	9	4	4	9	1	15	12	4	7	6	0	0	0	6	1	0	0	0	6	0
November	8.2	SW.	22	SW.	0	6	8	6	4	8	12	9	7	0	13	9	8	3	3	0	0	0	3	0	0	0	0	3	0
December	9.0	SW.	25	SW.	0	5	13	9	2	9	15	6	2	1	7	7	17	8	7	0	0	0	12	4	1	0	6	2	0
Year	8.0	S.	34	SE.	1	57	83	128	72	142	107	75	59	7	134	93	138	117	89	7	3	3	59	10	5	51	22	60	0

LOS ANGELES, CALIF.

[H_b=338 ft.; h_t=159 ft.; h_r=151 ft.; h_a=191 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.4	NE.	25	SE.	0	7	16	7	6	3	13	7	3	0	18	5	8	12	10	0	0	1	1	1	0	0	0	1	0
February	6.3	NE.	22	NE.	0	6	15	2	4	2	19	4	4	0	24	4	0	0	0	0	0	0	3	2	0	0	0	0	0
March	5.8	SW.	20	SW.	0	5	16	4	3	1	19	8	6	0	18	12	1	2	2	0	0	0	7	1	0	0	0	0	0
April	6.2	SW.	16	SW.	0	4	7	7	8	3	22	8	1	0	15	5	10	4	2	0	0	0	2	0	0	0	0	1	0
May	6.6	SW.	21	NW.	0	4	10	7	6	3	23	6	3	0	16	12	3	2	2	0	0	0	3	0	0	0	0	1	0
June	5.5	SW.	14	W.	0	0	6	9	12	3	29	1	0	0	16	11	3	2	2	0	0	0	14	3	0	0	0	0	0
July	5.5	SW.	13	W.	0	1	2	5	11	6	31	2	4	0	20	10	1	0	0	0	0	0	12	1	0	1	0	0	0
August	5.6	SW.	16	W.	0	0	1	5	12	7	31	1	5	0	16	15	0	1	0	0	0	0	4	0	0	2	0	1	0
September	5.1	SW.	13	SW.	0	1	1	5	13	3	32	2	3	0	11	17	2	0	0	0	0	0	13	4	0	0	0	0	0
October	5.0	SW.	17	NW.	0	1	6	6	9	2	26	5	7	0	18	6	7	2	2	0	0	0	21	5	0	5	0	0	0
November	5.8	NE.	21	NW.	0	7	12	5	2	1	17	10	6	0	24	5	1	1	1	0	0	0	7	2	0	6	0	0	0
December	6.0	NE.	22	SE.	0	6	12	7	3	2	15	8	9	0	15	8	8	7	6	0	0	0	10	3	0	0	0	0	0
Year	5.8	SW.	25	SE.	0	42	104	69	89	36	277	62	51	0	211	110	44	33	27	0	0	1	97	22	0	14	0	4	0

LOUISVILLE, KY.

[H_b=525 ft.; h_t=188 ft.; h_r=183 ft.; h_a=234 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.2	S.	36	S.	3	10	0	6	11	22	7	3	3	0	7	10	14	10	8	2	0	0	6	3	0	0	16	1	0
February	11.7	S.	36	S.	3	6	3	2	6	17	7	10	5	0	12	6	10	11	10	8	3	0	1	1	5	0	15	0	0
March	12.0	NW.	40	NW.	4	6	4	10	4	12	4	8	14	0	7	7	17	12	12	6	0	1	1	1	1	0	9	5	0
April	11.3	S.	35	NW.	4	10	9	1	9	12	11	3	4	1	8	7	15	14	13	0	0	0	2	0	0	0	0	3	0
May	10.2	S.	58	NW.	7	6	8	8	3	17	8	5	7	0	5	10	16	17	15	0	0	1	0	0	0	0	0	13	0
June	9.0	S.	34	SE.	2	16	3	3	5	28	4	0	0	1	15	13	2	3	3	0	0	0	0	0	0	18	0	7	0
July	8.6	S.	32	N.	1	10	10	7	10	16	5	0	1	3	9	8	14	10	8	0	0	0	0	0	0	9	0	6	0
August	8.6	N.	32	E.	1	22	7	2	3	11	10	3	3	1	11	10	10	9	8	0	0	0	3	1	0	4	0	6	0
September	8.0	S.	35	N.	1	12	2	2	8	23	7	1	4	1	13	6	11	10	8	0	0	0	10	6	0	7	0	8	0
October	9.8	N.	36	N.	1	16	9	6	9	13	3	3	2	1	13	10	8	6	6	0	0	0	2	0	0	0	0	2	0
November	11.9	S.	41	NW.	3	5	6	1	4	17	11	8	8	0	9	6	15	7	6	4	0	0	0	0	1	0	11	2	0
December	11.3	S.	34	SW.	2	16	7	5	4	20	4	3	3	0	4	7	20	13	9	2	2	0	3	2	5	0	14	0	0
Year	10.3	S.	58	NW.	32	135	68	53	76	208	81	47	54	8	113	100	152	122	106	22	5	2	28	14	12	38	65	53	0

MACON, GA.

[H_b=370 ft.; h_t=76 ft.; h_r=58 ft.; h_a=84 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.6	NW.	25	NW.	0	9	7	0	4	7	12	7	16	0	8	7	16	10	9	0	0	0	13	7	0	0	5	0	0
February	7.1	NW.	25	S.	0	8	8	3	4	4	5	3	21	0	5	4	19	13	11	0	0	0	10	5	0	0	7	1	0
March	8.6	NW.	30	S.	0	6	2	3	5	7	10	10	18	1	14	6	11	10	6	0	0	0	2	0	0	0	3	2	0
April	7.6	SW.	25	NW.	0	5	6	6	7	8	11	10	7	0	10	9	11	13	12	0	0	0	2	1	0	0	0	4	0
May	6.4	SW.	21	N.	0	6	5	4	4	12	13	6	11	1	13	10	8	7	4	0	0	0	0	0	0	12	0	10	0
June	6.0	S.	21	N.	0	3	9	4	2	13	8	11	9	1	14	9	7	9	8	0	0	0	0	0	0	21	0	11	0
July	6.1	S.	25	SE.	0	5	6	13	5	13	10	6	3	1	4	13	14	14	12	0	0	0	2	1	0	12	0	11	0
August	6.1	SW.	30	NW.	0	8	10	5	3	5	13	6	11	1	2	22	7	13	9	0	0	0	1	0	0	18	0	8	0
September	5.8	NW.	28	SE.	0	5	11	4	3	7	5	4	20	1	13	13	4	8	6	0	0	0	7	1	0	14	0	4	0
October	6.9	NE.	21	NE.	0	18	15	7	0	2	1	2	16	1	13	9	9	5	2	0	0	0	3	0	0	0	0	1	0
November	6.8	NW.	22	NW.	0	6	5	2	2	8	6	5	24	2	19	2	9	3	3	0	0	0	2	0	0	5	0	0	0
December	6.3	S.	21	NW.	0	6	8	5	3	14	6	6	8	6	10	10	11	8	6	0	0	0	8	6	0	0	2	0	0
Year	6.7	NW.	30	NW.	0	85	92	56	42	100	100	76	164	15	125	114	126	113	88	0	0	0	50	21	0	77	22	52	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

MADISON WIS.

[ϕ=43°05′ N.; λ=89°23′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.83	29.32	28.12	26.8	32.7	32.3	39.0	22.6	30.8	52	4	23	24	26	84	70	76	0.124	0.133	0.143	0.72	0.26	2.0	6.4	6.9	5.2	7.2
February	28.94	29.37	28.29	14.5	21.4	22.2	27.7	10.1	18.9	54	−23	11	13	15	85	71	73	.083	.089	.092	.86	.43	6.0	4.0	6.2	3.6	5.0
March	28.95	29.45	28.26	27.3	33.0	32.8	37.6	24.5	31.0	64	0	23	25	24	84	71	71	.131	.140	.138	2.68	.93	9.1	6.8	7.0	6.3	7.2
April	28.84	29.37	28.37	39.0	47.0	47.2	51.8	36.4	44.1	77	29	32	33	34	78	62	65	.188	.202	.210	3.75	1.24	5.1	6.0	7.8	6.7	6.9
May	28.85	29.17	28.50	53.3	61.6	61.0	65.6	50.2	57.9	84	33	47	48	50	81	63	69	.340	.343	.371	9.35	3.10	.0	7.1	7.0	7.3	7.1
June	28.91	29.31	28.60	70.2	81.1	81.3	86.1	65.9	76.0	97	45	59	60	60	68	50	50	.517	.536	.543	1.64	1.44	.0	4.4	4.6	4.2	4.3
July	28.98	29.36	28.62	69.2	78.9	78.0	82.7	64.5	73.6	94	58	60	59	60	72	53	56	.515	.514	.531	3.33	1.97	.0	3.8	4.1	4.2	4.2
August	28.99	29.24	28.68	63.1	75.0	73.7	78.9	60.3	69.6	86	52	56	54	54	80	49	52	.462	.421	.427	2.57	1.79	.0	3.9	4.0	3.4	3.6
September	28.87	29.15	28.60	61.1	71.8	68.7	75.9	58.5	67.2	92	43	54	55	55	78	59	63	.437	.453	.444	3.58	1.64	.0	5.1	5.2	3.9	5.0
October	28.99	29.42	28.50	43.7	53.3	50.8	57.2	40.7	49.0	77	26	38	38	38	80	59	61	.237	.249	.239	1.48	.88	.3	4.4	4.9	3.8	5.1
November	28.93	29.45	28.43	30.5	36.2	34.5	42.0	26.1	34.0	77	3	26	26	26	80	66	70	.147	.152	.144	.44	.12	2.6	6.7	6.7	5.8	6.6
December	29.01	29.77	28.37	21.8	25.2	25.1	30.3	16.6	23.4	50	−17	20	20	21	90	79	83	.124	.124	.128	.85	.36	5.3	7.7	8.3	6.4	8.0
Year	28.92	29.77	28.12	43.4	51.4	50.6	56.2	39.7	48.0	97	−26	37	38	39	80	63	66	.275	.280	.284	31.25	3.10	30.4	5.5	6.1	5.1	5.8

MARQUETTE, MICH.

[ϕ=46°34′ N.; λ=87°24′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.06	29.51	28.26	21.4	25.9	24.7	31.0	16.9	24.0	43	−3	18	20	20	87	78	81	0.102	0.111	0.110	2.11	0.91	15.5	8.1	8.4	7.9	8.3
February	29.10	29.54	28.44	11.9	18.6	17.5	22.9	8.5	15.7	45	−26	8	11	12	85	73	78	.074	.082	.083	3.44	.95	35.3	6.6	7.3	7.7	7.0
March	29.24	29.78	28.38	22.6	27.3	25.6	30.5	18.9	24.7	50	0	20	21	21	86	77	81	.108	.117	.113	1.95	.95	18.6	8.4	8.3	8.3	8.3
April	29.13	29.75	28.47	35.4	39.0	37.2	43.6	30.8	37.2	70	24	27	29	30	72	68	70	.150	.159	.166	4.32	1.55	12.5	6.7	6.6	6.8	6.6
May	29.14	29.55	28.51	50.2	53.8	50.5	58.9	42.4	50.6	83	30	39	41	39	67	64	67	.250	.269	.252	2.08	.72	.0	6.1	6.2	6.9	6.6
June	29.12	29.50	28.69	63.3	68.3	66.6	76.6	53.1	64.8	98	43	54	54	54	72	63	65	.423	.440	.431	1.32	.54	.0	4.8	4.5	5.0	4.8
July	29.20	29.62	28.89	65.0	70.3	66.5	76.1	56.0	66.0	99	48	56	57	56	74	63	69	.452	.472	.452	1.55	.43	.0	4.8	5.6	5.9	5.7
August	29.22	29.53	28.84	62.9	70.3	66.6	73.5	57.1	65.3	87	48	53	53	54	71	56	64	.407	.405	.419	.80	.46	.0	3.8	5.3	4.1	4.7
September	29.08	29.54	28.57	57.1	65.7	62.3	70.2	53.1	61.6	86	41	50	52	50	77	64	65	.366	.406	.369	4.03	2.02	.0	6.0	6.7	5.5	6.5
October	29.19	29.66	28.59	41.0	46.1	43.8	49.9	37.7	43.8	68	19	36	38	37	82	73	77	.222	.237	.229	2.06	.70	6.4	7.6	8.4	7.2	7.9
November	29.12	29.81	28.46	26.6	29.6	28.3	34.0	22.5	28.2	63	7	23	24	24	85	80	83	.128	.136	.135	2.79	.52	25.0	9.1	9.4	9.4	9.2
December	29.25	30.05	28.59	16.8	19.2	17.9	24.7	11.9	18.3	46	−11	14	15	14	87	84	85	.090	.094	.091	2.56	.61	20.2	8.3	9.1	8.6	8.4
Year	29.15	30.05	28.26	39.5	44.5	42.3	49.3	34.1	41.7	99	−26	33	35	34	79	70	74	.231	.244	.238	29.01	2.02	133.5	6.7	7.2	6.9	7.0

MEDFORD, OREG.

[ϕ=42°23′ N.; λ=122°52′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	28.59	29.15	28.01	31.1	36.9	39.4	41.8	27.9	34.8	50	15	30	32	32	94	81	75	0.163	0.179	0.179	3.36	1.05	11.3	7.2	7.7	7.1	8.0
February	28.80	29.12	28.33	31.3	40.7	45.9	47.0	28.4	37.7	56	17	29	30	30	90	65	55	.159	.166	.160	1.15	.66	.1	6.2	6.8	7.1	7.0
March	28.62	29.03	28.11	37.9	51.2	54.2	57.1	35.0	46.0	70	25	34	34	33	87	52	46	.201	.194	.190	.91	.23	.0	7.6	7.9	8.7	8.2
April	28.62	28.95	28.17	39.4	59.0	63.5	66.3	37.2	51.8	84	26	35	34	32	84	41	35	.204	.203	.188	.63	.46	.5	4.4	4.7	4.3	4.9
May	28.61	28.86	28.31	42.2	57.4	59.5	63.1	40.5	51.8	89	32	39	39	39	87	53	50	.236	.240	.240	1.41	.37	.0	7.1	7.1	7.3	7.3
June	28.57	28.80	28.32	51.6	72.3	76.5	78.4	50.5	64.4	97	40	46	49	48	82	44	39	.318	.350	.349	.15	.11	.0	5.8	5.0	4.0	5.0
July	28.55	28.76	28.27	56.3	83.3	89.7	91.1	55.4	73.2	104	47	48	52	50	75	34	26	.343	.384	.361	T	T	.0	.4	.9	1.1	.8
August	28.52	28.71	28.33	57.0	83.8	90.1	91.9	55.0	73.4	108	44	46	47	43	69	29	21	.321	.326	.286	.02	.02	.0	1.5	1.0	1.1	1.2
September	28.52	28.73	28.26	47.4	68.1	74.2	76.3	44.1	60.2	90	35	42	43	41	81	43	34	.204	.279	.360	.31	.11	.0	3.5	3.4	3.9	3.9
October	28.62	29.05	27.94	43.3	66.1	73.7	75.4	39.5	57.4	95	26	38	41	41	81	42	36	.231	.259	.260	1.13	.88	.0	2.3	4.1	3.2	4.0
November	28.84	29.07	28.41	32.4	47.2	52.7	55.2	28.8	42.0	65	18	32	38	38	96	71	60	.179	.226	.229	.03	.02	T	2.1	4.0	3.5	5.5
December	28.60	28.93	27.92	37.3	44.6	46.0	48.9	33.6	41.2	59	22	34	37	38	91	78	74	.200	.222	.228	1.99	.50	T	6.8	8.9	9.2	9.4
Year	28.62	29.15	27.92	42.3	59.2	63.8	66.0	39.7	52.8	108	15	38	40	39	85	53	46	.235	.252	.253	11.09	1.05	11.9	4.6	5.1	5.0	5.4

MEMPHIS, TENN.

[ϕ=35°09′ N.; λ=90°03′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.65	30.18	29.07	45.9	52.5	53.5	57.1	43.5	50.3	73	24	38	41	41	76	66	65	0.249	0.271	0.279	2.33	1.20	T	5.5	6.2	5.5	6.0
February	29.71	30.33	29.06	39.1	44.4	45.1	50.6	34.9	42.8	73	6	31	30	33	74	60	65	.203	.193	.208	5.07	1.45	2.5	7.5	6.4	6.4	6.6
March	29.61	30.07	29.07	47.1	54.7	55.2	60.9	44.0	52.4	80	30	38	39	41	72	58	61	.254	.267	.276	6.87	2.81	T	5.6	5.5	5.8	5.7
April	29.46	29.86	29.18	55.6	63.3	65.4	69.0	54.0	61.5	86	41	49	49	51	73	63	61	.355	.370	.382	4.93	1.22	.0	5.3	5.8	5.3	5.6
May	29.49	29.73	29.09	69.3	75.8	76.5	80.5	66.3	73.4	90	54	62	62	61	78	64	61	.570	.573	.552	5.90	1.93	.0	5.5	6.2	5.0	5.7
June	29.59	29.89	29.38	74.3	84.7	84.5	89.1	71.5	80.3	99	56	63	62	62	68	47	48	.588	.575	.569	.30	.26	.0	2.7	2.7	3.7	2.8
July	29.55	29.75	29.32	75.7	83.7	84.9	88.3	74.1	81.2	97	70	68	68	68	77	62	60	.684	.702	.704	6.15	2.91	.0	6.3	6.1	5.5	5.9
August	29.56	29.75	29.36	73.4	83.2	81.3	86.7	71.6	79.2	93	66	68	68	68	82	61	66	.676	.680	.694	2.01	.62	.0	3.9	5.1	5.1	4.8
September	29.53	29.67	29.33	73.5	84.3	81.2	87.5	72.2	79.8	92	60	68	68	70	83	60	70	.693	.706	.739	2.94	1.25	.0	3.8	4.7	4.8	4.2
October	29.66	29.90	29.32	55.3	68.6	66.6	73.2	53.5	63.4	83	39	49	50	50	79	52	57	.356	.370	.371	2.00	1.66	.0	3.6	3.4	3.2	3.6
November	29.70	30.17	29.33	47.1	56.4	56.0	61.8	44.4	53.1	79	31	39	40	39	74	57	56	.252	.272	.265	1.17	.95	.0	4.6	4.5	2.9	4.4
December	29.68	30.17	29.34	45.2	52.2	52.2	57.4	41.5	49.4	73	15	40	42	42	82	70	71	.275	.298	.298	10.75	4.05	.0	4.6	7.3	5.8	6.6
Year	29.60	30.33	29.06	58.5	67.0	66.9	71.8	56.0	63.9	99	6	51	52	52	77	60	62	.430	.440	.445	50.42	4.05	2.5	4.9	5.3	4.9	5.2

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

MADISON, WIS.

[H_b=974 ft.; h_t=70 ft.; h_r=62 ft.; h_a=78 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																											
January	10.2	S.	27	W.	0	4	4	1	11	18	5	12	7	0	2	13	16	6	5	10	3	0	13	4	6	0	28	1	2
February	10.9	NW.	29	N.	0	5	0	1	7	5	8	17	13	0	12	6	10	6	5	12	5	0	4	1	15	0	25	0	1
March	10.5	NW.	30	NE.	0	8	7	2	12	5	4	3	21	0	5	8	18	10	9	10	5	0	13	4	6	0	26	2	2
April	10.0	NE.	27	S.	0	6	11	7	6	2	10	10	7	1	5	9	16	14	10	5	3	2	13	3	0	0	10	5	1
May	9.8	NE.	30	NE.	0	6	10	10	11	8	5	9	3	0	3	11	17	18	16	0	0	4	11	2	0	0	0	10	1
June	7.9	SW.	25	SE.	0	5	1	2	5	10	22	10	5	0	14	9	7	4	4	0	0	0	4	0	0	10	0	4	3
July	7.5	SW.	31	NE.	0	2	8	7	5	11	20	5	4	0	16	6	9	8	6	0	0	0	1	0	0	2	0	7	2
August	7.0	SE.	22	NE.	0	6	7	6	10	9	3	9	11	1	19	8	4	5	4	0	0	0	5	1	0	0	0	4	1
September	8.8	SW.	24	N.	0	2	7	4	7	12	14	7	7	0	10	9	11	13	11	0	0	0	9	0	0	2	0	9	4
October	9.4	S.	25	NW.	0	7	2	0	6	18	11	11	7	0	12	10	9	10	8	1	1	0	11	1	0	0	4	1	3
November	10.9	NW.	30	W.	0	2	3	2	5	8	10	12	18	0	7	6	17	8	4	15	6	0	6	0	4	0	26	0	0
December	9.4	NW.	27	NW.	0	5	8	1	9	6	8	6	19	0	3	7	21	11	5	9	4	0	12	4	12	0	27	0	0
Year	9.4	SW.	31	NE.	0	58	68	43	94	112	120	111	122	2	108	102	155	113	87	63	27	6	102	20	43	14	146	43	20

MARQUETTE, MICH.

[H_b=734 ft.; h_t=77 ft.; h_r= 70 ft.; h_a=111 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.4	W.	34	S.	2	6	4	2	6	12	8	15	9	0	3	4	24	19	10	19	17	0	0	0	15	0	31	0	0
February	11.8	W.	37	SW.	1	2	1	0	4	6	14	16	13	0	5	7	16	13	12	16	13	0	0	0	19	0	28	0	0
March	10.2	NW.	36	SW.	3	8	8	3	8	6	4	7	18	0	2	6	23	16	10	21	14	0	0	0	19	0	30	0	0
April	8.8	NW.	37	W.	1	5	5	6	3	3	6	7	25	0	8	5	17	11	11	9	8	0	0	0	3	3	0	17	0
May	8.8	NW.	34	SW.	1	4	3	6	12	7	5	6	19	0	5	12	14	8	6	0	0	0	0	5	0	0	2	3	0
June	8.0	W.	30	W.	0	5	3	6	6	12	3	11	12	2	9	17	4	11	7	0	0	0	1	5	0	4	0	8	0
July	8.1	W.	25	SW.	0	6	1	7	7	15	6	9	11	0	7	13	11	10	7	0	0	0	0	2	0	2	0	8	1
August	9.6	W.	31	S.	0	5	1	5	5	12	7	14	11	2	13	12	6	6	5	0	0	0	0	0	0	0	0	3	0
September	10.5	W.	33	SW.	2	4	2	3	8	12	5	19	6	1	5	13	12	9	7	0	0	1	1	0	0	0	0	5	1
October	11.3	W.	32	SW.	1	8	0	3	8	10	6	22	5	0	1	10	20	19	9	9	5	0	4	1	1	0	8	1	0
November	11.4	W.	35	SW.	3	4	2	2	6	9	4	22	11	0	1	2	27	20	16	26	19	0	1	1	15	0	29	0	0
December	11.5	W.	43	SW.	2	2	1	3	9	8	7	24	7	1	1	7	23	21	14	24	19	0	1	1	21	0	28	0	0
Year	10.0	W.	43	SW.	16	59	31	46	82	112	75	172	147	6	60	108	197	163	114	124	95	1	8	18	93	6	173	29	2

MEDFORD, OREG.

[H_b=1,320 ft.; h_t=29 ft.; h_r=26 ft.; h_a=58 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	5.2	N.	35	SE.	2	11	3	2	5	8	9	11	8	5	3	6	22	16	11	16	11	0	17	13	1	0	25	0	0
February	5.1	N.	24	NW.	0	10	8	2	3	5	5	8	13	2	5	9	14	7	4	7	3	0	7	4	0	0	24	0	0
March	6.8	NW.	34	SE.	2	9	5	2	8	4	9	8	14	3	3	5	23	11	7	0	0	0	1	1	0	0	9	0	0
April	6.7	NW.	30	NW.	0	9	2	2	5	7	5	10	18	2	11	11	8	8	4	5	2	1	0	0	0	0	2	0	0
May	7.0	NW.	29	SE.	0	11	3	3	3	5	6	9	22	0	7	1	23	14	10	0	0	3	4	1	0	0	0	0	0
June	7.4	NW.	30	NW.	0	3	0	0	3	5	8	14	25	2	12	10	8	3	2	0	0	0	0	0	0	3	0	0	0
July	6.8	NW.	26	NW.	0	1	1	0	2	6	11	16	21	4	28	3	0	0	0	0	0	0	0	0	0	17	0	0	0
August	5.9	NW.	25	NW.	0	4	0	1	3	8	7	13	29	6	27	2	2	1	0	0	0	0	0	0	0	20	0	0	0
September	6.0	NW.	27	W.	0	5	1	0	3	7	9	15	20	0	12	11	7	5	3	0	0	0	3	3	0	1	0	0	0
October	4.6	S.	20	NW.	0	4	1	0	1	21	4	9	17	5	18	5	8	5	4	0	0	0	1	0	0	6	1	0	0
November	3.5	S.	16	NW.	0	6	3	1	1	11	12	7	13	6	9	12	9	2	0	1	0	0	19	15	0	0	25	0	0
December	6.4	N.	34	SE.	4	9	5	2	9	7	9	7	11	3	0	2	29	16	9	3	1	0	18	18	0	0	12	0	0
Year	5.9	NW.	35	SE.	8	82	32	15	46	94	94	127	202	38	135	77	153	86	54	32	17	4	70	55	1	47	98	0	0

MEMPHIS, TENN.

[H_b=399 ft.; h_t=78 ft.; h_r=70 ft.; h_a=86 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.5	SW.	31	SW.	0	3	7	6	10	14	10	7	3	2	9	8	14	11	6	1	0	0	0	0	0	0	5	2	0
February	8.6	SW.	30	NW.	0	11	9	6	7	5	10	3	5	0	8	6	14	13	9	3	2	0	2	1	3	0	10	1	0
March	9.0	E.	35	W.	2	4	9	15	4	9	9	6	5	1	11	6	14	12	11	1	0	1	0	0	0	0	0	8	0
April	7.9	SW.	30	N.	0	8	3	9	13	4	11	4	4	4	7	15	8	14	10	0	0	2	0	0	0	0	0	11	0
May	7.9	SW.	30	SW.	0	5	6	7	4	19	13	2	4	2	10	7	14	10	7	0	0	1	0	0	0	1	0	6	0
June	6.4	SW.	32	N.	1	7	11	6	3	8	15	4	2	4	19	9	2	5	1	0	0	0	0	0	0	17	0	6	0
July	6.0	SW.	15	NW.	0	5	10	11	5	9	14	3	3	2	9	10	12	5	4	0	0	0	0	0	0	13	0	9	0
August	5.6	E.	24	W.	0	9	11	9	6	5	8	12	2	0	11	13	7	8	7	0	0	0	1	0	0	8	0	11	0
September	6.4	SW.	22	N.	0	5	8	6	8	8	17	4	2	2	14	11	5	9	9	0	0	0	2	0	0	10	0	4	0
October	6.8	NE.	22	N.	0	6	15	14	8	3	7	3	3	3	19	5	7	4	4	0	0	0	1	0	0	0	0	2	0
November	8.6	SW.	30	NW	0	6	6	6	5	7	15	4	10	1	14	10	6	2	2	0	0	0	3	1	0	0	2	2	0
December	8.9	SW.	28	N.	0	1	13	10	5	13	13	3	4	0	7	9	15	8	8	0	0	1	5	3	1	0	5	4	0
Year	7.6	SW.	35	W.	3	70	108	105	78	104	142	55	47	21	138	109	118	101	78	5	2	5	14	5	4	49	24	70	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

MERIDIAN, MISS.

[ϕ=32°21′ N.; λ=88°40′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.72	30.19	29.25	47.1	58.7	56.3	63.1	44.0	53.6	76	24	43	43	45	85	58	68	0.306	0.313	0.330	2.16	1.08	0.0	6.5	6.0	4.5	6.6
February	29.74	30.30	29.22	45.1	52.8	51.4	58.5	40.4	49.4	79	10	40	38	40	82	60	67	.278	.276	.286	4.94	1.70	T	7.0	7.3	5.2	7.0
March	29.66	29.96	29.13	49.0	62.1	62.1	68.8	46.7	57.8	84	31	42	41	43	78	50	52	.296	.288	.303	5.73	1.97	.0	4.7	4.3	4.6	4.5
April	29.52	29.89	29.25	57.1	69.0	67.0	73.6	53.9	63.8	84	39	53	50	53	85	55	61	.414	.398	.407	5.46	1.98	.0	5.8	5.2	5.1	5.9
May	29.55	29.79	29.23	71.1	82.4	80.2	86.8	66.7	76.8	92	54	65	62	63	82	51	57	.627	.562	.583	1.76	1.04	.0	4.4	4.3	3.1	4.3
June	29.62	29.84	29.38	71.4	84.1	81.4	89.1	66.4	77.8	99	55	62	59	61	74	46	55	.581	.533	.565	5.12	2.32	.0	3.2	3.6	4.0	3.9
July	29.60	29.81	29.40	74.7	83.3	80.0	87.4	71.0	79.2	95	65	71	70	71	88	66	75	.757	.732	.750	11.63	3.29	.0	6.5	6.5	6.1	6.7
August	29.59	29.75	29.35	74.4	85.5	81.7	89.4	71.4	80.4	95	66	70	68	70	88	58	69	.741	.699	.736	1.56	1.06	.0	3.5	4.8	3.8	4.3
September	29.57	29.70	29.38	72.6	88.2	82.2	91.9	68.9	80.4	97	50	67	65	67	84	48	62	.683	.633	.682	2.00	1.31	.0	2.3	3.7	2.4	3.4
October	29.67	29.89	29.40	58.1	73.2	67.8	77.2	55.5	66.4	90	40	53	53	56	83	53	67	.419	.435	.464	1.69	.69	.0	4.0	4.0	2.5	4.1
November	29.75	30.17	29.42	47.7	63.9	57.8	68.2	44.8	56.5	81	32	42	41	43	81	46	61	.295	.290	.311	1.66	.76	.0	3.2	3.2	2.5	3.4
December	29.73	30.10	29.30	49.3	62.1	59.3	68.4	46.5	57.4	80	25	46	48	49	90	62	69	.347	.362	.370	4.76	1.79	.0	4.3	5.0	2.9	4.8
Year	29.64	30.30	29.13	59.8	72.1	68.9	76.9	56.4	66.6	99	10	54	53	55	83	54	64	.479	.460	.482	48.47	3.29	T	4.6	4.8	3.9	4.9

MIAMI, FLA.

[ϕ=25°48′ N.; λ=80°12′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	30.06	30.25	29.70	65.9	74.0	70.6	76.1	64.1	70.1	82	44	60	61	61	82	65	74	0.540	0.559	0.566	0.57	0.51	0.0	5.9	6.8	5.0	6.1
February	30.09	30.30	29.76	69.4	76.3	73.0	78.1	67.1	72.6	83	48	63	64	64	81	66	74	.588	.596	.603	2.54	2.33	.0	3.7	4.8	3.2	4.6
March	30.06	30.21	29.66	67.9	75.0	71.6	76.9	64.9	70.9	82	44	58	58	60	72	58	68	.512	.514	.537	1.69	.63	.0	3.3	4.6	3.5	4.2
April	29.95	30.12	29.71	73.6	80.1	75.6	81.7	69.4	75.6	90	62	66	66	66	77	62	73	.635	.638	.645	4.71	1.83	.0	4.3	6.7	6.0	6.1
May	29.97	30.13	29.74	79.4	82.2	79.1	83.9	75.7	79.8	87	67	71	71	71	75	69	77	.750	.756	.758	4.87	2.95	.0	5.2	6.5	5.5	6.1
June	29.97	30.11	29.77	80.1	83.5	79.5	85.3	75.5	80.4	91	66	71	70	71	74	66	77	.767	.751	.772	9.39	5.25	.0	6.1	6.3	7.0	6.6
July	30.00	30.10	29.89	81.2	84.7	81.2	86.3	76.7	81.5	89	69	74	74	73	78	71	76	.831	.843	.814	7.64	1.57	.0	7.4	8.2	8.7	8.2
August	29.95	30.10	29.67	82.3	84.8	82.4	87.4	77.7	82.6	90	70	75	74	74	78	71	77	.859	.831	.849	12.52	4.44	.0	5.8	7.1	6.3	6.7
September	29.92	30.09	29.66	82.0	85.4	81.7	87.1	77.5	82.3	92	71	74	73	74	75	68	78	.832	.821	.846	5.03	1.32	.0	4.3	5.3	4.5	5.2
October	29.88	30.09	29.11	76.8	80.5	78.6	82.5	73.3	77.9	86	69	71	70	70	82	72	76	.754	.739	.741	15.78	6.99	.0	6.8	7.2	5.6	7.0
November	30.03	30.35	29.63	66.5	75.8	71.2	77.4	64.0	70.7	83	54	59	60	60	79	59	68	.524	.535	.530	.90	.68	.0	5.0	5.7	2.6	4.9
December	30.13	30.30	29.85	67.1	74.9	71.7	76.4	65.1	70.8	81	50	61	61	62	81	63	72	.547	.550	.563	.61	.32	.0	2.8	4.0	3.5	3.8
Year	30.00	30.35	29.11	74.4	79.8	76.3	81.6	70.9	76.3	92	44	67	67	67	78	66	74	.678	.678	.685	66.05	6.99	.0	5.0	6.1	5.1	5.8

MILES CITY, MONT.

[ϕ=46°25′ N.; λ=105°49′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	27.27	27.79	26.79	16.2	23.7	24.3	31.2	9.5	20.4	57	−23	12	16	16	85	71	72	0.087	0.093	0.097	1.35	0.72	15.5	4.7	4.9	5.2	5.0
February	27.45	27.96	27.02	10.7	19.3	20.4	26.2	4.4	15.3	48	−35	6	11	13	82	69	72	.068	.082	.089	.18	.11	2.0	4.9	5.3	6.2	5.1
March	27.44	27.93	26.88	29.7	42.4	43.0	47.2	27.0	37.1	70	6	25	26	26	83	55	55	.137	.138	.144	.66	.19	3.4	5.4	5.8	5.7	5.5
April	27.41	28.03	26.78	36.3	48.7	49.6	53.4	34.6	44.0	73	19	31	30	31	80	51	52	.172	.170	.181	1.20	.57	2.7	6.8	6.4	6.3	6.2
May	27.36	27.66	26.93	48.1	61.1	63.0	65.6	46.1	55.8	92	36	40	39	40	76	48	47	.255	.248	.245	1.69	.42	.0	5.7	6.0	5.4	5.5
June	27.38	27.91	27.04	64.0	81.1	83.5	86.5	60.8	73.6	104	49	52	51	50	67	36	34	.395	.383	.362	.80	.31	.0	3.8	2.5	4.1	3.2
July	27.43	27.78	27.13	68.4	86.1	91.2	92.5	66.0	79.2	106	55	50	46	46	53	28	23	.361	.331	.317	.49	.41	.0	2.7	1.3	1.7	1.7
August	27.46	27.71	27.11	61.0	78.6	81.7	84.2	59.2	71.7	100	50	47	46	45	64	38	34	.332	.325	.306	1.38	.42	.0	4.3	3.9	4.2	3.9
September	27.34	27.74	26.89	52.0	70.2	71.5	76.3	50.1	63.2	95	34	39	38	39	63	35	33	.246	.246	.243	.90	.58	.0	2.6	3.0	3.4	3.1
October	27.49	27.94	26.91	38.9	56.1	54.5	61.7	35.6	48.6	86	23	30	31	33	71	42	43	.167	.173	.189	.39	.15	.0	4.5	4.9	4.6	4.7
November	27.57	28.06	27.11	31.4	44.0	40.9	49.1	27.2	38.2	70	−1	26	28	28	80	56	61	.143	.158	.154	.41	.20	2.8	4.4	5.0	5.3	5.1
December	27.43	27.98	26.97	18.6	24.3	21.6	30.5	10.5	20.5	54	−18	14	17	15	81	75	78	.088	.100	.103	.79	.28	9.9	6.9	7.8	6.3	7.5
Year	27.42	28.06	26.78	39.6	53.0	53.7	58.7	35.9	47.3	106	−35	31	32	32	74	50	51	.204	.204	.203	10.24	.72	36.3	4.7	4.7	4.9	4.7

MILWAUKEE, WIS.

[ϕ=43°02′ N.; λ=87°54′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.17	29.70	28.41	30.4	35.0	34.8	40.8	26.6	33.7	52	8	24	25	27	78	67	74	0.136	0.129	0.151	1.30	0.43	1.5	7.0	7.0	6.5	7.3
February	29.26	29.71	28.61	18.5	23.6	24.4	29.4	14.5	22.0	53	−22	12	14	16	76	67	70	.092	.097	.105	1.43	1.07	13.8	4.6	6.1	5.1	5.7
March	29.28	29.79	28.58	29.9	34.9	33.9	38.2	27.2	32.7	62	2	24	27	26	77	72	74	.136	.153	.149	3.93	1.06	12.9	7.1	7.2	6.7	7.2
April	29.16	29.72	28.71	40.7	45.1	45.3	50.5	37.2	43.8	72	30	34	34	34	77	67	68	.198	.200	.205	2.97	.99	.8	6.8	7.4	6.9	6.9
May	29.17	29.49	28.83	53.1	56.8	56.7	62.3	47.9	55.1	83	37	47	46	47	80	71	72	.331	.327	.333	9.56	3.25	.0	5.5	6.9	7.5	6.8
June	29.22	29.64	28.91	69.8	76.8	75.7	83.2	63.0	73.1	101	47	58	59	58	67	57	57	.498	.519	.499	2.47	1.25	.9	4.5	3.5	4.4	4.2
July	29.28	29.70	29.06	71.2	77.4	76.6	81.7	66.5	74.1	95	60	59	60	60	66	57	58	.510	.529	.524	4.55	1.83	.0	3.2	3.9	3.8	3.9
August	29.30	29.53	28.98	66.9	74.0	71.8	77.0	63.1	70.0	85	55	58	58	57	73	59	61	.485	.489	.471	1.75	1.20	.0	3.8	4.1	3.0	3.4
September	29.18	29.45	28.85	63.6	72.1	69.9	76.1	60.9	68.5	95	47	54	56	56	72	60	64	.438	.470	.470	2.57	1.97	.0	3.7	5.2	4.3	5.0
October	29.31	29.74	28.84	45.5	54.8	51.4	58.5	42.1	50.3	78	27	38	39	40	76	56	65	.242	.250	.255	2.83	2.20	T	4.0	4.5	4.0	4.7
November	29.24	29.77	28.71	32.7	38.0	36.1	42.3	28.4	35.4	71	5	26	26	27	74	62	69	.150	.159	.155	1.03	.38	3.5	7.7	7.5	5.7	7.0
December	29.34	30.09	28.74	25.3	28.7	28.2	33.1	19.7	26.4	55	−11	20	21	22	77	72	75	.128	.132	.133	1.13	.39	8.3	8.1	8.5	7.8	8.4
Year	29.24	30.09	28.41	45.6	51.4	50.4	56.1	41.4	48.8	101	−22	38	39	39	74	64	67	.279	.289	.288	35.52	3.25	40.8	5.5	6.0	5.5	5.9

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

MERIDIAN, MISS.

[H_b=375 ft.; h_t=67 ft.; h_r=60 ft.; h_a=92 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	5.8	S.	24	NW.	0	8	6	4	9	13	3	3	7	9	8	6	17	8	6	0	0	0	12	3	0	0	5	1	0
February	7.1	NE.	22	NW.	0	4	12	4	10	9	6	0	9	2	4	8	16	16	11	2	0	0	4	0	1	0	7	2	0
March	7.5	S.	28	W.	0	7	10	7	5	10	9	7	1	6	12	10	9	9	7	0	0	0	4	0	0	0	1	3	0
April	6.3	SE.	30	SE.	0	5	3	4	13	12	10	5	4	4	7	10	13	12	9	0	0	0	8	1	0	0	0	8	0
May	6.3	S.	32	S.	1	3	6	3	8	22	8	2	3	7	13	15	3	8	5	0	0	0	1	0	0	3	0	5	0
June	5.2	SW.	34	E.	1	8	10	3	3	5	13	4	4	10	15	8	7	7	5	0	0	0	0	0	0	15	0	11	0
July	5.0	E.	24	W.	0	2	4	16	13	8	9	4	0	6	5	11	15	15	12	0	0	0	3	0	0	10	0	12	0
August	4.5	SW.	24	SE.	0	2	9	7	9	10	13	4	1	7	14	11	6	11	4	0	0	0	5	0	0	14	0	10	0
September	4.1	SE.	22	NE.	0	2	7	4	9	4	10	7	4	13	17	11	2	5	4	0	0	0	1	0	0	26	0	4	0
October	5.4	NE.	20	NE.	0	11	18	15	4	0	1	0	4	9	14	9	8	6	4	0	0	0	5	1	0	0	0	2	0
November	5.5	N.	18	NW.	0	8	11	9	7	2	5	4	8	6	18	6	6	6	5	0	0	0	6	2	0	0	1	1	0
December	6.8	SW.	25	NW.	0	5	8	9	5	13	11	5	3	3	10	14	7	11	7	0	0	0	9	2	0	0	4	2	0
Year	5.8	S.	34	E.	2	65	104	85	95	108	98	45	48	82	137	119	109	114	80	2	0	0	58	9	1	68	18	61	0

MIAMI, FLA.

[H_b=25 ft.; h_t=124 ft.; h_r=117 ft.; h_a=168 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.7	SE.	30	NW.	0	9	4	10	15	6	4	4	9	1	6	15	10	6	1	0	0	0	3	1	0	0	0	0	0
February	10.9	SE.	24	SE.	0	4	6	9	17	10	2	2	6	0	13	8	7	4	4	0	0	0	2	1	0	0	0	0	0
March	11.6	SE.	37	SW.	2	11	7	14	16	4	4	2	4	0	17	9	5	7	4	0	0	0	0	0	0	0	0	2	0
April	10.3	SE.	26	SE.	0	9	14	5	13	8	3	3	5	0	7	12	11	7	6	0	0	0	1	1	0	2	0	10	0
May	10.7	SE.	25	SE.	0	1	13	18	21	8	0	0	0	1	8	10	13	10	8	0	0	0	0	0	0	0	0	2	0
June	9.7	SE.	25	S.	0	3	19	15	16	2	1	1	3	0	8	7	15	11	10	0	0	0	0	0	0	1	0	7	0
July	10.0	SE.	32	S.	1	3	6	19	16	5	7	1	5	0	0	10	21	24	20	0	0	0	0	0	0	0	0	18	0
August	9.0	SE.	25	SE.	0	2	8	15	22	6	4	4	1	0	5	12	14	16	15	0	0	0	0	0	0	0	0	13	0
September	10.2	E.	42	SW.	1	2	10	16	18	5	4	2	2	1	7	20	3	14	12	0	0	0	0	0	0	2	0	5	0
October	12.0	NE.	37	NE.	2	7	25	15	4	0	1	1	9	0	2	15	14	20	17	0	0	0	0	0	0	0	0	6	0
November	10.5	N.	24	N.	0	26	9	7	3	1	0	3	11	0	11	12	7	6	5	0	0	0	2	1	0	0	0	0	0
December	9.4	E.	25	NE.	0	11	10	22	4	4	2	2	6	1	16	10	5	4	3	0	0	0	1	1	0	0	0	0	0
Year	10.3	SE.	42	SW.	6	88	131	165	165	59	32	25	61	4	100	140	125	129	105	0	0	0	9	5	0	5	0	63	0

MILES CITY, MONT.

[H_b=2,371 ft.; h_t=48 ft.; h_r=41 ft.; h_a=55 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	5.5	S.	29	W.	0	3	4	2	1	21	12	15	2	2	13	7	11	5	4	8	4	0	1	1	15	0	29	0	0
February	6.7	S.	26	NW.	0	8	0	2	1	16	7	16	5	1	10	10	8	7	2	11	7	0	0	0	13	0	28	0	0
March	6.3	S.	29	NW.	0	4	12	9	6	15	3	1	12	0	8	14	9	10	7	9	8	0	0	0	4	0	25	0	0
April	8.9	N.	34	NW.	2	11	10	7	3	11	3	5	10	0	5	15	10	7	5	7	3	0	1	0	0	0	9	2	0
May	7.8	SE.	34	NW.	2	4	7	11	12	6	7	6	7	2	11	12	8	17	15	0	0	2	1	0	0	2	0	3	0
June	6.4	S.	34	W.	1	9	10	6	10	8	5	5	5	2	17	13	0	8	4	0	0	1	0	0	0	8	0	7	0
July	6.3	NE.	30	N.	0	6	13	9	12	6	5	6	4	1	26	5	0	4	3	0	0	0	0	0	0	18	0	6	0
August	6.3	SE.	23	N.	0	3	6	9	7	9	8	3	9	8	17	9	5	8	7	0	0	1	0	0	0	11	0	3	0
September	6.7	S.	36	NW.	2	7	7	2	7	11	5	6	11	4	20	6	4	3	3	0	0	0	1	9	0	2	0	0	2
October	6.2	S.	32	NW.	1	7	12	4	5	13	5	5	9	2	13	11	7	6	3	0	0	0	0	0	0	0	9	0	0
November	6.9	S.	36	NW.	3	6	4	3	2	16	7	6	14	2	9	15	6	6	4	3	3	0	0	0	2	0	19	1	0
December	5.9	S.	30	NW.	0	7	14	7	1	14	11	2	5	1	3	12	16	10	7	15	7	0	0	0	14	0	31	1	0
Year	6.7	S.	36	NW.	11	75	99	71	67	146	78	76	93	25	152	129	84	91	64	53	32	4	4	1	48	41	150	23	2

MILWAUKEE, WIS.

[H_b=681 ft.; h_t=97 ft.; h_r=89 ft.; h_a=221 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	13.8	W.	43	W.	4	9	2	3	5	8	13	15	7	0	3	12	16	5	5	12	1	0	9	4	4	0	23	0	0
February	15.0	W.	38	N.	5	6	1	2	2	5	10	15	15	0	7	10	11	9	5	11	6	0	3	0	14	0	24	2	0
March	13.6	N.	37	NW.	2	15	8	3	7	2	9	2	16	0	5	9	17	11	8	11	6	0	5	3	3	0	24	0	0
April	14.0	N.	36	N.	2	21	4	6	3	5	4	14	3	0	5	10	15	18	14	8	5	1	9	1	0	0	2	4	0
May	13.5	N.	43	N.	4	10	9	9	6	7	2	14	5	0	5	12	14	16	15	0	0	1	13	4	0	0	0	7	0
June	11.1	W.	35	N.	2	9	2	6	6	9	5	22	1	0	13	10	7	9	6	0	0	0	3	0	0	9	0	9	0
July	10.9	W.	33	SE.	1	10	4	7	5	12	6	18	0	0	16	8	7	8	7	0	0	0	5	0	0	4	0	6	0
August	10.8	W.	33	NW.	1	13	9	5	6	9	4	12	4	0	17	9	5	6	5	0	0	0	6	0	0	0	0	3	0
September	13.4	W.	32	NW.	2	4	6	9	3	9	9	11	9	0	11	7	12	9	7	0	6	0	12	3	0	2	0	5	2
October	13.5	W.	40	SW.	3	12	0	2	4	11	9	20	4	0	13	8	10	8	7	2	0	1	11	1	0	0	4	1	0
November	14.6	NW.	38	N.	5	6	2	4	1	5	10	14	18	0	4	8	18	12	9	11	8	0	7	0	5	0	17	1	0
December	13.3	NW.	42	SE.	3	15	3	2	6	5	8	7	16	0	1	8	22	10	8	10	5	0	14	2	10	0	25	6	0
Year	13.1	W.	43	W.	34	130	50	58	54	87	89	164	98	0	100	111	154	121	96	65	31	3	97	18	36	15	119	38	2

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

MINNEAPOLIS, MINN.

[ϕ=44°59′ N.; λ=93°18′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.84	29.24	28.22	----	26.2	26.5	31.7	14.5	23.1	46	−5	---	19	21	---	73	77	----	0.106	0.115	0.89	0.26	4.1	----	7.8	6.5	7.4
February	29.00	29.38	28.38	----	18.5	16.6	23.6	4.9	14.2	46	−28	---	8	9	---	65	70	----	.075	.076	.77	.35	8.9	----	6.3	4.7	5.8
March	29.04	29.46	28.34	----	33.9	33.5	37.6	23.5	30.6	57	−2	---	21	21	---	58	60	----	.119	.122	2.15	1.51	4.7	----	6.8	6.4	6.6
April	28.89	29.45	28.45	----	49.6	49.9	53.8	35.9	44.8	74	28	---	28	29	---	47	47	----	.165	.167	1.43	.78	.9	----	5.7	5.8	5.8
May	28.88	29.21	28.45	----	63.9	63.9	68.2	49.4	58.8	84	34	---	42	43	---	49	50	----	.295	.296	7.87	3.07	.0	----	7.1	7.3	7.1
June	28.90	29.40	28.57	----	83.5	84.8	89.0	66.9	77.9	100	49	---	58	58	---	42	42	----	.498	.515	1.31	.58	.0	----	4.1	3.9	4.1
July	28.97	29.33	28.74	----	83.4	84.0	87.6	66.5	77.0	100	57	---	58	57	---	43	42	----	.487	.481	2.16	1.27	.0	----	5.3	4.4	4.9
August	29.04	29.29	28.73	63.0	76.4	76.5	81.0	60.5	70.8	93	50	51	50	51	67	41	43	0.386	.369	.384	1.09	.81	.0	3.6	4.4	4.2	4.1
September	28.88	29.25	28.42	61.2	72.8	71.4	76.9	57.8	67.4	94	45	52	50	49	73	47	47	.410	.387	.366	3.44	1.34	.0	5.0	4.2	4.7	4.7
October	29.02	29.48	28.63	41.8	52.0	51.5	56.4	38.3	47.4	78	22	34	33	33	72	49	51	.203	.201	.203	1.26	1.17	.3	5.4	6.4	4.5	5.8
November	29.00	29.48	28.40	27.4	33.1	32.1	39.0	22.4	30.7	77	−2	22	24	24	78	68	71	.127	.136	.134	.57	.16	5.7	6.9	7.9	6.0	7.2
December	29.08	29.84	28.44	15.3	20.5	19.1	26.2	7.7	17.0	49	−19	11	13	13	82	72	77	.087	.093	.092	.71	.30	5.1	6.2	8.6	7.0	7.7
Year	28.96	29.84	28.22	----	51.2	50.8	55.9	37.4	46.6	100	−28	---	34	34	---	54	56	----	.244	.246	23.65	3.07	29.7	----	6.2	5.4	5.9

MOBILE, ALA.

[ϕ=30°41′ N.; λ=88°02′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	30.06	30.52	29.63	52.6	60.4	58.0	63.8	50.0	56.9	72	28	48	50	50	85	71	78	0.359	0.395	0.396	4.10	1.93	0.0	5.2	7.4	6.6	7.2
February	30.07	30.60	29.62	49.9	57.6	55.0	62.5	46.4	54.4	78	17	45	46	47	84	68	76	.331	.358	.357	6.88	1.64	.0	6.7	6.9	5.5	6.9
March	30.01	30.28	29.42	54.3	64.5	62.3	68.4	52.2	60.3	80	35	48	47	50	81	56	66	.363	.363	.388	6.39	2.99	.0	5.0	5.0	5.3	5.2
April	29.87	30.16	29.59	62.2	71.7	67.3	74.5	59.0	66.8	83	48	57	56	58	83	62	75	.482	.484	.507	14.12	5.92	.0	6.6	5.1	6.3	5.8
May	29.89	30.11	29.60	74.7	82.6	79.0	84.8	71.7	78.2	92	60	69	67	69	84	61	74	.721	.666	.723	1.48	.89	.0	4.8	4.9	3.8	4.6
June	29.94	30.12	29.71	74.1	84.7	81.0	88.5	70.3	79.4	98	60	65	63	65	74	51	60	.632	.600	.627	5.90	2.44	.0	3.3	3.8	4.2	3.8
July	29.92	30.14	29.70	77.5	84.4	81.1	88.3	73.6	81.0	96	70	74	72	73	88	68	77	.832	.786	.802	11.75	2.71	.0	7.3	7.6	6.3	7.0
August	29.91	30.07	29.67	77.8	86.1	82.6	89.2	75.2	82.2	93	70	73	71	72	86	62	72	.814	.761	.797	1.94	.90	.0	4.0	6.3	5.3	5.2
September	29.88	30.04	29.74	76.1	87.6	83.9	91.1	74.0	82.6	97	59	71	68	71	84	54	66	.766	.704	.766	1.40	.60	.0	2.8	4.1	3.9	3.6
October	29.96	30.19	29.68	63.2	76.6	72.7	79.5	61.4	70.4	92	46	58	58	60	83	55	66	.495	.512	.538	2.66	2.05	.0	4.7	4.9	4.2	4.7
November	30.08	30.48	29.74	53.0	66.0	61.9	69.3	50.7	60.0	81	39	46	46	49	79	52	64	.341	.349	.373	.66	.40	.0	3.6	3.0	1.6	2.9
December	30.08	30.41	29.65	55.7	66.4	62.4	69.6	53.3	61.4	79	36	52	53	54	88	63	76	.418	.432	.446	3.86	2.98	.0	5.0	4.8	3.8	4.8
Year	29.97	30.60	29.42	64.3	74.0	70.6	77.5	61.5	69.5	98	17	59	58	60	83	60	71	.546	.534	.560	61.14	5.92	.0	4.9	5.3	4.7	5.1

MODENA, UTAH

[ϕ=37°48′ N.; λ=113°54′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
anuary	24.55	24.96	23.96	15.5	30.5	27.1	34.4	9.1	21.8	52	−7	12	21	20	87	68	72	0.077	0.113	0.104	1.38	0.62	20.6	3.7	5.2	5.6	5.0
February	24.64	24.90	24.23	8.5	28.5	26.3	31.7	1.9	16.8	53	−27	5	17	16	84	60	64	.054	.092	.091	.04	.03	.7	1.9	2.0	2.5	2.2
March	24.58	24.91	24.29	28.3	48.7	49.2	52.7	25.4	39.0	68	18	21	19	18	72	30	30	.109	.100	.100	.28	.24	1.4	2.6	5.5	5.5	5.0
April	24.51	24.90	24.14	31.2	52.9	54.0	57.7	27.8	42.8	71	14	19	20	16	59	29	25	.104	.109	.095	.23	.15	.3	2.4	5.3	5.0	4.9
May	24.51	24.76	24.00	36.2	59.0	59.7	63.6	34.5	49.0	86	24	26	25	22	66	31	29	.137	.131	.119	1.13	.42	4.3	3.7	5.4	5.1	5.0
June	24.60	24.76	24.43	48.2	80.1	80.7	83.3	46.3	64.8	93	36	22	28	24	35	15	13	.116	.151	.128	T	T	.0	2.1	2.3	3.5	2.5
July	24.65	24.82	24.48	60.5	86.2	84.0	90.1	58.8	74.4	98	43	47	47	46	63	27	29	.336	.324	.316	2.15	.59	.0	2.7	3.8	5.6	4.4
August	24.64	24.80	24.43	54.3	82.3	82.6	86.5	52.8	69.6	98	45	38	40	37	56	25	22	.239	.264	.233	1.49	.73	.0	1.9	2.4	3.9	3.0
September	24.57	24.77	24.31	49.9	79.7	79.0	83.0	47.3	65.2	89	37	32	35	31	51	21	19	.191	.215	.183	.05	.05	.0	.6	1.9	1.7	1.5
October	24.68	24.95	24.36	41.9	67.5	65.1	71.6	38.7	55.2	78	29	29	30	29	60	27	30	.168	.173	.172	.60	.28	T	2.0	3.2	2.6	2.9
November	24.77	25.11	24.02	25.2	50.0	47.4	55.0	22.1	38.6	66	11	18	23	21	71	38	38	.094	.123	.113	.87	.49	5.8	1.6	2.3	2.2	2.4
December	24.68	24.97	24.29	26.9	45.5	39.3	49.2	23.8	36.5	64	4	22	24	25	80	45	58	.118	.126	.136	.38	.27	.8	3.9	5.2	5.5	5.3
Year	24.62	25.11	23.96	35.6	59.2	57.8	63.2	32.4	47.8	98	−27	24	27	25	65	35	36	.145	.160	.149	8.60	.73	33.9	2.4	3.7	4.1	3.7

MONTGOMERY, ALA.

[ϕ=32°23′ N.; λ=86°18′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	29.89	30.33	29.36	48.7	57.6	58.2	63.2	47.1	55.2	76	28	43	44	45	82	62	64	0.309	0.317	0.332	3.23	2.06	0.0	6.4	7.1	6.1	7.0
February	29.90	30.44	29.36	46.7	53.7	53.3	60.2	42.8	51.5	79	13	40	41	41	80	65	65	.288	.291	.294	5.65	1.42	T	7.1	7.6	5.1	7.3
March	29.82	30.15	29.22	50.4	62.1	62.0	68.3	48.3	58.3	84	34	41	40	43	69	46	52	.279	.271	.298	10.65	5.87	.0	5.3	4.7	4.6	4.7
April	29.69	30.02	29.45	58.2	68.2	67.0	73.4	55.0	64.2	84	45	52	52	51	81	58	59	.405	.404	.395	5.72	1.51	.0	6.1	6.8	6.0	6.2
May	29.73	30.00	29.45	72.6	83.8	82.2	88.1	69.0	78.6	95	58	65	62	62	78	49	52	.629	.558	.556	1.76	1.01	.0	4.1	5.1	3.5	4.2
June	29.76	29.98	29.55	73.0	86.1	83.2	91.1	69.1	80.1	103	57	62	60	60	70	45	51	.581	.549	.549	4.07	1.12	.0	5.1	4.5	4.7	5.1
July	29.77	29.97	29.51	74.5	83.9	81.1	88.5	71.9	80.2	96	66	70	68	69	86	62	70	.731	.701	.724	3.86	1.20	.0	7.1	6.3	7.6	6.8
August	29.75	29.96	29.49	75.9	85.8	81.9	90.3	72.9	81.6	94	68	71	69	70	85	57	69	.763	.706	.742	3.02	.93	.0	4.7	5.5	6.2	5.4
September	29.73	29.88	29.55	73.4	87.5	82.5	91.7	70.8	81.2	97	57	68	66	67	83	50	51	.693	.645	.666	5.91	2.40	.0	2.4	3.8	3.8	3.7
October	29.82	30.08	29.50	60.8	74.3	70.3	77.5	59.1	68.3	91	47	53	53	54	78	50	59	.429	.433	.439	3.47	2.52	.0	6.0	4.8	4.1	4.9
November	29.90	30.34	29.64	48.1	62.8	59.9	67.1	45.9	56.5	81	33	40	39	39	74	45	49	.277	.276	.274	.36	.15	.0	3.8	3.4	2.0	3.3
December	29.82	30.29	29.45	52.0	63.7	61.1	68.2	48.8	58.5	78	30	48	48	48	87	59	63	.363	.369	.356	3.03	1.18	.0	5.5	5.6	4.4	5.5
Year	29.81	30.44	29.22	61.2	72.5	70.2	77.8	58.4	67.8	103	13	54	54	54	79	54	60	.479	.460	.469	50.73	5.87	T	5.3	5.4	4.9	5.3

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

MINNEAPOLIS, MINN.

[H_b=918 ft.; h_t=102 ft.; h_r=92 ft.; h_a=208 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp. 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																											
January	11.0	W.	33	W.	2	1	2	2	6	6	3	8	3	0	3	8	20	14	7	15	11	0	9	1	13	0	31	0	0
February	12.7	W.	32	W.	1	1	0	1	3	3	1	11	8	0	8	10	10	8	5	13	8	0	9	0	18	0	25	0	0
March	12.4	N.	38	NW.	1	5	2	3	6	2	2	2	9	0	9	5	17	8	5	12	5	1	10	1	5	0	27	2	0
April	12.1	NW.	30	E.	0	4	3	2	6	2	0	4	9	0	11	5	14	11	6	9	3	0	5	0	0	0	11	2	0
May	12.3	E.	37	E.	4	2	6	5	5	3	2	5	3	0	5	9	17	11	10	0	0	1	0	0	0	0	0	6	0
June	9.4	S.	38	N.	1	5	2	1	2	11	4	4	1	0	14	10	6	6	4	0	0	0	0	0	0	17	0	8	2
July	9.8	S.	34	NW.	1	2	3	2	2	13	3	1	5	0	10	16	5	9	7	0	0	0	0	0	0	9	0	7	0
August	9.6	S.	25	NW.	0	11	3	1	9	19	1	7	11	0	14	12	5	5	2	0	0	0	2	0	0	3	0	2	0
September	11.6	SE.	35	SE.	3	4	2	5	13	11	9	6	9	1	12	9	9	7	6	0	0	0	6	0	0	3	0	7	0
October	12.1	S.	30	N.	0	9	0	2	8	14	4	13	12	0	9	10	12	5	3	6	1	0	7	0	1	0	7	0	0
November	12.2	NW.	41	W.	4	4	2	2	6	8	3	14	21	0	7	5	18	10	5	17	8	0	7	0	7	0	29	1	0
December	10.8	NW.	31	NW.	0	7	6	4	11	11	5	5	13	0	4	6	21	9	5	19	7	0	16	2	19	0	29	0	0
Year	11.3	S.	41	W.	17	55	31	30	77	103	37	80	104	1	106	105	154	103	65	91	43	2	71	4	63	32	159	35	2

MOBILE, ALA.

[H_b=57 ft.; h_t=125 ft.; h_r=119 ft.; h_a=161 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.5	S.	31	NW.	0	15	9	6	3	15	5	2	6	1	6	6	19	11	8	0	0	0	14	6	0	0	1	2	0
February	10.2	S.	29	E.	0	11	10	7	2	14	6	2	4	0	4	10	14	15	12	0	0	0	14	7	0	0	4	2	0
March	10.6	S.	34	SE.	1	11	9	3	5	18	5	5	6	0	10	12	9	7	5	0	0	0	7	4	0	0	0	2	0
April	9.8	S.	34	SE.	1	4	5	7	7	15	11	2	9	0	7	12	11	14	13	0	0	0	2	0	0	0	0	11	0
May	10.0	S.	32	SE.	1	7	0	2	6	27	13	2	5	0	14	8	9	6	4	0	0	0	3	0	0	4	0	6	0
June	8.9	N.	24	W.	0	10	3	3	3	8	13	5	15	0	15	9	6	7	5	0	0	0	0	0	0	10	0	11	0
July	8.1	S.	35	SW.	2	6	2	10	7	9	15	7	5	1	5	9	17	17	16	0	0	0	1	0	0	12	0	15	0
August	7.4	SW.	21	S.	0	14	3	8	6	6	15	4	6	0	14	8	9	6	4	0	0	0	0	0	0	11	0	13	0
September	7.8	N.	26	NE.	0	17	4	8	1	6	12	7	5	0	16	11	3	5	4	0	0	0	0	0	0	19	0	5	0
October	9.4	N.	26	N.	0	26	11	7	1	3	1	1	12	0	12	11	8	8	4	0	0	0	0	0	0	1	0	2	0
November	9.0	N.	23	NW.	0	16	7	2	4	6	6	6	13	0	19	7	4	4	4	0	0	0	3	2	0	0	0	0	0
December	9.8	S.	26	NW.	0	10	4	1	11	15	10	4	7	0	8	15	8	6	5	0	0	0	7	4	0	0	0	2	0
Year	9.1	S.	35	SW.	5	147	67	64	56	142	112	47	93	2	130	118	117	106	84	0	0	0	51	23	0	57	5	71	0

MODENA, UTAH

[H_b=5,473 ft.; h_t=10 ft.; h_r=3 ft.; h_a=46 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.3	SW.	38	S.	1	2	4	3	2	7	22	19	2	1	15	4	12	11	9	14	11	0	0	0	11	0	31	0	0
February	9.6	W.	32	NW.	1	8	9	5	0	1	14	15	4	0	20	6	2	2	0	6	2	0	1	0	13	0	28	0	0
March	10.2	SW.	38	W.	2	3	7	5	1	5	18	18	5	0	12	11	8	2	2	3	2	2	0	0	0	0	28	1	0
April	11.1	SW.	41	SW.	3	2	8	4	1	6	14	16	9	0	12	8	10	5	3	4	3	1	0	0	0	0	25	0	0
May	10.9	SW.	43	SW.	5	1	5	4	3	4	24	17	4	0	12	9	10	10	7	8	5	0	0	0	0	0	13	2	0
June	11.8	SW.	31	SW.	0	0	1	0	0	12	29	17	1	0	21	5	4	0	0	0	0	0	0	0	0	4	0	2	0
July	9.8	SW.	40	SW.	3	3	4	5	1	4	21	20	4	0	7	22	2	12	8	0	0	3	0	0	0	19	0	18	0
August	9.8	SW.	47	W.	4	1	2	2	2	7	24	21	3	0	17	12	2	6	5	0	0	2	0	0	0	7	0	13	0
September	11.7	SW.	36	SW.	3	0	1	2	0	6	29	19	2	1	26	3	1	1	1	0	0	0	0	0	0	0	0	1	0
October	9.3	SW.	35	SW.	2	2	6	7	0	3	22	22	0	0	20	6	5	5	3	1	1	1	0	0	0	0	8	2	0
November	8.3	W.	38	SW.	1	5	11	6	3	3	15	13	4	0	23	3	4	4	3	5	4	0	0	0	0	0	30	0	0
December	9.3	SW.	36	SW.	2	1	3	0	2	1	25	26	4	0	12	7	12	5	2	6	3	0	2	0	2	0	29	0	0
Year	10.1	SW.	47	W.	27	28	61	43	15	59	257	223	42	2	197	96	72	63	43	47	31	9	3	0	26	30	192	39	0

MONTGOMERY, ALA.

[H_b=218 ft.; h_t=92 ft.; h_r=90 ft.; h_a=105 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.9	S.	24	NW.	0	9	7	9	10	12	7	3	5	0	6	7	18	10	6	0	0	0	13	8	0	0	1	1	0
February	8.2	SE.	31	NW.	0	10	7	8	10	7	3	4	7	0	4	7	17	13	13	1	0	0	4	1	0	0	6	2	0
March	8.9	SW.	23	N.	0	9	11	2	7	12	10	7	4	0	11	10	10	8	7	0	0	1	0	0	0	0	0	3	0
April	7.8	SE.	24	SE.	0	3	5	12	12	3	13	7	4	1	8	8	14	10	9	0	0	1	3	0	0	0	0	7	0
May	6.9	S.	28	N.	0	3	11	7	3	18	11	6	1	2	16	9	6	8	7	0	0	0	2	1	0	14	0	6	0
June	6.2	W.	23	SW.	0	8	10	3	6	3	12	9	8	1	12	7	11	10	10	0	0	1	0	0	0	16	0	13	0
July	6.2	E.	32	S.	1	4	7	10	13	6	10	6	5	1	4	11	16	15	10	0	0	1	3	1	0	12	0	10	0
August	5.6	SW.	24	SW.	0	7	5	10	11	12	8	6	3	0	11	10	10	10	10	0	0	0	3	0	0	19	0	13	0
September	5.6	N.	25	E.	0	10	6	15	8	7	7	2	5	0	19	7	4	11	9	0	0	0	8	0	0	23	0	8	0
October	6.9	N.	19	N.	0	17	14	16	5	1	1	3	5	0	12	9	10	5	5	0	0	0	6	1	0	1	0	4	0
November	6.6	NW.	21	NW.	0	8	6	8	8	6	9	5	9	1	19	3	8	5	3	0	0	0	6	2	0	0	0	1	0
December	7.1	S.	20	N.	0	9	5	9	13	9	7	7	2	1	12	5	14	9	8	0	0	0	10	2	0	0	1	2	0
Year	6.9	S.	32	S.	1	97	94	109	106	96	98	65	58	7	134	93	138	114	97	1	0	4	58	16	0	85	8	70	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

MOORHEAD, MINN.

[ϕ=46°52′ N.; λ=96°44′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.81	29.27	28.18	10.6	15.7	13.9	22.3	1.5	11.9	41	−10	9	12	12	93	84	90	0.066	0.076	0.078	1.37	0.30	20.8	5.9	5.9	4.9	6.7
February	28.97	29.44	28.46	4.2	10.3	10.0	16.4	−1.7	7.4	46	−31	3	6	7	93	83	88	.059	.068	.072	.43	.19	5.7	6.6	6.5	5.3	6.1
March	29.04	29.55	28.32	21.5	31.4	31.9	36.6	19.5	28.0	56	−5	18	25	23	87	63	69	.106	.121	.133	.37	.20	3.1	5.9	6.4	6.0	6.3
April	28.91	29.48	28.43	34.4	46.2	46.7	50.7	32.0	41.4	76	18	28	29	32	76	55	60	.155	.171	.189	2.07	1.13	6.7	5.8	5.1	5.6	5.4
May	28.85	29.22	28.18	49.6	62.5	62.6	67.2	46.3	56.8	87	32	42	40	42	77	48	50	.285	.268	.279	1.93	.98	.0	6.7	6.9	6.4	7.0
June	28.86	29.48	28.46	64.9	80.5	81.5	86.2	59.3	72.8	104	44	54	54	55	71	44	42	.436	.444	.444	2.13	1.59	.0	5.4	4.4	4.1	4.4
July	28.93	29.27	28.59	66.0	80.8	81.6	86.1	61.3	73.7	102	52	57	57	56	73	46	45	.473	.474	.467	1.44	.44	.0	3.2	5.0	3.5	3.8
August	28.97	29.28	28.62	59.6	76.9	78.4	82.2	56.8	69.5	97	45	50	50	49	73	41	37	.378	.379	.355	1.34	1.12	.0	4.8	3.8	4.0	4.2
September	28.81	29.19	28.35	54.2	69.9	68.4	75.3	51.0	63.2	87	32	46	45	48	76	44	50	.338	.325	.356	1.11	.51	.0	4.1	4.8	5.7	5.0
October	28.96	29.53	28.53	34.4	49.4	47.1	54.4	30.9	42.6	83	15	26	30	30	73	49	52	.144	.170	.171	.45	.39	.6	5.6	5.9	4.6	5.8
November	29.00	29.45	28.29	23.0	27.8	25.5	34.4	16.4	25.4	66	−2	20	22	21	88	77	82	.112	.121	.115	.91	.45	11.2	7.9	7.0	5.6	7.1
December	29.07	29.89	28.43	3.8	9.1	8.5	17.5	−3.1	7.2	44	−31	2	6	6	93	85	89	.056	.065	.065	1.70	.90	21.9	7.2	8.1	7.2	7.7
Year	28.93	29.89	28.18	35.5	46.7	46.3	52.4	30.8	41.7	104	−31	30	31	32	81	60	63	.217	.224	.227	15.25	1.59	70.0	5.8	5.8	5.2	5.8

NANTUCKET, MASS.

[ϕ=41°17′ N.; λ=70°06′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.95	30.61	29.06	37.5	41.7	38.6	45.3	33.3	39.3	56	20	33	33	33	83	72	81	0.193	0.195	0.197	2.73	1.35	0.7	6.5	6.5	4.1	6.3
February	29.92	30.66	29.17	32.8	37.7	34.1	41.3	28.7	35.0	52	13	27	28	28	78	70	79	.156	.171	.163	4.72	1.22	8.6	5.4	5.8	4.8	6.0
March	29.86	30.33	28.97	35.8	39.4	36.2	42.0	31.6	36.8	53	16	29	28	30	77	66	77	.169	.166	.168	7.34	1.88	9.0	5.9	5.0	5.4	6.4
April	29.97	30.42	29.26	44.9	48.5	43.9	51.1	39.9	45.5	64	32	38	39	40	80	71	80	.242	.246	.251	4.78	1.67	.0	6.2	6.3	5.2	6.2
May	29.94	30.30	29.56	55.5	60.5	51.7	62.8	48.5	55.6	79	41	48	48	47	78	65	86	.349	.349	.334	1.62	1.02	.0	5.1	4.5	5.3	5.2
June	29.90	30.18	29.64	62.8	66.7	59.6	69.5	56.1	62.8	81	48	56	56	56	79	70	87	.455	.458	.452	4.78	1.68	.0	4.7	4.2	4.7	5.2
July	29.98	30.26	29.61	65.4	69.6	62.7	72.1	59.7	65.9	81	52	61	61	60	88	75	90	.551	.545	.516	1.01	.74	.0	5.1	5.8	5.5	6.3
August	29.99	30.39	29.60	69.2	73.3	67.0	75.0	63.8	69.4	84	57	65	64	64	87	75	91	.623	.605	.609	3.99	1.04	.0	4.7	5.5	5.3	5.9
September	29.89	30.27	29.15	65.2	69.5	63.3	71.4	60.6	66.0	78	52	60	59	59	84	71	87	.531	.511	.507	7.54	2.38	.0	5.7	4.6	4.5	5.9
October	30.06	30.60	29.37	55.0	58.2	53.6	60.9	49.6	55.2	71	33	48	48	49	78	70	84	.348	.348	.358	8.31	3.15	.0	4.7	4.1	3.9	4.8
November	29.92	30.46	29.13	41.1	43.9	40.9	47.8	35.1	41.4	66	22	34	34	33	75	68	74	.207	.211	.203	2.80	.71	T	5.8	5.6	4.7	5.8
December	30.04	30.71	29.33	31.9	34.7	33.4	39.8	27.3	33.6	51	−3	26	28	28	79	75	80	.155	.162	.168	5.05	1.56	9.7	8.0	7.6	4.9	7.5
Year	29.95	30.71	28.97	49.8	53.6	48.8	56.6	44.5	50.5	84	−3	44	44	44	80	71	84	.332	.331	.327	54.67	3.15	28.0	5.6	5.5	4.9	6.0

NASHVILLE, TENN.

[ϕ=36°10′ N.; λ=86°47′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.52	30.04	28.87	42.2	50.6	49.9	55.5	38.5	47.0	70	21	39	40	39	90	68	68	0.261	0.265	0.253	3.51	1.67	0.0	6.4	6.7	4.9	6.3
February	29.57	30.17	28.91	36.3	43.2	43.8	49.8	32.4	41.1	71	2	32	30	30	84	63	63	.199	.192	.185	6.21	2.96	3.8	7.0	6.5	5.1	6.3
March	29.48	29.88	28.86	43.1	52.5	53.3	58.7	39.7	49.2	80	24	35	35	37	74	54	56	.223	.228	.243	6.14	1.90	T	5.7	6.3	5.3	6.2
April	29.35	29.72	29.02	52.9	63.5	62.6	68.6	48.9	58.8	80	40	45	43	45	76	51	56	.311	.292	.317	4.17	1.28	.0	5.9	5.8	5.3	5.7
May	29.38	29.64	29.05	66.6	76.8	74.4	80.8	62.0	71.4	90	52	61	59	60	82	56	63	.538	.514	.534	9.94	3.17	.0	5.9	5.8	5.7	5.8
June	29.46	29.74	29.25	71.7	85.1	82.7	89.5	66.1	77.8	99	52	62	61	62	73	46	53	.585	.565	.590	1.76	1.06	.0	2.4	3.7	4.5	3.7
July	29.44	29.68	29.24	73.8	83.8	83.0	87.7	69.4	78.6	97	62	67	65	65	79	57	59	.667	.639	.645	5.37	2.47	.0	5.1	6.7	5.3	5.8
August	29.43	29.67	29.23	70.4	82.7	80.6	86.7	67.0	76.8	93	58	65	65	65	84	57	61	.628	.631	.627	2.79	1.27	.0	4.4	5.4	5.1	5.0
September	29.41	29.54	29.18	69.5	84.1	79.7	87.5	66.4	77.0	93	53	64	65	65	84	54	64	.617	.634	.633	3.66	2.31	.0	3.3	5.0	4.3	4.7
October	29.54	29.75	29.14	52.6	67.7	65.0	71.2	49.9	60.6	82	36	46	46	47	80	47	53	.329	.325	.333	1.23	.76	.0	4.7	4.3	3.6	4.4
November	29.54	29.97	29.21	43.8	54.3	52.7	59.5	39.6	49.6	78	24	36	36	37	74	53	57	.225	.233	.235	1.47	.76	.0	5.0	4.9	4.6	4.8
December	29.56	30.04	29.24	44.4	52.4	50.9	56.6	39.8	48.2	70	12	38	40	39	79	64	67	.263	.276	.269	6.40	2.08	T	6.5	6.8	6.2	6.9
Year	29.47	30.17	28.86	55.6	66.4	64.9	71.0	51.6	61.3	99	2	49	49	49	80	56	60	.404	.400	.405	52.65	3.17	3.8	5.2	5.7	5.0	5.5

NEW HAVEN, CONN.

[ϕ=41°18′ N.; λ=72°56′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.90	30.55	29.23	33.7	40.0	38.6	44.5	30.0	37.2	59	11	28	29	29	80	64	68	0.161	0.163	0.165	1.73	0.82	T	5.8	5.8	4.6	5.5
February	29.87	30.62	29.15	29.2	36.9	34.0	40.2	24.7	32.4	59	10	23	25	24	77	61	65	.137	.145	.138	4.15	1.30	14.3	5.2	6.4	4.3	5.8
March	29.82	30.29	28.92	33.9	38.9	37.7	42.7	30.7	36.7	55	11	26	26	27	71	61	66	.142	.147	.151	6.60	1.66	5.8	5.6	7.1	4.1	7.1
April	29.89	30.35	29.27	45.0	50.9	47.9	54.8	39.9	47.4	70	30	39	41	40	80	70	76	.245	.261	.256	4.64	1.54	T	7.3	7.3	6.3	7.1
May	29.85	30.15	29.46	59.3	65.7	61.3	69.9	53.0	61.4	91	44	50	50	51	73	61	72	.372	.384	.392	2.00	.66	.0	6.8	6.7	6.8	6.5
June	29.81	30.06	29.51	67.3	73.3	69.8	78.2	60.2	69.2	94	47	56	56	58	70	57	68	.479	.477	.505	2.26	1.72	.0	5.1	5.7	5.7	5.3
July	29.90	30.21	29.50	70.0	76.6	72.0	81.0	63.8	72.4	97	54	61	60	63	73	60	74	.539	.541	.580	3.58	2.60	.0	6.0	6.7	6.2	6.2
August	29.89	30.27	29.48	69.4	76.1	72.8	79.1	64.5	71.8	96	57	62	62	64	78	64	75	.564	.560	.604	7.39	2.36	.0	5.8	7.2	6.4	6.8
September	29.82	30.15	29.35	63.4	70.5	67.2	73.9	59.4	66.6	85	40	56	56	59	79	63	76	.474	.472	.513	5.05	2.50	.0	6.0	6.7	6.1	6.4
October	30.00	30.53	29.47	49.2	59.2	55.4	63.0	44.3	53.6	75	29	41	42	45	75	55	68	.277	.286	.317	2.64	.79	.0	4.8	5.0	3.9	4.9
November	29.86	30.40	29.10	36.3	43.0	41.0	46.9	31.9	39.4	70	16	28	29	29	72	58	63	.163	.173	.177	.90	.34	3.1	5.2	5.6	4.9	5.6
December	29.99	30.79	29.36	26.8	31.0	30.3	36.4	22.1	29.2	50	−8	19	20	20	73	63	67	.122	.124	.125	4.51	1.77	16.4	7.1	6.8	5.6	6.8
Year	29.88	30.79	28.92	48.6	55.2	52.3	59.2	43.7	51.4	97	−8	41	41	42	75	61	70	.306	.311	.327	45.45	2.60	39.6	5.9	6.4	5.0	6.2

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

MOORHEAD, MINN.

[H_b=940 ft.; h_t=50 ft.; h_r=43 ft.; h_a=58 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	9.3	S.	30	N.	0	14	4	3	7	16	2	9	7	0	8	8	15	14	9	20	14	0	3	1	23	0	31	0	1
February	10.1	NW.	30	NW.	0	6	1	1	0	17	8	9	13	1	8	7	13	9	4	14	9	0	2	0	22	0	27	0	1
March	9.5	S.	35	NW.	1	15	10	5	8	13	2	1	8	0	10	5	16	7	4	10	5	0	6	1	9	0	29	1	2
April	10.9	N.	26	E.	0	18	4	6	9	6	3	9	5	0	11	6	13	7	4	8	4	0	1	0	0	0	16	0	0
May	9.2	S.	26	E.	0	10	0	7	15	13	5	4	8	0	7	6	18	9	7	0	0	1	1	0	0	0	2	4	0
June	8.2	S.	29	NW.	0	16	3	3	9	18	4	2	4	1	13	13	4	9	6	0	0	0	1	1	0	9	0	8	0
July	7.5	S.	26	N.	0	9	6	8	5	18	2	3	10	1	16	12	3	7	5	0	0	0	0	0	0	10	0	8	0
August	8.3	S.	24	S.	0	12	6	2	2	21	7	4	8	0	12	13	6	9	4	0	0	0	1	0	0	5	0	4	0
September	9.4	S.	30	NW.	0	6	1	7	8	15	4	11	6	2	10	13	7	7	3	0	0	1	2	0	0	0	1	6	1
October	10.0	N.	30	W.	0	18	3	2	7	14	1	5	12	0	6	14	11	5	2	4	3	0	0	0	2	0	17	0	0
November	10.2	NW.	35	N.	1	12	1	4	0	16	4	8	15	0	5	8	17	9	6	18	9	0	2	0	14	0	30	0	1
December	9.0	S.	25	N.	0	14	4	5	6	18	3	6	6	0	5	4	22	10	6	21	9	0	6	2	23	0	31	0	1
Year	9.3	S.	35	N.	2	150	43	53	76	185	45	71	102	5	111	109	145	102	60	95	53	2	25	5	93	24	184	31	7

NANTUCKET, MASS.

[H_b=12 ft.; h_t=14 ft.; h_r=4 ft.; h_a=90 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	18.3	W.	56	NE.	12	8	7	3	2	7	14	11	10	0	7	6	18	11	8	5	3	0	6	2	1	0	14	0	0
February	16.2	W.	39	SW.	5	3	2	3	2	6	13	13	14	0	7	10	11	14	12	7	5	0	8	7	3	0	18	0	0
March	17.8	W.	45	NE.	10	8	5	6	7	2	8	13	13	0	9	8	14	15	15	10	7	0	5	3	2	0	10	0	0
April	17.1	S.	43	NE.	8	5	9	9	7	11	10	7	2	0	8	4	18	12	10	0	0	1	13	8	0	0	1	2	0
May	13.1	SW.	35	S.	1	6	5	6	9	15	15	4	2	0	9	13	9	7	5	0	0	0	11	11	0	0	0	2	0
June	12.8	S.	40	SW.	3	8	3	1	2	19	15	7	5	0	9	14	7	10	8	0	0	0	9	8	0	0	0	4	0
July	14.6	SW.	59	NE.	4	6	14	6	3	8	17	6	2	0	7	11	13	7	3	0	0	0	18	18	0	0	0	4	0
August	13.1	SW.	34	N.	1	8	10	6	2	13	19	2	2	0	11	5	15	9	8	0	0	0	18	14	0	0	0	5	0
September	13.1	SW.	54	NE.	1	3	9	3	4	11	11	14	5	0	11	7	12	9	8	0	0	0	14	8	0	0	0	3	0
October	14.9	N.	39	N.	3	11	8	5	6	5	10	10	7	0	16	4	11	13	10	0	0	0	6	4	0	0	0	1	0
November	15.3	W.	35	NE.	5	8	5	2	4	7	11	15	8	0	9	9	12	13	11	5	2	1	5	2	1	0	12	1	0
December	16.2	W.	45	NE.	12	11	4	4	3	6	5	17	12	0	5	5	21	17	15	10	9	0	9	4	8	0	17	0	0
Year	15.2	SW.	59	NE.	65	85	81	54	51	110	148	119	82	0	108	96	161	137	113	37	26	2	122	89	15	0	72	22	0

NASHVILLE, TENN.

[H_b=546 ft.; h_t=168 ft.; h_r=161 ft.; h_a=191 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.8	S.	34	NW.	1	2	5	10	7	15	7	8	8	0	9	9	13	11	8	0	0	0	3	2	0	0	11	1	0
February	10.7	S.	31	W.	0	8	8	5	3	12	2	7	11	0	6	10	12	12	10	5	3	0	3	2	3	0	10	2	0
March	11.3	NW.	50	W.	1	7	7	7	5	11	4	7	13	1	9	6	16	11	11	3	0	2	2	0	0	0	5	5	0
April	10.1	S.	35	S.	2	5	7	7	8	10	3	12	8	0	8	11	11	15	11	0	0	0	0	0	0	0	0	3	0
May	9.7	S.	47	NW.	3	7	6	5	6	12	10	5	11	0	9	11	11	13	13	0	0	2	3	0	0	1	0	14	0
June	7.2	W.	40	NW.	2	4	13	4	2	2	5	14	14	2	15	10	5	6	4	0	0	0	0	0	0	20	0	12	0
July	7.2	SW.	25	NE.	0	4	9	7	6	7	15	8	6	0	7	13	11	10	6	0	0	0	1	1	0	11	0	11	0
August	6.8	W.	28	NW.	0	6	11	4	5	8	6	8	9	5	9	16	6	9	7	0	0	0	4	2	0	9	0	7	0
September	6.5	SW.	29	S.	0	3	7	6	6	9	7	12	7	3	11	13	6	9	7	0	0	0	8	2	0	12	0	9	0
October	8.6	NE.	26	NW.	0	8	9	10	7	7	4	5	10	2	15	7	9	6	2	0	0	0	3	1	0	0	0	1	0
November	9.6	NW.	33	NW.	2	3	3	3	6	9	12	8	16	0	14	7	9	6	4	0	0	0	2	1	0	0	9	2	0
December	10.2	S.	31	NW.	0	9	8	6	3	14	8	8	6	0	2	15	14	15	14	1	0	0	3	2	1	0	7	4	0
Year	9.0	S.	50	W.	11	66	93	74	64	116	83	102	119	13	114	128	123	123	97	9	3	4	32	13	4	53	42	71	0

NEW HAVEN, CONN.

[H_b=106 ft.; h_t=74 ft.; h_r=68 ft.; h_a=153 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.6	N.	33	N.	1	17	4	2	4	6	10	13	6	0	12	4	15	7	4	8	3	0	12	3	2	0	19	0	0
February	10.1	W.	32	SW.	1	5	1	2	1	10	10	17	10	0	10	8	10	13	12	7	5	0	17	2	5	0	23	0	0
March	11.3	NW.	32	SW.	1	17	7	2	4	6	7	6	13	0	8	7	16	13	12	8	4	0	11	0	2	0	13	1	0
April	10.1	N.	32	NE.	1	13	12	7	6	10	2	5	5	0	6	8	16	18	12	2	1	2	12	2	0	0	1	1	0
May	8.3	S.	27	SW.	0	12	5	6	8	12	10	3	5	1	6	10	15	11	10	0	0	0	12	3	0	1	0	3	0
June	8.3	S.	24	N.	0	10	5	0	7	22	4	2	10	0	9	14	7	9	6	0	0	0	7	2	0	2	0	8	0
July	8.3	S.	31	NE.	0	17	5	2	9	15	9	4	1	0	8	11	12	9	6	0	0	0	10	0	0	4	0	3	0
August	8.8	N.	31	E.	0	16	9	2	6	17	5	4	2	1	5	8	18	17	14	0	0	0	18	0	0	1	0	9	0
September	8.5	S.	28	NE.	0	15	5	0	4	11	5	14	5	1	5	12	13	10	8	0	0	0	16	2	0	0	0	3	0
October	9.4	N.	33	NW.	1	28	4	0	4	10	3	6	7	0	14	8	9	8	7	0	0	0	13	0	0	0	3	2	0
November	9.6	N.	29	W.	0	16	3	1	0	8	12	10	10	0	9	10	11	10	7	10	6	0	12	0	2	0	20	0	0
December	9.6	N.	28	N.	0	22	6	1	2	5	8	8	10	0	7	8	16	14	9	8	6	0	18	1	11	0	22	0	0
Year	9.4	N.	33	N.	5	188	66	25	55	132	85	92	84	3	99	108	158	139	107	43	25	2	159	15	22	8	101	30	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

NEW ORLEANS, LA.

[ϕ=29°57′ N.; λ=90°04′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	30.06	30.55	29.70	54.6	63.9	61.4	66.8	53.2	60.0	79	32	50	50	52	85	63	74	0.384	0.398	0.422	3.59	1.54	0.0	4.8	7.3	5.8	7.1
February	30.07	30.60	29.65	53.5	60.9	58.7	66.1	50.1	58.1	83	20	48	48	49	84	64	73	.372	.367	.378	5.62	1.28	.0	6.5	6.7	5.7	6.6
March	30.00	30.22	29.43	58.1	68.7	65.4	71.9	55.9	63.9	83	41	51	50	54	76	54	69	.397	.397	.445	6.15	2.27	.0	5.4	5.2	4.8	5.0
April	29.86	30.17	29.58	65.0	74.4	71.5	77.4	62.5	70.0	90	46	60	59	59	83	62	66	.536	.527	.520	6.38	2.19	.0	6.6	5.4	5.0	5.8
May	29.88	30.11	29.52	75.8	84.2	80.5	86.7	73.0	79.8	92	64	70	68	70	83	59	70	.739	.680	.725	3.01	2.01	.0	3.9	5.6	4.9	5.2
June	29.95	30.11	29.71	76.9	85.6	83.5	89.5	73.6	81.6	90	64	66	62	64	70	46	54	.661	.566	.620	.59	.40	.0	2.8	3.4	3.4	3.4
July	29.92	30.10	29.76	79.1	84.7	82.0	88.4	76.2	82.3	95	73	74	75	73	86	67	76	.852	.791	.815	7.32	1.49	.0	6.5	7.6	7.3	7.2
August	29.91	30.07	29.69	79.9	86.6	83.1	90.1	77.0	83.6	94	71	74	72	72	83	62	69	.845	.776	.781	7.28	2.04	.0	2.6	6.4	6.0	6.0
September	29.89	30.06	29.75	78.9	88.2	84.0	91.0	76.9	84.0	97	70	73	69	72	82	54	67	.813	.712	.780	3.08	.91	.0	2.3	4.4	4.1	3.6
October	29.96	30.21	29.71	67.5	78.4	74.3	80.6	66.2	73.4	90	51	61	60	62	81	56	68	.560	.550	.578	.64	.38	.0	3.6	4.3	2.7	4.3
November	30.09	30.45	29.71	58.2	68.9	64.6	71.2	57.0	64.1	83	48	52	49	51	80	52	64	.410	.380	.401	3.60	1.74	.0	3.7	3.1	1.9	3.7
December	30.09	30.41	29.66	58.9	69.4	64.6	72.8	56.6	64.7	82	40	54	54	55	84	59	72	.442	.442	.457	1.23	.65	.0	5.6	5.0	3.2	4.6
Year	29.97	30.60	29.43	67.2	76.2	72.8	79.4	64.8	72.1	99	20	61	60	61	81	58	68	.584	.549	.577	48.49	2.27	.0	4.5	5.4	4.5	5.2

NEW YORK, N.Y.

[ϕ=40°43′ N.; λ=74°00′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.67	30.27	29.03	36.7	42.2	41.5	47.1	33.3	40.2	62	14	26	28	29	65	58	60	0.149	0.163	0.165	1.53	0.78	T	6.3	5.3	5.2	6.0
February	29.65	30.38	28.97	31.3	36.5	34.7	41.7	26.0	33.8	63	10	23	24	21	70	60	58	.133	.140	.125	2.98	.81	11.5	5.5	7.2	4.5	5.8
March	29.59	30.08	28.72	34.5	39.6	38.8	44.5	31.5	38.0	57	15	26	26	28	70	61	65	.146	.150	.156	5.89	1.50	3.1	5.7	6.6	6.2	6.9
April	29.64	30.07	29.04	46.7	52.4	50.0	57.7	42.5	50.1	76	32	38	38	38	72	60	66	.238	.244	.242	4.49	1.95	T	6.8	5.5	5.4	6.6
May	29.61	29.92	29.22	59.6	65.9	62.6	71.2	54.3	62.8	86	45	51	51	50	75	62	68	.393	.396	.391	5.93	1.27	.0	6.9	6.9	6.0	7.0
June	29.59	29.82	29.32	67.0	74.8	71.4	79.3	62.2	70.8	96	47	59	60	59	75	60	67	.513	.539	.524	2.55	.74	.0	5.0	5.0	5.0	5.5
July	29.67	29.97	29.29	70.4	78.5	73.5	81.9	65.5	73.7	100	55	63	63	63	78	61	71	.578	.595	.581	2.77	1.35	.0	5.5	5.1	5.0	5.7
August	29.66	30.03	29.20	70.4	76.9	74.4	80.5	67.0	73.8	95	58	64	63	64	80	64	71	.596	.591	.598	9.21	3.41	.0	5.6	6.9	5.6	6.3
September	29.60	29.88	29.16	64.7	71.8	69.7	75.9	61.7	68.8	86	53	58	58	59	80	64	70	.496	.493	.508	8.17	4.50	.0	5.4	5.8	5.6	6.2
October	29.77	30.26	29.25	51.6	58.8	57.5	64.3	47.5	55.9	78	31	43	44	45	73	59	65	.290	.308	.323	1.98	.70	.0	4.6	4.5	3.2	5.0
November	29.64	30.18	28.91	37.8	43.8	42.6	49.2	34.4	41.8	69	17	29	31	30	71	60	61	.173	.186	.185	.85	.49	.5	4.3	5.5	4.9	5.7
December	29.76	30.52	29.19	30.2	33.7	33.9	40.8	25.0	32.9	54	−6	23	22	23	73	64	64	.138	.134	.141	3.33	1.01	13.2	6.7	6.6	6.2	6.9
Year	29.66	30.52	28.72	50.1	56.2	54.2	61.2	45.9	53.6	100	−6	42	42	42	74	61	66	.320	.328	.328	49.08	4.50	28.3	5.7	5.9	5.3	6.1

NORFOLK, VA.

[ϕ=36°51′ N.; λ=76°17′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.97	30.53	28.95	45.0	51.3	49.4	57.0	41.6	49.3	73	27	39	39	39	80	65	69	0.254	0.249	0.247	2.99	0.99	1.4	7.1	6.8	6.5	6.9
February	30.00	30.65	29.41	40.7	46.8	46.5	53.4	35.8	44.6	70	17	33	32	34	74	59	63	.207	.208	.217	2.52	.88	.3	5.4	6.7	4.6	6.6
March	29.92	30.41	29.22	43.7	51.7	48.9	58.0	40.0	49.0	79	24	35	35	35	72	54	60	.217	.225	.224	1.98	.40	.0	6.0	6.9	4.8	6.6
April	29.88	30.29	29.39	55.1	62.5	57.4	67.2	49.9	58.6	78	41	47	46	47	75	57	70	.337	.320	.332	2.13	.71	.0	5.2	5.4	5.8	5.8
May	29.88	30.21	29.48	67.7	76.0	70.2	80.3	61.9	71.1	92	50	60	58	60	77	56	72	.531	.500	.528	1.76	.74	.0	6.6	6.8	7.3	7.0
June	29.87	30.13	29.63	72.2	81.2	76.5	86.2	67.3	76.8	99	52	63	60	62	73	51	62	.598	.557	.581	2.65	1.25	.0	5.7	5.8	5.9	5.8
July	29.94	30.20	29.71	73.0	80.8	76.0	85.0	68.6	76.8	96	61	67	66	67	83	62	75	.677	.647	.673	5.26	1.57	.0	7.0	6.1	6.1	6.4
August	29.88	30.22	28.59	75.5	82.2	76.5	85.5	71.4	78.4	94	67	70	69	70	84	66	81	.738	.718	.736	13.13	6.64	.0	6.5	6.8	5.9	6.6
September	29.86	30.13	29.29	72.4	81.1	76.1	85.0	69.5	77.2	94	56	67	65	66	83	59	73	.665	.633	.673	2.07	1.40	.0	5.9	5.5	5.2	5.5
October	30.02	30.39	29.57	59.2	67.6	62.6	71.0	55.9	63.4	86	41	52	52	53	77	59	71	.401	.403	.416	.39	.24	.0	4.1	4.9	3.4	4.5
November	29.96	30.55	29.32	44.9	53.4	50.9	57.6	42.3	50.0	74	26	36	36	37	71	54	60	.233	.239	.249	.99	.73	T	4.4	4.5	3.6	4.7
December	30.07	30.74	29.58	44.0	50.4	47.1	55.1	39.0	47.0	72	18	38	38	36	80	65	67	.249	.251	.233	.66	.39	T	7.1	6.3	4.8	6.7
Year	29.94	30.74	28.59	57.8	65.4	61.5	70.1	53.6	61.8	99	17	51	50	50	77	59	69	.426	.412	.424	35.93	6.64	1.7	5.9	6.0	5.8	6.1

NORTH HEAD, WASH.

[ϕ=46°16′ N.; λ=124°04′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.65	30.44	28.98	39.8	41.4	41.1	43.7	36.7	40.2	49	29	38	38	37	91	87	87	0.229	0.230	0.228	13.14	2.09	10.2	7.9	8.2	8.1	8.5
February	29.95	30.36	29.40	37.4	41.6	41.3	44.0	34.8	39.4	49	15	34	36	36	88	81	82	.204	.218	.218	4.95	.89	T	6.9	7.2	7.8	7.5
March	29.79	30.27	29.17	42.7	46.1	45.4	48.3	39.9	44.1	57	36	40	40	41	89	82	85	.245	.254	.254	10.48	1.35	.0	7.6	8.3	8.1	8.0
April	29.90	30.21	29.49	43.5	48.2	47.6	50.5	41.9	46.2	68	34	39	41	41	85	76	78	.240	.256	.257	1.47	.66	.0	6.4	5.8	6.8	5.7
May	29.80	30.10	29.32	46.5	50.0	50.4	52.3	45.4	48.8	60	39	44	45	44	91	84	80	.286	.304	.293	5.27	1.15	.0	9.3	7.3	6.8	7.5
June	29.84	30.08	29.36	52.0	56.7	56.3	58.1	50.9	54.5	62	45	48	50	49	87	78	78	.339	.339	.354	2.08	1.28	.0	7.5	6.0	6.8	6.4
July	29.88	30.09	29.61	52.8	56.9	57.3	58.5	52.0	55.2	62	49	51	52	52	93	84	83	.369	.391	.392	.81	.44	.0	6.9	5.1	4.7	5.5
August	29.80	29.95	29.62	56.1	59.5	58.5	62.7	53.5	58.1	67	50	53	54	54	91	85	88	.400	.420	.423	.65	.29	.0	7.4	7.0	6.8	7.9
September	29.72	30.06	29.40	53.2	56.1	56.0	58.4	50.9	54.6	62	44	50	52	52	92	85	86	.370	.384	.387	6.58	2.12	.0	7.9	7.4	7.2	7.9
October	29.82	30.18	29.17	50.9	54.3	53.0	56.6	48.8	52.7	74	42	48	50	50	92	87	88	.343	.365	.357	5.43	1.32	.0	5.1	5.5	5.9	7.2
November	30.03	30.29	29.53	46.5	49.8	49.6	53.2	44.2	48.7	64	38	44	46	46	92	89	89	.294	.315	.317	4.50	1.73	.0	6.0	6.7	6.0	6.9
December	29.62	30.06	29.00	46.3	47.3	46.9	49.3	43.1	46.2	53	34	44	45	45	94	94	93	.298	.307	.300	21.85	2.92	T	8.7	9.1	9.5	9.4
Year	29.82	30.44	28.98	47.3	50.7	50.3	53.0	45.2	49.1	87	15	44	46	46	90	84	85	.301	.317	.315	77.21	2.92	10.2	7.3	7.0	6.8	7.4

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

NEW ORLEANS, LA.

[H_b=53 ft.; h_t=76 ft.; h_r=71 ft.; h_a=84 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	6.4	SE.	19	E.	0	4	15	8	13	8	6	5	1	2	5	8	18	14	9	0	0	0	12	8	0	0	0	0	0
February	8.0	NE.	22	NE.	0	6	9	12	9	6	5	4	4	1	5	10	13	13	10	0	0	0	6	3	0	0	2	2	0
March	8.1	SE.	20	SW.	0	2	11	9	11	11	9	7	0	2	12	11	8	7	6	0	0	0	2	1	0	0	0	4	0
April	7.6	SE.	21	SW.	0	1	7	7	17	6	11	6	4	1	9	13	8	11	11	0	0	0	5	2	0	0	0	8	0
May	7.2	SE.	18	SE.	0	2	4	6	29	10	4	5	2	0	8	15	8	8	5	0	0	1	1	1	0	5	0	6	0
June	6.3	SW.	23	NE.	0	6	14	2	6	5	13	4	8	2	16	11	3	4	3	0	0	0	0	0	0	15	0	9	0
July	6.9	SW.	21	NE.	0	0	5	9	11	7	19	8	0	3	3	11	17	19	17	0	0	0	0	0	0	13	0	11	0
August	5.6	SE.	18	E.	0	7	8	11	10	9	4	11	2	0	5	15	11	15	10	0	0	0	0	0	0	16	0	19	0
September	6.1	SE.	36	N.	1	3	12	8	14	5	8	7	1	2	14	15	1	9	8	0	0	0	0	0	0	19	0	8	0
October	7.4	NE.	18	NE.	0	6	28	9	8	2	2	4	3	0	13	10	8	5	3	0	0	0	1	1	0	0	0	0	0
November	6.7	NE.	18	E.	0	5	12	9	9	3	9	5	7	1	15	11	4	10	6	0	0	0	0	0	0	0	0	4	0
December	6.9	SW.	18	NW.	0	3	10	4	14	13	12	3	3	0	12	10	9	6	4	0	0	0	5	2	0	0	0	2	0
Year	6.9	SE.	36	N.	1	45	135	94	151	85	102	69	35	14	117	140	108	121	92	0	0	1	32	18	0	68	2	73	0

NEW YORK, N.Y.

[H_b=314 ft.; h_t=415 ft.; h_r=398 ft.; h_a=454 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	15.8	NW.	57	NW.	15	4	8	3	4	3	14	6	20	0	10	5	16	7	5	5	2	0	8	2	1	0	13	0	0
February	18.9	NW.	60	NW.	17	4	3	1	1	3	13	8	23	0	10	6	12	12	10	7	4	0	11	3	5	0	20	1	0
March	13.2	NW.	56	NW.	14	9	7	5	2	3	5	11	20	0	6	10	15	14	13	9	5	0	16	2	0	0	12	2	0
April	13.7	SE.	46	NW.	7	5	9	10	10	6	6	5	9	0	6	9	15	11	10	1	1	0	13	5	0	0	2	3	0
May	12.2	SW.	51	NW.	3	6	9	5	10	8	11	6	7	0	5	11	15	13	13	0	0	0	18	5	0	0	0	6	0
June	13.0	N.	67	NW.	10	14	5	5	8	10	6	6	6	0	7	14	9	10	9	0	0	2	10	1	0	2	0	10	0
July	11.1	SW.	56	N.	1	2	9	6	9	8	12	10	6	0	10	10	11	7	4	0	0	0	11	0	0	5	0	6	0
August	11.9	N.	51	SE.	3	10	13	7	5	9	9	5	4	0	7	9	15	16	14	0	0	1	14	0	0	3	0	7	0
September	12.8	NW.	44	NW.	6	9	10	1	4	9	8	7	12	0	7	10	13	15	10	0	0	0	17	0	0	0	0	2	0
October	13.0	N.	57	NW.	2	21	6	6	4	6	7	7	5	0	11	11	9	6	4	0	0	0	11	0	0	0	2	1	0
November	15.6	W.	53	NW.	10	10	4	2	1	7	7	14	15	0	10	9	11	7	5	8	3	0	12	2	1	0	12	0	0
December	14.2	NW.	56	NW.	10	13	9	2	3	3	8	10	14	0	7	6	18	11	11	6	4	0	17	5	7	0	17	0	0
Year	14.2	NW.	67	NW.	98	107	92	53	61	75	106	95	141	0	96	110	159	129	108	36	19	3	158	25	14	10	78	38	0

NORFOLK, VA.

[H_b=91 ft.; h_t=170 ft.; h_r=178 ft.; h_a=205 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	13.8	SW.	43	NW.	4	10	8	5	3	11	11	5	9	0	6	9	16	9	8	1	1	0	7	1	0	0	3	1	0
February	14.4	W.	44	NW.	6	5	6	2	5	10	6	12	10	0	5	10	13	15	9	3	1	0	7	2	0	0	7	0	0
March	14.8	NW.	42	W.	3	11	6	3	8	9	7	5	13	0	5	10	16	11	9	0	0	1	5	0	0	0	3	4	0
April	13.2	NE.	39	NW.	2	2	14	8	14	9	7	5	1	0	11	8	11	12	9	0	0	1	7	1	0	0	0	4	0
May	11.4	S.	31	NW.	0	7	6	7	10	13	6	9	4	0	2	13	16	7	6	0	0	1	6	0	0	2	0	6	0
June	10.3	S.	34	W.	1	9	6	7	9	11	4	7	7	0	8	15	7	7	6	0	0	0	3	1	0	13	0	10	0
July	9.9	S.	32	NE.	1	1	10	9	7	13	9	9	4	0	9	5	17	14	12	0	0	1	8	0	0	11	0	9	0
August	11.8	NE.	57	NE.	3	5	11	13	7	10	11	4	1	0	5	11	15	13	13	0	0	0	0	0	0	8	0	9	0
September	11.2	S.	56	NE.	1	2	7	7	11	8	12	8	5	0	9	9	12	6	6	0	0	0	5	2	0	4	0	4	0
October	11.4	NE.	31	N.	0	14	19	7	6	9	4	2	1	0	13	9	9	4	3	0	0	0	6	1	0	0	0	1	0
November	13.1	S.	44	NW.	4	11	5	5	4	14	8	6	7	0	15	3	12	8	4	1	0	0	9	2	0	0	4	1	0
December	12.6	SW.	38	W.	1	12	10	7	1	13	11	7	1	0	4	13	14	7	5	3	0	0	10	0	0	0	8	0	0
Year	12.3	S.	57	NE.	26	89	108	80	85	130	98	79	63	0	92	115	158	113	90	8	2	4	73	10	0	38	25	49	0

NORTH HEAD, WASH.

[H_b=211 ft.; h_t=11 ft.; h_r=3 ft.; h_a=56 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	18.1	S.	65	S.	20	7	3	6	11	11	8	9	7	0	1	7	23	27	25	9	8	0	4	3	1	0	5	0	0
February	14.7	S.	55	S.	13	3	3	9	8	7	9	8	9	0	4	7	17	21	18	2	1	0	3	2	1	0	5	0	0
March	16.5	S.	65	S.	19	4	2	6	15	22	2	5	6	0	3	4	24	26	26	0	0	0	4	0	0	0	0	0	0
April	14.4	N.	42	N.	5	26	3	2	4	4	1	9	10	1	9	9	12	15	10	0	0	0	5	1	0	0	0	0	0
May	14.9	S.	49	S.	12	7	1	2	10	14	15	11	2	0	1	11	19	22	16	0	0	0	3	1	0	0	0	0	0
June	12.8	N.	49	S.	3	33	3	0	3	2	5	3	11	0	7	10	13	12	7	0	0	0	2	0	0	0	0	0	0
July	15.8	N.	40	S.	6	48	0	1	2	5	0	1	5	0	10	11	10	9	3	0	0	0	14	6	0	0	0	0	0
August	12.6	N.	33	N.	1	35	1	1	0	16	3	2	4	0	5	5	21	11	5	0	0	0	20	13	0	0	0	0	0
September	16.4	S.	68	S.	13	19	2	1	4	21	6	5	2	0	4	4	22	21	19	0	0	0	6	3	0	0	0	1	0
October	14.0	N.	49	S.	10	22	1	6	5	20	1	4	3	0	7	4	20	16	13	0	0	0	19	11	0	0	0	0	0
November	10.7	N.	43	S.	7	18	8	5	13	7	4	2	2	1	8	2	20	12	9	0	0	0	14	5	0	0	0	0	0
December	22.6	S.	70	S.	26	3	2	4	9	29	6	7	2	0	0	2	29	31	28	1	1	0	9	3	0	0	0	0	0
Year	15.3	N.	70	S.	135	225	29	43	84	158	60	66	63	2	59	76	230	223	179	12	10	0	103	48	2	0	10	1	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

NORTH PLATTE, NEBR.

[ϕ=41°08′ N.; λ=100°45′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	26.92	27.38	26.41	22.3	42.0	37.0	46.9	19.5	33.2	60	10	17	17	17	80	37	44	0.092	0.094	0.095	0.16	0.16	1.3	3.9	4.1	4.3	4.9
February	27.05	27.41	26.57	14.6	33.8	31.5	39.5	11.4	25.4	63	−19	9	12	12	77	43	47	.070	.080	.078	.15	.08	1.8	2.8	3.2	5.4	3.8
March	27.00	27.39	26.52	30.5	46.6	46.5	52.5	28.0	40.2	79	16	24	25	26	77	47	49	.132	.138	.145	.62	.39	5.1	6.5	6.2	6.6	6.4
April	26.94	27.37	26.36	38.7	56.6	56.3	61.7	36.6	49.2	79	18	32	29	30	77	39	40	.190	.177	.180	4.78	3.61	.2	5.6	5.5	5.5	5.7
May	26.94	27.22	26.28	48.4	65.2	65.3	69.4	46.1	57.8	90	36	44	42	41	84	48	47	.292	.278	.262	2.61	1.03	.0	6.2	5.7	5.6	6.2
June	27.02	27.53	26.65	65.4	86.0	84.7	91.0	62.9	77.0	102	52	56	53	54	72	35	39	.456	.419	.429	1.27	.57	.0	3.5	4.0	4.7	4.3
July	27.07	27.40	26.82	66.5	85.7	87.1	91.9	64.6	78.2	104	56	60	58	56	81	41	38	.524	.485	.464	.94	.77	.0	4.5	2.7	2.5	3.7
August	27.10	27.33	26.89	61.9	78.3	76.7	82.1	61.0	71.6	96	56	59	58	59	89	54	58	.498	.499	.506	3.35	1.40	.0	6.4	5.7	6.5	6.2
September	26.98	27.33	26.56	56.8	77.1	74.7	82.8	55.5	69.2	96	42	51	52	53	83	47	49	.392	.422	.421	2.01	1.76	.0	3.7	3.0	3.0	3.3
October	27.11	27.50	26.67	40.8	65.1	59.8	69.6	38.7	54.2	84	29	34	33	35	75	30	39	.198	.192	.209	T	T	.0	3.6	2.9	3.3	3.6
November	27.15	27.45	26.69	31.1	51.4	45.0	56.2	27.9	42.0	72	14	23	26	25	72	39	47	.124	.138	.134	.17	.15	1.4	2.7	3.7	3.6	3.5
December	27.05	27.54	26.50	24.7	40.1	35.3	45.1	21.5	33.3	69	2	20	22	22	84	52	58	.113	.121	.118	1.06	1.03	.2	4.4	4.5	4.6	5.4
Year	27.03	27.54	26.28	41.8	60.7	58.3	65.7	39.5	52.6	104	−19	36	36	36	79	43	46	.257	.254	.253	17.12	3.61	10.0	4.5	4.3	4.6	4.8

OKLAHOMA CITY, OKLA.

[ϕ=35°26′ N.; λ=97° 33′W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.68	29.10	28.26	40.0	53.3	50.8	58.7	36.3	47.5	71	19	31	33	31	69	48	49	0.185	0.206	0.185	0.33	0.19	0.0	3.7	5.2	3.9	4.7
February	28.80	29.24	28.29	30.5	44.1	42.8	49.9	26.9	38.4	75	−5	24	25	24	76	51	49	.144	.153	.140	1.42	.65	2.0	4.4	5.1	5.1	5.0
March	28.67	29.10	28.20	44.3	56.8	57.4	63.1	40.9	52.0	83	23	37	36	36	75	52	49	.236	.240	.237	2.88	2.38	2.4	6.0	6.8	5.1	5.7
April	28.56	28.95	28.07	51.2	68.3	66.4	73.5	49.2	61.4	87	35	42	40	38	71	39	40	.284	.271	.255	3.05	1.48	T	3.2	3.0	4.1	3.6
May	28.56	28.89	28.10	63.2	76.2	75.2	80.6	60.8	70.7	93	46	56	56	56	80	53	53	.477	.476	.457	3.98	1.52	.0	5.2	4.7	4.2	4.1
June	28.69	29.01	28.48	71.3	90.0	87.9	93.8	69.6	81.7	104	54	58	57	56	64	34	36	.499	.481	.457	.15	.15	.0	2.8	3.1	3.5	3.0
July	28.66	28.87	28.48	75.5	89.5	88.1	93.6	73.4	83.5	107	64	66	66	64	75	48	48	.656	.642	.604	1.73	.71	.0	3.7	4.0	3.9	3.8
August	28.69	28.89	28.52	71.3	83.0	82.4	87.8	70.0	78.9	97	62	68	68	68	89	63	64	.682	.687	.692	5.38	1.42	.0	6.2	5.5	6.2	5.5
September	28.63	28.93	28.40	69.8	84.7	81.5	88.6	68.5	78.6	95	55	65	66	66	85	56	61	.627	.652	.650	3.37	1.45	.0	4.4	3.7	3.1	4.3
October	28.77	29.08	28.46	53.9	69.5	66.4	74.0	52.6	63.3	85	41	47	50	51	79	51	59	.340	.372	.381	3.34	1.41	.0	3.6	4.7	3.3	4.0
November	28.84	29.17	28.39	44.2	58.3	54.9	63.1	42.5	52.8	79	32	36	37	38	75	49	56	.230	.239	.242	1.88	1.18	.0	3.9	4.0	3.4	4.3
December	28.76	29.18	28.37	38.0	50.4	47.7	55.8	34.9	45.4	74	16	31	31	32	77	50	57	.180	.179	.192	1.61	.99	.0	4.5	4.6	3.2	4.4
Year	28.69	29.24	28.07	54.4	68.7	66.8	73.5	52.1	62.8	107	−5	47	47	47	76	50	52	.378	.383	.374	29.12	2.38	4.4	4.3	4.5	4.1	4.4

OMAHA, NEBR.

[ϕ=41°16′ N.; λ=95°56′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.71	29.18	28.00	30.6	39.1	40.3	45.8	26.5	36.2	59	19	22	25	25	70	57	56	0.120	0.137	0.140	0.94	0.66	1.9	4.0	5.0	3.4	5.2
February	28.88	29.38	28.34	19.9	30.0	30.5	36.1	15.9	26.0	65	−18	11	13	12	90	50	48	.081	.087	.085	.25	.15	5.1	2.8	3.5	2.7	3.5
March	28.82	29.27	28.15	32.6	41.3	42.4	47.8	30.3	39.0	72	10	27	27	28	79	59	59	.156	.160	.165	3.25	1.30	17.6	5.8	5.6	5.4	5.9
April	28.70	29.12	28.09	44.1	57.2	57.7	61.6	42.3	52.0	79	31	34	33	33	67	42	42	.206	.200	.204	.38	.30	T	5.6	5.6	4.9	5.4
May	28.69	28.93	28.23	55.7	67.2	68.1	71.4	52.7	62.0	92	40	47	46	46	74	51	50	.340	.325	.329	.73	.25	.0	5.1	6.1	5.5	5.7
June	28.76	29.26	28.45	72.3	88.5	89.0	93.1	69.9	81.5	107	51	56	54	54	58	32	32	.468	.432	.436	.25	.21	.0	3.5	3.3	3.6	3.6
July	28.81	29.17	28.41	71.4	84.5	85.1	88.9	68.6	78.8	101	62	62	62	61	74	49	47	.571	.574	.554	5.03	3.46	.0	4.2	4.1	2.8	3.6
August	28.84	29.06	28.64	65.9	78.0	78.2	83.1	64.2	73.6	100	54	58	58	58	78	53	54	.500	.487	.502	1.63	.81	.0	5.4	6.7	5.4	6.1
September	28.72	29.01	28.30	63.8	76.9	75.7	81.7	61.4	71.6	97	38	57	56	56	79	52	54	.482	.474	.480	4.72	1.82	.0	4.4	3.5	2.9	3.5
October	28.88	29.27	28.48	46.1	59.4	58.5	64.6	43.1	53.8	81	29	36	35	37	69	42	46	.223	.222	.241	.36	.32	T	3.3	3.2	1.9	2.9
November	28.89	29.32	28.36	35.9	47.2	45.6	53.0	31.1	42.0	78	18	26	26	27	68	46	50	.149	.148	.150	.37	.17	1.1	4.5	4.6	3.2	4.3
December	28.88	29.49	28.22	27.1	34.9	33.9	40.7	21.9	31.3	63	−5	20	21	21	74	57	60	.124	.129	.131	1.39	.89	T	4.9	5.8	3.5	5.5
Year	28.80	29.49	28.00	47.1	58.7	58.8	64.0	44.0	54.0	107	−18	38	38	38	72	49	50	.285	.281	.285	19.30	3.46	25.7	4.5	4.8	3.8	4.6

OSWEGO, N.Y.

[ϕ=43°29′ N.; λ=76°35′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.61	30.21	28.91	31.6	35.9	34.8	41.0	26.8	33.9	58	5	24	26	26	74	66	71	0.132	0.142	0.146	0.89	0.34	4.0	8.9	8.0	6.9	8.1
February	29.59	30.23	28.99	25.9	29.6	29.1	35.6	20.9	28.2	48	−3	20	20	21	77	65	70	.111	.109	.116	1.81	.51	21.2	8.0	7.4	7.8	7.5
March	29.58	30.04	28.75	30.4	32.5	32.3	36.2	27.7	32.0	48	11	23	24	24	74	69	72	.126	.128	.134	3.32	.98	6.0	9.0	8.1	7.8	8.1
April	29.59	30.10	29.13	44.0	49.2	48.1	53.7	38.5	46.1	82	28	35	35	37	71	62	68	.208	.219	.232	3.23	.81	2.6	7.1	6.2	6.0	6.5
May	29.58	29.91	29.20	55.5	59.6	57.1	65.8	48.5	57.2	80	36	48	48	46	73	65	69	.347	.345	.329	2.24	.62	.0	7.0	7.0	7.0	6.9
June	29.56	29.83	29.19	66.3	70.4	68.1	75.5	58.4	67.0	90	46	56	56	56	70	62	68	.470	.468	.470	.84	.38	.0	4.9	4.3	6.4	4.8
July	29.63	30.06	29.32	71.6	75.4	73.8	80.1	63.8	72.0	91	57	59	59	59	66	58	62	.507	.509	.510	.93	.55	.0	5.1	4.2	6.2	5.0
August	29.63	29.97	29.03	67.0	72.7	70.3	76.0	61.3	68.6	94	53	58	58	59	73	62	68	.485	.492	.506	4.31	2.38	.0	5.7	4.9	5.9	5.3
September	29.55	29.91	29.10	61.1	67.1	64.0	70.2	56.3	63.2	84	42	55	56	55	80	68	74	.440	.461	.452	1.45	.48	.0	6.9	7.2	4.6	7.0
October	29.72	30.16	29.23	47.6	52.6	50.1	57.0	41.8	49.4	71	26	38	38	39	70	60	66	.244	.239	.242	2.22	1.03	T	7.1	7.0	5.7	6.7
November	29.56	30.11	28.85	31.5	34.0	33.9	40.3	25.7	33.0	68	5	27	28	30	84	79	84	.156	.162	.171	4.55	.71	28.9	6.7	8.5	8.6	8.6
December	29.72	30.63	29.08	22.8	26.0	25.9	32.7	16.9	24.8	52	−23	19	21	22	86	81	85	.117	.124	.133	2.55	.34	17.8	9.6	8.8	8.2	9.1
Year	29.61	30.63	28.75	46.4	50.4	49.0	55.3	40.6	48.0	94	−23	38	39	40	75	66	71	.279	.283	.287	26.34	2.38	52.5	7.3	6.8	6.8	7.0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

NORTH PLATTE, NEBR.

[H_b=2,821 ft.; h_t=11 ft.; h_r=3 ft.; h_a=51 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	7.4	W.	25	NW.	0	3	2	0	6	6	10	17	15	3	11	11	9	1	1	3	1	0	2	0	2	0	31	0	0
February	8.9	W.	29	NW.	0	7	2	4	4	4	5	21	9	0	13	11	4	3	2	7	3	0	4	1	6	0	27	0	0
March	9.5	N.	30	N.	0	11	6	8	12	8	3	8	5	1	8	8	15	7	3	7	7	0	10	2	3	0	24	0	0
April	10.5	N.	30	N.	0	14	5	6	12	4	3	8	8	0	11	8	11	10	6	5	3	0	4	0	0	0	11	4	0
May	8.8	E.	35	W.	2	5	8	11	7	2	5	14	9	1	8	10	13	10	8	0	0	1	7	1	0	0	0	6	0
June	7.8	S.	36	W.	1	4	6	9	15	14	2	4	4	2	12	13	5	6	5	0	0	2	1	0	0	20	0	10	0
July	7.7	SE.	29	N.	0	2	8	12	12	18	4	2	3	1	17	11	3	5	3	0	0	0	5	1	0	19	0	5	0
August	6.9	SE.	22	W.	0	5	9	5	20	10	2	4	5	2	6	13	12	14	12	0	0	0	7	2	0	6	0	11	0
September	7.3	S.	25	NW.	0	9	6	4	11	11	6	3	8	2	16	9	5	4	3	0	0	0	5	2	0	10	0	6	0
October	6.8	S.	27	N.	0	5	6	8	12	13	3	4	6	5	17	9	5	0	0	0	0	0	3	1	0	0	6	0	0
November	8.4	W.	32	NW.	2	11	3	2	2	3	5	24	9	1	19	7	4	3	2	5	2	0	3	0	1	0	21	0	0
December	7.3	W.	32	N.	1	8	3	6	11	4	7	16	6	1	11	10	10	4	2	4	2	0	5	0	6	0	27	0	0
Year	8.1	W.	36	W.	6	84	64	75	124	97	55	125	87	19	149	120	96	67	47	31	18	3	56	10	18	55	147	42	0

OKLAHOMA CITY, OKLA.

[H_b=1,214 ft.; h_t=10 ft.; h_r=3 ft.; h_a=47 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.0	S.	30	SW.	0	6	1	0	4	32	8	2	5	4	11	13	7	4	3	0	0	1	4	4	0	0	7	2	0
February	9.5	N.	32	N.	1	15	2	2	8	16	2	5	6	0	10	9	9	6	5	4	4	0	4	2	5	0	16	2	0
March	11.4	S.	29	S.	0	8	2	6	10	20	2	1	11	2	9	10	12	6	3	2	1	0	4	2	0	0	8	5	0
April	10.8	S.	30	SW.	0	13	2	3	9	22	2	5	3	1	18	7	5	6	4	1	0	2	2	0	0	0	0	5	0
May	10.3	S.	31	S.	0	6	5	6	11	24	2	4	4	0	15	11	5	9	8	0	0	1	1	0	0	4	0	9	0
June	10.1	S.	24	S.	0	3	2	2	10	41	1	0	1	0	16	13	1	1	1	0	0	0	0	0	0	21	0	3	0
July	8.8	S.	22	NE.	0	5	11	4	14	22	2	1	1	2	17	9	5	5	5	0	0	0	0	0	0	21	0	6	0
August	8.0	S.	27	SE.	0	7	7	4	17	20	0	2	5	0	8	13	10	11	10	0	0	0	5	3	0	12	0	13	0
September	9.7	S.	24	SE.	0	5	3	4	11	33	0	1	2	1	14	9	7	7	6	0	0	0	4	0	0	15	0	5	0
October	8.9	S.	28	NW.	0	15	8	5	16	12	2	1	3	0	13	14	4	7	7	0	0	1	5	2	0	0	0	8	0
November	9.9	S.	27	N.	0	14	1	2	3	24	2	9	5	0	14	8	8	4	3	0	0	0	3	1	0	0	0	1	0
December	9.7	S.	25	N.	0	16	1	2	5	24	5	3	6	0	15	5	11	4	3	0	0	0	4	0	1	0	10	1	0
Year	9.8	S.	32	N.	1	113	45	40	118	290	28	34	52	10	160	121	84	70	58	7	5	5	36	14	6	73	41	60	0

OMAHA, NEBR.

[H_b=1,105 ft.; h_t=115 ft.; h_r=107 ft.; h_a=122 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.5	NW.	29	NW.	0	2	0	4	10	11	15	5	13	2	14	4	13	6	5	4	2	0	4	3	3	0	23	2	0
February	10.0	NW.	38	N.	2	5	2	2	3	10	8	5	20	1	17	4	7	5	4	6	5	1	0	0	12	0	23	1	0
March	10.1	N.	30	NW.	0	10	3	7	10	9	2	1	17	3	11	7	13	9	8	6	5	3	5	2	5	0	18	4	0
April	9.9	NW.	30	NW.	0	13	4	10	5	6	4	5	13	0	10	8	12	4	2	4	0	0	1	0	0	0	2	2	0
May	8.8	NW.	30	NW.	0	15	6	6	7	7	9	3	9	0	11	8	12	8	5	0	0	1	3	0	0	1	0	3	0
June	7.4	S.	28	NE.	0	5	2	7	14	20	2	3	4	3	15	12	3	3	1	0	0	0	0	0	0	23	0	4	0
July	6.8	S.	30	N.	0	6	6	14	11	17	1	3	3	1	17	9	5	7	6	0	0	0	0	0	0	16	0	8	0
August	6.8	N.	20	N.	0	13	5	11	11	7	3	2	6	4	8	10	13	10	8	0	0	0	8	2	0	6	0	5	0
September	7.8	S.	31	N.	0	6	5	6	6	24	4	1	6	2	18	6	6	9	8	0	0	0	6	1	0	9	0	9	0
October	8.3	S.	29	NW.	0	9	2	2	7	20	5	4	11	2	19	10	2	3	1	1	0	0	4	2	0	0	1	2	0
November	9.7	NW.	37	NW.	2	3	3	4	5	7	7	9	22	0	13	11	6	4	3	4	2	0	2	2	0	0	16	1	0
December	8.5	NW.	32	NW.	1	8	7	6	7	12	5	5	12	0	11	9	11	2	2	4	0	0	5	1	7	0	24	0	0
Year	8.6	S.	38	N.	5	95	45	79	96	150	65	46	136	18	164	98	103	70	53	29	14	5	38	13	27	55	107	41	0

OSWEGO, N.Y.

[H_b=335 ft.; h_t=71 ft.; h_r=69 ft.; h_a=85 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	12.6	S.	32	W.	1	7	0	4	8	23	5	10	5	0	2	6	23	6	3	9	2	0	1	0	5	0	25	0	0
February	14.2	S.	27	W.	2	4	1	0	9	15	7	11	9	0	2	9	17	16	9	16	13	0	1	0	7	0	25	0	0
March	12.8	NW.	35	SW.	2	9	5	2	12	7	3	11	13	0	3	5	23	17	14	17	10	0	5	0	6	0	24	0	0
April	11.2	SE.	32	N.	1	6	1	4	18	8	6	10	7	0	6	10	14	17	14	4	2	0	4	0	0	0	6	0	0
May	8.6	W.	24	SE.	0	10	3	4	4	15	9	15	2	0	5	7	19	14	11	0	0	0	9	1	0	0	0	8	0
June	8.0	W.	24	N.	0	9	1	1	7	15	4	17	6	0	10	13	7	9	7	0	0	0	3	0	0	2	0	6	1
July	7.8	S.	31	N.	0	13	2	2	5	15	12	10	2	1	8	18	5	4	3	0	0	1	0	0	0	3	0	2	0
August	8.2	S.	26	NW.	0	5	7	5	8	13	8	8	7	1	12	5	14	13	10	0	0	0	2	0	0	1	0	3	0
September	8.4	S.	21	SW.	0	2	2	1	14	19	6	9	7	0	3	11	16	9	6	0	0	0	7	0	0	0	0	3	0
October	10.2	S.	29	NW.	0	3	4	0	16	23	1	7	8	0	6	8	17	10	6	1	1	2	6	0	0	0	4	2	0
November	12.2	S.	27	NW.	0	7	1	4	7	19	6	3	13	0	1	4	25	21	16	17	14	0	6	0	6	0	24	2	0
December	12.3	SE.	41	NW.	3	8	1	4	14	14	3	5	13	0	0	4	27	19	16	17	13	0	5	0	12	0	24	1	0
Year	10.5	S.	41	NW.	9	83	28	31	122	186	70	116	92	2	58	100	207	155	115	81	55	3	49	1	36	6	132	27	1

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

PALESTINE, TEX.

[ϕ=31°45′ N.; λ=95°40′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.53	30.10	29.17	50.2	59.5	59.2	64.0	47.4	55.7	75	25	43	43	43	78	61	60	0.314	0.320	0.313	3.26	1.46	0.0	5.9	6.5	6.3	6.3
February	29.60	30.12	29.03	43.2	51.3	50.9	57.9	38.9	48.4	79	5	39	39	39	84	67	66	.273	.278	.265	2.98	.92	.3	5.7	6.2	6.2	6.0
March	29.47	29.80	29.10	53.7	64.5	64.2	69.9	50.0	60.0	85	30	47	46	46	78	54	55	.347	.341	.341	6.33	2.95	.0	5.9	5.5	5.4	6.0
April	29.36	29.70	29.02	57.8	71.6	71.5	77.0	55.1	66.0	88	37	51	50	51	79	50	51	.403	.391	.400	4.14	1.39	.0	5.4	4.8	3.3	4.4
May	29.36	29.57	28.97	69.8	80.6	80.3	85.3	67.5	76.4	91	55	65	64	64	86	59	60	.634	.605	.614	5.39	3.91	.0	5.7	5.4	3.3	5.1
June	29.48	29.75	29.27	71.6	85.8	89.0	90.0	68.7	79.4	100	57	63	60	62	76	42	46	.594	.532	.562	.38	.38	.0	2.7	2.2	2.1	2.4
July	29.41	29.60	29.24	75.4	87.2	86.3	91.7	73.6	82.6	102	68	72	70	69	88	57	59	.774	.722	.716	2.66	1.30	.0	6.5	6.5	4.4	5.8
August	29.44	29.64	29.25	74.5	89.1	86.5	93.1	72.8	83.0	97	67	71	68	68	89	50	56	.759	.680	.697	.63	.41	.0	3.4	4.8	4.3	4.5
September	29.41	29.56	29.22	73.8	87.2	83.5	91.0	72.6	81.8	95	68	71	68	68	90	55	62	.753	.696	.701	1.59	1.14	.0	3.8	4.9	3.9	4.2
October	29.51	29.70	29.30	62.0	76.6	74.1	81.5	60.3	70.9	90	46	56	56	56	82	51	55	.472	.467	.464	.56	.42	.0	4.2	4.0	3.0	3.9
November	29.62	29.95	29.26	52.9	66.0	63.4	70.7	51.2	61.0	81	39	46	46	46	78	52	55	.333	.337	.329	.90	.82	.0	4.7	4.1	2.6	3.9
December	29.54	29.89	29.21	52.5	61.8	60.8	67.6	47.9	57.8	81	34	47	46	46	83	60	62	.357	.342	.333	3.80	1.06	.0	5.7	4.6	3.3	4.9
Year	29.48	30.12	28.97	61.4	73.4	72.5	78.3	58.8	68.6	102	5	56	55	55	83	55	57	.501	.476	.478	32.62	3.91	.3	5.0	5.0	4.0	4.8

PARKERSBURG, W.VA.

[ϕ=39°16′ N.; λ=81°36′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.42	29.99	28.68	36.8	45.3	43.3	49.8	33.3	41.6	71	18	31	32	32	79	62	67	0.179	0.193	0.196	2.96	0.76	T	6.3	6.5	5.3	6.8
February	29.46	30.05	28.80	29.4	38.9	38.0	44.9	26.1	35.5	65	−2	23	59	24	76	55	58	.134	.139	.143	1.92	.54	3.0	5.4	5.8	4.0	5.1
March	29.39	29.89	28.62	35.6	44.7	43.5	50.5	33.9	42.2	73	14	31	35	37	82	70	77	.187	.225	.240	6.43	2.05	.5	7.1	8.5	7.1	7.7
April	29.31	29.73	28.91	47.0	60.1	57.4	64.8	43.8	54.3	83	34	39	41	40	74	52	57	.243	.275	.260	3.47	.85	.0	5.0	5.5	6.1	5.4
May	29.32	29.63	28.94	62.9	70.6	68.7	75.9	58.2	67.0	88	45	56	57	57	79	65	68	.460	.482	.482	7.50	2.44	.0	7.3	7.4	6.2	6.9
June	29.37	29.71	29.18	69.5	82.5	79.3	87.0	63.5	75.2	98	41	60	61	62	73	50	58	.545	.567	.586	1.24	.64	.0	3.7	4.3	4.5	4.2
July	29.41	29.79	29.15	70.6	82.2	78.5	85.3	65.2	75.2	98	54	64	62	65	79	53	65	.598	.574	.623	3.51	1.11	.0	4.1	5.7	4.6	4.9
August	29.39	29.67	29.04	67.9	79.8	74.8	83.4	63.8	73.6	96	57	63	62	65	83	57	72	.574	.573	.619	6.17	2.12	.0	4.4	5.6	4.6	5.3
September	29.35	29.53	29.09	64.2	78.6	73.2	82.5	61.1	71.8	92	47	60	60	63	83	54	72	.520	.526	.590	2.20	.88	.0	5.1	5.0	5.2	5.4
October	29.50	29.76	28.99	47.6	63.0	56.2	66.6	43.3	55.0	83	28	42	44	45	82	52	68	.277	.305	.312	.51	.20	.0	5.2	5.3	3.0	5.3
November	29.42	29.90	28.79	38.3	46.7	43.4	52.0	33.4	42.7	82	11	32	33	32	78	59	67	.190	.197	.195	1.56	.60	6.0	6.4	7.2	6.1	7.1
December	29.51	30.19	29.05	35.7	42.4	40.0	47.6	30.0	38.8	69	1	30	31	32	80	66	73	.184	.199	.206	3.60	1.23	5.1	7.7	6.5	6.8	7.3
Year	29.40	30.19	28.62	50.5	61.2	58.0	65.9	46.3	56.1	98	−2	44	48	46	79	58	67	.341	.355	.371	41.07	2.44	14.6	5.6	6.1	5.3	6.0

PENSACOLA, FLA.

[ϕ=30°25′ N.; λ=87°13′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	30.06	30.49	29.62	54.3	59.3	59.2	63.2	52.1	57.6	72	27	51	54	55	90	83	87	0.405	0.433	0.452	3.21	1.20	0.0	5.5	6.6	5.9	7.1
February	30.08	30.58	29.68	52.2	57.4	56.1	62.8	47.9	55.4	74	17	49	51	51	90	81	86	.382	.408	.407	5.80	1.96	.0	6.8	7.5	4.8	6.8
March	30.02	30.28	29.44	56.2	63.1	61.7	66.7	54.0	60.4	74	35	50	51	54	81	68	79	.400	.411	.449	7.24	2.75	.0	3.6	3.4	4.1	3.6
April	29.88	30.14	29.54	64.0	69.3	67.7	72.4	61.4	66.9	80	50	60	61	63	88	77	86	.540	.554	.588	7.86	2.96	.0	5.6	4.8	5.8	5.1
May	29.91	30.12	29.63	75.5	79.7	78.0	82.3	72.7	77.5	90	64	70	71	73	85	76	84	.748	.759	.802	2.93	.94	.0	4.5	4.0	4.1	3.9
June	29.94	30.12	29.73	75.1	81.7	80.7	85.2	71.5	78.4	99	62	68	67	67	79	64	65	.700	.685	.683	2.87	.87	.0	3.0	3.1	3.3	3.1
July	29.94	30.13	29.71	78.3	82.3	80.6	85.0	74.1	79.6	95	69	74	73	74	87	75	81	.842	.819	.834	12.47	3.26	.0	5.7	5.9	6.2	5.9
August	29.93	30.10	29.68	78.4	83.5	82.4	86.5	76.2	81.4	90	72	74	73	74	86	71	76	.834	.808	.845	1.87	.74	.0	3.9	5.1	3.8	4.6
September	29.89	30.06	29.74	77.3	85.7	83.3	88.2	75.9	82.0	96	67	71	70	72	82	61	70	.777	.748	.797	.51	.39	.0	1.8	3.4	2.9	2.7
October	29.96	30.20	29.67	65.9	75.4	73.5	78.5	63.7	71.1	88	50	58	59	59	77	59	63	.510	.519	.527	2.80	1.34	.0	3.7	4.2	3.9	4.1
November	30.08	30.48	29.75	55.5	65.4	62.8	68.3	52.9	60.6	79	42	47	47	49	74	54	65	.356	.366	.391	1.62	1.14	.0	3.5	2.5	1.4	2.8
December	30.10	30.42	29.63	58.5	65.5	63.5	68.6	55.9	62.2	76	38	54	55	58	87	72	82	.454	.471	.497	1.22	.56	.0	4.6	4.0	2.7	3.9
Year	29.98	30.58	29.44	65.9	72.4	70.8	75.6	63.2	69.4	99	17	60	61	62	84	70	77	.579	.582	.606	60.40	3.26	.0	4.4	4.5	4.1	4.5

PEORIA, ILL.

[ϕ=40°43′ N.; λ=89°36′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.31	29.86	28.62	31.9	40.4	39.2	46.5	28.6	37.6	59	16	28	29	31	84	64	72	0.154	0.170	0.184	1.69	1.00	0.6	4.9	5.3	5.6	5.7
February	29.42	30.02	28.85	20.0	30.7	29.6	36.9	16.7	26.8	63	−19	15	19	20	82	61	68	.096	.115	.128	1.33	1.11	10.9	4.1	3.7	3.6	3.9
March	29.36	29.86	28.61	33.4	43.0	41.2	47.8	30.9	39.4	77	8	29	30	30	84	62	66	.175	.190	.184	4.70	2.60	4.1	6.2	7.4	6.2	6.5
April	29.24	29.65	28.85	44.7	55.7	54.6	60.6	41.2	50.9	79	31	39	39	40	81	56	60	.249	.253	.259	3.05	.87	T	4.9	5.9	5.0	5.5
May	29.24	29.53	28.80	57.9	68.1	65.5	71.9	53.8	62.8	86	37	54	54	56	86	63	73	.427	.436	.462	7.97	1.88	.0	5.4	7.0	6.3	6.7
June	29.33	29.71	29.10	71.8	88.0	83.8	92.0	65.8	78.9	101	46	61	62	62	70	43	49	.564	.574	.583	1.15	.72	.0	1.8	2.0	2.1	2.0
July	29.36	29.70	29.09	71.0	86.5	82.0	90.7	66.3	78.5	97	58	62	61	62	74	44	54	.568	.550	.579	1.93	.68	.0	2.9	2.7	2.2	2.5
August	29.37	29.59	29.06	65.1	81.2	75.6	84.3	61.8	73.0	93	52	59	58	60	82	48	59	.515	.500	.524	2.66	.91	.0	3.5	3.7	4.1	3.9
September	29.27	29.50	28.99	63.6	81.5	74.0	85.1	60.2	72.6	100	43	59	61	59	87	53	62	.522	.562	.514	5.92	2.89	.0	4.0	4.0	3.7	3.8
October	29.44	29.82	29.00	44.1	60.1	53.3	62.7	41.0	51.8	80	29	40	42	43	86	54	71	.260	.281	.296	2.23	.86	.0	3.5	4.0	3.9	4.0
November	29.39	29.95	28.94	34.1	44.8	41.7	49.1	30.0	39.6	80	11	28	28	29	79	52	61	.170	.168	.170	.26	.09	T	5.4	5.6	4.5	5.0
December	29.44	30.14	28.89	29.3	35.1	33.7	40.4	24.7	32.6	65	−4	24	26	27	81	69	76	.144	.157	.166	1.18	.55	1.5	7.2	7.9	4.8	7.0
Year	29.35	30.14	28.61	47.2	59.6	56.2	64.0	43.4	53.7	101	−19	42	42	43	81	56	64	.320	.330	.337	34.07	2.89	17.1	4.5	4.9	4.3	4.7

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

PALESTINE, TEX.

[H_b=510 ft.; h_t=64 ft.; h_r=57 ft.; h_a=72 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	8.3	S.	25	NW.	0	10	6	5	7	22	3	6	3	0	10	6	15	11	6	0	0	0	4	2	0	0	1	1	0
February	8.8	S.	30	NW.	0	12	4	8	3	15	4	1	7	2	9	7	12	11	9	2	2	0	2	3	1	0	6	2	0
March	10.1	S.	29	W.	0	5	6	12	7	18	4	3	7	0	8	11	12	9	6	0	0	1	2	2	0	0	1	8	0
April	8.5	S.	25	NW.	0	7	5	6	6	23	4	3	4	2	13	8	9	10	9	0	0	1	1	0	0	0	0	10	0
May	8.3	S.	28	SW.	0	5	7	8	12	16	7	3	3	1	11	13	7	6	6	0	0	0	1	1	0	3	0	6	0
June	7.0	S.	22	S.	0	0	8	8	7	23	8	4	2	0	22	6	2	2	2	0	0	0	0	0	0	14	0	3	0
July	7.7	S.	32	S.	1	5	1	15	11	16	10	2	1	1	5	19	7	8	6	0	0	0	0	0	0	21	0	6	0
August	6.0	S.	32	NW.	1	1	9	14	13	13	9	0	2	1	14	13	4	0	3	0	0	0	1	1	0	27	0	6	0
September	6.6	S.	23	SE.	0	0	2	18	17	14	7	0	1	1	15	8	7	8	5	0	0	0	2	1	0	21	0	6	0
October	7.2	NE.	24	NE.	0	4	23	10	12	8	2	2	1	0	15	10	6	4	3	0	0	0	3	1	0	1	0	5	0
November	7.6	S.	25	NW.	0	13	8	4	4	12	8	3	4	4	13	12	5	3	2	0	0	0	2	2	0	0	0	0	0
December	8.8	S.	28	SW.	0	4	8	3	4	20	11	5	5	2	13	7	11	9	7	0	0	0	3	3	0	0	0	1	0
Year	7.9	S.	32	S.	2	66	87	111	103	200	77	32	40	14	148	120	97	87	64	2	2	2	21	16	1	87	8	54	0

PARKERSBURG, W.VA.

[H_b=637 ft.; h_t=77 ft.; h_r= 70 ft.; h_a=84 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.9	SE.	24	SW.	0	2	2	1	24	5	13	4	9	2	7	7	17	13	11	3	0	0	6	1	2	0	17	0	0
February	8.1	SE.	34	NW.	2	1	1	1	17	8	11	5	12	0	13	6	9	11	10	5	4	0	2	0	5	0	18	0	0
March	8.1	NW.	34	NW.	1	4	2	1	16	5	11	2	21	0	5	5	21	15	13	14	4	0	3	0	2	0	16	7	0
April	6.8	SE.	23	W.	0	5	6	2	19	4	12	5	7	0	10	13	7	11	11	0	0	0	0	0	0	0	0	2	0
May	6.2	SW.	25	W.	0	6	4	1	15	6	20	4	6	0	2	15	14	18	14	0	0	1	5	0	0	0	0	14	0
June	5.4	SE.	32	SE.	1	6	2	1	16	7	16	7	5	0	13	15	2	9	7	0	0	0	5	2	0	13	0	11	0
July	5.0	SE.	38	NW.	1	5	9	1	29	7	4	0	6	1	11	14	6	9	9	0	0	0	12	1	0	9	0	6	0
August	5.4	SE.	29	NW.	0	11	9	0	13	9	6	6	6	2	12	10	9	13	12	0	0	0	11	2	0	5	0	7	0
September	5.1	SE.	16	NW.	0	7	3	3	17	4	11	4	7	4	10	7	13	9	7	0	0	0	14	2	0	6	0	3	0
October	5.6	SE.	27	NW.	0	7	3	1	18	2	5	3	16	7	10	11	10	6	4	0	0	0	13	2	0	0	2	1	0
November	7.7	SW.	28	NW.	0	4	1	0	13	5	20	3	12	2	6	8	16	12	9	8	3	0	11	0	2	0	13	0	0
December	6.8	NW.	26	NW.	0	5	8	0	15	6	6	7	13	2	8	4	19	13	11	4	2	1	5	0	5	0	17	1	0
Year	6.4	SE.	38	NW.	5	63	50	12	212	68	135	50	120	20	107	115	143	139	118	34	13	2	87	10	16	33	83	52	0

PENSACOLA, FLA.

[H_b=56 ft.; h_t=149 ft.; h_r=131 ft.; h_a=185 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.4	SE.	33	W.	1	11	11	13	9	5	4	3	5	1	7	4	20	10	7	0	0	0	8	5	0	0	1	0	0
February	12.5	NE.	38	E.	3	13	14	7	8	4	4	1	5	0	4	9	15	13	10	0	0	0	11	7	0	0	4	1	0
March	13.5	SE.	46	S.	4	10	9	3	10	9	9	8	4	0	16	11	4	5	5	0	0	0	5	3	0	0	0	3	0
April	13.1	SE.	54	SE.	5	5	6	8	14	8	9	6	4	0	11	9	10	12	10	0	0	0	1	1	0	0	0	12	0
May	12.2	S.	37	SE.	1	9	1	3	13	20	13	3	0	0	14	11	6	9	6	0	0	1	2	1	0	1	0	9	0
June	11.5	SW.	38	SE.	2	7	9	4	4	4	16	4	12	0	15	14	1	9	9	0	0	0	0	0	0	2	0	10	0
July	10.9	S.	37	W.	2	3	9	6	4	11	13	8	8	0	8	13	10	18	14	0	0	0	0	0	0	2	0	14	0
August	9.9	NE.	23	E.	0	7	16	4	4	12	11	5	2	1	10	18	3	10	9	0	0	0	0	0	0	0	0	15	0
September	10.4	SE.	30	SW.	0	10	11	4	6	4	12	8	5	0	22	6	2	3	2	0	0	0	0	0	0	7	0	10	0
October	12.8	NE.	27	SE.	0	17	24	4	4	2	3	1	7	0	16	7	8	5	5	0	0	0	0	0	0	0	0	6	0
November	11.4	NE.	30	S.	0	10	18	3	2	4	5	7	10	1	19	8	3	3	2	0	0	0	3	3	0	0	0	2	0
December	13.0	S.	46	S.	3	8	7	3	9	14	7	8	6	0	16	10	5	6	4	0	0	0	2	1	0	0	0	1	0
Year	11.9	SE.	54	SE.	21	110	135	62	87	97	106	62	68	3	158	120	87	103	83	0	0	1	32	21	0	12	5	83	0

PEORIA, ILL.

[H_b=609 ft.; h_t=11 ft.; h_r=4 ft.; h_a=45 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.8	S.	27	W.	0	3	1	3	8	24	6	7	10	0	10	10	11	11	6	3	2	0	13	3	1	0	23	1	0
February	8.7	NW.	28	SW.	0	5	2	2	4	9	10	10	13	1	15	6	7	3	3	5	2	0	9	2	9	0	23	0	0
March	8.6	NW.	28	NW.	0	9	7	5	11	8	2	5	15	0	8	5	18	10	6	6	3	1	7	1	3	0	21	4	0
April	9.1	NE.	24	SW.	0	8	12	3	7	10	1	10	8	1	10	7	13	12	10	1	0	0	4	0	0	0	1	4	0
May	7.1	S.	27	SW.	0	6	5	6	10	10	7	11	6	1	5	12	14	19	16	0	0	2	5	1	0	0	0	14	0
June	5.6	SW.	15	SW.	0	3	5	6	5	12	23	3	3	0	22	6	2	5	4	0	0	0	0	0	0	22	0	6	0
July	5.4	NE.	19	W.	0	6	16	7	6	6	11	5	3	2	20	9	2	7	6	0	0	0	1	0	0	21	0	5	0
August	5.0	NE.	21	S.	0	12	11	9	4	5	8	2	9	2	14	12	5	7	7	0	0	0	3	2	0	5	0	3	0
September	5.7	SW.	20	NE.	0	4	8	2	4	13	15	9	3	2	15	10	5	9	8	0	0	0	9	1	0	11	0	6	2
October	5.8	S.	20	NW.	0	11	3	3	7	16	7	5	8	2	16	4	11	11	7	0	0	0	15	0	0	0	2	2	0
November	8.6	NW.	28	W.	0	2	7	1	4	11	11	7	17	0	11	9	10	4	3	9	0	1	5	0	2	0	18	1	0
December	7.8	S.	21	W.	0	5	9	7	9	10	9	3	10	0	6	7	18	10	5	4	2	0	9	3	9	0	23	2	0
Year	7.2	S.	28	W.	0	74	86	54	79	134	110	77	105	11	152	97	116	108	81	28	9	4	80	13	24	59	111	48	2

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

PHILADELPHIA, PA.

[ϕ=39°57′ N.; λ=75°09′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.92	30.52	29.28	38.5	44.0	44.3	49.0	36.3	42.6	63	17	28	29	30	65	56	59	0.154	0.168	0.178	2.66	1.54	T	6.8	6.1	5.7	6.0
February	29.92	30.67	29.25	33.4	39.9	37.8	44.3	29.1	36.7	63	14	22	23	22	61	51	55	.132	.138	.132	3.19	1.09	11.8	5.5	5.1	4.3	5.1
March	29.86	30.37	29.03	37.1	43.1	42.6	48.0	34.8	41.4	60	20	27	27	28	66	54	58	.153	.154	.165	4.86	1.25	.7	6.5	7.1	5.7	6.9
April	29.87	30.26	29.28	49.0	57.5	55.8	62.5	45.0	53.8	79	34	39	39	39	70	52	56	.251	.257	.258	5.26	1.83	.0	5.5	5.4	4.0	5.6
May	29.85	30.18	29.45	62.7	40.9	66.3	75.1	57.5	66.3	89	45	53	53	54	73	56	68	.425	.424	.443	6.93	1.74	.0	6.6	7.0	6.5	6.8
June	29.82	30.09	29.58	69.9	79.8	76.7	83.7	65.1	74.4	98	50	58	57	60	68	48	57	.513	.503	.538	4.78	1.49	.0	5.0	4.7	4.8	4.9
July	29.90	30.22	29.59	72.0	81.6	78.1	85.5	67.7	76.6	99	54	53	62	64	74	54	62	.582	.580	.598	4.70	1.74	.0	5.5	5.3	5.4	5.2
August	29.87	30.24	29.28	72.2	80.2	76.7	83.3	68.8	76.0	97	60	54	63	65	77	59	68	.604	.595	.620	9.84	3.76	.0	6.3	6.8	5.9	6.3
September	29.83	30.12	29.40	66.2	75.0	72.6	78.5	64.0	71.2	91	55	59	59	61	80	59	68	.520	.511	.542	4.17	1.25	.0	5.6	7.0	4.6	6.0
October	30.01	30.45	29.46	51.6	61.8	59.3	66.7	49.0	57.8	81	32	43	44	46	72	54	62	.287	.311	.330	1.39	.84	.0	4.5	4.3	1.7	4.0
November	29.89	30.45	29.20	40.0	47.0	45.4	51.0	37.2	44.1	73	29	30	31	32	67	54	60	.178	.191	.194	1.07	.71	.2	5.0	5.3	4.8	5.7
December	30.02	30.82	29.47	33.2	37.3	36.8	43.2	29.3	36.2	61	3	24	24	24	68	60	61	.147	.147	.150	2.52	1.01	5.1	6.9	6.9	5.0	6.5
Year	29.90	30.82	29.03	52.2	59.8	57.7	64.2	48.6	56.4	99	3	42	43	44	70	55	61	.329	.332	.346	51.37	3.76	17.8	5.8	5.9	4.9	5.8

PHOENIX, ARIZ.

[ϕ=33°28′ N.; λ=112°00′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	Mean: 8 a.m.	Mean: Noon, local time	Mean: 8 p.m.	Mean: Maximum	Mean: Minimum	Mean: Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.84	29.14	28.44	39.3	56.6	57.2	61.5	35.8	48.6	75	29	30	28	29	69	37	38	0.164	0.158	0.165	2.31	1.07	1.0	2.7	4.6	3.7	4.0
February	28.88	29.27	28.56	38.8	57.9	60.4	63.5	35.7	49.6	78	24	27	24	22	61	29	25	.149	.136	.131	.15	.12	.0	2.2	2.6	2.3	2.5
March	28.78	29.06	28.50	49.3	71.9	74.3	77.0	46.8	61.9	83	38	30	26	24	47	19	15	.166	.147	.126	.00	.00	.0	2.7	4.0	4.2	3.7
April	28.70	29.11	28.27	52.6	73.8	75.5	79.1	50.3	64.7	90	38	31	27	26	47	22	20	.180	.158	.151	1.11	.86	.0	2.8	2.4	2.0	2.5
May	28.67	28.89	28.43	58.6	82.0	84.7	87.6	57.5	72.6	107	49	33	29	27	39	15	13	.191	.156	.147	T	T	.0	2.2	2.0	0.7	1.5
June	28.65	28.81	28.48	73.8	97.0	99.7	102.7	72.6	87.6	112	60	43	37	37	34	14	12	.292	.237	.228	.23	.19	.0	2.3	1.9	2.6	2.3
July	28.62	28.85	28.39	83.8	101.8	104.7	107.5	72.5	95.0	113	74	60	58	57	47	25	22	.546	.494	.472	.30	.20	.0	4.0	2.7	3.9	3.1
August	28.63	28.83	28.44	81.0	100.2	101.1	105.3	79.5	92.4	115	71	60	56	53	51	25	22	.534	.466	.413	.38	.15	.0	3.3	3.0	3.9	2.8
September	28.61	28.82	28.41	75.7	95.0	95.4	99.9	73.7	86.8	110	63	59	56	54	58	30	28	.516	.474	.431	1.62	1.33	.0	2.8	2.5	2.4	2.4
October	28.75	28.98	28.53	65.7	85.9	85.1	90.8	62.9	76.8	99	54	48	47	47	56	28	28	.353	.335	.327	.38	.16	.0	2.1	1.4	2.5	1.9
November	28.88	28.11	28.31	48.7	74.0	71.9	79.4	46.0	62.7	87	38	32	29	33	52	21	26	.177	.158	.192	.62	.62	.0	1.2	2.0	2.4	1.7
December	28.93	29.33	28.60	43.1	63.4	62.7	69.0	40.3	54.6	80	29	33	33	35	67	33	36	.189	.191	.209	T	T	.0	1.6	2.7	3.0	2.5
Year	28.74	29.33	28.27	59.2	80.0	81.1	85.3	57.0	71.1	115	24	40	38	37	52	25	24	.288	.259	.249	7.10	1.33	1.0	2.5	2.6	2.8	2.6

PITTSBURGH, PA.

[ϕ=40°26′ N.; λ=80°00′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	Mean: 8 a.m.	Mean: Noon, local time	Mean: 8 p.m.	Mean: Maximum	Mean: Minimum	Mean: Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.13	29.68	28.48	36.3	41.5	41.5	46.1	32.9	39.0	68	13	30	31	30	76	66	66	0.175	0.184	0.175	2.39	1.20	0.3	7.8	7.2	6.2	7.1
February	29.15	29.75	28.54	27.8	34.4	34.8	41.7	24.4	33.0	60	−3	21	21	21	74	59	57	.123	.127	.123	1.67	.41	5.4	6.0	6.6	5.0	6.5
March	29.09	29.58	28.37	33.6	39.3	40.3	44.7	31.3	38.0	71	11	27	29	30	77	69	66	.158	.177	.176	5.77	1.34	2.7	8.4	8.2	8.1	8.1
April	29.05	29.48	28.60	46.5	56.5	54.8	61.7	41.6	51.6	81	30	37	37	36	71	50	54	.233	.234	.221	4.25	1.46	T	6.7	6.5	7.0	6.7
May	29.06	29.38	28.67	60.0	67.6	65.4	72.2	54.8	63.5	85	44	52	53	52	78	62	65	.408	.414	.399	6.55	1.35	.0	8.5	8.4	7.2	7.8
June	29.10	29.39	28.87	68.4	79.3	77.0	83.9	62.7	73.3	96	41	57	57	56	69	47	50	.496	.478	.472	1.16	.51	.0	4.7	5.2	5.2	5.0
July	29.15	29.54	28.92	69.9	81.1	78.2	85.2	64.7	75.0	98	54	60	58	57	71	46	52	.519	.491	.487	3.21	1.24	.0	4.3	4.8	5.3	5.0
August	29.12	29.41	28.66	67.0	77.7	74.1	81.3	63.6	72.4	93	54	60	60	58	79	56	60	.524	.525	.496	5.51	1.99	.0	4.3	5.7	6.1	5.4
September	29.07	29.25	28.75	62.9	74.2	70.9	77.9	60.0	69.0	91	50	58	59	59	84	61	68	.492	.513	.510	4.20	1.75	.0	5.4	6.2	6.0	6.2
October	29.22	29.52	28.74	47.1	59.4	55.7	63.3	44.2	53.8	78	28	41	41	41	79	52	58	.265	.275	.267	.46	.17	T	5.3	5.5	5.0	5.5
November	29.11	29.67	28.47	36.8	42.4	40.7	47.3	32.0	39.6	78	9	30	30	30	75	64	67	.177	.182	.178	1.68	.81	5.2	6.6	7.4	7.8	7.3
December	29.21	29.95	28.66	32.6	37.7	37.5	43.2	27.4	35.3	63	1	27	29	28	80	70	69	.167	.186	.180	3.42	.81	7.0	7.5	7.9	7.6	7.9
Year	29.12	29.95	28.37	49.1	57.6	55.9	62.4	44.9	53.6	98	−3	42	42	42	76	58	61	.311	.316	.307	40.27	1.99	20.6	6.3	6.6	6.4	6.5

POCATELLO, IDAHO

[ϕ=42°52′ N.; λ=112°29′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	Mean: 8 a.m.	Mean: Noon, local time	Mean: 8 p.m.	Mean: Maximum	Mean: Minimum	Mean: Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	25.38	25.91	24.83	42.9	29.4	28.3	33.3	20.5	26.9	45	4	20	20	20	82	65	70	0.109	0.104	0.107	1.85	0.32	20.0	7.2	6.6	7.5	7.5
February	25.52	25.89	25.09	15.7	20.5	20.3	26.8	8.5	17.6	45	−28	12	13	14	82	70	75	.080	.081	.086	.41	.22	6.8	7.1	6.4	5.5	6.8
March	25.48	25.90	25.15	29.6	40.3	39.4	44.4	26.0	35.2	61	10	23	23	24	76	50	55	.121	.122	.129	.42	.11	3.4	6.1	6.6	6.5	6.4
April	25.39	25.82	25.00	35.8	48.9	51.2	54.3	34.0	44.2	71	21	27	27	26	70	45	38	.148	.146	.141	.99	.51	2.2	5.0	6.3	5.8	6.1
May	25.38	25.70	25.06	41.5	57.3	57.8	61.9	40.1	51.0	86	29	31	28	29	69	36	40	.176	.155	.163	1.40	.48	1.0	4.8	6.4	5.7	5.8
June	25.43	25.72	25.22	57.1	79.1	80.9	83.9	54.7	69.3	94	47	37	34	31	49	21	19	.224	.199	.181	.15	.10	.0	3.8	3.1	4.0	3.5
July	25.48	25.65	25.27	63.1	85.8	89.3	91.7	61.1	76.4	100	52	39	37	37	42	18	18	.248	.223	.229	1.05	.63	.0	2.5	2.1	3.2	2.4
August	25.49	25.66	25.26	56.3	78.1	81.9	84.4	54.7	69.6	100	42	37	35	32	51	23	18	.229	.210	.184	.25	.20	.0	3.1	2.5	3.5	2.7
September	25.41	25.66	25.09	50.0	70.4	72.6	75.7	47.4	61.6	89	32	29	31	29	47	24	23	.164	.173	.163	.16	.15	.0	1.6	2.0	2.3	2.4
October	25.53	25.80	24.99	44.4	63.5	63.2	69.7	41.4	55.6	81	30	25	27	26	48	26	26	.136	.147	.141	.21	.21	T	2.1	3.4	3.0	3.3
November	25.68	26.04	24.88	33.8	45.0	43.6	51.2	29.1	40.2	62	15	26	29	29	73	54	58	.137	.159	.160	.47	.34	1.9	4.2	4.5	4.5	4.4
December	25.50	25.80	25.05	35.2	41.3	38.6	45.5	30.5	38.0	61	14	23	25	26	62	54	61	.125	.136	.141	1.92	1.15	3.8	6.5	6.5	6.5	7.0
Year	25.47	26.04	24.83	40.6	55.0	55.6	60.2	37.3	48.8	100	−28	27	27	27	63	40	42	.158	.155	.152	9.34	1.15	39.1	4.5	4.7	4.8	4.9

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

PHILADELPHIA, PA.

[H_b=114 ft.; h_t=123 ft.; h_r=114 ft.; h_a=367 ft.]

Month	Wind: By self-register: Average hourly velocity	Wind: By self-register: Prevailing direction	Wind: By self-register: Maximum velocity	Wind: By self-register: Direction at time of maximum velocity	Wind: By self-register: Days with 32 miles or over	Wind: Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	Precipitation: 0.04 inch or over	Snow: T or more	Snow: 0.01 inch or more melted	Hail	Fog: Light	Fog: Dense	Maximum temp.: 32° or below	Maximum temp.: 90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Electricity: Aurora
	Mi.		*Mi.*																										
January	14.5	SW.	46	N.	7	7	9	5	4	2	15	4	16	0	10	6	15	9	6	2	2	0	5	1	1	0	6	0	0
February	14.4	NW.	44	S.	6	6	1	2	2	4	14	10	17	0	10	8	10	11	8	7	3	0	6	1	5	0	16	1	0
March	15.3	NW.	39	W.	5	6	6	6	2	3	12	6	21	0	6	6	19	12	12	4	3	0	6	2	0	0	8	2	0
April	14.3	SW.	36	E.	4	7	8	10	8	5	10	7	5	0	9	10	11	11	10	0	0	0	4	1	0	0	0	2	0
May	11.6	SW.	68	NW.	2	6	7	6	5	12	9	9	8	0	4	10	17	16	12	0	0	1	3	0	0	0	0	8	0
June	11.8	SW.	36	NW.	2	13	4	5	4	7	13	6	8	0	11	13	6	10	8	0	0	0	1	0	0	5	0	8	0
July	11.1	SW.	36	NE.	1	3	6	9	7	6	16	8	7	0	12	10	9	8	7	0	0	0	2	0	0	9	0	5	0
August	12.1	NE.	42	SE.	2	6	9	10	5	10	9	8	5	0	10	5	16	14	13	0	0	0	6	1	0	5	0	6	0
September	11.8	W.	29	NE.	0	3	11	5	1	8	12	14	6	0	7	12	11	11	10	0	0	0	7	1	0	2	0	2	0
October	12.1	N.	39	NW.	1	16	6	6	0	9	7	9	9	0	18	5	8	5	4	0	0	0	5	1	0	0	1	0	0
November	13.2	W.	33	S.	2	9	6	1	3	10	6	19	6	0	9	8	13	7	6	6	2	0	5	2	1	0	5	0	0
December	12.3	SW.	41	NW.	2	9	6	5	4	5	11	10	12	0	8	7	16	11	9	6	3	0	10	3	7	0	15	0	0
Year	12.9	SW.	68	NW.	34	91	79	70	45	81	134	110	120	0	114	100	151	125	105	25	13	1	60	13	14	21	51	34	0

PHOENIX, ARIZ.

[H_b=1,108 ft.; h_t=10 ft.; h_r=81 ft.; h_a=107 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	5.3	E.	32	SW.	1	5	4	14	8	6	5	7	13	0	15	8	8	6	5	1	1	0	3	1	0	0	4	0	0
Feburary	5.6	E.	22	NW.	0	2	0	14	5	4	5	17	9	0	19	3	6	2	1	0	0	1	0	0	0	0	7	1	0
March	6.3	E.	24	NW.	0	2	5	21	4	2	1	18	9	0	16	10	5	0	0	0	0	0	0	0	0	0	0	0	0
April	6.8	E.	29	SW.	0	4	3	14	6	4	6	18	4	1	24	1	5	5	5	0	0	1	0	0	0	2	0	2	0
May	7.0	W.	32	SW.	1	3	0	15	4	6	8	16	10	0	25	5	1	0	0	0	0	0	0	0	0	16	0	0	0
June	6.6	E.	24	N.	0	6	3	17	6	5	2	12	9	0	21	5	4	3	1	0	0	0	0	0	0	29	0	3	0
July	6.7	W.	27	NE.	0	4	5	14	7	5	5	17	4	1	19	10	2	5	2	0	0	0	0	0	0	31	0	8	0
August	6.1	E.	27	S.	0	7	4	15	4	8	4	13	3	4	20	9	2	6	5	0	0	0	0	0	0	31	0	10	0
September	5.7	E.	21	SW.	0	6	3	19	5	5	3	11	7	1	23	3	4	4	4	0	0	0	0	0	0	29	0	4	0
October	5.7	E.	23	NE.	0	5	8	26	5	3	2	4	9	0	23	7	1	5	3	0	0	0	0	0	0	24	0	2	0
November	5.0	E.	21	NW.	0	2	4	14	6	6	5	9	12	2	24	5	1	1	1	0	0	0	0	0	0	0	0	0	0
December	4.8	E.	19	N.	0	2	2	27	4	2	0	15	8	2	24	3	4	0	0	0	0	0	0	0	0	0	2	0	0
Year	6.0	E.	32	SW.	2	48	41	210	64	56	46	157	97	11	253	69	43	37	27	1	1	2	3	1	0	160	13	30	0

PITTSBURGH, PA.

[H_b=842 ft.; h_t=353 ft.; h_r=345 ft.; h_a=410 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.5	SW.	40	W.	2	1	2	6	7	11	17	10	8	0	5	10	16	10	8	7	2	0	7	1	3	0	15	0	0
February	13.3	W.	43	NW.	4	1	1	1	6	7	15	14	11	0	6	7	15	12	9	11	7	0	4	0	7	0	20	0	0
March	11.6	NW.	41	W.	2	3	3	6	7	3	9	14	17	0	2	8	21	18	13	16	9	0	7	1	2	0	23	3	0
April	10.4	W.	30	NW.	0	6	5	9	11	7	5	11	6	0	6	9	15	13	12	2	1	0	5	0	0	0	1	2	0
May	9.3	SW.	34	SW.	1	6	4	6	7	7	17	8	7	0	2	11	18	17	14	0	0	3	11	0	0	0	0	10	0
June	8.8	W.	38	NW.	1	10	2	4	3	4	13	13	11	0	11	12	7	5	5	0	0	0	0	0	0	11	0	11	0
July	8.0	SW.	41	NW.	3	5	9	7	6	7	20	4	4	0	13	9	9	11	8	0	0	0	6	0	0	7	0	9	0
August	9.1	SW.	42	NW.	1	12	8	6	5	4	14	6	7	0	10	12	9	11	9	0	0	0	6	0	0	1	0	7	0
September	8.7	SW.	28	SW.	0	5	4	8	6	5	14	10	8	0	6	12	12	13	11	0	0	0	8	3	0	2	0	3	0
October	8.6	SW.	35	NW.	1	3	7	3	12	7	10	5	15	0	10	11	10	6	3	1	0	0	6	4	0	0	1	1	0
November	10.5	W.	32	W.	2	2	2	5	2	9	13	20	7	0	4	8	18	14	8	11	4	0	6	2	4	0	13	1	0
December	10.8	W.	38	NW.	4	3	5	9	4	7	11	14	9	0	5	4	22	10	9	6	3	0	9	2	8	0	17	3	0
Year	10.0	SW.	43	NW.	21	57	52	70	76	78	158	129	110	0	80	113	172	140	109	54	26	3	75	13	24	21	90	50	0

POCATELLO, IDAHO

[H_b=4,477 ft.; h_t=60 ft.; h_r=52 ft.; h_a=68 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	12.3	SE.	38	SW.	4	4	2	0	23	10	19	2	2	0	2	13	16	16	12	19	16	0	3	2	14	0	31	0	0
February	10.4	SW.	32	SW.	1	9	1	2	5	11	19	1	8	0	5	9	14	11	3	19	11	0	6	1	19	0	28	0	0
March	10.1	SE.	32	SW.	1	6	2	7	19	5	13	2	8	0	6	11	14	8	4	10	6	0	0	0	1	0	26	0	0
April	9.3	SE.	30	SW.	0	4	2	7	15	7	7	7	10	1	9	5	16	7	5	7	3	0	1	0	0	0	12	4	0
May	9.3	SE.	31	SW.	0	6	1	7	18	5	15	7	3	0	8	11	12	13	7	4	3	4	0	0	0	0	4	3	0
June	8.4	SE.	34	SW.	1	5	2	2	16	11	7	6	11	0	16	8	6	4	2	0	0	0	0	0	0	7	0	6	0
July	8.7	S.	32	SW.	1	3	1	3	13	20	3	7	12	0	20	10	1	4	3	0	0	1	0	0	0	21	0	5	0
August	8.2	SE.	25	SW.	0	8	0	0	17	12	6	10	9	0	20	9	2	4	2	0	0	0	0	0	0	9	0	3	0
September	9.0	SE.	31	SW.	0	4	1	1	19	6	10	8	11	0	23	2	5	3	2	0	0	0	0	0	0	0	1	2	0
October	9.5	SE.	30	SW.	0	3	1	0	20	8	14	9	7	0	17	10	4	1	1	1	0	0	0	0	0	0	1	0	0
November	7.7	SE.	23	SW.	0	1	0	1	18	15	8	5	12	0	15	7	8	3	2	2	2	0	2	2	2	0	21	0	0
December	13.0	SE.	30	S.	0	1	0	0	32	11	16	0	2	0	3	13	15	6	6	9	4	0	1	0	2	0	16	0	0
Year	9.7	SE.	38	SW.	8	54	13	30	215	121	137	64	95	1	144	108	113	80	49	71	45	5	13	5	38	37	140	23	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

PORT ARTHUR, TEX.

[ϕ=29°52′ N.; λ=93°55′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	30.04	30.57	29.66	55.2	63.0	-----	66.2	53.0	59.6	76	31	50	51	---	85	70	---	0.391	0.422	-----	2.11	0.83	0.0	5.3	5.9	----	6.1
February	30.08	30.62	29.59	51.0	56.5	-----	61.8	47.7	54.8	77	18	47	49	---	87	74	---	.364	.374	-----	2.87	.75	T	5.8	6.5	----	6.9
March	29.98	30.24	29.51	58.9	67.5	-----	70.0	56.8	63.4	82	40	54	52	---	85	61	---	.445	.432	-----	6.37	4.41	.0	6.2	5.0	----	5.1
April	29.85	30.17	29.53	65.0	74.8	-----	77.8	62.8	70.3	87	42	60	56	---	84	57	---	.538	.505	-----	.89	.59	.0	5.4	4.3	----	4.7
May	29.84	30.06	29.41	76.1	84.1	-----	86.5	73.7	80.1	94	60	70	69	---	82	61	---	.745	.710	-----	2.48	1.49	.0	4.5	4.0	----	4.4
June	29.96	30.17	29.74	76.4	85.7	83.1	88.8	72.8	80.8	97	60	68	64	67	75	50	60	.693	.623	0.676	1.01	.98	.0	2.5	2.5	2.4	3.2
July	29.90	30.06	29.74	78.6	85.9	83.1	89.0	76.3	82.6	97	69	74	73	75	86	66	77	.845	.805	.857	18.21	8.52	.0	5.7	5.4	4.8	5.3
August	29.91	30.08	29.70	79.0	88.7	83.9	90.8	76.6	83.7	95	72	74	73	74	86	66	72	.852	.801	.824	4.02	1.25	.0	3.7	4.3	4.2	4.4
September	29.88	30.05	29.73	78.1	88.1	83.6	90.9	76.9	83.9	97	71	74	72	74	86	59	73	.835	.781	.841	2.83	1.56	.0	2.5	3.4	4.9	3.9
October	29.97	30.18	29.80	66.9	78.0	74.8	81.7	65.5	73.6	90	53	63	62	65	88	60	72	.593	.579	.625	.72	.62	.0	4.6	3.1	2.4	4.1
November	30.10	30.42	29.71	57.6	70.0	65.0	72.5	56.0	64.2	82	44	54	53	54	88	58	71	.432	.431	.451	.65	.39	.0	4.6	3.4	2.2	4.0
December	30.05	30.36	29.76	59.6	69.0	-----	70.8	56.7	63.8	81	39	56	55	---	90	65	---	.486	.473	-----	1.90	1.07	.0	5.8	4.5	----	5.2
Year	29.96	30.62	29.41	66.9	75.9	-----	78.9	64.6	71.8	97	18	62	61	---	85	62	---	.602	.578	-----	44.06	8.52	T	4.7	4.4	----	4.8

PORTLAND, MAINE

[ϕ=43°39′ N.; λ=70°15′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.84	30.61	29.13	28.8	34.4	33.4	39.3	25.1	32.2	55	7	22	24	25	74	65	71	0.121	0.132	0.140	5.40	1.56	19.8	5.3	5.4	4.4	4.8
February	29.78	30.51	28.97	25.1	30.8	30.7	36.5	21.6	29.0	50	5	18	21	22	74	67	67	.107	.122	.120	6.05	1.56	20.9	4.4	5.1	3.7	4.4
March	29.77	30.20	28.62	29.8	35.7	33.0	38.9	26.2	32.6	54	8	21	22	23	68	59	66	.117	.125	.128	5.94	2.28	9.2	4.8	4.9	5.5	4.9
April	29.88	30.49	29.15	41.5	45.8	42.5	48.7	37.0	42.8	73	27	34	34	32	75	69	70	.197	.204	.187	9.35	2.64	11.7	5.5	6.1	5.3	6.0
May	29.82	30.13	29.40	54.5	59.8	54.4	63.4	47.0	55.2	82	36	44	42	42	71	58	67	.306	.283	.283	2.22	.89	.0	3.8	4.2	3.8	4.0
June	29.77	30.03	29.46	63.8	68.9	64.5	72.9	55.2	64.6	93	45	56	54	52	76	61	67	.451	.428	.403	1.61	.67	.0	3.5	3.4	4.8	3.9
July	29.89	30.24	29.37	65.0	70.3	66.0	73.7	59.9	66.8	91	54	58	57	56	79	65	73	.491	.479	.464	2.51	1.00	.0	4.4	4.8	5.8	5.5
August	29.89	30.25	29.40	65.6	71.7	67.4	74.6	61.2	67.9	90	57	60	59	61	83	66	81	.527	.514	.541	2.85	1.15	.0	4.8	5.7	5.6	6.0
September	29.79	30.27	29.30	58.1	64.3	61.1	67.7	54.2	61.0	82	41	52	52	54	83	67	78	.409	.401	.428	6.07	1.39	.0	5.0	5.1	4.3	5.4
October	29.97	30.57	29.33	46.7	54.4	50.6	57.5	43.4	50.4	71	29	41	42	42	80	63	73	.269	.280	.277	6.72	2.73	T	4.6	4.8	4.7	4.5
November	29.80	30.32	28.94	31.7	37.3	35.3	43.0	27.3	35.2	66	10	25	25	26	75	61	69	.146	.147	.156	1.83	.74	4.2	5.7	5.5	6.0	5.3
December	29.95	30.64	29.26	18.2	23.1	21.7	28.2	14.1	21.2	43	−18	10	14	14	72	66	72	.081	.089	.090	7.52	1.89	42.3	5.5	6.3	5.7	6.0
Year	29.85	30.64	28.62	44.1	49.7	46.7	53.7	39.4	46.6	93	−18	37	37	37	76	64	71	.268	.267	.268	58.07	2.73	108.1	4.8	5.1	5.0	5.1

PORTLAND, OREG.

[ϕ=45°32′ N.; λ=122°41′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.78	30.50	29.22	38.2	41.4	41.4	43.6	36.0	39.8	58	23	35	35	35	87	77	78	0.206	0.207	0.207	7.94	2.64	8.7	8.4	9.2	7.7	8.8
February	30.06	30.52	29.50	35.3	39.7	41.0	43.8	32.6	38.2	58	12	30	32	33	83	74	73	.180	.189	.197	4.26	1.11	2.4	7.9	8.6	8.9	9.0
March	29.89	30.40	29.38	42.4	50.9	51.1	54.0	40.1	47.0	63	33	38	37	38	84	61	63	.228	.226	.232	5.10	.95	T	7.4	8.8	8.3	8.6
April	29.94	30.29	29.48	43.6	55.3	59.1	61.5	41.8	51.6	76	34	38	37	38	81	51	49	.229	.220	.232	.95	.39	1.7	5.1	6.5	6.2	5.9
May	29.87	30.17	29.50	47.8	56.2	58.8	61.0	46.8	53.9	80	43	43	42	43	82	62	58	.275	.272	.285	3.59	.62	.0	8.8	8.6	8.0	8.4
June	29.87	30.12	29.51	53.9	65.8	69.6	71.4	53.2	62.3	91	45	48	47	49	80	52	49	.333	.328	.347	2.60	2.16	.0	6.7	6.3	6.3	6.5
July	29.88	30.13	29.60	57.7	71.6	78.0	79.1	56.9	68.0	94	52	50	52	53	77	51	44	.367	.390	.412	T	T	.0	3.2	3.1	2.8	3.2
August	29.82	30.00	29.59	60.0	73.2	79.1	80.4	58.8	69.6	102	52	54	54	55	81	54	47	.417	.426	.441	.86	.74	.0	4.4	3.7	3.1	4.0
September	29.78	30.09	29.55	53.8	62.3	65.1	67.4	51.8	59.6	82	40	49	50	50	83	65	60	.345	.366	.364	2.97	.83	.0	7.0	6.6	6.3	7.0
October	29.88	30.24	29.24	51.5	60.6	62.7	65.3	49.0	57.2	81	38	48	50	50	89	68	66	.340	.361	.372	4.59	1.76	.0	5.5	5.8	5.8	6.2
November	30.12	30.39	29.59	43.3	48.4	49.0	51.6	41.4	46.5	62	35	41	42	43	92	80	82	.260	.273	.285	2.54	1.47	.0	5.2	7.9	6.7	7.7
December	29.76	30.12	29.08	45.2	47.9	47.7	50.5	42.8	46.6	60	34	41	42	42	86	81	82	.264	.276	.276	17.45	3.53	.1	8.7	9.5	9.6	9.5
Year	29.89	30.52	29.08	47.7	56.1	58.6	60.8	45.9	53.4	102	12	43	43	44	84	65	63	.287	.294	.304	52.85	3.53	12.9	6.5	7.0	6.6	7.1

PROVIDENCE, R.I.

[ϕ=41°50′ N.; λ=71°25′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.81	30.47	29.11	34.5	39.8	37.6	44.5	30.2	37.4	59	12	25	25	28	66	57	67	0.143	0.146	0.158	2.62	0.91	0.1	5.6	4.6	4.0	5.0
February	29.77	30.52	29.02	30.3	37.2	33.7	40.4	24.6	32.5	60	9	20	22	22	65	54	61	.125	.133	.130	3.15	1.21	15.4	4.5	5.2	3.4	4.8
March	29.72	30.19	28.78	33.8	39.3	36.0	41.6	29.8	35.7	55	12	23	23	24	65	56	64	.132	.133	.138	5.70	2.14	6.9	5.5	5.7	6.2	5.7
April	29.82	30.31	29.19	44.6	50.7	48.5	54.1	38.7	46.4	76	28	34	35	35	70	60	69	.209	.219	.221	5.33	1.99	.6	6.8	6.9	5.8	6.2
May	29.78	30.10	29.39	58.7	65.6	59.5	69.9	51.5	60.7	89	41	44	44	46	62	49	55	.305	.310	.333	4.10	2.13	.0	5.5	4.8	6.5	5.3
June	29.74	29.98	29.44	66.8	72.8	67.8	77.5	58.9	68.2	94	45	54	55	56	67	56	68	.447	.459	.469	2.85	.72	.0	5.2	4.8	5.4	4.8
July	29.83	30.12	29.41	69.8	76.2	69.8	79.8	62.1	71.0	97	52	59	58	61	70	57	74	.510	.502	.544	2.24	.88	.0	5.6	4.6	4.9	5.1
August	29.84	30.20	29.40	69.6	75.8	71.0	78.9	63.7	71.3	95	57	61	60	62	75	62	75	.542	.536	.571	2.68	.96	.0	5.9	6.1	5.8	5.8
September	29.75	30.14	29.29	63.4	69.4	65.0	72.6	57.4	65.0	81	45	56	55	57	79	65	77	.467	.460	.485	6.20	2.14	.0	5.0	5.7	4.9	5.5
October	29.92	30.47	29.35	49.7	58.1	53.5	61.5	43.7	52.6	75	27	41	40	44	73	53	70	.274	.262	.304	2.59	.98	.0	4.2	4.4	4.2	4.1
November	29.77	30.30	28.97	36.3	42.5	38.9	46.9	30.6	38.8	68	14	27	26	27	68	52	64	.156	.155	.170	1.35	.32	7.4	4.8	4.5	4.6	4.5
December	29.90	30.62	29.19	25.7	30.1	28.8	35.7	20.5	28.1	52	−11	16	18	18	66	62	66	.111	.120	.118	2.96	.94	12.7	7.8	6.2	4.6	6.6
Year	29.80	30.62	28.78	48.6	54.9	50.7	58.8	42.6	50.6	97	−11	38	38	40	69	57	68	.285	.286	.303	41.17	2.14	43.1	5.5	5.3	5.0	5.3

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

PORT ARTHUR, TEX.

[H_b=34 ft.; h_t=58 ft.; h_r=51 ft.; h_a=66 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																										
January	7.4	S.	24	S.	0	3	4	8	6	7	0	1	2	0	5	14	12	11	9	0	0	0	5	9	0	0	1	0	0
February	9.9	N.	29	NW.	0	8	5	3	2	4	2	0	2	2	2	13	13	13	8	1	0	0	4	9	1	0	5	2	0
March	9.6	SE.	30	NW.	0	3	5	8	5	5	1	1	3	0	9	15	7	9	6	0	0	0	3	2	0	0	0	4	0
April	9.1	S.	27	NE.	0	6	3	3	6	5	2	2	3	0	10	15	5	6	4	0	0	1	3	1	0	0	0	5	0
May	8.8	S.	28	NW.	0	5	3	1	10	8	0	2	2	0	10	19	2	5	3	0	0	0	1	0	0	6	0	3	0
June	7.6	S.	20	NW.	0	5	8	4	2	30	3	3	4	1	17	12	1	3	2	0	0	0	0	0	0	9	0	5	0
July	9.2	S.	26	SE.	0	2	7	5	5	21	12	4	6	0	9	16	6	12	11	0	0	0	0	0	0	14	0	8	0
August	6.0	S.	24	NE.	0	16	5	4	8	17	6	3	3	0	12	18	1	12	12	0	0	0	0	0	0	24	0	8	0
September	6.9	S.	29	NE.	0	8	6	9	16	15	2	2	1	1	13	16	1	10	7	0	0	0	0	0	0	21	0	6	0
October	7.4	E.	23	E.	0	17	12	7	13	7	1	1	2	2	10	20	1	2	2	0	0	0	4	1	0	0	0	3	0
November	8.4	E.	26	N.	0	12	5	10	5	11	5	2	10	0	15	12	3	4	4	0	0	0	1	1	0	0	0	1	0
December	9.2	S.	24	NW.	0	1	4	4	5	10	0	3	4	0	9	16	6	10	8	0	0	0	5	4	0	0	0	1	0
Year	8.3	S.	30	NW.	0	86	67	66	83	140	34	24	42	6	121	186	58	97	76	1	0	1	26	27	1	74	6	46	0

PORTLAND, MAINE

[H_b=103 ft.; h_t=82 ft.; h_r=75 ft.; h_a=117 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.6	N.	34	NW.	1	19	4	0	3	1	16	8	9	2	15	6	10	9	8	9	5	0	0	5	6	0	27	1	2
February	10.3	NW.	41	NW.	2	13	1	1	1	4	10	11	14	1	12	9	7	12	11	12	6	0	2	2	8	0	27	0	0
March	12.1	NW.	34	NW.	1	14	16	3	1	5	2	8	13	0	13	7	11	9	9	14	9	0	1	1	4	0	24	2	7
April	9.9	E.	35	NW.	1	8	11	11	4	4	7	5	8	2	8	9	13	19	16	3	3	0	7	6	0	0	4	2	4
May	9.3	S.	30	NW.	0	10	4	3	2	16	15	4	6	2	18	7	6	10	8	0	0	0	6	7	0	0	0	5	5
June	8.7	S.	23	NW.	0	13	1	9	1	11	11	6	5	3	15	11	4	12	8	0	0	0	5	7	0	2	0	13	8
July	7.4	S.	23	NW.	0	12	3	7	7	11	11	5	2	4	9	12	10	12	7	0	0	1	7	8	0	1	0	13	0
August	7.6	N.	24	SW.	0	13	4	5	3	6	13	5	7	6	9	8	14	15	7	0	0	1	8	9	0	1	0	10	4
September	7.5	W.	26	NW.	0	12	3	2	5	4	8	11	8	7	10	10	10	17	12	0	0	0	6	15	0	0	0	4	0
October	9.3	N.	31	S.	0	17	8	3	0	5	9	6	10	4	15	6	10	16	15	1	0	0	0	0	0	0	3	1	2
November	9.3	N.	31	NW.	0	19	4	2	0	8	10	9	7	1	9	11	10	17	9	13	9	0	3	4	4	0	23	1	0
December	9.2	N.	36	NW.	2	16	4	2	2	0	5	12	17	4	8	10	13	20	14	16	12	0	1	1	17	0	29	1	0
Year	9.3	N.	41	NW.	7	166	63	48	29	75	117	90	100	36	141	100	118	168	124	68	44	2	46	65	39	4	137	53	32

PORTLAND, OREG.

[H_b=153 ft.; h_t=68 ft.; h_r=63 ft.; h_a=106 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.3	S.	25	S.	0	1	0	4	8	16	20	5	7	1	1	4	25	26	22	10	10	0	7	3	2	0	6	0	0
February	7.3	SW.	24	E.	0	1	2	8	4	10	15	3	13	0	2	0	26	18	16	7	5	1	7	1	1	0	8	0	0
March	6.6	SE.	21	SW.	0	1	1	5	19	8	11	6	9	2	0	8	23	24	19	1	0	2	3	0	0	0	0	1	0
April	6.6	NW.	21	NE.	0	1	0	3	3	9	8	6	29	1	10	7	13	11	9	2	2	1	2	1	0	0	0	1	0
May	6.8	S.	21	SW.	0	1	0	0	10	21	12	5	13	0	2	1	28	20	18	0	0	2	0	0	0	0	0	3	0
June	6.2	NW.	22	SW.	0	8	0	1	4	13	3	4	27	0	5	9	16	8	5	0	0	0	0	0	0	1	0	0	0
July	7.5	NW.	19	NW.	0	9	2	0	4	2	2	1	42	0	21	4	6	0	0	0	0	0	0	0	0	1	0	0	0
August	6.4	NW.	19	NE.	0	6	2	4	4	4	2	2	36	2	15	7	9	5	3	0	0	0	1	1	0	6	0	0	0
September	6.6	NW.	23	W.	0	6	0	3	2	15	13	3	18	0	3	11	16	16	11	0	0	0	3	2	0	0	0	1	2
October	6.0	NW.	22	SW.	0	3	3	0	3	7	13	4	28	1	9	8	14	13	11	0	0	0	12	4	0	0	0	0	0
November	5.4	NW.	19	S.	0	2	3	5	16	6	3	4	19	2	4	7	19	11	6	0	0	0	19	12	0	0	0	0	0
December	8.2	SW.	27	S.	0	3	2	6	14	10	16	2	9	0	0	0	31	26	24	1	1	0	6	1	0	0	0	0	0
Year	6.8	NW.	27	S.	0	42	15	39	91	121	118	45	250	9	72	66	227	178	144	21	18	6	60	25	3	8	14	6	2

PROVIDENCE, R.I.

[H_b=160 ft.; h_t=215 ft.; h_r=211 ft.; h_a=251 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	13.5	NW.	47	NW.	9	9	0	1	4	9	9	0	29	1	13	7	11	9	8	7	3	0	6	2	3	0	21	0	0
February	14.1	NW.	53	NW.	8	4	1	1	1	10	9	6	24	0	12	9	7	14	9	9	6	0	5	0	5	0	23	0	0
March	14.4	NW.	50	NW.	5	7	7	7	0	2	5	5	29	0	12	4	15	15	14	11	8	0	10	0	2	0	18	0	0
April	12.4	NW.	40	NW.	5	9	9	5	9	6	5	3	14	0	8	7	15	14	11	1	1	0	16	0	0	0	1	2	0
May	10.6	SE.	30	NW.	0	4	5	3	15	10	8	6	11	0	10	10	11	11	6	0	0	0	10	0	0	0	0	3	0
June	10.6	NW.	31	NW.	0	6	4	0	9	12	8	4	17	0	12	11	7	12	11	0	0	1	9	0	0	3	0	8	0
July	9.2	S.	30	N.	0	4	11	6	3	13	10	7	8	0	12	9	10	9	8	0	0	0	4	0	0	5	0	4	0
August	9.9	NW.	32	S.	1	7	7	6	2	13	10	3	13	1	10	7	14	13	10	0	0	0	10	0	0	3	0	4	0
September	10.2	NW.	41	NW.	3	6	4	2	4	9	6	5	23	1	10	9	11	13	12	0	0	0	13	1	0	0	0	4	0
October	11.2	NW.	46	NW.	1	7	6	2	3	9	7	0	26	2	16	6	9	9	8	0	0	0	9	0	0	0	0	0	0
November	11.9	NW.	37	NW.	6	3	2	0	4	9	8	7	27	0	12	12	6	10	7	9	6	0	8	0	2	0	19	0	0
December	12.8	NW.	49	NW.	8	5	3	3	1	4	9	4	33	0	9	6	16	15	10	8	7	0	12	1	11	0	27	0	0
Year	11.7	NW.	53	NW.	46	71	59	36	55	106	94	50	254	5	136	97	132	144	114	45	31	1	112	4	23	11	112	25	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

PUEBLO, COLO.

[ϕ=38°18′ N.; λ=104°36′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	25.15	25.59	24.68	29.1	45.7	43.8	51.4	22.6	37.0	65	8	12	12	10	50	26	24	0.072	0.073	0.065	0.00	0.00	0.0	1.5	2.7	1.7	3.5
February	25.23	25.55	24.82	20.3	39.2	38.7	46.4	14.6	30.5	69	−24	6	7	8	55	31	31	.056	.060	.063	.36	.25	4.3	1.7	2.6	3.1	3.6
March	25.21	25.54	24.81	31.6	52.7	54.6	59.0	28.9	44.0	76	12	19	16	16	60	26	24	.103	.088	.092	.43	.38	3.4	3.5	4.7	4.8	4.8
April	25.16	25.66	24.67	35.8	54.3	56.7	61.0	33.0	47.0	77	13	26	24	22	68	37	32	.142	.131	.123	2.60	1.10	14.9	3.5	4.5	4.9	4.8
May	25.17	25.47	24.71	48.8	65.8	67.6	71.4	46.7	59.0	89	38	34	28	27	59	30	27	.198	.161	.153	2.55	2.40	.0	3.5	3.7	5.4	4.6
June	25.30	25.66	25.06	60.9	82.8	82.9	87.9	58.9	73.4	98	50	44	41	41	57	27	28	.299	.263	.279	2.66	1.97	.0	2.7	3.5	6.5	4.4
July	25.36	25.60	25.14	64.2	87.0	85.4	92.0	63.0	77.5	100	54	51	49	47	64	29	30	.380	.358	.336	1.98	1.21	.0	2.3	2.3	5.5	3.9
August	25.35	25.51	25.10	60.5	80.2	79.0	85.7	59.6	72.6	93	52	54	52	50	80	40	40	.424	.395	.372	1.57	.63	.0	4.6	3.4	6.4	4.9
September	25.26	25.60	24.92	56.0	80.4	79.5	86.0	53.7	69.8	100	40	43	41	42	65	27	30	.292	.268	.278	.41	.38	.0	1.9	1.9	3.0	2.6
October	25.35	25.67	24.97	42.6	68.0	66.5	74.2	39.0	56.6	83	28	26	28	28	54	24	24	.143	.155	.154	.00	.00	.0	2.2	2.6	3.7	3.2
November	25.39	25.77	24.87	35.4	56.0	52.6	61.6	28.3	45.0	75	10	19	22	20	54	30	31	.099	.115	.108	.12	.12	1.2	1.2	2.4	3.1	3.0
December	25.27	25.55	24.85	34.1	48.8	44.4	55.2	28.1	41.6	71	12	21	22	22	61	39	44	.109	.118	.118	1.09	1.05	10.4	2.2	4.2	2.5	3.9
Year	25.27	25.77	24.67	43.3	63.4	62.6	69.3	39.7	54.5	100	−24	30	28	28	61	30	30	.193	.182	.178	13.77	2.40	34.2	2.6	3.2	4.2	3.9

RALEIGH, N.C.

[ϕ=35°45′ N.; λ=78°37′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.72	30.19	28.81	43.7	53.5	51.0	58.6	41.3	50.0	75	25	37	38	39	77	58	64	0.235	0.245	0.254	2.86	1.07	10.0	6.2	5.9	6.0	6.3
February	29.71	30.28	29.13	39.9	49.1	47.9	55.0	35.6	45.3	75	16	30	32	32	68	56	58	.190	.207	.198	3.37	1.01	T	6.2	6.2	5.5	6.2
March	29.62	30.05	28.97	44.6	55.8	54.5	62.4	40.6	51.5	83	25	33	32	33	63	43	46	.210	.206	.216	2.01	.67	T	4.5	5.4	5.0	4.6
April	29.55	30.00	29.09	53.9	65.5	64.5	70.9	49.2	60.0	84	39	44	44	43	71	48	49	.303	.303	.290	5.33	2.64	.0	4.8	5.7	5.2	5.4
May	29.58	29.90	29.20	68.6	79.3	75.9	84.1	62.5	73.3	94	51	60	58	59	73	50	58	.519	.497	.511	2.66	.66	.0	4.4	5.0	5.3	5.1
June	29.58	29.86	29.32	73.5	84.7	79.8	88.7	67.1	77.9	101	49	60	58	60	66	42	53	.556	.509	.535	1.44	1.22	.0	4.8	4.7	5.5	4.9
July	29.64	29.91	29.41	74.1	84.1	78.8	87.7	68.1	77.9	98	54	66	64	66	76	54	67	.647	.614	.658	2.12	.56	.0	4.7	6.3	5.5	5.7
August	29.59	29.89	29.04	73.1	82.4	76.3	85.7	68.7	77.2	94	62	68	68	68	85	64	78	.694	.693	.697	3.02	1.37	.0	6.9	6.5	7.3	6.8
September	29.57	29.79	29.26	71.4	83.2	77.8	87.3	67.7	77.5	94	54	65	64	66	80	55	68	.627	.614	.649	.83	.39	.0	3.9	4.7	3.5	4.3
October	29.71	30.04	29.25	54.9	69.5	64.0	73.0	51.7	62.4	87	33	47	49	50	77	51	63	.345	.371	.382	.89	.67	.0	3.7	3.4	2.5	3.7
November	29.67	30.20	29.09	43.3	56.6	52.2	60.8	40.6	50.7	81	25	33	39	38	68	53	61	.210	.260	.248	1.48	.67	.0	4.1	3.5	3.5	4.0
December	29.76	30.34	29.27	42.7	53.2	49.7	57.5	39.2	48.4	71	15	35	38	38	73	60	66	.222	.252	.245	.92	.35	.0	6.4	4.9	4.9	5.7
Year	29.64	30.34	28.81	57.0	68.1	64.4	72.6	52.7	62.7	101	15	48	49	49	73	53	61	.396	.398	.407	29.93	2.64	10.0	5.0	5.2	5.0	5.2

RAPID CITY, S.DAK.

[ϕ=44°04′ N.; λ=103°12′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	26.38	26.81	25.73	26.3	39.3	33.6	43.2	17.9	30.6	61	−10	15	18	19	64	42	57	0.089	0.096	0.102	0.06	0.05	1.1	3.4	5.5	4.8	5.3
February	26.54	26.84	26.11	16.7	26.9	24.0	31.7	9.1	20.4	58	−28	8	11	12	68	56	64	.069	.077	.070	.35	.17	4.3	4.1	4.9	5.3	4.9
March	26.54	26.87	26.02	29.2	43.2	40.9	47.4	25.1	36.2	75	7	22	26	26	76	53	59	.119	.136	.137	1.36	.54	11.7	5.7	5.1	7.0	5.6
April	26.50	27.02	25.97	36.8	48.7	49.6	53.2	33.0	43.1	80	17	29	30	31	75	52	56	.165	.170	.181	2.78	1.36	5.0	5.9	6.1	6.8	6.3
May	26.50	26.83	25.86	47.2	58.6	58.6	62.3	43.6	53.0	92	33	38	40	42	74	56	59	.238	.255	.271	6.51	2.59	T	5.8	5.9	6.4	6.1
June	26.55	27.05	26.31	65.0	80.9	81.8	85.5	59.6	72.6	97	48	50	52	53	60	39	38	.363	.399	.404	1.14	.54	.0	3.1	3.6	5.1	4.0
July	26.62	26.92	26.34	68.2	83.4	86.0	89.6	63.4	76.5	102	51	52	52	52	59	37	34	.402	.404	.402	2.05	1.73	.0	3.2	3.4	3.1	3.4
August	26.65	26.88	26.35	61.5	75.3	76.6	79.9	58.1	69.0	96	51	49	51	51	67	50	46	.353	.393	.380	3.00	1.43	.0	4.2	5.3	4.5	4.7
September	26.52	26.91	26.13	56.2	73.0	71.8	78.1	51.3	64.7	97	30	42	44	45	62	38	41	.283	.302	.312	.11	.09	.0	3.9	3.3	3.6	3.2
October	26.63	27.02	26.10	43.2	61.1	56.0	65.3	37.3	51.3	83	25	29	32	32	60	38	42	.161	.183	.184	.17	.11	.0	3.8	4.7	3.6	4.0
November	26.68	27.03	26.25	36.2	48.3	43.3	53.8	28.0	40.9	72	5	23	27	26	61	46	51	.127	.144	.138	.12	.06	1.0	2.8	5.3	4.3	4.4
December	26.54	27.00	25.99	27.5	35.3	30.9	41.6	18.2	29.9	67	−14	16	20	19	69	60	65	.097	.113	.108	.23	.12	2.7	4.7	8.4	6.6	7.5
Year	26.55	27.05	25.73	42.8	56.2	54.4	61.0	37.0	49.0	102	−28	31	34	34	66	47	51	.206	.223	.225	17.88	2.59	25.8	4.2	5.1	5.1	5.0

READING, PA.

[ϕ=40°20′ N.; λ=75°58′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.69	30.28	29.08	36.1	42.1	41.6	48.5	33.0	40.8	60	14	26	27	30	66	56	62	0.142	0.153	0.169	1.21	0.58	0.4	6.3	6.4	5.4	6.0
February	29.68	30.38	29.08	30.2	37.2	34.5	42.7	25.1	33.9	61	5	19	22	20	62	53	56	.114	.125	.117	2.64	.75	10.0	5.6	5.2	4.9	5.4
March	29.62	30.09	28.78	35.7	40.7	40.7	46.9	32.5	39.7	67	16	25	26	27	64	56	61	.141	.145	.156	4.46	.86	4.0	6.2	7.3	6.1	6.6
April	29.63	30.02	29.07	48.0	55.5	55.1	62.5	42.8	52.6	82	30	37	36	39	68	52	58	.234	.231	.255	4.14	1.43	.3	6.0	5.8	5.8	5.7
May	29.61	29.93	29.22	61.4	69.0	65.3	73.2	54.9	64.0	90	41	53	52	53	74	58	67	.413	.402	.418	5.42	1.46	.0	7.3	7.5	6.7	6.8
June	29.59	29.88	29.34	69.4	78.2	75.0	82.6	62.2	72.4	98	45	58	57	58	67	49	59	.502	.499	.522	1.77	.53	.0	5.0	5.9	5.2	5.3
July	29.67	29.99	29.33	71.2	79.8	75.5	83.5	65.2	74.4	97	50	62	61	62	73	54	66	.558	.555	.576	4.69	1.91	.0	5.5	5.7	5.4	5.3
August	29.64	29.98	28.96	69.5	77.6	74.2	80.9	64.7	72.8	97	56	62	62	63	79	61	69	.572	.557	.583	7.53	2.35	.0	6.3	6.2	5.6	5.9
September	29.60	29.88	29.16	64.1	72.6	69.9	75.6	60.9	68.2	89	51	58	58	60	81	62	71	.495	.502	.523	2.84	.75	.0	5.1	5.7	4.8	5.4
October	29.78	30.19	29.24	49.0	59.5	56.7	65.3	45.0	55.2	83	29	40	42	44	72	53	62	.262	.284	.302	1.55	.70	.0	4.5	4.7	3.4	4.3
November	29.65	30.20	28.95	38.2	45.5	43.1	51.2	34.7	43.0	72	17	28	29	30	67	53	61	.165	.176	.178	.59	.37	.2	6.0	5.8	5.5	6.4
December	29.77	30.50	29.26	30.2	35.3	34.0	41.0	25.6	33.3	59	0	23	22	22	73	60	62	.135	.134	.135	1.91	.77	8.5	7.2	6.7	6.5	6.6
Year	29.66	30.50	28.78	50.2	57.8	55.5	62.8	45.6	54.2	98	0	41	41	42	70	56	63	.311	.314	.328	38.75	2.35	23.4	5.9	6.1	5.4	5.8

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

PUEBLO, COLO.

[H_b=4,685 ft.; h_t=80 ft.; h_r=72 ft.; h_a=86 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction of time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	8.8	W.	40	W.	3	8	2	8	8	2	2	18	14	0	18	11	2	0	0	0	0	0	0	0	1	0	28	0	0
February	8.8	W.	31	NW.	0	10	4	8	3	5	3	14	9	0	15	9	4	4	3	5	4	0	0	0	4	0	24	0	0
March	8.0	N.	32	W.	1	15	6	8	11	1	4	10	7	0	10	18	3	2	2	3	2	0	0	0	0	0	21	0	0
April	7.8	N.	32	NW.	1	17	8	0	7	5	6	11	6	0	11	12	7	10	8	8	6	0	1	1	0	0	11	0	0
May	8.4	E.	41	W.	3	11	2	14	10	5	5	9	6	0	15	11	5	3	3	0	0	0	0	0	0	0	0	1	0
June	7.1	NW.	38	NW.	1	13	1	5	8	7	1	12	13	0	12	13	5	8	6	0	0	0	0	0	0	15	0	8	0
July	7.1	SE.	35	NW.	1	15	3	7	12	3	4	8	10	0	12	18	1	8	5	0	0	0	0	0	0	21	0	9	0
August	6.6	E.	38	N.	1	12	6	17	5	4	6	7	5	0	8	20	3	9	8	0	0	0	0	0	0	11	0	9	0
September	6.7	N.	24	NW.	0	19	5	13	10	3	2	7	1	0	21	6	3	4	2	0	0	0	0	0	0	12	0	0	0
October	6.2	SE.	21	W.	0	14	9	12	16	1	3	6	1	0	20	10	1	0	0	0	0	0	0	0	0	0	4	0	0
November	6.8	N.	28	W.	0	18	9	5	17	1	1	5	4	0	17	11	2	2	1	2	2	0	0	0	1	0	22	1	0
December	7.9	W.	35	W.	1	11	1	8	7	4	3	17	11	0	13	15	3	2	2	3	2	0	1	1	0	0	21	0	0
Year	7.5	N.	41	W.	12	163	56	105	114	41	40	124	87	0	172	154	39	52	40	21	16	0	2	2	6	59	131	28	0

RALEIGH, N.C.

[H_b=376 ft.; h_t=103 ft.; h_r=94 ft.; h_a=146 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction of time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.7	W.	35	NW.	1	9	3	5	2	5	12	14	12	0	7	10	14	6	6	1	1	0	0	0	0	0	6	1	0
February	9.5	NW.	34	NW.	1	5	6	3	2	3	10	12	15	0	8	5	15	14	11	2	0	0	2	0	0	0	9	0	0
March	10.9	SW.	32	NW.	1	10	3	6	2	5	19	2	15	0	14	8	9	9	8	1	0	0	2	0	0	0	5	3	0
April	10.1	SW.	31	W.	0	11	5	5	9	8	12	8	2	0	8	17	5	12	9	0	0	1	2	0	0	0	0	4	0
May	8.6	SW.	30	NW.	0	4	9	8	4	8	15	9	5	0	9	15	7	11	10	0	0	0	3	2	0	7	0	7	0
June	8.1	N.	37	NW.	1	12	9	6	1	6	8	14	4	0	11	11	8	7	5	0	0	0	1	1	0	17	0	9	0
July	7.6	SW.	28	NE.	0	4	8	3	10	7	15	12	3	0	9	11	11	8	8	0	0	0	3	3	0	15	0	9	0
August	8.3	SW.	32	W.	1	9	11	5	4	5	18	7	2	1	4	12	15	18	13	0	0	0	1	1	0	11	0	9	0
September	8.4	SW.	29	N.	0	9	2	9	4	6	16	9	5	0	12	13	5	6	5	0	0	0	6	3	0	12	0	4	0
October	8.6	NE.	24	N.	0	19	17	4	3	4	10	2	3	0	18	4	9	3	2	0	0	0	3	2	0	0	0	1	0
November	9.1	SW.	32	NW.	1	7	6	4	2	4	17	10	10	0	15	7	8	5	4	0	0	0	4	2	0	0	5	1	0
December	8.9	SW.	26	NE.	0	7	13	2	1	2	21	6	10	0	13	5	13	8	7	0	0	0	7	2	0	0	7	0	0
Year	9.0	SW.	37	NW.	6	106	92	60	44	63	173	105	86	1	128	118	119	107	88	4	1	1	34	16	0	62	32	48	0

RAPID CITY, S.DAK.

[H_b=3,259 ft.; h_t=50 ft.; h_r= 43 ft.; h_a=58 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction of time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.2	W.	34	NW.	1	7	6	2	0	4	5	16	21	1	7	16	8	3	1	9	3	0	1	1	2	0	30	0	0
February	8.8	NW.	38	NW.	1	13	0	1	3	5	2	11	19	2	8	14	6	5	3	9	5	0	0	0	11	0	27	0	0
March	9.2	N.	32	NW.	2	16	8	2	9	7	1	8	10	1	9	13	9	9	7	14	8	0	0	0	6	0	25	0	0
April	10.2	N.	35	NW.	3	18	2	2	8	3	3	9	14	1	6	12	12	11	8	9	4	1	5	1	1	0	11	3	0
May	9.2	W.	34	NW.	1	11	5	2	9	6	1	15	12	1	7	10	14	17	13	2	1	2	11	2	0	1	0	5	0
June	7.7	W.	35	W.	1	11	2	4	5	12	2	13	8	3	14	14	2	6	3	0	0	2	0	0	0	11	0	10	0
July	7.5	W.	27	SW.	0	13	7	4	6	9	4	12	5	2	18	10	3	7	3	0	0	1	0	0	0	17	0	11	0
August	7.8	W.	26	NE.	0	8	3	5	14	11	2	12	7	0	12	12	7	9	8	0	0	0	5	1	0	5	0	7	0
September	8.4	W.	35	NW.	1	14	1	2	4	8	4	13	10	4	18	7	5	4	1	0	0	0	3	1	0	5	2	1	0
October	8.1	W.	35	NW.	1	13	4	3	4	3	2	16	13	4	14	11	6	3	2	0	0	0	1	0	0	0	8	0	0
November	9.6	NW.	41	NW.	4	9	3	0	2	4	1	16	21	4	13	10	7	3	2	5	1	0	0	0	1	0	20	0	0
December	7.2	W.	38	N.	1	9	5	1	4	8	4	19	7	5	1	12	18	4	3	10	3	0	4	2	9	0	24	0	0
Year	8.5	W.	41	NW.	16	142	46	28	68	80	31	160	147	28	127	141	97	81	54	58	25	6	30	8	30	39	147	37	0

READING, PA.

[H_b=323 ft.; h_t=283 ft.; h_r=275 ft.; h_a=306 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction of time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.5	NW.	38	NW.	1	8	6	4	9	4	8	4	19	0	8	9	14	9	8	3	3	0	4	5	2	0	14	0	0
February	12.8	NW.	51	NW.	12	2	4	4	7	5	6	5	23	0	11	7	10	12	10	9	5	0	5	6	4	0	22	0	0
March	15.4	NW.	50	W.	11	4	1	10	4	2	7	7	27	0	5	11	15	13	12	7	3	0	5	6	0	0	12	5	0
April	14.3	SE.	38	E.	9	5	1	7	19	4	6	5	13	0	8	13	9	12	9	1	1	0	1	6	0	0	1	3	0
May	10.0	NW.	70	NW.	6	12	1	5	8	11	7	11	7	0	5	10	16	18	15	0	0	0	6	2	0	1	0	7	0
June	9.9	NW.	58	NW.	4	14	1	2	9	9	8	3	14	0	8	15	7	9	7	0	0	0	3	2	0	7	0	11	0
July	8.9	NW.	41	E.	2	8	4	3	11	8	9	5	14	0	9	14	8	9	9	0	0	0	4	3	0	6	0	7	0
August	10.4	SE.	52	E.	3	10	9	4	10	8	7	6	7	1	10	10	11	13	12	0	0	0	1	8	0	2	0	4	0
September	9.4	NW.	27	NW.	0	6	7	3	9	6	11	2	16	0	11	8	11	13	11	0	0	0	2	6	0	0	0	3	0
October	9.6	NW.	37	NW.	2	15	5	6	6	7	5	5	12	1	14	11	6	6	5	0	0	0	3	3	0	0	2	1	0
November	12.0	NW.	40	NW.	7	6	7	0	7	7	4	9	20	0	5	12	13	8	4	8	3	0	1	10	2	0	11	0	0
December	10.6	NW.	46	NW.	6	11	2	9	10	2	5	6	17	0	6	10	15	10	8	6	3	0	2	14	8	0	19	0	0
Year	10.9	NW.	70	NW.	63	101	48	57	109	73	83	68	189	2	100	130	135	132	110	34	18	0	37	71	16	16	81	41	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

RED BLUFF, CALIF.

[ϕ=40°10′ N.; λ=122°15′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.68	30.07	29.24	38.0	45.4	48.6	50.6	34.8	42.7	73	29	33	35	36	84	71	66	0.191	0.206	0.212	4.09	0.84	4.1	6.6	6.1	6.1	6.4
February	29.86	30.09	29.51	38.7	52.1	55.3	57.0	35.8	46.4	72	27	33	34	34	80	52	48	.191	.201	.202	.97	.59	4.2	4.5	4.2	4.6	4.8
March	29.71	30.02	29.38	47.5	59.5	62.3	64.2	45.2	54.7	79	36	42	44	42	82	57	50	.269	.288	.269	2.02	.81	.0	7.6	7.2	7.7	7.7
April	29.60	29.91	29.28	50.1	69.1	73.6	75.5	47.8	61.6	92	38	40	41	40	71	38	32	.254	.266	.257	.22	.17	.0	2.4	2.5	3.6	3.1
May	29.63	29.87	29.32	51.7	69.2	73.1	75.5	50.6	63.0	104	40	40	41	38	72	38	34	.264	.257	.239	.86	.46	.0	4.3	5.7	5.3	5.3
June	29.54	29.75	29.31	62.1	83.0	89.4	90.3	61.1	75.7	110	49	46	46	43	57	29	21	.315	.322	.282	.26	.26	.0	2.7	2.1	2.6	2.3
July	29.45	29.72	29.24	71.5	95.1	102.4	103.4	70.2	86.8	111	61	46	47	43	42	27	15	.312	.327	.286	.01	.01	.0	.6	.4	.6	.6
August	29.46	29.68	29.25	68.9	90.6	99.0	99.4	66.8	83.1	114	59	46	46	44	48	24	17	.329	.328	.299	.00	.00	.0	.5	.5	.3	.5
September	29.49	29.81	29.31	60.0	78.6	85.1	86.9	57.7	72.3	98	50	44	44	41	59	32	23	.295	.294	.261	.08	.06	.0	1.7	1.3	1.8	1.7
October	29.58	29.93	29.04	59.2	79.2	82.3	86.0	56.4	71.2	104	47	41	42	42	54	32	28	.267	.279	.276	1.48	1.45	.0	1.3	2.8	2.8	2.8
November	29.80	30.02	29.42	45.0	64.6	65.7	70.8	42.7	56.8	81	34	36	36	38	73	36	38	.218	.220	.243	.00	.00	.0	1.1	2.1	2.9	2.4
December	29.76	30.16	29.15	41.1	47.5	48.5	50.9	39.0	45.0	62	30	40	41	41	94	80	78	.246	.260	.265	8.33	3.08	.0	6.0	8.1	7.0	8.3
Year	29.63	30.16	29.04	52.8	69.5	73.8	75.9	50.7	63.3	114	27	41	41	40	68	43	38	.263	.271	.258	18.32	3.08	8.3	3.3	3.6	3.8	3.8

RENO, NEV.

[ϕ=39°32′ N.; λ=119°49′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	25.39	25.91	24.93	25.2	37.5	36.9	42.0	18.6	30.3	62	9	18	22	22	73	55	55	0.098	0.115	0.113	2.22	0.91	28.5	4.2	5.4	5.0	5.1
February	25.56	25.84	25.23	22.9	37.0	36.8	41.5	15.9	28.7	58	−2	14	17	19	70	46	49	.082	.095	.099	.20	.13	2.5	3.1	3.6	4.4	3.4
March	25.45	25.80	25.17	35.5	51.6	50.5	54.8	31.3	43.0	69	21	22	21	25	58	31	37	.119	.113	.134	.34	.30	.5	5.2	5.2	6.0	5.2
April	25.40	25.75	25.04	37.8	57.2	57.2	61.5	34.4	48.0	75	21	23	21	24	55	25	29	.126	.116	.132	.06	.04	T	2.6	4.3	4.7	3.7
May	25.42	25.62	25.18	40.9	57.7	57.8	61.9	38.3	50.1	89	27	28	26	28	60	34	35	.153	.144	.150	.66	.46	.1	4.2	5.3	5.4	4.8
June	25.43	25.66	25.23	50.6	76.1	76.8	81.2	49.3	65.2	98	42	35	30	31	57	20	21	.208	.169	.176	.01	.01	.0	2.1	3.0	3.6	2.8
July	25.46	25.64	25.27	59.3	88.5	88.7	93.7	57.8	75.8	101	48	38	34	35	46	15	16	.232	.203	.209	.25	.18	.0	1.0	1.2	1.9	1.2
August	25.48	25.64	25.31	56.2	84.2	84.9	90.2	54.4	72.3	103	45	38	34	36	51	18	19	.230	.201	.214	.79	.78	.0	.8	1.3	2.4	1.5
September	25.40	25.56	25.21	48.9	75.0	77.0	81.0	46.1	63.6	91	37	31	30	30	52	20	19	.175	.167	.165	.00	.00	.0	.3	.7	.8	.6
October	25.52	25.86	24.96	45.4	72.5	71.4	77.3	41.8	59.6	89	32	29	30	29	53	22	24	.159	.165	.159	1.65	1.63	T	1.6	2.2	3.4	2.4
November	25.67	25.96	25.00	30.3	52.7	53.2	59.7	27.9	43.8	68	18	24	28	27	75	38	37	.125	.149	.148	.04	.04	.6	.9	1.4	2.1	1.5
December	25.50	25.75	25.06	32.2	44.4	45.0	50.6	28.5	39.6	62	9	24	29	28	72	57	52	.130	.160	.152	2.06	1.24	2.8	4.4	5.4	5.6	5.2
Year	25.47	25.96	24.93	40.4	61.2	61.4	66.3	37.0	51.7	103	−2	27	27	28	60	32	33	.153	.150	.154	8.28	1.63	35.0	2.5	3.2	3.8	3.1

RICHMOND, VA.

[ϕ=37°32′ N.; λ=77°27′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.92	30.50	28.91	39.5	49.8	47.2	54.7	36.5	45.6	72	21	35	38	37	63	66	69	0.211	0.243	0.234	3.85	1.35	1.7	6.0	6.1	6.2	6.5
February	29.94	30.50	29.33	35.6	45.3	43.4	51.1	31.4	41.2	70	14	28	30	30	75	59	61	.171	.179	.179	2.73	.61	5.7	5.3	5.3	5.5	5.7
March	29.86	30.34	29.11	40.7	51.1	47.9	56.2	36.7	46.4	78	20	32	33	33	71	52	58	.193	.208	.203	2.15	.58	T	4.8	5.9	3.9	5.7
April	29.82	30.27	29.31	51.1	62.5	59.3	67.9	45.6	56.8	80	35	44	46	45	77	57	61	.300	.323	.311	4.02	1.13	.0	4.5	5.2	4.2	4.8
May	29.82	30.17	29.39	65.0	76.0	70.2	80.7	59.5	70.1	93	45	58	60	59	81	59	70	.503	.522	.520	4.84	2.04	.0	5.5	5.5	5.6	6.0
June	29.82	30.13	29.59	71.7	83.4	78.2	87.1	64.4	75.8	100	48	61	61	62	71	48	60	.575	.562	.596	1.63	.80	.0	3.6	3.5	4.5	4.0
July	29.88	30.20	29.65	72.4	82.1	77.6	85.9	66.5	76.2	97	52	66	66	67	82	60	72	.662	.653	.671	4.59	1.95	.0	4.4	5.4	4.8	4.9
August	29.83	30.20	28.78	72.5	81.3	75.8	84.9	68.2	76.6	95	60	68	67	68	87	65	79	.695	.679	.698	8.84	3.19	.0	5.7	5.9	6.3	6.1
September	29.82	30.07	29.44	68.3	80.9	74.6	83.9	65.0	74.4	94	50	63	63	66	86	57	75	.597	.595	.645	1.05	.52	.0	5.7	4.6	3.9	5.1
October	29.99	30.35	29.50	51.3	66.2	59.0	70.4	47.0	58.7	87	32	46	48	49	84	54	71	.331	.354	.364	.72	.40	.0	3.3	3.4	1.8	3.4
November	29.91	30.49	29.26	40.3	53.2	48.3	58.0	36.9	47.4	77	16	33	35	36	77	51	63	.206	.223	.231	1.17	.78	T	4.7	4.7	3.9	5.0
December	30.01	30.73	29.53	38.0	47.4	43.8	52.7	33.7	43.2	74	12	32	33	33	79	60	66	.198	.209	.208	3.14	1.28	.1	6.0	6.6	3.9	6.1
Year	29.88	30.73	28.78	53.9	64.9	60.4	69.5	49.3	59.4	100	12	47	48	49	79	57	67	.387	.396	.405	38.73	3.19	7.5	5.0	5.2	4.5	5.3

ROCHESTER, N.Y.

[ϕ=43°08′ N.; λ=77°42′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.41	29.99	28.72	33.2	37.7	35.9	42.5	28.6	35.6	61	9	24	25	25	68	60	62	0.134	0.139	0.135	1.38	0.55	1.0	6.8	8.0	5.7	7.2
February	29.39	30.01	28.78	26.0	29.8	28.9	36.2	21.1	28.6	56	−2	18	18	18	70	61	63	.107	.102	.107	1.63	.80	10.7	6.2	7.2	6.9	6.9
March	29.39	29.87	28.59	30.7	34.2	32.9	37.4	27.9	32.6	56	11	24	23	24	74	65	70	.129	.131	.134	4.39	1.11	8.0	8.3	8.0	8.1	7.5
April	29.39	29.86	28.95	45.1	52.5	49.1	55.7	38.7	47.2	85	27	34	34	35	66	52	61	.204	.208	.217	2.76	.61	.4	5.4	6.6	6.0	6.3
May	29.39	29.71	29.00	58.5	64.6	60.5	69.3	51.3	60.3	81	39	47	47	48	66	55	64	.340	.340	.345	2.17	.99	.0	6.6	7.2	6.3	6.4
June	29.38	29.64	29.02	68.0	76.2	71.6	80.4	60.0	70.2	97	43	56	56	56	65	50	58	.466	.478	.464	1.34	.56	.0	4.2	4.7	5.1	4.3
July	29.45	29.89	29.14	72.1	81.3	76.1	84.5	64.1	74.3	99	55	58	56	55	51	43	50	.485	.457	.440	.43	.18	.0	4.1	4.3	4.5	3.9
August	29.45	29.78	28.85	67.6	75.6	71.8	78.7	61.9	70.3	96	52	56	55	56	68	52	59	.465	.449	.452	3.76	1.97	.0	5.7	5.3	4.2	4.9
September	29.37	29.70	28.94	61.5	69.2	65.7	73.1	56.1	64.6	88	44	53	54	54	76	60	67	.425	.432	.431	.71	.32	.0	7.1	6.7	5.0	6.6
October	29.53	29.93	29.05	47.7	54.8	50.8	58.5	41.8	50.2	76	27	38	36	38	69	52	62	.243	.224	.238	1.41	.92	T	6.1	6.9	5.3	6.9
November	29.37	29.93	28.69	32.5	35.8	34.6	41.9	27.3	34.6	80	8	25	27	27	74	69	73	.145	.154	.153	3.01	.63	10.3	8.6	8.1	8.3	8.3
December	29.51	30.40	28.91	26.1	29.1	27.7	34.9	20.1	27.5	57	−7	20	20	21	78	70	74	.121	.125	.130	2.57	.55	17.2	9.0	8.0	8.6	8.9
Year	29.42	30.40	28.59	47.4	53.4	50.5	57.8	41.6	49.7	99	−7	38	38	38	70	57	64	.272	.270	.279	25.56	1.97	56.6	6.6	6.8	6.2	6.5

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

RED BLUFF, CALIF.

[H_b=330 ft.; h_t=5 ft.; h_r=43 ft.; h_a=58 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																										
January	7.8	NW.	35	SE.	1	14	0	4	10	13	2	4	14	1	7	9	15	13	12	3	2	1	6	4	0	0	7	0	0
February	7.3	N.	24	NW.	0	15	2	0	6	12	1	1	18	1	11	8	9	4	4	1	1	0	1	0	0	0	5	0	0
March	8.9	SE.	31	SE.	0	8	0	0	13	18	2	5	16	0	6	6	19	11	8	0	0	1	0	0	0	0	0	2	0
April	7.8	NW.	26	NW.	0	16	0	1	10	8	2	4	19	0	19	6	5	4	1	0	0	0	0	0	0	0	3	0	1
May	7.5	SE.	28	SE.	0	9	2	5	12	10	1	5	15	3	10	8	13	9	4	0	0	1	0	0	0	0	5	0	2
June	6.8	SE.	18	SE.	0	5	3	10	16	13	1	3	9	0	21	6	3	1	1	0	0	0	0	0	0	0	14	0	1
July	6.2	N.	16	SE.	0	10	1	8	16	9	0	2	14	2	29	0	2	1	0	0	0	0	0	0	0	0	31	0	1
August	5.8	S.	18	SE.	0	7	0	7	11	15	4	2	13	3	30	1	0	0	0	0	0	0	0	0	0	0	28	0	2
September	6.4	NW.	25	SE.	0	8	2	3	11	14	1	3	17	1	25	3	2	3	1	0	0	0	0	0	0	0	12	0	0
October	6.1	NW.	24	SE.	0	10	0	2	14	7	3	4	22	0	21	6	4	3	2	0	0	0	1	0	0	0	10	0	1
November	5.7	NW.	22	W.	0	17	3	5	3	4	0	1	24	3	20	6	4	0	0	0	0	0	1	0	0	0	0	0	0
December	5.7	NW.	29	SE.	0	16	4	6	9	8	0	4	14	1	3	4	24	17	11	0	0	0	2	7	0	0	2	0	0
Year	6.8	NW.	35	SE.	1	135	17	51	131	131	17	38	195	15	202	63	100	66	44	4	3	3	11	11	0	103	14	10	0

RENO, NEV.

[H_b=4,527 ft.; h_t=74 ft.; h_r=67 ft.; h_a=81 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.5	W.	29	SW.	0	5	4	8	7	6	8	20	2	2	12	6	13	12	8	16	12	0	0	0	5	0	31	0	0
February	6.7	SW.	32	SW.	1	3	2	7	10	5	17	8	4	0	16	9	3	3	2	6	3	0	0	0	4	0	27	0	0
March	8.3	W.	31	W.	0	4	0	4	6	7	19	19	1	2	9	12	10	3	3	5	3	0	0	0	0	0	18	0	0
April	8.5	W.	30	W.	0	6	4	5	2	2	18	13	10	0	14	12	4	3	1	2	1	0	0	0	0	0	10	0	0
May	9.3	W.	32	SW.	1	0	1	3	5	1	20	19	13	0	11	15	5	6	3	6	4	0	0	0	0	0	8	0	0
June	8.9	W.	28	SW.	0	0	1	3	2	4	23	24	3	0	20	6	4	1	0	0	0	0	0	0	0	0	5	0	2
July	8.1	W.	27	SW.	0	0	1	0	1	2	38	18	2	0	28	1	2	2	2	0	0	0	0	0	0	0	25	0	2
August	7.2	W.	29	SW.	0	5	4	0	2	1	25	24	0	1	27	3	1	2	1	0	0	1	0	0	0	0	15	0	5
September	7.6	SW.	32	W.	1	4	2	4	3	2	31	12	2	0	28	1	1	0	0	0	0	0	0	0	0	0	1	0	0
October	6.3	SW.	31	SW.	0	6	6	6	3	7	23	9	2	0	21	8	2	2	2	1	1	0	0	0	0	0	1	0	0
November	5.0	SW.	41	W.	1	4	5	4	1	5	25	13	3	0	26	3	1	1	1	1	1	0	0	0	0	0	27	0	0
December	5.7	SW.	28	SE.	0	3	5	3	10	9	15	13	3	1	10	13	8	8	5	5	3	0	0	0	1	0	24	0	0
Year	7.3	W.	41	W.	4	40	35	47	52	51	262	192	45	6	222	89	54	43	28	42	28	1	0	0	10	46	146	9	0

RICHMOND, VA.

[H_b=144 ft.; h_t=11 ft.; h_r=3 ft.; h_a=52 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.2	SW.	40	N.	2	8	8	7	5	7	12	9	6	0	7	9	15	10	6	4	2	0	10	2	0	0	11	1	0
February	9.4	SW.	32	W.	1	7	5	2	5	4	11	12	10	0	9	6	13	12	9	3	3	0	5	0	3	0	15	0	0
March	10.4	N.	36	W.	1	10	8	8	6	4	10	9	7	0	9	10	12	10	9	2	0	0	3	1	0	0	10	3	0
April	9.3	NE.	27	N.	0	2	12	9	10	7	13	5	2	0	13	8	9	12	11	0	0	1	0	0	0	0	0	3	0
May	7.5	NE.	46	NW.	1	3	15	7	6	6	12	9	3	1	5	16	10	14	13	0	0	0	0	0	0	4	0	9	0
June	7.0	NE.	22	N.	0	5	9	9	6	10	8	7	5	1	14	11	5	6	6	0	0	0	2	2	0	14	0	7	0
July	6.3	SW.	26	E.	0	5	7	7	5	14	15	5	4	0	12	9	10	11	10	0	0	0	7	4	0	12	0	8	0
August	7.8	NE.	39	NE.	1	1	16	8	9	2	14	6	5	1	9	9	13	17	13	0	0	0	0	0	0	8	0	8	0
September	7.1	SW.	24	NE.	0	1	9	6	9	7	10	13	3	2	8	14	8	7	5	0	0	0	6	0	0	6	0	2	0
October	7.1	NE.	23	N.	0	4	24	7	6	6	6	4	3	2	20	5	6	6	3	0	0	0	7	3	0	0	1	1	0
November	9.0	SW.	34	NW.	1	6	7	3	6	7	13	10	8	0	10	10	10	6	2	1	0	0	6	3	0	0	9	2	0
December	8.3	SW.	24	NW.	0	3	10	9	4	11	11	9	5	0	7	12	12	9	7	2	1	0	3	2	1	0	14	0	0
Year	8.2	SW.	46	NW.	7	55	130	82	77	85	135	98	61	7	123	119	123	120	94	12	6	1	49	17	4	44	60	44	0

ROCHESTER, N.Y.

[H_b=523 ft.; h_t=86 ft.; h_r=77 ft.; h_a=102 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.9	SW.	39	W.	5	0	1	5	6	10	20	13	7	0	3	12	16	11	4	10	5	0	6	0	4	0	26	1	0
February	11.9	W.	40	W.	2	3	1	0	4	8	13	18	9	0	4	10	14	14	6	15	10	0	1	0	9	0	23	0	0
March	10.7	W.	35	W.	1	5	9	3	4	5	5	17	14	0	6	4	21	20	16	20	15	0	5	2	3	0	25	0	0
April	9.5	W.	29	W.	0	4	8	5	7	7	10	14	5	0	9	7	14	19	14	3	2	0	2	0	0	0	5	1	0
May	8.0	SW.	32	SW.	1	8	5	5	5	4	17	9	9	0	4	17	10	11	9	0	0	0	5	3	0	0	0	4	0
June	7.9	SW.	30	SW.	0	7	6	0	1	3	19	10	13	1	16	9	5	11	9	0	0	0	0	0	0	7	0	7	0
July	8.2	SW.	24	W.	0	4	10	3	1	4	20	12	8	0	15	14	2	5	3	0	0	0	0	0	0	8	0	4	0
August	7.4	NW.	28	W.	0	4	8	9	3	5	11	16	6	0	15	6	10	11	8	0	0	0	1	0	0	1	0	2	0
September	7.2	W.	25	W.	0	3	1	5	5	5	14	21	6	0	5	10	15	8	3	0	0	0	3	1	0	0	0	2	0
October	8.3	SW.	24	W.	0	4	5	1	2	13	17	13	7	0	5	10	16	8	5	2	1	0	1	0	0	0	4	0	0
November	8.3	W.	32	W.	1	0	4	5	4	12	11	16	8	0	1	8	21	19	15	16	13	0	3	0	4	0	22	1	0
December	7.7	W.	28	W.	0	5	1	6	7	3	14	17	8	0	3	3	25	23	13	17	14	0	6	1	12	0	25	0	0
Year	8.8	W.	40	W.	10	47	59	47	49	79	171	176	101	1	86	110	169	160	105	83	60	0	33	7	32	16	130	22	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

ROSEBURG, OREG.

[ϕ=43° 13′ N.; λ=123° 20′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.45	30.07	28.85	36.9	41.6	43.2	45.5	34.1	39.8	58	25	34	35	35	90	78	75	0.199	0.206	0.209	8.16	2.96	8.3	9.1	8.7	8.0	8.6
February	29.69	30.00	29.18	36.4	43.8	46.4	48.4	33.0	40.7	64	17	32	32	33	86	65	62	.185	.186	.193	2.22	1.01	.7	8.5	8.0	7.6	8.0
March	29.51	29.94	28.98	40.6	51.4	53.1	56.2	37.9	47.0	72	28	37	34	35	86	54	52	.219	.200	.207	2.15	.69	.0	8.2	8.2	8.8	8.1
April	29.54	29.84	29.12	41.4	55.6	60.5	62.3	39.8	51.0	78	33	38	37	36	86	50	43	.226	.221	.219	.85	.21	T	4.4	4.5	4.5	5.0
May	29.50	29.77	29.15	44.9	57.2	58.5	61.2	43.1	52.2	84	36	41	41	41	86	55	54	.259	.257	.258	3.15	.94	.0	8.3	7.1	6.6	7.3
June	29.48	29.70	29.27	52.0	67.2	71.3	73.6	51.3	62.4	87	44	47	49	48	83	53	46	.322	.350	.346	.72	.65	.0	6.7	4.6	4.6	5.8
July	29.46	29.69	29.19	55.0	76.1	82.8	84.1	53.9	69.0	94	46	49	52	49	80	44	32	.346	.391	.352	.00	.00	.0	1.9	1.0	1.6	1.5
August	29.42	29.61	29.23	56.5	76.1	82.8	84.4	54.8	69.6	99	48	50	52	49	79	44	33	.363	.389	.348	.24	.15	.0	3.0	2.1	1.9	2.6
September	29.41	29.62	29.20	49.8	65.5	68.4	71.2	47.5	59.4	84	39	46	47	46	86	53	49	.308	.327	.317	.79	.34	.0	5.4	5.2	4.5	5.7
October	29.50	29.93	28.79	46.0	62.7	68.4	70.5	43.4	57.0	89	30	44	47	48	92	59	50	.288	.329	.335	1.22	.61	.0	2.4	4.3	3.4	5.0
November	29.73	29.96	29.34	41.6	47.3	50.5	52.6	38.5	45.6	65	30	41	42	43	97	81	77	.256	.263	.285	1.02	.53	T	4.8	7.6	5.6	7.9
December	29.43	29.83	28.74	45.5	52.0	51.3	55.1	41.7	48.4	66	33	40	41	43	83	68	74	.250	.261	.277	4.69	1.02	T	7.5	8.9	9.3	9.5
Year	29.51	30.07	28.74	45.6	58.0	61.4	63.8	43.2	53.5	99	17	42	42	42	86	59	54	.268	.282	.279	25.21	2.96	9.0	5.8	5.8	5.5	6.2

ROSWELL, N.MEX.

[ϕ=33° 24′ N.; λ=104° 27′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	26.34	26.67	26.04	30.6	48.4	49.0	55.6	26.9	41.2	65	15	22	24	22	71	40	35	0.120	0.133	0.119	0.15	0.13	T	3.5	3.1	4.0	3.4
February	26.39	26.76	25.90	26.2	44.6	47.5	53.0	21.9	37.4	72	−24	18	20	20	70	41	41	.120	.116	.120	.39	.19	4.3	3.6	3.0	4.6	3.7
March	26.32	26.69	25.92	39.6	61.8	65.7	69.2	36.9	53.0	82	26	26	23	21	58	25	21	.142	.126	.114	T	T	.0	4.4	3.7	4.2	4.1
April	26.25	26.69	25.78	42.6	64.8	68.5	71.7	40.3	56.0	81	23	27	23	24	56	22	19	.149	.126	.127	.16	.16	T	2.6	2.3	2.0	2.4
May	26.24	26.53	25.83	53.8	77.3	78.5	82.7	51.1	66.9	95	37	34	32	30	50	22	21	.203	.200	.182	.50	.43	.0	1.8	1.2	3.2	2.1
June	26.36	26.65	26.12	64.7	87.0	88.3	92.1	62.7	77.4	104	52	50	46	44	61	29	26	.370	.332	.307	.63	.46	.0	2.5	1.7	4.5	2.7
July	26.36	26.62	26.16	68.5	87.9	89.9	93.8	67.3	80.6	102	61	58	55	52	69	34	30	.483	.438	.399	.79	.57	.0	3.0	1.8	3.2	2.6
August	26.38	26.55	26.12	66.7	84.7	83.5	90.1	65.5	77.8	97	61	59	57	55	78	42	43	.505	.476	.447	3.28	1.29	.0	4.5	2.7	5.3	4.1
September	26.32	26.60	26.07	63.4	82.4	83.7	88.2	61.9	75.0	94	58	59	58	55	85	44	40	.499	.484	.443	1.67	.95	.0	2.3	1.7	1.8	2.0
October	26.41	26.70	26.11	50.3	72.4	72.4	78.7	48.7	63.7	86	39	41	42	40	72	36	34	.267	.278	.263	.09	.06	.0	2.2	1.7	2.2	1.8
November	26.49	26.89	26.05	37.6	59.6	58.3	66.6	35.1	50.8	80	28	30	32	32	75	39	41	.171	.179	.182	1.13	.75	T	3.2	1.6	2.8	2.4
December	26.42	26.69	26.16	35.1	55.3	56.4	63.8	29.7	46.8	77	15	19	22	23	52	29	23	.104	.116	.121	T	T	.0	1.6	2.3	1.2	1.7
Year	26.36	26.89	25.78	48.3	68.8	70.1	75.5	45.7	60.6	104	−24	37	36	35	66	34	32	.261	.250	.235	8.79	1.29	4.3	2.9	2.2	3.2	2.8

SACRAMENTO, CALIF.

[ϕ=38° 35′ N.; λ=121° 30′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.99	30.36	29.53	38.5	43.8	46.7	47.5	36.4	42.0	61	30	36	38	38	89	81	74	0.208	0.229	0.229	2.85	0.76	T	5.7	6.5	5.8	6.5
February	30.13	30.40	29.87	40.5	50.8	56.3	56.8	37.5	47.2	65	29	35	37	36	82	61	48	.208	.223	.213	.95	.70	0.0	2.7	2.8	2.4	2.7
March	30.02	30.29	29.75	47.1	58.5	62.4	63.5	45.3	54.4	75	38	42	43	42	82	58	49	.267	.282	.275	1.44	.60	.0	3.6	3.7	3.9	3.7
April	29.88	30.20	29.55	47.9	64.6	68.7	70.2	46.3	58.2	83	36	41	39	40	77	41	37	.258	.250	.261	.03	.03	.0	2.0	1.8	1.8	1.8
May	29.93	30.21	29.66	48.8	66.3	69.4	71.8	47.5	59.6	100	39	42	42	42	80	42	40	.273	.205	.270	.30	.23	.0	2.1	3.2	2.8	2.8
June	29.84	30.01	29.64	54.8	76.7	81.1	83.0	54.3	68.6	101	45	47	47	46	76	36	31	.324	.326	.322	.08	.08	.0	1.6	1.5	1.7	1.7
July	29.73	29.99	29.55	60.9	86.2	94.0	95.5	59.8	77.6	110	53	50	52	47	69	32	22	.364	.389	.332	T	T	.0	.6	.3	.3	.3
August	29.75	29.95	29.55	60.2	83.1	90.0	91.8	58.9	75.4	111	53	51	51	48	72	35	26	.371	.380	.346	.00	.00	.0	.6	.1	.3	.3
September	29.78	30.07	29.58	55.9	74.8	80.7	82.2	54.4	68.3	93	49	48	49	46	77	41	32	.341	.349	.321	.03	.03	.0	.3	.5	.6	.5
October	29.87	30.15	29.47	56.6	75.2	80.8	82.7	54.2	68.4	101	47	46	46	47	72	40	34	.322	.323	.331	.66	.44	.0	1.4	1.6	1.6	1.5
November	30.07	30.30	29.59	46.4	64.1	66.7	69.5	43.2	56.4	77	38	39	41	42	77	44	42	.245	.266	.275	.00	.00	.0	.0	.6	1.4	.7
December	30.06	30.46	29.58	42.3	48.9	49.3	51.2	40.0	45.6	63	33	40	42	43	91	80	80	.252	.274	.277	5.74	1.64	.0	4.9	5.9	6.1	7.2
Year	29.92	30.46	29.47	50.0	66.1	70.5	72.1	48.2	60.1	111	29	43	44	43	79	49	43	.286	.296	.288	12.08	1.64	T	2.1	2.4	2.4	2.5

ST. JOSEPH, MO.

[ϕ=39° 49′ N.; λ=94° 51′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.88	29.35	28.19	33.6	43.8	42.4	50.5	29.7	40.1	68	16	26	26	27	73	52	56	0.147	0.150	0.154	0.37	0.22	1.0	4.3	3.6	2.4	3.9
February	29.04	29.57	28.56	22.2	35.2	33.2	40.5	19.1	29.8	72	−15	14	16	16	72	48	53	.092	.099	.093	.31	.24	2.7	3.8	3.5	2.2	3.6
March	28.94	29.42	28.26	36.4	46.7	45.9	52.3	32.9	42.6	80	12	30	31	31	77	56	59	.184	.189	.189	2.81	1.22	1.4	6.1	5.2	4.6	5.5
April	28.82	29.22	28.24	45.9	59.9	58.7	65.4	43.7	54.6	85	31	36	36	37	68	43	48	.220	.228	.233	3.42	2.10	T	5.4	5.2	3.2	4.9
May	28.82	29.09	28.37	57.4	68.7	68.5	73.6	54.9	64.2	90	41	51	51	53	80	57	60	.387	.392	.418	3.49	1.02	.0	5.5	5.9	4.4	5.3
June	28.92	29.37	28.68	71.5	87.0	88.5	92.3	69.0	80.6	102	49	58	59	59	65	40	39	.502	.517	.528	6.05	3.31	.0	3.0	3.0	1.6	2.4
July	28.94	29.22	28.65	72.1	85.9	86.5	90.3	69.6	80.0	102	59	63	63	63	74	48	47	.590	.593	.595	2.59	1.80	.0	3.2	3.1	2.0	3.1
August	28.97	29.17	28.76	67.7	80.0	79.1	84.5	65.5	75.0	94	54	61	62	63	80	56	60	.547	.564	.591	5.09	1.98	.0	5.8	5.0	4.9	5.4
September	28.87	29.13	28.55	65.0	79.6	76.7	84.6	62.2	73.4	96	43	60	60	61	84	53	60	.524	.526	.550	3.44	1.49	.0	2.9	3.0	2.7	3.3
October	29.04	29.42	28.70	47.0	62.9	58.5	67.0	44.1	55.8	80	30	40	40	41	77	44	53	.259	.261	.278	.79	.33	.0	3.2	2.8	2.2	2.7
November	29.04	29.50	28.60	39.0	50.2	47.6	55.9	34.3	45.1	80	20	28	29	30	66	46	52	.165	.168	.173	.52	.23	T	3.6	3.3	3.2	3.8
December	29.03	29.61	28.39	29.7	39.4	38.4	46.5	26.2	36.4	65	3	23	25	25	75	57	58	.135	.151	.146	1.41	.78	.1	5.3	4.1	2.9	4.4
Year	28.94	29.61	28.19	49.0	61.6	60.3	67.0	45.9	56.5	102	−15	41	42	42	74	50	54	.313	.320	.329	30.29	3.31	5.2	4.3	4.0	3.0	4.0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

ROSEBURG, OREG.

[H_b=510 ft.; h_t=45 ft.; h_r=41 ft.; h_a=76 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	5.2	S.	21	S.	0	8	2	3	8	22	13	0	5	1	1	7	23	22	18	12	12	2	12	1	0	0	11	0	0
February	5.1	SW.	21	N.	0	2	3	3	4	11	16	2	15	0	2	7	19	14	9	1	1	0	9	2	0	0	13	0	0
March	5.2	S.	24	SW.	0	7	4	4	2	15	13	4	13	0	1	5	25	16	13	0	0	1	8	0	0	0	1	0	0
April	5.5	N.	21	N.	0	23	3	3	0	5	7	0	10	9	12	7	11	9	6	3	0	3	2	0	0	0	0	0	0
May	5.8	N.	23	S.	0	14	2	0	3	16	10	5	7	5	3	8	20	19	17	0	0	2	2	0	0	0	0	0	0
June	5.4	N.	16	NW.	0	30	3	2	1	1	4	0	11	8	6	13	11	3	2	0	0	0	1	0	0	0	0	0	0
July	5.7	N.	18	N.	0	26	6	1	1	0	0	0	10	18	26	3	2	0	0	0	0	0	0	0	0	5	0	0	0
August	5.0	N.	18	N.	0	30	6	1	2	1	1	0	11	10	21	3	7	3	2	0	0	0	1	0	0	11	0	0	0
September	5.0	N.	24	SW.	0	18	4	4	3	4	6	3	10	8	9	10	11	13	6	0	0	0	4	1	0	0	0	0	0
October	3.5	NW.	21	W.	0	15	3	2	1	7	7	4	14	9	11	10	10	7	5	0	0	0	16	14	0	0	1	0	0
November	3.3	N.	15	W.	0	18	3	8	3	4	7	2	14	1	1	10	19	7	5	1	0	0	27	23	0	0	2	0	0
December	4.7	SW.	25	S.	0	5	1	3	4	16	24	3	6	0	0	1	30	19	12	1	0	0	9	7	0	0	0	0	0
Year	5.0	N.	25	S.	0	196	40	34	32	102	108	23	126	69	93	84	188	132	95	18	13	8	91	48	0	16	28	0	0

ROSWELL, N.MEX.

[H_b=3,566 ft.; h_t=75 ft.; h_r=69 ft.; h_a=85 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.2	NW.	39	NW.	3	9	2	3	5	7	5	11	18	2	20	6	5	2	1	1	1	0	0	1	0	0	27	0	0
February	7.9	N.	32	SE.	1	14	4	3	7	9	4	4	11	0	16	7	5	4	2	3	1	1	0	1	4	0	25	1	0
March	9.2	S.	32	NW.	1	9	5	3	11	10	4	7	13	0	15	12	4	0	0	0	0	0	1	1	0	0	6	0	0
April	9.7	SW.	34	SW.	3	7	5	1	7	2	12	13	9	4	20	6	4	1	1	2	1	0	0	0	0	0	3	0	0
May	10.2	SW.	32	SW.	1	5	4	4	9	10	9	12	9	0	23	7	1	3	2	0	0	1	0	0	0	6	0	3	0
June	7.8	SE.	29	SE.	0	3	2	3	23	8	2	10	8	1	19	9	2	5	3	0	0	0	0	0	0	19	0	7	0
July	7.3	SE.	27	W.	0	5	7	10	11	3	8	9	6	3	21	9	1	8	5	0	0	0	0	0	0	28	0	11	0
August	7.2	S.	36	NW.	2	5	6	8	15	12	1	6	5	4	11	17	3	9	8	0	0	0	2	0	0	19	0	12	0
September	7.1	S.	24	NE.	0	1	4	1	24	12	3	3	5	7	23	5	2	7	4	0	0	0	2	1	0	13	0	5	0
October	6.4	N.	24	W.	0	7	5	3	12	9	6	6	9	5	25	5	1	3	1	0	0	0	1	0	0	0	0	2	0
November	6.6	N.	29	SW.	0	13	3	4	3	15	3	5	12	2	22	6	2	4	3	2	0	0	1	1	0	0	9	1	0
December	6.8	S.	32	SW.	1	7	4	0	7	9	11	6	14	4	25	3	3	0	0	0	0	0	2	2	0	0	21	0	0
Year	7.8	S.	39	NW.	12	85	51	43	134	106	68	92	119	32	240	92	33	46	30	8	3	2	9	7	4	85	91	42	0

SACRAMENTO, CALIF.

[H_b=66 ft.; h_t=57 ft.; h_r=84 ft.; h_a=115 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.6	SE.	34	SE.	1	13	2	0	28	7	4	2	5	1	8	7	16	12	10	1	1	0	9	0	0	0	2	0	0
February	8.4	NW.	24	NW.	0	9	1	3	14	8	3	2	16	0	19	7	2	4	3	0	0	0	2	2	0	0	1	0	0
March	8.5	S.	29	NW.	0	3	2	1	16	13	15	1	10	1	16	12	3	10	8	0	0	1	0	0	0	0	0	1	0
April	9.3	S.	25	NW.	0	5	1	0	10	16	12	2	12	2	22	8	0	1	0	0	0	1	0	0	0	0	0	0	0
May	9.0	S.	21	SW.	0	4	0	0	14	16	18	2	8	0	22	7	2	4	3	0	0	0	0	0	0	4	0	0	0
June	9.3	S.	21	SW.	0	0	1	0	19	25	11	0	4	0	24	6	0	1	1	0	0	0	0	0	0	5	0	1	0
July	8.5	S.	20	SW.	0	2	0	0	8	44	4	1	2	1	31	0	0	0	0	0	0	0	0	0	0	23	0	1	0
August	8.5	S.	18	SW.	0	0	0	0	13	33	11	0	4	1	30	1	0	0	0	0	0	0	0	0	0	19	0	0	0
September	7.7	S.	25	SW.	0	1	0	1	14	19	11	1	10	3	28	1	1	2	0	0	0	0	0	0	0	3	0	0	0
October	6.7	S.	24	SE.	0	6	2	0	8	24	4	5	6	7	26	3	2	3	3	0	0	0	0	0	0	7	0	0	0
November	6.0	N.	28	NW.	0	14	7	2	11	5	1	2	10	8	28	1	1	0	0	0	0	0	2	0	0	0	0	0	0
December	6.6	SE.	24	S.	0	13	1	4	16	14	2	4	4	4	4	11	16	12	11	0	0	0	14	7	0	0	0	1	0
Year	8.1	S.	34	SE.	1	70	17	11	171	224	96	22	91	28	258	64	43	49	39	1	1	2	27	9	0	61	3	4	0

ST. JOSEPH, MO.

[H_b=967 ft.; h_t=11 ft.; h_r=3 ft.; h_a=49 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.6	SW.	31	NW.	0	2	2	3	12	13	14	6	10	0	15	11	5	4	4	4	2	1	7	3	2	0	20	1	0
February	9.9	NW.	31	W.	0	7	5	3	9	7	6	7	12	0	16	6	6	4	3	8	3	0	2	0	9	0	22	0	0
March	10.7	SE.	32	NW.	1	5	9	5	20	6	2	2	13	0	9	11	11	10	8	8	5	0	9	0	2	0	13	3	0
April	10.4	SE.	31	SE.	0	3	10	6	12	6	4	6	12	1	13	9	8	8	7	3	0	1	4	0	0	0	1	5	0
May	8.7	SE.	30	S.	0	2	12	2	12	10	6	5	13	0	12	9	10	14	10	0	0	1	4	0	0	1	0	8	0
June	7.7	S.	24	SW.	0	1	9	3	12	22	11	1	1	0	23	4	3	6	5	0	0	1	1	0	0	20	0	8	0
July	7.5	SE.	23	NW.	0	1	8	10	23	10	6	0	4	0	20	9	2	5	4	0	0	0	2	0	0	14	0	2	0
August	7.1	SE.	20	SE.	0	4	20	8	17	7	2	1	3	0	12	8	11	11	10	0	0	0	2	0	0	9	0	10	0
September	7.5	SW.	23	NW.	0	5	7	7	11	18	7	1	3	1	15	11	4	12	8	0	0	1	5	0	0	9	0	9	0
October	8.0	S.	24	NW.	0	4	8	8	14	9	4	2	12	1	19	9	3	3	3	0	0	0	2	1	0	0	1	3	0
November	10.2	NW.	41	NW.	2	6	3	6	6	5	12	4	18	0	16	7	7	4	3	1	1	0	2	0	0	0	13	0	0
December	8.9	SE.	27	NW.	0	3	5	8	16	4	10	3	13	0	18	4	9	4	3	4	0	0	4	0	6	0	22	0	0
Year	8.8	SE.	41	NW.	3	43	98	69	164	117	84	38	114	3	188	98	79	85	68	28	11	5	44	4	19	53	92	49	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

ST. LOUIS, MO.

[ϕ=38°38′ N.; λ=90°12′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.39	29.94	28.72	38.2	45.3	45.6	52.0	35.1	43.6	65	20	30	33	35	72	62	66	0.171	0.197	0.215	2.18	0.86	T	4.6	5.1	4.2	5.1
February	29.49	30.12	29.00	29.5	37.9	37.7	43.7	26.5	35.1	71	−5	21	21	23	69	50	58	.121	.127	.136	.96	.48	1.5	4.0	3.9	4.6	4.4
March	29.40	29.92	28.74	39.0	48.5	47.2	53.7	36.0	44.8	85	14	33	33	33	78	55	60	.208	.208	.200	4.91	1.30	.1	5.3	5.9	5.1	5.6
April	29.27	29.59	28.92	49.3	60.5	59.3	64.6	46.4	55.5	86	36	43	45	44	80	60	60	.287	.321	.306	3.84	1.37	T	5.3	6.2	5.2	5.6
May	29.28	29.54	28.82	62.1	71.4	70.0	76.0	58.5	67.2	93	45	56	60	61	81	68	75	.462	.527	.562	8.59	2.14	.0	5.7	6.5	5.9	6.1
June	29.38	29.72	29.17	75.0	87.4	88.0	91.9	71.5	81.7	102	56	60	58	60	60	38	41	.534	.502	.545	.15	.15	.0	2.1	2.4	1.9	2.2
July	29.38	29.66	29.18	74.7	85.9	85.9	90.4	72.0	81.2	103	65	64	64	66	70	51	54	.605	.606	.651	4.63	3.72	.0	4.3	3.9	2.8	3.6
August	29.39	29.60	29.16	69.9	83.2	81.9	87.4	68.2	77.8	99	61	59	60	61	69	47	51	.512	.528	.547	.60	.32	.0	3.7	3.9	4.1	4.2
September	29.32	29.53	29.07	69.7	82.7	80.9	87.0	67.7	77.4	99	56	62	62	63	79	53	58	.574	.576	.596	2.60	.74	.0	4.7	4.0	3.3	4.1
October	29.48	29.83	29.09	50.5	63.2	60.6	66.9	48.0	57.4	82	34	42	45	47	74	52	62	.279	.309	.333	2.97	1.71	.0	4.8	3.9	3.9	4.2
November	29.46	29.99	29.02	40.8	50.5	49.4	55.3	36.7	46.0	79	20	32	32	32	70	51	53	.192	.198	.193	1.64	.82	.0	5.0	4.6	4.0	4.9
December	29.48	30.10	29.04	36.5	42.0	42.1	48.9	31.4	40.2	72	4	28	29	30	72	62	64	.175	.176	.186	1.70	.84	2.2	6.6	6.2	4.8	6.9
Year	29.39	30.12	28.72	52.9	63.2	62.4	68.2	49.8	59.0	10.3	−5	44	45	46	73	54	58	.343	.356	.372	34.77	3.72	3.8	4.7	4.7	4.2	4.7

SALT LAKE CITY, UTAH

[ϕ=40°46′N.; λ=111°54′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	Dew point 8 a.m.	Dew point Noon, local time	Dew point 8 p.m.	Relative humidity 8 a.m.	Relative humidity Noon, local time	Relative humidity 8 p.m.	Vapor pressure 8 a.m.	Vapor pressure Noon, local time	Vapor pressure 8 p.m.	Precipitation Total	Precipitation Maximum in 24 hours	Total snowfall	Cloudiness 8 a.m.	Cloudiness Noon, local time	Cloudiness 8 p.m.	Cloudiness Daylight
January	25.57	26.09	24.94	26.7	32.7	31.9	36.5	21.6	29.0	47	14	19	21	22	71	60	64	0.099	0.112	0.114	2.07	0.35	22.9	6.8	6.6	6.2	6.6
February	25.70	26.05	25.27	18.4	29.7	26.5	30.8	13.0	21.9	51	−10	10	14	15	68	59	61	.070	.087	.090	.99	.27	15.9	5.5	5.5	5.6	5.8
March	25.63	26.04	25.28	35.2	45.3	46.3	50.0	31.6	40.8	69	18	24	26	25	66	48	45	.131	.137	.136	1.44	.60	4.1	4.9	6.3	5.8	5.9
April	25.54	25.97	25.06	39.6	52.9	53.6	57.0	36.7	46.8	73	24	26	25	26	58	37	37	.142	.138	.142	1.28	.74	4.4	4.1	5.4	5.9	5.1
May	25.52	25.82	25.21	45.3	59.3	60.5	63.7	42.5	53.1	89	33	33	31	31	65	40	40	.190	.177	.176	3.25	1.09	.3	4.9	5.3	5.6	5.4
June	25.54	25.79	25.35	64.9	84.0	86.3	88.4	62.9	75.6	95	53	37	36	35	37	19	17	.223	.216	.206	T	T	.0	2.6	2.0	3.4	2.7
July	25.61	25.77	25.40	71.0	89.3	90.4	94.0	68.6	81.3	101	57	47	48	45	44	26	23	.331	.346	.312	.18	.05	.0	2.9	2.7	3.5	3.0
August	25.62	25.75	25.38	64.5	82.8	85.1	87.1	61.0	74.0	99	47	39	38	34	41	22	18	.243	.241	.204	.20	.15	.0	1.8	2.3	1.9	2.0
September	25.54	25.80	25.22	58.5	76.1	78.1	81.0	54.6	67.8	94	44	38	37	35	48	25	22	.231	.223	.207	.34	.34	.0	1.8	1.7	2.7	2.0
October	25.68	25.97	25.24	50.5	67.0	66.7	71.7	45.9	58.8	79	33	28	30	30	44	26	28	.156	.166	.173	.66	.69	.4	1.5	2.2	2.6	2.4
November	25.83	26.19	25.00	36.8	49.9	47.0	53.3	33.2	43.2	62	25	26	29	31	66	46	54	.142	.159	.174	.19	.10	.2	2.9	3.6	2.2	3.1
December	25.69	26.04	25.20	36.0	43.9	42.0	48.4	31.0	39.7	62	13	25	26	29	64	51	61	.134	.143	.162	.51	.25	3.6	4.9	6.4	4.8	5.6
Year	25.62	26.19	24.94	45.6	59.4	59.5	63.5	41.9	52.7	101	−10	29	30	30	56	38	39	.174	.179	.175	11.11	1.09	51.8	3.7	4.2	4.2	4.1

SAN ANTONIO, TEX.

[ϕ=29°27′ N.; λ=98°28′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	Dew point 8 a.m.	Dew point Noon, local time	Dew point 8 p.m.	Relative humidity 8 a.m.	Relative humidity Noon, local time	Relative humidity 8 p.m.	Vapor pressure 8 a.m.	Vapor pressure Noon, local time	Vapor pressure 8 p.m.	Precipitation Total	Precipitation Maximum in 24 hours	Total snowfall	Cloudiness 8 a.m.	Cloudiness Noon, local time	Cloudiness 8 p.m.	Cloudiness Daylight
January	29.30	29.86	29.03	53.9	63.4	64.5	68.5	51.5	60.0	79	30	47	50	48	79	66	59	0.353	0.395	0.367	0.66	0.18	0.0	6.1	6.2	6.8	6.5
February	29.36	29.86	28.91	47.2	56.4	56.5	62.3	43.4	52.8	80	12	41	45	45	80	68	70	.294	.332	.330	1.92	.88	.0	5.4	6.6	6.1	6.4
March	29.24	29.54	28.85	57.9	68.8	71.7	75.7	56.0	65.8	90	40	50	53	50	79	62	31	.400	.445	.397	.54	.29	.0	6.6	5.5	6.5	6.0
April	29.13	29.46	28.76	61.5	76.4	78.9	83.3	59.9	71.6	95	41	52	53	49	72	48	38	.414	.439	.377	1.30	.61	.0	5.9	4.8	5.4	5.0
May	29.10	29.35	28.62	71.6	83.8	86.7	90.5	69.1	79.8	97	53	65	65	62	81	56	47	.635	.637	.583	2.23	1.67	.0	6.7	5.1	4.4	5.1
June	29.25	29.50	29.04	71.7	85.7	88.0	91.7	70.1	80.9	99	62	66	65	63	82	52	46	.634	.624	.586	1.74	1.40	.0	4.1	3.9	2.9	3.4
July	29.19	29.33	29.05	75.7	89.5	91.2	95.4	74.7	85.0	103	70	70	68	66	84	50	46	.747	.687	.643	1.98	1.73	.0	5.1	5.6	5.0	5.2
August	29.22	29.42	29.00	74.8	87.0	86.8	92.8	73.7	83.2	98	68	71	70	68	89	56	56	.767	.733	.687	2.78	1.19	.0	5.9	5.0	4.4	4.9
September	29.18	29.35	28.97	74.3	86.9	86.4	92.0	73.7	82.8	97	72	72	69	68	93	57	56	.786	.714	.689	3.18	1.19	.0	6.6	5.9	4.0	5.5
October	29.27	29.45	29.08	66.7	80.0	79.4	85.6	65.5	75.6	97	59	61	61	58	83	54	51	.552	.550	.502	.27	.13	.0	5.8	4.9	3.6	4.9
November	29.39	29.67	28.97	57.5	69.8	68.8	75.2	55.4	65.3	84	45	49	50	48	75	53	52	.375	.391	.364	.65	.45	.0	3.6	4.4	4.0	4.6
December	29.32	29.61	29.03	54.8	66.9	67.5	73.5	51.5	62.5	83	35	46	47	45	76	55	50	.350	.363	.336	.39	.22	.0	4.5	4.7	3.5	4.6
Year	29.24	29.86	28.62	64.0	76.2	77.2	82.2	62.0	72.1	103	12	58	58	56	81	56	52	.526	.526	.488	17.64	1.73	.0	5.5	5.2	4.7	5.2

SAN DIEGO, CALIF.

[ϕ=32°43′N.; λ=117°10′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	Dew point 8 a.m.	Dew point Noon, local time	Dew point 8 p.m.	Relative humidity 8 a.m.	Relative humidity Noon, local time	Relative humidity 8 p.m.	Vapor pressure 8 a.m.	Vapor pressure Noon, local time	Vapor pressure 8 p.m.	Precipitation Total	Precipitation Maximum in 24 hours	Total snowfall	Cloudiness 8 a.m.	Cloudiness Noon, local time	Cloudiness 8 p.m.	Cloudiness Daylight
January	29.95	30.17	29.51	47.0	58.9	56.4	61.0	44.6	52.8	71	39	36	40	44	69	53	66	0.220	0.253	0.292	4.32	1.89	0.0	4.3	4.8	4.1	4.3
February	30.01	30.26	29.80	47.2	58.7	57.8	60.9	44.5	52.7	68	39	37	40	43	69	52	59	.224	.256	.281	.02	.02	.0	2.9	2.8	2.6	3.0
March	29.95	30.11	29.75	51.4	62.2	60.7	64.7	49.4	57.0	80	45	45	46	48	81	60	66	.306	.323	.345	.13	.09	.0	5.6	4.9	5.3	5.6
April	29.88	30.07	29.68	53.9	61.2	60.2	63.5	52.2	57.8	77	45	46	50	49	76	67	66	.318	.360	.352	1.75	1.34	.0	7.2	5.3	5.7	5.9
May	29.91	30.10	29.72	54.0	61.4	60.5	63.5	52.8	58.2	74	48	49	49	50	83	64	68	.344	.350	.361	.53	.38	.0	6.7	3.5	4.0	4.7
June	29.85	30.01	29.70	57.7	64.3	64.4	66.5	56.6	61.6	70	53	54	55	55	87	71	71	.416	.436	.430	.08	.08	.0	9.7	4.4	2.9	5.4
July	29.79	29.94	29.64	61.8	67.8	67.1	70.1	60.8	65.4	78	58	59	60	60	91	76	74	.504	.519	.510	.02	.02	.0	9.3	4.6	4.7	5.9
August	29.78	29.96	29.55	63.5	68.9	67.9	71.0	62.2	66.6	80	58	60	60	60	88	74	77	.519	.523	.526	.01	.01	.0	9.0	2.6	3.9	5.0
September	29.77	29.90	29.63	59.6	65.0	64.1	66.9	58.6	62.8	70	53	56	56	58	86	74	76	.441	.452	.454	.02	.02	.0	8.8	4.6	4.2	6.0
October	29.85	30.00	29.61	58.6	65.2	63.2	67.6	57.1	62.4	79	51	55	57	57	88	75	82	.434	.468	.470	.16	.16	.0	6.6	4.0	4.8	5.2
November	29.96	30.22	29.53	55.0	68.8	64.7	70.8	52.1	61.4	87	43	41	44	48	65	46	58	.270	.298	.342	.03	.03	.0	3.9	3.3	3.6	3.4
December	30.02	30.34	29.86	50.5	60.3	57.6	62.5	47.7	55.1	72	42	44	45	48	79	60	72	.291	.306	.342	1.10	.61	.0	3.3	4.7	5.7	4.6
Year	29.89	30.34	29.51	55.0	63.6	62.0	65.8	53.2	59.5	87	39	48	50	52	80	64	70	.357	.378	.392	8.17	1.89	.0	6.4	4.1	4.3	4.9

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

ST. LOUIS, MO.

[H_b=568 ft.; h_t=265 ft.; h_r=258 ft.; h_a=303 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	14.2	SW.	44	SW.	6	4	1	1	2	20	21	2	11	0	11	10	10	9	5	2	0	0	4	3	0	0	9	4	0
February	13.0	NW.	47	SW.	4	8	3	3	0	12	10	5	15	0	11	9	8	5	5	6	2	0	0	0	5	0	16	1	0
March	13.0	S.	40	SW.	6	12	6	5	3	17	1	11	7	0	10	9	12	15	12	6	1	1	2	0	1	0	11	7	0
April	13.2	S.	44	S.	7	6	5	9	1	17	4	10	7	1	8	10	12	12	9	1	0	1	1	0	0	0	0	2	0
May	12.6	S.	50	S.	6	3	5	9	4	14	10	12	5	0	8	8	15	16	15	0	0	1	2	0	0	1	0	14	0
June	9.8	SW.	33	NW.	2	3	3	4	4	14	16	12	2	2	22	7	1	2	2	0	0	0	0	0	0	21	0	2	0
July	9.9	SW.	28	S.	0	8	10	11	2	12	16	1	1	1	18	8	5	4	4	0	0	0	1	0	0	18	0	4	0
August	9.0	NE.	23	SW.	0	10	15	10	2	12	6	6	0	1	13	11	7	6	4	0	0	0	0	0	0	11	0	6	0
September	10.5	S.	31	SW.	0	4	2	5	2	18	14	8	6	1	16	5	9	9	7	0	0	0	8	2	0	13	0	5	0
October	11.7	S.	38	SW.	1	5	10	3	5	15	9	6	9	0	14	11	6	11	7	0	0	0	7	0	0	0	0	5	0
November	13.1	NW.	38	SW.	6	9	4	1	0	10	11	12	13	0	13	8	9	6	5	0	0	0	2	0	0	0	9	0	0
December	12.3	S.	36	SW.	1	9	5	10	5	11	13	5	4	0	6	9	16	5	5	3	2	0	6	4	5	0	16	2	0
Year	11.9	S.	50	S.	39	81	69	71	30	172	131	90	80	6	150	105	110	100	80	18	5	3	33	9	11	64	61	52	0

SALT LAKE CITY, UTAH

[H_b=4,357 ft.; h_t=86 ft.; h_r=74 ft.; h_a=210 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.1	S.	30	SE.	0	2	2	6	15	11	1	7	17	1	8	6	17	11	11	16	11	0	0	0	6	0	31	0	0
February	6.3	NW.	24	W.	0	3	4	4	12	5	2	10	16	0	9	7	12	9	8	12	9	0	0	0	18	0	28	0	0
March	7.0	NW.	26	NW.	0	8	6	5	6	8	4	8	17	0	9	7	15	7	6	10	4	0	0	0	0	0	17	0	0
April	9.1	NW.	34	E.	1	11	3	8	6	9	3	7	13	0	10	11	9	9	8	7	5	1	0	0	0	0	9	1	0
May	8.3	NW.	29	NW.	0	7	5	10	10	11	1	4	14	0	10	10	11	13	8	7	3	0	0	0	0	0	0	3	0
June	8.5	SE.	30	SE.	0	14	1	11	10	8	2	2	11	1	23	3	4	0	0	0	0	0	0	0	0	18	0	1	0
July	7.5	S.	35	SW.	2	9	5	9	12	11	3	1	12	0	20	8	3	6	3	0	0	0	0	0	0	27	0	9	0
August	7.5	S.	34	SW.	1	10	0	9	9	13	0	2	17	2	23	7	1	3	1	0	0	0	0	0	0	13	0	3	0
September	8.2	NW.	24	SE.	0	5	2	8	12	6	0	2	24	1	24	4	2	1	1	0	0	0	0	0	0	6	0	1	0
October	7.1	SE.	31	SE.	0	5	2	10	10	9	0	13	12	1	21	7	3	1	1	1	1	0	0	0	0	0	0	0	0
November	5.6	SE.	30	NW.	0	5	2	8	13	5	1	11	15	0	19	7	4	5	1	2	1	0	0	0	0	0	9	0	0
December	6.6	S.	27	NW.	0	7	5	12	10	11	1	8	8	0	8	12	11	6	5	4	4	0	1	0	2	0	21	0	0
Year	7.4	S.	35	SW.	4	86	37	100	125	107	18	75	176	6	184	89	92	71	53	59	38	1	1	0	26	64	115	18	0

SAN ANTONIO, TEX.

[H_b=693 ft.; h_t=242 ft.; h_r=235 ft.; h_a=301 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.0	SE.	38	NE.	2	10	9	14	13	6	4	4	2	0	9	5	17	12	5	0	0	0	13	6	0	0	1	0	0
February	10.3	N.	30	N.	0	18	9	8	8	7	1	3	2	0	6	10	12	13	9	0	0	0	15	6	1	0	5	1	0
March	9.9	E.	31	E.	0	8	6	21	10	6	2	2	4	3	9	7	15	10	5	0	0	0	14	5	0	0	0	0	0
April	12.0	S.	32	NW.	2	8	9	12	12	9	2	2	5	1	11	11	8	7	5	0	0	1	7	1	0	6	0	6	0
May	12.8	SE.	38	W.	4	3	4	29	17	5	1	1	1	1	10	15	6	5	3	0	0	1	1	0	0	21	0	5	0
June	11.6	SE.	30	SE.	0	2	8	14	18	11	2	1	4	0	18	9	3	4	3	0	0	0	0	0	0	22	0	2	0
July	11.1	SE.	30	SE.	0	3	8	16	14	15	2	0	2	2	8	18	5	5	3	0	0	0	0	0	0	29	0	7	0
August	9.5	SE.	34	SE.	1	2	3	25	15	5	5	3	1	3	10	15	6	7	5	0	0	1	0	0	0	28	0	4	0
September	10.3	S.	28	S.	0	3	6	21	14	10	1	2	2	1	7	16	7	7	5	0	0	0	4	0	0	24	0	3	0
October	10.6	E.	30	E.	0	7	11	21	7	7	4	2	2	1	9	17	5	5	2	0	0	0	6	2	0	7	0	0	0
November	11.2	E.	29	S.	0	14	8	13	6	10	1	4	3	1	11	10	9	5	4	0	0	0	11	7	0	0	0	0	0
December	11.4	S.	35	W.	3	7	7	4	12	13	5	10	3	1	13	10	8	4	4	0	0	0	11	6	0	0	0	0	0
Year	11.0	SE.	38	W.	12	85	88	198	146	104	30	34	31	14	121	143	101	84	53	0	0	3	82	33	1	137	6	28	0

SAN DIEGO, CALIF.

[H_b=87 ft.; h_t=62 ft.; h_r=55 ft.; h_a=70 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.4	E.	32	SE.	1	7	4	10	9	5	4	3	19	1	15	6	10	12	9	0	0	1	6	0	0	0	0	1	0
February	6.0	NW.	19	NW.	0	4	6	8	4	0	4	14	15	1	19	5	4	1	0	0	0	0	8	4	0	0	0	0	0
March	6.4	NW.	19	NW.	0	4	6	11	2	2	3	15	19	0	7	16	8	3	1	0	0	0	7	2	0	0	0	0	0
April	7.3	W.	28	W.	0	3	2	7	3	8	11	20	6	0	8	10	12	5	5	0	0	1	1	1	0	0	0	0	0
May	7.4	W.	22	W.	0	4	0	9	3	3	16	22	5	0	13	10	8	6	2	0	0	0	2	0	0	0	0	0	0
June	6.7	SW.	20	NW.	0	8	2	4	4	3	14	18	7	0	5	23	2	1	1	0	0	0	7	2	0	0	0	0	0
July	6.6	SW.	15	W.	0	8	0	1	0	9	17	16	11	0	4	16	11	1	0	0	0	0	1	0	0	0	0	2	0
August	7.0	NW.	15	NW.	0	5	3	2	0	5	7	19	21	0	10	15	6	1	0	0	0	0	6	1	0	0	0	0	0
September	6.7	NW.	19	NW.	0	6	1	2	0	8	7	15	19	2	7	12	11	1	0	0	0	0	6	0	0	0	0	0	0
October	6.0	NW.	19	NW.	0	7	2	2	4	6	6	9	26	0	10	13	8	1	1	0	0	0	13	7	0	0	0	0	0
November	5.4	NW.	27	W.	0	13	2	1	8	7	8	4	16	1	15	10	5	2	0	0	0	0	5	6	0	0	0	0	0
December	5.5	NW.	24	S.	0	8	2	3	7	6	4	8	23	1	14	8	9	6	5	0	0	0	7	5	0	0	0	1	0
Year	6.4	NW.	32	SE.	1	77	30	60	44	62	101	163	187	6	127	144	94	40	24	0	0	2	67	28	0	0	0	4	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

SANDUSKY, OHIO

[ϕ=41°25′ N.; λ=82°40′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.32	29.85	28.60	33.5	40.6	----	44.2	29.3	36.8	66	13	29	29	---	81	65	---	0.168	0.170	----	1.34	0.62	1.0	7.3	7.5	---	7.2
February	29.35	29.93	28.59	25.4	33.7	----	38.7	22.0	30.4	58	−5	20	22	---	78	61	---	.119	.129	----	1.45	.71	1.3	6.2	6.0	---	5.6
March	29.32	29.87	28.58	31.8	38.8	----	42.4	29.3	35.8	64	10	26	28	---	79	66	---	.149	.165	----	3.27	1.02	5.2	8.1	8.0	---	8.1
April	29.24	29.65	28.76	45.6	51.0	----	55.2	39.8	47.5	78	31	37	38	---	73	64	---	.229	.234	----	2.48	.53	T	6.6	6.9	---	6.8
May	29.25	29.58	28.86	59.3	66.5	----	70.7	53.2	62.0	88	41	53	53	---	80	64	---	.411	.421	----	5.24	.91	.0	7.9	7.1	---	6.9
June	29.31	29.61	29.07	72.3	81.0	----	85.1	63.7	74.4	100	45	60	60	---	67	50	---	.547	.534	----	1.11	.37	.0	4.8	3.5	---	4.0
July	29.36	29.77	29.11	73.7	82.4	----	85.5	65.4	75.4	100	56	61	61	---	66	50	---	.553	.543	----	1.46	.82	.0	3.8	4.1	---	4.2
August	29.35	29.59	29.06	70.6	78.5	----	81.1	64.2	72.6	97	55	59	60	---	68	54	---	.509	.517	----	1.68	1.10	.0	4.4	3.7	---	4.2
September	29.28	29.48	28.95	65.3	74.9	----	78.0	60.1	69.0	98	47	58	58	---	78	59	---	.493	.500	----	4.38	1.40	.0	5.6	6.7	---	6.0
October	29.42	29.77	28.91	47.9	59.2	----	62.4	43.4	52.9	78	28	40	42	---	76	54	---	.261	.281	----	.94	.50	.0	6.0	4.7	---	5.6
November	29.30	29.83	28.64	34.8	41.0	----	45.8	30.2	38.0	78	5	30	32	---	81	70	---	.174	.191	----	1.90	.47	8.1	7.4	7.7	---	7.7
December	29.42	30.15	28.91	30.2	35.8	----	39.5	24.7	32.1	67	−4	26	28	---	83	72	---	.154	.171	----	1.74	.33	6.5	8.3	8.3	---	8.5
Year	29.33	30.15	28.58	49.2	57.0	----	60.7	43.8	52.2	100	−5	42	43	---	76	61	---	.314	.321	----	26.99	1.40	22.1	6.4	6.2	---	6.2

SANDY HOOK, N.J.

[ϕ=40°28′ N.; λ=74°01′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	30.00	30.60	29.36	37.0	41.3	40.3	45.2	34.3	39.8	56	16	30	32	32	74	69	72	0.170	0.186	0.187	1.92	0.97	T	6.4	5.6	5.2	5.7
February	29.98	30.72	29.27	31.8	36.1	34.5	39.9	27.2	33.6	57	13	26	26	25	77	66	68	.149	.152	.143	2.55	.66	10.5	5.5	5.6	3.5	5.2
March	29.92	30.42	29.06	35.7	39.6	38.9	43.3	33.2	38.2	56	18	29	31	32	77	72	75	.165	.179	.182	4.79	1.07	.5	5.6	6.5	5.5	6.2
April	29.96	30.41	29.35	48.3	50.7	48.3	54.0	42.4	48.2	73	35	40	42	42	79	75	79	.253	.280	.270	4.47	1.59	T	6.3	6.3	4.3	6.1
May	29.93	30.24	29.54	59.1	64.0	60.7	68.7	54.5	61.6	87	44	53	53	54	82	68	79	.419	.425	.424	4.93	1.18	.0	6.7	6.2	6.3	6.3
June	29.90	30.15	29.63	67.6	73.9	69.2	76.9	62.3	69.6	91	51	59	61	62	76	65	78	.528	.560	.569	4.59	3.00	.0	4.3	4.5	3.9	4.4
July	29.98	30.27	29.66	71.0	76.8	72.5	80.2	66.5	73.4	99	54	64	66	66	80	70	79	.614	.643	.640	2.28	.73	.0	5.3	4.8	6.3	5.0
August	29.96	30.33	29.49	71.8	77.1	73.5	79.6	68.6	74.1	97	60	66	66	67	82	70	80	.646	.650	.662	6.45	1.80	.0	5.2	5.5	5.3	5.8
September	29.91	30.22	29.45	66.1	71.6	69.1	74.8	63.9	69.4	86	57	60	63	63	82	75	81	.531	.585	.578	5.17	1.65	.0	5.2	5.2	4.5	5.5
October	30.09	30.56	29.57	53.2	59.2	57.7	63.2	49.6	56.4	78	34	47	52	49	79	77	74	.336	.401	.367	1.29	.41	.0	4.3	4.0	1.8	3.8
November	29.97	30.53	29.25	39.5	44.3	42.5	47.4	36.3	41.8	66	19	32	37	34	76	75	73	.194	.230	.210	1.24	.81	.5	4.3	4.9	4.0	5.7
December	30.09	30.85	29.53	30.9	34.2	33.7	39.1	27.0	33.0	54	−1	25	28	27	80	79	75	.151	.171	.161	2.44	.80	7.2	7.1	6.3	5.8	6.9
Year	29.97	30.85	29.06	50.8	55.8	53.4	59.4	47.2	53.3	99	−1	44	46	46	79	72	76	.346	.372	.366	42.12	3.60	18.7	5.5	5.4	4.7	5.6

SAN FRANCISCO, CALIF.

[ϕ=37°48′ N.; λ=122°26′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.88	30.22	29.37	43.6	48.5	50.0	52.3	41.7	47.0	65	36	40	39	40	88	73	70	0.250	0.245	0.246	5.68	1.21	0.0	5.4	5.7	5.0	5.8
February	30.04	30.27	29.78	46.4	53.7	54.4	58.2	44.2	51.2	65	40	38	37	39	75	56	59	.236	.228	.246	1.13	.64	.0	3.8	4.5	3.4	3.9
March	29.93	30.19	29.67	50.2	57.8	57.4	62.0	48.9	55.4	73	44	45	44	45	83	61	65	.299	.293	.302	2.93	.90	.0	5.0	5.3	5.9	5.7
April	29.83	30.09	29.52	49.9	59.8	57.6	62.4	48.6	55.5	82	43	44	42	44	80	56	62	.286	.278	.286	.06	.06	.0	5.0	4.6	3.3	4.3
May	29.89	30.11	29.66	50.8	58.4	56.6	61.0	29.3	55.2	85	47	44	45	45	80	62	67	.296	.299	.306	1.36	.84	.0	5.1	3.8	3.7	4.5
June	29.81	29.95	29.66	51.8	61.0	59.7	64.2	51.0	57.6	73	49	49	49	49	89	65	69	.342	.350	.352	.01	.01	.0	5.3	3.5	3.3	4.1
July	29.72	29.94	29.56	53.6	64.1	61.3	66.6	52.4	59.5	82	49	50	51	51	89	64	70	.362	.376	.375	.00	.00	.0	6.1	1.9	2.9	3.7
August	29.73	29.91	29.51	54.7	63.8	61.3	66.3	53.3	59.8	82	50	52	53	53	92	69	75	.389	.401	.407	T	T	.0	8.2	3.3	3.0	5.2
September	29.73	29.96	29.52	55.7	65.9	62.3	68.1	54.2	61.2	82	50	52	51	52	88	59	69	.389	.372	.385	.14	.14	.0	5.3	2.6	2.7	3.8
October	29.81	30.03	29.42	56.2	66.8	62.8	70.4	54.3	62.4	92	50	52	50	50	86	61	68	.384	.372	.361	1.49	1.36	.0	5.5	4.6	5.2	5.1
November	29.97	30.15	29.54	53.7	63.5	63.7	68.1	51.9	60.0	80	46	45	43	43	75	50	51	.305	.285	.290	.00	.00	.0	2.0	2.3	2.0	2.8
December	29.94	30.30	29.45	47.8	52.5	52.0	55.0	46.0	50.0	64	39	43	43	45	85	72	78	.282	.283	.300	4.19	1.43	.0	6.4	7.1	6.6	7.3
Year	29.86	30.30	29.37	51.2	59.6	58.3	62.9	49.6	56.3	92	36	46	46	46	84	62	67	.318	.315	.321	16.99	1.43	.0	5.2	4.1	4.0	4.7

SAN JUAN, P.R.

[ϕ=18°29′ N.; λ=66°07′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.92	30.06	29.75	74.7	78.9	----	80.1	70.5	75.3	85	66	68	68	---	79	71	---	0.676	0.699	----	2.30	0.35	0.0	4.7	3.6	---	4.6
February	29.97	30.09	29.78	74.1	77.9	----	79.6	70.3	75.0	84	67	66	67	---	75	70	---	.633	.661	----	.71	.15	.0	5.1	3.6	---	4.4
March	29.93	30.05	29.72	76.0	78.6	----	80.6	71.2	75.9	88	69	69	70	---	79	76	---	.705	.734	----	5.24	2.44	.0	5.9	5.2	---	5.5
April	29.87	30.01	29.75	78.5	80.3	----	82.4	71.4	76.9	91	69	69	70	---	73	72	---	.713	.741	----	6.36	4.62	.0	3.5	3.6	---	4.5
May	29.89	30.02	29.74	80.2	81.6	----	84.1	74.7	79.4	90	71	72	73	---	78	76	---	.796	.816	----	10.35	4.23	.0	5.8	5.9	---	6.1
June	29.88	29.99	29.76	81.9	83.5	----	85.7	75.6	80.6	91	74	74	75	---	78	76	---	.843	.869	----	7.97	2.12	.0	5.8	6.8	---	6.2
July	29.92	30.01	29.68	82.0	83.0	----	84.7	76.8	80.8	90	74	75	75	---	79	78	---	.861	.874	----	2.62	.56	.0	5.8	5.7	---	6.2
August	29.88	29.99	29.74	82.4	84.3	----	86.2	76.0	81.1	92	73	74	75	---	77	74	---	.844	.861	----	4.42	1.32	.0	5.8	5.5	---	6.1
September	29.83	29.96	29.69	81.1	83.2	----	85.1	75.1	80.1	90	72	74	76	---	79	78	---	.838	.885	----	7.28	1.63	.0	5.9	6.6	---	6.4
October	29.79	29.92	29.65	81.0	83.6	----	85.8	75.0	80.4	92	73	74	75	---	78	76	---	.828	.875	----	2.64	1.31	.0	5.4	5.6	---	5.8
November	29.82	29.97	29.65	79.3	82.2	----	83.8	74.1	79.0	88	72	73	74	---	80	76	---	.802	.831	----	5.68	1.07	.0	5.7	4.7	---	5.7
December	29.92	30.08	29.80	76.5	79.6	----	81.1	72.3	76.7	83	68	69	70	---	78	74	---	.708	.741	----	4.77	.79	.0	5.2	4.1	---	5.2
Year	29.88	30.09	29.65	79.0	81.4	----	83.3	73.6	78.4	92	66	71	72	---	78	75	---	.771	.798	----	60.34	4.62	.0	5.4	5.1	---	5.6

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

SANDUSKY, OHIO

[H_b=629 ft.; h_t=5 ft.; h_r=3 ft.; h_a=67 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	11.2	SW.	35	SW.	2	0	1	3	0	9	13	3	2	0	4	9	18	7	6	6	3	0	1	0	4	0	20	0	0
February	12.4	SW.	34	W.	2	0	0	0	1	5	9	10	3	0	7	11	10	9	7	7	4	0	1	1	8	0	23	0	0
March	11.3	NW.	34	W.	2	2	3	2	3	5	5	3	8	0	2	6	23	14	10	14	7	0	3	1	2	0	22	3	0
April	10.1	SW.	25	SW.	0	0	3	6	5	6	4	4	2	0	6	5	19	11	11	1	1	0	2	0	0	0	1	1	0
May	8.7	SW.	27	SW.	0	4	3	2	2	9	7	2	2	0	2	15	14	15	13	0	0	0	1	0	0	0	0	6	0
June	7.6	SW.	22	SW.	0	3	3	1	2	4	11	6	0	0	12	14	4	7	5	0	0	1	0	0	0	10	0	8	0
July	7.8	NE.	25	NE.	0	2	4	5	1	2	12	5	0	0	13	12	6	8	4	0	0	0	0	0	0	9	0	5	0
August	7.9	NE.	26	W.	0	4	7	4	1	5	9	1	0	0	10	18	3	5	3	0	0	0	1	0	0	2	0	1	0
September	8.5	SW.	23	W.	0	2	3	1	3	10	6	3	2	0	6	15	9	10	9	0	0	0	0	0	0	3	0	3	0
October	8.9	SW.	27	NW.	0	6	1	0	2	11	7	2	2	0	8	12	11	6	4	0	0	0	3	1	0	0	2	2	0
November	11.7	SW.	30	NW.	0	0	2	1	0	6	11	8	2	0	5	4	21	14	12	11	8	0	5	0	3	0	18	0	0
December	10.1	SW.	32	NW.	1	3	1	5	1	6	8	4	3	0	0	7	24	11	7	7	5	1	8	2	9	0	25	0	0
Year	9.7	SW.	35	SW.	7	26	31	30	21	78	102	51	26	0	75	128	162	117	91	46	28	2	25	5	26	24	111	29	0

SANDY HOOK, N.J.

[H_b=22 ft.; h_t=10 ft.; h_r=3 ft.; h_a=57 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	16.2	NW.	46	NE.	12	5	7	4	3	3	16	9	15	0	10	6	15	9	5	3	0	0	10	2	2	0	9	0	0
February	17.0	NW.	46	NW.	13	2	3	1	1	5	10	15	19	0	10	6	12	12	9	6	4	0	10	3	5	0	19	0	0
March	17.2	NW.	41	NW.	8	7	6	7	1	3	9	8	21	0	8	9	14	16	11	8	4	0	12	1	1	0	8	2	0
April	14.6	E.	35	N.	7	3	6	10	8	12	9	5	7	0	7	10	13	12	10	1	0	0	14	8	0	0	0	4	0
May	10.6	S.	46	NW.	2	3	10	4	4	14	11	10	6	0	5	9	17	15	13	0	0	0	19	6	0	0	0	5	0
June	11.7	SW.	50	SW.	6	7	7	3	5	12	12	8	6	0	13	12	5	12	9	0	0	1	11	5	0	1	0	11	0
July	11.4	SW.	50	NE.	2	1	8	7	5	10	14	16	1	0	11	8	12	10	8	0	0	0	13	1	0	3	0	4	0
August	13.0	NE.	39	S.	2	2	15	6	6	16	9	10	4	0	8	11	12	17	14	0	0	0	15	0	0	2	0	7	0
September	13.2	W.	38	NE.	3	3	9	3	3	10	9	15	8	0	8	12	10	12	11	0	0	0	13	2	0	0	0	4	0
October	13.9	N.	46	NW.	2	16	10	2	1	8	12	9	4	0	19	6	6	7	5	0	0	0	11	2	0	0	0	0	0
November	15.6	W.	47	NW.	7	6	6	0	2	9	14	11	12	0	7	11	12	8	6	5	2	0	7	2	1	0	6	0	0
December	14.8	W.	44	NW.	10	8	10	2	1	4	14	10	13	0	7	5	19	13	10	6	6	0	14	8	8	0	16	0	0
Year	14.1	W.	50	NE.	74	63	97	49	40	100	139	126	116	0	113	105	147	143	111	29	16	1	149	40	17	6	58	37	0

SAN FRANCISCO, CALIF.

[H_b=155 ft.; h_t=208 ft.; h_r=202 ft.; h_a=243 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.4	SE.	28	S.	0	9	4	1	9	7	1	14	17	0	10	6	15	14	11	0	0	3	1	1	0	0	0	0	0
February	7.2	W.	28	N.	0	4	8	0	8	2	1	15	18	0	14	9	5	3	3	0	0	0	4	3	0	0	0	0	0
March	7.3	W.	25	NW.	0	5	0	0	12	11	12	13	9	0	8	11	12	11	9	0	0	0	1	0	0	0	0	1	0
April	8.2	W.	29	NW.	0	1	4	0	1	5	16	26	6	1	12	13	5	2	1	0	0	0	0	0	0	0	0	1	0
May	10.0	W.	28	NW.	0	1	1	0	1	3	9	33	13	1	13	11	7	7	6	0	0	0	0	0	0	0	0	0	0
June	9.6	W.	26	W.	0	1	0	0	0	7	16	27	9	0	13	8	9	1	0	0	0	0	3	0	0	0	0	0	0
July	7.8	SW.	21	W.	0	0	0	0	1	5	45	9	2	0	15	11	5	0	0	0	0	0	1	0	0	0	0	0	0
August	7.8	SW.	21	SW.	0	0	0	0	0	2	37	23	0	0	11	12	8	0	0	0	0	0	7	0	0	0	0	0	0
September	6.8	SW.	22	W.	0	0	0	0	2	4	26	27	1	0	15	8	7	2	1	0	0	0	5	0	0	0	0	0	0
October	6.1	SW.	24	SW.	0	2	0	1	3	7	21	25	3	0	10	11	10	4	3	0	0	0	7	1	0	1	0	0	0
November	5.5	N.	30	N.	0	17	8	0	0	1	7	11	12	4	18	9	3	0	0	0	0	0	6	3	0	0	0	0	0
December	6.8	N.	29	SW.	0	12	4	1	12	6	7	3	15	2	4	8	19	11	11	0	0	0	7	1	0	0	0	0	0
Year	7.5	SW.	30	N.	0	52	29	3	49	60	198	226	105	8	143	117	105	55	45	0	0	3	42	9	0	1	0	2	0

SAN JUAN, P.R.

[H_b= 82 ft.; h_t=9 ft.; h_r=4 ft.; h_a=54 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.6	E.	29	E.	0	0	1	18	3	6	2	1	0	0	9	22	0	18	17	0	0	0	0	0	0	0	0	0	0
February	13.4	E.	29	NE.	0	0	3	13	3	7	2	0	0	0	9	19	0	10	7	0	0	0	0	0	0	0	0	0	0
March	13.8	E.	31	NE.	0	0	1	17	9	4	0	0	0	0	5	20	6	18	11	0	0	0	0	0	0	0	0	2	0
April	10.4	E.	28	E.	0	0	0	14	4	9	0	2	1	0	8	20	2	10	7	0	0	0	0	0	0	1	0	4	0
May	11.8	E.	27	NE.	0	2	2	22	5	0	0	0	0	0	4	17	10	14	13	0	0	0	0	0	0	0	0	5	0
June	10.7	E.	26	NE.	0	0	1	21	7	1	0	0	0	0	1	22	7	17	13	0	0	0	0	0	0	3	0	7	0
July	14.7	E.	38	NE.	2	0	4	22	1	3	0	0	1	0	3	20	8	19	14	0	0	0	0	0	0	1	0	7	0
August	10.8	E.	30	E.	0	1	1	19	5	4	1	0	0	0	3	20	8	21	17	0	0	0	9	0	0	4	0	7	0
September	9.9	E.	34	NE.	1	0	1	15	6	6	1	1	0	0	1	22	7	21	16	0	0	0	0	0	0	2	0	11	0
October	8.5	E.	29	E.	0	0	0	10	8	12	0	0	1	0	5	21	5	13	11	0	0	0	0	0	0	2	0	8	0
November	11.4	E.	31	NE.	0	0	3	11	5	9	2	0	0	0	3	24	3	25	22	0	0	0	0	0	0	0	0	0	0
December	13.3	E.	34	NE.	4	0	5	14	3	9	0	0	0	0	4	24	3	22	16	0	0	0	0	0	0	0	0	1	0
Year	11.7	E.	38	NE.	7	3	22	196	59	70	8	4	3	0	55	251	59	208	164	0	0	0	0	0	0	13	0	52	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

SANTA FE, N.MEX.

[ϕ=35°41′ N.; λ=105°57′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	23.17	23.45	22.90	21.5	32.6	30.0	37.1	17.2	27.2	48	9	12	16	17	64	50	57	0.073	0.090	0.094	0.73	0.42	7.8	3.6	4.1	2.9	3.8
February	23.18	23.50	22.73	19.4	32.9	33.6	38.4	15.9	27.2	58	−10	8	8	10	60	36	36	.065	.067	.070	.21	.08	3.5	2.8	3.6	4.5	3.7
March	23.18	23.42	22.86	32.1	47.6	50.4	53.8	29.7	41.8	66	14	16	14	12	49	28	22	.086	.084	.073	.29	.24	4.5	4.0	4.2	5.3	4.5
April	23.13	23.41	22.77	32.8	49.1	51.3	55.2	30.5	42.8	66	11	18	16	16	55	32	29	.100	.097	.093	.80	.34	10.9	4.4	4.7	4.9	4.8
May	23.17	23.41	22.70	44.3	61.0	62.2	65.8	41.2	53.5	78	29	24	20	21	46	22	25	.130	.110	.115	.99	.77	2.8	1.8	3.8	4.7	3.5
June	23.35	23.55	23.15	57.9	73.4	72.9	77.7	54.5	66.1	88	42	39	37	37	53	32	34	.251	.236	.242	2.30	1.37	.0	4.7	5.7	6.5	5.7
July	23.38	23.58	23.19	61.7	78.6	75.3	82.9	58.2	70.6	90	52	46	45	46	59	32	39	.323	.304	.321	2.00	.59	.0	3.8	4.3	8.0	5.1
August	23.37	23.51	23.17	57.7	75.7	73.2	79.4	56.3	67.8	87	50	48	47	47	70	38	42	.333	.324	.324	1.90	.80	.0	3.5	4.7	6.5	4.9
September	23.31	23.51	23.09	55.0	73.2	73.3	77.8	53.2	65.5	87	45	43	41	40	65	34	34	.282	.268	.256	1.24	.70	.0	2.1	3.1	2.7	3.0
October	23.35	23.54	23.09	43.0	61.8	57.6	66.1	41.3	53.7	72	36	31	31	32	64	34	42	.181	.181	.191	1.16	.67	.0	2.6	3.3	3.8	3.2
November	23.35	23.67	22.95	33.5	48.7	43.5	53.1	30.3	41.7	67	20	21	22	24	59	36	47	.110	.115	.128	1.02	.49	3.0	2.2	3.2	2.5	2.9
December	23.29	23.52	23.01	30.1	44.0	38.2	48.2	26.5	37.4	59	14	19	20	21	64	38	48	.104	.105	.108	.47	.79	5.4	2.0	2.8	3.2	2.8
Year	23.27	23.67	22.70	40.8	56.6	55.1	61.3	37.9	49.6	90	−10	27	26	27	59	34	38	.170	.165	.168	13.11	1.37	37.9	3.1	4.0	4.6	4.0

SAULT STE. MARIE, MICH.

[ϕ=46°30′ N.; λ=84°21′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.19	29.66	28.35	20.3	24.0	24.1	29.9	15.3	22.6	43	−12	18	19	21	88	81	86	0.102	0.109	0.114	2.23	0.84	16.8	8.7	8.2	7.7	8.4
February	29.22	29.70	28.58	10.8	18.2	16.7	23.4	6.5	15.0	40	−15	9	12	14	91	76	87	.072	.081	.088	2.38	.49	27.9	7.4	5.9	7.1	6.6
March	29.33	29.94	28.51	19.8	27.9	26.6	31.0	17.0	24.0	40	−5	17	20	22	87	70	81	.097	.110	.117	2.68	.79	21.3	6.8	6.8	7.3	6.5
April	29.25	29.85	28.61	35.4	41.9	39.2	45.8	30.8	38.3	69	23	27	28	29	73	62	67	.152	.154	.161	2.75	.82	1.2	5.6	6.1	5.6	5.5
May	29.27	29.63	28.70	48.6	58.0	53.8	63.0	41.3	52.2	81	29	39	40	39	71	56	60	.255	.269	.254	2.85	1.11	.0	5.8	5.2	6.4	5.6
June	29.26	29.59	28.92	59.4	70.9	66.0	75.7	51.1	63.4	91	35	52	54	53	78	57	64	.406	.448	.424	2.29	.97	.0	6.4	5.0	3.4	4.6
July	29.33	29.80	29.02	62.8	74.3	69.0	78.4	55.7	67.0	95	46	56	58	56	79	58	65	.453	.489	.462	1.66	.55	.0	5.2	5.2	5.0	4.8
August	29.35	29.67	28.96	59.6	71.0	65.2	74.5	53.5	64.0	87	46	54	52	52	81	54	65	.416	.397	.400	.82	.28	.0	3.8	4.0	3.2	3.5
September	29.22	29.65	28.66	54.7	64.8	60.0	68.4	51.0	59.7	86	38	49	49	51	82	59	73	.361	.361	.386	3.59	1.17	.0	5.1	5.2	5.5	5.3
October	29.32	29.76	28.80	40.6	46.1	44.0	49.0	37.0	43.0	66	16	36	37	37	84	70	76	.222	.229	.229	3.93	.60	6.0	7.4	8.4	8.3	8.1
November	29.23	29.99	28.63	21.9	25.5	25.9	31.2	17.0	24.1	52	−2	19	20	21	88	79	82	.110	.113	.120	3.83	.74	39.5	9.0	8.4	8.9	8.8
December	29.37	30.25	28.75	12.1	15.5	17.4	22.9	7.4	15.2	41	−24	10	12	15	90	86	89	.080	.087	.097	3.25	.37	29.5	8.2	8.5	8.9	8.3
Year	29.28	30.25	28.35	37.2	44.8	42.3	49.4	32.0	40.7	95	−24	32	33	34	83	67	75	.227	.237	.238	32.26	1.17	142.2	6.6	6.4	6.4	6.3

SAVANNAH, GA.

[ϕ=32°05′ N.; λ=81°05′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	30.05	30.42	29.45	51.2	62.8	56.9	66.5	48.2	57.4	77	34	48	50	49	88	64	76	0.353	0.382	0.368	4.74	1.77	0.0	7.1	5.8	5.4	5.8
February	30.06	30.55	29.66	50.2	60.4	56.0	64.6	46.0	55.3	80	22	46	49	48	85	69	76	.338	.379	.356	6.05	2.89	.0	6.2	6.4	4.9	6.8
March	30.00	30.36	29.47	53.1	65.7	60.0	70.0	50.2	60.1	82	36	45	46	47	75	51	65	.327	.338	.346	.91	.65	.0	3.1	3.2	2.9	3.2
April	29.90	30.24	29.60	60.6	71.3	65.7	74.8	56.6	65.7	84	47	54	56	56	80	61	73	.430	.467	.463	2.12	.74	.0	6.4	6.6	4.3	6.2
May	29.92	30.15	29.58	74.5	84.7	76.8	87.7	68.8	78.2	96	61	69	68	69	83	58	77	.706	.682	.707	.86	.35	.0	3.5	5.4	3.6	4.5
June	29.92	30.15	29.62	75.4	86.3	78.8	89.8	69.6	79.7	99	59	65	65	68	72	50	70	.643	.640	.690	4.15	2.30	.0	3.0	4.1	5.5	4.0
July	29.97	30.17	29.73	77.2	85.3	78.9	88.5	72.1	80.3	97	61	72	71	73	84	64	82	.782	.763	.807	6.78	1.41	.0	4.5	6.7	6.0	6.0
August	29.93	30.12	29.65	77.4	86.4	79.8	90.6	73.7	82.2	97	70	72	72	73	85	63	81	.798	.781	.818	5.49	1.38	.0	4.9	6.3	6.4	5.6
September	29.90	30.06	29.60	76.7	88.1	80.5	90.9	72.3	81.6	97	64	71	70	72	84	56	76	.772	.736	.784	8.81	6.98	.0	2.2	4.4	2.2	3.5
October	29.98	30.26	24.58	63.4	75.5	69.3	78.3	60.7	69.5	90	50	59	60	62	86	62	78	.518	.538	.562	7.50	2.91	.0	4.7	6.1	4.3	5.3
November	30.04	30.50	29.68	50.3	65.6	58.2	68.9	48.0	58.4	82	36	43	45	47	76	50	68	.306	.331	.347	.36	.14	.0	2.9	3.2	2.2	2.8
December	30.10	30.49	29.63	52.1	65.6	58.6	69.5	49.6	59.6	81	36	48	50	51	86	59	77	.354	.381	.389	.86	.53	.0	3.6	4.0	2.3	4.3
Year	29.98	30.55	29.45	63.5	74.8	68.3	78.3	59.6	69.0	99	22	58	58	60	82	59	75	.527	.535	.553	48.63	6.98	.0	4.3	5.2	4.2	4.8

SCRANTON, PA.

[ϕ=41°24′ N.; λ=75°42′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.18	29.72	28.65	31.7	37.8	37.6	42.4	28.2	35.3	55	9	26	28	29	80	67	72	0.146	0.155	0.167	1.12	0.42	5.2	6.2	6.4	6.0	6.1
February	29.15	29.81	28.55	26.5	32.9	30.9	37.9	21.8	29.8	56	3	22	21	21	80	61	66	.123	.121	.119	1.74	.50	14.1	6.2	6.5	4.3	5.9
March	29.09	29.55	28.29	32.2	37.6	36.5	41.8	28.6	35.2	66	12	26	27	27	78	66	69	.145	.151	.154	3.53	.89	5.0	7.4	7.7	6.9	7.4
April	29.10	29.53	28.55	45.0	53.9	53.6	59.8	40.0	49.9	79	26	36	35	35	72	53	52	.223	.219	.221	3.73	1.34	4.0	6.8	6.1	6.1	6.0
May	29.10	29.39	28.71	58.3	67.9	64.4	71.5	51.4	61.4	85	36	50	48	50	76	52	63	.378	.362	.385	3.82	.87	.0	6.7	7.5	6.8	6.3
June	29.09	29.34	28.81	66.0	77.5	73.9	81.8	58.7	70.2	96	41	56	55	55	70	48	54	.473	.468	.470	2.92	1.62	.0	4.6	4.9	4.5	4.9
July	29.17	29.52	28.81	67.9	80.5	76.4	84.5	61.2	72.8	97	49	60	57	60	76	47	58	.526	.486	.522	6.71	3.43	.0	4.3	5.6	5.0	4.8
August	29.15	29.48	28.49	65.2	76.3	71.7	80.1	60.0	70.0	95	49	58	57	59	78	54	67	.490	.483	.514	8.06	3.00	.0	5.7	6.3	6.0	5.5
September	29.09	29.38	28.63	59.2	70.8	67.1	73.4	55.8	64.6	86	41	54	55	56	84	60	70	.432	.448	.470	5.33	1.80	.0	5.6	6.3	5.2	6.0
October	29.26	29.68	28.75	44.4	57.2	53.0	61.5	40.3	50.9	75	27	40	40	42	83	54	66	.251	.263	.279	2.80	1.14	T	4.9	4.8	3.6	4.9
November	29.10	29.60	28.34	33.1	40.5	37.8	44.1	29.3	36.7	69	11	28	29	29	80	62	70	.158	.167	.166	1.22	.83	10.7	6.9	6.5	6.3	6.6
December	29.23	29.99	28.67	26.1	30.9	29.9	36.2	21.5	28.8	62	−10	21	23	25	80	71	75	.125	.134	.138	2.15	.46	13.7	7.5	7.4	7.3	7.5
Year	29.14	29.99	28.29	46.3	55.3	52.7	59.6	41.3	50.5	97	−10	40	40	41	78	58	65	.289	.288	.300	43.13	3.43	52.7	6.1	6.3	5.7	6.0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

SANTA FE, N.MEX.

[H_b=7,013 ft.; h_t=38 ft.; h_r=31 ft.; h_a=53 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp. 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	6.4	NE.	21	NW.	0	11	15	9	10	8	2	4	3	0	15	11	5	6	4	10	6	0	0	0	3	0	31	0	0
February	7.3	N.	21	N.	0	14	10	2	4	1	12	2	11	0	13	9	6	6	3	7	6	0	0	0	7	0	27	0	0
March	7.6	N.	25	SW.	0	13	7	8	5	9	4	9	7	0	14	9	8	4	2	7	4	0	0	0	0	0	21	0	0
April	7.2	SW.	25	SW.	0	10	6	1	11	5	11	11	3	2	12	8	10	7	6	9	6	0	1	0	0	0	16	0	0
May	7.8	SW.	30	SW.	0	6	3	11	8	7	14	7	5	1	15	13	3	4	3	2	2	4	0	0	0	0	7	2	0
June	5.9	E.	19	S.	0	3	8	19	5	7	9	4	2	3	10	6	14	12	8	0	0	1	0	0	0	0	0	10	0
July	6.1	E.	24	NE.	0	8	14	18	8	4	5	2	2	1	6	21	4	17	9	0	0	0	0	0	0	1	0	23	0
August	5.6	E.	25	NE.	0	2	12	20	7	5	11	2	1	2	6	22	3	15	11	0	0	0	0	0	0	0	0	19	0
September	5.9	SE.	18	SE.	0	4	8	10	15	7	10	3	2	1	19	5	6	5	4	0	0	0	0	0	0	0	0	5	0
October	5.5	E.	18	NE.	0	8	9	12	7	5	6	2	6	7	20	5	6	7	5	0	0	0	1	1	0	0	0	4	0
November	6.3	SE.	21	SE.	0	12	15	10	16	4	2	0	1	0	17	11	2	6	4	4	3	0	0	0	0	0	20	0	0
December	7.0	N.	21	NW.	0	15	18	8	8	3	2	3	5	0	20	9	2	3	1	7	3	0	0	0	1	0	29	0	0
Year	6.6	E.	30	SW.	0	106	125	128	104	65	88	49	48	17	167	129	69	92	60	46	30	5	2	1	11	1	151	63	0

SAULT STE. MARIE, MICH.

[H_b=614 ft.; h_t=11 ft.; h_r=3 ft.; h_a=52 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.9	E.	31	W.	0	3	8	10	18	1	9	5	8	0	3	4	24	17	12	22	17	0	13	0	16	0	31	0	0
February	9.8	SE.	49	NW.	1	2	2	2	14	4	9	9	13	1	7	4	17	20	16	22	20	0	8	1	19	0	28	0	1
March	9.8	NW.	35	NW.	1	6	8	5	13	2	2	4	22	0	10	5	16	17	11	17	14	0	6	0	17	0	30	0	4
April	8.9	NW.	32	NW.	1	0	7	9	11	4	4	5	19	1	10	8	12	12	10	10	3	0	6	0	2	0	20	2	5
May	7.8	SE.	30	NW.	0	1	5	13	12	6	5	4	14	2	10	9	12	8	8	0	0	0	10	2	0	0	2	4	5
June	6.5	SE.	31	NW.	0	3	4	9	12	1	4	13	12	2	12	13	5	8	6	0	0	0	9	2	0	1	0	6	1
July	6.2	NW.	23	NW.	0	1	3	10	10	5	6	12	14	1	12	10	9	10	8	0	0	0	9	1	0	2	0	9	2
August	6.8	NW.	24	NW.	0	3	2	6	12	4	3	7	23	2	19	8	4	6	5	0	0	0	5	2	0	0	0	2	3
September	7.6	NW.	23	NW.	0	1	6	8	17	2	2	3	19	2	12	8	10	11	8	0	0	0	16	2	0	0	0	6	3
October	9.2	SE.	31	NW.	0	4	9	5	17	4	7	4	12	0	2	9	20	19	16	9	6	3	10	0	1	0	8	2	1
November	9.5	SE.	36	NW.	1	8	10	10	13	2	5	3	9	0	0	5	25	23	18	24	21	0	6	2	15	0	28	0	0
December	9.1	SE.	35	NW.	4	1	13	10	15	5	5	6	7	0	1	6	24	25	20	25	21	0	7	0	22	0	29	0	0
Year	8.3	NW.	49	NW.	8	33	77	97	164	40	61	75	172	11	98	89	178	176	138	129	102	3	105	12	92	3	176	31	25

SAVANNAH, GA.

[H_b=65 ft.; h_t=73 ft.; h_r=71 ft.; h_a=152 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.7	N.	40	W.	2	13	5	7	2	10	9	8	8	0	11	5	15	8	7	0	0	0	9	1	0	0	0	0	0
February	10.9	W.	38	W.	2	6	5	8	2	9	7	9	10	0	7	6	15	13	11	0	0	0	11	7	0	0	3	0	0
March	12.3	S.	38	S.	2	8	4	5	7	12	9	9	7	1	17	8	6	4	3	0	0	0	4	2	0	0	0	2	0
April	11.2	SW.	30	NW.	0	9	6	10	6	11	7	8	3	0	9	6	15	12	9	0	0	0	3	0	0	0	0	5	0
May	10.3	S.	25	SE.	0	5	1	6	9	19	12	9	1	0	13	12	6	5	3	0	0	0	4	3	0	9	0	7	0
June	9.7	SW.	32	NW.	1	7	3	1	8	14	17	8	2	0	14	6	10	10	6	0	0	1	0	0	0	18	0	9	0
July	8.9	SW.	27	NW.	0	8	4	6	8	16	13	6	1	0	11	8	12	20	15	0	0	0	3	0	0	13	0	17	0
August	8.9	SW.	27	W.	0	10	5	5	4	11	11	13	2	1	12	6	13	14	12	0	0	0	0	0	0	21	0	13	0
September	9.5	S.	47	SE.	2	5	3	6	9	10	11	10	6	0	19	8	3	8	6	0	0	0	1	0	0	17	0	5	0
October	9.9	N.	29	S.	0	26	13	8	3	4	2	4	2	0	12	7	12	7	6	0	0	0	4	0	0	1	0	2	0
November	10.4	W.	43	NW.	1	8	4	7	2	4	11	16	8	0	19	6	5	3	3	0	0	0	6	0	0	0	0	1	0
December	10.0	SW.	32	E.	2	9	5	5	6	12	9	10	6	0	17	6	8	4	4	0	0	0	12	8	0	0	0	0	0
Year	10.2	SW.	47	SE.	12	114	58	74	66	132	118	110	56	2	161	84	120	108	85	0	0	1	57	21	0	79	3	61	0

SCRANTON, PA.

[H_b=805 ft.; h_t=72 ft.; h_r=64 ft.; h_a=104 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.2	SW.	27	NW.	0	14	2	2	6	4	17	2	12	3	6	10	15	10	5	10	3	0	6	0	3	0	23	0	0
February	8.4	SW.	29	NW.	0	5	4	1	1	3	20	3	19	0	6	12	10	11	8	11	8	0	4	1	8	0	24	0	0
March	8.7	NW.	25	NW.	0	9	5	3	4	5	11	2	23	0	4	9	18	16	13	17	7	0	4	0	2	0	20	1	0
April	7.3	NW.	23	SE.	0	7	10	4	8	6	13	0	12	0	7	12	11	11	10	4	1	0	1	0	0	0	5	0	0
May	6.3	SW.	19	NW.	0	19	2	2	1	7	21	3	7	0	5	12	14	16	10	0	0	0	10	0	0	0	0	4	0
June	6.5	SW.	32	NW.	1	18	2	1	2	4	20	2	11	0	7	19	4	10	7	0	0	0	10	0	0	5	0	8	0
July	5.8	SW.	26	NW.	0	16	2	1	5	7	23	4	4	0	8	19	4	8	7	0	0	0	15	0	0	7	0	8	0
August	6.1	N.	21	NW.	0	21	10	4	3	6	10	2	6	0	8	15	8	15	12	0	0	0	6	0	0	2	0	5	0
September	5.9	SW.	21	NW.	0	15	10	3	2	6	12	3	9	0	7	11	12	10	8	0	0	0	11	1	0	0	0	0	0
October	6.6	N.	25	NW.	0	18	4	4	4	4	13	4	9	2	9	16	6	6	5	1	0	0	11	1	0	0	4	0	0
November	7.6	SW.	24	NW.	0	13	0	2	1	4	26	2	12	0	4	14	12	9	5	13	7	0	4	0	2	0	21	0	0
December	7.3	NW.	28	NW.	0	9	6	3	8	3	13	0	18	2	3	10	18	13	11	13	5	0	9	0	10	0	23	1	0
Year	7.0	SW.	32	NW.	1	164	57	30	45	59	199	27	142	7	74	159	132	135	101	69	31	0	91	3	25	14	120	27	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

SEATTLE, WASH.

[ϕ=47°36′ N.; λ=122°20′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.72	30.50	29.15	38.5	40.6	40.6	43.2	36.1	39.6	53	28	34	34	34	85	79	79	0.203	0.203	0.203	5.20	1.14	1.1	8.5	8.8	8.2	8.8
February	30.03	30.53	29.47	35.3	39.2	40.0	42.4	32.6	37.5	54	16	30	29	29	80	68	66	.170	.168	.169	2.17	.67	1.0	6.6	7.0	8.1	7.5
March	29.88	30.43	29.32	41.2	46.9	48.7	50.9	39.0	45.0	62	34	37	36	36	85	68	63	.220	.219	.211	5.20	.78	T	7.9	7.7	7.8	7.4
April	29.96	30.33	29.50	43.7	50.9	55.1	56.7	42.0	49.4	72	34	38	36	34	80	58	48	.227	.211	.200	.84	.30	T	6.3	5.5	6.6	6.3
May	29.87	30.19	29.46	47.8	56.2	57.2	60.3	46.6	53.4	73	43	42	40	40	81	56	56	.269	.253	.255	2.63	.87	.0	8.6	7.3	7.4	7.6
June	29.90	30.16	29.39	52.7	62.5	66.9	68.5	52.0	60.2	82	46	45	45	44	77	54	46	.306	.305	.291	1.26	.75	.0	7.4	5.1	5.1	6.0
July	29.93	30.22	29.64	55.3	66.4	72.4	73.9	54.4	64.2	86	52	48	50	49	78	56	44	.341	.359	.345	1.13	.90	.0	3.8	3.5	2.7	3.6
August	29.86	30.06	29.66	58.1	69.3	75.0	76.7	57.0	66.8	92	53	53	53	53	85	59	50	.409	.407	.408	1.56	1.21	.0	4.2	4.2	3.1	4.0
September	29.78	30.17	29.45	52.3	59.7	61.6	64.3	50.8	57.6	80	39	49	48	48	88	68	62	.347	.344	.340	3.02	1.22	.0	7.3	7.0	6.2	7.0
October	29.90	30.27	29.22	50.0	56.3	57.0	60.2	47.8	54.0	74	40	47	48	48	90	74	72	.326	.334	.335	3.16	.90	.0	7.0	6.7	5.8	6.9
November	30.13	30.45	29.62	45.9	48.4	48.6	50.6	43.1	46.8	60	36	43	44	44	91	84	85	.286	.287	.293	3.41	2.38	.0	8.5	9.4	8.1	9.1
December	29.71	30.12	29.15	43.6	46.9	46.6	49.0	41.2	45.1	57	34	40	41	41	87	80	80	.250	.261	.258	15.33	2.02	T	8.8	9.0	9.1	9.0
Year	29.80	30.53	29.15	47.0	53.6	55.8	58.1	45.2	51.6	92	16	42	42	42	84	67	63	.280	.279	.276	44.91	2.38	2.1	7.1	6.8	6.5	6.9

SHERIDAN, WYO.

[ϕ=44°48′ N.; λ=106°57′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	Mean: 8 a.m.	Mean: Noon, local time	Mean: 8 p.m.	Mean: Maximum	Mean: Minimum	Mean: Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	25.88	26.35	25.34	19.9	31.9	27.9	37.4	9.5	23.4	62	−18	12	16	15	72	53	58	0.080	0.093	0.085	0.67	0.25	8.6	5.9	5.1	5.2	5.4
February	26.03	26.34	25.61	9.7	24.4	21.1	28.7	4.5	16.6	48	−33	3	11	11	74	56	63	.057	.077	.080	.64	.32	7.9	6.2	5.7	5.9	5.8
March	26.04	26.46	25.57	26.0	42.3	40.7	46.5	22.0	34.2	67	3	22	24	25	84	52	56	.119	.130	.137	1.80	1.31	16.9	6.0	6.0	6.8	6.1
April	26.03	26.58	25.50	31.2	47.7	46.1	51.8	28.0	39.9	73	8	28	29	30	86	52	57	.156	.165	.172	2.83	1.15	22.1	6.0	5.7	6.9	6.3
May	25.99	26.30	25.63	44.0	59.6	59.4	63.8	39.5	51.6	90	30	37	36	37	79	46	48	.226	.219	.222	2.75	.51	.2	5.6	5.9	5.6	5.7
June	26.05	26.47	25.78	58.4	79.7	79.1	83.7	53.3	68.5	94	44	49	48	49	72	34	36	.350	.340	.350	.07	.05	.0	3.5	3.3	5.9	3.9
July	26.10	26.39	25.83	59.4	85.3	86.6	90.2	55.4	72.8	102	45	48	45	45	68	27	25	.345	.307	.306	.25	.18	.0	1.8	2.2	2.5	2.2
August	26.13	26.29	25.81	53.4	78.1	77.3	82.6	50.7	66.6	97	41	46	44	43	79	34	35	.319	.293	.285	1.01	.35	.0	4.4	3.5	4.1	4.1
September	26.00	26.37	25.60	44.6	71.6	68.0	75.8	40.9	58.4	96	26	38	35	38	79	30	37	.235	.212	.244	.51	.35	T	3.0	2.7	3.2	2.8
October	26.12	26.42	25.57	35.6	61.5	55.1	66.1	32.7	49.4	85	23	30	29	30	81	34	42	.165	.162	.174	.83	.32	T	4.6	4.2	4.5	4.3
November	26.19	26.56	25.64	29.0	47.5	41.0	53.4	23.6	38.5	72	−1	24	25	24	81	46	55	.129	.137	.132	.39	.28	.8	3.2	5.8	4.4	5.0
December	26.00	26.40	25.54	23.6	33.3	28.3	41.0	15.4	28.2	67	−18	14	18	16	72	58	63	.084	.100	.093	.43	.28	7.1	6.3	7.8	6.4	7.5
Year	26.05	26.58	25.34	36.2	55.2	52.6	60.1	31.3	45.7	102	−33	29	30	30	77	44	48	.189	.186	.190	12.18	1.31	63.6	4.7	4.8	5.1	4.9

SHREVEPORT, LA.

[ϕ=32°30′ N.; λ=93°40′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	Mean: 8 a.m.	Mean: Noon, local time	Mean: 8 p.m.	Mean: Maximum	Mean: Minimum	Mean: Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.80	30.34	29.34	49.6	58.3	59.0	63.4	47.9	55.6	76	31	44	48	48	81	71	70	0.310	0.356	0.357	2.85	1.11	0.0	6.1	6.0	5.2	5.8
February	29.86	30.42	29.25	45.0	50.9	51.4	57.5	40.7	49.1	79	9	40	40	41	84	68	70	.285	.280	.289	6.72	1.75	.6	6.8	6.7	6.6	6.8
March	29.75	30.13	29.30	52.3	63.7	62.4	68.6	49.4	59.0	87	34	45	45	46	76	52	58	.324	.327	.334	6.25	3.40	.0	6.1	6.2	4.5	5.7
April	29.61	29.99	29.33	58.8	70.9	69.7	75.7	56.1	65.9	91	39	52	52	53	80	56	60	.415	.427	.430	5.19	1.29	T	5.6	5.1	6.0	5.5
May	29.62	29.87	29.23	70.9	82.4	81.3	87.2	68.4	77.8	93	57	66	64	65	84	55	59	.643	.604	.619	3.86	1.88	.0	5.4	5.0	2.9	4.5
June	29.74	30.01	29.51	73.8	88.1	86.6	92.4	70.6	81.5	102	58	64	61	62	73	42	45	.620	.560	.575	.15	.08	.0	1.6	1.8	3.0	2.3
July	29.67	29.85	29.48	76.5	86.2	84.5	91.0	73.8	82.4	103	68	72	72	71	88	65	68	.798	.784	.767	25.45	12.44	.0	5.5	6.3	6.1	6.0
August	29.70	29.86	29.50	76.5	87.7	85.1	91.6	74.3	83.0	95	69	73	74	73	89	64	69	.813	.835	.818	2.19	.55	.0	3.4	5.1	4.2	4.2
September	29.67	29.81	29.50	74.8	89.0	84.6	92.2	73.3	82.8	98	63	72	78	74	92	70	73	.797	.956	.863	1.07	1.04	.0	3.5	4.7	3.0	3.7
October	29.78	29.99	29.56	60.4	73.7	71.5	77.8	58.6	68.2	89	46	56	60	60	86	64	70	.461	.533	.539	4.55	2.21	.0	4.2	4.4	1.8	3.6
November	29.88	30.24	29.52	52.2	65.6	63.0	69.5	50.2	59.8	82	38	46	47	47	79	55	59	.327	.352	.347	.79	.65	.0	3.4	4.2	2.4	3.4
December	29.81	30.24	29.45	51.9	63.0	61.3	67.6	48.8	58.2	79	28	47	51	49	85	67	67	.358	.403	.378	4.64	1.14	.0	5.7	5.2	3.9	5.0
Year	29.74	30.42	29.23	61.9	73.3	71.7	77.9	59.3	68.6	103	9	56	58	57	83	61	64	.513	.535	.526	63.71	12.44	.6	4.8	5.1	4.1	4.7

SIOUX CITY, IOWA

[ϕ=42°30′ N.; λ=96°24′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	Mean: 8 a.m.	Mean: Noon, local time	Mean: 8 p.m.	Mean: Maximum	Mean: Minimum	Mean: Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.64	29.10	28.01	26.5	35.5	34.7	41.3	21.6	31.4	56	2	20	24	26	73	64	69	0.109	0.133	0.141	0.40	0.25	0.6	5.1	6.0	5.4	5.6
February	28.82	29.24	28.28	14.8	24.9	25.5	31.5	10.8	21.2	59	−23	8	13	13	76	60	60	.073	.088	.090	.20	.11	3.4	3.8	4.5	3.5	4.4
March	28.79	29.23	28.12	29.2	38.1	39.2	43.9	27.0	35.4	71	7	24	27	29	80	65	68	.157	.157	.171	2.67	.98	14.0	7.5	6.3	5.4	6.3
April	28.66	29.12	28.09	41.1	54.7	55.7	59.6	38.7	49.2	75	26	32	33	32	70	46	44	.190	.198	.196	.72	.60	.2	6.1	6.6	5.9	6.0
May	28.64	28.91	28.08	58.0	66.1	66.4	70.5	50.4	60.4	90	36	45	45	46	75	52	52	.313	.318	.324	1.51	.70	.0	6.4	6.5	6.9	6.8
June	28.69	29.22	28.39	71.1	87.3	88.0	92.6	67.4	80.0	107	48	57	55	56	63	35	36	.487	.451	.469	1.90	.71	.0	4.7	5.0	4.7	4.7
July	28.75	29.13	28.38	70.3	83.5	84.4	88.4	66.5	77.4	97	56	62	62	62	76	50	50	.570	.570	.579	3.20	.77	.0	3.9	4.2	4.2	4.2
August	28.79	29.03	28.54	63.7	77.5	78.0	81.5	61.5	71.5	95	52	56	57	57	77	52	50	.460	.480	.472	1.74	.58	.0	5.5	6.2	5.2	5.7
September	28.66	28.96	28.26	62.0	75.8	75.1	80.8	58.7	69.8	96	41	54	53	55	77	49	52	.438	.440	.466	5.83	3.12	.0	4.6	4.9	4.0	4.4
October	28.82	29.23	28.39	42.7	57.9	56.3	62.9	40.1	51.5	82	26	33	34	35	68	42	46	.197	.207	.223	.22	.15	T	3.7	5.1	2.8	3.8
November	28.84	29.27	28.23	31.8	43.3	40.8	50.2	26.7	38.4	74	12	24	26	25	72	52	54	.135	.147	.135	.09	.07	T	4.8	5.7	4.7	5.3
December	28.83	29.46	28.23	22.9	30.1	28.5	36.7	17.4	27.0	61	−15	18	20	20	81	65	71	.112	.121	.126	1.81	1.73	.6	5.8	6.5	5.5	6.1
Year	28.74	29.46	28.01	44.1	56.2	56.0	61.7	40.6	51.1	107	−23	36	37	38	74	53	54	.268	.276	.283	20.29	3.12	18.8	5.2	5.6	4.8	5.3

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

SEATTLE, WASH.

[H_b=125 ft.; h_t=90 ft.; h_r=83 ft.; h_a=321 ft.]

Month	Wind: By self-register: Average hourly velocity	Wind: By self-register: Prevailing direction	Wind: By self-register: Maximum velocity	Wind: By self-register: Direction at time of maximum velocity	Wind: By self-register: Days with 32 miles or over	Wind: Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	Precipitation: 0.04 inch or over	Snow: T or more	Snow: 0.01 inch or more melted	Hail	Fog: Light	Fog: Dense	Maximum temp.: 32° or below	Maximum temp.: 90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Electricity: Aurora
	Mi.		*Mi.*																										
January	11.4	S.	38	SW.	3	2	4	5	15	18	17	0	1	0	1	4	26	21	18	12	8	1	3	1	0	0	4	0	0
February	10.3	SE.	40	SW.	3	1	13	3	7	12	14	0	6	0	6	2	20	13	10	8	4	0	7	0	1	0	8	0	0
March	8.7	SE.	30	SW.	0	5	5	2	20	16	10	1	3	0	2	12	17	22	18	1	0	2	7	0	0	0	0	2	0
April	8.1	NE.	28	S.	0	11	14	2	6	8	5	7	5	2	6	12	12	8	4	2	0	0	2	0	0	0	0	0	0
May	9.7	S.	32	S.	1	4	0	5	10	23	12	4	4	0	1	12	18	12	11	0	0	0	1	0	0	0	0	0	0
June	8.3	N.	26	SW.	0	14	7	8	6	8	8	6	3	0	8	10	12	9	4	0	0	0	1	0	0	0	0	0	0
July	8.3	NE.	28	S.	0	15	14	1	4	8	4	6	7	3	14	12	5	3	2	0	0	0	4	0	0	0	0	0	0
August	6.7	NE.	18	SW.	0	15	9	2	4	12	5	4	6	5	15	7	9	6	5	0	0	0	11	0	0	1	0	0	0
September	10.2	S.	41	SW.	2	9	3	4	10	13	14	1	4	2	2	13	15	16	9	0	0	0	9	1	0	0	0	1	0
October	9.4	S.	40	S.	6	13	8	0	10	16	8	3	2	2	6	7	18	14	9	0	0	0	12	1	0	0	0	1	0
November	7.3	S.	35	S.	4	9	4	6	11	18	6	0	4	2	1	3	26	14	8	0	0	0	20	4	0	0	0	0	0
December	12.9	S.	42	SW.	7	5	3	3	10	23	15	0	2	1	0	3	28	26	23	3	3	2	6	0	0	0	0	0	0
Year	9.3	S.	42	SW.	26	103	84	41	113	175	118	32	47	17	62	97	206	164	121	26	15	5	83	7	1	1	12	4	0

SHERIDAN, WYO.

[H_b=3,790 ft.; h_t=10 ft.; h_r=3 ft.; h_a=47 ft.]

Month	Wind: By self-register: Average hourly velocity	Wind: By self-register: Prevailing direction	Wind: By self-register: Maximum velocity	Wind: By self-register: Direction at time of maximum velocity	Wind: By self-register: Days with 32 miles or over	Wind: Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	Precipitation: 0.04 inch or over	Snow: T or more	Snow: 0.01 inch or more melted	Hail	Fog: Light	Fog: Dense	Maximum temp.: 32° or below	Maximum temp.: 90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Electricity: Aurora
January	6.2	NW.	35	NW.	1	2	5	0	11	11	7	3	22	1	10	13	8	7	4	14	7	0	6	0	9	0	31	0	0
February	6.3	NW.	30	NW.	0	2	5	5	6	10	5	5	18	0	6	13	9	5	4	16	5	0	3	0	15	0	28	0	0
March	6.1	NW.	27	NW.	0	0	2	1	10	8	11	9	21	0	7	11	13	8	6	12	7	0	1	1	2	0	30	0	0
April	7.5	NW.	37	NW.	2	5	5	3	5	8	7	4	23	0	7	12	11	14	11	11	9	0	1	1	2	0	20	3	0
May	7.1	NW.	31	NW.	0	2	6	6	10	2	4	5	24	3	10	10	11	14	10	3	3	1	0	0	0	0	1	6	1
June	5.5	NW.	24	NW.	0	3	12	2	15	7	7	1	11	2	14	15	1	3	1	0	0	0	1	0	0	3	0	10	0
July	4.9	SE.	22	NW.	0	3	9	8	10	11	6	4	9	2	23	8	0	4	2	0	0	0	0	0	0	16	0	9	0
August	4.9	NW.	24	SW.	0	2	8	3	11	10	6	3	16	3	17	8	6	8	5	0	0	0	0	0	0	8	0	9	0
September	5.1	NW.	27	SW.	0	1	3	3	7	15	9	4	16	2	20	7	3	5	3	1	0	1	2	0	0	3	5	2	0
October	5.3	NW.	32	NW.	1	2	4	1	4	10	10	8	19	4	16	8	7	9	4	2	0	0	2	0	0	0	16	1	0
November	6.0	NW.	35	NW.	2	4	1	1	4	13	10	7	20	0	10	10	10	6	4	4	3	0	2	0	1	0	27	0	0
December	5.4	NW.	31	NW.	0	4	7	3	2	11	11	11	13	0	3	8	20	5	3	10	4	0	6	1	10	0	29	0	0
Year	5.9	NW.	37	NW.	6	30	67	36	95	116	93	64	212	17	143	123	99	88	57	73	38	2	24	3	39	30	187	40	1

SHREVEPORT, LA.

[H_b=249 ft.; h_t=92 ft.; h_r=90 ft.; h_a=227 ft.]

Month	Wind: By self-register: Average hourly velocity	Wind: By self-register: Prevailing direction	Wind: By self-register: Maximum velocity	Wind: By self-register: Direction at time of maximum velocity	Wind: By self-register: Days with 32 miles or over	Wind: Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	Precipitation: 0.04 inch or over	Snow: T or more	Snow: 0.01 inch or more melted	Hail	Fog: Light	Fog: Dense	Maximum temp.: 32° or below	Maximum temp.: 90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Electricity: Aurora
January	11.4	S.	37	NW.	1	2	8	2	13	22	4	3	8	0	11	6	14	11	11	0	0	0	12	0	0	0	2	2	0
February	11.2	NE.	34	NW.	1	6	15	2	12	8	1	4	8	0	7	5	16	15	10	3	1	0	7	1	3	0	6	4	0
March	13.0	SE.	46	SE.	7	2	12	10	14	10	2	8	4	0	8	13	10	10	9	0	0	1	2	2	0	0	0	7	0
April	11.8	S.	40	S.	2	5	3	9	16	11	2	6	8	0	10	8	12	12	11	1	0	1	2	0	0	1	0	10	0
May	10.8	S.	35	S.	2	1	7	6	15	20	4	3	6	0	13	13	5	10	8	0	0	0	0	0	0	7	0	8	0
June	9.0	S.	30	S.	0	1	12	10	5	11	15	4	2	0	22	7	1	4	2	0	0	0	0	0	0	22	0	5	0
July	9.9	SE.	36	N.	2	1	5	15	15	12	11	3	0	0	6	17	8	17	12	0	0	0	0	0	0	21	0	9	0
August	7.0	E.	33	NE.	1	2	9	19	8	14	9	1	0	0	14	14	3	9	7	0	0	0	1	0	0	23	0	6	0
September	7.7	S.	27	SE.	0	3	8	10	11	20	5	3	0	0	17	8	5	3	1	0	0	0	0	0	0	25	0	3	0
October	9.1	NE.	33	NE.	1	6	19	16	13	2	0	1	5	0	18	9	4	6	5	0	0	0	5	0	0	0	0	5	0
November	10.7	S.	31	SW.	0	8	7	6	5	14	1	7	12	0	15	11	4	4	3	0	0	0	9	1	0	0	0	0	0
December	11.5	S.	33	SW.	1	4	7	5	13	21	7	3	2	0	15	6	10	9	9	0	0	0	6	0	0	0	1	3	0
Year	10.3	S.	46	SE.	18	41	112	110	140	165	61	45	55	0	156	117	92	110	88	4	1	2	44	4	3	99	9	60	0

SIOUX CITY, IOWA

[H_b=1,138 ft.; h_t=64 ft.; h_r=57 ft.; h_a=106 ft.]

Month	Wind: By self-register: Average hourly velocity	Wind: By self-register: Prevailing direction	Wind: By self-register: Maximum velocity	Wind: By self-register: Direction at time of maximum velocity	Wind: By self-register: Days with 32 miles or over	Wind: Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	Precipitation: 0.04 inch or over	Snow: T or more	Snow: 0.01 inch or more melted	Hail	Fog: Light	Fog: Dense	Maximum temp.: 32° or below	Maximum temp.: 90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Electricity: Aurora
January	11.6	NW.	41	NW.	4	8	0	6	9	14	4	3	18	0	9	11	11	6	2	9	4	0	6	3	5	0	30	0	0
February	12.1	NW.	30	N.	0	6	5	2	4	12	4	8	14	1	12	11	5	6	2	11	5	0	0	0	14	0	24	0	0
March	12.3	N.	37	NW.	2	12	10	7	14	9	2	0	8	0	9	6	16	8	6	8	5	0	5	1	4	0	25	4	0
April	12.4	NW.	29	NW.	0	8	6	11	8	7	3	2	15	0	8	9	13	5	3	4	1	1	1	0	0	0	7	1	0
May	12.1	NW.	41	S.	3	10	8	11	4	11	1	6	11	0	6	10	15	8	7	0	0	2	2	0	0	0	0	7	0
June	10.8	S.	37	W.	1	2	8	5	5	28	9	1	2	0	12	10	8	5	5	0	0	1	0	0	0	21	0	6	0
July	10.4	S.	32	N.	1	3	4	7	8	25	5	2	6	2	12	12	7	11	11	0	0	0	1	0	0	14	0	9	0
August	9.9	S.	35	NW.	1	6	16	3	14	7	7	1	8	0	11	7	13	9	7	0	0	0	4	1	0	5	0	3	0
September	11.6	S.	32	NW.	3	5	1	10	4	25	3	5	7	0	15	7	8	8	6	0	0	1	2	0	0	8	0	3	1
October	12.2	S.	34	NW.	3	9	8	2	2	24	2	2	12	1	16	10	5	3	2	1	0	0	1	0	0	0	6	1	0
November	12.2	NW.	46	NW.	2	4	4	5	2	8	4	3	30	0	10	9	11	3	1	6	0	0	4	0	1	0	24	0	0
December	9.4	NW.	32	NW.	1	6	3	13	13	12	3	0	12	0	10	7	14	4	3	8	1	0	8	2	9	0	27	0	0
Year	11.4	S.	46	NW.	21	79	73	82	87	182	47	33	145	4	130	109	126	76	55	47	16	5	34	7	33	48	143	34	1

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

SPOKANE, WASH.

[ϕ=47°40′ N.; λ=117°25′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	27.79	28.43	27.42	29.9	33.6	33.2	36.7	26.8	31.8	48	11	25	26	26	80	73	74	0.137	0.144	0.145	1.16	0.27	15.7	7.2	8.1	8.4	8.1
February	28.05	28.60	27.60	20.0	26.1	27.5	30.4	16.2	23.3	46	−17	14	17	19	78	70	69	.095	.103	.107	.60	.24	9.8	7.2	7.1	7.1	7.2
March	27.96	28.50	27.47	34.5	43.9	44.9	47.8	32.6	40.2	57	23	30	30	30	81	58	57	.163	.165	.167	1.19	.30	2.0	6.2	7.4	7.5	7.4
April	27.94	28.39	27.45	39.9	54.4	56.6	59.1	37.8	48.4	76	28	30	28	28	69	37	36	.168	.156	.158	.28	.26	3.8	5.7	5.9	6.2	5.5
May	27.90	28.20	27.58	43.1	58.1	60.5	63.0	42.0	52.5	86	36	36	34	32	78	42	37	.215	.195	.185	.59	.20	T	5.5	7.0	6.9	6.4
June	27.90	28.27	27.57	52.5	70.0	74.8	76.6	51.3	64.0	97	40	43	42	40	71	39	32	.278	.274	.260	1.16	.42	.0	5.5	5.0	4.8	5.2
July	27.93	28.21	27.61	58.6	79.8	85.1	86.2	57.5	71.8	101	49	44	42	39	60	27	21	.298	.276	.251	.17	.17	.0	2.5	2.2	1.8	2.3
August	27.93	28.16	27.67	57.4	78.3	82.8	84.5	56.1	70.3	98	46	44	44	41	63	33	27	.294	.289	.258	.64	.30	.0	3.0	3.9	3.5	3.5
September	27.85	28.24	27.54	47.5	63.0	66.5	68.2	45.3	56.8	83	30	41	40	37	79	45	37	.259	.249	.229	1.25	.42	.0	5.7	5.3	5.0	5.4
October	27.97	28.27	27.42	43.5	57.2	59.8	62.9	40.5	51.7	81	28	38	40	39	81	56	51	.235	.256	.246	2.72	.89	2.6	3.6	6.2	5.2	5.7
November	28.20	28.56	27.55	35.3	41.8	42.4	44.9	33.3	39.1	60	19	34	36	36	93	81	80	.194	.218	.218	.80	.48	2.5	6.2	8.2	7.0	8.1
December	27.82	28.23	27.36	36.4	39.4	39.4	42.9	32.7	37.8	59	20	32	33	34	85	79	80	.189	.194	.197	4.35	.97	2.8	9.0	8.5	8.4	9.1
Year	27.94	28.60	27.36	41.6	53.8	56.1	58.6	39.3	49.0	101	−17	34	34	33	76	53	50	.210	.210	.202	14.91	.97	39.2	5.6	6.2	6.0	6.2

SPRINGFIELD, ILL.

[ϕ=39°48′ N.; λ=89°39′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.30	29.85	28.63	34.2	42.6	42.1	47.8	31.3	39.6	62	15	30	32	34	82	68	71	0.169	0.193	0.203	2.85	1.31	T	4.6	5.5	4.8	6.2
February	29.40	30.01	28.89	24.5	34.6	33.7	39.9	21.6	30.8	65	−10	17	21	22	73	56	61	.103	.129	.134	1.19	.68	2.2	4.6	3.9	4.1	4.2
March	29.33	29.83	28.60	35.9	46.1	43.8	50.9	32.9	41.9	82	11	31	34	34	82	63	68	.191	.218	.206	6.50	3.30	4.6	5.6	6.9	6.2	6.4
April	29.20	29.57	28.86	47.0	58.4	56.7	63.1	43.5	53.3	84	34	42	43	43	82	60	64	.274	.302	.297	2.57	.78	T	5.9	6.6	5.1	5.5
May	29.21	29.49	28.76	60.1	70.0	67.9	74.0	56.3	65.2	88	38	56	58	58	86	66	71	.456	.488	.493	8.69	1.27	.0	6.3	8.1	6.0	7.1
June	29.31	29.67	29.10	73.1	88.4	86.2	92.9	68.5	80.7	101	50	62	60	62	68	40	46	.570	.544	.581	3.29	1.16	.0	2.5	2.7	3.5	3.0
July	29.32	29.65	29.10	72.9	88.0	85.4	91.8	69.1	80.4	101	61	63	61	62	72	42	48	.591	.559	.568	.42	.39	.0	4.1	4.5	3.2	4.4
August	29.33	29.55	29.07	66.8	81.5	79.6	85.9	64.6	75.2	96	56	60	58	59	78	48	52	.523	.504	.520	2.34	.84	.0	4.6	4.7	4.6	4.5
September	29.25	29.46	28.95	66.5	82.7	78.5	86.2	64.4	75.3	98	53	60	61	60	81	50	57	.540	.554	.544	5.05	3.18	.0	4.2	4.1	4.1	4.0
October	29.41	29.78	28.98	46.6	61.7	56.3	64.8	44.6	54.7	81	31	42	43	44	83	52	65	.272	.291	.301	2.38	.72	.0	4.1	4.3	4.6	4.7
November	29.38	29.91	28.92	36.4	47.8	44.5	51.5	32.7	42.1	80	17	32	32	32	82	54	63	.188	.193	.195	.28	.16	T	5.0	5.6	4.1	5.6
December	29.41	30.07	28.93	32.4	38.9	37.0	44.1	28.0	36.0	66	0	29	31	30	86	72	76	.172	.187	.186	.91	.41	.5	6.8	8.1	4.8	7.6
Year	29.32	30.07	28.60	49.7	61.7	59.3	66.1	46.5	56.3	101	−10	44	44	45	80	56	62	.338	.347	.352	36.47	3.30	7.3	4.9	5.4	4.6	5.3

SPRINGFIELD, MO.

[ϕ=37°12′ N.; λ=93°18′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	28.58	29.10	27.96	38.3	48.2	47.1	53.0	35.6	44.3	66	19	30	31	33	71	52	60	0.174	0.189	0.205	2.68	0.79	T	4.1	4.6	4.9	4.4
February	28.57	29.19	28.26	28.2	37.5	38.4	43.9	25.1	34.5	74	−13	21	24	26	76	62	65	.128	.140	.154	1.09	.69	1.8	3.9	4.9	5.0	4.9
March	28.57	29.00	28.05	30.6	48.4	49.8	55.7	36.8	46.2	79	18	33	34	36	78	62	64	.205	.213	.232	2.40	.98	.9	5.9	5.8	5.1	5.7
April	28.46	28.76	28.10	49.2	59.6	58.8	65.0	45.5	55.2	86	32	42	44	42	78	60	60	.279	.295	.290	6.61	3.53	5.2	4.8	5.3	4.7	3.8
May	28.49	28.78	28.05	61.2	70.7	69.7	74.9	56.8	65.8	87	44	56	56	57	82	62	66	.452	.464	.476	6.79	3.57	.0	5.4	5.4	4.6	3.9
June	28.62	28.91	28.40	71.0	84.1	84.9	88.5	68.0	78.2	98	56	59	57	58	67	42	42	.520	.493	.503	3.43	3.17	.0	1.9	2.7	2.8	2.5
July	28.59	28.80	28.44	72.6	82.0	83.2	86.8	69.8	78.3	100	64	64	64	65	76	57	56	.612	.609	.622	4.17	3.79	.0	3.5	4.0	3.3	3.9
August	28.61	28.80	28.43	69.3	79.4	78.2	82.9	66.5	74.7	90	59	63	65	64	82	62	63	.587	.617	.612	4.86	2.32	.0	5.3	5.1	4.9	4.3
September	28.56	28.77	28.34	66.3	79.2	77.5	82.9	65.9	74.4	91	54	64	64	65	87	64	68	.606	.620	.632	7.02	2.36	.0	3.4	3.8	3.6	4.2
October	28.68	29.01	28.42	50.8	63.2	60.6	67.2	48.1	57.6	79	34	44	44	46	79	51	60	.306	.301	.330	3.17	1.42	.0	3.6	3.1	3.1	2.9
November	28.69	29.09	28.32	42.0	52.4	50.0	56.9	39.4	48.2	75	28	35	36	36	77	57	60	.217	.235	.223	1.01	.45	T	4.2	3.8	3.2	3.8
December	28.65	29.12	28.30	37.9	45.5	44.6	52.6	33.6	43.1	74	12	32	32	33	81	63	65	.200	.199	.198	.84	.56	T	4.7	5.1	3.8	5.1
Year	28.60	29.19	27.96	52.4	62.5	61.9	67.5	49.3	58.4	100	−13	45	46	47	78	58	61	.357	.365	.373	44.07	3.79	7.9	4.2	4.5	4.1	4.1

SYRACUSE, N.Y.

[ϕ=43°03′ N.; λ=76°09′ W.]

Month	Monthly mean	Extremes: Maximum	Extremes: Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Extremes: Maximum	Extremes: Minimum	Dew point: 8 a.m.	Dew point: Noon, local time	Dew point: 8 p.m.	Relative humidity: 8 a.m.	Relative humidity: Noon, local time	Relative humidity: 8 p.m.	Vapor pressure: 8 a.m.	Vapor pressure: Noon, local time	Vapor pressure: 8 p.m.	Precipitation: Total	Precipitation: Maximum in 24 hours	Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.36	29.95	28.72	33.7	38.6	-----	43.1	28.8	36.0	63	9	26	28	---	72	65	---	0.142	0.154	-----	1.00	0.55	1.4	8.4	7.8	----	8.1
February	29.32	29.97	28.72	27.2	31.3	-----	37.1	21.8	29.4	52	0	20	23	---	72	70	---	.113	.125	-----	1.74	.57	14.1	7.2	7.9	----	8.1
March	29.30	29.76	28.50	31.5	34.4	-----	38.3	27.9	33.1	51	10	25	27	---	77	73	---	.138	.147	-----	4.22	.72	13.2	8.5	8.7	----	8.0
April	29.33	29.81	28.83	47.1	52.9	-----	57.4	39.3	48.4	84	26	36	36	---	67	57	---	.224	.230	-----	3.65	.86	.7	6.8	6.5	----	6.6
May	29.32	29.64	28.92	61.0	66.5	-----	70.6	51.5	61.0	84	36	49	49	---	65	58	---	.363	.364	-----	3.17	.74	.0	6.8	6.8	----	6.4
June	29.31	29.57	28.95	70.3	77.2	-----	80.7	60.3	70.5	96	45	56	54	---	62	46	---	.474	.448	-----	1.58	1.00	.0	5.3	5.5	----	5.7
July	29.38	29.79	29.08	74.6	82.3	-----	86.1	64.9	75.5	98	54	59	58	---	60	44	---	.514	.486	-----	.30	.14	.0	4.3	5.0	----	5.3
August	29.37	29.73	28.72	68.7	76.0	-----	79.2	61.0	70.1	96	53	58	57	---	69	54	---	.493	.478	-----	4.36	1.46	.0	5.2	6.0	----	6.0
September	29.30	29.65	28.84	63.5	69.1	-----	72.7	56.0	64.4	87	43	56	56	---	77	66	---	.458	.474	-----	1.70	.83	.0	6.7	7.2	----	7.1
October	29.47	29.89	28.95	48.8	54.9	-----	58.6	41.3	50.0	75	26	40	38	---	72	55	---	.259	.241	-----	2.12	1.01	T	6.2	6.6	----	6.2
November	29.31	29.83	28.59	32.2	35.8	-----	42.2	26.4	34.3	75	6	25	30	---	74	72	---	.146	.178	-----	3.01	.71	19.6	8.0	8.2	----	8.0
December	29.45	30.34	28.87	24.3	28.2	-----	34.6	17.7	26.2	55	−24	18	19	---	77	69	---	.115	.119	-----	2.24	.52	12.8	9.2	8.2	----	8.4
Year	29.35	30.34	28.50	48.6	53.9	-----	58.4	41.4	49.9	98	−24	39	40	---	70	61	---	.287	.287	-----	29.09	1.46	61.8	6.9	7.0	----	7.0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

SPOKANE, WASH.

[H_b=1,929 ft.; h_t=101 ft.; h_r=94 ft.; h_a=110 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	8.7	S.	26	SW.	0	2	7	5	2	22	23	0	1	0	0	9	22	14	10	18	11	0	4	2	8	0	25	0	0
February	7.7	S.	25	SW.	0	5	6	3	0	24	10	0	5	3	4	9	15	10	5	14	9	0	3	1	13	0	24	0	0
March	7.1	S.	22	SW.	0	5	8	9	1	13	19	4	2	1	3	12	16	13	8	9	3	2	3	1	0	0	12	0	0
April	6.9	SW.	24	SW.	0	2	8	7	1	15	19	1	6	1	7	12	11	4	1	5	2	0	0	0	0	0	6	0	2
May	7.8	S.	25	W.	0	2	4	9	3	19	20	2	3	0	6	12	13	7	6	1	0	1	1	0	0	0	0	2	0
June	7.1	SW.	20	SW.	0	1	6	8	0	13	24	4	3	1	9	11	10	7	5	0	0	0	0	0	0	3	0	2	0
July	6.7	SW.	21	SW.	0	7	2	10	4	6	20	7	5	1	20	9	2	1	1	0	0	0	0	0	0	9	0	1	2
August	5.9	SW.	19	W.	0	1	6	17	3	8	18	3	3	3	18	5	8	5	3	0	0	0	1	1	0	13	0	2	0
September	6.8	SW.	26	W.	0	4	3	8	3	10	14	10	5	3	10	9	11	8	5	0	0	0	0	0	0	0	1	1	2
October	5.9	SW.	21	W.	0	5	8	15	2	11	10	5	4	2	10	6	15	9	6	2	2	0	5	1	0	0	2	0	0
November	5.0	S.	22	SW.	0	7	5	9	3	11	8	3	12	2	4	5	21	7	5	3	2	0	23	15	0	0	9	0	0
December	9.1	S.	30	S.	0	4	6	4	1	28	15	1	0	3	2	1	28	22	17	8	6	0	9	3	3	0	12	0	0
Year	7.1	S.	30	S.	0	45	69	104	23	180	200	40	49	20	93	100	172	107	72	60	35	3	49	24	24	25	91	8	6

SPRINGFIELD, ILL.

[H_b=636 ft.; h_t= 5 ft.; h_r=3 ft.; h_a=191 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	13.0	S.	34	NW.	2	3	2	2	6	22	12	6	9	0	6	17	8	8	7	2	0	0	6	5	0	0	14	1	0
February	12.7	S.	37	S.	2	4	4	5	2	12	9	9	11	0	14	6	8	7	3	6	3	0	2	0	6	0	20	0	0
March	12.5	S.	34	NW.	1	8	4	5	5	13	7	8	12	0	8	8	15	15	11	7	2	1	3	0	1	0	14	5	0
April	12.8	S.	32	S.	1	9	9	3	5	12	6	8	8	0	11	4	15	15	12	1	0	0	2	0	0	0	0	4	0
May	11.4	S.	41	SW.	3	5	6	7	9	16	8	6	5	0	6	7	18	13	16	0	0	1	0	0	0	0	0	17	0
June	9.6	SW.	31	NW.	0	3	5	3	4	11	26	6	2	0	19	9	2	6	4	0	0	0	0	0	0	23	0	7	0
July	9.8	S.	31	N.	0	8	10	6	7	11	12	5	3	0	8	20	3	3	1	0	0	0	0	0	0	19	0	0	0
August	9.3	NE.	40	SW.	1	13	9	9	6	11	4	6	4	0	13	11	7	11	9	0	0	0	1	1	0	7	0	6	0
September	10.2	S.	27	NW.	0	7	4	3	4	17	6	15	4	0	16	5	9	9	5	0	0	0	4	0	0	11	0	4	1
October	10.9	S.	32	S.	1	8	7	5	8	16	5	6	7	0	14	8	9	8	7	0	0	0	3	1	0	0	1	3	0
November	13.0	NW.	38	NW.	4	8	6	1	4	16	9	2	14	0	8	10	12	4	3	7	0	0	2	0	2	0	12	0	0
December	12.0	S.	31	NW.	0	10	6	6	9	16	5	5	5	0	3	9	19	6	5	5	1	0	8	2	7	0	20	1	0
Year	11.4	S.	41	SW.	15	86	72	55	69	173	109	82	84	0	126	114	125	110	83	28	6	2	31	9	16	60	81	48	1

SPRINGFIELD, MO.

[H_b=1,324 ft.; h_t=98 ft.; h_r=66 ft.; h_a=104 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.6	S.	31	NW.	0	4	0	1	14	24	8	4	7	0	14	7	10	6	6	2	0	0	9	0	0	0	11	4	0
February	11.1	S.	31	W.	0	6	8	3	9	11	3	7	9	0	13	4	11	6	6	6	3	0	2	1	7	0	18	0	0
March	12.1	SE.	31	SE.	0	6	5	9	13	10	4	6	8	1	11	7	13	12	9	2	1	1	6	0	1	0	9	4	0
April	11.1	SE.	31	S.	0	11	3	11	10	8	7	8	1	1	18	5	7	12	10	3	2	0	9	0	0	0	1	2	0
May	10.2	S.	29	W.	0	6	5	3	8	20	6	7	6	1	15	9	7	11	10	0	0	0	6	0	0	0	0	7	0
June	8.3	S.	29	SW.	0	5	3	4	11	27	6	2	1	1	24	6	0	3	2	0	0	0	0	0	0	16	0	4	0
July	8.5	S.	24	SW.	0	6	11	10	13	14	2	2	0	4	13	15	3	6	4	0	0	0	3	0	0	8	0	3	0
August	7.6	SE.	24	N.	0	5	8	12	16	12	3	1	3	2	15	9	7	12	11	0	0	0	8	0	0	0	0	9	0
September	8.2	S.	22	W.	0	0	3	4	16	21	5	0	5	6	15	7	8	11	8	0	0	0	7	3	0	2	0	6	0
October	9.7	SE.	23	S.	0	7	9	3	23	3	3	7	4	3	19	9	3	10	10	0	0	0	5	1	0	0	0	9	0
November	10.6	S.	34	NW.	2	7	2	3	6	13	7	10	11	1	16	5	9	7	4	1	0	0	6	0	0	0	7	0	0
December	10.8	SE.	24	SW.	0	6	5	8	16	9	5	5	6	2	13	8	10	5	4	2	0	0	11	2	2	0	14	1	0
Year	10.0	S.	34	NW.	2	69	62	71	155	172	59	59	61	22	186	91	88	101	84	16	6	1	72	7	10	26	60	49	0

SYRACUSE, N.Y.

[H_b=596 ft.; h_t=65 ft.; h_r=57 ft.; h_a=79 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	9.1	S.	28	SW.	0	2	1	10	4	20	11	8	6	0	3	6	22	7	4	14	5	0	0	0	5	0	22	0	0
February	10.1	W.	25	SW.	0	0	1	5	4	11	13	13	9	0	3	6	19	15	11	16	12	0	0	0	7	0	25	0	0
March	9.2	E.	27	NW.	0	3	1	17	4	1	8	14	14	0	2	10	19	22	18	20	16	0	1	0	3	0	21	0	0
April	8.2	E.	24	NW.	0	1	3	17	5	9	5	15	5	0	7	7	16	15	12	5	1	0	0	1	0	0	6	1	0
May	7.2	S.	21	SW.	0	8	1	8	5	8	11	11	10	0	7	13	11	15	11	0	0	0	0	0	0	0	0	6	0
June	6.8	NW.	21	NW.	0	4	2	5	4	8	8	10	19	0	8	11	11	8	3	0	0	0	0	0	0	7	0	7	0
July	7.0	S.	21	NW.	0	4	0	5	4	16	9	11	13	0	7	20	4	4	4	0	0	0	0	0	0	9	0	8	0
August	6.8	S.	21	NW.	0	2	2	11	3	15	10	10	9	0	9	10	12	13	11	0	0	0	0	0	0	1	0	3	0
September	6.5	S.	19	NW.	0	2	0	13	8	15	6	14	2	0	2	13	15	10	6	0	0	0	0	0	0	0	0	3	0
October	7.6	S.	26	NW.	0	3	0	9	9	16	10	9	6	0	8	9	14	10	7	1	0	0	2	1	0	0	4	1	0
November	8.8	W.	25	NW.	0	4	0	8	4	15	10	15	4	0	4	4	22	20	15	18	13	0	2	0	5	0	23	0	0
December	8.6	W.	26	NW.	0	1	0	18	1	11	8	11	12	0	1	7	23	18	13	15	9	0	2	0	12	0	24	0	0
Year	8.0	S.	28	SW.	0	34	11	126	55	145	109	141	109	0	61	116	188	157	115	89	56	0	7	2	32	17	125	27	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

TAMPA, FLA.

[ϕ=27°57′ N.; λ=82°27′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	30.06	30.35	29.71	58.2	69.1	64.9	73.1	55.5	64.3	80	40	56	56	58	91	66	79	0.466	0.483	0.498	0.46	0.14	0.0	6.1	6.4	4.6	5.8
February	30.08	30.44	29.72	60.7	71.8	66.8	75.0	57.7	66.4	84	39	57	60	60	89	67	79	.494	.533	.530	3.75	2.34	.0	5.8	5.2	4.8	5.2
March	30.04	30.25	29.65	60.1	73.0	67.4	76.5	57.2	66.8	86	44	54	50	53	80	47	62	.434	.395	.430	2.85	1.23	.0	3.2	3.5	3.6	3.5
April	29.93	30.11	29.74	67.9	76.9	72.7	80.7	63.6	72.2	86	58	62	60	62	83	58	70	.569	.534	.561	6.14	2.46	.0	4.8	5.7	4.1	5.3
May	29.96	30.13	29.73	74.9	84.9	80.2	88.6	70.7	79.6	93	65	70	66	69	85	55	69	.733	.653	.714	1.30	.42	.0	3.1	2.9	3.4	3.4
June	29.96	30.09	29.76	76.1	84.7	79.8	88.3	70.7	79.5	95	62	69	65	67	79	54	68	.713	.636	.676	4.50	1.47	.0	3.5	4.4	4.3	4.4
July	29.98	30.12	29.84	78.1	86.2	79.5	89.4	74.2	81.8	93	69	73	71	72	85	62	78	.815	.761	.777	12.32	4.78	.0	4.5	5.6	6.5	6.2
August	29.94	30.10	29.68	78.7	87.5	81.0	90.6	74.5	82.6	94	70	74	71	73	86	59	76	.845	.765	.800	6.75	2.94	.0	4.6	5.1	6.1	5.7
September	29.90	30.10	29.37	78.8	87.9	81.4	90.5	75.0	82.8	94	72	74	71	72	84	58	75	.834	.765	.794	9.86	7.27	.0	1.7	3.9	2.0	3.3
October	29.91	30.15	29.45	70.7	82.0	75.7	84.1	68.7	76.4	89	63	66	65	66	85	57	73	.639	.622	.650	1.71	1.48	.0	3.7	4.2	2.4	4.1
November	30.06	30.45	29.72	58.6	72.3	65.4	74.8	56.5	65.6	84	46	52	51	53	79	49	66	.418	.402	.433	.30	.28	.0	2.0	2.1	1.6	2.3
December	30.13	30.37	29.78	58.9	73.0	66.5	75.6	57.1	66.4	84	43	55	54	57	87	52	71	.446	.430	.471	.13	.11	.0	2.3	2.2	1.3	2.3
Year	30.00	30.45	29.37	68.5	79.1	73.4	82.3	65.1	73.7	95	39	64	62	64	84	57	72	.617	.582	.611	50.07	7.27	.0	3.8	4.3	3.8	4.3

TATOOSH ISLAND, WASH.

[ϕ=48°23′ N.; λ=124°44′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.70	30.53	28.99	40.2	41.2	40.7	43.3	38.2	40.8	49	32	36	36	35	86	81	81	0.217	0.213	0.209	13.21	3.23	1.4	7.9	8.6	8.0	8.6
February	30.02	30.51	29.46	38.2	40.2	39.9	42.4	36.2	39.3	47	23	34	32	31	93	74	73	.197	.192	.185	8.01	2.59	3.6	7.5	6.9	6.4	7.5
March	29.88	30.42	29.21	41.8	45.1	44.3	47.0	39.9	43.4	53	34	38	38	38	87	78	80	.231	.232	.232	12.87	2.39	.1	6.9	7.7	7.3	8.1
April	30.01	30.37	29.56	43.1	48.0	46.9	49.7	42.2	46.0	64	38	40	40	40	88	74	78	.244	.249	.250	1.40	.45	.0	5.2	6.0	6.9	7.1
May	29.90	30.22	29.37	46.6	49.9	49.4	51.9	45.7	48.8	59	41	43	44	44	87	81	80	.277	.288	.285	3.61	.44	.0	8.8	8.1	7.0	8.7
June	29.97	30.21	29.47	49.6	54.3	54.0	56.4	48.9	52.6	64	43	47	48	48	90	80	81	.322	.333	.337	2.04	.86	.0	7.1	6.6	6.3	6.8
July	30.01	30.26	29.64	51.5	55.5	55.1	57.5	50.4	54.0	72	48	50	51	51	94	84	86	.354	.371	.373	2.54	1.06	.0	6.7	4.7	3.7	5.9
August	29.93	30.10	29.71	53.5	57.4	56.7	60.0	51.8	55.9	75	48	52	53	54	95	87	91	.386	.404	.416	1.22	.65	.0	5.2	5.2	4.0	6.5
September	29.80	30.20	29.33	52.3	54.4	54.5	56.3	50.0	53.2	59	45	50	50	50	93	86	87	.362	.360	.368	7.81	1.88	.0	8.8	7.5	8.1	8.4
October	29.92	30.31	29.15	49.5	51.9	51.2	53.8	47.7	50.8	66	43	48	48	48	94	87	89	.335	.337	.334	10.03	1.89	.0	7.0	6.4	6.3	6.9
November	30.14	30.48	29.64	47.0	48.8	47.7	50.1	45.1	47.6	54	39	46	46	46	95	90	94	.308	.310	.312	9.35	3.20	.0	7.4	5.7	5.6	7.5
December	29.68	30.17	29.12	43.8	45.7	44.6	47.4	41.0	44.2	53	34	41	42	41	91	87	87	.263	.270	.258	16.27	2.08	1.0	9.4	9.2	9.3	9.5
Year	29.91	30.53	28.99	46.4	49.4	48.7	51.3	44.8	48.0	75	23	44	44	44	90	82	84	.291	.297	.297	88.36	3.23	6.1	7.3	6.9	6.6	7.6

TERRE HAUTE, IND.

[ϕ=39°29′ N.; λ=87°24′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.39	29.93	28.66	36.3	42.3	42.0	48.5	32.5	40.5	63	15	31	32	33	82	67	70	0.183	0.184	0.199	2.29	0.85	T	4.5	6.0	5.5	5.9
February	29.47	30.06	28.74	27.1	35.5	34.9	40.8	23.2	32.0	67	−7	21	22	23	78	58	62	.126	.129	.138	2.13	1.00	2.1	4.7	5.1	4.2	4.5
March	29.40	29.88	28.70	36.4	44.3	45.1	49.9	33.6	41.8	76	11	31	32	33	80	64	65	.192	.204	.213	5.81	1.73	2.3	5.5	7.1	6.6	7.0
April	29.28	29.62	28.87	47.3	58.5	56.7	62.9	43.9	53.4	82	34	40	40	41	77	53	59	.225	.264	.270	3.37	.89	T	5.6	5.5	5.1	5.7
May	29.30	29.57	28.90	61.1	70.2	68.9	74.8	57.5	66.2	88	43	56	56	58	82	63	70	.452	.471	.491	7.93	2.25	.0	6.9	6.3	6.9	6.5
June	29.38	29.71	29.16	72.2	86.4	85.0	90.4	68.1	79.2	102	48	60	58	59	66	39	43	.544	.506	.532	.03	.02	.0	2.5	2.4	3.0	2.3
July	29.39	29.71	29.15	72.7	85.6	84.9	89.8	68.6	79.2	100	56	61	57	59	68	41	45	.554	.496	.523	.72	.39	.0	3.8	4.0	4.5	4.0
August	29.39	29.61	29.12	66.8	80.8	78.8	85.2	63.8	74.5	94	55	59	58	59	77	48	52	.508	.496	.505	3.60	2.35	.0	3.6	4.1	4.4	4.1
September	29.32	29.50	29.05	66.2	79.8	78.2	84.5	64.5	74.5	96	52	60	60	61	83	55	58	.542	.544	.559	5.16	1.69	.0	5.1	4.9	3.9	4.8
October	29.48	29.84	29.08	47.7	61.4	57.5	64.8	44.8	54.8	81	34	42	40	43	81	48	59	.275	.263	.239	1.52	.58	.0	4.4	4.6	3.5	4.5
November	29.44	29.97	28.96	36.3	45.9	44.7	51.9	32.2	42.0	80	16	30	31	32	77	57	60	.178	.187	.190	.63	.21	T	5.1	6.0	5.2	5.4
December	29.48	30.12	29.08	34.8	40.0	39.0	46.3	29.5	37.9	69	00	29	31	31	80	69	72	.183	.192	.193	1.42	.67	1.2	7.5	7.7	6.3	7.6
Year	29.39	30.12	28.66	50.4	60.9	59.6	65.8	46.8	56.3	102	−7	43	43	44	78	55	60	.330	.328	.342	34.61	2.35	5.6	4.9	5.4	4.9	5.2

TOLEDO OHIO

[ϕ=41°40′ N.; λ=83°34′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.30	29.85	28.58	33.6	38.7	36.7	42.5	28.9	35.8	65	13	28	28	28	78	65	72	0.160	0.157	0.159	1.13	0.44	2.1	6.9	6.2	6.5	6.4
February	29.34	29.91	28.58	24.6	32.0	31.1	36.7	20.4	28.6	57	−11	17	18	20	70	56	62	.109	.114	.119	1.95	.90	3.6	4.8	5.1	4.8	4.4
March	29.32	29.86	28.60	31.0	37.5	37.0	41.2	29.0	35.1	61	8	24	26	28	74	63	68	.137	.153	.164	3.33	1.15	3.5	7.4	7.0	7.1	7.0
April	29.24	29.66	28.74	44.0	50.8	50.5	55.4	40.2	47.8	80	29	36	37	36	74	63	61	.222	.232	.225	2.45	.72	T	6.4	6.1	6.0	6.1
May	29.26	29.57	28.85	57.8	65.4	63.9	68.8	53.8	61.3	86	36	51	51	52	78	62	67	.383	.392	.400	5.88	1.34	.0	6.5	6.1	5.8	5.6
June	29.30	29.62	29.04	70.0	81.2	79.7	85.8	64.9	75.4	99	46	58	55	57	66	42	48	.504	.460	.490	1.02	.63	.0	3.4	2.5	3.0	2.4
July	29.35	29.78	29.13	70.1	81.4	79.9	84.9	65.1	75.0	99	57	60	58	57	71	47	48	.523	.486	.482	2.13	1.09	.0	3.2	3.4	2.6	2.8
August	29.35	29.60	29.03	66.1	76.8	75.0	79.9	61.9	70.9	90	55	58	57	58	77	52	57	.495	.473	.495	2.99	1.14	.0	3.0	3.1	2.8	2.5
September	29.27	29.48	28.94	62.8	72.7	71.3	76.9	60.3	68.6	95	51	57	58	58	82	61	66	.477	.490	.506	3.51	.81	.0	4.4	5.2	5.1	4.7
October	29.42	29.79	28.93	45.6	56.6	53.6	60.3	42.8	51.6	78	28	39	39	41	78	53	63	.250	.252	.272	1.03	.47	.0	5.0	4.5	3.7	4.3
November	29.31	29.84	28.66	34.0	39.5	38.5	44.5	29.7	37.1	77	9	28	30	30	78	69	71	.165	.180	.179	1.16	.21	4.1	7.2	7.6	7.2	7.4
December	29.42	30.20	28.88	28.7	33.2	32.1	37.9	23.8	30.8	65	−2	24	26	26	80	76	77	.143	.163	.157	1.75	.44	8.1	8.2	8.5	8.0	8.3
Year	29.32	30.20	28.58	47.4	55.5	54.1	59.6	43.4	51.5	99	−11	40	40	41	76	59	63	.297	.296	.304	26.33	1.34	21.4	5.5	5.4	5.2	5.2

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

TAMPA, FLA.

[H_b=35 ft.; h_t=88 ft.; h_r=81 ft.; h_a=197 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																											
January	10.9	E.	34	W.	1	11	10	13	5	6	5	3	8	1	6	15	10	5	5	0	0	0	10	3	0	0	0	1	0
February	11.9	S.	33	N.	1	8	9	7	4	14	3	5	6	0	11	8	9	8	6	0	0	0	8	2	0	0	0	2	0
March	11.8	N.	34	S.	2	12	7	7	8	6	5	5	12	0	17	11	3	4	4	0	0	0	2	2	0	0	0	4	0
April	10.7	E.	37	SW.	3	6	5	11	9	8	4	9	8	0	9	10	11	11	8	0	0	0	1	0	0	0	0	8	0
May	9.9	SE.	30	NE.	0	4	4	17	17	9	3	4	4	0	21	7	3	6	4	0	0	0	2	0	0	16	0	5	0
June	9.9	E.	29	NE.	0	5	8	15	16	5	4	2	5	0	10	12	8	13	12	0	0	0	0	0	0	13	0	12	0
July	9.9	E.	39	E.	2	6	7	16	13	5	5	8	2	0	4	17	10	17	17	0	0	0	0	0	0	16	0	19	0
August	8.6	E.	43	SE.	3	6	9	17	17	5	1	2	5	0	3	20	8	14	13	0	0	0	1	0	0	19	0	22	0
September	10.7	E.	46	N.	2	5	6	23	8	4	6	1	5	2	20	8	2	8	7	0	0	0	0	0	0	20	0	13	0
October	12.7	E.	38	NW.	3	17	22	16	1	2	1	0	3	0	17	7	7	6	4	0	0	0	4	0	0	0	0	4	0
November	11.5	NE.	25	NE.	0	17	21	7	1	2	4	2	6	0	22	4	4	3	1	0	0	0	5	2	0	0	0	0	0
December	10.2	S.	28	E.	0	11	5	17	4	8	3	3	11	0	22	7	2	3	1	0	0	0	9	3	0	0	0	0	0
Year	10.7	E.	46	N.	17	108	113	166	103	74	44	44	75	3	162	126	77	98	82	0	0	0	42	12	0	84	0	90	0

TATOOSH ISLAND, WASH.

[H_b=86 ft.; h_t=10 ft.; h_r=3 ft.; h_a=54 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	17.7	S.	54	S.	17	1	1	13	2	16	14	9	5	1	0	7	24	25	25	11	5	0	1	1	0	0	1	1	0
February	17.6	E.	45	S.	12	2	2	20	2	11	4	11	4	0	3	7	18	17	16	6	4	1	0	0	1	0	6	1	0
March	15.1	E.	45	E.	9	4	2	20	7	11	5	10	3	0	2	5	24	23	22	2	1	0	0	0	0	0	0	0	0
April	10.3	W.	33	NW.	3	4	5	10	3	7	12	12	6	1	5	5	20	12	10	0	0	0	3	3	0	0	0	0	0
May	11.3	SW.	33	S.	1	0	1	15	8	12	19	5	2	0	0	5	26	23	19	0	0	0	0	1	0	0	0	0	0
June	8.4	SW.	23	NE.	0	1	3	10	0	8	18	17	3	0	3	15	12	11	8	0	0	0	3	5	0	0	0	0	0
July	8.3	SW.	26	E.	0	2	1	6	1	10	27	10	3	2	8	13	10	11	7	0	0	0	8	7	0	0	0	0	0
August	10.5	S.	28	S.	0	0	6	6	1	24	21	2	1	1	9	6	16	9	5	0	0	0	4	17	0	0	0	0	0
September	13.3	S.	62	S.	7	1	2	9	8	16	14	7	3	0	3	3	24	21	17	0	0	0	3	4	0	0	0	1	0
October	13.5	E.	44	S.	8	1	6	17	3	13	12	6	3	1	9	2	20	16	14	0	0	0	2	10	0	0	0	0	0
November	14.1	E.	49	S.	7	0	4	28	3	13	3	3	1	5	6	4	20	16	13	0	0	0	4	13	0	0	0	0	0
December	20.4	E.	63	S.	23	1	1	20	4	11	13	9	3	0	0	2	29	29	29	3	2	0	0	0	0	0	0	0	0
Year	13.4	E.	63	S.	87	17	34	174	42	152	162	101	37	11	48	74	243	213	185	22	12	1	28	61	1	0	7	3	0

TERRE HAUTE, IND.

[H_b=575 ft.; h_t=96 ft.; h_r=86 ft.; h_a=129 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.9	S.	35	SW.	1	4	1	4	6	27	4	5	11	0	11	7	13	9	8	2	1	0	8	3	1	0	17	0	0
February	10.9	S.	35	SW.	1	5	3	1	7	13	7	7	13	0	13	8	7	11	7	9	6	0	3	0	6	0	21	0	0
March	10.8	NW.	35	W.	1	8	1	5	7	9	5	8	19	0	6	8	17	14	11	8	3	0	5	1	1	0	14	5	0
April	11.1	S.	35	S.	1	3	9	5	7	11	4	6	12	1	11	9	10	14	11	2	0	0	1	0	0	0	0	2	0
May	9.6	S.	29	W.	0	6	5	7	12	10	8	5	9	0	7	11	13	16	15	0	0	1	0	0	0	0	0	12	0
June	8.3	SW.	25	SW.	0	5	10	0	5	8	25	5	2	0	21	8	1	2	0	0	0	0	0	0	0	19	0	6	0
July	8.5	NE.	23	SW.	0	5	15	5	6	14	14	1	2	0	14	11	6	9	5	0	0	0	0	0	0	17	0	4	0
August	8.1	NE.	21	E.	0	9	16	5	4	11	6	1	9	1	17	8	6	8	6	0	0	0	0	0	0	6	0	5	0
September	7.8	SW.	25	W.	0	2	7	6	7	13	12	6	6	1	14	5	11	12	9	0	0	0	3	0	0	8	0	9	0
October	9.1	S.	30	S.	0	7	9	3	8	14	7	1	11	2	13	10	8	7	6	0	0	0	8	0	0	0	0	1	0
November	10.9	S.	30	NW.	0	8	2	0	4	15	9	9	13	0	9	10	11	8	6	6	0	0	0	0	3	0	15	1	0
December	10.2	S.	30	S.	0	9	11	3	6	15	6	3	9	0	3	9	19	9	5	3	3	0	4	0	6	0	17	0	0
Year	9.7	S.	35	S.	4	73	89	44	79	160	107	57	116	5	139	104	122	119	89	30	13	1	32	4	17	50	84	45	0

TOLEDO, OHIO

[H_b=628 ft.; h_t=79 ft.; h_r=72 ft.; h_a=87 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.9	SW.	41	W.	2	3	1	7	3	7	21	12	8	0	8	10	13	8	7	5	3	0	6	1	4	0	22	1	0
February	12.2	W.	36	NW.	1	7	0	1	3	5	10	22	8	0	13	10	5	9	6	10	3	0	3	1	8	0	23	1	0
March	11.1	NW.	32	NW.	2	9	7	2	8	4	7	9	16	0	7	5	19	12	7	12	4	0	7	2	3	0	22	2	0
April	10.5	E.	29	W.	0	3	8	11	8	7	6	14	6	0	10	6	14	17	8	1	1	0	6	0	0	0	3	3	0
May	9.4	E.	24	NW.	0	6	6	13	8	5	5	13	6	0	10	12	9	16	13	0	0	0	2	1	0	0	0	9	0
June	8.5	W.	26	W.	0	9	3	4	4	6	3	21	10	0	20	8	2	9	5	0	0	0	1	0	0	12	0	6	0
July	8.1	W.	23	W.	0	6	11	11	4	2	7	18	3	0	22	6	3	6	6	0	0	0	0	0	0	11	0	6	0
August	8.1	E.	24	NW.	0	9	8	13	5	1	6	11	9	0	21	8	2	6	4	0	0	0	3	0	0	0	0	2	0
September	8.9	SW.	25	W.	0	7	7	5	4	8	17	5	7	0	13	9	8	11	10	0	0	0	2	0	0	3	0	5	0
October	8.8	SW.	27	NW.	0	9	1	3	2	11	12	15	9	0	15	8	8	6	5	0	0	0	3	1	0	0	3	4	0
November	11.0	W.	27	NW.	0	2	6	3	1	4	13	19	12	0	5	4	21	13	11	12	6	0	5	0	4	0	18	1	0
December	9.7	W.	27	W.	0	6	3	9	6	3	12	12	11	0	3	5	23	10	5	9	4	0	12	4	10	0	24	1	0
Year	9.8	W.	41	W.	5	76	61	82	53	63	119	171	105	0	147	91	127	123	87	49	21	0	50	10	29	26	115	41	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

TOPEKA, KANS.

[ϕ=39° 3′ N.; λ=95° 41′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January				33.1			52.5	30.2	41.4	67	17										0.17	0.11	1.0				3.1
February				23.0			42.2	20.3	31.2	72	−14										.49	.40	5.9				3.2
March				37.7			54.2	34.2	44.2	80	14										2.01	1.01	1.7				5.2
April				46.7			67.0	44.1	55.6	87	32										3.82	1.76	.1				4.1
May				58.6			75.6	55.0	65.3	93	44										2.55	.83	.0				4.9
June				73.1			95.5	68.0	81.8	106	51										2.25	1.59	.0				2.4
July				73.0			92.9	69.6	81.2	106	60										2.47	1.97	.0				3.5
August				69.0			86.3	66.0	76.2	100	54										3.50	1.18	.0				5.5
September				66.6			86.0	62.9	74.4	97	44										2.30	1.55	.0				3.4
October				48.3			69.1	44.2	57.0	83	31										.61	.49	.0				3.2
November				39.5			57.5	35.6	46.6	80	24										.58	.47	.0				3.4
December				30.0			49.5	27.4	38.4	70	5										1.49	.76	T				3.9
Year				49.9			69.0	46.5	57.8	106	−14										22.24	1.97	8.7				3.8

TRENTON, N.J.

[ϕ=40° 13′ N.; λ=74° 46′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.83	30.43	29.20	35.1	42.0	40.7	46.8	32.4	39.6	61	14	29	30	31	77	63	70	0.164	0.173	0.183	1.93	0.82	T	6.2	5.9	5.8	6.0
February	29.82	30.58	29.14	30.0	37.8	34.1	41.6	25.0	33.3	62	6	23	24	23	74	58	63	.135	.142	.130	2.66	.83	10.8	6.2	5.4	4.0	5.2
March	29.76	30.26	28.90	34.9	40.9	39.3	45.4	31.8	38.6	59	17	27	28	29	73	62	67	.153	.159	.164	5.59	1.42	3.2	5.8	7.3	6.0	6.6
April	29.78	30.18	29.18	47.8	55.5	52.0	60.2	41.7	51.0	80	31	40	39	40	76	57	66	.259	.251	.265	4.40	1.56	T	6.1	6.0	4.3	6.0
May	29.76	30.09	29.33	61.1	69.6	63.8	74.0	54.3	64.2	90	44	53	51	54	77	56	72	.426	.404	.432	4.91	.92	.0	6.3	7.4	6.1	6.7
June	29.73	30.00	29.48	68.8	78.1	73.8	82.6	61.4	72.0	99	45	59	58	60	72	51	64	.519	.506	.555	2.93	1.45	.0	5.4	5.3	4.9	5.0
July	29.81	30.12	29.48	70.8	79.9	75.3	84.0	64.2	74.1	98	52	63	62	63	78	56	67	.588	.561	.584	3.42	1.61	.0	5.3	5.4	5.5	5.2
August	29.78	30.15	29.27	70.4	78.8	74.1	81.8	65.2	73.5	98	56	64	64	65	81	63	74	.599	.609	.618	10.09	2.70	.0	6.1	6.8	5.6	6.2
September	29.74	30.05	29.29	64.6	73.7	69.5	77.3	60.7	69.0	89	52	59	60	61	82	62	75	.506	.522	.542	4.86	1.55	.0	5.6	6.4	4.2	5.9
October	29.92	30.37	29.38	49.4	60.2	55.4	64.5	44.0	54.2	80	29	42	44	45	78	56	69	.282	.304	.319	1.30	.77	.0	4.3	4.4	2.1	4.2
November	29.80	30.37	29.08	36.9	45.3	42.1	49.6	33.6	41.6	71	16	30	31	32	74	58	69	.173	.188	.195	1.08	.62	1.0	5.3	5.5	5.7	5.7
December	29.92	30.71	29.35	29.3	34.5	32.8	39.7	24.8	32.2	57	−2	24	24	24	79	66	70	.141	.144	.146	2.62	.84	7.8	6.7	6.1	5.8	6.4
Year	29.80	30.71	28.90	49.9	58.0	54.4	62.3	44.9	53.6	99	−2	43	43	44	77	59	69	.329	.330	.344	45.79	2.70	22.8	5.8	6.0	5.0	5.8

VALENTINE, NEBR.

[ϕ=42° 50′ N.; λ=100° 32′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	27.12	27.56	26.53	23.3	40.2	33.9	44.7	17.9	31.3	59	−2	16	20	19	74	44	54	0.091	0.105	0.101	0.09	0.07	1.0	3.9	5.0	6.0	5.3
February	27.27	27.60	26.83	12.4	28.7	25.0	34.5	6.4	20.4	61	−25	8	12	12	80	54	61	.069	.084	.081	.19	.07	2.4	4.4	4.2	3.8	4.5
March	27.25	27.67	26.70	27.2	39.4	39.7	45.8	24.2	35.0	73	4	23	26	27	84	62	65	.126	.144	.152	2.87	2.27	22.3	5.7	6.3	6.8	6.3
April	27.18	27.64	26.63	36.8	52.7	52.8	58.3	34.0	46.2	82	18	31	31	32	79	48	51	.178	.183	.193	2.25	1.09	.9	5.7	5.7	6.7	6.1
May	27.18	27.52	26.40	48.1	61.3	61.3	65.8	44.8	55.3	92	32	42	41	42	81	53	57	.268	.262	.280	4.74	1.25	.3	5.6	6.8	6.2	6.5
June	27.24	27.77	26.93	66.8	86.0	86.1	91.0	63.4	77.2	102	51	53	51	50	61	32	32	.406	.391	.373	1.10	.50	.0	3.1	2.6	4.9	3.2
July	27.29	27.61	27.02	67.6	85.7	84.1	91.9	63.6	77.8	108	51	56	55	54	69	39	41	.459	.444	.437	2.43	1.02	.0	4.7	3.2	4.1	3.9
August	27.33	27.58	27.09	60.9	77.7	75.5	81.7	57.9	69.8	98	46	53	52	54	78	46	52	.415	.402	.424	2.88	1.13	.0	4.5	4.8	5.1	5.1
September	27.20	27.59	26.72	55.4	75.4	74.2	81.6	52.8	67.2	99	37	47	47	47	76	41	42	.346	.354	.347	.37	.16	.0	3.7	3.7	3.2	3.7
October	27.32	27.73	26.86	38.5	66.9	57.5	67.3	35.8	51.6	87	16	28	30	30	66	34	37	.157	.173	.169	.05	.05	.0	2.6	3.4	3.5	3.5
November	27.36	27.69	26.90	31.9	46.7	41.9	52.1	25.9	39.0	71	8	23	25	24	71	46	52	.126	.136	.130	.24	.13	1.7	4.1	5.3	5.5	5.0
December	27.27	27.80	26.67	24.5	35.3	30.0	42.4	17.3	29.8	70	−10	17	20	19	74	55	64	.101	.111	.107	.53	.39	2.2	4.3	6.7	7.2	6.4
Year	27.25	27.80	26.40	41.1	57.5	55.2	63.1	37.0	50.0	108	−25	33	34	34	74	46	51	.228	.232	.233	17.74	2.27	30.8	4.4	4.8	5.2	5.0

VICKSBURG, MISS.

[ϕ=32° 22′ N.; λ=90° 53′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
January	29.84	30.34	29.36	49.1	58.5	58.1	63.3	47.0	55.2	77	27	43	47	46	81	68	67	0.309	0.360	0.343	2.63	0.69	0.0	7.0	6.7	5.9	6.7
February	29.87	30.43	29.34	46.0	52.8	51.8	58.4	42.1	50.2	78	14	41	42	42	83	69	72	.290	.304	.303	8.06	4.74	.3	7.5	7.7	6.1	7.4
March	29.78	30.12	29.31	51.6	63.7	63.5	68.8	49.8	59.3	84	36	43	42	45	74	48	53	.309	.295	.329	5.03	2.00	.0	6.1	4.6	5.5	5.8
April	29.64	30.01	29.40	57.7	69.1	68.1	73.4	55.3	64.4	86	40	53	55	54	84	63	65	.422	.432	.460	6.87	2.46	.0	6.6	5.6	5.8	5.9
May	29.66	29.89	29.19	70.8	81.4	79.8	85.1	68.5	76.8	90	57	65	64	66	83	58	64	.631	.615	.653	3.66	1.72	.0	4.9	5.1	4.5	5.1
June	29.75	29.99	29.53	72.9	84.0	82.5	87.8	69.6	78.7	97	59	62	63	64	72	51	56	.588	.598	.626	1.96	.97	.0	3.3	3.2	3.2	3.4
July	29.71	29.90	29.48	75.7	84.4	81.6	88.0	73.2	80.6	95	69	71	72	72	86	67	74	.760	.780	.790	7.06	4.40	.0	6.5	7.3	8.0	7.5
August	29.72	29.90	29.51	74.3	85.5	82.4	89.4	71.8	80.6	94	67	70	70	72	86	61	71	.729	.740	.775	2.64	.88	.0	3.4	5.8	4.8	5.5
September	29.76	29.84	29.54	73.7	87.5	82.8	90.4	71.8	81.1	95	60	68	68	70	84	53	65	.700	.690	.729	1.52	.91	.0	2.9	4.4	3.7	4.0
October	29.80	30.00	29.56	58.7	73.3	70.0	76.7	57.6	67.2	86	40	54	54	57	84	53	64	.426	.443	.480	.55	.28	.0	4.2	4.4	4.4	4.6
November	29.89	30.31	29.57	50.7	64.2	60.4	67.8	48.8	58.3	79	38	43	43	44	76	50	58	.303	.316	.317	1.24	.88	.0	4.1	4.1	3.5	4.4
December	29.85	30.24	29.48	51.8	62.3	62.2	68.1	49.6	58.8	79	27	48	49	48	86	64	60	.357	.380	.356	4.97	2.43	.0	5.7	5.8	4.2	5.6
Year	29.77	30.43	29.19	61.1	72.2	70.3	76.4	58.8	67.6	97	14	55	56	57	82	59	64	.485	.496	.513	46.19	4.74	.3	5.2	5.4	5.0	5.5

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

TOPEKA, KANS.

[H_b=— ft.; h_t=65 ft.; h_r=61 ft.; h_a=87 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	9.9	SW.	28	N.	0	2	1	1	5	4	10	4	4	0	18	11	2	3	2	2	1	0	4	3	1	0	19	0	0
February	9.5	N.	32	NW.	1	4	0	2	1	5	5	6	5	0	14	10	4	4	3	6	4	0	4	0	7	0	20	0	0
March	11.9	SE.	32	NW.	1	4	2	4	7	5	2	2	5	0	11	10	10	8	5	5	3	0	0	0	2	0	12	3	0
April	10.9	NW.	26	SW.	0	1	3	6	2	3	4	5	6	0	13	10	7	8	7	2	1	2	1	0	0	0	1	5	0
May	9.6	S.	26	SW.	0	6	4	2	0	8	3	5	3	0	14	7	10	12	10	0	0	0	2	0	0	3	0	9	0
June	9.4	S.	38	NW.	1	1	2	1	5	12	7	1	0	1	19	9	2	6	4	0	0	0	0	0	0	25	0	7	0
July	8.6	S.	27	SW.	0	2	6	6	3	8	2	2	2	0	16	12	3	8	5	0	0	0	0	0	0	20	0	5	0
August	7.9	S.	30	S.	0	4	6	4	4	6	3	3	1	0	9	13	9	11	8	0	0	1	1	0	0	12	0	11	0
September	8.8	S.	31	S.	0	2	3	3	5	10	4	3	0	0	17	8	5	6	6	0	0	0	3	1	0	11	0	7	0
October	8.9	S.	26	NW.	0	3	1	3	3	10	0	7	4	0	18	8	5	4	3	0	0	1	5	2	0	0	1	1	0
November	10.2	NW.	36	NW.	1	4	2	2	1	2	7	8	4	0	18	6	6	3	2	0	0	0	0	0	0	0	11	1	0
December	9.1	S.	27	NW.	0	3	2	3	4	5	5	5	4	0	19	5	7	4	3	2	0	0	4	3	5	0	21	1	0
Year	9.6	S.	38	NW.	4	36	32	37	40	78	52	51	38	1	186	109	70	77	58	17	9	4	24	9	15	71	85	50	0

TRENTON, N.J.

[H_b=190 ft.; h_t=88 ft.; h_r=83 ft.; h_a=106 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.8	NW.	37	NW.	3	9	7	1	3	16	4	5	16	1	9	6	16	9	8	4	0	0	5	3	2	0	14	0	0
February	10.9	NW.	37	W.	5	5	2	1	4	9	4	14	16	1	12	5	11	8	8	7	2	0	8	0	6	0	22	0	0
March	11.4	NW.	34	W.	2	3	9	3	3	6	6	8	23	0	6	9	16	15	12	7	5	0	8	0	1	0	11	2	0
April	10.5	S.	32	W.	1	4	12	4	10	9	7	6	8	0	8	9	13	12	11	1	0	1	11	0	0	0	1	4	0
May	8.4	S.	32	NW.	1	7	7	2	8	13	12	5	8	0	5	14	12	15	13	0	0	1	12	1	0	1	0	7	0
June	8.8	S.	32	NW.	1	9	4	4	5	16	6	6	10	0	10	15	5	11	6	0	0	0	5	1	0	7	0	8	0
July	8.0	S.	24	NE.	0	9	3	3	11	14	11	7	4	0	10	13	8	10	8	0	0	0	4	1	0	8	0	6	0
August	8.8	N.	34	SE.	1	16	9	4	12	9	6	4	1	1	6	12	13	16	13	0	0	0	10	3	0	3	0	5	0
September	8.7	W.	26	SW.	0	4	10	1	4	11	8	13	8	1	5	14	11	13	11	0	0	0	11	0	0	0	0	3	0
October	8.2	N.	29	NW.	0	17	6	3	2	9	11	5	9	0	17	9	5	8	4	0	0	0	9	1	0	0	2	0	0
November	9.6	W.	24	S.	0	9	2	1	1	13	8	13	12	1	9	9	12	8	6	8	2	0	7	3	1	0	15	0	0
December	9.1	NW.	34	NW.	1	10	8	3	1	7	7	13	13	0	7	9	15	11	10	6	4	0	11	3	9	0	19	0	0
Year	9.4	S.	37	NW.	15	102	79	30	64	132	90	99	129	5	104	124	137	136	110	33	13	2	101	16	19	19	84	35	0

VALENTINE, NEBR.

[H_b=2,598 ft.; h_t=47 ft.; h_r=36 ft.; h_a=54 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	10.0	W.	38	NW.	3	4	2	1	3	4	7	29	11	1	9	13	9	4	1	8	4	0	2	1	1	0	31	0	0
February	9.7	W.	32	NW.	1	12	2	1	3	2	2	23	9	2	11	10	7	5	3	7	5	0	1	0	10	0	28	0	0
March	9.7	N.	32	NW.	1	6	7	12	6	7	4	9	11	0	8	8	15	7	4	8	6	0	6	3	4	0	24	1	0
April	12.0	NW.	35	SE.	2	9	4	8	9	4	2	10	14	0	7	10	13	9	6	6	3	1	2	0	0	0	15	3	0
May	10.4	W.	56	SW.	2	11	5	11	9	3	3	11	8	1	6	10	15	14	13	1	1	1	9	1	0	1	0	3	0
June	10.1	S.	40	SW.	1	4	5	4	3	19	13	7	4	1	17	13	0	6	6	0	0	1	0	0	0	20	0	10	0
July	9.6	S.	34	NE.	4	9	5	8	13	8	7	8	2	2	17	9	5	10	7	0	0	1	2	0	0	19	0	11	0
August	8.7	S.	27	SW.	0	7	8	13	6	14	3	7	2	2	10	12	9	14	12	0	0	2	3	2	0	7	0	10	0
September	9.0	W.	31	SW.	0	7	2	6	3	11	8	10	6	1	16	7	7	4	3	0	0	0	0	0	0	8	0	1	0
October	9.9	W.	37	S.	1	12	3	6	1	10	6	15	8	1	18	9	4	2	1	0	0	0	0	0	0	0	11	0	0
November	10.4	W.	37	NW.	3	7	2	5	0	2	6	23	12	3	12	8	10	4	3	3	2	0	0	0	1	0	23	0	0
December	8.8	W.	38	NW.	1	6	6	8	4	5	4	21	8	0	6	11	14	3	2	9	1	0	3	0	7	0	26	0	1
Year	9.9	W.	56	SW.	19	94	51	83	60	89	65	179	95	14	137	120	108	82	61	42	22	6	28	7	23	55	158	39	1

VICKSBURG, MISS.

[H_b=247 ft.; h_t=65 ft.; h_r=58 ft.; h_a=73 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.1	S.	25	W.	0	8	9	6	14	13	5	2	5	0	8	4	19	8	7	0	0	0	4	2	0	0	3	1	0
February	8.4	SE.	24	W.	0	10	10	4	13	8	3	1	7	0	5	6	17	18	15	1	1	0	4	2	0	0	5	2	0
March	9.3	S.	32	W.	1	5	8	7	11	14	7	6	4	0	8	12	11	9	6	0	0	1	1	0	0	0	0	6	0
April	8.1	SE.	30	W.	0	6	4	6	18	6	8	7	5	0	9	7	14	14	12	0	0	1	4	0	0	0	0	11	0
May	7.5	S.	22	SE.	0	3	6	5	18	14	4	6	6	0	10	12	9	4	4	0	0	0	2	1	0	1	0	6	0
June	6.6	SW.	22	NW.	0	11	10	5	8	10	10	2	4	0	17	6	7	4	4	0	0	0	1	0	0	10	0	7	0
July	6.9	SW.	18	W.	0	3	4	13	11	12	13	4	1	1	2	12	17	13	11	0	0	0	0	0	0	17	0	16	0
August	5.4	W.	21	NW.	0	8	8	9	9	7	10	7	3	1	6	18	7	9	7	0	0	0	2	0	0	16	0	8	0
September	5.5	SE.	20	SE.	0	11	6	5	13	7	4	4	7	3	14	11	5	6	5	0	0	0	2	1	0	17	0	7	0
October	6.5	N.	21	NW.	0	24	12	11	6	5	1	0	3	0	12	12	7	6	4	0	0	0	6	2	0	0	0	5	0
November	7.1	N.	21	NW.	0	14	6	6	6	13	6	2	7	0	15	4	11	7	4	0	0	0	4	3	0	0	0	2	0
December	8.2	S.	24	S.	0	9	5	2	12	24	3	3	4	0	10	8	13	9	7	0	0	0	4	2	0	0	1	4	0
Year	7.3	S.	32	W.	1	112	88	79	139	133	74	44	56	5	116	112	137	107	86	1	1	2	34	13	0	61	9	75	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

WALLA WALLA, WASH.

[ϕ=46°02′ N.; λ=118°20′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	28.82	29.49	28.41	37.7	41.4	40.4	45.4	32.8	39.1	61	13	26	28	28	62	58	62	0.142	0.154	0.158	1.28	0.39	1.5	7.3	7.7	7.5	7.8
February	29.10	29.71	28.62	28.6	34.3	34.4	38.6	24.9	31.8	59	−3	18	20	22	66	56	59	.108	.116	.128	1.73	.64	12.9	7.2	8.0	7.1	7.2
March	28.96	29.52	28.42	40.8	49.7	51.3	54.2	37.5	45.8	64	26	31	32	31	68	52	48	.174	.184	.177	1.32	.31	T	6.5	7.3	8.1	7.2
April	28.94	29.40	28.42	44.9	57.0	61.3	63.1	42.2	52.6	80	32	32	31	30	60	39	33	.178	.174	.172	1.27	1.01	.01	5.2	5.5	4.9	5.0
May	28.90	29.21	28.58	47.8	60.6	63.7	66.4	46.0	56.2	86	36	38	37	37	69	44	39	.230	.228	.224	2.13	.78	.0	5.5	6.0	6.1	5.6
June	28.87	29.21	28.57	57.5	72.6	77.7	79.7	56.3	68.0	100	45	44	45	44	61	39	32	.288	.303	.296	.42	.29	.0	5.7	4.1	4.0	4.5
July	28.88	29.21	28.54	64.3	82.1	88.8	90.5	62.8	76.6	104	54	43	42	41	48	26	20	.284	.277	.262	.04	.03	.0	1.2	1.6	1.6	1.6
August	28.86	29.11	28.66	64.4	80.9	86.9	88.7	61.7	75.2	103	51	43	45	43	47	32	25	.278	.302	.287	.15	.13	.0	2.8	2.6	2.6	2.6
September	28.84	29.21	28.53	53.9	67.8	70.2	72.9	51.1	62.0	88	39	43	42	42	67	40	39	.277	.270	.271	1.27	.25	.0	5.1	4.2	4.5	4.5
October	28.95	29.28	28.33	52.2	63.5	65.4	68.9	48.6	58.8	81	37	39	40	42	62	45	46	.245	.256	.275	2.05	.76	.0	3.5	5.0	5.1	5.0
November	29.22	29.60	28.59	41.0	46.9	46.3	49.6	38.0	43.8	69	30	36	37	39	84	71	76	.218	.226	.238	1.08	.64	T	5.0	7.0	7.4	7.6
December	28.85	29.22	28.29	42.4	46.4	45.2	50.6	38.3	44.4	70	22	34	34	35	73	66	68	.197	.203	.208	3.48	.75	13.6	8.4	8.4	9.7	9.2
Year	28.93	29.71	28.29	48.0	58.6	61.0	64.0	45.0	54.5	104	−3	36	36	36	64	47	46	.218	.224	.225	16.22	1.01	28.1	5.3	5.6	5.7	5.6

WASHINGTON, D.C.

[ϕ=38°54′ N.; λ=77°03′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.94	30.53	29.15	37.3	45.1	44.8	50.8	34.5	42.6	68	20	29	29	31	73	56	59	0.168	0.167	0.182	3.25	1.75	T	6.1	5.2	4.9	6.0
February	29.95	30.63	29.29	33.3	41.5	39.1	46.5	30.2	38.4	68	14	22	23	22	65	49	51	.134	.132	.126	2.63	.58	8.3	6.2	5.1	4.8	5.2
March	29.87	30.37	29.08	38.6	45.7	44.4	50.7	35.2	43.0	74	20	28	26	28	66	50	55	.168	.161	.171	3.24	1.00	1.0	6.5	6.6	5.1	6.1
April	29.85	30.28	29.33	49.7	60.1	58.2	65.6	45.8	55.7	83	33	40	37	39	69	47	51	.258	.243	.254	4.67	1.41	.0	5.2	5.0	5.5	4.7
May	29.84	30.17	29.46	63.1	71.3	67.5	76.1	58.2	67.2	91	47	55	55	56	76	60	68	.451	.453	.462	6.26	1.21	.0	7.7	7.0	7.2	6.5
June	29.83	30.14	29.57	70.0	80.1	77.4	85.3	64.1	74.7	100	47	59	58	62	70	49	61	.537	.530	.593	3.88	1.15	.0	4.4	4.7	4.6	4.2
July	29.90	30.23	29.61	71.8	80.5	78.6	85.4	66.8	76.1	99	52	64	63	66	77	57	66	.603	.591	.648	6.71	2.76	.0	5.6	4.8	5.5	5.0
August	29.85	30.22	28.83	71.8	80.0	77.0	84.3	67.6	76.0	98	60	65	65	67	80	61	72	.628	.620	.669	9.91	6.40	.0	5.5	5.5	5.7	5.3
September	29.83	30.08	29.42	66.8	76.7	72.2	80.3	63.3	71.8	94	52	61	60	63	83	60	74	.550	.540	.592	2.62	.70	.0	5.4	4.9	4.1	5.2
October	30.01	30.38	29.49	50.2	62.1	57.1	66.9	46.1	56.5	86	31	44	45	48	79	55	72	.296	.317	.353	2.56	1.13	.0	4.4	3.3	2.3	4.1
November	29.91	30.51	29.22	39.2	48.2	46.2	53.0	37.0	45.0	75	17	30	30	31	69	50	55	.179	.193	.188	.95	.64	.5	5.7	5.0	4.7	5.6
December	30.03	30.81	29.48	34.9	40.5	39.9	46.8	30.3	38.6	69	8	26	27	27	71	58	61	.159	.163	.169	2.43	1.16	3.0	6.7	6.2	5.0	6.4
Year	29.90	30.81	28.83	52.2	61.0	58.5	66.0	48.3	57.1	100	8	44	43	45	73	54	62	.344	.342	.367	49.11	6.40	12.8	5.8	5.3	5.0	5.4

WICHITA, KANS.

[ϕ=37°41′ N.; λ=97°20′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	28.50	28.99	27.91	34.7	46.9	47.1	53.2	31.8	42.5	65	21	26	26	26	71	46	44	0.148	0.150	0.143	0.10	0.10	0.0	2.2	5.4	4.3	4.2
February	28.64	29.12	28.11	25.7	38.8	39.3	45.3	21.8	33.6	73	−12	16	15	15	69	44	42	.100	.096	.090	.34	.20	3.5	4.1	5.1	4.3	4.8
March	28.52	28.98	27.98	40.5	54.1	52.6	58.5	36.7	47.6	82	18	31	30	31	69	42	49	.186	.182	.194	1.72	1.60	.9	5.8	5.3	5.1	5.7
April	28.41	28.77	27.81	48.1	63.7	64.1	69.3	45.7	57.5	87	31	36	33	33	66	34	35	.237	.211	.212	.86	.80	.0	3.7	3.8	3.9	4.1
May	28.41	28.73	27.91	58.8	73.5	74.4	78.5	57.0	67.8	97	40	51	49	49	77	46	44	.387	.365	.361	2.29	1.04	.0	4.7	4.7	4.5	4.8
June	28.52	28.93	28.25	72.3	89.7	91.4	95.7	69.6	82.6	109	55	55	51	50	56	28	26	.451	.392	.375	.83	.47	.0	3.7	3.9	4.1	3.7
July	28.52	28.78	28.28	73.2	88.1	89.1	93.3	71.7	82.5	105	62	64	62	62	75	43	42	.610	.569	.558	2.34	1.23	.0	4.7	3.3	3.5	3.9
August	28.54	28.73	28.34	69.9	83.9	82.5	87.9	68.4	78.2	104	57	64	62	63	82	51	55	.601	.561	.582	8.50	3.93	.0	5.5	5.6	4.7	5.4
September	28.47	28.76	28.22	68.8	80.2	79.4	85.6	66.3	76.0	96	48	63	62	62	82	57	58	.584	.570	.565	1.39	1.03	.0	4.1	4.9	3.3	3.8
October	28.62	28.97	28.30	51.4	66.6	64.9	70.5	49.6	60.0	84	35	42	42	42	72	42	45	.288	.284	.289	.74	.70	.0	4.2	4.1	3.7	4.1
November	28.66	29.02	28.19	41.4	55.1	53.3	60.0	39.0	49.5	78	23	32	33	32	69	45	48	.186	.199	.194	.85	.75	T	4.0	3.0	2.6	3.5
December	28.60	29.12	28.08	33.4	44.8	44.5	50.6	30.7	40.6	69	10	26	28	29	74	53	55	.152	.162	.171	1.85	.93	.0	5.8	5.7	4.3	5.2
Year	28.53	29.12	27.81	51.5	65.4	65.2	70.7	49.0	59.9	109	−12	42	41	41	72	44	45	.328	.312	.311	21.81	3.93	4.4	4.4	4.6	4.0	4.4

WILLISTON, N.DAK.

[ϕ=48°09′ N.; λ=103°35′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	27.78	28.29	27.25	10.8	18.3	17.8	25.8	3.9	14.8	49	−15	7	11	12	82	73	76	0.064	0.076	0.077	0.49	0.26	5.1	5.0	5.7	5.8	5.9
February	27.95	28.51	27.46	5.0	13.6	13.4	20.5	−.4	10.0	44	−35	1	5	5	81	66	68	.058	.068	.070	.61	.22	5.9	2.8	4.0	5.5	4.5
March	28.00	28.43	27.41	26.0	35.6	35.8	40.7	23.1	31.9	69	−3	21	23	23	80	61	62	.117	.126	.127	.29	.17	2.2	4.8	4.0	4.9	4.8
April	27.95	28.63	27.36	32.6	44.6	46.4	49.8	30.7	40.2	70	16	28	30	30	80	58	57	.153	.165	.171	1.20	.47	7.0	5.6	4.7	4.3	4.9
May	27.89	28.19	27.37	47.5	61.5	61.0	65.6	44.7	55.2	93	31	40	39	41	77	48	52	.259	.256	.271	3.52	1.60	.0	4.9	5.0	6.4	5.2
June	27.91	28.52	27.58	62.1	77.6	79.9	82.8	58.1	70.4	100	47	53	51	50	73	41	37	.410	.387	.371	1.60	.54	.0	4.1	2.4	2.3	3.0
July	27.96	28.29	27.68	63.5	80.6	84.1	87.0	59.4	73.2	103	48	51	50	47	66	38	31	.386	.377	.339	2.57	.89	.0	3.7	2.2	1.8	2.7
August	27.99	28.31	27.61	58.8	77.2	79.3	82.6	56.8	69.6	99	44	48	48	48	69	39	37	.339	.347	.342	.41	.17	.0	3.5	3.1	3.9	3.8
September	27.84	28.18	27.44	48.9	68.0	67.3	72.7	46.8	59.8	96	32	41	40	40	75	39	40	.263	.264	.264	.93	.91	.0	3.6	3.4	2.8	3.4
October	28.02	28.51	27.48	34.0	48.7	46.1	52.8	30.9	41.8	82	18	28	30	30	77	55	58	.150	.172	.165	1.05	.34	4.1	4.7	4.1	5.1	4.9
November	28.06	28.60	27.46	28.4	34.9	32.1	40.1	23.9	32.0	57	3	24	26	25	83	68	73	.133	.142	.136	.66	.44	6.2	5.1	3.8	5.7	5.2
December	28.01	28.54	27.52	8.3	10.4	8.8	18.4	−.7	8.8	49	−26	4	4	4	82	76	78	.062	.060	.061	2.11	.53	21.2	6.0	6.1	5.0	6.2
Year	27.95	28.63	27.25	35.5	47.6	47.7	53.2	31.4	42.3	103	−35	29	30	30	77	55	56	.209	.203	.200	15.44	1.60	51.7	4.5	4.0	4.5	4.5

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

WALLA WALLA, WASH.

[H_b=991 ft.; h_t=57 ft.; h_r=50 ft.; h_a=65 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	8.1	S.	30	W.	0	0	1	1	4	31	13	11	1	0	1	12	18	13	7	12	5	0	0	1	4	0	11	0	0
February	6.9	S.	26	W.	0	2	1	1	8	18	11	10	5	0	4	9	15	9	8	10	5	0	1	0	8	0	15	0	0
March	6.7	S.	32	W.	1	3	2	2	7	18	13	14	3	0	2	14	15	13	7	3	1	0	2	0	0	0	3	1	0
April	6.4	S.	24	SW.	0	5	4	2	5	21	9	10	3	1	11	8	11	7	6	2	1	1	0	0	0	0	1	0	0
May	6.3	S.	21	W.	0	4	3	3	8	22	8	9	5	0	9	11	11	13	10	0	0	2	0	0	0	0	0	1	0
June	6.1	S.	18	W.	0	3	3	3	2	26	9	14	0	0	14	8	8	6	3	0	0	0	0	0	0	4	0	1	0
July	5.8	S.	22	W.	0	3	3	1	4	24	7	16	3	1	24	7	0	2	0	0	0	0	0	0	0	14	0	3	0
August	5.7	S.	16	W.	0	8	4	2	8	21	5	11	1	2	21	6	4	3	1	0	0	0	0	0	0	16	0	0	0
September	5.9	S.	23	W.	0	3	0	2	3	24	8	17	3	0	11	12	7	10	8	0	0	0	0	0	0	0	0	4	0
October	5.6	S.	25	SW.	0	1	3	1	10	20	14	9	3	1	13	6	12	8	7	0	0	0	0	0	0	0	0	0	0
November	4.3	S.	18	W.	0	4	3	4	6	17	6	11	9	0	5	6	19	8	6	1	0	0	7	4	0	0	5	0	0
December	7.9	S.	32	S.	1	1	3	2	8	25	14	6	2	1	0	5	26	22	19	6	4	1	7	1	4	0	10	0	0
Year	6.3	S.	32	S.	2	37	30	24	73	267	117	138	38	6	115	104	146	114	82	34	16	4	17	6	16	34	45	10	0

WASHINGTON, D.C.

[H_b=112 ft.; h_t=62 ft.; h_r=42 ft.; h_a=85 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.6	NW.	30	N.	0	9	4	5	0	14	7	4	18	1	10	7	14	9	6	2	1	0	8	2	0	0	11	0	0
February	8.9	NW.	32	N.	2	5	3	2	2	9	10	7	17	1	13	6	9	12	11	5	4	0	11	1	3	0	15	0	0
March	9.1	NW.	32	NW.	2	5	6	3	2	12	3	3	25	3	11	5	15	13	11	2	1	0	10	0	0	0	7	3	0
April	8.3	S.	25	NW.	0	5	5	11	4	14	7	2	11	1	13	11	6	12	10	0	0	0	2	0	0	0	0	2	0
May	6.3	S.	27	NW.	0	9	6	7	2	18	6	3	10	1	4	13	14	18	16	0	0	1	6	0	0	2	0	12	0
June	6.0	NW.	30	NW.	0	7	8	1	5	6	12	8	10	3	14	11	5	12	11	0	0	0	2	0	0	12	0	11	0
July	5.8	S.	31	NW.	0	2	7	9	3	10	12	2	10	7	14	7	10	10	9	0	0	0	6	0	0	10	0	6	0
August	6.2	S.	35	NE.	1	11	7	5	3	13	9	3	4	7	12	9	10	14	9	0	0	0	6	1	0	6	0	4	0
September	5.6	NW.	21	NW.	0	5	7	3	4	9	4	3	11	14	12	10	8	13	12	0	0	0	12	0	0	3	0	3	1
October	5.5	N.	25	NW.	0	13	7	1	1	7	8	3	7	15	18	5	8	7	4	0	0	0	11	0	0	0	1	1	0
November	7.6	NW.	27	NW.	0	6	6	1	1	10	14	3	18	1	11	7	12	8	5	2	1	0	10	1	1	0	7	0	0
December	6.9	NW.	32	NW.	1	3	2	6	1	10	12	4	20	4	9	8	14	13	8	3	3	0	13	1	6	0	16	0	0
Year	7.0	NW.	35	NE.	6	80	68	54	28	132	104	45	161	58	141	99	125	141	112	14	10	1	97	6	10	33	57	42	1

WICHITA, KANS.

[H_b=1,358 ft.; h_t=85 ft.; h_r=78 ft.; h_a=93 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	11.5	SW.	35	SW.	3	10	3	3	6	17	12	3	7	1	14	10	7	2	1	0	0	0	2	1	1	0	18	0	0
February	10.9	N.	32	S.	1	13	6	2	9	11	5	4	6	0	12	6	10	4	2	7	4	0	1	1	6	0	20	0	0
March	13.0	S.	32	SW.	1	6	6	6	11	10	8	3	12	0	7	13	11	4	3	2	1	1	1	0	0	0	10	3	0
April	12.7	N.	37	SW.	3	16	5	7	7	12	4	4	5	0	17	8	5	3	2	0	0	0	0	0	0	0	2	2	0
May	11.7	S.	38	SW.	2	10	9	5	7	18	7	1	5	0	12	10	9	7	6	0	0	0	3	0	0	3	0	5	0
June	12.3	S.	43	W.	1	1	4	5	6	30	12	1	1	0	15	10	5	5	5	0	0	0	0	0	0	23	0	7	0
July	10.6	S.	30	N.	0	4	15	11	10	19	3	0	0	0	15	11	5	3	3	0	0	0	0	0	0	20	0	7	0
August	9.7	S.	28	S.	0	6	11	7	17	14	5	0	2	0	10	13	8	12	11	0	0	0	5	1	0	12	0	11	0
September	10.7	S.	32	SW.	1	7	6	3	12	22	9	0	1	0	18	5	7	6	5	0	0	0	2	1	0	11	0	5	1
October	10.3	S.	27	NE.	0	9	10	7	8	16	6	1	5	0	15	10	6	3	2	0	0	0	2	1	0	0	0	3	0
November	10.8	SW.	29	S.	0	11	5	6	7	7	14	2	8	0	18	5	7	4	2	1	0	0	3	1	0	0	4	0	0
December	10.7	SW.	28	SW.	0	13	7	7	3	15	10	5	2	0	13	8	10	4	3	0	0	0	5	1	3	0	15	0	0
Year	11.2	S.	43	W.	12	106	87	69	103	191	95	24	54	1	166	109	90	57	45	10	5	1	24	7	10	69	69	43	1

WILLISTON, N.DAK.

[H_b=1,878 ft.; h_t=41 ft.; h_r=33 ft.; h_a=48 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.3	SW.	38	W.	2	9	9	2	4	11	14	7	5	1	9	8	14	8	4	17	8	0	2	1	21	0	31	0	1
February	9.6	W.	35	W.	1	6	1	3	6	6	13	10	11	0	12	10	6	5	4	7	5	0	2	2	19	0	28	0	2
March	8.4	SE.	40	W.	1	7	5	6	15	10	4	5	10	0	12	11	8	4	3	9	3	0	1	1	6	0	28	0	0
April	10.9	NE.	27	N.	0	8	12	10	8	4	6	5	7	0	12	10	8	6	5	5	3	0	1	0	2	0	15	0	0
May	9.6	SE.	31	NW.	0	6	5	10	15	7	2	6	11	0	11	11	9	11	10	0	0	1	2	1	0	1	1	4	0
June	7.3	SE.	32	E.	1	5	10	5	8	9	7	10	6	0	18	9	3	8	5	0	0	0	0	0	0	6	0	11	0
July	7.7	SE.	32	NW.	1	5	9	6	14	7	6	6	8	1	21	10	0	10	6	0	0	1	0	0	0	14	0	10	0
August	7.1	SE.	36	W.	1	6	11	5	15	4	6	8	5	2	18	7	6	7	4	0	0	0	0	0	0	7	0	4	0
September	10.1	W.	38	NW.	3	4	6	3	11	4	8	14	9	1	17	8	5	2	1	0	0	0	1	1	0	2	0	6	0
October	8.4	SE.	38	W.	2	7	11	6	8	5	7	5	12	1	14	6	11	7	6	5	4	0	0	0	3	0	18	0	2
November	9.6	W.	46	NW.	2	2	3	4	2	5	14	17	13	0	11	9	10	8	2	11	6	0	0	0	8	0	25	0	1
December	7.3	SW.	25	NW.	0	4	8	7	10	6	9	6	8	2	7	9	15	13	10	15	13	0	0	0	23	0	31	0	0
Year	8.6	SE.	46	NW.	14	69	90	67	116	78	96	99	105	8	162	108	95	89	60	69	42	2	6	6	82	30	177	29	12

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

WILMINGTON, N.C.

[ϕ=34°14′ N.; λ=77°57′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	30.02	30.49	29.20	48.2	58.5	53.1	62.3	44.8	53.6	74	31	43	44	45	83	60	74	0.301	0.312	0.313	2.22	0.91	T	5.7	5.4	4.6	5.5
February	30.05	30.62	29.54	46.4	54.9	51.6	60.2	40.9	50.6	74	21	39	40	42	76	61	71	.273	.285	.291	5.83	1.58	0.0	5.6	6.6	5.3	6.7
March	29.99	30.34	29.37	49.2	60.3	55.8	64.5	45.0	54.8	81	31	41	38	40	74	46	58	.285	.267	.276	2.88	1.49	.0	4.1	3.1	2.6	3.5
April	29.89	30.24	29.48	59.2	68.0	62.7	71.2	53.9	62.6	79	44	51	48	53	76	52	72	.392	.355	.411	4.50	2.68	.0	4.4	5.3	6.3	5.2
May	29.92	30.19	29.56	71.3	79.6	73.9	83.1	65.5	74.3	94	53	65	63	66	80	58	78	.622	.583	.653	3.34	1.65	.0	3.6	3.4	3.4	4.0
June	29.91	30.17	29.69	74.1	83.9	76.6	86.9	68.1	77.5	98	51	65	63	66	75	52	72	.650	.612	.668	1.61	.67	.0	3.8	3.7	4.6	4.4
July	29.97	30.19	29.72	75.5	82.4	76.9	85.5	69.9	77.7	92	58	70	70	70	84	67	82	.753	.737	.762	7.63	2.56	.0	4.8	5.5	4.9	5.5
August	29.91	30.15	29.33	76.6	83.8	77.8	86.2	72.1	79.2	94	67	72	73	74	87	71	87	.798	.810	.832	6.45	1.00	.0	4.8	6.5	6.2	6.2
September	29.89	30.11	29.41	75.0	84.1	78.2	86.6	71.2	78.9	93	60	70	68	72	85	60	82	.752	.712	.798	8.27	6.43	.0	3.3	4.0	2.7	3.9
October	30.02	30.34	29.63	60.1	72.3	66.2	75.2	56.4	65.8	87	42	54	55	58	82	56	76	.444	.451	.498	.07	.03	.0	3.5	4.3	2.8	4.4
November	30.02	30.56	29.54	48.0	60.5	54.4	64.1	44.9	54.5	79	20	41	40	44	78	49	69	.287	.278	.311	.38	.29	.0	3.3	3.3	3.0	3.3
December	30.01	30.64	29.62	47.5	60.0	53.5	64.4	43.9	54.2	77	20	41	43	44	79	55	72	.287	.305	.311	.19	.13	.0	5.7	4.5	3.1	4.8
Year	29.97	30.64	29.20	60.9	70.7	65.1	74.2	56.4	65.3	98	20	54	54	56	80	57	74	.487	.476	.510	43.37	6.43	T	4.4	4.6	4.1	4.8

WINNEMUCCA, NEV.

[ϕ=40°58′ N.; λ=117°43′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	25.56	26.14	25.09	20.2	32.7	31.7	37.7	14.5	26.1	55	3	18	22	23	89	64	70	0.095	0.115	0.121	1.14	0.41	15.4	5.2	6.3	5.8	5.8
February	25.74	26.06	25.40	10.4	27.8	28.2	34.0	1.7	17.8	53	−26	8	16	17	88	59	61	.067	.089	.097	.64	.17	9.2	4.1	3.9	5.1	4.5
March	25.62	26.04	25.30	30.4	47.7	48.8	52.7	26.8	39.8	68	17	24	25	24	78	42	39	.128	.136	.129	.76	.68	5.8	5.3	6.8	6.4	6.3
April	25.56	25.97	25.13	33.0	55.9	56.9	61.1	30.3	45.7	75	12	23	23	22	66	29	28	.129	.131	.123	.27	.12	.7	3.4	4.1	4.8	3.8
May	25.55	25.80	25.26	37.4	59.1	60.1	64.3	35.9	50.1	91	27	28	27	26	70	32	31	.152	.147	.138	.50	.26	.2	4.8	5.6	6.0	5.2
June	25.56	25.83	25.30	52.5	80.5	80.9	85.4	50.5	68.0	100	42	31	32	29	46	18	16	.180	.179	.163	.02	.01	.0	3.0	2.4	3.8	2.6
July	25.59	25.75	25.40	58.8	90.3	91.5	95.5	57.0	76.2	103	49	34	38	35	40	17	15	.199	.229	.210	.06	.06	.0	1.0	1.5	1.4	1.2
August	25.61	25.77	25.41	53.4	85.1	85.3	90.1	50.6	70.4	104	36	32	35	31	45	18	15	.184	.206	.178	.09	.09	.0	.7	1.1	1.3	.9
September	25.55	25.76	25.26	42.8	74.7	74.6	79.6	39.3	59.4	92	31	26	30	29	52	23	22	.142	.171	.166	.34	.20	.0	1.3	1.2	1.5	1.3
October	25.68	26.03	25.08	39.0	71.0	68.5	75.5	34.7	55.1	86	22	21	28	27	48	22	24	.116	.154	.148	1.07	1.07	T	1.3	2.1	2.8	2.0
November	25.84	26.14	25.17	24.8	51.0	48.3	57.0	21.5	39.2	68	10	20	25	24	81	37	39	.104	.134	.129	.09	.09	1.2	2.1	1.8	2.1	2.2
December	25.66	25.97	25.19	28.8	44.9	41.1	49.9	23.9	36.9	63	7	22	26	26	77	48	54	.122	.140	.138	.69	.32	1.7	5.9	5.5	5.3	6.0
Year	25.63	26.14	25.08	36.0	60.1	59.7	65.2	32.2	48.7	104	−26	24	27	26	65	34	34	.135	.153	.145	5.67	1.07	34.2	3.2	3.5	3.9	3.5

WYTHEVILLE, VA.

[ϕ=36°56′ N.; λ=81°05′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	27.67	28.09	26.94	36.1	45.2	42.5	49.8	32.7	41.2	63	17	31	33	32	82	64	68	0.186	0.198	0.197	2.09	0.80	0.3	5.8	6.9	6.2	6.5
February	27.66	28.10	27.22	31.5	39.8	36.6	45.0	26.3	35.6	66	−1	26	26	25	79	61	64	.155	.158	.147	2.70	.73	5.0	5.7	7.0	5.1	6.2
March	27.60	27.95	27.00	36.7	46.0	43.8	51.1	32.2	41.6	71	18	29	29	30	73	53	60	.174	.176	.183	3.12	1.00	1.1	6.1	6.4	6.7	6.3
April	27.57	27.90	27.25	46.5	57.8	54.1	62.4	41.1	51.8	78	29	38	39	39	72	51	60	.234	.243	.244	3.34	.65	.0	5.6	5.6	5.3	5.5
May	27.64	27.91	27.29	61.3	71.2	66.0	75.2	54.2	64.7	86	45	55	55	55	80	58	69	.442	.442	.443	4.26	1.03	.0	6.2	5.7	5.7	5.6
June	27.68	27.90	27.51	66.5	77.4	72.3	81.7	57.8	69.8	94	38	58	55	57	74	49	61	.495	.460	.493	2.50	1.02	.0	3.6	4.2	4.8	3.9
July	27.71	27.98	27.49	66.8	77.8	72.5	82.1	60.2	71.2	92	45	61	59	61	81	54	69	.539	.510	.550	5.01	1.68	.0	4.8	5.5	5.5	5.4
August	27.68	27.94	27.34	65.5	75.7	70.0	79.2	60.4	69.8	89	50	61	60	62	86	60	75	.544	.520	.550	1.29	.23	.0	5.7	6.7	6.1	5.9
September	27.66	27.83	27.45	64.5	78.2	70.4	81.4	59.4	70.4	89	46	59	56	58	82	50	66	.511	.474	.497	.30	.19	.0	4.2	4.9	3.2	4.3
October	27.74	28.01	27.30	45.3	62.1	55.6	66.5	39.6	53.0	85	24	40	42	43	82	49	65	.259	.279	.292	1.17	.80	.0	3.6	3.9	3.1	3.7
November	27.64	28.05	27.10	36.5	47.5	42.3	51.0	32.6	41.8	74	11	29	31	31	74	54	65	.174	.188	.187	.86	.40	.4	5.1	5.4	4.7	5.4
December	27.71	28.14	27.35	36.7	45.1	42.3	51.2	32.4	41.8	66	12	31	32	33	79	59	70	.182	.192	.201	2.18	1.12	T	6.4	5.8	6.3	6.3
Year	27.66	28.14	26.94	49.5	60.4	55.6	64.7	44.1	54.4	94	−1	43	43	44	79	55	66	.325	.320	.332	28.82	1.68	6.8	5.2	5.7	5.2	5.4

YAKIMA, WASH.

[ϕ=46°36′ N.; λ=120°30′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	28.72	29.39	28.27	29.5	37.6	36.9	41.5	24.6	33.0	59	9	23	25	26	78	62	63	0.127	0.140	0.142	0.62	0.15	8.0	5.0	6.5	6.9	6.8
February	29.00	29.62	28.50	23.3	33.3	36.0	39.4	18.8	29.1	57	−9	16	18	20	72	52	51	.096	.106	.117	.38	.16	4.6	5.1	5.9	5.9	6.0
March	28.87	29.46	28.36	36.2	48.8	49.6	52.2	33.3	42.8	61	25	29	27	28	75	44	44	.161	.150	.158	.99	.40	.2	5.3	6.5	7.6	6.6
April	28.85	29.31	28.34	42.8	60.0	61.7	64.6	39.8	52.2	84	29	30	29	31	60	32	33	.164	.164	.174	.16	.09	T	3.4	4.3	4.9	4.1
May	28.80	29.10	28.46	45.3	62.0	63.3	66.1	43.7	54.9	82	33	36	34	35	72	36	36	.215	.200	.204	1.08	.41	.0	5.2	6.6	6.9	6.2
June	28.80	29.19	28.44	55.2	74.0	77.4	80.1	53.8	67.0	100	41	41	40	40	59	31	27	.259	.256	.252	.41	.37	.0	5.0	4.9	4.0	4.4
July	28.81	29.13	28.48	61.3	82.4	87.1	89.3	59.6	74.4	103	52	42	37	39	51	21	20	.276	.224	.242	.06	.05	.0	2.2	1.5	1.5	1.5
August	28.80	29.08	28.60	61.1	83.0	86.5	88.3	59.3	73.8	102	51	44	40	40	56	25	22	.297	.255	.252	.16	.11	.0	2.2	2.6	2.8	2.5
September	28.75	29.17	28.45	49.6	66.6	67.3	70.5	46.8	58.6	86	32	41	39	40	73	38	40	.259	.243	.254	.62	.46	.0	4.5	4.4	5.2	4.4
October	28.86	29.20	28.29	46.2	65.2	65.2	69.4	42.4	55.9	85	27	37	38	38	72	39	40	.228	.233	.238	.45	.25	.0	3.3	4.7	4.8	4.4
November	29.14	29.52	28.50	36.3	46.8	47.5	50.6	33.3	42.0	72	21	33	35	36	88	66	66	.190	.208	.214	.21	.16	.0	5.7	7.2	6.6	7.1
December	28.75	29.18	28.23	34.9	41.8	41.6	45.2	31.7	38.4	65	22	31	34	34	87	74	75	.178	.198	.199	2.18	.68	7.5	7.4	8.5	8.3	8.5
Year	28.85	29.62	28.23	43.5	58.5	60.0	63.1	40.6	51.8	103	−9	34	33	34	70	42	43	.204	.198	.204	7.32	.68	20.3	4.5	5.3	5.4	5.2

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

WILMINGTON, N.C.

[H_b=72 ft.; h_t=73 ft.; h_r=65 ft.; h_a=107 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp. 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		Mi.																											
January	10.0	NW.	38	NW.	2	13	6	4	2	9	11	6	10	1	9	12	10	5	5	1	0	0	11	1	0	0	2	0	0
February	10.1	NW.	32	NW.	1	12	5	6	1	7	8	9	8	0	5	7	16	12	10	0	0	0	12	4	0	0	5	1	0
March	11.7	NW.	28	SW.	0	12	3	2	3	10	15	5	12	0	15	13	3	6	5	0	0	0	6	0	0	0	4	3	0
April	11.0	SW.	38	NW.	1	4	11	7	3	11	11	8	5	0	11	11	8	9	8	0	0	0	9	0	0	0	0	4	0
May	9.4	SW.	30	NW.	0	3	9	5	8	8	15	9	5	0	15	12	4	9	7	0	0	0	7	1	0	3	0	10	0
June	8.7	SW.	27	NW.	0	6	5	1	2	5	19	12	10	0	13	10	7	4	3	0	0	0	2	1	0	10	0	9	0
July	8.5	SW.	30	NW.	0	4	8	3	3	7	21	11	5	0	10	11	10	18	13	0	0	0	11	2	0	8	0	14	0
August	8.6	SW.	30	NW.	0	6	13	3	1	9	14	12	3	1	7	12	12	19	18	0	0	0	10	0	0	6	0	13	0
September	8.3	S.	42	NW.	2	5	9	7	3	11	6	9	7	3	14	12	4	10	9	0	0	0	18	3	0	5	0	5	0
October	7.6	NE.	22	S.	0	13	22	3	2	8	0	4	8	2	14	8	9	4	0	0	0	0	17	5	0	0	0	2	0
November	8.7	NW.	32	NW.	1	19	12	5	0	7	12	4	10	1	16	8	6	5	2	0	0	0	20	3	0	0	2	1	0
December	9.0	SW.	26	NW.	0	0	12	5	2	8	12	6	5	2	10	12	9	3	2	0	0	0	14	4	0	0	3	0	0
Year	9.3	SW.	42	NW.	7	97	115	51	30	100	144	95	88	10	139	128	98	104	82	1	0	0	137	24	0	32	16	62	0

WINNEMUCCA, NEV.

[H_b=4,344 ft.; h_t=18 ft.; h_r=6 ft.; h_a=56 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.3	SW.	27	SW.	0	2	16	1	0	6	27	8	2	0	10	7	14	12	9	19	12	0	4	0	6	0	31	0	0
February	7.7	NE.	34	NW.	1	2	21	3	1	4	22	3	0	0	12	10	6	7	6	11	7	0	6	0	11	0	28	0	0
March	7.9	SW.	29	SW.	0	7	16	1	0	8	20	8	2	0	6	13	12	5	3	8	4	1	0	0	0	0	28	0	0
April	8 8	NE.	32	NW.	1	8	22	0	0	7	12	5	6	0	16	7	7	4	2	6	1	1	0	0	0	0	16	3	0
May	8.4	SW.	40	W.	1	1	11	3	0	11	22	11	3	0	10	13	8	4	2	7	3	1	0	0	0	1	9	1	0
June	7.9	SW.	26	SW.	0	3	15	1	0	7	18	10	5	1	19	9	2	2	0	0	0	0	0	0	0	7	0	2	0
July	7.3	SW.	21	SE.	0	2	13	2	2	3	21	16	2	1	28	2	1	2	1	0	0	0	0	0	0	25	0	3	0
August	7.0	SW.	21	S.	0	7	23	0	1	1	17	9	4	0	28	2	1	2	1	0	0	0	0	0	0	15	0	2	0
September	7.6	SW.	29	SW.	0	5	16	0	0	4	20	15	0	0	27	1	2	2	2	0	0	0	1	1	0	2	3	0	0
October	7.4	NE.	24	W.	0	7	22	1	0	1	17	5	9	0	25	4	2	1	1	1	0	0	0	0	0	0	13	0	0
November	6.7	NE.	28	NW.	0	5	27	3	1	4	12	3	5	0	24	3	3	1	1	2	1	0	0	0	0	0	29	0	0
December	7.5	SW.	26	S.	0	2	23	0	6	4	23	2	1	1	9	8	14	8	4	6	3	0	0	0	1	0	26	0	0
Year	7.7	SW.	40	W.	3	51	225	15	11	60	231	95	39	3	214	79	72	50	32	60	31	3	11	1	18	50	183	11	0

WYTHEVILLE, VA.

[H_b=2,304 ft.; h_t=49 ft.; h_r=40 ft.; h_a=55 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	7.7	W.	24	W.	0	1	3	7	2	0	3	32	14	0	8	8	15	10	7	3	1	0	0	2	0	0	13	0	0
February	8.1	W.	28	NW.	0	2	3	8	1	0	3	28	11	0	7	9	12	15	9	9	6	0	0	1	4	0	18	0	0
March	9.6	W.	32	W.	1	4	2	5	2	2	2	26	19	0	8	9	14	10	9	7	3	0	0	0	2	0	18	4	0
April	7.9	W.	27	W.	0	3	2	15	2	4	3	19	12	0	10	11	9	11	9	0	0	1	0	1	0	0	1	3	0
May	6.7	W.	24	W.	0	5	0	5	2	4	5	34	6	1	8	14	9	14	12	0	0	0	4	3	0	0	0	11	0
June	5.7	W.	18	W.	0	7	3	2	3	0	9	17	17	2	14	13	3	8	8	0	0	0	4	3	0	5	0	10	0
July	5.0	W.	18	E.	0	2	3	13	5	1	4	24	8	2	9	12	10	13	12	0	0	0	3	2	0	2	0	8	0
August	5.5	W.	21	W.	0	2	5	10	4	0	4	24	10	3	6	15	10	15	12	0	0	0	3	1	0	0	0	8	0
September	6.0	W.	21	NW.	0	2	4	6	2	3	9	22	12	0	12	14	4	4	2	0	0	0	3	5	0	0	0	3	0
October	5.3	W.	20	W.	0	9	3	11	3	0	2	17	16	1	17	10	4	5	4	0	0	0	5	0	0	0	6	1	0
November	8.9	W.	29	W.	0	2	3	5	0	0	5	27	18	0	12	6	12	10	6	3	1	0	1	0	1	0	16	0	0
December	7.7	W.	27	NW.	0	3	7	6	0	0	8	26	11	1	9	10	12	9	6	3	0	0	7	3	1	0	12	0	0
Year	7.0	W.	32	W.	1	42	38	93	26	14	57	296	154	10	120	131	114	124	96	25	11	1	30	21	8	7	84	48	0

YAKIMA, WASH.

[H_b=1,076 ft.; h_t=58 ft.; h_r=52 ft.; h_a=67 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	5.3	NW.	32	NW.	1	4	4	4	11	10	5	13	9	2	5	9	17	8	6	9	6	0	6	2	5	0	25	9	0
February	5.3	W.	27	W.	0	4	4	2	9	6	4	13	13	1	7	12	9	5	3	8	5	0	0	0	7	0	21	0	0
March	5.5	NW.	26	NW.	0	5	3	2	10	7	5	12	16	2	5	12	14	8	6	5	1	0	0	0	0	0	11	0	0
April	7.1	NW.	27	NW.	0	8	4	1	9	2	1	5	30	0	14	10	6	3	2	2	1	0	0	0	0	0	5	0	0
May	7.0	NW.	23	W.	0	8	4	3	4	6	8	13	14	2	5	16	10	11	7	0	0	1	0	0	0	0	0	2	0
June	7.3	NW.	23	SW.	0	6	0	1	4	0	5	12	32	0	12	12	6	3	1	0	0	0	0	0	0	4	0	0	0
July	7.3	NW.	19	NW.	0	6	0	2	3	2	5	15	28	1	27	3	1	3	1	0	0	0	0	0	0	14	0	1	0
August	6.5	NW.	21	NW.	0	3	4	1	4	2	7	15	25	1	21	5	5	3	1	0	0	0	0	0	0	16	0	1	0
September	5.8	NW.	26	SW.	0	5	4	2	2	6	11	14	16	0	13	13	4	5	3	0	0	0	2	0	0	0	1	1	0
October	5.0	NW.	26	SW.	0	9	1	4	6	9	4	11	17	1	13	9	9	6	4	0	0	0	2	0	0	0	1	0	0
November	4.0	NW.	21	SW.	0	6	2	4	12	12	6	7	11	0	6	3	21	5	1	0	0	0	12	3	0	0	13	0	0
December	5.1	NW.	22	SW.	0	4	1	2	13	7	4	11	16	4	2	4	25	19	10	7	4	0	8	3	3	0	16	0	0
Year	5.9	NW.	32	NW.	1	68	31	28	87	69	65	141	227	14	130	108	127	79	45	31	17	1	36	8	15	34	93	5	0

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

YELLOWSTONE PARK, WYO.

[ϕ=44°58′ N.; λ=110°42′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	23.68	24.16	23.23	18.2	22.8	20.6	25.2	13.2	19.2	36	−7	13	15	13	79	68	72	0.078	0.082	0.078	1.19	0.27	23.3	7.8	9.0	7.3	9.2
February	23.78	24.16	23.44	6.5	14.5	13.1	19.1	1.2	10.2	37	−40	2	6	6	78	68	76	.052	.063	.062	.76	.29	12.4	6.3	7.7	7.8	7.8
March	23.82	24.21	23.48	21.9	34.6	33.0	38.4	18.3	28.4	51	0	16	20	18	76	53	54	.090	.105	.096	.54	.18	9.0	6.4	7.5	7.0	7.3
April	23.80	24.19	23.43	27.1	42.2	41.1	45.9	24.1	35.0	62	5	22	22	23	78	45	49	.121	.119	.125	.91	.27	5.4	6.0	7.1	7.2	6.6
May	23.80	24.09	23.47	34.9	50.4	49.3	54.4	32.0	43.2	77	22	28	26	27	75	42	46	.152	.142	.147	1.15	.37	1.7	6.0	7.6	6.7	7.1
June	23.92	24.25	23.73	48.1	71.8	70.1	74.7	45.2	60.0	85	35	37	34	36	67	27	32	.224	.199	.215	1.05	.48	.0	3.3	5.3	5.3	5.2
July	23.99	24.20	23.78	50.6	75.9	77.0	82.0	49.2	65.6	91	39	38	36	36	63	23	25	.234	.215	.219	.21	.08	.0	1.8	2.2	3.6	3.1
August	23.99	24.15	23.66	47.1	69.0	68.7	73.3	44.5	58.9	87	35	37	36	36	70	36	35	.224	.214	.213	2.58	1.06	T	4.1	4.1	5.3	4.6
September	23.86	24.12	23.55	41.7	61.4	59.4	65.3	37.9	51.6	80	26	30	30	30	64	35	37	.167	.175	.171	1.73	.62	3.5	2.5	3.6	3.3	3.4
October	23.95	24.29	23.50	36.6	53.4	51.0	60.0	32.5	46.2	76	17	24	27	26	62	38	40	.132	.149	.141	.83	.29	.3	4.8	4.2	4.4	4.7
November	24.04	24.40	23.37	28.4	38.8	35.4	42.7	24.1	33.4	55	1	21	23	22	73	53	57	.112	.123	.115	.32	.31	4.6	3.8	6.4	4.5	6.3
December	23.81	24.06	23.38	27.4	32.3	30.5	35.1	22.0	28.6	43	9	20	22	20	72	63	65	.109	.115	.111	1.38	.19	23.4	6.9	8.8	7.7	8.6
Year	23.87	24.40	23.23	32.4	47.3	45.8	51.3	28.7	40.0	91	−40	24	25	24	71	46	48	.141	.142	.141	12.65	1.06	83.6	5.0	6.1	5.8	6.2

YUMA, ARIZ.

[ϕ=32°45′ N.; λ=114°36′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
January	29.88	30.20	29.40	44.7	61.1	59.6	62.7	39.5	51.1	76	34	30	31	30	60	36	36	0.171	0.179	0.173	1.16	0.58	0.0	2.2	2.5	2.0	2.3
February	29.95	30.38	29.62	44.5	62.5	64.0	65.6	40.3	53.0	78	29	22	20	21	45	21	21	.131	.121	.121	.12	.12	.0	1.1	1.1	1.6	1.3
March	29.81	30.16	29.53	52.9	77.3	78.8	80.7	49.8	65.2	88	45	33	27	26	51	16	14	.195	.146	.140	.00	.00	.0	1.9	2.1	2.6	2.1
April	29.72	30.15	29.30	54.6	77.6	79.3	81.1	51.9	66.5	97	40	35	31	31	53	21	20	.215	.182	.182	.91	.86	.0	.7	1.0	1.8	1.2
May	29.69	29.95	29.48	59.8	84.3	86.4	88.8	57.0	72.9	106	45	41	34	34	53	18	17	.263	.200	.196	.01	.01	.0	1.1	.5	.8	.7
June	29.62	29.81	29.44	70.4	96.8	99.8	102.0	68.3	85.2	114	58	53	44	46	56	18	17	.415	.298	.318	T	T	.0	1.0	1.0	.7	.8
July	29.58	29.75	29.35	80.9	102.9	105.3	108.0	79.2	93.6	115	66	61	58	56	53	24	21	.551	.491	.471	T	T	.0	1.9	1.6	.7	1.3
August	29.58	29.84	29.37	79.4	102.0	103.0	106.6	77.5	92.0	119	67	67	60	59	66	28	26	.668	.550	.518	.27	.27	.0	1.0	1.0	1.3	1.2
September	29.56	29.77	29.36	75.3	98.2	97.3	102.1	72.9	87.5	111	61	64	60	59	69	30	31	.612	.543	.520	.20	.20	.0	1.5	1.2	1.1	1.2
October	29.71	29.95	29.47	67.0	91.1	87.5	94.4	64.1	79.2	105	55	54	53	54	67	30	34	.443	.426	.440	.78	.78	.0	.6	.7	1.3	1.0
November	29.89	30.17	29.37	55.6	77.9	71.7	79.7	50.7	65.2	89	39	30	31	33	40	20	26	.167	.174	.187	.02	.02	.0	.5	1.2	1.7	1.3
December	29.96	30.42	29.70	47.9	68.4	63.4	70.2	44.0	57.1	77	34	29	30	33	50	27	33	.165	.185	.195	.09	.08	.0	1.1	1.8	1.7	1.7
Year	29.75	30.42	29.30	61.1	83.3	83.0	86.8	57.9	72.4	119	29	43	40	40	55	24	25	.333	.291	.288	3.56	.86	.0	1.2	1.3	1.4	1.3

DUTCH HARBOR, ALASKA

[ϕ=53°55′ N.; λ=166°30′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	*			†		†																		†		†	
January	29.71	30.33	28.77	32.8	-----	33.0	37.5	26.4	32.0	55	17	----	----	----	----	----	----	----	----	----	4.02	0.46	13.3	6.8	----	7.5	----
February	29.72	30.39	28.81	32.4	-----	34.4	37.6	29.2	33.4	44	11	----	----	----	----	----	----	----	----	----	8.12	1.99	6.8	6.4	----	6.5	----
March	29.72	30.56	28.60	30.1	-----	33.7	36.4	27.2	31.8	46	10	----	----	----	----	----	----	----	----	----	1.13	.17	5.2	6.5	----	7.3	----
April	29.67	30.50	28.62	34.2	-----	38.3	42.2	31.4	36.8	52	24	----	----	----	----	----	----	----	----	----	4.76	.82	12.0	6.5	----	7.7	----
May	29.90	30.42	29.21	37.2	-----	43.5	47.2	35.0	41.1	61	28	----	----	----	----	----	----	----	----	----	1.63	.62	.8	7.8	----	7.9	----
June	29.91	30.53	29.37	43.0	-----	49.5	53.1	40.8	47.0	61	35	----	----	----	----	----	----	----	----	----	1.10	.31	.0	7.7	----	8.4	----
July	29.98	30.45	28.49	45.7	-----	53.3	57.3	43.5	50.4	74	37	----	----	----	----	----	----	----	----	----	.82	.34	.0	6.5	----	7.9	----
August	29.81	30.27	29.18	47.3	-----	52.2	55.8	44.8	50.3	63	39	----	----	----	----	----	----	----	----	----	2.44	.98	.0	7.4	----	7.7	----
September	29.77	30.53	29.07	46.0	-----	49.5	52.4	42.9	47.6	63	32	----	----	----	----	----	----	----	----	----	3.01	.59	.0	8.0	----	8.7	----
October	29.69	30.38	28.87	40.0	-----	42.8	45.1	37.0	41.0	54	30	----	----	----	----	----	----	----	----	----	10.53	3.08	T	7.0	----	8.7	----
November	29.69	30.51	28.96	35.2	-----	37.5	40.1	31.2	35.6	49	22	----	----	----	----	----	----	----	----	----	4.97	.95	5.2	7.4	----	8.0	----
December	30.09	30.71	28.88	33.9	-----	35.1	37.2	30.4	33.8	45	22	----	----	----	----	----	----	----	----	----	5.54	2.06	.9	7.8	----	7.8	----
Year	29.80	30.89	29.49	38.2	-----	41.9	45.2	35.0	40.1	74	10	----	----	----	----	----	----	----	----	----	48.07	3.08	44.2	7.2	----	7.8	----

FAIRBANKS, ALASKA

[ϕ=64°51′ N.; λ=147°39′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Moisture: Cloudiness: 8 a.m.	Moisture: Cloudiness: Noon, local time	Moisture: Cloudiness: 8 p.m.	Moisture: Cloudiness: Daylight
	*			†		†						†		†	†		†	†		†				†		†	
January	29.30	30.24	28.60	−23.6	−23.0	−20.7	−14.2	−32.8	−23.5	17	−60	−28	−27	−24	79	81	82	0.016	0.016	0.017	1.13	0.48	18.3	3.9	4.6	5.4	5.0
February	29.55	30.43	28.79	−9.1	−1.0	1.7	4.2	−17.7	−6.8	28	−49	−12	−5	−3	84	81	79	.032	.039	.043	.65	.30	12.4	5.7	6.2	6.4	6.4
March	29.38	30.23	28.47	1.6	16.2	19.4	22.8	−6.2	8.3	45	−35	−4	4	5	77	56	51	.040	.053	.055	.07	.04	1.2	4.5	5.4	6.1	5.5
April	29.33	29.82	28.89	25.1	39.7	41.2	43.3	20.9	32.1	54	−5	19	20	20	78	44	43	.104	.104	.105	.17	.09	2.0	4.9	5.1	5.7	5.2
May	29.32	29.68	28.87	38.9	52.3	53.1	57.0	35.6	46.3	76	26	32	28	28	76	42	42	.183	.159	.162	.82	.36	T	7.3	6.6	7.3	7.1
June	29.34	29.73	28.98	44.5	60.8	61.9	65.1	42.3	53.7	87	32	39	35	34	80	40	37	.243	.210	.198	1.52	.93	.0	6.1	6.6	7.3	6.6
July	29.38	29.69	29.08	50.2	65.4	66.8	69.5	47.1	58.3	88	36	45	42	41	84	46	43	.305	.274	.266	1.39	.88	.0	5.6	5.8	6.2	6.4
August	29.30	29.73	28.85	47.8	60.1	61.8	63.7	43.8	53.8	82	28	43	41	41	84	53	48	.277	.266	.259	2.16	.63	.0	7.4	8.3	8.2	8.2
September	29.22	29.95	28.42	35.9	47.7	49.0	51.0	32.5	41.8	68	26	32	31	30	86	53	51	.181	.172	.171	.46	.19	1.6	7.4	8.2	8.3	8.0
October	29.36	30.33	28.50	18.6	25.0	26.3	27.8	12.5	20.2	47	−11	12	14	14	74	62	60	.061	.067	.068	1.08	.32	16.4	5.6	6.4	6.3	6.4
November	29.30	29.93	28.67	8.8	9.1	9.6	14.4	.6	7.5	41	−36	4	3	4	78	75	75	.053	.053	.055	.73	.22	12.4	7.3	8.2	7.8	8.1
December	29.80	30.34	29.26	−27.3	−24.9	−23.8	−20.2	−33.9	−27.0	25	−54	−31	−28	−27	84	84	84	.016	.017	.017	.96	.31	15.7	3.1	3.8	3.8	3.9
Year	29.38	30.43	28.42	17.6	27.3	28.9	32.0	12.1	22.1	88	−60	13	13	14	80	60	58	.128	.121	.120	11.14	.93	80.0	5.7	6.3	6.6	6.4

* No diurnal correction applied.

† Hours at Dutch Harbor, 1 a.m., and 1 p.m., one hundred sixty-fifth meridian time; at Fairbanks, 2 a.m. and 2 p.m., one hundred fiftieth meridian time.

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

YELLOWSTONE PARK, WYO.

[H_b=6,241 ft.; h_t=11 ft.; h_r=4 ft.; h_a=48 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T. or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																											
January	11.6	SW.	35	SW.	2	1	1	0	1	20	29	9	1	0	0	4	27	18	10	31	18	0	0	0	28	0	31	0	0
February	10.3	SW.	32	SW.	1	6	0	1	3	8	32	6	0	0	4	5	19	14	7	23	14	0	1	1	25	0	28	0	0
March	9.0	SW.	27	SW.	0	9	0	2	1	14	22	10	4	0	4	9	18	9	5	19	9	0	1	0	5	0	31	0	0
April	9.5	SW.	28	N.	0	10	2	1	0	5	21	9	12	0	4	14	12	14	8	14	11	2	1	0	5	0	20	0	0
May	8.7	SW.	32	SW.	1	11	5	1	2	10	26	5	2	0	3	12	16	12	9	11	5	1	0	0	0	0	17	1	2
June	8.8	SW.	30	SW.	0	3	1	0	1	15	31	8	1	0	8	14	8	6	4	0	0	1	0	0	0	0	0	9	0
July	8.3	SW.	27	SW.	0	6	1	0	1	8	31	9	6	0	19	9	3	8	1	0	0	0	0	0	0	1	0	11	0
August	7.8	SW.	27	SW.	0	14	2	0	1	8	25	8	4	0	12	12	7	10	8	2	0	1	0	0	0	0	0	5	0
September	9.3	SW.	40	SW.	2	1	0	1	0	9	38	7	4	0	17	8	5	7	7	3	2	2	0	0	0	0	6	4	0
October	8.3	SW.	31	SW.	0	6	2	0	2	8	20	16	7	1	14	6	11	7	5	7	2	1	0	0	0	0	15	1	0
November	8.3	SW.	26	SW.	0	7	2	1	1	13	27	7	2	0	7	9	14	3	1	10	2	0	0	0	3	0	27	0	0
December	11.8	SW.	30	SW.	0	4	1	0	2	7	44	4	0	0	1	7	23	22	15	24	21	0	0	0	8	0	25	0	0
Year	9.3	SW.	40	SW.	6	78	17	7	15	125	346	98	43	1	93	109	163	130	80	144	84	8	3	1	74	1	200	31	2

YUMA, ARIZ.

[H_b=141 ft.; h_t=9 ft.; h_r=2 ft.; h_a=54 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T. or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	6.5	N.	31	NW.	0	20	7	11	7	3	2	4	8	0	23	4	4	5	4	0	0	1	1	1	0	0	0	0	0
February	7.6	N.	26	N.	0	30	9	1	1	4	4	2	5	0	24	3	1	1	1	0	0	0	0	0	0	0	3	0	0
March	6.6	W.	30	N.	0	15	7	4	2	4	10	11	9	0	23	6	2	0	0	0	0	0	0	0	0	0	0	0	0
April	6.9	W.	24	N.	0	11	4	1	3	6	9	16	10	0	27	2	1	2	2	0	0	0	0	0	0	4	0	1	0
May	7.6	W.	35	SW.	1	1	3	7	3	6	13	25	2	2	29	2	0	1	0	0	0	0	0	0	0	15	0	0	0
June	5.5	SW.	21	E.	0	3	2	6	6	11	17	9	5	1	29	1	0	0	0	0	0	0	0	0	0	26	0	2	0
July	6.1	SW.	25	SE.	0	3	3	1	10	12	19	8	2	4	28	3	0	0	0	0	0	0	0	0	0	31	0	1	0
August	5.6	SW.	25	E.	0	3	3	9	11	12	14	8	2	0	26	1	1	1	1	0	0	0	0	0	0	31	0	2	0
September	5.2	SW.	21	S.	0	5	3	4	13	7	13	9	2	4	27	1	2	1	1	0	0	0	0	0	0	30	0	1	0
October	4.6	NE.	22	SE.	0	12	12	10	1	7	9	7	2	2	28	3	0	1	1	0	0	0	0	0	0	24	0	7	0
November	6.2	N.	22	W.	0	29	11	1	2	3	0	3	10	1	24	5	1	1	0	0	0	0	0	0	0	0	0	0	0
December	5.7	N.	21	W.	0	19	15	4	1	3	4	9	7	0	25	5	1	2	1	0	0	0	0	0	0	0	0	0	0
Year	6.2	N.	35	SW.	1	151	79	59	60	78	114	111	64	14	316	36	13	15	11	0	0	1	1	1	0	161	3	14	0

DUTCH HARBOR, ALASKA.†

[H_b=13 ft.; h_t=4 ft.; h_r=3 ft. h_a=— ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T. or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
		*																											
January	----	NW.	----	----	----	1	4	1	11	7	10	3	17	8	2	14	15	27	19	15	14	0	0	0	7	0	25	0	0
February	----	SE.	----	----	----	1	2	5	16	5	4	6	12	5	2	16	10	19	17	6	4	0	0	0	5	0	17	0	0
March	----	SE.	----	----	----	0	1	6	15	4	10	7	11	8	3	13	15	21	11	15	11	0	0	0	8	0	25	0	0
April	----	S.	----	----	----	1	3	3	9	13	12	3	11	5	1	17	12	22	20	15	11	0	0	0	0	0	19	0	0
May	----	SE.	----	----	----	1	3	1	15	7	6	10	11	8	3	8	20	18	8	4	3	0	0	0	0	0	8	0	0
June	----	E.	----	----	----	1	12	7	18	5	8	1	0	8	0	13	17	14	9	0	0	0	0	0	0	0	0	0	0
July	----	NE.	----	----	----	3	15	1	9	3	11	3	2	15	3	14	14	11	7	0	0	0	0	1	0	0	0	0	0
August	----	E.	----	----	----	3	6	9	9	6	8	7	10	4	0	17	14	11	8	0	0	0	0	0	0	0	0	0	0
September	----	S.	----	----	----	1	1	5	15	7	12	12	4	3	2	7	21	19	15	0	0	0	0	0	0	0	1	0	0
October	----	S.	----	----	----	5	3	3	13	4	14	2	16	2	0	14	17	29	23	5	0	0	0	0	0	0	3	0	0
November	----	SW.	----	----	----	8	3	1	7	2	17	3	11	8	2	9	19	20	15	14	9	0	0	0	0	0	19	0	0
December	----	NW.	----	----	----	3	5	5	13	3	7	1	20	5	0	16	15	13	6	11	5	0	0	1	5	0	19	0	0
Year	----	SE.	----	----	----	28	58	47	150	66	119	58	125	79	18	158	189	224	158	85	57	0	0	2	25	0	136	0	0

FAIRBANKS, ALASKA.†

[H_b=454 ft.; h_t=11 ft.; h_r=61 ft.; h_a=87 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T. or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	2.1	N.	17	SW.	0	7	5	5	1	3	3	3	8	27	14	5	12	12	5	15	12	0	15	10	31	0	31	0	17
February	2.4	N.	15	SW.	0	14	3	4	1	11	8	4	9	2	7	6	15	8	5	11	7	0	13	0	28	0	28	0	19
March	4.3	N.	22	SE.	0	20	5	10	1	8	4	6	7	0	11	7	13	4	0	7	4	0	2	0	24	0	31	0	27
April	5.2	N.	19	NE.	0	11	10	13	2	7	5	6	6	0	9	11	10	4	2	8	3	0	0	0	0	0	30	0	27
May	5.6	S.	22	NE.	0	4	9	7	1	13	5	13	8	2	6	5	20	11	7	6	0	0	2	0	0	0	12	1	0
June	5.9	N.	22	NE.	0	11	6	4	3	5	7	14	6	4	5	11	14	10	8	0	0	1	0	0	0	0	1	2	0
July	6.5	SW.	26	S.	0	6	4	6	4	13	16	4	6	3	8	7	16	10	7	0	0	0	1	1	0	0	0	1	0
August	5.8	E.	24	SW.	0	8	11	9	2	4	16	6	6	0	1	8	22	14	8	0	0	0	3	1	0	0	1	0	8
September	4.8	N.	27	NW.	0	9	8	4	9	5	5	6	12	2	2	7	21	8	5	8	4	0	4	0	0	0	17	0	17
October	4.8	S.	17	N.	0	5	3	8	8	12	6	7	9	4	8	7	16	11	11	13	11	0	3	2	21	0	31	0	24
November	3.4	N.	12	S.	0	9	9	9	5	9	3	4	5	7	3	4	23	14	7	17	14	0	5	2	29	0	30	0	14
December	2.2	N.	22	SW.	0	19	5	9	4	5	3	3	4	10	17	4	10	8	4	10	8	0	8	12	31	0	31	0	23
Year	4.4	N.	27	NW.	0	123	79	88	41	95	81	76	86	61	91	82	192	114	69	95	63	1	56	28	164	0	243	4	176

* By eye observations at this station.

† For hours of observation see note on preceding page.

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

JUNEAU, ALASKA

[ϕ=58°18′ N.; λ=134°24′ W.]

Month	Pressure: Monthly mean	Pressure: Extremes: Maximum	Pressure: Extremes: Minimum	Temperature: Mean: 8 a.m.	Temperature: Mean: Noon, local time	Temperature: Mean: 8 p.m.	Temperature: Mean: Maximum	Temperature: Mean: Minimum	Temperature: Mean: Monthly	Temperature: Extremes: Maximum	Temperature: Extremes: Minimum	Moisture: Dew point: 8 a.m.	Moisture: Dew point: Noon, local time	Moisture: Dew point: 8 p.m.	Moisture: Relative humidity: 8 a.m.	Moisture: Relative humidity: Noon, local time	Moisture: Relative humidity: 8 p.m.	Moisture: Vapor pressure: 8 a.m.	Moisture: Vapor pressure: Noon, local time	Moisture: Vapor pressure: 8 p.m.	Moisture: Precipitation: Total	Moisture: Precipitation: Maximum in 24 hours	Moisture: Precipitation: Total snowfall	Cloudiness: 8 a.m.	Cloudiness: Noon, local time	Cloudiness: 8 p.m.	Cloudiness: Daylight
	* In.	In.	In.	°	°	°	°	°	°	°	°	°	°	°	%	%	%	In.	In.	In.	In.	In.	In.				
January	29.48	30.51	28.84	23.8	24.1	24.4	27.8	20.1	24.0	45	7	15	17	18	70	74	75	0.096	0.100	0.104	6.01	1.42	40.5	8.6	8.6	8.5	8.8
February	29.84	30.58	28.78	27.8	30.4	30.7	32.8	24.4	28.6	43	13	23	25	24	82	80	77	.126	.138	.135	6.67	1.74	49.3	8.2	7.2	8.8	9.0
March	29.75	30.48	29.00	30.2	35.0	35.7	37.5	27.8	32.6	49	9	22	21	21	72	57	56	.125	.123	.121	3.91	1.04	3.3	5.8	6.5	6.6	6.4
April	29.93	30.31	29.49	35.9	42.5	43.1	44.7	33.7	39.2	52	28	32	28	29	85	59	59	.180	.156	.160	7.11	1.79	5.5	8.1	8.1	7.6	7.9
May	29.79	30.13	29.50	41.7	53.8	54.5	56.0	40.5	48.2	69	35	38	37	37	86	56	54	.228	.222	.218	4.65	2.72	.0	7.9	6.7	7.2	7.4
June	29.85	30.32	29.43	46.3	55.0	55.3	57.6	45.1	51.4	77	37	43	43	43	87	68	67	.278	.288	.282	6.92	1.10	.0	7.9	7.7	7.4	7.7
July	29.92	30.28	29.46	49.7	56.9	57.4	59.3	48.5	53.9	73	43	47	48	48	91	75	74	.326	.351	.342	3.67	.68	.0	8.8	8.3	8.6	8.5
August	29.91	30.30	29.62	50.7	58.0	59.7	61.4	49.1	55.2	80	42	49	50	50	93	77	73	.344	.358	.359	11.72	1.65	.0	7.3	7.4	7.2	7.4
September	29.65	30.14	28.88	46.5	51.9	52.9	55.0	43.8	49.4	64	37	41	41	41	83	70	68	.263	.265	.267	4.56	1.27	.0	8.1	8.4	8.6	8.4
October	29.80	30.57	28.99	38.1	39.9	39.8	42.1	34.9	38.5	55	13	32	31	30	76	72	70	.195	.195	.192	14.09	2.87	8.4	8.4	8.3	8.0	8.3
November	29.80	30.38	29.15	39.1	40.4	39.9	43.8	35.1	39.4	53	28	36	36	36	88	84	86	.213	.211	.212	13.23	2.01	6.3	9.4	9.0	9.0	9.2
December	29.86	30.42	28.93	12.7	13.9	13.0	17.4	8.7	13.0	33	−10	0	0	0	56	52	53	.046	.045	.044	.88	.39	12.3	3.9	3.8	4.1	3.7
Year	29.80	30.58	28.78	36.9	41.8	42.2	44.6	34.3	39.4	80	−10	32	31	31	81	69	68	.202	.204	.203	83.42	2.87	125.6	7.7	7.5	7.6	7.7

KODIAK, ALASKA

[ϕ=57°48′ N.; λ=152°22′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	* 29.53	30.53	28.78	† 25.8	----	† 27.2	32.1	21.2	26.6	41	5	----	----	----	----	----	----	----	----	----	0.70	0.20	9.0	† 9.4	----	† 5.0	6.5
February	29.78	30.37	28.82	30.1	----	32.1	34.9	27.5	31.2	42	12	----	----	----	----	----	----	----	----	----	8.43	3.42	9.2	9.3	----	6.6	7.1
March	29.64	30.66	28.69	30.2	----	34.9	37.1	26.8	32.0	48	9	----	----	----	----	----	----	----	----	----	4.24	.74	3.0	9.6	----	6.5	6.8
April	29.76	30.34	29.09	34.6	----	40.2	42.9	32.2	37.6	51	27	----	----	----	----	----	----	----	----	----	4.94	1.16	T	9.1	----	6.4	6.9
May	29.80	30.19	29.26	39.5	----	45.6	48.1	37.4	42.8	62	27	----	----	----	----	----	----	----	----	----	6.59	1.00	3.5	8.9	----	7.1	7.4
June	29.89	30.33	29.43	45.4	----	54.1	57.9	42.6	50.2	73	35	----	----	----	----	----	----	----	----	----	1.46	.60	.0	8.3	----	4.1	4.2
July	29.90	30.17	29.58	50.4	----	56.3	60.7	48.0	54.4	71	42	----	----	----	----	----	----	----	----	----	4.24	1.29	.0	8.9	----	6.8	7.1
August	29.81	30.29	29.31	48.7	----	54.1	56.9	46.3	51.6	63	42	----	----	----	----	----	----	----	----	----	6.91	1.74	.0	7.0	----	7.3	7.6
September	29.66	30.17	28.84	44.6	----	51.9	54.8	41.4	48.1	68	31	----	----	----	----	----	----	----	----	----	3.04	1.32	T	4.2	----	5.0	5.4
October	29.68	30.42	28.85	37.9	----	42.9	45.0	34.1	39.6	50	23	----	----	----	----	----	----	----	----	----	3.11	.78	.4	7.3	----	5.5	5.4
November	29.60	30.41	28.58	34.9	----	37.7	----	31.0	----	45	22	----	----	----	----	----	----	----	----	----	2.75	.83	.5	4.9	----	5.9	6.5
December	29.94	30.52	29.06	27.7	----	30.6	----	24.3	----	----	14	----	----	----	----	----	----	----	----	----	.58	.54	.4	3.8	----	4.4	4.2
Year	29.75	30.66	28.58	37.5	----	42.3	----	34.4	----	73	5	----	----	----	----	----	----	----	----	----	46.99	3.42	28.0	7.6	----	5.9	6.3

NOME, ALASKA

[ϕ=64°30′ N.; λ=165°24′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	* 29.77	30.20	29.04	† −6.9	----	† −4.8	0.4	−13.8	−6.7	28	−36	† −15	----	† −12	† 68	----	† 73	† 0.026	----	† 0.032	0.94	0.22	9.3	† 5.6	----	† 5.9	6.2
February	30.05	30.81	29.38	1.9	----	5.8	9.4	−4.3	2.6	39	−28	3	----	1	79	----	78	.057	----	.059	.49	.16	2.5	4.0	----	4.0	3.8
March	29.91	30.65	29.06	5.5	----	12.5	15.1	−.6	7.2	28	−22	2	----	7	84	----	78	.050	----	.064	.27	.12	2.7	4.7	----	4.4	4.6
April	29.79	30.30	29.12	22.7	----	29.4	31.9	17.3	24.6	43	−2	21	----	26	92	----	84	.117	----	.139	.49	.07	4.7	6.3	----	6.2	5.3
May	29.92	30.25	29.53	28.1	----	35.9	37.0	25.8	31.4	64	7	27	----	31	94	----	84	.151	----	.182	.53	.19	2.7	6.6	----	5.8	6.2
June	29.88	30.17	29.52	36.5	----	43.9	46.4	36.4	41.4	66	22	35	----	38	90	----	81	.206	----	.233	.29	.18	.2	7.5	----	7.2	7.4
July	29.89	30.23	29.62	44.0	----	50.2	53.6	41.5	47.6	68	35	43	----	46	96	----	87	.278	----	.318	.48	.42	.0	6.5	----	7.5	6.5
August	29.72	30.31	29.21	46.1	----	53.1	55.2	42.1	48.6	66	32	44	----	47	92	----	81	.291	----	.327	2.32	.55	.0	6.7	----	7.2	6.0
September	29.77	30.32	29.18	35.0	----	44.6	45.4	31.5	38.4	55	21	32	----	39	88	----	80	.118	----	.242	.84	.23	.8	3.7	----	5.9	5.1
October	29.81	30.48	29.12	24.3	----	30.2	31.5	20.0	25.8	44	10	20	----	25	81	----	79	.108	----	.134	.45	.16	4.2	5.2	----	7.1	7.4
November	29.80	30.43	29.37	12.5	----	15.1	17.4	6.7	12.0	32	−9	8	----	11	81	----	80	.066	----	.074	.91	.47	7.1	6.3	----	8.0	8.1
December	30.27	30.84	29.55	8.2	----	7.7	13.2	2.3	7.8	32	−21	6	----	5	88	----	88	.061	----	.061	1.06	.28	8.7	6.9	----	7.4	7.5
Year	29.88	30.84	29.04	21.5	----	27.0	29.7	17.1	23.4	68	−36	19	----	22	86	----	81	.127	----	.155	9.07	.55	42.9	5.8	----	6.4	6.2

TANANA, ALASKA

[ϕ=65°10′ N.; λ=152°06′ W.]

Month	Monthly mean	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	Maximum	Minimum	Monthly	Maximum	Minimum	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	8 a.m.	Noon, local time	8 p.m.	Total	Maximum in 24 hours	Total snowfall	8 a.m.	Noon, local time	8 p.m.	Daylight
January	* 29.62	30.42	28.96	† −29.2	----	† −23.8	−17.7	−37.5	−27.6	6	−68	----	----	----	----	----	----	----	----	----	0.87	0.20	6.8	† 3.4	----	† 4.8	4.3
February	29.88	30.79	29.21	−15.5	----	−4.9	−1.5	−21.4	−11.4	21	−52	----	----	----	----	----	----	----	----	----	.45	.15	4.6	3.9	----	5.2	4.6
March	29.73	30.57	28.66	−6.0	----	11.7	15.8	−12.0	1.9	29	−37	----	----	----	----	----	----	----	----	----	.22	.12	2.9	2.2	----	4.7	3.6
April	29.67	30.13	29.21	22.4	----	38.5	41.2	18.9	30.0	54	0	----	----	----	----	----	----	----	----	----	.09	.05	T	4.6	----	5.2	4.9
May	29.64	30.01	29.20	36.1	----	52.6	57.4	32.7	45.0	77	20	----	----	----	----	----	----	----	----	----	.83	.24	.1	6.7	----	6.0	6.0
June	29.65	29.96	29.33	42.1	----	60.8	64.9	38.2	51.6	83	23	----	----	----	----	----	----	----	----	----	1.31	.26	T	5.6	----	6.2	5.7
July	29.66	29.94	29.39	45.7	----	66.8	71.1	41.6	56.4	87	31	----	----	----	----	----	----	----	----	----	1.02	.51	0	5.4	----	5.8	5.3
August	29.58	30.09	29.11	43.0	----	61.5	65.6	39.2	52.4	84	21	----	----	----	----	----	----	----	----	----	1.79	.30	0	5.8	----	6.7	6.1
September	29.55	30.25	28.76	33.1	----	47.9	50.8	28.8	39.8	64	9	----	----	----	----	----	----	----	----	----	1.04	.37	T	4.8	----	6.7	5.9
October	29.67	30.59	28.90	14.0	----	25.5	28.5	10.2	19.4	46	−15	----	----	----	----	----	----	----	----	----	.52	.36	7.0	4.8	----	5.7	5.3
November	----	----	----	----	----	----	12.4	−1.4	5.5	26	−36	----	----	----	----	----	----	----	----	----	.67	.18	9.0	----	----	----	6.5
December	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Year	----	----	----	----	----	----	----	----	----	87	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

* No diurnal correction applied.

† Hours at Kodiak, 2 a.m. and 2 p.m., one hundred fiftieth meridian time; at Nome, 2 a.m. and 2 p.m., one hundred sixty-fifth meridian time; at Tanana, 1 a.m. and 1 p.m., one hundred fiftieth meridian time.

Annual meteorological summaries for the year ending Dec. 31, 1933—Continued

JUNEAU, ALASKA

[H_b=80 ft.; h_t=96 ft.; h_r=88 ft.; h_a=116 ft.]

Month	Wind: By self-register: Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	Number of winds, 8 a.m. and 8 p.m.: North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Number of days: Clear	Partly cloudy	Cloudy	Precipitation: 0.01 inch or over	0.04 inch or over	Snow: T or more	0.01 inch or more melted	Hail	Fog: Light	Dense	Maximum temp.: 32° or below	90° or above	Minimum temperature 32° or below	Electricity: Thunderstorms	Aurora
	Mi.		*Mi.*																										
January	8.7	S.	27	NE.	0	1	10	8	14	19	1	8	0	1	2	4	25	26	18	26	23	0	1	0	22	0	28	0	0
February	6.6	W.	31	N.	0	1	2	5	8	22	4	13	1	0	1	5	22	18	17	17	16	0	0	0	11	0	26	0	0
March	8.9	S.	28	SE.	0	1	9	8	18	10	4	7	3	2	9	6	16	14	10	15	9	0	0	0	6	0	19	0	4
April	7.2	S.	27	E.	0	1	2	7	13	13	2	9	4	9	5	3	22	19	16	11	7	0	0	0	0	0	10	0	0
May	6.0	S.	24	SE.	0	2	3	5	9	15	3	10	1	14	4	7	20	16	15	0	0	0	0	0	0	0	0	0	2
June	6.7	S.	25	E.	0	0	3	5	11	15	1	11	2	12	5	7	18	19	16	0	0	0	0	0	0	0	0	0	0
July	6.1	S.	23	SE.	0	0	2	2	6	28	5	7	0	12	2	5	24	24	16	0	0	0	1	0	0	0	0	0	0
August	5.8	S.	22	SE.	0	0	0	0	12	18	5	14	0	13	7	3	21	20	19	0	0	0	3	0	0	0	0	0	3
September	6.2	S.	23	SE.	0	2	6	4	8	15	0	12	1	12	3	2	25	17	16	0	0	0	4	0	0	0	0	0	2
October	10.1	SE.	39	NE.	3	2	12	9	19	14	1	4	0	1	2	6	23	22	21	6	4	0	3	0	4	0	9	0	5
November	7.2	S.	25	E.	0	0	0	3	21	16	3	12	1	4	1	3	26	26	24	10	7	0	4	0	0	0	7	0	0
December	11.7	NE.	35	E.	3	3	22	22	3	1	0	5	2	4	18	3	10	6	6	10	6	0	0	0	28	0	31	0	1
Year	7.6	S.	39	NE.	6	13	71	78	142	186	29	112	15	84	59	54	252	227	194	95	72	0	16	0	71	0	130	0	17

KODIAK, ALASKA †

[H_b=15 ft.; h_t=5 ft.; h_r=4 ft.; h_a=— ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	----	* W.	----	------	----	4	3	0	1	2	11	9	9	17	12	8	11	14	7	14	11	1	0	0	14	0	29	0	0
February	----	NW.	----	------	----	3	7	1	3	1	5	4	10	21	8	4	16	18	13	9	9	0	1	0	7	0	19	0	0
March	----	NW.	----	------	----	4	5	5	7	3	2	4	13	19	10	1	20	15	12	9	5	0	1	0	3	0	27	0	0
April	----	SE.	----	------	----	5	5	2	14	3	5	5	5	16	8	4	18	12	9	9	4	0	0	0	0	0	20	0	0
May	----	E.	----	------	----	4	5	6	3	1	2	4	3	34	6	7	18	18	17	2	2	0	0	1	0	0	2	0	0
June	----	SE.	----	------	----	1	5	2	12	4	1	4	2	29	15	5	10	5	5	0	0	1	0	1	0	0	0	0	0
July	----	NW.	----	------	----	3	3	5	2	1	0	4	6	38	8	4	19	8	8	0	0	0	0	3	0	0	0	0	0
August	----	SE.	----	------	----	1	8	5	6	2	0	0	3	37	5	7	19	16	16	0	0	0	0	1	0	0	0	0	0
September	----	NW.	----	------	----	2	2	4	9	6	8	4	12	13	13	8	9	12	12	1	0	1	0	0	0	0	2	0	0
October	----	W.	----	------	----	3	5	3	4	3	2	6	3	33	13	7	11	14	12	4	1	1	0	0	0	0	11	0	0
November	----	S.	----	------	----	2	1	0	5	7	7	4	2	32	10	5	15	17	15	7	3	0	0	0	----	0	17	0	0
December	----	W.	----	------	----	9	3	0	0	2	0	21	8	19	20	1	10	3	1	6	2	0	0	0	----	0	28	0	0
Year	----	NW.	----	------	----	41	52	33	66	35	43	69	76	308	128	61	176	152	127	61	37	4	2	6	----	0	155	0	0

NOME, ALASKA †

[H_b=22 ft.; h_t=5 ft.; h_r=4 ft.; h_a=55 ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	8.6	NE.	42	NE.	3	7	23	12	2	1	1	4	9	3	9	7	15	14	8	17	14	0	0	0	31	0	31	0	2
February	8.9	E.	49	NE.	2	10	16	15	6	0	0	4	5	0	15	8	5	8	5	7	7	0	2	5	24	0	27	0	0
March	10.4	E.	33	NE.	1	9	18	13	6	2	0	7	6	1	14	7	10	8	2	11	8	0	3	0	31	0	31	0	0
April	10.4	E.	35	NE.	1	2	16	11	6	7	5	6	7	0	10	6	14	15	6	18	15	0	1	0	16	0	30	0	0
May	8.2	W.	35	NE.	3	5	12	9	4	3	9	12	6	2	13	3	15	8	4	9	7	0	4	0	12	0	27	0	0
June	8.5	W.	26	NE.	0	2	8	9	5	5	5	20	5	1	5	7	18	4	2	2	1	0	10	4	0	0	8	0	0
July	7.5	W.	21	W.	0	1	5	6	5	9	12	21	3	0	7	8	16	3	2	0	0	0	11	5	0	0	0	0	0
August	9.7	SW.	45	S.	3	9	8	2	6	6	16	11	4	0	9	8	14	16	13	0	0	1	6	0	0	0	1	0	1
September	8.4	N.	30	W.	0	11	15	2	6	4	4	6	12	0	15	3	12	12	7	3	2	0	3	2	0	0	18	0	16
October	9.1	NE.	36	NE.	1	10	20	15	2	3	4	1	7	0	6	5	20	9	3	16	9	1	5	0	20	0	30	0	5
November	8.4	NE.	30	E.	0	19	18	16	1	1	0	2	3	0	4	3	23	10	4	15	10	0	2	2	30	0	30	0	2
December	6.4	NE.	33	E.	1	10	18	18	2	2	6	4	2	0	7	2	22	12	9	17	11	0	10	10	31	0	31	0	2
Year	8.7	NE.	49	NE.	15	95	177	128	51	43	62	98	69	7	114	67	184	119	65	115	84	2	57	28	195	0	264	0	42

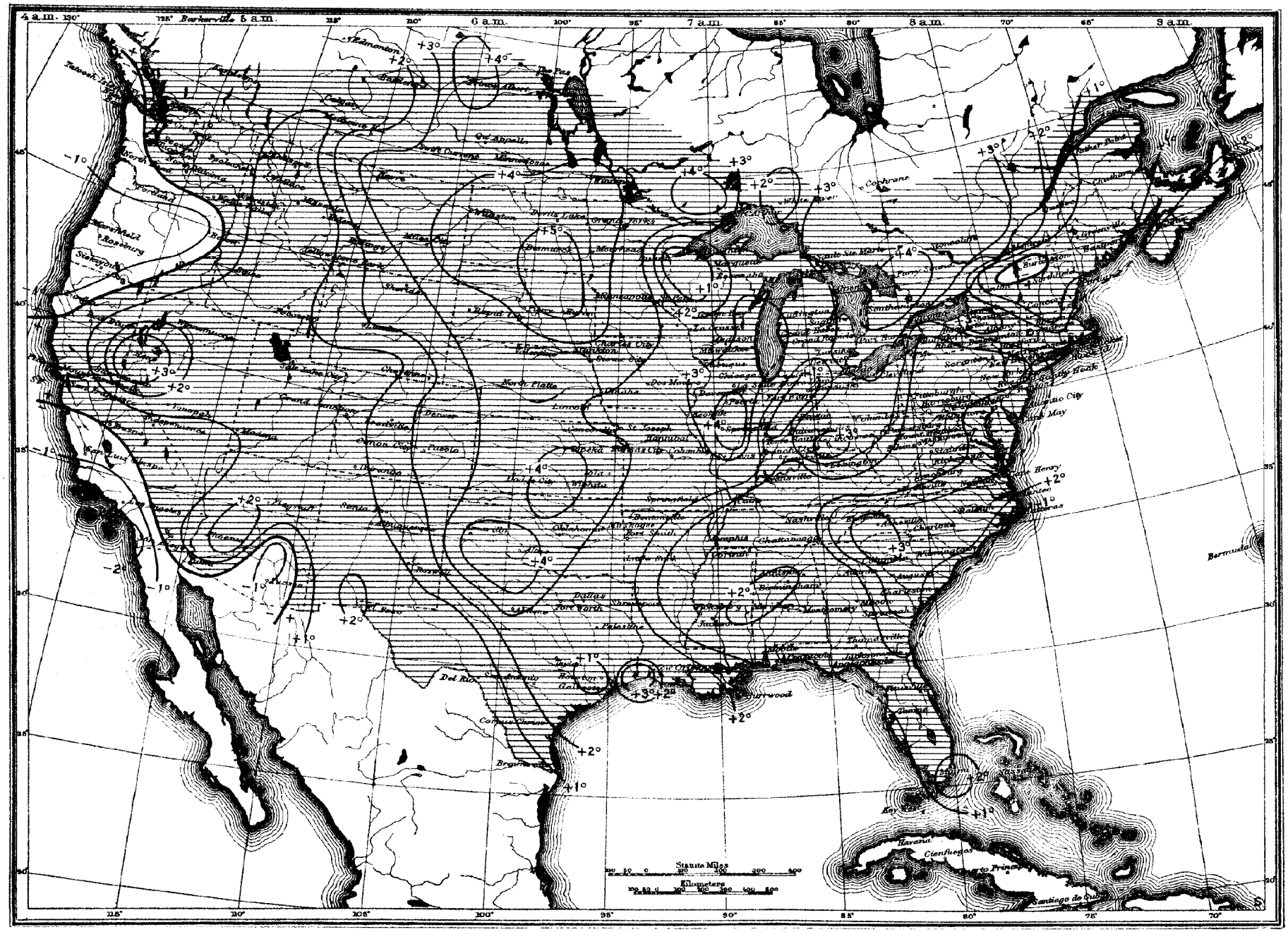
TANANA, ALASKA †

[H_b=228 ft.; h_t=4 ft.; h_r=3 ft.; h_a=— ft.]

Month	Average hourly velocity	Prevailing direction	Maximum velocity	Direction at time of maximum velocity	Days with 32 miles or over	North	Northeast	East	Southeast	South	Southwest	West	Northwest	Calm	Clear	Partly cloudy	Cloudy	0.01 inch or over	0.04 inch or over	T or more	0.01 inch or more melted	Hail	Light	Dense	32° or below	90° or above	Minimum temperature 32° or below	Thunderstorms	Aurora
January	----	* SE.	----	------	----	2	5	0	21	1	4	1	12	16	16	8	7	10	8	10	10	0	0	2	31	0	31	0	12
February	----	SE.	----	------	----	0	2	1	26	0	1	0	8	18	12	8	8	8	4	9	8	0	0	2	28	0	28	0	12
March	----	SE.	----	------	----	0	2	0	33	0	0	1	4	22	17	7	7	4	2	5	4	0	0	0	31	0	31	0	14
April	----	SE.	----	------	----	5	0	2	30	2	1	1	2	17	10	13	7	3	1	8	3	1	0	0	1	0	30	0	6
May	----	SE.	----	------	----	7	0	0	22	5	6	1	15	6	8	12	11	10	6	2	1	2	0	0	0	0	17	0	0
June	----	SE.	----	------	----	1	1	0	20	6	10	3	14	5	8	12	10	12	7	2	1	0	0	0	0	0	5	4	0
July	----	NW.	----	------	----	3	0	1	12	1	8	5	17	15	11	15	5	11	6	0	0	0	0	0	0	0	4	1	0
August	----	SE.	----	------	----	2	1	0	15	4	8	2	5	25	6	13	12	15	13	0	0	0	0	1	0	0	5	0	3
September	----	SE.	----	------	----	1	0	2	19	1	5	1	6	25	5	18	9	9	6	3	1	0	0	1	0	0	23	0	11
October	----	SE.	----	------	----	1	4	1	26	0	0	4	4	22	8	13	10	8	1	12	8	0	0	1	18	0	31	0	13
November	----	SE.	----	------	----	----	----	----	----	----	----	----	----	----	7	7	16	12	7	15	12	0	0	0	30	0	30	0	5
December	----	----	----	------	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Year	----	----	----	------	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

* By eye observations at this station.

† For hours of observation see note on preceding page.



DEPARTURE FROM NORMAL TEMPERATURE, IN DEGREES FAHRENHEIT, FOR THE CROP SEASON OF 1933, MARCH 1 TO SEPTEMBER 30.

Shaded portions show excess (+) and unshaded portions deficiency (−) of temperature. Figures show mean daily excess (+) or deficiency (−) of temperature over areas bounded by light lines.

TOTAL PRECIPITATION, INCHES, FOR THE CROP SEASON OF 1933, MARCH 1 TO SEPTEMBER 30.

DEPARTURE FROM NORMAL PRECIPITATION FOR THE CROP SEASON OF 1933, MARCH 1 TO SEPTEMBER 30.

Shaded portions show excess (+) and unshaded portions deficiency (−) of precipitation. Figures show, in inches, amount of excess or deficiency of precipitation over areas bounded by light lines.

TOTAL PRECIPITATION, INCHES, FOR THE YEAR 1933.