

1997

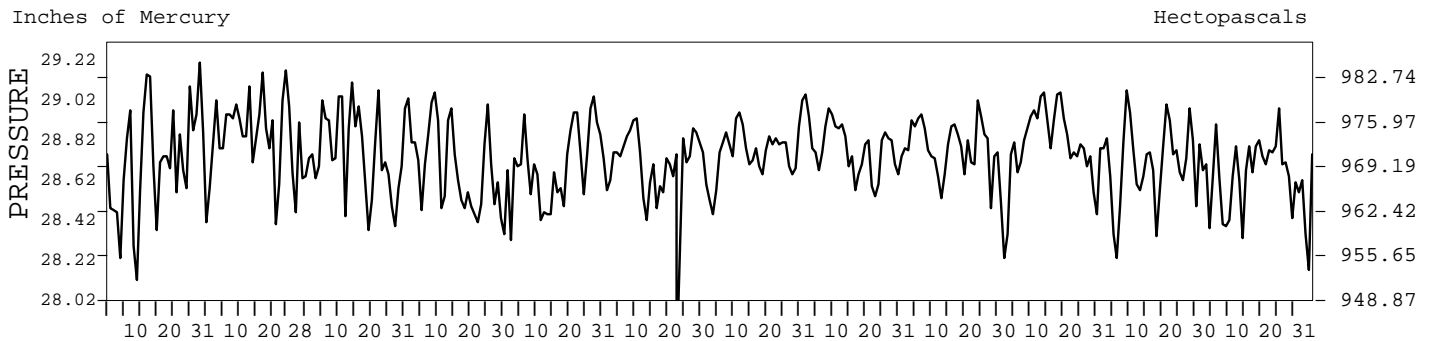
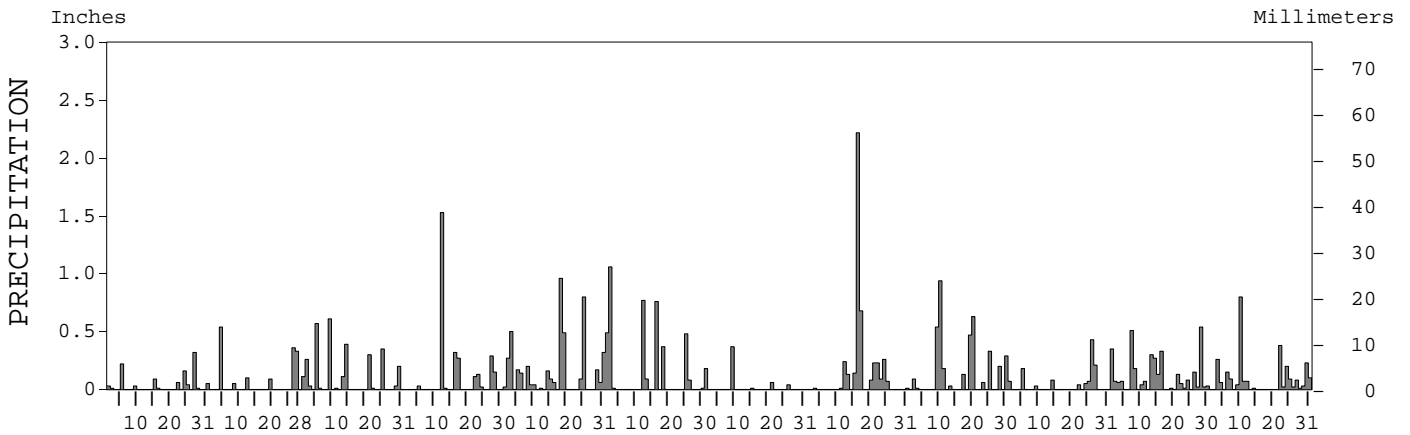
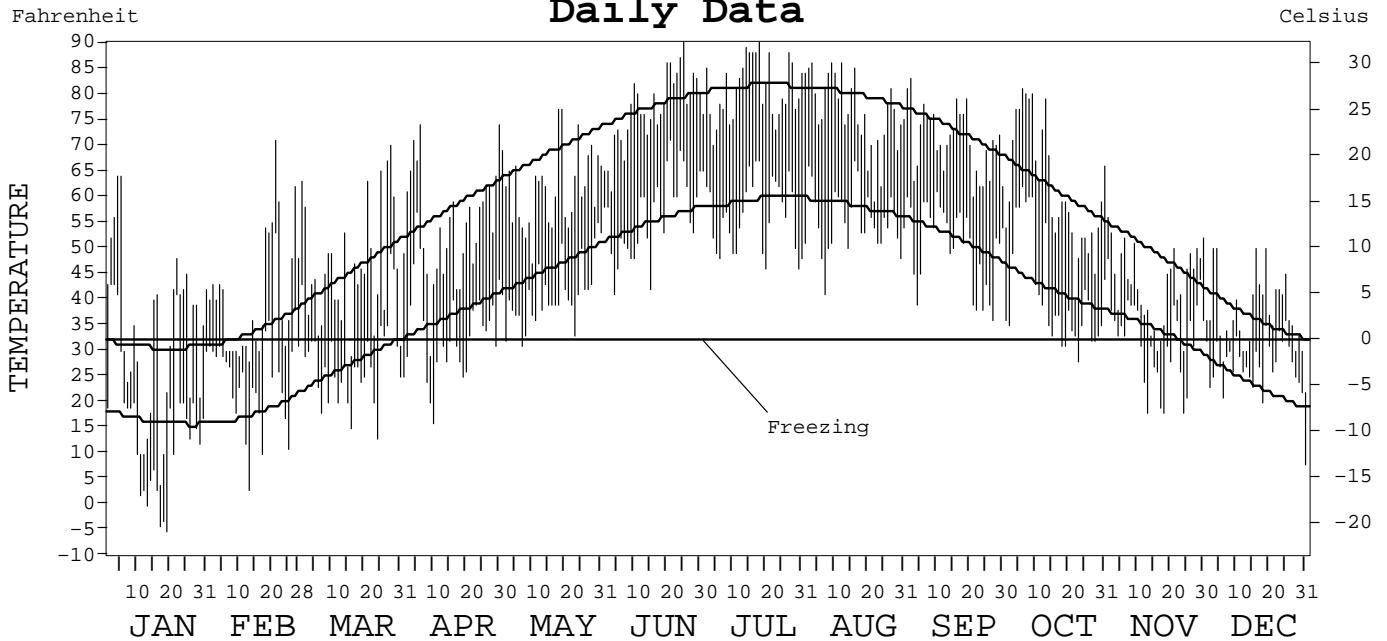
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-4047

YOUNGSTOWN,
OHIO (YNG)

Daily Data



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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE
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NATIONAL CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

James H. ...
ACTING DIRECTOR

NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 1997

YOUNGSTOWN, OH (YNG)

LATITUDE: 41° 15' 16" N LONGITUDE: 80° 40' 26" W ELEVATION (FT): GRND: 1178 BARO: 1199 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14852

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	33.4	40.5	46.0	54.7	61.7	77.1	80.8	76.6	70.9	61.9	43.1	37.2	57.0	
	HIGHEST DAILY MAXIMUM	64	71	70	74	77	90	90	86	83	81	56	50	90	
	DATE OF OCCURRENCE	05+	21	28	30+	19+	25	18	12+	02	06	01	19+	JUL 18	
	MEAN DAILY MINIMUM	16.3	25.1	27.9	33.9	41.0	56.2	56.7	55.4	50.5	41.5	31.9	27.3	38.6	
	LOWEST DAILY MINIMUM	-5	3	13	16	31	41	46	41	36	28	18	8	-5	
	DATE OF OCCURRENCE	19	13	24	10	07	04	30+	07	27	23	24+	31	JAN 19	
	AVERAGE DRY BULB	24.9	32.8	37.0	44.3	51.4	66.7	68.8	66.0	60.7	51.7	37.5	32.3	47.8	
	MEAN WET BULB		29.8	33.4	38.4	46.4		63.1	60.9	56.2	46.8	35.4	30.2		
	MEAN DEW POINT		24.3	27.5	29.7	40.3		58.9	57.4	52.9	42.1	31.7	26.3		
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	1	1	0	0	0	0	0	0	2
	MAXIMUM ≤ 32°	14	11	3	1	0	0	0	0	0	0	3	8	40	
	MINIMUM ≤ 32°	27	24	25	14	2	0	0	0	0	5	14	27	138	
	MINIMUM ≤ 0°	4	0	0	0	0	0	0	0	0	0	0	0	4	
H/C	HEATING DEGREE DAYS	1236	894	862	617	415	52	19	45	148	435	817	1007	6547	
	COOLING DEGREE DAYS	0	0	0	0	0	110	143	86	28	30	0	0	397	
RH	MEAN (PERCENT)	76	73	70	60	68	72	71	77	77	73	80	80	73	
	HOUR 01 LST	79	74	76	68	77	85	87	90	88	83	82	81	81	
	HOUR 07 LST	79	77	76	73	77	85	84	89	91	86	85	82	82	
	HOUR 13 LST	72	69	65	48	54	57	54	60	61	56	72	75	62	
	HOUR 19 LST	73	70	67	56	63	62	61	71	76	72	78	79	69	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	4	2	2	0	1	2	2	3	4	1	5	1	27	
	THUNDERSTORMS	0	1	1	3	7	3	5	5	6	0	0	0	31	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	28.71	28.86	28.75	28.70	28.68		28.77	28.77	28.75	28.82	28.69	28.64		
	MEAN SEA-LEVEL PRESS. (IN.)		30.16	30.04	29.98	29.95		30.01	30.02	30.00		29.98	29.93		
WINDS	RESULTANT SPEED (MPH)	8.4	4.9	4.3	3.8	4.2		1.2	1.8	1.9	2.0	3.1	4.3		
	RES. DIR. (TENS OF DEGS.)	23	23	27	29	26		29	26	25	22	23	24		
	MEAN SPEED (MPH)	12.2	10.2	11.0	9.1	10.8	7.5	6.5	6.6	6.6	7.7	8.7	9.2	8.8	
	PREVAIL. DIR. (TENS OF DEGS.)	25	22	26	30	29	21	01	22	22	21	22	24	22	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	33	44	31	39	46	32	23	29	31	30	29	24	46	
	DIR. (TENS OF DEGS.)	23	23	32	24	24	33	30	22	24	24	31	10	24	
	DATE OF OCCURRENCE	10+	27	31	06	03	25	17+	12	29	27	26	24	MAY 03	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	41	57	40	48	57	37	33	37	38	37	38	31	57	
DIR. (TENS OF DEGS.)	24	24	28	25	25	34	26	21	22	24	30	13	25		
DATE OF OCCURRENCE	16	27	15	06	03	25	09	12	29	27	26	24	MAY 03		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.03	1.47	2.99	2.86	4.59	4.12	0.66	4.40	3.90	1.16	3.42	2.71	33.31	
	GREATEST 24-HOUR (IN.)	0.33	0.69	0.61	1.53	1.33	1.23	0.37	2.25	1.31	0.57	0.57	0.84	2.25	
	DATE OF OCCURRENCE	27-28	26-27	09	12	18-19	01-02	09	16-17	09-10	26-27	13-14	09-10	AUG 16-17	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	12	6	14	10	19	10	5	14	13	9	22	19	153	
PRECIPITATION ≥ 0.10	3	4	9	7	11	6	2	8	9	3	10	7	79		
PRECIPITATION ≥ 1.00	0	0	0	1	0	1	0	1	0	0	0	0	3		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)									0.8	8.2	13.5			
	GREATEST 24-HOUR (IN.)									0.4	4.8	4.2			
	DATE OF OCCURRENCE									27+	15-16	30			
	MAXIMUM SNOW DEPTH (IN.)									T	5	4			
	DATE OF OCCURRENCE									28	17+	31+			
	NUMBER OF DAYS WITH:														
SNOWFALL ≥ 1.0									0	3	4				

HEATING DEGREE DAYS (base 65°F) 1997 YOUNGSTOWN, OH (YNG)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1968-69	32	39	73	400	710	1150	1243	1066	1032	491	275	116	6627
1969-70	13	17	167	440	803	1242	1457	1128	1036	509	180	77	7069
1970-71	20	19	101	347	716	1077	1367	1055	1070	642	314	18	6746
1971-72	16	26	76	221	788	898	1186	1198	1028	611	208	157	6413
1972-73	51	39	154	580	842	972	1157	1116	630	512	324	6	6383
1973-74	8	17	120	308	659	1037	1077	1103	878	465	288	60	6020
1974-75	8	10	216	480	692	1064	1069	995	972	717	149	48	6420
1975-76	8	8	189	389	559	1063	1391	873	672	468	313	22	5955
1976-77	18	59	183	584	969	1321	1692	1119	703	449	148	127	7372
1977-78	9	28	65	429	652	1142	1403	1378	1030	582	273	86	7077
1978-79	31	2	82	456	680	1004	1363	1332	781	568	310	74	6683
1979-80	35	37	141	445	652	987	1250	1270	1008	596	233	139	6793
1980-81	11	12	117	576	826	1220	1438	989	894	408	232	16	6739
1981-82	12	21	189	491	721	1101	1414	1098	920	628	81	99	6775
1982-83	11	65	161	302	587	763	1083	885	757	543	359	81	5597
1983-84	13	0	143	406	662	1265	1393	850	1101	486	323	18	6660
1984-85	16	13	182	271	763	885	1417	1137	796	383	200	111	6174
1985-86	10	17	141	365	589	1255	1207	1014	799	437	186	86	6106
1986-87	9	64	105	381	772	1036	1201	999	802	464	185	43	6061
1987-88	6	44	118	594	611	971	1252	1123	878	532	206	91	6426
1988-89	11	29	134	618	675	1086	983	1119	837	618	306	48	6464
1989-90	0	20	130	382	772	1446	925	863	731	488	306	75	6138
1990-91	20	6	141	357	603	918	1183	927	745	399	102	26	5427
1991-92	0	3	165	360	766	999	1115	960	919	515	264	108	6174
1992-93	12	55	168	523	721	1005	1044	1121	950	526	239	70	6434
1993-94	3	8	192	481	732	1099	1438	1091	929	452	364	58	6847
1994-95	5	39	156	429	581	922	1096	1113	776	572	213	20	5922
1995-96	20	0	169	353	869	1238	1273	1134	1043	567	318	33	7017
1996-97	29	12	141	434	904	971	1236	894	862	617	415	52	6567
1997-	19	45	148	435	817	1007							

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COOLING DEGREE DAYS (base 65°F) 1997 YOUNGSTOWN, OH (YNG)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	0	0	0	1	26	101	170	151	67	8	0	0	524
1970	0	0	0	16	71	110	182	148	112	4	0	0	643
1971	0	0	0	0	16	164	119	109	114	10	0	0	532
1972	0	0	0	0	8	38	184	125	39	0	0	0	394
1973	0	0	0	4	2	137	204	210	81	0	0	0	638
1974	0	0	0	15	21	74	162	143	21	0	1	0	437
1975	0	0	0	0	65	163	204	207	8	9	0	0	656
1976	0	0	0	30	21	145	137	100	28	0	0	0	461
1977	0	0	4	28	80	86	246	171	89	0	4	0	708
1978	0	0	0	0	37	102	142	176	117	0	0	0	574
1979	0	0	0	7	38	95	147	139	61	14	0	0	501
1980	0	0	0	0	23	41	153	203	66	0	0	0	486
1981	0	0	0	6	30	179	212	124	55	0	0	0	606
1982	0	0	0	2	66	28	209	98	42	16	10	4	475
1983	0	0	0	5	5	127	299	292	117	4	0	0	849
1984	0	0	0	6	18	151	141	207	53	6	0	0	582
1985	0	0	0	41	39	33	119	111	118	0	1	0	462
1986	0	0	2	9	44	97	196	136	90	5	0	0	579
1987	0	0	0	5	84	167	294	153	33	0	1	0	737
1988	0	0	0	0	27	136	295	246	25	7	0	0	736
1989	0	0	4	0	37	84	219	153	71	8	0	0	576
1990	0	0	10	35	9	112	159	117	56	8	0	0	506
1991	0	0	0	18	144	165	227	216	89	23	0	0	882
1992	0	0	0	5	16	52	166	75	49	0	0	0	363
1993	0	0	0	0	18	111	261	209	41	1	0	0	641
1994	0	0	0	15	12	182	224	112	39	0	0	0	584
1995	0	0	0	0	9	185	287	332	16	0	0	0	829
1996	0	0	0	0	46	128	116	107	37	0	0	0	434
1997	0	0	0	0	0	110	143	86	28	30	0	0	397

SNOWFALL (inches) 1997 YOUNGSTOWN, OH (YNG)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1968-69	0.0	0.0	0.0	T	5.8	21.6	8.6	11.8	9.3	T	T	0.0	57.1
1969-70	0.0	0.0	0.0	0.4	6.0	21.2	15.2	13.4	10.0	0.6	0.0	0.0	66.8
1970-71	0.0	0.0	T	T	1.7	15.6	16.0	18.0	22.0	0.4	0.0	0.0	73.7
1971-72	0.0	0.0	0.0	0.0	20.1	7.2	9.0	19.0	9.3	2.1	0.0	0.0	66.7
1972-73	0.0	0.0	0.0	0.4	8.2	8.3	5.3	11.8	8.5	1.8	T	0.0	44.3
1973-74	0.0	0.0	0.0	0.0	3.3	7.0	9.8	9.2	9.2	4.7	T	0.0	43.2
1974-75	0.0	0.0	0.0	0.9	5.3	20.4	6.6	10.2	13.5	1.8	0.0	0.0	58.7
1975-76	0.0	0.0	0.0	0.0	3.7	10.2	19.7	7.9	5.0	0.6	T	0.0	47.1
1976-77	0.0	0.0	0.0	T	8.9	10.9	22.0	10.5	3.3	0.6	0.0	0.0	56.2
1977-78	0.0	0.0	0.0	T	5.6	18.6	36.0	9.6	3.6	T	0.0	0.0	73.4
1978-79	0.0	0.0	0.0	0.0	2.0	5.7	16.2	9.6	2.8	T	0.0	0.0	36.3
1979-80	0.0	0.0	0.0	T	1.6	7.4	6.2	9.2	8.4	T	T	0.0	32.8
1980-81	0.0	0.0	0.0	0.1	5.9	11.0	13.8	8.2	10.1	T	0.0	0.0	49.1
1981-82	0.0	0.0	0.0	0.4	1.5	17.6	13.5	5.4	13.1	10.6	0.0	0.0	62.1
1982-83	0.0	0.0	0.0	T	4.1	10.7	3.4	7.6	11.9	1.7	0.0	0.0	39.4
1983-84	0.0	0.0	T	0.0	2.8	7.9	12.4	22.3	18.0	T	0.0	0.0	63.4
1984-85	0.0	0.0	0.0	0.0	4.6	9.4	21.2	9.1	1.7	5.8	0.0	0.0	51.8
1985-86	0.0	0.0	0.0	0.0	T	16.4	7.0	9.9	7.4	3.2	T	0.0	43.9
1986-87	0.0	0.0	0.0	0.0	6.8	3.2	20.3	3.7	20.6	12.4	0.0	0.0	67.0
1987-88	0.0	0.0	0.0	0.2	4.6	29.5	10.4	17.4	14.4	1.2	0.0	0.0	77.7
1988-89	0.0	0.0	0.0	0.9	2.4	13.0	3.7	9.6	11.1	1.9	0.3	0.0	42.9
1989-90	0.0	0.0	0.0	2.3	3.0	14.6	11.7	8.4	2.3	3.5	T	0.0	45.8
1990-91	0.0	0.0	T	0.0	0.5	6.6	9.3	12.2	1.6	0.4	0.0	0.0	30.6
1991-92	T	0.0	0.0	0.0	2.3	8.3	18.3	3.0	21.1	1.5	0.0	0.0	54.5
1992-93	0.0	0.0	0.0	4.0	6.8	14.0	8.7	17.6	30.9	0.5	0.0	0.0	82.5
1993-94	0.0	0.0	0.0	7.7	1.4	17.4	27.2	15.6	9.2	2.5	0.0	0.0	81.0
1994-95	0.0	0.0	T	0.0	1.5	3.6	8.8	12.4	6.3	1.1	T	0.0	33.7
1995-96	0.0	0.0	0.0	0.0		18.6	13.9	5.6	4.9	2.8			
1996-97													
1997-				0.8	8.2	13.5							
POR= 52 YRS	T	0.0	T	0.6	5.6	12.5	12.9	10.8	10.6	2.4	0.1	0.0	55.5

WBAN : 14852

REFERENCE NOTES:

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1997
YOUNGSTOWN,
OHIO (YNG)

The Youngstown Municipal Airport is located in northeastern Ohio approximately 8 miles north of the city of Youngstown in Trumbull County. Airport elevation is 1,178 feet, about 200 feet higher than most communities in the Mahoning and Shenango River Valleys. There are numerous natural and man-made lakes in the region, including Lake Erie, 45 miles to the north. Drainage from the area flows southward through the Mahoning and Shenango Rivers which join to form the Beaver River at New Castle, Pennsylvania. The Beaver empties into the Ohio River at Rochester, Pennsylvania.

This entire area experiences frequent outbreaks of cold Canadian air masses which may be modified by passage over Lake Erie. This effect produces widespread cloudiness especially during the cool months of the year. The winter months are characterized by persistent cloudiness and intermittent snow flurries. The daily temperature range during most winter days is quite small. During most winters, the bulk of the snow falls as flurries of 2 inches or less per occurrence, although several snowstorms per year will produce amounts in the 4- to 10-inch range.

Destructive storms seldom occur, and tornadoes are not common. During recent years flood control projects have all but eliminated the threat of serious river flooding. Flash flooding of small streams and creeks rarely affects residential areas. Certain communities have well known areas of urban flooding during periods of prolonged heavy thunderstorms.

The climate of the Youngstown district has had an important role in the growth and development of this industrial area. Temperatures seldom reach extreme values especially during the summer months. However, high humidity during most days of the year tends to accentuate the temperature. Rainfall, reasonably well distributed throughout the year, provides a more than adequate supply of water for agriculture, industrial, and residential use.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is October 14 and the average last occurrence in the spring is May 6.

STATION LOCATION

YOUNGSTOWN, OHIO

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUTOMATED STATION	* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS	
						SEA LEVEL	GROUND												
							WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND				WIND
Administration Building Municipal Airport	4/13/42	Present	NA	41°16'	80°40'	1178	a20	c4	4 e5	NA	NA	3 d3	3 d3	b4 f4	NA	Thermometer shelter and rain gage 50 feet S of Admin. Bldg. to 4/27/50 and 160 feet ENE of Admin. Bldg. thereafter. a - 62 feet to November 1958. b - Commissioned 9/25/59 on site about 1800 feet SW of Admin. Bldg. c - Removed prior to 12/31/66. d - Minor adjustment 5/3/69. e - Minor adjustment 5/15/81. f - Type change 7/17/85. S ASOS Commissioned 09/01/95			

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, North Carolina 28801.
 INQUIRIES/COMMENTS CALL: (704) 271-4800.

National Climatic Data Center
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