

1998

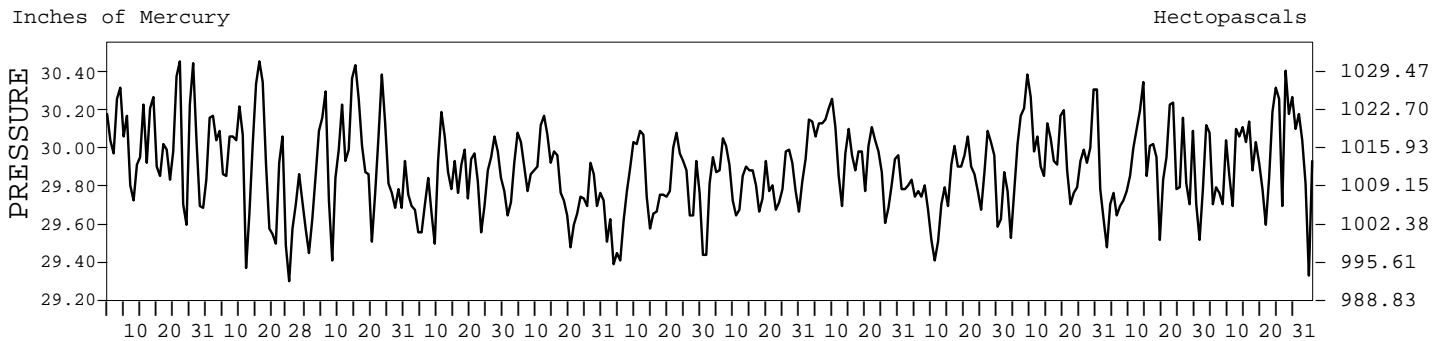
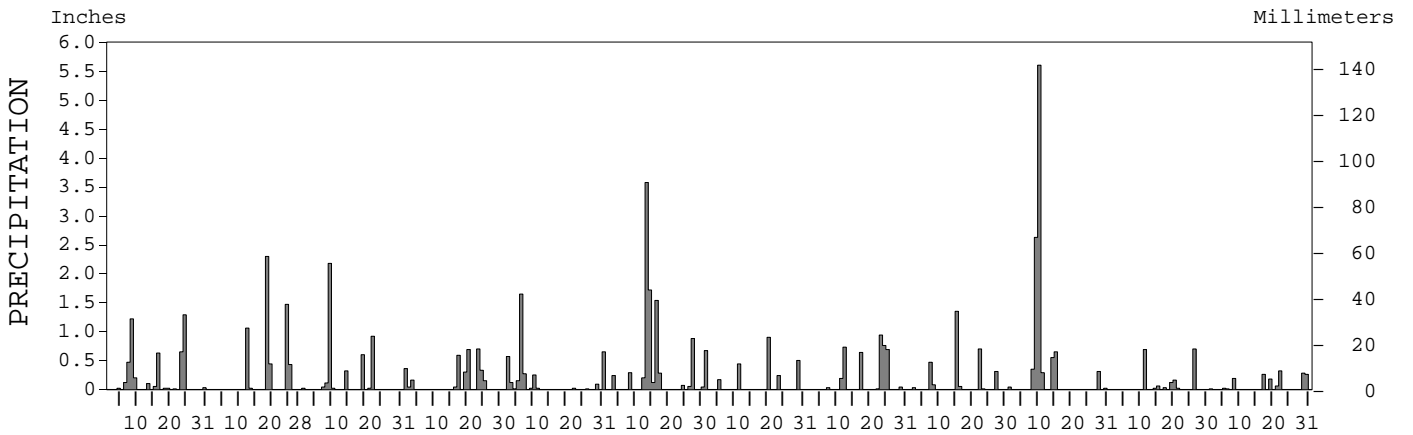
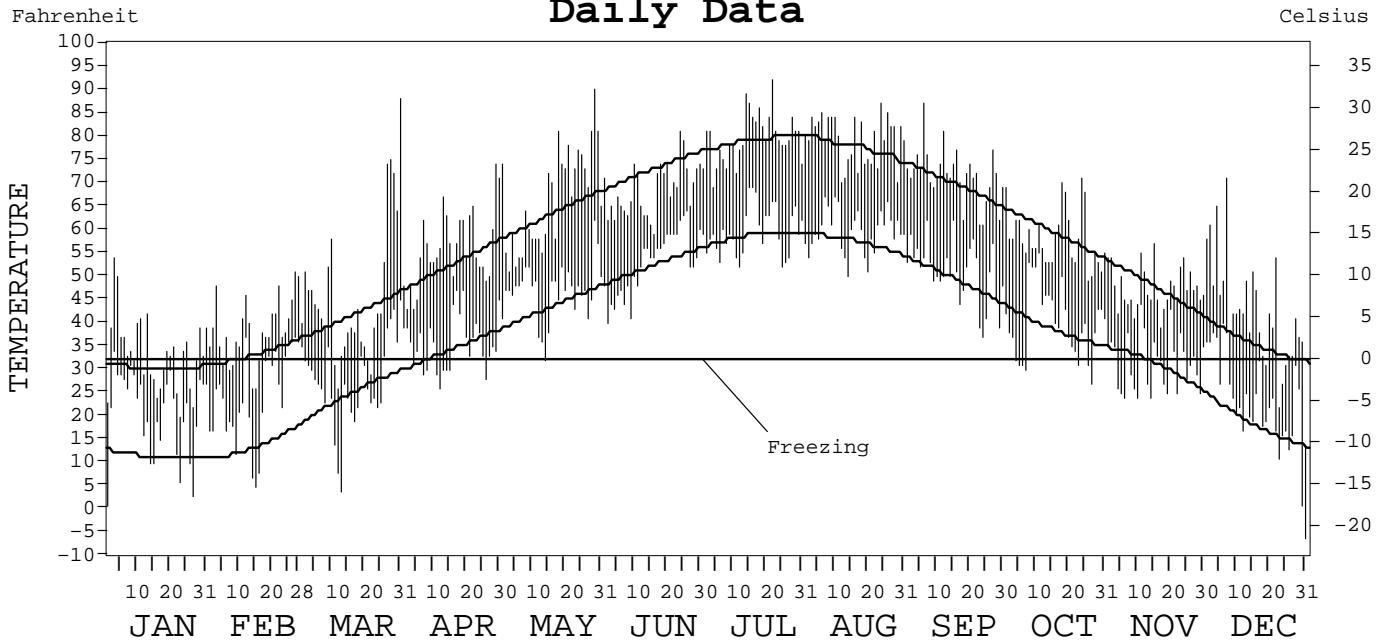
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-2389

PORTLAND,
MAINE (PWM)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE
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 ASHEVILLE, NORTH CAROLINA

METEOROLOGICAL DATA FOR 1998

PORTLAND, ME (PWM)

LATITUDE: 43° 38' 32" N LONGITUDE: 70° 18' 16" W ELEVATION (FT): GRND: 43 BARO: 78 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14764

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	33.4	38.4	46.0	55.9	66.7	68.5	79.5	79.3	71.5	58.3	47.5	42.0	57.2	
	HIGHEST DAILY MAXIMUM	54	51	88	74	90	81	92	87	87	71	57	71	92	
	DATE OF OCCURRENCE	03	27	31	29	29	24	22	24	06	24	15	07	JUL 22	
	MEAN DAILY MINIMUM	20.8	24.1	27.4	35.6	46.8	52.8	59.5	59.6	50.9	40.1	31.3	22.9	39.3	
	LOWEST DAILY MINIMUM	1	5	4	26	32	40	52	50	37	27	24	-6	-6	
	DATE OF OCCURRENCE	01	15	13	12	14	02	25+	14	24	27	14+	31	DEC 31	
	AVERAGE DRY BULB	27.1	31.3	36.7	45.8	56.8	60.7	69.5	69.5	61.2	49.2	39.4	32.5	48.3	
	MEAN WET BULB	25.8	28.8	33.8	40.7	52.1	57.5	64.7	64.3	57.8	45.7		29.4	29.4	
	MEAN DEW POINT	20.6	22.7	28.4	33.1	47.8	55.0	61.2	61.1	54.2	40.3		22.3	22.3	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	1	0	1	0	0	0	0	0	0	2
	MAXIMUM ≤ 32°	13	6	4	0	0	0	0	0	0	0	0	5	28	
	MINIMUM ≤ 32°	30	20	22	9	1	0	0	0	0	7	16	25	130	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	1	1		
H/C	HEATING DEGREE DAYS	1164	938	872	569	264	143	3	9	124	482	761	1002	6331	
	COOLING DEGREE DAYS	0	0	2	0	15	21	152	154	17	0	0	0	361	
RH	MEAN (PERCENT)	76	72	73	64	75	84	77	78	78	72	69	68	74	
	HOUR 01 LST	79	78	80	75	86	93	91	89	88	79	74	73	82	
	HOUR 07 LST	79	81	81	71	78	88	84	82	89	83	80	77	81	
	HOUR 13 LST	69	61	60	52	63	73	63	62	62	59	58	54	61	
	HOUR 19 LST	75	72	74	62	73	83	71	78	79	70	68	64	72	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	1	3	4	2	8	14	4	5	6	0	1	3	51	
	THUNDERSTORMS	0	0	0	0	3	5	3	4	3	0	0	0	18	
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.)	30.03	29.91	29.92	29.83	29.84	29.77	29.83	29.97	29.81	29.97	29.92	29.97	29.90	
	MEAN SEA-LEVEL PRESS. (IN.)		29.98	29.99	29.90	29.90	29.83	29.89	30.04	29.87	30.03		30.04		
WINDS	RESULTANT SPEED (MPH)		4.7	1.4	2.9	1.2	2.1	2.7	1.7	2.0	3.9	3.5	3.5		
	RES. DIR. (TENS OF DEGS.)		36	31	34	09	16	22	23	27	31	27	29		
	MEAN SPEED (MPH)	8.5	8.3	8.7	8.5	7.6	7.4	6.2	6.1	6.8	9.5	7.5	7.1	7.7	
	PREVAIL. DIR. (TENS OF DEGS.)	01	33	04	32	08	09	19	19	22	28	29	23	28	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	33	32	28	31	32	34	26	57	25	36	36	36	57	
	DIR. (TENS OF DEGS.)	31	32	28	01	28	13	29	28	31	27	28	29	28	
	DATE OF OCCURRENCE	25	26+	31	10	29	14+	29	24	23	01	24	22	AUG 24	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	40	44	38	37	40	44	37	61	33	44	43	46	61	
DIR. (TENS OF DEGS.)	29	06	16	01	29	13	29	28	31	32	28	27	28		
DATE OF OCCURRENCE	25	18	14	10	29	14+	10	24	23	30+	24	22	AUG 24		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	4.83	5.72	4.23	3.36	3.83	9.01	2.92	4.03	3.00	10.45	1.80	1.59	54.77	
	GREATEST 24-HOUR (IN.)	1.94	2.35	2.18	1.03	1.65	4.43	0.90	1.22	1.40	6.51	0.70	0.54	6.51	
	DATE OF OCCURRENCE	23-24	18-19	09	23-24	06	13-14	20	23-24	15-16	09-10	26	29-30	OCT 09-10	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	14	6	9	10	13	12	6	9	8	9	8	10	114	
PRECIPITATION ≥ 0.10	8	5	5	8	7	9	6	6	4	7	4	6	75		
PRECIPITATION ≥ 1.00	2	3	1	0	1	3	0	0	1	2	0	0	13		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	17.1	0.9	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	11.7	39.4	
	GREATEST 24-HOUR (IN.)	8.6	0.9	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	7.6	8.6	
	DATE OF OCCURRENCE	15-16	18	22								18+	29-30	JAN 15-16	
	MAXIMUM SNOW DEPTH (IN.)	7	6	3	0	0	0	0	0	0	0	T	8	8	
	DATE OF OCCURRENCE	24+	03+	23+								18	30	DEC 30	
	NUMBER OF DAYS WITH:														
SNOWFALL ≥ 1.0	3	0	2	0	0	0	0	0	0	0	0	4	9		

NORMALS, MEANS, AND EXTREMES

PORTLAND, ME (PWM)

LATITUDE: 43° 38' 32" N LONGITUDE: 70° 18' 16" W ELEVATION (FT): GRND: 43 BARO: 78 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14764

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	30.3	33.1	41.4	52.3	63.2	72.7	78.8	77.4	69.3	58.7	47.0	35.1	54.9
	MEAN DAILY MAXIMUM	42	30.7	33.2	41.3	52.6	63.5	73.0	78.8	77.5	69.4	58.7	47.2	35.7	55.1
	HIGHEST DAILY MAXIMUM	58	64	64	88	85	94	98	99	103	95	88	74	71	103
	YEAR OF OCCURRENCE		1950	1957	1998	1957	1987	1991	1977	1975	1983	1963	1987	1998	AUG 1975
	MEAN OF EXTREME MAXS.	51	49.0	50.5	59.4	71.6	83.2	89.0	92.0	90.0	85.8	75.7	64.5	54.2	72.1
	NORMAL DAILY MINIMUM	30	11.4	13.5	24.5	34.1	43.4	52.1	58.3	57.1	48.9	38.3	30.4	17.8	35.8
	MEAN DAILY MINIMUM	42	12.6	13.8	24.3	33.6	43.1	52.1	58.1	56.8	48.7	38.2	30.0	18.0	35.8
	LOWEST DAILY MINIMUM	58	-26	-39	-21	8	23	33	40	33	23	15	3	-21	-39
	YEAR OF OCCURRENCE		1971	1943	1950	1954	1956	1944	1965	1965	1941	1976	1989	1963	FEB 1943
	MEAN OF EXTREME MINS.	51	-9.1	-7.5	3.6	21.5	30.6	40.5	47.4	44.4	33.1	23.5	14.8	-3.3	20.0
	NORMAL DRY BULB	30	20.8	23.3	33.0	43.3	53.3	62.4	68.6	67.3	59.1	48.5	38.7	26.5	45.4
	MEAN DRY BULB	51	21.8	23.8	32.3	43.1	53.3	62.5	68.5	67.0	58.7	48.6	38.6	27.1	45.4
	MEAN WET BULB	47	20.4	22.0	29.5	38.6	48.3	57.2	62.9	61.8	54.7	45.0	35.9	24.9	41.8
	MEAN DEW POINT	47	13.4	14.6	22.3	31.9	43.0	53.3	59.3	58.5	51.3	40.5	30.7	18.7	36.5
	NORMAL NO. DAYS WITH:														
	MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.0	0.2	0.9	1.9	1.2	0.3	0.0	0.0	0.0	4.5
	MAXIMUM ≤ 32°	30	17.2	12.9	4.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	12.4	47.7
MINIMUM ≤ 32°	30	29.9	26.5	25.2	13.5	2.0	0.0	0.0	0.0	0.8	8.6	19.3	28.9	154.7	
MINIMUM ≤ 0°	30	6.1	3.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	13.3	
H/C	NORMAL HEATING DEG. DAYS	30	1370	1168	992	651	363	100	11	39	189	512	789	1194	7378
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	0	22	123	111	12	0	0	0	268
RH	NORMAL (PERCENT)	30	67	65	66	67	71	75	75	76	77	74	73	70	71
	HOUR 01 LST	30	72	70	72	77	82	87	88	88	88	83	79	75	80
	HOUR 07 LST	30	73	73	73	72	75	79	81	84	85	84	80	77	78
	HOUR 13 LST	30	58	56	56	54	58	60	60	60	60	58	61	60	58
	HOUR 19 LST	30	66	64	66	66	69	73	73	76	78	75	73	69	71
S	PERCENT POSSIBLE SUNSHINE	55	56	60	56	55	54	60	63	64	63	57	48	53	57
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	58	2.0	2.1	3.4	3.2	5.1	5.2	6.4	5.6	5.1	4.7	3.6	2.0	48.4
	THUNDERSTORMS	58	0.0	0.1	0.4	0.5	1.9	4.1	4.5	3.5	1.5	0.6	0.4	0.1	17.6
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	1					5.6	6.4							
	MIDNIGHT-MIDNIGHT (OKTAS)														
	MEAN NO. DAYS WITH:														
CLEAR	1	4.0	2.0	7.0		7.0	6.0	1.0	9.0	3.0	8.0		5.0		
PARTLY CLOUDY	1		1.0	3.0		4.0	5.0	1.0	1.0	2.0			4.0		
CLOUDY	1	4.0	5.0	7.0		10.0	9.0	2.0	3.0	6.0	3.0		8.0		
PR	MEAN STATION PRESSURE (IN)	26	29.92	29.93	29.90	29.88	29.89	29.87	29.88	29.94	29.97	29.99	29.96	29.94	29.92
	MEAN SEA-LEVEL PRES. (IN)	46	29.98	29.99	29.96	29.94	29.97	29.94	29.96	29.99	30.05	30.06	30.00	30.01	29.99
WINDS	MEAN SPEED (MPH)	38	9.3	9.4	10.1	10.1	9.2	8.4	7.7	7.7	8.1	8.5	8.9	8.9	8.9
	PREVAIL. DIR (TENS OF DEGS)	21	36	34	32	18	18	18	18	18	18	34	36	36	18
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	4	38	45	37	40	32	34	31	57	33	37	41	40	57
	DIR. (TENS OF DEGS)		16	08	06	29	36	13	07	28	29	14	10	30	28
	YEAR OF OCCURRENCE		1996	1995	1996	1995	1995	1998	1996	1998	1995	1995	1997	1997	AUG 1998
	MAXIMUM 5-SECOND:														
SPEED (MPH)	4	53	56	44	47	44	44	44	61	41	47	72	49	72	
DIR. (TENS OF DEGS)		16	07	05	29	32	13	25	28	02	01	01	29	01	
YEAR OF OCCURRENCE		1996	1995	1996	1995	1995	1998	1997	1998	1996	1995	1995	1997	NOV 1995	
PRECIPITATION	NORMAL (IN)	30	3.53	3.33	3.67	4.08	3.62	3.44	3.09	2.87	3.09	3.90	5.17	4.55	44.34
	MAXIMUM MONTHLY (IN)	58	11.92	7.10	9.97	9.90	9.64	9.01	7.48	15.22	9.81	16.83	13.50	9.69	16.83
	YEAR OF OCCURRENCE		1979	1981	1953	1973	1984	1998	1976	1991	1954	1996	1983	1969	OCT 1996
	MINIMUM MONTHLY (IN)	58	0.76	0.04	0.81	0.71	0.49	0.70	0.61	0.27	0.30	0.26	0.90	0.98	0.04
	YEAR OF OCCURRENCE		1970	1987	1965	1941	1965	1941	1965	1947	1948	1947	1976	1955	FEB 1987
	MAXIMUM IN 24 HOURS (IN)	58	3.56	3.41	3.47	5.26	4.66	5.58	2.68	7.83	7.49	13.32	4.70	3.82	13.32
	YEAR OF OCCURRENCE		1977	1981	1951	1973	1989	1967	1996	1991	1954	1996	1990	1969	OCT 1996
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	10.5	9.5	11.4	11.7	12.0	11.4	10.1	9.7	8.9	9.5	11.8	12.2	128.7	
PRECIPITATION ≥ 1.00	30	0.7	0.8	1.0	0.9	0.7	0.8	0.7	0.6	0.8	1.2	1.7	1.4	11.3	
SNOWFALL	NORMAL (IN)	30	19.3	16.5	11.6	3.4	0.1	0.0	0.0	0.0	T	0.4	3.2	16.4	70.9
	MAXIMUM MONTHLY (IN)	57	62.4	61.2	49.0	15.9	7.0	0.0	0.0	0.0	T	3.8	20.5	54.8	62.4
	YEAR OF OCCURRENCE		1979	1969	1993	1982	1945				1992	1969	1997	1970	JAN 1979
	MAXIMUM IN 24 HOURS (IN)	57	27.1	21.5	18.6	15.9	7.0	0.0	0.0	0.0	T	3.6	11.1	22.8	27.1
	YEAR OF OCCURRENCE		1979	1969	1993	1982	1945				1992	1969	1972	1970	JAN 1979
	MAXIMUM SNOW DEPTH (IN)	46	31	31	33	17	1	0	0	0	0	2	10	40	40
	YEAR OF OCCURRENCE		1979	1967	1967	1956	1966					1969	1972	1970	DEC 1970
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	4.4	3.4	3.1	0.9	0.*	0.0	0.0	0.0	0.0	0.1	1.0	4.3	17.2	

PRECIPITATION (inches) 1998 PORTLAND, ME (PWM)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	3.63	6.28	3.36	2.86	1.67	3.53	5.45	2.20	5.28	2.51	8.54	9.69	55.00
1970	0.76	4.31	4.22	4.14	3.15	2.91	0.95	5.12	4.49	3.87	2.38	5.14	41.44
1971	2.25	6.76	4.74	1.86	4.09	1.09	3.14	3.24	3.55	3.95	4.13	2.85	41.65
1972	2.09	5.14	6.01	2.53	3.17	4.24	2.05	0.80	4.31	3.92	7.87	6.49	48.62
1973	2.58	2.57	3.33	9.90	6.28	4.87	1.70	3.48	2.23	3.38	2.40	9.57	52.29
1974	3.41	2.07	3.82	3.82	4.20	4.69	3.66	1.45	5.43	1.74	4.85	4.41	43.55
1975	4.40	2.51	3.20	3.71	1.09	4.87	2.06	3.89	4.34	4.50	6.01	8.14	48.72
1976	4.44	2.84	2.47	2.42	3.99	1.53	7.48	4.87	1.86	5.37	0.90	3.22	41.39
1977	6.46	3.75	6.92	3.46	2.04	3.38	2.83	2.79	4.63	8.30	6.46	6.61	57.63
1978	6.91	0.87	4.19	4.46	4.36	2.42	1.67	2.36	0.59	3.23	2.26	3.15	36.47
1979	11.92	3.50	4.17	6.48	5.15	1.97	5.90	5.53	3.28	6.71	3.95	2.59	61.15
1980	0.98	1.36	4.54	5.78	1.83	3.34	1.99	2.14	3.00	2.99	4.75	1.18	33.88
1981	0.93	7.10	1.44	3.46	2.27	4.59	5.44	2.31	6.14	4.71	2.80	4.51	45.70
1982	5.17	2.53	3.20	4.54	2.91	6.75	2.61	3.35	1.90	1.93	3.61	1.18	39.68
1983	4.59	3.94	9.75	6.82	5.98	1.35	4.31	2.58	1.35	3.38	13.50	8.78	66.33
1984	2.56	4.99	5.12	4.81	9.64	3.87	3.86	2.09	0.84	3.26	3.69	3.44	48.17
1985	1.03	1.54	3.15	1.25	2.03	2.74	3.30	3.18	2.97	4.07	6.36	2.39	34.01
1986	6.58	2.61	4.21	3.49	2.51	3.91	3.44	1.87	2.64	2.09	5.18	5.91	44.44
1987	5.21	0.04	4.29	6.33	2.62	5.01	1.79	2.48	4.64	2.54	3.82	2.01	40.78
1988	1.97	3.34	1.85	3.68	4.27	2.36	5.89	5.24	1.50	3.47	8.84	1.21	43.62
1989	1.15	2.37	2.14	2.94	8.74	4.49	2.50	1.73	4.48	4.81	3.97	2.23	41.55
1990	3.19	2.49	1.42	5.16	5.23	4.12	3.21	1.89	3.12	7.46	7.50	7.90	52.69
1991	2.91	1.85	6.19	6.71	3.77	1.47	2.35	15.22	5.44	2.83	4.34	4.06	57.14
1992	4.80	3.42	3.93	2.47	1.15	3.99	4.06	2.59	3.11	2.48	4.39	2.12	38.51
1993	2.80	3.84	6.26	5.69	1.14	2.89	2.73	1.21	4.10	3.74	4.05	5.40	43.85
1994	5.34	1.29	6.71	2.94	4.87	1.25	1.73	2.82	6.60	0.63	3.67	6.20	44.05
1995	4.92	3.55	2.14	2.36	3.31	2.60	3.14	0.47	2.40	4.78	7.27	4.35	41.29
1996	5.30	3.03	2.68	6.44	3.72	4.35	6.19	0.50	3.54	16.83	1.65	6.53	60.76
1997	4.59	2.48	4.05	5.21	2.41	0.76	2.01	4.15	2.68	1.37	5.21	2.57	37.49
1998	4.83	5.72	4.23	3.36	3.83	9.01	2.92	4.03	3.00	10.45	1.80	1.59	54.77
POR= 127 YRS	3.91	3.65	3.95	3.67	3.43	3.25	3.12	3.05	3.23	3.52	4.11	3.97	42.86

WBAN : 14764

AVERAGE TEMPERATURE (°F) 1998 PORTLAND, ME (PWM)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	24.2	25.0	31.1	43.0	52.8	62.6	67.6	71.3	60.9	48.9	41.1	28.7	46.4
1970	16.7	25.4	32.4	43.6	55.7	63.5	70.1	68.8	61.0	51.7	41.3	19.6	45.8
1971	12.2	21.9	31.6	41.6	52.7	64.3	69.0	68.9	61.3	52.5	35.4	27.3	44.9
1972	22.2	21.1	28.9	40.6	52.6	59.6	67.5	65.3	58.7	45.2	35.0	24.0	43.4
1973	23.1	23.4	37.7	45.5	51.3	63.8	70.8	70.9	58.4	49.2	37.7	33.5	47.1
1974	23.2	24.5	33.9	45.1	50.6	61.3	68.2	67.9	58.8	44.7	39.3	30.2	45.6
1975	26.7	25.0	29.8	40.0	55.6	61.5	70.1	66.8	57.2	49.3	43.0	24.3	45.8
1976	15.7	28.2	31.5	45.0	52.3	65.9	65.9	65.4	57.3	43.6	36.1	19.4	43.9
1977	14.6	21.9	36.2	42.4	54.4	59.0	68.2	66.6	57.6	48.1	39.4	25.4	44.5
1978	21.1	19.2	30.2	40.6	52.7	61.0	68.0	68.6	57.8	48.2	36.4	26.1	44.2
1979	23.7	15.6	35.6	42.2	55.3	62.7	69.3	64.8	57.4	47.5	42.4	29.8	45.5
1980	22.7	20.5	32.0	44.3	53.7	61.0	69.6	71.2	61.5	45.9	36.2	21.3	45.0
1981	13.8	32.3	35.7	45.2	55.3	63.9	68.8	66.0	58.6	46.6	38.9	29.2	46.2
1982	15.0	23.3	32.1	42.0	54.6	58.3	69.2	64.4	59.2	48.1	41.3	32.0	45.0
1983	25.2	26.2	35.8	44.4	52.0	63.8	69.7	67.6	63.0	47.9	40.2	26.1	46.8
1984	19.8	32.0	28.2	43.3	53.0	63.9	69.6	69.1	57.8	49.6	39.2	31.2	46.4
1985	16.2	26.4	34.8	44.1	53.7	61.7	69.8	66.6	60.7	50.8	39.9	24.6	45.8
1986	25.0	23.4	34.6	46.5	53.6	60.9	66.3	66.2	57.4	47.9	36.3	29.6	45.6
1987	21.6	23.0	34.0	44.9	54.6	63.8	68.0	66.2	59.6	47.1	38.1	30.2	45.9
1988	21.6	25.7	34.2	43.5	54.7	63.8	71.1	71.1	59.4	46.5	41.0	26.0	46.6
1989	26.8	24.0	31.6	41.1	55.6	63.9	69.4	68.0	60.5	49.8	37.3	14.1	45.2
1990	30.2	25.7	34.7	44.6	51.8	62.4	70.3	69.8	59.8	52.4	41.8	33.7	48.1
1991	23.4	29.8	37.0	45.9	58.1	65.5	70.1	69.9	58.2	50.8	40.4	26.4	48.0
1992	23.9	25.9	30.9	41.4	51.9	63.4	65.8	66.8	58.9	47.3	37.6	28.9	45.2
1993	23.4	16.8	29.8	43.3	54.8	64.5	69.8	69.5	59.6	46.2	39.0	29.9	45.6
1994	14.0	19.6	33.5	44.5	52.3	66.0	72.4	66.4	58.4	49.5	41.5	31.5	45.8
1995	27.1	21.2	34.8	41.2	52.1	64.1	70.0	67.4	56.4	52.4	35.7	24.5	45.6
1996	21.4	23.9	29.8	42.9	52.5	63.0	66.4	67.4	59.8	46.8	35.1	34.5	45.3
1997	23.4	28.7	30.4	41.8	51.1	63.3	69.0	67.3	58.7	47.0	36.2	29.5	45.5
1998	27.1	31.3	36.7	45.8	56.8	60.7	69.5	69.5	61.2	49.2	39.4	32.5	48.3
POR= 124 YRS	22.2	23.6	32.4	42.9	53.3	62.4	68.3	66.7	59.4	49.3	38.6	27.0	45.5

HEATING DEGREE DAYS (base 65°F) 1998 PORTLAND, ME (PMM)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	30	7	179	494	710	1120	1491	1104	1005	637	283	93	7153
1970-71	7	14	159	408	704	1400	1634	1202	1028	695	373	81	7705
1971-72	3	20	147	381	878	1164	1322	1265	1112	725	379	155	7551
1972-73	27	53	190	607	893	1264	1292	1157	842	575	419	99	7418
1973-74	0	9	231	480	813	970	1290	1126	958	595	444	131	7047
1974-75	15	17	206	624	762	1071	1177	1112	1086	746	286	146	7248
1975-76	13	59	230	480	653	1258	1522	1061	1030	594	389	94	7383
1976-77	45	73	229	660	858	1404	1559	1199	888	674	354	184	8127
1977-78	29	54	233	518	761	1219	1353	1276	1071	724	377	134	7749
1978-79	39	32	230	513	852	1201	1272	1380	905	677	311	97	7509
1979-80	21	82	240	539	672	1083	1305	1284	1018	613	346	163	7366
1980-81	16	6	163	584	855	1349	1578	910	901	588	312	54	7316
1981-82	16	45	189	566	778	1102	1543	1161	1014	684	320	198	7616
1982-83	20	78	185	519	704	1015	1225	1080	895	612	393	101	6827
1983-84	8	38	139	527	738	1198	1397	949	1132	642	368	110	7246
1984-85	11	13	223	469	767	1043	1506	1076	930	620	347	115	7120
1985-86	4	32	157	433	747	1245	1236	1161	935	548	354	138	6990
1986-87	47	52	242	523	855	1092	1336	1172	955	597	343	77	7291
1987-88	20	58	171	548	798	1070	1339	1130	950	641	323	112	7160
1988-89	13	32	180	569	713	1201	1174	1141	1028	708	286	91	7136
1989-90	6	25	167	464	824	1573	1071	1093	935	607	402	107	7274
1990-91	12	24	170	388	690	964	1283	979	861	568	236	76	6251
1991-92	11	16	228	433	730	1191	1267	1127	1051	700	414	84	7252
1992-93	47	30	208	543	814	1112	1280	1344	1084	645	311	81	7499
1993-94	15	5	192	575	774	1080	1577	1266	968	609	389	61	7511
1994-95	1	35	201	472	697	1028	1167	1216	929	706	391	85	6928
1995-96	9	35	265	380	873	1248	1343	1181	1083	659	384	90	7550
1996-97	23	17	179	556	889	940	1284	1011	1065	689	424	135	7212
1997-98	11	21	192	554	857	1093	1164	938	872	569	264	143	6678
1998-	3	9	124	482	761	1002							

WBAN : 14764

COOLING DEGREE DAYS (base 65°F) 1998 PORTLAND, ME (PMM)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	0	0	0	0	3	56	118	211	59	0	0	0	447
1970	0	0	0	0	4	55	172	136	41	0	0	0	408
1971	0	0	0	0	0	66	135	149	43	1	0	0	394
1972	0	0	0	0	0	3	114	71	8	0	0	0	196
1973	0	0	0	0	1	71	189	201	40	0	0	0	502
1974	0	0	0	2	4	26	121	115	28	0	0	0	296
1975	0	0	0	0	1	49	179	120	2	0	0	0	351
1976	0	0	0	0	2	128	80	93	5	0	0	0	308
1977	0	0	0	1	32	12	135	109	19	0	0	0	308
1978	0	0	0	0	6	22	138	150	20	0	0	0	336
1979	0	0	0	0	15	34	162	83	19	3	0	0	316
1980	0	0	0	0	1	50	163	205	67	0	0	0	486
1981	0	0	0	0	20	30	138	84	5	0	0	0	277
1982	0	0	0	0	6	4	158	66	17	0	0	0	251
1983	0	0	0	0	0	73	161	125	84	3	0	0	446
1984	0	0	0	0	0	84	162	147	12	0	0	0	405
1985	0	0	0	0	5	25	161	92	35	1	0	0	319
1986	0	0	0	0	8	23	93	96	19	0	0	0	239
1987	0	0	0	0	28	47	121	103	17	0	0	0	316
1988	0	0	0	0	11	85	209	227	17	2	0	0	551
1989	0	0	0	0	2	67	151	126	38	0	0	0	384
1990	0	0	0	0	0	34	181	179	19	7	0	0	420
1991	0	0	0	0	29	96	178	176	31	0	0	0	510
1992	0	0	0	0	13	43	76	93	30	0	0	0	255
1993	0	0	0	0	1	72	170	150	37	0	0	0	430
1994	0	0	0	0	1	101	237	89	10	0	0	0	438
1995	0	0	0	0	3	67	174	118	14	0	0	0	376
1996	0	0	0	0	5	38	75	99	29	0	0	0	246
1997	0	0	0	0	0	90	145	100	8	2	0	0	345
1998	0	0	2	0	15	21	152	154	17	0	0	0	361

SNOWFALL (inches) 1998 PORTLAND, ME (PWM)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	0.0	0.0	0.0	3.8	T	24.7	6.2	9.8	20.7	2.9	0.0	0.0	68.1
1970-71	0.0	0.0	0.0	T	0.0	54.8	17.2	35.6	24.7	9.2	0.0	0.0	141.5
1971-72	0.0	0.0	0.0	0.0	6.2	12.5	7.0	38.0	21.7	6.3	0.0	0.0	91.7
1972-73	0.0	0.0	0.0	T	15.6	35.1	9.6	6.6	0.5	2.3	0.0	0.0	69.7
1973-74	0.0	0.0	0.0	0.0	0.0	7.2	15.0	4.3	6.2	8.3	0.0	0.0	41.0
1974-75	0.0	0.0	0.0	T	3.2	8.2	15.4	11.6	6.3	1.7	0.0	0.0	46.4
1975-76	0.0	0.0	0.0	T	3.6	25.3	18.1	4.9	22.2	T	0.0	0.0	74.1
1976-77	0.0	0.0	0.0	0.0	1.5	23.3	35.2	7.9	19.3	1.4	T	0.0	88.6
1977-78	0.0	0.0	0.0	0.0	1.9	23.1	30.7	8.2	12.5	0.8	0.0	0.0	77.2
1978-79	0.0	0.0	0.0	0.0	3.6	18.9	62.4	4.5	T	2.9	0.0	0.0	92.3
1979-80	0.0	0.0	0.0	1.7	T	1.8	6.0	11.2	6.8	0.0	0.0	0.0	27.5
1980-81	0.0	0.0	0.0	0.0	8.9	13.0	9.2	4.6	3.1	T	0.0	0.0	38.8
1981-82	0.0	0.0	0.0	0.0	T	24.0	25.9	11.0	8.5	15.9	0.0	0.0	85.3
1982-83	0.0	0.0	0.0	0.0	0.6	5.7	12.4	24.5	2.1	T	0.0	0.0	45.3
1983-84	0.0	0.0	0.0	0.0	T	12.6	28.3	3.3	26.4	T	0.0	0.0	70.6
1984-85	0.0	0.0	0.0	0.0	T	17.0	12.1	7.2	13.1	2.4	0.0	0.0	51.8
1985-86	0.0	0.0	0.0	0.0	3.1	11.2	18.6	12.0	6.4	T	0.0	0.0	51.3
1986-87	0.0	0.0	0.0	0.0	5.2	4.0	50.7	0.8	14.3	3.4	0.0	0.0	78.4
1987-88	0.0	0.0	T	0.0	5.4	9.1	19.8	20.8	3.0	4.2	0.0	0.0	62.3
1988-89	0.0	0.0	0.0	T	T	3.5	4.0	13.8	8.9	0.7	0.0	0.0	30.9
1989-90	0.0	0.0	0.0	0.0	5.0	15.6	20.4	25.6	3.2	T	0.0	0.0	69.8
1990-91	0.0	0.0	T	0.0	0.2	6.8	13.4	6.3	5.7	T	0.0	0.0	32.4
1991-92	0.0	0.0	0.0	0.0	T	22.5	2.4	10.3	13.4	10.0	0.0	0.0	58.6
1992-93	0.0	0.0	T	T	2.8	2.1	17.1	33.5	49.0	11.1	0.0	0.0	115.6
1993-94	0.0	0.0	0.0	0.2	T	12.3	39.3	12.2	12.2	T	0.0	0.0	76.2
1994-95	0.0	0.0					15.5	17.3	1.4	0.0	0.0	0.0	
1995-96	0.0	0.0	0.0	0.0	2.0	37.3	37.1	13.1	25.0	8.5			
1996-97						1.4							
1997-98					20.5	6.3	17.1	0.9	9.7	0.0	0.0	0.0	
1998-	0.0	0.0	0.0	0.0	T	11.7							
POR= 57 YRS	0.0	0.0	T	0.2	3.1	14.6	19.6	16.9	12.9	3.0	0.2	0.0	70.5

WBAN : 14764

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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1998 PORTLAND, MAINE (PWM)

The Portland City Airport is located 2 3/4 miles west of the site of the former city office. The surrounding country is mostly open, rolling and sloping generally toward the Fore River, a body of brackish water about 1,000 feet wide at a distance of about 1/2 mile from the station and forming one boundary (north through east) of the field. The airport is about 5 1/2 miles west-northwest of the open ocean. A slight rise reaching an elevation of 100 feet, lying northwest of the field, cuts down the wind slightly from that direction. The older portion of the city is situated on a hill rising abruptly from sea level to 170 feet, 1 1/2 miles east of the airport and on the opposite side of the Fore River. A line of low hills southeast of the airport, near the ocean, which reach a maximum height of 160 feet, shuts off sight of the ocean from the airport. Sebago Lake with an area of 44 square miles is situated about 15 miles to the northwest and 45 miles farther are the White Mountains, averaging 3,000 to 5,000 feet in height.

As a rule, Portland has very pleasant summers and falls, cold winters with frequent thaws, and disagreeable springs. Very few summer nights are too warm and humid for comfortable sleeping. Autumn has the greatest number of sunny days and the least cloudiness. Winters are quite severe, but begin late and then extend deeply into the normal springtime.

Heavy seasonal snowfalls, over 100 inches, normally occur about each 10 years. True blizzards are very rare. The White Mountains, to the northwest, keep considerable snow from reaching the Portland area and also moderate the temperature. Normal monthly precipitation is remarkably uniform throughout the year.

Winds are generally quite light with the highest velocities being confined mostly to March and November. Even in these months the occasional northeasterly gales have usually lost much of their severity before reaching the coast of Maine.

Temperatures well below zero are recorded frequently each winter. Cold waves sometimes come in on strong winds, but extremely low temperatures are generally accompanied by light winds.

The average freeze-free season at the airport station is 139 days. Mid-May is the average occurrence of the last freeze in spring, and the average occurrence of the first freeze in fall is late September. The freeze-free period is longer in the city proper, but may be even shorter at susceptible places further inland.

Daily maximum temperatures at the present airport site agree closely with those near the former intown office, but minimum temperatures on clear, quiet mornings range as much as 15 degrees lower at the airport.

STATION LOCATION

PORTLAND, MAINE

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE											ACFT	* Type	REMARKS
						SEA LEVEL	GROUND												
							G	W	E	P	S	T	R	W	8	H			
Fort Preble	1/1820	12/1836		43°39'	70°14'	53												Surgeon General Station.	
Fort Preble	10/1840	8/1845		43°39'	70°14'													Surgeon General Station.	
Fort Preble	1/1849	12/1853		43°39'	70°14'													Surgeon General Station.	
Portland	1856	1859		43°39'	70°15'													Cooperative Station.	
Fort Preble	1865	1871		43°39'	70°14'													Smithsonian Institute Station.	
<u>CITY</u>																			
4 Exchange Street	7/15/71	9/30/73		43°39'	70°15'	30	?	40											
Boyd's Block, Middle & Exchange Streets	9/30/73	12/01/74	450 ft. NW	43°39'	70°15'	51	?	50											
Custom House, Fore St.	12/01/74	7/01/85	450 ft. E	43°39'	70°15'	32	82	28											
First National Bank 57 Exchange Street	7/01/85	12/04/40	350 ft. WNW	43°39'	70°15'	47	117*	81	#81	075								0 - 74 feet 1/94 to 4/97. * - 89 feet 5/22/93-11/28/99. # - Added January 1889.	
<u>AIRPORT</u>																			
Administration Bldg. + Portland City Airport++	12/03/39	10/13/88	2.75 mi. W of City Office	43°39'	70°19'	d43	a20 f20	e6 g	e6 g	%33	b3 h13	6 h13	3 h13	c4 f5 15	NA			a - 36 feet to 6/41'; 61 feet to 5/43; 43 feet to 8/48; and 55 feet to 10/6/64. b - 24 feet to 6/48. c - Commissioned 1200 feet ESE of thermometer site 2/2/65. d - 61 feet to 2/2/65 and 47 feet to 12/10/69. e - Standby status after 2/2/65. f - Moved 850 feet SE 12/10/69. g - Removed 7/17/78. h - Effective 12/26/78. % - Commissioned 6/30/53. i - Type change 12/10/85. WSFO moved to airport 7/31/88.	
+ General Aviation Terminal, effective Oct. 1968 1001 Westbrook St.																			
++ Portland Int'l Jetport, Sept. 1969.																			
4 Al McKay Avenue Portland International Jetport	10/13/88	Present	Unknown	43°39'	70°18'	j38	k20	5	5	5	3	3	3	k5	NA			j - Effective 7/30/88. K - Not moved 10/13/88. S ASOS commissioned 08/01/94.	

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801. INQUIRIES/COMMENTS CALL: (828) 271-4800

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