



# LOCAL CLIMATOLOGICAL DATA

U.S. DEPARTMENT OF COMMERCE  
MAURICE H. STANS, Secretary  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
ENVIRONMENTAL DATA SERVICE

RICHMOND, VIRGINIA  
BYRD FIELD  
NOVEMBER 1969

Latitude 37° 30' N		Longitude 77° 20' W		Elevation (ground) 164 ft.		Standard time used: EASTERN																
Date	Temperature (°F)					Degree days (Base 65°) 7A 7B	Weather types shown by code 1-9 on dates of occurrence 123 456 789 Fog Heavy Fog * * * * * Thunderstorm Sleet Glaze Duststorm Smoke, Haze Blowing Snow	Snow, Sleet, or Ice on ground at 07AM (in.)	Precipitation		Avg. station pressure (in.) Elev. 164 feet m.s.l.	Wind			Sunshine		Sky cover (Tenths)		Date			
	Maximum	Minimum	Average	Departure from normal	Average dew point				Heating	Cooling		Water equivalent (in.)	Snow, sleet (in.)	Resultant direction	Resultant speed (m.p.h.)	Average speed (m.p.h.)	Fastest mile Speed (m.p.h.) Direction	Hours and tenths		Percent of possible	Sunrise to sunset	Midnight to midnight
1	69	55	62	8	55	3						29.94	11	10.0	18	SE	0.0	0	10	10	1	
2	72	56	64	10	61	1						29.63	08	4.5	8.2	25	SE	0.5	4	9	8	2
3	74*	56	65	12	58	0						29.69	18	3.6	5.0	11	SW	4.4	51	5	4	3
4	60	44	52	-1	41	13						29.73	28	2.5	5.0	13	NE	2.0	19	9	8	4
5	53	40	47	-6	32	18						29.60	32	8.6	10.1	18	NW	0.7	7	10	10	5
6	63	42	53	1	30	12						29.56	29	7.8	10.2	18	NW	3.5	34	8	9	6
7	60	37	49	-3	37	16						29.67	35	7.2	7.3	18	N	4.6	44	5	6	7
8	49	43	46	-6	45	19						29.62	29	2.1	5.0	8	N	0.0	0	10	10	8
9	50	42	46	-5	45	19						29.62	34	9.3	9.6	16	NW	0.0	0	10	10	9
10	66	46	56	5	46	9						29.66	35	9.7	10.2	17	N	4.8	45	6	5	10
11	63	39	51	0	42	14						29.72	32	2.8	3.6	9	N	3.6	35	8	6	11
12	58	43	51	1	49	14						29.50	22	3.8	6.0	14	NW	1.7	16	9	7	12
13	58	32	45	-5	33	20						29.65	09	2.5	3.9	10	SE	7.5	74	6	6	13
14	59	38	49	0	40	16						29.37	25	3.0	7.9	18	W	1.3	12	8	9	14
15	39	27	33	-16	13	32						29.77	24	9.1	10.2	17	NW	10.2	100	0	2	15
16	55	22	39	-10	21	26						30.22	23	3.9	5.2	11	W	9.9	98	2	2	16
17	61	27	44	-4	29	21						30.40	16	5.4	5.9	12	S	8.8	87	7	5	17
18	67	32	50	2	42	15						30.24	12	2.4	3.7	12	SE	7.8	77	6	6	18
19	68	39	54	7	51	11						29.85	17	5.2	11.1	25	W	0.0	0	10	10	19
20	50	30	40	-7	27	25						29.97	32	5.4	7.2	17	NW	9.8	97	1	2	20
21	41	23	32	-15	17	33						30.19	33	4.7	5.5	13	NW	10.0	100	1	1	21
22	53	20*	37	-10	24	28						30.22	20	4.1	5.3	15	SW	8.5	85	2	4	22
23	67	35	51	5	35	14						30.09	21	6.6	7.2	13	SW	6.6	66	6	8	23
24	62	32	47	1	36	18						30.16	02	4.2	6.5	16	NE	6.9	69	3	4	24
25	57	27	42	-3	30	23						30.24	20	3.7	5.6	12	SE	9.6	97	2	3	25
26	58	31	45	0	32	20						30.13	32	2.7	6.2	15	NE	9.9	100	1	3	26
27	55	24	40	-4	32	25						30.14	09	2.2	3.9	10	SE	4.6	46	9	8	27
28	52	36	44	0	37	21						30.06	03	5.3	6.3	9	NE	2.4	24	8	9	28
29	54	27	41	-3	31	24						29.91	27	2.2	5.2	16	N	9.5	97	1	1	29
30	46	22	34	-9	20	31						29.72	26	4.5	8.3	14	N	5.7	58	6	5	30
Sum	Sum					Total	Total			Total	Total	For the month:			Total	%	Sum	Sum				
1739	1067				541	0	Number of days		1.87	0	29.87	30	1.3	6.9	25	W	152.8	for 178	180			
Avg.	Avg.	Avg.	Dep.	Avg.	Dep.	Dep.			Precipitation		Dep.			Date: 19+	Possible	month	Avg.	Avg.				
58.0	35.6	46.8	-1.7	36	46				≤ .01 inch	7	-1.17					305.3	\$1	5.9	6.0			
Number of days				Season	to date			Snow, sleet			Greatest in 24 hours and dates			Greatest depth on ground of snow, sleet or ice and date								
Maximum Temp.		Minimum Temp.		807	1350			Thunderstorms	0		Precipitation		Snow, Sleet									
≥ 32°		≤ 90°		4	14	0		Heavy fog	X 1		.72		19		0							

Date	A. M. Hour ending at												P. M. Hour ending at											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1																								
2		T	T	.01	T	.07	.14	.20	T	T	T	.01	T	.01				T	.01			T	T	
3																								
4																								
5			T																					
6																								
7																								
8	T	T	T	.01	.01	T	T	T	T	.02	.03	.02	.05	.07	.04	.03	.03	.06	.04	.02	T			
9						T		T	T	T	T	T	.01	.01	T									
10																								
11																								
12				.01	.07	.04	.01	T		.02	.02	.01	.02	.03										
13																					T	T		
14																								
15																								
16																								
17																								
18																								
19													T	.01	.01	.08	.06	.12	.15	.05	.09	.14	.01	T
20																								
21																								
22																								
23																								
24																								
25																								
26				T	.01																			
27																								
28																								
29																								
30																								

\* Extreme temperatures for the month. May be the last of more than one occurrence.  
- Below zero temperature or negative departure from normal.  
‡ ≥ 70° at Alaskan stations.  
+ Also on an earlier date, or dates.  
X Heavy fog restricts visibility to 1/4 mile or less.  
T In the Hourly Precipitation table and in columns 9, 10, and 11 indicates an amount too small to measure.  
The season for degree days begins with July for heating and with January for cooling.  
Data in columns 6, 12, 13, 14, and 15 are based on 8 observations per day at 8-hour intervals.  
Wind directions are those from which the wind blows. Resultant wind is the vector sum of wind directions and speeds divided by the number of observations. Figures for directions are tens of degrees from true North; i.e., 09 = East, 18 = South, 27 = West, 36 = North, and 00 = Calm. When directions are in tens of degrees in Col. 17, entries in Col. 16 are fastest observed 1-minute speeds. If the / appears in Col. 17, speeds are gusts.

Any errors detected will be corrected and changes in summary data will be annotated in the annual summary.

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I certify that this is an official publication of the Environmental Science Services Administration, and is compiled from records on file at the National Weather Records Center, Asheville, North Carolina 28801.

*William J. Haggard*  
Director, National Weather Records Center

Hour (Local time)	AVERAGES												Resultant wind Speed (m.p.h.)					
	Sky cover (in tenths)	Station pressure (in.)	Dry bulb (°F)	Wet bulb (°F)	Rel. hum. %	Dew point (°F)	Wind speed (m.p.h.)	Direction	Sky cover (in tenths)	Station pressure (in.)	Dry bulb (°F)	Wet bulb (°F)		Rel. hum. %	Dew point (°F)	Wind speed (m.p.h.)	Direction	
01	6	29.88	43	40	80	36	5.5	34	2.2									
04	6	29.88	40	38	85	36	5.3	30	1.5									
07	6	29.89	39	38	88	35	5.3	29	.5									
10	5	29.92	50	45	67	38	8.1	31	1.5									
13	7	29.86	56	47	52	37	9.1	26	2.9									
16	6	29.84	55	47	53	37	8.3	24	1.1									
19	6	29.86	47	42	70	37	6.5	28	.7									
22	6	29.87	44	40	74	35	6.6	32	1.9									

OBSERVATIONS AT 3-HOUR INTERVALS

HOUR	SKY COVER (Tenths)	CEILING (Hds. of Ft.)	VISI- BILITY (Miles)	WEATHER	DAY 01					DAY 02					DAY 03					WIND DIR. SPEED (Knots)											
					DRY BULB (°F)	WET BULB (°F)	REL. HUM. (%)	DEW PT. (°F)	DRY BULB (°F)	WET BULB (°F)	REL. HUM. (%)	DEW PT. (°F)	DRY BULB (°F)	WET BULB (°F)	REL. HUM. (%)	DEW PT. (°F)															
01	10	100	10		56	55	93	54	08	5	10	10	5	DAY 02	62	61	93	60	09	5	7	40	3	DAY 03	58	58	100	58	35	2	
04	10	80	10		57	56	93	55	13	8	10	8	5		62	61	93	60	10	10	10	6	UNL	1	1	58	58	100	58	36	2
07	10	80	10		59	57	87	55	11	9	10	5	4		62	61	97	61	13	17	10	15	2	F	58	58	100	58	00	0	
10	10	CIR	15		64	60	78	57	11	8	10	8	10		63	62	93	61	10	4	3	UNL	3	FK	60	64	90	63	20	5	
13	10	100	15		69	60	59	54	13	12	10	10	10		68	66	90	65	34	6	3	UNL	5	H	73	66	66	61	16	7	
16	10	50	15		64	58	70	54	11	10	7	80	15		66	63	87	62	36	6	2	UNL	7		73	63	57	67	16	8	
19	10	50	10		61	58	84	56	09	10	7	40	15		65	63	87	61	01	6	3	UNL	12		61	58	81	55	19	4	
22	10	40	10		62	59	84	57	10	10	6	40	12		60	60	100	60	35	3	0	UNL	12		60	55	72	51	21	7	
... (Remaining rows follow a similar pattern with varying weather and temperature readings) ...																															

NOTES

CEILING COLUMN—  
UNL indicates an unlimited ceiling.  
CIR indicates a cirriform cloud ceiling of unknown height.

WEATHER COLUMN—  
\* Tornado  
T Thunderstorm  
Q Squall  
R Rain  
RW Rain showers  
ZR Freezing rain  
L Drizzle  
ZL Freezing drizzle  
S Snow  
SP Snow pellets  
IC Ice crystals  
SW Snow showers  
SG Snow grains  
E Sleet  
A Hail  
AP Small hail  
F Fog  
IF Ice fog  
GF Ground fog  
BD Blowing dust  
BN Blowing sand  
BS Blowing snow  
BY Blowing spray  
K Smoke  
H Haze  
D Dust

WIND COLUMNS—  
Directions are those from which the wind blows, indicated in tens of degrees from true North, i. e., 09 for East, 18 for South, 27 for West. Entry of 00 in the direction column indicates calm.

Speed is expressed in knots; multiply by 1.15 to convert to miles per hour.

ADDITIONAL DATA  
Other observational data contained in records on file can be furnished at cost via microfilm or microfiche copies of the original records. Inquiries as to availability and costs should be addressed to: Director, National Weather Records Center, Federal Building, Asheville, N. C. 28801