

FEBRUARY 1996
 RICHMOND, VA
 R.E.BYRD INTERNATIONAL AP.

LOCAL CLIMATOLOGICAL DATA

published by: National Climatic Data Center



LATITUDE: 37° 30' N LONGITUDE: 77° 20' W

ELEVATION (GROUND): 164 FEET

TIME ZONE: EASTERN STANDARD
 ISSN # 0198-537X
 WBAN # 13740

DATE	TEMPERATURE° F						DEG DAYS BASE 65°		SIGNIFICANT WEATHER	SNOW/ICE ON GND(IN)		PRECIPITATION (INCHES)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES				SUNSHINE		CLOUDINESS																														
	MAXIMUM	MINIMUM	AVERAGE	DEP FROM NORMAL	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING		0700	1300	2400	2400	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT WIND SPEED	RES DIR	AVERAGE SPEED	MAXIMUM				TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN																									
										LST	LST	LST	LST						5-SEC	2-MIN	SPEED	DIR			SPEED	DIR	CEILOMETER TENTHS	SAFELITE TENTHS	CEILOMETER TENTHS	SAFELITE TENTHS																						
01	28	20	24	-12	10	21	41	0				0.00	30.04	30.25	4.3	5	5.2	16	03	14	03	0	0					6																								
02	28	21	25	-11	21	24	40	0	RZRSF	3		2.9	1.54	29.97	30.19	10.6	1	10.8	25	01	21	02	0	0																												
03	21	17	19	-17	10	16	46	0	RSF	2		0.9	29.97	30.18	16.3	0	16.4	32	01	24	01	202	32			8		8																								
04	18	8	13	-23	-4	11	52	0	SH			F	30.22	30.43	14.1	35	14.5	29	36	24	36	585	94	0	0			2																								
05	21	-2*	10*	-27	1	10	55	0	R	1		F	30.35	30.57	5.4	21	7.3	20	20	16	20	561	89																													
06	32	7	20	-17	11	17	45	0	FH	1		F	30.34	30.56	1.7	16	3.2	13	02	10	02	620	99	0	0	0																										
07	37	14	26	-11	22	26	39	0	RF	1		F	30.17	30.38	8.7	18	9.0	21	19	17	19	444	70	3	8	4		8																								
08	47	36	42	5	34	38	23	0	RF	1		0.26	29.73	29.94	11.0	20	11.2	18	21	15	20	61	10	6	9	8																										
09	53	31	42	5	34	41	23	0	F	0		0.00	29.58	29.78	7.5	28	8.8	24	32	21	30	565	89	3		2																										
10	59	27	43	6	30	38	22	0		0		0.00	29.68	29.88	7.3	20	7.9	22	20	20	19	625	98			7																										
11	64	40	52	14	33	43	13	0				0.00	29.38	29.58	11.3	26	14.7	36	29	28	28	530	83	2	3			1																								
12	42	29	36	-2	14	29	29	0		0		0.00	29.64	29.85	10.9	32	11.5	26	31	21	30	518	81	6	3	5		3																								
13	37	18	28	-10	6	23	37	0				0.00	29.83	30.04	5.4	25	10.0	26	32	23	32	634	98			2																										
14	58	34	46	8	23	37	19	0				0.00	29.38	29.58	9.5	22	12.0	31	26	25	26	289	45			5																										
15	52	33	43	4	29	36	22	0	R			0.01	29.53	29.74	5.0	5	7.0	22	34	18	32	399	61			2		4																								
16	34	25	30	-9	26	28	35	0	SF+	8		8.3	0.50	29.53	29.73	14.3	36	15.0	34	36	28	36	0	0			8																									
17	32	10	21	-18	9	21	44	0		4		0.00	29.61	29.82	8.2	27	10.4	25	32	21	33	601	92			1		2																								
18	39	17	28	-11	15	26	37	0		1		0.00	29.72	29.93	4.2	28	6.3	23	31	18	32					1		1																								
19	49	20	35	-5	29	34	30	0		0		0.00	29.99	30.20	7.0	14	7.7	17	11	15	11	445	68	2	6	2		5																								
20	59	43	51	11	50	50	14	0	RF			0.34	29.90	30.10	6.3	14	7.0	24	21	20	24	40	6																													
21	54	47	51	11	51	51	14	0	F+			0.00	29.84	30.05	1.2	26	3.1	10	28	10	16					4		4																								
22	61	45	53	13	53	53	12	0	RF+H	0		0.17	29.76	29.95	2.8	2	3.1			999	00	80	12																													
23	54	49	52	11	51	51	13	0	RF+			0.07	29.71	29.91	3.7	7	6.4	18	14	16	14	13	2	10			10																									
24	65	48	57	16	33	48	8	0	FH			0.00	29.65	29.85	10.2	28	13.6	32	28	25	30	561	84	0				3																								
25	65	40	53	12	26	42	12	0				0.00	29.86	30.06	8.2	24	8.4	22	25	18	25	414	62	0				0																								
26	63	39	51	9	37	45	14	0	RF			0.01	29.76	29.96	2.3	4	3.9	16	04	14	04	28	4	5				4																								
27	67	43	55	13	48	51	10	0	FH			0.00	29.72	29.92	2.7	17	4.9	16	18	15	18	489	72	1				3																								
28	73*	47	60*	17	45	54	5	0	R			F	29.44	29.65	9.6	26	12.2	34	26	26	28	435	64	1				3																								
29	47	27	37	-6	14	28	28	0				0.00	29.88	30.08	8.0	34	10.1	24	33	21	36	640	94																													
											46.9				28.7				37.8				- .9				26.1				34.2				<----- MONTHLY AVERAGES ----->				29.80		30.01		2.5		29		9.0		<- MONTHLY AVERAGES ->			
DEPARTURE		18.8		-4.1		TOTAL DEPARTURE		782		TOTAL DEPARTURE		46		TOTAL DEPARTURE		3453		TOTAL DEPARTURE		296		TOTAL SNOWFALL:		12.1		TOTAL PRECIPITATION:		2.97		SUNSHINE TOTALS:		PERCENT POSSIBLE:																				
HEATING:		782		46		3453		296		GREATEST 24-HR PRECIPITATION:		1.54		GREATEST 24-HR SNOWFALL:		0.02		WIND		SPEED		DIRECTION		DATE		MAXIMUM 5-SECOND		: 36		29		11																				
COOLING:		0		0		0		0		GREATEST SNOW DEPTH:				MAXIMUM 2-MINUTE		: 999		00		PRECIPITATION ≥ 0.01 INCH		: 9		PRECIPITATION ≥ 0.10 INCH		: 5		SNOWFALL ≥ 1.0 INCH		: 2		NUMBER OF DAYS WITH																				
NUMBER OF DAYS WITH		->		CLEAR		PARTLY CLOUDY		CLOUDY		MAXIMUM TEMP ≥ 90 :		0		MINIMUM TEMP ≤ 32 :		16		MAXIMUM TEMP ≤ 32 :		7		MINIMUM TEMP ≤ 0 :		1		PRECIPITATION ≥ 0.01 INCH :		9		PRECIPITATION ≥ 0.10 INCH :		5		SNOWFALL ≥ 1.0 INCH :		2		NUMBER OF DAYS WITH														

FEBRUARY 1996
RICHMOND, VA

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

FEBRUARY 1996 WBAN # 13740
RICHMOND, VA

DATE	A.M. HOUR (L.S.T.) ENDING AT												DATE	P.M. HOUR (L.S.T.) ENDING AT												DATE	
	1	2	3	4	5	6	7	8	9	10	11	12		1	2	3	4	5	6	7	8	9	10	11	12		
01													01											01			
02		T	0.06	0.08	0.05	0.10	0.06	0.05	0.05	0.07	0.09	0.04	02	0.04	0.06	0.10	0.04	0.04	T	0.02	0.03	T	0.02	0.03	0.07	02 * 1.10	
03		0.03	0.02	T	T	T	T	T					03			T	T	T	T							03 * 0.05	
04	T	T	T	T									04													04	
05													05			T										05	
06													06				T									06	
07													07												T	07	
08	0.04	0.02	T	T					T	0.01	T	0.01	08	T					T	T	0.01	0.07	0.06	0.04	T	08	
09													09														09
10													10														10
11													11														11
12													12														12
13													13														13
14													14														14
15					T	T	T	T					15	0.01													15
16		T	T	T	0.01	T	0.01	0.01	0.01	T	T	T	16	T	0.01	0.01	T	T	T	T	T	T	T			16 * 0.06	
17													17														17
18													18														18
19													19														19
20									0.01	0.01	0.01	0.01	20	0.06	T	0.02	0.18	0.03	T		T	T	0.01	T		20	
21													21														21
22											0.01		22			0.01	0.02	0.01	0.01	T		0.01	0.08	0.03		22 * 0.18	
23	T	T	0.05	0.01			0.01						23													23	
24													24														24
25													25														25
26													26				T	T		T	T	0.01	T			26	
27													27													27	
28							T						28													28	
29													29													29	

PUBLISHED BY: NCDC, ASHEVILLE, NC.

* The sum of the hourly totals follows the * when it disagrees with the daily total on page 1. NWS does not edit ASOS hourly precipitation but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

MAXIMUM SHORT DURATION PRECIPITATION (MSDP) **

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)												
ENDED: DATE												
ENDED: TIME												

** NCDC derives MSDP data from one-minute ASOS data. The MSDP data are not printed when inconsistent with ASOS hourly totals.

The time indicated is the ending time of the interval.
Date and time are not entered for trace amounts.

REFERENCE NOTES :

WFO = WEATHER FORECAST OFFICE.
 ASOS = AUTOMATED SURFACE OBSERVING SYSTEM.
 * = EXTREME FOR THE MONTH (LAST OCCURRENCE IF MORE THAN ONE).
 T = TRACE PRECIPITATION AMOUNT.
 + = ALSO OCCURS ON EARLIER DATES.
 F+ = HEAVY FOG, VISIBILITY .25 MILES OR LESS.
 BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA.
 THE HEATING DEGREE DAY SEASON BEGINS JULY 1.
 THE COOLING DEGREE DAY SEASON BEGINS JANUARY 1.
 CEILOMETER (30-SECOND) DATA ARE USED TO DERIVE CLOUDINESS AT OR BELOW 12,000 FEET. THIS CLOUDINESS IS THE MEAN CLOUD COVER DETECTED DURING THE TIME INTERVAL (HOUR, SUNRISE TO SUNSET, OR MIDNIGHT TO MIDNIGHT).
 SATELLITE DATA ARE USED TO DERIVE CLOUDINESS ABOVE 12,000 FEET. EFFECTIVE CLOUD AMOUNT IS BASED ON THE CLOUD COVER AND THE TRANSPARENCY OF THE CLOUDS WITHIN THE SATELLITE FIELD OF VIEW (APPROX. 50 x 50 KM).
 SKY CONDITION IS BASED ON THE SUM (NOT TO EXCEED 10) OF THE SUNRISE TO SUNSET CLOUD COVER BELOW AND ABOVE 12,000 FEET. BOTH CEILOMETER AND SATELLITE DATA MUST BE PRESENT TO COMPUTE SKY CONDITION. CLEAR = 0 - 3 TENTHS, PARTLY CLOUDY = 4 - 7 TENTHS, AND CLOUDY = 8 - 10 TENTHS.
 RESULTANT WIND IS THE VECTOR SUM OF THE WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS.
 WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. '00' INDICATES CALM.
 SR-SS = SUNRISE TO SUNSET. MN-MN = MIDNIGHT TO MIDNIGHT.
 SNOWFALL IS FOR THE 24-HOUR PERIOD ENDING AT THE TIME INDICATED IN COLUMN HEADING.
 WATER EQUIVALENT OF SNOW ON THE GROUND IS REPORTED ONLY WHEN THE DEPTH IS 2 OR MORE INCHES.
 H, F, F+, P-, R, S, AND ZR ARE REPORTED FROM ASOS AUTOMATED SENSORS. OTHER WEATHER TYPES MAY BE ADDED TO THE REPORT BY STATION PERSONNEL OR BE PROVIDED BY THE WEATHER FORECAST OFFICE (WFO).

A HAIL	GL GLAZE	SG SNOW GRAINS
BD BLOWING DUST	H HAZE	SP SNOW PELLETS
BN BLOWING SAND	IC ICE CRYSTALS	T THUNDER
BS BLOWING SNOW	IF ICE FOG	V VOLCANIC ASH
BY BLOWING SPRAY	IP ICE PELLETS	ZL FREEZING DRIZZLE
D DUST	K SMOKE	ZR FREEZING RAIN
F FOG	L DRIZZLE	& TORNADO
F+ HEAVY FOG	P- UNKN. PRECIP.	&C FUNNEL CLOUD
GF GROUND FOG	R RAIN	&W WATERSPOUT
	S SNOW	

NORMALS ARE FOR THE YEARS 1961 - 1990.
 A HEATING (COOLING) DEGREE DAY IS THE DIFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65°F.
 DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100% RELATIVE HUMIDITY.
 WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100% RELATIVE HUMIDITY.

TEMPERATURE - HUMIDITY INDEX (STEADMAN, 1979)

TEMPERATURE ° F	RELATIVE HUMIDITY (PERCENT)										
	0	10	20	30	40	50	60	70	80	90	100
120	107	116	130	148							
115	103	111	120	135	151						
110	99	105	112	123	137	150					APPARENT TEMPERATURE
105	95	100	105	113	123	135	149				
100	91	95	99	104	110	120	132	144			
95	87	90	93	96	101	107	114	124	136		
90	83	85	87	90	93	96	100	106	113	122	
85	78	80	82	84	86	88	90	93	97	102	108
80	73	75	77	78	79	81	82	85	86	88	91
75	69	70	72	73	74	75	76	77	78	79	80
70	64	65	66	67	68	69	70	70	71	71	72

WIND CHILL EQUIVALENT TEMPERATURE (SIPLE & PASSEL, 1945)

TEMPERATURE ° F	WIND VELOCITY (MPH)									
	4	5	10	15	20	25	30	35	40	45
45	45	43	34	29	26	23	21	20	19	18
40	40	37	26	23	19	16	13	12	11	10
35	35	32	22	16	12	8	6	4	3	2
30	30	27	16	9	4	1	-2	-4	-5	-6
25	25	22	10	2	-3	-7	-10	-12	-13	-14
20	20	16	3	-5	-10	-15	-18	-20	-21	-22
15	15	11	-3	-11	-17	-22	-25	-27	-29	-30
10	10	6	-9	-18	-24	-29	-33	-35	-37	-38
5	5	0	-15	-25	-31	-36	-41	-43	-45	-46
0	0	-5	-22	-31	-39	-44	-49	-52	-53	-54
-5	-5	-10	-27	-38	-46	-51	-56	-58	-60	-62
-10	-10	-15	-34	-45	-53	-59	-64	-67	-69	-70
-15	-15	-21	-40	-51	-60	-66	-71	-74	-76	-78
-20	-20	-26	-46	-58	-67	-74	-79	-82	-84	-85
-25	-25	-31	-52	-65	-74	-81	-86	-89	-92	-93
-30	-30	-36	-58	-72	-81	-88	-93	-97	-100	-102

ADDITIONAL INFORMATION :

SUPPLEMENTARY HOURLY PRECIPITATION
UNIVERSAL RAIN GAUGE (WATER EQUIVALENT IN INCHES)

FEBRUARY 1996
RICHMOND, VA

LATITUDE 37° 30'N
LONGITUDE 77° 19'W

DATE	A.M. HOUR (L.S.T.) ENDING AT												DATE	P.M. HOUR (L.S.T.) ENDING AT												DATE	DAILY TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12		1	2	3	4	5	6	7	8	9	10	11	12		
01													01											01	0.00		
02		0.01	0.05	0.09	0.04	0.11	0.05	0.06	0.05	0.10	0.10	0.07	02	0.04	0.06	0.09	0.07	0.04	0.03	0.02	0.03	T	0.04	0.06	0.13	02	1.34
03	0.05	0.06	0.04	0.02	T	0.02	T	T					03											03	0.19		
04													04			T	T	T	T	T				04	T		
05													05											05	0.00		
06													06											06	0.00		
07													07											07	0.00		
08	0.04	0.02											08								0.01	0.08	0.05	0.04	08	0.26	
09													09											09	0.00		
10													10											10	0.00		
11													11											11	0.00		
12													12											12	0.00		
13													13											13	0.00		
14													14											14	0.00		
15													15											15	0.00		
16					0.01	0.04	0.05	0.02	0.07	0.03	0.03	0.02	16	0.03	0.05	0.04	0.06	0.01	0.02	0.02				16	0.50		
17													17											17	0.00		
18													18											18	0.00		
19													19											19	0.00		
20										0.01	0.01		20	0.04		0.01	0.17	0.04						20	0.28		
21													21											21	0.00		
22													22		0.03			0.02	0.01	0.01			0.06	0.04	22	0.17	
23			0.05		0.01								23											23	0.06		
24													24											24	0.00		
25													25											25	0.00		
26													26											26	0.00		
27													27											27	0.00		
28													28											28	0.00		
29													29											29	0.00		
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SUPPLEMENTARY MAXIMUM SHORT DURATION PRECIPITATION (MSDP)

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)	0.07	0.11	0.12	0.14	0.17	0.17	0.17	0.17	0.17	0.22	0.25	0.29
ENDED: DATE	20	20	20	20	20	20	20	20	20	02	02	02
ENDED: TIME	1521	1525	1528	1534	1534	1534	1534	1534	1534	1157	1157	1212

The National Weather Service has determined that the ASOS Heated Tipping-Bucket (HTB) rain gauge may not measure water equivalent precipitation accurately during frozen precipitation events. Precipitation data from a nearby site is provided on this page to supplement the ASOS HTB data.

M = Missing Data.

USCOM - NOAA - ASHEVILLE, NC 250

The time indicated is the ending time of the interval.
Date and time are not entered for trace amounts.

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION,
AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER.

Kenneth D Haden

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL ENVIRONMENTAL, SATELLITE, DATA AND INFORMATION SERVICE NATIONAL CLIMATIC DATA CENTER DIRECTOR
ASHEVILLE, NORTH CAROLINA NATIONAL CLIMATIC DATA CENTER

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