



LOCAL CLIMATOLOGICAL DATA Monthly Summary

R.E. BYRD INTERNATIONAL AP.

LATITUDE 37° 30' N LONGITUDE 77° 20' W ELEVATION (GROUND) 164 FEET TIME ZONE EASTERN 13740

DEC 1988
 RICHMOND, VA

DATE	TEMPERATURE °F						DEGREE DAYS BASE 65°F		WEATHER TYPES 1 FOG 2 HEAVY FOG 3 THUNDERSTORM 4 ICE PELLETS 5 HAIL 6 GLAZE 7 DUSTSTORM 8 SMOKE, HAZE 9 BLOWING SNOW	SNOW ICE PELLETS OR ICE ON GROUND AT 0700 INCHES	PRECIPITATION		AVERAGE STATION PRESSURE IN INCHES ELEV. 177 FEET ABOVE M. S. L.	WIND (M. P. H.)					SUNSHINE		SKY COVER (TENTHS)			
	MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT	HEATING ISEASON BEGINS WITH JUL 7A	COOLING ISEASON BEGINS WITH JAN 7B	WATER EQUIVALENT (INCHES)			SNOW, ICE PELLETS (INCHES)	RESULTANT DIR.		RESULTANT SPEED	AVERAGE SPEED	PEAK GUST		FASTEST 1-MIN	MINUTES	PERCENT OF TOTAL POSSIBLE	SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT		
																SPEED	DIRECTION						SPEED	DIRECTION
01	50	36	43	-1	25	22	0		0	0.00	0.0	29.930	30	7.3	8.6	23	NW	20	30	563	96	1	2	
02	47	29	38	-5	20	27	0		0	0.00	0.0	30.065	29	5.6	8.2	23	W	13	28	585	100	1	2	
03	64	32	48	5	24	17	0		0	0.00	0.0	29.890	24	9.1	9.6	21	W	16	25	584	100	1	1	
04	52	23	38	-5	18	27	0		0	0.00	0.0	30.050	35	7.2	8.2	33	N	20	36	548	94	1	1	
05	48	23	36	-6	15	29	0		0	0.00	0.0	30.060	23	3.9	4.2	15	SW	10	25	221	38	10	6	
06	63	26	45	3	18	20	0		0	0.00	0.0	29.940	22	6.5	6.9	18	SW	14	22	581	100	0	0	
07	63	35	49	7	28	16	0		0	0.00	0.0	29.800	22	6.1	6.4	14	SW	9	23	360	62	9	5	
08	55	37	46	4	31	19	0		0	0.00	0.0	30.010	03	4.3	5.7	18	NE	14	05	466	80	3	4	
09	43	30	37	-4	32	28	0	1	T	0.41	1.8	30.000	01	3.2	4.2	12	N	7	04	0	0	10	9	
10	39	22	31	-10	25	34	0	2	T	0.00	0.0	29.930	22	2.9	3.5	12	S	8	19	387	67	7	7	
11	33	20	27	-14	14	38	0		0	0.00	0.0	30.010	01	7.5	8.1	20	N	15	01	486	84	3	3	
12	25	12	19*	-22	5	46	0		0	0.00	0.0	30.200	02	4.0	4.3	10	N	8	01	500	87	3	3	
13	29	11*	20	-20	14	45	0		0	T	T	29.800	27	2.0	2.4	8	W	7	28	296	51	7	6	
14	48	17	33	-7	24	32	0	8	0	0.00	0.0	29.880	21	4.8	5.4	14	S	10	19	473	82	7	7	
15	61	31	46	6	27	19	0		0	0.00	0.0	29.870	27	4.7	7.0	15	NW	10	30	421	73	6	5	
16	35	20	28	-12	6	37	0		0	0.00	0.0	30.050	02	4.3	5.0	16	N	12	36	464	81	4	6	
17	35	22	29	-10	14	36	0		0	T	T	29.790	30	2.4	3.0	9	N	6	32	369	64	7	7	
18	34	20	27	-12	9	38	0		0	0.00	0.0	29.950	25	3.5	4.6	10	W	7	31	442	77	5	4	
19	56	22	39	0	20	26	0		0	0.00	0.0	30.015	20	7.0	7.3	18	SW	14	22	522	91	1	2	
20	64	31	48	9	25	17	0		0	0.00	0.0	30.080	21	12.7	12.9	33	SW	23	22	461	80	8	7	
21	63	47	55	16	46	10	0	1	0	0.12	0.0	30.040	24	8.1	10.4	29	W	16	26	72	13	10	10	
22	51	30	41	3	30	24	0	1	0	0.00	0.0	30.290	05	8.8	9.8	23	N	20	02	527	92	2	3	
23	49	31	40	2	38	25	0	1	8	0	T	0.0	30.090	21	3.9	5.6	15	S	10	21	32	6	10	10
24	71	48	60*	22	53	5	0	1	8	0	0.11	0.0	29.790	21	10.9	11.4	33	SW	22	21	257	45	9	9
25	59	31	45	7	34	20	0		0	0.00	0.0	29.910	29	7.6	8.7	26	NW	15	31	575	99	0	0	
26	49	27	38	0	21	27	0		0	0.00	0.0	30.260	02	5.6	7.0	16	NE	14	01	575	99	0	1	
27	54	30	42	4	26	23	0		0	0.00	0.0	30.220	19	6.7	7.3	21	SW	15	20	497	86	8	8	
28	72*	40	56	18	43	9	0		0	0.05	0.0	29.790	23	12.0	18.0	49	SW	32	21	203	35	9	7	
29	43	26	35	-2	19	30	0		0	0.00	0.0	30.150	03	4.5	7.4	17	N	13	04	470	82	6	5	
30	42	29	36	-1	26	29	0		0	0.02	0.0	30.040	18	6.3	7.4	21	SW	15	20	50	9	10	10	
31	58	34	46	9	32	19	0	1	8	0	0.08	0.0	29.940	21	2.7	5.3	16	SW	10	23	413	72	4	8
SUM	SUM	SUM	SUM	SUM	TOTAL	TOTAL		NUMBER OF DAYS		TOTAL	TOTAL	FOR THE MONTH:							TOTAL	%	SUM	SUM		
1555	872				794	0				0.79	1.8	29.990	25	2.6	7.2	49	SW	32	21	12400	FOR	162	158	
AVG	AVG	AVG	AVG	AVG	DEP.	AVG.	DEP.	PRECIPITATION		DEP.		DATE: 28	DATE: 28						POSSIBLE	MONTH	AVG.	AVG.		
50.2	28.1	39.2	-0.7	24.5	16	0		≥ .01 INCH.	6	-2.60									17905	69	5.2	5.1		
NUMBER OF DAYS						SEASON TO DATE		SNOW, ICE PELLETS		GREATEST IN 24 HOURS AND DATES					GREATEST DEPTH ON GROUND OF									
						TOTAL	TOTAL	≥ 1.0 INCH							SNOW, ICE PELLETS OR ICE AND DATE									
MAXIMUM TEMP.						MINIMUM TEMP.		THUNDERSTORMS		PRECIPITATION					SNOW, ICE PELLETS									
≥ 90°						≤ 32°		1607		1476		0					1							
0						24		0		101					140									
								CLEAR		12		PARTLY CLOUDY		9		CLOUDY 10								

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
 T TRACE AMOUNT.
 + ALSO ON EARLIER DATE(S).
 HEAVY FOG: VISIBILITY 1/4 MILE OR LESS.
 BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA.

DATA IN COLS 6 AND 12-15 ARE BASED ON 21 OR MORE OBSERVATIONS AT HOURLY INTERVALS. RESULTANT WIND IS THE VECTOR SUM OF WIND SPEEDS AND DIRECTIONS DIVIDED BY THE NUMBER OF OBSERVATIONS. COLS 16 & 17: PEAK GUST - HIGHEST INSTANTANEOUS WIND SPEED. ONE OF TWO WIND SPEEDS IS GIVEN UNDER COLS 18 & 19: FASTEST MILE - HIGHEST RECORDED SPEED FOR WHICH A MILE OF WIND PASSES STATION (DIRECTION IN COMPASS POINTS). FASTEST OBSERVED ONE MINUTE WIND - HIGHEST ONE MINUTE SPEED (DIRECTION IN TENS OF DEGREES). ERRORS WILL BE CORRECTED IN SUBSEQUENT PUBLICATIONS.

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

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

Kenneth D. Haden
 DIRECTOR NATIONAL CLIMATIC DATA CENTER

OBSERVATIONS AT 3-HOUR INTERVALS

DEC 1988
RICHMOND, VA 13740

HOUR L. S. T.	VISI-BILITY			WEATHER	TEMPERATURE			WIND			SKY COVER (TENTHS)	VISI-BILITY			WEATHER	TEMPERATURE			WIND																																											
	CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE		AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)		CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE		AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)																																									
DEC 1st																					DEC 2nd																					DEC 3rd																				
01	2	UNL	10		44	40	34	68	27	8	10	55	7		39	33	22	51	01	10	0	UNL	7		39	31	17	41	28	7																																
04	0	UNL	10		43	38	31	63	30	9	3	UNL	7		34	30	22	62	35	5	0	UNL	7		37	30	16	42	26	6																																
07	0	UNL	10		37	35	31	79	27	7	0	UNL	10		31	28	22	69	34	5	0	UNL	7		33	28	19	56	23	4																																
10	2	UNL	10		46	37	22	39	29	9	0	UNL	10		40	33	19	43	30	9	2	UNL	10		49	39	24	38	25	7																																
13	0	UNL	10		49	37	18	29	30	17	5	UNL	10		45	35	18	34	31	10	1	UNL	15		41	46	28	29	24	9																																
16	2	UNL	12		50	39	21	32	31	6	2	UNL	12		47	36	17	30	30	7	0	UNL	15		63	47	28	27	22	8																																
19	2	UNL	15		44	36	23	44	28	4	0	UNL	12		39	32	20	47	23	7	0	UNL	15		54	43	28	37	24	11																																
22	8	UNL	15		41	34	23	49	01	7	0	UNL	12		34	29	20	57	21	5	0	UNL	15		55	44	30	39	25	14																																
DEC 4th																					DEC 5th																					DEC 6th																				
01	0	UNL	10		50	41	30	46	28	5	0	UNL	10		26	23	16	66	00	0	0	UNL	10		36	28	12	37	26	3																																
04	0	UNL	10		47	40	29	50	31	6	5	UNL	10		31	26	15	52	22	4	0	UNL	10		31	26	15	52	26	3																																
07	7	200	10		45	37	23	42	36	16	7	250	10		28	24	16	61	00	0	0	UNL	10		29	25	15	56	14	3																																
10	1	UNL	15		43	33	14	31	36	17	10	100	10		36	30	17	46	26	3	0	UNL	10		47	37	19	33	21	5																																
13	0	UNL	15		46	34	12	25	02	8	10	100	10		41	32	13	32	25	7	0	UNL	10		60	43	17	19	23	12																																
16	0	UNL	15		46	34	9	22	32	9	9	200	10		47	35	10	22	24	7	0	UNL	10		61	43	16	17	24	11																																
19	0	UNL	15		32	27	15	50	00	0	2	UNL	10		34	28	14	44	22	5	0	UNL	10		47	36	17	30	22	6																																
22	0	UNL	15		29	25	16	58	00	0	0	UNL	10		33	27	14	46	20	5	0	UNL	10		43	35	22	43	21	8																																
DEC 7th																					DEC 8th																					DEC 9th																				
01	0	UNL	10		42	35	24	49	20	5	0	UNL	10		49	42	32	52	27	6	10	46	10		42	37	30	63	00	0																																
04	0	UNL	10		36	32	25	64	22	6	0	UNL	10		44	39	33	65	36	3	10	38	7		R	41	36	29	62	02	6																															
07	0	UNL	10		40	35	27	60	24	4	0	UNL	10		42	38	33	71	00	0	10	5	1		SF	33	33	32	96	03	4																															
10	10	250	7		50	41	27	41	23	5	0	UNL	7		50	43	34	54	05	12	10	7	0		SF	33	33	32	96	01	4																															
13	10	250	8		61	46	27	28	25	7	5	UNL	10		54	44	32	43	05	8	10	9	1		SF	33	33	33	100	02	5																															
16	10	250	10		59	46	30	33	20	6	7	UNL	10		52	43	30	43	02	8	10	8	7		F	34	33	32	92	35	4																															
19	8	250	10		51	42	30	45	22	6	4	UNL	10		44	38	28	54	07	4	7	20	5		F	33	33	32	96	00	0																															
22	4	UNL	10		52	43	31	45	23	6	10	45	10		43	37	29	58	05	4	8	20	3		F	32	32	32	100	00	0																															
DEC 10th																					DEC 11th																					DEC 12th																				
01	9	UNL	0	4	F	30	30	30	100	25	4	0	UNL	10		31	28	23	72	27	4	0	UNL	10		20	17	6	54	36	6																															
04	2	UNL	1	8	F	28	28	27	96	30	3	7	45	10		28	27	25	89	00	0	0	UNL	10		19	16	7	59	36	5																															
07	0	UNL	3		23	22	21	92	00	0	8	UNL	10		29	27	23	78	01	11	0	UNL	10		16	14	7	68	01	5																																
10	9	UNL	7		31	30	27	85	15	3	2	UNL	10		31	26	16	54	01	11	1	UNL	8		20	16	5	52	02	4																																
13	4	UNL	10		37	32	24	59	24	3	1	UNL	10		33	26	9	37	01	11	2	UNL	10		24	19	3	40	04	4																																
16	8	UNL	10		37	32	22	55	21	6	3	UNL	10		31	24	8	38	01	7	7	UNL	10		24	19	2	38	06	4																																
19	10	110	7		34	30	24	67	00	0	2	UNL	10		25	21	9	51	02	6	7	UNL	7		19	15	1	45	07	3																																
22	10	110	7		33	31	27	79	21	5	0	UNL	10		22	18	7	52	01	7	5	UNL	7		14	12	6	70	00	0																																
DEC 13th																					DEC 14th																					DEC 15th																				
01	0	UNL	7		11	10	7	84	00	0	4	UNL	10		25	23	19	78	20	3	7	UNL	10		46	38	27	48	22	9																																
04	7	UNL	7		13	12	9	84	00	0	7	80	10		27	25	22	81	24	3	6	UNL	10		45	38	28	52	23	7																																
07	10	20	7		17	15	11	77	00	0	0	UNL	7		19	18	17	92	17	3	5	UNL	10		39	35	28	65	21	5																																
10	10	28	7		22	19	9	57	24	3	1	UNL	6		38	33	25	60	21	3	8	200	10		50	42	30	46	27	5																																
13	10	30	6	S	24	21	14	66	26	5	10	100	7		46	37	24	42	22	7	3	UNL	10		60	47	31	34	27	9																																
16	0	UNL	10		29	26	19	66	27	4	10	250	7		46	38	27	48	20	6	8	150	10		59	45	26	28	30	9																																
19	0	UNL	10		26	24	19	75	00	0	8	UNL	7		39	34	27	62	18	4	2	UNL	10		45	37	24	44	36	5																																
22	8	UNL	10		27	25	22	81	00	0	10	UNL	7		45	37	26	47	21	7	0	UNL	10		35	31	24	64	00	0																																
DEC 16th																					DEC 17th																					DEC 18th																				
01	10	UNL	10		34	30	21	59	36	4	10	100	10		23	20	11	60	00	0	0	UNL	10		26	21	8	46	30	3																																
04	10	250	10		30	24	8	39	01	8	10	100	10		23	21	17	78	00	0	0	UNL	10		24	20	8	50	28	3																																
07	10	100	10		27	21	6	41	02	7	10	33	10		25	21	12	58	29	3	0	UNL	10		21	18	9	60	26	3																																
10	7	250	10		27	21	2	34	01	5	10	33	7		28	24	14	56	30	4	0	UNL	10		29	23	7	39	27	5																																
13	1	UNL	10		31	23	2	29	01	5	4	UNL	7		32	28	20	61	31	5	6	UNL	10		34	26	6	31	24	5																																
16	0	UNL	10		31	23	0	26	01	4	8	55	7		33	27	14	46	33	4	10	UNL	10		32	25	9	38	28	5																																
19	3	UNL	10		24	19	3	40	00	0	7	55	7		27	23	14	58	00	0	4	UNL	10		24	20	9	53	19	3																																
22	10	100	10		24	20	10	55	12	3	3	UNL	7		30	24	11	45	32	4	10	100	10		29	24	13	51	19	4																																

WEATHER CODES

- * TORNADO
- T THUNDERSTORM
- Q SQUALL
- R RAIN
- RW RAIN SHOWERS
- ZR FREEZING RAIN
- L DRIZZLE
- ZL FREEZING DRIZZLE
- S SNOW
- SW SNOW SHOWERS
- SG SNOW GRAINS
- SP SNOW PELLETS
- IC ICE CRYSTALS
- IP ICE PELLETS
- IPW ICE PELLET SHOWERS
- A 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

CEILING: UNL INDICATES UNLIMITED
 WIND DIRECTION: 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. AN ENTRY OF 00 INDICATES CALM
 SPEED: THE OBSERVED AVERAGE ONE-MINUTE VALUE, EXPRESSED IN KNOTS (MPH=KNOTS X 1.15).

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

DEC 1988
RICHMOND, VA

13740

DATE	A.M. HOUR ENDING AT												P.M. HOUR 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	
02																									02
03																									03
04																									04
05																									05
06																									06
07																									07
08																									08
09				T	T	0.06	0.04	0.05	0.05	0.07	0.04	0.05	0.03	0.02	T										09
10																									10
11																									11
12																									12
13										T	T	T	T	T											13
14																									14
15																									15
16																									16
17										T	T	T	T												17
18																									18
19																									19
20																									20
21																	T	0.05	0.05	0.02	T				21
22																									22
23										T	T														23
24	T	0.01	T																						24
25																	T	0.05	0.05						25
26																									26
27																									27
28																	0.01	0.03	0.01						28
29																									29
30																									30
31	0.04	0.04																					T	0.02	31

MAXIMUM SHORT DURATION PRECIPITATION

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)	0.02	0.02	0.03	0.03	0.04	0.06	0.07	0.09	0.11	0.13	0.16	0.18
ENDED: DATE	09	09	09	09	09	09	09	09	09	09	09	09
ENDED: TIME	1053	1053	1104	1104	1115	1115	1128	1128	1115	1115	1115	1145

THE PRECIPITATION AMOUNTS FOR THE INDICATED TIME INTERVALS MAY OCCUR AT ANY TIME DURING THE MONTH. THE TIME INDICATED IS THE ENDING TIME OF THE INTERVAL. DATE AND TIME ARE NOT ENTERED FOR TRACE AMOUNTS.

VALIDATED BY:
JAY HOLLIFIELD

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