

NOV 1989
 RICHMOND, VA
 NAT'L WEATHER SER OFC
 RICHMOND INTL AP, EXEC. TERMINAL

ISSN 0198-537X

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

NOV 1989
RICHMOND, VA

DATE	TEMPERATURE °F			DEGREE DAYS BASE 65°F		WEATHER TYPES	SNOW ICE PELLETS OR ICE ON GROUND AT 0700 INCHES	PRECIPITATION		AVERAGE STATION PRESSURE IN INCHES	WIND (M.P.H.)			SUNSHINE		SKY COVER (TENTHS)								
	MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEW POINT			HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)		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			
1	2	3	4	5	6	7A	7B	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01	65	44	55	-2	47	10	0	1	0	0.00	0.0	29.960	01	4.5	6.4	18	N	13	35	491	77	5	5	
02	59	40	50	-3	44	15	0	1	0	0.45	0.0	29.960	05	5.8	7.1	15	E	10	05	279	44	9	8	
03	61	37	49	-4	41	16	0	1	8	0.06	0.0	29.880	34	7.3	9.0	30	NW	22	36	313	49	8	7	
04	56	32	44	-8	31	21	0	0	0	0.00	0.0	30.090	13	2.4	5.6	15	SE	10	15	511	81	2	2	
05	64	35	50	-2	42	15	0	1	8	0.00	0.0	30.070	17	5.2	5.9	16	S	12	17	512	81	6	3	
06	69	47	58	6	51	7	0	1	0	0.04	0.0	29.890	22	9.2	10.2	29	SW	16	24	200	32	8	7	
07	59	51	55	3	54	10	0	2	0	0.00	0.0	29.780	21	3.3	6.9	14	SW	12	20	0	0	10	10	
08	67	50	59	8	58	6	0	1	0	0.45	0.0	29.630	18	7.8	8.7	21	S	16	21	0	0	10	9	
09	69	46	58	7	52	7	0	1	3	0.74	0.0	29.480	23	7.0	11.4	33	S	18	22	213	34	7	6	
10	64	37	51	0	31	14	0	0	0	0.00	0.0	29.710	25	4.2	8.7	40	W	23	31	602	97	2	1	
11	65	31	48	-2	35	17	0	0	0	0.00	0.0	29.860	21	8.0	8.6	25	SW	20	23	510	83	5	5	
12	76*	48	62	12	42	3	0	0	0	0.00	0.0	29.920	29	4.9	9.3	20	SW	15	24	588	95	2	2	
13	73	45	59	9	48	6	0	0	0	0.00	0.0	30.090	15	5.6	8.8	20	S	15	18	598	98	1	0	
14	75	57	66	17	59	0	1	1	8	0.0	0.0	29.940	20	10.0	10.4	22	SW	15	21	375	61	9	7	
15	73	62	68*	19	61	0	3	1	8	0.01	0.0	29.730	20	11.4	11.7	33	SW	20	21	205	34	10	10	
16	70	41	56	7	42	9	0	0	0	0.30	0.0	29.390	24	13.8	18.7	47	W	32	27	321	53	5	5	
17	48	33	41	-7	22	24	0	0	0	0.00	0.0	29.865	25	7.4	8.8	17	W	12	24	607	100	1	2	
18	58	33	46	-2	24	19	0	0	0	0.00	0.0	29.980	27	6.4	10.8	33	W	18	27	493	81	3	3	
19	50	25	38	-10	21	27	0	0	0	0.00	0.0	30.130	23	3.4	6.7	21	SW	15	23	475	79	5	3	
20	67	44	56	8	32	9	0	0	0	0.00	0.0	29.495	24	16.0	16.4	35	SW	22	24	394	65	7	5	
21	63	32	48	1	17	17	0	0	0	0.00	0.0	29.600	33	17.1	18.6	48	NW	29	32	600	100	0	0	
22	37	28	33	-14	21	32	0	1	4	0.60	T	29.880	05	4.3	6.1	16	N	10	01	0	0	10	8	
23	35	24	30	-17	26	35	0	1	4	1.35	1.1	29.810	36	9.0	9.3	22	N	15	36	267	45	8	6	
24	41	19*	30*	-16	23	35	0	0	0	0.00	0.0	30.130	24	5.9	7.2	15	W	12	27	560	94	2	1	
25	51	25	38	-8	28	27	0	0	0	0.00	0.0	29.995	22	11.2	11.5	25	SW	17	23	397	67	7	5	
26	68	41	55	9	44	10	0	0	0	0.0	T	29.780	25	7.6	11.8	26	W	17	22	212	36	10	7	
27	54	36	45	0	37	20	0	0	0	0.0	T	29.970	14	4.7	6.4	15	SE	13	13	108	18	9	8	
28	69	48	59	14	49	6	0	1	0	0.00	0.0	29.700	24	8.4	13.6	32	SW	21	23	259	44	9	8	
29	50	27	39	-6	26	26	0	0	0	0.00	0.0	29.950	02	8.4	9.1	21	N	15	01	365	62	8	6	
30	55	24	40	-4	20	25	0	0	0	0.00	0.0	29.880	24	6.9	9.4	22	SW	16	23	588	100	0	0	
SUM	SUM					TOTAL	TOTAL	NUMBER OF DAYS		TOTAL	TOTAL	FOR THE MONTH:			TOTAL	%	SUM	SUM						
1811	1142					468	4			3.00	1.1	29.850	24	3.7	9.8	48	NW	32	27	11043	60	178	149	
AVG.	AVG.	AVG.	DEP.	AVG.	DEP.			PRECIPITATION		DEP.						DATE: 21	DATE: 16	POSSIBLE	MONTH	AVG.	AVG.			
60.4	38.1	49.3	0.4	37.5	-15		4	≥ .01 INCH.	9	-0.29										18316	60	5.9	5.0	
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.		6.90		1481		THUNDERSTORMS	1		PRECIPITATION		SNOW, ICE PELLETS											
≥ 90°		≤ 32°		≤ 32°		≤ 0°		DEP.	DEP.		HEAVY FOG													
0		0		10		0		-38	145		CLEAR		9		PARTLY CLOUDY		8		CLOUDY		13			

* EXTREME FOR THE MONTH - LAST OCCURRENCE IF MORE THAN ONE.
 † 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 ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

Kenneth D. Walden
 DIRECTOR NATIONAL CLIMATIC DATA CENTER

OBSERVATIONS AT 3-HOUR INTERVALS

NOV 1989
RICHMOND, VA

13740

HOUR	L.S.T.	SKY COVER (TENTHS)	CEILING IN HUNDREDS OF FEET	VISI-BILITY			TEMPERATURE			WIND			SKY COVER (TENTHS)	CEILING IN HUNDREDS OF FEET	VISI-BILITY			TEMPERATURE			WIND												
				WHOLE MILES	1/8THS MILE	WEATHER	AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)			AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)							
NOV 1st																																	
01	2	UNL	8				60	59	58	93	28	7	4	UNL	7			44	41	38	80	36	5	10	4	2	RF	50	50	49	96	05	6
04	0	UNL	7				56	54	53	90	30	6	3	UNL	7			41	40	39	93	03	5	10	4	2	RF	50	50	49	96	36	5
07	3	UNL	5			F	50	49	48	93	00	0	0	7	UNL	7		44	41	38	80	04	5	10	8	4	RF	50	49	48	93	30	7
10	4	UNL	7				58	53	49	72	35	11	10	75	7			56	48	38	51	10	7	10	15	5	F	52	50	48	86	29	10
13	1	UNL	7				63	54	45	52	03	5	10	250	7			58	50	41	53	11	6	8	55	7		59	50	41	52	32	11
16	10	250	7				62	52	43	50	05	5	10	65	5		RF	53	51	50	90	01	6	5	UNL	8		54	47	39	57	02	12
19	10	250	7				55	49	42	62	08	6	10	28	8		RF	51	51	50	96	05	9	2	UNL	10		47	40	30	52	01	12
22	10	250	7				51	45	37	59	05	6	10	28	8		RF	51	51	50	96	03	5	0	UNL	10		40	36	31	70	01	6
NOV 2nd																																	
NOV 3rd																																	
NOV 4th																																	
NOV 5th																																	
NOV 6th																																	
NOV 7th																																	
NOV 8th																																	
NOV 9th																																	
NOV 10th																																	
NOV 11th																																	
NOV 12th																																	
NOV 13th																																	
NOV 14th																																	
NOV 15th																																	
NOV 16th																																	
NOV 17th																																	
NOV 18th																																	

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).

OBSERVATIONS AT 3-HOUR INTERVALS

NOV 1989
RICHMOND, VA 13740

HOUR L.S.T.	VISI-BILITY			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)																																													
NOV 19th																						NOV 20th																						NOV 21st																					
01	0	UNL	10	33	29	22	64	01	4	6	80	10	44	37	26	49	23	12	0	UNL	10	62	48	33	34	34	17																																						
04	0	UNL	10	29	26	21	72	00	0	8	110	10	48	40	29	48	25	13	0	UNL	10	51	38	15	24	33	18																																						
07	3	UNL	10	28	26	22	78	00	0	7	110	10	49	41	30	48	23	12	0	UNL	10	45	35	16	31	32	25																																						
10	6	UNL	10	37	31	19	48	05	5	7	UNL	10	56	45	31	39	25	19	0	UNL	10	46	36	18	33	33	23																																						
13	7	UNL	10	45	35	18	34	24	5	7	200	10	62	48	32	33	24	18	0	UNL	10	47	36	15	28	32	17																																						
16	4	UNL	10	49	37	17	28	21	9	7	UNL	10	67	50	31	26	24	19	0	UNL	10	47	35	12	24	34	11																																						
19	0	UNL	10	40	33	22	49	20	7	0	UNL	10	63	48	32	31	23	14	0	UNL	10	38	30	15	39	01	11																																						
22	0	UNL	10	40	34	24	53	21	10	0	UNL	10	61	51	40	46	25	11	0	UNL	10	34	28	15	46	02	11																																						
NOV 22nd																						NOV 23rd																						NOV 24th																					
01	0	UNL	10	32	27	15	50	02	6	10	5	5	RF	33	33	32	96	01	8	0	UNL	10	25	24	22	88	30	6																																					
04	7	UNL	10	31	26	15	52	36	7	10	4	1	SF	32	31	30	92	36	12	0	UNL	10	26	24	18	72	30	8																																					
07	10	100	10	30	26	17	58	00	0	10	11	6	F	30	29	27	89	35	13	0	UNL	7	20	19	17	88	20	4																																					
10	10	80	10	34	28	17	50	08	5	10	19	7		29	28	25	85	36	12	0	UNL	10	34	30	23	64	25	7																																					
13	10	100	10	36	29	16	44	16	4	9	28	8		33	30	24	70	34	9	1	UNL	10	40	34	24	53	27	9																																					
16	10	50	7	RIP	37	31	20	50	07	3	3	UNL	10	34	31	26	73	36	12	7	250	10	39	34	25	57	23	8																																					
19	10	20	5	RIP	33	32	30	89	01	7	0	UNL	10	30	28	23	75	33	7	0	UNL	10	31	30	27	85	20	4																																					
22	10	5	6	RZRF	33	32	31	92	06	9	0	UNL	10	24	23	21	88	00	0	0	UNL	8	30	28	25	82	22	5																																					
NOV 25th																						NOV 26th																						NOV 27th																					
01	0	UNL	8	28	27	24	85	22	8	2	UNL	10	47	43	37	68	22	14	2	UNL	7	42	41	40	93	00	0																																						
04	0	UNL	8	29	27	22	75	23	8	8	UNL	10	50	45	40	69	22	15	7	55	7	39	38	37	93	27	3																																						
07	5	UNL	8	26	25	22	85	19	7	10	85	10	53	48	43	69	23	12	2	UNL	7	37	36	35	93	00	0																																						
10	4	UNL	10	41	35	25	53	22	12	10	80	7	57	51	46	67	24	14	10	80	7	50	44	36	59	10	7																																						
13	7	UNL	10	50	41	27	41	24	15	10	250	7	65	56	49	56	26	14	10	55	7	53	43	30	42	14	9																																						
16	8	UNL	10	50	41	28	43	22	8	9	46	8	67	56	46	47	27	12	10	55	7	54	45	35	49	13	7																																						
19	10	UNL	10	42	38	31	65	20	7	7	UNL	7	53	50	46	77	04	3	10	35	7	52	47	41	66	17	8																																						
22	4	UNL	10	43	40	37	80	21	10	3	UNL	7	46	44	41	83	03	5	10	27	7	52	48	43	72	23	5																																						
NOV 28th																						NOV 29th																						NOV 30th																					
01	8	16	8	52	49	45	77	21	10	7	120	10	49	42	33	54	01	11	0	UNL	10	26	24	20	78	16	5																																						
04	7	11	8	48	47	46	93	22	5	8	50	10	46	40	33	61	36	5	0	UNL	10	26	24	20	78	22	6																																						
07	8	5	2	56	55	54	93	20	16	10	120	10	43	38	31	63	03	6	0	UNL	10	27	24	19	72	23	8																																						
10	10	17	7	64	59	56	75	23	18	10	120	10	46	38	27	48	36	12	0	UNL	10	41	33	19	41	25	12																																						
13	10	250	7	68	61	56	66	23	15	9	150	10	46	37	24	42	02	7	0	UNL	10	51	39	20	30	22	12																																						
16	9	200	7	67	61	56	68	23	10	5	UNL	10	47	38	23	39	34	10	0	UNL	10	54	41	20	26	23	11																																						
19	9	200	7	65	55	46	50	32	10	0	UNL	10	38	32	22	53	02	9	0	UNL	10	48	37	19	32	30	7																																						
22	8	120	8	55	45	32	42	35	11	0	UNL	10	32	28	19	59	02	4	0	UNL	10	39	33	21	49	02	5																																						

SUMMARY BY HOURS

HOUR L.S.T.	SKY COVER (TENTHS)	STATION PRESSURE (INCHES)	AVERAGES				RESULTANT WIND		
			TEMPERATURE				DIRECTION	SPEED (MPH)	
			AIR TEMP OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %			
01	4	29.855	46	43	39	77	8.3	24	3.1
04	4	29.850	44	42	37	79	8.5	25	3.9
07	5	29.860	44	41	37	80	8.7	22	3.9
10	6	29.880	52	46	38	62	11.7	25	4.8
13	6	29.830	57	48	37	49	12.6	25	7.2
16	6	29.820	57	48	37	50	11.2	24	5.3
19	4	29.850	51	45	37	63	9.2	24	1.6
22	4	29.870	47	43	37	71	8.1	21	1.5

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

NOV 1989
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	0.01	0.01	0.01	0.01	0.01	0.01									T	T	0.01	0.04	0.04	0.04	0.06	0.04	0.05	0.07	0.10	03
04																									04	
05																									05	
06																T	0.01	0.02	0.01	T						06
07																									07	
08																									08	
09				0.13	0.11	T	0.06	0.12	T	0.08	0.20	0.04	0.17	0.02	0.11	0.02				T	0.03	T			09	
10																									10	
11																									11	
12																									12	
13																									13	
14																								T	T	14
15	0.01	T	T																						15	
16																									16	
17						0.19	0.01	T	0.05	0.05															17	
18																									18	
19																									19	
20																									20	
21																									21	
22																									22	
23	0.10	0.08	0.05	0.08	0.04	T	T									T	0.03	0.02	0.06	0.15	0.09	0.10	0.06	0.09	23	
24																									24	
25																									25	
26																									26	
27																		T	T						27	
28																									28	
29																									29	
30																									30	

MAXIMUM SHORT DURATION PRECIPITATION

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)	0.06	0.10	0.11	0.12	0.15	0.20	0.24	0.26	0.29	0.31	0.35	0.39
ENDED: DATE	09	09	09	09	09	09	09	09	09	09	09	09
ENDED: TIME	1029	1031	1035	1043	1043	0415	0427	1059	1107	1107	1051	1057

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.

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