

DEC 1989
 RICHMOND, VA
 NAT'L WEA SER OFC NOAA
 BOX A-63, RICHMOND INTL AIRPORT

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

DEC 1989
 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 (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)			WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)		RESULTANT DIR.	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST	DIRECTION	FASTEST 1-MIN	MINUTES	PERCENT OF TOTAL POSSIBLE	SUNRISE TO MIDNIGHT	MIDNIGHT TO MIDNIGHT			
01	56	27	42	-2	22	23	0		0	0.00	0.0	30.010	29	0.8	5.1	16	W	14	29	587	100	0	0		
02	60	26	43	0	28	22	0	1	0	0.00	0.0	29.800	21	7.6	10.0	35	SW	25	21	342	58	7	5		
03	48	25	37	-6	10	28	0		0	0.00	0.0	29.665	31	17.8	18.5	41	NW	28	30	381	65	3	2		
04	37	20	29	-14	9	36	0		0	0.00	0.0	29.750	25	6.8	9.2	23	W	17	26	231	40	6	5		
05	57	26	42	0	24	23	0		0	0.00	0.0	29.570	26	5.2	6.2	25	W	17	26	241	41	7	5		
06	65*	33	49	7	32	16	0		0	0.01	0.0	29.580	20	7.7	8.9	20	NW	15	20	211	36	8	7		
07	52	37	45	3	28	20	0		0	0.00	0.0	30.000	03	8.1	10.3	20	N	15	07	336	58	7	6		
08	38	26	32	-10	23	33	0	1 4	1	0.97	3.9	30.080	03	13.1	13.6	29	NE	20	03	0	0	10	10		
09	28	25	27	-14	19	38	0	1 4 6	3	0.21	0.2	29.880	02	14.8	15.0	26	N	21	36	0	0	10	10		
10	41	21	31	-10	22	34	0	2 6	3	0.00	0.0	29.835	30	1.6	8.3	22	N	17	01	578	100	0	4		
11	38	33	36	-5	32	29	0	2 8	2	0.0	0.0	29.840	22	5.0	7.2	16	W	13	27	310	54	10	10		
12	36	33	35	-6	32	30	0	1 4	1	0.60	2.5	29.800	03	9.2	9.5	20	NE	14	03	0	0	10	10		
13	34	25	30	-10	29	35	0	1 4	4	0.28	2.5	29.750	01	7.8	9.8	21	N	16	36	364	63	9	9		
14	37	18	28	-12	24	37	0	2 8	3	0.00	0.0	29.920	22	5.1	6.5	17	SW	13	23	502	87	2	3		
15	47	18	33	-7	26	32	0	1	2	0.05	1	29.785	19	5.0	10.8	38	NW	21	20	459	80	9	8		
16	34	19	27	-13	5	38	0		1	0.00	0.0	29.930	31	11.6	11.9	31	W	16	30	480	83	1	2		
17	29	11	20	-19	8	45	0		1	0.00	0.0	30.100	24	2.4	4.6	13	SW	8	23	489	85	9	7		
18	28	20	24	-15	10	41	0		1	0.00	0.0	30.160	03	5.7	6.8	21	NE	15	02	411	72	9	9		
19	30	19	25	-14	18	40	0	1 6	1	0.05	0.8	30.040	03	4.7	5.6	14	N	10	01	302	53	10	10		
20	34	17	26	-13	15	39	0	1	2	0.00	0.0	30.000	31	5.1	7.3	20	NW	14	30	559	97	0	1		
21	40	13	27	-12	10	38	0		1	0.00	0.0	30.000	33	5.4	11.1	30	NW	20	30	410	71	7	3		
22	19	8	14*	-24	-5	51	0		1	0.00	0.0	30.330	35	13.7	13.9	28	N	20	35	546	95	8	5		
23	21	9	15	-23	2	50	0		1	0.00	0.0	30.340	02	15.7	16.0	35	NE	22	03	422	73	9	8		
24	24	14	19	-19	4	46	0		1	0.00	0.0	30.100	01	15.4	16.2	33	N	23	02	310	54	8	6		
25	32	7*	20	-18	9	45	0		1	0.00	0.0	29.860	20	8.1	9.2	18	S	15	19	359	62	10	7		
26	44	23	34	-4	17	31	0		1	0.00	0.0	29.670	27	8.8	12.9	29	W	18	27	551	96	2	3		
27	31	17	24	-14	11	41	0		1	0.00	0.0	29.970	17	5.0	8.7	18	S	17	21	438	76	9	8		
28	47	23	35	-3	23	30	0		1	0.00	0.0	29.950	22	3.1	5.8	15	W	13	26	528	92	2	2		
29	49	24	37	0	28	28	0	1	0	0.00	0.0	30.060	17	3.8	4.3	14	S	10	18	446	77	9	7		
30	51	37	44	7	32	21	0	1	0	0.09	0.0	29.970	05	1.2	6.1	12	NE	9	03	428	74	9	10		
31	62	35	49*	12	47	16	0	2	0	0.36	0.0	29.695	20	8.2	9.7	33	S	24	20	0	0	10	10		
SUM	SUM	SUM	SUM	SUM	SUM	TOTAL	TOTAL	NUMBER OF DAYS	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	
1249	689					1036	0		2.62	9.9	29.920	33	2.7	9.6	41	NW	28	30	11221	for	210	192			
AVG.	AVG.	AVG.	DEP.	AVG.	DEP.	DEP.	DEP.	PRECIPITATION	DEP.							DATE: 3	DATE: 3	POSSIBLE	MONTH	AVG.	AVG.				
40.3	22.2	31.3	-8.6	19.1	25.8	0	0	9	-0.77										17905	63	6.8	6.2			
NUMBER OF DAYS		SEASON TO DATE		SNOW, ICE PELLETS		GREATEST IN 24 HOURS AND DATES		GREATEST DEPTH ON GROUND OF																	
MAXIMUM TEMP.		MINIMUM TEMP.		1726		1481		THUNDERSTORMS		0		PRECIPITATION		SNOW, ICE PELLETS											
≥ 90°		≤ 32°		≤ 32°		≤ 0°		DEP.		DEP.		4		0.97		08		3.9		13		4		13	
0		9		25		0		220		145		CLEAR		8		PARTLY CLOUDY		5		CLOUDY		18			

* 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 OCEANIC AND ATMOSPHERIC ADMINISTRATION

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

DEC 1989
RICHMOND, VA 13740

HOUR	L.S.T.	VISI-BILITY				TEMPERATURE				WIND				SKY COVER (TENTHS)	VISI-BILITY				TEMPERATURE				WIND							
		SKY COVER (TENTHS)	CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	WEATHER	AIR OF	WET BULB OF	DEN POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	SKY COVER (TENTHS)		CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	WEATHER	AIR OF	WET BULB OF	DEN POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)						
DEC 1st																														
01	0	UNL	10		33	29	22	64	00	0	0	UNL	10		34	32	28	79	08	3	4	UNL	10		46	38	26	46	01	10
04	0	UNL	8		27	25	22	81	21	3	0	UNL	7		29	28	26	89	00	0	0	UNL	10		40	32	18	41	30	10
07	0	UNL	8		28	26	22	78	00	0	5	UNL	6	F	28	27	26	92	00	0	0	UNL	10		34	27	13	42	33	14
10	0	UNL	10		44	36	23	44	25	8	7	UNL	7		40	36	30	68	23	6	1	UNL	10		36	28	11	35	30	18
13	0	UNL	10		53	39	15	22	30	7	10	UNL	7		52	42	28	40	20	14	3	UNL	10		38	29	8	29	32	20
16	1	UNL	10		54	40	18	24	30	4	3	UNL	7		55	43	27	34	20	17	8	40	10		36	27	5	27	31	19
19	0	UNL	10		40	34	24	53	00	0	4	UNL	7		52	43	32	47	20	14	4	UNL	10		32	24	4	30	33	18
22	0	UNL	10		36	32	26	67	05	4	8	120	7		50	42	31	48	24	8	0	UNL	10		27	21	1	32	33	20
DEC 2nd																														
DEC 3rd																														
DEC 4th																														
DEC 5th																														
DEC 6th																														
DEC 7th																														
DEC 8th																														
DEC 9th																														
DEC 10th																														
DEC 11th																														
DEC 12th																														
DEC 13th																														
DEC 14th																														
DEC 15th																														
DEC 16th																														
DEC 17th																														
DEC 18th																														

WEATHER CODES

- | | | | |
|---|--|---|---|
| <ul style="list-style-type: none"> * TORNADO T THUNDERSTORM Q SQUALL R RAIN RW RAIN SHOWERS ZR FREEZING RAIN L DRIZZLE | <ul style="list-style-type: none"> ZL FREEZING DRIZZLE S SNOW SW SNOW SHOWERS SG SNOW GRAINS SP SNOW PELLETS IC ICE CRYSTALS IP ICE PELLETS | <ul style="list-style-type: none"> IPW ICE PELLET SHOWERS A HAIL F FOG IF ICE FOG GF GROUND FOG BD BLOWING DUST | <ul style="list-style-type: none"> 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

DEC 1989
RICHMOND, VA 13740

HOUR L.S.T.	VISI-BILITY			TEMPERATURE				WIND		SKY COVER (TENTHS)	VISI-BILITY			WEATHER	TEMPERATURE				WIND																																																																
	SKY COVER (TENTHS)	CEILING IN HUNDREDS OF FEET		AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)		SKY COVER (TENTHS)	CEILING IN HUNDREDS OF FEET			AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	SKY COVER (TENTHS)	CEILING IN HUNDREDS OF FEET		AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)																																																						
		WHOLE MILES	16THS MILE									WHOLE MILES	16THS MILE									WHOLE MILES	16THS MILE							WHOLE MILES	16THS MILE	WHOLE MILES	16THS MILE																																																		
DEC 19th																												DEC 20th																												DEC 21st																											
01	10	250	10	22	20	14	71	00	0	10	15	6	F	26	25	23	88	36	6	5	0	UNL	10		20	17	10	65	23	3																																																					
04	10	UNL	10	20	18	14	78	00	0	3	UNL	6	F	21	20	19	92	33	6	5	0	UNL	10		15	14	10	81	00	0																																																					
07	7	200	10	21	18	10	62	29	3	0	UNL	7		20	19	18	92	33	8	8	0	UNL	10		13	12	8	80	18	4																																																					
10	9	110	10	26	23	15	63	06	6	0	UNL	7		25	23	17	72	34	8	4	UNL	7		29	25	16	58	25	6																																																						
13	10	25	7	29	25	15	56	01	9	0	UNL	7		32	27	15	50	32	8	8	UNL	7		38	30	12	34	30	17																																																						
16	10	27	0	26	25	23	88	04	4	0	UNL	10		34	27	11	38	28	8	8	UNL	7		35	28	13	40	02	13																																																						
19	10	17	1	26	25	24	92	01	6	0	UNL	10		29	24	10	45	28	5	2	UNL	10		26	22	11	53	36	12																																																						
22	10	16	3	25	24	22	88	01	6	0	UNL	10		22	19	9	57	20	4	2	UNL	10		19	15	3	50	01	15																																																						
DEC 22nd																												DEC 23rd																												DEC 24th																											
01	0	UNL	10	15	12	0	51	01	13	3	UNL	10		13	10	-1	53	36	13	10	200	10		18	15	4	54	02	17																																																						
04	0	UNL	10	11	8	-8	42	36	15	6	200	10		11	9	-2	55	01	12	10	200	10		15	13	4	62	02	20																																																						
07	0	UNL	10	9	6	-8	45	33	10	6	UNL	10		9	7	-2	61	01	12	8	200	10		14	12	3	61	36	18																																																						
10	8	UNL	10	13	10	-7	40	35	15	8	UNL	10		11	9	0	61	01	15	10	200	10		14	12	3	61	01	17																																																						
13	10	UNL	10	16	12	-6	37	01	16	10	UNL	10		18	15	4	54	03	14	7	200	10		21	17	2	43	02	18																																																						
16	6	UNL	10	18	13	-5	36	35	10	10	200	10		20	16	5	52	01	13	7	200	10		23	18	5	46	35	16																																																						
19	3	UNL	10	15	11	-6	39	34	8	10	200	10		20	17	7	57	02	15	3	UNL	10		20	17	6	54	34	10																																																						
22	7	UNL	10	14	11	-3	46	35	9	10	200	10		19	16	5	54	03	17	0	UNL	10		17	14	5	59	31	11																																																						
DEC 25th																												DEC 26th																												DEC 27th																											
01	0	UNL	10	13	11	5	70	33	6	10	70	8		30	25	15	54	21	10	0	UNL	10		22	18	6	50	01	7																																																						
04	0	UNL	8	9	8	4	80	28	3	10	65	8		31	27	18	59	24	9	6	UNL	10		19	15	2	47	05	5																																																						
07	3	UNL	7	8	7	3	80	20	4	0	UNL	8		29	26	19	66	23	8	8	UNL	10		17	14	2	52	00	0																																																						
10	9	120	7	20	17	9	62	20	7	0	UNL	7		34	29	21	59	25	14	8	250	10		22	18	4	46	17	8																																																						
13	10	110	7	28	22	8	43	19	13	2	UNL	10		43	35	23	45	29	15	10	250	10		27	22	8	45	18	10																																																						
16	10	110	7	32	26	13	45	20	11	5	UNL	10		41	34	21	45	28	12	10	80	10		30	25	15	54	18	10																																																						
19	10	95	7	30	25	14	51	21	10	0	UNL	10		36	28	12	37	32	12	10	39	10		30	26	18	61	16	6																																																						
22	10	60	7	30	25	15	54	20	11	0	UNL	10		28	23	9	45	05	10	10	75	10		31	28	23	72	21	9																																																						
DEC 28th																												DEC 29th																												DEC 30th																											
01	8	110	10	29	27	22	75	21	6	0	UNL	10		30	28	24	78	14	4	10	75	7	R	38	35	31	76	18	5																																																						
04	3	UNL	10	32	28	19	59	28	7	0	UNL	10		25	24	22	88	15	4	10	55	7		38	36	32	79	21	6																																																						
07	0	UNL	7	24	22	18	78	00	0	5	UNL	7		26	25	24	92	12	3	10	55	7	R	40	37	32	73	20	7																																																						
10	4	UNL	10	32	28	21	64	11	5	8	UNL	5	F	36	33	28	73	20	6	9	90	7		46	40	32	58	22	4																																																						
13	0	UNL	10	43	36	24	47	16	4	10	UNL	7		48	41	31	52	19	6	6	UNL	7		51	43	32	48	04	6																																																						
16	3	UNL	10	46	38	25	44	26	11	10	250	7		45	39	31	58	18	9	10	95	7		46	40	32	58	03	8																																																						
19	0	UNL	10	34	31	25	70	14	4	10	250	8		40	36	31	70	15	6	10	100	7		42	38	32	68	04	5																																																						
22	0	UNL	10	29	27	24	82	14	3	10	200	8		40	36	31	70	17	4	10	27	6	F	40	38	34	79	04	5																																																						
DEC 31st																																																																																			
01	10	28	6	F	38	37	36	93	00	0																																																																									
04	10	110	4	F	36	36	35	96	04	4																																																																									
07	9	110	1	F	35	35	34	96	15	4																																																																									
10	10	11	2	F	47	47	46	96	18	9																																																																									
13	10	3	0	RF	50	50	50	100	20	10																																																																									
16	10	11	1	RF	58	57	57	97	19	17																																																																									
19	10	27	5	RF	59	58	57	93	20	13																																																																									
22	10	21	6	RF	61	59	57	87	22	16																																																																									

SUMMARY BY HOURS

HOUR L.S.T.	SKY COVER (TENTHS)	AVERAGES						RESULTANT WIND	
		STATION PRESSURE (INCHES)	TEMPERATURE			WIND SPEED (MPH)	DIRECTION	SPEED (MPH)	
			AIR TEMP OF	WET BULB OF	DEW POINT OF				
01	6	29.920	29	26	19	68	7.6	36	3.3
04	6	29.930	26	24	18	72	7.5	35	3.7
07	5	29.950	25	23	17	74	7.4	35	3.0
10	6	29.970	31	27	19	63	10.5	33	3.1
13	7	29.910	37	31	19	52	11.9	32	4.2
16	7	29.880	37	31	20	53	12.1	30	2.6
19	6	29.890	34	29	20	61	10.0	31	1.3
22	6	29.900	32	28	20	66	10.1	33	2.8

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

DEC 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																								03		
04																								04		
05																								05		
06							T	T	0.01	T														06		
07																								07		
08				T	T	0.05	0.08	0.02	0.05	0.05	0.07	0.09	0.07	0.10	0.10	0.08	0.07	0.09	0.02	0.01	0.01	T	0.01	T	08	
09	T	T												T	0.01	0.03	T	0.02	0.04	0.07	0.01	0.03	T	T	09	
10																									10	
11																								T	11	
12	T	T	T	T	T	T	0.05	0.03	0.02	0.03	0.02	0.05	0.02	0.02	0.01	0.01	0.04	0.02	0.03	0.03	0.06	0.06	0.03	0.07	12	
13	0.02	0.03	0.04	0.04	0.02	0.05	0.01	0.02	0.01	0.04	T	T	T	T	T	T									13	
14																									14	
15																						T	0.04	0.01	15	
16	T																								16	
17																									17	
18																									18	
19													T	T	0.01	0.02	0.01	0.01	T	T	T				19	
20																									20	
21																									21	
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24																									24	
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27																						T	T	T	27	
28																									28	
29																									29	
30	T	T	T	T	0.01	0.02	0.02	T																0.02	0.02	30
31	T										0.01	0.03	0.02	0.04	0.12	0.02	T	0.01	T	T	0.01	0.02	0.08	0.08	31	

MAXIMUM SHORT DURATION PRECIPITATION

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)	0.03	0.04	0.04	0.05	0.07	0.10	0.13	0.16	0.19	0.22	0.25	0.30
ENDED: DATE	08	08	08	08	08	08	08	08	08	08	08	08
ENDED: TIME	1635	1121	1649	1533	1704	1151	1159	1151	1533	1533	1649	1649

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:
DON GRISINGER

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