

# 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

SEP 1991  
 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 MINUTES	SKY COVER (TENTHS)					
	MAXIMUM	MINIMUM	AVERAGE	DEPARTURE FROM NORMAL	AVERAGE DEN POINT	HEATING I SEASON BEGINS WITH JUL	COOLING I SEASON BEGINS WITH JAN			WATER EQUIVALENT (INCHES)	SNOW, ICE PELLETS (INCHES)		RESULTANT DIR.	RESULTANT SPEED	AVERAGE SPEED	PEAK GUST		FASTEST 1-MIN	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	76	58	67	-7	60	0	2	1 3 8	0	0.03	0.0	30.020	03	9.0	10.0	23	NE	16	03	552	71	9	7
02	79	54	67	-7	55	0	2		0	0.00	0.0	30.200	06	6.0	8.1	16	E	12	01	730	94	4	2
03	84	57	71	-3	59	0	6		0	0.00	0.0	30.100	15	3.3	5.5	22	S	10	20	714	92	4	3
04	87	61	74	0	64	0	9		0	0.00	0.0	29.880	19	8.9	9.5	22	S	16	20	672	87	7	6
05	87	71	79	5	66	0	14	1 8	0	0.0	0.0	29.865	07	1.0	5.2	15	W	8	01	377	49	8	9
06	79	66	73	0	68	0	8	1 3 8	0	0.07	0.0	29.970	36	5.0	6.5	18	NW	17	31	491	64	8	8
07	85	64	75	2	62	0	10	1 8	0	0.00	0.0	30.060	02	4.0	5.5	13	NE	9	04	665	87	5	5
08	89	59	74	1	58	0	9	1 8	0	0.00	0.0	30.080	15	3.2	4.5	15	E	12	10	672	88	2	2
09	89	59	74	2	58	0	9	1 8	0	0.00	0.0	30.080	15	2.7	4.9	16	E	10	13	684	90	4	3
10	88	62	75	3	62	0	10	1 8	0	0.00	0.0	29.940	20	9.0	9.2	21	SW	15	21	591	78	7	7
11	91	65	78	6	64	0	13	1 8	0	0.00	0.0	29.800	31	2.7	6.6	17	NH	12	31	600	79	7	8
12	87	64	76	4	59	0	11	1 8	0	0.00	0.0	29.860	02	5.1	6.9	14	NE	10	36	654	87	5	6
13	87	62	75	4	64	0	10	1 8	0	0.00	0.0	29.855	15	5.4	6.3	16	S	12	17	621	83	7	7
14	94	68	81	10	69	0	16	1 8	0	0.00	0.0	29.815	08	2.1	7.5	18	N	13	36	607	81	6	7
15	91	70	81	10	69	0	16	1 8	0	0.00	0.0	29.940	13	3.6	5.3	13	SE	8	18	563	75	8	8
16	97	73	85	15	72	0	20	1 8	0	0.00	0.0	29.910	18	9.4	9.6	21	S	15	18	619	83	2	3
17	97*	73	85*	15	72	0	20	1 8	0	0.00	0.0	29.850	19	9.8	10.4	18	S	16	19	582	78	2	2
18	94	74	84	14	70	0	19	1 8	0	0.00	0.0	29.855	18	12.1	12.3	25	S	20	19	558	75	5	4
19	93	56	75	6	64	0	10	1 3	0	0.45	0.0	29.890	29	1.4	12.6	26	N	21	35	420	57	7	6
20	70	53	62	-7	46	3	0	1 8	0	0.14	0.0	30.030	36	9.4	9.8	24	N	20	36	552	75	9	8
21	71	48	60	-9	44	5	0	1 8	0	0.00	0.0	30.120	01	5.7	7.1	17	N	14	36	676	92	3	2
22	75	45	60	-8	47	5	0	1 8	0	0.00	0.0	30.160	10	2.8	5.2	15	E	9	15	631	86	3	4
23	78	59	69	1	57	0	4	1 8	0	0.0	0.0	30.040	20	5.2	5.8	20	SW	13	21	520	72	9	8
24	78	58	68	1	62	0	3	1 8	0	0.95	0.0	29.910	09	4.6	6.4	17	E	13	13	325	45	9	9
25	77	63	70	3	66	0	5	1 8	0	1.02	0.0	29.550	21	5.6	8.8	18	S	15	16	262	36	10	10
26	76	56	66	-1	52	0	1	1 8	0	0.03	0.0	29.580	30	7.1	8.2	22	W	15	28	562	78	3	4
27	71	47	59*	-7	42	6	0	1 8	0	0.00	0.0	29.890	01	2.8	4.2	16	N	12	36	682	95	0	0
28	74	45*	60	-6	42	5	0	1 8	0	0.00	0.0	30.105	12	1.2	5.3	12	SE	9	13	716	100	0	0
29	80	50	65	0	51	0	0	1 8	0	0.00	0.0	30.180	20	7.5	7.9	21	SW	15	19	647	91	2	3
30	74	54	64	-1	55	1	0	1 8	0	0.00	0.0	30.185	04	5.0	7.0	15	N	12	05	615	86	3	2
SUM	SUM					TOTAL	TOTAL	NUMBER OF DAYS		TOTAL	TOTAL			FOR THE MONTH:				TOTAL	%	SUM	SUM		
2498	1794					25	227			2.69	0.0	29.960	15	1.0	7.4	26	N	21	35	17560		158	153
AVG.	AVG.	AVG.	DEP.	AVG.	DEP.			PRECIPITATION		DEP.						DATE: 19	DATE: 19	POSSIBLE	MONTH	AVG.	AVG.		
83.3	59.8	71.6	1.4	59.3		1	47			-0.83								22363	79	5.3	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.		DEP.		THUNDERSTORMS		PRECIPITATION		SNOW, ICE PELLETS													
≥ 90°		≤ 32°		≤ 0°		HEAVY FOG		1.48		24-25		0.0											
7		0		0		1		469		PARTLY CLOUDY		12		CLOUDY 8									

\* 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

*Kenneth D. Wadsworth*  
 DIRECTOR  
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**noaa**

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

## OBSERVATIONS AT 3-HOUR INTERVALS

SEP 1991  
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	1/16THS MILE		AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	CEILING IN HUNDREDS OF FEET		WHOLE MILES	1/16THS MILE	AIR OF		WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)											
SEP 1st																																	
01	10	150	5		FH	73	71	70	90	27	7	0	UNL	12			57	55	53	87	02	6	0	UNL	10			59	58	57	93	34	3
04	9	30	5		FH	72	69	67	84	01	11	0	UNL	12			55	53	52	90	01	6	0	UNL	10			58	57	56	93	34	3
07	10	36	10			69	63	59	71	03	14	0	UNL	12			59	56	53	81	36	8	5	UNL	10			63	61	59	87	05	3
10	10	50	10			69	61	56	63	04	12	5	UNL	12			72	63	57	59	05	9	6	30	10			75	65	59	58	15	7
13	9	31	10			74	65	60	62	03	11	7	55	12			77	64	56	48	09	9	6	50	10			80	65	56	44	16	5
16	6	41	12			76	66	59	56	03	7	7	70	12			74	64	57	56	10	9	4	UNL	10			82	66	56	41	20	9
19	4	UNL	12			69	63	59	71	05	5	7	7	12			67	62	58	73	09	6	4	UNL	10			73	66	62	69	14	6
22	0	UNL	12			62	59	57	84	05	5	0	UNL	12			62	59	57	84	07	5	3	UNL	10			66	64	62	87	13	5
SEP 2nd																																	
SEP 3rd																																	
SEP 4th																																	
SEP 5th																																	
SEP 6th																																	
SEP 7th																																	
SEP 8th																																	
SEP 9th																																	
SEP 10th																																	
SEP 11th																																	
SEP 12th																																	
SEP 13th																																	
SEP 14th																																	
SEP 15th																																	
SEP 16th																																	
SEP 17th																																	
SEP 18th																																	

## WEATHER CODES

* TORNADO	ZL FREEZING DRIZZLE	IPW ICE PELLET SHOWERS	BN BLOWING SAND
T THUNDERSTORM	S SNOW	A HAIL	BS BLOWING SNOW
Q SQUALL	SW SNOW SHOWERS	F FOG	BY BLOWING SPRAY
R RAIN	SG SNOW GRAINS	IF ICE FOG	K SMOKE
RW RAIN SHOWERS	SP SNOW PELLETS	GF GROUND FOG	H HAZE
ZR FREEZING RAIN	IC ICE CRYSTALS	BD BLOWING DUST	D DUST
L DRIZZLE	IP ICE PELLETS		

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

SEP 1991  
RICHMOND, VA 13740

HOUR L.S.T.	SKY COVER (TENTHS)			WEATHER	TEMPERATURE				WIND		SKY COVER (TENTHS)			WEATHER	TEMPERATURE				WIND	
	UNL	HUNDREDS OF FEET	WHOLE MILES		AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	UNL	HUNDREDS OF FEET	WHOLE MILES		AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)
SEP 19th																				
01	0	UNL	8		76	73	71	85	19	9	10	50	7		56	54	52	87	33	7
04	1	UNL	7		75	72	71	87	19	9	10	55	7	R	54	52	51	90	36	11
07	5	UNL	7		75	72	71	87	19	10	10	75	6	RF	54	52	51	90	36	6
10	5	UNL	8		86	76	71	61	22	9	10	250	10		60	55	50	70	36	11
13	6	50	8		92	76	68	46	20	12	9	UNL	15		68	54	41	38	36	17
16	10	28	5	RW	62	60	58	87	03	11	10	UNL	15		68	53	38	33	36	12
19	10	36	8		59	56	54	84	01	11	8	UNL	15		59	51	43	56	02	6
22	10	10	8	RW	58	56	55	90	33	11	4	UNL	15		53	50	46	77	02	4
SEP 20th																				
SEP 21st																				
01	0	UNL	15		49	47	44	83	00	0	10	65	12		60	57	55	84	17	3
04	0	UNL	15		47	46	45	93	35	3	10	25	10		62	59	56	81	18	4
07	0	UNL	7		50	47	44	80	36	4	10	55	10		63	60	57	81	18	4
10	0	UNL	10		65	56	48	54	09	6	10	250	10		72	64	59	64	23	8
13	1	UNL	12		71	57	45	40	08	6	10	130	10		77	63	54	45	20	9
16	9	UNL	12		73	58	46	38	11	7	9	120	10		74	64	58	58	22	7
19	9	120	12		64	56	50	61	15	8	10	110	10		68	63	59	73	23	3
22	8	55	12		59	55	52	78	13	4	0	UNL	6	F	62	60	58	87	12	3
SEP 22nd																				
SEP 23rd																				
SEP 24th																				
01	0	UNL	15		49	47	44	83	00	0	10	65	12		60	57	55	84	17	3
04	0	UNL	15		47	46	45	93	35	3	10	25	10		62	59	56	81	18	4
07	0	UNL	7		50	47	44	80	36	4	10	55	10		63	60	57	81	18	4
10	0	UNL	10		65	56	48	54	09	6	10	250	10		72	64	59	64	23	8
13	1	UNL	12		71	57	45	40	08	6	10	130	10		77	63	54	45	20	9
16	9	UNL	12		73	58	46	38	11	7	9	120	10		74	64	58	58	22	7
19	9	120	12		64	56	50	61	15	8	10	110	10		68	63	59	73	23	3
22	8	55	12		59	55	52	78	13	4	0	UNL	6	F	62	60	58	87	12	3
SEP 25th																				
SEP 26th																				
SEP 27th																				
01	9	4	4	RWF	69	68	68	97	15	9	10	3	2	LF	61	60	59	93	32	8
04	8	8	8		69	68	67	93	23	10	10	5	4	F	59	58	57	93	33	7
07	10	4	7		67	66	65	93	21	9	10	40	6	F	60	58	57	90	35	7
10	10	10	7		72	68	65	79	21	9	0	UNL	7		67	59	53	61	28	7
13	10	120	7		76	69	65	69	23	9	0	UNL	8		75	59	46	36	27	10
16	10	60	2	8 RF	68	66	65	90	18	6	2	UNL	15		74	59	48	40	28	13
19	10	32	2	F	66	65	65	97	14	3	0	UNL	15		64	57	51	63	25	4
22	10	39	2	RF	66	65	65	97	33	5	0	UNL	15		60	54	49	67	33	6
SEP 28th																				
SEP 29th																				
SEP 30th																				
01	0	UNL	15		47	46	44	89	31	3	0	UNL	15		52	50	48	86	18	3
04	0	UNL	15		46	45	43	89	35	3	0	UNL	10		52	51	49	90	19	3
07	0	UNL	8		48	45	41	77	00	0	0	UNL	8		53	51	49	86	18	4
10	0	UNL	10		66	53	40	39	32	5	0	UNL	10		70	59	51	51	21	11
13	0	UNL	15		72	54	36	27	06	7	1	UNL	10		78	62	50	38	22	12
16	0	UNL	15		72	54	37	28	14	5	5	UNL	12		79	62	50	36	20	8
19	0	UNL	15		60	53	46	60	13	4	5	UNL	12		63	57	53	70	17	7
22	0	UNL	15		55	50	44	67	15	5	8	85	12		62	57	53	73	18	3

## SUMMARY BY HOURS

HOUR L.S.T.	SKY COVER (TENTHS)	AVERAGES						RESULTANT WIND	
		STATION PRESSURE (INCHES)	TEMPERATURE			REL HUMIDITY %	WIND SPEED (MPH)	DIRECTION	SPEED (MPH)
			AIR TEMP OF	WET BULB OF	DEW POINT OF				
01	5	29.950	65	62	60	86	5.7	19	1.4
04	5	29.950	63	61	59	89	5.6	29	0.8
07	5	29.980	64	61	60	86	5.9	02	0.9
10	5	29.990	75	66	60	60	8.8	25	1.3
13	6	29.950	81	67	58	46	9.8	19	2.0
16	6	29.920	80	66	57	49	10.0	16	2.1
19	6	29.940	71	64	60	69	7.2	12	3.5
22	5	29.965	67	63	60	80	6.4	12	2.8

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

SEP 1991  
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	0.03																							01	
02																									02
03																									03
04																									04
05							T	T																	05
06			0.02	T			0.02	0.02	0.01																06
07																									07
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09																									09
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14																									14
15																									15
16																									16
17																									17
18																									18
19																									19
20		0.01	0.04	0.02	0.05	0.01	0.01	T					0.10	0.05	0.03	0.02	0.05		T		T	0.19	0.01	20	
21																									21
22																									22
23					T	T																			23
24																									24
25	0.03												0.02	0.02	0.11	0.04	0.05	0.02		0.03	0.08	0.23	0.35	25	
26	T	0.03	T										0.01	0.10	0.17	0.07	0.14	0.02	0.04	0.10	0.22	0.12	T	26	
27																									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)	0.13	0.16	0.19	0.21	0.26	0.30	0.35	0.43	0.51	0.58	0.65	0.68
ENDED: DATE	24	24	25	25	25	25	25	25	25	25	25	25
ENDED: TIME	2354	2358	0001	0001	0001	0001	0001	0001	0001	0001	0018	0043

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:  
MATTHEW BODOSKY

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