

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 1989
 RICHMOND, VA

DATE	TEMPERATURE OF						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 DEN POINT	HEATING (SEASON BEGINS WITH JUL)	COOLING (SEASON BEGINS WITH JAN)	WATER EQUIVALENT (INCHES)			SNOW, ICE PELLETS (INCHES)	AVERAGE SPEED		PEAK GUST		MINUTES	PERCENT OF TOTAL POSSIBLE	SUNRISE TO SUNSET	MIDNIGHT TO MIDNIGHT					
												RESULTANT DIR.		RESULTANT SPEED	SPEED					DIRECTION	SPEED	DIRECTION		
01	87	63	75	1	66	0	10		0	0.00	0.0	29.790	20	10.7	11.0	24	SW	16	21	637	82	5	5	
02	87	73	80	6	67	0	15	8	0	0.00	0.0	29.790	02	5.0	10.0	22	NE	16	01	628	81	6	7	
03	73	60	67	-7	57	0	2		0	0.00	0.0	30.020	03	9.2	9.6	20	NE	15	03	512	66	10	8	
04	80	57	69	-5	58	0	4		0	0.00	0.0	30.130	05	10.0	10.8	24	E	15	07	625	81	4	4	
05	75	61	68	-6	62	0	3		0	0.00	0.0	30.120	05	8.8	9.0	17	NE	13	05	283	37	10	9	
06	80	62	71	-2	64	0	6		0	0.00	0.0	30.050	06	6.7	7.3	15	NE	12	04	502	65	9	7	
07	80	59	70	-3	61	0	5	1	8	0.00	0.0	29.950	04	3.9	4.5	13	N	12	06	602	79	6	5	
08	86	58	72	-1	62	0	7	1	8	0.00	0.0	29.870	10	1.8	3.8	15	SE	7	12	763	100	0	1	
09	89	64	77	5	68	0	12		8	0.00	0.0	29.800	18	4.3	5.4	12	S	8	14	608	80	4	3	
10	94	68	81	9	71	0	16	1	8	0.00	0.0	29.750	18	5.4	5.8	14	S	9	15	642	85	1	1	
11	94*	70	82*	10	71	0	17	1	3	8	0.00	0.0	29.790	20	2.6	5.5	15	N	9	18	633	84	3	3
12	78	72	75	3	71	0	10	1	8	0.00	0.0	29.900	04	7.7	8.2	14	NE	13	02	80	11	10	9	
13	89	71	80	9	71	0	15	1	8	0.00	0.0	29.920	09	3.2	7.4	17	S	12	05	556	74	8	7	
14	84	69	77	6	72	0	12	2	8	0.05	0.0	29.800	33	1.3	6.5	13	W	9	26	525	70	9	8	
15	89	70	80	9	70	0	15	1	3	0.00	0.0	29.790	17	1.0	6.7	37	E	25	11	542	73	8	9	
16	86	69	78	8	71	0	13	1	3	8	0.47	0.0	29.780	20	4.5	7.7	33	S	25	18	230	31	10	9
17	82	66	74	4	64	0	9	1		0.00	0.0	29.810	32	2.4	6.8	15	NE	12	02	364	49	7	6	
18	73	61	67	-3	61	0	2			0.00	0.0	29.930	02	11.4	11.7	20	N	14	03	163	22	9	9	
19	67	62	65	-4	63	0	0	1		0.10	0.0	29.890	02	13.6	13.9	29	NE	22	02	0	0	10	10	
20	82	63	73	4	70	0	8	2		1.87	0.0	29.920	05	4.4	6.3	17	E	12	13	37	5	10	10	
21	87	72	80	11	73	0	15	2		0.00	0.0	29.940	10	8.5	8.9	23	E	17	10	625	85	5	7	
22	88	72	80	12	71	0	15			0.02	0.0	29.640	17	14.1	17.2	43	S	28	19	204	28	9	8	
23	84	51	68	0	58	0	3			0.10	0.0	29.710	27	3.9	16.4	49	N	37	36	210	29	9	8	
24	63	46	55	-12	40	10	0			0.00	0.0	30.140	03	8.2	9.2	23	N	17	02	726	100	2	4	
25	65	47	56	-11	53	9	0	1		0.96	0.0	30.030	04	8.7	9.1	18	NE	13	05	144	20	10	9	
26	75	60	68	1	59	0	3	1		0.64	0.0	29.800	36	9.6	10.5	26	N	18	01	159	22	8	7	
27	64	45	55*	-11	41	10	0			0.00	0.0	30.210	03	10.8	11.2	28	NE	18	01	718	100	0	0	
28	70	42*	56	-10	46	9	0			0.00	0.0	30.200	15	2.1	4.6	15	S	10	17	551	77	7	5	
29	77	53	65	0	58	0	0			0.00	0.0	29.970	23	8.1	8.5	18	SW	14	22	240	34	10	9	
30	69	62	66	1	59	0	1		8	0.00	0.0	30.020	04	5.6	6.3	13	NE	10	03	35	5	10	10	
SUM	SUM					TOTAL	TOTAL	NUMBER OF DAYS		TOTAL	TOTAL	FOR THE MONTH:						TOTAL	%	SUM	SUM			
2397	1848					38	218			5.33	0.0	29.915	05	2.8	8.7	49	N	37	36	12544	FOR	209	197	
AVG.	AVG.	AVG.	DEP.	AVG.	DEP.	DEP.	DEP.	PRECIPITATION		DEP.						DATE: 23	DATE: 23	POSSIBLE	MONTH	AVG.	AVG.			
79.9	61.6	70.8	0.6	62.6	14	38		≥ .01 INCH	9	1.81								22363	56	7.0	6.6			
NUMBER OF DAYS						SEASON TO DATE		SNOW, ICE PELLETS		GREATEST IN 24 HOURS AND DATES						GREATEST DEPTH ON GROUND OF								
MAXIMUM TEMP.		MINIMUM TEMP.		TOTAL		TOTAL		≥ 1.0 INCH		PRECIPITATION		SNOW, ICE PELLETS												
≥ 90°		≤ 32°		≤ 32°		≤ 0°		DEP.		DEP.		HEAVY FOG												
2		0		0		0		17		122		CLEAR 5		PARTLY CLOUDY 8		CLOUDY 17								

* 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



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

SEP 1989
RICHMOND, VA

13740

HOUR L.S.T.	VISI-BILITY			TEMPERATURE				WIND		SKY COVER (TENTHS)	VISI-BILITY			TEMPERATURE				WIND		SKY COVER (TENTHS)	VISI-BILITY			TEMPERATURE				WIND	
	CEILING IN HUNDREDS OF FEET	WHOLE MILES	1/8TH MILE	AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)		CEILING IN HUNDREDS OF FEET	WHOLE MILES	1/8TH MILE	WEATHER	AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %	DIRECTION		SPEED (KNOTS)	CEILING IN HUNDREDS OF FEET	WHOLE MILES	1/8TH MILE	WEATHER	AIR OF	WET BULB OF	DEW POINT OF	REL HUMIDITY %
SEP 1st																													
01	0	UNL	10	65	64	63	93	17	4	10	60	7		76	71	69	79	20	10	10	55	7		72	66	63	73	05	11
04	0	UNL	7	64	63	62	93	18	6	10	55	7		76	71	69	79	24	9	10	55	7		69	64	61	76	03	8
07	1	UNL	7	67	65	64	90	20	6	10	90	3	FH	73	72	71	94	35	4	10	70	7		68	61	55	63	05	9
10	0	UNL	8	80	71	67	65	20	14	3	UNL	7		83	71	65	55	03	14	10	65	10		69	60	54	59	02	9
13	5	UNL	10	85	71	63	48	24	13	8	55	8		85	71	64	50	04	11	10	85	10		73	62	54	52	02	9
16	10	200	10	84	72	66	55	21	14	5	UNL	8		85	72	65	51	06	8	10	85	10		73	63	57	57	01	9
19	10	200	7	78	71	68	72	19	10	7	100	8		79	71	67	67	03	6	5	UNL	10		69	64	60	73	03	7
22	10	200	7	77	72	69	76	21	11	10	100	8		75	70	67	76	04	8	3	UNL	10		65	60	57	76	06	6
SEP 2nd																													
SEP 3rd																													
SEP 4th																													
SEP 5th																													
SEP 6th																													
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SEP 16th																													
SEP 17th																													
SEP 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

SEP 1989
RICHMOND, VA 13740

HOUR L.S.T.	SEP 19th										SEP 20th										SEP 21st											
	SKY COVER (TENTHS)		VISI-BILITY		TEMPERATURE				WIND		SKY COVER (TENTHS)		VISI-BILITY		TEMPERATURE				WIND		SKY COVER (TENTHS)		VISI-BILITY		TEMPERATURE				WIND			
	CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	WEATHER	AIR of	WET BULB of	DEW POINT of	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	WEATHER	AIR of	WET BULB of	DEW POINT of	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)	CEILING IN HUNDREDS OF FEET	WHOLE MILES	16THS MILE	WEATHER	AIR of	WET BULB of	DEW POINT of	REL HUMIDITY %	DIRECTION	SPEED (KNOTS)		
01	10	30	7		67	65	64	90	02	11	10	3	1	4	LF	63	62	62	97	02	9	10	2	0	8	F	73	73	73	100	11	4
04	10	20	7	RW	65	64	63	93	03	14	10	2	1	4	LF	64	63	63	97	02	5	10	1	0	4	F	74	74	74	100	09	4
07	10	9	7	R	64	63	63	97	02	14	10	3	1	4	RF	65	65	65	100	36	5	8	3	1	4	F	75	75	75	100	09	8
10	10	13	8		66	64	62	87	03	13	10	7	0	12	RWF	71	70	70	97	07	5	7	15	6		F	80	76	74	100	15	6
13	10	8	2	LF	64	63	63	97	01	11	8	250	7			81	76	74	79	17	3	6	35	7			85	76	72	65	11	11
16	10	9	5	F	63	62	62	97	01	12	10	25	3		RWF	76	76	76	100	03	3	2	UNL	7			84	76	73	70	11	11
19	10	8	5	F	63	62	62	97	01	11	10	40	7		RW	74	73	73	97	10	4	1	UNL	7			76	73	72	88	09	7
22	10	5	2	LF	63	62	62	97	02	10	10	3	1	4	F	73	73	73	100	04	4	8	15	7			73	73	73	100	08	8
SEP 22nd																																
01	10	25	7		74	73	72	94	09	8	0	UNL	8			74	68	65	74	21	13	10	95	8			52	46	39	61	36	13
04	10	23	7	RW	75	74	73	94	11	12	0	UNL	8			72	68	66	82	21	13	3	UNL	8			48	44	39	71	01	11
07	10	17	7		77	75	74	91	13	13	10	80	7			72	69	67	84	19	11	0	UNL	8			48	44	40	74	36	9
10	9	17	7		82	77	75	79	15	15	10	85	7			73	69	67	82	21	14	0	UNL	10			57	48	38	49	02	15
13	10	32	7		83	75	72	70	17	14	8	UNL	8			82	71	65	57	23	16	1	UNL	15			60	49	37	43	05	6
16	8	37	8		85	75	71	63	18	18	10	30	8			61	56	52	72	36	25	3	UNL	15			63	52	40	43	04	8
19	7	UNL	8		80	71	66	63	20	12	10	55	7			51	49	47	86	01	13	10	UNL	15			53	49	44	72	08	5
22	4	UNL	8		77	69	65	67	20	12	10	80	7			52	47	41	66	36	11	8	UNL	15			47	46	44	89	16	4
SEP 23rd																																
SEP 24th																																
SEP 25th																																
01	4	UNL	10		47	46	45	93	36	5	10	6	2	RF	64	64	64	100	02	10	0	UNL	10			58	51	45	62	01	14	
04	5	UNL	10		48	46	43	83	03	7	10	4	2	RF	61	60	59	93	31	12	0	UNL	10			53	48	42	66	02	12	
07	10	UNL	10		50	48	45	83	03	6	10	5	6	RF	61	60	60	97	02	7	0	UNL	10			51	46	41	69	03	14	
10	10	UNL	10		63	56	51	65	04	9	10	7	7	L	63	61	60	90	31	10	0	UNL	10			57	49	40	53	04	10	
13	10	25	7		64	59	56	75	06	7	9	22	8			72	66	62	71	32	10	0	UNL	12			63	52	42	46	02	12
16	10	21	6	R	61	60	59	93	03	8	7	UNL	10			73	66	61	66	02	12	0	UNL	12			63	51	39	41	04	10
19	10	4	2	RF	60	59	59	97	05	10	4	UNL	10			65	62	59	81	02	6	0	UNL	12			53	47	41	64	07	5
22	10	3	2	RF	62	61	61	97	04	10	0	UNL	10			61	57	54	78	01	11	0	UNL	12			48	45	42	80	08	3
SEP 26th																																
SEP 27th																																
SEP 28th																																
01	0	UNL	10		44	43	42	93	00	0	4	UNL	8			54	53	52	93	21	5	10	100	8			64	63	62	93	26	4
04	0	UNL	8		43	42	41	93	00	0	10	250	8			57	55	54	90	23	8	10	100	8			63	62	61	93	00	0
07	0	UNL	8		45	44	42	89	33	6	10	120	8			59	57	55	87	23	5	10	100	7		R	63	61	59	87	36	6
10	8	UNL	10		63	53	44	50	07	5	10	150	8			66	61	57	73	22	8	10	70	6		H	66	61	57	73	05	8
13	9	UNL	10		66	55	44	45	17	5	10	200	8			71	63	57	61	21	10	10	150	5		RH	69	63	59	71	09	7
16	7	UNL	10		69	57	46	44	17	8	8	UNL	8			77	66	59	54	23	9	10	70	5		H	69	63	59	71	03	8
19	6	UNL	10		58	55	52	81	17	3	10	200	8			67	64	62	84	21	8	10	25	5		RH	64	62	60	87	04	5
22	7	250	8		55	54	53	93	15	3	10	200	8			67	63	61	81	25	6	10	29	5		RH	63	60	58	84	03	6

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	6	29.910	66	64	62	90	7.4	04	2.4
04	6	29.900	65	63	62	91	7.7	03	2.1
07	7	29.930	65	63	62	90	8.1	04	3.1
10	7	29.950	73	67	63	71	9.6	05	3.6
13	7	29.915	78	68	63	62	9.8	06	2.0
16	7	29.880	76	68	63	65	11.5	04	4.3
19	7	29.900	70	66	64	81	7.3	07	3.0
22	6	29.930	67	65	63	87	7.1	06	2.6

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

SEP 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
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MAXIMUM SHORT DURATION PRECIPITATION

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)	0.35	0.66	0.75	0.84	0.96	1.03	1.07	1.09	1.20	1.24	1.24	1.28
ENDED: DATE	15	15	15	15	15	15	15	15	20	20	20	20
ENDED: TIME	1746	1747	1752	1757	1806	1821	1836	1841	0837	0859	0919	0959

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 HOWELL

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