

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

JUL 1990
 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	COOLING ISEASON 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		
01	94	67	81		64	0	16	1 3	0	0.29	0.0	29.620	33	7.4	9.5	48	N	30	35	534	61	8	7
02	83	63	73*	-4	59	0	8		0	0.00	0.0	29.760	34	8.0	9.4			16	33	773	88	4	2
03	89	60*	75	-2	58	0	10	1	0	0.00	0.0	29.890	22	5.4	6.3	14	SW	12	20	775	88	4	4
04	96	65	81	4	63	0	16		8	0.00	0.0	29.830	24	11.1	11.9	22	N	17	26	772	88	6	5
05	101	70	86	9	67	0	21		8	0.00	0.0	29.710	23	3.7	7.3			17	02	643	73	2	3
06	93	72	83	6	68	0	18		8	0.00	0.0	29.740	02	4.8	6.7			12	04	658	75	6	7
07	84	66	75	-2	64	0	10		8	0.01	0.0	29.950	08	7.7	8.8			15	10	576	65	9	9
08	91	65	78	0	67	0	13		8	0.00	0.0	30.005	17	5.9	7.8			15	19	664	76	8	8
09	101*	75	88*	10	71	0	23	3	8	0	T	29.850	23	7.9	9.9			17	35	618	70	4	5
10	100	74	87	9	70	0	22	1 3	8	0	T	29.810	26	2.5	7.2			17	21	643	73	5	6
11	100	73	87	9	70	0	22	1 3	8	1.60	0.0	29.820	19	4.6	8.4			23	01	648	74	4	6
12	93	72	83	5	72	0	18	1 3	8	1.02	0.0	29.800	23	10.8	12.6			23	28	632	72	6	7
13	76	71	74	-4	70	0	9	1		0.09	0.0	29.890	03	4.4	8.0			14	04	382	44	10	10
14	90	72	81	3	73	0	16	1 3		0.50	0.0	29.830	15	7.7	8.5			16	14	559	64	9	9
15	89	72	81	3	72	0	16			0	T	29.810	19	12.7	13.1			20	19	623	72	9	9
16	89	69	79	1	70	0	14	1 3	8	0.04	0.0	30.030	17	3.9	5.9			12	19	677	78	9	7
17	90	69	80	2	69	0	15	1 3	8	0.04	0.0	30.100	15	2.0	4.5			15	13	666	77	9	7
18	89	67	78	0	69	0	13			0.00	0.0	30.040	19	6.4	6.8			10	17	752	87	7	6
19	93	69	81	3	69	0	16	1 3	8	1.98	0.0	29.975	20	3.2	6.1			21	03	446	52	8	6
20	92	69	81	3	70	0	16	1		0.00	0.0	29.870	22	10.3	10.7			21	23	720	83	3	4
21	94	72	83	5	70	0	18	1 3		0.28	0.0	29.770	23	6.6	9.3			21	03	678	79	4	4
22	93	70	82	4	72	0	17	2	8	0.00	0.0	29.720	21	2.8	5.0			9	21	688	80	6	5
23	95	74	85	7	70	0	20		8	0.10	0.0	29.690	30	3.5	9.1			16	01	587	68	5	5
24	84	69	77	-1	63	0	12			0.00	0.0	29.850	01	8.4	9.0			14	01	740	86	4	4
25	88	66	77	-1	64	0	12			0.00	0.0	29.930	01	7.0	7.6			14	36	743	87	2	1
26	88	68	78	-1	73	0	13		8	0.00	0.0	29.990	03	9.1	9.5			18	02	735	86	2	1
27	82	69	76	-2	70	0	11	3		0.62	0.0	29.960	03	8.6	9.4			16	02	512	60	9	7
28	85	71	78	0	69	0	13			0	T	29.910	04	9.1	9.4			16	04	650	76	8	7
29	83	68	76	-2	69	0	11	1		0.17	0.0	29.820	35	4.7	7.4			15	09	500	59	8	6
30	88	69	79	1	70	0	14	1		0	T	29.750	07	3.6	6.2			12	11	740	87	7	6
31	92	72	82	4	69	0	17	1	8	0.00	0.0	29.690	36	4.3	7.8			14	01	603	71	6	6
SUM	SUM					TOTAL	TOTAL	NUMBER OF DAYS		TOTAL	TOTAL	FOR THE MONTH:				TOTAL	%	SUM	SUM				
2805	2148					0	470			6.74	0.0	29.850	24	0.9	8.4			30	35	19937		191	179
AVG.	AVG.	AVG.	DEP.	AVG.	DEP.			PRECIPITATION		DEP.						DATE:	DATE:	1	POSSIBLE	MONTH	AVG.	AVG.	AVG.
90.5	69.3	79.9	2.1	67.9		0	73	≥ .01 INCH.	13	1.60								26897	74	6.2	5.8		
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.				0	958	THUNDERSTORMS	11	PRECIPITATION	SNOW, ICE PELLETS												
≥ 90°	≤ 32°	≤ 32°	≤ 0°			DEP.	DEP.	HEAVY FOG	1	2.08	11-12	0.0											
17	0	0	0			0	191	CLEAR	4	PARTLY CLOUDY	15	CLOUDY	12										

* 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. Wadsworth
 DIRECTOR NATIONAL CLIMATIC DATA CENTER

OBSERVATIONS AT 3-HOUR INTERVALS

JUL 1990
RICHMOND, VA

13740

HOUR U.S.T.	JUL 1st										JUL 2nd										JUL 3rd									
	SKY COVER (TENTHS)		VISIBILITY		TEMPERATURE			WIND			SKY COVER (TENTHS)		VISIBILITY		TEMPERATURE			WIND			SKY COVER (TENTHS)		VISIBILITY		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	31	6		76	71	69	79	01	9	1	UNL	7		67	65	64	90	34	9	0	UNL	10		63	61	59	87	19	3
04	5	UNL	8	F	72	67	64	76	31	4	0	UNL	7		64	62	60	87	34	6	0	UNL	10		62	60	59	90	18	3
07	9	150	8	F	73	68	65	76	27	8	0	UNL	8		66	62	59	78	31	9	0	UNL	10		69	65	62	79	16	3
10	4	UNL	7		85	72	65	51	29	12	5	UNL	8		74	65	59	60	32	8	0	UNL	10		82	68	59	46	23	4
13	8	UNL	7		92	73	63	38	32	10	5	UNL	10		81	67	59	47	34	14	4	UNL	10		86	67	55	35	19	5
16	9	60	7	T	85	69	59	42	35	26	8	55	10		79	65	56	45	03	13	8	UNL	10		88	67	54	31	25	8
19	10	65	7		70	66	63	79	01	3	1	UNL	10		78	65	56	47	01	6	10	UNL	10		82	68	59	46	21	7
22	0	UNL	7		68	66	65	90	28	3	0	UNL	10		67	63	60	78	00	0	6	UNL	10		71	64	60	68	20	6

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 | O 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

JUL 1990
RICHMOND, VA 13740

HOUR L.S.T.	JUL 19th							JUL 20th							JUL 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 %
01	3	UNL	7		74	72	71	90	21	7	0	UNL	6	F	69	68	67	93	00	0	8	120	7			77	73	71	82	20	9
04	4	UNL	7		73	71	70	90	18	4	1	UNL	6	F	69	68	67	93	17	3	0	UNL	7			75	72	70	85	23	8
07	10	UNL	7		75	72	71	87	20	5	0	UNL	6	F	75	71	69	82	23	7	2	UNL	7			78	73	70	77	25	8
10	3	UNL	6	H	86	76	71	61	25	5	1	UNL	7		85	74	69	59	24	13	2	UNL	8			86	76	71	61	23	5
13	8	40	6	H	90	76	70	52	34	3	5	UNL	8		89	77	71	55	24	17	3	UNL	7			93	76	69	46	25	7
16	10	40	5	TRWH	76	71	68	76	18	7	4	UNL	8		89	76	70	54	23	14	5	UNL	7			92	77	70	49	23	9
19	8	150	5	RWF	72	70	69	90	21	3	5	UNL	8		85	77	73	67	23	13	8	50	7	T		77	73	71	82	16	8
22	2	UNL	5	F	70	69	68	93	20	4	7	120	8		79	74	72	79	18	6	10	55	6	TRW		74	71	70	87	32	8
JUL 22nd																															
01	3	UNL	6	F	73	72	71	94	24	5	0	UNL	6	H	76	73	72	88	18	3	7	55	7			74	67	63	69	02	8
04	5	UNL	5	F	71	70	70	97	11	3	0	UNL	5	H	75	72	71	87	16	4	7	55	7			72	66	62	71	02	10
07	10	1	0	8	71	71	71	100	15	5	0	UNL	7	H	78	72	69	74	25	7	1	UNL	7			72	66	63	73	34	9
10	7	UNL	6	H	84	76	73	70	18	3	0	UNL	8		87	75	69	55	29	10	4	UNL	8			78	68	63	60	06	8
13	6	UNL	6	H	89	76	70	54	30	8	5	UNL	8		90	75	68	48	26	8	8	35	7			82	70	63	53	36	10
16	4	UNL	6	H	92	77	71	50	26	3	8	55	7	RW	88	76	71	57	22	8	4	UNL	8			83	70	63	51	03	8
19	0	UNL	6	H	86	78	74	68	19	6	10	50	7		82	75	71	69	01	14	2	UNL	8			79	69	63	58	02	6
22	0	UNL	6	H	79	75	73	82	20	5	10	48	7		77	70	66	69	01	10	0	UNL	8			73	67	64	74	33	4
JUL 23rd																															
JUL 24th																															
JUL 25th																															
JUL 26th																															
JUL 27th																															
JUL 28th																															
JUL 29th																															
JUL 30th																															
JUL 31st																															

SUMMARY BY HOURS

HOUR L.S.T.	AVERAGES											RESULTANT WIND	
	SKY COVER (TENTHS)	STATION PRESSURE (INCHES)			TEMPERATURE			REL HUMIDITY %	WIND SPEED (MPH)	DIRECTION	SPEED (MPH)	RESULTANT WIND	
		AIR TEMP OF	WET BULB OF	DEW POINT OF	DIRECTION	SPEED (MPH)							
01	5	29.850	73	70	68	86	6.9	22	1.2				
04	5	29.850	71	69	67	88	6.1	23	0.7				
07	6	29.870	74	70	68	83	7.9	25	2.2				
10	5	29.880	83	73	69	64	8.9	29	2.1				
13	6	29.855	87	74	68	54	10.1	31	2.9				
16	6	29.820	87	74	67	54	10.8	18	1.0				
19	7	29.830	79	72	68	71	9.2	12	2.0				
22	6	29.860	75	70	68	81	6.8	19	1.7				

HOURLY PRECIPITATION (WATER EQUIVALENT IN INCHES)

JUL 1990
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					T	T										0.06	0.22	0.01						01		
02																									02	
03																									03	
04																									04	
05																									05	
06																									06	
07	0.01	T																							07	
08																									08	
09																			T						09	
10																		T							10	
11																									11	
12	0.07	0.03	T													T	T	0.02	1.19	0.03	T	T		0.36	12	
13		T	T	T												T	T	0.40	0.40	0.10	0.01	0.01	0.04	0.03	0.01	13
14																T										14
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30																										30
31																										31

MAXIMUM SHORT DURATION PRECIPITATION

TIME PERIOD (MINUTES)	5	10	15	20	30	45	60	80	100	120	150	180
PRECIPITATION (INCHES)	0.56	0.74	0.93	1.05	1.42	1.71	1.83	1.88	1.91	1.92	1.93	1.94
ENDED: DATE	11	11	11	19	19	19	19	19	19	19	19	19
ENDED: TIME	1817	1817	1817	1358	1409	1423	1437	1456	1501	1501	1556	1623

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:
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MATTHEW BODOSKY

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