



LOCAL CLIMATOLOGICAL DATA

Monthly Summary

INQUIRIES/COMMENTS CALL
 (704) 271-4800

R.E. BYRD INTERNATIONAL AP.

LATITUDE 37° 30' N LONGITUDE 77° 20' W ELEVATION (GROUND) 164 FEET TIME ZONE EASTERN 13740

JUL 1993
 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. 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	DIRECTION	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	83	67	75	-2	69	0	10	1	8	0	T	0.0	29.850	09	5.6	6.7	18	E	14	07	399	45	10	10	
02	89	70	80	3	71	0	15	1	8	0	T	0.0	29.820	17	7.9	9.2	24	S	17	17	491	56	10	10	
03	97	69	83	6	71	0	18	1	3	8	0	0.19	29.760	23	2.3	8.0	23	NW	18	32	542	62	7	8	
04	93	71	82	5	72	0	17	1	8	0	0.00	0.0	29.805	01	2.5	5.0	17	N	10	35	736	84	5	5	
05	96	73	85	8	72	0	20	1	8	0	0.00	0.0	29.865	16	3.8	5.5	14	SE	13	18	608	69	2	3	
06	97	73	85	8	74	0	20	1	8	0	0.00	0.0	29.870	16	6.9	7.2	20	SE	15	15	536	61	3	2	
07	98	74	86	8	72	0	21	1	3	8	0	0.18	0.0	29.870	19	4.2	7.0	36	NW	23	29	456	52	5	5
08	102*	74	88	10	71	0	23	1	8	0	0.00	0.0	29.840	25	0.8	6.1	14	S	12	01	714	81	1	1	
09	100	75	88	10	72	0	23	1	8	0	0.00	0.0	29.840	14	1.9	5.6	13	S	13	14	615	70	2	2	
10	101	74	88	10	71	0	23	1	3	8	0	0.13	0.0	29.840	18	1.2	7.1	26	NE	14	06	498	57	6	5
11	98	71	85	7	70	0	20	1	8	0	0.00	0.0	29.770	05	0.3	6.7	15	NE	13	10	595	68	5	5	
12	97	76	87	9	69	0	22	1	8	0	0.00	0.0	29.680	30	2.5	6.9	16	SW	10	34	518	59	3	5	
13	95	75	85	7	73	0	20	1	3	8	0	0.24	0.0	29.830	09	1.8	5.8	15	SW	14	20	567	65	5	4
14	100	73	87	9	72	0	22	1	8	0	0.00	0.0	29.860	20	6.9	7.4	26	S	14	21	423	49	5	5	
15	90	77	84	6	71	0	19	1	8	0	0.04	0.0	29.810	36	4.7	6.5	15	N	10	01	372	43	10	10	
16	91	68	80	2	60	0	15	1	8	0	0.00	0.0	29.810	35	5.5	6.4	17	N	13	34	744	86	6	7	
17	90	65	78	0	57	0	13	1	8	0	0.00	0.0	29.820	03	4.6	6.7	20	N	10	02	768	89	6	5	
18	90	64	77	-1	62	0	12	1	8	0	0.00	0.0	29.900	11	6.6	7.2	18	E	13	11	678	78	7	6	
19	91	72	82	4	72	0	17	1	3	8	0	0.04	0.0	29.790	19	9.1	9.6	21	S	17	21	340	39	10	10
20	95	73	84	6	70	0	19	1	8	0	0.00	0.0	29.730	34	5.3	7.0	20	N	14	36	656	76	5	6	
21	95	71	83	5	62	0	18	1	8	0	0.15	0.0	29.810	35	3.7	7.3	17	W	14	26	682	79	5	5	
22	88	64	76	-3	60	0	11	1	8	0	0.02	0.0	29.840	35	6.8	7.5	20	NW	13	34	642	75	6	5	
23	88	61*	75*	-4	56	0	10	1	8	0	0.00	0.0	29.870	04	0.6	5.8	15	S	12	16	423	49	9	8	
24	93	69	81	2	69	0	16	1	3	8	0	0.60	0.0	29.880	13	5.1	5.8	16	SE	12	13	526	61	8	8
25	92	72	82	3	74	0	17	1	8	0	0.29	0.0	29.880	09	5.0	5.6	29	E	15	09	376	44	9	9	
26	90	71	81	2	70	0	16	1	8	0	T	0.0	29.875	12	7.0	8.1	16	SE	12	12	514	60	8	9	
27	93	73	83	4	72	0	18	1	8	0	0.03	0.0	29.760	19	8.5	9.1	21	SW	15	22	400	47	9	9	
28	101	71	86	8	69	0	21	1	8	0	0.00	0.0	29.750	24	2.3	6.5	17	N	12	25	786	92	2	2	
29	101	75	88*	10	65	0	23	1	8	0	0.00	0.0	29.650	25	4.5	9.5	24	SW	17	23	705	83	2	2	
30	93	68	81	3	58	0	16	1	8	0	0.00	0.0	29.670	30	7.0	9.3	21	NW	14	29	725	85	3	3	
31	86	68	77	-1	59	0	12	1	8	0	0.00	0.0	29.780	34	5.8	6.6	22	NN	14	33	475	56	8	7	
SUM	SUM					TOTAL	TOTAL			TOTAL	TOTAL		TOTAL	TOTAL						TOTAL	%	SUM	SUM		
2913	2197					0	547			1.91	0.0	29.810	16	0.7	7.1	36	NW	23	29	17510		182	181		
AVG.	AVG.	AVG.	DEP.	AVG.	DEP.	DEP.	DEP.			PRECIPITATION	DEP.									DATE: 7	DATE: 7	POSSIBLE	FOR MONTH	AVG.	AVG.
94.0	70.9	82.5	4.5	67.9	0	0	144			0.01 INCH	11	-3.12										26883	65	5.9	5.8
NUMBER OF DAYS						SEASON TO DATE		SNOW, ICE PELLETS		GREATEST IN 24 HOURS AND DATES				GREATEST DEPTH ON GROUND OF SNOW, ICE PELLETS OR ICE AND DATE											
						TOTAL	TOTAL	≥ 1.0 INCH																	
						0	980	6																	
MAXIMUM TEMP.						MINIMUM TEMP.						PRECIPITATION		SNOW, ICE PELLETS											
≥ 90°						≤ 32°						0.60		24-25		0.0									
26						0						0		0		0									
						0		205		CLEAR 8		PARTLY CLOUDY 13		CLOUDY 10											

* 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

JUL 1993
RICHMOND, VA 13740

HOUR L.S.T.	SKY COVER (TENTHS)			VISI-BILITY		WEATHER	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)																																												
JUL 19th																						JUL 20th																						JUL 21st																					
01	10	110	10				74	68	64	71	13	5	9	250	3	F	76	75	74	94	19	6	2	UNL	5	H	75	71	69	82	35	4																																	
04	10	120	10				73	68	65	76	16	4	7	UNL	3	F	75	74	73	94	29	5	0	UNL	5	H	72	67	64	76	35	6																																	
07	10	23	8				75	71	69	82	18	6	2	UNL	5	H	79	75	73	82	35	5	4	UNL	7		77	68	62	60	02	10																																	
10	9	24	4			H	84	76	72	67	22	8	8	UNL	6	H	88	76	70	55	36	12	9	UNL	7		84	70	62	48	03	7																																	
13	10	27	4			H	87	77	73	63	18	11	4	UNL	5	H	92	76	68	46	32	11	5	UNL	7		92	71	59	33	01	8																																	
16	10	30	5				90	77	72	56	21	13	5	UNL	5	H	95	75	66	39	32	9	0	UNL	7		94	71	58	30	33	4																																	
19	10	33	3			RWH	82	78	77	85	19	8	3	UNL	6	H	89	74	67	48	02	3	6	120	7		87	70	61	42	33	3																																	
22	6	UNL	2			FH	80	78	77	91	19	6	7	85	5	H	85	74	68	57	33	5	10	90	7		81	71	65	58	13	4																																	
JUL 22nd																						JUL 23rd																						JUL 24th																					
01	9	250	5			F	74	71	70	87	36	9	3	UNL	8		63	60	58	84	36	3	10	150	10		73	66	62	69	13	3																																	
04	9	60	5			F	71	70	69	93	36	5	7	UNL	8		61	58	56	84	00	0	3	7	70	10		70	66	63	79	00	0																																
07	8	UNL	7				72	67	64	76	36	10	9	140	8		68	61	56	66	01	8	8	100	7		74	68	65	74	15	3																																	
10	8	130	10				76	67	61	60	31	7	10	150	8		78	64	55	45	01	7	9	250	6		86	74	68	55	12	5																																	
13	8	UNL	10				84	68	58	41	32	9	10	150	10		83	65	52	34	27	5	9	40	6		90	76	70	52	15	9																																	
16	3	UNL	8				86	67	55	35	01	6	8	150	10		87	67	55	34	18	10	5	UNL	6		92	77	70	49	15	8																																	
19	5	UNL	10				81	64	53	38	34	6	9	150	10		81	66	56	42	19	9	6	250	5		79	76	75	88	13	10																																	
22	0	UNL	8				68	62	57	68	00	0	10	150	10		75	66	61	62	00	0	10	130	5		77	74	73	88	11	4																																	
JUL 25th																						JUL 26th																						JUL 27th																					
01	10	150	6			F	75	74	74	97	10	3	10	40	6	F	74	73	73	97	09	3	10	47	8		77	71	67	71	16	8																																	
04	10	4	6			F	75	74	74	97	03	4	10	2	1	F	73	72	72	97	04	4	10	32	8		75	70	68	79	19	9																																	
07	10	2	1			F	76	75	75	97	07	4	2	UNL	2	F	75	74	73	94	07	5	10	22	6		74	71	70	87	18	7																																	
10	10	17	5			H	84	78	75	75	11	4	8	24	5	H	83	75	71	67	11	8	9	140	7		83	75	71	67	22	12																																	
13	9	37	5			H	83	77	75	77	09	13	10	43	7		86	73	67	53	14	9	10	27	5		89	78	74	61	20	10																																	
16	8	55	6			RWH	83	78	76	80	10	8	10	65	7		84	75	70	63	09	9	8	250	5		82	79	73	54	17	7																																	
19	9	150	6			H	77	74	73	88	10	6	10	200	6	H	82	73	69	65	13	9	8	UNL	5		86	78	75	70	17	6																																	
22	10	24	4			FH	75	74	73	94	00	0	10	95	6	RH	77	72	70	79	14	8	10	UNL	5		79	76	74	85	13	5																																	
JUL 28th																						JUL 29th																						JUL 30th																					
01	0	UNL	6			H	77	75	74	91	22	4	2	UNL	7		79	72	69	72	19	7	2	UNL	7		77	67	61	58	07	3																																	
04	0	UNL	5			FH	74	73	73	97	23	3	0	UNL	7		78	73	70	77	19	5	0	UNL	7		69	65	62	79	18	3																																	
07	2	UNL	1				80	77	76	88	00	0	3	UNL	6	H	81	73	69	67	04	6	0	UNL	7		77	66	60	56	25	7																																	
10	8	UNL	5			H	90	75	68	48	36	8	0	UNL	6	H	90	76	69	50	15	6	0	UNL	8		88	70	59	38	28	11																																	
13	0	UNL	7				96	74	64	35	00	0	2	UNL	6	H	98	75	64	33	28	14	5	UNL	10		91	68	53	28	28	12																																	
16	3	UNL	7				99	77	67	35	18	10	3	UNL	6	H	100	75	64	31	21	12	5	UNL	10		89	68	55	32	31	11																																	
19	0	UNL	7				94	74	64	37	24	9	2	UNL	7		94	71	58	30	24	12	7	150	10		86	66	54	34	30	8																																	
22	4	UNL	7				81	72	68	65	18	7	2	UNL	7		83	70	62	49	35	10	6	95	7		75	64	56	52	34	8																																	
JUL 31st																																																																	
01	9	100	7				73	63	57	57	36	6																																																					
04	10	90	7				70	63	58	66	00	0																																																					
07	10	55	7				73	65	59	62	28	5																																																					
10	10	43	10				76	66	59	56	34	10																																																					
13	8	49	8				82	68	60	47	31	11																																																					
16	8	250	8				85	70	61	45	36	9																																																					
19	3	UNL	8				80	68	61	52	01	4																																																					
22	10	75	7				77	67	61	58	32	6																																																					

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: 1.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).

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	5	29.810	75	71	69	82	4.8	16	1.4
04	5	29.800	73	70	68	86	4.9	25	1.4
07	5	29.830	77	72	69	78	6.4	34	1.2
10	5	29.840	86	74	68	56	8.5	36	1.8
13	6	29.820	90	74	67	47	9.5	32	0.8
16	7	29.780	91	75	67	47	9.7	15	3.1
19	7	29.780	85	73	68	60	8.0	16	2.6
22	6	29.815	78	72	68	73	5.5	15	1.8

