



# DECEMBER 1996

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# RICHMOND, VA

R.E.BYRD INTERNATIONAL AP. (RIC)  
 Lat: 37°30' N Long: 77°19' W Elev (Ground): 164 Feet  
 Time Zone: EASTERN WBAN: 13740 ISSN #:0198-537X

DECEMBER 1996  
RICHMOND, VA

DATE	TEMPERATURE °F							DEG DAYS BASE 65°		WEATHER	SNOW/ICE ON GND(IN)		PRECIPITATION (INCHES)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES								DATE																													
	MAXIMUM	MINIMUM	AVERAGE	DEP FROM NORMAL	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING	0700 LST		1300 LST	2400 LST	2400 LST	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	MAXIMUM																																			
																			5-SEC		2-MIN																																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																															
01	64	50	57	12	57	58	8	0	RA BR	0		0.0	0.89	29.68	29.88	15.8	17	16.0	48*	16	40*	15	01																															
02	63	33	48	4	36	43	17	0	RA BR	0		0.0	0.08	29.76	29.97	8.5	28	7.2	40	30	31	30	02																															
03	49	31	40	-4	36	38	25	0	BR HZ	0		0.0	0.00	29.94	30.15	3.8	23	3.8	13	17	10	17	03																															
04	54	35	45	2	30	38	20	0		0		0.0	0.00	30.01	30.22	8.1	34	9.5	25	36	21	31	04																															
05	44	27	36	-7	33	35	29	0	TSRA RA GS BR SQ	0		0.0	0.87	29.91	30.11	3.6	33	5.2	43	25	37	24	05																															
06	49	35	42	-1	30	36	23	0	BR	0		0.0	0.00	29.66	29.86	6.9	26	9.0	29	27	22	27	06																															
07	44	33	39	-3	36	39	26	0	RA BR	0		0.0	0.98	29.57	29.77	1.5	32	7.5	34	33	23	34	07																															
08	51	29	40	-2	33	37	25	0	RA SN FG+ FZFG BR	0		0.0	0.02	29.53	29.74	5.9	23	7.3	31	32	28	32	08																															
09	45	32	39	-3	22	32	26	0		0		0.0	0.00	29.78	29.98	10.0	32	10.8	33	32	26	32	09																															
10	48	30	39	-2	24	33	26	0		0		0.0	0.00	29.93	30.14	6.7	21	8.2	23	20	18	20	10																															
11	66	34	50	9	39	44	15	0		0		0.0	0.00	29.76	29.96	6.3	21	7.1	21	16	18	17	11																															
12	63	44	54	13	50	52	11	0	FG+ BR	0		0.0	0.00	29.82	30.03	3.3	18	3.9	10	11	9	19	12																															
13	55	45	50	9	47	48	15	0	RA BR	0		0.0	0.71	29.81	30.01	11.1	34	11.8	32	34	25	35	13																															
14	45	41	43	3	36	40	22	0		0		0.0	0.00	30.00	30.21	15.9	35	16.0	34	36	28	36	14																															
15	48	38	43	3	35	39	22	0		0		0.0	0.00	30.15	30.36	9.4	01	10.0	24	01	20	01	15																															
16	45	42	44	4	41	42	21	0	RA BR	0		0.0	0.01	30.01	30.22	5.8	02	4.2	11	08	9	07	16																															
17	54	42	48	8	47	47	17	0	RA FG+ BR	0		0.0	0.02	29.72	29.93	4.0	18	5.8	20	17	16	17	17																															
18	57	45	51	12	47	48	14	0	RA FG+ BR	0		0.0	0.26	29.72	29.93	3.3	25	5.6	16	23	14	22	18																															
19	45	25	35	-4	36	38	30	0	RA SN BR	0		1.0	0.41	29.67	29.87	6.0	30	8.7	31	29	25	29	19																															
20	31	20	26	-13	12	21	39	0		0		0.0	0.00	30.13	30.34	9.7	28	8.0	25	31	18	29	20																															
21	36	16*	26*	-13	16	22	39	0		0		0.0	0.00	30.36	30.57	6.5	29	2.5	10	24	9	18	21																															
22	42	22	32	-6	21	29	33	0		0		0.0	0.00	30.24	30.45	5.7	20	6.4	18	19	15	20	22																															
23	57	35	46	8	32	40	19	0	RA	0		0.0	0.01	30.09	30.30	9.5	20	9.7	18	20	16	19	23																															
24	65	46	56	18	48	52	9	0	RA BR	0		0.0	0.31	29.76	29.97	12.3	21	16.0	36	19	29	19	24																															
25	46	29	38	0	22	31	27	0		0		0.0	0.00	30.08	30.29	3.3	27	6.2	28	30	21	30	25																															
26	49	25	37	-1	28	34	28	0	RA DZ	0		0.0	0.15	30.21	30.42	3.5	15	3.7	15	13	11	14	26																															
27	55	37	46	9	32	39	19	0	RA HZ	0		0.0	0.06	30.06	30.26	0.6	04	3.7	10	13	9	13	27																															
28	54	36	45	8	42	45	20	0	BR HZ	0		0.0	0.00	30.01	30.22	8.8	19	9.1	17	18	15	18	28																															
29	69	49	59*	22	54	57	6	0	BR HZ	0		0.0	0.00	29.89	30.09	9.7	22	10.2	24	22	21	22	29																															
30	72*	43	58	21	47	52	7	0	FG+ BR	0		0.0	0.00	30.01	30.21	3.6	21	5.8	15	13	13	13	30																															
31	57	41	49	12	48	49	16	0	RA FG+ BR	0		0.0	0.13	29.92	30.13	2.7	04	6.9	22	07	16	07	31																															
52.3											35.2	43.8	■ ■	36.0	40.6	21.1	0.0	< MONTHLY AVERAGES		TOTALS-->		1.0	4.91	29.91	30.12	2.8	26	7.9	<-- MONTHLY AVERAGES																									
2.1		5.3		3.7		■ ■		<----- DEPARTURE FROM NORMAL ----->											1.65		SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3																																	
DEGREE DAYS											GREATEST 24-HR PRECIPITATION: 0.98 DATE: 7											SEA LEVEL PRESSURE DATE TIME																																
MONTHLY TOTAL DEPARTURE											GREATEST 24-HR SNOWFALL: 1.0 DATE: 19											MAXIMUM : 30.65 21 1033																																
SEASON TO DATE TOTAL DEPARTURE											GREATEST SNOW DEPTH: 0 DATE:											MINIMUM : 29.59 02 0054																																
HEATING: 654 -118 1509 19											NUMBER OF DAYS WITH →											MAXIMUM TEMP ≥ 90: 0											MINIMUM TEMP ≤ 32: 11											PRECIPITATION ≥ 0.01 INCH : 15										
COOLING: 0 0 1316 -32																						MAXIMUM TEMP ≤ 32 : 1											MINIMUM TEMP ≤ 0 : 0											PRECIPITATION ≥ 0.10 INCH : 9										
																						THUNDERSTORMS : 1											HEAVY FOG : 6											SNOWFALL ≥ 1.0 INCH : 1										

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

## RICHMOND, VA

DECEMBER 1996

RIC

WBAN # 13740

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note 2)	2400 LST	
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24			Water	Equiv.
01	0.03	0.09	0.04	T	0.02	0.04	0.04	0.03	0.01	0.04	0.02	0.01	01	0.05	0.13	0.05	0.12	0.03					0.01	0.04	01	0.80	0.89		
02	T	0.07	0.01										02												02		0.08		
03													03												03	0.00			
04													04												04	0.00			
05													05						T	T	0.10	0.20	0.48	0.08	0.01	05	0.87		
06													06												06	0.00			
07													07	0.16	0.20	0.04	T	0.11	0.10	0.01	T			07	0.98				
08													08							0.02				08	0.02				
09													09											09	0.00				
10													10											10	0.00				
11													11											11	0.00				
12													12											12	0.00				
13								0.03	0.17	0.25	0.14	0.04	0.02	13	0.04	0.02	T		T	T				13	0.71				
14													14											14	0.00				
15													15											15	0.00				
16													16									0.01	T	16	0.01				
17			0.01										17			0.01								17	0.02				
18								T	T				18								0.01	0.05	0.04	0.05	0.10	18	0.26		
19	0.10	0.09	0.02	0.05	0.02	T	0.01	0.01	0.06	0.01	0.01	T	19							0.01	0.02	0.01			19	0.41			
20													20												20	0.00			
21													21												21	0.00			
22													22												22	0.00			
23									0.01	T	T		23												23	0.01			
24													24												24	0.31			
25													25										T		25	0.00			
26													26												26	0.15			
27	0.01	0.03	0.01	0.01									27												27	0.06			
28													28												28	0.00			
29													29												29	0.00			
30													30												30	0.00			
31	0.05	0.02	0.05						T	0.01	T	T	31												31	0.13			

### MAXIMUM SHORT DURATION PRECIPITATION (See Note 1)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)												
Ending Date												
Ending Time (Hour/Min)												

Date and time are not entered for TRACE amounts.

Note 1: NCDC derives these data from one-minute ASOS values. The table is not printed when inconsistent with ASOS hourly totals.

Note 2: The sum of the hourly totals is given when it differs from the daily total. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

# REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

\* = Extreme for the month (last occurrence if more than one)

T = Trace precipitation amount

+ = also occurs on earlier date

FG+ = Heavy fog, visibility .25 miles or less  
BLANK entries denote missing or unreported data

Resultant wind is the vector sum of the wind speeds and directions divided by the number of observations.

Wind direction is recorded in tens of degrees (2 digits) clockwise from true north. '00' = calm, 'VR' = variable.

Precipitation is for the 24-hour period ending at the time indicated in the column heading.

Water Equivalent of snow on the ground is reported only when the depth is 2 or more inches.

NORMALS ARE FOR THE YEARS 1961 – 1990

## WEATHER NOTATIONS

QUALIFIER	WEATHER PHENOMENA		
	PRECIPITATION	OBSCURATION	OTHER
BC Patches	DZ Drizzle	BR Mist	DS Duststorm
BL Blowing	GR Hail	DU Widespread Dust	FC Funnel Cloud
DR Low Drifting	GS Small Hail and/or Snow Pellets	FG Fog	+FC Tornado Waterspout
FZ Freezing	IC Ice Crystals	FU Smoke	PO Well-Developed Dust/Sand Whirls
MI Shallow	PE Ice Pellets	HZ Haze	SQ Squalls
PR Partial	RA Rain	PY Spray	SS Sandstorm
SH Shower(s)	SG Snow Grains	SA Sand	(GL) Glaze
TS Thunderstorm	SN Snow	VA Volcanic Ash	
VC In the Vicinity	UP Unknown Precipitation		

Intensity (as indicated on pages 4 to 6):  
'+' = Heavy    ' ' = Moderate    '- ' = Light

# RICHMOND, VA DECEMBER 1996

Ceilometer (30-second) data are used to derive cloudiness at or below 12,000 feet. This cloudiness is the mean cloud cover detected during sunrise to sunset (SR-SS), or midnight to midnight (MN-MN).

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0-2 oktas, Partly Cloudy = 3-6 oktas, Cloudy = 7-8 oktas.

A Heating (Cooling) Degree Day is the difference between the average daily temperature and 65 degrees F. The HDD season begins July 1, the CDD season begins January 1.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity. Wet Bulb is the temperature the air would have if cooled at constant pressure by evaporation of moisture into it, to 100% relative humidity.

ADDITIONAL NOTES:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							2.00	10.00	
02							6.00	10.00	
03							2.50	10.00	
04							10.00	10.00	
05							2.00	10.00	
06							10.00	10.00	
07							1.00	10.00	
08							< .25	10.00	
09							10.00	10.00	
10							10.00	10.00	
11							10.00	10.00	
12							.25	10.00	
13							1.50	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							1.00	10.00	
17							< .25	10.00	
18							< .25	10.00	
19							.50	10.00	
20							8.00	10.00	
21							7.00	10.00	
22							10.00	10.00	
23							10.00	10.00	
24							5.00	10.00	
25							10.00	10.00	
26							4.00	10.00	
27							2.00	10.00	
28							.25	8.00	
29							1.00	10.00	
30							< .25	10.00	
31							.25	10.00	
<b>MONTHLY AVGS</b>							4.67	9.94	
<b>SUNSHINE (MINUTES)</b>									
Total:					Possible:				
					Percent Possible:				
<b>NUMBER OF DAYS WITH:</b>									
<b>SKY CONDITION</b>									
CLR			PTLY CLDY		CLOUDY		MISSING		
							31		
<b>MINIMUM VISIBILITY (MILES)</b>									
<=0.25			<=3.0			>=7.0			
7			16			12			

# OBSERVATIONS AT 3-HOURLY INTERVALS

# RICHMOND, VA

DECEMBER 1996

RIC

WBAN # 13740

HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE ° F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)		HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE ° F			RELATIVE HUMIDITY (PCT)	WIND		PRESSURE (INCHES, HG)					
	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT		WET BULB	SPEED (MPH)	DIRECTION TENS OF DEG	STATION		SEA LEVEL	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)		EFF CLD AMT Oktas	VISIBILITY (MILES)	DRY BULB		DEW POINT	WET BULB	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		
<p><b>SUNRISE: 0706      DEC 01      SUNSET: 1652</b></p>																															
01	OVC	048			3.00	-RA	BR	51	50	51	96	9	17	29.94	30.14	01	CLR	NC			10.00			39	30	35	70	6	15	29.69	29.90
04	OVC	065			3.00			55	53	54	93	13	16	29.85	30.05	04	CLR	NC			10.00			40	32	37	73	6	15	29.63	29.84
07	OVC	043			3.00	-RA		56	54	55	93	14	16	29.81	30.01	07	OVC	090			10.00			40	34	37	79	5	14	29.61	29.81
10	OVC	037			3.00	-RA	BR	58	56	57	93	14	16	29.75	29.96	10	OVC	039			4.00	RA	BR	43	41	42	93	6	17	29.59	29.79
13	OVC	019			3.00	-RA	BR	60	58	59	93	17	16	29.66	29.86	13	OVC	003			2.00	+RA	BR	43	43	43	100	13	32	29.49	29.70
16	OVC	005			2.00	-RA	BR	61	59	60	93	30	15	29.53	29.73	16	OVC	011			8.00	-RA		40	38	39	93	15	35	29.51	29.71
19	OVC	008			10.00			61	60	60	97	15	16	29.49	29.70	19	OVC	050			10.00			38	37	38	97	5	VR	29.52	29.73
22	OVC	015			6.00	RA	BR	63	61	62	93	17	19	29.46	29.66	22	CLR	NC			9.00			37	37	37	100	9	28	29.56	29.77
<p><b>SUNRISE: 0706      DEC 02      SUNSET: 1651</b></p>																															
01	OVC	016			10.00	-RA		62	61	61	96	10	20	29.39	29.59	01	VV	001			0.25	FG		34	34	34	100	5	24	29.53	29.73
04	OVC	014			10.00			53	50	51	89	12	29	29.53	29.73	04	VV	001			0.25	FZFG		31	31	31	100	0	00	29.57	29.78
07	CLR	NC			10.00			49	44	47	83	10	27	29.66	29.86	07	CLR	NC			10.00			32	30	31	92	3	25	29.56	29.77
10	CLR	NC			10.00			52	33	44	49	13	30	29.77	29.97	10	CLR	NC			10.00			43	36	40	76	7	23	29.57	29.77
13	CLR	NC			10.00			53	28	42	38	12	29	29.82	30.02	13	CLR	NC			10.00			51	32	43	48	13	22	29.51	29.72
16	CLR	NC			10.00			52	25	41	35	12	28	29.87	30.07	16	OVC	095			10.00			49	32	42	52	9	22	29.49	29.70
19	CLR	NC			10.00			41	31	37	67	0	00	29.92	30.13	19	OVC	100			10.00			39	36	38	89	5	12	29.52	29.72
22	CLR	NC			10.00			35	31	33	85	0	00	29.96	30.17	22	OVC	110			10.00			36	34	35	93	6	22	29.50	29.70
<p><b>SUNRISE: 0707      DEC 03      SUNSET: 1651</b></p>																															
01	CLR	NC			10.00			33	29	32	85	0	00	29.97	30.18	01	OVC	095			10.00			38	33	36	83	8	01	29.54	29.75
04	CLR	NC			10.00			32	30	31	92	3	12	29.98	30.19	04	OVC	095			10.00			35	24	31	64	9	35	29.60	29.81
07	CLR	NC			9.00			32	31	32	96	0	00	30.00	30.20	07	CLR	NC			10.00			32	18	27	56	7	30	29.68	29.89
10	CLR	NC			6.00	BR		40	38	39	93	3	15	30.02	30.22	10	FEW	NC			10.00			39	19	32	45	16	29	29.77	29.97
13	BKN	031			10.00			48	38	43	68	8	17	29.94	30.15	13	BKN	055			10.00			44	23	36	43	24	33	29.75	29.96
16	CLR	NC			6.00	HZ		49	41	45	74	5	16	29.89	30.10	16	OVC	060			10.00			43	22	35	43	18	33	29.82	30.03
19	CLR	NC			10.00			41	39	40	93	5	19	29.90	30.10	19	CLR	NC			10.00			39	21	33	48	12	31	29.92	30.13
22	CLR	NC			2.50	BR		36	36	36	100	5	19	29.88	30.08	22	CLR	NC			10.00			34	19	29	54	6	29	29.97	30.18
<p><b>SUNRISE: 0708      DEC 04      SUNSET: 1651</b></p>																															
01	CLR	NC			10.00			37	35	36	93	3	26	29.86	30.07	01	CLR	NC			10.00			31	20	27	64	6	26	30.00	30.20
04	CLR	NC			10.00			39	32	36	76	7	30	29.89	30.09	04	CLR	NC			10.00			31	21	28	67	0	00	30.02	30.23
07	CLR	NC			10.00			40	30	36	68	7	30	29.96	30.17	07	BKN	100			10.00			31	26	29	82	3	12	30.04	30.25
10	FEW	NC			10.00			49	31	41	50	13	35	30.02	30.23	10	CLR	NC			10.00			39	22	33	50	8	18	30.04	30.24
13	BKN	060			10.00			51	28	41	41	13	33	30.01	30.22	13	CLR	NC			10.00			45	22	36	40	13	20	29.93	30.13
16	CLR	NC			10.00			51	28	41	41	8	35	30.04	30.25	16	CLR	NC			10.00			47	24	38	41	14	20	29.84	30.05
19	CLR	NC			10.00			41	28	36	60	9	02	30.10	30.30	19	CLR	NC			10.00			40	26	35	58	9	19	29.83	30.03
22	CLR	NC			10.00			38	28	34	68	9	36	30.13	30.34	22	CLR	NC			10.00			40	27	35	60	10	19	29.79	30.00
<p><b>SUNRISE: 0709      DEC 05      SUNSET: 1651</b></p>																															
01	CLR	NC			10.00			33	27	31	78	5	36	30.11	30.31	01	CLR	NC			10.00			35	27	32	72	8	20	29.77	29.98
04	CLR	NC			10.00			31	26	29	82	3	01	30.09	30.29	04	CLR	NC			10.00			36	28	33	73	3	16	29.77	29.98
07	CLR	NC			9.00			28	26	27	92	0	00	30.08	30.29	07	BKN	075			10.00			40	33	37	77	6	19	29.76	29.97
10	CLR	NC			8.00			36	30	34	79	0	00	30.10	30.31	10	CLR	NC			10.00			52	37	45	57	12	24	29.79	29.99
13	CLR	NC			10.00			41	33	38	74	5	16	30.00	30.21	13	CLR	NC			10.00			62	42	52	48	7	23	29.71	29.91
16	SCT	NC			10.00			41	35	38	79	9	12	29.85	30.06	16	CLR	NC			10.00			59	45	52	60	9	20	29.73	29.93
19	OVC	060			8.00	-RA		41	38	40	89	8	12	29.71	29.92	19	BKN	075			10.00			53	45	49	74	7	21	29.77	29.97
22	OVC	006			2.00	+TSRA	BR	44	40	42	85	14	23	29.56	29.76	22	OVC	085			10.00			50	46	48	86	5	19	29.78	29.98
<p><b>SUNRISE: 0710      DEC 06      SUNSET: 1651</b></p>																															
01	OVC	003			10.00			39	38	39	96	13	26	29.51	29.71	01	CLR	NC			10.00			50	48	49	93	9	20	29.78	29.98
04	CLR	NC			10.00			36	33	35	89	14	26	29.54	29.75	04	CLR	NC			1.00	BR		46	46	46	100	5	17	29.80	30.00
07	CLR	NC			10.00			35	32	34	89	9	25	29.61	29.82	07	VV	001			0.25	FG		46	46	46	100	0	00	29.82	30.03
10	CLR	NC			10.00			44	30	38	58	14	27	29.68	29.89	10	BKN	100			8.00			53	52	52	96	0	00	29.87	30.07
13	CLR	NC			10.00			47	25	38	42	12	29	29.69	29.90	13	SCT	NC			10.00			61	53	57	75	6	14	29.82	30.02
16	CLR	NC			10.00			47	25	38	42	5	28	29.70	29.90	16	BKN	080			10.00			63	54	58	73	5	10	29.82	30.02
19	CLR	NC			10.00			37	31	35	79	3	11	29.72	29.93	19	BKN	042			10.00			55	51	53	87	6	07	29.84	30.04
22	CLR	NC			10.00			37	30	34	76	6	13	29.69	29.89	22	OVC	047			10.00			52	49	50	89	3	04	29.82	30.02

# OBSERVATIONS AT 3-HOURLY INTERVALS

## RICHMOND, VA

DECEMBER 1996

RIC

WBAN # 13740

HOUR (LST)	≤ 12K FEET			SATELLITE		WEATHER	TEMPERATURE ° F			WIND		PRESSURE (INCHES, HG)		HOUR (LST)	≤ 12K FEET			SATELLITE		WEATHER	TEMPERATURE ° F			WIND		PRESSURE (INCHES, HG)			
	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas	VISIBILITY (MILES)		DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION		SEA LEVEL	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
SUNRISE: 0716						DEC 13	SUNSET: 1652						SUNRISE: 0719						DEC 19	SUNSET: 1654									
01	OVC	090			8.00	53	50	51	89	5	34	29.79	29.99	01	OVC	007			3.00	RA BR	45	45	45	100	6	20	29.71	29.91	
04	OVC	055			6.00	49	47	48	93	8	34	29.77	29.97	04	OVC	005			3.00	-RA BR	45	44	45	97	7	18	29.67	29.88	
07	OVC	038			2.00	49	48	48	97	6	32	29.76	29.96	07	OVC	005			10.00		45	44	45	97	6	23	29.65	29.85	
10	OVC	005			1.75	50	49	49	96	9	32	29.80	30.00	10	OVC	003			10.00	-RA	40	39	40	97	13	34	29.66	29.87	
13	OVC	014			10.00	51	50	51	96	16	32	29.78	29.99	13	OVC	003			4.00	BR	37	37	37	100	7	35	29.60	29.81	
16	OVC	032			10.00	50	48	49	93	12	31	29.82	30.03	16	OVC	003			1.50	BR	37	36	37	96	5	32	29.59	29.79	
19	OVC	023			10.00	49	43	46	80	18	33	29.86	30.06	19	OVC	007			2.50	-RA BR	36	35	36	97	12	33	29.62	29.82	
22	OVC	017			10.00	47	41	44	80	18	35	29.86	30.06	22	OVC	039			10.00		30	24	28	79	13	30	29.78	29.99	
SUNRISE: 0716						DEC 14	SUNSET: 1652						SUNRISE: 0720						DEC 20	SUNSET: 1655									
01	OVC	019			10.00	45	39	42	80	18	36	29.88	30.09	01	CLR	NC			10.00		24	13	21	62	15	30	29.91	30.11	
04	OVC	022			10.00	44	37	41	76	16	34	29.91	30.12	04	CLR	NC			10.00		21	11	18	65	7	25	29.98	30.19	
07	OVC	022			10.00	43	36	40	76	17	36	29.94	30.14	07	CLR	NC			10.00		21	9	18	59	9	26	30.08	30.29	
10	OVC	024			10.00	44	36	41	73	15	36	30.00	30.20	10	CLR	NC			10.00		24	9	20	52	14	28	30.16	30.37	
13	OVC	026			10.00	45	35	41	68	21	35	29.99	30.20	13	CLR	NC			10.00		29	12	24	49	10	25	30.13	30.34	
16	OVC	028			10.00	44	34	40	68	16	36	30.04	30.24	16	CLR	NC			10.00		30	11	24	45	9	30	30.16	30.37	
19	OVC	028			10.00	43	34	39	71	18	36	30.09	30.30	19	CLR	NC			10.00		26	14	22	60	0	00	30.23	30.44	
22	OVC	024			10.00	42	34	39	73	13	01	30.11	30.32	22	CLR	NC			10.00		22	16	20	78	0	00	30.28	30.49	
SUNRISE: 0717						DEC 15	SUNSET: 1653						SUNRISE: 0720						DEC 21	SUNSET: 1655									
01	BKN	023			10.00	40	33	37	77	17	36	30.12	30.32	01	CLR	NC			10.00		19	15	18	85	0	00	30.31	30.52	
04	OVC	017			10.00	38	33	36	83	12	36	30.14	30.34	04	CLR	NC			7.00		18	15	17	88	3	01	30.34	30.55	
07	OVC	015			10.00	38	33	36	83	10	35	30.17	30.38	07	CLR	NC			10.00		17	13	16	84	6	36	30.38	30.60	
10	OVC	015			10.00	40	34	37	79	13	36	30.21	30.42	10	CLR	NC			10.00		25	15	22	66	0	00	30.43	30.65	
13	BKN	021			10.00	44	34	40	68	9	34	30.16	30.37	13	CLR	NC			10.00		33	16	28	49	10	21	30.38	30.59	
16	CLR	NC			10.00	46	34	41	63	9	02	30.13	30.34	16	CLR	NC			10.00		35	15	29	44	3	VR	30.36	30.57	
19	OVC	042			10.00	44	35	40	71	9	04	30.16	30.36	19	CLR	NC			10.00		27	19	24	72	5	14	30.35	30.56	
22	OVC	014			10.00	43	38	41	82	9	05	30.15	30.35	22	CLR	NC			10.00		25	19	23	78	0	00	30.34	30.55	
SUNRISE: 0718						DEC 16	SUNSET: 1653						SUNRISE: 0721						DEC 22	SUNSET: 1656									
01	OVC	012			10.00	42	39	41	89	6	02	30.11	30.32	01	CLR	NC			10.00		24	20	23	84	3	17	30.32	30.53	
04	OVC	010			10.00	42	39	41	89	6	04	30.09	30.29	04	CLR	NC			10.00		22	20	21	92	3	16	30.32	30.53	
07	OVC	008			10.00	42	40	41	92	6	36	30.08	30.29	07	CLR	NC			10.00		25	19	23	78	3	15	30.29	30.50	
10	OVC	008			10.00	43	40	42	89	8	07	30.08	30.29	10	CLR	NC			10.00		32	21	28	64	9	22	30.31	30.52	
13	OVC	008			10.00	44	41	43	89	0	00	29.99	30.20	13	CLR	NC			10.00		40	20	33	45	9	20	30.22	30.43	
16	OVC	008			10.00	44	42	43	93	3	04	29.96	30.17	16	CLR	NC			10.00		40	23	34	51	7	19	30.18	30.39	
19	OVC	003			1.00	44	43	44	96	5	03	29.95	30.16	19	OVC	075			10.00		35	24	31	64	5	16	30.18	30.39	
22	OVC	003			1.00	43	43	43	100	6	05	29.91	30.11	22	OVC	065			10.00		40	23	34	51	10	20	30.16	30.37	
SUNRISE: 0718						DEC 17	SUNSET: 1653						SUNRISE: 0721						DEC 23	SUNSET: 1656									
01	OVC	003			0.50	43	43	43	100	3	32	29.84	30.04	01	SCT	NC			10.00		37	23	32	57	7	21	30.14	30.34	
04	OVC	001			2.00	43	43	43	100	0	00	29.79	29.99	04	OVC	075			10.00		39	24	33	55	12	21	30.13	30.33	
07	OVC	001			0.75	43	43	43	100	0	00	29.75	29.96	07	OVC	100			10.00		39	28	35	65	8	18	30.14	30.35	
10	OVC	001			1.00	46	46	46	100	10	18	29.73	29.93	10	OVC	080			10.00		44	32	39	63	8	22	30.18	30.39	
13	OVC	038			8.00	50	49	49	96	8	20	29.65	29.85	13	CLR	NC			10.00		55	35	46	47	14	21	30.10	30.30	
16	OVC	008			3.00	53	52	52	96	8	21	29.66	29.87	16	CLR	NC			10.00		56	38	47	51	12	19	30.06	30.26	
19	BKN	041			10.00	52	50	51	93	6	23	29.70	29.91	19	CLR	NC			10.00		48	37	43	66	10	18	30.05	30.25	
22	OVC	046			5.00	49	49	49	100	5	18	29.73	29.93	22	CLR	NC			10.00		49	36	43	61	12	21	30.01	30.22	
SUNRISE: 0719						DEC 18	SUNSET: 1654						SUNRISE: 0722						DEC 24	SUNSET: 1657									
01	OVC	001			0.25	47	47	47	100	0	00	29.73	29.93	01	CLR	NC			10.00		50	39	45	66	14	20	29.96	30.16	
04	OVC	002			1.00	46	46	46	100	0	00	29.71	29.91	04	CLR	NC			10.00		51	45	48	80	16	19	29.89	30.09	
07	OVC	002			1.00	49	49	49	100	3	16	29.71	29.92	07	CLR	NC			10.00		53	50	51	89	17	19	29.85	30.05	
10	OVC	013			2.00	52	52	52	100	12	22	29.75	29.96	10	OVC	035			10.00		59	52	55	78	22	20	29.80	30.00	
13	BKN	011			10.00	54	49	51	83	8	29	29.70	29.90	13	FEW	NC			10.00		65	53	58	66	17	20	29.68	29.88	
16	BKN	031			10.00	55	47	51	74	7	29	29.70	29.91	16	OVC	037			10.00		63	53	57	70	16	19	29.61	29.81	
19	OVC	100			10.00	50	44	47	80	8	22	29.75	29.95	19	OVC	060			10.00	-RA	53	51	52	93	15	26	29.65	29.85	
22	OVC	070			3.00	46	45	46	96	5	15	29.75	29.96	22	OVC	090			10.00		53	46	50	77	12	28	29.71	29.92	

# OBSERVATIONS AT 3-HOURLY INTERVALS

# RICHMOND, VA

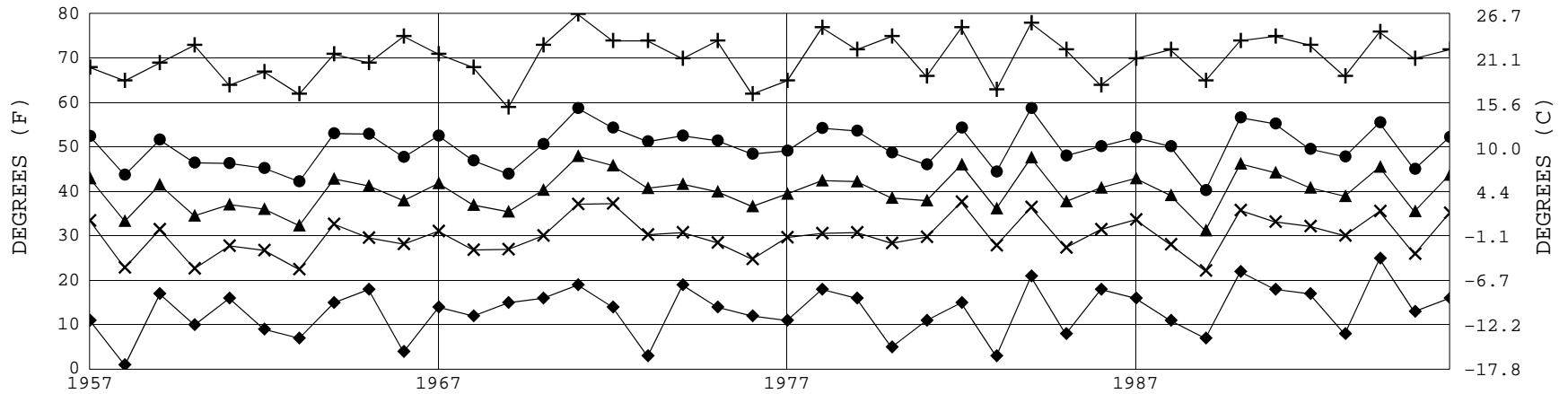
DECEMBER 1996

RIC

WBAN # 13740

HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)		HOUR (LST)	≤ 12K FEET		SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)													
	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas		DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION		SEA LEVEL	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)		EFF CLD AMT Oktas	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL										
SUNRISE: 0722						DEC 25	SUNSET: 1657						SUNRISE: 0724						DEC 31	SUNSET: 1702																	
01	CLR	NC		10.00		42	27	36	55	15	30	29.84	30.04	01	OVC	032		4.00	RA BR	51	50	51	96	6	14	29.96	30.16										
04	CLR	NC		10.00		36	22	31	57	12	32	29.93	30.14	04	OVC	029		5.00	BR	50	49	49	96	6	15	29.88	30.09										
07	CLR	NC		10.00		31	21	28	67	9	01	30.03	30.23	07	OVC	004		3.00	BR	50	49	49	96	3	21	29.83	30.03										
10	CLR	NC		10.00		34	18	29	52	9	04	30.13	30.34	10	OVC	001		0.50	BR	51	51	51	100	0	00	29.85	30.05										
13	CLR	NC		10.00		39	19	32	45	8	27	30.11	30.32	13	OVC	003		2.00	BR	55	54	54	96	6	34	29.83	30.03										
16	CLR	NC		10.00		42	22	35	45	6	20	30.11	30.32	16	OVC	002		1.50	BR	51	50	51	96	9	04	29.90	30.10										
19	CLR	NC		10.00		34	27	31	76	3	10	30.16	30.37	19	FEW	NC		3.00	BR	47	46	47	97	6	06	29.99	30.20										
22	CLR	NC		10.00		30	25	28	82	3	14	30.19	30.40	22	OVC	015		3.00		43	39	41	86	14	05	30.10	30.31										
SUNRISE: 0722						DEC 26	SUNSET: 1658						<b>3-HOURLY OBSERVATION NOTES</b>																								
01	CLR	NC		10.00		30	25	28	82	3	17	30.22	30.42	Sky Cover is the amount of the sky obscured. CLR = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8. Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet. NC= No ceiling detected. & = Original observation contained additional weather elements. See page 3 for additional notes.																							
04	CLR	NC		10.00		28	24	27	85	3	14	30.24	30.45																								
07	CLR	NC		10.00		26	24	25	92	0	00	30.30	30.51																								
10	CLR	NC		8.00		34	29	32	82	3	16	30.31	30.52																								
13	CLR	NC		10.00		47	24	38	41	7	16	30.23	30.43																								
16	BKN	095		10.00		47	27	39	46	10	13	30.15	30.36																								
19	OVC	025		10.00		45	32	40	61	0	00	30.16	30.37																								
22	OVC	017		5.00	-RA	41	32	37	70	0	00	30.10	30.30																								
SUNRISE: 0723						DEC 27	SUNSET: 1659																														
01	OVC	011		2.00	-RA	40	32	37	73	6	30	30.04	30.24																								
04	OVC	013		5.00	HZ	39	32	36	76	0	00	30.00	30.21																								
07	CLR	NC		2.00	HZ	38	31	35	76	3	32	30.06	30.26																								
10	CLR	NC		3.00	HZ	38	32	36	79	6	01	30.10	30.31																								
13	CLR	NC		10.00		51	32	43	48	6	VR	30.04	30.25																								
16	CLR	NC		10.00		53	32	44	45	6	09	30.05	30.25																								
19	FEW	NC		10.00		44	32	39	63	0	00	30.08	30.29																								
22	CLR	NC		10.00		43	31	38	63	5	10	30.07	30.27																								
SUNRISE: 0723						DEC 28	SUNSET: 1659																														
01	CLR	NC		7.00		37	31	35	79	6	15	30.06	30.26																								
04	VV	001		0.50	HZ	41	31	37	67	6	20	30.07	30.28																								
07	VV	001		0.25	HZ	42	31	38	65	7	18	30.04	30.25																								
10	OVC	001		2.00	BR	45	45	45	100	7	18	30.08	30.28																								
13	OVC	013		6.00	BR	51	47	49	86	12	17	30.01	30.21																								
16	SCT	NC		8.00		53	49	51	86	12	19	29.96	30.17																								
19	OVC	014		6.00	BR	52	49	50	89	12	19	29.97	30.17																								
22	OVC	016		6.00	BR	54	51	52	90	10	19	29.95	30.15																								
SUNRISE: 0723						DEC 29	SUNSET: 1700																														
01	OVC	016		7.00		54	51	52	90	9	19	29.94	30.14																								
04	FEW	NC		5.00	BR	50	49	49	96	8	20	29.92	30.13																								
07	CLR	NC		3.00	BR	50	49	49	96	6	19	29.91	30.12																								
10	BKN	070		3.00	HZ	59	55	57	87	8	20	29.93	30.13																								
13	BKN	025		10.00		66	58	61	75	15	22	29.84	30.04																								
16	CLR	NC		10.00		69	55	61	61	12	24	29.82	30.03																								
19	CLR	NC		10.00		61	56	58	84	12	21	29.85	30.06																								
22	CLR	NC		10.00		61	57	59	87	10	24	29.90	30.11																								
SUNRISE: 0724						DEC 30	SUNSET: 1701																														
01	CLR	NC		8.00		58	56	57	93	7	26	29.93	30.13																								
04	CLR	NC		6.00	BR	54	53	53	97	5	30	29.98	30.18																								
07	BKN	001		0.25	FG	46	46	46	100	0	00	30.02	30.22																								
10	CLR	NC		10.00		59	51	55	75	6	31	30.06	30.26																								
13	CLR	NC		10.00		70	42	55	37	0	00	30.02	30.22																								
16	CLR	NC		10.00		70	37	53	30	6	15	30.01	30.21																								
19	CLR	NC		10.00		56	49	52	77	9	12	30.03	30.24																								
22	FEW	NC		8.00		52	50	51	93	8	13	29.99	30.19																								

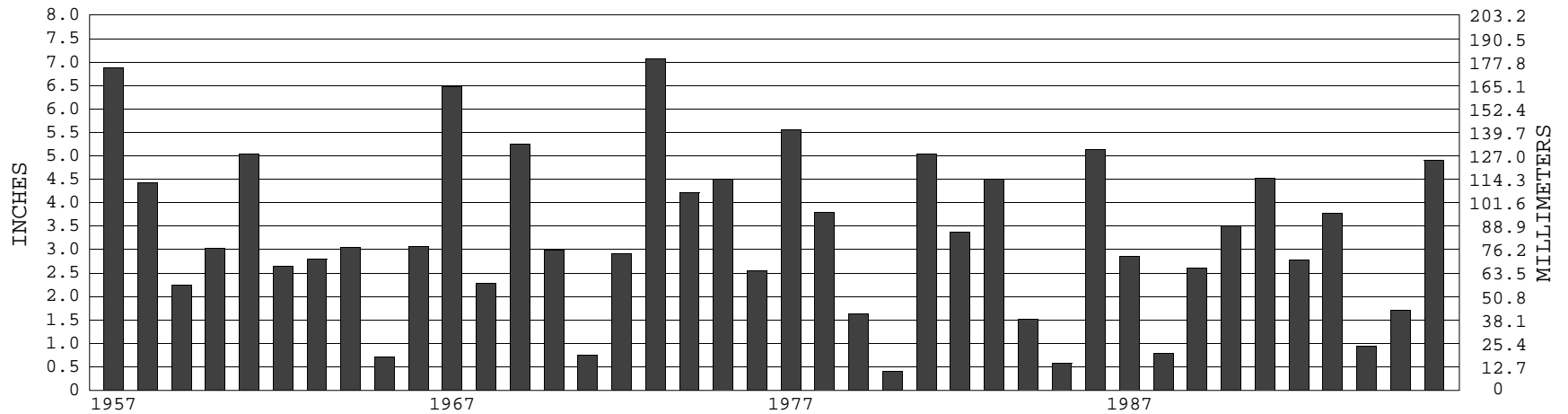
### RICHMOND, VA DECEMBER TEMPERATURES



+ Extreme Max.      ● Mean Max.      ▲ Mean      × Mean Min.      ◆ Extreme Min.

Long-Term (1957-1996) Mean: 40.2      1961-1990 Normal: 40.1

### RICHMOND, VA DECEMBER PRECIPITATION



Long-Term (1957-1996) Mean Monthly Total: 3.32

1961-1990 Normal: 3.26



**DECEMBER 1996  
RICHMOND, VA**

**LOCAL CLIMATOLOGICAL DATA**

NOAA, National Climatic Data Center

*I certify that this is an official publication of the National Oceanic and Atmospheric Administration (NOAA). It is compiled using information from weather observing sites operated by NOAA – National Weather Service / Department Of Transportation – Federal Aviation Administration and received at the National Climatic Data Center (NCDC), Asheville, North Carolina 28801.*

*Kenneth D Hadean*

DIRECTOR

**NOTICE**

Effective July 1, 1996, the National Weather Service & Federal Aviation Administration began using the METAR format for Hourly Observations.

We welcome your questions or comments, please contact us at  
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