



NOVEMBER 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

NOVEMBER 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	11	12	13	14	15	16	17	18	19	20	21	22	23	24													
01	61	48	55	1	47	50	10	0	RA BR	0	0.0	0.08	29.68	29.88	1.7	02	3.3	15	36	13	36	01													
02	48	35	42	-11	38	41	23	0	RA BR	0	0.0	0.32	29.70	29.91	5.9	02	6.9	21	04	17	02	02													
03	50	32	41	-12	24	34	24	0		0	0.0	0.00	30.07	30.28	5.4	33	6.2	21	33	17	36	03													
04	57	29	43	-10	31	38	22	0		0	0.0	0.00	30.24	30.45	1.4	29	4.2	18	18	14	20	04													
05	68	39	54	1	47	50	11	0		0	0.0	0.00	30.16	30.37	5.7	19	5.2	15	18	13	19	05													
06	73	55	64	12	59	60	1	0	FG+ BR	0	0.0	0.00	30.12	30.33	3.6	20	3.3	16	20	15	20	06													
07	72	54	63	11	61	62	2	0	FG BR	0	0.0	0.00	29.93	30.13	5.6	17	6.6	20	19	16	19	07													
08	76*	53	65*	13	63	65	0	0	TSRA RA FG BR	0	0.0	1.18	29.50	29.70	13.9	19	16.1	40*	24	32*	24	08													
09	55	38	47	-5	36	42	18	0	RA	0	0.0	0.02	29.65	29.86	10.3	25	10.9	25	20	20	27	09													
10	47	33	40	-11	29	35	25	0		0	0.0	0.00	29.88	30.08	9.0	24	9.6	25	22	22	22	10													
11	44	26	35	-16	21	30	30	0		0	0.0	0.00	30.07	30.28	6.6	29	7.0	21	28	18	26	11													
12	44	24	34	-17	16	28	31	0		0	0.0	0.00	30.36	30.57	5.9	30	6.0	21	30	15	30	12													
13	45	23	34	-17	18	29	31	0		0	0.0	0.00	30.43	30.64	5.3	29	3.1	11	32	9	08	13													
14	39	29	34	-16	29	33	31	0	SN BR	0	T	T	30.35	30.56	6.1	01	7.0	20	36	16	36	14													
15	43	25	34	-16	19	28	31	0		0	0.0	0.00	30.56	30.77	8.4	02	8.4	22	05	18	05	15													
16	48	22	35	-15	23	30	30	0		0	0.0	0.00	30.54	30.76	4.8	03	3.1	11	32	9	29	16													
17	55	25	40	-9	27	34	25	0	BR	0	0.0	0.00	30.31	30.52	4.7	36	1.2	10	29	8	27	17													
18	55	35	45	-4	40	44	20	0	RA BR	0	0.0	0.14	29.89	30.10	1.6	19	2.7	9	27	8	24	18													
19	56	44	50	1	44	47	15	0	RA BR	0	0.0	0.01	29.70	29.91	3.5	33	3.6	16	36	14	36	19													
20	53	39	46	-2	35	41	19	0	RA	0	0.0	0.09	29.72	29.93	2.7	01	4.9	24	01	17	02	20													
21	39	32	36	-12	29	33	29	0	RA SN BR	0	T	0.51	29.74	29.95	5.6	03	6.1	14	01	11	01	21													
22	43	33	38	-10	29	35	27	0		0	0.0	0.00	29.86	30.07	13.1	34	13.4	28	32	22	32	22													
23	48	28	38	-9	28	34	27	0		0	0.0	0.00	29.97	30.18	4.2	30	4.9	17	21	15	22	23													
24	56	29	43	-4	32	37	22	0	BR	0	0.0	0.00	30.00	30.21	1.8	01	3.4	15	11	13	10	24													
25	65	35	50	3	47	49	15	0	RA BR HZ	0	0.0	0.01	29.91	30.12	3.9	19	5.6	17	19	15	22	25													
26	69	37	53	7	48	52	12	0	TSRA RA BR	0	0.0	0.86	29.68	29.89	5.6	30	13.8	36	36	26	36	26													
27	42	30	36	-10	18	29	29	0		0	0.0	0.00	30.24	30.45	12.3	36	12.8	30	34	25	36	27													
28	38	24	31*	-15	19	26	34	0		0	0.0	0.00	30.27	30.48	4.7	35	3.3	15	30	13	36	28													
29	42	22*	32	-13	24	29	33	0	BR	0	0.0	0.00	30.23	30.45	2.6	36	3.0	13	04	10	05	29													
30	50	29	40	-5	36	38	25	0	RA BR	0	0.0	0.30	30.10	30.31	5.3	16	5.3	18	15	13	15	30													
										52.7		33.6	43.2	■ ■	33.9	39.4	21.7	0.0	< MONTHLY AVERAGES		TOTALS-->		T	3.52	30.03	30.24	2.1	32	6.4	<- MONTHLY AVERAGES					
										-8.6		-4.3	-6.4	■ ■	<----- DEPARTURE FROM NORMAL ----->										0.35	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3									
DEGREE DAYS										GREATEST 24-HR PRECIPITATION: 1.18 DATE: 8										SEA LEVEL PRESSURE DATE TIME															
MONTHLY										GREATEST 24-HR SNOWFALL: T DATE: 21+										MAXIMUM : 30.83 16 0957															
TOTAL DEPARTURE										GREATEST SNOW DEPTH: 0 DATE:										MINIMUM : 29.52 08 1532															
HEATING: 652 190										NUMBER OF DAYS WITH →										PRECIPITATION ≥ 0.01 INCH : 11															
COOLING: 0 0										MAXIMUM TEMP ≥ 90: 0										PRECIPITATION ≥ 0.10 INCH : 6															
										MINIMUM TEMP ≤ 32: 16										SNOWFALL ≥ 1.0 INCH : 0															
										MAXIMUM TEMP ≤ 32 : 0																									
										THUNDERSTORMS : 2																									
										MINIMUM TEMP ≤ 0 : 0																									
										HEAVY FOG : 1																									

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA

NOVEMBER 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													01												01	0.07	0.08		
02	0.06	0.06	0.04	0.05	0.02	0.04	T	T	0.01	T	T	02												T	02	0.33	0.32		
03									T			03													03		0.00		
04												04													04		0.00		
05												05													05		0.00		
06												06													06		0.00		
07												07													07		0.00		
08												08		0.01		0.36	0.51	0.03	0.12	0.03	0.04			08		1.18			
09	T	T	T						T	0.08		09				T	0.02							09		0.02			
10												10												10		0.00			
11												11												11		0.00			
12												12												12		0.00			
13												13					T							13	T	0.00			
14												14												14		T			
15												15												15		0.00			
16												16												16		0.00			
17												17												17		0.00			
18												18			T	T			0.04	0.08	0.02	T		18		0.14			
19						0.01						19												19		0.01			
20	0.01	0.02	0.03	0.02	0.01	T						20												20		0.09			
21												21	0.02	0.05	0.07	0.10	0.11	0.07	0.02	0.01	0.03	0.02	T	21		0.51			
22												22												22		0.00			
23												23												23		0.00			
24												24												24		0.00			
25												25							T		0.01		T	25		0.01			
26	0.06	0.01	0.02	T	T	0.30	0.36	0.11				26												26		0.86			
27												27												27		0.00			
28												28												28		0.00			
29												29												29		0.00			
30						T	T					30			T	0.03	0.06	0.05	0.04	0.03	0.04	0.03	0.01	0.01	30		0.30		

MAXIMUM SHORT DURATION PRECIPITATION (See Note 1)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.33	.40	.44	.45	.49	.79	.84	.87	.88	.90	.90	.91
Ending Date	08	08	08	08	08	08	08	08	08	08	08	08
Ending Time (Hour/Min)	1606	1611	1614	1616	1616	1613	1627	1647	1703	1721	1721	1820

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 NOVEMBER 1996

Ceilorometer (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							6.00	10.00	
02							2.50	10.00	
03							9.00	10.00	
04							10.00	10.00	
05							9.00	10.00	
06							<.25	10.00	
07							1.50	10.00	
08							2.00	10.00	
09							7.00	10.00	
10							10.00	10.00	
11							8.00	10.00	
12							9.00	10.00	
13							10.00	10.00	
14							6.00	10.00	
15							10.00	10.00	
16							7.00	10.00	
17							4.00	10.00	
18							.50	10.00	
19							.50	10.00	
20							9.00	10.00	
21							1.00	10.00	
22							10.00	10.00	
23							9.00	10.00	
24							5.00	10.00	
25							4.00	10.00	
26							1.50	10.00	
27							10.00	10.00	
28							7.00	10.00	
29							6.00	10.00	
30							3.00	10.00	
MONTHLY AVGS							5.92	10.00	
SUNSHINE (MINUTES)									
Total: Possible: Percent Possible:									
NUMBER OF DAYS WITH:									
SKY CONDITION									
CLR PTLY CLDY CLOUDY MISSING 30									
MINIMUM VISIBILITY (MILES)									
<=0.25 <=3.0 >=7.0 1 9 15									

OBSERVATIONS AT 3-HOURLY INTERVALS

RICHMOND, VA

NOVEMBER 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)
SUNRISE: 0660						NOV 25	SUNSET: 1653						SUNRISE: NOV 31						SUNSET:								
01	CLR	NC			8.00		38	36	37	93	5	15	30.00	30.21													
04	CLR	NC			6.00	BR	37	35	36	93	3	18	29.98	30.18													
07	CLR	NC			4.00	BR	35	34	35	96	3	16	29.98	30.18													
10	CLR	NC			8.00		53	46	50	77	8	20	29.98	30.19													
13	CLR	NC			10.00		62	50	56	65	7	18	29.92	30.12													
16	BKN	070			5.00	HZ	62	52	56	70	6	15	29.87	30.07													
19	OVC	047			10.00		60	55	57	84	7	16	29.85	30.06													
22	OVC	100			8.00		58	56	57	93	10	15	29.78	29.98													

SUNRISE: 0701						NOV 26	SUNSET: 1653						SUNRISE: 0702						NOV 27	SUNSET: 1653							
01	OVC	021			4.00	-RA BR	60	59	59	96	14	17	29.69	29.89													
04	OVC	011			10.00		62	60	61	93	15	17	29.59	29.79													
07	OVC	050			3.00	+RA BR	60	59	59	96	8	20	29.56	29.77													
10	SCT	NC			10.00		64	60	62	87	9	24	29.54	29.75													
13	OVC	085			10.00		67	52	58	59	17	30	29.53	29.73													
16	OVC	060			10.00		63	44	53	50	17	33	29.64	29.84													
19	CLR	NC			10.00		46	34	41	63	20	36	29.84	30.04													
22	CLR	NC			10.00		38	27	34	65	6	34	29.97	30.17													

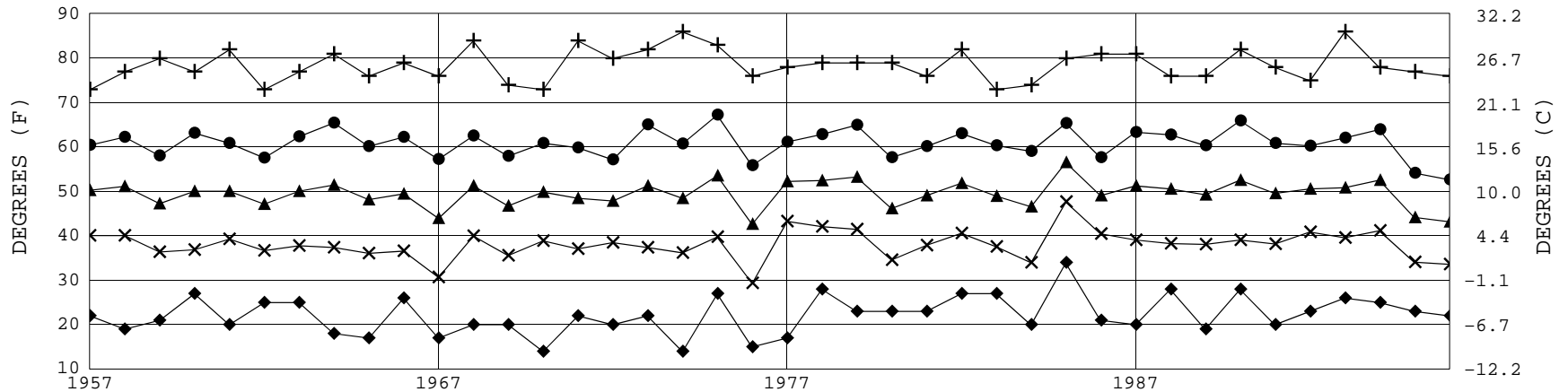
3-HOURLY OBSERVATION NOTES

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.

SUMMARY BY HOUR

HOUR (LST)	AVERAGES											RESULTANT WIND (MPH)	
	CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (INCHES, HG)		VISIBILITY (MILES)	WIND SPEED (MPH)	DIRECTION	SPEED	DIRECTION
							STATION	SEA LEVEL					
01			39	34	37	81	30.03	30.23	9.28	6	1	27	
02			39	34	37	82	30.03	30.23	8.95	6	1	27	
03			39	34	37	83	30.03	30.23	8.97	7	1	27	
04			38	33	36	83	30.03	30.23	8.85	7	1	27	
05			38	33	36	83	30.03	30.24	8.95	7	1	27	
06			38	33	36	83	30.04	30.24	8.00	7	2	27	
07			38	33	36	83	30.05	30.25	8.35	7	1	27	
08			40	34	37	81	30.06	30.27	8.56	7	1	27	
09			43	35	40	74	30.07	30.27	8.68	7	1	27	
10			46	34	41	65	30.06	30.27	9.23	8	1	27	
11			48	33	42	60	30.06	30.26	9.73	8	1	27	
12			49	34	43	58	30.03	30.23	9.67	9	2	27	
13			50	33	43	55	30.01	30.22	9.80	9	2	27	
14			51	33	44	54	30.00	30.20	9.75	9	2	35	
15			51	34	44	54	29.99	30.20	9.72	8	3	27	
16			50	34	43	57	30.00	30.20	9.05	8	2	26	
17			48	34	42	62	30.00	30.21	9.28	6	1	32	
18			45	35	41	69	30.01	30.22	9.52	6	1	27	
19			43	35	40	75	30.03	30.23	8.98	6	1	36	
20			42	34	39	76	30.03	30.24	9.20	7	2	27	
21			41	34	38	78	30.04	30.24	9.05	6	2	36	
22			41	34	38	77	30.04	30.25	8.85	6	0	0	
23			40	34	38	79	30.04	30.25	8.95	6	1	28	
24			40	34	37	80	30.04	30.23	8.95	6	2	27	

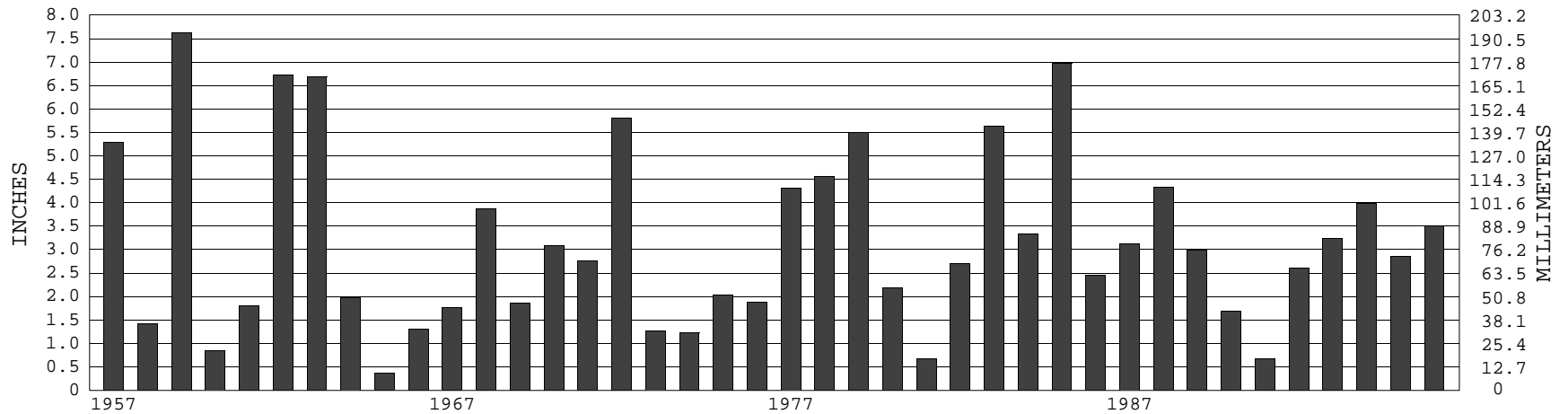
RICHMOND, VA NOVEMBER TEMPERATURES



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

Long-Term (1957-1996) Mean: 49.5 1961-1990 Normal: 49.6

RICHMOND, VA NOVEMBER PRECIPITATION



Long-Term (1957-1996) Mean Monthly Total: 3.18

1961-1990 Normal: 3.17



**NOVEMBER 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 Haden

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
704-271-4800 (voice), 704-271-4876 (fax),
704-271-4010(TDD)
or orders@ncdc.noaa.gov

For address correction, please return a photocopy of this page to Subscription Services indicating changes

NATIONAL CLIMATIC DATA CENTER
151 PATTON AVE
ASHEVILLE, NORTH CAROLINA 28801 –5001

OFFICIAL BUSINESS. PENALTY FOR PRIVATE USE \$300

FIRST CLASS
POSTAGE AND FEES PAID
NOAA
PERMIT G-19