

**APPENDIX A**

**ASOS Video**

**Screens**

**EXAMPLE OF THE VDU SCREEN**

09:35:17	08/12/97	HOME TOWN AIRPORT	
SKY	BKN075		
VSBY	21/2SM	TWR VSBY	3SM
PREWX	HZ	SEA PRES	1024.7
TEMP/DP	20/17 C	REL HUM	43
WIND	090/07 040V120	MAG WIND	110/07 070V140
ALT SET	30.15 DEN ALT 1000	PRES ALT	320
REMARKS RMK AO2 TWR VIS 3 VIS 13/4V4			
SPECI KXXX 121220Z 09007KT 040V120 2 1/2SM HZ BKN075 20/17 A3015			
RMK AO2 TWR VIS 3 VIS 1 3/4V4			

**EXAMPLE OF THE OID REVIEW OBSERVATION (METAR/SPECI) SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

<p>08/12/97 04:22:18 SPECI KXXX 120916Z AUTO 33004KT 4SM BR FEW001 19/19 A3011 RMK AO2</p> <p>08/12/97 05:02:23 METAR KXXX 120956Z AUTO 00000KT 5SM BR BKN075 20/19 A3013 RMK AO2 SLP197 T02000194</p> <p>08/12/97 06:02:42 METAR KXXX 121056Z AUTO 00000KT 3SM BR CLR 21/21 A3014 RMK AO2 SLP201 T02060206</p> <p>08/12/97 06:13:15 SPECI KXXX 121108Z AUTO 00000KT 2 1/2SM BR FEW120 20/20 A3014 RMK AO2</p> <p>08/12/97 06:39:27 SPECI KXXX 121134Z AUTO 00000KT 3SM BR FEW120 22/21 A3015 RMK AO2</p> <p>08/12/97 07:02:18 METAR KXXX 121156Z AUTO 36003KT 4SM BR CLR 23/22 A3015 RMK AO2 SLP206 70005 T02280217 10228 20183 51015</p> <p>08/12/97 07:57:23 METAR KXXX 121256Z AUTO VRB05KT 5SM HZ CLR 24/22 A3015 RMK AO2 SLP207 T02440217</p> <p>REVIEW OBSERVATION</p>		
PRINT	DATE	PREV
EXIT	BACK	NEXT



**EXAMPLE OF THE OID REVIEW SHEF SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

08/11/97 19:24:30 .A XXX 0812 DH0022/PPH 0.00 08/11/97 20:24:28 .A XXX 0812 DH0122/PPH 0.03 08/11/97 21:26:04 .A XXX 0812 DH0222/PPH 0.01 08/11/97 22:26:04 .A XXX 0812 DH0322/PPH 0.00 08/11/97 23:26:03 .A XXX 0812 DH0422/PPH 0.00 08/12/97 00:26:57 .A XXX 0812 DH0522/PPH 0.00 08/12/97 01:26:02 .A XXX 0812 DH0622/PPH 0.01 08/12/97 02:39:05 .A XXX 0812 DH0722/PPH 0.00 08/12/97 03:28:22 .A XXX 0812 DH0822/PPH 0.00 08/12/97 04:28:19 .A XXX 0812 DH0922/PPH 0.00 08/12/97 05:27:14 .A XXX 0812 DH1022/PPH 0.00 08/12/97 06:28:23 .A XXX 0812 DH1122/PPH 0.00 08/12/97 07:27:22 .A XXX 0812 DH1222/PPH 0.00 08/12/97 08:24:29 .A XXX 0812 DH1322/PPH 0.00		
REVIEW SHEF		
PRINT	DATA	PREV
EXIT	BACK	NEXT

**EXAMPLE OF THE OID MAINTENANCE SYSTEM-LOG (SYSLOG) SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

08/10/97 23:59 *SY 9999 AOMC CALLS TODAY: 0, AOMC SUCCESSFUL CALLS TODAY: 0  08/11/97 23:04 *ST 1958 ALL AFOS COMMUNICATION ATTEMPTS FAILED  08/11/97 23:59 *SY 9999 CALLS ON PHONE LINES: LINE #1 0 CALLS LINE #2 0 CALLS LINE #3 0 CALLS LINE #4 0 CALLS LINE #5 0 CALLS LINE #6 0 CALLS LINE #7 0 CALLS LINE #8 0 CALLS 08/11/97 23:59 *SY 9999 AOMC CALLS TODAY: 0, AOMC SUCCESSFUL CALLS TODAY: 0		
MAINTENANCE LOG		
PRINT	DATA	PREV
	FILTR	
EXIT	BACK	NEXT

**EXAMPLE OF THE OID 5-SECOND AVERAGE WIND SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

5-SECOND AVERAGE WIND					
READINGS	WIND DIR	WIND SPD	READINGS	WIND DIR	WIND SPD
OLDEST	359	5	12	356	6
23	354	5	11	340	6
22	350	6	10	354	5
21	351	6	9	352	5
20	356	6	8	360	5
19	16	6	7	1	6
18	19	7	6	356	7
17	19	7	5	355	6
16	6	7	4	357	6
15	358	6	3	6	6
14	356	6	2	3	6
13	356	5	NEWEST	18	5

CURRENT

PRINT	PAGE	
		UPDATE
EXIT	BACK	

**EXAMPLE OF THE OID 10-SECOND PRESSURE SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

10-SECOND PRESSURE			
READINGS	PRESSURE 1	PRESSURE 2	PRESSURE 3
OLDEST	29.854	29.863	
5	29.854	29.863	
4	29.853	29.863	
3	29.854	29.863	
2	29.853	29.863	
NEWEST	29.853	29.863	

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PRINT	PAGE	
		UPDATE
EXIT	BACK	

**EXAMPLE OF THE OID 1-MINUTE CURRENT SENSOR DATA SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

1-MINUTE CURRENT SENSOR DATA										
UTC	VIS1	D/N1	VIS2	D/N2	VIS3	D/N3	TEMP	DEWPT	5SEC WIND	RVR
1342	5.19	D					79	71	24	8
1343	5.30	D					79	71	21	8
1344	5.34	D					79	71	33	6
1345	5.34	D					79	71	11	7
1346	5.37	D					79	71	16	7
1347	5.39	D					79	71	34	7
1348	5.36	D					79	71	353	6
1349	5.40	D					79	71	6	7
1350	5.45	D					79	71	356	7
1351										

  

PRECIPITATION AMOUNT (HOUR):	0.00 IN	PRINT	PAGE	
WATER EQUIVALENT (HOUR):	M IN			UPDATE
CURRENT SNOW DEPTH:	M IN	EXIT	BACK	

**EXAMPLE OF THE OID 1-MINUTE CURRENT SENSOR DATA SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

1-MINUTE CURRENT SENSOR DATA				
UTC	WX	ZR	TS	
1337	NP	--	-	
1338	NP	--	-	
1339	NP	--	-	
1340	NP	--	-	
1341	NP	--	-	
1342	NP	--	-	
1343	NP	--	-	
1344	NP	--	-	
1345	NP	--	-	
1346	NP	--	-	
1347	NP	--	-	
1348	NP	--	-	
1349	NP	--	-	
1350	NP	--	-	
1351	NP	--	-	

  

		CURRENT	
PRINT	PAGE		
UPDATE			
EXIT	BACK		

**EXAMPLE OF THE OID DAILY SUMMARY DATA SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

DAILY SUMMARY FOR 08/11/97			
24 HR MAX TEMP (F):	90	LATEST DAY MAX TEMP (0700-1900 LST):	90
24 HR MAX TEMP TIME (LST):	1614	LATEST NIGHT MIN TEMP(1900-0800 LST):	58
24 HR MIN TEMP (F):	58		
24 HR MIN TEMP TIME (LST):	0535	SKY COVER MID-MID (TENTHS):	
24 HR AVG TEMP (F):	74	SKY COVER SR-SS (TENTHS):	
DEPART FROM NORMAL:	0		
		TOTAL SUNSHINE (MINUTES):	M
HEATING DEGREE DAYS:	0	TOTAL SUNSHINE (HOURS):	M
COOLING DEGREE DAYS:	9	PERCENT POSSIBLE SUNSHINE:	M
		CHARACTER OF SUNRISE:	
PEAK WIND SPEED (MPH):	15	CHARACTER OF SUNSET:	
PEAK WIND DIR (DEG):	210	WEATHER (CODE):	1,2,8
PEAK WIND TIME (LST):	1558		
FASTEST 2MIN SPEED (MPH):	13		
FASTEST 2MIN DIR (DEG):	170		
FASTEST 2MIN TIME (LST):	1643		
AVERAGE WIND SPEED (MPH):	2.7		

  

DAILY DATA		
PRINT	PAGE	PREV
		DATE
EXIT	BACK	NEXT

**EXAMPLE OF THE OID DAILY SUMMARY DATA SCREEN**

08:47:19 08/12/97 1347Z HOME TOWN AIRPORT

DAILY PRECIPITATION SUMMARY FOR 08/11/97			
24 HR PRECIPITATION	(IN):	0.04	
24 HR SNOWFALL	(IN):		
SNOW DEPTH	(IN):	M	
HOURLY INCREMENTAL PRECIPITATION VALUES (IN):			
0059	0.00	1259	0.00
0159	0.00	1359	0.00
0259	0.00	1459	0.00
0359	0.00	1559	0.00
0459	0.00	1659	0.00
0559	0.00	1759	0.00
0659	0.00	1859	0.00
0759	0.00	1959	0.00
0859	0.00	2059	0.04
0959	0.00	2159	0.00
1059	0.00	2259	0.00
1159	0.00	2359	0.00

  

DAILY DATA		
PRINT	PAGE	PREV
		DATE
EXIT	BACK	NEXT

**EXAMPLE OF THE OID DAILY SUMMARY DATA SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

DAILY PRESSURE SUMMARY FOR 08/11/97		
HOURLY STATION PRESSURE VALUES:		
0556	29.850	
1156	29.865	
1756	29.815	
2356	29.775	
AVERAGE STATION PRESSURE:	29.830	
MINIMUM SEA LEVEL PRESSURE:	30.06	
TIME OF OCCURRENCE:	1839	
DAILY DATA		
PRINT	PAGE	PREV
	DATE	
EXIT	BACK	NEXT

**EXAMPLE OF THE OID MONTHLY TEMPERATURE SUMMARY SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

MONTHLY TEMPERATURE SUMMARY - AUG97 SO FAR THIS MONTH		
AVG DAILY MAXIMUM: 86.7	MAXIMUM TEMPERATURE: 93	
AVG DAILY MINIMUM: 55.5	DATE(S) OF MAXIMUM: 3	
AVG MONTHLY TEMP: 71.1	MINIMUM TEMPERATURE: 47	
DEPART FROM NORMAL:	DATE(S) OF MINIMUM: 8	
NUM DAYS MAX 32 AND BELOW: 0	NUM DAYS MIN 32 AND BELOW: 0	
NUM DAYS MAX 90 AND ABOVE: 3	NUM DAYS MIN 0 AND BELOW: 0	
HEATING DEGREE DAYS	COOLING DEGREE DAYS	
MONTHLY TOTAL: 0	MONTHLY TOTAL: 71	
DEPART FROM NORMAL:	DEPART FROM NORMAL:	
SEASON (JUL 1 - JUN 30): 0(E)	SEASON (JAN 1 - DEC 31): 215(E)	
DEPART FROM NORMAL: 0(E)	DEPART FROM NORMAL: -255(E)	
MONTHLY DATA		
PRINT	PAGE	JULY
EXIT	BACK	



**EXAMPLE OF THE OID MONTHLY PRECIPITATION SUMMARY SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

MONTHLY PRECIPITATION SUMMARY - AUG97 SO FAR THIS MONTH		
	PRECIPITATION	SNOW
MONTHLY TOTAL:	0.42	M
DEPARTURE FROM NORMAL:		
GREATEST IN 24 HOURS:	0.30	
DATE(S) OF OCCURRENCE:	4	
GREATEST DEPTH ON GROUND:		M
DATE(S) OF OCCURRENCE:		
NUMBER OF DAYS WITH PRECIPITATION .01 INCH OR MORE: 4 NUMBER OF DAYS WITH PRECIPITATION .10 INCH OR MORE: 1 NUMBER OF DAYS WITH PRECIPITATION .50 INCH OR MORE: 0 NUMBER OF DAYS WITH PRECIPITATION 1.00 INCH OR MORE: 0		
SHORT DURATION PRECIPITATION AMOUNTS WITH DATE/TIME TAGS:		MONTHLY DATA
5 0.04 051345 30 0.13 041200 100 0.20 041320		PRINT
10 0.06 051350 45 0.15 041200 120 0.18 041200		PAGE
15 0.07 041200 60 0.17 041200 150 0.28 041230		JULY
20 0.09 041200 80 0.18 041200 180 0.18 041200		
		EXIT
		BACK

**EXAMPLE OF THE OID MONTHLY SUMMARY DATA SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

MONTHLY SUMMARY - AUG97 SO FAR THIS MONTH		
NUMBER OF CLEAR DAYS:		
NUMBER OF PARTLY CLOUDY DAYS:		
NUMBER OF CLOUDY DAYS:		
TOTAL SUNSHINE (HOURS):	M	
PERCENT POSSIBLE SUNSHINE:	M	
AVERAGE STATION PRESSURE: 29.785		
HIGHEST SEA LEVEL PRESSURE: 30.25 +		
DATE OF OCCURRENCE:	08	
TIME OF OCCURRENCE:	1048	
LOWEST SEA LEVEL PRESSURE: 29.80 +		MONTHLY DATA
DATE OF OCCURRENCE:	04	PRINT
TIME OF OCCURRENCE:	1847	PAGE
		JULY
		EXIT
		BACK
AVERAGE SEA LEVEL PRESSURE: 30.08		

**EXAMPLE OF THE OID MONTHLY NORMALS SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

NORMALS FOR AUGUST														
DAY	TMIN	TMAX	TAVG	SUN	DAY	TMIN	TMAX	TAVG	SUN	DAY	TMIN	TMAX	TAVG	SUN
1	65	85	75	850	11	65	84	74	830	21	63	83	73	807
2	65	85	75	848	12	64	84	74	828	22	63	83	73	805
3	65	85	75	846	13	64	84	74	825	23	62	82	72	803
4	65	85	75	844	14	64	84	74	823	24	62	82	72	800
5	65	85	75	842	15	64	84	74	821	25	62	82	72	798
6	65	85	75	840	16	64	84	74	819	26	62	82	72	796
7	65	84	75	838	17	64	83	73	817	27	62	82	72	793
8	65	84	75	836	18	63	83	73	814	28	61	81	71	791
9	65	84	75	834	19	63	83	73	812	29	61	81	71	788
10	65	84	74	832	20	63	83	73	810	30	61	81	71	786
										31	61	81	71	784
AVG/SUM: 63.5 83.3 73.4 25360														
MONTHLY NORMAL HEATING DEG DAYS: 0											NORMALS			
MONTHLY NORMAL COOLING DEG DAYS: 260											PRINT		PREV	
MONTHLY NORMAL PRECIP: 4.14														
SEASON HEATING DEGREE DAYS: 0														
SEASON COOLING DEGREE DAYS: 730											EXIT	BACK	NEXT	

**EXAMPLE OF THE OID SPECIAL ALERT (SPECI) CRITERIA SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

CRITERIA FOR SPECIAL ALERTS													
SKY CONDITION:													
CEILING AT OR BELOW 3000 1500 1000 500 FEET													
USER'S CEILING AT OR BELOW 0 0 0 0 0 0													
LAYERS BELOW 1000 FEET													
USER'S LAYERS BELOW 0 0 0 0													
VISIBILITY: 3 2 1 MILES													
USER'S VISIBILITY 1/2													
RVR: 2400 FEET													
											CRITERIA		
											FEET	PRINT	PAGE
											EXIT	BACK	



**EXAMPLE OF THE OID SITE PHYSICAL CHARACTERISTICS SCREEN**

08:47:19 08/12/97 1347Z HOME TOWN AIRPORT

STATION				
NAME:	HOME TOWN AIRPORT			
IDENTIFIER:	XXX	DATE:	08/12/97	
COMMISSIONED:	COMM	TIME:	13:55:57	UTC
ATTENDED:	YES	UTC TO LST OFFSET:	-5	
OPEN 24 HOURS:	YES	METAR SWITCH DATE:	05/01/96	UTC
OPENING TIME:		METAR SWITCH TIME:	07:45:00	UTC
CLOSING TIME:		DSM GENERATED:	YES	
ELEVATION:	281 FEET	PRIMARY DSM XMIT TIME:		UTC
		INTERMED DSM XMIT TIMES:	19:01:00	UTC
FIELD ELEVATION:	277 FEET			UTC
PRESSURE SENSOR ELEVATION:	283 FEET			UTC
		MSM GENERATED:	YES	
OBS HOURLY REPORT TIME:	50	MSM XMIT TIME:		UTC
OBS EDIT TIME:	5:00			PHYSICAL
OBS HOURLY TRANSMIT TIME:	55:00			
SHEF HOURLY TRANSMIT TIME:	22			
LATITUDE:	38.57N			
LONGITUDE:	77.27W			
MAG DECLINATION:	9W			

PRINT		
EXIT	BACK	

**EXAMPLE OF THE OID SOFTWARE VERSION SCREEN**

08:47:19 08/12/97 1347Z

HOME TOWN AIRPORT

UNIT	BOARD	NAME	DEVICE	VERSION	DATE
ACU	CPU A	PSOS OS	EPROM	1.81	03/07/95
	CPU B	PSOS OS	EPROM	1.81	03/07/95
	MEMORY	ACU APPLICATION	EPROM	2.60	06/26/97
	MEMORY	DCP APPLICATION	EPROM	2.60	06/26/97
DCP-1	CPU A	BOOT	EPROM	1.80	11/22/96
	MEMORY	DCP APPLICATION	RAM	2.60	06/26/97

SOFTWARE VERSIONS		
PRINT		
EXIT	BACK	

## **APPENDIX B**

# **ASOS Initial**

## **Operating Capabilities**

## ASOS SENSOR SPECIFICATIONS

PARAMETER	SENSOR	RANGE	ACCURACY
Cloud Height	Laser Ceilometer	100-12,000 Feet	± 100 Feet Or 5% Whichever Is Greater
Visibility	Forward Scatter Meter	< ¼ To 10+ Miles	± ¼ Mile To 1¼ Miles; Up To ± 2 reportable Increments Between 4 and 10 Miles
Present Weather Identification Precipitation	Precipitation Identifier (PI)	Detect Light, Moderate, And Heavy Rain Or Snow; Or Mixed Precipitation	Solid <sup>1</sup> : 99 / 97  Liquid <sup>1</sup> : 99 / 90
Freezing Rain Occurrence	Vibrating Element	Accumulation Over 01"/Hr	99% In Precipitation Rates As Low As 0.05"/Hr.
Obstructions To Vision	Derived From Other Sensors: (Temperature; Dew Point, Visibility)	Fog, Haze Reports	When Visibility Is < 7 Miles
Ambient Temperature	Resistive Temperature Device (RTD)	-80EF To +130EF	RMSE: 0.9EF To 1.8EF <sup>2</sup>
Dew Point Temperature	Chilled Mirror	-30EF To +86EF <sup>3</sup>	RMSE: 1.1EF To 7.9EF <sup>2</sup>
Pressure	Redundant Pressure Cells	16.9"Hg - 31.5"Hg	± 0.02"Hg
Wind Direction	Vane	0 - 359E	± 5E (When Speed \$ 5 Knots)
Wind Speed	Cup Anemometer	0 - 125 KTS	± 2 Knots Or 5% Whichever is Greater
Liquid Precipitation	Heated Tipping Bucket	0 - 10"/Hr	± 0.02" Or 4% Of Hourly Total Whichever is Greater
Thunderstorm	Wideband Electric Field	30 miles	Thunderstorms: 100 % within 10 miles; Cloud-to-ground lightning : 90% within 10 miles

<sup>1</sup>% of occurrences detected / % correctly identified

<sup>2</sup>Dependent on operating range

<sup>3</sup>ASOS Program Office is working to increase the reportable range to: -80EF to +86EF

## ASOS DATA CHARACTERISTICS

PARAMETER	SENSOR		ALGORITHM		
	Data Collection Frequency	Data Sampling Interval	Data Processing Frequency	Data Accumulation Period	Data Reporting Frequency
Cloud Height & Amount	~1/770 sec	12-sec	30-sec	30-min	1-min
Visibility	30-sec	1-min	1-min	10-min	1-min
Present Weather	1-sec	1-min	1-min	10-min	1-min
Freezing Rain	1-sec	1-min	1-min	15-min	1-min
Temp/Dew Point	10-sec	1-min	1-min	5-min	1-min
Wind	1-sec	5-sec	5-sec	2-min	5-sec 1-min
Pressure	10-sec	1-min	1-min	1-min	1-min
Precipitation Accumulation	1-sec	1-min	1-min	1-min	15-min 1-hour
Thunderstorm	1-sec	1-min	1-min	1-min	1-min

## **APPENDIX C**

# **Content of ASOS-Generated METAR**

## **A Quick Reference Guide**



# KEY TO DECODE AN ASOS (METAR) OBSERVATION

METAR KABC 121755Z AUTO 21016G24KT 180V240 1SM R11/P6000FT -RA BR BKN015 OVC025 06/04 A2990  
 RMK AO2 PK WND 20032/25 WSHFT 1715 VIS 3/4V1 1/2 VIS 3/4 RWY11 RAB07 CIG 013V017 CIG 017 RWY11  
 PRESFR SLP125 P0003 60009 T00640036 10066 21012 58033 TSNO \$

<b>TYPE OF REPORT</b>	METAR: hourly (scheduled) report; SPECI: special (unscheduled) report.	METAR
<b>STATION IDENTIFIER</b>	Four alphabetic characters; ICAO location identifier.	KABC
<b>DATE/TIME</b>	All dates and times in UTC using a 24-hour clock; two-digit date and four-digit time; always appended with <u>Z</u> to indicate UTC. 121755Z	
<b>REPORT MODIFIER</b>	Fully automated report, no human intervention; removed when observer signed-on.	AUTO
<b>WIND DIRECTION AND SPEED</b>	Direction to nearest ten degrees from true north (first three digits); next two digits: speed in whole knots; as needed <u>G</u> usts (character) followed by maximum observed speed; always appended with <u>KT</u> to indicate knots; 0000 <u>KT</u> for calm; if direction varies by 60E or more a Variable wind direction group is reported.	21016G24KT 180V240
<b>VISIBILITY</b>	Prevailing visibility in statute miles and fractions (space between whole miles and fractions); always appended with <u>SM</u> to indicate statute miles; values <1/4 reported as M1/4.	1SM
<b>RUNWAY VISUAL RANGE</b>	10-minute RVR value in hundreds of feet; reported if prevailing visibility is # one mile or RVR # 6000 feet; always appended with <u>FT</u> to indicate feet; value prefixed with <u>M</u> or <u>P</u> to indicate value is lower or higher than the reportable RVR value .	R11/P6000FT
<b>WEATHER PHENOMENA</b>	RA: liquid precipitation that does not freeze; SN: frozen precipitation other than hail; UP: precipitation of unknown type; intensity prefixed to precipitation: light (-), moderate (no sign), heavy (+); FG: fog; FZFG: freezing fog (temperature below 0EC); BR: mist; HZ: haze; SQ: squall; maximum of three groups reported; augmented by observer: FC (funnel cloud/tornado/waterspout); TS (thunderstorm); GR (hail); GS (small hail; <1/4 inch); FZRA (intensity; freezing rain); VA (volcanic ash).	-RA BR
<b>SKY CONDITION</b>	Cloud amount and height: CLR (no clouds detected below 12000 feet); FEW (few); SCT (scattered); BKN (broken); OVC (overcast); followed by 3-digit height in hundreds of feet; or vertical visibility ( <u>VV</u> ) followed by height for indefinite ceiling.	BKN015 OVC025
<b>TEMPERATURE/DEW POINT</b>	Each is reported in whole degrees Celsius using two digits; values are separated by a solidus; sub-zero values are prefixed with an <u>M</u> (minus).	06/04
<b>ALTIMETER</b>	Altimeter always prefixed with an <u>A</u> indicating inches of mercury; reported using four digits: tens, units, tenths, and hundredths.	A2990

REMARKS ON REVERSE SIDE

REMARKS IDENTIFIER: RMK	RMK
<b>TORNADIC ACTIVITY:</b> Augmented; report should include TORNADO, FUNNEL CLOUD, or WATERSPOUT, time begin/end, location, movement; e.g., TORNADO B25 N MOV E.	
<b>TYPE OF AUTOMATED STATION:</b> AO2; automated station with precipitation discriminator.	AO2
<b>PEAK WIND:</b> PK WND dddff(f)/(hh)mm; direction in tens of degrees, speed in whole knots, and time.	PK WND 20032/25
<b>WIND SHIFT:</b> WSHFT (hh)mm	WSHFT 1715
<b>TOWER OR SURFACE VISIBILITY:</b> TWR VIS vvvvv: visibility reported by tower personnel, e.g., TWR VIS 2; SFC VIS vvvvv: visibility reported by ASOS, e.g., SFC VIS 2.	
<b>VARIABLE PREVAILING VISIBILITY:</b> VIS v v v v v V v v v v v ; reported if prevailing visibility is < 3 miles and variable.	VIS 3/4V1 1/2
<b>VISIBILITY AT SECOND LOCATION:</b> VIS vvvvv [LOC]; reported if different than the reported prevailing visibility in body of report.	VIS 3/4 RWY11
<b>LIGHTNING:</b> [FREQ]LTG [LOC]; when detected the frequency and location is reported, e.g., FRQ LTG NE.	
<b>BEGINNING AND ENDING OF PRECIPITATION AND THUNDERSTORMS:</b> w'w'B(hh)mmE(hh)mm; TSB(hh)mmE(hh)mm	RAB07
<b>VIRGA:</b> Augmented; precipitation not reaching the ground, e.g., VIRGA.	
<b>VARIABLE CEILING HEIGHT:</b> CIG h h h V h h h ; reported if ceiling in body of report is < 3000 feet and variable.	CIG 013V017
<b>CEILING HEIGHT AT SECOND LOCATION:</b> CIG hhh [LOC]; Ceiling height reported if secondary ceilometer site is different than the ceiling height in the body of the report.	CIG 017RWY11
<b>PRESSURE RISING OR FALLING RAPIDLY:</b> PRESRR or PRESFR; pressure rising or falling rapidly at time of observation.	PRESFR
<b>SEA-LEVEL PRESSURE:</b> SLPppp; tens, units, and tenths of SLP in hPa.	SLP125
<b>HOURLY PRECIPITATION AMOUNT:</b> Prrrr; in .01 inches since last METAR; a trace is P0000.	P0003
<b>3- AND 6-HOUR PRECIPITATION AMOUNT:</b> 6RRRR; precipitation amount in .01 inches for past 6 hours reported in 00, 06, 12, and 18 UTC observations and for past 3 hours in 03, 09, 15, and 21 UTC observations; a trace is 60000.	60009
<b>24-HOUR PRECIPITATION AMOUNT:</b> 7R R R R ; precipitation amount in .01 inches for past 24 hours reported in 12 UTC observation, e.g., 70015.	
<b>HOURLY TEMPERATURE AND DEW POINT:</b> Ts T T T s T' T' ; tenths of degree Celsius; s : 1 if temperature below 0EC and 0 if temperature 0EC or higher.	T00640036
<b>6-HOUR MAXIMUM TEMPERATURE:</b> 1s T T T ; tenths of degree Celsius; 00, 06, 12, 18 UTC; s : 1 if temperature below 0EC and 0 if temperature 0EC or higher.	10066
<b>6-HOUR MINIMUM TEMPERATURE:</b> 2s T T T ; tenths of degree Celsius; 00, 06, 12, 18 UTC; s : 1 if temperature below 0EC and 0 if temperature 0EC or higher.	1012
<b>24-HOUR MAXIMUM AND MINIMUM TEMPERATURE:</b> 4s T T T s T T T ; tenths of degree Celsius; reported at midnight local standard time; 1 if temperature below 0EC and 0 if temperature 0EC or higher, e.g., 400461006.	
<b>PRESSURE TENDENCY:</b> 5appp; the character (a) and change in pressure (ppp); tenths of hPa) the past 3 hours.	58033
<b>SENSOR STATUS INDICATORS:</b> RVRNO: RVR missing; PWINO: precipitation identifier information not available; PNO: precipitation amount not available;	
FZRANO: freezing rain information not available; TSNO: thunderstorm information not available; VISNO [LOC]: visibility at secondary location not available, e.g., VISNO RWY06; CHINO [LOC]: (cloud-height-indicator) sky condition at secondary location not available, e.g., CHINO RWY06.	TSNO
<b>MAINTENANCE CHECK INDICATOR:</b> Maintenance needed on the system.	\$
If an element or phenomena does not occur, is missing, or cannot be observed, the corresponding group and space are omitted (body and/or remarks) from that particular report, except for Sea-Level Pressure (SLPppp). SLPNO shall be reported in a METAR when the SLP is not available.	

## **APPENDIX D**

# **ASOS Voice**

## **Vocabulary**

# ASOS VOICE VOCABULARY

(Revised 8/18/97)

## a

airport  
all quadrants  
altimeter  
and  
at  
automated weather  
  observation  
automated weather  
  observing system

## b

between  
blowing snow  
blowing snow in vicinity  
blowing dust  
blowing dust in vicinity  
blowing sand  
blowing sand in vicinity  
broken

## C

calm  
ceiling  
celsius  
center  
center field  
clear

## d

density altitude  
dew point  
distant  
drizzle  
dust storm  
dust storm in vicinity

## e

east  
eight  
estimated

## f

feet  
few  
five  
fog  
fog in vicinity  
four  
freezing drizzle  
freezing fog  
freezing rain  
funnel cloud

## h

hail  
haze  
heavy drizzle  
heavy dust storm  
heavy freezing drizzle  
heavy freezing rain  
heavy ice pellets  
heavy rain  
heavy sand storm  
heavy snow  
hundred

## i

ice pellets  
information not available

## j, k, l

left  
less than  
lightning  
light drizzle  
light freezing drizzle  
light freezing rain  
light ice pellets  
light rain  
light snow

## m

minus  
missing  
mist

## n

niner  
north  
northeast  
northwest

## o

one  
one eighth  
one half  
one and one half  
one and one quarter  
one and three quarters  
one quarter  
one sixteenth  
overcast

## p

patches of fog  
peak gusts  
peak gusts in squalls  
present weather

## q, r

rain  
remarks  
right  
runway

## s

sand  
sand storm  
sand storm in vicinity  
scattered  
seven

shallow fog  
six  
sky condition  
smoke  
snow  
south  
southeast  
southwest  
special  
squalls  
surface visibility

## t

temperature  
temporarily inoperative  
test  
thousand  
three  
three and one half  
three quarters  
through  
thunderstorm  
tornado  
tower visibility  
two  
two and one half

## u, v

variable  
vertical visibility  
vicinity  
visibility  
volcanic ash

## w

waterspout  
west  
wide spread dust  
wind

## x, y, z

zero  
zulu

## **APPENDIX E**

# **Acronyms**

# ACRONYMS

ACF	Area Control Facility	NLDN	National Lightning Detection Network
ACU	Acquisition Control Unit	NWS	National Weather Service
ADAS	AWOS Data Acquisition System	NWSTG	NWS Telecommunication Gateway
AGL	Above Ground Level	OFCM	Office of the Federal Coordinator for Meteorological Services and Supporting Research
ALS	ASOS Lightning Sensor	OID	Operator Interface Device
ALDARS	Automated Lightning Detection and Reporting System	OMO	One-Minute Observation
AMOS	Automated Meteorological Observing System	OTV	Obstruction to Vision
AOMC	ASOS Operations and Monitoring Center	OVC	Overcast
ARP	Airport Reference Point	PACE	PC-Based Asynchronous Communications Extension (for ASOS)
ARTCC	Air Route Traffic Control Center	PI	Precipitation Identification
ASOS	Automated Surface Observing System	PLCD	Preliminary Local Climatic Data
ATC	Air Traffic Controller	PV	Prevailing Visibility
ATCT	Air Traffic Control Tower	PWINO	Precipitation Identifier Information Not Available
AUTOB	Automated Observation	RAMOS	Remote Automated Meteorological Observing System
AWIPS	Advanced Weather Interactive Processing System for the 1990s	RBC	Rotating Beam Ceilometer
AWOS	Automated Weather Observing System	RMSE	Root Mean Square Error
AV-AWOS	Aviation Automated Weather Observing System	RS	Record Special SAO
BKN	Broken	RTA	Remote Terminal to AFOS
CF	Center Field	RTD	Resistive Temperature Device
CHI	Cloud Height Indicator	RWP	Real-Time Weather Processor
CLR	Clear	SA	Scheduled Record Hourly SAO
CONUS	Continental United States	SAO	Surface Aviation Observation
DCP	Data Collection Package	SEV	Sensor Equivalent Visibility
DD	Dew Point Depression	SCT	Scattered
DOD	Department of Defense	SHEF	Standard Hydrometeorological Exchange Format
FAA	Federal Aviation Administration	SID	Station Identifier
FIBI	Filed But Impractical to Transmit	SMCC	Systems Monitoring and Coordination Center
FMH-1	Federal Meteorological Handbook # 1	SOC	Systems Operations Center
GAI	Global Atmospheric Inc.	SOD	Systems Operations Division
GFE	Government Furnished Equipment	SP	Special SAO
GOES	Geostationary Operational Environmental Satellite	SRRS	Service Records Retention System
Hg	Mercury	SUM	Software User's Manual
hPc	Hectopascals	TDZ	Touchdown Zone
HTB	Heated Tipping Bucket (precipitation gauge)	TNO	Thunderstorm Information Not Available
Hz	Hertz	USP	Urgent Special SAO
IOC	Initial Operating Capability	UTC	Universal Coordinated Time
IR	Infrared	VDU	Video Display Unit
IREM	InfraRed Emitting Diode	WMSC	Weather Message Switching Center
kHz	Kilohertz	WMSCR	Weather Message Switching Center Replacement
LED	Light Emitting Diode	WSR-88D	Weather Surveillance Radar 1988, Doppler
LEDWI	Light Emitting Diode Weather Identifier	Z	Zulu Time
LST	Local Standard Time	ZR	Freezing Rain
MWP	Meteorological Weather Processor	ZRNO	Freezing Rain Information Not Available
NADIN	National Airspace Data Interchange Network		
NAS	National Airspace System		
NCDC	National Climatic Data Center	\$	Maintenance Check Indicator
NGRVR	New Generation Runway Visual Range		