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Key to METAR Surface Weather Observations

Unedited Surface Weather Observations (METAR/SPEC)							Latitude 41° 59'	Longitude -87° 55'	Station Elev. (ft) 658	Time Conversion	Day 02	Mon. 01	Year 1999	SID ORD
		WIND				VISIBILITY								
TYPE	TIME (LST)	DIR TRUE	SPD KTS	GUST KTS	VARIABILITY TRUE	SURFACE STATUTE MILES	RUNWAY VISUAL RANGE (FT)	PRESENT WEATHER	SKY CONDITIONS			TEMP °C	DEW POINT °C	ALTI-METER INS.
1	2	3	4	5	6	7	8	9	10			11	12	13
S	0049	100	21			3/4	R14R/4000VP6000FT	-SN BR	BKN005 OVC015			-08	-09	A3024

Station (Type, Name, State)
ASOS CHICAGO, IL
REMARKS AND SUPPLEMENTAL CODED DATA
14
PRESFR P0000 (CG)

Column Number			
1	TYPE	Type of Observation	**S** - routine (standard) hourly observation. Non-standard time observation will also show type **S** on these forms, although they are not.
2	TIME(LST)	Time of Observation	reported as "Local Standard Time"
3	DIR TRUE	Wind Direction	direction from which wind blows. Reported to nearest degree, 0 to 359, from true north. Based on a 2-minute average just prior to observation time.
4	SPD KTS	Wind Speed	reported in knots. Based on a 2-minute average just prior to observation time.
5	GUST KTS	Wind Gust	maximum 5-second peak wind speed measured in the last ten minutes.
6	VARIABILITY TRUE	Variable Wind Direction Indicator	determined if during the 2-minute evaluation period it varies by 60 degrees or more regardless of wind speed.
7	SURFACE STATUTE MILES	Prevailing Surface Visibility	reported in statute miles & fractions. Max reported visibiltiy is 10 statute miles. Derived by sensors. Reported as variable is prevailing visibility varies by 1/2 mile or more and the average visibility is less than 3 miles.
8	RUNWAY VISUAL RANGE (FT)	Secondary Visibility Measurements	reported when surface visibility 1 mile or less. Runway Visual Range: R; 2-digit runway designator **L**eft, **C**enter, or **R**ight as needed; **"/index.html"**; **M**inus or **P**lus, 4-digit value; 4-digit value **V**arialbility 4-digit value and tendency **D**own, **U**p or No change)
9	PRESENT WEATHER	See Table of Significant Weather and Obscurations Reported by ASOS (below)	
10	SKY CONDITION	Cloud amount, height and type	**SK**y **C**lear 0/8, **FEW**>0/8-2/8, **SC**a**T**tered 3/8-4/8, **B**ro**K**e**N** 5/8-7/8, **OV**er**C**ast 8/8; 3-digit height in hundreds of ft; **T**owering **CU**mulus or **C**umulonim**B**us in **METAR**. **V**ertical **V**isibility for obscured sky and height "VV004". More than 1 layer may be reported. ASOS stations report only, **CL**ea**R** for "clear below 12,000 feet"
11	TEMP	Dry Bulb Temperature	reported in whole degrees Celsius
12	DEW POINT	Dew Point Temperature	reported in whole degrees Celsius
13	ALTIMETER (INS.)	Altimeter Setting in	reported to nearest hundreth of an inch. Altimeter setting is the computed pressure value to which an aircraft altimeter scale is set so that it will indicate the altitude above mean sea level of an aircraft on

		Inches of Mercury	the ground at the location for which the value was determined.
14	REMARKS AND SUPP'L CODED DATA	See table xxx below for details	

Table of Significant Weather and Obscurations Reported under "Present Weather" Column

QUALIFIER: Intensity or Proximity			
"-" Light	**"no sign"** Moderate	**"+"** Heavy	
VC Vicinity: but not at aerodrome. Between 5 and 10SM of the point(s) of observation			
Descriptor			
MI Shallow	BC Patches	PR Partial	TS Thunderstorm
BL Blowing	SH Showers	DR Drifting	FZ Freezing
WEATHER PHENOMENA			
Precipitation			
DZ Drizzle	RA Rain	SN Snow	SG Snow grains
IC Ice crystals	PL Ice pellets	GR Hail	GS Small hail/snow pellets
UP Unknown precipitation in automated observations			
Obscuration			
BR Mist(>= 5/8SM)	FG Fog(< 5/8SM)	FU Smoke	VA Volcanic Ash
SA Sand	HZ Haze	PY Spray	DU Widespread dust
Other			
SQ Squall	SS Sandstorm	DS Duststorm	PO Well developed dust/sand whirls
FC Funnel cloud	+FC tornado/waterspout		

Table of Remarks and Supplemental Coded Data

The following groups are reported in the **Remarks** section of the SWO reports. Remarks include clarifying or augmenting data concerning elements in the body of the SWO reports, additive coded data, and maintenance data. 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. The left most column are examples.

TORNADO, FUNNEL CLOUD or WATERSPOUT	TORNADIC ACTIVITY	Augmented; report should include TORNADO, FUNNEL CLOUD or WATERSPOUT, time (after the hour) of beginning/end, location, movement; e.g.,TORNADO B25 N MOVE E
AO2	TYPE OF AUTOMATED STATION	AO1; automated station without a precipitation descriminator. AO2; automated station with precipitation descriminator.
PK WND 20032/25	PEAK WIND	PK WND dddff(F)/(hh)mm; direction in tens of degrees, speed in whole knots, time (reported in UTC) in minutes after the hour. Only minutes after the hour is included if the hour can be inferred from the report.
WSHFT 1715	WIND SHIFT,/FONT>	WSHFT followed by hours and minutes of occurrence. The term FROPA may be entered after the time if it is reasonably certain that the wind shift was a result of a frontal passage.
TWR VIS 2	TOWER OR SURFACE VISIBILITY	TWR VIS vvvvv: visibility reported by tower personnel,e.g., TWR VIS 2; SFC VIS vvvvv: visibility reported by ASOS or observer.
VIS 3/4V1 1/2	VARIABLE PREVAILING VISIBILITY	VIS $v_n v_n v_n v_n v_n$ **V** $v_x v_x v_x v_x v_x v_x$; reported if prevailing visibility is <3 statute miles and variable.
VIS 3/4 RWY11	VISIBILITY AT SECOND	VIS vvvvv(LOC); reported if different than the reported prevailing visibility in the body of the report.

	LOCATION	
FRQ LTG NE	LIGHTNING	(FREQUENCY) LTG (LOCATION); when detected the frequency and location is reported, e.g., FRQ LTG NE, meaning frequent lightning to northeast of station. (See code details in table below)
RAB07	BEGINNING AND ENDING TIME OF PRECIPITATION AND THUNDERSTORMS	w'w'B(hh)mmE(hh)mm; TSB(hh)mmE(hh)mm, where w'w' is the present weather precipitation contraction, B indicates began, E indicates ended; (hh)indicates the hour (reported in UTC) the phenomena began or ended and can be omitted if the hour can be inferred from the report, mm indicates the minutes after the hour the phenomenon began or ended.
	VIRGA	Augmented to report by human observer; indicates precipitation not reaching the ground is observed.
CIG 013V017	VARIABLE CEILING	CIG $h_nh_nh_nVh_xh_xh_x$; reported if the ceiling in the body of the report is <3000 feet and variable.
CIG 017 RWY11	CEILING HEIGHT AT SECOND LOCATION	CIG hhh[LOC]; Ceiling height reported if secondary ceilometer site ceiling value is different than the ceiling height in the body of the report.
PRESFR	PRESSURE RISING OR FALLING RAPIDLY	PRESRR or PRESFR; pressure rising or falling rapidly at time of observation.
SLP125	SEA LEVEL PRESSURE	SLPppp; sea level pressure reported for ppp in tens, units, and tenths of hPa.
P0003	HOURLY PRECIPITATION AMOUNT	Prrrr; in tens, units, tenths and hundredths of an inch since last regular hourly METAR. A trace is reported as P0000.
60009	3- AND 6-HOUR PRECIPITATION AMOUNT	6RRRR; precipitation amount, including water equivalent, to nearest 0.01 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.
70015	24-HOUR PRECIPITATION AMOUNT	$7R_{24}R_{24}R_{24}R_{24}$; precipitation amount to nearest 0.01 inches for past 24 hours reported in 12 UTC observation; e.g., 70015 indicates 0.15 inches of precipitation for past 24 hours.
T00640036	HOURLY TEMPERATURE AND DEW POINT	$Ts_nT_aT_aT_as_nT'_aT'_aT'_a$; reported to nearest tenth of ^oC; s_n: 1 if temperature or dew point below 0^oC and 0 if temperature/dew point 0^oC or higher.
10066	6-HOUR MAXIMUM TEMPERATURE	$1s_nT_xT_xT_x$; maximum temperature for past 6 hours reported to nearest tenth of degree Celsius; reported on 00, 06, 12, 18 UTC reports; s_n = 1 if temperature below 0^oC and 0 if temperature 0^oC or higher.
21012	6-HOUR MINIMUM TEMPERATURE	$2s_nT_nT_nT_n$; minimum temperature for past 6 hours reported to nearest tenth of degree Celsius; reported on 00, 06, 12, 18 UTC reports; s_n = 1 if temperature below 0^oC and 0 if temperature 0^oC or higher.
400461006	24-HOUR MAXIMUM AND MINIMUM TEMPERATURE	$4s_nT_xT_xT_xs_nT_nT_nT_n$; maximum temperature for past 6 hours reported to nearest tenth of degree Celsius; reported on midnight local standard time reports; s_n = 1 if temperature below 0^oC and 0 if temperature 0^oC or higher; e.g., 400461006 indicates a 24-hour maximum temperature of 4.6^oC and a 24-hour minimum temperature of -0.6^oC.
58033	PRESSURE TENDENCY	5appp; the character (a) and amount of change in pressure (ppp) in tenths of hPa for the past 3 hours. (See code details in table below)
TSNO	SENSOR STATUS INDICATORS	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 (may indicate augmenting weather observer not logged on); VISNO [LOC} visibility at second location not available, e.g. VISNO RWY06; CHINO [LOC}: (cloud-height- indicator) sky condition at secondary location not available, e.g., CHINO RWY06.
$	MAINTENANCE CHECK INDICATOR	Maintenance is needed on the system.

Table of Remarks Referring to Type and Frequency of Lightning

Type of Lightning		

Type	Contraction	Definition
Cloud-ground	CG	Lightning occurring between cloud and ground.
In-cloud	IC	Lightning which takes place within the cloud.
Cloud-cloud	CC	Streaks of lightning reaching from one cloud to another.
Cloud-air	CA	Streaks of lightning which pass from a cloud to the air, but do not strike the ground.
Frequency of Lightning		
Frequency	**Contraction**	**Definition**
Occasional	OCNL	Less than 1 flash per minute.
Frequent	FRQ	About 1 to 6 flashes per minute.
Continuous	CONS	More than 6 flashes per minute.

Table of Remarks Referring to Characteristics of Pressure Tendency

Primary Requirement	Description	Code Figure
Atmospheric pressure now higher than 3 hours ago.	Increasing, then decreasing	0
	Increasing, then then steady, or increasing then increasing more slowly.	1
	Increasing steadily or unsteadily.	2
	Decreasing or steady, then increasing; or increasing, then increasing more rapidly.	3
Atmospheric pressure now same as 3 hours ago.	Increasing, then decreasing	0
	Steady	4
	Decreasing, then increasing.	5
Atmospheric pressure now lower than 3 hours ago.	Decreasing, then increasing.	5
	Decreasing then steady; or decreasing then decreasing more slowly.	6
	Decreasing steadily or unsteadily.	7
	Steady or increasing, then decreasing; or decreasing then decreasing moe rapidly.	8

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National Climatic Data Center
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This document is provided to help users decode airport observations archived at the National Climatic Data Center. Any updates or amendments to the METAR reporting practices can be viewed at the National Weather Service Office of Systems Operations.

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http://www.ncdc.noaa.gov/ol/climate/conversion/swometardecoder.html
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