U.S. METAR/SPECI CODE FORMAT WITH REMARKS

METAR/SPECI_ CCCC_ YYGGggZ_AUTO_COR_ddfff(f)G$f_mf_m(f_m)$KT_$d_nd_nd_nVd_xd_xd_x$_VVVVVSM_[$RD_RD_R/V_RV_RV_RV_R$FT or $RD_RD_R/V_nV_nV_nV_nVV_xV_xV_xV_x$FT]_w'w'_[$N_sN_sN_sh_sh_sh_s$ or $VVh_sh_sh_s$ or SKC/CLR]_T'T'/T'dT'd_A$P_HP_HP_HP_H$_RMK_(Automated, Manual, Plain Language)_(Additive and Automated Maintenance Data)

Body of Report: PARAMETER	DESCRIPTION
Type of Report (METAR/SPECI)	METAR is the routine (scheduled) report. SPECI is the non-routine (unscheduled) weather report.
Station Identifier (CCCC)	ICAO station identifier. Consists of four alphabetic characters, e.g., KABC.
Date/Time (YYGGggZ)	Day of the month, followed by the actual time of the report or when the criteria for a SPECI is met or noted. Group ends with Z to indicate use of UTC. For example, 251456Z.
Report Modifier (AUTO or COR))	AUTO indicates a fully automated report. No human intervention. COR indicates a correction to a previously disseminated report.
Wind (ddfff(f)G$f_mf_m(f_m)$KT) ($d_nd_nd_nVd_xd_xd_x$)	True wind direction in tens of degrees using three digits. Speed is reported in whole knots (two or three digits). Gusts (G) are appended to the speed if required. Group ends with KT to indicate knots. For example, 23018G26KT. If wind direction varies by 60° or more and speed is > 6 knots a variable wind group is also reported, e.g., 180V250. Direction may be reported VRB (variable) if speed is ≤ 6 knots, e.g., VRB05KT. Calm winds are reported 00000KT.
Visibility (VVVVVSM)	Surface visibility reported in statute miles. A space divides whole miles and fractions. Group ends with SM to indicate statute miles. For example, 1 1/2SM. Auto only: M prefixed to value < 1/4 mile, e.g., M1/4SM.
Runway Visual Range ($RD_RD_R/V_RV_RV_RV_R$FT or $RD_RD_R/V_nV_nV_nV_nVV_xV_xV_xV_x$FT)	10-Minute RVR value: Reported in hundreds of feet if visibility is ≤ one statute mile or RVR is ≤ 6000 feet. Group ends with FT to indicate feet. For example, R06L/2000FT. The RVR value is prefixed with either M or P to indicate the value is lower or higher than the RVR reportable values, e.g., R06L/P6000FT. If the RVR is variable during the 10-minute evaluation period, the variability is reported, e.g., R06L/2000V4000FT.
Present Weather (w'w')	Present weather (other than obscurations) occurring at the station are reported in the body of the METAR/SPECI. Obscurations are reported if visibility < 7 miles. VA may be reported with any visibility. BCFG and PRFG may also be reported if visibility ≥ 7SM. Some present weather and qualifiers may be reported if In-the-Vicinity (not at point-of-observation), e.g., TS, FG, SH, PO, BLDU, BLSA, BLSN, SS and DS. Weather is reported in order of decreasing dominance. Maximum of three groups reported (precipitation included in one group; separate groups for other weather). Automated stations can only report RA, SN, UP, FG, BR, FZFG, HZ, and SQ without augmentation. See table on reverse for more information on qualifiers and weather phenomena.
Sky Condition ($N_sN_sN_sh_sh_sh_s$ or $VVh_sh_sh_s$ or SKC/CLR)	Automated stations truncate to three layers up to 12000 feet; if no layers are detected CLR is reported. At manual stations up to six layers can be reported; if no layers observed SKC is reported. Each layer contains the amount (FEW, SCT, BKN, OVC) immediately followed by the height using three digits, e.g., FEW015 BKN030. Any layer containing CB or TCU (manual only) the contraction is appended to the layer height, e.g., FEW015TCU. All layers are considered opaque. Vertical visibility (VV) is reported in hundreds of feet for an indefinite ceiling, e.g., VV002. Surface obscuration (manual only) reported using amount (FEW, SCT, BKN), followed by "000," e.g., SCT000; remark required.
Temperature/Dew Point (T'T'/$T'_dT'_d$)	Temperature and dew point are reported to the nearest whole degree Celsius using two digits, e.g., 17/13. Sub-zero values are prefixed with an M, e.g., 03/M02.
Altimeter (A$P_HP_HP_HP_H$)	Altimeter is prefixed with an A indicating altimeter in inches of mercury. Reported using four digits; tens, units, tenths, and hundredths of inches of mercury, e.g., A2990.
Remarks (RMK) -- Divided into two categories: 1. Automated, Manual (Augmented), Plain Language (Manual Only), 2. Additive and Automated Maintenance Data. The following describes the order in which remarks are reported.	
Automated, Manual, Plain Language	Volcanic Eruption, Tornadic Activity (B/E_(hh)mm_LOC/DIR_(MOV), Type of Automated Station (AO1, AO2), Peak Wind (PK_WND_ddfff(f)/(hh)mm), Wind Shift (WSHFT_(hh)mm_FROPA), Tower Visibility (TWR_VIS_vvvvv), Surface Visibility (SFC_VIS_vvvvv), Variable Prevailing Visibility ($VIS_v_nv_nv_nv_nVv_xv_xv_xv_x$), Sector Visibility (VIS_[DIR]_vvvvv), Visibility at 2nd Location (VIS_vvvvv_[LOC], Lightning ([FREQ]_LTG[type]_[LOC]), Begin/End Pcpn (w'w'B(hh)mmE(hh)mm), Begin/End Thunderstorm (TSB(hh)mmE(hh)mm), Thunderstorm Location (TS_LOC_(MOV_DIR)), Hailstone Size (GR_[size]), Virga (VIRGA_(DIR)), Variable Ceiling Height (CIG_$h_nh_nh_nVh_xh_xh_x$), Obscurations (w'w'_[$N_sN_sN_s$]($h_sh_sh_s$), Variable Sky Condition ($N_sN_sN_s(h_sh_sh_s)_V_N_sN_sN_s$), Significant Cloud Types, Ceiling Height at 2nd Location (CIG_hhh_[LOC], Pressure Rising/Falling Rapidly (PRESRR, PRESFR), Sea-Level Pressure (SLPppp or SLPNO), Aircraft Mishap (ACFT MSHP), No SPECI ReportsTaken (NOSPECI), Snow Increasing Rapidly (SNINCR_[inches-hr/inches on ground]), Other Significant Information (agency specific, e.g., LAST)
Additive and Automated Maintenance Data	Hourly Precipitation Amount (Prrrr), 3- and 6-Hour Precipitation Amount (6RRRR), 24-Hour Precipitation Amount ($7R_{24}R_{24}R_{24}R_{24}$), Snow Depth on the Ground (4/sss), Water Equivalent of Snow on Ground (933RRR), Cloud Types ($8/C_LC_MC_H$), Duration of Sunshine (98mmm), Hourly Temperature and Dew point: 0.1°C ($Ts_nT'T'T's_nT'_dT'_dT'_d$), 6-Hour Maximum Temperature: 0.1°C ($1s_nT_xT_xT_x$), 6-Hour Minimum Temperature: 0.1°C ($2s_nT_nT_nT_n$), 24-Hour Maximum/Minimum Temperature: 0.1°C ($4s_nT_xT_xT_xs_nT_nT_nT_n$), 3-Hour Pressure Tendency (5appp), Sensor Status Indicators: RVRNO, PWINO, PNO, FZRANO, TSNO, VISNO_LOC, CHINO_LOC, Maintenance Check Indicator: $

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), and 3-, 6-, and 24-Hour precipitation groups. At designated stations, SLPNO shall be reported in a METAR when the SLP is not available.

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
National Weather Service - Observing Systems Branch
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NOTATIONS FOR REPORTING WEATHER PHENOMENA

QUALIFIER

Intensity or Proximity

-	Light	no sign	Moderate	+	Heavy
VC	In the Vicinity				

Descriptor

MI	Shallow	**PR**	Partial	**BC**	Patches	**DR**	Low Drifting
BL	Blowing	**SH**	Shower(s)	**TS**	Thunderstorm	**FZ**	Freezing

WEATHER PHENOMENA

Precipitation

DZ	Drizzle	**RA**	Rain	**SN**	Snow	**SG**	Snow Grains
IC	Ice Crystals	**PE**	Ice Pellets	**GR**	Hail	**GS**	Small Hail/Snow Pellets
UP	Unknown Precipitation (auto; no intensity)						

Obscuration

BR	Mist	**FG**	Fog	**FU**	Smoke	**VA**	Volcanic Ash
DU	Widespread Dust	**SA**	Sand	**HZ**	Haze	**PY**	Spray

Other

PO	Well Developed Dust/Sand Whirls	**SQ**	Squalls	**FC**	Funnel Cloud(s) (Tornado, or Waterspout)	**SS**	Sandstorm
DS	Duststorm						

REPORTABLE CONTRACTIONS FOR SKY COVER

Reportable Contraction	Meaning	Summation Amount of Layer
VV	Vertical Visibility	8/8
SKC or CLR	Clear	0
FEW	Few	<1/8 - 2/8
SCT	Scattered	3/8 - 4/8
BKN	Broken	5/8 - 7/8
OVC	Overcast	8/8

SKC is reported at manual stations when no clouds are observed.
CLR is reported at automated stations when no clouds are detected at or below 12000 feet.

REPORTING OF LAYERS AUTOMATED STATIONS

Priority	Layer Description
1	lowest few layer
2	lowest broken layer
3	overcast layer
4	lowest scattered layer
5	second lowest scattered layer
6	second lowest broken layer
7	highest broken layer
8	highest scattered layer

REPORTABLE VISIBILITY VALUES -- Automated	REPORTABLE VISIBILITY VALUES -- Manual
M1/4, 1/4, 1/2, 3/4, 1, 1 1/4, 1 1/2, 1 3/4, 2, 2 1/2, 3, 4, 5, 6, 7, 8, 9, 10	0, 1/16, 1/8, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4, 1 3/8, 1 7/8, 2, 2 1/4, 2 1/2, 2 3/4, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40, etc., in 5 mile increments.

FORMAT AND ORDER OF CODED REMARKS -- Times of Transmission	00	03	06	09	12	15	18	21
Synoptic Cloud Types, $8/C_LC_MC_H$ (manual)	X	X	X	X	X	X	X	X
Snow Increasing Rapidly, SNINCR [inches/hr]/[inches on ground] (manual)	Hourly							
Depth of Snow on the Ground, 4/sss (manual)	X[1]		X[2]		X[1]		X[2]	
Water Equivalent of Snow on the Ground, 933RRR (manual)							X	
Duration of Sunshine, 98mmm (manual)	0800 UTC							
Hourly Precipitation Amount, Prrrr (automated stations only)	Hourly							
3- and 6-Hour Precipitation Amount, 6RRRR	X[3]	X[4]	X[3]	X[4]	X[3]	X[4]	X[3]	X[4]
24-Hour Precipitation Amount, $7R_{24}R_{24}R_{24}R_{24}$					X			
Hourly Temperature and Dew Point, $Ts_nT_aT_aT_as_nT'_aT'_aT'_a$	Hourly							
6-Hour Maximum Temperature, $1s_nT_xT_xT_x$	X		X		X		X	
6-Hour Minimum Temperature, $2s_nT_nT_nT_n$	X		X		X		X	
24-Hour Maximum/Minimum Temperature, $4s_nT_xT_xT_xs_nT_nT_nT_n$	Midnight Local Standard Time (LST)							
Pressure Tendency, 5appp	X	X	X	X	X	X	X	X

1 - included whenever there is more than a trace of snow on the ground
2 - included whenever there is more than a trace of snow on the ground and more than a trace of precipitation occurred within the past 6 hours
3 - 6-hour precipitation amount
4 - 3-hour precipitation amount