

## AVIATION ROUTINE WEATHER REPORTS (METAR)

Weather observations made hourly at selected airports are coded to international standards. Reports may be prepared manually or by automated equipment. Each METAR report contains the following sequence of elements which are explained below:

METAR KPIT 091955Z COR 22015G25KT 3/4SM R28/2600FT +TSRA OVC010CB 18/16 A2992 RMK RAB50

1      2      3      4      5      6      7      8      9      10    11    12

Figure 3-2

1. Type of Report (METAR - routine hourly report or SPECI - special report).
2. Station Designator (K indicates contiguous U.S.).
3. Date (2 digits) and Time (4 digits, UTC) of Report.
4. COR indicates corrected report; AUTO indicates automated observation; omitted if manual report.
5. Wind (3 digits true direction, 2-3 digits for speed. G indicates gust followed by 2-3 digit speed, KT indicates knots. Variable direction indicated by VRB. Calm indicated by 00000KT. If wind direction varies by 60° or more, range of direction appended, e.g. 180V260).
6. Prevailing Visibility (SM indicates statute miles).
7. Runway Visual Range (if reported, Runway designator/4 digit value in feet).
8. Weather and Obstructions to Visibility (See Figure 3-3).
9. Sky Condition (Cloud amount, height, and type. See Fig 3-4).
10. Temperature and Dew Point (In degrees Celsius. M indicates negative value).
11. Altimeter Setting (Inches of mercury ).
12. RMK indicates remarks . (Added when observer deems necessary ).

WEATHER AND OBSTRUCTIONS TO VISIBILITY			
QUALIFIER			
Intensity (Applies only to precipitation, not descriptor)			
- Light	(None)	Moderate	+ Heavy
Descriptor			
MI Shallow	BC Patches	PR Partial	TS Thunderstorm
BL Blowing	SH Showers	DR Drifting	FZ Freezing
Proximity			
VC Vicinity, but not at airport (between 5 and 10SM from airport).			
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 in automated observations			
Obscuration			
BR Mist (Vis $\geq$ 5/8SM)	FG Fog (Vis $<$ 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		

Figure 3-3

SKY CONDITION	
SKC	- Sky Clear (CLR used if AUTO report to indicate clear below 12,000 feet)
FEW	- Few (<1/8 to 2/8 coverage)
SCT	- Scattered (3/8 to 4/8 coverage)
BKN*	- Broken (5/8 to 7/8 coverage)
OVC*	- Overcast (8/8 coverage)
VV*	- Vertical visibility in 100's of feet (clouds obscured)
Cloud bases reported by three digits in hundreds of feet AGL.	
Towering cumulus (TCU) or Cumulonimbus (CB) are reported if present.	
* Constitutes a ceiling	

Figure 3-4

The METAR shown in Figure 3-2 is decoded as follows:

<b>METAR</b>	Routine hourly report
<b>KPIT</b>	Pittsburgh
<b>091955Z</b>	9th day of month, 1955 UTC
<b>COR</b>	Corrected observation
<b>22015G25KT</b>	Wind from 220° true direction at 15 knots, maximum gusts to 25 knots
<b>3/4SM</b>	Visibility 3/4 statute mile
<b>R28/2600FT</b>	Runway 28 visibility range 2,600 feet
<b>+TSRA</b>	Thunderstorm, heavy rain
<b>OVC010CB</b>	Overcast, cumulonimbus clouds, bases at 1,000 feet AGL
<b>18/16</b>	Temperature 18 °C, dew point 16 °C
<b>A2992</b>	Altimeter setting 29.92 "Hg
<b>RMK RAB50</b>	Remarks: Rain began at 1950Z

Examples of REMARKS:

RE	Recent weather events
RAB20	Rain began at 20 minutes past the hour
SNE45	Snow ended at 45 minutes past the hour
WS TKO RW04	Wind shear reported during takeoff from runway 4
WS LDG RW27	Wind shear reported during landing on runway 27
PK WND 22030/18	Peak wind from 220° at 30 knots. Observed at 18 minutes past the hour
SLP045	Sea level pressure 1004.5 hPa
T01820159	Temperature 18.2 °C, dew point 15.9 °C
\$	Automated equipment in need of maintenance

	METAR/TAF ABBREVIATIONS		RY/RWY Runway (in WS reports)	FG	Fog (Visibility less than 5/8SM)
		SCT	Scattered (3/8 to 4/8 cloud coverage)	FU	Smoke
A O 1	Automated Observation without precipitation discriminator (rain/snow)	SKC	Sky Clear	GR	Hail
		SLP	Sea Level Pressure (in hPa)	GS	Small Hail/Snow Pellets
A O 2	Automated Observation with precipitation discriminator (rain/snow)	SM	Statute mile(s)	HZ	Haze
		SPECI	Special Report	IC	Ice Crystals
A M D	Amended Forecast (TAF)	TEMPO	Temporary changes expected (between 2 digit beginning hour and 2 digit ending hour)	PE	Ice Pellets
B E C M G	Becoming (expected between 2 digit beginning hour and 2 digit ending hour)	TKOF	Takeoff	PO	Dust/Sand Whirls
		V	Varies (wind direction or RVR)	PY	Spray
B K N	Broken (5/8 to 7/8 cloud coverage)	VC	Vicinity (5SM or more, 10SM or less from airport)	RA	Rain
		VRB	Variable wind direction when speed is 6 knots or less	SA	Sand
CLR	Clear at or below 12,000 feet (AWOS/ASOS report only)	VV	Vertical Visibility (Indefinite ceiling)	SG	Snow Grains
		WS	Wind Shear (in TAF, low level and not associated with convective activity)	SN	Snow
COR	Correction to observation			SQ	Squall
F E W	Few (<1/8 to 2/8 cloud coverage)			SS	Sandstorm
				UP	Unknown Precipitation (automated observations)
F M	From (4 digit beginning time in hours and minutes)			VA	Volcanic Ash
					CLOUD TYPES
LDG	Landing			CB	Cumulonimbus
M	In temperature field mean minus (below zero)			CBMAM	Cumulonimbus Mammatus
				TCU	Towering Cumulus
M	In RVR listing indicates visibility less than lowest reportable sensor value (e.g. M600FT = less than 600 feet)			ACC	Alto cumulus Castellanus
				SCSL	Stratocumulus Standing Lenticular
N O	Not available (e.g. SPLNO, RVRNO)			ACSL	Alto cumulus Standing Lenticular
				CCSL	Cirrocumulus Standing Lenticular
NSW	No Significant Weather				ASOS/AWOS CODES
OVC	Overcast (8/8 cloud coverage)				
		BC	Patches	RVRNO	RVR missing
P	In RVR indicates visibility greater than highest reportable sensor value (e.g. P6000FT = greater than 6000 feet)	BL	Blowing	PWINO	Precipitation identifier information not available
		DR	Low Drifting	PNO	Precipitation amount not available
		FZ	Freezing	FZRANO	Freezing rain information not available
P 6 SM	Visibility greater than 6 SM (TAF only)	MI	Shallow	TSNNO	Thunderstorm information not available
		PR	Partial	VISNO [loc]	Visibility at secondary location [loc] not available
PROB 30	Probability 30 to 39 percent (precipitation forecasts)	SH	Showers	CHINO [loc]	(cloud height indicator) sky condition at secondary location [loc] not available
		TS	Thunderstorm	\$	Maintenance needed on the system
PROB 40	Probability 40 to 49 percent (precipitation forecasts)				
R	Runway (in RVR reports)				
RE	Recent weather events (in remarks)				
R M K	Remark				