Federal Aviation
Administration

Initial En Route Qualification Training

Handout 00
METAR Handout

Course 50148001

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Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR) (Front)

TAF	KPIT 091730Z 0918/1024 15005KT 5SM HZ FEW020 WS010/31022KT FM091930 30015G25KT 3SM SHRA OVC015 TEMPO 0920/0922 1/2SM +TSRA OVC008CB FM100100 27008KT 5SM SHRA BKN020 OVC040 PROB30 1004/1007 1SM -RA BR FM101015 18005KT 6SM -SHRA OVC020 BECMG 1013/1015 P6SM NSW SKC
NOTE: Users are cautioned to confirm ***DATE*** and ***TIME*** of the TAF. For example FM**100000** is 0000Z on the **10th**. Do not confuse with ***1000Z!***	
METAR KPIT 091955Z COR 22015G25KT 3/4SM R28L/2600FT TSRA OVC010CB 18/16 A2992 RMK SLP045 T01820159	

Forecast	Explanation	Report
TAF	Message type: TAF-routine or TAF AMD-amended forecast, METAR-hourly, SPECI-special or TESTM-non-commissioned ASOS report	**METAR**
KPIT	ICAO location indicator	**KPIT**
091730Z	Issuance time: ALL times in UTC "Z", 2-digit date, 4-digit time	**091955Z**
0918/1024	Valid period, either 24 hours or 30 hours. The first two digits of EACH four digit number indicate the date of the valid period, the final two digits indicate the time (valid from 18Z on the 9th to 24Z on the 10th).	
	In U.S. METAR: CORrected ob; or AUTOmated ob for automated report with no human intervention; omitted when observer logs on.	**COR**
15005KT	Wind: 3 digit true-north direction, nearest 10 degrees (or VaRiaBle); next 2-3 digits for speed and unit, KT (KMH or MPS); as needed, Gust and maximum speed; 00000KT for calm; for METAR, if direction varies 60 degrees or more, Variability appended, e.g., 180V260	**22015G25KT**
5SM	Prevailing visibility; in U.S., Statute Miles & fractions; above 6 miles in TAF Plus6SM. (Or, 4-digit minimum visibility in meters and as required, lowest value with direction)	**¾SM**
	Runway Visual Range: R; 2-digit runway designator Left, Center, or Right as needed; "/", Minus or Plus in U.S., 4-digit value, FeeT in U.S., (usually meters elsewhere); 4-digit value Variability 4-digit value (and tendency Down, Up or No change)	**R28L/2600FT**
HZ	Significant present, forecast and recent weather: see table (on back)	**TSRA**
FEW020	Cloud amount, height and type: Sky Clear 0/8, FEW >0/8-2/8, ScaTtered 3/8-4/8, BroKeN 5/8-7/8, OverCast 8/8; 3-digit height in hundreds of ft; Towering Cumulus or CumulonimBus in **METAR**; in **TAF**, only CB. Vertical Visibility for obscured sky and height "VV004". More than 1 layer may be reported or forecast. In automated **METAR** reports only, CleaR for "clear below 12,000 feet"	**OVC 010CB**
	Temperature: degrees Celsius; first 2 digits, temperature "/" last 2 digits, dew-point temperature; Minus for below zero, e.g., M06	**18/16**
	Altimeter setting: indicator and 4 digits; in U.S., A-inches and hundredths; (Q-hectoPascals, e.g., Q1013)	**A2992**
WS010/31022KT	In U.S. **TAF**, non-convective low-level (≤2,000 ft) Wind Shear; 3-digit height (hundreds of ft); "/"; 3-digit wind direction and 2-3 digit wind speed above the indicated height, and unit, KT	

Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR) (Back)

	In METAR, ReMarK indicator & remarks. For example: Sea- Level Pressure in hectoPascals & tenths, as shown: 1004.5 hPa; Temp/dew-point in tenths °C, as shown: temp. 18.2°C, dew-point 15.9°C	**RMK SLP045 T01820159**
FM091930	FroM: changes are expected at: 2-digit date, 2-digit hour, and 2-digit minute beginning time: indicates significant change. Each FM starts on a new line, indented 5 spaces	
TEMPO 0920/0922	TEMPOrary: changes expected for <1 hour and in total, < half of the period between the 2-digit date and 2-digit hour beginning, and 2-digit date and 2-digit hour ending time	
PROB30 1004/1007	PROBability and 2-digit percent (30 or 40): probable condition in the period between the 2-digit date & 2-digit hour beginning time, and the 2-digit date and 2-digit hour ending time	
BECMG 1013/1015	BECoMinG: change expected in the period between the 2-digit date and 2-digit hour beginning time, and the 2-digit date and 2-digit hour ending time	

Table of Significant Present, Forecast and Recent Weather - Grouped in categories and used in the order listed below; or as needed in TAF, No Significant Weather.

Qualifiers
Intensity or Proximity

"-" = Light	**No sign** = Moderate	"+" = Heavy

"**VC**" = Vicinity, but not at aerodrome. In the US METAR, 5 to 10 SM from the point of observation. In the US TAF, 5 to 10 SM from the center of the runway complex. Elsewhere, within 8000m.

Descriptor

BC – Patches	**BL** – Blowing	**DR** – Drifting	**FZ** – Freezing
MI – Shallow	**PR** – Partial	**SH** – Showers	**TS** – Thunderstorm

Weather Phenomena
Precipitation

DZ – Drizzle	**GR** – Hail	**GS** – Small Hail/Snow Pellets	
IC – Ice Crystals	**PL** – Ice Pellets	**RA** – Rain	**SG** – Snow Grains
SN – Snow	**UP** – Unknown Precipitation in automated observations		

Obscuration

BR – Mist (≥5/8SM)	**DU** – Widespread Dust	**FG** – Fog (<5/8SM)	**FU** – Smoke
HZ – Haze	**PY** – Spray	**SA** – Sand	**VA** – Volcanic Ash

Other

DS – Dust Storm	**FC** – Funnel Cloud	**+FC** – Tornado or Waterspout	
PO – Well developed dust or sand whirls		**SQ** – Squall	**SS** – Sandstorm

- Explanations in parentheses "()" indicate different worldwide practices.
- Ceiling is not specified; defined as the lowest broken or overcast layer, or the vertical visibility.
- NWS TAFs exclude BECMG groups and temperature forecasts, NWS TAFS do not use PROB in the first 9 hours of a TAF; NWS METARs exclude trend forecasts. US Military TAFs include Turbulence and Icing groups.

NOTE: All METAR reports are issued in "Greenwich Mean Time" or its abbreviation "ZULU". Therefore saying ZULU in a METAR report is optional, if any other time convention is used in the report it must be stated.

METAR PHRASEOLOGY EXAMPLES

METAR KVKS 091955Z AUTO 22015KT 10SM CLR 15/06 A3002

"VICKSBURG ONE NINER FIVE FIVE ZULU AUTOMATED OBSERVATION, WIND TWO TWO ZERO AT ONE FIVE, VISIBILITY ONE ZERO, CLEAR BELOW ONE TWO THOUSAND, TEMERATURE ONE FIVE, DEWPOINT ZERO SIX, ALTIMETER THREE ZERO ZERO TWO."

METAR KJAN 241255Z 190015G25KT 1 1/2SM RA FEW021 BKN042 OVC084 12/10 A2991

"JACKSON ONE TWO FIVE FIVE ZULU OBSERVATION, WIND ONE NINER ZERO AT ONE FIVE GUSTS TWO FIVE, VISIBILITY ONE AND ONE HALF RAIN, FEW CLOUDS AT TWO THOUSAND ONE HUNDRED, CEILING FOUR THOUSAND TWO HUNDRED BROKEN, EIGHT THOUSAND FOUR HUNDRED OVERCAST, TEMPERATURE ONE TWO, DEWPOINT ONE ZERO, ALTIMETER TWO NINER NINER ONE."

METAR KGWO 012355Z 00000KT 5SM SKC M01/M10 A3008

"*GREENWOOD TWO THREE FIVE FIVE ZULU OBSERVATION, WIND CALM, VISIBILITY FIVE, SKY CLEAR, TEMPERATURE MINUS ONE, DEWPOINT MINUS ONE ZERO, ALTIMETER THREE ZERO ZERO EIGHT."*