The Bureau of Meteorology

Aviation services

TAF and METAR/SPECI reference card

This reference card contains selected TAF and METAR/SPECI information to help users gain a better understanding of aerodrome forecasts and reports.

TAF (Aerodrome Forecast) is a statement of meteorological conditions expected for the specified period of time in the airspace within 5 nautical miles of the aerodrome reference point.

TAF3 is a TAF issued routinely every three hours and receives priority, proactive amendments.

METAR (Meteorological Aerodrome Report) is a routine aerodrome weather report issued at half hourly time intervals.

SPECI (Special Meteorological Report) is a special aerodrome weather report issued only when meteorological parameters meet specific criteria.

Sample TAF & METAR/SPECI

TAF AMD YPPH 020328Z 0203/0306
01010KT 9999 -SHRA SCT030
FM020400 25014KT 9999 -SHRA SCT030
FM030300 28020G30KT 9999 -SHRA SCT025
INTER 0203/0208 25015G25KT 4000 SHRA SCT015
INTER 0208/0212 25015G25KT 6000 SHRA SCT020
INTER 0304/0306 28025G35KT 4000 SHRA BKN015
RMK
T 11 15 15 13 Q 1019 1017 1018 1019
TAF3

SPECI YPPH 020500Z 27007KT 9999 FEW016
SCT035 13/11 Q1018
RMK RF00.4/006.2 HAZE

Elements of TAF and METAR/SPECI

AUTO will be included when a METAR/SPECI contains only automated observations.

Wind is given in the format DDDSSKT. DDD is the mean direction in degrees true rounded to the nearest 10 degrees and SS is the mean speed in knots (KT).

The maximum gust will be given after the letter G if it is forecast or observed to exceed the mean by 10 knots or more, e.g. 33028G40KT gives a mean wind direction of 330 degrees true, with a mean speed of 28 knots and a maximum gust of 40 knots.

At selected aerodromes, an additional wind variation group may also be included in METAR/SPECI when the wind direction varies by 60 degrees or more during the sampling period used for the wind report. For example, 150V220 indicates that the wind has varied between 150 and 220 degrees.

Visibility is given in metres, in a 4-figure group (e.g. 0500=500m, 2000=2000m). 9999 indicates visibility of 10 kilometres or more.

In METAR/SPECI, 2 groups may be reported when visibility is not the same in different directions; the prevailing visibility first, then the minimum visibility and its direction (using one of the 8 points of the compass) from the observing station, e.g. 8000 2000NE.

Air temperature (and dew point in METAR/SPECI) are given in degrees Celsius in a 2-digit group, rounded to the nearest whole degree. Negative values are preceded by M (minus), e.g. M03. In TAF, air temperature values are preceded by the letter T. In METAR/SPECI, the air temperature and dew point are given in the format TT/TdTd, where T is the air temperature and Td is the dew point, e.g. 22/15.

QNH is given in hectopascals in a 4-figure group, e.g. 1008, or 0998. QNH values are preceded by the letter Q. QNH values in METAR/SPECI are rounded down to the whole hectopascal.

TAF3 label, following the forecast QNH in the RMK section of the TAF, indicates a TAF3 service. It may also be followed by a VALID TL (till) and time stamp indicating the cessation of the TAF3 service at aerodromes offering a limited service, i.e. TAF3 VALID TL 150600.

TAF **issue time** and METAR/SPECI **report time** are given in the format DDHHMMZ. For example, 171655Z indicates an issue time of 1655UTC on the 17th day of the month.

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Did you know?

In TAF, the four temperature and QNH values are point forecasts for HH, HH+3, HH+6 and HH+9 where HH is the commencement of the TAF validity.

Users should use a linear interpolation to determine the forecast value between these points.

TAF cloud information

Code	Cloud amount
FEW	Few (1 to 2 oktas)
SCT	Scattered (3 to 4 oktas)
BKN	Broken (5 to 7 oktas)
OVC	Overcast (8 oktas)
NSC	Nil significant cloud
NCD*	Nil cloud detected (in AUTO METAR/SPECI reports only)

*not used in TAF code – used in AUTO observations

A TAF is normally issued half an hour to 2 hours prior to the start of the validity period.

Validity period for a TAF is given in the format DDHH/DDHH, e.g. 1718/1900 indicates a validity of 30 hours from 1800UTC on the 17th.

Cloud amount is forecast using the abbreviations above.

Cloud information in TAF and METAR/SPECI is given in the order of lowest to highest in accordance with the following rules:

1st group is the lowest layer regardless of amount. **2nd group** is the next layer covering more than two eighths of sky. **3rd group** is the next layer covering more than 4 eighths of sky.

Extra groups – cumulonimbus (CB) and towering cumulus (TCU) when not included in the above.

Cloud type is not given except for CB and TCU.

Weather is included in a forecast or report using the abbreviations in the table (right). Examples are:

BCFG for fog patches.

SHRA for moderate showers of rain.

Intensity is indicated for precipitation, dust storms, sandstorms and funnel clouds (tornados and water spouts), by prefixing the weather groups as shown in these examples:

+TSRA for thunderstorm with heavy rain showers.

DZ for moderate drizzle.

-RA for light rain.

Note: not all weather types are included in AUTO reports.

Common abbreviations

BECMG Becoming

CAVOK Ceiling and visibility and weather ok

FM From

INTER Intermittent variations – periods < 30 mins in an hour

MOD Moderate

PROB30 30% chance of forecast conditions occurring

PROB40 40% chance of forecast conditions occurring

RMK (remark) in TAF precedes information on turbulence (if forecast), temperatures, QNH and TAF3 (when applicable)

SEV Severe

TEMPO Temporary variations – periods of 30 mins to < 60 mins

Z Appended to issue and validity times to signify UTC (Coordinated Universal Time)

Weather information

Prefix	Weather intensity
+	Heavy
no prefix	Moderate
–	Light

Code	Weather descriptor
BC	Patches
BL	Blowing
DR	Drifting
DL	Distant lightning
FZ	Freezing
MI	Shallow
PR	Partial
SH	Showers
TS	Thunderstorm
VC	in the Vicinity

Code	Weather phenomenon
BR	Mist
DU	Dust
DS	Dust storm
DZ	Drizzle
FC	Funnel cloud
FG	Fog
FU	Smoke
GR	Hail
GS	Small hail/snow pellets
HZ	Haze
PL	Ice pellets
PO	Dust devil
RA	Rain
SA	Sand
SG	Snow grains
SN	Snow
SQ	Squall
SS	Sandstorm
VA	Volcanic ash
UP	Unidentified precipitation

Further aviation educational resources produced by the Bureau of Meteorology can be found at www.bom.gov.au/aviation/knowledge-centre.

| A vertical line in the margin indicates a text amendment since last update.