



Our Wings Carry Your Dreams

# Terminal Aerodrome Forecasts

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## Introduction

A Terminal Aerodrome Forecast or TAF for short, is a coded current and predictive weather for an aerodrome within 5nm of the reference point. It is a useful statement of the weather for a temporary period around the airport however if intending longer range flights outside of the 5nm radius – pilots should consider using an area forecast.

The forecast gives information to the pilot in a text and numerical format which must be decoded in order to determine the weather at the aerodrome. The forecast gives the following information:

- Time of issue and validity
- Changes of weather
- wind
- Weather phenomena
- Temperature
- QNH

## TAF Type

On the first line of the TAF will indicate what kind of TAF is it. Codes such as:

- TAF                      Is an Aerodrome Forecast
- TAF AMD              Amended Aerodrome Forecast
- TAF COR              A forecast which has been corrected for errors
- TAF CNL              Forecast which has been cancelled
- TAF NIL                Aerodrome forecast will not be issued

## Location

Next information is simply the location of the forecast. Using either an International Civil Aviation Organisation (ICAO) code or an approved Australian Airservices code.

## Issue and Validity Time

The next line indicates the time of issue of the forecast in GMT/Zulu/UTC time. The format is given in a six-figure group with the DD as the day of the month and HHMM as the hour and minutes of that day in UTC. eg. 15 0635 On the 15<sup>th</sup> day of the month at 6:35 AM in the morning. **TAF YMAY 022230Z 0300/0312 35010KT CAVOK**

The validity time is given in either 3, 6 and or 12-hour period depending on the airport category. Number group format is of 8 figures with the day and hour – DDHH/DDHH eg. 0812/0818 on the 8<sup>th</sup> day of the month between the hours of 1200 to 1800 hours.

## Wind

Wind format is given in degrees true to the nearest 10°. Variation must be applied to use for take-off calculations. Variation for the airport can be found in the En Route Supplement Australia (ERSA). A wind which is varying is given the designation of VRB eg. VRB05 Variable 5 Knots.

A full wind direction and speed is given as 25010KT.

To indicate gusting winds which only occurs when the wind varies greater than 10 knots from the mean, the letter designator Golf or G is used e.g., 25015G35KT

## Visibility

This measurement determines the horizontal distance that the pilot can expect to be able to see. The visibility is a unit given in metres ranging from near zero to 9999. 9999 indicates more than 10-kilometre visibility.

Between the ranges of zero to 800 – visibility will change in increments of 50. Between 800 to 5,000 metres – increments of 100 metres. If visibility is greater than 5,000 metres, then the increments will be in 1,000 metres steps.

Visibility will not be shown if CAVOK is shown in the forecast.

## Weather

Weather phenomena in the current forecast are abbreviated using code approved by Airservices. Weather such as precipitation, dust storms, sandstorms and funnel clouds can be further described of intensity using the positive and negative symbols; + given for heavy and – for light. E.g., +SHRA indicates heavy showers of rain, –DZ light drizzle.

## Cloud

Information of cloud at the airport is limited with a base below 5000FT or within the minimum sector altitude whichever is the highest altitude. Cumulonimbus or towering Cumulus are included regardless of what height.

OKTAS system is used to describe how much is a section of the sky covered by cloud. Imagine you take a section of sky and divide it into eight equal segments. Then count how many segments feature a cloud in it.

FEW = 1 to 2

SCT = 3 to 4

BKN = 5 to 7

OVC = 8



It starts with the lowest layer of cloud to the highest layer. There are rules for the forecasting of cloud.

- Lowest layer regardless of amount
- 2<sup>nd</sup> group is only reported if more than 2 OKTAS
- 3<sup>rd</sup> group is only reported if more than 4 OKTAS

Cloud amount is given in abbreviations of FEW, SCT, BKN and OVC following by the height above aerodrome level in hundreds of feet e.g., 007 = 700FT, 015 = 1500FT.

## CAVOK

This code is given to indicate that cloud and visibility and weather OK, the following conditions must be met for a CAVOK to be issued.

- Visibility of 10 km or more
- No cloud below 5,000 feet and no cumulonimbus at any height
- No weather phenomena/significant weather

## Changes in Forecast

Significant changes in forecast can be categorised into From-FM, Becoming-BECMG, Intermittent-INTER and Temporary-TEMPO. When changes in weather meet change requirements a new line of forecast or a short-term weather condition is posted in the following formats.

Following any change of forecast with the use of FM and BECMG information on wind, visibility, weather and cloud will be given.

### FROM

A FM symbol is used to indicate a rapid change of conditions to a prevailing forecast for a certain time period onwards. It will indicate a change in forecast until the next FM or becoming-BECMG.

e.g., FM051000 CAVOK VRB05KT – from the day of the 5<sup>th</sup> at 1000UTC the forecast is CAVOK with wind variable at 5 knots.

### BECMG

Is used to indicate a change in conditions, over a period of time indicated, the condition will then prevail/remain in force until another change using FM or BECMG or the issue of a new forecast. E.g., BECMG 081100 SCT030 9999 – states that on the 8<sup>th</sup> day of the month at 1100UTC it will slowly change to scattered cloud at 3000FT with more than 10km visibility.

### TEMPO

A TEMPO or temporary forecast is issued for a defined period of time where the conditions will fall below the conditions in the forecast for a period of 30 to 60 minutes. E.g., TEMPO 0611/0615 TSRA 3000 CB030 – during a period on the 6<sup>th</sup> day of the month between 1100 and 1500 UTC the forecast will have periods of 30 to 60 mins where thunderstorm rain showers will reduce visibility to 3,000 metres and cumulonimbus cloud at 3,000 feet.

**TEMPO 2209/2218 2000 +TSRA BKN005 SCT040CB**

### INTER

An INTER or intermittent period is a forecast issued for a period of time when the significant condition changes fall below the forecast within 30-minute periods. E.g., INTER 1003/1005 FOG 0500

This indicates that between the periods of 0300 to 0500 UTC on the 10<sup>th</sup> day of the month, for intermittent periods of 30 minutes fog will be reducing visibility to 500 metres.

**INTER 0308/0312 31020G40KT 3000 +TSRA BKN010 SCT040CB**

## PROB – Probability

Is used to indicate the chance of the forecast in a TAF with the conditions falling below the alternate minima. It is usually referred to in the cast of thunderstorms or conditions resulting in poor visibility. The chances will not be reported if less than 30 percent chance or more than a 50 percent. When using a PROB for thunderstorm a TEMPO or INTER.

## Remarks – RMK

The term RMK or remark is used to indicate any further notes on the forecast and precedes the turbulence, air temperature and QNH forecasts.

## Turbulence

Only when turbulence is considered hazardous and not associated with cumulonimbus cloud or towering cumulus cloud. The forecast period is given in day, hour and minute format and given a TILL to indicate the end of the forecast period. E.g., FM180630 TILL181230.

## Air Temperature

The shade temperature forecast of the airport is given in whole degrees Celsius. If the temperature falls below zero it is prefixed with M to indicate minus. The temperature forecast is given at three-hour intervals with 90 mins transition in between and begins with the forecast validity time.

HH HH+3 HH+6 HH+9 – T 26 28 35 29. So, if the validity time started at 0400 the temperature would be 28 degrees at 0700 and then 29 degrees at 1000.

## QNH

Similar format to the temperature forecast, the QNH is given in a whole four figure format in the units of Hectopascals or Hpa. The changes are given in 3 hour intervals and the beginning of the forecasts corresponds with the commencement of the validity period. The section of the forecast is given the prefix of Q. Eg. Q 1010 1008 1004 1005.

## Examples of Full TAFs

### BANKSTOWN (YSBK)

```
TAF YSBK 192316Z 2000/2012
21008KT 9999 SHOWERS OF LIGHT RAIN SCT010 BKN020
FM200200 14015KT 9999 SHOWERS OF LIGHT RAIN FEW015 BKN020
FM201000 VRB03KT 9999 SHOWERS OF LIGHT RAIN SCT010 BKN020
INTER 2000/2012 5000 SHOWERS OF MODERATE RAIN BKN010
RMK
T 21 24 23 22 Q 1012 1011 1011 1012

METAR YSBK 200130Z AUTO 21007KT 9999 // OVC015 22/18 Q1011 RMK
RF00.0/000.0
```

### SYDNEY (YSSY)

```
TAF YSSY 192319Z 2000/2106
19013KT 9999 SHOWERS OF LIGHT RAIN SCT010 BKN020
FM200100 16018KT 9999 SHOWERS OF LIGHT RAIN FEW010 BKN020
FM200900 13010KT 9999 SHOWERS OF LIGHT RAIN BKN020
FM202300 14015KT 9999 SHOWERS OF LIGHT RAIN SCT025
INTER 2000/2022 5000 SHOWERS OF MODERATE RAIN BKN010
RMK
T 21 23 23 22 Q 1012 1011 1011 1012
```

## Trivia

The NAIPS you know and use today is from an old computer coding format. When NAIPS was first introduced the internet was not capable of sending large amounts of information regarding weather and notice to airmen information.

Thus, the Australian Airservices came up with the short-handed code in order to fit all the information requested by pilots. Coded weather is shared all around the world however the Australian system has kept the text and number format to make the transfer of information easier.

## Reference Material

ERSA

Bureau of Meteorology website knowledge centre

<http://www.bom.gov.au/aviation/knowledge-centre/>

