

# AVIATION WEATHER PRODUCTS

## Area Forecasts

Bureau of Meteorology › Aviation Weather Services

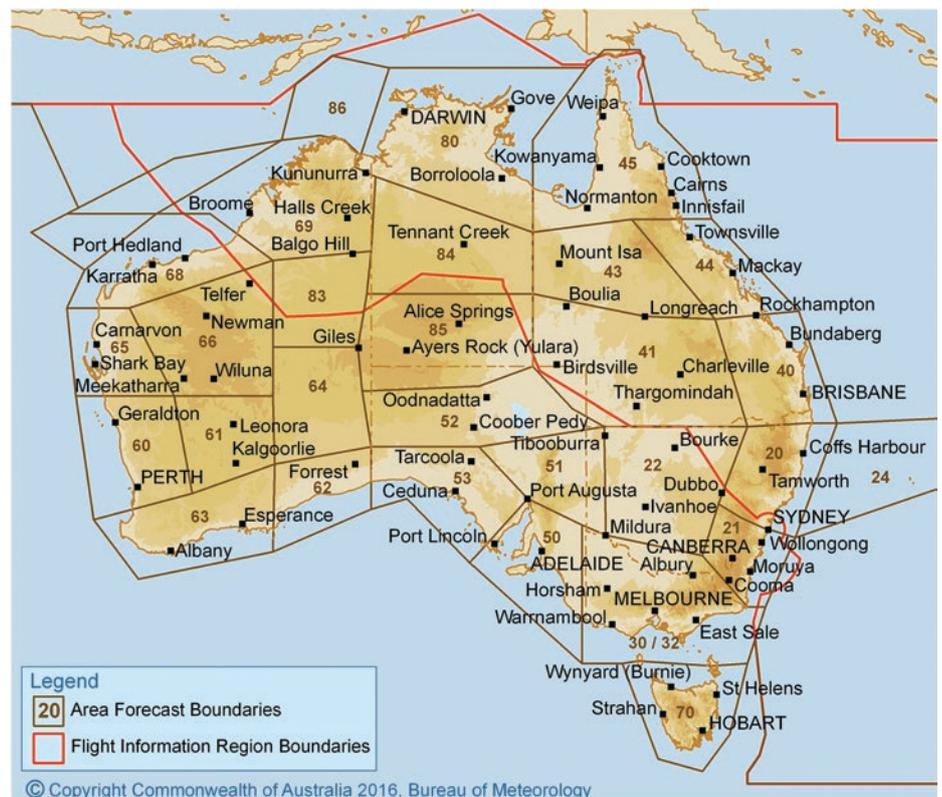
Effective from 10 November 2016



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### Area Forecasts

The Area Forecast (ARFOR) system is designed primarily to meet the needs of general aviation pilots. The ARFOR provides a forecast of weather conditions for the specified area from the surface to 10,000 feet above mean sea level (AMSL). The system provides for the routine issue of forecasts for designated areas and the prompt issue of amendments when prescribed criteria are satisfied. Forecasts are issued for the numbered areas shown in the map below.



More detail of the area forecast zones is contained in the *Airservices Australia publication Planning Chart Australia (PCA)*.

There may be variations in commencement of validity between different regions and between those times when daylight saving is or is not operating. However, the following principles apply:

- the standard validity period is twelve hours but this may vary from state to state.
- an Area Forecast covering daylight hours will be available as soon as practicable in the morning.
- Area Forecasts will generally be available a minimum of one hour before commencement of validity.



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Cloud amount is given using the following abbreviations:

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)

...except for cumulonimbus and towering cumulus, for which amount is described as:

Code	Cloud Amount
ISOL	Isolated
OCNL	Occasional
FRQ	Frequent
EMBD	Embedded

### Definitions

#### Isolated

An area with spatial coverage of up to 50% of an area of 3000 NM<sup>2</sup>.

#### Occasional

An area with spatial coverage greater than 50% but not more than 75% of an area of 3000 NM<sup>2</sup>.

#### Frequent

An area with spatial coverage greater than 75% of an area of 3000 NM<sup>2</sup>.

#### Embedded

An area affected would be of the order of at least 3000 NM<sup>2</sup> over ARFOR areas and at least 7200 NM<sup>2</sup> over remaining areas.

Cloud type is given using the following abbreviations:

Code	Cloud Type
CU	Cumulus
SC	Stratocumulus
CB	Cumulonimbus
TCU	Towering cumulus
ST	Stratus
AS	Altostratus
AC	Alto cumulus
NS	Nimbostratus

## Message Structure

### Message Identifier

The forecast is identified as AREA FORECAST unless the forecast is an amendment in which case it will be identified AMEND AREA FORECAST. In amended forecasts, any amended section will be annotated with AMD preceding the section heading.

### Validity Period

The validity period is written DDHHMM TO DDHHMM, where DD is the day of the month and HHMM is the time in hours and minutes UTC.

### Area Number

The relevant forecast zone is specified by an area forecast number. The zones are given in detail on Airservices *Australia's Planning Chart Australia (PCA)*. Note that Areas 24, 87 and 88 are only designated for the purpose of Area QNH.

### Overview

The overview will highlight any conditions which may inhibit safe operations for pilots flying under visual flight rules, and will make reference, where necessary, to any spatial and temporal variations. It will assist the pilot in making the following types of decisions:

- Are the meteorological conditions Visual Meteorological Conditions (VMC), marginal, Instrument Flight Rules (IFR) or too poor for flying?
- Is it better to plan for a coastal or inland track?
- If bad weather is encountered, what is the contingency plan? - Return? Change altitude? Change heading? Land immediately?

### Subdivisions

Area forecasts may be divided into spatial, temporal or weather-related subdivisions. Spatial subdivisions are given using PCA locations or lat/lon coordinates.

### Winds and Temperatures

Upper level winds are given for 2000 (or 3000 in elevated regions), 5000, 7000 and 10,000 feet AMSL. The expected mean wind direction is given in three figures to the nearest ten degrees True, followed by a solidus (/), followed by the mean wind speed in two figures to the nearest five knots, e.g. 290/40. CALM and VRB (variable) are used when appropriate. A REMARKS section may be included below the WIND section to provide further information.

Upper level temperature is given for 10,000 feet AMSL. This is given in whole degrees Celsius, following the forecast of the upper wind for the level concerned, e.g. 290/40 PS08. The abbreviation PS is used for positive temperatures, and MS (minus) is used for negative temperatures.

### Cloud

The inclusion of cloud is restricted to:

- any cumulonimbus (CB) or towering cumulus (TCU);
- any cloud with a base below 10,000 feet AMSL;
- any cloud associated with any forecast precipitation.

Cloud amount and type are given using the abbreviations in the tables on the left.

If no, or no significant, cloud is expected throughout the area or subdivision, the format used is NIL or NIL SIGNIFICANT.

When CU and SC, or AC and AS, occur together at similar heights, they are combined, i.e. CU/SC or AC/AS.

Cloud base and tops are given in feet above MSL.

## Abbreviations and Codes Used in Area Forecasts

Code	Description
AMD	Amendment
BKN	Broken
CAVOK	Cloud and visibility and weather ok
DZ	Drizzle
EMBD	Embedded
FEW	Few
FG	Fog
FM	From
FRQ	Frequent
GR	Hail
GS	Small Hail
INTER	Intermittent variations (only used in Critical Locations section)
ISOL	Isolated
MOD	Moderate
NS	Nimbostratus
OCNL	Occasional
OVC	Overcast
RA	Rain
SC	Stratocumulus
SCT	Scattered
SEV	Severe
SH	Shower
SN	Snow
ST	Stratus
TCU	Towering Cumulus
TEMPO	Temporary variations (only used in Critical Locations section)
TS	Thunderstorm
Z	Code for UTC (universal time)

## Weather

Weather is given using the abbreviations and codes in the tables on the left. If no significant weather is expected throughout the area or subdivision, the format used is NIL or NIL SIGNIFICANT.

## Visibility

Horizontal visibility is given in metres to the nearest 100 metres up to and including 5000 metres, and in whole kilometers above that value. Forecast visibilities of 50 metres or less are given as ZERO. The forecast value is followed by the units used e.g. 8KM or 1000M. Significant variations of visibility are included.

If the visibility is forecast to be above 10 kilometres, the word UNRESTRICTED is used.

## Freezing Level

Freezing level is the height in feet above MSL where the air temperature is zero degrees Celsius. Reference is made to any variations in height greater than 1000 feet, and to the occurrence of more than one freezing level. If the freezing level is above 10,000 feet AMSL, ABV 10000FT will be used.

## Icing

This section provides information on the expected occurrence of moderate or severe icing in precipitation or cloud including convective cloud.

The height in feet above MSL of the bottom and top of the layer is given as, for example, MOD IN RA 5000/8000FT.

When the layer of icing is expected to extend above 10,000 feet AMSL, descriptions such as MOD ABV 8000FT are used.

## Turbulence

This section provides information on moderate or severe turbulence including turbulence associated with convective cloud.

The height above MSL of the bottom and top of any layer(s) is given as, for example, MOD IN CLOUD 4000/10000FT.

When the turbulence is expected to extend to ground level, descriptions such as MOD BLW 8000FT are used.

When the turbulence is expected to be confined to clouds, descriptions such as MOD IN CLOUD BLW 8000FT are used.

When the turbulence is expected to extend above 10000FT AMSL, descriptions such as SEV ABV 8000FT are used.

## Critical Locations

These are locations such as gaps in mountain ranges which are frequently used by general aviation aircraft.

Critical location forecasts are appended to Area Forecasts for Bowral and Mt Victoria (NSW) on AREA 21, Mt Victoria and Murrurundi (NSW) on AREA 20, and Kilmore Gap (Vic) on AREA 30/32.

Critical location forecasts are written in a mixture of plain language and TAF format making reference as necessary to cloud, visibility and weather.

CAVOK is used to indicate visibility greater than 10 KM, cloud ceiling above 5000 FT above ground level and nil significant weather.

## Remarks

This section will include any relevant information not included elsewhere in the forecast.

## Example

AMEND AREA FORECAST 071700 TO 080500 AREA 21

OVERVIEW:

LOW CLOUD, DRIZZLE AND SCATTERED FOG W OF MVI/YSCB/YCOM TILL 01Z. ISOLATED FOGS REMAINDER TIL 01Z.

SUBDIVISIONS:

A: W OF MVI/YSCB/YCOM

B: REMAINDER

WIND:

2000	5000	7000	10000
280/15	290/15	280/10	300/15 MS03

AMD CLOUD:

A: BKN ST 2000/5000 TILL 03Z. BKN CU 3000/7000, ISOL TOPS TO 13000FT.

B: SCT CU/SC 2500/5000 WI 60NM OF COAST, INCREASING TO 5000/7000 FM 02Z.

AMD WEATHER

A: DZ, FG TILL 03Z

B: FG TILL 01Z

VISIBILITY:

500M IN FOG, 3000M IN DZ

FREEZING LEVEL:

5000FT

ICING:

MOD IN LARGE CU ABV FZLVL

TURBULENCE:

MOD IN LARGE CU

CRITICAL LOCATIONS (HEIGHT ABOVE MSL)

MT VICTORIA: BKN ST 3700 (CLOUD ON GROUND)

BOWRAL: 9999 SCT SC 5000

REMARKS:

FOR CLARIFICATION OF METEOROLOGICAL ISSUES CALL 02 9296 1527.



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Other brochures produced by the Bureau of Meteorology's aviation weather services program can be found at [www.bom.gov.au/aviation/knowledge-centre](http://www.bom.gov.au/aviation/knowledge-centre).

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