Australian Government

Bureau of Meteorology

BUREAU OF METEOROLOGY REVIEW INTO THE PROVISION OF AERODROME FORECASTS (TAF)

INFORMATION PAPER

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CONTENTS

EXECUTIVE SUMMARY

The Bureau of Meteorology is Australia's national weather, climate and water agency. The Bureau operates in a dynamic environment and is required to constantly adjust its operations to meet the changing demands of governments, business and the community, while maintaining focus on the core functions that deliver the long-term benefits.

The Bureau operates in accordance with both Australian Government legislation and international obligations to provide a range of services, including the provision of aviation weather services. The Bureau receives most of its funding from the Australian Government, but in accordance with government policy recovers most of the costs incurred in the provision of specialised services to the aviation industry, from that industry.

As meteorology has such a significant influence on aviation activities, both from a financial and safety perspective, the aviation industry maintains a strong involvement in ensuring that aviation weather services meet their requirements. Regular consultation occurs between the Bureau and representatives of international, domestic and regional airlines, general aviation, and other industry groups together with the Department of Infrastructure and Transport and related agencies such as the Civil Aviation Safety Authority, Airservices Australia and the Australian Transport Safety Bureau.

The Bureau has commenced a comprehensive review into the provision of regional aviation weather products and services, to determine if its products and services continue to meet the needs and expectations of aviation users. It is recognised that the needs of government, communities and a range of aviation groups, especially those involved in regional operations, may have changed significantly in recent years.

The first part of this review is focused on the provision of Aerodrome Forecasts (TAF) across Australia. Aerodrome forecasts are considered to be one of the most important forecasts produced for the aviation industry. The availability, or non-availability, of a quality TAF for certain locations can have significant safety and financial impacts for the aviation industry and regional communities.

The purpose of the review is to determine the current and future TAF needs of all sectors of the aviation industry and to make recommendations relating to the provision and categorisation of TAF, including guidelines for the introduction, modification, suspension and cancellation of forecasts. This may include provision of TAF for locations not serviced by the general aviation industry, or serviced on an exclusive basis as occurs with a number of mining sites and oil/gas fields. The review will also make recommendations relating to physical and technological resources required for the provision of the TAF service including the minimum observational systems to support the production and ongoing monitoring of a TAF during its period of validity.

The review will also determine the likely impact on both internal and external stakeholders, in order for those stakeholders to fully consider all aspects of any recommendations that may be made. The Bureau of Meteorology will welcome any comments or suggestions from interested parties as part of the initial review, and commits to a comprehensive consultation process prior to the implementation of any significant changes to existing products or services. The Bureau has largely

completed the gathering, collating and analysis of information as part of the initial consultation process and is preparing to release a draft review. The Bureau is currently engaging with other agencies and preparing a Communication and Stakeholder Engagement Plan which will detail the consultation process. It is proposed that once publicly released, the aviation industry will have two months to comment on the draft review.

AVIATION WEATHER SERVICES

The Bureau of Meteorology's Aviation Weather Service enhances the safety, regularity and efficiency of national and international aviation operations through the provision of accurate, timely and relevant forecasts, warnings and information for aerodromes and en-route operations.

Aviation weather services are generated and delivered through:

- National Meteorological & Oceanographic Centre (NMOC) in Melbourne
- Regional Forecasting Centres (RFC) in each State
- Sydney Airport Meteorological Unit (SAMU)
- Meteorological Offices in Cairns, Townsville, Rockhampton and Canberra
- Volcanic Ash Advisory Centre (VAAC) in Darwin; and
- Meteorological Unit at the Airservices Australia National Operations Centre in Canberra.

The Bureau of Meteorology's role in providing services for civil aviation is established through the Meteorology Act 1955. Under the Convention for International Civil Aviation (the Chicago Convention) the Bureau is the designated Meteorological Authority for Australia and also provides meteorological services for civil aviation in Australia in accordance with the standards and practices set out in Annex 3 to the Convention. In fulfilling this mandate it works closely with Airservices Australia, which is responsible for air traffic services, and the Civil Aviation Safety Authority (CASA), which is responsible for the safety regulation of civil aviation in Australia.

Throughout the year, user consultation and arrangements for ongoing service improvements continue to be coordinated by a variety of committees, working groups and focus groups involving the Bureau, the Department of Infrastructure and Transport and related agencies (CASA, Airservices Australia and the Australian Transport Safety Bureau), and representatives of international, domestic and regional airlines, general aviation, and other industry groups. International consultation and coordination occur through the WMO Commission for Aeronautical Meteorology and working groups, the International Civil Aviation Organization (ICAO) Asia Pacific Air Navigation Planning and Implementation Regional Group, and a number of ICAO study groups.

The Bureau's Aviation Weather Service has made a major change in its structure in response to better match the service requirements of the aviation industry. These include Upper Airspace Weather Services for high-level flights and commercial airliners, Regional Aviation Weather Services for lower-level flights and smaller aircraft and Major Airport Weather Services for the area immediately surrounding major international airports.

The Bureau has commenced its role in the new Airservices Australia National Operations Centre in Canberra. The role of the new centre is to better manage air traffic nationally for reduced time delays at various points during flights, leading to reductions in the amount of fuel burned, with the added impact of lower carbon emissions from aircraft.

The Bureau's Aviation Weather Services has acquired certification to AS/NZS ISO 9001:2000 Quality Management Standard. The quality management system will ensure rigorous ongoing independent scrutiny of the management and delivery of aviation weather services, and provide a firm basis for continuous improvement of aviation weather services to meet industry needs.

In 2008, as part of preparation for an audit of aviation safety in Australia under ICAO's Universal Safety Oversight Programme, the Bureau conducted a comprehensive review of its Aviation Weather Services documentation and practices and its compliance with international standards and practices for aviation, as set out in Annex 3 to the Chicago Convention. The audit report contained no negative findings or recommendations for improvement in relation to the Bureau's Aviation Weather Services documentation and practices. However there is still an ongoing requirement to minimise the Registered Differences that Australia has against Annex 3.

An Aviation Client Satisfaction Survey was conducted in 2008 to ascertain the level of satisfaction of the Bureau's aviation clients with the quality of products and the delivery of aviation weather services. Regular aviation client satisfaction surveys provide important user feedback, which assist the Bureau in identifying and addressing areas in which aviation weather services may be improved and aligned more closely with the needs of the aviation industry. The results of the first survey were very positive in regard to the Bureau's services.

A centralised process has been implemented for managing meteorological investigations relating to aircraft accidents and incidents, whereby all requests received by the Bureau are dealt with in a nationally coordinated and consistent manner. Meteorological investigations relating to aviation accidents and incidents assist in identifying deficiencies in, and possible improvements to, aviation weather services. Consistency in such investigations allows the Bureau to more easily identify widespread or common issues with the services, and also facilitates archiving of information for future reference.

As part of the aviation forecaster competency program, assessment of aviation forecasters has been completed in Victoria and South Australia, commenced in New South Wales, and will be progressively conducted across all States. This competency training and assessment reflects what an aviation meteorologist would be expected to do while exercising due care on the job and hence provides the foundation for service-focused, operationally-relevant training. It also provides a mechanism for benchmarking the required skills and knowledge.

The Bureau is delivering an improved aviation weather service by harmonising its service delivery with the ongoing centralisation of air traffic management that is aimed at increasing the industry's overall efficiency. One of the objectives is to restructure weather services to aviation to provide improved operations and information to the aviation industry.

Australian Government policy requires that the Bureau recover the costs incurred in the provision of specialised services to the Department of Defence and the aviation industry. In 2010-2011, the estimated cost to the aviation industry is approximately $21 million (excluding GST). Because of this cost recovery, and the impact of aviation weather services on their operations, the aviation industry maintains a strong involvement in costing and scope of services delivered.

Government policy also mandates the Bureau comply with an Efficiency Dividend. The impact of achieving that dividend is that the whole of the Bureau is continually required to review its products and services, together with its human and technical resources, to achieve the required efficiencies.

AERODROME FORECAST (TAF)

AERODROME FORECAST REVIEW

The Bureau of Meteorology's role in providing services for civil aviation is established through the Meteorology Act 1955. Under the Convention for International Civil Aviation (the Chicago Convention) the Bureau is the designated Meteorological Authority for Australia and also provides meteorological services for civil aviation in Australia in accordance with the standards and practices set out in Annex 3 to the Convention.

The Bureau provides a range of aviation weather products and services including Aerodrome Forecasts (TAF). A TAF is a statement of meteorological conditions expected in the airspace within a radius of five nautical miles of the aerodrome reference point for a specific validity period.

The Meteorology Act 1955 contains no express requirement for the Bureau of Meteorology to provide a TAF service for an aerodrome, but it does require the Bureau to

> perform its functions under this Act … in the public interest generally and in particular … (b)… for the purposes of navigation and shipping and of civil aviation…

The International Civil Aviation Organization (ICAO) Annex 3 and ICAO Doc 9673 (Air Navigation Plan – Asia & Pacific Regions) set out Australia's requirements for providing a TAF service for Australia's international aerodromes. Annex 3 also contains details relating to the preparation, content and validity period of TAF, together with information relating to review, amendment and cancellation of issued TAF.

A current Memorandum of Understanding (MOU) between the Bureau and Airservices Australia, as the Air Traffic Services provider within the Australian Flight Information Region (FIR), sets out arrangements for the provision of the Aviation Weather Services and states that:

> 4.1 The provision of the Aviation Weather Service is based on the following general principles: …
>
> (b) Provisions contained in Annex 3 to the Chicago Convention, Meteorological Service for International Air Navigation, shall apply to Domestic as well as International Air Navigation. …
>
> 7.1 The practices and procedures that apply to the provision of the Aviation Weather Service are specified in the Bureau's Aeronautical Services Handbook. The manner in which meteorological services are provided by Airservices for use by the aviation community is described in the Australian Integrated Aeronautical Information Publication (AIP). The Aeronautical Services Handbook (ASH) and the Aeronautical Information Publication shall be consistent in content with paras 4.1 (a) and (b) of this.'

The list of Australian international aerodromes and alternates is contained in AIP GEN 1.2 (Appendix A).

The Bureau currently provides a TAF service for Australian international and domestic aerodromes in accordance with the airfield category, which is determined by factors such as the type and the amount of traffic (Appendix B). A list of aerodromes for which the Bureau provides TAF services is contained the Airservices Australia En-Route Supplement (ERSA) and in the Bureau's Aeronautical Services Handbook (ASH) Attachment 2 (Appendix C).

The provision or non-provision of a TAF by the Bureau, together with its period of validity, are highly significant issues for the aviation industry. In the absence of a current TAF for a location, pilots may need to carry sufficient fuel for a diversion to a suitable alternate aerodrome. Carriage of that extra fuel comes at an economic and environmental cost, and can result in a reduction in the freight or passengers able to be carried, in order to offset the additional weight of the fuel. A number of other important operational and safety considerations are also affected by the provision or non-provision of a TAF.

There have been significant changes within the aviation industry in recent years, particularly the increase of fly-in fly-out operations to mining sites throughout Australia, and changes in the types of aircraft being utilised within the regional aviation sector. These, and other factors, have resulted in an increased pressure on the Bureau to provide additional aviation weather services.

While the Bureau has remained responsive to the needs of industry through ongoing consultative processes, it also recognises that no significant review of the overall provision of regional aviation weather services and products has been completed in recent times. In order for the Bureau to meet its obligations for continuous improvement, and to fully meet the aviation industry's needs and expectations, it is undertaking a review of these products and services, commencing with Aerodrome Forecasts.

The review will determine the current and future TAF needs of all sectors of the aviation industry and to make recommendations relating to the provision and categorisation of TAF, including guidelines for the introduction, modification, suspension and cancellation of forecasts. This may include provision of a TAF for locations not serviced by the general aviation industry, or serviced on an exclusive basis as occurs with a number of mining sites and oil/gas fields. The review will also make recommendations relating to physical and technological resources required for the provision of a TAF service including the minimum observational systems to support the production, and ongoing monitoring of a TAF, during its period of validity.

INFORMATION SOURCES AND CONSIDERATIONS

As part of the TAF review the Bureau will consider information from a wide range of sources including:

- International and domestic legislation, regulations and requirements
- The needs and requirements of all sections of the aviation industry, including international, domestic, regional and general aviation operators
- The needs of service providers and regulators such as Airservices Australia and the Civil Aviation Safety Authority and other agencies such as the Australian Defence Force
- The needs and requirements of regional communities
- Bureau of Meteorology policies and procedures, budget and resources
- A thorough review of all available aircraft movement figures and statistics, from a range of sources, to ensure an accurate representation of aviation movements across Australia is captured. This will include movements such as those provided by fly-in fly-out operations
- Current provision of TAF
- Consideration in respect to the climatology of locations, including suitable strategic and alternate aerodromes
- Consultation with aviation forecasters
- International best practice standards and expectations, together with an assessment of current and future trends with respect to aviation forecasting
- Current and future technologies and their impact on the provision and monitoring of a TAF service
- Current and future resource requirements for aviation forecasting in each office
- Current and future TAF validation and quality management; and
- Current and future observational resource requirements

OBJECTIVES

- Establish guidelines and requirements for TAF service changes for an aerodrome, including the introduction, modification, suspension and termination of a service
- Establish guidelines for the times of validity of a TAF service
- Establish a process for the regular review of TAF location and service
- Establish the minimum requirements relating to observations in order to both issue and maintain a TAF service
- Establish guidelines for the provision and prioritisation of observational and/or broadcast infrastructure to support a TAF service, or to provide the greatest assistance to industry in the absence of a TAF service
- Establish a process to determine the workload and staffing requirements for the provision of a TAF service and the associated costs
- Establish a quality framework and validation process to ensure the quality and continuous improvement of the TAF service
- Establish a process for the provision of a TAF on a contractual basis if required

STAKEHOLDERS

Stakeholders include, but are not limited to:

- International, domestic and regional airlines
- Other aviation users including charter operators, general aviation community, corporate aviation, flying training organisations and emergency medical and search and rescue services
- Other airline and industry representative bodies and agencies
- Government departments including the Department of the Environment, Water, Heritage and the Arts (Bureau of Meteorology), the Department of Infrastructure and Transport, Department of Regional Australia, Regional Development and Local Government as well as Airservices Australia, Civil Aviation Safety Authority, Australian Transport Safety Bureau, Department of Defence, and others
- Aerodrome owners and/or operators
- Regional communities

APPENDIX A: DESIGNATED INTERNATIONAL AIRPORTS

Airservices Australia Aeronautical Information Publication (AIP) Book (2 June 2011) contains the following information;

GEN 1.2 ENTRY, TRANSIT AND DEPARTURE OF AIRCRAFT

2. DESIGNATED INTERNATIONAL AIRPORTS - AUSTRALIA

2.1 Major International Airports

2.1.1 "Major International Airport" means an airport of entry and departure for international air traffic where all formalities incident to Customs, Immigration, Health, and similar procedures are carried out.

… [Adelaide, Brisbane, Cairns, Darwin, Melbourne, Perth, Sydney]…

2.2 Restricted Use International Airports

2.2.1 "Restricted Use International Airport" means an airport of entry and departure at which the formalities incident to Customs, Immigration, Health, and similar procedures are made available on a restricted basis, to flights with prior approval only.

…[Avalon, Broome, Canberra, Coffs Harbour, Gold Coast, Hobart, Learmonth, Lord Howe Island, Port Hedland, Townsville, Williamtown/ Newcastle]…

2.3 Alternate Airports to International Airports

2.3.1 "Alternate Airport" means an airport specified in the flight plan to which a flight may proceed when it becomes inadvisable to land at the airport of intended landing (see also GEN 1.3 Section 6.).

…[Alice Springs, Avalon, Canberra, Coffs Harbour, Gold Coast, Kalgoorlie, Launceston, Learmonth, Port Hedland, Rockhampton, Tindal, Townsville]…

2.4 International Non-Scheduled Flight Airports

2.4.1 "International Non-Scheduled Flight Airport" means an airport at which approval may be granted, provided the prescribed prior notice is given, for international non-scheduled flights only. No other form of international operation is permitted:

… [Horn Island]…

2.5 External Territory International Airport

2.5.1 "External Territory International Airport" means an airport of entry and departure for international air traffic located upon an Australian External Territory, where all formalities incident to Immigration, Health and Territory Customs, and similar procedures are available.

… [Norfolk Island, Christmas Island, Cocos (Keeling) Island]…

APPENDIX B: METEOROLOGICAL SERVICES

Airservices Australia Aeronautical Information Publication (AIP) Book (2 June 2011 contains the following information;

GEN 3.5 METEOROLOGICAL SERVICES

1. METEOROLOGICAL AUTHORITY

1.1 Meteorological services for civil aviation in Australia and its territories are provided by the Australian Bureau of Meteorology (BoM).

1.2 Area of Responsibility

The area of responsibility of the Australian BoM covers the Australian FIR's and Australian external territories in other FIR's. Meteorological watch for an area or a route is carried out by officers of the BoM by surveillance of all reports for an area or route, with the object of amendment of forecasts and/or the issue of SIGMET and AIRMET advices. Meteorological watch service is provided to the pilot in command through ATS units.

2. METEOROLOGICAL SERVICES

2.1 Meteorological services are provided by officers of the BoM within the types of meteorological offices listed below:

a. Aviation Weather Centre (AWC). AWC is located within the National Meteorological and Oceanographic Centre (NMOC) at Melbourne and originates forecasts and warnings for operations above A100 on domestic air routes and for international operations within the Australian region.

b. Regional Forecasting Centre (RFC). RFCs are located at State Capital cities. For aviation requirements, RFC's originate and obtain warnings, forecasts and other relevant information for flights with which they are concerned and maintain a meteorological watch over the aerodromes for which they are responsible.

c. Defence Weather Service Office (DWSO). DWSOs provide forecasts and warnings for at least the local aerodrome. They also supply and display meteorological information and provide briefing and documentation for military aircrew.

d. Meteorological Watch Office (MWO). MWOs are located within all RFC's and at Canberra and Townsville MOs. They maintain watch over meteorological conditions affecting flight operations in assigned areas and prepare and disseminate SIGMET information relating to these areas.

e. Meteorological Office (MO). MOs provide a range of observing and forecasting functions. In particular, local aviation forecasting services are offered at Cairns, Canberra, and Townsville. The primary role of other Meteorological offices is the taking, recording and transmission of surface and upper air observations. They do not provide meteorological briefing

services to pilots, but may assist, if required, in explaining the meaning of terms used in forecasts. With prior notice, some of these offices may be able to assist in arranging to have documentation available.

f. Airport Meteorological Unit (AMU). Currently, the only AMU in Australia is located at Sydney Airport. Its main function is to provide meteorological services for Sydney Airport and support for air traffic services, and users of Sydney Airport. It provides a telephone briefing service only.

g. Meteorological Support for the National Operations Centre (NOC). This unit is located within Airservices' NOC to provide meteorological support to the centre.

3. AVIATION FORECASTS

3.3 Aerodrome Forecasts

3.3.1 Aerodrome forecasts (TAF) are a statement of meteorological conditions expected for a specified period in the airspace within a radius of five (5) nautical miles of the aerodrome reference point.

3.3.2 The TAF service provided is in accordance with the airfield category, the category of airfield being determined by the type and the amount of traffic.

3.3.3 Category description and service are as follows:

Category	Aerodrome Type	Routine TAF Service
A	**International** Major International Restricted Use International International Alternates International Non−Scheduled External Territory International	Issued 6 hourly, valid for 18, 24 or 30 hours. Commencement times 00, 06, 12, 18 Z Continuous MET watch and amendment service
B	**Major Domestic** Passengers above 40,000 pa Control tower	Issued 6 hourly, valid for 12, 18 or 24 hours Commencement times 00, 06, 12, 18 Z Continuous MET watch and amendment service
C	**Minor Domestic** Passengers below 40,000 pa	As determined by consultation with clients MET watch and amendment service during validity
D	**Strategic Domestic** Alternate for RPT Other Aerodromes	As determined by consultation with clients MET watch and amendment service during validity

E	**Observations only** Critical Locations Aerodromes with AWS	No TAF service except for SAR, mercy flights etc on request

3.8 Forecast Amendments

3.8.1 Amendments to forecasts are issued as necessary when changes are expected during the period of validity of a given forecast.

4. METEOROLOGICAL REPORTS

4.1 Aerodrome Weather Reports are observations of meteorological conditions at an aerodrome. The reports are generated made by electronic recording devices called Automatic Weather Stations (AWS) and may have manual input by approved observers. Manual input of visibility, weather and cloud is for an area of radius of approximately eight KM (5 NM) of the aerodrome reference point.

4.1.1 Owing to the variability of meteorological elements in space and time, to limitations of observing techniques and to limitations caused by the definitions of some of the elements, the specific value of any of the elements given in a report shall be understood by the recipient to be the best approximation to the actual conditions at the time of observation.

4.2 Routine Reports (METAR) are issued at fixed times, hourly or half hourly, and are made available at pre-flight briefing or on request to aircraft in flight (METAR/SPECI composition is detailed in para 12.).

4.3 Special Reports (SPECI) are aerodrome weather reports issued whenever weather conditions fluctuate about or are below specified criteria.

4.5 Approved Observers

4.5.1 “Approved Observers” are officers of the BoM, Air Traffic Controllers, and other persons on the ground approved for the purpose by the BoM and/or the CASA.

4.5.2 For the purpose of observing visibility for take-off and landing at an aerodrome, the pilot in command shall be deemed an approved observer for that flight.

7. AUTOMATIC METEOROLOGICAL BROADCASTS

7.4 Aerodrome Weather Information Service (AWIS) and Weather and Terminal Information Reciter (WATIR)

7.4.1 AWIS and WATIR provide actual weather conditions via telephone and, at specified locations, broadcast. Most broadcasts are continuous (updated every minute) but some (as indicated in ERSA) must be activated by a press-to-talk (PTT) pulse. AWIS provides information from the AWS. WATIR combines the AWS information with additional terminal information from the airport operator.

7.4.2 Basic AWS's provide wind direction and speed, temperature, humidity, pressure setting and rainfall. Advanced AWS's provide automated cloud and visibility.

7.4.3 AWIS will provide some of the following information:

a. station identifier as a plain language station name,

b. identifier "AWS AERODROME WEATHER",

c. wind direction in degrees Magnetic and speed in Knots,

d. altimeter setting (QNH),

e. temperature in whole degrees Celsius,

f. cloud below 12,500FT,

g. visibility,

h. dew point in whole degrees Celsius,

i. percentage relative humidity, and

j. rainfall over the previous ten minutes.

7.4.4 AWIS and WATIR information is considered to be "real time" data. When information is not available about a particular item, either because of invalid data or an inoperative sensor, the relevant element of the broadcast will be identified as "CURRENTLY NOT AVAILABLE"; eg, "TEMPERATURE CURRENTLY NOT AVAILABLE". When the information from the AWIS is determined as being corrupt, incomplete, or not available, a NOTAM will be issued.

7.4.5 The integrity of the barometric system in BoM-accepted AWS's is such that they are an approved source of QNH. Therefore, QNH from these AWS's may be used in accordance with ENR 1.5 sub-section 5.3.

7.4.6 When AWIS information is available after hours (AH), and the aerodrome is uncontrolled, reference will be made to its availability in ATIS ZULU.

7.4.7 The availability of AWIS and WATIR is contained in ERSA FAC and ERSA MET.

ENR 1.10 FLIGHT PLANNING

1. FLIGHT PLAN PREPARATION

1.1 Before beginning a flight, a pilot in command must study all available information appropriate to the intended operation and, in the cases of flights away from the vicinity of an aerodrome… and all IFR flights, must make a careful study of … current weather reports and forecasts for the route to be flown and the aerodromes to be used. …The pilot must then plan the flight in relation to the information obtained.

1.2 Forecasts

1.2.1 A forecast must be either a flight forecast or an area forecast with an aerodrome forecast for the destination and, when required, the alternate aerodrome. For a flight to a destination for which a prescribed instrument approach procedure does not exist, the minimum requirement is an Area Forecast.

1.2.2 For flights for which a forecast is required and cannot be obtained, the flight is permitted to depart provided the pilot is satisfied that the weather at the departure point will permit the safe return of the flight within one hour of departure. The flight is permitted to continue provided a suitable forecast is obtained for the intended destination within 30 minutes after departure.

1.2.3 For flights to a destination for which an aerodrome forecast is required and cannot be obtained or is “provisional”, the flight is permitted to depart provided an alternate aerodrome meeting all the requirements specified in ENR 1.1 Section 58 is provided.

1.2.5 A pilot in command must ensure that the forecasts cover the period of the flight and that the aerodrome forecasts for the destination and alternate aerodromes, to be nominated in the flight plan, are valid for a period of not less than 30 minutes before and 60 minutes after the planned ETA.

APPENDIX C: CURRENT TAF LOCATION DATA

Current TAF locations as listed in the Bureau of Meteorology Aeronautical Services Handbook (ASH) Attachment 2 (18 November 2010).

AREA	STATE	LOCATION	AVIATION IDENT	TAF CATEGORY
20	NSW	Armidale	YARM	B
20	NSW	Ballina/Byron Gateway	YBNA	B
20	NSW	Bankstown	YSBK	B
20	NSW	Casino	YCAS	E
20	NSW	Cessnock	YCNK	D
20	NSW	Coffs Harbour	YCFS	A
20	NSW	Coonabarabran	YCBB	D
20	NSW	Glen Innes	YGLI	D
20	NSW	Grafton	YGFN	D
20	NSW	Gunnedah	YGDH	D
20	NSW	Inverell	YIVL	D
20	NSW	Kempsey	YKMP	D
20	NSW	Lismore	YLIS	B
20	NSW	Maitland	YMND	D
20	NSW	Moree	YMOR	C
20	NSW	Moss Vale	MSV	E
20	NSW	Mount Boyce	MTBO	E
20	NSW	Mudgee	YMDG	D
20	NSW	Murrurundi	MUI	E
20	NSW	Narrabri	YNBR	C
20	NSW	Port Macquarie	YPMQ	B
20	NSW	Richmond NSW	YSRI	A
20	NSW	Scone	YSCO	D
20	NSW	Sydney Aero	YSSY	A
20	NSW	Tamworth	YSTW	B
20	NSW	Taree	YTRE	C
20	NSW	Williamtown	YWLM	A
21	NSW	Bathurst	YBTH	C
21	NSW	Camden	YSCN	B
21	NSW	Canberra Aero	YSCB	A
21	NSW	Cooma	YCOM	C
21	NSW	Cootamundra	YCTM	D

AREA	STATE	LOCATION	AVIATION IDENT	TAF CATEGORY
21	NSW	Cowra	YCWR	D
21	NSW	Goulburn	YGLB	D
21	NSW	Merimbula	YMER	B
21	NSW	Moruya	YMRY	C
21	NSW	Nowra	YSNW	B
21	NSW	Orange	YORG	B
21	NSW	Parkes	YPKS	C
21	NSW	Wagga Wagga	YSWG	B
21	NSW	Wollongong	YWOL	D
21	NSW	Young	YYNG	D
22	NSW	Bourke	YBKE	D
22	NSW	Cobar	YCBA	D
22	NSW	Condobolin	YCDO	D
22	NSW	Coonamble	YCNM	D
22	NSW	Dubbo	YSDU	B
22	NSW	Forbes	YFBS	D
22	NSW	Griffith	YGTH	B
22	NSW	Hay	YHAY	D
22	NSW	Ivanhoe	YIVO	D
22	NSW	Narrandera	YNAR	C
22	NSW	Nyngan	YNYN	D
22	NSW	Temora	YTEM	D
22	NSW	Walgett	YWLG	D
22	NSW	West Wylong	YWWL	D
22	NSW	White Cliffs	YWHC	E
22	NSW	Wilcannia	YWCA	D
24	NSW	Lord Howe Island	YLHI	A
EXT	EXT	Norfolk Island	YSNF	A
30	NSW	Albury	YMAY	B
30	VIC	Avalon	YMAV	A
30	VIC	Bairnsdale	YBNS	D
30	VIC	Ballarat	YBLT	D
30	VIC	Bendigo Aero	YBDG	D
30	VIC	Charlton	YCHL	E
30	VIC	Coldstream	YCEM	E
30	VIC	Corowa	YCOR	D
30	VIC	Deniliquin	YDLQ	D

AREA	STATE	LOCATION	AVIATION IDENT	TAF CATEGORY
30	VIC	East Sale	YMES	B
30	VIC	Edenhope	YEDE	E
30	VIC	Essendon Aero	YMEN	B
30	VIC	Falls Creek	YFLK	E
30	VIC	Hamilton	YHML	D
30	VIC	Hopetoun	YHPN	E
30	VIC	Horsham	YHSM	D
30	VIC	Kilmore Gap	KMG	E
30	VIC	Latrobe Valley	YLTV	D
30	VIC	Mallacoota	YMCO	D
30	VIC	Mangalore	YMNG	D
30	VIC	Melbourne Aero	YMML	A
30	VIC	Mildura	YMIA	B
30	VIC	Moorabbin	YMMB	B
30	VIC	Mount Buller	YBXU	E
30	VIC	Mount Hotham	YHOT	D
30	VIC	Nhill	YNHL	D
30	VIC	Point Cook	YMPC	D
30	VIC	Portland	YPOD	C
30	VIC	Shepparton	YSHT	D
30	VIC	Stawell	YSWL	E
30	VIC	Swan Hill	YSWH	D
30	VIC	Wangaratta	YWGT	D
30	VIC	Warrnambool	YWBL	D
30	VIC	West Sale	YWSL	D
30	VIC	Yarrawonga	YYWG	E
32	TAS-ANT	Flinders Island	YFLI	C
32	TAS-ANT	King Island	YKII	C
40	QLD	Amberley	YAMB	B
40	QLD	Archerfield	YBAF	B
40	QLD	Brisbane Aero	YBBN	A
40	QLD	Bundaberg	YBUD	B
40	QLD	Gayndah	YGAY	D
40	QLD	Gladstone Aero	YGLA	B
40	QLD	Gold Coast (Coolangatta)	YBCG	A
40	QLD	Goondiwindi	YGDI	D
40	QLD	Hervey Bay	YHBA	B

AREA	STATE	LOCATION	AVIATION IDENT	TAF CATEGORY
40	QLD	Kingaroy	YKRY	D
40	QLD	Maroochydore/Sunshine Coast	YBMC	B
40	QLD	Maryborough	YMYB	C
40	QLD	Oakey	YBOK	B
40	QLD	Rockhampton	YBRK	A
40	QLD	Thangool	YTNG	C
40	QLD	Toowoomba	YTWB	D
41	QLD	Ballera	YLLE	D
41	QLD	Barcaldine	YBAR	D
41	QLD	Birdsville	YBDV	D
41	QLD	Blackall	YBCK	D
41	QLD	Charleville	YBCV	C
41	QLD	Cunnamulla	YCMU	D
41	QLD	Longreach	YLRE	C
41	QLD	Quilpie	YQLP	D
41	QLD	Roma	YROM	C
41	QLD	St George	YSGE	D
41	QLD	Thargomindah	YTGM	D
41	QLD	Windorah	YWDH	D
43	QLD	Boulia	YBOU	D
43	QLD	Century Mine	YCNY	D
43	QLD	Cloncurry	YCCY	D
43	QLD	Hughenden	YHUG	D
43	QLD	Julia Creek	YJLC	D
43	QLD	Mount Isa	YBMA	B
43	QLD	Richmond	YRMD	D
43	QLD	The Monument	YTMO	D
43	QLD	Trepell	YTEE	D
43	QLD	Winton	YWTN	D
44	QLD	Charters Towers	YCHT	D
44	QLD	Clermont	YCMT	D
44	QLD	Emerald	YEML	B
44	QLD	Hamilton Island	YBHM	B
44	QLD	Mackay	YBMK	B
44	QLD	Moranbah	YMRB	C
44	QLD	Proserpine/Whitsunday Coast	YBPN	B
44	QLD	Samuel Hill	YSMH	D

AREA	STATE	LOCATION	AVIATION IDENT	TAF CATEGORY
44	QLD	Townsville	YBTL	A
44	QLD	Williamson	YWIS	D
45	QLD	Burketown	YBKT	D
45	QLD	Cairns	YBCS	A
45	QLD	Coen	YCOE	D
45	QLD	Cooktown	YCKN	C
45	QLD	Georgetown	YGTN	D
45	QLD	Horn Island	YHID	A
45	QLD	Innisfail	YIFL	D
45	QLD	Kowanyama	YKOW	D
45	QLD	Lockhart River	YLHR	D
45	QLD	Mareeba	YMBA	D
45	QLD	Mornington Island	YMTI	D
45	QLD	Normanton	YNTN	D
45	QLD	Scherger	YBSG	D
45	QLD	Weipa	YBWP	B
50	SA	Adelaide Airport	YPAD	A
50	SA	Edinburgh	YPED	B
50	SA	Kadina	YKDI	E
50	SA	Kingscote	YKSC	B
50	SA	Minlaton	YMIN	D
50	SA	Mount Gambier	YMTG	B
50	SA	Murray Bridge	YMBD	D
50	SA	Naracoorte	YNRC	D
50	SA	Parafield	YPPF	B
50	SA	Port Augusta	YPAG	D
50	SA	Port Lincoln	YPLC	B
50	SA	Renmark	YREN	D
50	SA	Robe	YRBE	E
50	SA	Whyalla	YWHA	B
51	NSW	Broken Hill	YBHI	B
51	SA	Leigh Creek	YLEC	D
51	SA	Olympic Dam	YOLD	C
51	NSW	Tibooburra	YTIB	D
51	SA	Woomera	YPWR	B
52	SA	Coober Pedy	YCBP	C
52	SA	Marree	YMRE	E

AREA	STATE	LOCATION	AVIATION IDENT	TAF CATEGORY
52	SA	Moomba	YOOM	D
52	SA	Oodnadatta	YOOD	D
53	SA	Ceduna	YCDU	C
53	SA	Cleve	YCEE	D
53	SA	Tarcoola	YTAR	D
53	SA	Wudinna	YWUD	D
60	WA	Cunderdin	YCUN	D
60	WA	Garden Island HSF	YGAD	E
60	WA	Geraldton	YGEL	B
60	WA	Gin Gin	YGIG	E
60	WA	Jandakot	YPJT	B
60	WA	Morawa	YMRW	E
60	WA	Mount Magnet	YMOG	D
60	WA	Pearce	YPEA	B
60	WA	Perth Aero	YPPH	A
60	WA	Rottnest Island	YRTI	D
61	WA	Kalgoorlie	YPKG	A
61	WA	Laverton	YLTN	D
61	WA	Leinster	YLST	D
61	WA	Leonora	YLEO	D
61	WA	Murrin Murrin	YMMI	D
61	WA	Southern Cross	YSCR	D
62	WA	Forrest	YFRT	D
63	WA	Albany	YABA	B
63	WA	Busselton	YBLN	D
63	WA	Esperance Aero	YESP	C
63	WA	Norseman	YNSM	D
64	WA	Warburton	YWBR	D
65	WA	Carnarvon	YCAR	C
65	WA	Shark Bay	YSHK	D
66	WA	Meekatharra	YMEK	D
66	WA	Mount Keith	YMNE	D
66	WA	Newman	YNWN	B
66	WA	Paraburdoo	YPBO	B
66	WA	Telfer	YTEF	D
66	WA	Wiluna	YWLU	D

AREA	STATE	LOCATION	AVIATION IDENT	TAF CATEGORY
68	WA	Barrow island	YBWX	D
68	WA	Karratha	YPKA	B
68	WA	Learmonth	YPLM	A
68	WA	North Rankin A Platform	YXNR	D
68	WA	Onslow	YOLW	D
68	WA	Port Hedland	YPPD	A
68	WA	Roebourne	YROE	E
69	WA	Argyle	YARG	D
69	WA	Balgo Hill	YBGO	D
69	WA	Broome	YBRM	A
69	WA	Curtin/Derby South	YCIN	B
69	WA	Derby	YDBY	D
69	WA	Fitzroy Crossing	YFTZ	D
69	WA	Halls Creek	YHLC	D
69	WA	Kalumburu	YKAL	E
69	WA	Kununurra	YPKU	B
69	WA	Mungalalu-Truscott	YTST	D
69	WA	Wyndham	YWYM	D
EXT	EXT	Christmas Is	YPXM	A
EXT	EXT	Cocos Island	YPCC	A
70	TAS-ANT	Devonport	YDPO	B
70	TAS-ANT	Hobart Aero	YMHB	A
70	TAS-ANT	Launceston	YMLT	A
70	TAS-ANT	Smithton	YSMI	D
70	TAS-ANT	St Helens	YSTH	D
70	TAS-ANT	Strahan	YSRN	D
70	TAS	Tasman Island	YTSI	E
70	TAS-ANT	Wynyard (Burnie)	YWYY	B
80	NT	Batchelor	YBCR	E
80	NT	Bathurst Island (Nguiu)	YBTI	D
80	NT	Bayu Undan	YBYU	D
80	NT	Borroloola	YBRL	D
80	NT	Darwin Aero	YPDN	A
80	NT	Delamere Weapons Range	YDWF	E
80	NT	Elcho Island (Ngayawili)	YELD	C
80	NT	Gove	YPGV	B

AREA	STATE	LOCATION	AVIATION IDENT	TAF CATEGORY
80	NT	Groote Eylandt	YGTE	C
80	NT	Jabiru	YJAB	D
80	NT	Maningrida	YMGD	C
80	NT	McArthur River Mine	YMHU	D
80	NT	Milingimbi	YMGB	D
80	NT	Ngukurr	YNGU	D
80	NT	Port Keats	YPKT	D
80	NT	Smith Point	YSMP	D
80	NT	Snake Bay	YSNB	D
80	NT	South Goulburn Island (Warruwi)	YGBI	D
80	NT	Tindal	YPTN	A
80	NT	Victoria River Downs	YVRD	D
84	NT	Hooker Creek (Lajamanu)	YHOO	D
84	NT	Tennant Creek	YTNK	D
84	NT	The Granites	YTGT	D
84	NT	Wave Hill	YWAV	D
85	NT	Alice Springs	YBAS	A
85	NT	Ayers Rock (Yulara)	YAYE	B
85	NT	Ernabella (Pukatja)	YERN	D
85	WA	Giles	YGLS	D
85	NT	Jervois	YJVS	E
85	NT	Kintore (Wulungurru)	YKNT	D
85	NT	Yuendumu	YYND	D
86	EXT	Jabiru Venture	YJVN	D
86	EXT	Modec Venture Drilling Rig	YMVE	D
86	EXT	Northern Endeavour Drilling Rig	YNEN	D
86	WA	Troughton Island	YTTI	D
87	WA	Browse Island	YBWS	D
EXT	Tas/Ant	Wilkins Aerodrome	YWKS	