



Review of aerodrome forecast services for the aviation industry

Questions and Answers

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Introduction: The Aerodrome Forecast (TAF) review at a glance

- (i) The Aerodrome Forecast (TAF) review commenced in 2009 at the request of the aviation industry, which funds the TAF service entirely.
- (ii) The draft TAF review report was released to industry and aerodrome operators to comment on 18 December 2012. During a three month comment period, we received more than 50 submissions from airport owners and operators, airlines, industry bodies, government agencies and members of parliament.
- (iii) A review committee and a working group were established to formally review the issues identified in submissions and revise the draft report as necessary. The TAF review final report was released on 9 September 2014.
- (iv) Other forecast and warning services provided to the aviation community and the general public will not change as a result of this review. All these services will continue unchanged.
- (v) The aviation weather service provided by the Bureau of Meteorology operates under ICAO regulations and we must have in place quality management systems, which in-turn requires a review of services.
- (vi) TAFs are not mandatory to operate an aerodrome, but are of benefit for possible fuel reduction purposes. Indeed hundreds of aerodromes throughout regional and remote Australia operate safely without a TAF service already.
- (vii) TAF are only one of a number of forecast services provided for aviation operations. The other primary forecasts include Area Forecasts (ARFORs), Area QNH (pressure) forecasts, AIRMETs and SIGMETs.

1. Why was the TAF review undertaken?

The TAF review commenced in 2009 following requests from the aviation industry to review the Bureau's TAF services. It was established to address aviation industry concerns that the TAF service was at capacity, there had not being a national review of TAF services in the last two decades, industry concerns about the lack of responsiveness at times and due to changing requirements within the industry.

In addition, the Bureau's Aviation Weather Services is required to review products and services as part of the quality management system to meet International Civil Aviation Organization (ICAO) service standards.

2. What was the purpose of the TAF review?

The purpose of the TAF review was to address industry concerns regarding the TAF service by:

- Reviewing TAF services nationally and determining whether they meet the needs of the aviation industry and regulatory obligations;
- Establishing guidelines relating to the provision and categorisation of TAFs; and
- Establishing procedures for the introduction, modification and cancellation of TAF services.

3. What did the TAF review cover?

The TAF review assessed regulatory and safety requirements, best practices and industry and government needs associated with the provision and categorisation of TAFs. The review established guidelines for the introduction, modification and cancellation of TAFs. This included the provision of TAFs for locations funded by the Meteorological Service Charge (MSC) as well as locations funded separately.

It also reviewed and defined the minimum standard of observations required to support the effective production and ongoing monitoring of a TAF during its period of validity.

4. How did the Bureau seek feedback on the draft TAF review and how was the aviation industry informed of the progress of the review?

The below flow chart summarises the major consultation that occurred during the TAF review.

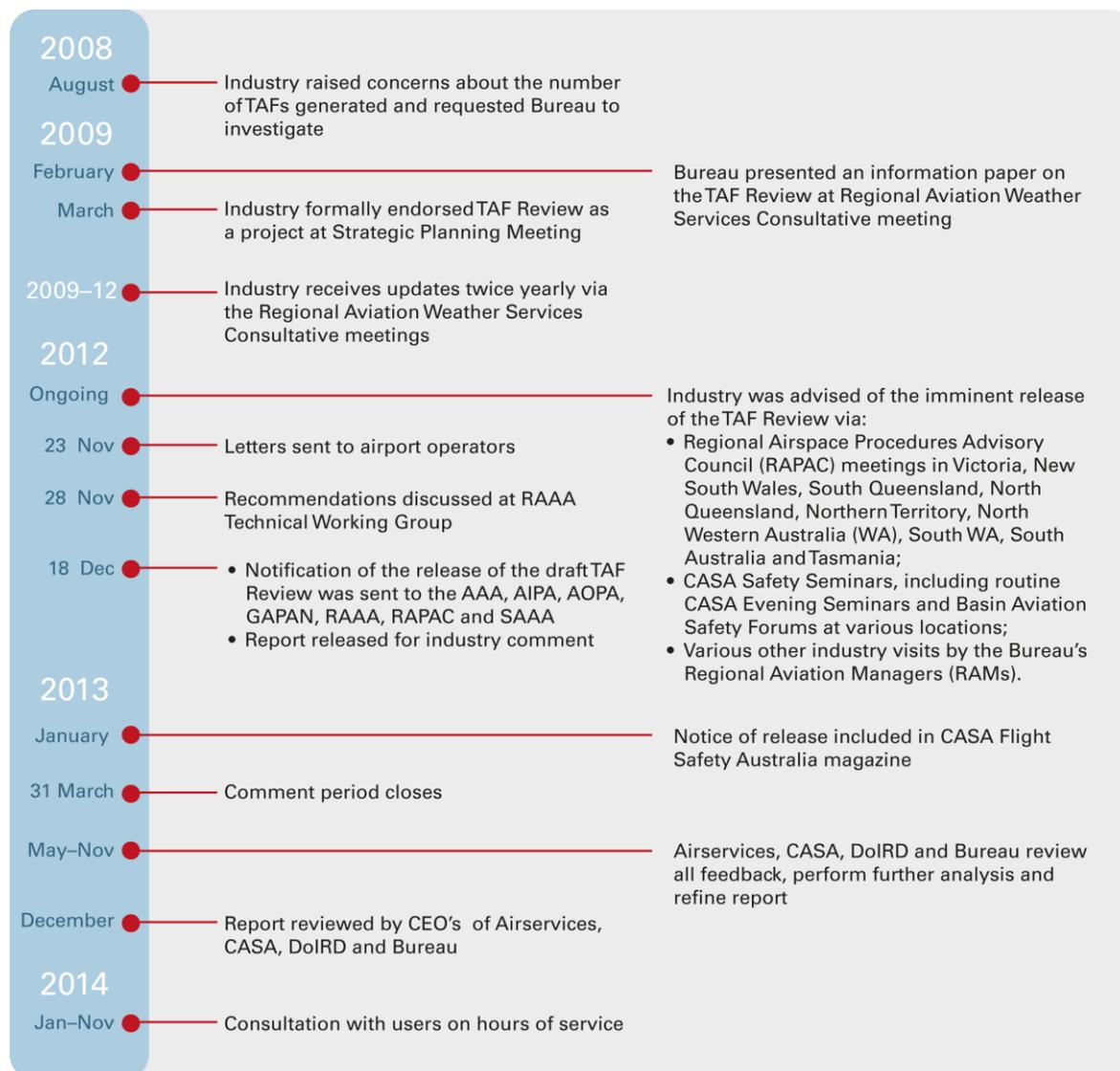


Figure 1 - Timeline of TAF review consultation

5. How was feedback considered and how were the final decisions made?

A review committee and a working group were established—each comprising representatives from Airservices Australia (Airservices), Civil Aviation Safety Authority (CASA), the Department of Infrastructure and Regional Development (DoIRD) and the Bureau. Both groups formally reviewed the issues identified in submissions and revised the draft report as necessary.

6. What are the next stages in the TAF review?

The TAF review final report and implementation plan were presented to, and agreed by, industry representatives at an extraordinary Industry Consultative Group meeting in Brisbane on the 27th August 2014. The project has now progressed into an implementation phase based on the agreed implementation plan.

The TAF review final report and implementation plans can be accessed at <http://www.bom.gov.au/aviation/taf-review/>

7. Will there be another TAF review?

As part of its quality management processes the Bureau intends to undertake a full review of TAF services every 3 years. These reviews will be conducted in consultation with industry and other government agencies. The Bureau will also undertake a post-implementation review one year after the implementation of the TAF review recommendations.

8. When will changes to TAF services occur, including the cessation of services and changes to issue and validity times?

Changes to TAF services will be implemented on 5 March 2015. All changes to the provision of TAF services will be updated in the AIP, DAP and ERSA with 5 March 2015 AIRAC cycle.

9. Which TAF services will cease?

Through the TAF review, the MSC funding of TAF service at 53 aerodromes will cease on 5 March 2015. These locations are:

Balgo Hill, Barcaldine, Bayu Undan, Blackall, Borroloola, Boulia, Cessnock, Cleve, Condobolin, Coonamble, Cootamundra, Corowa, Cowra, Cunnamulla, Deniliquin, Forbes, Gayndah, Goondiwindi, Gunnedah, Hay, Inverell, Kempsey, Kingaroy, Kintore (Wulungurru), Laverton, Mallacoota, Milingimbi, Mount Keith, Murrin-Murrin, Naracoorte, Nhill, Norseman, Northern Endeavour, North Rankin, Nyngan, Oodnadatta, Point Cook, Smithton, Smith Point, Snake Bay, South Goulburn Island, Tanami, Tarcoola, Temora, Tibooburra, Troughton Island, Victoria River Downs, Wave Hill, West Sale, West Wyalong, Wilcannia, Wudinna and Wyndham.

Optionally an aerodrome operator can fund the continued provision of service on a contractual cost recovery basis (see Question 24). This operator will also be required to fund any required observational equipment upgrades to meet the minimum observational equipment standard defined.

10. Why are some TAFs changing issue and/or validity times?

The TAF review assessed the categories of all TAF services, as a result 50 aerodromes will be re-categorised and the service re-aligned. In the majority of cases, this will result in the same or an increase to the TAF hours of coverage at the aerodrome. The Bureau will continue to work with industry to determine what hours of TAF services are required.

11. Will weather observations be affected by the TAF review?

Existing weather observation infrastructure will not be removed as part of the TAF review. Aerodromes which currently have an Automatic Weather Station (AWS) and/or Aerodrome Weather Information Service (AWIS) will retain these services even if the TAF service ceases.

Further to this, there will be additional observational infrastructure installed at many TAF locations, including:

- 7 AWSs;
- 66 ceilometers;
- 74 visimeters; and
- 1 present weather sensor.

12. Is the TAF review focused on cost savings rather than safety?

Safety is paramount to the TAF review and was a major driver for undertaking the review. The TAF review identified that the quality of TAFs would be improved, and safety enhanced, by ensuring that all TAF sites meet minimum observation requirements that exceed the current observational infrastructure at many aerodromes.

The changes from the TAF review will improve the quality of all aviation weather services and may provide capacity for some additional services as required by the industry.

13. Apart from TAF, will any other weather services be affected?

No other weather information will be affected by the TAF review. All other weather observations, forecasts for the general public, weather warnings and climate predictions will remain unchanged (see Figure 2). Aviation warnings and Area Forecasts are likewise unaffected. Whilst the TAF review will cease MSC funding of some TAF services, the review also determines that approximately \$6M+ should be spent on additional observational infrastructure in regional and remote aerodromes which will result in enhanced observations, forecasts and warnings.

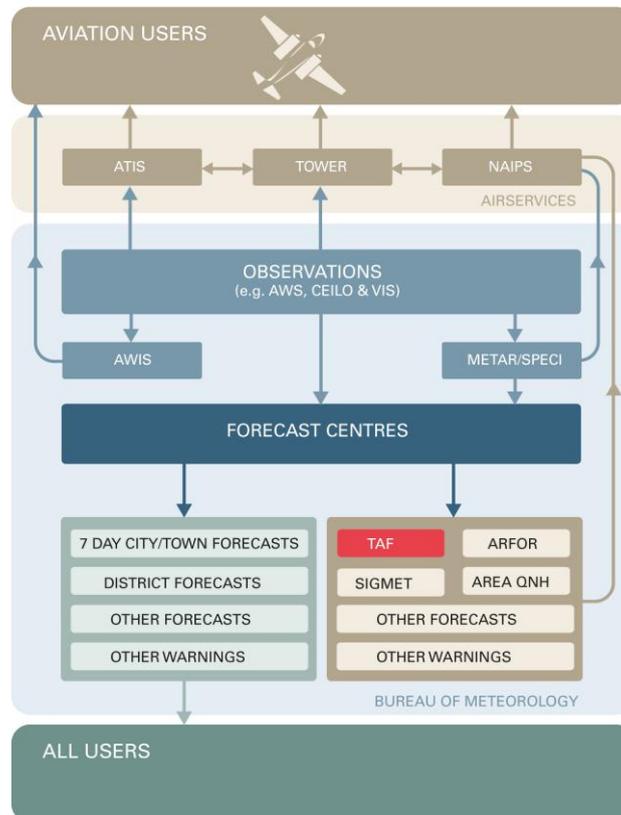


Figure 2 – TAF services in relation to other weather services

14. Does the 60nm rule imply conditions are the same between these locations?

This refers to Recommendation 3 from the TAF review Report.

“Recommendation 3 - Where a category Medium (C) or Small (D) TAF is located within 60 nautical miles of another TAF, the need for each Category C and D TAF should be assessed—with typically only one TAF being maintained. An assessment will be carried out considering complexity of the climatology, availability of meteorological observations, aerodrome infrastructure and access to alternate aerodromes, to determine the location of the TAF to be provided.”

The Bureau is not suggesting two locations within 60nm of one another are always meteorologically representative of one another. However, due to relatively low movement and passenger numbers into Category C and D aerodromes and given the high cost to maintain observations and produce TAFs for each site, some TAFs will cease due to their proximity to another TAF location. In such cases, aircraft can carry additional fuel to reach an alternate aerodrome which has a TAF service.

Funding and Administration

15. Who funds the Bureau’s aviation weather service?

Australian Government policy requires that the Bureau recover the incremental costs incurred in the provision of specialised services from the aviation industry. The Bureau’s core aviation service is funded by the aviation industry on a cost recovery

basis through funds collected via the Meteorological Service Charge (MSC) – See Question 16.

16. What is the Meteorological Service Charge (MSC)?

The MSC funds the core aviation meteorological service and is recovered by Airservices on behalf of the Bureau. The MSC is incurred by:

- all domestic landings operating under IFR;
- all international flights (inbound and outbound); and
- all flights over an Australian Flight Information Region.

The charge is calculated on the basis of the deemed maximum take-off weight (MTOW) and the distance flown. There are two different rates based on MTOW of the aircraft, these being up to 20 tonnes and over 20 tonnes. For further information refer to <http://www.bom.gov.au/aviation/about-us/overview/>

17. Who/What is the Meteorological Authority?

In Australia, the Meteorological Authority is the Bureau of Meteorology. The Director of the Bureau of Meteorology, under Australian Civil Aviation Regulations 1988, Regulation 120 (CAR120), also has the authority to certify competency of aeronautical meteorological service providers.

120 Weather reports not to be used if not made with authority

The operator or pilot in command of an aircraft must not use weather reports of actual or forecasted meteorological conditions in the planning, conduct and control of a flight if the meteorological observations, forecasts or reports were not made with the authority of:

- (a) *the Director of Meteorology; or*
- (b) *a person approved for the purpose by CASA.*

Further information regarding the authorisation process and associated costs can be obtained from:

Ms Sue O'Rourke
Section Head, Meteorological Authority
email: metauthority@bom.gov.au
Phone: (03) 9669 4662

About TAFs

18. What is a TAF?

An Aerodrome Forecast or TAF is a forecast of expected weather conditions within 5nm of aerodrome reference point and is designed for aircraft take-off and landing at the aerodrome. It is only used by pilots, flight planners and the aviation industry. TAFs include coded descriptions of weather, visibility, cloud, wind, temperature and pressure for aviation use.

The following is an example TAF for Darwin:

TAF YPDN 060512Z 0606/0712
31013KT 9999 SCT030
FM060800 29008KT 9999 SCT020
FM070400 32014KT 9999 SCT030

PROB30 TEMPO 0705/0712 VRB25G40KT 1000 TSRA BKN010 SCT020CB
RMK
T 34 32 30 28 Q 1007 1007 1009 1009

Refer to <http://www.bom.gov.au/aviation/data/education/awp-taf.pdf> for additional TAF information.

Most aerodromes which receive TAFs also have an automatic weather station (AWS) which report current weather conditions. These observations are often referred to as aerodrome weather reports or METARs/SPECIs. The TAF review does not propose the removal of any aerodrome weather reports.

The following is an example METAR for Gove aerodrome:

METAR YPGV 060600Z 03008KT 9999 FEW030 BKN350 33/23 Q1008
RMK RF00.0/000.0 HAZE

Refer to <http://www.bom.gov.au/aviation/data/education/awp-metarspeci.pdf> for additional METAR information.

19. How are TAFs used?

Pilots and other aviation users utilise TAFs to learn of expected weather conditions for take-off and landing for flight planning purposes. Where sufficiently poor weather conditions are forecast, aircraft must carry additional fuel to enable the aircraft to fly to an alternate aerodrome if it is unable to land at the destination aerodrome due to poor weather. Where there is no TAF for an aerodrome with an instrument approach procedure, all flights must carry enough fuel to proceed to an alternate aerodrome.

20. Will the cessation of a TAF service mean aircraft can't fly to a location?

The operation of services into an aerodrome is not dependent on the availability of a TAF for that location. Moreover, there are hundreds of aerodromes that operate without a TAF with pilots making use of the Area Forecast (ARFOR) for flight planning and situational awareness.

Flights are also often undertaken to aerodromes that receive a TAF but outside the validity times of this TAF. Flights to destinations without a valid TAF are required to carry sufficient fuel to allow them to divert to a suitable alternate (with a TAF), that is unless the destination aerodrome does not have a prescribed instrument approach procedure, in which case the minimum requirement is to flight plan on the appropriate ARFOR.

21. What is the process of requesting a new, or an extension to an existing, TAF service?

If an aerodrome owner, operator or an airline believes they require a new, or an extension to an existing, TAF service they should first call their local Regional Aviation Manager (RAM) to discuss the request (see Question 28 for contact details).

If the requestor wishes to progress the request they should formally write to National Manager Regional Aviation Weather Services providing evidence of why the service is required. Based on this information provided and other information available to the Bureau, the Bureau will apply the criteria defined in the TAF review to determine if the TAF service can be provided as either a:

- MSC funded TAF service; or
- Contractual TAF service (see Question 24).

If it is deemed that a TAF will only be provided as a contractual service (with associated costs), it then becomes a commercial decision by requestor whether to proceed with the service.

22. What is required to provide a TAF service for a new location?

In order to obtain a new TAF service, the Bureau requires

- access to meteorological observations from an automatic weather station with aviation sensors located at the aerodrome, whose installation and ongoing maintenance should be approved by the Meteorological Authority;
- a funding source; and
- forecasting and "weather watch" capacity to undertake the additional task.

The funding source could be either the Meteorological Service Charge or user funded (contractual TAF) service. The later will also require a service agreement to be signed by both the Bureau and the source of the funding.

23. What is the cost of a weather station?

The cost of an automatic weather station (AWS) varies significantly depending on the required quality, with costs varying between \$30 and \$200,000. For aviation use, the weather station needs to meet requirements defined by the World Meteorological Organization (WMO) and International Civil Aviation Organization (ICAO). The cost of an installed AWS suitable for aviation use, including ceilometer and visimeter, is typically between \$100,000 and \$200,000 depending on siting costs. In addition, there are annual maintenance and servicing costs, which vary between \$2,000 and \$15,000 per annum.

24. What is a contractual TAF?

A contractual TAF is a TAF provided by the Bureau that is funded on a cost-recovery basis as opposed to being funded by the Meteorological Service Charge (MSC) as part of the core aviation weather service.

In order to obtain a contractual TAF service, the aerodrome must have an AWS with aviation sensors and the equipment needs to be approved for aviation use by the Meteorological Authority.

25. Who funds contractual TAFs?

Typically the aerodrome owner or operator would fund a contractual TAF service and may in turn recover costs from aircraft using the aerodrome. Alternatively the contractual TAF may be funded directly or indirectly by local industry, regional agreements, local council, state or federal governments.

26. What does a contractual TAF service cost?

The charges for a contractual TAF vary depending on location, number of issues required per day, validity requirements and the number of other TAFs and observations in the region of the TAF location. Two charges are payable, these being

set up and service charges. Further information can be obtained from the National Manager Regional Aviation Weather Services.

27. How do users access contractual TAFs?

Airservices is the provider of the Aeronautical Information Service for Australia and therefore the official disseminator of aviation information, including meteorological forecasts. For this reason, the Bureau will provide contractual TAFs to Airservices for dissemination like all other TAFs. Users would then typically access contractual and standard TAFs via NAIPS Internet Service or their airline flight planning system.

Contact Information

28. Points of contact at the Bureau

For further information on the TAF review, please contact your local Regional Aviation Managers.

Regional Aviation Manager – North East (QLD and NT)
Mr Geoff Doueal
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