AUSTRALIA

AERONAUTICAL INFORMATION CIRCULAR (AIC)

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USE OF VERTICAL VISIBILITY IN AVIATION METEOROLOGICAL PRODUCTS

1. INTRODUCTION

1.1 Due to the recent bushfires in Australia, and the persistent nature of smoke in the atmosphere obscuring or partially obscuring the sky, the Bureau of Meteorology will provide information on vertical visibility in aviation meteorological products in line with international standards and practices.

1.2 Information on vertical visibility (VV) will be provided in Aerodrome Forecast (TAF), Trend Forecast (TTF) and Critical Location forecasts within the Graphical Area Forecast (GAF) in lieu of cloud information when smoke is obscuring the sky. The operational impacts of VV are detailed in section 6 of this circular.

1.3 The purpose of this AIC is to assist operators in understanding vertical visibility, its intended use and operational impacts, to provide forward notification of its implementation and subsequent operational impact(s).

1.4 The actual date and time of implementation will be advised by NOTAM.

2. BACKGROUND

2.1 ICAO recommends that cloud amount should be forecast using relevant abbreviations, however ‘when it is expected that the sky will remain or become obscured and clouds cannot be forecast and information is available at the aerodrome, the vertical visibility should be forecast’.

3. VERTICAL VISIBILITY

3.1 Vertical Visibility (VV) describes the vertical distance through a meteorological obscuration (e.g. a layer of smoke) that an observer can identify an object directly above him/herself.

3.2 Vertical visibility is forecast in the form “VV” followed by the forecast value e.g. a vertical visibility of 1000 feet is communicated as “VV010”.

3.3 For clarity, horizontal visibility will continue to be forecast.

4. IMPACTED AVIATION METEOROLOGICAL PRODUCTS

4.1 Aerodrome Forecast (TAF), Trend Forecast (TTF) and Critical Location forecasts within the Graphical Area Forecast (GAF) will be impacted by this change.

4.2 Meteorological reports in the form of METAR/SPECI or AWIS will not be immediately impacted, however users will be notified of any future change.

4.3 Use of Vertical visibility (VV) for other obscuring phenomena (e.g. dust and fog) in aviation meteorological products will be implemented in the future and users will be notified accordingly.

5. CHANGES TO TAF, TTF AND CRITICAL LOCATION FORECASTS WITHIN THE GAF

5.1 TAF and TTF

- When the sky is obscured by smoke, vertical visibility will be forecast in lieu of cloud amount and height.
- Vertical visibility will be included if it is below 5,000FT.
- Vertical visibility will be given in hundreds of feet using three figures, in the following format VVnnn where nnn is height in hundreds of feet above aerodrome elevation. e.g. 02005KT 4000 FU VV010.
- Significant changes and variations in vertical visibility (improvement or deterioration) will be included if it satisfies the specified amendment thresholds (100, 200, 500 or 1 000 ft).
- TAF Example:

TAF YMNG 160630Z 1608/1620
14012KT 6000 FU NSC
FM161500 02012KT 9000 FU NSC
TEMPO 1608/1615 3000 FU VV010
RMK
T 29 22 19 17 Q 1013 1014 1015 1016

- TTF Example:

TTF METAR YMML 152030Z 36011KT CAVOK 14/12 1019 RMK RF00.0/000.0 SMOKE

TTF:FM2200 VRB05KT 4000 FU VV018

5.2 Critical location forecasts

- Critical Location Forecast Example:

REMARKS:

CRITICAL LOCATIONS [HEIGHT AMSL]:

KMG [ELEV 1200FT]: 5000M FU NSC, BECMG 1408/1410 9000M FU VV010

- Vertical visibility information will not be provided in the main body of the GAF, as the visibility forecast refers to the horizontal surface visibility.

6. OPERATIONAL IMPACT

6.1 The cloud amount / height elements of aviation weather forecasts are fundamental to aviation safety, particularly in relation to a pilot determining whether a route can be flown under the Visual Flight Rules (VFR) and/or when they must plan for an alternate aerodrome.

6.2 For VFR flights, pilots use the forecast en-route height of the cloud base to determine whether a flight can be commenced or continued under the VFR.

6.3 For all flights, one component of the alternate aerodrome rules requires pilots (note there are exceptions) to plan for an alternate aerodrome when the cloud is more than SCT below the alternate minimum (the alternate minimums for different flights are outlined in the AIP).

6.4 In simple terms, when cloud is forecast above the alternate minimum, the likelihood of a pilot having to proceed to an alternate aerodrome has been reduced to an acceptable level. When more than SCT cloud is forecast below the alternate minimum, the likelihood of a pilot carrying out a successful instrument approach, or remaining visual (if operating under the VFR), has been reduced to an unacceptable level for safety. When this occurs, risk mitigation is necessary, for example by: planning for an alternate aerodrome; choosing not to depart an aerodrome under the VFR; or, choosing not to continue en-route under the VFR.

6.5 Operationally, where vertical visibility is forecast instead of cloud, the same risk of a pilot not becoming “visual” after an approach or not remaining in Visual Meteorological Conditions (VMC) on a VFR flight is present. The practical effect is that the vertical visibility height is equivalent to an overcast cloud layer at that same height.

6.6 In order to maintain the appropriate level of aviation safety during circumstances when vertical visibility is forecast in lieu of cloud heights, pilots and operators are to treat the vertical visibility height as equivalent to “more than SCT cloud” when determining whether to depart, or continue a flight under the VFR, or plan for an alternate aerodrome. Note that these options are subject to the other alternate aerodrome rules and exceptions outlined in AIP, or the subject of individual operator authorisations.

7. CONTACT

7.1 For aviation meteorological questions contact BoM via phone number listed in the GAF.

7.2 For additional information on changes to TAF, TTF and Critical Location forecast contact: webav@bom.gov.au

7.3 For operational impacts contact CASA enquiries number 131 757.

8. CANCELLATION

8.1 This AIC self-cancels 202004300000 UTC.

9. DISTRIBUTION

9.1 Airservices Australia website only.