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Australian Government
Civil Aviation Safety Authority

**ANNEX C TO SOC ON MULTI-PART
AC 139-05, AC 171-05 AND AC 172-03
V1.0**

Bureau of Meteorology feedback and CASA's response/disposition

May 2024

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Bureau of Meteorology feedback and CASA response/disposition to Draft AC 139-05, AC 171-05 and AC 172-03 - All-weather operations at aerodromes v1.0

C.1 Section 1.2 – Definitions

C.1.1 Bureau of Meteorology feedback

“Consider including relevant Annex 3 meteorological definitions with the option to ‘Australianise’ definitions and remove ‘international’ as the services provided are for the purpose of both international and domestic aviation.)

The following were proposed:

- Meteorological office. An office designated to provide meteorological service for international air navigation.
- Aerodrome meteorological office. An office designated to provide meteorological service for aerodromes serving international air navigation.
- Aeronautical meteorological station: A station designated to make observations and meteorological reports for use in international air navigation.
- Observation (meteorological). The evaluation of one or more meteorological elements.
- Meteorological information. Meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions.
- Meteorological (MET) observer: a person certified by the Bureau of Meteorology to make and record meteorological observations and provide authorised weather reports.
- Meteorological (MET) equipment: means Automatic Weather Observing System (AWOS). {or is the intent to limit the equipment to those types required for LVP and prescribed in Part 139 MOS (i.e. RVR and WDI)? If so - Meteorological (MET) equipment: means the MET equipment required for LVP which includes RVR system and WDI.}
- Meteorological (MET) service: means meteorological service in accordance with ICAO Annex 3 and Australian registered differences.
- From MA2 Certificate of Approval Policy: Automatic Weather Observing System (AWOS): means a fully integrated and configurable system of instruments, interfaces, processing, and transmission units that provides continuous, real-time information and measurements on aerodrome weather conditions. An AWOS includes but is not limited to: Automatic Weather Stations (AWS); Threshold Anemometers; Transmissometers (RVR systems); and Low-Level Wind Shear Systems.
- Runway Visual Range System: means the electronic instrument, equipment and systems used to measure Runway Visual Range.
- Meteorological Aerodrome Report (METAR): means a routine aerodrome weather report issued at half hourly time intervals.
- Special Aerodrome Weather Report (SPECI): means a special aerodrome weather report issued only when meteorological parameters meet specific criteria.

- New Annex 3 definition (effective Nov 2025): Meteorological Service Provider: The relevant entity providing designated to provide meteorological service for air navigation. ## As this is stating the obvious we recommend including it in the AC, along with who performs the role: In Australia and its territories the Bureau of Meteorology provides the meteorological service for aviation as legislated under the Meteorology Act 1955.”

C.1.2 CASA response/disposition

We reviewed the recommended definitions and have adopted several of them for AC.

C.2 Remainder of AC

C.2.1 Bureau of Meteorology feedback

“Para 4.1.1 bullet 1: Suggest replacing with ‘observed’ to align definition.”

C.2.2 CASA response/disposition

We agree and have amended the final version of the AC.

C.2.3 Bureau of Meteorology feedback

“Para 4.1.1 bullet 5: Recommend specifying the types of equipment, in particular the types of MET equipment as AWO rely on MET equipment. additional equipment and procedures necessary to support certain types of AWO, such as MET equipment....”

C.2.4 CASA response/disposition

This list is a basic summary of requisites for AWA. Considerable detail is provided later in the document.

We propose no change.

C.2.5 Bureau of Meteorology feedback

“Section 4.2: For completeness, address ‘Condition 4’ - what does it mean? If operations should cease, please explain this?”

C.2.6 CASA response/disposition

Condition 4 is defined in section 1.2 of the AC. While the situation would normally trigger a cessation of operations, this is not a certainty. Aircraft may be equipped with vision enhancing systems which may allow continuation of limited operations.

We are satisfied with the existing explanations and propose no change..

C.2.7 Bureau of Meteorology feedback

“Paras 4.2.4, 4.2.5 & 4.4.4: Recommend using definition: reduced aerodrome visibility conditions”

C.2.8 CASA response/disposition

We appreciate the recommended change, but are satisfied with the existing wording.

C.2.9 Bureau of Meteorology feedback

“Para 4.4.3: ‘Note 4’ not listed on table - More context needed - does it relate to the whole table?”

C.2.10 CASA response/disposition

The note applies to whole table.

In the final AC, we have separated this note from the note pertaining to the diagram.

C.2.11 Bureau of Meteorology feedback

“Para 4.4.4: Consider how the following terms are used in the AC: RAVC vs MET conditions vs MET observations vs MET equipment; MET services vs MET Service Provider”

C.2.12 CASA response/disposition

We appreciate the comment, but are of the view that ‘MET conditions’ is simply painting a picture of the weather situation. That weather situation may or may not trigger an action.

C.2.13 Bureau of Meteorology feedback

“Para 4.5.1.1: MET service differs from MET equipment. The service is provided by the MET service provider, whereas the equipment can be provided by the aerodrome operator, therefore recommend separating these two things. It’s unclear what suitable MET service is. We assume its is an authorised weather forecast for the aerodrome and authorised weather report - METAR/SPECI, and hence we have suggested a definition for MET service. How does CASA determine what is suitable? It’s unclear what suitable MET equipment is. We assume suitable equipment as that described in Part 139 MOS and hence we have suggested a definition for MET equipment. How does CASA determine what is suitable?”

C.2.14 CASA response/disposition

While we appreciate the argument, we don’t intend to amend the reference in the final AC. This list is broad and general in nature and is not meant to identify who will provide the service in each case.

C.2.15 Bureau of Meteorology feedback

“Section 4.5.2: Under section 4.5.1.1 there is a requirement for assessing the suitability of an aerodrome in relation to MET equipment. MET equipment to support LVP - RVR - is provided by the aerodrome operator (not the Bureau). We recommend including it is the responsibility of the AO to install RVR systems to support LVP. It would be advantageous to note that under this section there is suitable land to support Met services, i.e. appropriate meteorological observations to AWO.”

C.2.16 CASA response/disposition

Section 4.5.2 is a general summary of aerodrome operator actions to support LVP. Section 5.3.8 specifies who is responsible for providing RVR equipment.

No change proposed.

Allocation of land is a valid consideration.

We have added reference to allocation of space or land requirements as a new paragraph in section 5.1 (Provisions to support AWO - General)

C.2.17 Bureau of Meteorology feedback

“Section 5.2: Should MET equipment be included in this section? The aerodrome requires RVR measurements in order to initiate LVP, it is the responsibility of the aerodrome to install an RVR system for this purpose.”

C.2.18 CASA response/disposition

Para 5.2.1 refers generically to equipment required to conduct AWO. Logically, this will include MET equipment. There are explicit references to MET equipment later in chapter 5.

We propose no change.

C.2.19 Bureau of Meteorology feedback

“Section 5.3 Onward: Any reference to a MET entity – BoM, MET, MET observer, MET service, MET service provider – review and clarification for each reference is needed to better reflect CASA's intended meaning in each case. Based on current arrangements, this could be BoM, the Meteorological Authority Office (MAO), an automatic weather observing system (AWOS) Certificate of Approval (CoA) holder, or technical staff (including 'observers') depending on the aerodrome and how its MET equipment has been set-up. Definitions should be added to 1.2 as suggested.”

C.2.20 CASA response/disposition

We appreciate the additional information about MET aspects and have included the section 5.3 proposals in the final AC.

C.2.21 Bureau of Meteorology feedback

“Para 5.3.1: Remove 'services' as this is confusing. There are multiple players with regards to MET (refer to comment above) and 5.3.1 suggests things in this section (MET services) are provided by the Bureau but this is not the case. As per comment above [preceding], as there are multiple players with regards to MET, the information in this paragraph has been moved to roles/responsibilities section.”

C.2.22 CASA response/disposition

We accept these recommendations.

After further consideration we have omitted para 5.3.1.

C.2.23 Bureau of Meteorology feedback

“AWO AC generally: Suggest including all chapter references – i.e. ICAO Annex 3 4.1.5”

C.2.24 CASA response/disposition

While ideal to reference to paragraph level in the AC. Experience has shown that ICAO will change something in an Annex or PANS, which completely disrupts the original paragraph number structure.

For the final AC, we will provide ICAO references at the section heading level.

C.2.25 Bureau of Meteorology feedback

“Table 24, Row 1: Australia currently holds a C difference against this standard. Description of Difference: CASR only require Wind Velocity, Barometric pressure and Temperature for Met Displays in ATC Towers. Remark: Minimum requirement as determined by the Civil Aviation Safety Regulator”

C.2.26 CASA response/disposition

We appreciate the advice.

We will modify Table 24 to show height of cloud base sensors as a recommended, rather than required, facility.

C.2.27 Bureau of Meteorology feedback

“Table 24, Row 3: Recommended: ICAO Annex 3 - 4.6.5.2 – Australia does not issue local routine and special reports”

C.2.28 CASA response/disposition

We acknowledge this and have omitted references to local routine and special reports.

C.2.29 Bureau of Meteorology feedback

“Table 24, Row 5: AC text does not align with what is prescribed in Annex 3. Annex 3 states: Recommendation: When instrumented systems are used for the measurement of the cloud amount and the height of cloud base, representative observations should be obtained by the use of sensors appropriately sited. For local routine and special reports, in the case of aerodromes with precision approach runways, sensors for cloud amount and height of cloud base should be sited to give the best practicable indications of the cloud amount and height of cloud base at the threshold of the runway in use. For that purpose, a sensor should be installed at a distance of less than 1 200 m (4 000 ft) before the landing threshold.”

C.2.30 CASA response/disposition

We appreciate the advice.

We have amended the final AC so that the relevant recommendation aligns with the wording in Annex 3.

C.2.31 Bureau of Meteorology feedback

“Table 24, Row 6: It is not clear what is meant, or expected, by "familiarise MET with the requirements for LVP". Is this referring to infrastructure planning, operations (observations or forecasting) or..? Does this mean familiarise the MET service provider?”

C.2.32 CASA response/disposition

The aerodrome operator is expected to ensure the MET service provider is aware of the specific requirements for the LVP at a particular aerodrome. For example, an aerodrome operator may be upgrading from CAT I approach operations to CAT III. This requires RVR as a starting point and the MET service provider should be made aware and engaged.

We have amended the final AC to reflect this intent.

C.2.33 Bureau of Meteorology feedback

“Section 5.3.5 (secondary power supplies): This should also be included as a requirement in 5.2.4 Table 2 for aerodrome operators to make this available. It needs to be more explicit that aerodrome operators are required to make this available.”

C.2.34 CASA response/disposition

It is not appropriate to set this as a requirement because there is no underpinning legislation. The ICAO reference is only a recommendation and there is no equivalent requirement or recommendation in the

Part 139 MOS. Also, an Annex 14 requirement or recommendation does not automatically translate into a requirement or recommendation for an Australian aerodrome operator. There are numerous references in Annex 14 to matters that, in Australia, are the responsibility of persons other than aerodrome operators. For example: Annex 14 recommends secondary power supply for ATC signal lamps or control towers. In the Australian context, control towers are the responsibility of ATS providers.

We intend no change.

C.2.35 Bureau of Meteorology feedback

“Table 25, Row 4: Not clear who is to inform ATS and AIS? There is a requirement that RVR data is made available to BOM for ingestion into the METAR/SPECI as per ICAO Annex 3 requirements.”

C.2.36 CASA response/disposition

We appreciate the comment. Our earlier stated intention to amend the chapeau assigns the responsibility to the aerodrome operator.

The final version of the AC will also include advice to inform the BOM of any changes to RVR serviceability.

C.2.37 Bureau of Meteorology feedback

“Table 25, Row 7: 'Use standard reporting... lasts for 10 minutes' item – review against Table 31 content and incorporate consistent wording and 'degree of compliance' advice.”

C.2.38 CASA response/disposition

We appreciate the advice and note that it replicates and partly contradicts the recommendation in Table 31. As ATC will normally pass RVR information to aircraft, the information more logically should only appear in Table 31.

We will omit the referenced table row.

C.2.39 Bureau of Meteorology feedback

“Para 5.4.1: 'The operator should review these provisions' – for clarity is this, 'aerodrome operator' or 'aircraft operator'?”

C.2.40 CASA response/disposition

We note this comment.

As this matter affects for than the aerodrome operator, we have added a generic statement: ‘... and service providers’.

C.2.41 Bureau of Meteorology feedback

“Para 5.9.7: ‘...means to report the status of.’ This sentence seems to be incomplete.”

C.2.42 CASA response/disposition

Thank you. The sentence should refer to ‘status of LVP’.

We have corrected this in the final AC.

C.2.43 Bureau of Meteorology feedback

“Para 6.2.1: The Bureau commends CASA for proposing to create an aerodrome working groups to holistically review services in support of AWO/LPV operations at each airport.”

C.2.44 CASA response/disposition

Noted.

C.2.45 Bureau of Meteorology feedback

“Para 8.4.3: 'Prediction of conditions for initiation and termination of LVP is dependent on specific coordination with MET.' – what is CASA's expectation here (what does CASA expect this to look like)?”

C.2.46 CASA response/disposition

Our expectation is described in the remainder of the paragraph; that coordination between the parties would ensure adequate preparation for forecast meteorological conditions.

C.2.47 Bureau of Meteorology feedback

“Para 8.4.7.3, 8.4.7.4 & Table 38, row 3, para 8.5.1 ‘... MET conditions deteriorate/improve...’: Recommend being specific - should this be RVR/RV or visibility.”

C.2.48 CASA response/disposition

We are of the view that LVP is influenced by a variety of met conditions; (not only visibility - despite the name LVP).

We propose no change.