C A R I B B E A N

M E T E O R O L O G I C A L

O R G A N I Z A T I O N

**ANNUAL MEETING OF DIRECTORS OF METEOROLOGICAL SERVICES Doc. 6**

Basseterre, ST KITTS AND NEVIS, 14 NOVEMBER 2018

**OUTCOME/HIGHLIGHTS OF THE SIXTEENTH MEETING OF COMMISSION FOR AERONAUTICAL METEOROLOGY**

(Submitted by the Coordinating Director)

**Summary**

1. At the kind invitation of the Government of the United Kingdom of Great Britain and Northern Ireland, the sixteenth session of the Commission for Aeronautical Meteorology (CAeM‑16) was held in Exeter from 24 to 27 July 2018, at the University of Exeter. A Technical Conference (TECO) was held at the same venue on 23 July 2018.
2. The session of the Commission was chaired by its President Mr Chi Ming Shun. Elections were held for officers of the Commission for the next intercessional period. **Mr. Ian Lisk** (United Kingdom of Great Britain and Northern Ireland) and **Ms Stephanie Desbios** (France) were declared elected by acclamation for the positions of President and Vice President of the Commission respectively. **Ms Kathy-Ann Caesar** (British Caribbean Territories) was selected as the co-chair on the Expert Team - Education, Training and Competency and hence she is a member of the CAeM Management Group.

**1. Aircraft Meteorological Data Relay (AMDAR) and other instruments and methods of observation**

3. In late 2016, the International Air Transport Association (IATA) secretariat approached the World Meteorological Organization (WMO) to inform that, at the behest of its member airlines, it had undertaken a study on the operation of the WMO Aircraft Meteorological Data Relay (AMDAR) programme and had made the following recommendations:

1. IATA to work with WMO to expand the AMDAR programme across the globe and establish a more equitable cost-recovery mechanism for the participating airlines; and
2. IATA to set up a global turbulence database with real-time data transmission to airlines during flight operations.

4. At that initial meeting, it was agreed that there appeared to be significant advantages and mutual benefits, to their respective members, if a formal collaboration on the future operation of the AMDAR programme were to be established.

5. It was decided to establish a Working Arrangement between IATA and WMO on the Operation of the AMDAR Programme. Under the Working Arrangement, the two organizations would work together to develop the terms of reference and concept of operations, based on which a future collaboration on AMDAR might be defined and later approved by a subsequent decision of the Executive Council and Congress. The Working Arrangement was formally established in July 2017.

6. Under the Concept of Operations for the IATA-WMO Collaborative AMDAR Programme (IWCAP), the following are the key aspects:

1. Each Regional Association (RA) would be responsible for establishing and maintaining regional requirements for AMDAR observations, primarily based on national member requirements and resourcing to pay for observations and support for the programme operation;
2. IATA and WMO would develop a cost framework for supporting the operation and development of IWCAP to meet national and regional requirements for observations;
3. IATA and WMO would jointly manage funds to support the IWCAP and reimburse airline partners for the costs of the programme development and provision of observations on the WMO Information System (WIS); and
4. RAs would operate and maintain Regional Data Processing Centres and support planning activities and data and quality management operations through the establishment of regional working groups.

7. In the Anglophone Caribbean, the following airlines are members of IATA:

1. Caribbean Airlines;
2. Cayman Airways;
3. LIAT Airlines.

***Instruments and methods of observation***

8. There was an acknowledgement of a need for improved coordination and collaboration between the Commission for Aeronautical Meteorology (CAeM) and the Commission for Instruments and Methods of Observation (CIMO) in the context of meteorological observations supporting international air navigation. For example, guidance on meteorological observations at aerodromes and (increasingly) in the terminal area could be improved or developed, including in the context of automated observing systems, and that there needs to be a way to direct periodic aviation-specific enquiries on instruments and methods of observation to persons with the necessary level of expertise to respond. The CAeM-MG-2016 acknowledged that addressing these issues should form part of the CAeM’s future priorities.

***WMO Information System (WIS) and interoperability with ICAO SWIM***

9. CBS has continued to support the development and implementation of the ICAO Meteorological Information Exchange Model (IWXXM) as a data format for reporting aeronautical meteorological information in XML/GML. Information on the standard and its development are available at **https://wis.wmo.int/page=TT-AvXML** and the technical maintenance of the code can be accessed at **https://github.com/wmo-im/iwxxm**. ICAO is developing its system-wide information management (SWIM) environment that will include meteorological information as one component.

10. In preparation for the SWIM environment and at the request of ICAO, for the past several years WMO has been developing the IWXXM referenced above. The IWXXM is the data model chosen for representing aeronautical meteorological information in SWIM and the technical specifications of IWXXM are included in the *WMO Manual on Codes* (WMO-No. 306), Volume I.3, Part D – Representation Derived from Data Models. The agreed format for the operational exchange of information in the SWIM environment, including meteorological information, is XML/GML.

**2.** **Tropical cyclone developments of relevance to aviation**

11. SIGMETs are issued by Meteorological Watch Offices (MWO) about the occurrence or expected occurrence of specified en route phenomena which may affect the safety of aircraft operations. SIGMETs are of highest priority among other types of meteorological information provided to aviation users, supporting pre-flight planning and in-flight re-planning. To encourage implementation, there was a recommendation for establishing an agreement at the national level for coordination between civil aviation and meteorological authorities.

12. Provisions concerning the issuance and dissemination of SIGMET information are contained in ICAO Annex 3 to the Convention on International Civil Aviation, *Meteorological Service for International Air Navigation,* which is reproduced by WMO as Technical Regulations (WMO‑No. 49), Volume II. Specialized tropical cyclone advisory information is required to support MWOs in the preparation of SIGMET information related to tropical cyclones.

13. Within the aforementioned ICAO and WMO provisions, tropical cyclone advisory centres (TCACs) are designated to provide tropical cyclone advisories to MWOs, the world area forecast centres (WAFCs) and international OPMET data banks. Close coordination has been established between the MWO and its responsible TCAC.

14. It has been recommended by WMO Tropical Cyclone Meetings (TCM) that the Tropical Cyclone Programme of WMO (TCP) should coordinate, through the relevant WMO technical commission, to work with ICAO to ensure that the aeronautical users’ requirements for tropical cyclone information is discussed among the WMO Permanent Representatives of the TCACs/RSMCs/TCWCs to ensure regional coordination and that the implementation plans meet ICAO’s regulatory requirements. Additionally, in order to improve coordination, ICAO representation should be offered at the various WMO Regional Association tropical cyclone meetings.

**3.** **Education and training developments of relevance to aviation**

15. The WMO competency standards for aeronautical meteorological observers (AMO) and aeronautical meteorological forecasters (AMF) were the first WMO competency frameworks to be approved in 2013 and included in WMO-No. 49, *Technical Regulations*, Volume I, *General Standards and Recommended Practices*. Since then, additional frameworks have been implemented by WMO, with several additional frameworks under development. This has prompted the publication of the [*WMO Guide to Competency*](https://library.wmo.int/opac/index.php?lvl=notice_display&id=20181) (WMO-No. 1205) in early 2018. This Guide covers competency assessment practices, competency documentation, and competency-based training. In addition, it discusses the process of developing or adapting a competency framework.

16. The qualification requirement that an AMF has successfully completed the relevant parts of the Basic Instruction Package for Meteorologists (BIP-M) was introduced by WMO as a recommended practice in 2013 and elevated to a Standard in 2016 ([WMO-No. 49, *Technical Regulations*, Volume I](https://library.wmo.int/opac/doc_num.php?explnum_id=4065), *General Meteorological Standards and Recommended Practices*, Part V, *Personnel providing aeronautical meteorological services*, section 1.2.1.1 refers). The WMO ETR Office requested of EC-70 (June 2018) to approve a review plan for the BIP-M and BIP-MT to consider any needs for updating based on scientific advances and changing roles of operational weather forecasters and changing service delivery requirements.

**4. WMO Regulatory and Guidance Material**

17. Within the WMO and ICAO regulatory frameworks for aeronautical meteorological service provision, there is currently duplication between WMO-No. 49, *Technical Regulations*, Volume II – Meteorological Service for International Air Navigation, and ICAO Annex 3, Parts I and II. These publications are essentially identical. Parts III and IV are reserved only for the WMO publication, where Part III addresses aeronautical climatology and Part IV addresses the format and preparation of flight documentation.

18 Arising from a bilateral meeting between the WMO Secretary-General and the ICAO Secretary General in April 2017, it was recommended that the two organizations seek opportunities to improve efficiency, including potentially eliminating WMO-No. 49, Volume II.

19. At the CAeM Management Group (MG) meeting in January 2018, the MG noted that the ongoing duplication of key documents such as Technical Regulations, including disparate document controls, was not consistent with the principles of quality management and does not set a good example to international aeronautical meteorological service providers and the wider community.

20. At the CAeM 17th Session (Exeter, United Kingdom), the Commission:

**Recommends** that WMO, in coordination with ICAO, should:

 (1) Undertake steps necessary to discontinue *Technical Regulations* (WMO-No. 49), Volume II while ensuring that any material of continuing relevance is reviewed before being transferred to other (new or existing) regulatory or guidance material of WMO or ICAO;

(2) Ensure, during the accomplishment of (1), that:

 (a) Any WMO or ICAO regulatory and/or guidance material that cross- references WMO *Technical Regulations* (WMO-No. 49), Volume II is appropriately amended; and

 (b) Members are kept fully informed of the relevance and availability of this material as well as other relevant ICAO provisions;

**Requests** the Secretary-General to keep ICAO informed of these developments and, in consultation with ICAO, explore means to enable free access, preferably online, to relevant ICAO regulatory and guidance material by all WMO Members and their NMHSs providing meteorological service for international air navigation.

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July 2018