



WORKING PAPER

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 2: Enabling the global air navigation system

2.3: Future provision of aeronautical meteorological service

**DEVELOPING COST RECOVERY MECHANISMS FOR THE PROVISION OF
AERONAUTICAL METEOROLOGICAL INFORMATION**

(Presented by the United States)

EXECUTIVE SUMMARY

This paper presents the need for timely action to provide updated guidelines and guidance on cost recovery for aeronautical meteorological service, as well as a proposal to provide the Meteorology Panel with the necessary assistance in the areas of airport and air navigation services economics.

Action: The Conference is invited to:

- a) note the information in this paper; and
- b) agree to the recommendation contained in paragraph 3.2.

1. INTRODUCTION

1.1 The ICAO Meteorology (MET) Divisional Meeting (2014) (MET/14) recognized the need to review how States, national meteorological service providers, and designated charging authorities currently recover costs associated with the provision of aeronautical meteorological service. Based on the *Report of the Meteorology Divisional Meeting 2014* (Doc 10045), specifically Recommendation 4/4, the Secretariat was directed to develop guidance through the Air Transport Bureau (ATB), and in coordination with the World Meteorological Organization (WMO), addressing equitable cost recovery practices where aeronautical meteorological service is fulfilled on a multi-regional, regional, or sub-regional basis (Doc 10045, refers). Subsequently, Recommendation 4/4 from the MET/14 meeting resulted in the development of Job Card METP.011.01 assigned to the Meteorology Panel (METP) by the Air Navigation Commission (ANC).

1.2 The provision of aeronautical meteorological service is on the cusp of experiencing a paradigm shift. National meteorological service providers, as well as private entities are now capable of producing and disseminating weather information to aviation decision-makers that covers large geographic areas encompassing multiple States and flight information regions (FIRs). Furthermore, aviation users have expressed a need for globally-consistent, phenomena-based hazardous weather

information to support operational capabilities envisaged to improve the safety and efficiency of international air navigation.

1.3 In response to a need for improved observations and forecasts of hazardous meteorological conditions articulated by aviation users, the MET/14 adopted Recommendation 2/9 calling for “implementation of a regional advisory system for select en route hazardous meteorological conditions.” This recommendation resulted in the METP being tasked by the ANC, through Job Card METP.007.01, to develop such a regional advisory system. Further discussion of the issue within the METP and refinement of the aviation users’ needs resulted in a shift to focus on the provision of phenomena-based hazardous meteorological information that is not confined to FIR boundaries. Thus, the METP is leading the change in the provision of aeronautical meteorological service called for by MET/14 and affirmed by the ANC.

1.4 It is important to understand how this paradigm shift in the provision of aeronautical meteorological service may affect the recovery of costs for meteorological information. As new meteorological services become available and legacy information is provided in a more efficient manner, it may be necessary to update the mechanisms used to recover aeronautical meteorological service costs. The challenge is to ensure that any update is consistent with the key charging principles contained in ICAO’s *Policies on Charges for Airports and Air Navigation Services* (Doc 9082). Specifically, States should ensure that charges are cost-based, non-discriminatory, transparent, and do not cross-subsidize other users. Adherence to these principles has benefitted international aviation in numerous ways. In particular, these principles have been crucial in preventing the proliferation of airport and air navigation service charges, encouraging more efficient provision of services, and fostering the growth of international aviation.

1.5 To address this challenge, the METP will need to work closely with both the Airport Economics Panel (AEP) and the Air Navigation Service Economics Panel (ANSEP). The AEP and ANSEP are responsible for maintaining the information contained in Doc 9082 and have frequently assisted the ATB and ANC in drafting guidance with respect to the issue of cost recovery and the economics of service provision.

2. DISCUSSION

2.1 Nearly all ICAO Member States have some form of cost recovery mechanism for the provision of aeronautical meteorological service. However, the current cost recovery mechanisms for meteorological information are largely based on legacy, text-based weather information products.

2.2 The existing cost recovery mechanisms for weather information for civil aviation are likely insufficient to ensure that States, national meteorological services, and designated charging authorities will be able to appropriately recover costs for the provision of aeronautical meteorological service as this paradigm shift continues.

2.3 Aviation operators view the paradigm shift in the provision of weather information for civil aviation as addressing two principal areas of need;

- 1) the availability of global-and regional-scale information will improve the level of flight safety in those areas of the world for which meteorological information is either inadequate or non-existent; and

- 2) globally-consistent, phenomena-based, geo-referenced digital weather information will improve the efficiency of international aviation operations through better integration into flight planning systems and processes.

2.4 Thus, aviation operators are supportive of the paradigm shift in the provision of weather information for civil aviation. However, there is concern that any change in the way costs are recovered for aeronautical meteorological service be accomplished in a manner consistent with ICAO's key charging principles and do not result in duplicative charges for the provision of the same meteorological information by different entities.

2.5 Cost recovery for aeronautical meteorological service is governed by Doc 9082. Additional clarification and guidance can be found in the two supporting economic manuals - *Manual on Air Navigation Services Economics* (Doc 9161) and *Airport Economics Manual* (Doc 9562). Doc 9161 and Doc 9082 are maintained by the Air Navigation Service Economics Panel (ANSEP) and the Airport Economics Panel (AEP), respectively. Both the ANSEP and the AEP provide assistance to the ATB.

2.6 ICAO has previously established specialized groups to address specific issues related to the provision of meteorological information for international air navigation.

2.6.1 In particular, ICAO convened the first meeting of the International Volcanic Ash Task Force (IVATF) in July 2010 in response to the actions undertaken by the European and North Atlantic Office in reaction to the Eyjafjallajökull volcano eruption in April 2010. The IVATF was given several tasks in its terms of reference including proposing revisions of guidance on volcanic ash contingency plans, developing ash concentration thresholds, improving ash detection systems, reviewing notifications and warnings for volcanic ash, and improving and harmonizing dispersion models. At its fourth meeting in July 2012, the IVATF formulated twenty four recommendations.

2.6.2 Similarly, in February 2012, ICAO established the Meteorological Aeronautical Requirements and Information Exchange Project Team (MARIE-PT) to address the concept for the provision of meteorological information to support global air traffic management and develop guidance on the digital exchange of aeronautical meteorological information. The work of the MARIE-PT resulted in the publication of the *Manual on Digital Exchange of Aeronautical Meteorological Information* (Doc 10003) and further development of ICAO Meteorological Information Exchange Model (IWXXM), in particular the products to be available in IWXXM format for Amendment 77 to Annex 3 — *Meteorological Service for International Air Navigation*.

2.7 ICAO has also established or encouraged specialized groups or working arrangements to address issues related to financial policies for the provision of air navigation services, including joint Panel meetings and multi-disciplinary work groups.

2.7.1 The Conference on the Economics of Airports and Air Navigation Services (CEANS), held in Montréal from 15 to 20 September 2008, formulated several recommendations concerning revision of ICAO's guidance material in Doc 9082 and the supporting economic material contained in Doc 9161 and Doc 9562. To efficiently address the CEANS recommendations, the AEP and ANSEP held joint meetings. During the fourth joint meeting of the AEP and ANSEP, the panels reached numerous conclusions regarding proposed updates to the aforementioned documents.

2.7.2 The *Sixth Worldwide Air Transport Conference* (AT/Conf/6), held in Montréal from 18 to 22 March 2013, addressed the economics of airports and air navigation services with respect to modernization of the aviation system. The AT/Conf/6 formulated Recommendation 2.7/1b which called for the establishment of a multi-disciplinary working group to consider the challenges with establishing

operational and economic incentives to allow early benefits of new technologies and procedures as described in the Aviation System Block Upgrade (ASBU) modules (ATConf/6-WP/104 refers). In response to this recommendation, ICAO established the multi-disciplinary working group (MDWG) linked to the implementation of Aviation System Block Upgrades (MDWG-ASBUs) to assist the Secretariat in the work required as follow-up to the Recommendation 2.7/1b. The MDWG-ASBUs was tasked with reporting to the Council on, *inter alia*, the applicability of economic and operational incentives to air traffic management modernization programs, the definition of financial incentives, and how such incentives could be reflected in ICAO policies and guidance material. In addition, the MDWG-ASBU was directed to report its findings to a joint AEP-ANSEP meeting to determine if the existing guidance material could be amended to incorporate the findings.

3. CONCLUSION

3.1 The provision of aeronautical meteorological information for civil aviation is expected to undergo a transformation over the next decade. It is important that any change in how the associated costs are recovered remain consistent with ICAO's key charging principles. While the METP is eager to move forward, it requires the assistance of experts with the knowledge of the economics of airports and air navigation services and ICAO charging policies. Consequently, the METP would benefit from the formation of a multi-disciplinary working group, including members from the AEP and ANSEP, to identify potential new charging mechanisms to recover costs associated with the provision of aeronautical meteorological services.

3.2 In light of the above, the Conference is invited to agree to the following recommendation:

Recommendation 2.3/x – Development of Cost Recovery Mechanisms for the Provision of Aeronautical Meteorological Information

That the Conference:

- a) support the need to expeditiously identify how aeronautical meteorological service provision has changed, how it will continue to evolve, and how these changes may affect the recovery of the relevant costs associated with service provision on a multi-regional, regional, and sub-regional basis; and
- b) request ICAO to establish an appropriate multi-disciplinary working group, composed of experts with the requisite knowledge and expertise, and in close coordination with WMO, to review how the services have changed, what new cost recovery challenges have arisen, and identify possible mechanisms to recover these costs in a manner consistent with ICAO's key charging principles. The findings of this group should then be presented to the METP, AEP, and ANSEP for further consideration.

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