



International Civil Aviation Organization

**MIDANPIRG Meteorology Sub-Group
Fifth Meeting (MET SG/5)**

(Jeddah, Saudi Arabia, 2-4 September 2014)

Agenda Item 3: Global/Regional developments related to MET

OUTCOMES FROM IAVWOPSG, METWSG, AMOFSG

(Presented by the Secretariat)

SUMMARY

This paper provides a summary of outcomes from the International Airways Volcano Watch Operations Group (IAVWOPSG), Meteorological Warnings Study Group (METWSG) and Aerodrome Meteorological Observation and Forecast Study Group (AMOFSG) since the last MET SG meeting.

1. INTRODUCTION

1.1 A review of outcomes from the eighth meeting of the International Airways Volcano Watch Operations Group (IAVWOPSG/8, 17 to 20 February 2014, Melbourne – <http://www.icao.int/safety/meteorology/iavwopsg/Pages/default.aspx>) and the fifth meeting of the Meteorological Warnings Study Group (METWSG/5, 20 to 21 June 2013, Montréal – <http://www.icao.int/safety/meteorology/metwsg/Pages/default.aspx>) and the tenth meeting of the Aerodrome Meteorological Observation and Forecast Study Group (AMOFSG/10, 17 to 19 June 2013, Montréal – <http://www.icao.int/safety/meteorology/amofsg/Pages/default.aspx>).

2. DISCUSSION

2.1 With reference to the IAVWOPSG/8, the *Handbook on the International Airways Volcano Watch (IAVW) – Operational Procedures and Contact List* (Doc 9766) would be updated to include: guidance for VAACs regarding collaborative decision analysis and forecasting (CDAF) process, adding a new paragraph concerning the dissemination of aircraft reports of volcanic ash to VAACs... In addition, regional SIGMET guides would be updated with proposed guidance material for the provision of SIGMET information for a complex volcanic ash cloud. VAACs were also expected to implement operational use of the standardized international volcano database as provided by the Smithsonian Institution to assign volcano name and number in the volcanic ash advisories. With reference to a possible provision of volcanic ash information beyond the current T+18 hours, the VAACs will jointly develop and produce a trial T+24 hour forecast of volcanic ash clouds, to compile the results of the trial and feedback from users and report back to the IAVWOPSG/9 meeting. Allocation of forecast confidence in the remarks section of volcanic ash advisories would also go through a trial phase and report back to the IAVWOPSG/9. Also, an ad-hoc group was established to improve the dissemination of aircraft reports on volcanic ash to VAACs. With reference to space weather, an ad-hoc group would develop a *Manual on Space Weather for International Air Navigation* that should include information to support the required space weather services (as

proposed in Amendment 77 to Annex 3) and their associated effects and impacts on international air navigation. The IAVWOPSG/8 meeting also endorsed version 3.0 of the concept of operations for space weather information in support of international air navigation.

2.2 The meeting will recall the Global Database of Area Control Centre (ACC) AFTN 8-Letter Addresses for the Notification by VAAC London Concerning the Release of Radioactive Material into the Atmosphere noting entries are still missing from Iraq (Baghdad and Basrah ACCs), Iran (Tehran ACC, FIC, FIR), Lebanon (Beirut ACC), and Syria (Dam ACC). These States are encouraged to provide their ACC AFTN addresses to receive notification on the release of radioactive material into the atmosphere.

2.3 With reference to METWSG/5, the developments of a proposal related to regional advisory centres for the issuance of SIGMET advisories that would be considered at the proposed MET Divisional Meeting in July 2014. The METWSG agreed to have a high-level strategic statement relating to the short- and long-term vision for the provision of information for hazardous meteorological conditions in time for the MET/14 meeting. Further development of a concept of operation for a regional SIGMET advisory system that would reflect the views of the users and regulatory authorities as well as the short- and long-term vision would be conducted by an ad-hoc group. Furthermore, an ad-hoc group would develop a plan for future governance and equitable cost recover of a regional SIGMET advisory system for consideration at the MET/14 meeting.

2.4 Furthermore, changes would be expected to draft Amendment 77 to Annex 3 – *Meteorological Service for International Air Navigation*, Appendix 6, Table A6-1 such that the location descriptors for volcanic ash cloud used in SIGMET messages are simplified and consolidated; the option to repeat elements location, level, movement or expected movements, changes in intensity and forecast position of the same phenomenon covering more than one area within the flight information region/control area (FIR/CTA) be removed except for a volcanic ash cloud and cumulonimbus cloud associated with a tropical cyclone; the use of a polygon of latitude and longitude coordinates (in degrees and minutes) to describe the cumulonimbus (CB) cloud tops associated with a tropical cyclone in a SIGMET message be enabled; the use of multi-segment lines and areas between two lines in the horizontal extent to describe the location of a phenomenon in SIGMET and AIRMET messages be enabled; the application of the descriptors ENTIRE FIR and ENTIRE CTA to all phenomena warranting the issuance of a SIGMET message be enabled; the use of SFC (surface) for the height of cloud base in AIRMET messages, be enabled.

2.5 With reference to the dissemination of special air-reports, a proposal to modify the draft Amendment 77 to Annex 3 – *Meteorological Service for International Air Navigation and consequently the Procedures for Air Navigation Service – Air Traffic Management (PANS-ATM, Doc 4444)* concerning the dissemination of special air-reports to the centres designated by regional air navigation agreement for the operation of the aeronautical fixed service (AFS) satellite distribution system and Internet-based services. Furthermore, a proposal is being developed to modify the *Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444)*, Appendix 1, Model AIREP SPECIAL to ensure that special air-reports (downlink) to be issued also for the flight level of a volcanic ash cloud, moderate turbulence (with or without EDR) and moderate icing, thus ensuring consistency with Annex 3 – *Meteorological Service for International Air Navigation*, Appendix 3, Table A4-1 (*Template for the special air-report (downlink)*).

2.6 With reference to AMOFSG/10, numerous proposals to modify Annex 3 as part of draft Amendment 77 were made such as updating the application of time averaging criteria used in aerodrome local reports; introducing a definition for a meteorological watch office and amends the definition of SIGMET information; possible inclusion of provisions related to crosswind and headwind/tailwind information, including for gusts; modification to runway light intensity used in runway visual range assessment; modify reporting of showers in automated local routine and special reports and METAR and SPECI whereby when showers cannot be determined based upon a method

that takes account of the presence of convective cloud, the precipitation should not be characterized by showers (SH); ensure that only one weather phenomena is represented per recent weather group in the supplementary information of local routine and special reports and METAR and SPECI; modification to the siting of instrumented systems used for the measurement of cloud amount and height of cloud base at aerodromes; representation of midnight in TAF as 00 instead of 24; possibly updating required transit times of meteorological information; and possibly updating the terminology used to describe provisions that are subject to an agreement between two or more parties or subject to a designation.

2.7 Lastly, the meeting may recall developments related to Aviation System Block Upgrades (ASBU) that includes a baseline implementation (implementation of current provisions) and future upgrades based on future requirements and future industry capabilities. This methodology would include potential implementation upgrades every five years and numbered in blocks: block 0 – 2013, current provisions. block 1 – 2018, block 2 – 2023 and block 3 – 2028. Current meteorological provisions that entail SIGMET information, aerodrome warnings, wind shear warnings and alerts, enroute forecasts provided by WAFC, volcanic ash advisory centres and tropical cyclone advisory centres as well as OPMET availability were included in block 0. MET requirements for ATM to support performance based air navigation methods would be expected in future blocks in order to contribute in optimizing the benefits of performance based navigation. The later blocks would consider dynamic integration of MET information into the ground ATM systems' decision support logic and eventually avionics automated decision support systems which would enable the future 4D trajectory based operations. A workshop on preparations for ICAO's 12th Air Navigation Conference (AN-Conf/12, 19 to 30 November 2012, Montreal) – ASBU methodology was held in Cairo from 30 September to 4 October 2012. More information may be obtained at the following link: <http://www.icao.int/MID/Pages/2012-asbu.aspx>.

2.8 The meeting may also recall that details of modules within the block (such as meteorology) included pre-requisites and a global readiness checklist: status (ready now or estimated date), standards readiness, avionics availability, ground system availability, procedures available and operations approvals. The modules were also mapped to key performance areas (e.g. Capacity: optimized usage of airspace capacity that would allow achieving arrival and departure rates). This new implementation methodology, ASBU, was endorsed at the 12th Air Navigation Conference in November 2012.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information in this paper; and
- b) provide ACC AFTN addresses to receive notification on the release of radioactive material into the atmosphere.