

INTERNATIONAL CIVIL AVIATION ORGANIZATION
CAR/SAM REGIONAL AIR NAVIGATION PLANNING AND IMPLEMENTATION GROUP
(GREPECAS)

FOURTH MEETING OF THE AERONAUTICAL METEOROLOGY SUBGROUP
(AERMETSG/4)

(Mexico City, 22 to 26 May 2000)

Agenda Item 6: Review of the volcanic ash warning and tropical warning systems
including advisory procedures in the CAR/SAM Regions

IMPLEMENTATION OF THE VOLCANIC ASH WARNING AND THE
TROPICAL CYCLONE WARNING SYSTEMS IN THE CAR/SAM REGIONS

(Presented by the Secretariat)

Summary

This working paper reviews the status of implementation of the volcanic ash and the tropical cyclone warning systems in the CAR/SAM Regions and refers a number of difficulties observed on the implementation of the established ICAO operational procedures for the dissemination of the ash volcanic warnings. Likewise, reviews the status of implementation of VAAC's serving the CAR/SAM Regions as well as the updated IAVW Operational Procedures and Contact List.

References:

- AERMETSG/3 Meeting Report;
- GREPECAS/6; GREPECAS/7 and GREPECAS/8 Meeting Reports;
- Annex 3; and
- CAR/SAM/3 RAN Meeting Report (Yellow Cover)

1. Introduction

1.1 Although there have been a number of important developments in the implementation of the IAVW in the CAR/SAM Regions, the Subgroup should note that the established institutionalized coordination of efforts between aeronautical and scientific organizations dealing with volcanic phenomena is not sufficient as yet to give a quick response to the volcanic hazard occurred in a continent considered potentially dangerous for aircraft in flight in view of the number of volcanoes in activity. Actions have been taken by States regarding the recommendations made at several ICAO regional meetings and the Regional Offices concerned, however, serious problems are yet observed on the implementation of the procedures established. The SIGMET messages continue to be prepared with errors either in the format or the text; dissemination of SIGMETs continue to be made in a deficient manner. The preparation and issuance of the messages is in many cases, made with inexplicable delay; although preventives actions have been taken by a number of States, the recommended formal committee to support volcanic ash warnings and inclusion of procedures in their contingency arrangements continue to be not operative enough.

2. Implementation of the Volcanic Ash Advisory Centres (VAACs)

2.1 The Subgroup will recall that the role of the VAACs was introduced in Annex 3 through the proposal for Amendment 71, applicable on 5 November 1998. Further the requirements for volcanic ash advisories in standard alphanumeric format, the proposal also includes recommendations for more frequent update of volcanic ash SIGMETs and formats for volcanic ash advisories in graphical format (VAG).

2.2 It should be noted that the two Regional Centres providing volcanic advisory for the CAR/SAM States are the volcanic ash advisory centres (VAACs) of Buenos Aires and Washington which are reflected in FASID Table MET 3, Part II of the CAR/SAM ANP. Although the two VAACs are considered fully operational, there are some questions to be raised regarding the provision of advisory, in particular from the VAAC, Buenos Aires. The subgroup may wish to note that a revised advisory will go to States in June 2000 for comments as part of Amendment 72 to Annex3.

2.3 Concerning the VAAC Washington, the Subgroup will recall that as of November 1, 1997, the VAAC is issuing text based Volcanic Ash Advisory Statements (VAASs), which contain satellite-derived information and other reports of volcanic ash, including graphical depiction of ash clouds. In addition to these products, forecast information concerning the trajectory of the ash cloud, VAFTAD graphics are also provided, when possible. It should be noted nevertheless, that VAASs are advisory messages to support Meteorological Watch Offices (MWOs) and Area Control Centers (ACCs) or Flight Information Centres (FICs) on issuance of meteorological and aviation related warnings.

2.4 Regarding the status of implementation of the Buenos Aires VAAC, notwithstanding that the Centre be considered operative, it should be noted that improvements are yet necessary, particularly concerning the implementation of a computer volcanic ash trajectory/dispersion model in order to provide advisory information on volcanic ash trajectories for MWOs and ACCs. In this regard the subgroup may wish to note that in compliance with Conclusion 8/27 of GREPECAS/8, coordination meeting between the Buenos Aires and Washington VAACs was held in Washington , March 13-15, 2000. The Member of the United

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States may wish to present a Summary report on Conclusions of the meeting.

3 SIGMET messages language requirements

3.1 During recent visit of Washington VAAC officers to Ecuador in order to improve aircraft warnings for ongoing eruptions of the Guagua Pichincha and Tungurahua volcanoes a concerned emerged related with the issuance of VA SIGMET on Spanish language from MWO Guayaquil.

3.2 As the Subgroup is aware, until about three years ago, there was a provision in Annex 3 (Chapter 7 dealing with SIGMETs) which indicated that the SIGMET should be issued in abbreviated plain language using ICAO abbreviations, but where this was not possible, by using “the vocabulary of a national language, taken with its usual meaning in aviation”. However, at the last but one amendment to Annex3, this phrase was deleted so that “ abbreviated plain language using ICAO abbreviations” is all that remains. Of course it does not expressly say that “thou shalt use English”, but it possible that in some States their local staff instructions still refer to the early situation. ICAO has also tried to standardize the SIGMETs and reduce the amount of plain text so that for the most part agreed ICAO abbreviations could be used which are not language-specific.

3.3 The SIGMETs for volcanic ash are probably the worst case because we can only minimize the free text to a certain degree. Although it will not be an easy discussion, perhaps the Subgroup could discuss and agreed to propose that SIGMETs using any free text should use English language.

4. Tropical Cyclone Warning System

4.1 The Meeting will recall that new provisions concerning SIGMET messages for tropical cyclones were introduced in Amendment 71 to Annex 3, applicable on 5 November 1998, which among others, includes items related to the standardization of tropical cyclone advisories format; provision relating to Tropical Cyclone Advisory Centers (TCACs); and updating SIGMETs for tropical cyclones.

4.2 The Meeting will also recall that the Tropical Cyclone Advisory Centre (TCAC) designated as the Centre responsible for the preparation of tropical cyclone advisory for the CAR/SAM Regions, is the TCAC, Miami (CAR/SAM/2, Rec. 8/13). The details concerning the TCAC, Miami, including its area of responsibility, the indication of the tropical cyclone season and a list of MWOs to which the advisory information is to be sent, has been included in FASID Table MET 3 - Part I - Tropical Cyclone Advisory Centre in the CAR/SAM Regions (CAR/SAM/3, Rec 7/3).

4.3 Nevertheless the important developments in implementation of the Tropical Cyclone System, it should be noted that a number of MWOs go back on the issuance of the SIGMET messages related to the tropical cyclones for the concerned area of responsibility, i.e., the concerned flight information region (FIR). It is expected that the new provision of Annex 3 related with the standardization of the advisory format for tropical cyclone messages to be provided by the TCAC, serving CAR/SAM Regions, foster the implementation of the Tropical Cyclone System in these Regions.

5. IAVW Operational Procedures and Contact List. IAVW Handbook

5.1 The latest version of the International Airways Volcano Watch (IAVW) Operational Procedures and Contact List was first issued in 14 September 1993. Since that time the document has been updated as necessary and circulated to all States annually as an attachment to a State letter. The updating of the procedures and contact list was done progressively in step with the expansion of the IAVW and changing operational requirements based on recommendations made by the Volcanic Ash Warning Study Group (VAWSG). Moreover, with the increasing maturity of the IAVW operational procedures, some of the more fundamental ones, such as the role of the Volcanic Ash Advisory Centres (VAACs) and the requirements for, and content/format of, volcanic ash advisories have been upgraded to Annex 3 — *Meteorological Service for International Air Navigation* provisions.

5.2 It is considered that it is no longer sufficient or appropriate to promulgate the IAVW Operational Procedures and Contact List as an attachment to a State letter. The intention is to produce them in the future in a loose-leaf handbook (pocket-size) format, the content of which would also be placed on the ICAO IAVW Web site. The revised draft IAVW Operational Procedures and Contact List in the new format is provided in the **Appendix**. It should be noted that the textual material in the Appendix is sized to printing in handbook format.

5.3 The Subgroup will note that it is proposed to introduce a new section in the IAVW Handbook dealing with the responsibilities of the International NOTAM Offices (NOFs), who are responsible for the issuance of NOTAMs/ASHTAMs in the State. Hitherto, the procedures only dealt with the role of the ACCs in initiating a NOTAM/ASHTAM. Moreover, up to now it has been impossible for the NOTAMs/ASHTAMs to be sent directly to the VAACs. Hence, the inclusion of the role of the NOFs in the past was largely unnecessary. However, efforts have been made recently to use the so-called “dummy WMO abbreviated header” within the usual AFTN communications header envelope to permit NOFs to send NOTAMs for volcanic ash and ASHTAMs to the VAACs direct via AFTN. This proposal was based on the procedures used successfully for decades in the ROBEX scheme in the ASIA/PAC Regions and the AMBEX scheme in the AFI Region. Tests conducted between the Lima NOF (Peru) and the Guayaquil NOF (Ecuador) sending NOTAMs for volcanic ash to the Washington VAAC proved successful. In view of this, the responsibilities of the NOFs have been included in the IAVW Handbook together with detailed instructions/guidance how to address the NOTAMs/ASHTAMs to the VAACs.

5.4 The Subgroup may wish to consider if the handbook should be expanded in the future to include some initial indication of the responsibilities of the aerodrome management, for example, in preparing pre-eruption logistics etc for those aerodromes known to be at risk from ash from a nearby active volcano.

5.5 In this latter regard, the Aerodromes Section in the ICAO Secretariat is looking at the possibility of including guidance for aerodrome management on dealing with volcanic ash at airports, in a future amendment to the ICAO Airport Services Manual (Doc 9137) and possibly introduce a “parent” Recommended Practice in Annex 14 — *Aerodromes*. The group will be interested to learn that a request for such guidance was received from the airport management at Quito Airport, Ecuador, during the eruption of Guagua Pichincha earlier this year. So far, the only guidance is in the volcanic ash manual (to be published this year) and these parts of the manual were translated into Spanish and provided to Ecuador and also other

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States in the SAM Region.

6 Action by the AERMETSG

6.1 The subgroup is invited to:

- a) note the information provided in this paper;
- b) consider the suggestion made in paragraph 3.3; and
- c) review the updated IAVW Operational Procedures and Contact List in the Appendix and provide any comments, corrections required, and advice how the draft “Handbook” could be further improved to facilitate operational use of the document.
