

FIRST MEETING

IAVW OPERATIONS GROUP

(Bangkok, Thailand, 15 to 19 March 2004)

EXECUTIVE SUMMARY¹

1. INTRODUCTION

1.1 The first meeting of the International Airways Volcano Watch Operations Group (IAVWOPSG/1), held in the ICAO Asia/Pacific (Asia/Pac) Regional Office, Bangkok, Thailand, 15 to 19 March 2004, was attended by eighteen experts from the eight volcanic ash advisory centre (VAAC) Provider States, one User State, International Air Transport Association (IATA) and the World Meteorological Organization (WMO).

1.2 Mr. P. Lechner (New Zealand) was elected Chairman and Mr. P. Chen (Canada) was elected Vice-Chairman. Mr. P. Lechner presided over the meeting throughout its duration. Mr. R. Romero, from ICAO Headquarters, Montreal, was Secretary of the meeting assisted by Mr. Dimitar Ivanov, Regional Officer, Meteorology from the Asia/Pacific Regional Office.

2. Tasks of the IAVWOPSG

2.1 The group noted that, in accordance with its terms of reference, it was expected to:

- a) undertake work on specific tasks included in its work programme;
- b) ensure the currency of
 - 1) International Airways Volcano Watch (IAVW) — related provisions in Annex 3 — *Meteorological Service for International Air Navigation*; and
 - 2) IAVW-related procedures in the air navigation plan/facilities and services implementation documents (ANP/FASID).

2.2 With regard to specific tasks, the group addressed sixteen outstanding tasks of the disbanded Volcanic Ash Warnings Study Group (VAWSG), seven IAVW-related issues raised by the MET Divisional Meeting (2002) and referred to the IAVWOPSG for follow-up and four issues raised at the Air Navigation Commission.

2.3 The group reviewed the IAVW related regional procedures contained in ANP/FASID and agreed to a new format for FASID Table MET 3B (Conclusion 1/1 refers).

¹ The full report is available in English at the following open website: www.icao.int/anb/IAVWOPSG

3. Operation of the IAVW

3.1 To facilitate the future assessments of the IAVW implementation and operation, the group agreed that, the volcanic ash advisory centre Provider States should prepare a joint concise management report for consideration by each IAVWOPSG Meeting. The report would cover the period elapsed since the previous meeting addressing the IAVW operations, highlighting recent developments and future plans for operational updates (Conclusion 1/2 refers). The group also considered it necessary that a sample letter of agreement should be developed to assist States in order to enhance their coordination with the States authorities/agencies involved in the implementation of the IAVW (Conclusion 1/3 refers).

3.2 The group agreed to assist the Secretariat in reviewing, by correspondence, Doc. 9691, *Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds* and to send comments by 20 July 2004. After this date the Secretariat will finalize the amendment (Conclusion 1/4 refers).

3.3 Regarding the update of the worldwide ash encounter database, the group considered that the implementation of the provisions in Annex 3 regarding the special air reports to be made by aircraft in case of an encounter or observation of a volcanic ash cloud, pre-eruption activity or a volcanic eruption was very important for the operation of the IAVW and agreed that airlines should be encouraged to issue them (Conclusion 1/5 refers). The group's attention was drawn by the Secretariat to the lack of procedures regarding the archiving of aircraft encounters with volcanic ash. It was agreed that, special air-reports on volcanic ash were to be sent to the Smithsonian Institution for updating their global database and that the Secretariat should develop appropriate procedures for inclusion in the *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* (Doc 9766) (Conclusion 1/6 refers).

3.4 Concerning VAAC back-up procedures, the group agreed that VAACs Anchorage and London should be tasked with drafting these procedures. Once the procedures are agreed to by all VAACs, the Secretariat will include them in the *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* (Doc 9766) (Conclusion 1/7 refers).

3.5 The group reconfirmed the importance to request the International Union of Geodesy and Geophysics (IUGG) to provide guidance on the aviation volcano level of alert colour code to relevant member organizations, in order to promote the use of the colour code by vulcanological agencies when providing vulcanological information to VAACs, area control centres (ACCs) and meteorological watch offices (MWOs) (Conclusion 1/8 refers). The group agreed that the current wording of the colour code in Annex 15 — *Aeronautical Information Services* should be amended (Conclusion 1/9 refers). The group was aware of the problems related to the use of the colour code which was not suitable for the users' tactical and strategic planning. The group felt nevertheless that the colour code as defined in Annex 3 and Annex 15 provided useful information and that the existing deficiencies should be addressed by an ad-hoc working group (Conclusion 1/10 refers).

3.6 Concerning the introduction of the source of volcanic information in SIGMETs for volcanic ash, the group agreed that there was no need to propose amendments to the SIGMET format (Decision 1/11 refers).

3.7 The group welcomed the willingness of VAACs Toulouse and Washington to extend their areas of responsibility which would permit a quasi-global coverage of the IAVW (Conclusion 1/12 refers).

3.8 The group noted that the PIRGs would have to develop a new table (FASID Table MET 3C) listing the State volcano observatories from which information was required by ACCs, MWOs and VAACs. In order to assist the PIRGs, the group developed a set of principles (Conclusion 1/13 refers), which would allow an equitable evaluation of State volcano observatories.

4. Development of the IAVW

4.1 The group discussed issues related to the graphical format for volcanic ash advisories and SIGMETs for volcanic activity. Regarding graphical SIGMETs, the group reviewed the current template for SIGMETs messages (in alphanumeric form) included in Amendment 73 of Annex 3. It was agreed that the graphical product should contain the same information that is currently in the alphanumeric message with the improvement of the display of the area affected by volcanic ash which no longer would be limited to a polygon with at most five sides. In view of the obvious advantages of the graphical products, the group agreed to the establishment of an ad hoc working group to review and develop graphical products (volcanic ash advisories and SIGMETs) and to prepare a report on time for the IAVWOPSG/2 (Conclusion 1/14 refers). The group also agreed that the word "FIRST" in the time label "DATE AND TIME OF FIRST ERUPTION" in the volcanic ash advisories in graphical format should be removed, and referred this task (Conclusion 1/20 refers) to this ad hoc working group.

4.2 Concerning Recommendation 1/13 of the MET Divisional Meeting (2002) which had called for the upgrade of the status of the volcanic ash advisory to a "warning", the group concluded that the upgrade was not feasible in view of the far -reaching and legal implications that would emerge from such a change (Decision 1/15 refers).

4.3 With regard to the inclusion of an abbreviated WMO "dummy" header in the format of ASHTAM/NOTAM for volcanic ash with the purpose to facilitate routing of messages, the group considered that this procedure would *de facto* double the workload at most international NOTAM offices (NOFs) and agreed that there was no need to pursue work in this regard (Decision 1/16 refers). The group also considered a related issue raised at the recent meeting of the EANPG which had formulated Conclusion 45/18 calling for the IAVWOPSG to consider the global operational requirements to disseminate ASHTAMs and NOTAMs for volcanic ash on SADIS. The group agreed that it was essential that any data on volcanic activity should reach the States and users concerned with a minimum of delay and that ASHTAMs and NOTAMs for volcanic ash should be uplinked on the international satellite communications system (ISCS) and SADIS (Conclusion 1/17 refers). EANPG Conclusion 40/21 b) had also called for ICAO to review Annex 3 provisions for SIGMET messages for volcanic ash cloud in order to introduce a requirement for MWOs to acknowledge the receipt of volcanic ash advisories. In this regard, the group agreed that this proposal would be difficult to implement, and that work on this issue should be discontinued (Decision 1/18 refers).

4.4 The group considered the possibility of the inclusion of the smell of sulphur in Annex 3 as a condition prompting the issuance of a special aircraft observation. Since sulphur dioxide could be used as an indicator of the existence of volcanic ash, the group agreed on its inclusion in special aircraft observations (Conclusion 1/19 refers).

4.5 The group was pleased to note the improvement of the quality of volcanic ash advisories, highlighted by the users. However, the group recognized that there was still some scope for improvement and agreed to the establishment of an ad hoc working group to review the format of the volcanic ash advisory (Conclusion 1/21 refers). Concerning the harmonization of the format of those elements which are common to both volcanic ash and tropical cyclones advisories called for by APANPIRG Conclusion 14/39, the group

agreed that the Secretariat should develop a proposal for consideration by the IAVWOPSG/2 (Conclusion 1/22 refers).

4.6 The group discussed the feasibility of volcanic ash deposition observations at aerodromes and the inclusion of this information in meteorological reports. The group felt that these observations were necessary and tasked the Secretariat, in coordination with the IAVWOPSG member from WMO, to undertake a feasibility study on this issue (Conclusion 1/23 refers). The group also agreed that the VAACs should be encouraged to work towards a consistent approach on the development of a Volcano Explosivity Index (VEI)/Source term matrix (Conclusion 1/24 refers). The group also discussed the need of end users of assurance that there would not be significant changes in the projected trajectories as originally forecast in case of transference of responsibility between VAACs. In this regard, the group agreed that VAACs Provider States should conduct informal model intercomparisons on a routine basis (Conclusion 1/25 refers).

4.7 Concerning the inclusion of volcano number in SIGWX charts called for by APANPIRG Conclusion 8/27, the group agreed that the work had been completed with the inclusion of a Standard in Annex 3. However, it was noted that users (International Air Transport Association (IATA) and International Federation of Air Line Pilots' Associations (IFALPA)) had no utilization of the volcano number in SIGWX charts. Therefore, this issue would be brought to the attention of the WAFSOPSG (Conclusion 1/26 refers).

4.8 With the emerging complexity of volcanic ash cloud monitoring, the workload of most VAACs would increase. In this regard, the group invited ICAO, in coordination with WMO, to send a letter to VAAC Provider States highlighting the need for their continuous support to the IAVW (Conclusion 1/27 refers).

5. Matters related to the accidental release of toxic chemicals and radioactive material into the atmosphere

5.1 Regarding accidental release of toxic chemical into the atmosphere and the development of possible international arrangements for the exchange of related information, the group recognized that this was a problematic task and that progress had been delayed due to the absence of a lead organization. However, from the users point of view, the development of procedures for obtaining such information and its transmission to aircraft in-flight in a timely manner was considered necessary. In order to initiate work in this area the group agreed that an ad hoc working group be established (Conclusion 1/31 refers). Regarding the assessment and enhancement, called for by Recommendation 1/20 a) of the MET Divisional Meeting of existing operational procedures and notification practices on the accidental release of radioactive material from nuclear facilities, the group agreed that it should also be undertaken by this ad hoc working group.

5.2 Regarding the early notification by the International Atomic Energy Agency (IAEA) of an accidental release of radioactive materials into the atmosphere, it was pointed out that the IAEA was reluctant to advise more than one international aviation focal point. It was noted that based on the informal contacts established by the Secretariat with some States, ACCs were generally not prepared to accept this additional responsibility due to the unusual nature of the task. The group agreed that if a database converting positions into FIRs and their associated ACCs was available, it would help to find an international aviation focal point. In this regard, the group instructed the Secretariat to undertake a study (Conclusion 1/28 refers).

5.3 With regard to the feasibility of the inclusion by the WAFCs of information on the trajectory of a radioactive material on a separate chart, the group expressed serious misgivings about the utility of this information within the WAFS which provided meteorological information at the pre-flight planning stage. It was agreed that this type of "perishable" time-critical information should not be provided by the WAFS (Decision 1/29 refers).

5.4 Regarding the proposal for the amendment of the relevant Annexes and PANS to take account of the altitude to which trajectories forecasts of radioactive concentrations should be provided by WMO RSMC, the group agreed that, since no definitive upper limit can be established, ICAO documents should not be amended (Decision 1/30 refers).

5.6 Concerning the need for the development of an international format for advisories for all radioactive and hazardous material accidentally released into the atmosphere called for by Recommendation 1/20 b) of the MET Divisional Meeting, the group agreed that for aeronautical users it would be a step forward if information could be provided in abbreviated plain language. Regarding radioactive materials, the group agreed that the best option would be a SIGMET and instructed the Secretariat to undertake a study in this regard (Conclusion 1/32 refers).

5.7 Concerning the assessment of the need for the provision of information for international air navigation on solar radiation storms and other bio-hazards, called for by the MET Divisional Meeting (2002), the group noted that Annex 15 (5.1.1.1 t) refers) already required the issuance of a NOTAM when a forecast of solar cosmic radiation was provided. The group felt that the provision of additional information should be assessed. and agreed to request the member from the United States to present a report for consideration at the IAVWOPSG/2 (Conclusion 1/33 refers).

6 Future work programme

6.1 The group reviewed the work programme and proposed changes based on the discussions under Agenda Items 2, 3 and 4 (Conclusion 1/34 refers).

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