International Civil Aviation Organization

FOURTEENTH MEETING OF THE COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND METEOROLOGY SUB-GROUP OF APANPIRG (CNS/MET SG/14)

Jakarta, Indonesia, 19 – 22 July 2010

Agenda Item 9: Regional Implementation of International Airways Volcano Watch (IAVW)

VOLCANIC ACTIVITY REPORTS COLLECTION AND DISSEMINATION

(Presented by Australia)

SUMMARY

This paper outlines the issues relating to the collection and dissemination of Volcanic Activity Reports (VAR) and recommends actions to ensure that improved reporting is achieved.

This paper relates to:

Strategic Objectives:
A: Safety – Enhance global civil aviation safety
D: Efficiency – Enhance the efficiency of aviation operations

Global Plan Initiatives:
GPI-18Aeronautical Information
GPI-19 Meteorological systems

1. Background

1.1 One of the more problematic aspects of the efficient implementation of the International Airways Volcano Watch (IAVW) has been the forwarding of pilot reports of volcanic ash, including encounters with volcanic ash, through appropriate channels. Volcanic eruptions can be very challenging to observe from the ground or with remote sensing, particularly in the tropical Asia/Pacific region, which has the greatest occurrence of obscuring high altitude (> FL600) convective cloud in the world owing to warm sea temperatures and a high tropopause. This, combined with poor local infrastructure and governance in some of the relevant countries, leads to a paucity of reports forwarded through ACCs, Meteorological Watch Offices (MWO), and airlines.

1.2 In one case study, dealing with a series of serious high level eruptions in Papua New Guinea, it was found that, of some 80 written pilot reports that *were* made, very few were transmitted in real-time, and less than 5% reached the Volcanic Ash Advisory Centre (VAAC) until an officer flew to Port Moresby to retrieve them for post-event analysis.

2. Volcanic Activity Report

2.1 Volcanic Activity Reports (VAR) are Special Air-reports containing observations of volcanic activity. These reports are required to be forwarded to air traffic services and then to the MWOs and VAACs. The form of the Volcanic Activity Report is given in ICAO Doc. 4444 – Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM). Relevant extracts from Doc. 4444 are given in Attachment 1.

2.2 The issue of the low level of receipt of VAR has been discussed several times at World Meteorological Organization (WMO) and International Civil Aviation Organization (ICAO) meetings, most recently at the 5th meeting of the International Airways Volcano Watch Operations Group (IAVWOPSG) in March 2010. As at previous meetings, the importance of disseminating *near-real* time collection of the VAR in a central repository, for prompt distribution to the nine VAACs, relevant MWO, and the Smithsonian Institution's Global Volcanism Program (which serves the broader community as a central, non-real time repository of information and where appropriate protocols for use of this data are already in place) was highlighted.

2.3 Conclusion 4/22 from IAVWOPSG/4 invited VAAC Darwin to establish, on a trial basis, a facility for the global collection of the VAR forms and to report back to the next IAVWOPSG meeting. Further investigation has concluded that it is more appropriate for the relevant AIS and RODB to coordinate any central collection and distribution point.

2.4 As a result of the eruptions of Eyjafjallajokull in Iceland and subsequent air traffic disruption over Europe, the Bureau of Meteorology has agreed to participate in the recently created International Volcanic Ash Task Force (IVATF), and remains committed to working with airline and ATM representatives, including IATA and IFALPA, to increase awareness of the benefits of the information contained in VAR and improve the rate of VAR submission.

3. Action required by the Meeting

3.1 The meeting is invited to:

a) Note the information in the paper; and

b) Raise awareness with stakeholders, including IATA and IFALPA, to promote the full use of the VAR form including its dissemination to the VAACs.

ATTACHMENT 1

ICAO Doc. 4444 – Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM).

CHAPTER 4 – GENERAL PROVISIONS FOR AIR TRAFFIC SERVICES

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4.12.5 Recording of special air-reports of volcanic activity

Special air-reports containing observations of volcanic activity shall be recorded on the special air-report of volcanic activity form. Forms based on the model form for special air-reports of volcanic activity at Appendix 1 shall be provided for flight crews operating on routes which could be affected by volcanic ash clouds.

4.12.6 Forwarding of meteorological information

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4.12.6.2 When receiving special air-reports by data link communications, air traffic services units shall forward them without delay to their associated meteorological watch office and the WAFCs.

4.12.6.3 When receiving air-reports by voice communications, air traffic services units shall forward them without delay to their associated meteorological watch offices. In the case of routine air-reports which contain a Section 3, the air traffic services unit shall forward Section 1, sub-items 1 to 3 and Section 3.

APPENDIX 1 - INSTRUCTIONS FOR AIR-REPORTING BY VOICE COMMUNICATIONS

1. Reporting instructions

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2. Special air-reports

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2.2 In the case of special air-reports containing information on volcanic activity, a post-flight report shall be made on the volcanic activity reporting form (Model VAR). All elements which are observed shall be recorded and indicated respectively in the appropriate places on the form Model VAR.

2.3 Special air-reports shall be made as soon as practicable after a phenomenon calling for a special air-report has been observed.

2. Special air-report of volcanic activity form (Model VAR)

MODEL VAR: to be used for post-flight reporting

VOLCANIC ACTIVITY REPORT

Air-reports are critically important in assessing the hazards which volcanic ash cloud present to aircraft operations.

OPERATOR:			A/C IDENTIFICATION: (as indicated on flight plan)		
PILOT-IN-COMMAND:					
DEP FROM:	DATE:	TIME; UTC:	ARR AT:	DATE:	TIME; UTC:
ADDRESSEE			AIREP SPECIAL		
Items 1-8 are to be reported immediately to the ATS unit that you are in contact with.					
1) AIRCRAFT IDENTIFICATION			**2)** POSITION		
3) TIME			**4)** FLIGHT LEVEL OR ALTITUDE		
5) VOLCANIC ACTIVITY OBSERVED AT (position or bearing, estimated level of ash cloud and distance from aircraft)					
6) AIR TEMPERATURE			**7)** SPOT WIND		
8) SUPPLEMENTARY INFORMATION a) SO2 detected Yes ☐ No ☐ b) Ash encountered Yes ☐ No ☐ (Brief description of activity especially vertical and lateral extent of ash cloud and, where possible, horizontal movement, rate of growth, etc)					
After landing complete items 9-16 then send form to:					
9) DENSITY OF ASH CLOUD	☐ (a) Wispy		☐ (b) Moderate dense		☐ (c) Very dense
10) COLOUR OF ASH CLOUD	☐ (a) White ☐ (d) Black		☐ (b) Light Grey ☐ (e) other _____		☐ (c) Dark grey
11) ERUPTION	☐ (a) Continuous		☐ (b) Intermittent		☐ (c) Not visible
12) POSITION OF ACTIVITY	☐ (a) Summit ☐ (d) Multiple		☐ (b) Side ☐ (e) Not observed		☐ (c) Single
13) OTHER OBSERVED FEATURES OF ERUPTION	☐ (a) Lightning ☐ (d) Ash fall out		☐ (b) Glow ☐ (e) Mushroom cloud		☐ (c) Large rocks ☐ (f) All
14) EFFECT ON AIRCRAFT	☐ (a) Communication ☐ (d) Pitot static		☐ (b) Nav systems ☐ (e) Windscreen		☐ (c) Engines ☐ (f) Windows
15) OTHER EFFECTS	☐ (a) Turbulence		☐ (b) St Elmo's Fire		☐ (c) Other Fumes
16) OTHER INFORMATION: (Any information considered useful)					