International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)
Eighth Meeting of the GREPECAS Aeronautical Meteorology Subgroup (AERMETSG/8)
Santiago, Chile, 9 to 13 October 2006

Agenda Item 3: Implementation of the International Airways Volcano Watch (IAVW) in the CAR/SAM Regions

Notification Message of Volcanic Activity by the Volcano Observatory

(Presented by the United States)

SUMMARY

This paper discusses draft operational procedures under development within the United States on providing information from a Volcano Observatory to Federal Aviation Administration (FAA) Air Route Traffic Control Centers (ARTCC), United States Meteorological Watch Offices (MWO), and United States Volcanic Ash Advisory Centers (VAAC) in support of the issuance of a Volcanic Ash NOTAM, SIGMET and/or Volcanic Ash Advisory (VAA).

1. Introduction

1.1 Amendment 74 to Annex 3 – *Meteorological Service for International Air Navigation* – identifies the responsibility of volcano observatories (VO) to send information about significant pre-eruption volcanic activity, volcanic eruptions, and/or volcanic ash in the atmosphere directly to the appropriate to Area Control Centers (ACC), Meteorological Watch Offices, and Volcanic Ash Advisory Centers. ICAO has amended Regional Air Navigation Plans (RANP) to include the selected volcano observatories in Table MET3C for purposes of supporting international air navigation.

1.2 Information provided by volcano observatories is used principally by ACC in the preparation of an ASHTAM or NOTAM on the status of the volcano (including both precursory unrest and eruptive activity) and by MWO in preparation of SIGMET when volcanic ash is present in the atmosphere. This information also is shared with the supporting VAAC so the VAAC can begin to monitor the volcano using satellite imagery and issue VAA as required.

2. Discussion

2.1 As part of the United States effort to implement the International Airways Volcano Watch (IAVW) program, the FAA in cooperation with the United States Geological Survey (USGS) and the National Oceanic and Atmospheric Administration (NOAA) has drafted a National Operations Plan

for Volcanic Ash. The plan describes the roles and responsibilities of each Federal agency and how they are to communicate information. Examples of the message format are also included in the plan.

2.2. In the development of the plan it was recognized that there was no defined message to be used by a volcanologist on how to communicate information to controllers in the Traffic Management Unit of the ARTCC nor was there any defined message format on how to communicate information to a meteorologist in the MWO. Upon notification of a potential or ongoing eruption, Air Traffic Service personnel have the responsibility to issue a volcanic ash NOTAM. The meteorologist will issue a SIGMET when notified of an eruption.

2.3 Both the Anchorage and Washington VAAC require notification of the same information from the volcano observatory for their area of responsibility for the purpose of issuing of a volcanic ash advisory and volcanic ash graphic.

2.4 Experience within the United States has shown that the level of familiarity with communicating concise information between the different USGS VO and controllers varied and that there was a need to develop a standardized message of not only format but also for content. Therefore, in the development of the plan it was agreed to design a message format that could be used universally. The development of the message format was done collaboratively among the principal agencies under the auspices of the VA Working Group in the Office of the Federal Coordinator for Meteorology.

2.5 The current draft National Operations Plan has a suggested message format referred to as a Volcanic Ash Notification for Aviation (VANA). If adopted by the Federal agencies, the VANA will become the standardized message to communicate information to controllers, meteorologists, and dispatchers at ARTCC, MWO, VAAC, and AOC from the USGS VO.

2.6 The VANA incorporates the aviation color code for level of volcanic activity which is a standard in Annex 15 – *Aeronautical Information Services* – and is documented in the Handbook on the International Airways Volcano Watch (IAVW) (1st edition, 2000; Doc 9766-AN/968). A VANA is issued by the VO when a color code changes (up or down) or within a color-code level when significant change in volcanic behavior occurs. Dissemination of the VANA would occur by email or telefax directly to the pertinent ACC, MWO, VAAC, as well as to Airline Operation Centers as appropriate.

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(1) VOLCANIC ACTIVITY NOTICE FOR AVIATION

(2) Notice Number: *Year/sequential number (YYYY/xxx)*

(3) Issued: *Universal (Z) date and time (YYYYMMDD/HHMMZ). Also specify conversion between universal date/time and local date/time.*

(4) Source: *Name of volcanological agency*

(5) Volcano: *Name and CAVW#*

(6) Location: *Latitude and longitude in degrees and minutes (e.g., N1621E14540)*

(7) Area: *Regional descriptor (e.g., Northern Mariana Islands)*

(8) Summit Elevation: *nnnn M(nnnn FT)*

(9) Current Aviation Collor Code:

(10) Previous Aviation Collor Code:

(11) Volcanic Activity Summary: *Free text, limited to 5 lines. If known, specify time and duration of eruptive activity.*

(12) Observed Volcanic Cloud Height: *nnnn M (nnnnn FT) above summit or AMSL (specify which). Give source of height data (ground observer, radar, etc.). "NIL" if no ash plume produced.*

(13) Other Volcanic Cloud information: *Free text, limited to 5 lines, with comments on cloud characteristics (ash content, direction of movement, etc.). Specify if cloud height is obscured or suspected to be higher than what can be observed clearly. "NIL" if no cloud produced.*

(14) Remarks: *Free text, limited to 5 lines. Comments on seismic and other monitoring data, observatory actions, etc.*

(15) Contacts: *Names, phone numbers (voice and fax), email addresses*

(16) Next Notice*: Will be issued by YYYY/MM/DD, or indicate if final notice for an event.*

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2.7 While the U.S. National Operations Plan has not been finalized, it is believed the need to develop a message utilizing standardized language should be shared with other States in the effort of developing a single global standard.

2.8 Also, it should be noted that the U.S. Geological Survey, in consultation with the International Union of Geodesy and Geophysics (IUGG), will coordinate the development of any proposed message format with ICAO IAVW Operations Group (IAVWOPSG).

3. Recommendation

3.1 It is recommended that there is a need to have a standard message format to be used by volcano observatories in communicating information to ACC, MWO, AOC, and VAAC. Also, the development of a standard message format should be considered by the IAVWOPSG in coordination with the IUGG. The United States offers a proposal on the development of a standard message format to be used by VO.

4. Action

4.1 The meeting is invited to note the information in this paper and endorse the recommended course of action.

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