



International Civil Aviation Organization

**SEVENTEENTH MEETING OF THE METEOROLOGY
SUB-GROUP (MET SG/17) OF APANPIRG**

Bangkok, Thailand, 13 – 16 May 2013

**Agenda Item 5: Regional Implementation of International Airways Volcano Watch
(IAVW)**

USE OF VOLCANO OBSERVATORY NOTICE FOR AVIATION (VONA) FORMAT

(Presented by Japan)

SUMMARY

This paper presents recent global discussions on enhancement of volcanic activity reports from Volcano Observatories, and encourages States implementation of the Volcano Observatory Notice for Aviation (VONA) format.

1. Introduction

1.1 To foster globally consistent provision of information on volcanic activities by Volcano Observatories (VOs) to VAACs and other relevant organizations, the International Airways Volcano Watch Operations Group (IAVWOPSG) introduced Volcano Observatory Notice for Aviation (VONA) format, as described in detail in the *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* (Doc 9766)¹. A template of the VONA format is presented in Appendix A to this paper.

1.2 IAVWOPSG has been working on promotion of the use of the VONA format to facilitate efficient and effective notification of volcanic activities. According to the outcomes of recent discussion, the group agreed that each State be invited to implement the VONA format to operations of their VOs.

2. Discussion

2.1 Needless to say, immediate notification of volcanic activity is essential resource for each VAAC to ensure appropriate and accurate issuance of Volcanic Ash Advisory (VAA). However, there has not been any reporting format uniformly defined. This would prevent proper and quick issuance of notification of volcanic activities.

¹<http://www.icao.int/safety/meteorology/iavwopsg/Handbook%20on%20the%20IAVW%20Doc%209766/Doc.9766.alltext.pdf>

2.2 In order to facilitate the enhancement of volcanic activity report, use of the VONA format is considered as efficient and effective way. The IAVWOPSG at its 6th meeting in September 2011, concluded that the introduction of a reference to the use of the VONA format should be included in the amendment 76 to ICAO Annex 3 — *Meteorological Service for International Air Navigation*.

2.3 As well as the IAVWOPSG, the International Volcanic Ash Task Force (IVATF) also noted the utility of VONA format. IVATF/2, which was held in July 2011, recommended IAVWOPSG to coordinate with the World Organization of Volcano Observatories (WOVO) to increase the use of the VONA format. According to this recommendation IAVWOPSG/6 formulated the following conclusion:

Conclusion 6/23 — Increased use of the VONA template by volcano observatories and list of volcanoes that threaten aviation

That WOVO through IUGG be invited to:

- (a) promote increased use by volcano observatories of the aviation colour code and the Volcano Observatory Notice for Aviation (VONA) template;
- (b) produce a list of volcanoes that threaten aviation and are unmonitored or inadequately monitored for the risks they pose; and
- (c) report back on progress in time for IAVWOPSG/7.

2.4 Also in IVATF/3 meeting held in February 2012, further discussion on this issue was made. The task force finally agreed to the following recommendation which invites IAVWOPSG to coordinate with WOVO on the development of further useful guidance material on the use of aviation colour code and the VONA:

Recommendation 3/2 — That, the International Airways Volcano Watch Operations Group (IAVWOPSG) be tasked to invite the World Organization of Volcano Observatories (WOVO) through the International Union of Geodesy and Geophysics (IUGG) to develop further suitable guidance material as part of IAVWOPSG Conclusion 6/23, in view of fostering the increased use of the aviation colour code and the volcano observatory notice for aviation (VONA) by volcano observatories.

2.5 As a follow-up of IVATF Recommendation 3/2, IAVWOPSG is coordinating with WOVO. In addition, with regard to the guidance material, IAVWOPSG/7 held in March 2013 discussed how the recommendation was successfully implemented. Noting that the guidance material should address especially the means of communication to deliver information from VOs to ACCs, MWOs and VAACs, the group formulated following conclusion:

Conclusion 7/24 — Additional guidance on VONA

That an ad-hoc working group consisting of Australia, IATA, IUGG, Japan, New Zealand and United States (Rapporteur) be tasked to:

- (a) develop additional guidance material on the use of the volcano observatory notice for aviation (VONA) for inclusion in the *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* (Doc 9766) to support the implementation of Annex 3 – *Meteorological Service for International Air Navigation* (Amendment 76) provisions in this regard; and
- (b) submit the guidance material called for by a) to the Secretary by end September 2013 for inclusion in Doc 9766 accordingly.

2.6 Recently at the 198th Session the ICAO Council endorsed the amendment 76 to Annex 3, which includes the reference of use of VONA format as a recommended practice. The relevant parts from Amendment 76 to Annex 3 are reproduced in the Appendix B to this paper.

3. Proposed Draft Conclusion

3.1 Given the above information, the following draft conclusion should be formulated:

Draft Conclusion 17/xx – Use of VONA format

That, States be invited to consider ways to ensure implementation of the VONA format to report volcanic activities by Volcano Observatories.

4. Action by the Meeting

4.1 The meeting is invited to:

- a) note the information contained in this paper,
- b) discuss any relevant matters as appropriate, and
- c) consider the proposed draft conclusion for adoption.

**APPENDIX A – FORMAT OF VOLCANO OBSERVATORY NOTICE FOR AVIATION
(VONA)**

Explanation of the format of a Volcano Observatory Notice for Aviation (VONA) which is issued by a VO when a colour code changes (up or down) or within a colour-code level when an ash-producing event or other significant change in volcanic behaviour occurs.

(1) VOLCANO OBSERVATORY NOTICE FOR AVIATION — VONA

- (2) Issued: Universal (Z) date and time (YYYYMMDD/HHMMZ).
- (3) Volcano: Name and number (per Smithsonian database at <http://www.volcano.si.edu/world/>)
- (4) Current Aviation Colour Code: **GREEN, YELLOW, ORANGE, OR RED** in upper case bold font
- (5) Previous Aviation Colour Code: Lower case font, not bold
- (6) Source: Name of Volcano Observatory (volcanological agency)
- (7) Notice Number: Create unique number that includes year
- (8) Volcano Location: Latitude, longitude in NOTAM format (N or S deg min W or E deg min)
- (9) Area: Regional descriptor
- (10) Summit Elevation: nnnnn FT (nnnn M)
- (11) Volcanic Activity Summary: Concise statement that describes activity at the volcano. If known, specify time of onset and duration (local and UTC) of eruptive activity.
- (12) Volcanic Cloud Height: Best estimate of ash-cloud top in nnnnn FT (nnnn M) above summit or AMSL (specify which). Give source of height data (ground observer, pilot report, radar, etc.). “UNKNOWN” if no data available or “NO ASH CLOUD PRODUCED” if applicable.
- (13) Other Volcanic Cloud information: Brief summary of relevant cloud characteristics such as colour of cloud, shape of cloud, direction of movement, etc. Specify if cloud height is obscured or suspected to be higher than what can be observed clearly. “UNKNOWN” if no data available or “NO ASH CLOUD PRODUCED” if applicable.
- (14) Remarks: Optional; brief comments on related topics such as monitoring data, observatory actions, volcano’s previous activity, etc.
- (15) Contacts: Names, phone numbers (voice and fax), email addresses.
- (16) Next Notice: “A new VONA will be issued if conditions change significantly or the colour code is changes.” Indicate if final notice for an event. Include URL of Web site where latest volcanic information is posted.

APPENDIX B – AMMENDMENT 76 TO ANNEX 3
REGARDING THE USE OF VONA FORMAT

4.1 Information from State volcano observatories

Recommendation.— *The information required to be sent by State volcano observatories to their associated ACCs, MWO and VAAC should comprise:*

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b) for volcanic eruption: the date/time (UTC) of report and time of eruption (UTC) if different from time of report; name and, if known, number of the volcano; location (latitude/longitude); and description of the eruption including whether an ash column was ejected and, if so, an estimate of height of ash column and the extent of any visible volcanic ash cloud, during and following an ~~eruption~~-eruption; and

c) for volcanic eruption cessation: the date/time (UTC) of report and time of eruption cessation (UTC); name and, if known, number of the volcano; and location (latitude/longitude).

Note 1.— *Pre-eruption volcanic activity in this context means unusual and/or increasing volcanic activity which could presage a volcanic eruption.*

Note 2.— *The State volcano observatories may use the Volcano Observatory Notice for Aviation (VONA) format to send information to its associated ACCs, MWO and VAAC. The VONA format is included in the Handbook on the International Airways Volcano Watch (IAVW) (Doc 9766) which is available on the ICAO IAVWOPSG website*

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