



International Civil Aviation Organization

**FIRST MEETING OF THE ASIA/PACIFIC METEOROLOGICAL
ADVISORIES AND WARNINGS IMPLEMENTATION TASK FORCE
(METWARN/1 TF/1)**

Bangkok, Thailand, 23 – 25 March 2011

Agenda Item 4: Advisories and Aerodrome Warnings

TIMELINESS OF VOLCANIC ASH ADVISORIES

(Presented by IATA)

SUMMARY

The issuance of volcanic ash advisories during the eruption phase is critical to enable safe operations of those aircraft which are enroute near the eruption source. This paper provides an example of a volcanic ash advisory which is not timely and poses questions to the meeting.

1. INTRODUCTION/BACKGROUND

1.1 Reference is made to the Annex 3, Table A2-1 template for volcanic ash advisory messages, which enables volcanic ash advisory centres (VAAC) to provide information on eruptions shortly after they occur. As shown in the **attachment**, elements 11, 12 and 13 allow for the details of the eruption, time of observation of ash and observed or estimated ash cloud. The observed or estimated ash cloud, if not seen by satellite, may be predicted with the wind provided at various layers above the volcano. Therefore, a VAAC may issue an eruption advisory with the forecast fields populated with NOT AVBL or NOT PROVIDED before sufficient information (from satellite or ground) is gathered for input into trajectory models used for forecasting the position of a volcanic ash cloud..

2. DISCUSSION

2.1 On 4 March 2011, the Kizimen Volcano in the Russian Federation erupted. The first advisory was issued almost three hours later. This advisory had no trajectory information as satellite data did not permit the identification of volcanic ash.. In addition, there was an inconsistency in that the information source (MTSAT-2 KEMSD) indicates that satellite data was used, while the observed volcanic ash cloud (VA NOT IDENTIFIABLE FROM SATELLITE DATA) suggested otherwise.

VA ADVISORY

DTG: 20110304/2132Z
VAAC: TOKYO
VOLCANO: KIZIMEN 1000-23
PSN: N5508E16019
AREA: RUSSIA
SUMMIT ELEV: 2376M
ADVISORY NR: 2011/112
INFO SOURCE: MTSAT-2 KEMSD
AVIATION COLOUR CODE: NIL
ERUPTION DETAILS: ERUPTION AT 20110304/1842Z FL210 WAS REPORTED.
OBS VA DTG: 04/2100Z
OBS VA CLD: VA NOT IDENTIFIABLE FROM SATELLITE DATA. WINDS ABV THE
VO
LCANO AT 04/1840Z FL100 120/52KT FL210 130/72KT FROM JMA NWP MODEL.
FCST VA CLD +6HR: NIL
FCST VA CLD +12HR: NIL
FCST VA CLD +18HR: NIL
RMK: NIL
NXT ADVISORY: NO FURTHER ADVISORIES=

2.2 The following questions would be relevant to this event:

- 1) When was the information about the eruption received by the VAAC?
- 2) What was the source of information?
- 3) Could the advisory have been issued much sooner after the eruption occurred?

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information in this paper; and
- b) discuss the questions provided in section 2.2.

Table A2-1. Template for advisory message for volcanic ash

Key: M = inclusion mandatory, part of every message;
 O = inclusion optional;
 = = a double line indicates that the text following it should be placed on the subsequent line.

Note 1.— The ranges and resolutions for the numerical elements included in advisory messages for volcanic ash are shown in Appendix 6, Table A6-4.

Note 2.— The explanations for the abbreviations can be found in the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC, Doc 8400).

Note 3.— Inclusion of a “colon” after each element heading is mandatory.

Note 4.— The numbers 1 to 18 are included only for clarity and they are not part of the advisory message, as shown in the example.

Element	Detailed content	Template(s)	Examples
1	Identification of the type of message (M)	Type of message	VA ADVISORY
2	Time of origin (M)	Year, month, day, time in UTC	DTG: nnnnnnnn/nnnnZ
3	Name of VAAC (M)	Name of VAAC	VAAC: nnnnnnnnnnnn
4	Name of volcano (M)	Name and IAVCEI ¹ number of volcano	VOLCANO: nnnnnnnnnnnnnnnnnnnnn [nnnnnn] or UNKNOWN or UNNAMED
5	Location of volcano (M)	Location of volcano in degrees and minutes	PSN: Nnnnn or Snnnn Wnnnnn or Ennnnn or UNKNOWN
6	State or region (M)	State, or region if ash is not reported over a State	AREA: nnnnnnnnnnnnnnnnn
7	Summit elevation (M)	Summit elevation in m (or ft)	SUMMIT ELEV: nnnnM (or nnnnnFT)
8	Advisory number (M)	Advisory number: year in full and message number (separate sequence for each volcano)	ADVISORY NR: nnnn/nnnn
9	Information source (M)	Information source using free text	INFO SOURCE: Free text up to 32 characters
10	Colour code (O)	Aviation colour code	AVIATION COLOUR CODE: RED or ORANGE or YELLOW or GREEN or UNKNOWN or NOT GIVEN or NIL
11	Eruption details (M)	Eruption details (including date/time of eruption(s))	ERUPTION DETAILS: Free text up to 64 characters or UNKNOWN

Element	Detailed content	Template(s)	Examples
12	Time of observation of ash (M)	Day and time (in UTC) of observation of volcanic ash	OBS VA DTG: nn/nnnZ
13	Observed or estimated ash cloud (M)	Horizontal (in degrees and minutes) and vertical extent at the time of observation of the observed or estimated ash cloud or, if the base is unknown, the top of the observed or estimated ash cloud; Movement of the observed or estimated ash cloud	OBS VA CLD or EST VA CLD: TOP FLnnn or SFC/FLnnn or FLnnn/nnn [nnKM WID LINE ² BTN (nnNM WID LINE BTN)] Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] ² or TOP FLnnn or SFC/FLnnn or FLnnn/nnn MOV N nnKMH (or KT) or MOV NE nnKMH (or KT) or MOV E nnKMH (or KT) or MOV SE nnKMH (or KT) or MOV S nnKMH (or KT) or MOV SW nnKMH (or KT) or MOV W nnKMH (or KT) or MOV NW nnKMH (or KT) ² or VA NOT IDENTIFIABLE FM SATELLITE DATA WIND FLnnn/nnn nnn/nn[n]MPS (or KT) ² or WIND FLnnn/nnn VRBnnMPS (or KT) or WIND SFC/FLnnn nnn/nn[n]MPS (or KT) or WIND SFC/FLnnn VRBnnMPS (or KT)
14	Forecast height and position of the ash clouds (+6 HR) (M)	Day and time (in UTC) (6 hours from the "Time of observation of ash" given in Item 12); Forecast height and position (in degrees and minutes) for each cloud mass for that fixed valid time	FCST VA CLD +6 HR: nn/nnnZ SFC or FLnnn/[FL]nnn [nnKM WID LINE ² BTN (nnNM WID LINE BTN)] Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] ² or NO VA EXP or NOT AVBL or NOT PROVIDED

Element	Detailed content	Template(s)	Examples
15	Forecast height and position of the ash clouds (+12 HR) (M) Day and time (in UTC) (12 hours from the "Time of observation of ash" given in Item 12); Forecast height and position (in degrees and minutes) for each cloud mass for that fixed valid time	FCST VA CLD +12 HR: nn/nnnnZ SFC or FLnnn/[FL]nnn [nnKM WID LINE ² BTN (nnNM WID LINE BTN)] Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn][– Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn]] ³ or NO VA EXP or NOT AVBL or NOT PROVIDED	FCST VA CLD 23/1300Z +12 HR: SFC/FL270 N4830 E16130 – N4830 E16600 – N5300 E16600 – N5300 E16130 NO VA EXP NOT AVBL NOT PROVIDED
16	Forecast height and position of the ash clouds (+18 HR) (M) Day and time (in UTC) (18 hours from the "Time of observation of ash" given in Item 12); Forecast height and position (in degrees and minutes) for each cloud mass for that fixed valid time	FCST VA CLD +18 HR: nn/nnnnZ SFC or FLnnn/[FL]nnn [nnKM WID LINE ² BTN (nnNM WID LINE BTN)] Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn][– Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn]] ² or NO VA EXP or NOT AVBL or NOT PROVIDED	FCST VA CLD 23/1900Z +18 HR: NO VA EXP NOT AVBL NOT PROVIDED
17	Remarks (M) Remarks, as necessary	RMK: Free text up to 256 characters or NIL	RMK: LATEST REP FM KVERT (0120Z) INDICATES ERUPTION HAS CEASED. TWO DISPERSING VA CLD ARE EVIDENT ON SATELLITE IMAGERY NIL
18	Next advisory (M) Year, month, day and time in UTC	NXT ADVISORY: nnnnnnn/nnnnZ or NO LATER THAN nnnnnnn/nnnnZ or NO FURTHER ADVISORIES or WILL BE ISSUED BY nnnnnnn/nnnnZ	NXT ADVISORY: 20080923/0730Z NO LATER THAN nnnnnnn/nnnnZ NO FURTHER ADVISORIES WILL BE ISSUED BY nnnnnnn/nnnnZ

Notes.—

1. International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI).
2. A straight line between two points drawn on a map in the Mercator projection or a straight line between two points which crosses lines of longitude at a constant angle.
3. Up to 4 selected layers.
4. If ash reported (e.g. AIREP) but not identifiable from satellite data.