A SIGMET provides concise information issued by a Meteorological Watch Office (MWO) concerning the occurrence or expected occurrence of specific en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations. The WV SIGMET provides information on volcanic ash and should be based on the Volcanic Ash Advisory.

**WV SIGMET Structure**

**WMO Header**

- Bulletin identification: TTAAii
- Disseminating centre: CCCC
- Transmission time: YYGGgg
- Correction indicator: [BBB]

**FIRST LINE OF SIGMET**

- Location indicator: CCCC
- Message identifier: SIGMET
- Sequence number: [n][n]
- Validity period: VALID YYGGgg/YYGGgg
- Issuing office: CCCC-

**SIGMET MAIN BODY**

- FIR/CTA Name
- Phenomenon
- Observed/forecast phenomenon: Location
- Movement or expected movement
- Changes in intensity
- Forecast time & forecast position

**WMO Header**

**Bulletin identification**

<table>
<thead>
<tr>
<th>TT</th>
<th>Data type designator</th>
<th>WV – for SIGMET for volcanic ash</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Country or territory designators</td>
<td>Assigned according to Table C1, Part II of Manual on the Global Telecommunication System, Volume I – Global Aspects (WMO Publication No. 386)</td>
</tr>
</tbody>
</table>

**Disseminating centre**

CCCC is the ICAO location indicator of the communication centre disseminating the message (this may be the same as the MWO location indicator).

**Transmission time**

YYGGgg is the date/time group; where YY is the day of the month and GGGg is the time of transmission of the SIGMET in hours and minutes UTC (normally this time is assigned by the disseminating (AFTN) centre).
Correction indicator
BBB should only be included when issuing a correction to a SIGMET which had already been transmitted. The BBB indicator shall take the form CCx for corrections to previously relayed bulletins, where x takes the value A for the first correction, B for the second correction, etc., for a specific SIGMET.

First line of SIGMET
Location indicator
CCCC is the ICAO location indicator of the ATS unit serving the FIR or CTA to which the SIGMET refers.

Message identifier
The message identifier is SIGMET.

Sequence number
The daily sequence number in the form [n][n][n], e.g. 1, 2, 01, 02, A01, A02, restarts every day for SIGMETs issued from 0001 UTC.

Validity period
The validity period is given in the format VALID YYGGgg/YYGGgg where YY is the day of the month and GGgg is the time in hours and minutes UTC. For observed volcanic ash, the start of validity for the SIGMET should be the same as the issue time. For forecast volcanic ash, the start of validity should be the time the volcanic ash is expected to enter/develop in a MWO's FIR and can be issued no more than 12 hours prior to the start of validity. The validity period for a WV SIGMET shall be no more than 6 hours.

Issuing Office
CCCC- is the ICAO location indicator of the MWO originating the message followed by a hyphen.

SIGMET Main Body
FIR/CTA Name
The ICAO location indicator and full name of the FIR/CTA for which the SIGMET is issued in the form CCCC <name> FIR[/UIR] or CCCC <name> CTA.

Phenomenon
The description of the volcanic ash consists of: VA ERUPTION [MT volcano name] PSN <location> VA CLD

Observed or forecast phenomenon
Whether the volcanic ash is observed or forecast in the form OBS [AT GGggZ] or FCST [AT GGggZ] where GG is hours and gg minutes UTC.

Location
The location of the volcanic ash is provided with reference to geographical coordinates in latitude and longitude in degrees and minutes.

The number of coordinates should be kept to a minimum and should not normally exceed seven.

If the volcanic ash covers the entire FIR or CTA the following can be used as an alternative: ENTIRE FIR [/CTA]

Level
The level and vertical extent of the volcanic ash given in one of the following formats: [SFC/]FLnnn or [SFC/]nnnnM or [SFC/]n[nnnnFT or TOP FLnnn or ABV FLnnn or TOP ABV FLnnn or FLnnn/nnn or [nnnn/]nnnnM or [nnnn/]n[nnnnFT or [nnnnM/]FLnnn or [(n)n[nnnnFT]/FLnnn
Movement or expected movement (not included if ‘forecast time’ and ‘forecast position’ are given)

Direction and rate of movement of the volcanic ash where the direction is given with reference to one of the sixteen points of the compass (using the appropriate abbreviation) and the rate is given in KT (or KMH) in the form MOV <direction> <speed>KT or KMH. The abbreviation STNR (Stationary) is used if no significant movement is expected.

Changes in intensity

The expected evolution of the volcanic ash’s intensity as indicated by: INTSF or WKN or NC

Forecast time and forecast position (not included if movement is given)

The forecast position of the volcanic ash in the form:
FCST AT <GGgg> Z <location>
or
FCST AT <GGgg>Z ENTIRE FIR/CTA
or
FCST AT g<GGgg>Z NO VA EXP

Note: Forecast position should not be used in conjunction with the movement or expected movement of the volcanic ash cloud.

Repetition of elements

This is used to repeat the elements in a SIGMET message when two volcanic ash clouds occur simultaneously in an FIR. The descriptor AND is used to separate the elements for each volcanic ash cloud.

Renewing a SIGMET

A SIGMET is renewed with a new sequence number when the validity period is due to expire but the volcanic ash is expected to persist.

 Cancelling a SIGMET

If, during the validity period of a SIGMET, the volcanic ash is no longer evident or if it has moved out of the FIR, the SIGMET shall be cancelled by issuing a SIGMET with the abbreviation CNL.

CNL SIGMET [n][n]n YYGGgg/YYGGgg

Source of Information

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Types of Information</th>
<th>Issue a VA SIGMET</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAAC</td>
<td>Advice that ash is observed or is expected to enter the MWO’s FIR at a specific time in the future.</td>
<td>Issue immediately</td>
</tr>
<tr>
<td>Volcano Observatory</td>
<td>Details of an eruption with either no information about any ash or the extent of any ash cloud. These may be received in the form of a Volcano Observatory Notice for Aviation (VONA).</td>
<td>Issue immediately</td>
</tr>
<tr>
<td>Pilot Report, Met Office, ATS Unit</td>
<td>Report of an eruption with or without associated ash, or an ash encounter without any reference to a specific volcano. Note: All reports should be forwarded on to the responsible VAAC without delay.</td>
<td>Issue immediately, even if no information received from a VAAC</td>
</tr>
</tbody>
</table>

SIGMET Dissemination

SIGMET is part of operational meteorological (OPMET) information and should be exchanged via aeronautical fixed service (AFS). The SIGMET priority indicator used shall be FF.
Volcanic Ash Advisory (VA) Example

VAAC: TOKYO

VOLCANO: SAKURAJIMA / WAKAMIKO (AIRA CALDERA) 282080

PSN: N3136 E13039

AREA: JAPAN

SUMMIT ELEV: 1117M

AVIATION COLOUR CODE: NIL

ERUPTION DETAILS: EXPLODED AT 20150521/0120Z FL170 EXTD S

OBS VA DTG: 21/0215Z

OBS VA CLD:
SFC/FL170 N3020 E13225 - N3051 E13328 - N3056 E13414 - N3042 E13422 - N3009 E13229 MOV E
35KT SFC/FL170 N3134 E13042 - N3121 E13117 - N3110 E13108 - N3119 E13031 MOV SE 45KT


RMK: NEW VA OBS SATELLITE IMAGERY.

NXT ADVISORY: 20150521/0600Z

Volcanic Ash Graphic (VAG) Example

Volcanic Ash (WV) SIGMET Example

Infrared difference satellite imagery by Himawari-8 during its pre-operational phase. The red-coloured region indicates volcanic ash. Image courtesy Japan Meteorological Agency.
**VA, VAG and WV SIGMET Example 2**

**Volcanic Ash Advisory (VA) Example**

<table>
<thead>
<tr>
<th>IDD41295</th>
<th>VA ADVISORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTG: 20140213/1752Z</td>
<td>VAAC: Darwin</td>
</tr>
<tr>
<td>VOLCANO: Kelut 263280</td>
<td>PSN: S0756 E11219</td>
</tr>
<tr>
<td>AREA: Indonesia</td>
<td>ADVISORY NR: 2014/2</td>
</tr>
<tr>
<td>SUMMIT ELEV: 1731M</td>
<td>INFO SOURCE: MTSAT, MEDIA.</td>
</tr>
<tr>
<td>ERUPTION DETAILS: VA PLUME OBS TO FL450 EXTENDING 50NM TO W AT 13/1632Z.</td>
<td></td>
</tr>
<tr>
<td>OBS VA DTG: 13/1745Z</td>
<td></td>
</tr>
<tr>
<td>OBS VA CLD: SFC/FL450 S0715 E11255 - S0720 E11105 - S0825 E11100 - S0830 E11245 - S0715 E11255</td>
<td></td>
</tr>
<tr>
<td>FCST VA CLD +6HR: 13/2345Z SFC/FL450 S0720 E11255 - S0715 E11050 - S0830 E11045 - S0835 E11250 - S0720 E11255</td>
<td></td>
</tr>
<tr>
<td>FCST VA CLD +12HR: 14/0545Z SFC/FL450 S0720 E11255 - S0710 E11035 - S0830 E11025 - S0835 E11250 - S0720 E11255</td>
<td></td>
</tr>
<tr>
<td>FCST VA CLD +18HR: 14/1145Z SFC/FL450 S0715 E11255 - S0705 E11020 - S0830 E11015 - S0835 E11250 - S0715 E11255</td>
<td></td>
</tr>
<tr>
<td>RMK: HEIGHT DERIVED FROM 13/1632Z MTSAT IR IMAGE AND JUANDA 13/1200Z SOUNDING.</td>
<td></td>
</tr>
<tr>
<td>NXT ADVISORY: NO LATER THAN 20140213/2345Z</td>
<td></td>
</tr>
</tbody>
</table>

**Volcanic Ash Graphic (VAG) Example**

**Volcanic Ash (WV) SIGMET Format**

WVAAii CCCC YYYGggg [BBB]
CCC SIGMET [n][n][n] VALID YYYGggg/YYGggg CCCC- CCCC <FIR/CTA Name> FIR/CTA VA ERUPTION MT <name> PSN <location> VA CLD OBS/FCST [AT GGggZ] <Location> <Levels> <Movement or expected movements> <Changes in intensity> <Forecast time and foecast position>=

**Volcanic Ash (WV) SIGMET Example**

WVID21 WAAA 131805
WAAZ SIGMET A01 VALID 131745/132345 WAAA-WAAZ UJUNG PANDANG FIR VA ERUPTION MT KELUT PSN S0756 E11219 VA CLD OBS AT 1745Z WI S0715 E11255 - S0720 E11105 - S0825 E11100 - S0830 E11245 - S0715 E11255 - S0715 E11050 - S0830 E11045 - S0835 E11250 - S0720 E11255 =

**Cancellation**

WVNG20 AYPY 072250
AYPY SIGMET AS VALID 072300/080200 AYPY-AYPY PORT MORESBY FIR CNL SIGMET A4 072000/080200=

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Refer to the following for more information:
- ICAO Annex 3 – Meteorological Service for International Air Navigation (Amd 77)
- ICAO Regional SIGMET Guide
- ICAO Doc.8896 – Manual of Aeronautical Meteorological Practice
- WMO No.732 Guide to Practices for Meteorological Offices Serving Aviation
- ICAO Doc. 9691 – Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds
- ICAO Doc. 9766 – Handbook on the International Airways Volcano Watch

4 November 2016