

# SIGMET QUICK REFERENCE GUIDE

## WV SIGMET

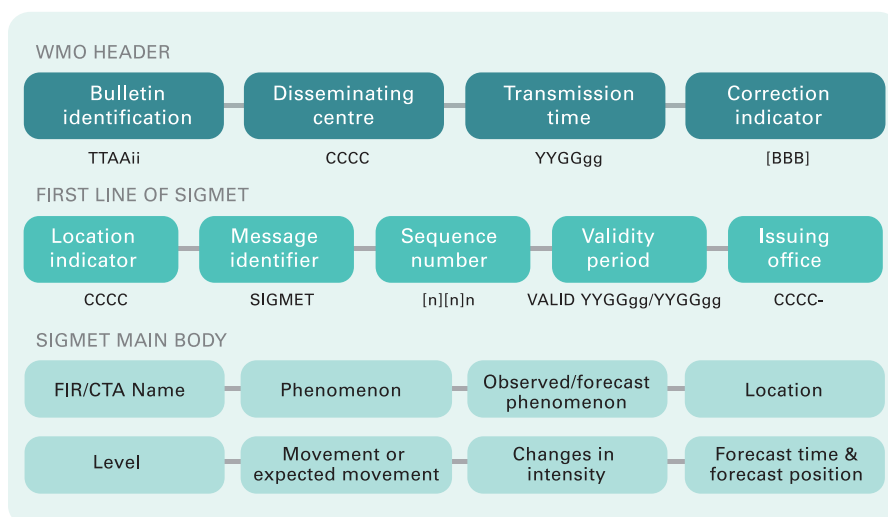
### SIGMET Abbreviations

APRX	Approximately
BTN	Between
CLD	Cloud
CNL	Cancel or cancelled
CTA	Control area
EXP	Expected
FCST	Forecast
FIR	Flight Information Region
FL	Flight level
FT	Feet
INTSF	Intensify or intensifying
KM	Kilometres
KT	Knots
KMH	Kilometres per hour
M	Metres
MOV	Moving
MT	Mountain
NC	No Change (in intensity)
NM	Nautical Miles
OBS	Observed
PSN	Position
SFC	Surface
STNR	Stationary
UIR	Upper Information Region
VA	Volcanic Ash
WI	Within (area)
WID	Wide
WKN	Weakening (intensity)
Z	Coordinated Universal Time

### WV SIGMET

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.

### SIGMET Structure



### WMO Header

#### Bulletin identification

<b>TT</b>	Data type designator	<b>WV</b> – for SIGMET for volcanic ash
<b>AA</b>	Country or territory designators	Assigned according to Table C1, Part II of <i>Manual on the Global Telecommunication System, Volume I – Global Aspects</i> (WMO Publication No. 386)
<b>ii</b>	Bulletin number	Assigned on national level according to Part II of <i>Manual on the Global Telecommunication System, Volume I – Global Aspects</i> (WMO Publication No. 386)

#### Disseminating centre

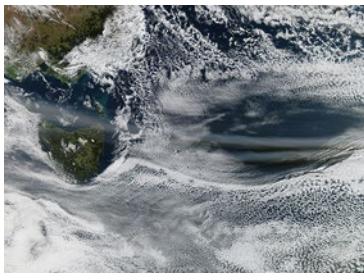
**CCCC** is the ICAO location indicator of the communication centre disseminating the message (this may be the same as the MWO location indicator).

#### 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).



Sarychev volcano, on Matua Island in the Kuril Islands, erupting on 12 June 2009. Image courtesy NASA.



Ash over Tasmania from Puyehue-Cordón Caulle volcano, Chile, 13 June 2011. Image courtesy NASA, Satellite, Aqua.



Sakurajima volcano, in southern Japan is one of the most active volcanoes in the world. Image courtesy Kimon Berlin.

### 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 **[n]nnnn/][n]nnnnFT** or **[nnnnM/]FLnnn** or **[n]nnnnFT/]FLnnn**

E	East or eastern longitude
ENE	East-north-east
ESE	East-south-east
N	North or northern latitude
NE	North-east
NNE	North-north-east
NNW	North-north-west
NW	North-west
S	South or southern latitude
SE	South-east
SSE	South-south-east
SSW	South-south-west
SW	South-west
W	West or western longitude
WNW	West-north-west
WSW	West-south-west



Tavurvur Volcano, Rabaul, 8 December 2009. More than a foot of ash fell on parts of the city, and combined with rain, it collapsed many of the small city's buildings and houses. Image courtesy NASA, Earth Observatory.

### 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

Source of Information	Types of Information	Issue a VA SIGMET
VAAC	Advice that ash is observed or is expected to enter the MWO's FIR at a specific time in the future.	Issue immediately
Volcano Observatory	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).	Issue immediately
Pilot Report, Met Office, ATS Unit	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.	Issue immediately, even if no information received from a VAAC

### SIGMET Dissemination

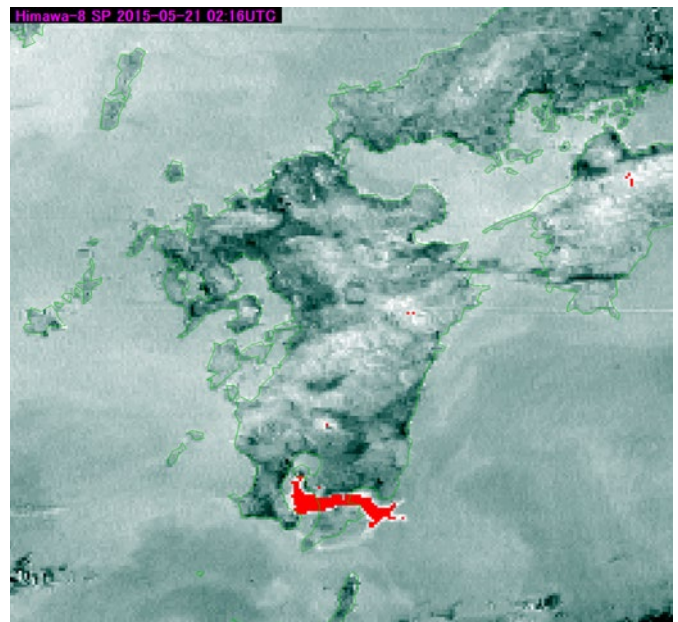
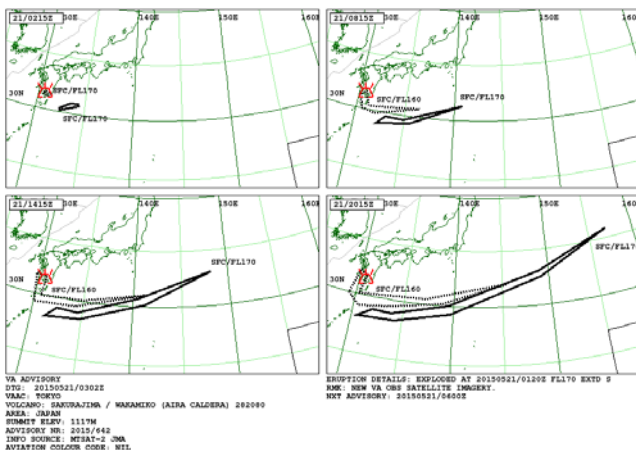
SIGMET is part of operational meteorological (OPMET) information and should be exchanged via aeronautical fixed service (AFS). The SIGMET priority indicator used shall be **FF**.

## VAA, VAG and WV SIGMET Example 1

### Volcanic Ash Advisory (VAA) Example

FVFE01 RJTD 210302  
 VA ADVISORY  
 DTG: 20150521/0302Z  
 VAAC: TOKYO  
 VOLCANO: SAKURAJIMA / WAKAMIKO (AIRA CALDERA) 282080  
 PSN: N3136 E13039  
 AREA: JAPAN  
 SUMMIT ELEV: 1117M  
 ADVISORY NR: 2015/642  
 INFO SOURCE: MTSAT-2 JMA  
 AVIATION COLOUR CODE: NIL  
 ERUPTION DETAILS: EXPLODED AT 20150521/0120Z FL170 EXT D 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  
 FCST VA CLD +6 HR: 21/0815Z SFC/FL170 N2939 E13308 - N2936 E13456 - N3116 E14050 - N2923 E13534 - N2856 E13219 SFC/FL160 N3113 E13012 - N3129 E13045 - N3020 E13114 - N3045 E13627 - N2946 E13155 - N3003 E13034  
 FCST VA CLD +12 HR: 21/1415Z SFC/FL170 N2858 E13433 - N3043 E14030 - N3303 E14809 - N3009 E14109 - N2828 E13451 - N2814 E13124 - N2907 E13225 SFC/FL160 N3144 E12945 - N3143 E13049 - N2957 E13035 - N3006 E13458 - N3104 E14120 - N2929 E13413 - N2918 E13001  
 FCST VA CLD +18 HR: 21/2015Z SFC/FL170 N2959 E13924 - N3301 E14857 - N3551 E15658 - N3231 E14905 - N2916 E13941 - N2814 E13412 - N2809 E13035 - N2855 E13156 - N2849 E13352 SFC/FL160 N3209 E13000 - N3142 E13046 - N3003 E13019 - N3027 E13706 - N3203 E14530 - N3010 E13850 - N2924 E13334 - N2901 E13028 - N3000 E12917  
 RMK: NEW VA OBS SATELLITE IMAGERY.  
 NXT ADVISORY: 20150521/0600Z=

### Volcanic Ash Graphic (VAG) 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.

### Volcanic Ash (WV) SIGMET Example

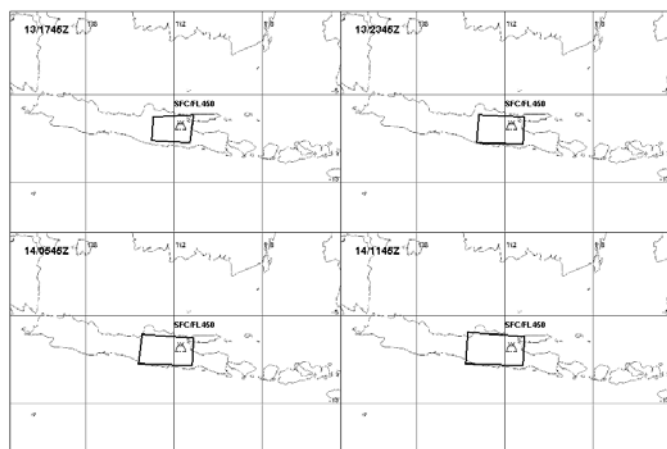
WVJP31 RJTD 210320  
 RJJJ SIGMET E05 VALID 210320/210920 RJTD-  
 RJJJ FUKUOKA FIR VA ERUPTION MT SAKURAJIMA-  
 WAKAMIKO(AIRA-CALDERA) PSN N3136 E13039 VA CLD OBS  
 AT 0215Z WI N3020 E13225 - N3051 E13328 - N3056 E13414  
 -N3042 E13422 - N3009 E13229 - N3020 E13225 SFC/FL170 FCST  
 AT 0815Z WI N2939 E13308 - N2936 E13456 - N3116 E14050 -  
 N2923 E13534 - N2856 E13219 - N2939 E13308= AND WI N3134  
 E13042 - N3121 E13117 - N3110 E13108 - N3119 E13031 - N3134  
 E13042 SFC/FL170 NC FCST AT 0815Z WI N3113 E13012 - N3129  
 E13045 - N3020 E13114 - N3045 E13627 - N2946 E13155 - N3003  
 E13034 - N3113 E13012 =

## VAA, VAG and WV SIGMET Example 2

### Volcanic Ash Advisory (VAA) Example

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

### Volcanic Ash Graphic (VAG) Example



VOLCANIC ASH ADVISORY DTG: 20140213/1752Z  
 VAAC: Darwin  
 VOLCANO: Kelut 263280  
 AREA: Indonesia  
 SUMMIT ELEV: 1731M  
 ADVISORY NR: 2014/2  
 INFO SOURCE: MTSAT, MEDIA.  
 AVIATION COLOUR CODE: RED  
 ERUPTION DETAILS: VA PLUME OBS TO FL450 EXTENDING 50NM TO W AT 13/1632Z.  
 RMK: HEIGHT DERIVED FROM 13/1632Z MTSAT IR IMAGE AND JUANDA 13/1200Z SOUNDING.  
 NXT ADVISORY: NO LATER THAN 20140213/2345Z

### Volcanic Ash (WV) SIGMET Format

WVAaii CCCCYYGGgg [BBB]  
 CCCC SIGMET [n][n]n VALIDYYGGgg/YYGGgg CCCC-  
 CCCC <FIR/CTA Name> FIR/CTA VA ERUPTION MT <name>  
 PSN <location> VA CLD OBS/FCST [AT GGggZ] <Location>  
 <Level> <Movement or expected movement> <Changes in intensity> <Forecast time and forecast 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 SFC/FL450 NC FCST AT 2345Z WI S0720 E11255 -  
 S0715 E11050 - S0830 E11045 - S0835 E11250 - S0720 E11255 =

### Cancellation

WVNG20 AYPY 072250  
 AYPY SIGMET A5 VALID 072300/080200 AYPY-  
 AYPY PORT MORESBY FIR CNL SIGMET A4 072000/080200=

### 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.49 Technical Regulations Volume II – Meteorological Service for International  
 Air Navigation (2013 ed)  
 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