

# AVIATION WEATHER PRODUCTS

## Volcanic Ash Advisories

Bureau of Meteorology › Aviation Services

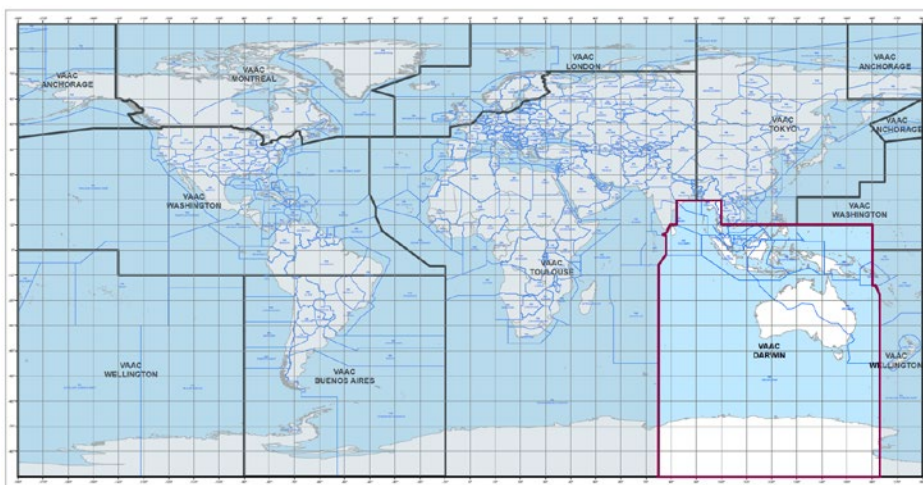


The Bureau of Meteorology operates one of nine Volcanic Ash Advisory Centres providing monitoring and reporting of volcanic ash for the aviation industry.

### Volcanic Ash Advisories

Information on volcanic ash is initially issued by Volcanic Ash Advisory Centres (VAACs) in the form of Volcanic Ash Advisory (VAA) messages. Volcanic ash SIGMET messages are prepared by the relevant Meteorological Watch Offices (MWO) from the information contained in the VAA. All Australian Volcanic Ash SIGMETs are issued by the Bureau's MWO in Melbourne.

The Bureau of Meteorology operates VAAC Darwin out of Melbourne. The VAAC Darwin is staffed by meteorologists who are specially trained in the detection and forecast movement of volcanic ash. The VAAC Darwin is responsible for the area that encompasses the active volcanic regions of Indonesia, Papua New Guinea and the southern Philippines, and extends southwards to the pole. This area encompasses the active volcanic regions of Indonesia, Papua New Guinea and the southern Philippines. The other VAACs are Anchorage (US), Buenos Aires (Argentina), London (UK), Montreal (Canada) Tokyo (Japan), Toulouse (France), Washington (US) and Wellington (NZ). The various areas of responsibility are shown in the following diagram:



### Message Structure

#### WMO Header

The World Meteorological Organization header is included to facilitate the international exchange of messages.

#### VA Advisory

The message type is identified as VA (volcanic ash) ADVISORY.

#### VA ADVISORY

#### Status Indicator (optional)

This is a conditional element and will not appear in operational advisories. Used only when the message issued indicates that a test or an exercise is taking place. When used the element will contain 'TEST' or the abbreviation 'EXER'.



Australian Government  
Bureau of Meteorology

## Aviation Color Code

### RED

- Eruption is forecast to be imminent with significant emission of ash into the atmosphere likely; or
- Eruption is underway with significant emission of ash into the atmosphere occurring.

### ORANGE

- Volcano is exhibiting heightened unrest with increased likelihood of eruption; or
- Volcanic eruption is underway with no, or minor, ash emission.

### YELLOW

- Volcano is experiencing signs of elevated unrest above known background levels; or (after a change from a higher alert level)
- Volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.

### GREEN

- Volcano is in normal non-eruptive state; or (after a change from a higher alert level)
- Volcano activity considered to have ceased and volcano reverted to its normal, non-eruptive state.

## Date/Time (of issue) Group (DTG)

Year, month, day and time of issue followed by the letter Z (universal time coordinated, UTC).

DTG: 20191109/0020Z

## VAAC

Name of issuing office (the Volcanic Ash Advisory Centre).

VAAC: DARWIN

## Volcano Name and Number

The volcano name is followed by the IAVCEI (International Association of Vulcanology and Chemistry of the Earth's Interior) reference number for the erupting volcano.

VOLCANO: MERAPI 263250

## Volcano Position

Volcano position is given by latitude and longitude in degrees and minutes.

PSN: S0733 E11027

## Area

Gives the State, or region if the VA is not reported over a State, within which the ash is located.

AREA: INDONESIA

## Summit Elevation

Gives the volcano's summit height above sea level, in metres and/or feet.

SUMMIT ELEV: 2968M

## Advisory Number

Each volcano has its own numbering sequence, giving the number of advisories issued for that volcano in the current calendar year. Given in the format YYYY/N.

ADVISORY NR: 2019/9

## Information Source

Describes the means (e.g. pilot reports, satellite imagery, vulcanological authority) by which the VAAC was notified of the volcanic ash.

INFO SOURCE: HIMAWARI-8, CVGHM

## Aviation Color Code

The aviation colour code is an alert level developed by the IAVW (International Airways Volcano Watch) and recommended for use by vulcanological agencies to report volcanic activity information for inclusion in VAA (and NOTAMS). See left column for the four levels of alert.

AVIATION COLOUR CODE: ORANGE

## Eruption Details

Gives a summary of the details of the eruption as provided by the information source.

ERUPTION DETAILS: VATO FL150 AT 08/2321Z

## Observation Date/Time Group

Gives the day of the month and the time (UTC) of the observation in the format DD/HHMMZ.

OBS VA DTG: 09/0020Z

## Observed Ash Cloud

Gives horizontal and vertical extent of the observed or estimated ash cloud, if known, plus an indication of the movement of the cloud.

OBS VA CLD: SFC/FL150 S0734 E11031 - S0750 E11023 - S0734 E11008 - S0728 E11028 MOV SW 10KT



Shinmoe-dake volcano, Kyushu, 2011. Image, NASA

### Forecast

Gives the horizontal and vertical extent of the ash cloud at +6, +12, and +18 hours from the time of the observed cloud.

FCST VA CLD +6 HR: 09/0620Z SFC/FL150 S0743 E11031 - S0820  
 E11002 - S0755 E10929 - S0730 E11015  
 FCST VA CLD +12 HR: 09/1220Z SFC/FL150 S0802 E11027 - S0841  
 E10954 - S0754 E10912 - S0738 E10953  
 FCST VA CLD +18 HR: 09/1820Z NO VA EXP

### Remarks

Includes any further pertinent information, e.g. identifying what has changed if the message is a correction.

RMK: CVGHM REPORT DISCRETE ERUPTION TO FL150 AT 08/2321. VA  
 OBSTO FL150 ON SAT IMAGERY. VA EXPECTED TO DISSIPATE BY  
 08/1820Z. VA HEIGHT AND MOVEMENT BASED ON CVGHM GND  
 REPORT, SATELLITE IMAGERY AND MODEL GUIDANCE.

### Next Advisory

Gives the approximate date/time of the next advisory issue. The normal frequency of issue is every six hours, but will be more often if significant new information becomes available. However, under certain circumstances such as when precautionary advisories are being issued, or when regular information is being received indicating an eruption is ongoing and ash is not evident on satellite imagery, advices may be issued every twenty four hours.

Will also indicate if the ash cloud is expected to move into an adjacent VAACs area of responsibility.

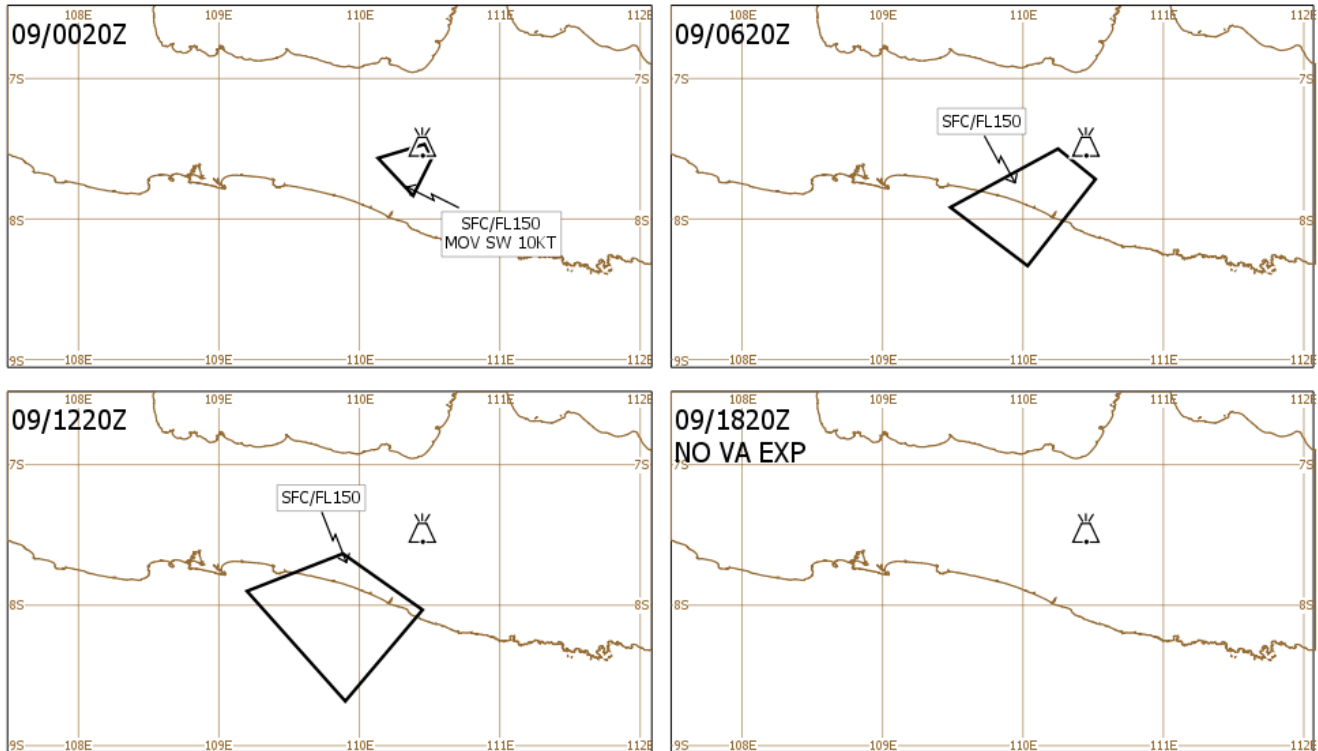
NXT ADVISORY: NO LATER THAN 20191109/0120Z

## Volcanic Ash Advisory Example

VA ADVISORY  
 DTG: 20191109/0020Z  
 VAAC: DARWIN  
 VOLCANO: MERAPI 263250  
 PSN: S0733 E11027  
 AREA: INDONESIA  
 SUMMIT ELEV: 2968M  
 ADVISORY NR: 2019/9  
 INFO SOURCE: HIMAWARI-8, CVGHM  
 AVIATION COLOUR CODE: ORANGE  
 ERUPTION DETAILS: VA TO FL150 AT 08/2321Z  
 OBS VA DTG: 09/0020Z  
 OBS VA CLD: SFC/FL150 S0734 E11031 - S0750 E11023 - S0734  
 E11008 - S0728 E11028 MOV SW 10KT  
 FCST VA CLD +6 HR: 09/0620Z SFC/FL150 S0743 E11031 - S0820  
 E11002 - S0755 E10929 - S0730 E11015  
 FCST VA CLD +12 HR: 09/1220Z SFC/FL150 S0802 E11027 - S0841  
 E10954 - S0754 E10912 - S0738 E10953  
 FCST VA CLD +18 HR: 09/1820Z NO VA EXP  
 RMK: CVGHM REPORT DISCRETE ERUPTION TO FL150 AT 08/2321. VA  
 OBSTO FL150 ON SAT IMAGERY. VA EXPECTED TO DISSIPATE BY  
 08/1820Z. VA HEIGHT AND MOVEMENT BASED ON CVGHM GND  
 REPORT, SATELLITE IMAGERY AND MODEL GUIDANCE.  
 NXT ADVISORY: NO LATER THAN 20191109/0120Z

## Volcanic Ash Advisory Graphic (VAG)

Advisory messages for volcanic ash are also issued in graphical format whenever a text product is issued. The VAG uses all the information from the VAA, and displays the OBS VA CLD and FCST parts of the Volcanic Ash Advisory as polygons in four panels. Different line styles are used to distinguish between the different layers of ash.



VOLCANIC ASH ADVISORY		
DTG:	20191109/0020Z	ADVISORY NR: 2019/9
VAAC:	DARWIN	INFO SOURCE: HIMAWARI-8, CVGHM
VOLCANO:	MERAPI 263250	AVIATION COLOUR CODE: ORANGE
PSN:	S0733 E11027	ERUPTION DETAILS: VA TO FL150 AT 08/2321Z
AREA:	INDONESIA	CVGHM REPORT DISCRETE ERUPTION TO FL150 AT 08/2321. VA OBS TO FL150 ON SAT IMAGERY. VA EXPECTED TO DISSIPATE BY 08/1820Z. VA HEIGHT AND MOVEMENT BASED ON CVGHM GND REPORT, SATELLITE IMAGERY AND MODEL GUIDANCE.
SUMMIT	2968M	
ELEV:		NKT ADVISORY: NO LATER THAN 20191109/0120Z



**Australian Government**  
**Bureau of Meteorology**

Airservices Australia is the official distributor of aviation forecasts, warnings and observations issued by the Bureau of Meteorology. Airservices' flight briefing services are available at [www.airservicesaustralia.com](http://www.airservicesaustralia.com). Telephone contact details for elaborative briefings are contained in Airservices' Aeronautical Information Publication Australia (AIP), which is available online through their website.

Other brochures produced by the Bureau of Meteorology's aviation meteorological services program can be found at [www.bom.gov.au/aviation/knowledge-centre](http://www.bom.gov.au/aviation/knowledge-centre).

A vertical line in the margin indicates a text amendment since last update.