



ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

Workshop on the provision of
information on volcanic eruptions
and ash clouds

(Yaoundé, Cameroon, 16 – 20 June 2025)



Action to be taken by the MWO prior to and during a volcanic eruption

ICAO Regional Office

By the Secretariat

Outline

1. Introduction.
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A3: Chap.3 §3.4 : STD 3.4.1 : A Contracting State, **having accepted the responsibility** for providing air traffic services within a flight information region (FIR) or a control area (CTA), **shall establish**, in accordance with regional air navigation agreement, **one or more MWOs, or arrange for another Contracting State to do so.**

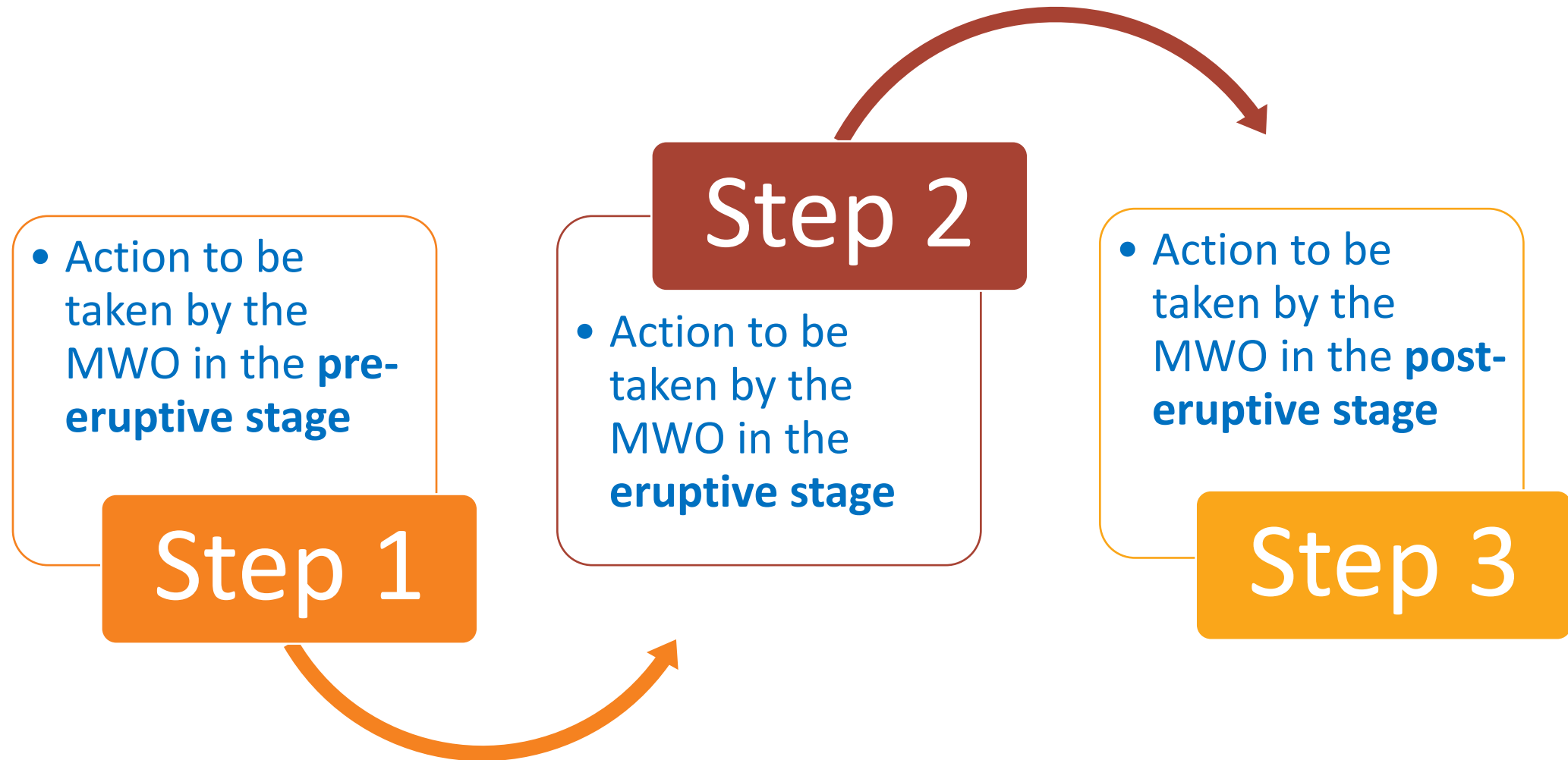
As per Annex 3 provisions, the **Meteorological watch offices (MWOs)** shall issue a **Volcanic Ash SIGMET** Information using the **information provided by their associated Volcanic Ash Advisory Centres (VAACs)**, to assist operators at the flight planning stages, as well as aircraft in flight.

The actions by the MWOs in **pre-eruptive, eruptive** and **post-eruptive** stages are fundamental. Aerodrome Meteorological Offices (AMOs)/Stations (AMSs) also **play a key role in reporting on volcanic activities.**

- **Aerodrome Meteorological Offices (AMOs)/Stations (AMSs)** are rarely located near active volcanoes, but those that are such as the AMO in Comoros, **shall report volcanic activity** when eruptions or ash clouds are observed.
- The **Volcanic Activity Report** is issued using the **Special air-report of Volcanic Activity Form** (Model VAR) provided in Doc 9691.
- **Volcanic Activity Reports** are sent to the **relevant Meteorological Watch Offices (MWO)**.
- If volcanic ash **affects visibility** at the aerodrome, **it is included in METAR/SPECI reports**.
- While less common, **visibility reductions due to volcanic ash may also be forecast in TAFs**.

Actions by the MWOs in Pre-eruptive, Eruptive and Recovery stages

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Action by MWO in Pre-eruptive phase

- Volcano observatories **shall report** pre-eruptive activity via a **VONA** message to their ACC, **MWO**, and VAAC.
- When volcanic activity is suspected, VOs, VAACs, or **MWOs** may ask ATS units to request **regular air-reports** from aircraft.
- Initial alerts may come from AIREPs, VONAs, satellite data, or sensors, prompting SIGMETs (by **MWOs**), VAAs/VAGs, and NOTAMs during the eruption phase.
- States must ensure timely distribution of **alerts** and **warnings** to **warn aircraft in flight early**.

Action by MWO During the eruption phase (1/3)

- **Pay attention to VAA/VAG produced by the AFI VAAC Toulouse as well as supplementary products provided by the MET offices co-located within AFI VAAC;**
- **Monitor information from volcano observatories in their area of responsibility;**
- **Immediately after the reception of any of those advisories, check within their area of responsibility for VA contaminated areas and;**
- **Issue SIGMET according to VAAC advisory information, special air-reports on volcanic ash and any other relevant information and/or measurements available;**

Action by MWO during the eruption phase (2/3)

- Ensure the VA SIGMET format **complies with ICAO Annex 3 standards**; Templates provided in Annex 3 may assist in meeting these requirements.
- Inform the ACC and VAAC **whether volcanic ash is detectable via satellite, ground, airborne**, or other relevant data sources.
- **Report any discrepancies** between aircraft observations (e.g., ash encounters) or other verified sources and existing VAA/VAG, SIGMET, or NOTAM/ASHTAM information to the relevant VAACs and MWOs and immediately notify downstream MWOs.
- Upon receipt, **forward special air-reports on volcanic ash to the AFI VAAC and Regional OPMET** Centre via AFTN for distribution to SADIS and WIFS, following the format in Annex 3, Appendix 6.

Action by MWO During the eruption phase (3/3)

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- **Coordinate with ACCs, MWOs, and the VAAC** to ensure consistency in volcanic ash analysis and forecasting.
- **Provide regular volcanic ash briefings** to ACCs, ATFM units, airport and aircraft operators using the latest observations and forecasts.
- **Issue SIGMETs for volcanic ash** in both text and, if possible, graphical format based on VAAC advisories.
- **Update SIGMETs at least every 6 hours.**
- **Ensure ongoing coordination with ACC/FIC** to align SIGMETs, and NOTAMs.

Action by MWO in Recovery Phase

- The **recovery phase** commences with the issuance by the VAAC of the first VAA/VAG containing the statement “**NO VA EXP**” (i.e. “**no volcanic ash expected**”).
- This normally occurs when it is determined that the **volcanic activity has reverted to its non-eruptive state** and the **airspace is no longer affected** by volcanic ash.
- Consequently, **appropriate MET and AIS messages** should be issued **in accordance with Annex 3** [*Meteorological Services for International Air Navigation*] and **Annex 15** [*Aeronautical Information Services*], respectively.

World area forecast system (WAFS)

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- The **two WAFCs**, located in London and Washington, have key responsibilities regarding volcanic ash:
 - a) to indicate volcanic eruptions on **SIGWX forecast charts** using the standard symbol, along with **a reminder for pilots to consult relevant SIGMETs**;
 - b) to distribute volcanic ash advisory information available in abbreviated **plain language, IWXXM format, and graphical form**, via the AFS Internet-based services (**SADIS and WIFS**).
- The content of SIGWX forecasts should be based on **information from the responsible VAAC** to ensure consistency across advisory products.



Conclusion

MWOs shall maintain **close coordination** with their associated VAACs, VO, ACC/FIR, neighboring MWOs, associated AMOs as well as other stakeholders, for the **timely provision** of information at **any stage** of a volcanic activity.



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Thank You!