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INTRODUCTION OF ICAO QUANTITATIVE VOLCANIC ASH FORECASTS FROM 27 NOVEMBER 2025

1 Introduction

1.1 This AIC provides notification of the introduction of the ICAO Quantitative Volcanic Ash (QVA) forecast information service. This new service was introduced in ICAO Annex 3 Amendment 82 which was adopted in April 2025 with an applicability date of **27 November 2025**.

1.2 QVA forecasts will provide higher resolution detail than existing volcanic ash products and will include both a single, specific forecast snapshot and probabilistic forecasts of ash concentration within the boundaries of an eruption. It is intended that the new forecasts afford the opportunity to move away from traditional discernible/visible ash criteria and instead take advantage of engine and airframe volcanic ash certification specifications, issued by aviation authorities.

1.3 VAAC London and VAAC Toulouse will provide QVA forecasts from 27 November 2025. The other seven ICAO designated worldwide VAACs will not initially supply QVA forecasts. However, Amendment 82 recommends that all VAACs should issue QVA forecasts from 26 November 2026.

1.4 Supplementary Volcanic Ash Concentration data and charts, provided in support of the Volcanic Ash Contingency Plan, EUR Doc 019 (NAT Doc 006, Part II) in the ICAO European and North Atlantic regions, will continue to be provided in parallel until 27 November 2026.

1.5 VAAC London and VAAC Toulouse changes are summarised in the table below:

Changes effective from 27 November 2025	
Change	Comment
Introduction of Quantitative Volcanic Ash (QVA) forecasts in accordance with Amendment 82 to ICAO Annex 3, and the first edition of the PANS-MET (Doc 10157).	QVA API information service becomes operational.
Changes effective from 27 November 2026	
Retirement of former supplementary volcanic ash charts and data.	Users of the supplementary charts should move to use the QVA information service prior to this date.

1.6 Volcanic Ash Advisories and Volcanic Ash Annotated Satellite Images will continue to be provided with no change.

1.7 To take maximum advantage of the QVA forecasts, Operator's should examine the QVA data sets that will be provided and review the following, taking account of the revised ash concentration threshold levels and associated engine and airframe OEM advice:-

i. VA Safety Risk Assessment;
ii. Operations manuals;
iii. Flight Planning Systems;
iv. Airframe and engine maintenance.

VAAC London are offering a beta QVA API for test and evaluation purposes. Please look at the information available on: https://www.metoffice.gov.uk/services/transport/aviation/regulated/international-aviation/vaac/qva/qva-api. To request access to the QVA API applicants should email: QVA@metoffice.gov.uk.

2 London VAAC QVA Forecast Overview

2.1 In the event of a volcanic eruption QVA forecasts will be published and made available to operators via a VAAC London QVA API information service: https://www.metoffice.gov.uk/services/transport/aviation/regulated/international-aviation/vaac/qva/qva-api.

The QVA API adheres to the EUROCONTROL SWIM Technical Infrastructure Yellow Profile standards and comprises of a request-reply and notifications service that will inform users when new data is published. Three core data sets will be provided:

- Expected (Forecast) Ash Concentration: A gridded dataset (NetCDF format) providing specific 3-dimensional ash concentration location details.
- Probability of Ash Exceedance: A gridded dataset (NetCDF format) indicating the likelihood of ash exceeding key concentration thresholds (0.2mg/m³, 2mg/m³, 5mg/m³, and 10mg/m³). These concentration levels were selected on the advice of engine manufactures.
- Feature Objects (IWXXM Format): Representations of areas where ash exceeds concentration thresholds at various flight levels.

With 12 vertical levels, and a horizontal resolution of 0.25 degrees of latitude and longitude the deterministic QVA forecasts will provide significantly more refined information on the presence of volcanic ash.

The introduction of probabilistic forecasts will support improved assessment of the safety risks of operations into, or near, areas of airspace with known or forecast volcanic ash cloud contamination. For example, based on the new forecasts, the “ash dose” that an aircraft engine could be, or has been subjected to, can be calculated for a flight that traverses a contaminated area. Using acceptable “ash dose” guidance, and associated required engine maintenance, determined by the engine manufacturer, the acceptability of a planned flight and post flight maintenance requirements can be determined.

The ICAO Manual on Flight Safety and Volcanic Ash (Doc 9974, 2012) provides details on the assessment of the safety risks associated with operations into or near areas of airspace with known or forecast volcanic ash contamination. To maximise benefit from the new forecasts, while maintaining an acceptable level of safety and increased maintenance, Operators should consult their airframe and engine manufacturers, CAA Flight Operations Inspector and Airworthiness Surveyor if/as applicable, when revising their safety risk assessments.

2.2 Operators will need to be able to extract and visualise QVA forecast data ensuring that applicable systems are able to correctly process the changes and decode the API digital data (IWXXM and NetCDF format) into charts and other end-user material if/as applicable.

2.3 To ensure standardization of flight documentation, software and systems used to extract and visualise QVA IWXXM data must, where applicable, decode the data into forecast charts in accordance with applicable ICAO Standards and UK Regulations.

3 Other considerations

3.1 Operators are advised that the ICAO European and North Atlantic Office will be reviewing the Volcanic Ash Contingency Plan, EUR Doc 019 (NAT Doc 006, Part II) to reflect the introduction of QVA Forecast information and the expected retirement in November 2026 of the existing VAAC London (and VAAC Toulouse) supplementary Volcanic Ash Concentration data and charts. Similarly, the CAA will be reviewing the applicable material contained in CAP1236 (Guidance regarding flight operations in the vicinity of volcanic ash).

3.2 All relevant personnel, and particularly flight crew, engineers and operations control staff should be briefed on the new QVA forecasts and provided with information and training appropriate to their role.

4 Further information

4.1 General information about the new QVA forecasts can be found on the VAAC London website, including example QVA charts: https://www.metoffice.gov.uk/services/transport/aviation/regulated/international-aviation/vaac/qva/index.

4.2 More detailed information about the service is contained in the VAAC London Quantitative Volcanic Ash (QVA) API – User Guide, available from https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/services/transport/aviation/vaac/vaac-london-qva-user-guide-v1.0.pdf.

5 Contacts

5.1 For enquiries regarding QVA forecasts and the QVA API information service contact: QVA@metoffice.gov.uk.

5.2 For enquiries regarding regulatory matters relating to flight operations in the vicinity of volcanic ash including requirements for maintaining Volcanic Ash Safety Risk Assessments operators should contact their CAA Flight Operations Inspector.