



ICAO

*International Civil Aviation Organization***INFORMATION PAPER****Twenty-fifth Meeting of the Meteorology Sub-group
(MET SG/25)**

Online, 18 – 22 October 2021

Agenda Item 5: Research, development and other initiatives**VAAC TOKYO MANAGEMENT REPORT**

(Presented by Japan)

SUMMARY

This paper presents the VAAC Tokyo IAVW Management Report for the period from 1 October 2020 through 31 August 2021.

1. INTRODUCTION

1.1 The Volcanic Ash Advisory Centre (VAAC) Tokyo is operated by the Japan Meteorological Agency (JMA), which is responsible for observing meteorological, climatological, geophysical, and oceanic phenomena and issuing information accordingly as national service. The VAAC Tokyo area of responsibility (AoR) includes the East Asia, the Northwest Pacific region and part of the Arctic Circle. This report covers operations since 1 October 2020 through 31 August 2021.

2. DISCUSSIONVAAC Tokyo Operations

2.1 VAAC Tokyo issued 2463 volcanic ash advisories (VAAs) during the period from 1 October 2020 through 31 August 2021 for 16 volcanoes within the VAAC Tokyo (AoR). Figure 1 shows the annual total number of VAAs each year issued by VAAC Tokyo since 2009.

2.2 VAAC Tokyo issued no VAA on behalf of VAAC Darwin for its backup operations. Test VAAs were provided for:

The Asia/Pacific SIGMET test in December 2020,
System update test in March 2021.

Significant Eruptions

2.3 During the period, volcanoes in the Kamchatka Peninsula and the Kuril Islands, such as Bezymianny, Ebeko, Karymsky, Klyuchevskoy, Sarychev peak, and Sheveluch

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actively erupted; some of these events with volcanic ash expanding across Northern Pacific (NOPAC) routes or towards Pacific Organized Track System (PACOTS) routes affected aviation operations. Among these events, a series of eruptions of Bezymianny (21 to 23 October 2020) was estimated to reach up to FL310.

2.4 Active volcanoes in Japan, such as Fukutoku-Oka-No-Ba, Nishinoshima, Sakurajima, Satsuma-ijima, and Suwanosejima also periodically erupted. VAAC Tokyo issued the largest number of VAAs (1083) for Suwanosejima in VAAC Tokyo AoR during the period.

2.5 Another remarkable event in the AoR is the eruption of Fukutoku-Oka-No-Ba volcano, Japan, which started on 12 August 2021. The eruption, which had a maximum height of FL540, lasted for about 4 days, and ash emission continued until 15 August. There was no contact reports from civil aircrafts encountering volcanic ash from Fukutoku-Oka-No-Ba volcano but there were some inquiries from JCAB ATC (Japan Civil Aviation Bureau Air Traffic Control) and the civil airlines to consider the route.

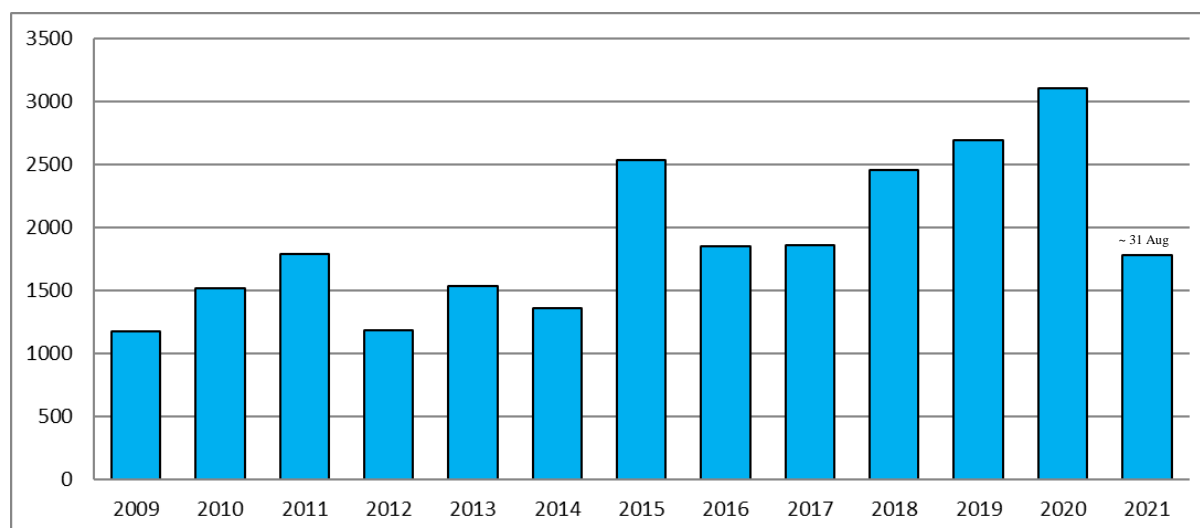


Fig. 1 Annual total number of VAAs each year issued by VAAC Tokyo since 2009.

Significant Operational and Technical Changes

2.6 In November 2020, Japan Meteorological Agency's headquarters moved from Otemachi to Toranomon (3-6-9 Toranomon, Minato City, Tokyo 105-8431, Japan). We have already notified the relevant counterparts and requested revision of the Handbook on the IAVW. The contact information has been changed as follows;

Operational phone number: +81 (3) 3434 9120

FAX: +81 (3) 3434 9121

Administrative phone number: +81 (3) 3434 9119

Email addresses: in addition to

the operational (vaac.tokyo@volash.kishou.go.jp) and

the administrative (vaac.tokyo-adm@volash.kishou.go.jp) email addresses,

please also add vaac.tokyo@jma.go.jp.

2.7 VAAC Tokyo uses a “Volcanic Ash advisory and ash fall Forecast distribution System” (hereafter, VAFS) for volcanic ash analysis, forecasting, and create/disseminate products. This system was updated in March 2021 and is currently being operated as VAFS2. We are now able to issue VAA as IWXXM format from VAFS2. We have also made minor updates to the VAAC Tokyo web page.

2.8 We also update for the Japan Meteorological Agency Atmospheric Transport Model (JMA-ATM). JMA had been operated global and regional atmospheric transport models (JMA-GATM and JMA-RATM, respectively) to issue VAAs and volcanic ash fall forecasts. Its processes consist of advection, diffusion, gravitational fallout, dry deposition, rainout, and washout and so on. The new JMA-ATM was designed from the points of view of robustness, promptness, flexibility and manageability.

2.9 JMA-GATM and JMA-RATM each had their eruption scales that they are good at. Still, they had used different vertical coordinates throughout their development history, making them somewhat inflexible. Therefore, the JMA-ATM unifies the models by converting the grid-point values to identical z-coordinates.

VAAC Back-up between Darwin and Tokyo

2.10 VAAC Darwin and VAAC Tokyo concluded a mutual backup agreement in March 2014; VAAC Darwin provides backup operations for VAAC Tokyo AoR, and VAAC Tokyo provides backup operations for the area north of 20 degrees south in VAAC Darwin AoR. During the period, VAAC Tokyo performed back-up operations for VAAC Darwin on 5 October 2020 and 27 April 2021, but no VAA are issued on behalf of VAAC Darwin for its backup operations.

3. ACTION BY THE MEETING

3.1 Note the information contained in this paper.
