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 WELLINGTON MANAGEMENT REPORT

(Presented by New Zealand)

SUMMARY

This paper covers the VAAC Wellington activities for the period 1 October 2020 to 31 August 2021.

1. INTRODUCTION

1.1 Volcanic Ash Advisory Centre (VAAC) Wellington, operated by the Meteorological Service of New Zealand Limited (MetService) covers the region southward from the Equator and from E160 to W140, except for the Melbourne and Brisbane Flight Information Regions (FIRs), and southward from S10 and from W140 to W90.

1.2 VAAC Wellington has progressed collaboration with VAAC Darwin and the New Zealand State volcano observatory, GNS Science. The VAAC has also continued communication with other meteorological and air traffic service organisations across the Pacific region when seeking confirmation of volcanic activity and during periodic volcanic ash exercises.

2. DISCUSSION

VAAC Wellington Operations

2.1 A total of 50 Volcanic Ash Advisories (VAAs) and accompanying Volcanic Ash Graphics (VAGs) have been issued for the Wellington area of responsibility between the period 1 October 2020 and 31 August 2021, as shown in Figure 1 below. The majority of the VAAs issued (86%) related to re-suspended ash at Whakaari/White Island in New Zealand.

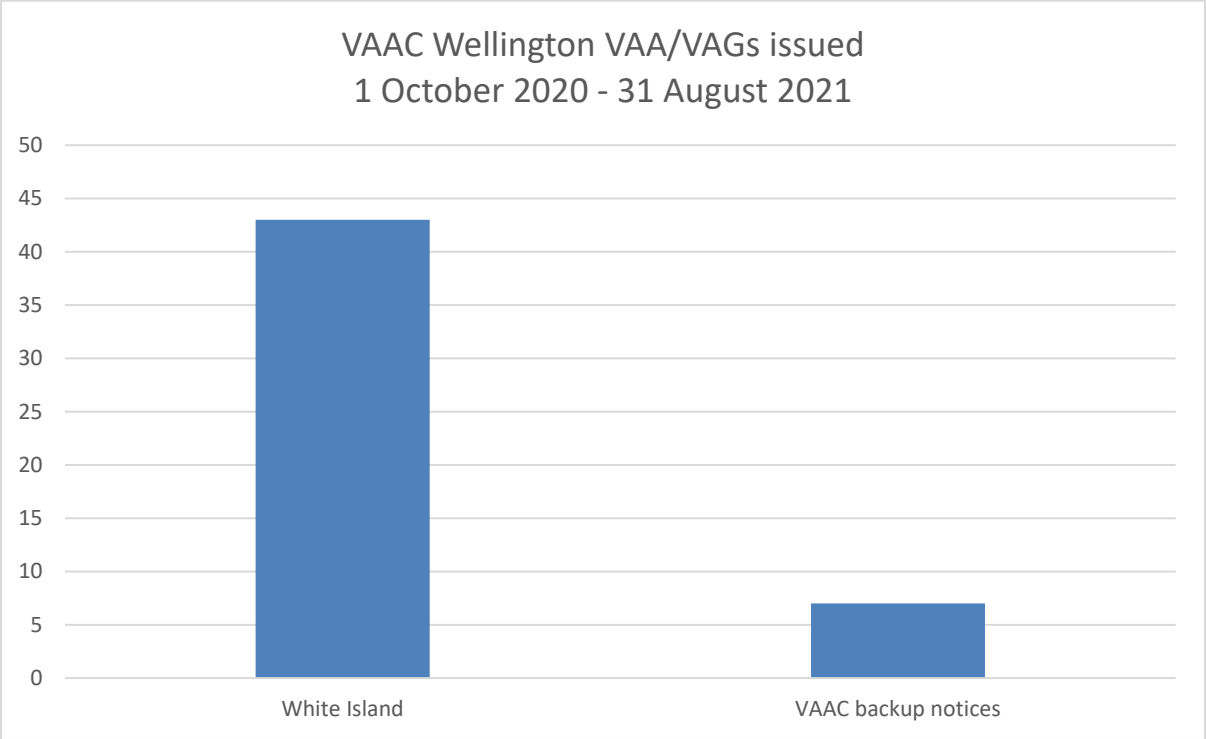

Figure 1 - VAAC Wellington advisories issued 1 October 2020 – 31 August 2021

2.2 The remainder of VAAs issued relate to back-up notices between the Wellington and Darwin VAACs. These included a backup test on 18 December 2020 and a series of live handovers in November 2020; January 2021; February 2021 and April 2021 to assist VAAC Wellington in completing a series of planned technical upgrades. The live handovers required monitoring of the VAAC Wellington area only, there were no active VAAs in force. There has been an increased effort to follow a more formal process for initiating and accepting back-up service requests, which has supported the continuous improvement of day-to-day communication between the two VAACs.

2.3 There was an increase in both number of events and VAA issued during 2020, compared to the previous calendar year (Figure 2). Most of these events occurred in November and were related to the Whakaari/White Island re-suspension event. Details of all other events in 2020 were covered in the previous report. For the period 1 January 2021 to 31 August 2021, there have been no volcanic ash events and the few VAA issued were all related to back-up notices (described in 2.2) and a Pacific MWO SIGMET test.

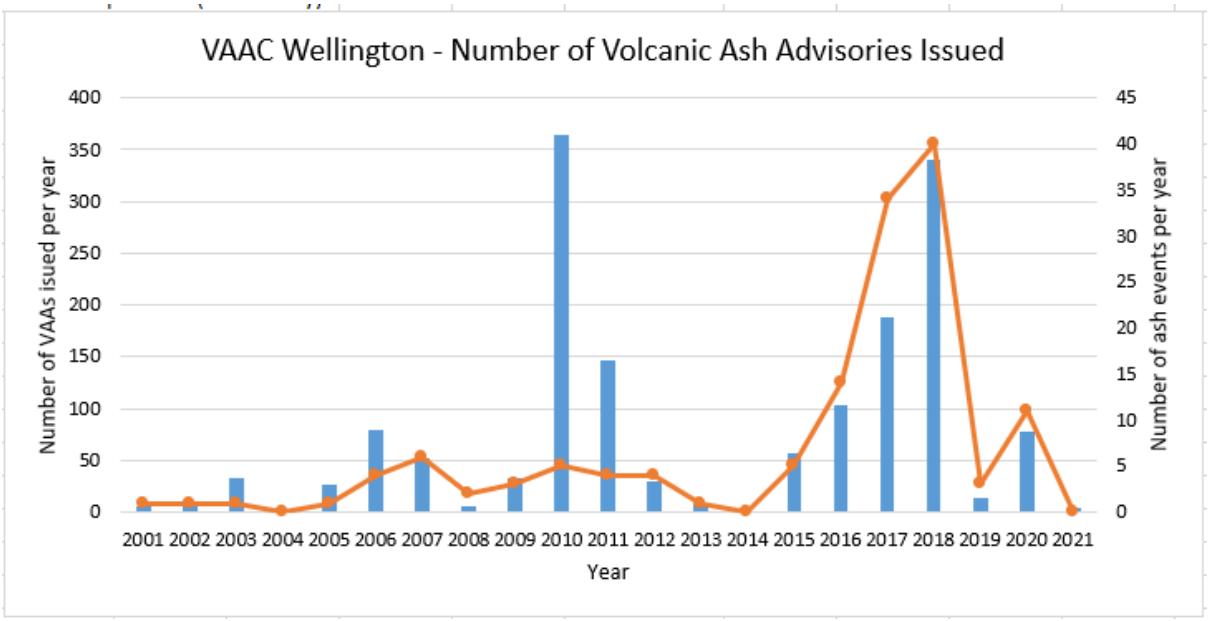

Figure 2 - VAAC Wellington - Number of operational events and advisories per year. Note, 2021 year until 31 August only.

Other Activities

2.4 In November 2020, the VAAC introduced a new and improved way for forecasters to test VA products internally, with VAAC testing moved away from the operational environment (originally aimed at ensuring that end-to-end operational systems were working) into one that was completely contained in a test environment. One key reason for this was having the testing process closely linked to our operational environments resulted in test VAA messages occasionally being sent unintentionally through operational channels, to end users. Using the test environment removed the risk of live transmission and allows forecasters to test various scenarios that the VAAC could face operationally including being able to run through the additional operational steps for a New Zealand located eruption, compared to an eruption in the wider VAAC area of responsibility, due to the additional MWO responsibilities. Given the infrequent nature of eruptions across the VAAC Wellington area of responsibility, it is important that forecasters remain familiar on the different processes required when issuing VAAs and, when required, VA SIGMETs. These tests are completed three times/week, and now include the option for forecasters to run through a variety of scenarios from start to finish.

2.5 VAAC Wellington is now issuing VAA as per the ICAO Meteorological Information Exchange Model (IWXXM) schema version 3.1, which came into effect from November 2020.

2.6 There have been some official name changes to volcanos within the VAAC Wellington area. Of note, White Island is now known as Whakaari/White Island (or Whakaari – White Island); Egmont is now known as Taranaki and Metis Shoal is now referred to as Lateiki.

VAAC Wellington Competencies

2.7 There are currently 25 AMF (Aeronautical Meteorological Forecaster) competent forecasters as per WMO and ICAO requirements, with 6 based out of our Auckland office and the remaining 19 based out of our Wellington office.

2.8 VAAC Wellington has been working towards creating a separate VAAC competency to

increase the pool of forecasters able to respond to VA events. The competency is based on the WMO guidelines which are applied to the wider AMF competency and there is a plan to add a further 4 VAAC competent forecasters to the VAAC team by the end of 2021.

VAAC and Key Stakeholder Collaboration

2.9 VAAC Wellington continues strong collaboration with VAAC Darwin. The Microsoft Teams channel is proving to be a very useful tool for timely communication between the two VAACs. The channel can be used for either VAAC to formally request back up, and seamlessly transfer responsibility. On 18 December 2020, VAAC Wellington and Darwin completed their annual backup test as described in the VAAC Darwin and Wellington Backup Test paper presented to the conjoint session of MET/IE WG19 and MET/S WG11. Further backup tests are planned for the coming months, with the exact dates to be confirmed.

2.10 VAAC Wellington have also set up a Teams channel with MWO Nadi, to enhance information sharing should Wellington VAAC issue a VAA that affects the Nadi FIR.

2.11 VAAC Wellington continues to have regular contact with New Zealand's State volcano observatory (GNS Science), also using a Microsoft Teams channel. The collaboration is proving to be very a useful exchange of information, particularly around gas flight (planning and results), extra insight from the volcanologists and potential increase in activity for areas within the VAAC, but outside of the New Zealand area. VAAC Wellington also continues to assist the Tonga Meteorological Service and Solomon Islands Meteorological Service with addressing long-standing ICAO deficiencies.

2.12 The VAAC successfully participated in the APAC annual SIGMET tests on the 9 December 2020. The VAAC was also involved in the "mini" SIGMET test on the 17 August 2021 as outlined in a separate paper to this meeting.

International Engagement

2.13 VAAC Wellington remains involved in the work of the ICAO WG-MOG/IAVW and WG-MISD/VASD workstreams. Following agreement within the WG-MISD/VASD work stream on the functional and performance requirements for quantitative volcanic ash information (QVA) for initial operating capabilities, and subsequent approval at METP/5, VAAC Wellington is now scoping how it will provide its QVA information service.

2.14 VAAC Wellington is also part of the WMO VAAC Best Practice group (lead by VAACs Darwin and Montreal) tasked with updating the Aeronautical Meteorological Personnel competencies (as set out by the WMO SC-AVI Expert Team on Education, Training and Competency) to accommodate the role of VAAC forecasters..

Quality and Safety Management Compliance

2.15 VAAC Wellington, as part of MetService, is certified to AS/NZS ISO 9001:2015 quality management standards. MetService also maintains a Safety Management System as part of its Civil Aviation Rule Part-174 certification, which covers VAAC operations.

2. ACTION BY THE MEETING

2.7 Note the information contained in this paper.

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