



International Civil Aviation Organization

**THE TENTH MEETING OF ASIA/PACIFIC OPMET MANAGEMENT  
TASK FORCE (OPMET/M TF/10)**

Bangkok, Thailand, 17 – 19 April 2012

**Agenda Item Conjoint: SIGMET**

**a) SIGMET Tests**

**VAAC BACKUP TEST**

(Presented by Australia)

**SUMMARY**

This paper presents the outcomes from a recent backup test conducted between the Darwin VAAC and the Tokyo VAAC.

**1. INTRODUCTION**

1.1 Australia and Japan provide Volcanic Ash Advisory Centres within the framework of the International Airways Volcano Watch (IAVW). The relevant responsibilities are set out in Annex 3 – Meteorological Service for International Air Navigation, Chapter 3, Section 3.5. Of note sub-section 3.5.2 states that: *“In the case of interruption of the operation of a VAAC, its function shall be carried out by another VAAC or another meteorological centre, as designated by the VAAC Provider State concerned.”*

1.2 Backup procedures to be used in case of interruption to the operation of a VAAC are included in the Handbook of the International Airways Volcano Watch (IAVW) – Appendix D (ICAO Doc 9766). The document also notes that the *“backup site may be another meteorological centre in the same Contracting State or it may be another VAAC”*.

1.3 Appendix D of ICAO Doc 9766 also states that: *“The backup arrangements should be tested at least annually”*

**2. DISCUSSION**

2.1 Procedures for conducting a backup test were developed jointly by the Darwin and Tokyo VAACs. These procedures included nominating a mutually agreed date and time on which test Volcanic Ash Advisories (VAA) would be issued, developing the necessary AFTN address lists and deciding on an appropriate format for the test VAA. Recipients of the test VAA were requested to respond by email to the VAAC that the advisory had been received and these responses were collated for the analysis of the test.

2.2 ICAO APAC Office issued a State Letter titled '*T 4/9.1:AP006/12(MET): IAVW Handbook (Doc 9766) Appendix D – Backup Procedures for Volcanic Ash Advisory Centres Schedule for Tokyo/Darwin VAAC back-up tests – January 2012*' dated 16 January 2012 to notifying recipients and requesting their participation.

2.3 The test was conducted on the 18 January 2012 with Tokyo VAAC activating backup procedures for the Darwin VAAC area of responsibility at 0200 UTC, issuing a test VAA then handing back responsibility at 0230 UTC. Darwin VAAC subsequently activated backup procedures for the Tokyo VAAC area of responsibility at 0400 UTC, issued a test VAA then handed back responsibility at 0430 UTC. The full procedures were detailed in the State Letter (also see **Attachment 1**).

2.4 For the test VAA issued by Tokyo on behalf of Darwin, only 5 of the 50 addressees responded by email. Follow up phone calls to two major Australian airline's operations centres indicated that the message had been received. The low response rate may be partially attributed to the short lead up time (2 days) between the issuance of the ICAO letter and the backup test. A second factor affecting the response rate may also be that many of the smaller aviation clients of the Darwin VAAC use email as the primary communication medium and were unaware of or unable to access the AFTN messages.

2.5 Client confirmation responses, received for the VAA issued by Tokyo on behalf of Darwin, indicate a transmission delay of 12 minutes between issuance and receipt. Given the possibility of serious consequences resulting from late VAA this delay in transmission is operationally significant. It appears the delay was due to the automated message switch for the AFTN collective YBZZPXXX being configured only for messages originating from YPDMYMYX; thus the message from RJTDYMYX required manual addressing to each of the collective members. Discussions are currently underway with Airservices Australia to determine the best way to address this issue. In the short term this issue will be overcome by Tokyo using the individual addresses, rather than the collective.

2.6 Dissemination of the VAA issued by Darwin on behalf of Tokyo was initially unsuccessful due to a message configuration issue, which resulted in the message not being sent to the AFTN network. Due to the subtle nature of the problem it is unlikely this fault would have been identified by means other than operational testing. Approximately two hours after the initial failed transmission the configuration issue was resolved and the message was automatically disseminated via AFTN; initial evidence suggests that the disseminated messages were received by clients within 2 minutes of dispatch. The issue which led to the initial dissemination failure is now resolved, however, further operational testing is required to demonstrate the robustness of the system.

2.7 Backup VAA issued during the test were not available on the websites of the VAACs for which they were issued. This has the potential to confuse VAA clients due to conflicting messages being conveyed regarding current advisories.

### **3. CONCLUSIONS & RECOMMENDATIONS**

3.1 The test was successful in identifying communications issues within the AFTN network that are in the process of being resolved. All other test procedures were conducted successfully.

3.2 It is recommended that:

- The State Letter be issued will a longer lead-time before the Test;
- Test VAA should be made available on the respective VAAC websites;
- Test VAA should be also be disseminated to client email addresses where possible;
- A further test be conducted in late 2012 after which testing be conducted annually;
- Test procedures be included in the Asia/Pac SIGMET Guide.

**4. ACTION BY THE MEETING**

4.1 The meeting is invited to note the information and recommendations contained in this paper and provide comment.

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## **ATTACHMENT 1 – TOKYO-DARWIN VAAC BACKUP TEST PROCEDURES**

### **1. Introduction**

- 1.1 International Airways Volcano Watch Operations Group (IAVWOPSG) recognised the need for the regular testing of VAAC backup procedures that would ensure the continuing availability of Volcanic Ash Advisories and identify deficiencies in the dissemination procedures of backup products. Therefore, the second meeting of IAVWOPSG held in Bangkok, 15 to 19 March 2004, adopted Conclusion 2/19, as follows:

#### ***Conclusion 2/19 – Inclusion of VAAC back-up procedures in Doc 9766***

*That the Secretariat include in Doc 9766, Handbook on the International Airways Volcano Watch (IAVW) – Operational Procedures and Contact List, the VAAC backup procedures agreed by the group.*

- 1.2 Paragraph f) of the back-up procedures developed and agreed by the group states that:  
*The back-up arrangements should be tested at least annually*
- 1.3 The Tokyo and Darwin VAACs have developed a mutual back-up arrangement that includes procedures for undertaking a back-up test as described in this document.

### **2. Purpose and Scope of VAAC Back-up tests**

- 2.1 The purpose of the VAAC back-up test is to ensure that internal procedures for the handover of responsibility and the issue of products for the other VAAC's area of responsibility are robust and functional.
- 2.2 The scope of the test also includes checking the dissemination pathways of the Volcanic Ash Advisory (VAA) messages.
- 2.3 The test is not designed to check the issuance of Volcanic Ash SIGMET and so there is **no requirement** to issue test SIGMETs.

### **3. Back-up test procedures**

#### **3.1 Procedures for Tokyo – Darwin VAAC Back-up tests**

Internal procedures related to handover of responsibility and issuance of VAAs for the other VAAC's area of responsibility will be tested and the results included in a final report.

#### **3.2 Procedures for testing the dissemination of back-up VAAs**

On the specified date at **0200 UTC** the Tokyo VAAC will issue a test Volcanic Ash Advisory (VAA) for the Darwin VAAC. The message will indicate that it is a TEST and will follow the format given in Section 4.

Recipients of the message **should send a confirmation email** to the address given in the message, including the message text and the time received.

**MWOs should NOT at this stage issue a test SIGMET.**

At **0400 UTC** the Darwin VAAC will issue test VAA for the Tokyo VAAC area of responsibility. The message will indicate that it is a TEST and will follow the format given in Section 4.

Recipients of the message **should send a confirmation email** to the address given in the message, including the message text and the time received.

**MWOs should NOT at this stage issue a test SIGMET.**

In the event of a major eruption in either area the test may be cancelled.

3.3 **Processing of the test results**

The Tokyo and Darwin VAACs will analyse the received responses to the test messages and present the results to IAVWOPSG/7 in February 2013.

4. **Format of TEST VAA**

GG \*\*\*\*\*  
DDHHMM YMMCYMYX  
FVFE01 RJTD DDHHMM  
VA ADVISORY  
DTG: YYYYMMDD/HHMMZ  
VAAC: TOKYO  
VOLCANO: TEST  
PSN: N1000 E10000  
AREA: UNKNOWN  
SUMMIT ELEV: 9999M  
ADVISORY NR: YYYY/N  
INFO SOURCE: NIL  
AVIATION COLOUR CODE: NIL  
ERUPTION DETAILS: NIL  
OBS VA DTG: NIL  
OBS VA CLD: NIL  
FCST VA CLD +6HR: NO VA EXP  
FCST VA CLD +12HR: NO VA EXP  
FCST VA CLD +18HR: NO VA EXP  
RMK: THIS IS A TEST ADVISORY ISSUED BY DARWIN  
VAAC FOR THE TOKYO VAAC AREA OF RESPONSIBILITY. PLEASE  
ACKNOWLEDGE RECEIPT OF THIS ADVISORY BY SENDING AN EMAIL TO  
VAAC AT EQVOL2.KISHOU.GO.JP  
TOKYO VAAC.  
NXT ADVISORY: NO FURTHER ADVISORIES.

GG \*\*\*\*\*  
DDHHMM RJTDYMYX  
FVAU01 ADRM DDHHMM  
VA ADVISORY  
DTG: YYYYMMDD/HHMMZ  
VAAC: DARWIN  
VOLCANO: TEST  
PSN: N1000 E10000  
AREA: UNKNOWN  
SUMMIT ELEV: 9999M  
ADVISORY NR: YYYY/N  
INFO SOURCE: NIL

AVIATION COLOUR CODE: NIL

ERUPTION DETAILS: NIL

OBS VA DTG: NIL

OBS VA CLD: NIL

FCST VA CLD +6HR: NO VA EXP

FCST VA CLD +12HR: NO VA EXP

FCST VA CLD +18HR: NO VA EXP

RMK: THIS IS A TEST ADVISORY ISSUED BY TOKYO

VAAC FOR THE DARWIN VAAC AREA OF RESPONSIBILITY. PLEASE  
ACKNOWLEDGE RECEIPT OF THIS ADVISORY BY SENDING AN EMAIL TO  
DARWIN.VAAC AT BOM.GOV.AU

DARWIN VAAC.

NXT ADVISORY: NO FURTHER ADVISORIES.

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