

International Civil Aviation Organization



ICAO

WORKING PAPER

ICAO Asia and Pacific (APAC)

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(MET SG/27)

Bangkok, Thailand, 04 to 08 September 2023

Agenda Item 4: Regional guidance material

UPDATE OF VAAC BACKUP PROCEDURES IN APAC REGIONAL SIGMET GUIDE

(Presented by VAACs Wellington, Darwin and Tokyo)

SUMMARY

This paper proposes updates to the VAAC Backup Procedures (operational and test), with the purpose of updating the existing procedures to reflect current practices and to simplify the information provided.

1. INTRODUCTION

1.1 The 12th Meeting of the Meteorological Services Working Group (MET/S WG/12 – [report here](#)), following information provided on VAAC Washington backup arrangement with VAAC Darwin, the meeting agreed the following action:

MET/S WG/12 Action 30: VAAC back-up test procedures – review and update: Refer to the pertinent information from IP/08 and determine appropriate action for the next review and update of the VAAC back-up test procedures [Ref: para. 8.25.]

2. DISCUSSION

2.1 VAACs Darwin, Wellington and Tokyo have reviewed the VAAC back-up test procedures contained with Appendices F, G, H and I, in the Asia-Pacific Regional SIGMET Guide. Due to the extensive changes proposed, a clean version only has been provided, as attached to this paper as Appendix A.

2.2 The changes that have been made include the following:

Appendix F

- Table has been removed as this information is already in the *Handbook on International Airways Volcano Watch (IAVW) Operational Procedures and Contact Lists (Doc 9766)* and a reference has been made as to where to find the appropriate information

- The back-up area details for VAAC Darwin, VAAC Tokyo, VAAC Washington and VAAC Wellington have been added
- New APAC centric map has been added

Appendix G

- Minor edits have been made to reflect all APAC VAAC back-up procedures

Appendix H

- Title has been changed to make this section generic to VAAC back-up test procedures
- VAAC names have been removed and replaced with VAAC A and VAAC B. This template can now be used by any APAC VAACs conducting back-up tests
- Added footnote 1 to show that VAAC Darwin provides back-up to VAAC Washington but VAAC Washington does not provide back-up to any APAC VAAC
- Times have been made generic and represented as T
- Attachment 1A is now Attachment A and contains generic examples which can be used by any APAC VAAC
- Attachment 1B is now Attachment B and contains generic examples which can be used by any APAC VAAC
- Some variations have been provided in the VAA elements in Attachment A and Attachment B
- Attachment 2A and 2B are now Attachment C and contains updated AFTN lists for VAAC Darwin, VAAC Tokyo and VAAC Wellington
- Added new VAAC Washington AFTN table to Attachment C
- Removed Attachment 3

Appendix I

- Appendix I has been merged into Appendix G

2.3 The VAAC back-up information in Appendix F, G and H has been made generic as there was no value in having this information repeated separately for each VAAC back-up combination. These templates will now be used by any APAC VAACs where VAAC A and VAAC B wording will be replaced by the VAACs that are conducting the back-up test.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the information in this paper;
- b) Agree to update the Asia-Pacific Regional SIGMET Guide, as proposed in Appendix A.

APPENDIX A

APPENDIX F

VOLCANIC ASH ADVISORY CENTRES

The operational and back-up header arrangements can be found in *ICAO Handbook on International Airways Volcano Watch (IAVW) Operational Procedures and Contact Lists (Doc 9766)* under table 4-3 (<https://www.icao.int/airnavigation/METP/MOGVA%20Reference%20Documents/Handbook%20on%20the%20IAVW,%20Doc%209766.pdf>).

To supplement the information within the IAVW Handbook, the back-up arrangements between the APAC VAACs are as follows:

VAAC Darwin provides back-up to the full area of responsibility for VAAC Tokyo and VAAC Tokyo provides back-up to the VAAC Darwin area of responsibility north of 20 degrees south. Since 2008, the VAACs have coordinated the details of the back-up scheme and conducted trials. The official back-up service between VAAC Darwin and VAAC Tokyo started in 2014 with the signing of the Scheme of Cooperation between the Bureau of Meteorology and Japan Meteorological Agency.

VAAC Darwin provides back-up to the full area of responsibility for VAAC Wellington and VAAC Wellington provides back-up to the VAAC Darwin area of responsibility south of 20 degrees south. The back-up service started in 2007 with VAAC Darwin providing back-up for VAAC Wellington and in 2013 VAAC Wellington was able to provide back-up for VAAC Darwin.

VAAC Darwin and VAAC Montreal provide back-up to the VAAC Washington area of responsibility. The back-up area covered by VAAC Darwin is westward of W170, southward from N10 from W170 to W100 and the entire Central America, Panama, Barranquilla, Maiquetia, Georgetown, Paramaribo and Cayenne Flight Information Regions (FIRs) and everything southward in VAAC Washington AOR. This will be known as the part of VAAC Washington's AOR designated to VAAC Darwin for back-up services. The service started on 1 November 2021.

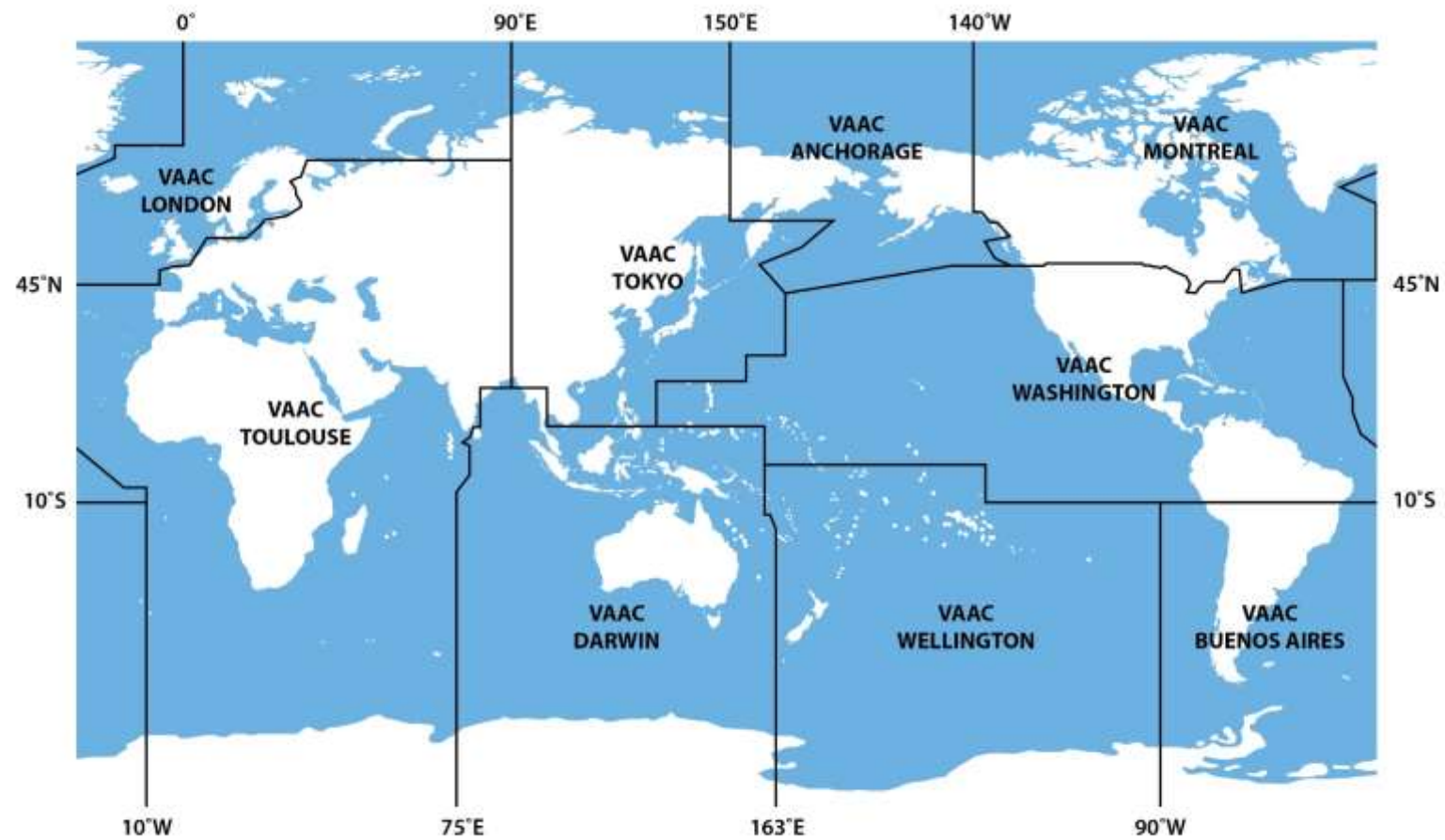


Figure: Areas of responsibility of the VAACs

APPENDIX G

ASIA/PACIFIC VAAC BACK-UP PROCEDURES

1. Situations in which Back-up Procedures should be considered

1.1 Situations that may require VAAC responsibilities to be handed over to the back-up partner include:

- Insufficient VAAC staff resources are available to adequately perform VAAC duties;
- VAAC forecasters are unable to access the information required to adequately monitor any volcanic activity;
- The VAAC is unable to generate VAAs;
- The VAAC is unable to disseminate VAAs;
- The VAAC is under threat from an event that may limit its ability to properly perform its functions in the near future; and
- During any other situation where the VAAC Shift Supervisor considers the VAAC is unable to properly perform its functions.

2. Actions to be taken by Routine VAAC to initiate handover to Back-up VAAC

2.1 The VAAC Shift Supervisor will request back-up from Back-up VAAC using the VAAC contact details contained within IAVW Handbook (ICAO Doc. 9766) Table 4-2. Requests are to be made using the following communication methods as per each VAAC back-up arrangement:

- a. E-mail (FAX as back-up method)
- b. Communication Platform; and
- c. Telephone.

2.2 Using the appropriate communications forms, provide detailed information regarding the following:

- a. Expected duration and nature of outage;
- b. Current Volcanic Ash Advisories including:
 - Headers used

- Volcano names
- Next routine issue times
- Sequence number
- What has been observed on satellite imagery
- What other reports have been received e.g. Volcanological Agency Reports, AIREPs, ASHTAMs, SIGMETs, phone calls or emails
- Forecast strategy and expected developments; and
- c. Other volcanoes of interest including:
 - Any volcanoes for which an imminent eruption has been forecast
 - Any volcanoes exhibiting elevated levels of activity
 - Any recent volcanic activity reports received.

2.3 If possible, provide, any information other than listed above that is not currently available to the Back-up VAAC.

2.4 Maintain a written logbook of actions taken for the duration of the back-up service.

3. Actions to be taken by the Back-up VAAC upon receipt of a back-up request

3.1 Commence satellite monitoring for the Routine VAAC.

3.2 Send a confirmation message using the appropriate communications forms indicating whether operational back-up for the Routine VAAC is able to be commenced.

3.3 Send VAA to external users advising of the outage and advising Back-up VAAC contact details as per appropriate VAA proforma.

3.4 Continue routine satellite monitoring and issue VAA as required to the relevant AFTN and e-mail addresses. If VAA are issued for active eruptions then the VAAC is required to include the message "ISSUED BY VAAC A ON BEHALF OF VAAC B". Advise volcanological agencies that new information should be sent directly to the Back-up VAAC.

3.6 Maintain a written logbook of actions taken for the duration of the back-up service.

4. Actions to be taken by Routine VAAC to resume normal operations

4.1 Commence satellite monitoring for the Routine VAAC.

4.2 Send a notification of intent to resume normal operations to the Back-up VAAC, using the appropriate communications forms.

4.3 Upon receipt of confirmation from the Back-up VAAC, issue VAA to external users advising of the resumption of normal operations by the Routine VAAC as per appropriate VAA pro forma.

4.5 Continue routine satellite monitoring and issue VAA as required to the appropriate AFTN and e-mail addresses. Advise volcanological agencies that information should now be sent directly to the Routine VAAC.

4.6 Prepare an event report summarizing the significant actions and any other relevant information contained within the logbooks of the Back-up VAAC and Routine VAAC.

5. Actions to be taken by Back-up VAAC upon receipt of intent to resume normal operations notification from the Routine VAAC

5.1 Send a confirmation receipt for the intent to resume normal operations notification, using the appropriate communications forms.

5.2 Using the appropriate communications forms, provide detailed information regarding:

- A. Details of current Volcanic Ash Advisories including:
 - Header used
 - Volcano names
 - Next routine issue times
 - Sequence number

- What has been observed on satellite imagery
 - What other reports have been received e.g. Volcanological Agency Reports, AIREPs, ASHTAMs, SIGMETs, phone calls or emails
 - Current forecast strategy and expected developments; and
- B. Other volcanoes of interest including:
- Any volcanoes for which an imminent eruption has been forecast
 - Any volcanoes exhibiting elevated levels of activity
 - Any recent volcanic activity reports received.

5.3 Provide the Routine VAAC with copies of logbooks created by the Back-up VAAC during the back-up event.

5.4 Cease routine satellite monitoring for the Routine VAAC.

APPENDIX H

VAAC BACK-UP TEST PROCEDURES

1. Introduction

- 1.1 The *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* (Doc 9766) recommends that Volcanic Ash Advisory Centres (VAACs) should conduct back-up tests at least annually.
- 1.2 The VAACs A and B have developed a mutual back-up arrangement that includes procedures for undertaking a back-up test as described in Doc 9766.

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. However, it 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 of VAAC A by VAAC B

- 3.1 On the specified date for the test, at mutually agree time (T) VAAC A will request back-up services from VAAC B according to internal procedures and using the operational VAAC contact details contained within the IAVW Handbook (Doc 9766) Table 4-2. VAAC B will issue a VAA for commencement of back-up test to participating operational units as per the VAA example Attachment A (i).
- 3.2 VAAC B will issue a VAA for VAAC back-up test to participating operational units as per the VAA example in Attachment A (ii). All recipients (ACCs/FICs, MWOs, WAFCs and RODBs) of this

VAA are requested to **respond to VAAC A** using the email address E-MAIL ADDRESS HERE and the subject 'VAA TEST' with an affirmative or negative response regarding the receipt of the test VAA.

3.3 At T+30 minutes VAAC A will notify of intent to resume normal operations to VAAC B, and VAAC A will issue a VAA for cessation of back-up test to participating operational units as per the VAA example in Attachment A (iii).

3.4 MWOs should NOT issue a test SIGMET at any stage of the test.

4. Back-up test of VAAC B by VAAC A¹

4.1 At T+60 minutes, the VAAC B will request back-up services from VAAC A according to internal procedures and using the operational VAAC contact details contained within the IAVW Handbook (Doc 9766) Table 4-2. VAAC A will issue a VAA for commencement of back-up test to participating operational units as per the VAA example in Attachment B (i).

4.2 VAAC A will issue a VAA for VAAC back-up test to participating operational units as per the VAA example in Attachment B (ii). All recipients (ACCs/FICs, MWOs, WAFCs and RODBs) of this VAA are requested to **respond to VAAC B** using the email address E-MAIL ADDRESS HERE and the subject 'VAA TEST' with an affirmative or negative response regarding the receipt of the test VAA.

4.3 At T+90 minutes VAAC B will notify of intent to resume normal operations to VAAC A, and VAAC B will issue a VAA for cessation of back-up test to participating operational units as per the VAA example in Attachment B (iii).

4.4 MWOs should NOT issue a test SIGMET at any stage of the test.

¹ In the case of a VAAC Washington back-up test, the second part of this procedure will not occur as VAAC Washington does not provide back-up to VAAC Darwin. Typically, VAAC Washington and VAAC Darwin conduct live back-ups where operational advisories are issued for active volcanoes.

5. Back-up test termination and reporting

5.1 At T+120 minutes the test will be terminated.

5.2 In case of significant eruption, the test should be ceased.

5.3 During the test each VAAC will maintain a logbook of events and will provide the other VAAC with a copy.

5.4 Email responses to the VAA for VAAC back-up test will be analysed by the VAACs. Both VAACs will analyse the responses to the test VAAs and will present the results to the conjoint meeting of the Asia/Pacific Meteorological Information Exchange Working Group or an appropriate expert group (or groups) that may be required to progress International Airways Volcano Watch (IAVW) related work.

ATTACHMENT A – SAMPLE VAA MESSAGES

(i) VAA for commencement of back-up test; AFTN message from VAAC B to operational units in VAAC A area of responsibility:

```
FF *****
DDHHMM XXXXXXXX
TTAAii CCCC DDHHMM
VA ADVISORY
STATUS: TEST
DTG: YYYYMMDD/HHMMZ
VAAC: A
VOLCANO: NOTICE 999999 or TEST 999999
PSN: Snnnn or Nnnnn Wnnnnn or Ennnnn
AREA: UNKNOWN
SUMMIT ELEV: 9999M or UNKNOWN
ADVISORY NR: YYYY/N
INFO SOURCE: NIL
AVIATION COLOUR CODE: NIL
ERUPTION DETAILS: NIL
OBS VA DTG: nn/nnnnZ
OBS VA CLD: VA NOT IDENTIFIABLE FM SATELLITE DTA WINDS SFC/FL010 VRB00KT
FCST VA CLD +6HR: NO VA EXP
FCST VA CLD +12HR: NO VA EXP
FCST VA CLD +18HR: NO VA EXP
RMK: VAAC A AND VAAC B ARE CONDUCTING A BACK UP TEST NOW.
THIS IS A TEST NOTICE ISSUED BY VAAC B FOR THE VAAC A AREA
OF RESPONSIBILITY ANNOUNCING THE START OF BACK UP TEST FOR VAAC
A BY VAAC B.
NXT ADVISORY: NO FURTHER ADVISORIES.
```

(ii) VAA for VAAC back-up test; AFTN message from VAAC B to operational units in VAAC A area of responsibility:

```
FF *****
DDHHMM XXXXXXXX
TTAAii CCCC DDHHMM
VA ADVISORY
STATUS: TEST
DTG: YYYYMMDD/HHMMZ
VAAC: A
VOLCANO: TEST 999999
PSN: Snnnn or Nnnnn Wnnnnn or Ennnnn
AREA: UNKNOWN
SUMMIT ELEV: 9999M or UNKNOWN
```

ADVISORY NR: YYYY/N
 INFO SOURCE: NIL
 AVIATION COLOUR CODE: NIL
 ERUPTION DETAILS: NIL
 OBS VA DTG: nn/nnnnZ
 OBS VA CLD: VA NOT IDENTIFIABLE FM SATELLITE DTA WINDS SFC/FL010 VRB00KT
 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 VAAC B
 FOR THE VAAC A AREA OF RESPONSIBILITY. PLEASE
 ACKNOWLEDGE RECEIPT OF THIS ADVISORY BY SENDING AN EMAIL TO
 [e-mail address].
 NXT ADVISORY: NO FURTHER ADVISORIES.

(iii) VAA for cessation of back-up test; AFTN message from VAAC A to operational units in
 VAAC A area of responsibility:

FF *****
 DDHHMM XXXXXXXX
 TTAAii CCCC DDHHMM
 VA ADVISORY
 STATUS: TEST
 DTG: YYYYMMDD/HHMMZ
 VAAC: A
 VOLCANO: NOTICE 999999 or TEST 999999
 PSN: Snnnn or Nnnnn Wnnnnn or Ennnnn
 AREA: UNKNOWN
 SUMMIT ELEV: 9999M or UNKNOWN
 ADVISORY NR: YYYY/N
 INFO SOURCE: NIL
 AVIATION COLOUR CODE: NIL
 ERUPTION DETAILS: NIL
 OBS VA DTG: nn/nnnnZ
 OBS VA CLD: VA NOT IDENTIFIABLE FM SATELLITE DTA WINDS SFC/FL010 VRB00KT
 FCST VA CLD +6HR: NO VA EXP
 FCST VA CLD +12HR: NO VA EXP
 FCST VA CLD +18HR: NO VA EXP
 RMK: VAAC A AND VAAC B ARE CONDUCTING A BACK UP TEST NOW.
 THIS IS A TEST NOTICE ISSUED BY VAAC A FOR THE VAAC A AREA
 OF RESPONSIBILITY ANNOUNCING THE END OF BACK UP TEST FOR VAAC A
 BY VAAC B.
 NXT ADVISORY: NO FURTHER ADVISORIES.

ATTACHMENT B – SAMPLE VAA MESSAGES

VAA for commencement of back-up test; AFTN message from VAAC A to operational units in VAAC B area of responsibility:

```
FF *****
DDHHMM XXXXXXXX
TTAAii CCCC DDHHMM
VA ADVISORY
STATUS: TEST
DTG: YYYYMMDD/HHMMZ
VAAC: B
VOLCANO: NOTICE 999999 or TEST 999999
PSN: Snnnn or Nnnnn Wnnnnn or Ennnnn
AREA: UNKNOWN
SUMMIT ELEV: 9999M or UNKNOWN
ADVISORY NR: YYYY/N
INFO SOURCE: NIL
AVIATION COLOUR CODE: NIL
ERUPTION DETAILS: NIL
OBS VA DTG: nn/nnnnZ
OBS VA CLD: VA NOT IDENTIFIABLE FM SATELLITE DTA WINDS SFC/FL010 VRB00KT
FCST VA CLD +6HR: NO VA EXP
FCST VA CLD +12HR: NO VA EXP
FCST VA CLD +18HR: NO VA EXP
RMK: VAAC A AND VAAC B ARE CONDUCTING A BACK UP TEST NOW.
THIS IS A TEST NOTICE ISSUED BY VAAC A FOR THE VAAC B AREA
OF RESPONSIBILITY ANNOUNCING THE START OF BACK UP TEST FOR VAAC
B BY VAAC A.
NXT ADVISORY: NO FURTHER ADVISORIES.
```

(ii) VAA for VAAC back-up test; AFTN message from VAAC A to operational units in VAAC B area of responsibility:

```
FF *****
DDHHMM XXXXXXXX
TTAAii CCCC DDHHMM
VA ADVISORY
STATUS: TEST
DTG: YYYYMMDD/HHMMZ
VAAC: B
VOLCANO: TEST 999999
PSN: Snnnn or Nnnnn Wnnnnn or Ennnnn
AREA: UNKNOWN
SUMMIT ELEV: 9999M or UNKNOWN
```

ADVISORY NR: YYYY/N
 INFO SOURCE: NIL
 AVIATION COLOUR CODE: NIL
 ERUPTION DETAILS: NIL
 OBS VA DTG: nn/nnnnZ
 OBS VA CLD: VA NOT IDENTIFIABLE FM SATELLITE DTA WINDS SFC/FL010 VRB00KT
 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 VAAC A
 FOR THE VAAC B AREA OF RESPONSIBILITY. PLEASE
 ACKNOWLEDGE RECEIPT OF THIS ADVISORY BY SENDING AN EMAIL TO
 [e-mail address].
 NXT ADVISORY: NO FURTHER ADVISORIES.

(iii) VAA for cessation of back-up test; AFTN message from VAAC B to operational units in VAAC B area of responsibility:

FF *****
 DDHHMM XXXXXXXX
 TTAAii CCCC DDHHMM
 VA ADVISORY
 STATUS: TEST
 DTG: YYYYMMDD/HHMMZ
 VAAC: B
 VOLCANO: NOTICE 999999 or TEST 999999
 PSN: Snnnn or Nnnnn Wnnnnn or Ennnnn
 AREA: UNKNOWN
 SUMMIT ELEV: 9999M or UNKNOWN
 ADVISORY NR: YYYY/N
 INFO SOURCE: NIL
 AVIATION COLOUR CODE: NIL
 ERUPTION DETAILS: NIL
 OBS VA DTG: nn/nnnnZ
 OBS VA CLD: VA NOT IDENTIFIABLE FM SATELLITE DTA WINDS SFC/FL010 VRB00KT
 FCST VA CLD +6HR: NO VA EXP
 FCST VA CLD +12HR: NO VA EXP
 FCST VA CLD +18HR: NO VA EXP
 RMK: VAAC A AND VAAC B ARE CONDUCTING A BACK UP TEST NOW.
 THIS IS A TEST NOTICE ISSUED BY VAAC B FOR THE VAAC B AREA
 OF RESPONSIBILITY ANNOUNCING THE END OF BACK UP TEST FOR VAAC A
 BY VAAC B.
 NXT ADVISORY: NO FURTHER ADVISORIES.

ATTACHMENT C

A. AFTN addresses for exchange of VAAC back-up test VAA messages in the VAAC Darwin area of responsibility.

YMMCYMYX (VAAC Darwin)					
AGGGZQZX	NZKLYMYX	VTBBYPYX	WADDYMYF	WSSSYZYK	YMRFYMYX
AGGHYMYX	PHZHZRZX	VTBBZQZX	WADDYMYX	WSSSYZYX	YPDNZAZX
AGGHYSYX	RJAAJALO	VTBDYMYX	WADDYOYX	YBBBVOZM	YPDNZGZA
AYPMZQZX	RJAANCAO	VTBSYMYX	WBFCZQZX	YBBBYPYX	YPDNZTZX
AYPYANGM	RJTDYMYX	VVVVYMYX	WBKKYMYX	YBBBZRZA	YPRFYMYX
AYPYANGO	RJTDYPYX	VVHNZQZX	WBKKZQZQ	YBBBZRZB	YPRMYMYX
AYPYMYX	RKSIYPYX	VVHMZQZX	WIIFZQZX	YBBBZRZG	YPTNZAZX
EDDFDLHD	RPHIZQZX	VVVVYMYX	WIIIIYMYX	YBBBZRZX	YPTNZGZA
EGZZMASI	RPLLYMYX	VVVVZQZX	WMFCZQZX	YBRFYMYX	YPTNZTZX
EGZZMPAC	VCBIYMYX	VYYFZQZX	WMKKMASD	YMHFYMYX	YSRFYMYX
EGZZVANW	VCBIZQZX	VYYVYMYX	WMKKYMYX	YMMLJSTX	YSSYQFAM
KLGBPACO	VHHHCPAO	VYYYYMYX	WMKKZQZX	YMMMZRZA	YSSYWZAX
KWBCYMYX	VHZZYPYX	VYYYZQZX	WRRRYNYX	YMMMZRZB	
LSZHWRW	VOMFZQZX	WAAAYMYX	WSJCZQZX	YMMMZRZG	
NFFNYPYX	VOMMYMYX	WAAAZQZX	WSSSSIAO	YMMMZRZX	
NZAAANZO	VOMMZQZQ	WAAFZQZX	WSSSYMYX	YMMCYMYX	

B. AFTN addresses for exchange of VAAC back-up test VAA messages in the VAAC Tokyo area of responsibility.

RJTDYMYX (VAAC Tokyo)					
CWAOYMYU	CYYCWJAO	EGKKVIRW	EGRRYMYX	EGZZMASI	EGZZVANW
EHAMKLM	EHAMKLMK	EHAMKLMW	KWBCYMYX	NFFNYPYX	NZAAANZO
NZKLYMYX	PANCYMYX	RCTPYMYX	RCTPZQZX	RKRRZQZX	RKSIYMYX
RPHIZRZX	RPLLYMYV	RPLLYMYX	SAZZMAMX	UEEEYMYX	UEEEZRZX
UELLYMYX	UELLZRZX	UERRYMYX	UERRZRZX	UHBBYMYX	UHBIYMYX
UHHHYMYX	UHHHZRZX	UHMMYMYX	UHMMZRZX	UHNMYMYX	UHOYMYX
UHPPYMYX	UHPPZRZX	UHSHYMYX	UHSSYMYX	UHWWYMYX	UIAAYMYX
UIAAZRZX	UIBBYMYX	UIIIYMYX	UIIIZRZX	UIKKYMYX	ULMMYMYX
ULMMZRZX	UNKLYMYX	UNKLZRZX	UUUUYNYX	UUUWZDZX	VDPPYFYX
VDPPYMYX	VDPPZRZX	VDPPZTZX	VHHHYMYX	VLVTYMYX	VTBBYPYX

VTBDYMYX	VTBSYMYX	VVVVYMYX	VVHNZQZX	VVHNZRZX	VVHMZQZX
VYYYYMYX	VYYYYZQZX	WSJCZRZX	WSSSYMYX	WSSSYZYX	YBBBYPYX
YBZZSQJX	YMLLJSTX	YPDMYMYX	ZBAAYMYX	ZBBBYPYX	ZGGGYMYX
ZHHHYMYX	ZJHKYMYX	ZKPYYMYX	ZLXYMYX	ZMUBYMYX	ZSSSYMYX
ZUUUYMYX	ZWWWYMYX	ZYTXMYX			

C. AFTN addresses for exchange of VAAC back-up test VAA messages in the VAAC Wellington area of responsibility.

NZKLYMYX (VAAC Wellington)					
AGGHYMYX	AGGHYSYX	KWBCYMYX	NFFNYPYX	NFFNYMYX	NTAAYMYX
NWBBYMYX	NZZZBVXX	RJTDYPYX	VTBBYPYX	WSSSYZYX	YBBBVOZM
YBBBYPYX	YBZZMANX	YPDMYMYX			

D. AFTN addresses for exchange of VAAC back-up test VAA messages in the VAAC Washington area of responsibility.

KWBCYMYX (VAAC Washington)					
CWAOYMYU	MHTGYNYX	MPZLZQZX	SBMUYFTH	SMZZMAMX	SYCJYNYX
KDCAYNYX	MHTGZQZX	MROCYOYX	SBREYMYX	SOCAYMYX	SYCJZQZX
KDZZNAXX	MKJPYMYX	MUHAYMYX	SBRFZRZX	SOOOZQZX	TJSJYFYX
KZAKZRZX	MMMDXTYA	PAZAZRZX	SBRJYNYX	SPIMYMYX	TJSJYMYX
KZINZQZX	MMMXYMYT	PHZHZRZX	SEGUYMYX	SPIMYNYX	TNCCYMYX
KZNYZQZX	MMMXYMYX	SBAOZRZX	SEGUYNYX	SPIMYOYX	TTPPYMYX
NZKLYMYX	MMMXYNYX	SBAZZQZX	SEGUZQZX	SPIMZQZX	TTPPYNYX
MDCSZQZX	MMMYXTYA	SBAZZRZX	SKBOYMYX	SPZZMAMX	TTZPZQZX
MDSYMYX	MMMZNMXO	SBBRZRZX	SKBOYNYX	SVMYMYX	
MDSYNYX	MPPCICPX	SBBSYMYX	SKBOZQZX	SVMYNYX	
MHCCZQZX	MPTOYMYX	SBCWYMYX	SMJPYFYX	SVZMZQZX	
MHTGYMYX	MPTOYNYX	SBCWZRZX	SMPMZRZX	SYCJYMYX	

