



International Civil Aviation Organization

WORKING PAPER

**TWENTIETH MEETING OF THE METEOROLOGY SUB-GROUP
(MET SG/20) OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING
AND IMPLEMENTATION REGIONAL GROUP (APANPIRG)**

Bangkok, Thailand, 6 – 9 June 2016

Agenda Item 6.1: Observations, reports, forecasts, advisories and warnings

WELLINGTON AND DARWIN VAAC BACKUP TEST

(Presented by New Zealand)

SUMMARY

This paper presents the outcomes from a backup test conducted between the Wellington VAAC and Darwin VAAC on 19 April 2016.

1. INTRODUCTION

1.1 New Zealand and Australia provide Volcanic Ash Advisory Centres (VAACs) 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, subsection 3.5.3 states that: *“In case of interruption of the operation of a VAAC, its functions 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;

a) The Handbook on the International Airways Volcano Watch (IAVW) – Appendix D (ICAO Doc 9766). The document also notes that *“The backup arrangements should be tested at least annually.”*; and

b) The APAC Regional SIGMET Guide (Fifth Edition, October 2015), Appendix F, Asia/Pacific VAAC Back-up Procedures.

1.3 A Memorandum of Understanding (MOU) exists between the Bureau of Meteorology (Australia) and the Meteorological Service of New Zealand Ltd (MetService), regarding their respective operational activities as ICAO-designated VAAC operators, and includes a section on backup arrangements.

1.4 The Wellington/Darwin VAAC test backup procedures are outlined in Appendix H of the Asia/Pacific Regional SIGMET Guide.

2. DISCUSSION

2.1 Procedures for conducting a backup test were developed jointly by the Wellington and Darwin VAACs. These procedures include 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 VAAs are requested to respond by email to the VAAC that the advisory has been received and these responses are collated for an analysis of the test. The Regional OPMET databanks (RODBs) are also requested to assist with the data collection.

2.2 The Wellington VAAC notified planned recipients of the upcoming backup test via AFTN message on the 11th April 2016, while the Darwin VAAC notified planned recipients of the upcoming backup test via email on the 15th April 2016. The notification to recipients by each VAAC included the full test procedures (refer to the Asia/Pacific Regional SIGMET Guide, Appendix H)..

2.3 The test was conducted on the 19th April 2016 with Wellington VAAC activating backup procedures for the Darwin VAAC area of responsibility south of 20S at 0105 UTC. The test VAA was then issued at 0110 UTC, and responsibility was handed back to Darwin VAAC at 0132 UTC. Darwin VAAC subsequently activated backup procedures for the Wellington VAAC area of responsibility at 0201 UTC, issued a test VAA at 0214 UTC and handed back responsibility at 0231 UTC.

2.4 The Wellington and Darwin VAACs believe that the VAAs were successfully disseminated via AFTN in a timely manner. However, few acknowledgements of receipt were provided to either VAAC. (See Appendix 1.) No Volcanic Ash Graphics were disseminated for this test.

2.5 In view of the limited number of acknowledgements of receipt of the test VAAs from the test on 19 April, it is planned to re-run the test in 4 – 6 months time. Any non-responses from the re-run test will be followed up with a query regarding the lack of participation, to ensure that the test VAAs (and therefore operational VAAs) are in fact being received.

2.6 Darwin VAAC noted that the test VAA issued for the Wellington area of responsibility included the Darwin VAAC header information instead of the Wellington VAAC header information. The source of this problem has been identified and will be corrected for future tests.

2.7 A list of the AFTN addresses used for the test, and also the actions required by participants, are provided in Appendices 2A to 2D.

3. Conclusion

3.1 In view of the discussion above, the meeting is invited to consider the following draft conclusion:

Draft Conclusion 20/xx - Improvement of the Darwin and Wellington VAAC Back-up Tests

That:

- a) The Darwin and Wellington VAACs continue to promote the implementation and understanding of the IAVW, through active engagement with regional MWOs;
- b) The Darwin and Wellington VAACs continue to conduct regular back-up testing at least annually;
- c) The AFTN address lists in Appendices 2A and 2B are reviewed in consultation with the APAC ROMET;
- d) Non-responses from tests participants should be followed up with a query to ensure that test VAAs are being received; and

4. ACTION BY THE MEETING

4.1 The meeting is invited to:

- a) Note the information contained in this paper;
- b) Discuss any relevant matters as appropriate, and
- c) Consider the proposed draft conclusion for adoption

APPENDIX 1

Acknowledgement of Test VAA Receipt

Wellington VAAC received responses from:

- Singapore RODB – acknowledgement email received 190221Z
- Bangkok RODB and ACC/FIC – acknowledgement email received 190241Z
- Airways NZ ACC/FIC – acknowledgement email received 190253Z
- Bangkok MWO – acknowledgement email received 190938Z (despite VTBSYMYX not being included in Appendix 2B)
- New Caledonia ACC/FIC - acknowledgement email received 200346Z

Darwin VAAC received responses from:

- Bangkok RODB and ACC/FIC – acknowledgment email received 190118Z
- Air Services Australia – acknowledgment email received 190252Z
- NOCMET
- MWO Chennai (Singapore)

In addition, Wellington VAAC received acknowledgement of the test VAA sent on behalf of the Darwin VAAC from:

- Singapore RODB – acknowledgment email received at 190105Z

APPENDIX 2A

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

YPDMYMYX (VAAC Darwin)						
AGGHYMYX	ANYNYOYX	AYPMYMYX	AYPMYSYX	AYPMZGZX	AYPYANGM	AYPYANGO
EGKKVIRW	EGLLSITV	EGZZMASI	EGZZMPAC	EGZZVANW	EHAMKLM D	EHAMKLMK
EHAMKLMW	EL LXCLXB	KDENXLDW	KJFKGTIW	KWBCYMYX	LOZZMMSS	LSZHSWRW
NFFNYPYX	NZAAANZO	NZKLYMYX	RJAAANAO	RJAAJALO	RJAANCAO	RJAAYMYX
RKSIYPYX	RPHIZRZX	RPLLYMYX	VCBIYMYX	VCBIZQZX	VHHHCPAO	VHHHYMYX
VOMFZQZX	VOMMYMYX	VTBBYPYX	VTBDYMYX	VTBSYMYX	VVGLYMYX	VVNBZRZX
VVTSYMYX	VVTSZRZX	VYYYYMYX	VYYYYQZX	WAAAYMYX	WAAAZQZX	WABBYMYX
WADDYMYF	WADDYMYX	WADDYOYX	WBFCZQZX	WBKBYMYX	WBKKZQZQ	WBSBYMYX
WIIIIYMYX	WIHHYMYX	WIIIZQZX	WMFCZQZX	WMKBYMYX	WMKBYWYX	WMKKMASD
WMKKYMYX	WPD LZTZ	WNKKZQZX	WRRRYNYX	WSATYMYX	WSJCZQZX	WSSSSIAO
WSSSYMYW	WSSSYMYX	WSZZMYR	YAMBZAZX	YAMBZGZA	YAMBZTZX	YBBBNCYM
YBBBVOZM	YBBBZRZA	YBBBZRZB	YBBBZRZG	YBBBZRZX	YMMLJSTX	YMMMZRZA
YMMMZRZB	YMMMZRZG	YMMMZRZX	YPDNZAZX	YPDNZGZA	YPDNZTZX	YPTNZAZX
YPTNZGZA	YPTNZTZX	YSSYQFAM				

Note: the above list is subject to validation and updates by States/units concerned.

APPENDIX 2B

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

NZKLYMYX (VAAC Wellington)
SAZZMAMX YBBYPYX NCRGZPZX NFFNYZYX NFFNYMYX NFFFZQZX TAAYMYX
NTTTZQZX RJTDYPYX RJTDYMYX ANYNYSYX NIUEYAYX NWWWZTZ XZZOZQZX
NZZCZQZX NZKLYMYX NSFAZTZ WSSSYZYX AGGHZQZX AGGHYMYX TBBYZYX
NFTFZTZ EGZZMASI KWBCYMYX PHNLYMYX KZAKZQZX PHZHZQZX VVVZTZ X
AYPMZQZX AYPYMYX

Note: the above list is subject to validation and updates by States/units concerned.

APPENDIX 2C

List of States, participating units and tasks required for VAAC back-up test

STATE	UNIT TYPE	LOCATION NAME	LOC. ID.	TASK (S) REQUIRED	AFTN ADDRESS
ARGENTINA	VAAC	BUENOS AIRES VAAC	SAZZ	J	SAZZMAMX
AUSTRALIA	ACC/FIC	BRISBANE/BRISBANE INTL	YBBN	D	YBBNZQZX
AUSTRALIA	ACC/FIC	CAIRNS/CAIRNS INTL	YBCS	D	YBCSZQZX
AUSTRALIA	ACC/FIC	TOWNSVILLE/TOWNSVILLE INTL	YBTL	D	YBTLZQZX
AUSTRALIA	ACC/FIC	HOBART	YMHB	D	YMHZQZX
AUSTRALIA	ACC/FIC	MELBOURNE ACC/FIC	YMMM	D	YMMZQZX
AUSTRALIA	ACC/FIC	ADELAIDE/ADELAIDE INTL	YPAD	D	YPADZQZX
AUSTRALIA	ACC/FIC	DARWIN/DARWIN INTL	YPDN	D	YPDNZQZX
AUSTRALIA	ACC/FIC	PERTH/PERTH INTL	YPPH	D	YPPHZQZX
AUSTRALIA	ACC/FIC	SYDNEY/SYDNEY (KINGSFORD SMITH) INTL	YSSY	D	YSSYZQZX
AUSTRALIA	MWO	BRISBANE (REGIONAL FORECAST CENTRE)	YBRF	D	YBRFMYX
AUSTRALIA	MWO	HOBART (REGIONAL FORECASTING CENTRE)	YMHF	D	YMHFMYX
AUSTRALIA	MWO	MELBOURNE (WORLD MET CENTRE, BUREAU OF METEOROLOGY)	YMMC	D	YMMCXYX
AUSTRALIA	MWO	MELBOURNE (REGIONAL FORECAST CENTRE)	YMRF	D	YMRFMYX
AUSTRALIA	MWO	DARWIN (REGIONAL FORECASTING CENTRE)	YPDM	D	YPDMYX
AUSTRALIA	MWO	PERTH (REGIONAL FORECASTING CENTRE)	YPRF	D	YPRFMYX
AUSTRALIA	MWO	ADELAIDE	YPRM	D	YPRMYX
AUSTRALIA	MWO	SYDNEY (REGIONAL FORECASTING CENTRE)	YSRF	D	YSRFMYX
AUSTRALIA	RODB	BRISBANE (FIR/FIC/ACC/COM/MET/NOF)	YBBB	D J	YBBBYPYX
AUSTRALIA	VAAC	DARWIN (REGIONAL FORECASTING CENTRE)	YPDM	A E F H I M	YPDMYX
COOK ISLANDS	ACC/FIC	COOK ISLANDS ACC/FIC	NCRG	J	NCRGZPZX
FIJI	RODB	NADI/INTL	NFFN	D J	NFFNYZYX
FIJI	MWO	NADI (REGIONAL FORECASTING CENTRE)	NFFN	J	NFFNYMYX
FIJI	ACC/FIC	NADI ACC	NFFF	J	NFFFZQZX
FRANCE	VAAC	TOULOUSE VAAC	LFPW	D	LFPWYMYX
FRENCH POLYNESIA	MWO	TAHITI	NTAA	J	NTAAYMYX
FRENCH POLYNESIA	ACC/FIC	TAHITI ACC	NTTT	J	NTTTZQZX
INDIA	ACC/FIC	CHENNAI (FIC)	VOMF	D	VOMFZQZX
INDIA	MWO	CHENNAI	VOMM	D	VOMMYMYX
INDONESIA	ACC/FIC	UJUNG PANDANG (FIC)	WAAF	D	WAAFZQZX
INDONESIA	ACC/FIC	JAKARTA FIC	WIIF	D	WIIFZQZX

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INDONESIA	MWO	MAKASSAR/SULTAN HASANUDDIN	WAAA	D	WAAAYMYX
INDONESIA	MWO	JAKARTA INTL/SOEKARNO-HATTA	WIII	D	WIIIIYMYX
JAPAN	RODB	TOKYO (CITY)	RJTD	D J	RJTDYPYX
JAPAN	VAAC	TOKYO VAAC	RJTD	D J	RJTDYMYX
MALAYSIA	ACC/FIC	KOTA KINABALU ACC/FIC	WBFC	D	WBFCZQZX
MALAYSIA	ACC/FIC	KUALA LUMPUR ACC/FIC	WMFC	D	WMFCZQZX
MALAYSIA	MWO	SEPANG/KL INTERNATIONAL AIRPORT	WMKK	D	WMKKYMYX
MYANMAR	ACC/FIC	YANGON INTERNATIONAL	VYYY	D	VYYYZQZX
MYANMAR	MWO	YANGON INTERNATIONAL	VYYY	D	VYYYYMYX
NAURU	ACC/FIC	NAURU FIC	ANYN	J	ANYNYSYX
NIUE	ACC/FIC	NIUE FIC	NIUE	J	NIUEYAYX
NEW CALEDONIA	ACC/FIC	NEW CALEDONIA ACC/FIC	NWWW	J	NWWWZTX
NEW ZEALAND	VAAC	KELBURN	NZKL	B C G K L M	NZKLYMYX
NEW ZEALAND	ACC/FIC	OCEANIC CONTROL CENTRE	NZZO	J	NZZOZQZX
NEW ZEALAND	ACC/FIC	DOMESTIC CONTROL CENTRE	NZZC	J	NZZCZQZX
NEW ZEALAND	MWO	KELBURN FORECASTING OFFICE	NZKL	J	NZKLYMYX
PAPUA NEW GUINEA	ACC/FIC	PORT MORESBY ACC/FIC/COM	AYPM	D	AYPMZQZX
PAPUA NEW GUINEA	MWO	PORT MORESBY INTL	AYPY	D	AYPYMYX
PHILIPPINES	ACC/FIC	MANILA (ACC/FIC/COM)	RPHI	D	RPHIZRX
PHILIPPINES	MWO	NINYOY AQUINO INTERNATIONAL AIRPORT, MANILA	RPLL	D	RPLLYMYX
SAMOA	ACC/FIC	SAMOA ACC/FIC	NSFA	J	NSFAZTX
SINGAPORE	ACC/FIC	SINGAPORE ACC/FIC	WSJC	D	WSJCZRX
SINGAPORE	MWO	SINGAPORE/CHANGI	WSSS	D	WSSSYMYX
SINGAPORE	RODB	SINGAPORE/CHANGI	WSSS	D J	WSSSYZYX
SOLOMON ISLANDS	ACC/FIC	HONIARA (HENDERSON)	AGGH	D J	AGGHZQZX
SOLOMON ISLANDS	MWO	HONIARA (HENDERSON)	AGGH	D J	AGGHYMYX
SRI LANKA	ACC/FIC	KATUNAYAKE/BANDARANAIIKE INTERNATIONAL AIRPORT COLOMBO	VCBI	D	VCBIZQZX
SRI LANKA	MWO	KATUNAYAKE/BANDARANAIIKE INTERNATIONAL AIRPORT COLOMBO	VCBI	D	VCBIYMYX
THAILAND	ACC/FIC	BANGKOK (ACC/FIC/COM CENTRE)	VTBB	D	VTBBYPYX
THAILAND	MWO	BANGKOK/SUARNABHUMI INTL AIRPORT	VTBS	D	VTBSYMYX
THAILAND	RODB	BANGKOK (ACC/FIC/COM CENTRE)	VTBB	D J	VTBBZYX
TONGA	ACC/FIC	TONGA ACC/FIC	NFTF	J	NFTFZTX
UNITED KINGDOM	W AFC	UK PDAI (GEN)	EGZZ	D J	EGZZMASI
UNITED STATES	W AFC	WASHINGTON (NWS NATIONAL MET CENTER), DC.	KWBC	D J	KWBCYMYX
UNITED STATES	MWO	HONOLULU	PHNL	J	PHNLYMYX
UNITED STATES	ACC/FIC	OAKLAND ACC	KZAK	J	KZAKZQZX

UNITED STATES	ACC/FIC	HONOLULU ACC	PHZH	J	PHZHZQZX
VANUATU	ACC/FIC	VANUATU ACC/FIC	NVVV	J	NVVVZTZX
VIET NAM	ACC/FIC	HA NOI/NOI BAI INTERNATIONAL	VVNB	D	VVNBZRZX
VIET NAM	ACC/FIC	HO CHI MINH/TAN SON NHAT INTERNATIONAL	VVTS	D	VVTSZRZX
VIET NAM	MWO	GIA LAM	VVGL	D	VVGLYMYX

Note: the list of AFTN addresses in the table above is subject to validation and updates by States/units concerned.

*Tasks required for VAAC back-up test

APPENDIX 2D

List of Tasks and Timeline

TASK ID.	TIME UTC	TASK DESCRIPTION
A	0100	VAAC Darwin will request VAAC Wellington to commence back-up services
B	Sequential	VAAC Wellington will issue a VAA (commencement of test) for VAAC Darwin area of responsibility
C	Sequential	VAAC Wellington will issue a VAA (test) for VAAC Darwin area of responsibility
D	Sequential	MWOs/ACCs/FICs in VAAC Darwin area of responsibility and RODBs/WAFCs will respond to VAAC Darwin (using email) to confirm receipt or non-receipt of test VAA issued by VAAC Wellington for the VAAC Darwin area of responsibility
E	0130	VAAC Darwin will notify VAAC Wellington of intent to resume normal operations
F	0145	VAAC Darwin will issue a VAA (cessation of test) for VAAC Darwin area of responsibility
G	0200	VAAC Wellington will request VAAC Darwin to commence back-up services
H	Sequential	VAAC Darwin will issue a VAA (commencement of test) for VAAC Wellington area of responsibility
I	Sequential	VAAC Darwin will issue a VAA (test) for VAAC Wellington area of responsibility
J	Sequential	MWO/ACC/FICs in VAAC Wellington area of responsibility and RODB/WAFCs will respond to VAAC Wellington (using email) to confirm receipt or non-receipt of test VAA issued by VAAC Darwin for the VAAC Wellington area of responsibility
K	0230	VAAC Wellington will notify VAAC Darwin of intent to resume normal operations
L	0245	VAAC Wellington will issue a VAA (cessation of test) for VAAC Wellington area of responsibility
M	0100 - 0245	VAAC Wellington and VAAC Darwin will maintain a log of events