

INTERNATIONAL CIVIL AVIATION ORGANIZATION



Working draft of the

AFI VOLCANIC ASH EXERCISE DIRECTIVE VOLCEX 21/01

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Note: The dates, hours and volcanic exercises numbers given in this documents are can be modified /changed to adapt to the context.

2. INTRODUCTION

- 1.1. A simulated eruption of a volcano in Cape Verde called ??? will produce volcanic ash to FLxxx where it will be transported by northwest wind of xx km/hr (xx kt) in order to impact xxxx routes from 0045 UTC 13 September 2021 to 0645 UTC 14 September 2021.
- 1.2. The objectives to be tested are provided in section 3 of this report.
- 1.3. The Exercise Leader will be Ms./Mr. [full name], [Job Title], [State]. The duties of the Exercise Leader are specified in the AFI VOLCEX OPINS. There will be no operational impact in this exercise (dedicated staff is expected to be available for the test).
- 1.4. The AFI ATM volcanic ash contingency plan (AFI VCAP) edition 2017 template developed by EASF and WACAF Offices will be the contingency plan to be tested in this exercise.
- 1.5. **Note:** *If one or more participants consider it difficult to continue this exercise due to severe events such as volcanic eruption or low pressure, they may advise the Exercise Leader to cancel the exercise. In response, the Exercise Leader will announce the cancellation where appropriate.*
- 1.6. Exercise date and time (UTC): [13 or 14 September, 0045 to 0645]
- 1.7. Pre-exercise Coordination Meeting: A series of pre-exercise coordination meetings will be scheduled. Notices for the meetings will be relayed through email. Details of the pre-exercise coordination meetings are detailed under 10.3
- 1.8. The Debrief Meeting will be held from: [4 to 5 October 2021]
 - 1.8.1. Host /Chair: MWO of the Volcano State of the Exercises will host the Debrief Meeting while the Exercise Leader will chair the Debrief.
 - 1.8.2. Coordination: By EASF Office Nairobi, Kenya; and ICAO WACAF Dakar, Senegal
- 1.9. Exercise website: A dedicated website for the exercise is available at www.xxxxxxxx. Other useful websites include:

3. PARTICIPATING AGENCIES

- 2.1. Agencies that have agreed to participate in the exercise, listed according to their area of responsibility, their roles and responsibilities in **appendix A**.

4. AIMS AND OBJECTIVES

- 3.1. The overall objective of the exercise is to maintain enhanced safety, regularity and efficiency of aviation in the event of a volcanic eruption by demonstrating the provision and exchange of volcanic ash information in support of flexible airspace management, improved situational awareness and collaborative decision making, and dynamically-optimized flight trajectory planning.
- 3.2. [In particular, the exercise aims to demonstrate the practice of applicable global and regional procedures related to volcanic activity and volcanic ash, including:
 - a) Distribution of alerts (e.g., VONA)
 - b) Distribution of AIS and MET messages (e.g., VAA/VAG, SIGMET, NOTAM, AIREP)
 - c) Responses by ATC, ATFM and aircraft operators (e.g., safety risk assessments, tactical re-routes)
 - d) Enhanced situational awareness and CDM (e.g., via a teleconference/webex)]
 - 3.3. The exercise shall be planned and conducted to ensure that detrimental effects on the aviation system performance are avoided, but that nevertheless useful experience and information is generated.

5. EXERCISE DURATION

- 4.1. The exercise shall be conducted over a period of approximately **four (4) hours commencing at xxxx UTC xx September 2021.**
- 4.2. The first VONA is expected to be issued within 10 minutes of the exercise start. The **second VONA, is to be issued nearing the exercise end time**

6. EXERCISE VOLCANO

- Volcano Name: Sao Vicente;
- Volcano number: 384030;
- Position: N1685 W2497
- Area: Cape Verde Islands

7. EXERCISE SCENARIO

- 6.1. Simulated eruption with volcanic ash cloud up to FLxxx moving **[direction]** at **x-x** knots to impact ATS routes and airspace within **XXX FIR (CODE)** and **XXXX FIR (CODE)**.
- 6.2. Volcanic ash deposition at **xxxx (CODE)** and **xxxx aerodromes (CODE)** in **[State]**, will impact operations and airport closure.
- 6.3. Schematics of the information flow between operational units in a volcanic ash exercise according to ICAO Doc 9766 Handbook on the International Airways Volcano Watch is provided in **Appendix B**

8. EXERCISE SCHEDULE

- 7.1. Participating agencies have agreed to the following chronological list of the actions to be undertaken before and during the exercise as provided in **Appendix C**

9. EXERCISE SCENARIO MESSAGES

- 8.1. VONA messages related to the exercise: Exercise messages comprising VONA start with “VA EXERCISE **AFI VOLCEX 21/01**” and end with “EXERCISE EXERCISE EXERCISE”. They should be based on the agreed exercise scenario. Template for VONA exercise message and distribution lists are provided in **Appendix D**
- 8.2. VAA/ VAG message/s related the exercise: Exercise messages comprising VAA and VAG should include the use of “VA EXERCISE” and “**AFI VOLCEX 21/01**” (in accordance with ICAO Doc 9766, Part 4, 4.8) to highlight and emphasize that the advisory information refers to the volcanic ash exercise. They should be based on the agreed exercise scenario and the preceding exercise VONA messages. Template of VAA and VAG exercise messages and distribution lists are provided in Appendixes E, F and G.
- 8.3. **VA Exercises SIGMET Messages:** Exercise messages comprising SIGMET should include the use of “VA EXERCISE” and “**AFI VOLCEX 21/01**” (in accordance with ICAO Doc 9766, Part 4, 4.8) to highlight and emphasize that the SIGMET information refers to the volcanic ash exercise. They should be based on the preceding exercise VAA messages. Template of SIGMET exercise messages and distribution lists are provided in **Appendixes H and I**
- 8.4. **NOTAM message/s related to the Exercise:** Exercise messages comprising NOTAM start with “VA EXERCISE AFI VOLCEX 21/01” and end with “EXERCISE EXERCISE EXERCISE” (in Item E of NOTAM). Template of NOTAM/ASHTAM exercise messages and distribution lists are provided in **Appendix J and K**
- 8.5. **AIREP message/s related to the exercise:** Exercise messages comprising special air-reports end with “VA EXERCISE AFI VOLCEX 21/01 EXERCISE EXERCISE EXERCISE”. Template of special air-report exercise messages and distribution lists are provided in **Appendix L**

- 8.6. Other Communications Matters:** Other communications such as exercise tele-conferences/web-conferences, e-mail exchanges and instant messaging chats start with “VA EXERCISE AFI VOLCEX 21/01.
- 8.7.** Volcanic ash information is disseminated through e-mail (e.g. VONA, and Ground Observation report), AFTN (e.g. SIGMET, NOTAM/ASHTAM, VAA/VAG, special air-report, Aerodrome Warning), website (e.g. VAA/VAG, SIGMET) and phone.
- 8.8.** During the exercise, tele-conference sessions involving all participating and observing agencies would be using Zoom or MS Teams or other available online platform.

10. DIRECTING STAFF

- 9.1. A list of all Directing Staff is provided at **Appendix M**.
- 9.2. A list of contacts for agencies observing the exercise is provided at **Appendix A**.

11. SPECIAL INSTRUCTIONS

- 10.1. Exercise GO/NO decision shall be made by the Exercise Leader one day before the planned exercise commencement date and time. In case of unforeseen circumstances, such as a real volcanic eruption or other significant event affecting the air transport system, the Exercise Leader may decide to either postpone the exercise to a later date or to cancel the exercise. A decision not to proceed, i.e., to postpone or cancel the exercise, shall be communicated to all participants and observers as early as possible before the exercise is due to commence
- 10.2. In case of real volcanic eruption or other unforeseen circumstances occur within the exercise period, the Exercise Leader has to raise views from all participating agencies and postpone or abort the exercise if the undergoing exercise is considered to potentially affect the operation of aviation system. According to ICAO Doc 9766 Handbook on the IAVW, Appendix F, paragraph 2.3., “Exercises can only simulate a real event, while operation of the aviation system must continue normally and be unaffected by the exercise. The planning of the exercise needs to ensure that detrimental effects on the system performance are avoided, but that nevertheless useful experience and information is generated.”
- 10.3. Exercise teleconference/web-conference guidelines:
- The Volcano State MWO shall be the host of teleconference meetings and shall be assisted by the ICAO Secretariat.
 - Instant messaging and communication applications may be utilized as a supplementary means to share information among participants.
 - The use of English and French languages is expected among participants during teleconference meetings. Interpretation services will be provided by the Secretariat.
 - The Exercise Leader shall instruct the participants on his/her turn to speak in order to manage the meeting in an orderly manner.
- 10.4. Exercise [teleconference /web conference] instructions:
- Lead:** The lead of teleconference calls should be the main ATM Centre [*name*] of the State where the volcano is erupting (e.g. a volcano eruption in Cape Verde.
 - Expected participants and general information expected from each:
 - VO : brief update on eruption status, latest height information, source of height information; duration of event, expected activity

- VAAC : brief update on VAA/VAG (are observations such as aircraft reports being used to update products)
 - MWO : brief update on SIGMET (if different from VAA/VAG, briefly explain why)
 - NOF : brief update on NOTAM and published reroutes
 - ACC : brief update on reroutes and coordination with ACCs and ATMCs
 - ATMC : brief update on overall strategy (coordination with other ATMCs and ACCs)
 - Airlines : brief update on tactical reroutes, flight plan changes and satisfaction with reroutes
 - ATMC : response, if necessary, to airlines
 - ACC : response, if necessary, to ATMCs and airlines
- c) **Information sharing:** The following web portal is available to obtain volcanic ash related products and information: [to be provided].
- d) **Language:** The teleconferences will be held in English and French languages.
- e) **Microphones:** Each Participant should mute microphones to reduce back ground noise. The Leader of the teleconference will instruct the participant when to speak.

12. DEFINITION OF ACRONYMS

Abbreviation or acronym Decode

ACC	Area Control Centre
AIM	ATFCM Information Message
ANM	ATFCM Notification Message
AIS	Aeronautical Information Service
AO	Aircraft Operator
AOC	Airline Operations Centre
ANSP	Air Navigation Service provider
ATFCM	Air Traffic Flow and Capacity Management
ASHTAM	Special series NOTAM notifying, by means of a specific format, change in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations
ATM	Air Traffic Management
ATS	Air Traffic Services
CFMU	Central Flow Management Unit
CTR	Control zone
FMP	Flow Management Position
IFPS	Integrated Initial Flight Plan Processing System
IFPZ	IFPS Zone
MWO	Meteorological Watch Office
NOF	International NOTAM Office
NOTAM	A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations
SIGMET	Information concerning en-route weather phenomena which may affect the safety of aircraft operations

VA	Volcanic Ash
VAA	Volcanic Ash Advisory
VAAC	Volcanic Ash Advisory Centre
VAG	Volcanic Ash Graphic
VONA	Volcano Observatory Notice for Aviation

13. APPENDIXES

Table 1 AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix A – List of Participants

Participants	Areas of responsibilities	Roles and responsibilities
VO Cape Verde	VO	
VAAC Toulouse	VAAC	
ACC SAL/Grant Canary (GVSC)	ACC	
MWO SAL/Grant Canary (GVAC)	MWO	
NOF SAL/Grant Canary (GVAC)	NOF	
National Authority	Regulation	
...
...
...
ESAF RO, ENV/MET WACAF RO, MET	Coordination	

Figure 1 AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix B - Information flow between operational units in a volcanic ash exercise

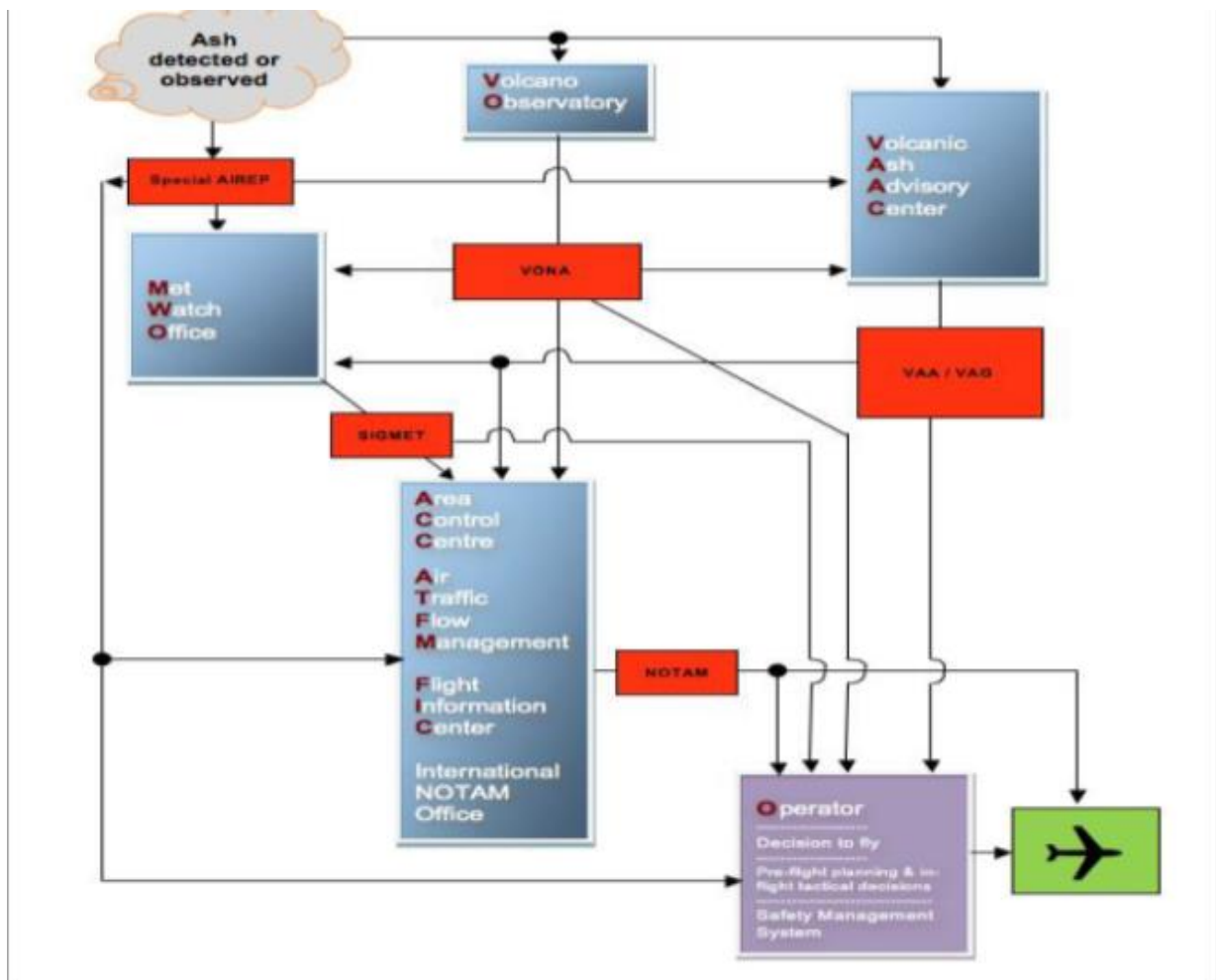


Table 2 AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix C - Diagram of Actions to be undertaken during the exercises

Date /Time (UTC)	Players	Event /Action
[1 month prior to the exercise]	<ul style="list-style-type: none"> • Exercise leader • ICAO Secretariat 	Publish final version of exercise directive
[1 week prior to the exercise]	NOF/s [name/s]	Issue preparatory NOTAMs to inform the aviation community of the exercise
[Exercise date, 0100]	Exercise leader	Send email message to all players to announce commencement of the exercise
[Exercise date, 0100]	VO [name]	Issue 1st exercise VONA (initial eruption details)
[Exercise date, 0100+]	VAAC Toulouse	Issue 1 st exercise VAA/[VAG] based on VONA
[Exercise date, 0100+]	MWO Antananarivo	Issue 1 st exercise SIGMET based on VONA
[Exercise date, 0100+]	ACC/NOF [name/s]	Issue 1 st exercise NOTAM based on SIGMET
[Exercise date, 0200]	VAAC Toulouse	Issue 2 nd exercise VAA/VAG based on observations/reports
[Exercise date, 0200+]	MWO Antananarivo	Issue 2 nd exercise SIGMET based on VAA/VAG
[Exercise date, 0200+]	Exercise leader	Send email message inviting [selected players] to join [teleconference/web conference] at [time]
[Exercise date, 0200+]	ACC/NOF [name/s]	Issue 2 nd exercise NOTAM based on SIGMET
[Exercise date, 0200+]	ACC/ATM Centre/s [names]	Apply ATFM measures based on SIGMET
[Exercise date, 0200+]	AOs [name/s]	Take appropriate flight planning actions: e.g. reroute or cancel flights
[Exercise date, 0215]	AO [name]	Report aircraft observation [volcanic ash/no volcanic ash] as special air-report
[Exercise date, 0215+]	ATS unit/s [name/s]	Relay and record special air-report
[Exercise date, 0230]	VO [name]	Issue 2nd exercise VONA (updated eruption details)
[Exercise date, 0245]	Exercise leader, [list selected players]	Exercise [teleconference/web conference] to discuss the latest situation
[Exercise date, 0300]	VAAC Toulouse	Issue 3 rd exercise VAA/VAG based on observations/reports
[Exercise date, 0300+]	MWO Antananarivo	Issue 3 rd exercise SIGMET based on VAA/VAG
[Exercise date, 0300+]	ACC/NOF [name/s]	Issue 3 rd exercise NOTAM based on SIGMET
[Exercise date, 0300+]	ACC/ATM Centre/s [names]	Apply ATFM measures based on SIGMET

[Exercise date, 0300+]	AOs [name/s]	Take appropriate flight planning actions: e.g. reroute or cancel flights
[Exercise date, 0600]	VAAC Toulouse	Issue 4 th exercise VAA and VAG based on observations/reports
[Exercise date, 0600+]	MWO Antananarivo	Issue 4 th exercise SIGMET based on VAA/VAG
[Exercise date, 0600+]	ACC/NOF [name/s]	Issue 4 th exercise NOTAM based on SIGMET
[Exercise date, 0600+]	ACC/ATM Centre/s [names]	Apply ATFM measures based on SIGMET
[Exercise date, 0600+]	AOs [name/s]	Take appropriate flight planning actions: e.g. reroute or cancel flights
[Exercise date, 0645]	Exercise leader	Send email message to all players to announce cessation of the exercise
[Exercise date, 0645]	VO [name]	Cancel exercise VONA
[Exercise date, 0645]	VAAC Toulouse	Cancel exercise VAA/VAG
[Exercise date, 0645]	MWO Antananarivo	Cancel exercise SIGMET
[Exercise date, 0645]	ACC/NOF [name/s]	Cancel exercise NOTAM

Table 3 AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix D - VONA Message Template for VA Exercise

EXERCISE EXERCISE EXERCISE	
(1) VOLCANO OBSERVATORY NOTICE FOR AVIATION — VONA	
(2) Issued:	Universal (Z) date and time (YYYYMMDD/HHMMZ).
(3) Volcano:	Name and number (per Smithsonian database at http://www.volcano.si.edu/)
(4) Current aviation colour code:	GREEN, YELLOW, ORANGE OR RED in upper-case bold font
(5) Previous aviation colour code:	Lower-case font, not bold
(6) Source:	Name of volcano observatory (volcanological agency)
(7) Notice number:	Create unique number for each VONA that includes year
(8) Volcano location:	Latitude, longitude in NOTAM format (N or S deg min W or E deg min)
(9) Area:	Regional descriptor
(10) Summit elevation:	nnnnn FT (nnnn M)
(11) Volcanic activity summary:	Concise statement that describes activity at the volcano. If known, specify time of onset and duration (local and UTC) of eruptive activity. If the eruption is ongoing at the time of VONA release, indicate “eruption and ash emission is continuing”.
(12) Volcanic cloud height:	Best estimate of ash-cloud top in nnnnn FT (nnnn M) above summit or AMSL (specify which). Give source of height data (ground observer, pilot report, radar, etc.). “UNKNOWN” if no data available or “NO ASH CLOUD PRODUCED” if applicable.
(13) Other volcanic cloud information:	Brief summary of relevant cloud characteristics (colour of cloud, shape of cloud, direction of movement, etc.) Specify if cloud height is obscured or suspected to be higher than what can be observed clearly. “UNKNOWN” if no data available or “NO ASH CLOUD PRODUCED” if applicable.
(14) Remarks:	Optional. Brief comments on related topics (monitoring data, observatory actions, volcano’s previous activity, etc.)

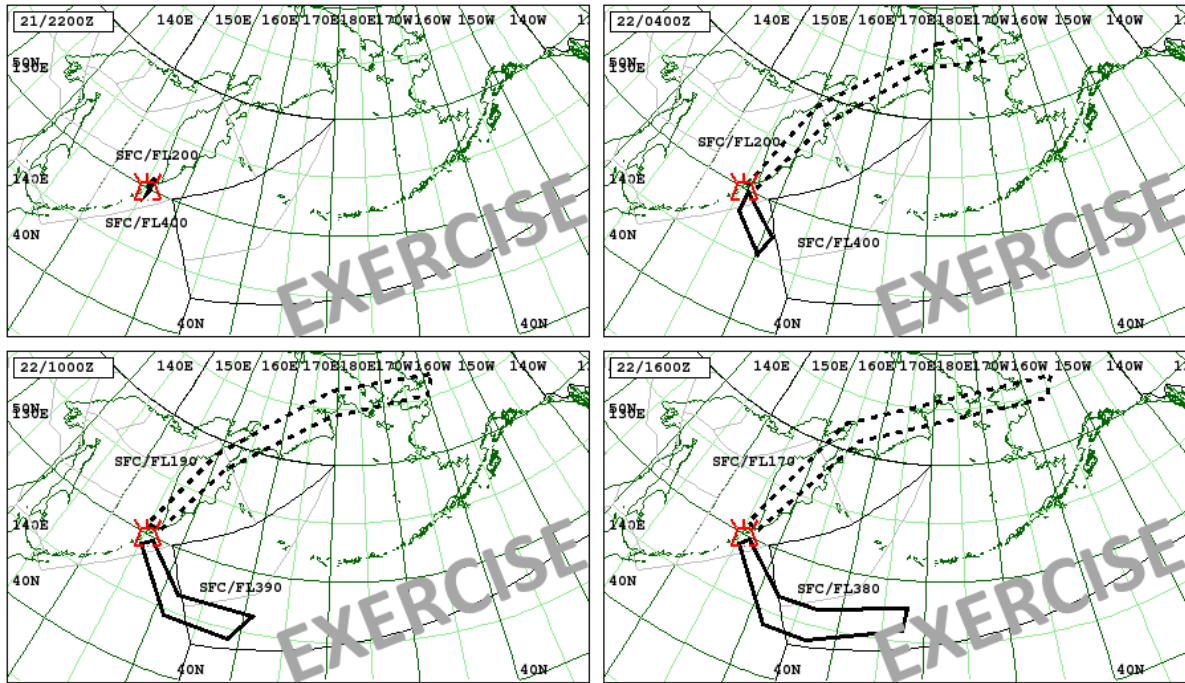
(15) Contacts:	Names, telephone and fax numbers, e-mail addresses.
(16) Next notice:	“A new VONA will be issued if conditions change significantly or the colour code is changed.” Include URL of website where latest volcanic information is posted.
EXERCISE EXERCISE EXERCISE	

Table 4 AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix E - VAA Exercise Message Template

FVFE01 RJTD	[ddhhmm]
VA ADVISORY	
DTG:	2015[MMDD/hhmm]Z
VAAC:	TOKYO
VOLCANO	: [TAAL 273070]
PSN:	[N1400 E12100]
AREA:	PHILIPPINES
SUMMIT ELEV:	[311M]
ADVISORY NR:	9999/1
INFO SOURCE :	EXERCISE MTSAT-2 PHIVOLCS]
AVIATION COLOUR CODE:	[NIL]
ERUPTION DETAILS:	[EXERCISE ERUPTION AT 20151001/0045Z OVER FL370 EXTD N]
OBS VA DTG:	[DD/hhmm]Z
OBS VA CLD:	[VA NOT IDENTIFIABLE FM SATELLITE DATA WIND FL370 170/45KT]
FCST VA CLD +6 HR:	[NO VA EXP]
FCST VA CLD +12 HR:	[NO VA EXP]
FCST VA CLD +18 HR:	[NO VA EXP]
RMK: EXERCISE	
[WE WILL ISSUE FURTHER ADVISORY IF VA IS DETECTED IN SATELLITE IMAGERY]	
EXERCISE EXERCISE EXERCISE	
NXT ADVISORY:	[NO FURTHER ADVISORIES]=

Appendix F
VAG to be inserted

Figure 2 AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix F – VA Graphic



VA ADVISORY
DTG: 20160421/2240Z
VAAC: TOKYO
VOLCANO: KARPINSKY GROUP 290350
AREA: KURIL ISLANDS
SUMMIT ELEV: 1326M
ADVISORY NR: 9999/2
INFO SOURCE: EXERCISE VOLKAM16 HIMAWARI-8 KVERT UHPP
AVIATION COLOUR CODE: NIL

ERUPTION DETAILS: EXERCISE ERUPTION AT 20160421/2145Z FL400
EXTD SE MOV 60KT REPORTED
RMK: EXERCISE VOLKAM16 NIL EXERCISE EXERCISE EXERCISE
NXT ADVISORY: 20160422/0000Z

Table 5 AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix G - AFI VAAC Centre Toulouse and its Area of Responsibilities

ICAO loc. ind.	Area of responsibility Name	MWOs to which advisory information is to be sent		ACCs to which advisory information is to be sent	
		Name	ICAO loc. ind	Name	ICAO loc. ind
LFPW	AFI Region	Accra	DGAA	Accra	DGAC
		Addis Ababa	HAAB	Addis Ababa	HAAA
		Antananarivo	FMMI	Antananarivo	FMMM
		Asmara	HHAS	Asmara	HHAA
		Brazzaville	FCBB	Brazzaville	FCCC

		MWOs to which advisory information is to be sent		ACCs to which advisory information is to be sent	
		Bujumbura	HBBA	Bujumbura	HBBA
		Dakar	GOBD	Dakar	GOOO
		Dar-Es-Salaam	HTDA	Dar-es-Salaam	HTDC
		Entebbe	HUEN	Entebbe	HUEC
		Gaborone/SSK	FBSK	Gaborone	FBGR
		Harare	FVHA	Harare	FVHA
		Johannesburg	FAOR	Cape Town	FACA
				Johannesburg	FAJA
				Johannesburg Oceanic	FAJO
		Kano	DNKN	Kano	DNKK
		Kigali	HRYR	Kigali	HRYR
		Kinshasa	FZAA	Kinshasa	FZAA
		Lilongwe	FWLI	Lilongwe	FWLL
		Lomé	DXXX	Lomé	DXXX
		Luanda	FNLU	Luanda	FNAN
		Lusaka	FLFI	Keneth Kuanda	FLKK
		Mauritius	FIMP	Mauritius	FIMM
		Maputo	FQMA	Beira	FQBE
		Mogadishu	HCMM	Mogadishu	HCSM
		N'Djamena	FTTJ	N'Djamena	FTTT
		Nairobi	HKJK	Nairobi	HKNA

		MWOs to which advisory information is to be sent		ACCs to which advisory information is to be sent	
		Niamey	DRRN	Niamey	DRRR
		Roberts	GLRB	Roberts	GLRB
		Sal	GVAC	Sal	GVSC
		Seychelles	FSIA	Seychelles	FSSS
		Windhoek	FYWH	Windhoek	FYWH

AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix H - Exercises SIGMET Templates

Table 1. SIGMET based on VONA:

WVPH31 RPLL nnnnnn
 RPHI SIGMET nn VALID nnnnnn/nnnnnn RPLL-
 RPHI MANILA FIR VA EXERCISE APAC VOLCEX 19/02 VA ERUPTION MT KANLAON PSN N1041
 E12313 VA CLD OBS AT nnnnZ SFC/FL350 MOV S INTSF EXERCISE EXERCISE EXERCISE=

Table 2. SIGMET based on VAA when VA is not identifiable from satellite but with wind speed at significant FL:

WVPH31 RPLL nnnnnn
 RPHI SIGMET nn VALID nnnnnn/nnnnnn RPLL-
 RPHI MANILA FIR VA EXERCISE APAC VOLCEX 19/02 VA ERUPTION MT KANLAON PSN N1041
 E12313 VA CLD OBS AT nnnnZ SFC/FL350 MOV S nnKT INTSF EXERCISE EXERCISE EXERCISE=

Table 3. SIGMET based on 1st VAA when VA is identifiable from satellite:

WVPH31 RPLL nnnnnn
 RPHI SIGMET nn VALID nnnnnn/nnnnnn RPLL-
 RPHI MANILA FIR VA EXERCISE APAC VOLCEX 19/02 VA ERUPTION MT KANLAON PSN N1041
 E12313 VA CLD OBS AT nnnnZ WI Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn
 Ennnnn SFC/FL350 MOV S nnKT NC FCST nnnnZ VA CLD WI Nnnnn Ennnnn - Nnnnn Ennnnn -
 Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn Ennnnn SFC/FL350 MOV S nnKT INTSF EXERCISE
 EXERCISE EXERCISE=

Table 4. SIGMET based on 2nd VAA when VA is identifiable from satellite:

WVPH31 RPLL nnnnnn
 RPHI SIGMET nn VALID nnnnnn/nnnnnn RPLL-
 RPHI MANILA FIR VA EXERCISE APAC VOLCEX 19/02 VA ERUPTION MT KANLAON PSN N1041
 E12313 VA CLD OBS AT nnnnZ WI Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn
 Ennnnn SFC/FL350 MOV S nnKT NC FCST nnnnZ VA CLD WI Nnnnn Ennnnn - Nnnnn Ennnnn -
 Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn Ennnnn SFC/FL350 MOV S nnKT NC EXERCISE
 EXERCISE EXERCISE=

Table 5. SIGMET based on succeeding VAA (source: VAAC T or VAAC D) when VA is identifiable from satellite:

WVPH31 RPLL nnnnnn
 RPHI SIGMET nn VALID nnnnnn/nnnnnn RPLL-
 RPHI MANILA FIR VA EXERCISE APAC VOLCEX 19/02 VA ERUPTION MT KANLAON PSN N1041
 E12313 VA CLD OBS AT nnnnZ WI Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn
 Ennnnn SFC/FL350 MOV S nnKT NC FCST nnnnZ VA CLD WI Nnnnn Ennnnn - Nnnnn Ennnnn -
 Nnnnn Ennnnn - Nnnnn Ennnnn - Nnnnn Ennnnn SFC/FL350 MOV S nnKT NC EXERCISE
 EXERCISE EXERCISE=

Table 6. SIGMET cancellation:

WVPH31 RPLL nnnnnn
 RPHI SIGMET nn VALID nnnnnn/nnnnnn RPLL-
 RPHI MANILA FIR VA EXERCISE APAC VOLCEX 19/02 CANCEL SIGMET nn nnnnnn/nnnnnn
 EXERCISE EXERCISE EXERCISE=

Table 6 AFI VOLCEX 21/01 EXERCISE DIRECTIVE - Appendix I-. Distribution List for SIGMET

AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix J - Exercises NOTAM Templates

NOTE: THE TEXT IN ITEM E) OF THE FOLLOWING NOTAMs MAY BE AMENDED TO INCLUDE STANDARD ICAO ABBREVIATIONS

Table 1: Preparatory NOTAM (issued 1 week prior to exercise)

<p>(Bxxxx/19 NOTAMN Q) RPHI/QWWWXX/IV/NBO/W/000/999/1025N12308E999 A) RPHI B) 1909120000 C) 1909120400 D) E) VA EXERCISE APAC VOLCEX 19/02 VOLCANIC ASH EXERCISE TAKES PLACE dd SEPTEMBER FROM 00:00 TO APPROX. 4:00 UTC. EXERCISE NAME: VOLCEX19/02. EXERCISE VOLCANO : KANLAON N10 25 E123 08 PHILIPPINES. FREE TEXT OF PROMULGATED EXERCISE MESSAGES START WITH: VA EXERCISE APAC VOLCEX19/02. FREE TEXT OF EXERCISE MESSAGES END WITH: EXERCISE EXERCISE EXERCISE. F) SFC G) UNL)</p>
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Table 2: 1ST exercise NOTAM

<p>(Bxxxx/19 NOTAMN Q) RPHI/QWWWXX/IV/NBO/W/000/999/1025N12308E999 A) RPHI B) 190912XXXX C) 190912XXXXEST (24hr) D) E) VA EXERCISE APAC VOLCEX 19/02. ERUPTION OF VOLCANO xxxx 272070 N10 25 E123 08 PHILIPPINES AS REPORTED BY VOLCANO OBSERVATORY AT 0000 UTC. VOLCANO ASH CLOUD REPORTED BY GROUND OBSERVER. EXERCISE EXERCISE EXERCISE. F) SFC G) 35000FT AMSL)</p>
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Table 3: 1ST exercise ASHTAM

<p>(Bxxxx/19 NOTAMN Q) RPHI/QWWWXX/IV/NBO/W/000/999/1025N12308E999 A) RPHI B) (date/time of eruption) C) KANLAON D) N10 25 E123 08 E) (volcano level of alert color code) F) VA EXERCISE APAC VOLCEX 19/02. (existence and horizontal/vertical extent of volcanic ash cloud) G) (direction of movement of ash cloud) H) (air routes or portions of air routes and flight levels affected) I) (closure of airspace and/or air routes or portions of air routes, and alternative air routes)</p>

available)

J) VA EXERCISE APAC VOLCEX 19/02 (source of information)

K) VA EXERCISE APAC VOLCEX 19/02 (plain language remarks)
EXERCISE EXERCISE EXERCISE

Table 4: Final exercise NOTAM

(Bxxxx/19 NOTAMC Q) RPHI/QWWWXX/IV/NBO/W/000/999/1025N12308E999

A) RPHI

B) 190912XXXX C)

D)

E) VA EXERCISE APAC VOLCEX 19/02. ERUPTION OF VOLCANO KANLAON 272070 N10 25 E123 08 PHILIPPINES HAS CEASED AS REPORTED BY VOLCANO OBSERVATORY AT 0400 UTC. VOLCANIC ASH CLOUD HAS DISSIPATED. VOLCANIC ASH CLOUD NO LONGER VISIBLE. EXERCISE EXERCISE EXERCISE.

F)

G)

Table 7 Addresses for NOFs to use to send ASHTAMs or NOTAMs on volcanic activity to their associated VAAC in The AFI Region

NOF States	Addresses for NOFs to use to send ASHTAMs or NOTAMs on volcanic activity to their associated VAAC in AFI Region
Cameroon	LFPWYMYX EGZZVANW
Cape Verde	LFPWYMYX EGZZVANW
Comoros	LFPWYMYX EGZZVANW
Democratic Republic of Congo	LFPWYMYX EGZZVANW
Eritrea	LFPWYMYX EGZZVANW
Ethiopia	LFPWYMYX EGZZVANW
French	LFPWYMYX EGZZVANW
Kenya	LFPWYMYX EGZZVANW

AFI VOLCEX 21/01 EXERCISE DIRECTIVE - Appendix K-. Distribution List for NOTAM

Table 1. NOTAM Distribution List

Table 2. ASHTAM Distribution List

Table 1. Special air-report as spoken in radiotelephony

AIREP SPECIAL *aircraft identification* POSITION *latitude and longitude time* FLIGHT LEVEL *number*
 CLIMBING [DESCENDING] TO FLIGHT LEVEL *number* ASH CLOUD VA EXERCISE APAC VOLCEX19/02
 EXERCISE EXERCISE EXERCISE

Table 2. Special air-report as recorded by the ATS unit and forwarded to the MET office concerned

ARS *nnnnnn* *nnnn*N*nnnnn*E *hhmm* *Fnnn* ASC [DES] *Fnnn* VA CLD VA EXERCISE APAC
 VOLCEX19/02 EXERCISE EXERCISE EXERCISE

Table 8 Table 4 AFI VOLCEX 21/01 EXERCISE DIRECTIVE Appendix M - List of Directing Staff

<i>Organization</i>	<i>State</i>	<i>Contact name</i>	<i>Contact position</i>	<i>Primary telephone number</i>	<i>Secondary telephone number</i>	<i>Fax number</i>	<i>e-mails address</i>
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