

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

INTERNATIONAL CIVIL AVIATION ORGANIZATION



**AFI VOLCANIC ASH EXERCISE OPERATIONAL
INSTRUCTIONS**

(AFI VOLCEX OPINS)

First Edition 2021

Prepared by the ICAO ESAF and WACAF Regional Offices February 2021

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(AFI VOLCEX OPINS)**

Table of Contents

RECORDING OF AMENDEMENTS AND CORRIGENDA	2
PART I – General rules on volcanic ash exercises process.....	5
1. Overview	5
2. Exercises.....	5
3. Aims.....	5
4. Objectives	5
5. Concepts	6
6. Expectations.....	6
7. Language	7
8. Reference material.....	7
PART II – Volcanic ash conduct process and strategy	7
1. Introduction	7
2. Volcanic Ash Exercises Steering Group	7
3. Exercise Leader	8
4. Directing Staff	9
5. Exercise planning	9
6. Exercise directive	9
7. Exercise conduct.....	9
8. Initial exercise report.....	10
9. Exercise debrief	10
10. Final exercise report	10
11. Follow up of lessons learnt, recommendations and conclusions.....	10
PART III – APPENDIXES.....	11
<i>Table 1 Volcano Observatories States for AFI Region</i>	11
<i>Table 2 Annual Volcanic Ash Exercise Activity Schedule</i>	12
DIRECTING STAFF INSTRUCTIONS.....	13
EXERCISE PLANNING MEETING.....	14
EXERCISE DIRECTIVE TEMPLATE	15

Prepared by the ICAO ESAF and WACAF Regional Offices February 2021

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

COMMUNICATIONS INSTRUCTIONS 18
REPORTING REQUIREMENTS 19
INITIAL EXERCISE REPORT TEMPLATE 20
EXERCISE DEBRIEF MEETING 21
FINAL EXERCISE REPORT TEMPLATE 22

PART I – General rules on volcanic ash exercises process

1. Overview

- 1.1. The *working draft* of the Africa –Indian Ocean (AFI) Volcanic Ash Exercises Operating Instructions (AFI VOLCEX OPINS) contained herein have been prepared by the Eastern and Southern African (ESAF) and Western and Central African (WACAF) Offices, to facilitate the conducting of regular volcanic ash exercises in the AFI Region of ICAO.
- 1.2. The first working draft version of the AFI VOLCEX OPINS was initiated ESAF/WACAF Offices and consolidated by APIRG IMSG MET Project 2, based on the EUR/NAT VOLCEX OPINS developed in 2011 and using the documents referenced in the paragraph 8.
- 1.3. Participating agencies are responsible for providing air traffic services, aeronautical information service, meteorological and geological data as well as volcanic ash dispersion forecasts and aircraft operation.

2. Exercises

- 2.1. Volcanic ash exercises are held bi-annually in the AFI Region, and exercise volcanic activity alerting, AIS and MET message routing, volcanic ash dispersion forecasts, air traffic control, air traffic flow and capacity management, and aircraft operator response.
- 2.2. Volcanic ash exercises are conducted bi-annually in the AFI Region, and are designed to test volcanic activity alerting, aeronautical information service (AIS) and meteorological (MET) message routing, volcanic ash information, air traffic control procedures, air traffic flow and capacity management and aircraft operator response and the collaborative decision making (CDM) between the various actors in accordance with regional and global procedures
- 2.3. The exercises adhere to the following naming convention: “Exercise VOLCEX{YY}/{NN}”, where {YY} relates to the year of the exercise and {NN} relates the sequence number of the exercise. For example, Exercise VOLCEX20/01 is the first exercise of 2020, whilst Exercise VOLCEX20/02 is the second exercise of 2020.

3. Aims

- 3.1. The aim of volcanic ash exercises in the AFI Region are to practice and develop inter-agency response to volcanic activity, in order to maintain regularity, efficiency and aviation safety in the event of a volcanic eruption.

4. Objectives

- 4.1. The exercises are designed to:

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APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS (AFI VOLCEX OPINS)

- a) Practice the conduct of volcanic activity response in accordance with the regional reference documents;
- b) Verify existing information, AIS and MET message routing on AFTN addresses, relevant e-mail addresses, telephone and fax number, and internet addresses (URLs);
- c) Maintain appropriate information and message routing between all involved agencies and organizations;
- d) Provide volcanic activity response training for key personnel involved;
- e) Verify and develop existing procedures; and
- f) Provide, when appropriate, recommendations for amendment of the reference documents, in accordance with the lessons learned and conclusions contained in the Final Exercise Report.

5. Concepts

- 5.1. The annual or bi-annual volcanic ash exercises involve the participation from different geographic areas of the AFI Region.
- 5.2. Each exercise involves a simulated eruption of a volcano in the AFI Region. The AFI volcano observatories States are listed in the **Appendix A** to this document. With reference to the provisions of ICAO eANP Volume I, Volcanic Ash Advisory Centre (VAAC) **Toulouse** has been designated as AFI VAAC to prepare volcanic ash advisory information for the Africa-Indian Ocean Region. Simulated ash clouds or clouds from an assigned volcano may cross national and/or international boundaries, depending on the objectives of the exercise.
- 5.3. Each exercise may have different objectives, which the scenario will be designed to address. For example, any or all of the activities listed below may be tested depending on the scope of the exercise:
 - a) AFTN, e-mail addresses, message routing and voice communications;
 - b) Alerting and volcanic ash dispersion forecasts and advice;
 - c) ATS response;
 - d) ATC and aircraft operator response;
 - e) ATM response;
 - f) AIS response; and/or
 - g) MET response.

6. Expectations

- 6.1. All participating agencies in the exercises are expected to adhere to the OPINS contained herein.

Prepared by the ICAO ESAF and WACAF Regional Offices February 2021

APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS (AFI VOLCEX OPINS)

7. Language

7.1. The use of English and French languages is expected among participants during teleconference meetings. The exercises, and any associated meetings and documentation, will be in both English and French languages. Interpretation services will be provided by the Secretariat.

8. Reference material

- ICAO Annex 3 – Meteorological Service for International Air Navigation
- ICAO Annex 11 – Air Traffic Services
- ICAO Annex 15 – Aeronautical Information Services
- ICAO Doc 4444-ATM/501 – Procedures for Air Navigation Services
- ICAO Doc 9691-AN/954 – Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds
- ICAO Doc 9766-AN/968 – Handbook on the International Airways Volcano Watch
- AFI – Volcanic Ash Contingency Plan
- EUR/NAT Volcanic Exercise Operating Instructions

PART II – Volcanic ash conduct process and strategy

1. Introduction

- 1.1. Exercise VOLCEX are exercise projects supported by Air Traffic Control Centres, Meteorological Watch Offices, AIS NOTAM Offices, Volcanic Ash Advisory centres, Aircraft Operators, etc, in the AFI Region of ICAO.
- 1.2. Participating agencies are expected to adhere to the OPINS contained herein. All costs of travel, meetings, communications and exercise conduct are carried by each individual party.

2. Volcanic Ash Exercises Steering Group

- 1.1. The management of the volcanic ash Exercises is of the responsibility of the AFI Volcanic Ash Exercise Steering Group (AFI VOLCEX/SG) established by the **APIRG IMSG MET Project 2**, with the objective of improving the response to volcanic eruptions and volcanic ash clouds by the relevant service providers and airspace users in the AFI Region through organizing regular volcanic ash exercises, in order to validate and continually improve the regional volcanic ash contingency plans and procedures.

APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS (AFI VOLCEX OPINS)

- 1.2. The AFI VOLCEX/SG meets annually, and:
 - a) coordinating with all participants an annual or a two-year schedule of volcanic ash exercises and their scenarios;
 - b) continuous review of regional volcanic ash contingency plans and procedures,
 - c) proposing improvements based on the lessons learned;
 - d) and organizing volcanic ash awareness events concerning the hazardous effects of volcanic ash on aviation and the established contingency measures.
- 1.3. An example of the annual volcanic ash exercise activity schedule in the AFI Region is presented at Appendix B.
- 1.4. Regular updates on the activities of the AFI VOLCEX/SG are provided to the APIRG IMSG MET Project 2, amongst others, by the Secretary of the AFI VOLCEX/SG.
- 1.5. The AFI VOLCEX/SG determines the appropriate Exercise Leader for each exercise based on the expected volcanic ash scenario. The Exercise Leader is typically a member of the AFI VOLCEX/SG.

3. Exercise Leader

- 3.1. Having been designated by the AFI VOLCEX/SG, the Exercise Leader takes care of administrative matters relating to the Exercise VOLCEX, in coordination with the Secretary of the AFI VOLCEX/SG, such as the production of the Exercise Directive and Final Exercise Report.
- 3.2. The Exercise Leader is also the supervisor of the Directing Staff.
- 3.3. The Exercise Leader is responsible for:
 - Reporting to the debriefing meetings for volcanic ash exercises in the AFI Region
 - (usually combined with the MET Project II meeting)
 - Publishing the exercise directive
 - Supervising the volcanic ash exercise
 - Reporting results of volcanic ash exercises including lessons learned, as well as recommended improvements to the regional volcanic ash ATM contingency plan and global ICAO provisions, to the appropriate Project(s) in APIRG
 - Conducting the volcanic ash exercise in coordination with directing staff
 - Making the GO/NO decision for the volcanic ash exercise (see 10.1 for more details)

APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS (AFI VOLCEX OPINS)

4. Directing Staff

- 4.1. A group of experts representing each of the specialist areas of the exercises, such as Meteorological watch offices, Volcanic ash advisory centres, NOTAM offices, etc.
- 4.2. The Directing Staff negotiate and design an exercise scenario, supervise the conduct of the exercise, debrief the exercise and write the Initial Exercise Report.
- 4.3. The list of contacts for agencies supervising the exercises as Directing Staff can be established using the Guideline presented at Annex C.

5. Exercise planning

- 5.1. A Planning Meeting is held *at least 3 months prior to* an exercise, allowing participating agencies to negotiate the exercise objectives, determine the impact area, and, if necessary, design the volcanic and meteorological activity messages to serve the objectives.
- 5.2. Guideline principles concerning the Planning Meetings are presented at **Appendix D**.

6. Exercise directive

- 6.1. An exercise directive should be published prior to the exercise which clearly describes the exercise scenario, participating agencies and any special instructions.
- 6.2. Immediately following the Planning Meeting, the Exercise Leader will start to prepare an Exercise Directive, with input from Directing Staff as appropriate.
- 6.3. The Exercise Directive will clearly state the exercise scenario, date(s) and time(s), participating agencies and Exercise Leader, aims and objectives, communications, Directing Staff, and any special instructions.
- 6.4. The Exercise Directive is to be finalized by the Exercise Leader at least two weeks prior to the exercise.
- 6.5. The Exercise Leader, in coordination with the Secretary of the AFI VOLCEX/SG, is to ensure that the Exercise Directive is circulated to all Directive Staff and posted on the ICAO ESAF and WACAF Offices' website.
- 6.6. The Exercise Directive template is presented at **Appendix E**.

7. Exercise conduct

- 7.1. The exercise is conducted in accordance with the Exercise Directive.
- 7.2. Participants (or “players”) are expected to issue exercise scenario messages such as volcanic ash advisories, SIGMET and NOTAM or ASHTAM in accordance with the examples provided in the Exercise Directive.
- 7.3. There must be no operational impact since the exercises are simulations.

APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS (AFI VOLCEX OPINS)

- 7.4. All communications pertaining to the exercise (text based, graphics based and/or voice communication) must adopt the guidelines presented in **Appendix F**.

8. Initial exercise report

- 8.1. Based on experience during the exercise, participating agencies (principally Directing Staff) are expected to complete an Initial Exercise Report.
- 8.2. The Initial Exercise Report focuses attention on the major lessons learnt, recommendations and conclusions. It may be necessary for the participating agencies to conduct immediate internal (local or national) debriefings in order to compile the Initial Exercise Report.
- 8.3. Suggested reporting requirements are presented at Appendix G.
- 8.4. Based on local debriefing, the Initial Exercise Report is to be submitted to the Exercise Leader within two weeks of the end of the exercise.
- 8.5. The Initial Exercise Report template is presented at Appendix H.

9. Exercise debrief

- 9.1. A Debrief Meeting is held *within 3 months, preferably 1 month after* the exercise has been conducted, often conjoined with the Planning Meeting of the next exercise.
- 9.2. The Debrief Meeting allows the participant agencies (Directing Staff) to present their experience of the exercise, identifying common themes, lessons learned and recommendations, in order for the Exercise Leader to prepare a Final Exercise Report.
- 9.3. Guideline principles concerning the Debrief Meetings are presented at **Appendix I**.

10. Final exercise report

- 10.1. The Exercise Leader is to consolidate the Initial Exercise Reports from the Directing Staff, as well as Debrief Meeting presentations and discussions, in order to prepare a Final Exercise Report.
- 10.2. The Final Exercise Report is to be available no later than one month after the Debrief Meeting. The Final Exercise Report is to be circulated to all exercise participants (Directing Staff), and posted on the ICAO ESAF and WACAF Offices website in coordination with the Secretary of the ESAF and WACAF Offices VOLCEX/SG.
- 10.3. The Final Exercise Report template is presented at Appendix J.

11. Follow up of lessons learnt, recommendations and conclusions

- 11.1. Each participant agency is expected to undertake the necessary follow-up of internal issues to arise from the exercise. The Secretary of the AFI VOLCEX/SG, with input

Prepared by the ICAO ESAF and WACAF Regional Offices February 2021

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

from the AFI VOLCEX/SG members, is expected to address those issues arising of regional or international significance that may warrant the attention of the A in the first instance.

PART III – APPENDIXES

APPENDIX A

VOLCANO OBSERVATORIES STATES (AFI eANP Volume I Part V)

Table 1 Volcano Observatories States for AFI Region

State	Volcano Observatory
Cameroon	Institut de recherches géologiques et minières de Yaoundé
Cape Verde	Serviço Nacional de Meteorología e Geofísica, P.O. Box 76, Ilha do Sal
Comoros	Observatoire Volcanologique du Karthala, Moroni
Democratic Republic of Congo/RDC	Centre de Recherches en Sciences Naturelles (CRSN) Lwiro, Bukavu
Eritrea	University of Asmara, Geophysics Section
Ethiopia	Geophysics Observatory, Addis Ababa University
France (La Réunion)	Observatoire volcanologique du Piton de la Fournaise
Kenya	Geology Department, University of Nairobi

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

APPENDIX B

ANNUAL VOLCANIC ASH EXERCISE ACTIVITY SCHEDULE

Table 2 Annual Volcanic Ash Exercise Activity Schedule

Timeframe	Activity	Action by	Status
January	Finalizing and publication of Final Exercise Report (VOLCEX{YY-1}/02)	Exercise Leader in coordination with Secretary of the VOLCEX/SG	
February	-	-	-
March	Finalizing and publication of Exercise Directive (VOLCEX{YY}/01)	Exercise Leader in coordination with Secretary of the VOLCEX/SG	
April	Exercise VOLCEX{YY}/01	Exercise Leader, Directing Staff and Key Players	
May	Submission of Initial Exercise Reports (VOLCEX{YY}/01)	Directing Staff to Exercise Leader	
June	<ul style="list-style-type: none"> • Debrief Meeting (VOLCEX{YY}/01) and • Planning Meeting (VOLCEX{YY}/02) • Preparation of Exercise Directive (VOLCEX{YY}/02)\ • VOLCEX/SG annual meeting 	<ul style="list-style-type: none"> • Exercise Leader and Directing Staff • Exercise Leader • VOLCEX/SG members 	
July	Finalizing and publication of Final Exercise Report (VOLCEX{YY}/01)	Exercise Leader in coordination with Secretary of the VOLCEX/SG	
August	-	-	-
September	Finalizing and publication of Exercise Directive (VOLCEX{YY}/02)	Exercise Leader in coordination with Secretary of the VOLCEX/SG	
October	Exercise VOLCEX{YY}/02	Exercise Leader, Directing Staff and Key Players	
November	Submission of Initial Exercise Reports (VOLCEX{YY}/02)	Directing Staff to Exercise Leader (last exercise)	
December	<ul style="list-style-type: none"> • Debrief Meeting (VOLCEX{YY}/02) and 	Exercise Leader and Directing Staff Exercise Leader	

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

Timeframe	Activity	Action by	Status
	<ul style="list-style-type: none"> • Planning Meeting (VOLCEX{YY+1}/01) Preparation of Exercise Directive (VOLCEX{YY+1}/01) 		

Note 1: All entries are indicative and subject to change.

Note 2: {YY} is the year of the exercise and {NN} is the sequence number of the exercise. For example, “EXERCISE VOLCEX20/01” is the first exercise of 2020, whilst Exercise VOLCEX20/02 is the second exercise of 2020.

APPENDIX C

DIRECTING STAFF INSTRUCTIONS

1. The Directing Staff is the controlling work group for Exercise VOLCEX and carries out the following functions:

- a) Represent the organizations of the exercise which collaborate in conducting a certain exercise (e.g. VAAC, MET, ATM, AIS, AO, etc);
- b) Negotiate the specific objectives of each exercise (during Planning Meeting);
- c) Assists in the design of the exercise scenario which serves the objectives;
- d) Prepares the content of messages which are the result of the exercise scenario;
- e) Provides input to the Exercise Directive;
- f) Initiates and oversees the exercise operation;
- g) Submits Initial Exercise Report to Exercise Leader; and
- h) Provides input during the Debrief Meeting.

2. The Directing Staff have the following post exercise duties:

- a) Present the exercise lessons learnt and follow-up recommendations within their own particular specialist area; and
- b) Advises and instructs exercise participants (players) and new Directing Staff members, and facilitates appropriate renewal of Directing Staff.

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

APPENDIX D

EXERCISE PLANNING MEETING

1. Planning Meetings are held at least 3 months prior to a planned exercise in the AFI Region, and are chaired by the Exercise Leader (as determined by the AFI VOLCEX/SG)
2. The main aims are to:
 - a) Determine the specific date(s) and time(s) of the exercise;
 - b) Negotiate the aims and objectives of the exercise;
 - c) Design a scenario to meet the objectives of the exercise;
 - d) Identify agencies and personnel with Directing Staff responsibility; and
 - e) Exchange information of interest for the exercise community.
3. The Planning Meeting should normally be hosted by one of the participating agencies. Delegates should include key personnel able to make decisions on behalf of their own organization or specialist area.
4. As chair, the Exercise Leader, in co-ordination with the host agency, should prepare the Planning Meeting agenda, and provide necessary travel/accommodation and meeting facilities information. Any delegate may suggest an agenda item, which should be forwarded to the Exercise Leader at least four weeks prior to the Planning Meeting.
5. The delegates attending the Planning Meeting shall be prepared to:
 - a) Present ideas for new exercise and develop a complete scenario for the exercise;
 - b) Decide date for the next exercise;
 - c) Identify Directing Staff.
6. The Exercise Leader may elect to prepare minutes which are to be circulated to the appropriate organizations not more than four weeks after the Planning Meeting.

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

APPENDIX E

EXERCISE DIRECTIVE TEMPLATE

Title: EXERCISE DIRECTIVE FOR EXERCISE VOLCEX{YY}/{NN}

1. INTRODUCTION

- 1.1. Volcanic ash exercises are conducted by ICAO AFI Region in order to practice and develop inter-agency response to volcanic activity, in order to maintain safety, regularity and efficiency of aviation in the event of a volcanic eruption”.¹
- 1.2. The ICAO Africa-Indian Ocean (AFI) volcanic ash exercise to be conducted in {YYYY}, named AFI VOLCEX {YY}/{NN}, will involve the simulated eruption of [volcano Name] volcano in the [State].
- 1.3. The exercise will demonstrate 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.
- 1.4. There will be no operational impact in this exercise and dedicated staff is expected to be available for participation in the exercise.
- 1.5. Exercise date and time (UTC): *(complete)*
- 1.6. Exercise Leader: *(complete)*
- 1.7. Pre-Exercise Meeting: *(date, agenda, related arrangements)*
- 1.8. Debrief Meeting: *(date, agenda, related arrangements)*
- 1.9. Debrief host and chairman: *(complete)*

2. PARTICIPATING AGENCIES

A list of the agencies that have agreed to participate in the exercise, listed according to area of

¹ ICAO Doc 9766 – Handbook on the International Airways Volcano Watch, Appendix F- Guidance for Conducting Volcanic Ash Exercises in ICAO Regions

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

responsibility (i.e. VAAC, MET Watch Office, ACC, AO, etc.).

3. AIMS AND OBJECTIVES

The negotiated objectives of the exercise.

4. EXERCISE DURATION

The period which the exercise will be conducted.

5. EXERCISE VOLCANO

Name, number and position of the exercise volcano.

6. EXERCISE SCENARIO

A short description of the events of volcanic and meteorological activity.

7. EXERCISE SCHEDULE

A chronological list of the actions to be undertaken before and during the exercise by participating agencies.

Table 3 Exercises Schedule

<i>Date /Time (UTC)</i>	<i>Player</i>	<i>Event /Action</i>
.....
.....
.....

8. EXERCISE SCENARIO MESSAGES

Scenario messages related the exercise, including at least one example for each of the following: VONA, AIM, VAA, VAG, SIGMET ASHTAM or VA NOTAM.

9. COMMUNICATIONS

Instructions regarding message handling and other communications.

10. DIRECTING STAFF

Contact list of persons responsible for the preparation and conduct of the exercise and who have the duty be available at exercise workstation(s) during the exercise.

Table 4 Directing Staff Contacts Details

<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>

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

...
...
...

11. SPECIAL INSTRUCTIONS

Any other special instructions of relevance to the conducting of the exercise.

12. LIST OF ABBREVIATIONS

A list of abbreviations used in the Exercise Directive, including but not limited to, the following:

Table 5 List of Abbreviations

Abbreviation	Decode
ACC	Area Control Centre
AIM	ATFCM Information Message
AIS	Aeronautical Information Service
AO	Aircraft Operator
AOC	Airline Operator 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 Unit
IFPS	Integrated Initial Flight Plan Processing System

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

Abbreviation	Decode
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

APPENDIX F

COMMUNICATIONS INSTRUCTIONS

MESSAGE TRAFFIC

Exercise messages such as VONA, VAA, VAG, SIGMET, NOTAM and AIM are to be distributed to normal subscribers.

The free-text part of *all messages* shall commence with or include clear reference to “EXERCISE VOLCEX{YY}/{NN}”.

The free-text part of *all messages* shall terminate with the suffix “EXERCISE EXERCISE EXERCISE”.

Example SIGMET and NOTAM:

```

WVUK02 EGRR 131200
EGGX SIGMET 2 VALID 131200/131800 EGRREGGX
SHANWICK OCEANIC FIR EXERCISE VOLCEX11/01 [...]
EXERCISE EXERCISE EXERCISE=

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Prepared by the ICAO ESAF and WACAF Regional Offices February 2021

APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS (AFI VOLCEX OPINS)

(A0778/10 NOTAMR A0777/10
Q) BIRD/QWWXX/IV/NBO/W/000/999/6337N01901WXXX
A) BIRD
B) 1104130900 C) 1104131200
E) EXERCISE VOLCEX11/01 [...] EXERCISE EXERCISE EXERCISE
F) GND G) UNL)

Any voice communications via telephone or radio shall commence with the prefix
“EXERCISE VOLCEX{YY}/{NN}”.

*Note: Where {YY} is the year of the exercise and {NN} is the sequence number of the exercise.
For example, “EXERCISE VOLCEX11/01” is the first exercise of 2011.*

APPENDIX G

REPORTING REQUIREMENTS

1. Immediate local Debriefing.

Directing Staff members should give an initial debriefing, within their organization, immediately after the termination of the exercise. The Initial Debrief should be short and enable the players to:

- Obtain an immediate assessment of their performance.
- Profit from their strength and weaknesses revealed by the exercise.

2. National Debrief.

If considered appropriate, an inter-agency debrief meeting is recommended on a national level prior to the Debrief Meeting.

3. 3. Debrief Meeting.

The Exercise Debrief should be attended by all agencies participating in the exercise and should be detailed to enable players as well as Directive Staff members to:

- Discuss the lessons learned;
- Identify strength and weaknesses of the operation;
- Contribute to the Final Exercise Report;
- Identify major lessons learnt; and
- Identify and discuss recommendations and conclusions.

4. Reporting.

The aim of reporting is to focus on major lessons learnt, recommendations and conclusions of the exercise operation and to distribute those to the participating organizations and to the appropriate international organizations. The following reporting chain should be followed:

- a) Initial Exercise Reports. An initial draft report by each participating organization

Prepared by the ICAO ESAF and WACAF Regional Offices February 2021

APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS (AFI VOLCEX OPINS)

should be forwarded to the Exercise Leader within one month of the end of the exercise. The Exercise Leader will collate the reports in time for the Debrief Meeting in order then prepare the Final Exercise Report.

- b) Final Exercise Report. The Exercise Leader should prepare the Final Exercise Report within two months of the Debrief Meeting and publish through the AFI VOLCEX/SG Secretary to all the exercise participants.

APPENDIX H

INITIAL EXERCISE REPORT TEMPLATE

Title: INITIAL EXERCISE REPORT FOR EXERCISE VOLCEX{YY}/{NN}

Name of reporting organization: {Enter}

1. Introduction

Include date of the exercise, synopsis of how the exercise ran and notes if the exercise operation ran in some ways opposed to the way it was planned in the Exercise Directive.

2. Co-operating Organizations

List the VAACs, Meteorological Watch Offices, ACC, Aircraft operators, etc, cooperating with the reporting organization during the exercise.

3. Communications

Assess communications operations, i.e. message handling and distribution as well as the other information exchange.

4. Log of exercise operation

A recapitulation of the exercise operation log, as it was actually played on the exercise day.

5. Lessons learned

List the major or most significant lessons learned during the exercise. Approximately 3 items.

6. Recommendations

List recommendations, if appropriate, within the organization, nationally and/or internationally. Approximately 3 items.

7. Conclusions

Prepared by the ICAO ESAF and WACAF Regional Offices February 2021

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

Provide any final concluding remarks relating to the exercise.

APPENDIX I

EXERCISE DEBRIEF MEETING

1. Debrief Meetings are held within 3 months, preferably 1 month after an exercise in the AFI Region, and chaired by the Exercise Leader (as determined by the AFI VOLCEX/SG).
2. The main aims are to:
 - a) Discuss the conduct of the exercise;
 - b) Identify lessons learned and recommendations;
 - c) Contribute to the Final Exercise Report; and
 - d) Exchange items of interest for the exercise community.
3. The Debrief Meetings should normally be hosted by one of the participating agencies. Directing Staff members should attend the Debrief Meeting, where possible.
4. As chairman, the Exercise Leader, in co-ordination with the host agency, should prepare the Debrief Meeting agenda, and provide the necessary travel/accommodation and meeting facilities information. Any delegate may suggest an agenda item, which should be forwarded to the Exercise Leader at least four weeks prior to the Debrief Meeting.

APPENDIX J

FINAL EXERCISE REPORT TEMPLATE

Title: FINAL EXERCISE REPORT FOR EXERCISE VOLCEX{YY}/{NN}

1. Introduction

Include date of the exercise, the Exercise Leader and Directing Staff. Synopsis of how the exercise ran and notes if the exercise operation ran in some ways opposed to the way it was planned in the Exercise Directives.

2. Co-operating organizations.

List all the VAACs, Meteorological Watch Offices, ACC, Aircraft operators, etc, participating in the whole exercise.

3. Log of exercise operation

A recapitulation of the exercise operation log as it was actually played on the exercise day.

4. Communications

Assess communications operations, i.e. message handling and distribution as well as the other information exchange.

5. Lessons learned

List major or most significant lessons learned during the exercise. Approximately 3 items.

6. Recommendations

List recommendations if appropriate, and note specially it recommendations which apply to international practices and documents. Approximately 3 items.

7. Conclusions

Provide any final concluding remarks relating to the exercise.

**APPENDIX 3K- AFI VOLCANIC ASH EXERCISE OPERATIONAL INSTRUCTIONS
(AFI VOLCEX OPINS)**

-END-