**INTERNATIONAL CIVIL AVIATION ORGANIZATION**



***~~Working draft of the~~***

**AFI ~~VOLCANIC ASH EXERCISE~~ OPERATIONAL INSTRRUCTIONS RELATED TO THE VOLCANIC ASH EXERCISES**

**(~~AFI VOLCEX~~ OPI~~NS~~-VOLCEX)**

***~~First~~ Second Edition 202~~1~~5***

The designations and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

# RECORDING OF AMENDEMENTS AND CORRIGENDA

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Amendments | | | |  | Corrigenda | | | | |
| # | Date of issue | Date entered | Entered by |  | N° | Date of issue | Date entered | Entered by |
| 1 | Nov. 2021, Dec. 2023 | June 2025 | Secretariat |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

Table of Contents

[RECORDING OF AMENDEMENTS AND CORRIGENDA 3](#_Toc64359344)

[PART I – General rules on volcanic ash exercises process 4](#_Toc64359345)

[1. Overview 4](#_Toc64359346)

[2. Exercises 4](#_Toc64359347)

[3. Aims 5](#_Toc64359348)

[4. Objectives 5](#_Toc64359349)

[5. Concepts 5](#_Toc64359350)

[6. Expectations 6](#_Toc64359351)

[7. Language 6](#_Toc64359352)

[8. Reference material 6](#_Toc64359353)

[PART II – Volcanic ash conduct process and strategy 6](#_Toc64359354)

[1. Introduction 6](#_Toc64359355)

[2. Volcanic Ash Exercises Steering Group 7](#_Toc64359356)

[3. Exercise Leader 7](#_Toc64359357)

[4. Directing Staff 8](#_Toc64359358)

[5. Exercise planning 8](#_Toc64359359)

[6. Exercise directive 8](#_Toc64359360)

[7. Exercise conduct 9](#_Toc64359361)

[8. Initial exercise report 9](#_Toc64359362)

[9. Exercise debrief 9](#_Toc64359363)

[10.Final exercise report 9](#_Toc64359364)

[11.Follow up of lessons learnt, recommendations and conclusions 10](#_Toc64359365)

[PART III – APPENDIXES 10](#_Toc64359366)

[*Table 1 Volcano Observatories States for AFI Region* 10](#_Toc64359367)

[*Table 2 Annual Volcanic Ash Exercise Activity Schedule* 11](#_Toc64359368)

[DIRECTING STAFF INSTRUCTIONS 12](#_Toc64359369)

[EXERCISE PLANNING MEETING 13](#_Toc64359370)

[EXERCISE DIRECTIVE TEMPLATE 14](#_Toc64359371)

[COMMUNICATIONS INSTRUCTIONS 17](#_Toc64359372)

[REPORTING REQUIREMENTS 18](#_Toc64359373)

[INITIAL EXERCISE REPORT TEMPLATE 19](#_Toc64359374)

[EXERCISE DEBRIEF MEETING 20](#_Toc64359375)

[FINAL EXERCISE REPORT TEMPLATE 21](#_Toc64359376)

# PART I – General rules on volcanic ash exercises process

# 1. Overview

* 1. The ~~w~~*~~orking draft~~* ~~of the~~ Africa –Indian Ocean (AFI) ~~Volcanic Ash Exercises~~ Operating Instructions related to the Volcanic Ash Exercises (AFI ~~VOLCEX~~ OPI~~NS~~-VOLCEX) contained herein have been prepared by the Eastern and Southern African (ESAF) and Western and Central African (WACAF) Offices, to facilitate the coordination and conduct of regular volcanic ash exercises in the AFI Region ~~ICAO~~.
  2. ~~The first working draft version of the AFI VOLCEX OPINS was initiated ESAF/WACAF Offices and consolidated by APIRG IIMSG MET Project 2, based on the EUR/NAT VOLCEX OPINS developed in 2011 and using the documents referenced in the paragraph 8.~~
  3. The AFI OPI-VOLCEX provides operational guidance for planning, conducting and reporting on volcanic ash exercises. ~~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

* 1. In the AFI Region, Volcanic ash exercises are carried out in the bi-annually basis. ~~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. 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
  3. The exercises adhere to the following naming and numbering convention: “Exercise VOLCEX~~{~~YYYY~~}/{~~-NN~~}~~”, where ~~{~~YYYY~~}~~ relates to the year of the exercise and ~~{~~NN~~}~~ relates to the sequence number starting since the first exercise, ranging from 01 to NN. ~~of the exercise. For example, Exercise VOLCEX20/01 is the first exercise of 2020, whilst Exercise VOLCEX20/02 is the second exercise of 2020.~~ For example, VOLCEX 2025-03 means the 3rd volcanic ash exercise of the Region conducted in 2025.

# 3. Aims

* 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

* 1. The exercises are designed to:

1. Practice the conduct of volcanic activity response in accordance with the regional reference documents;
2. Verify existing information, AIS and MET message routing on AFTN addresses, relevant e-mail addresses, telephone and fax number, and internet addresses (URLs)s;
3. Maintain appropriate information and message routing between all involved agencies and organizations;
4. Provide volcanic activity response training for key personnel involved;
5. Verify and develop existing procedures; and
6. Provide, when appropriate, recommendations for amendment of the reference documents, ~~in accordance with~~ based on ~~the~~ lessons learned, and conclusions provided in the Final Exercise Report.

# 5. Concepts

* 1. ~~The annual or bi-annual volcanic ash exercises involve the participation from different geographic areas of the AFI Region.~~
  2. ~~Each~~ Volcanic ash exercise is based on ~~involves~~ a simulation ~~ed~~ of volcano eruption ~~of a volcano in the AFI Region~~. ~~The AFI volcano observatories States are listed in the~~ **~~Appendix A~~** ~~to this document.~~ In accordance with ~~reference to~~ the provisions of ~~ICAO~~ the AFI 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.~~
  3. Based on the ~~Each exercise may have different~~ objectives of the exercise, the VACC will propose scenarios of simulated ashes that may address ~~which the scenario will be designed to address. For example,~~ any or all of the following activities ~~listed below may be tested depending on the scope of the exercise~~:

1. AFTN, e-mail addresses, message routing and voice communications;
2. Alerting and volcanic ash dispersion forecasts and advice;
3. ATS response;
4. ATC and aircraft operator response;
5. ATM response;
6. AIS response; and/or
7. MET response.

# ~~6. Expectations~~

* 1. ~~All participating agencies in the exercises are expected to adhere to the OPINS contained herein.~~

# 7. Language

* 1. The use of English and French languages is expected among participants during teleconference meetings. ~~The exercises, and any associated~~ The preparatory meetings of the volcanic ash exercises may be conducted in English and/or French.
  2. Documentation related to the volcanic ash exercises should be available in both English and French.
  3. ~~, will be in both English and French languages. Interpretation services will be provided by the Secretariat.~~

# 8. Reference materials

* ICAO Annex 3 – Meteorological Service for International Air Navigation
* Doc 10157 – Procedures for Air Navigation Services - Meteorology
* 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
* Doc 8896 – Manual of Aeronautical Meteorological Practice
* 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 Exercise process and strategy

# ~~1. Introduction~~

* 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.~~
  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. The AFI Volcanic Ash Exercise Steering Group (AFI VOLCEX SG), established by APIRG, is responsible for coordinating the volcanic ash exercises. ~~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. IIMSG 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.~~
  2. The AFI VOLCEX SG meets annually. It is in charge of ~~and~~:

1. Coordinating the organization of the volcanic ash exercise in the region;
2. Reporting on the outcomes of volcanic ash exercises conducted in the region to the IIM Subgroup.
3. reviewing the regional volcanic ash contingency plans and procedures,
4. Proposing improvements/update of the Volcanic Ash related procedures, including the regional volcanic ash contingency plan.
5. organizing volcanic ash awareness events concerning the hazardous effects of volcanic ash on aviation and the established contingency measures.
   1. A ~~n example of the annual~~ sample volcanic ash exercise ~~activity~~ schedule ~~in the AFI Region~~ is presented at Appendix B.
   2. ~~Regular updates on the activities of the AFI VOLCEX/SG are provided to the APIRG IIMSG MET Project 2, amongst others, by the Secretary of the AFI VOLCEX/SG.~~
   3. The AFI VOLCEX SG designates the ~~appropriate~~ Exercise Leader for each exercise based on agreed criteria. The Exercise Leader is typically a member of the AFI VOLCEX SG.

# 3. Exercise Leader

* 1. The Exercise Leader is the supervisor of the Directing Staff. He is responsible for:
* The Exercise Leader (EL) is responsible for coordinating the schedule and the conduct of a specific volcanic ash exercise.
* He is the supervisor of the technical Team (Directing Staff) established for the Exercise.
* The EL coordinates the development of the Exercise Scenario, the preparation and publication of the exercise directive.
* Report on the results of volcanic ash exercises including lessons learned, as well as recommended actions.
* Responsible for taking the GO/NO decision during the volcanic ash exercise.

# 4. Directing Staff

* 1. A group of experts representing each of the specialized areas involved in the exercises, such as MWOs, Volcanic ash advisory centres, NOTAM offices, ATS, etc.
  2. The Directing Staff coordinate with VAAC Toulouse to negotiate and design the exercise scenario, conduct the exercise, lead the debriefing meetings, and draft the Initial Exercise Report.
  3. The list of participating agencies to the Directing Staff can be established using the Guideline presented at Annex C.

# 5. Exercise planning

* 1. A Planning Meeting is held at least 3 months prior to an exercise, enabling participating agencies to :

# negotiate the exercise objectives;

# determine the impacted area; and

# if necessary, design the volcanic and meteorological activity messages to serve the objectives..

* 1. Guideline concerning the Planning Meetings are provided in **Appendix D**.

# 6. Exercise directive

* 1. Immediately after the Planning Meeting, the Exercise Leader shall start drafting the Exercise Directive, incorporating inputs from the Directing Staff as appropriate.
  2. The Exercise Directive shall specify the following:

# Exercise scenario, date(s), and time(s)

# Participating agencies and Exercise Leader

# Aims and objectives

# Detailed actions to be carried out as part of the exercise

# Communication arrangements

# List of Directing Staff

# Any special instructions

* 1. The Exercise Leader shall finalize the Exercise Directive no later than two weeks before the exercise and ensure it is distributed to all Directing Staff and published on the ICAO ESAF and WACAF Offices websites.
  2. The Exercise Directive Template is presented at **Appendix E**.

# 7. Exercise conduct

* 1. The exercise is conducted as scheduled in the Exercise Directive.
  2. The Players are expected to issue exercise scenario messages such as volcanic ash advisories, SIGMET and NOTAM based on the Samples provided in the Exercise Directive.
  3. There must be no operational impact since the exercises are simulations. Otherwise, the Exercise Leader shall take an appropriate decision.
  4. All communications pertaining to the exercise (text based, graphics based and/or voice communication) must adopt the agreed guidelines

# 8. Initial exercise report

* 1. Following a VA exercise, it is essential to capture and consolidate key observations and insights from the participating agencies, particularly the Directing Staff.
  2. Each participating agency is expected to prepare an Initial Exercise Report based on its involvement and observations during the exercise. The report should focus on:

# Major lessons learned

# Actionable recommendations

# Relevant conclusions

* 1. Agencies are to submit their Initial Exercise Report to the Exercise Leader within two weeks of the conclusion of the exercise.
  2. The Initial Exercise Report template is presented at Appendix H.

# 9. Exercise debrief

* 1. A Debrief Meeting is held within three months—ideally within one month—after the exercise, often back-to-back with the Planning Meeting for the next exercise.
  2. The Exercise Debrief should be attended by all agencies having participated in the exercise and should be detailed to enable players to:

# Discuss the lessons learned;

# Identify strength and weaknesses of the operation;

# Contribute to the Final Exercise Report; and

* discuss recommendations and conclusions
  1. Guideline principles concerning the Debrief Meetings are presented at **Appendix I.**

# 10.Final exercise report

* 1. The Exercise Leader is responsible for consolidating the Initial Exercise Reports and Debrief Meeting outcomes into the Final Exercise Report.
  2. The Final Report should be completed within one month of the Debrief Meeting and submitted to the ICAO ESAF and WACAF Offices.
  3. The Final Report is submitted to the IIM SG meeting for review and submission to the Africa-Indian Ocean Aviation System Implementation Group (AASPG) for endorsement and further guidance.
  4. The Final Exercise Report template is presented at Appendix J.

# 11.Follow up of lessons learnt, recommendations and conclusions

* 1. The extent of lessons learned, and areas of improvements depends on the exercise objectives and its scenario. The following is indicative and not exhaustive.
* Need for Timely and Accurate Information Sharing
* Clarification of Roles and Responsibilities
* Importance of Standardized Procedures
* Effectiveness of Cross-Border Coordination

# Need for Robust Communication Systems

* VOLCEX is a process, not a one-off action .

# PART III – APPENDIXES

APPENDIX A

VOLCANO OBSERVATORIES SATES

Volcano observatory States selected to assist the AFI Volcanic Ash Advisory Centre (VAAC Toulouse) are listed in the Table MET I-1 in Volume I of the AFI eANP.

## *~~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 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 | Execution of the 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 | * Debrief Meeting ~~(VOLCEX{YY}/01)~~ and * Planning Meeting for the next Exercise~~(VOLCEX{YY}/02)~~ * Preparation of Directive of the next Exercise ~~(VOLCEX{YY}/02)\~~ * VOLCEX SG annual meeting | * 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 VOLCEXSG |  |
| ~~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~~ | * ~~Debrief Meeting (VOLCEX{YY}/02) and~~ * ~~Planning Meeting (VOLCEX{YY+1}/01) Preparation of Exercise Directive (VOLCEX{YY+1}/01)~~ | ~~Exercise Leader and Directing Staff Exercise Leader~~ |  |

***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:

1. Represent the organizations of the exercise which collaborate in conducting a certain exercise (e.g. VAAC, MET, ATM, AIS, AO, etc);
2. Negotiate the specific objectives of each exercise (during Planning Meeting);
3. Assists in the design of the exercise scenario which serves the objectives;
4. Prepares the content of messages which are the result of the exercise scenario;
5. Provides input to the Exercise Directive;
6. Initiates and oversees the exercise operation;
7. Submits Initial Exercise Report to Exercise Leader; and
8. Provides input during the Debrief Meeting.

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

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

**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. 2. The main aims are to:
3. Determine the specific date(s) and time(s) of the exercise;
4. Negotiate the aims and objectives of the exercise;
5. Design a scenario to meet the objectives of the exercise;
6. Identify agencies and personnel with Directing Staff responsibility; and
7. Exchange information of interest for the exercise community.
8. 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.
9. 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.
10. 5. The delegates attending the Planning Meeting shall be prepared to:
11. Present ideas for new exercise and develop a complete scenario for the exercise;
12. Decide date for the next exercise;
13. Identify Directing Staff.
14. 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 E**

## EXERCISE DIRECTIVE TEMPLATE

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

1. INTRODUCTION
   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]](#footnote-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].
   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.
   4. There will be no operational impact in this exercise and dedicated staff is expected to be available for participation in the exercise.
   5. Exercise date and time (UTC): *(complete)*
   6. Exercise Leader: *(complete)*
   7. Pre-Exercise Meeting: *(date, agenda, related arrangements)*
   8. Debrief Meeting: *(date, agenda, related arrangements)*
   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 responsibility (i.e. VAAC, MET Watch Office, ACC, AO, etc.).*

1. AIMS AND OBJECTIVES

*The negotiated objectives of the exercise.*

1. EXERCISE DURATION

*The period which the exercise will be conducted.*

1. EXERCISE VOLCANO

*Name, number and position of the exercise volcano.*

1. EXERCISE SCENARIO

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

1. EXERCISE SCHEDULE

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

**Table 3 Exercises Schedule**

|  |  |  |
| --- | --- | --- |
| *Date /Time (UTC)* | *Player* | *Event /Action* |
| *…..* | *…..* | *…..* |
| *…..* | *…..* | *…..* |
| *…..* | *…..* | *…..* |

1. 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.*

1. COMMUNICATIONS

*Instructions regarding message handling and other communications.*

1. 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**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *Organization* | *State* | *Contact name* | *Contact position* | *Primary telephone number* | *Secondary telephone number* | *Fax number* | *e-mails address* |
| *…* | *…* | *…* | *…* | *…* | *…* | *…* | *…* |
| *…* | *…* | *…* | *…* | *…* | *…* | *…* | *…* |
| *…* | *…* | *…* | *…* | *…* | *…* | *…* | *…* |

1. SPECIAL INSTRUCTIONS

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

1. 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 |
| 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=

(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.

1. National Debrief.

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

1. 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.

1. 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:

1. Initial Exercise Reports. An initial draft report by each participating organization 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.
2. Final Exercise Report. The Exercise Leader should prepare the Final Exercise Report within two months of the Debrief Meeting and publish though 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.*

* + - 1. **Co-operating Organizations**

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

* + - 1. **Communications**

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

* + - 1. **Log of exercise operation**

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

* + - 1. **Lessons learned**

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

* + - 1. **Recommendations**

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

* + - 1. **Conclusions**

*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:

1. Discuss the conduct of the exercise;
2. Identify lessons learned and recommendations;
3. Contribute to the Final Exercise Report; and
4. Exchange items of interest for the exercise community.
   * + 1. The Debrief Meetings should normally be hosted by one of the participating agencies. Directing Staff members should attend the Debrief Meeting, where possible.
       2. 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.*

1. **Co-operating organizations.**

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

1. **Log of exercise operation**

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

1. **Communications**

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

1. **Lessons learned**

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

1. **Recommendations**

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

1. **Conclusions**

*Provide any final concluding remarks relating to the exercise.*

*-END-*

1. *ICAO Doc 9766 – Handbook on the International Airways Volcano Watch, Appendix F- Guidance for Conducting Volcanic*

   *Ash Exercises in ICAO Regions* [↑](#footnote-ref-1)