



AFI Volcanic Ash Exercise Workshop

(Virtual, 06-08 April 2021)

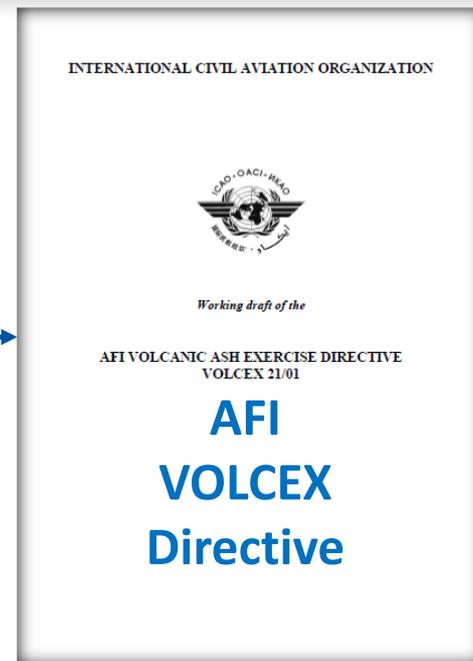
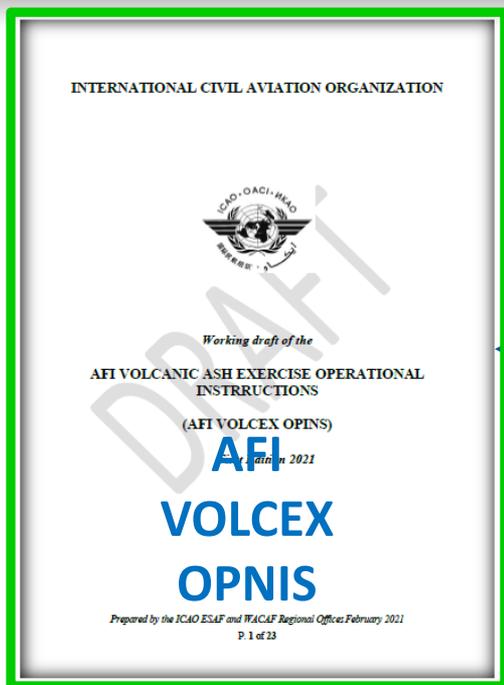
AFI Volcanic Ash Exercise Operational Instructions (AFI VOLCEX OPINS)

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Content

1. AFI Volcanic Ash Exercise Regulatory Documents
2. AFI Volcanic Ash Exercise Operational Instructions (AFI VOLCEX OPINS)

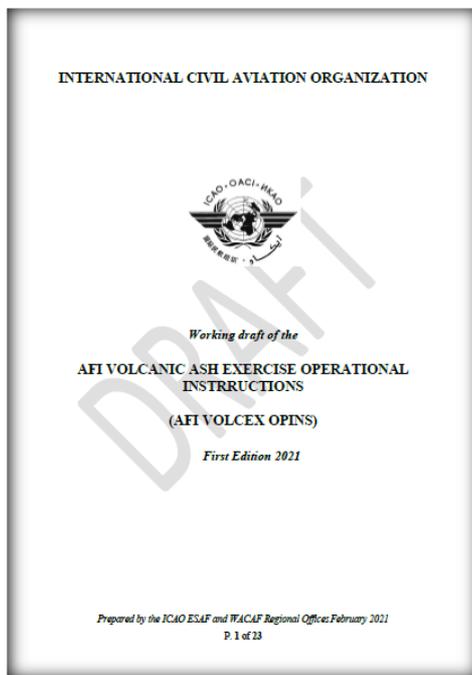




- **General rules** and operational instructions
- **Strategy** for conducting volcanic ash exercises

- **Implantation** Doc. of the AFI VOLCEX OPIS
- For this year : VOLCEX 21/01 to tests some facilities /services related to volcanic ash.

AFI VOLCEX OPNIS Structure



- Part I : General rules on volcanic exercises process
- Part II : Strategy for conducting volcanic ash exercises
- Part III : Appendixes



Overview

**Working Draft Version of the
AFI VOLCEX OPINS, Edition
2021**

Initiated and developed by ICAO ESAF and WACAF Offices in coordination and with support of APIRG IMSG MET Project 2

Benefits support from EUR/NAT through sharing of Resources and best practices

Development conducted on the basis of ICAO SARPs/Procedures related to volcanic ash

To facilitate the conduct of regular volcanic ash exercises in the AFI Region, Participating Agencies 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

Exercises details



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

Frequency of exercises :

- According to ICAO Doc 9766 – Handbook on the international Airways Volcanic Watch (IAVW):
 - Exercise can be conducted at least every 3 years
 - May be adapted to the context
- Proposal of every two years for AFI Region VOLCEX





AFI VOLCEX Objectives

Bi-annual AFI VOLCEX 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 ;
- aircraft operator response and the collaborative decision making (CDM) between the various actors in accordance with regional and global procedures;

And

- Provide, when appropriate, recommendations for amendment of the reference documents, in accordance with the lessons learned and conclusions formulated in the final report of the exercise

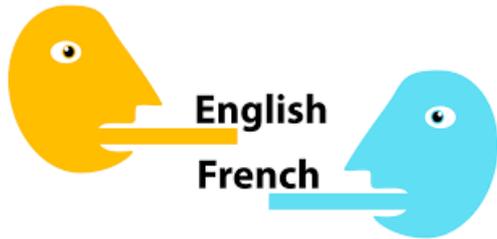


Concepts

- The bi-annual volcanic ash exercises involve the **participation from different geographic areas** of the AFI Region.
- Each exercise involves a **simulated eruption of a volcano** in the AFI Region.
- The AFI volcano observatories States are listed in the **AFI eANP Volume I Table MET I-1**.
- **Volcanic Ash Advisory Centre (VAAC) Toulouse** has been designated as AFI VAAC to prepare volcanic ash advisory information for AFI Region
- Simulated ash clouds or clouds from an assigned volcano **may cross national and/or international boundaries**, depending on the objectives of the exercise

- Each exercise may have different objectives, **which the scenario will be designed to address**.
- **The scope of the exercise will specify the activities to be tested**. For example, any or all of the activities listed below may be tested
 - AFTN, e-mail addresses, message routing and voice communications;
 - Alerting and volcanic ash dispersion forecasts and advice;
 - ATS response;
 - ATC and aircraft operator response;
 - ATM response;
 - AIS response; and/or
 - MET response.

Language



- **Working language** : English and French.
- The exercises, and any associated meetings and documentation, **will be in both English and French languages.**
- **Interpretation services** will be provided by the Secretariat.



References

- ICAO Doc 9766 – Handbook on the International Airways Volcano Watch (IAVW), Appendix F
- 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 ATM Volcanic Ash Contingency Plan

Strategy components



Steering Group



Exercise Leader



Directing Staff



Planning Meeting



Exercise Directive

**DESIGNING OF SCENARIO AND
EXERCISE CONDUCT**

Conduct Exercise



Initial Report
(Directing Staff)



Debriefing Meeting



Final report
(Exercise Leader)



Follow-up
activities



| ICAO

UNITING AVIATION

Volcanic Ash Exercises Steering Group

- **Coordinating** with all participants an annual or a two-year schedule of volcanic ash exercises and their scenarios;
- **Continuous review of regional volcanic ash contingency plans** and procedures,
- **Proposing improvements** based on the lessons learned;
- **Organizing volcanic ash awareness events** concerning the hazardous effects of volcanic ash on aviation and the established contingency measures.



Steering Group

Exercise Leader

- **Reporting to the debriefing meetings** for volcanic ash exercises in the AFI Region
- **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)



Exercise Leader

Directing Staff

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



Directing Staff

Exercise Planning Meeting

- 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.



Planning Meeting

Exercise directive

- An exercise directive should be published prior to the exercise which clearly describes the exercise scenario, participating agencies and any special instructions.
- 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.
- The Exercise Directive is to be finalized by the Exercise Leader at least two weeks prior to the exercise.
- 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.



Exercise Directive



Exercise conduct

- The exercise is conducted **in accordance with the Exercise Directive**.
- 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.
- There must be **no operational impact** since the exercises are simulations.
- All communications pertaining to the exercise (text based, graphics based and/or voice communication) **must adopt the agreed guidelines**

**DESIGNING OF SCENARIO AND
EXERCISE CONDUCT**

Conduct Exercise

Initial exercise report

- Based on experience during the exercise, participating agencies (principally Directing Staff) are expected to complete an Initial Exercise Report.
- The Initial Exercise Report focuses attention on the major lessons learnt, recommendations and conclusions. .
- 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.



Exercise debrief

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.

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**



Debriefing Meeting

Final exercise report

- 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.
- 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.

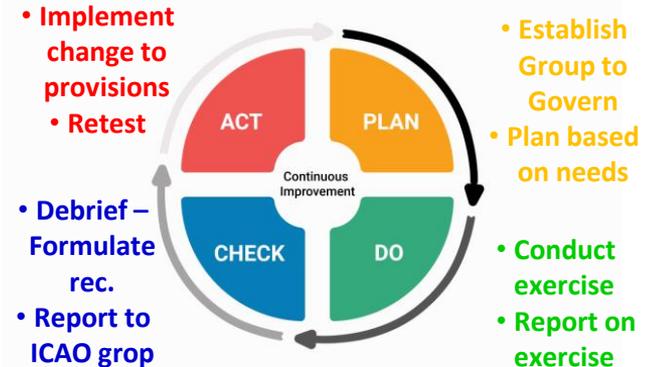


Follow up of lessons learnt, rec. and conclusions

- Each participant agency is expected to undertake the necessary follow-up of internal issues that arise from the exercise.
- The Secretary of the AFI VOLCEX/SG, with input 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.
- VOLCEX is a process, not a one-off action



Follow-up activities





Appendixes

- Table 1 Volcano Observatories States for AFI Region
- Table 2 Annual Volcanic Ash Exercise Activity Schedule
- DIRECTING STAFF INSTRUCTIONS
- EXERCISE PLANNING MEETING
- EXERCISE DIRECTIVE TEMPLATE
- COMMUNICATIONS INSTRUCTIONS
- REPORTING REQUIREMENTS



ICAO

North American
Central American
and Caribbean
(NACC) Office
Mexico City

South American
(SAM) Office
Lima

ICAO
Headquarters
Montréal

Western and
Central African
(WACAF) Office
Dakar

European and
North Atlantic
(EUR/NAT) Office
Paris

Middle East
(MID) Office
Cairo

Eastern and
Southern African
(ESAF) Office
Nairobi

Asia and Pacific
(APAC) Sub-office
Beijing

Asia and Pacific
(APAC) Office
Bangkok



THANK YOU

