



INTERNATIONAL CIVIL AVIATION ORGANIZATION

Seventh Meeting of the APIRG Infrastructure and Information Management Sub-Group (IIM/SG7)

Dakar, Senegal, 5 - 8 August 2024

Agenda Item 3: Achievements in Infrastructure and Information Management**3.5 Other Air Navigation Initiatives****WP3.5C Outcomes of the Second volcanic ash exercise of the AFI Region**

(Presented by the Secretariat)

SUMMARY

This paper provides an update on the outcomes of the second volcanic ash exercise conducted in December 2023 under the leadership of the Democratic Republic of the Congo.

Action by the meeting in paragraph 3

REFERENCE(S):

- APIRG/25 Report
- AFI VOLCEX 21/01 Report
- Doc 9766 Handbook on the IAVW
- AFI VA Exercises Directive for Exercise VOLCEX 21-01 Rev0.1
- AFI VAA Exercises Operational Instructions VOLCEX OPINS Rev0.1
- Terms of Reference of the AFI VOLCEX Steering Group

Related ICAO Strategic Objective(s):

- **A** – Safety, **B** – Air Navigation Capacity and Efficiency

1. INTRODUCTION

- 1.1 The meeting may recall that the APIRG/25 meeting, held in Kigali, Rwanda from 7 to 11 November 2022, through Decision 25/18, endorsed the report of the first AFI volcanic ash exercise (VOLCEX 21/01) conducted in November 2021 under the leadership Cabo Verde as the Exercise Leader State.
- 1.2 The meeting may also note that, the APIRG/26 meeting, after taking note of the outcomes of the first volcanic ash exercise as presented by the Volcanic Ash Exercise Steering Group (VOLCEX/SG), approved the schedule of the second volcanic ash exercise (VOLCEX 23/01) to be conducted in December 2023 by the Democratic Republic of Congo (DRC) as Leader State.
- 1.3 This working paper presents the outcomes of the volcanic ash exercise led by DRC.

2. DISCUSSION

- 2.1 The AFI second volcanic ash exercise was conducted on 7 December 2023. It simulated the eruption of Nyiragongo volcano (volcano number: 223030, position Lat: 1° 31' S; Long: 29° 15' E) located on Goma, Democratic Republic of the Congo (DRC), Central Africa Region.
- 2.2 The simulated high level volcanic ash cloud contaminated eleven FIRs, affecting major air traffic routes in Kinshasa; Brazzaville; Libreville; Douala; Bangui; Dar ES Salam ; Entebbe ; Kigali ; Luanda ; Bujumbura and Nairobi FIRS.
- 2.3 The exercise was led by the Goma Volcanological Observatory (OVG), the Air Navigation Services Provider/the Airways Authority (RVA) and the Civil Aviation Authority (CAA) of the Democratic Republic of Congo was the Exercise Leader.
- 2.4 The exercise involved participants from some agencies in Democratic Republic of Congo; Republic of Congo; Gabon; Cameroon; Central African Republic; Tanzania; Uganda; Rwanda; Burundi and Kenya. The Bulletin Compiling Centre (Kenya); the Dakar and Pretoria Regional OPMET Data Bank (RODB Dakar and RODB Pretoria); Senegal; Cap Vert; IATA and the ICAO WACAF and ESAF Regional Offices participated in the exercise.
- 2.5 The objectives of the exercise include:
 - Demonstrate coordination procedures between all participating parties (ANSPs; ATM ; Centres ; AIS ; VO ; VAACs ; MWOs ; SAR ; Military ; Users).
 - Timely distribution of messages including AIS and MET VONA; VAA/VAG; SIGMET; NOTAM; AIREP messages.
 - Ensure the operational status of telecommunications networks.
 - Evaluate the effectiveness of the team in managing a contingency related to volcanic ash.
 - Check the effectiveness of agreements between neighboring States that may face issues related to volcanic ash when relevant regarding the provision of information on the volcanic eruption.
 - Demonstrate information timely sharing via telecommunications network and internet-based services.
 - Demonstrate transmission of air-reports on volcanic ash in accordance with Annex 3 (Aircraft -> ACC -> MWO ->VAAC).
- 2.6 Provide, recommendations for amendment of the procedures on the basis of lessons learned and conclusions formulated.
- 2.7 The exercise was conducted on a regional basis, from 09:30 to 15:00 UTC on 7 December 2023. The followings were achieved:
 - Representatives from five (5) Volcano Observatory States, MET Watch Offices of four (4) impacted States, Notam Offices from for (4) impacted States, ACCs from four (4) impacted States, representatives from ANSP (ASECNA), Two airlines, IATA and representatives from Civil Aviation Authorities of five (5) impacted States participated in the exercise.

- Satisfactory coordination procedures between participating parties (ANSPs; ATM ; Centres ; AIS ; VO ; VAACs ; MWOs ; SAR).
- Satisfactory distribution of volcanic ash related messages including VONA; VAA/VAG; SIGMET; NOTAM and AIREPs.
- Activation of volcanic ash contingency plans in impacted States and good interaction of Rescue Coordination Centres Search and Rescue Centres.

2.8 Aspects that need to be improved include:

- Need to improve the formats of the NOTAM messages;
- Challenges related to the missing of the ARS from South African /Ethiopian airlines. Need to ensure that airlines are onboard;
- System of some MWOs States is set for SIGMET related to Thunderstorm and doesn't allow SIGMET WV;
- Exercise should focus on the phraseology to ensure the effective application;
- Need to have official notices to have key stakeholders involved in the exercise;
- Need to provide clarity on the role of all key stakeholders, including SAR entities;
- Delay in receiving some messages, including SIGMET was experienced;
- List of distribution should be extended to cover all the relevant recipients;
- Failure of some key stakeholders, including RODBs to participate in the exercise/Teleconference.

2.9 The report providing details of the outcomes will be made available at ICAO ESAF and WACAF websites.

2.10 In accordance with the provisions of the AFI VAA Exercises Operational Instructions, the volcanic ash exercise is conducted every two years in the region. Knowing that the first VA exercise was conducted in 2021 by Cabo Verde and the second VA exercise by The Democratic Republic of the Congo in 2023, the third should take place in 2025.

2.11 In light of the above, the Extraordinary Meeting of the AFI Volcanic Ash Exercise Steering Group, held virtually on 26 July 2024 to discuss the organization and coordination of the next VA exercise, acknowledged Kenya's proposal to be the lead state for VOLCEX 2025.

3. ACTIONS BY THE MEETING

3.1. The meeting is invited to:

- a) Note the information in this paper.
- b) Endorse Kenya's proposal to be the lead state for VOLCEX 2025
- c) Invite the Secretariat to provide necessary support for the organization of the 2025 VA exercise.

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