



**INTERNATIONAL CIVIL AVIATION ORGANISATION**  
***AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)***  
**FIRST MEETING OF THE ATM/MET TASK FORCE (ATM/MET/1)**  
***(Nairobi, 10 – 11 June 2013)***

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**Agenda Item 3: Review and Update The Draft AFI ATM Volcanic Contingency Plan (VACP)**

**VOLCANIC ASH TRAFFIC FLOW DISRUPTIONS**

*(Presented by South Africa ATNS Central Airspace Management Unit (CAMU))*

**SUMMARY**

This Information Paper Discusses Volcanic Ash Traffic Flow Disruptions and the importance of having a VACP in place based on past experiences

Conclusion is at paragraph 3.

**1. INTRODUCTION**

- 1.1 During June 2011 South Africa was unexpectedly exposed to volcanic ash fallout from a Chilean Volcano named Cordon Caulle. The event commenced over a weekend which complicated matters. The South African airspace falls under the jurisdiction of the VAAC in Toulouse, France for volcanic ash predictions as declared by ICAO. South Africa's ATNS CAMU became the focal point for coordination between airlines and predicting the impact of the volcanic ash to air traffic flows. It became apparent that better procedures and information were needed regarding the impact on air traffic and predictability of the movement of the volcanic ash over South Africa. It was evident that the volcanic ash cloud had the potential to disrupt air traffic flows in South Africa as well as the possibility of disrupting arriving and departing regional and international traffic.

- 1.2 There are currently 1500 dormant volcanoes, monitored by the Global Volcanism Program (GVP) based at the Smithsonian Institution National Museum of Natural History in the United States of America. At least 60 of these volcanoes are considered active and, as a result, they affect the aviation community for approximately 20 days in a year.

The mission of GVP is to document, understand, and disseminate information about global volcanic activity and they do this via the Volcano Observatory Notices for Aviation (VONA). The information disseminated, by VONA, may include significant pre-eruptive activity, eruptions, and/or ash in the atmosphere to the Area Control Centres, Meteorological Watch Office (MWO) and the Volcanic Ash Advisory Centres (VAACs).

## **2.1 The ATNS CAMU and the Cordon Caulle Ash Cloud Experience**

- 1.1.1 The CAMU based in Johannesburg, South Africa became the focal point for coordination between the VAAC in Toulouse, airlines, and the other airspace users on sharing information with regards to predicting the impact of the ash. This occurred unexpectedly and commenced over a weekend with little prior experience in this field. The CAMU had to collaborate with the VAAC, Toulouse to establish a better understanding and to develop procedures on volcanic ash prediction and information sharing.
- 1.1.2 From eruption notification, the VAAC Toulouse promulgated the VONA alerting the aviation community of the direction and impact of the ash cloud. South Africa had never been affected by a volcano before and therefore were not prepared for the ash cloud when it started affecting our airspace
- 1.1.3 The VAAC Toulouse issued an advisory, containing date, name of the eruption, position, elevation, Info source, aviation colour code, eruption details, time frames, flight level bands and area bounded by coordinates to the affected ANSP.
- 1.1.4 The CAMU then followed its internal distribution protocols and took appropriate NOTAM and CDM actions with surprised airlines.
- 1.1.5 ICAO Annex 3 has reference for all notification procedures upon fallout and advisories from the VAAC.

## 1.2 Volcanic Eruption Exercises

- 2.2.1 The objective of the exercises will assist the CAMU to evaluate the following processes:
- Collaborative Decision Making (CDM) and its effectiveness to a volcanic eruption and other aviation crises in the region.
  - Response Times – to check the time taken to receive and acknowledge all messages and action relating to the exercise.
  - Notification to end users, to check speed and response times of the associate members when there is a crisis
  - Check comprehension of what is expected of the member states –ATC,MET,ATFM and NOTAM offices
- 2.2.2 South Africa (ATNS/CAMU) should be added to the contact list of AFI countries as listed on the Handbook on the International Airways Volcano Watch - **ICAO DOC 9766**.
- 2.3.2 The CAMU coordination with meteorological services and the VAAC are vital and need to be continuously fine tuned during exercises which might have an impact on further coordination as decided by the Task Force..
- 2.3.4 By way of the responsibilities entrusted to the CAMU it is essential that the CAMU be included in the proposed exercises which should enhance the volcanic ash fall out procedures as well as being of assistance to neighbouring FIR's

## 2. CONCLUSION

### 2.1 In conclusion:

- 3.1.1 ATNS CAMU will be engaging with the South African Weather services (SAWS) and the South African Civil Aviation Authority (SACAA) to develop a coordinated procedure in the event of a fall out that affects national airspace. This procedure will compliment the VACP.

- 2.1.2 ACC's have an obligation to pass air reports from pilots; this process will be streamlined
- 2.1.3 CAMU has supplied the VAAC with two communication channels for advisory over and above the existing met AFTN address, namely the [camuhelpdesk@atns.co.za](mailto:camuhelpdesk@atns.co.za) email and FAJSATFM AFTN address; this will enable prior warning for the unit- CAMU to write an internal procedure of action upon receipt of an advisory that affects ATNS CAMU area of responsibility. This will also compliment the VACP. Neighbouring FIR's should take note.
- 2.1.4 The AFI aviation community should be made aware that volcanic ash has two distinct profiles, the actual ash cloud (hazardous to aircraft in flight), that floats and settles down over time and the nitrogen and sulphur gas (SO<sub>2</sub>/SO<sub>4</sub> that floats higher and higher with time. Distinction should be made between the two and disseminated by at least an AIC as decided by the Task Force.
- 2.1.5 The Ash cloud has an impact on aviation and could disrupt traffic flows while the gases have little or no impact. It is understood that the VAAC will stop issuing advisories as the ash settles. It should be recalled that the impact of the gasses could have an effect on human health however this effect lies with the health organisations.
- 2.1.6 ATNS CAMU will be acting in accordance with the safety risk assessment approach as set out in the draft document "ICAO Management of Flight Operations with Known or Forecast Volcanic Cloud Contamination" while decisions to perform flight operations in the ash contaminated areas will be made by airlines based on their Safety Risk.
- 2.1.7 ATNS CAMU intends to engage or sensitise the regional ICAO office via the Task Force, to look into the possibility of participating and or coordinating participation of SADC in the VAAC biannual VOLCANIC ERUPTION EXERCISES.

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