



International Civil Aviation Organization

**Trans-Regional Airspace and Supporting ATM Systems Steering Group
Third Meeting (TRASAS/3)**

Paris, France, 19 – 20 October 2010

Agenda Item 6: Update on Volcanic Ash Activities

ACTIVITIES OF THE EUR/NAT VOLCANIC ASH EXERCISES STEERING GROUP

(Presented by the ICAO EUR/NAT Secretariat)

SUMMARY

This information paper provides an insight into the activities of the Volcanic Ash Exercises Steering Group of the EANPG COG and NAT IMG, including the conducting of regular volcanic ash contingency exercises and volcanic ash awareness events.

The meeting is invited to support such initiatives within the EUR/NAT Region.

1. Introduction

1.1. The European and North Atlantic Volcanic Ash Exercises Steering Group (EUR/NAT VOLCEX/SG) was established by EANPG COG and NAT SPG in 2008 (Conclusion 41/11 and Conclusion 44/17 refer respectively). The VOLCEX/SG is principally tasked to ensure the continuity of volcanic ash exercises conducted in the EUR/NAT Region, determine the schedule for the exercises and their scenarios, organize volcanic ash awareness events, propose improvements to EUR and NAT Volcanic Ash Contingency Plans, and report the outcome of activities of the steering group to the EANPG COG and NAT IMG on an annual basis.

1.2. Volcanic ash in the atmosphere ignores national and international boundaries, and poses a significant hazard to aviation. An ash cloud will drift wherever the wind wishes to take it on any given day. The eruption of the Eyjafjallajökull volcano in Iceland during April and May 2010 perfectly demonstrated how volcanic ash can spread far and wide, affecting civil aviation operations regionally and globally. Whilst significant eruptions in the NAT Region are relatively rare when compared, say, with other ICAO Regions, eruptions in the far east part of the EUR Region are a more frequent occurrence – particularly those volcanoes in/around the Kamchatka Peninsula of the Russian Federation.

1.3. Preparation for a volcanic ash incident requires investment and resource from many stakeholders to facilitate a collaborative response to such events, however unlikely or rare such events might be considered to be. Safety is the number one priority. Consequently, the activities of the VOLCEX/SG are an attempt to facilitate a regional collaborative response to a significant volcanic eruption by conducting regular exercises in the EUR/NAT Region involving the meteorological (MET) community (MET Watch Offices and Volcanic Ash Advisory Centres), air traffic management (ATM), NOTAM officers, airline operators (AO), volcano observatories, etc.

1.4. The information paper outlines the activities of the EUR/NAT VOLCEX/SG.

(3 pages)

2. Discussion

2.1. Since 2008, the VOLCEX/SG has formally overseen the conducting of two volcanic ash contingency exercises per year in the EUR/NAT Region – typically one in the EUR Region and one in the NAT Region. In 2008, simulated eruptions of Mount Katla (Iceland) and Agua de Pau (Azores, Portugal) were exercised; whilst in 2009, simulated eruptions of Mount Askja (Iceland) and Mount Etna (Italy) were conducted. Most recently, the VOLCEX/SG simulated an eruption of Mount Faial in the Azores. Each exercise has typically lasted one working day (0800 to 1600 UTC).

2.2. Preparations for each volcanic ash exercise start approximately three months in *advance* of the nominated/agreed day with an initial and then final Exercise Directive prepared by the nominated Exercise Leader. The Exercise Leader is typically a member of the VOLCEX/SG. The debriefing takes place approximately three months *after* each exercise. A report is prepared by the Exercise Leader following each exercise comprising the lessons learned and recommendations of participants, and published on the EUR/NAT website¹. The outcomes of the exercises are discussed more fully by the VOLCEX/SG at least annually, with recommendations put forward for EANPG COG of NAT IMG consideration, as appropriate.

2.3. To date, the exercises have demonstrated that the collaborative response to such events (by MET, ATM, airlines, etc) is not perfect within the EUR/NAT Region; but, the situation is greatly improved from that of several years ago, and continues to improve as each exercise is conducted.

2.4. Stakeholders with interests in, or responsibility for, those active volcanoes that pose a threat in/around Iceland, Portugal (the Azores) and Italy, and whom have taken part in the conducting of the regular exercises, now have a much greater awareness of volcanic ash hazards posed to aviation and the contingencies that must be employed to ensure safe and efficient aviation operations. The VOLCEX/SG is agreed that there has been definite and strong progress in recent years, due in no small part to the support of volcanologists, meteorologists, NOFs, ANSPs, ATFM, airline operators, etc in the conducting of the contingency exercises in the EUR/NAT Region.

2.5. That said however, several exercises have demonstrated that the issuance of volcanic ash SIGMET (i.e. aeronautical MET warnings messages for impacted flight information regions (FIRs)) are often lacking in their issuance, content, format, and continuity with neighbouring FIRs. This may result in a complete lack of awareness of the hazard amongst (aeronautical) users, or a misinterpretation/misapplication of the information provided.

2.6. The VOLCEX/SG firmly believes that the collaborative and coordinated response to a volcanic ash incident is paramount to ensure safe and efficient air navigation. This has been perfectly demonstrated during previous exercises, and also during the real eruption of the Eyjafjallajökull volcano in Iceland during April and May 2010. Volcanic ash related information for the international civil aviation community needs to be provided in a timely manner, in required formats, to the necessary recipients via the necessary communication means. During the initial response to an incident, decisions relating to the appropriate contingency measures to implement may have to be taken with limited time, limited information and limited resource. It is important that the information provided by Volcanic Ash Advisory Centres, MET Watch Offices, NOTAM offices, etc, is communicated effectively and efficiently at the beginning and throughout a volcanic ash event.

2.7. Many of the airline operators that have participated in the recent volcanic ash exercises have commented that they have benefitted greatly from being able to identify how their operations would have been affected had the eruption been a real event – for example, the impact of airport closures, closure of airspace, reallocation of resources – airframes and staff, etc. Moreover, participants have identified what improvements are necessary to their own (local) volcanic ash business continuity processes. Similar positive

¹ <http://www.paris.icao.int/Met/index.htm>

comments have been expressed by flow management personnel, air navigation service providers, etc that are participated in the exercises.

2.8. The exercises have also identified how regional guidance material, such as the Volcanic Ash Contingency Plan of the EUR and NAT Region, could/should be improved. Through the work of the VOLCEX/SG, amongst others, the contingency plans have been improved substantially in recent years, and will continue to be updated based on lessons learned and experiences gained from the conducting of regular regional exercises or real events.

2.9. The VOLCEX/SG believes that the awareness of volcanic ash as a hazard to aviation within Central and Eastern Europe should be improved. Since there are no active volcanoes in this part of the EUR Region, it can be all too easy to assume that they will never be affected by volcanic ash. This is entirely the wrong assumption to make, as was demonstrated by the Eyjafjallajökull eruption in April and May 2010, where an ash cloud spread across much of central and eastern Europe, including Russia, within a matter of hours or a few days of the incident.

2.10. The EUR/NAT VOLCEX/SG, at the request of the EANPG COG/47 meeting, has been giving due consideration to facilitating the establishment of volcanic ash exercises in the far east of the EUR Region – e.g. simulating an eruption on Sakhalin or Kamchatka, with an scenario impacting cross-polar, trans-polar, or trans-east routes. For a number of reasons, not least logistical, the VOLCEX/SG has recommended to the EANPG COG/48 meeting that a volcanic ash exercises steering group for the far east of the EUR Region may be necessary to facilitate such an undertaking. Awareness building has to be done from the bottom-up and can take years – as has been demonstrated in the EUR/NAT Region amongst the current members of the VOLCEX/SG, where it has taken some 3 or 4 years for truly coordinated exercises to be organized and executed. In order to increase the level of awareness and cooperation, the Russian Federation and Japan (VAAC Tokyo) are expected to be invited to attend a future steering group and/or exercise planning meeting of the EUR/NAT VOLCEX/SG in order to increase awareness of how the regional exercises are planned, executed and debriefed.

3. Conclusions

3.1. Volcanic ash in the atmosphere ignores national and international boundaries, and can spread over many hundreds or thousands of kilometres in relatively short amounts of time. Excluding eruptions in/around the Kamchatka peninsula, most authorities agree that a further significant eruption, equivalent to or greater than the Eyjafjallajökull eruption of 2010, will occur in the EUR/NAT Region within a matter of months or years, rather than decades or centuries. The response to a volcanic ash incident must be done on a multi-regional and multi-organizational basis. Reaction in isolation is not an option.

3.2. For further information on the activities of the EUR/NAT VOLCEX/SG, including volcanic ash exercise directives, exercise schedule (for the next two years), exercise reports and the Volcanic Ash Contingency Plan of the EUR and NAT Regions, can be obtained via the following URL:

http://www.paris.icao.int/Met/Volc_Ash/index.htm

4. Action by the Steering Group

4.1. The meeting is invited to note the contents of this information paper and support such activities within the EUR/NAT Region.

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