



WORKING PAPER

INTERNATIONAL VOLCANIC ASH TASK FORCE (IVATF)

FIRST MEETING

Montréal, 27 to 30 July 2010

Agenda Item 3: Results of the EUR/NAT VATF Meeting (Plenary)

3.5: Follow-up action including recommendations

EUR/NAT VATF RECOMMENDATIONS FOR THE IVATF

(Presented by the Secretariat)

SUMMARY

This working paper presents a number of recommendations to emerge from the European and North Atlantic Volcanic Ash Task Force (EUR/NAT VATF), based on lessons learned and experiences gained during the eruption of the Eyjafjallajökull volcano in Iceland during April and May 2010, and the consequential disruption to air traffic in the EUR and NAT Regions.

The recommendations herein are proposed for the consideration of the IVATF and its contributory sub-groups.

1. INTRODUCTION

1.1 The European and North Atlantic Volcanic Ash Task Force (EUR/NAT VATF), established by the ICAO Regional Director, Europe and North Atlantic, on 28 April 2010, has prepared a number of recommendations for consideration by the International Volcanic Ash Task Force (IVATF). The recommendations are based on lessons learned and experiences gained amongst MET and ATM service Providers and users in the EUR and NAT Regions during the eruption of the Eyjafjallajökull volcano in Iceland during April and May 2010, and the consequential disruption to air traffic in those Regions.

1.2 The volcanic ash related recommendations are principally those to emerge from the second meeting of the EUR/NAT VATF (8 to 10 June 2010), as well as feedback received at the EUR/NAT Office from EUR/NAT VATF members via correspondence.

1.3 In addition to preparing the attached recommendations, the EUR/NAT VATF drafted a consolidated proposal for amendment to a common Volcanic Ash Contingency Plan for the EUR and NAT Regions (IP/04 refers). The common Plan has consequently been endorsed by the European Air

Navigation Planning Group (EANPG) and North Atlantic Systems Planning Group (NAT SPG). Having completed its deliverables, the ICAO Regional Director, Europe and North Atlantic, took the decision to dissolve the EUR/NAT VATF on 10 June 2010.

2. DISCUSSION

2.1 Appendix A to this working paper provides, in tabulated format, the recommendations to emerge from the EUR/NAT VATF for consideration by the IVATF.

2.2 Each of the recommendations has been aligned, to the extent possible, to the appropriate contributory sub-groups of the IVATF. For example, matters concerning improvements to the volcanic ash notification and warning mechanism are recommended for the consideration of the air traffic management (ATM) sub-group of the IVATF. However, it should be noted that a number of the recommendations cross disciplinary boundaries.

3. CONCLUSIONS

3.1 Having reviewed the list of recommendations presented at Appendix A, the IVATF is invited to consider how best to accommodate the recommendations into the future work activities of the IVATF as a whole and its contributory sub-groups (ATM, airworthiness, science and international airways volcano watch (IAVW) coordination group).

3.2 Accordingly, the IVATF is invited to formulate the following action agreed:

Action agreed 1/... — EUR/NAT VATF recommendations for the IVATF

That, the list of recommendations to emerge from the European and North Atlantic Volcanic Ash Task Force (EUR/NAT VATF), as presented at Appendix¹ to this report, be addressed, as appropriate, by the relevant sub-groups of the IVATF in time for the IVATF/2 Meeting.

4. ACTION BY THE IVATF

4.1 The IVATF is invited to:

- a) note the contents of this paper; and
- b) endorse the draft “Action Agreed” contained therein.

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¹ In Appendix to this working paper.

APPENDIX

EUR/NAT VATF RECOMMENDATIONS FOR THE IVATF

IVATF sub-groups ²	Principle tasks of each IVATF sub-group ¹	EUR/NAT VATF recommendations for the IVATF sub-groups ³
IVATF as a whole	<ul style="list-style-type: none"> • Determine (chronologically) what occurred after the eruption (the reaction to the event by various stakeholders); identify what needs to be done next; and • Assess existing (regional and global) guidance in light of the Icelandic eruption experiences. 	<ol style="list-style-type: none"> 1.1. Determine the number of ash concentration levels to be used taking into consideration the operational requirements, scientific observation and forecast capability, and the need for safety and efficiency; 1.2. Re-evaluate PANS-ATM Doc 4444 paragraph 15.8 (principally 15.8.3) in view of permitting operations in airspace where ash contamination exists within safe/tolerable levels; 1.3. Consider whether the <i>Volcanic Ash Contingency Plan – EUR and NAT Regions</i> could be used as a template/model for other ICAO Regions; 1.4. Determine need for new or improved SARPs and/or guidance when: <i>entire</i> FIRs are contaminated by volcanic ash; volcanic ash is just entering an FIR; and/or the re-suspension of volcanic ash occurs (i.e. windblown ash) affecting an aerodrome or FIR;

² Extracted from ICAO State Letter reference AN 10/18.3-IND/10/5 (*Establishment of the International Volcanic Ash Task Force (IVATF)*) issued 18 May 2010.

³ Based on the outcome of EUR/NAT VATF/2 meeting and feedback received at the EUR/NAT Office from EUR/NAT VATF members via correspondence.

Air Traffic Management (ATM) sub-group	<ul style="list-style-type: none"> • Assess contingency procedures and reporting criteria to detect and mitigate; and • Review existing notification and warning procedures in light of the Icelandic eruption experience. 	<p>1.5. Determine common methodology for simplifying complex airspace descriptions for dissemination by SIGMET, NOTAM/ASHTAM, or when defining Danger or Restricted Areas;</p> <p>1.6. Develop guidance to aid the decision making process when contamination may be considered ‘unsafe’, and when airspace and/or aerodromes should be closed and re-opened;</p> <p>1.7. Develop guidance relating to the use of alternate aerodromes when large areas of airspace contamination exist or for aircraft in emergency situations;</p> <p>1.8. Consider standardization and possible aggregation of SIGMET and NOTAM for warning of airspace contamination (including ash concentration), and re-evaluate the utility/application of ASHTAM;</p> <p>1.9. Evaluate the acceptability of referring operators to public Internet sites where detailed information concerning volcanic ash activity is provided;</p> <p>1.10. Consider whether the current provision of volcanic ash advisory information <i>at least once every 6 hours</i> (valid T+0 to 18 hours) is sufficient to meet current and future user needs – consider longer term planning products (T+0 to T+30 hours); increased temporal resolution (particularly between T+0 and T+6); increased frequency of issuance (at least every 3 hours), etc;</p> <p>1.11. Determine whether a central repository and information sharing scheme could be established for air (“pilot”) and maintenance reports related to volcanic ash encounters;</p> <p>1.12. Consider how to improve the submission of Volcanic Activity Reports (VAR) by clarifying the distribution mechanism to ensure that all concerned stakeholders receive the information in a timely and efficient manner;</p>
Airworthiness (AIR) sub-group	<ul style="list-style-type: none"> • Develop the acceptable level(s) of ash concentration for safe aircraft operations in contaminated airspace; establish regulatory provisions required for the level(s) identified. 	<p>1.13. Determine what types of airspace contamination might be hazardous (or not) to aviation taking into consideration particle size, ratio, chemical composition, etc;</p> <p>1.14. Determine commonly agreed threshold values and terminology (e.g. low/medium/high or light/moderate/severe) for each level of airspace contamination;</p>

Science (S) sub-group	<ul style="list-style-type: none"> Determine ways and means to improve ash detection/ avoidance systems 	<p>1.15. Determine the need for near real-time calibration and verification systems based on quantifiable data from in-situ and well-established airborne, ground and space-based remote sensing systems;</p> <p>1.16. Establish standards and specifications related to volcanic ash observations and measurements;</p> <p>1.17. Determine a suitable mechanism whereby the feed of volcanic ash observations and measurements to the VAACs can be enhanced in order to improve the timely and efficient data assimilation in dispersion modelling;</p> <p>1.18. Identify a commonly agreed definition for ‘visible ash’ and the methods used to determine it (e.g. satellite image wavelength, remote sensing technique, etc);</p> <p>1.19. Consider whether Eulerian dispersion models or ensemble forecasting techniques could be used to predict the dispersion of volcanic ash. Such modelling could reduce the uncertainties in model initialization (source parameters) and better identify ‘levels of confidence’ in the model output;</p>
IAVW coordination group	<ul style="list-style-type: none"> Identify any additional work related to the improvement and harmonization of dispersion models (including eruption source parameters), required to be undertaken by the IAVWOPSG; Identify the need to refine the existing VAG charts in the PNG format, with the view of mapping areas of ash contamination according to the level of ash concentration. 	<p>1.20. Determine whether all VAACs are in a position to produce and disseminate ash concentration guidance charts and coordinate data (akin to that provided by the meteorological office co-located with VAAC London) and develop a draft amendment to ICAO SARPs accordingly;</p> <p>1.21. Determine common user requirements with regards to the vertical segmentation (i.e. vertical layers) of ash advisory and concentration information that would allow more effective use of non-contaminated airspace above and below the expected contamination areas – to better support airport, terminal manoeuvring area and en-route flight operations;</p> <p>1.22. Determine feasibility of observing and forecasting different types of airspace contamination (e.g. gas versus hard particles), and identify how less hazardous phenomenon to aviation, such as steam, could be relayed to airspace managers and users.</p>

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