

**Report on the actions undertaken in the context of the impact
of the volcanic ash cloud crisis on the air transport industry**

1. INTRODUCTION

1. The impact of the Eyjafjallajökull eruption in Iceland on the air transport industry was huge and required urgent action at EU level, including in areas under national competence for which there was a strong need for coordination.
2. An extraordinary Transport Ministers Council was organised by the Spanish Presidency on May 4th in which conclusions were unanimously agreed on the basis of a report made by the Commission. These conclusions required several immediate actions to alleviate the situation (including an update and an improvement of the risk assessment and risk management in such crises as well as the definition of binding limit values, at EU level, defining the safety envelope of engines and aircrafts as regards the risk of volcanic ashes) and more structural measures (notably the acceleration of the Single European Sky, the assessment of the application of the Air Passenger Rights legislation, and the development of a pan-European mobility plan applicable in case of crises).
3. The present report aims at giving to the Ministers an overview of the situation and progress made with regard to the specific actions identified. It is permanently under review according to the evolution of events.

2. THE AVIATION CRISIS : THE EU MEASURES TAKEN SO FAR

4. According to the Council Conclusions, the following actions and areas of priority were agreed:

2.1. Definition of a new European methodology and a coherent approach for safety risks assessment and risk management

5. Since the irruption of the ash cloud in EU skies, several decisions have been taken on the application of new procedures following Eurocontrol advice and the expertise of the Volcanic Advisory Ash Centers (VAAC). Indeed the Eyjafjallajökull eruption and its consequences for air transport showed how important the quality of technological and data support is to enable an appropriate risk assessment and decision making process in cases of incidents and events with potential effects on a large geographic scale and on such complex systems with high safety requirements as in air transport.
6. On 19th April 2010, the Transport Ministers initially agreed on new measures which created three areas defined according to the risks for flights (the so-called "option 3" scenario):
 - A first zone located in the central nucleus of the emissions ("no-fly zone"), including a 60 nautical miles buffer zone, in which is maintained a full restriction of operations.

- A second zone which in principle does not impede air traffic operations being carried out, even though there are still amounts of ash. Within this zone, the decisions about operations will be taken in a coordinated manner by the authorities of the Member States.
 - A third zone with no restrictions of any type to the operations as it is not affected by the ash.
7. Since then, further work has been done, demonstrating the effectiveness of the model used to determine the areas where ash concentration could be above engine tolerance levels. For that reason, as from noon on May 11th, the 60 nautical mile 'Buffer Zone' which was initially added to the proposed no-fly zone was removed.
8. Moreover, EASA has in this period published two associated Safety Information Bulletins (SIB):
- Bulletin 2010-17 issued on 22 April - guidance for aircraft inspections and incident reporting
 - Revised EASA SIB 2010-17R2 on 21 May - incorporation of European zones naming, and reference to VAAC charts (including associated threshold levels)
9. On this basis, in agreement with the EU Presidency and the European Commission, Eurocontrol informed on 21st May that the London VAAC would publish charts at six hours intervals, indicating three levels of predicted ash concentration:
- No Fly zone (black): airspace in which flights are being prohibited following EASA recommendations (ash concentration level above 4000 microgrammes/m³). Notifications of these closures are being coordinated through the Eurocontrol Central Flow Management Unit (CFMU).
 - Enhanced Procedures Zones:
 - (a) a grey zone in which two different approaches for flights operations are recommended by EASA under certain conditions (ash concentration level between 2000 microgrammes/m³ and 4000 microgrammes/m³). States will publish the approach and conditions being applied in their area of responsibility.
 - (b) a red zone, commensurate with the 'second zone' as identified in the Transport Ministers meeting of 19th April (ash concentration level between 200 microgrammes/m³ and 2000 microgrammes/m³).
 - Normal zone (white), with no restrictions (ash concentration level below 200 microgrammes/m³).
10. This system is the one currently applied for the whole EU airspace. It has proven its efficiency on the basis of the information provided by the relevant VAACs and has allowed the greater access to the European airspace, while fully guaranteeing the highest level of safety. According to these recommendations, Member States are in a position to exercise their responsibilities over their airspace and take decisions relating to the closure of airspace on the basis of the available information in a way agreed throughout the EU for all flights.
11. The application of this system has permitted to maintain a high and uniform level of safety. More than 250,000 flights have been conducted in the Normal Zone and Enhanced Procedures Zones since the Volcano erupted and reported without any safety issue. The encounters that may happen are continuously being reported and

verified by the European Aviation Safety Agency (EASA) and only two ash related encounters were reported as of 28 May 2010. None of the reported events have resulted in any finding that EASA considers affecting the safety of the flight and the aircraft were returned to service after inspection.

12. The Commission, in close cooperation with Eurocontrol and the Member States will continue to closely monitor the system taking into account further developments.

2.2. Establishment by the relevant authorities responsible for flight safety of binding limit values, at EU level, which clearly define the safety envelope of engines and aircrafts as regards the risk of volcanic ash

13. Aircraft and engines manufacturers have the primary responsibility for defining the safety envelope of their products and provide adequate instructions for the continuing airworthiness thereof. In the absence of a defined certification standard for volcanic ashes, it has been difficult to obtain full information on the performance of aircraft and engines operated in airspace contaminated by volcanic ashes. Aircraft and engine manufacturers' experts have nevertheless agreed on a tolerable limit for actual ash concentration levels up to 4 000 micrograms/m³. This limit is based on evidence gained in this and previous ash encounters and contains a large margin of safety relative to those incidents known to have immediate consequences on flight safety (estimated to be in the region of 2 000 000 micrograms/m³ or 2 g/m³). This acceptance led to the definition of an “Enhanced Procedures Zone”.

14. The European Aviation Safety Agency (EASA) has developed an action plan to overcome the current absence of adequate certification of aircraft and engines in relation to volcanic ashes and establish appropriate measures to ensure the aircraft remain airworthy. Its principal elements are:

- The publication of two revisions of a dedicated Safety Information Bulletin (SIB) containing interim recommendations to ensure the safety of flights within the current 3-zone model in case the manufacturers would not have issued specific instructions for continuing airworthiness. These recommendations entail in particular an enhanced inspection program for aircraft and engines flown into airspace known to have to contamination with ashes and the reporting of any encounter. The Agency is ready to prepare further revisions as necessary to clarify the provisions related to the implementation of the current model, such as the clearance flights, and to adapt to the developments of the model
- Immediate actions in the field of airworthiness which are of its direct competence, in order to ensure that the certification process of new engines or major changes to existing engines addresses the issue of possible contamination with volcanic ashes. A rulemaking task was initiated in order to review and adapt the existing certification specifications to include specific requirements to mitigate the risk of contamination by volcanic ashes.
- In spite of the difficulties to establish with the necessary legal and scientific certainty limits of binding nature for the safety envelope of aircraft and engines as regards the risk of volcanic ashes, work is in progress towards such an objective. Actions are taken to coordinate test flights in order to identify possible limits for acceptable contamination with volcanic ashes, and to exchange test flight results.

2.3. Enhancement of the relevant technological and methodological tools in view of the ICAO Assembly

15. In conjunction with the action to develop a coherent approach to safety risk assessment and risk management, and wanting at all costs to avoid duplication of existing efforts, the Commission has taken steps to identify current technological and methodological tools being used to support this process, whilst equally having proceeded with an initial overview of research and technology projects in the pipeline (Joint Research Centre (JRC) preliminary report 4 May). The purpose of this exercise is to identify what can be of use in the short-term to optimise this risk assessment and risk management process, whilst equally identifying the next steps in the mid- and long-term for further enhancements.
16. Further work and consolidation will take place in coordination with JRC, the Research General Directorate and EASA, as well as the use, on an ad hoc basis, of available EU and international expertise where deemed appropriate. A joint workshop is planned for 21 June 2010.
17. Results of this work, as well as the output from the other activities outlined above, will sustain the European contribution to the work currently being undertaken by the ICAO EUR/NAT Volcanic Ash Task Force in reviewing the 'Volcanic Ash Contingency Plan' that formed the basis for the decisions to close airspace in the early days of the crisis, as well as the ICAO International Volcanic Ash Task Force whose work is set to start with its first meeting on 27-30 July and that aims to focus on a more holistic and sustainable problem solving process. The Commission is participating in both of these activities alongside EASA and Eurocontrol, the aim clearly being to ensure the necessary level of consistency between the various outputs so as to avoid the resurgence of fragmented approaches.
18. The revised ICAO EUR Volcanic Ash Contingency Plan is expected to be finalised and endorsed in the course of the month of June, and will in itself constitute an important contribution to the future discussions and activities of the ICAO International Volcanic Ash Task Force, in view of an EU initiative for the ICAO General Assembly on September 2010.

2.4. Acceleration and anticipation of the full implementation of the Single European Sky.

19. The crisis showed the crucial importance of a better integration of the EU airspace through the Single European Sky (SES) initiative. The acceleration of its implementation has been given the highest political priority by the Council on May 4th.

2.4.1. Immediate creation of a crisis coordination cell:

20. Already in the first days of the presence of an ash cloud in the EU airspace, an ad hoc crisis cell has allowed the coordination with the Commission, Eurocontrol, the Presidency and the stakeholders. EASA has participated to several of these meetings. Nevertheless, as highlighted by the Council conclusions, all these efforts had to be formalised through the creation of a formal structure which could coordinate in the case of a sudden crisis affecting the EU airspace in order to react immediately and take the appropriate initiatives. This European Aviation Crisis Coordination Cell (EACCC) is effective as of 11 May 2010.
21. The main role of the EACCC is to facilitate the management of crisis situations affecting aviation in the European region. It is activated when unexpected

circumstances would affect significantly the environment of operations. The EACCC has responsibilities to alert, take initiatives and propose measures to manage the crisis and to coordinate the implementation of these measures. The EACCC has to inform adequately the aviation community (decision makers, airspace users and service providers).

22. The European Commission, together with Eurocontrol, supported by EASA, are in charge of steering the management of the crisis. The Chairmen of the EACCC are the Head of the Single European Sky Unit (DG Mobility and Transport in the Commission) and the Director of CFMU in Eurocontrol. According to the circumstances they trigger the mechanism and appoint the Crisis Cell Operations Manager who manages the crisis on their behalf.
23. The permanent Members of the EACCC ("Core Group") are the 2 Chairmen, the Crisis Cell Operations Managers, EASA representative and nominate representatives of Airspace users, Air Navigation Service Providers (ANSPs) and airports. The membership is supplemented by nominated representatives of ICAO, national regulators and NSAs, Military, Aircraft manufacturers, MET offices and VAACs or other similar bodies dependent on the type of crisis, as well as other entities/experts which may contribute to the management of a specific crisis. Member States must be duly informed and shall contribute to the EACCC's work.
24. Coordination activities of the cell took place during May linked to the issuance of the EASA SIB 2010-17R2. The last "Core Group" meeting of the EACCC took place on June 3rd to evaluate the situation. It took note of the reduction of activity of the Eyjafjallajökull.

2.4.2. Nomination without delay of the Functional Airspace Blocks (FABs) System Coordinator:

25. At the request of Member States or third countries, the Coordinator will facilitate and speed up the establishment of FABs upon the request of Member States. The nomination of Mr Georg Jarzembowski as the Coordinator received the support of the Single European Sky Committee on May 7th. The formal nomination is expected shortly and will be effective until at the latest 4 December 2012, deadline for the establishment of FABs.

2.4.3. Accelerated implementation of the FABs:

26. The European Commission will work with the Member States to ensure an accelerated implementation of the FABs. FABs need to be established as soon as practicably possible without waiting for the December 2012 deadline. The European Commission will accelerate the adoption of implementing rules for the information to be provided before the establishment and modification of FABs. General guidance material will also be issued. Both deliverables are expected in the fall of 2010.

2.4.4. Appointment of the European network manager before the end of 2010:

27. The European Network manager will play a key role in order to ensure the most efficient and coordinated use of the European airspace. The draft implementing rule for its appointment will be the subject of a first stakeholders' consultation on 10 June in view of its adoption during the last quarter of 2010.

2.4.5. Adoption before summer 2010 of the performance scheme (Performance implementing rule and designation of the Performance Review Body):

28. On proposal by the Commission, the Single European Sky Committee has given on 7 May its support to:

- The draft Commission Regulation setting up the performance scheme, based on the setting of binding targets in the areas of safety, environment, capacity/delay and cost-efficiency,
- The decision designating Eurocontrol (through its Performance Review Commission) to exercise the functions of Performance Review Body (PRB) assisting the Commission in the implementation of the performance scheme.

29. They are now following the normal procedures for being formally approved by the Commission in the coming weeks.

30. In parallel a Call for interest for the selection of the Chairman of the PRB has been published on 8th June 2010. This will allow the concrete entry into force of the performance scheme on 1st January 2012 as requested by the legislator.

2.4.6. Acceleration of the implementation of EASA's new competences, particularly on ATM, to be assumed before 2012:

31. EASA issued on 28 May 2010 two opinions to the Commission on the extension of competences to ATM.

- EASA Opinion 02/2010 'for a Commission Regulation on common requirements for the provision of air navigation services, as regards working methods and operating procedures AND for a Commission Regulation on safety oversight in air traffic management and air navigation services', as well as the Draft Regulations on ANSP (ATM.001) and on safety oversight (ATM.004)
- EASA Opinion 03/2010 'for a Commission Regulation laying down implementing rules for the licensing and medical certification of air traffic controllers'

32. The Commission intends to use these opinions as a basis for draft measures to be presented in the coming months.

2.4.7. Adoption of the SESAR deployment strategy before the end of 2010:

33. The work is ongoing, notably through the associated financial and evaluation studies. The study on the deployment of SESAR has been launched in March 2010. A preliminary report is expected by end-June, and the target for submitting recommendations to the Council is before the end 2010.

2.5. Regulation on Air Passengers' rights

34. The Commission has done its utmost to ensure that, in accordance with the conclusions of the extraordinary Council on 4 May 2010, the rules on Air Passenger Rights and notably (EC) Regulation 261/2004 are applied and enforced in a uniform and harmonised way everywhere in the EU. To do so the Commission has kept close contacts with both stakeholders and national authorities. A series of meetings have been held with all competent national enforcement bodies (NEB) and industry. Following a Commission's questionnaire, the Commission has received replies from the stakeholders about the impact on the industry. Further to these exchanges of information, the Commission has prepared with NEB a working document

summarising the most recurrent questions linked to the volcano crisis and a suggested line of interpretation.

35. The Commission has also started preparing the necessary steps to evaluate -in the process of the review of the Regulation- the lessons learnt from the volcano crisis, in order to avoid putting an excessive and unfair burden on the aviation industry whilst ensuring at the same time that passengers are not left alone in bearing the financial cost and the inconvenience of natural catastrophes such as the volcano eruption. The outcome of this reflection will be taken into account in the Communication on the implementation and possible review of Regulation 261/2004 to be adopted in autumn 2010.

2.6. Application of the EU air transport legislation: operational flexibility, ETS, slots.

36. Given the need to facilitate the speedy and efficient repatriation of stranded passengers, the Commission said that it would not object if Member States consider allowing additional flexibility in the application of operational restrictions. Such flexibility should have been strictly restricted to the transition period needed to ensure the return to normality. It appears that no specific problems have been reported in the application of such flexibility.

37. The Commission also stated that the recent events from the volcano will have no effect whatsoever on the total size of the emissions cap for aviation under the EU ETS. It acknowledged that the reduced activity over the past week could in principle affect the distribution of free allowances between aircraft operators. However, it considered that such relative distributional impacts are likely to be small as most operators have been impacted by the flight restrictions. Flights cancelled throughout the year for other reasons, such as strikes, forest fires and severe weather could also lead to distributional impacts. However, the Commission is ready to examine the long term effects.

38. The Commission services also recommended slot coordinators to take into account the effects of the crisis, so that airlines can keep slots which are not used during the crisis and the period immediately afterwards, due to the "unforeseeable and unavoidable circumstances" as foreseen under article 10(4)(a) of the Slot Regulation (closure of the airport or the airspace. To this end, the Commission organised on 28th May a meeting with the core group of the European Airport Coordinators Association (EUACA) who acknowledged that the disruptions caused by the ash cloud are affecting the use of slots. They agreed that the non-use can still be justified under the Slot Regulation (serious disturbance of operations) and, as a result, that some flexibility can be allowed to airlines.

39. The Commission services will keep close contacts with the coordinators in order to avoid divergent interpretations of article 10(4). In the context of a possible revision of the Slot Regulation, the Commission services will consider the possibility and options to have, in the future, specific procedure to deal flexibly, jointly and swiftly with crisis situations.

2.7. Potential compensations

2.7.1. Application of the rules on State aid

40. As regards the application of State aid rules, the Commission announced in its information note of 27 April 2010 that it could prepare a Communication clarifying

the requirements to be fulfilled to provide State aid measures and discuss it with Member States so as to achieve a proportionate and coordinated response.

41. Against this backdrop, the Commission notes that it has not received any related State aid notification so far. So as to avoid prejudging Member States' decisions in that respect, the Commission has abstained to adopt such Communication to date.
42. In this context however, it is worth mentioning that Member States may implement, where necessary, supportive measures that do not constitute State aid such as, for instance, the granting of loans or guarantees under market conditions, which can be implemented without delay.

2.7.2. Availability of EU funds

43. Following demands made by several delegations during the extraordinary Transport Council of Ministers, the Commission has assessed whether EU financial assistance could be provided on the basis of existing EU financial instruments. The results of this analysis show that existing EU funds cannot be mobilised for compensating the economic losses due to the closure of various parts of the EU airspace.

2.7.2.1. The European Regional Development Fund

44. The European Regional Development Fund may finance the preparation and implementation of long-term measures to prevent and cope with natural and technological risks as well as reconstruction measures after natural disasters, e.g. in infrastructure. In the ash cloud crisis, there was no damage to infrastructure.

2.7.2.2. The EU Solidarity Fund (EUSF)

45. The EU Solidarity Fund supplements only public expenditure by the Member States in the event of major natural disaster. It allows all Member States to show solidarity with one or a few Member States confronted with a major disaster. It aims at enabling "the Community to act swiftly and efficiently to help as quickly as possible in mobilising emergency services to meet people's immediate needs and contribute to the short term restoration of damaged key infrastructure so that economy activity can resume in the disaster-stricken regions".
46. Indeed, the aim of the Fund is to complement the efforts of the States concerned and to cover a share of their public expenditure in order to help the beneficiary State to carry out the essential emergency operations, depending on the type of disaster. It covers:
 - the immediate restoration to working order of infrastructure and plant in the fields of energy, water and waste water, telecommunications, transport, health and education;
 - the temporary accommodation and funding rescue services to meet the immediate needs of the population concerned if there are serious repercussions on living conditions;
 - the immediate securing of preventive infrastructures and measures of immediate protection of the cultural heritage;
 - the immediate cleaning up of disaster-stricken areas, including natural zones.
47. Thus, it does not appear that the EUSF can be used to compensate the economic damage suffered by the industry.

2.7.2.3. The Civil Protection Mechanism and Financial Instrument

48. The Community Civil Protection Mechanism and the directly linked Civil Protection Financial Instrument cover European civil protection and address disaster prevention, preparedness and response. In relation to the volcanic ash cloud crisis, the Civil Protection Mechanism was activated with the aim to take stock of the situation and consider what type of assistance might be needed for stranded passengers (medical or accommodation). However, not many concrete actions were undertaken.
49. The Civil Protection Financial Instrument has a limited annual budget (€26 million in 2010). Support under this instrument can be used only when all other options available to Participating States are exhausted. This is not the case in the recent ash cloud crisis. Under the Instrument, co-financing of transport in the context of a civil protection operation would have been eligible, e.g. for the transport of passengers, medical evacuation and related civil protection measures, upon prior application. This could also have included assets for the repatriation of passengers by Participating States. During the ash cloud crisis, however, no requests were made by Governments prior to actions taken.

2.8. Structural measures to favour a robust and interlinked European transport System

50. The closure of the European airspace following the volcanic eruption in Iceland has shown the vital importance of a modern integrated transport system in which, if one mode of transport can not deliver, other transport modes can quickly substitute in the interest of passengers. The crisis raised several questions about the possibility to evacuate and repatriate smoothly stranded passengers, notably the need to activate emergency measures and promote better intermodality between air services and other modes of transport, notably rail.
51. Following the Transport Council of 4 May 2010, the Commission has examined whether emergency response mechanisms already exist at national and European levels, and how they could have been better activated during the recent ash cloud crisis.
52. As previously mentioned, the main tool is the Monitoring and Information Centre (MIC). Nevertheless it appears that it was not considered necessary by Member States to call upon assistance through the MIC. When assessing the existing emergency mobility plans, the Commission will explore with the Member States the reasons for this and the potential shortcomings in terms of coordination.
53. Simultaneously, the Commission has started an overall consultation with stakeholders and Member States to determine objectively what have been the main obstacles to the organisation and deployment of alternative solutions to pan-European mobility of passengers and goods in the recent ash cloud crisis. Following letters sent by Vice-President Kallas on April 28th, brainstorming meetings with stakeholders will be organised in the course of June. Moreover a first meeting with the transport experts of Member States is foreseen on 22 June 2010 in order to assess the existing measures and identify the needed improvements.
54. It already appears that the Mobility plan should concentrate in particular on the following points:
 - Existence and activation of national or regional emergency plans to cope with such situations like natural disasters, including for cross-border areas

- Effective contingency plans allowing, when necessary, the rescheduling of the traffic and the mobilisation of all available rolling stock and personnel. The main obstacles will have to be identified.
- Improvement of the intermodal coordination with better rail/air interconnections and possibly common information and retailing systems allowing seamless intermodal rerouting of passengers, including the role of TEN-T infrastructure.
- Development of systems to allow re-booking for passengers, exchangeability of tickets, mutual exchange of schedule information between air and rail, optimisation of schedules.
- Role of innovation to the competitive mobility.

55. On this basis, the Commission's services will prepare for this autumn a document to be submitted to Member States with an analysis of the situation and concrete scenarios for the future. Immediate possibilities of further cooperation and mid-term evolutions will be properly assessed.

3. CONCLUSIONS

56. The Commission has deployed all its efforts and taken concrete measures in order to implement without delay the Transport Ministers Council's conclusions.

57. In the coming months, the Commission will actively pursue:

- The development of an EU methodology for risk assessment and risk management, in close cooperation with Eurocontrol and the Member States, Efforts will focus on the improvement of the quality of information and measurement systems and the most efficient methodology to take decisions.
- The definition as fast as possible by relevant Safety authorities of binding limit values at EU level for the impact of ash concentration on engines.
- In view of the ICAO General Assembly of September 2010, the preparation of a coordinated draft EU position on methodological tools for risk assessment and management in case of volcanic eruptions. The draft paper will be submitted to the Council on July 2010.
- The acceleration of the implementation of the Single European Sky. Important steps forward have been made in the last weeks. It is of primary importance to maintain the priority to the full implementation of the various measures needed to the realisation of the Single European Sky and, in particular, the nomination of the Network Manager function which will ensure a more effective and more coordinated management of the European airspace.
- The review of the Air Passenger Rights legislation in order to take fully into account the recent events and the need to update and clarify the legislation to strike the balance between the exceptional circumstances in case of natural disasters and the need to ensure that stranded passengers are afforded adequate treatment.
- The assessment of the potential shortcomings in the needed cooperation between Member States and modes of Transport to face emergency situations and potential solutions. The Commission will present this autumn a report on the improvements at short and medium term towards a pan-European mobility action plan.

58. The Commission will also establish in the coming weeks an Aviation Platform gathering all aviation stakeholders at European level. It should be able
- To follow-up to the crisis measures and, beyond the present situation,
 - To work closely with all air transport actors on all initiatives that have an impact on the sector.

The Aviation Platform should have its first meeting at the beginning of the autumn 2010 and will be a permanent structure allowing effective interaction with the stakeholders to define and address the challenges for the coming years.

59. The Commission will continue to permanently monitor the situation and reserves the right to take any initiative where necessary. It will duly inform the Council and the European Parliament.