

## Eighth session Global actions – Steps to be taken

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**Atlantic Conference  
on Eyjafjallajökull and aviation**

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Ressources, territoires et habitats  
Énergie et climat  
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## ***15 April, the ash cloud brought to chaos air traffic in France***

- All main airports closed up to five days, including Paris Charles de Gaulle and Paris Orly hubs.
- Many European airspaces closed, leading to a lengthy disruption of airlines networks.
- No previous experience of such a situation and insufficient knowledge of the phenomena.

## ***A crisis with huge consequences***

- 15000 flights, departing or landing in France, cancelled.
- 1,8 million passengers grounded, sometimes trapped in a terminal.
- 150000 people, somewhere in the world, unable to flight back to France for a week or more.
- At least, 168 millions Euros of losses for French airlines, 20 millions Euros for DGAC.
- Affecting other transport modes (rail, road) and neighbor countries.



## ***We first followed all ICAO provisions***

- Any ash area, as determined by the competent VAAC, must be avoided.
- “Zero tolerance” guidance applied to prevent airliners of any ash encounter.
- Public transport and IFR operations were forbidden within the ash cloud.

## ***Then, we began to consider traffic restrictions could be not appropriate***

- We were not notified of ash encounter report, or in-flight observation of ash layer from VFR flights (which were never grounded). Satellite pictures did not confirm plume residues.
- We gained more information about the numeric dispersion models used by London and Toulouse VAACs.
- We joined a series of teleconferences, lead by UK CAA, where aircraft manufacturers, scientists, authorities and aviation experts provided explanations and tried to set a tolerable ash density limit.
- France is far away from the volcano and our skies were contaminated only by ash erupted several days before, most probably diluted.



## « Test » flights and corridors concept

- On 18 and 19 April, four airlines flew between Paris and some airports in the south of France “test” flights, without passengers, through predicted ash. All these aircraft were found free of any damage or deposit after a deep post flight inspection including boroscopic check of engines.
- On 20 April, a new series of “test” flights was successfully performed between main French airports and some others destinations (Amsterdam and London) in order to explore corridors.
- These corridors were immediately used by passengers flights to join Paris to Toulouse, Bordeaux, Marseille and Nice where many long haul flights have been diverted. Each aircraft was carefully checked after every leg. By sampling, some of them were stopped for a deep inspection including boroscopic check of at least one engine. No event, no ash encounter at all.
- On 21 April, “test” flights were used to open corridors towards Strasbourg, Amsterdam and London.



## *The 2 mg/m<sup>3</sup> ash density level agreement, a step forward*

- On 19 April, Eurocontrol proposal was agreed by EC Transport ministers;
- On 20 April evening, experts agreed that flights can be safely operated in low contaminated airspaces (less than 2mg/m<sup>3</sup> limit).
- On 21 April all French airports, all French airspace were declared opened to traffic, which slowly resumed.
- When new density charts (showing the 2mg/m<sup>3</sup> limit), were published by London VAAC on 22 April, large part of France were outside the red zone.
- Taking care of EASA SIB, DGAC issued a “consigne opérationnelle” (OPS directive) setting specific inspections and maintenance actions applying to any French registered aircraft operated through an actual or predicted ash contaminated airspace. Sampling and trend monitoring methods are an alternative mean of compliance and risk assessment was introduced.
- Few days later, major manufacturers began to issue guidance for enhanced maintenance procedures when an aircraft flies through low density ash area.



## ***The European aviation system was not ready to this disruption***

- No previous experience
- Few expertise available, specialists networks not organized /linked together
- No technical data about aircraft tolerance to ash ingestion
- Lack of means to obtain real-time physical measurements of the position, the height and the density of the ash cloud.
- Some lack of coordination between organisations / authorities involved
- Unclear responsibilities between States and European bodies

## ***Immediate actions were appropriate for air safety but are leading to a financial collapse***

- Following ICAO recommendations, London VAAC provided ash contamination charts.
- National authorities reacted by closing airspaces and airports.
- Airlines were grounded, air traffic was totally disrupted.
- Passengers were trapped and try to rush to an other mean of transportation, adding to disorganization.



## *A better handling during the second phase of the eruption, mid May*

- We have now a first experience
- We have some tools, list of actions and guidance from European organisations
- There are effective coordination networks in Europe
- Experts are working to improve the procedures

## *No major difficulty in France*

- Airspace and airports were kept open. No disruption of traffic.
- Test flight procedure was used on 8 May when some spots of medium contamination were predicted in the south of France, allowing more than 800 flights to safely operate across this area.
- Our “Consigne opérationnelle” remained in force, under a revised version published on the 9 May.
- We got some ash observations and contamination reports. When appropriate, aircraft were inspected. But no significant damage or safety concern was identified.



## ***Strong need to improve prediction of ash contamination***

- VAAC charts details should present multiple levels of concentrations, more flight levels layers and FIR boundaries.
- VAAC charts should be issued every 6 hours.
- Use of satellite imagery, to confirm or to amend, dispersion model prediction chart should be generalized.
- Data collected by LIDARs provide essential information about vertical dispersion of ash. Promotion of LIDARs, gathering and sharing in formations through a network could be very useful for ATM, specially in the vicinity of main airports.
- Crew and maintenance engineers reporting must be promoted.

## ***Engines and airframes ash tolerances***

- Research and experts work must go on to determine effects of volcanic ash on an aircraft.



## *Air Traffic Management and airlines operations*

- Enhanced coordination in EUR and NAT regions is a need, based on ICAO revised contingency plans.
- Eurocontrol must continue to play a key role, organising and regulating flows of traffic.
- Implementation of Single European Sky

## *International coordination of actions*

- European Commission, Eurocontrol, EASA are involved in Europe.
- ICAO must keep the leadership by supporting the International Volcanic Ash Task Force and publishing a revised Annex 3.



*Thank you for your attention*

