Risks to the aviation network

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Volcanic Ash – a risk to aviation

- **2006 – 2008**
  - Volcanic Ash Exercises Conducted to better prepare for a real event
  - Expanded to airlines in 2008
- **2008**
  - ICAO EUR and NAT Regional Planning and Implementation Groups formalized process and developed terms of reference to a group called VOLCEX/SG that:
    - Conduct exercises to **routinely test Volcanic Ash Contingency Plan and suggest updates accordingly**
    - Exercises to rotate between Iceland, Italy and Portugal

14 exercises conducted thus far
Not only in Europe

• 2010

• ICAO EUR Regional Planning and Implementation Group established another group called EUR (EAST) VOLCEX/SG and developed terms of reference for this group to:

  – Conduct exercises to **routinely test Volcanic Ash Contingency Plan and suggest updates accordingly**
  
  – Exercise volcanos in Kamchatka and Kurile Islands – Russian Federation

*7 exercises conducted thus far*
What to test?

- Volcanic activity alerting
- Aeronautical information service (AIS)
- Meteorological message routing
- Volcanic ash information
- Air traffic control procedures
- Air traffic flow and capacity management
- Aircraft operator response
- Collaborative decision making between stakeholders
Full circle

» Establish Group to Govern
» Plan based on needs
» Conduct exercise
» Report on exercise
» Debrief – develop recommendations
» Report to ICAO group
» Implement change to provisions
» Retest
The risk became reality

Normal traffic density in Europe in April

16.00 UTC

What happened?

Traffic in Europe on 18 April 2010
Lessons learnt from 2010 ash crisis

May 2010:
European Aviation Crisis Coordination Cell

Network management
Political leadership
Airworthiness Safety

Coordinating Europe’s response in times of crises and disruption to air traffic management
EACCC participate to ICAO volcanic ash exercises

Getting ready for the next eruption
There are more risks to the aviation network!
More preparation is needed!

Exercise, exercise, exercise, exercise, ...
NUCLEAR 14 – scenario & participants

T0  Fatal incident at a Nuclear Power plant (NPP)
T0 + 1h  State authorities order evacuation of the vicinity of the NPP
T0 + 2h  NPP meltdown $\rightarrow$ airspace above (30km radius closed)
T0 + 2h45  NM receives the dispersion model output $\rightarrow$ forecast SFC-500m (RSMC)

Participants

States, CAAs, ANSPs

Observers

Airlines Operators
- American Airlines
- Saudi Airlines
- United Airlines

Airports
- Paris CDG
- Brussels Zaventem
- Berlin Schonefeld
- (Amsterdam Schiphol)

- ACI
- DG ENERGY
- European Railways
- ERCC
- NM-AOLC
- ICAO
- RSMC
NUCLEAR 14 – available information

Eurocontrol Exercise
Time integrated concentration (Bq/m².s)
for surface to 500m layer over 24 hours
valid 21/11/2014 12h00 UTC

Dispersion model: MOCAGE Accident
Meteo model: ARPEGE

RELEASE DATA
Site: exercice Eurocontrol
Emission start: 19/11/2014 09h00 UTC
Release duration: 06h 00
Lat: 49° 42' 26" N; 49° 4' 92.1" N
Lon: 19° 04' 19.9" E; 19° 2' 15.6" E
Emission rate: 4.0e+17 Bq/h
Base: 0m
Top: 500m
Released pollutant: 1-131

MODEL DATA
Grid resolution: 0.5°
Init for meteo data

Max value for current step:
1.3152200 Bq/m².s

Max position ★
Source position ▲
Probable risk to aviation at 10 000 feet

init: 2017051300 UTC – hourly average (2-3 h) of I-131 [Bq m-3] in FL100 – res.: 6.5 km (R3B08)
mean: 0.95 std: 23.75 min: -0.00 max: 1196.90
Customer perception is very important when assessing the business risk

The right information at the right time is crucial to support risk-based decision making