CONTINGENCY PLANNING of AIR NAVIGATION SERVICES

SASI Workshop

Examples of Contingency in ATM and Critical Infrastructures

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EUROCONTROL

Summary

- Software bugs and hardware failures.

- Fires, structural collapses and earthquakes .

- Floods, rainfall, groundwater and air conditioning.

- Power failures, national critical infrastructures.

- Pandemics.

- War, security and counter terrorism.

Extreme Weather Events

- Some evidence of increased flooding.

- Clear regional issues:
  - Where is safe from floods in the Netherlands?

- Do not just focus on rainfall:
  - ACC machines rooms flooded by roof leaks;
  - Another floods from broke air conditioning pipe;
  - Rising ground water affects power distribution...

Extreme Weather Events

- Our risk assessments are changing.

- Walham switch station.
  - UK high-voltage network;
  - National Grid risk1-in-1000 pa;
  - 2005, flood risk1-in-75 to 200 pa;
  - 2007 it flooded...

- UK Cabinet Office: Pitt Review.

Flooding

- Many ACC's are now in or near flood plains.

- Surface water flooding away from plains.

- Dykes and dams feasible terrorist targets.

- Machine rooms flood from air con. coolant etc.

- Boxing day Tsunami:
  - safety risks from traffic load not damage.

Structural Collapse and Fire

- Fires have destroyed an ACC.

- Further problems with machine rooms:
  – water deluge system destroys hardware;
  – so will not activate unless manually activated;
  – or use halon but delay before room safe.

- Earthquakes a clear issue in some states.

Earthquakes

- Several ACCs close to major faults.

- State and military aid needed.

- Clear route from 'devastated' city.

- CNS infrastructure may be affected...

Loss of National Infrastructures

- 2003 Blackouts in Italy and North America.
  - Each affected 50 million consumers.

- Eventual loss of ATC even with UPS'.
  - More important loss of staff, suppliers etc.
  - Communications systems also affected.

- Italian skies were closed.

- Increasing vulnerabilities – eg EC projects.

Software Bugs

- ANSPs use identical software:
  - in primary and in secondary systems;
  - creates vulnerabilities, duplicates bugs.

- Can supplier help if staff on new contracts?
  - Takes several weeks to fix bug.

- Also, insider threat of security violation –
  - Deliberately inserting bug in CNS application?

Hardware Issues

- Linate:
  - Ground Movement Radar System.

- Ueberlingen:
  - SWI communications system;
  - operating in fallback mode.

- ECAC state work on radar array;
  - ACC not told as dishes lowered to ground;
  - ATCOs see targets of vehicles on motorway.

Security and Counter Terrorism Issues

- Attack on ATM infrastructure:
    - It is a matter of 'when' and not 'if'.

- Some ANSPs rely on military support;
    - But have not told the military...

- Example of 2001 – secondary ATM effects;
    - Closure of North American airspace.

- ANSPs use military facilities in contingency;
    - Could leave nation vulnerable to attack? See earlier slide on risk.

Pandemics

- According to the World Health Organisation:
  - We are in an 'inter-pandemic' period.

- UK believes this is the highest impact risk.

- Many ANSPs have pandemic plans –
  - Which staff to isolate, which to keep away...

- ACCs have closed for localised illness...

WHO Phase	Pandemic Period	Characteristics of Phase
Phase 1	Interpandemic period	No new influenza virus subtypes have been detected in humans.
Phase 2		No new influenza virus subtypes have been detected in humans, but an animal variant threatens human disease.
Phase 3	Pandemic alert period	Human infection(s) with a new subtype but no human-to-human spread.
Phase 4		Small cluster(s) with limited localized human-to-human transmission.
Phase 5		Larger cluster(s) but human-to-human spread still localised.
Phase 6	Pandemic period	Pandemic: increased and sustained transmission in general population.

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