AIRPORT DISRUPTION RISK ANALYSIS FOR AIRPORTS

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DISRUPTION:

An interruption in the usual way that a system, process, or event works

Source: Cambridge Business English Dictionary
<table>
<thead>
<tr>
<th>LIKELIHOOD (probability)</th>
<th>SAFETY AND SECURITY</th>
<th>CONTINUOUS RISK ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occur at some time (1%)</td>
<td>Unlikely -</td>
<td>Moderate -</td>
</tr>
<tr>
<td>Occur at some time (1%)</td>
<td>Possible -</td>
<td>High -</td>
</tr>
<tr>
<td>Occur at some time (1%)</td>
<td>Likely -</td>
<td>Critical -</td>
</tr>
<tr>
<td>Occur at some time (1%)</td>
<td>Almost certain -</td>
<td>Catastrophic</td>
</tr>
</tbody>
</table>

CONSEQUENCES

- No Injuries or First Aid required
- Some First Aid
- External Medical
- Extensive Injuries
- Death or Major Injuries
- Toxic Environ Damage
- $1-100,000 Damage
- $100,000-1,000,000 Damage
- $1,000,000-10,000,000 Damage
- $10,000,000+ Damage

SAFETY AND SECURITY - THE HIGHEST IMPORTANCE

CONTINUOUS RISK ASSESSMENT
Flight Compensation Regulation 261/2004

... cancellation caused by extraordinary circumstances ...
Winter 2010 flight cancellations in Europe

17 Dec – 21 Dec

90377 flights
... could be expected
GENERIC HUB - ONE DAY CLOSURE

Sever impact on airlines – domino effect

Number of PAX affected

More stable data → predictions

Number of MVT → could happen
Volcanic Ash Crisis April 2010
Eyjafjallajökull
BAA 2010 data – 6 airports;
6 mil Ł/Day → 2.2 mil airport
2.5 mil €/day closure

Financial loss; operations;
compliance; human factors;
cost of life; reputation
Direct financial loss – costs for 200 PAX + relatives + response teams food, accommodation, transportation 500,000 €/5 days

Operations – Typical Busy Day
CLOSED AIRPORT (IATA) – 100,569 PAX
710,890 €/hour
COMPLIANCE

Liability for non-conformities

1 mil €

Cost of life – Value of Statistical Life (VSL)

200 x 2 mil € = 400 mil €
CONSEQUENCE SCORE
... to find a common base / per hour
ACCIDENT PROBABILITY
... unlikely $10^{-2}$
SPEED OF ONSET
... important in operations
INITIAL RISK
RISK CONTROL

Pro-active = be prepared
Re-active = training

RESIDUAL RISK COST
12.7 mil €/Y

RISK CONTROL BENEFITS
94.4 mil €/Y

“How am I supposed to think about consequences before they happen?”
CONCLUSIONS

Accidents continue to happen
Risk of airport (partial) closure
Safety standards – A/D compliance
A/D invest above the standards – operational resilience