Aviation Safety Monitoring in Europe

Fred Abbink

ICAS Mykonos; 3 October 2005
“European Aeronautics: A Vision for 2020”

Contents

Air Transport and Aeronautics - Key Assets for the Future of Europe

A Vision for European Aeronautics in 2020
- Responding to society’s needs
- Securing global leadership
- Establishing supportive public policy and regulation
- Identifying the research agenda

The Way Forward: Creating Partnership for Research and Innovation
Major goals for Europe

Safety (5 fold reduction in accident rate)

Environment (50% reduction in CO2 per PassKm and 50% reduction of Perceived Noise)

European Air Transport System Capacity (3 fold increase in airspace and airport capacity in all-weather conditions)
Least safe Means of Passenger Transport (In Fatalities per Mio PKM)
Accidents by Primary Cause*

<table>
<thead>
<tr>
<th>Category</th>
<th>Caused by</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flight Crew</td>
<td>75</td>
<td>56</td>
</tr>
<tr>
<td>Airplane</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>Weather</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>Misc./Other</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Maintenance</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Airport/Air Traffic Control</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Total with known causes: 133

Unknown or awaiting reports: 44

Total: 177

*As determined by the investigating authority, percent of accidents with known causes.
Fatal accident rate comparison

- US operators: 0.37 per million flights
- EASA operators: 0.48 per million flights
- Others: 2.24 per million flights

Source: NLR Air Safety Database
European Airspace Structure
European Organisations for aviation safety

**EUROPEAN UNION**
- Albania
- Bulgaria
- Croatia
- FYROM
- Hungary
- Luxembourg
- Portugal
- Czech Rep.
- Cyprus
- Greece
- Spain
- Sweden
- U.K.
- Austria
- France
- Norway
- Poland
- Slovak Rep.
- Slovenia
- Switzerland
- U.K.

**ECAC (42)**
- Armenia
- Estonia
- Latvia
- Lithuania

**JAA (39)**
- Austria
- Azerbaijan
- Belgium
- Denmark
- Finland
- Germany
- Ireland
- Italy
- Monaco
- Serbia & M.
- Turkey
- Ukraine
- Armenia
- Moldova
- Romania

**EASA (28)**
- Austria
- Belgium
- Bulgaria
- Croatia
- Cyprus
- Czech Rep.
- Estonia
- Latvia
- Lithuania
- Luxembourg
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey
- Ukraine

**EUROCONTROL (35)**
- Austria
- Belgium
- Bulgaria
- Cyprus
- Czech Rep.
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Sweden
- Switzerland
- Turkey
- Ukraine

**GASR (21)**
- Armenia
- Belarus
- Georgia
- Moldova
- Russia
- Serbia & M.
- Ukraine

* candidates

**ECAC (42)**

**JAA (39)**

**EUROCONTROL (35)**

**GASR (21)**
Who monitors safety performance?

- Airlines
- Accident Investigation Agencies
- Air Navigation Service Providers
- Airprox boards
- States
- Airports
- European Aviation Safety Agency
Accident prevention & Flight Safety Programme (JAR-OPS)

- Programme to maintain risk awareness, evaluation, and promulgation of relevant information relating to incidents and accidents.

- Collation of accidents/incidents that occurred with the airline.

- Pro-active use of digital flight data from routine operations to improve aviation safety.
Accident Investigation Agencies

-Determine the causes of air accidents and serious incidents

-Make safety recommendations intended to prevent recurrence
Air Navigation Service Providers (ANSP)

-EUROCONTROL ‘requires’ that an ANSP has a

- Formal means of safety occurrence reporting and assessment

-Not fully implemented throughout Europe
Airprox boards

- Analyse air proximity occurrences
- Not present in every European state

The role of the airprox board:

- Analyse of what happened and determining the main causal factors.
- Assess the risk levels involved.
- Make recommendations to prevent recurrence.
- Communicate findings and lessons learned.
Airports

-Airports in the EU need to report incidents (2005)

-For many airports this is new
States

- EU Occurrence reporting Directive
- Safety Assessment of Foreign Aircraft (SAFA) Programme
EU Occurrence reporting Directive

EU Member States shall require that all safety occurrences are reported to the competent authorities (EU Directive).

- Local Civil Aviation Authority and, or
- Accident Investigation Agency
Safety Assessment of Foreign Aircraft Programme

- Inspections of aircraft to find significant irregularities
- All findings are put into a centralized database
- Limited to on-the-spot assessments
European Aviation Safety Agency (EASA)

-EASA has the regulatory and executive tasks in the field of aviation safety in the EU

-Safety analysis & research is part of the organisation

- This task is under development
Who reports to who?

- Airports
- Air Navigation Service Providers
- Airprox boards
- States
- EASA
- Airlines
- Accident Investigation Agencies
Who gets the safety information?

- Airports
- Air Navigation Service Providers
- Airprox boards
- EASA
- Accident Investigation Agencies
- States
- Airlines
Information overload

"EUREKA! MORE INFORMATION!"

© 1996 Ted Goff
The role of Safety Management Systems

**SMS = Systematic, comprehensive and proactive process for managing safety risks**
Future of safety monitoring in Europe

- High pressure to deliver a safe air transport system
- Systems approach needed
- Role of EASA becomes important
- Single European accident investigation agency