Session 6

Accident Prevention Measures

SEMINAR ON AIRCRAFT ACCIDENT INCIDENT INVESTIGATION
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## Accident prevention measures

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## Accident Prevention Measures

1. Accident prevention measures

2. Incident reporting systems

3. Database systems and analysis — Preventive actions

4. Exchange of safety information
Accident prevention measures

- **Annex 13 Chapter 8**
- To promote accident prevention by collection and analysis of safety data and by a prompt exchange of safety information, as part of the State safety programme.
Accident prevention measures

1. State safety policy and objectives
   1.1 State safety legislative framework
   1.2 State safety responsibilities and accountabilities
   1.3 Accident and incident investigation
   1.4 Enforcement policy

2. State safety risk management
   2.1 Safety requirements for service providers SMS
   2.2 Agreement on service providers safety performance

3. State safety assurance
   3.1 Safety oversight
   3.2 Safety data collection, analysis and exchange
   3.3 Safety data driven targeting of oversight on areas of greater concern or need

4. State safety promotion
   4.1 Internal training, communication and dissemination of safety information
   4.2 External training, communication and dissemination of safety information
Accident prevention measures

- **Element 1.3**
  Accident and incident investigation

- **Element 3.2**
  Safety data collection, analysis and exchange

Accident prevention, as part of the State Safety Programme (SSP)
Accident prevention measures

1. Accident prevention measures

2. Incident reporting systems

3. Database systems and analysis — Preventive actions

4. Exchange of safety information
A State shall establish a **mandatory incident reporting system**
to facilitate collection of information on actual or potential safety deficiencies.
Incident reporting systems

- A State shall establish a voluntary incident reporting system to facilitate collection of information on actual or potential safety deficiencies that may not be captured by the mandatory incident reporting system.
Voluntary incident reporting system

- A voluntary incident reporting system shall be **non-punititive** and afford protection to the sources of the information.

- A non-punititive environment is fundamental to voluntary reporting.

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Accident prevention measures

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4. Exchange of safety information
A State shall establish and maintain an accident and incident database to facilitate the effective analysis of information on actual or potential safety deficiencies obtained, including that from its incident reporting systems, and to determine any preventive actions required.
Database systems should use *standardized formats* to facilitate data exchange

- States are encouraged to foster *regional arrangements*
• States are encouraged to use an ADREP-compatible system for accident/incident reporting as well as for collecting, storing, and disseminating relevant safety information.
• Air Navigation Commission (ANC) identified need to “determine the most satisfactory method of reporting information from inquiries into aircraft accidents and incidents”

• ADREP panel “Terms of Reference” established.

• Accident Investigation and Prevention (AIG) divisional meeting recommended to develop a data system

• ADREP First Generation (1976)
  - Based on US NTSB data reporting system

• ADREP Second Generation (1987)
  • Improved factor system  
    (e.g. no blame, human and organizational factors)

• ADREP Third Generation (2000)
  - New definitions; new taxonomies; new software
ICAQ ADREP 2000 Taxonomy

- Aerodrome
- Air Traffic Services
- Aircraft
- Aircraft Meteo
- Aircraft Recording
- Airspace
- ATM Recording
- ATS Unit
- CFIT
- Ditch
- Events
- Failures
- Fire
- History of flight
- Injuries
- Management
- Member
- Narrative
- Note
- Occurrence
- Recommendations
- Runway
- Sector
- Separation
- Survival
- Weather
- Wreckage / Impact

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Database systems and analysis - Preventive actions

1. Safety Data Collection
2. Safety Data Monitoring
3. Safety Performance Trending
4. Mitigating actions
Database systems and analysis - Preventive actions

- Mandatory Reporting System
- Voluntary Reporting System
- Investigation Reports (feedback)
- Surveillance Audits (feedback)

Safety data collection

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Accident prevention measures

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3. Database systems and analysis — Preventive actions

4. Exchange of safety information
States should promote the establishment of safety information sharing networks among all users of the aviation system and should facilitate the free exchange of information on actual and potential safety deficiencies.
Exchange of safety information

- **Standardized** definitions, classifications and formats are needed to facilitate data exchange.
Exchange of safety information

- Air operators
- Other service providers
- Maintenance organizations
- Other Stakeholders

Information exchange
Exchange of safety information

Safety Information
State A

Safety Information
State B

Safety Information
State C
To promote accident prevention by collection and analysis of safety data and by a prompt exchange of safety information, as part of the State safety programme.
“DO NOT FOCUS ONLY ON THE CONSEQUENTIAL EVENTS”

Data-driven safety pyramid

Accident prevention measures

Fatal Accidents

Serious Incidents

Accidents

Incidents

Reportable Occurrences

ICAO ADREP System (Annex 13)

Beyond ADREP

Additional Prevention without any harmful consequence
- End -

Session 6

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