

Accident and serious incidents Data Collection, Processing and Analysis

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Today's Briefing

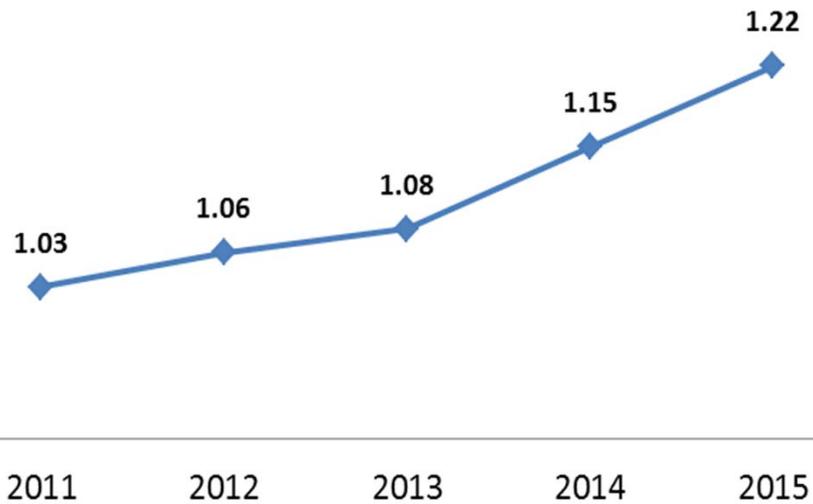
- Introduction
- ICAO requirements
- Challenges
- Way forward

Purpose of Data Collection

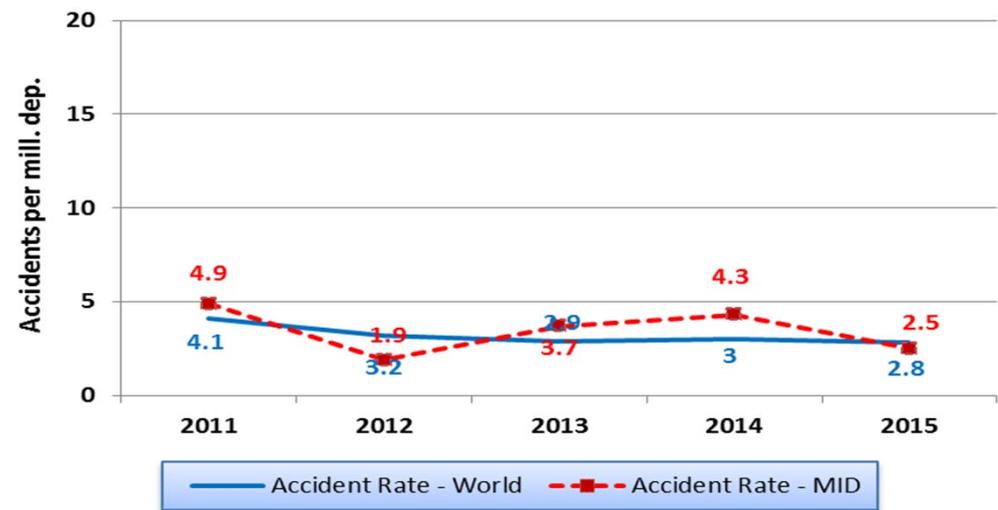
- To facilitates the collection of information on actual or potential safety deficiencies thus contributing to the identification safety risks and implementation of safety improvement measures.
- The sole objective of occurrence reporting is the prevention of accidents and incidents and not to attribute blame or liability.

Why we need reporting?

MID Traffic
Million of Scheduled Commercial Departures



Accident Rate
Scheduled Commercial above 5700 kg



International requirements

- ICAO
 - **Annex 13**- Aircraft Accident and Incident Investigation
 - **Doc 9859** - Safety Management Manual.

Investigation

ICAO Annex 13 laid down that the state of occurrence shall institute an investigation into the circumstances of the accident and serious incidents.

State of Occurrence

5.1 The State of Occurrence shall institute an investigation into the circumstances of the accident and be responsible for the conduct of the investigation, but it may delegate the whole or any part of the conducting of such investigation to another State or a regional accident investigation organization by mutual arrangement and consent. In any event, the State of Occurrence shall use every means to facilitate the investigation.

5.1.1 **Recommendation.**— *The State of Occurrence should institute an investigation into the circumstances of a serious incident. Such a State may delegate the whole or any part of the conducting of such investigation to another State or a regional accident investigation organization by mutual arrangement and consent. In any event the State of Occurrence should use every means to facilitate the investigation.*

5.1.2 The State of Occurrence shall institute an investigation into the circumstances of a serious incident when the aircraft is of a maximum mass of over 2 250 kg. Such a State may delegate the whole or any part of the conducting of such investigation to another State or a regional accident investigation organization by mutual arrangement and consent. In any event the State of Occurrence shall use every means to facilitate the investigation.

Final Investigation report

- ICAO Annex 13 laid down that the investigating state of accidents and serious incidents involving aircraft with MTOW over 5700 Kgs, a copy of the final report should be shared with ICAO.

ADREP Accidents/Incidents Data Reports

- Accident data reports and incident data reports are to be forwarded to ICAO as soon as practical after the completion of the investigation in accordance with ICAO Annex 13, Chapter 7.

ACCIDENT/INCIDENT DATA REPORT

RESPONSIBILITY OF THE STATE CONDUCTING THE INVESTIGATION

Accidents to aircraft over 2 250 kg

7.5 When the aircraft involved in an accident is of a maximum mass of over 2 250 kg, the State conducting the investigation shall send, as soon as practicable after the investigation, the Accident Data Report to the International Civil Aviation Organization.

Additional information

7.6 **Recommendation.**— *The State conducting the investigation should, upon request, provide other States with pertinent information additional to that made available in the Accident/Incident Data Report.*

Incidents to aircraft over 5 700 kg

7.7 If a State conducts an investigation into an incident to an aircraft of a maximum mass of over 5 700 kg, that State shall send, as soon as is practicable after the investigation, the Incident Data Report to the International Civil Aviation Organization.

Mandatory and Voluntary occurrences reporting

- The provisions in Chapter 8 of ICAO Annex 13 **require the States to establish mandatory incident reporting (MOR)** systems to facilitate the collection of information on actual or potential safety deficiencies.
- The provisions in Chapter 8 of ICAO Annex 13 also **require the States to establish a Voluntary occurrence reporting**

Incident reporting systems

8.1 A State shall establish a mandatory incident reporting system to facilitate collection of information on actual or potential safety deficiencies.

8.2 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.

Note.— States are encouraged to establish other safety data collection and processing systems to collect safety information that may not be captured by the incident reporting systems mentioned in 8.1 and 8.2 above.

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

Note 1.— A non-punitive environment is fundamental to voluntary reporting.

*Note 2.— States are encouraged to facilitate and promote the **voluntary reporting** of events that could affect aviation safety by adjusting their applicable laws, regulations and policies, as necessary.*

Note 3.— Guidance related to both mandatory and voluntary incident reporting systems is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 4.— Attachment E contains legal guidance for the protection of information from safety data collection and processing systems.

SAFETY DATA STORAGE AND ANALYSIS

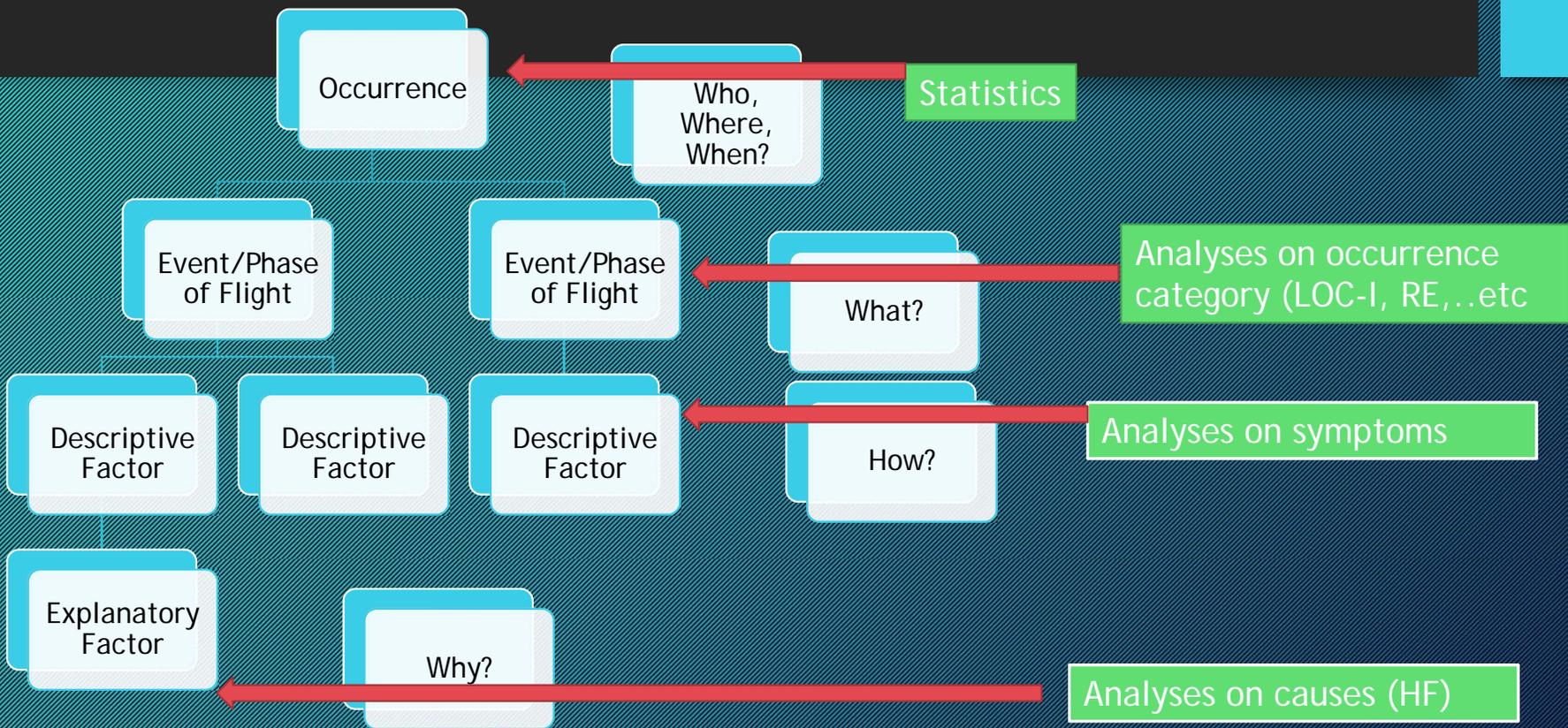
- ICAO Annex 13 states that the safety database systems should use standardised formats to facilitate data exchange.
- Currently, the European Coordination Centre for Accident and Incident Reporting Systems (ECCAIRS) software is the only software that operates on the ICAO Accident/Incident Data Reporting taxonomy.
- Apart from providing a standardised format, ECCAIRS software also applies the commonly used 'SHELL model' in its analytical tool

How we do it

- Collection and De-identification of accidents and serious incidents included in ISTARS & ECCAIRS
- Perform Analyses of accidents and serious incidents reported
- Identify risk areas and conduct root cause analyses

Challenges

- Incomplete data/information in iSTARS and ECCAIRS
- Lack of sharing of accidents and serious incidents preliminary and investigation reports
- Some States do not have yet ECCAIRS use in place



Example

The image shows a screenshot of a search interface with a toolbar at the top containing symbols for search, list, AND/OR, plus, right arrow, close, copy, and paste. The main area contains a query with several lines of text, each followed by an 'and' connector. Brackets on the right side of the text group these lines into four categories: 'Occurrence / Event', 'Analyses on Categories', 'Analyses on Symptoms', and 'Analyses on Causes'. The text 'Event phase equal to Take-off' is enclosed in a dashed rectangular box.

{ } [] AND OR + ▶ ✕ ✂ 📄 📂

{ Occurrence category equal to SCF-PP: powerplant failure or malfunction } Occurrence / Event
and
{ Event type equal to Engine shutdown/flameout }
and
{ Event phase equal to Take-off } Analyses on Categories
and
{ Aircraft manufacturer/model equal to 777 }
and
{ Descriptive factor subject equal to 7310 Engine fuel system } Analyses on Symptoms
and
{ The person or organization to which the explanatory factor relates equal to Maintenance personnel }
and
{ Descriptive factor modifier {Aircraft/Descriptive Factor} equal to Incorrect procedure } Analyses on Causes

Adapted: Heinrich Safety triangle



Way Forward.....

- The meeting is invited to reiterate the RASG-MID/6 conclusion 6/10: Accident & serious incidents final reports
- The meeting is also invited to reiterate RASG-MID/6 conclusion 5/3: use of ECCAIRS
- States are urged to provide additional details information/data on accidents and serious incidents through States' focal points for the purpose of analysis
- States be involved in the development of root cause analysis and contributory factors during the next ASRT meetings (workshop)

Safety occurrence? Report it to your organisation!



Questions?