

## OBJECTIVES

To provide participants with in-depth training in investigation techniques and an understanding of the organisational factors and management issues. The course will cover all aspects of the investigation process from preparation to report writing and discuss case studies on accident investigation focusing on management deficiencies.

## OUTLINE

### **Module 1: Techniques and Regulations**

#### **ICAO Annex 13**

- International requirements
- Rights and responsibilities of States involved

#### **Preparation to Conduct an Investigation**

- National laws and procedures
- Investigation equipment
- Communications equipment
- Transportation to accident site
- Protective clothing
- Accident site safety

#### **On-site Investigation Tasks**

- Coordination with other agencies
- Sources of evidence
- Documenting the accident site
- Wreckage recovery from the sea

#### **Use of Critical Data in Investigation**

- Flight data recorder (FDR)
- Cockpit voice recorder (CVR)
- Radar data

#### **Technical Investigation**

- Structures, power plants and systems
- Maintenance records
- Aerodynamics
- Mid-air collisions
- In-flight break-ups

#### **Operations Investigation**

- Flight path
- Crew history, duty times and competency

#### **Human Factors**

- SHELL model
- Reason model
- Types of errors and examples

- Techniques for investigating human factors

#### **Survival Factors**

- Crashworthiness
- Pathology

#### **Interviewing Techniques**

#### **Investigator Tools**

#### **Writing the Final Report**

### **Module 2: Organisational Factors and Major Issues**

#### **International Requirements**

- ICAO Annex audits
- States' responsibilities
- Role of the accident investigation authority
- New challenges

#### **Management of Accident Investigations**

- Overview
- Dealing with media
- Family assistance programmes
- Case study – maintenance issues
- Case study – accidents in mountainous terrain
- Case study – Swissair SR111 MD11
- Developing safety recommendations

#### **Organisational Factors in Safety from Airlines' Perspective**

- Investigation of anomalies in aircraft accidents
- Crew resource management
- Economic pressures and its effect on airline safety
- Case study – Commuter aircraft accident
- Case study – Major airline accident

#### **Understanding Human Factors in Aircraft Accidents**

- Human performance in the context of the total system
- Human factors investigation principles
- Human factors analysis and classification system

#### **Safety Programme Management**

- Basic safety concepts for airports, air traffic control and airlines

#### REGISTRATION

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- International safety management system (SMS) requirements
- Hazards and risk assessment
- SMS for accident investigators

#### **Accident Site Hazards**

- Biological hazard risks associated with aircraft accident investigation
- Recognition of biological hazards
- Modes of bloodborne pathogen transmission
- Procedures to control exposure to bloodborne pathogens
- Exposure control plan
- Hepatitis B virus (HBV) vaccination information
- Exposure incidents
- Personal protective equipment
- Personal protection equipment exercise

#### **Case Studies**

To illustrate and amplify the topics addressed, the following recent accident case studies will be discussed:

- MK Airlines take-off accident (Halifax)
- AirTransat A330 (Azores, Portugal)
- American Airlines A300 vertical fin loss (New York, USA)
- B727 accident (Benin)
- COPA B737 (Panama)
- IL76 accident (Timor Leste)
- Mid-air collision between a B77 and a TU154 (Uberlingen, Germany)
- Runway collision between a MD83 and a Shorts 330 (Paris, France)
- A310 CFIT accident (Kathmandu, Nepal)
- Helios Airways B737 accident (Athens, Greece)

#### **Coping with the Reality of an International Investigation**

#### **Safety Products – Approach and Landing Accident Reduction (ALAR) Tool Kit**

#### **Use of ALAR Tool Kit**

#### **WHO SHOULD ATTEND**

Accident investigators, chief investigators or management personnel involved in aircraft accident investigation from civil aviation authorities, airport authorities, safety and regulatory bodies, airlines and aircraft manufacturers, law enforcement, military and government agencies, airport emergency

services.

#### **DURATION**

2 weeks

#### **APPLICATION DEADLINE**

30 November 2009

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