



Aircraft Accident Investigation Course: Annex 13, Wreckage, Flight Recorders and Recommendations



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Introduction:

Aircraft accident investigation course built on ICAO Annex 13, covering wreckage, flight recorders and safety recommendations over 10 days for staff who investigate aircraft accidents and serious incidents, ending with an Investigation Readiness Plan for a case organisation. When an occurrence happens, units without rehearsed notification, site and recorder procedures lose perishable evidence, miss participation rights and issue findings that do not prevent recurrence. Nominees already take part in occurrence investigation or oversight and work through case files of wreckage diagrams, recorder readouts and witness statements. CoreConcept Training Center delivers this aircraft accident investigation course.

Course Objectives:

- Classify an aviation occurrence against the Annex 13 definitions and decide whether, and by whom, it must be investigated
- Issue Annex 13 notifications and organise the participation of accredited representatives, advisers and other involved parties
- Run accident site safety controls, wreckage documentation and evidence custody so that perishable and physical evidence survives
- Retrieve and analyse flight data recorder, cockpit voice recorder, flight data monitoring and air traffic evidence to build an event timeline
- Analyse crew, maintenance, supervision and organisational contributions using HFACS and the Swiss cheese model
- Write a final report and safety recommendations with tracked responses, and assemble an Investigation Readiness Plan

Target Audience:

- Staff of investigation authorities who lead or join field investigations of aircraft accidents and serious incidents
 - Airline flight safety staff who support state investigations and run internal occurrence investigations
 - Airport safety, rescue coordination and airside operations staff who secure accident sites and preserve evidence
 - Maintenance and engineering quality staff who examine components, records and wreckage after an occurrence
 - Aviation oversight staff who review investigation reports and follow up safety recommendations
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Course Outline:

Day 1: Annex 13 Investigation Foundations and Occurrence Classification

- ICAO Annex 13 Objective of Prevention Without Blame
- Annex 13 Accident, Serious Incident and Incident Definitions
- Occurrence Classification Decision Tree for Investigation Triggers
- Investigation Authority Independence From Judicial and Administrative Proceedings
- Investigation Readiness Baseline Using an Annex 13 Checklist

Day 2: Notification, State Participation and Accredited Representatives

- Annex 13 Notification Message Content and Distribution List
- State of Occurrence, Registry, Operator, Design and Manufacture Roles
- Accredited Representative and Technical Adviser Participation Rights
- Delegation of Investigation Arrangements Between Contracting States
- ADREP Preliminary Report and Occurrence Data Reporting

Day 3: Accident Site Response, Site Safety and Wreckage Examination

- Site Hazard Assessment for Composites, Fuel and Pressure Vessels
- Biohazard Protection and Personal Protective Equipment Site Rules
- Wreckage Distribution Diagram and Drone Photogrammetry Survey
- Wreckage Examination of Flight Controls, Engines and Fracture Surfaces
- Evidence Log, Chain of Custody and Perishable Evidence Capture

Day 4: Flight Recorders, Flight Data and Air Traffic Evidence

- Flight Data Recorder Parameter Lists and Readout Workflow
- Cockpit Voice Recorder Transcript Preparation and Privacy Handling
- Underwater Locator Beacon Search and Damaged Recorder Recovery
- Flight Data Monitoring Records and Quick Access Recorder Downloads
- Air Traffic Radar, Radio Recordings and Weather Data Correlation

Day 5: Guided Case Study on Week-One Investigation Evidence

- Case Runway Excursion Notification and Site Response Plan
 - Case Wreckage Diagram and Evidence Log Review
 - Case Flight Data Parameter Plot and Event Timeline Build
 - Case Witness Statement Mapping Against Recorder Data
 - Case Preliminary Report Draft and Peer Review
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Day 6: Specialised Analysis of Structures, Powerplants, Fire and Survival Factors

- Metallurgical Fatigue and Overload Fracture Analysis Laboratory Requests
- Powerplant Teardown Planning and Engine Manufacturer Participation
- In-Flight Fire Pattern Analysis and Smoke Evidence Interpretation
- Survival Factors Analysis of Cabin Evacuation and Crashworthiness
- Flight Path Reconstruction and Performance Simulation From Recorded Data

Day 7: Human Factors Analysis With HFACS and Organisational Influences

- HFACS Unsafe Acts Classification of Crew Errors and Violations
- HFACS Preconditions Covering Fatigue, Crew Resource Management and Environment
- HFACS Unsafe Supervision and Organisational Influences Assessment
- Swiss Cheese Model Mapping of Defences and Latent Conditions
- Interview Plans for Flight Crew, Controllers and Maintenance Staff

Day 8: Investigation Governance, Evidence Protection and Stakeholder Communication

- Protection Rules for Recorder Recordings and Safety Information
- Assistance Arrangements for Aircraft Accident Victims and Families
- Media Statement Protocol and Public Interest Communication Plan
- Coordination Protocol With Judicial Authorities and Parallel Inquiries
- Draft Final Report Consultation With Participating States

Day 9: Final Report, Safety Recommendations and Follow-Up Measurement

- Annex 13 Final Report Format Sections and Findings Layout
- Causes and Contributing Factors Statements Written Without Blame
- Safety Recommendation Drafting With Addressee, Action and Rationale
- Safety Recommendation Response Tracking and Closure Status Codes
- Investigation Performance Indicators and Recommendation Effectiveness Review

Day 10: Case Study Capstone and Investigation Readiness Plan

- Case Organisation Investigation Readiness Gap Review
 - Case Notification and Site Response Procedure Drafting
 - Case Recorder Recovery and Flight Data Evidence Arrangements
 - Case HFACS Analysis and Safety Recommendation Set
 - Investigation Readiness Plan Completion and Panel Presentation
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Skills You Will Gain:

- Occurrence Classification
- Annex 13 Notification Handling
- Accident Site Safety Control
- Wreckage Documentation
- Flight Recorder Data Analysis
- HFACS Human Factors Analysis
- Final Report Writing
- Safety Recommendation Tracking

Why Attend This Course:

- Deliver an Investigation Readiness Plan for a case organisation to the head of the investigation unit and the accountable safety manager for approval
- Decide which occurrences require notification and investigation, which states and parties take part, and which evidence must be secured first
- Avoid lost recorder data, contaminated wreckage evidence, missed participation rights and recommendations that stay open without a response
- Brief site responders, safety staff and engineering colleagues on the notification flow, evidence log, recorder recovery steps and HFACS coding

Conclusion:

Back at work, the participant presents the Investigation Readiness Plan to the head of the investigation unit, the accountable safety manager and the airport emergency coordinator. They use it to approve notification contacts, site safety rules, recorder recovery arrangements, evidence custody forms and the safety recommendation tracking register. After the first drill or real occurrence handled under the plan, the unit should review notification times, the condition of evidence secured, timeline quality and the status of every recommendation issued.

Frequently Asked Questions FAQ:

What should participants know before the aircraft accident investigation course?

Participants should already work in aviation safety, operations, maintenance or oversight and understand basic aircraft systems and flight operations. No prior field investigation is needed; a laptop with a spreadsheet application is used to plot flight data and build event timelines.

How does aircraft accident investigation under Annex 13 differ from a safety management system course?

It deals with the investigation of a specific accident or serious incident: notification, site work, wreckage, flight recorders, human factors analysis and the final report. Safety management system courses deal with hazard logs, risk assessment and safety performance across routine operations.

Why do flight recorders matter so much in aircraft accident investigation?

Flight data and cockpit voice recorders give an objective record of aircraft parameters and flight deck audio before and during the occurrence. Investigators use them to test witness accounts, rebuild the flight path and identify contributing factors, so their recovery is usually a top priority.

What do participants take back from the aircraft accident investigation course?

Participants take back an Investigation Readiness Plan for a case organisation, with a notification flow, site safety rules, an evidence log and custody form, recorder recovery arrangements, an HFACS coding sheet and a safety recommendation tracking register.
