



Flight Data Monitoring (FDM/FOQA) Course: Event Sets, Analysis and Safety Action



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Introduction:

Flight data monitoring FDM/FOQA event sets, analysis and safety action are the subject of this 5-day course for airline and helicopter flight safety departments, FDM analysts and gatekeepers, who produce an FDM Programme Plan for a case operator. Many operators download recorder data routinely yet run untuned event sets, drown in nuisance exceedances, lose crew trust over data access and rarely turn trends into safety action. Nominees already handle flight data, safety reports or crew liaison at work and practise through case studies built on de-identified event lists and parameter plots. CoreConcept Training Center delivers this flight data monitoring course.

Course Objectives:

- Decode recorder data frames and validate parameters from quick access recorder downloads before any event is analysed
- Design event and exceedance sets with severity levels, thresholds and flight phase logic for aeroplane and helicopter fleets
- Analyse routine measurements, event rate trends and precursors to separate genuine operational risk from data noise
- Operate a gatekeeper and de-identification process under a written crew agreement that keeps flight data use non-punitive
- Feed FDM findings into hazard identification, risk assessment and safety action tracking within the safety management system
- Select FDM software and analysis service providers against defined requirements while keeping responsibility for the analysis in-house

Target Audience:

- Flight data monitoring units responsible for downloading, processing and analysing recorder data
 - Flight safety departments responsible for turning FDM trends into hazard entries and safety action
 - Gatekeeper and crew liaison functions responsible for de-identification and confidential crew contact
 - Flight operations and training standards units responsible for acting on FDM findings in procedures and simulator sessions
 - Helicopter operator safety units responsible for rotary-wing flight data events and fleet trends
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Course Outline:

Day 1: FDM Foundations and Programme Current-State Review

- ICAO Annex 6 Flight Data Analysis Programme Purpose and Scope
- FDM, FOQA and Flight Data Analysis Terminology Compared
- Non-Punitive Principles and Safeguards Protecting Flight Data Sources
- In-House and Outsourced FDM Models With Retained Operator Responsibility
- FDM Maturity Baseline Using a Self-Assessment Checklist

Day 2: Recorder Data Frames, Parameter Decoding and Data Quality

- Flight Data Acquisition Unit Inputs and Data Frame Layouts
- Quick Access Recorder Download Routines and Recovery Rate Tracking
- Parameter Decoding Tables, Sampling Rates and Engineering Units
- Data Validation Rules for Spikes, Dropouts and Frozen Values
- Flight Phase Detection Logic Built From Recorded Parameters

Day 3: Event Set Design, Exceedance Thresholds and Routine Measurements

- Event Set Library for Unstable Approaches and Hard Landings
- Exceedance Threshold Setting With Graded Severity Levels
- Helicopter Event Definitions for Torque, Rotor Speed and Low Hover
- Routine Measurement Distributions for Whole-Fleet Comparison
- Nuisance Event Review and False Positive Tuning Log

Day 4: Trend Analysis, Gatekeeping and Safety Action Links

- Statistical Process Control Charts for Event Rate Trends
- Precursor Analysis Linking Events to Accident Outcome Categories
- Gatekeeper Role, De-Identification Steps and Crew Contact Protocol
- Crew Agreement Clauses on Data Access, Retention and Disclosure
- FDM Findings Entered Into Hazard Log and Safety Action Tracker

Day 5: Case Study Work on the FDM Programme Plan

- Case Operator Data Pack With De-Identified Event Lists
 - Case Event Set Review and Threshold Adjustment Proposal
 - Case Trend Briefing for the Safety Review Board
 - Case FDM Software and Service Provider Evaluation Scorecard
 - FDM Programme Plan Completion and Peer Challenge
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Skills You Will Gain:

- Recorder Data Decoding
- Parameter Data Validation
- Event Set Design
- Exceedance Threshold Tuning
- Flight Data Trend Analysis
- Gatekeeper Crew Contact
- FDM Provider Evaluation
- Safety Action Tracking

Why Attend This Course:

- Deliver an FDM Programme Plan for a case operator to the head of flight safety and the accountable manager for approval
- Decide which events to retune, retire or add, and which trends justify a safety action, using fleet-wide evidence
- Avoid wasted analyst hours on nuisance events, lost crew trust from loose data access and provider contracts that leave analysis unchecked
- Coach analysts, gatekeepers and training captains with the event set catalogue, crew contact protocol and trend briefing template

Conclusion:

Back at work, the participant presents the FDM Programme Plan to the head of flight safety, the accountable manager and the crew representative body. They use it to approve the event set and thresholds, confirm gatekeeper duties and data access rules, agree how FDM trends enter the hazard log and choose whether analysis stays in-house or goes to a provider. After the first quarter of analysis under the plan, the unit should review recorder recovery rates, nuisance event counts, crew contacts made and the safety actions closed.

Frequently Asked Questions FAQ:

What should participants know before the flight data monitoring FDM/FOQA course?

Participants should already work in flight safety, flight operations, training standards or engineering and understand basic aircraft performance and flight phases. A laptop with a spreadsheet application is useful for parameter plots and trend charts during the case study work.

How does a flight data monitoring course differ from a safety management system or accident investigation course?

It centres on running the flight data programme itself: recorder data, event sets, thresholds, trends, gatekeeping and provider choice. Safety management system courses cover the whole organisational framework, while accident investigation courses examine a single occurrence after it has happened.

Why is de-identification so important in flight data monitoring?

Crews support flight data monitoring only when they trust that data will not be used to punish them. De-identification, a named gatekeeper and a written crew agreement limit who can link an event to a crew and keep the focus on fixing hazards.

What do participants take back from the flight data monitoring FDM/FOQA course?

Participants take back an FDM Programme Plan for a case operator, with an event set catalogue and thresholds, data validation rules, a crew contact protocol, a trend briefing template and a provider evaluation scorecard they can adapt to their own operation.
