

Integrated Aviation Safety Management, Accident Investigation & Safety Leadership

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Cairo (Egypt)

UK Training

PARTNER



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Introduction

Aviation safety requires far more than compliance with regulations and technical proficiency. Modern aviation organizations must adopt an integrated approach that combines aviation safety management, accident investigation, root cause analysis, and safety leadership to effectively identify hazards, prevent incidents, strengthen organizational resilience, and support continuous improvement.

As aviation operations become increasingly complex, professionals responsible for safety, quality, maintenance, engineering, flight operations, and regulatory compliance must possess the knowledge and practical skills necessary to investigate occurrences, identify immediate and underlying causes, evaluate operational risks, implement corrective and preventive actions, and foster a proactive safety culture. These capabilities are fundamental to reducing operational risk, improving organizational performance, and maintaining compliance with international aviation standards.

The Advanced Aviation Safety Management, Accident Investigation, Root Cause Analysis & Safety Leadership course has been designed as a comprehensive learning program that integrates internationally recognized aviation safety principles with practical investigation methodologies, analytical techniques, leadership practices, and organizational improvement strategies. Rather than addressing these disciplines independently, the course demonstrates how they complement one another to improve aviation safety performance throughout an organization.

Throughout the program, participants explore international aviation safety standards, including ICAO Annex 13 and Annex 19, while developing practical competencies in Safety Management Systems SMS, aviation accident investigation, evidence collection, human factors analysis, root cause analysis methodologies, analytical investigation techniques, safety reporting, organizational learning, corrective and preventive action planning, crisis management, risk management, and safety leadership. Through practical discussions, aviation case studies, workshops, and real operational examples, participants gain the ability to apply internationally recognized best practices within their own aviation environments.

By the end of the course, participants will possess a structured understanding of aviation safety management together with the analytical and leadership skills required to investigate safety events, improve operational performance, strengthen organizational resilience, support regulatory compliance, and promote long-term aviation safety excellence.

Course Objectives

By the end of this course, participants will be able to:

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- Understand international aviation safety principles and regulatory requirements.
- Apply the requirements of ICAO Annex 13 and ICAO Annex 19.
- Strengthen the implementation of Safety Management Systems SMS.
- Conduct professional aviation accident and incident investigations.
- Collect, preserve, validate, and analyze investigation evidence.
- Evaluate technical, organizational, environmental, and human factors contributing to aviation occurrences.
- Apply structured Root Cause Analysis methodologies during investigations.
- Utilize Five Whys, Fault Tree Analysis, Fishbone Diagrams, Event Sequencing, and Barrier Analysis.
- Develop effective corrective and preventive actions.
- Improve analytical thinking and structured decision-making.
- Prepare professional aviation investigation reports.
- Strengthen organizational learning through investigation findings.
- Develop leadership capabilities that support aviation safety culture.
- Integrate risk management into aviation operational activities.
- Lead continuous safety improvement initiatives within aviation organizations.

Course Outlines

Day One: Aviation Safety Management and Safety Leadership Foundations

- Principles of aviation safety management and operational safety.
- ICAO Annex 13 and ICAO Annex 19 requirements.
- Components of Safety Management Systems SMS.
- Aviation hazards and operational risk management.
- Safety performance indicators and safety assurance.
- Building a proactive safety culture.
- Leadership versus management in aviation safety.
- Human behaviour, the Bradley Curve, and behavioural safety principles.
- Leadership responsibilities for improving aviation safety performance.

Day Two: Aviation Accident Investigation and Human Factors

- Legal framework for aviation accident investigation.
- Objectives and scope of aviation investigations.
- Investigation planning and notification procedures.
- Evidence preservation and evidence collection techniques.
- Flight data recorders and supporting investigation data.
- Human factors and organizational factors affecting aviation safety.
- SHELL Model and Swiss Cheese Theory.
- Crew Resource Management principles.
- Investigation interviewing techniques.
- Aviation accident case studies.

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A graphic of a chessboard with several chess pieces. A gold king piece is prominent in the foreground, with a silver pawn and a silver knight behind it. The board is white and grey, with concentric circles in the background.

Day Three: Root Cause Analysis and Investigation Methodologies

- Principles of Root Cause Analysis in aviation systems.
- Root Cause Analysis process.
- Five Whys methodology.
- Fault Tree Analysis.
- Fishbone Diagrams.
- Event Sequencing techniques.
- Barrier Analysis.
- Cause-and-effect analysis.
- Selecting appropriate investigation methodologies.
- Identifying immediate, contributing, and root causes.

Day Four: Corrective Actions, Risk Management, and Organizational Learning

- Developing corrective and preventive actions CAPA.
- Risk-based decision-making.
- Verification of corrective action effectiveness.
- Organizational resilience and business continuity.
- Strategic risk management.
- Crisis management principles.
- Organizational learning from investigations.
- Safety reporting and investigation documentation.
- Communicating lessons learned.
- Continuous improvement planning.

Day Five: Integrated Aviation Safety Investigation and Performance Improvement

- Conducting integrated aviation safety investigations.
- Leading multidisciplinary investigation teams.
- Preparing professional investigation reports.
- Applying investigation findings to Safety Management Systems.
- Strengthening organizational safety culture.
- Supporting regulatory compliance through investigations.
- Developing aviation safety improvement strategies.
- Integrating leadership, investigation, and risk management.
- Final aviation safety case study.
- Development of an organizational aviation safety improvement roadmap.

Why Attend This Course: Wins & Losses!

- Develop integrated expertise in aviation safety management, accident investigation, root cause analysis, and safety leadership.
- Conduct structured aviation investigations using internationally recognized methodologies.
- Strengthen analytical thinking through advanced Root Cause Analysis techniques.
- Improve the identification of technical, organizational, environmental, and human factors.
- Develop practical corrective and preventive actions that reduce operational risk.
- Enhance Safety Management System SMS implementation and effectiveness.
- Improve safety reporting and investigation documentation.
- Strengthen leadership capabilities that promote proactive safety cultures.
- Support regulatory compliance with ICAO safety requirements.
- Improve organizational resilience through proactive risk management.
- Promote organizational learning following aviation safety events.
- Contribute to safer aviation operations and long-term operational excellence.

Conclusion

The Advanced Aviation Safety Management, Accident Investigation, Root Cause Analysis & Safety Leadership course provides an integrated framework for strengthening aviation safety through the combination of internationally recognized safety management principles, structured accident investigation methodologies, advanced root cause analysis techniques, and effective safety leadership practices.

Throughout the program, participants develop practical competencies in Safety Management Systems, aviation accident investigation, evidence collection, human factors analysis, analytical investigation methods, corrective and preventive action planning, risk management, organizational learning, and leadership for continuous safety improvement. Practical discussions, aviation case studies, and applied exercises ensure that participants can confidently transfer these competencies to real operational environments.

The course also demonstrates how systematic investigations, effective leadership, proactive risk management, and continuous organizational learning work together to reduce operational risk, prevent recurring safety events, strengthen regulatory compliance, improve organizational resilience, and enhance overall aviation safety performance. By the end of the program, participants will possess the knowledge, analytical capability, and leadership skills required to contribute effectively to safer, more reliable, and continuously improving aviation organizations.

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