Advanced Aviation SMS Implementation and Auditing Training Course



14 - 18 Dec 2026

Barcelona

5900 € (Per Person)

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Course Introduction / Overview:

This comprehensive training course provides an in-depth exploration of advanced concepts for implementing and auditing Aviation Safety Management Systems (SMS). Moving beyond foundational principles, this program is designed to equip aviation professionals with the strategic skills needed to build, manage, and continuously improve a robust SMS in line with global standards, such as the ICAO Safety Management Manual (SMM), Document 9859. The curriculum delves into the practical application of the four core components: Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. We will explore sophisticated techniques for hazard identification, risk assessment, and the development of meaningful Safety Performance Indicators (SPIs). A significant focus is placed on fostering a positive safety culture, drawing on the influential work of experts like Dr. James Reason on human factors and organizational accidents. Participants at BIG BEN Training Center will engage with complex case studies and learn to navigate the challenges of change management and SMS integration. This course is essential for those aiming to lead safety initiatives, ensure regulatory compliance, and drive operational excellence by transforming their organization's safety framework from a reactive to a proactive and predictive system.

Target Audience / This training course is suitable for:

- Aviation Safety Managers and Officers.
- Airline and Airport Operations Managers.
- Quality and Compliance Managers.
- Civil Aviation Authority Inspectors and Personnel.
- Air Traffic Control Supervisors.
- Maintenance and Engineering Managers.
- Flight Operations Managers and Crew Schedulers.
- Corporate and Executive-Level Aviation Leaders.
- Internal and External Aviation Auditors.
- Human Factors Specialists.

Target Sectors and Industries:

- Commercial Airlines and Cargo Carriers.
- Airport Operators and Authorities.
- Air Navigation Service Providers (ANSPs).
- Aircraft Maintenance, Repair, and Overhaul (MRO) Organizations.
- Business and Corporate Aviation Operators.
- Aviation Training Organizations (ATOs).
- Aircraft Manufacturing Companies.
- Governmental agencies, military aviation units, and regulatory bodies.

Target Organizations Departments:

- Safety and Security Department.
- Flight Operations Department.
- Quality Assurance and Compliance Department.
- Maintenance and Engineering Department.
- Ground Operations Department.
- Air Traffic Services Department.
- Corporate Governance and Risk Management.
- Human Resources and Training Department.

Course Offerings:

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

- Develop and implement a comprehensive and compliant aviation Safety Policy.
- Master advanced hazard identification and safety risk management techniques.
- Design, monitor, and analyze effective Safety Performance Indicators (SPIs).
- Conduct thorough internal and external SMS audits and inspections.
- Champion and cultivate a positive 'Just Culture' within their organization.
- Integrate human factors principles into all aspects of the SMS.
- Manage organizational changes effectively without compromising safety.
- Develop and test a robust Emergency Response Plan (ERP).
- Lead safety promotion and communication initiatives across all departments.
- Ensure continuous improvement of the Safety Management System.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, practical, and engaging, ensuring that participants can immediately apply their learning in a real-world aviation environment. We move beyond traditional lectures to create a dynamic learning experience centered on active participation. The course combines expert-led presentations on core SMS principles with intensive, hands-on workshops and group exercises. A cornerstone of our approach is the extensive use of case studies derived from actual aviation incidents and safety successes, allowing for a deep analysis of root causes and effective mitigation strategies. Participants will work in teams to conduct simulated risk assessments, develop Safety Performance Indicators, and draft components of an SMS manual. Interactive sessions, facilitated discussions, and role-playing scenarios, particularly for audit and investigation processes, are used to build practical skills and confidence. Continuous feedback is provided by the instructor and peers, fostering a collaborative environment where complex safety challenges are explored from multiple perspectives. This blended learning approach ensures a comprehensive understanding of both the theory and the practical application of advanced safety management.

Course Agenda (Course Units):

Unit One Foundations of Advanced SMS

- The Evolution of Aviation Safety Thinking.
- Deep Dive into the ICAO SMS Framework (Annex 19).
- Comparing Global Regulatory Requirements (EASA, FAA, etc.).
- The Four Components of SMS Revisited: An Advanced Perspective.
- Establishing a Robust Safety Policy and Clear Accountabilities.
- The Role of the Safety Manager and the Safety Action Group (SAG).
- Integrating SMS with Existing Management Systems (e.g., QMS).

Unit Two Advanced Safety Risk Management (SRM)

- Proactive and Predictive Hazard Identification Methodologies.
- Advanced Risk Assessment Techniques and Matrix Customization.
- Bow-Tie Analysis for Risk Mitigation and Control.
- Understanding and Applying the ALARP (As Low As Reasonably Practicable) Principle.
- Developing and Implementing Effective Safety Controls.
- Risk Management for New Technologies and Operational Changes.
- Workshop: Conducting a Complex Safety Risk Assessment.

Unit Three Safety Assurance and Performance Monitoring

- The Core Principles of a Modern Safety Assurance Program.
- Designing Meaningful Safety Performance Indicators (SPIs) and Targets (SPTs).
- Techniques for Safety Data Collection, Analysis, and Reporting.
- Leading Effective Internal and External SMS Audits.
- Continuous Improvement: The Role of Management Review.
- Managing the Process of Change to Ensure Safety is Maintained.
- Practical Exercise: Developing a Safety Performance Monitoring Dashboard.

Unit Four Human Factors and Safety Culture

- Exploring James Reason's Swiss Cheese Model in Complex Scenarios.
- Human Error, Violations, and System-Induced Failings.
- Building and Sustaining a 'Just Culture' in Practice.
- Techniques for Effective Safety Communication and Promotion.
- Conducting Safety Surveys and Analyzing Cultural Indicators.
- Training and Competency in an SMS Environment.
- Case Study Analysis of an Accident from a Human Factors Perspective.

Unit Five SMS Implementation, Auditing, and Emergency Response

- Developing a Phased SMS Implementation Plan.
- Overcoming Common Challenges in SMS Implementation.
- Advanced Auditing Techniques and Root Cause Analysis.
- Preparing for and Responding to Regulatory Audits.
- Developing, Testing, and Refining the Emergency Response Plan (ERP).
- The Future of SMS: Predictive Analytics and Big Data.
- Final Project: Developing a Strategic SMS Improvement Plan.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As aviation moves towards greater automation and reliance on artificial intelligence, how must the principles of Safety Risk Management and Human Factors evolve to address the new, complex failure modes these technologies introduce?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by moving beyond standard regulatory compliance to focus on the strategic implementation and operational excellence of an Aviation Safety Management System. Unlike introductory programs that cover only the basics, this training provides a deep dive into the advanced, practical aspects of running a world-class SMS. We place a significant emphasis on the nuances of fostering a genuine 'Just Culture', a concept often discussed but rarely taught with practical implementation strategies. The curriculum is built around real-world, complex case studies, challenging participants to apply theoretical knowledge to scenarios they will face in their careers. Furthermore, the course is forward-looking, introducing concepts like predictive safety analytics and the integration of SMS with future aviation technologies. Rather than simply providing a checklist of ICAO requirements, this program equips leaders with the critical thinking skills, advanced analytical tools like Bow-Tie analysis, and change management techniques necessary to build a resilient, proactive, and continuously improving safety system that becomes an integral part of the organization's DNA.