Aviation Maintenance and Technical Records Management Training Course

Ref: #AVI6396

Course Introduction / Overview:

This comprehensive training course provides an in-depth exploration of the critical functions of aviation maintenance management and technical records control. In an industry where safety and regulatory compliance are paramount, the effective management of maintenance activities and the meticulous upkeep of technical records form the bedrock of airworthiness and operational integrity. This program is designed to equip participants with the essential knowledge and skills to navigate the complex regulatory landscape, including EASA and FAA requirements, and to implement best practices for optimal efficiency and safety. Drawing upon principles discussed by leading academics like Dr. Graham R. Braithwaite in the field of aviation safety management, the course delves into both the strategic aspects of maintenance planning and the detailed processes of records management. Participants will gain a holistic understanding of the entire maintenance lifecycle, from program development to aircraft lease transitions. BIG BEN Training Center has developed this curriculum to bridge the gap between theoretical regulations and practical, on-the-ground application, ensuring that professionals can confidently manage and audit maintenance operations and their corresponding documentation, a theme also central to publications like "Aircraft Maintenance and Repair".

Target Audience / This training course is suitable for:

- Aviation Maintenance Planners.
- Technical Records Specialists and Officers.
- Aircraft Maintenance Managers and Supervisors.
- Quality Assurance and Compliance Managers.
- Airworthiness Engineers and Staff.
- Maintenance Control Center (MCC) Personnel.
- Engineers and Technicians aspiring to management roles.
- Aircraft Leasing and Asset Management Professionals.
- Regulatory Authority Staff and Aviation Inspectors.

Target Sectors and Industries:

- Commercial Airlines and Cargo Operators.
- Maintenance, Repair, and Overhaul (MRO) Organizations.
- Business and Corporate Aviation Operators.
- Aircraft and Engine Leasing Companies.
- Aviation Regulatory and Governmental Bodies.
- Military Aviation and Defense Contractors.
- Component Repair and Manufacturing Companies.
- Aviation Consulting and Auditing Firms.

Target Organizations Departments:

- Maintenance and Engineering.
- Technical Records and Archives.
- Quality Assurance and Safety Management.
- Continuing Airworthiness Management (CAMO).
- Flight Operations and Dispatch.
- Supply Chain and Logistics.
- Fleet Planning and Management.
- Legal and Contracts Departments.

Course Offerings:

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

- Develop and manage an effective aircraft maintenance program in compliance with international standards.
- Implement robust systems for controlling and auditing aircraft technical records.
- Interpret and apply key EASA and FAA regulations related to maintenance and airworthiness.
- Master the procedures for managing Airworthiness Directives (ADs) and Service Bulletins (SBs).
- Enhance operational efficiency through optimized maintenance planning and scheduling.
- Conduct thorough audits of maintenance procedures and technical documentation.
- Manage the complexities of aircraft lease transitions, including delivery and redelivery requirements.
- Analyze maintenance data to improve aircraft reliability and reduce operational costs.
- Understand the critical role of human factors in maintaining a safe maintenance environment.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, engaging, and practical, ensuring that participants can immediately apply their learning in a professional context. This course moves beyond traditional lectures by integrating a dynamic blend of learning techniques. Sessions will be led by experienced industry experts who use real-world case studies to illustrate key concepts, from managing an Aircraft on Ground (AOG) situation to navigating a complex regulatory audit. A significant portion of the training is dedicated to group discussions and collaborative problem-solving exercises, allowing participants to share experiences and develop solutions to common industry challenges. Practical workshops will focus on tasks such as creating a work package, reviewing a back-to-birth traceability record, and analyzing reliability reports. This hands-on approach is reinforced by continuous feedback from the instructor, fostering a supportive learning environment where participants can build confidence in their new skills. The methodology emphasizes a deep understanding of not just the "what" but the "why" behind maintenance management and records control.

Course Agenda (Course Units):

Unit One Foundations of Aviation Maintenance and Regulatory Frameworks

- Introduction to Aviation Maintenance Management.
- The Role of the International Civil Aviation Organization (ICAO).
- Understanding the EASA Regulatory Structure (Part-M, Part-145).
- Navigating the FAA Regulations (FARs).
- The Critical Importance of Aircraft Technical Records.
- Responsibilities of Operators, MROs, and CAMOs.
- Defining Airworthiness and Continuing Airworthiness.
- Human Factors in Aviation Maintenance.

Unit Two Maintenance Program Development and Planning

- Understanding the Maintenance Steering Group (MSG-3) Philosophy.
- Developing and Amending an Aircraft Maintenance Program (AMP).
- Sources of Maintenance Data (MPD, MRBR).
- Short-term, Medium-term, and Long-term Maintenance Planning.
- Work Package Creation and Management.
- Resource and Manpower Planning for Maintenance Checks.
- Managing Unscheduled Maintenance and AOG Situations.
- Introduction to Maintenance Control Center (MCC) Operations.

Unit Three Comprehensive Technical Records Control

- Types of Aircraft Technical Records (Logbooks, Certificates, and Forms).
- Managing Airframe, Engine, and Propeller Logbooks.
- Control and Documentation of Airworthiness Directives (ADs).
- Assessment and Embodiment of Service Bulletins (SBs).
- Component Control and Life-Limited Parts (LLPs) Traceability.
- Back-to-Birth Traceability Requirements and Best Practices.
- Digital Technical Records Systems and e-Signatures.
- Archiving, Retention, and Security of Maintenance Records.

Unit Four Airworthiness Management, Reliability, and Quality

- The Role and Responsibilities of a CAMO.
- Performing Airworthiness Reviews and Issuing ARCs.
- Developing and Managing a Reliability Program.
- Collecting and Analyzing Maintenance Data for Reliability.
- Root Cause Analysis for Repetitive Defects.
- Principles of Quality Assurance in Aviation Maintenance.
- Conducting Internal and External Maintenance Audits.
- Preparing for Regulatory Authority Audits and Inspections.

Unit Five Advanced Topics in Maintenance and Records Management

- Managing Aircraft Lease Transitions (Delivery and Redelivery).
- Technical Records Requirements for Aircraft Sales and Purchases.
- Introduction to Maintenance Repair and Overhaul (MRO) Software.
- The Impact of Big Data and Predictive Maintenance.
- Corrosion Prevention and Control Programs (CPCP).
- Structural Integrity and Repair Management.
- Future Trends in Aviation Maintenance Technology and Regulation.
- Course Review and Final Assessment Workshop.

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 more data-driven, predictive maintenance models, what are the primary challenges in ensuring the integrity and security of digital technical records against cyber threats?

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

This course distinguishes itself by providing a holistic and integrated perspective on aviation maintenance, seamlessly connecting high-level management strategy with the meticulous, detail-oriented discipline of technical records control. Unlike programs that treat these as separate subjects, our curriculum is built on the principle that operational efficiency and regulatory compliance are two sides of the same coin. We move beyond a simple recitation of regulations by immersing participants in complex, real-world scenarios that challenge them to apply EASA and FAA rules to practical problems. The focus is on developing critical thinking and decision-making skills, enabling participants to not only manage a maintenance program but to optimize it. Furthermore, the course places significant emphasis on the financial and operational implications of both excellent and poor records management, particularly during high-stakes events like aircraft lease transitions. By exploring in-depth case studies of both successes and failures in the industry, participants gain actionable insights and a deep, practical wisdom that cannot be acquired from textbooks alone, preparing them to be leaders in airworthiness management.