Aircraft Maintenance Planning and Production Control Training Course

Ref: #AVI3730

Course Introduction / Overview:

Effective aircraft maintenance planning and production control are the cornerstones of a safe, reliable, and profitable aviation operation. This discipline is a complex interplay of regulatory compliance, resource management, and operational efficiency, demanding a high level of expertise. As detailed in seminal works like "Aviation Maintenance Management" by Harry A. Kinnison, the ability to forecast maintenance needs, schedule tasks efficiently, and control the production flow is critical to minimizing aircraft downtime and maximizing fleet availability. This comprehensive program offered by BIG BEN Training Center is designed to provide a deep, A-to-Z understanding of the principles and practices that govern modern Maintenance, Repair, and Overhaul (MRO) environments. Participants will move beyond theoretical knowledge to master the practical application of planning strategies, scheduling techniques, and production control methodologies. The curriculum addresses everything from interpreting maintenance program documents and ensuring EASA and FAA compliance to implementing lean MRO principles and leveraging digital tools for enhanced operational oversight, ensuring every participant leaves with the skills to drive performance and safety within their organization.

Target Audience / This training course is suitable for:

- Aircraft Maintenance Planners.
- Production Control Managers and Staff.
- MRO Project Managers.
- Technical Services Engineers.
- Maintenance Shift Leaders and Supervisors.
- Quality Assurance and Compliance Personnel.
- Aviation Logistics and Spares Planners.
- Continuing Airworthiness Management Organisation (CAMO) staff.
- Aircraft Engineers and Licensed Technicians aspiring to planning roles.
- Operations Managers in the aviation sector.

Target Sectors and Industries:

- Commercial Airlines.
- Cargo and Freight Air Carriers.
- Corporate and Private Jet Operators.
- Maintenance, Repair, and Overhaul (MRO) organizations.
- Aircraft Leasing Companies.
- Military Aviation and Defense Contractors.
- Governmental bodies and Civil Aviation Authorities.
- Aerospace Manufacturing and Engineering Firms.

Target Organizations Departments:

- Maintenance and Engineering.
- Planning and Production Control.
- Technical Services.
- Quality Assurance and Safety.
- Logistics and Supply Chain Management.
- Continuing Airworthiness Management (CAM).
- Operations Control Center (OCC).
- Technical Records.

Course Offerings:

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

- Develop and manage aircraft maintenance programs in compliance with regulations.
- Master short-term, medium-term, and long-term maintenance forecasting techniques.
- Create efficient work packages and task cards for line and base maintenance.
- Implement effective production control strategies to minimize aircraft ground time.
- Optimize the allocation of manpower, tooling, and facility resources.
- Analyze and improve maintenance turnaround time (TAT) using key performance indicators.
- Apply lean principles to streamline MRO processes and eliminate waste.
- Integrate Safety Management Systems (SMS) and human factors into planning.
- Ensure accurate and compliant maintenance documentation and record-keeping.
- Evaluate the impact of digital MRO and predictive maintenance technologies.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, immersive, and practical, ensuring that participants can immediately apply their learning in a real-world context. We move beyond traditional lectures to foster a dynamic learning environment built on active participation and collaborative problem-solving. The course heavily utilizes case studies drawn from actual MRO scenarios, allowing participants to analyze complex planning challenges and develop viable solutions. Group discussions and team-based exercises will focus on creating maintenance schedules, optimizing resource allocation for a simulated C-check, and responding to unscheduled maintenance events. Interactive workshops will provide hands-on experience with planning tools and production control boards. Our expert instructors facilitate these sessions, providing continuous feedback and guiding participants to connect theoretical concepts with their practical application. This blended approach ensures a deep and lasting understanding of aircraft maintenance planning and production control principles, equipping attendees with both the knowledge and the confidence to excel in their roles.

Course Agenda (Course Units):

Unit One: Foundations of Aircraft Maintenance Planning

- Introduction to Aircraft Maintenance Management.
- The Role of a Maintenance Planner and Production Controller.
- Understanding the Aircraft Maintenance Program (AMP).
- Navigating Aviation Regulations (EASA and FAA).
- Distinguishing Between Planning, Scheduling, and Control.
- Introduction to Maintenance Documentation and Technical Records.
- The Structure of a Continuing Airworthiness Management Organisation (CAMO).

Unit Two: Strategic and Long-Range Maintenance Planning

- Forecasting for Heavy Maintenance and Major Checks (C-Checks, D-Checks).
- Fleet Management and Maintenance Slot Allocation.
- Strategic Resource Planning: Manpower, Hangar Space, and Tooling.
- Budgeting and Cost Control in Maintenance Planning.
- Developing and Optimizing the Maintenance Schedule.
- Managing Modifications and Service Bulletins.
- Liaison with Supply Chain for Long-Lead-Time Parts.

Unit Three: Tactical Planning and Production Control

- Planning and Scheduling for Line Maintenance (A-Checks and Daily Checks).
- Work Package Creation and Task Card Management.
- Managing Unscheduled Maintenance and Aircraft on Ground (AOG) Situations.
- Effective Shift Handovers and Communication Protocols.
- Production Control Boards and Visual Management Techniques.
- Monitoring Work Progress and Managing Deviations.
- Principles of Critical Path Analysis in Maintenance Tasks.

Unit Four: Optimizing MRO Performance and Efficiency

- Key Performance Indicators (KPIs) for Maintenance Planning.
- Measuring and Improving Aircraft Turnaround Time (TAT).
- Introduction to Lean Principles in an MRO Environment.
- Waste Reduction and Process Improvement Techniques.
- Reliability Programs and their link to Maintenance Planning.
- Root Cause Analysis for Maintenance Delays.
- Auditing and Ensuring Compliance in Planning and Production.

Unit Five: Advanced Concepts and Future of Maintenance Planning

- Integrating Safety Management Systems (SMS) into Planning.
- Understanding and Mitigating Human Factors in Maintenance.
- The Role of Digital MRO and Paperless Maintenance.
- Introduction to Predictive Maintenance (PdM) and Health Monitoring.
- Data Analytics for Maintenance Decision Making.
- Managing Third-Party Maintenance Contracts.
- Course Review, Final Assessment, and Action Planning.

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:

How might the integration of predictive analytics and AI fundamentally reshape the traditional roles of maintenance planners and production controllers in the next decade?

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

This course distinguishes itself by providing a holistic and deeply practical perspective that bridges the critical gap between strategic planning and tactical production control. While many programs focus on one area, we integrate both, reflecting the interconnected reality of a high-performing MRO environment. Our curriculum is meticulously structured to move beyond mere regulatory knowledge, focusing instead on the application of that knowledge to drive operational excellence, efficiency, and safety. Participants will not just learn what a maintenance program contains; they will learn how to optimize it. They will not just hear about lean principles; they will engage in exercises designed to identify and eliminate waste in real-world maintenance workflows. Furthermore, the course is forward-looking, dedicating significant time to the emerging trends of digital MRO and predictive maintenance. This ensures that attendees are prepared not only for the challenges of today but are also equipped with the foresight to lead their organizations into the future of aviation maintenance. The emphasis on case studies and interactive problem-solving, facilitated by seasoned industry experts, guarantees a rich, applicable learning experience.