

Reliability for Regulators – Effective Oversight and Auditing by Competent Authorities – 2 Days

Introduction

A key element of any State Safety Programme now requires the oversight of numerous safety KPIs. None more important than aircraft maintenance reliability, since there is a direct impact on owner/operator safety. In simple terms, regulators are required to demonstrate reliability oversight as a basic fundamental to their safety obligations. Air transport the world over is having to deal with increasingly complex operational & technical systems, not least integrated Safety Systems in an extensive environment of reducing cost and increasing competitive advantage. Reduced aircraft maintenance reliability, also means reduced aviation safety performance for the state (as well as the operator), which can have critical impact on the nation as whole, and may include –

Higher exposure to aviation incidents & accidents at the national level;
Diminished reputation for safety and reliability on the global stage;
Operational restrictions placed on registered aircraft outside of sovereign borders.

To this end, aircraft maintenance reliability is considered as one of the major requirements by National Aviation Authorities (NAA) and should be treated as an intrinsic element of the State Safety Programme (SSP). Therefore, the NAA's ability to maintain a clear oversight of Aircraft Maintenance Reliability in the Commercial Air Transport domain is critical to the national and international success of the state.

Reliability programs form an essential element of the continuing airworthiness process and in fact, is mandatory when aircraft are managed using Maintenance Steering Group or Condition Monitoring maintenance programme methodologies. As a regulator, you will be introduced to the concept and the purpose of a reliability program, not only to ensure that the aircraft maintenance program tasks are effective and their periodicity is adequate, but also to ensure that aircraft maintenance is performed in a safe manner utilizing all safety reliability data available to it.

Additionally, the reliability program may result in the escalation or deletion of a maintenance task, as well as the de-escalation or addition of maintenance tasks. As the regulator, you will need to understand if and when to approve such amendments by investigating and analyzing reliability data presented by your operators with a view to the approval of changes to their aircraft maintenance programmes.

tel + 359 2 821 08 06
email team@sassofia.com

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Who is this course for?

This intensive 2 Days course is specifically aimed at regulatory personnel who are involved in the review and determination of approval of reliability programmes. In particular, regulatory professionals with responsibility for approval of new aircraft maintenance reliability functions, as well as consideration for approval of amendments to existing systems, not least those professionals involved with the achievement of an effective interface between the operator's reliability functions and the concerned departments within the National Aviation Authority.

What is the benefit of the training – what will I learn?

- a) Understand the importance of Aircraft Maintenance Reliability within the context of safety and the remit of the SSP.
- b) Expectations from your Owner / Operator of aircraft.
- c) Assessment and decision-making of proposed reliability systems (Initial Application / Amendment)
- d) Reliability Centred Maintenance equals Safety Centred Maintenance
- e) Supporting Subpart G Reliability related Continued Airworthiness Management (CAM) organizations in terms of changing regulatory and operational environment – How to support your operators and keep them compliant.
- f) Reviewing, assessing and reporting on overall reliability at state and international level – What the regulator needs to be doing.

Detailed Content / Topics - The following Subjects will be addressed

- Maintenance Programme Oversight – Basics for the Regulator
- Aircraft Maintenance Programmes – EASA Regulatory Drivers;
- Reviewing Applicable Airworthiness Standards
- Appendix I to AMC M.A.302 & M.B.301 (b) – Maintenance Programme Content
- Part 21:
- AMC 21.A.3B(b) – Determination of an Unsafe Condition – Introduction
- AMC 21.A.38(b) – Guidelines for establishing if a condition is unsafe – Systems
- GM 21.A.35(b)(2) – Objective; Content of Function; Reliability Testing
- GM 21.A.35(f)(1) & (2) – Flying Time for Function & Reliability Testing
- 21.A.91 – Classification of Changes to TC – Minor Changes
- 21.A.91 – Classification of Changes to TC – Assessment of Change for Classification – Complimentary Guidance
- Aircraft Continuing Airworthiness Monitoring

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- M.B.303 – Aircraft Continuing Airworthiness Monitoring
- AMC1 to M.B.303(a): ACAM Survey Programme;
- AMC1 to M.B.303(b): ACAM Scope of Surveys;
- GM M.B.303(a): Combined Surveys;
- The risk based approach to Monitoring Airworthiness Status

- Understanding the concept of Airworthiness Key Risk Elements (Appendix III to GM M.B.303 (b) – Key Risk Elements, review and assessment techniques):
- C.1 – Aircraft Maintenance Programme

- Development and assessment of Scheduled Maintenance Tasks;
- Maintenance of specific equipment, modifications and repairs;
- Assessing Mandatory Instructions for Continuing Airworthiness (ALIs, CMRs, TCDS, etc.);
- Assessing other mandatory instructions – ADs and Repetitive ADs;
- Maintenance related to operating rules – RVSM, MNPS, B-RNAV, ETOPS/EDTO;
- Additional scheduled maintenance measures due to use of aircraft and operating environment;
- Approval Status of additional or alternative instructions;
- As required presence and activity of reliability programme;
- AMP Approval via regulator or via indirect approval procedures
- Review of Aircraft Compliance with AMP
- C.2 – Component Control

- Mandatory Maintenance Tasks
- ADD, Repetitive Defect, Unscheduled maintenance
- Life Limited and Time Controlled Components
- Impact of component control on Aircraft Maintenance and Reliability Programmes
- C.3 – Repairs

- Repair Status – Tracing repairs and unrepaired damage/deterioration
- Repair Instruction compliance with approved repair data
- Repairs resulting in new or amended Airworthiness Limitations
- Inclusion of new or amended maintenance instructions in AMP
- Comparison of Physical Repair Status with Documented Repair Status
- Establishing Safety Significance – Review of KREs ; Risk based analysis on non-conformities

- Day 2 – Key elements of an Effective Reliability Programme

- Advising owners/operators on the necessity of a reliability programme.

- The purpose and relationship of reliability with maintenance programming.
- Task/MP effectiveness and periodicity, Interval escalation/de-escalation (restriction) decisions – what reliability data does the regulator need to approve the amendment?
- Which aircraft types need reliability programmes and which do not?

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- Evidence of Reliability Centred and Condition Monitoring Maintenance procedures.
- The Reliability Programme
- 1. Applicability for Large Fleets – When and when not to incorporate a Reliability Programme
- 2. Applicability for Small Fleets – When and when not to incorporate a Reliability Programme
- 3. The incorporation of engineering judgement into the system
- 4. Contracted Maintenance
- 5. Reliability Programme:

- Your owner/operator’s objectives,
- Identification of Items,
- Terms and Definitions that should be present in your owner/operator’s reliability system,
- Corrective Actions
- Organizational Responsibilities,
- Evaluation and Review,
- Approval of Maintenance Programme Amendments,

- Techniques for Reliability data gathering, auditing, analysis and reporting
- GM 21.A.3A(a)- The system for collection, investigation and Analysis of Data
- AMC No. 1 to 21.A.3A(a) – Data related to Flammability Reduction Means Reliability
- AMC No.2 to 21.A.3A(a) – Data Related to ETOPS Significant Occurrences
- GM 21.A.3A(b) – Occurrence Reporting and Reporting to the Regulator
- GM No. 2 to 21.A.139 – Quality System – Conformity of Supplied parts and Appliances
- Approving Information Sources and data collection means
- Approving your operators methods for displaying information
- Understanding and approving your operator’s examination, analysis and interpretation methods.
- Range and Depth of Engineering Analysis of your operator.
- Availability and Continuity of reliability data from your operator’s third parties.
- Presentation of Information by the operator to the Competent Authority
- Regulatory Requirements for a Compliant Quality System
- Methods to assess the effectiveness of the Quality System
- How to Measure Effective Performance Delivery During Compliance Audits
- Assessing Auditor Competences
- Compliance Audit Processes how to be Effective
- Using Psychological Tools to Support Audit Questioning
- Effective Audit Communication Review
- How to deliver Effective Sampling during Quality Audits
- Assessment of Remedial Action – follow up and measures of effectiveness
- Root Cause Analysis – Processes for Validation

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Target Groups

Regulator personnel involved with safety and reliability oversight; Safety Accountable Managers, Reliability Managers, Engineering Quality Managers; Maintenance Quality Managers

Pre-Requisites

Previous Knowledge and appreciation of Aircraft Maintenance Programming under EASA Part M or regulatory equivalent

Learning Objectives

- How to support your operators and keep them compliant
- What the regulator needs to be doing
- The importance of Aircraft Maintenance Reliability within the context of safety and the remit of the SSP

Certificate Wording

Introduction to Reliability Programs for Regulators, Considering Applicable Airworthiness Standards, Reliability Program Assessment – Initial Application & Amendment. Aircraft Continuing Airworthiness Monitoring. Risk Based Approach to Monitoring Airworthiness Status.

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- "The instructor used the right words to explain the material."*
- "The discussions among the group were very beneficial."*
- "The instructor showed very resourceful background and experience."*
- "All sections of the course were related to my field."*
- "Adequate answers were given to specific questions."*

Duration

2 Days – To commence at 09.00 and finish at 17.00, with appropriate refreshment breaks.

Sofema Aviation Services offers a flexible approach to developing all in-company training courses which are specific to the client's needs. If you would like additional information concerning how course content may be configured to be more appropriate for your organisation please email team@sassofia.com

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