

# Reliability & MSG-3 Processes – Theory & Practical – 5 Days

## Introduction

Reliability programs form an essential element of the continuing airworthiness process and in fact are mandatory when aircraft are managed using MSG methodology.

The purpose of a reliability program is to ensure that the aircraft maintenance program tasks are effective and their periodicity is adequate, in addition the reliability program may result in the escalation or deletion of a maintenance task, as well as the de-escalation or addition of a maintenance task.

Whilst the primary purpose is to demonstrate the effectiveness of the Aircraft Maintenance Program, we can use the reliability program to support both the optimisation and development of the maintenance program.

Reliability data is also collected and analysed by the manufacturer as a tool to optimise the maintenance process and such information is typically considered by the MRB working groups. MSG 3 delivers a top down approach which focuses on the need to ensure either economic viability or to maintain the aircraft system, component or structure in an airworthy condition.

For each potential failure cause, the MSG-3 guidelines provide task oriented logic to determine the appropriate scheduled maintenance tasks. The resulting task oriented program consists of specific tasks, selected for a given functional failure consequence based on actual reliability characteristics of the equipment they are designed to protect.

The course is developed to provide for a practical approach to delivering an effective Reliability Program within the organisation and will be of immense benefit to anyone with responsibility for the reliability process or an obligation to perform audits of the reliability process.

## Who is the Course for?

The course will also be beneficial to other persons working within a CAMO environment including Maintenance Program Management and Quality Audit Staff.

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## Detailed Content / Topics - The following Subjects will be addressed

### Day 1

- Abbreviations & Terms
- Aircraft Maintenance Program Introduction
- General Introduction to Aircraft Reliability Systems
- Part M Subpart C Regulatory Driven Reliability requirements
- Maintenance Planning Engineering Function
- The Benefits of an Effective Reliability Program
- Performance Standards
- Measures of Reliability
- Operator Responsibilities
- Structure and Development of the Reliability Program
- Aircraft Maintenance Programme Reliability Considerations

### Day 2

- Abbreviations
- Structure and Development of the Reliability Program
- Aircraft Maintenance Programme Reliability Considerations
- Information Sources & Data Acquisition
- Reliability Analysis and Interpretation
- Standard Deviation & Alert Levels
- Calculating Reliability Data
- Indicators of Structural Reliability
- Indicators of Aircraft Components Reliability
- Presenting Reliability Data
- Engine Reliability Program (Engine Condition Trend Monitoring (ECTM))
- Effective use of reliability data to support the management of Continuing Airworthiness
- Understanding Strip reports and working with workshop data

### Day 3

- Abbreviations & Terms
- Reliability Programme Administration
- Manage Competencies within a Reliability Framework
- Developing Reliability Procedures
- Reliability Auditing
- Corrective Actions
- Reliability Driven Optimization
- Managing External Information Sources
- Pooling Arrangements
- Evaluation, Review and Changes
- Managing check findings in the context of reliability
- Measuring the Effectiveness of the Maintenance Planning Process

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### Day 4

- Abbreviations & Terms
- The Origins of MSG-3
- Aircraft Maintenance Fundamentals
- Aircraft Maintenance Program – Developments
- General Introduction to MSG-3 Process
- Features and Benefits of MSG-3
- MSG-3 Analysis Methodology
- System and Power Plant Analysis
- Structural Analysis
- Zonal Analysis
- EWIS / HIRF

### Day 5 – Practical

- Alert Level Deviation
- Implementing an effective reliability system
- The Mathematics behind the Reliability
- Measuring Failure Rates
- Rates and Chances of Failure
- Reliability Programme Elements
- Standard Deviation

## Target Groups

CAMO staff involved in managing the Maintenance or Reliability programs, Reliability Staff and other staff with technical involvement in the Aircraft reliability processes. The course is beneficial for persons requiring a comprehensive understanding of MSG-3.

The course will also be beneficial to other persons working within a CAMO environment including Maintenance Program Management and Quality Audit Staff.

## Pre-Requisites?

A background in an aviation maintenance planning and reliability will be a distinct advantage however the course is stand alone.

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## Learning Objectives

This course aims to provide the participants with an in depth understanding of the MSG-3 process and methodology employed to develop MSG-3-based Maintenance Programmes.

This training covers all elements required to ensure you achieve the maximum benefit from your Reliability Program.

## What do People Say about Sofema Aviation Services Training?

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

## Duration

5 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](mailto:team@sassofia.com)



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