

# Aircraft Reliability Systems – Understanding the Maths Workshop – 2 Days

## Introduction

Reliability can be about far more than simply maintaining Maintenance Programme (MP) effectiveness and reliability. Data collected through the reliability analysis process can be used to support the optimisation of the maintenance process.

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.

A reliability program may either be a part of the aircraft maintenance program (AMP) or an independent program on its own, with suitable reference in the AMP. Continuing Airworthiness regulations per EASA member states or third country requirements generally define these responsibilities and we know that operators are ultimately responsible and therefore accountable for the airworthiness of their aircraft. EASA & third country regulators always require the inclusion of a reliability programme for an operator of large aircraft and/or when the Maintenance program is based on Maintenance Steering Group (MSG) Logic or on condition monitoring.

This intensive 2 day workshop will explain in detail and raise awareness regarding the management, oversight and methodologies involved in Aircraft Reliability Systems..

## Who is the Course for?

This course is aimed at Quality Assurance staff required to audit the Reliability process, CAMO staff involved in managing the Maintenance or Reliability programs. It is also suitable for other staff with specific general interest

## What is the Benefit of this Training – What will I learn?

A detailed range of demonstrations and mathematical exercises that are designed to provide the delegate with:

- A basic knowledge of statistical analysis, and how these principles are applied to reliability data.
- Using worked examples and raw reliability data, understand & apply the mathematical calculations associated with aviation reliability.
- Provide guidance and interpretation with regard to data and findings drawn from calculated results.

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<b>Level</b>	
<b>Price</b>	On Demand

## What is the Benefit of this Training – What will I learn?

- Guidelines on how to use Standard & Alert Level Deviation principles to set Upper Control Limits.
- A demonstration of various forms of data display & reporting that is employed by the typical large aircraft operator with a view to AMP enhancement & optimization.

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

### Day 1

- The Mathematics behind Aircraft Reliability
- Probability Basics
- Descriptive Statistics
- Charts & Graphs
- Tabular Displays
- Probability Laws
- Introduction to Sample Theory
- The basics of distribution
- Discrete (Poisson Distribution Overview)
- Continuous Distribution
- Normal Distribution
- Standard Normal
- Estimation Theory
- Proportions
- Mean Scores
- Data Collection
- Sample Planning

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

### Day 2

- The Mathematics behind Aircraft Reliability
- Calculating Arithmetic Mean
- Calculating Standard Deviation – Population & Sample
- Setting Standard Deviation (68% 95% and 99%)
- Use of Mean & Standard Deviation to set the UCL (Mean + 1SD, Mean + 2SD, etc..)
- Identifying & Managing False Alerts
- Determining Confidence levels, intervals, etc.
- Rate of Failure;
- Mean Time to Failure (MTTF);
- Mean Time Between Failure (MTBF);
- Mean Time Between Unscheduled Removals (MTBUR)
- Mean Time To Removal (MTTR)
- Chance of Failure
- Usefulness

## Target groups

Quality Assurance staff required to audit the Reliability process, CAMO staff involved in managing the Maintenance or Reliability programs. Other staff with specific general interest.

## Pre-requisites

A background in an aviation airworthiness environment.

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## Learning Objectives

A reliability program provides an appropriate means of monitoring the effectiveness of the maintenance program. This training covers all elements required to ensure you achieve the maximum benefit from your Reliability Program, whilst augment the delegates understanding of the mathematics employed by a wide range of aircraft reliability software systems.

## 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 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 – each day will commence at 09.00 and finish at 17.00, with appropriate refreshment breaks.  
To register for this training, please email [team@sassofia.com](mailto:team@sassofia.com) or Call +359 28210806



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