

# 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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**Date**

**Category**

Personal Development

Venue

Level

Price

## 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.

## Why Should I choose SAS for the training?

Sofema Aviation Services a Regulatory training and consulting company with 45 years commercial aviation experience and 13 years operational experience. Since we started we have provided certificates to approx 30,000 delegates we have grown for 2 primary reasons!

The first is that we are professional and we listen to our customers. Please visit our [download area](#) as an example of how we engage with our customer.

The second is not only the fact that our prices are far more cost effective than our competitors it is that our [discount program](#) leaves all the others way behind – please do not take our word for it check it out!

## What Makes SAS Aircraft Reliability Systems – Understanding the Maths Workshop – 2 Days different?

Because our courses are written by people who have lived through the regulations. The author of the training material has more than 25 years' experience as an auditor across the entire regulatory spectrum.

At Sofema Aviation Services our focus is on accepting that compliance with Regulations is in fact minimum compliance. Interpreting the regulations in a way which enables the development and optimisation of our business is where we should see opportunity to drive efficiencies and cost saving.

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

Day 1 – The Mathematics behind Aircraft Reliability

Probability Basics

Descriptive Statistics

Charts & Graphs

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

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

### 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.

## 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.

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## 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

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 [office@sassofia.com](mailto:office@sassofia.com)



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