

MSG-3 - An Overview

Overview

MSG-3 is a proven methodology used to determine a maintenance regime that realises the inherent safety and reliability levels of aircraft equipment and systems at a minimum total cost. It uses principles derived from research carried out in the American airline industry in the 1960s that challenges traditional overhaul concepts.

This course is designed to provide the delegate with an introduction to MSG-3 that provides the background information and process knowledge to allow personnel to participate in MSG-3 studies. The fundamental principles are established using a combination of advanced presentation techniques, informal delegate instructor interaction and formal scripted exercises. This course is aimed at the aviation sector.

The course begins by defining MSG-3, its aims and historical origins. The subsequent modules provide the delegate with a basic understanding of the failure characteristics theory required to understand the MSG-3 logic and then overviews the components of the MSG-3 methodology. Separate modules overview MSG-3 specifics such as Structurally Significant Items (SSI), Zonal Maintenance and Lightning / High Intensity Radiated Field (L/HIRF) Analysis. The course concludes with a brief look at MSG-3 Management issues and a summary of the course and conclusion.

Target Audience

The course is designed to meet the needs of aviation personnel who require an overview of MSG-3. It is ideal for any organisation considering involvement in MSG-3, Managers that need a basic understanding and personnel involved (at any level) in activities supporting MSG-3 studies.

Objectives and Utility

On completion of this training course the delegate will understand the background to, need for and the scope of MSG-3. They will have gained an understanding of the technical and management issues pertinent to MSG-3 and knowledge sufficient to enable a competent individual to understand and support MSG-3 studies.

The delegate will benefit professionally from the knowledge which has been given, and the sponsoring organisation gains personnel who have an understanding of the MSG-3 methodology.

The individual is better equipped for their role and they will have undergone a degree of personal development through the expansion of their knowledge base.

The Training Process

The course establishes the basic principles of MSG-3 and some of the basic failure characteristic theory used in the methodology.

The course is supplemented by practical exercises in order to reinforce the training and to facilitate retention. The exercises are based on aviation examples in order to ensure that they are as realistic and effective as is practically possible.

Course Programme

Day 01 - AM

102-T-M **MSG-3 Introduction and MSG-3 Defined**

This module explains the requirement for and describes a brief history of MSG-3. The meaning of Key MSG-3 terminology is explained and an overview of the MSG-3 process is described.

104-T-M **MSG-3 - Reliability and Failures**

This module describes the basis of engineering failures and how this influence's maintenance decisions and explains the meaning of key engineering failure terminology.

105-T-M **MSG-3 - Significant Item (SI) Selection**

The Significant Item (SI) selection process is introduced and the purpose of the activities, which occur in a SI selection process is covered.

117-T-M **MSG-3 Functions - Failures - Effects - Cause Sheet**

In order for the MSG-3 Analyst to appreciate the requirements of a Functions - Failures - Effects - Cause Sheet it is necessary to understand the principles behind this technique. This module overviews the details of an Functions - Failures - Effects - Cause Sheet in relation to MSG-3.

119-T-M **MSG-3 Maintenance Tasks**

This module lists and describes the types and characteristics of MSG-3 Preventive Maintenance tasks.

Day 01 - PM

108-T-M **MSG-3 Task Selection**

Appreciate the basics of Preventive Maintenance task preference, evaluation and selection.

109-T-M **MSG-3 and Structures**

An overview of structure design philosophy, the procedure for analyzing structures and the meaning of structural and maintenance terminology are addressed in this module.

111-T-M **MSG-3 Zonal Maintenance**

This module covers the basic principles behind Zonal Maintenance. The ATA-2200 Standard is used.

120-T-M **MSG-3 Lightning / High Intensity Radiated Field (L/HIRF) Analysis**

Lightning / High Intensity Radiated Field (L/HIRF) analysis is established in the aviation industry as dedicated maintenance to reduce the possibility of single failure cause and occurrence of common failure cause across redundant channels and L/HIRF causing aircraft airworthiness implications. This module provides an overview of the methodology.

112-T-M **Implementing MSG-3 & Age Exploration**

This module provides an overview of the problems associated with producing the MSG-3 derived task recommendations into a workable Preventive Maintenance programme and broadly looks at management actions relating to the MSG-3 effort.

If MSG-3 is to be the success it should be, it is vital that the project is properly controlled. This must start at the very first approaches to MSG-3 and continue right through the analysis and subsequent implementation of the maintenance programme.

Properly implemented MSG-3 will reap benefits for an organisation because it will develop a scheduled maintenance programme which will be focused and optimised for the equipment in its operating context. This should have the advantage of reducing the overall cost of maintenance, Preventive and Corrective.

An MSG-3 derived maintenance schedule also enables the organisation to plan ahead with more confidence, an example could be the simple planning for the provision of spares used during scheduled maintenance. This aspect not only ensures that spares are available when required but also a relevant stock holding is established to ensure an acceptable level of availability.

These issues are broadly discussed during this module.

The activities necessary to implement and sustain an MSG-3 analysis programme are overviewed along with the basic principles of an Age Exploration programme.

122-T-M MSG-3 Summary and Conclusion

Brief summary of key points of course.