

Managing Maintenance Error – A Practical Guide

By James Reason & Alan Hobbs

Nowadays, maintenance is recognized as one of the most important issues in the aerospace industry. Yet it has often been treated as a side activity in the past. The reason for this may be the overall lack of automation opportunities. Maintenance simply depends on human hands and minds. Therefore, (human) errors are and remain a major cause of maintenance failures. This book provides a guide to manage the risk of these maintenance errors.

A book review by Stephan Peters

The risk of an error to occur cannot be entirely avoided; the risk simply cannot be eliminated. By informing maintenance staff on why and how maintenance errors occur, control measures can be put into place to limit the risks. The ultimate goal is to create an organization that is resilient in dealing with (new) maintenance errors, an organization that proactively seeks to control potential risks in the future. To apply effective measures to aircraft maintenance, one has to understand the cause of errors, which is part of human factors research, while the measures and procedures to be implemented will be more maintenance and safety-oriented. Knowledge of both fields is therefore a plus.

Book discussion

Maintenance is one of the most error-sensitive activities undertaken these days. The concept of maintenance errors is introduced and illustrated in the first chapter with several fitting examples. The authors explain the different levels on which errors occur in the second chapter and stress the point that error management systems are just as susceptible to errors as the system they are meant to correct. Next, the key human factors concepts are discussed. Different human properties and factors that influence human performance are explained, to form the necessary background information for the reader.

The next four chapters form the true core of this book. They describe the

type of errors that occur and the factors that increase error frequency. To put these theoretical concepts into perspective, three case studies are given to illustrate how wrong things can go wrong. Finally, the authors list the principles of error management, which describe everything about errors and failures that we already knew, but never realized.

The book continues with measures one can take to counter these maintenance errors and failures. The authors spread these measures out over three chapters, according to person & team, workplace & task, and organization. The authors clearly value organizational culture as an important factor in error management, as they include a separate chapter on safety culture.

Finally, the book concludes with, what the authors call, ‘the toughest aspect of error management’: managing it all and continuing to keep up the good work. This last chapter gives some practical tips on how to start the difficult task of error management, on how to manage it, and on how to keep the work going.

Conclusion

“Managing Maintenance Errors” provides a thorough, yet concise explanation of managing maintenance errors. The book has a logical structure in which the concepts and the ideas are explained in a clear and readable style. All issues are appropriately supported by the illustrations and the three case studies link everything

together as practical examples. The book provides a wealth of practical knowledge, drawn from the experience of the authors.

Maintenance and safety professionals will value this book as an excellent guide to the field of maintenance error management while at the same time it proves to be a recommendable read for human factors professionals and for anyone dealing with maintenance-sensitive systems.

About the authors

James Reason is consultant to numerous organizations throughout the world and Professor Emeritus of Psychology, University of Manchester, England. Alan Hobbs is currently a Senior Research Associate, San Jose State University Foundation at the NASA Ames Research Center, California.

About the reviewer

Stephan Peters is currently graduating at the Aerospace Management and Operations chair at Delft University of Technology. He has completed his undergraduate studies in Aerospace Engineering at the same university. His academic interests focus on entrepreneurship, finance and supply chain management in the aviation industry.

Book Information

Author: James Reason & Alan Hobbs
 Title: Managing Maintenance Error – A Practical Guide
 Publisher: Ashgate Publishing Limited
 Publishing Date: May 2003
 ISBN: 0-7546-1591-X

Ashgate website: www.ashgate.com

