

Better Business Results Through Improving Asset Operability & Maintainability



Course Description

Course Duration

The duration is 1 day.

Audience Profile

Owners of industrial or infrastructure assets and facilities, Managers, Engineers, Planners, Designers, Logisticians, Tradespersons, Operators, Finance Managers, Safety Officers and all those who contribute to asset, facility or maintenance management and who are eager to achieve a sustainable improvement in productivity, revenue and return on investment at reduced cost and risk level.

Course Objectives

To equip those active in the management of productive and infrastructure assets with the knowledge, skills and attitudes needed at the various stages in the life of an asset for optimising the quality and quantity of asset outputs, minimising risk and use of inputs, as required by the business plan. The course will combine theoretical concepts and practical considerations to refine the understanding of:

- ergonomics, operability, maintainability, hazard elimination and life cycle cost;
- the ability to recognise when processes and assets are not well designed for operability and maintainability;
- modify the design of processes, assets or operating and maintenance procedures as a result of the HazOps and Bretby Maintainability Index analysis.

The value of the course will come from implementing the practical techniques presented in this course.

What makes this course different?

The main difference is the inclusion of the Bretby Maintainability Index analysis. Although this is a worthwhile technique there is little information available. We also promote applying designing for maintainability analysis to existing assets.

Main Topics

- Asset Operability & Maintainability Explained

- Towards best practice for asset operability & maintainability
- What is improving asset operability and maintainability?
- What are the objectives and goals of improving asset operability and maintainability?
- How do asset operability and maintainability link to asset management
- Definitions and acronyms
- What are the benefits of improving asset operability and maintainability?
- Why should you consider improving asset operability and maintainability?
- What is the asset operability and maintainability improvement process?
- How should you implement improved asset operability and maintainability?
- **How Do You Select Assets for Operability and Maintainability Improvement?**
 - How to identify the assets for analysis?
 - How do you set-up an asset register?
 - Which asset to analyse first?
 - How to assess risk?
 - How to assess assets for operability and maintainability?
 - How do you comprehensively establish functions?
 - Syndicate exercise 1
- **What is Ergonomics?**
 - Ergonomics as a multi-disciplined science
 - What are the benefits of improved ergonomics?
 - What are anthropometry and bio-mechanics?
 - What is a man-machine system?
 - How can you apply ergonomics?
 - Syndicate exercise 2
- **What Are the General Principles of Improving Asset Operability?**
 - How to apply ergonomics to asset operability?
 - How to optimise the man - machine interface?
 - What are the important factors of the physical environment?
 - How to improve asset safety?
 - What is a hazards and operability analysis?
 - At what times do you perform hazards and operability analyses?
 - How to perform the HazOps analysis



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- Which HazOps analysis sheets do you use?
- What are the benefits of HazOps?
- What are the disadvantages of HazOps?
- **What Are the General Principles of Improving Asset Maintainability?**
 - What is asset maintainability?
 - What are the fundamental principles of maintainability?
 - How to specify maintainability?
 - How to measure maintainability?
 - How to (re)commission assets?
 - How do you assess existing assets for maintainability?
 - Syndicate exercise 3
- **What Methods Are Available for Maintainability Analysis?**
 - Which asset maintainability analysis do you use?
 - US Standard MIL-HDBK-, maintainability prediction
 - The Bretby Maintainability Index
 - What are the index components?
 - How to perform the BMI analysis?
 - How to apply the Bretby Maintainability Index?
 - Example of a BMI analysis
 - Syndicate exercise 4
- **How to Implement Improved Asset Operability and Maintainability?**
 - How to implement asset operability and maintainability improvement?

All delegates will receive a textbook that sets new standards for industrial training materials that will reinforce the training experience for many years to come.

Seminar Leader – Emile Eerens

Emile Eerens holds a doctoral degree in Engineering and a Grad.Diploma in Business Management. Emile has experience in planning and managing shutdowns in power stations and mines in Australia and is extensively involved in “training for excellence” in the wider business of asset maintenance and management.

Emile has over 22 years experience as an Asset Maintenance and Management Engineer, Trainer and Consultant. In his career he worked in the Power Generation, Electricity Distribution, Mining, Health Facilities, Construction and Petrochemical Industries and has experience in Supervision, Design, Engineering, Research & Development, Training and Management.

He is in demand as a developer and presenter of various public and in-house Asset Maintenance and Management courses.



Emile is the author of the manuals:

- *Business Driven Asset Management for Industrial and Infrastructure Assets (2003)*
- *Developing Maintenance Plans with Reliability Centred Maintenance (2003)*
- *Optimizing Asset Performance with Total productive Maintenance (2003)*
- *Improving Asset Operability and Maintainability (2003)*
- *Improving Assets and their Management with Value Methodology (2003)*
- *Business Driven Facility Management (2004)*
- *Improving Asset Output with Basic Reliability Engineering (2005)*
- *Business Driven Maintenance Management (2006)*
- *How to Improve Asset Operability and Maintainability, 2nd ed (2006), 3rd ed (2008)*
- *Improving Assets and their Management with Value Methodology, 2nd ed (2006), 3rd ed (2008)*
- *Asset Operations Optimization, formerly Total Productive Maintenance, 2nd ed (2006), 3rd ed (2008)*
- *How to Optimize Shutdown Management (2004), 2nd Edition (2006)*
- *Reliability Driven Asset Management, formerly Reliability Centered Maintenance, 2nd ed (2006), 3rd ed (2007), 4th ed (2008)*
- *Basic Reliability Engineering, 2nd ed (2006), 3rd ed (2008)*
- *Fault, Failure and Problem Prevention with Root Cause Analysis (2008)*

