

# Maintenance and Reliability Masterclass (CMRP exam preparation)

## Why Attend

- This course will provide Maintenance and Reliability personnel with a full explanation of the Award-winning UK Model of Excellence for Maintenance from Carcharodon (a leading British Maintenance Consultancy). This course serves as preparation for the Certified Maintenance & Reliability Professional (CMRP) exam. As required by the Society for Maintenance & Reliability Professionals (SMRP), participants interested in taking the exam may independently do so via an external testing center.
- This course will enable participants to develop a strategy for outstanding maintenance and reliability performance, tools to improve reliability at equipment level, and an insight to the latest practices in planning, scheduling and control.
- The Certified Maintenance & Reliability Professional standard is the leading accreditation for modern maintenance and reliability professionals. This is a top tier qualification which was established to set a consistent, recognized standard in industry, is the only certification of its kind accredited by the American National Standards Institute (ANSI) and follows the global standards of the Organization for Standards (ISO) for its accreditation process. Participants who pass the exam will be able to use the designation “CMRP”.

## Course Methodology

- This is an interactive course. There are open question and answer sessions, regular group exercises and activities, videos, case studies as well as presentations on best practice and the fundamentals of reliability improvement. Participants have the opportunity to share examples from their own experience and work with the facilitator and other participants to develop actions for improvement.

## Course Objectives

By the end of the course, participants will be able to:

- Understand the Model of Excellence for Maintenance and how to use this to improve company profitability
- Develop effective methodologies to improve Manufacturing Process Reliability
- Describe the key aspects of improving reliability at equipment level
- Utilize leadership skills to achieve maintenance and reliability excellence
- Demonstrate best practice in Work Management, including the principles of managing work flow, planning and scheduling, and shutdown management

## Target Audience

- This course is ideal for maintenance managers and reliability professionals. Experienced supervisors, planners, project engineers, operations managers, functional specialists, and those seeking to prepare for the CMRP exam and achieve the CMRP designation will also benefit from this course.

## Target Competencies

- Maintenance Management
- Reliability Excellence
- Work Flow Management
- Process Management
- Leadership



### An introduction to the Model of Excellence

- How maintenance has evolved
- Sources of best practice and benchmarking options
- The pitfalls of traditional maintenance practices
- Understanding where money should be invested and where money tends to be wasted
- The importance of planning
- The relationship between fixed costs and maintenance performance
- A change in thinking
- Away from cost reduction or reliability or safety
- Towards cost reduction and reliability and safety
- The modern maintenance strategy and asset management
- How pace setters add value through maintenance innovation and integration with operating teams

## Aligning Maintenance with the Business plan and Managing for Performance

- How to align maintenance with the unique requirements of any business
- Developing a maintenance vision and a credible plan for delivering this
- Launching and managing the Maintenance Improvement plan
- Selecting and tracking Key Performance Indicators to track progress towards the vision
- An overview of change management
- Overcoming resistance
- Processes and tools for managing change
- Effective management of Human Factors
- Identifying and satisfying stakeholders
- Communication
- Health, safety and environmental considerations

## A Holistic Approach to Asset Reliability Improvement

- Understanding the relevant management processes for any asset and operation
- Reliability Centred Maintenance
- Lean and six-sigma
- Total Productive Maintenance
- The ideal reliability road map
- Improving process performance
- Cost, risk and value engineering
- The principles of cost-effective maintenance investment
- Management processes
- Reliability improvement methodologies
- Change Management for key processes
- Auditing and assurance processes for compliance with reliability processes
- Conforming with local legislation and relevant standards

## Improving Reliability at Equipment Level

- Setting reliability targets at equipment level
- Assessing and baselining present equipment performance
- Analysis options to understand the underlying causes of inadequate equipment performance
- Root Cause Failure Analysis
- Weibull analysis
- Criticality analysis
- Failure Mode Effects and Criticality Analysis
- Development of effective maintenance plans
- Reactive
- Preventive
- Predictive
- Proactive
- Condition monitoring options for different equipment and failure modes
- A process to ensure new equipment reliability is at the required level
- Implementation of reliability plans for all equipment

## Developing a High-Performance Team

- Developing an organisation that will support the reliability and maintenance strategies
- Setting a reliability focused culture
- The roles of personnel outside maintenance in reliability improvement and how to engage the right people in the right way
- Assessing gaps in the organisation skills and the current capability vs that required
- Competency management (training and developing personnel).
- Leadership skills required to deliver full organisational performance
- Setting a reliability focused culture
- The roles of personnel outside maintenance in reliability improvement and how to engage the right people in the right way

## Work Management (The Maintenance Process)

- Optimising the workflow process and CMMS system performance
- Modern workflow management processes
- Adjusting efforts to drive performance and Continuous Improvement
- Identifying the correct scope of work
- The work that is critical
- Eliminating waste
- Approval and prioritisation of work
- Planning and work pack development for maximum efficiency
- Scheduling work to meet targets and match resource plans
- On Time In Full work execution
- Tool time improvements
- Controlling HSE
- Recording work done, learning and improving future work

## Work Management (Major Activities and Supporting Services)

- Planning and executing projects
- Managing maintenance materials and stores
- Use of computer-based technology
- An introduction to major maintenance tasks, shutdowns and turnarounds