



CAT-I

ARP Category I – Advocate

Asset Reliability Practitioner Training & Certification

Manager-Engineer Awareness (Track B)

The Asset Reliability Practitioner [ARP] Category I “MANAGER-ENGINEER AWARENESS” course is intended for senior management, maintenance and operations/production management, engineers, junior reliability engineers, and condition monitoring professionals who need to understand the “big picture” of the reliability and performance improvement process.

Whether your organization manufactures products or a commodity; provides an essential service; relies on machinery/electrical equipment, or is involved with protecting their country, this course will provide a memorable explanation of how and why to improve reliability and performance.



CAT-I Course Overview



This course seeks to achieve two goals:

1. Present the business case and explain how it is possible to assess the benefits to your organization. You can take what you learn to justify a new program, expand your existing program, or to simply breathe new life into a stale program.
2. Demystify the concepts, terminology, and the process required to improve reliability and performance. All the key issues will be covered, from defect elimination to the development of the asset

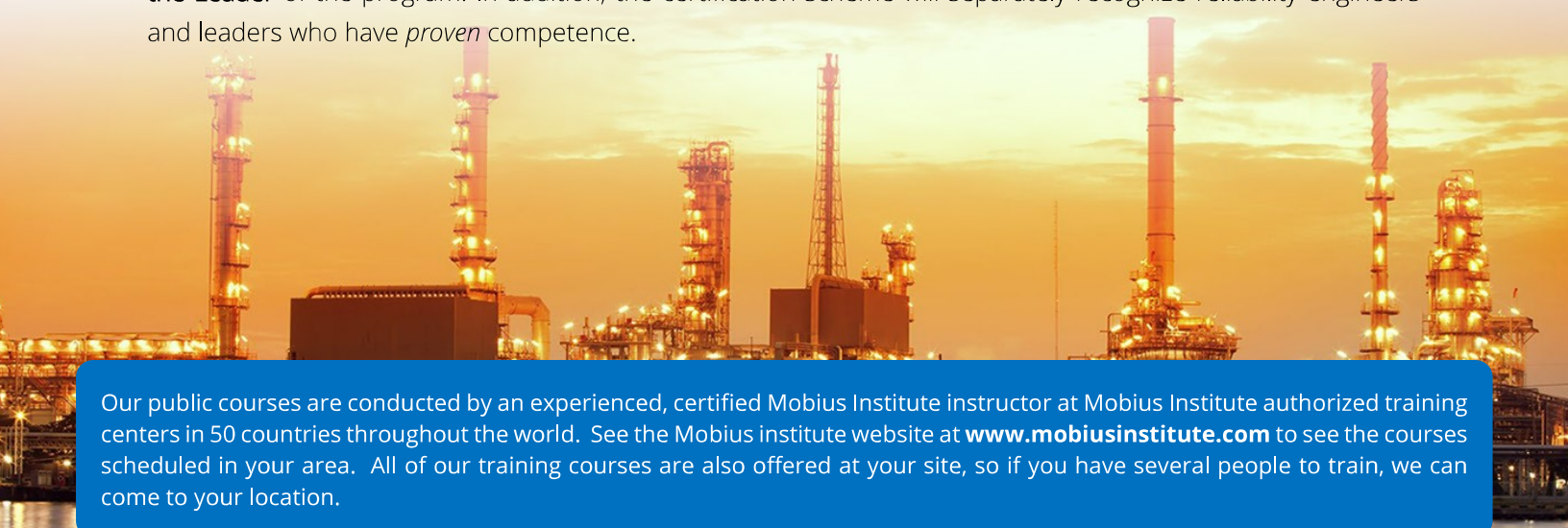
strategy, from condition monitoring to operator driven reliability, from culture change to continuous improvement, and so much more.

This course will leave you with a clear vision of what the process is, how to justify the initiative, and all the key elements. You will learn what has worked for other organizations, and why so many programs have failed.

The course achieves these goals by utilizing animations and animated simulations that make it understandable, memorable, and interesting. Potentially complex concepts are easily explained with these proven tools. And to ensure your time is put to best use, you can watch any part of the course, or the entire course, online before you attend the live event. And you can watch it again soon afterwards to refresh your memory and improve your understanding.

About the Asset Reliability Practitioner Training & Certification Program

Practitioners and leaders involved with the important role of improving the reliability and performance of an industrial facility should be recognized for their knowledge, experience, and contribution. The new Mobius Institute Asset Reliability Practitioner (ARP) certification scheme will recognize the knowledge and basic experience of people at three levels; **the Advocate** who contributes to the initiative, **the Reliability Engineer**, and **the Leader** of the program. In addition, the certification scheme will separately recognize reliability engineers and leaders who have *proven* competence.

A wide-angle photograph of an industrial facility, likely a refinery or chemical plant, at sunset. The sky is a mix of orange and yellow, and the facility's structures, including tall distillation columns and piping, are silhouetted against the bright light. The foreground shows a body of water reflecting the scene.

Our public courses are conducted by an experienced, certified Mobius Institute instructor at Mobius Institute authorized training centers in 50 countries throughout the world. See the Mobius Institute website at www.mobiusinstitute.com to see the courses scheduled in your area. All of our training courses are also offered at your site, so if you have several people to train, we can come to your location.

CAT-I Course **Description**

Course Options:

Format: Public (live) course

Optional: Certification examination, 2 hours, 70% passing grade

Certification Prerequisite: Prior experience is not required for attending the training course, but 6 months of general industrial experience is required for certification.

What our reliability students have said:

"The topic speaks for itself. The complete session literally covers almost every aspect of Reliability right from the beginning till the end of successfully launching Reliability Program.

"exceptionally great job for the one and half days in creating a charged atmosphere amongst the participants.

Topics covered:

- BENEFITS
- ASSESSING YOUR BENEFITS
- CULTURE CHANGE
- SELLING SENIOR MANAGEMENT
- STRATEGY
[PLAN/MISSION/VISION/TEAM/SUPPORT]
- UNDERSTANDING FAILURE
- DEFECT ELIMINATION
[DFR/PROCUREMENT/ACCEPTANCE TESTING/OPERATORS/More]
- WORK MANAGEMENT
- SPARES MANAGEMENT
- ASSET STRATEGY [RTF/CBM/IBM, MAL, ACR, BOM/MOC, FMEA/RCM/PMO, RCA]
- PRECISION AND PROACTIVE WORK
[Lubrication/alignment/balancing/fastening]
- CONDITION MONITORING
[CBM/VA/OA/UT/WPA/MCE/IR/More]
- BREAKING OUT OF REACTIVE MAINTENANCE
- CONTINUOUS IMPROVEMENT
[KPIs/BENCHMARKING/EDUCATION]



Learn the Mobius Way™

Highly credentialed certification

The Asset Reliability Practitioner (ARP) certification scheme follows the independent format of the time-tested ISO certification programs, such as ISO 18436, and it follows the guidelines defined under ISO/IEC 17024 – the same process followed by the independently accredited Mobius Institute Board of Certification [MIBoC] certification scheme that has already certified tens of thousands of men and women from over 170 countries.

Two independent committees developed the certification program. The Scheme Committee defined the topics and the requirements (such as training, experience, and examination). The Technical Committee approved the topics and is responsible for approving training courses (which may be taught by any approved organization around the world) and the examination database.

Both committees are made up of experienced practitioners, consultants, and educators from around the world to ensure that the scheme meets the requirements of all industries in all countries.



CAT-I Certification

All Mobius certified analysts receive personalized logos with their certification number and name for their own professional use. Mobius Institute also maintains a listing of all certified analysts on our website and provides each analyst with a certification confirmation webpage.

For more information about Mobius Institute's accreditation, please visit www.mobiusinstitute.com/certification.

Get started today

Go to our website to learn more about our reliability & performance improvement offerings. View the public course schedule for your area. If you have questions, please don't hesitate to e-mail your questions to learn@mobiusinstitute.com or contact an authorized training center in your region.

MOBIUS INSTITUTE

AUSTRALIA – BELGIUM – COSTA RICA – INDIA – UNITED STATES
and authorized training centers in 50 countries.

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Detailed topic list:

INTRODUCTION

- Overview of reliability and performance improvement
- What causes equipment to be unreliable or perform poorly
- The relationship between reliability improvement and asset management, operational excellence, TPM, and lean strategies
 - An introduction to ISO 55000
- The relationship between reliability and safety

BENEFITS

- An overview of the benefits, with basic examples

ASSESSING YOUR BENEFITS

- What is important to your business?
- What are you good at, where do you need help?
- What do those gaps cost you?

CULTURE CHANGE

- The importance of developing the culture of reliability
- The steps necessary to change people's and an organization's culture
- Being aware of human error and human psychology (e.g. biases)
- The importance of defining who is responsible and accountable, who will provide support, who should be consulted, and who should be kept informed [RASCI]

SELLING SENIOR MANAGEMENT

- Building the business case based on the goals of the business, the identified gaps, and the value gained by closing those gaps
- How to ensure you gain and retain senior management support

STRATEGY

- What is involved in developing a strategy
 - Setting goals
 - The need for a mission/vision statement
 - The main components of a “roadmap” strategy

- The need to establish a “steering committee”
- Gaining support across the organization

UNDERSTANDING FAILURE

- Why does equipment fail?
 - Mechanical failures
 - Electrical failures
- Understanding equipment “failure patterns”
 - Does all equipment wear out with age?
 - What are “random failures”
 - Early age “infant mortality” failures
- Why is this so important?

DEFECT ELIMINATION

- Overview of the goals of defect elimination
- An overview of each of the main sources of defects and how to eliminate them
 - Design for reliability, maintainability, operability, and sustainability
 - Procurement for lowest life cycle costs
 - Transport without damage
 - Acceptance testing to reject defective equipment
 - Storage to eliminate degradation
 - Eliminating maintenance induced failures through precision installation, maintenance and commissioning
 - Eliminating operator induced failures
 - Proactive tasks that reduce the likelihood of failure and poor performance

ASSET STRATEGY

- Overview of run-to-failure, condition-based, and interval-based maintenance
- The need for the master asset list and bill of materials
- Establishing the asset criticality ranking
- Utilizing Preventive Maintenance Optimization [PMO], Reliability Centered Maintenance [RCM], and/or Failure Modes Effects (and Criticality) Analysis [FMECA] to develop the asset reliability strategy
- Operator driven reliability [ODR]

WORK MANAGEMENT

- The benefits of coordinated, planned, and scheduled work
- An overview of the complete cycle: work requests, planned tasks, kitting, scheduling, managing break-in work, precision job execution (and the need for written procedures), job feedback and improvement
- The opportunity to improve work efficiency (or “wrench time”)
- How planning can minimize time/costs with shutdowns and outages
- The role of the computerized maintenance management system [CMMS] or enterprise asset management [EAM] system

SPARES MANAGEMENT

- The financial and work management benefit of efficient spares management
- Basic introduction to spares selection
- Caring for spares

PRECISION AND PROACTIVE WORK

- What is precision and the importance of precision work
 - The basics of precision shaft and belt alignment, soft foot correction, fastening, machine balancing, and other common mechanical and electrical tasks
 - The importance of developing and following written procedures
 - The importance of precision installation, such as bearings, seals, gears, belts, pumps, electrical equipment, and other equipment
 - The importance of commissioning
- The importance of taking proactive steps to avoid future problems, including precision lubrication, resonance correction, power quality control, and keeping equipment and workplaces clean and organized

CONDITION MONITORING

- Overview of CM principles for mechanical and electrical equipment
- The relationship between CM and planning/scheduling and operations
- A detailed overview of:
 - Vibration analysis
 - Ultrasound
 - Oil analysis
 - Wear particle analysis
 - Electric motor testing
 - Infrared analysis

- Non-Destructive Testing [NDT]
- Process/performance monitoring
- Visual inspections
- The future of CM and predictive analytics

BREAKING OUT OF REACTIVE MAINTENANCE

- What to do if you are trapped in the reactive maintenance cycle

CONTINUOUS IMPROVEMENT

- The principle of and importance of continuous improvement, Kaizen, PDCA, and Lean
- The need to reassess business conditions and what is critical
- Utilizing metrics to measure and improve performance
 - Benchmarking against industry and the facilities “best day”
 - The importance of establishing the right KPIs
 - Suggested metrics and KPIs and the most effective use of KPIs
 - The importance of accurate data collection
- The importance of constant communication
- Root cause (failure) analysis [RCA and RCFA]
 - The importance of conducting RCA/RCFA
 - The importance of making the improvements
 - How to perform RCA/RCFA
- The need for on-going education, skills, and awareness training

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