



Towards Reliability

Awareness for the Tradesperson

This course will raise the awareness and understanding of the maintenance trades in matters of maintenance, reliability, condition monitoring, and precision skills, and demonstrates the impact of trade techniques upon the vibration condition and reliability of plant and machinery.

Duration and Delivery

The course content is for 4 days (2 X 2-days a month apart) and a reduced version 2 day version is also available. It is intended to be run on-site and from time to time is offered as a public course.

Other forms of delivery are also available, such as 4 X 1-day or 6 X ½-day, set a week or two weeks apart, and including a mini-project relating to the participants area of work.

Each in house course is tailored to the site's specific requirements

Who Should Attend

Mechanical and electrical fitters employed in the maintenance of plant and those at the first level of supervision, particularly where this supervision may involve contractors similarly employed.

Outcomes Sought

To understand the contribution they can make toward improved plant reliability and maintenance costs through:

- Plant wide application of precision trade skills to appropriate standards
- Understanding the context of condition based maintenance
- Appreciation of causes of vibration in plant and its effect on plant life and maintenance costs

Course Content

1: Towards Reliability

- Maintenance and its Management
- Maintenance Methodologies and their Balanced Application
- Condition Monitoring in the Context of Reliability Improvement

2: Vibration Measurement & Analysis

- Measurable Parameters in Dynamic Systems
- The Technology of Vibration Measurement and Analysis
- Vibration Measurement Applied to Condition Monitoring
- Vibration Analysis for Fault Diagnosis
- Vibration Reporting

3: Condition Monitoring Technologies

- Using Thermography for Rotating Machinery Monitoring
- Oil Condition and Wear Debris Analysis
- NDT applied to Condition Monitoring
- Performance Monitoring of Machines and Systems

4: Rolling Element Bearings

- Bearing Failure Processes
- Rolling Element Bearing Condition Assessment
- Estimating Safe Remaining Bearing Life.

5: Maintenance Systems

- Maintenance Planning based on CM Reports
- Managing Condition Monitoring for Reliability Improvement.
- Standards for Machinery Acceptance Testing and Balancing
- QA. Development of Procedures and Work Instructions
- QA. Developing and Implementing Workshop/Contractor Standards

6: Failure Processes and Identification of Cause

- The failure processes in machinery and systems
- Obtaining data to identify cause of failure.
- Root Cause Analysis

7: Precision Maintenance

- The Justification for use of Precision Skills plant wide
- Skills Development for Tradespersons
- Machine Overhaul – Fits and Tolerances
- Balancing
- Alignment , preparation and procedures
- Implementing Precision Maintenance for Maximum Cost-Benefit
- Measuring the Benefits of a Precision Maintenance Programme