Introduction to Modern Maintenance Management Presentation
One Day Seminar on Maintenance Management Guidelines, Best Practices, Strategies, Frameworks and Techniques

Course Content

Maintenance Management

• Make Maintenance Profit Focused
• The 6 Purposes of Maintenance
• Turning Maintenance into a Profit Centre
• Develop a Plan to Reach Mastery
• Turn Objectives into Systematic Activities
• Benefits of Reliable, Productive Equipment

Defect Creation and Elimination

• Most Business make their Machines Break
• Why You Need Defect Elimination and Failure Prevention
• Problems Waste Time, Money and Resources
• Eliminate Defects to Prevent Problems
• But where do the failures start?
• Strength of Materials Limitations
• Cause of Aging Failure
• Know the Limits of Your Parts
• The Degradation Cycle
• The Overload Cycle
• Stress and Fatigue are Optional

Introduction to Reliability

• Traditional Bathtub Curve for Equipment
• Deciding when to do Planned Preventive Maintenance
• Six Failure Patterns for Aircraft Equipment
• Reliability disconnected from Overhauls
• RCM Influenced Maintenance Strategy
• High Reliability is a Choice
• Value of Reliability on Operating Time
• Value of Reliability on Unit Cost of Production
• Parts Fail… then Machines Stop
• Equipment is components in series
• High risk in a series arrangement
• Reliability of Series Systems
• Series Systems
• Reliability Implications for Series Systems
• Reliability of Parallel Systems
• Reliability Implications for Parallel Systems
• Studies into Individual Parts Failure Curves
• Using Weibull Curves for Failure Prediction
• Graph of Weibull Component Life Prediction
• Can use Weibull Shape Parameter Estimation for each Failure Mode
• High Reliability of Parts is Valuable
• Reliability of Machines
• Improving the Reliability of Machines
• Financial Benefits of Reliable Machines
• Building for the Physics of Failure

Risk and Reliability

• Classical Risk Analysis Method is Sound
• Risk – Reduce Chance or Reduce Consequence?
• The Application of Risk Based Principles to Managing Maintenance

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Course Content continued

- Risk Influences Maintenance Type
- Base Maintenance on Operating Risk Matrix
- Risk Identification and Removal Worksheets
- Match Maintenance Strategies to Risk
- Best Practice Reliability Engineering Application
- Match Maintenance and Operating Practices to Equipment Criticality
- Cause and effect of our equipment failures
- Reliability in Time Domain
- Infant Mortality and Poor Installation
- Random Failure – Induced Stress

Maintenance Strategy Development

- Strategy to Control Equipment Failures Curves
- Equipment Reliability Strategies
- The Story in Human Error Rate Tables
- Human Error
- Likelihood of Human Error
- Analysing Work Order History for Failure Modes
- Analysing Failure Timelines and Pareto Charts
- Using Failure Density Function to Determine PM Frequency
- Analysing Work Order History for Failure Modes
- Analysing Failure Timelines and Pareto Charts
- How do You get Reliability?
- Using Failure Density Function to Determine PM Frequency
- Useful Analysis of Maintenance History
- Probability of Failure

Failure Elimination Techniques

- Useful Analysis of Maintenance History
- Probability of Failure
- Root Cause Failure Analysis (RCFA)
- How RCFA Contributes To Improvement
- Failure Mode Effects Criticality Analysis
- Failure Mode and Effects Analysis (FMEA)
- Which parts ‘age’ and which suffer stress?
- Bills of Materials in Maintenance Selection
- Strategies for Reliability Improvement
- Design and Operating Cost Totally Optimised Risk (DOCTOR)
- Life Cycle Risk Management Strategy
- We Need to Capture All Incident Costs to Justify Removing Their Causes
- Failure Costs Surge thru the Company
- Defect and Failure True (DAFT) Costs go Company-wide
- Calculate DAFT Costs on Spreadsheets

Best Practice Maintenance Management

- Standard Risk Management Process Needs DAFT Costs to Find Real Risk
- Implications of DAFT Costs to Risk
- Quantify the Financial Cost of Risk
- A Process to Produce Reliability
- Maintenance Strategy Selection
- How do You get Reliability?
- Strategies for Reliability Improvement
- Precision Maintenance: The Practice of Defect Elimination and Failure Prevention
Course Content continued

- The Added Value of Defect Elimination and Failure Prevention
- Precision across the entire ‘equipment system’
- Typical Precision Maintenance Program Content
- Typical Standards for a Precision Maintenance Program
- Accuracy Controlled Enterprise (ACE) Procedures
- The Accuracy Controlled Enterprise is…
- Accuracy Controlled SOPs Remove Variation with Proactive Statistical Process Control
- Set Standards and Standardise their Use
- 6 Mechanical Equipment Care Standards to Set, Use and Keep Using
- Getting high task reliability needs quality

Plant and Equipment Wellness

- Plant and Equipment Wellness
- Plant and Equipment Wellness Defined
- Remove variation … by setting standards and measuring accuracy
- Prevent failure … by defect elimination
- Prevent failure … by proactive precision maintenance
- Risk control … by chance reduction risk management
- Accuracy control … by precision domain practices
- Accuracy control … by precision systems
- Maintenance Quality System to ISO9001
- Accuracy Controlled Enterprise Policy
- ACE Procedures – what to do
- ACE Work Instructions – exactly how to do it
- Measure and Monitor
- ACE 3Ts
- Visual management
- Quality Management Tools
- Measure/Monitor/Improve Performance … by process step value contribution
- The Continuous Improvement Journey
- Getting high equipment reliability…
- Maintenance Management Best Practice – Profit-Focused Ultra-High Reliability