

ASSET MAINTENANCE PROGRAM PRACTICES

INTRODUCTION

The Asset Maintenance Program Practices course is structured for managerial, non-technical and technical staffs with responsibility for asset maintenance or maintenance support. We suggest that a non-technical and a technical person from the same organization attend the course to achieve even better post-course benefits.

All assets and plants are designed to operate profitably and sustainably in a given economy. Thus, it is important to have maintenance and its support meet these broader goals within an established economy and management accounting framework.

PRESENTER

Adrian Stephan

He has over 40 years of hands-on experience in integrated solutions for equipment and asset maintenance, through life product (logistics) support, life cycle cost, spares, reliability, risk, safety, configuration management, and their management systems.

His all round practical experience base includes hydrocarbon, power generation, mining, primary production, defence, and rail industries. With his qualifications and very wide range and depth of experience, he is well equipped to offer organisations interested in effective asset management and preservation of plant integrity, a valuable insight into the techniques, strategies and tools available to plan and increase the protection of their investment.

He holds, in addition to other qualifications, a Masters Degree in Management from Monash University (thesis topic was TPM), a Graduate Diploma in Management from Royal Melbourne Institute of Technology, and is a Certified Professional Logistician. He has also holds the Certificate in Workplace Training and Competency Assessment.

PROGRAM

DAY ONE

QUANTITATIVE METHODS FOR ASSET MANAGEMENT

- **Introduction to quantitative methods**
- **Triple bottom line**
- **Financial calculations**
 - Accounting equation Payback
 - Breakeven analysis
 - Percent rate of return (PRR)
 - Average return on investment (ROI)
 - Internal rate of return (IRR)
 - Net present value (NPV)
 - Cost-Benefit ratio (CBR)
 - Earnings Before Interest and Tax (EBIT)
 - Return on Net Assets (RONA)
- **Statistical calculations**
 - Probability
 - Histograms, central tendency & variability
 - Distributions (normal, exponential, log-normal, Poisson, & Weibull)
 - Regression analysis
- **Decision making methods**
Forecasting

DAY TWO

ASSET MAINTENANCE, ECONOMICS AND MANAGEMENT

Accounting

- Integrated engineering asset management principles
- Balanced score cards
- Asset and maintenance economics
- Management and financial accounting
- Maintenance budgeting
- Depreciation
- Cost drivers
- Total cost of ownership
- Establishing remaining useful life (RUL)
- Asset performance measures
- Resilience engineering
- Analysis of alternatives

DAY THREE

MAINTENANCE TASK GENERATION

- What generates the need for a maintenance task?
- Quality and continuous improvement
- Asset capability & dependability

- Reliability, Maintainability & Availability (RMA) Supportability
- Establish the need for maintenance: faults and failures (FMECA, FTA, RCA, AHP, etc)
- Maintenance critical items
- Generating the maintenance task plan

DAY FOUR

CORE MAINTENANCE PRACTICES

- Maintenance fundamentals
- Maintenance resource plan
- Performance measures
- Setting maintenance strategy & policy
- Maintenance decision making (technical and economic approaches)
- Repair economics
- Types of maintenance (e.g. improvement, corrective, preventive, and predictive)
- Applied maintenance philosophies [e.g. Reliability Centred Maintenance (RCM) & Total Productive Maintenance (TPM)]
- Spares & parts inventory management and control

DAY FIVE

MAINTENANCE ENGINEERING ROLES AND RESPONSIBILITIES

- Maintenance organization
- MROO (Maintenance, Repair, Overhaul, & Operations)
- Data codification, collection and analysis
- Integrity management
- Maintenance documentation
- Troubleshooting principles
- Maintenance errors & losses
- Workload management
- Outsourcing and insourcing
- Accounting for maintenance
- Maintenance for sustainability

Hands-on Exercises

You will be performing exercises in this course involving short calculations. Please bring a scientific calculator (e.g. Casio fx82ES Plus) to the course, and know how to use its exponential and statistical features.