SALVO

MAINTENANCE SERIES

EFFECTIVE PREVENTIVE, PREDICTIVE & CONDITION-BASED MAINTENANCE

28th – 30th November 2011 (Monday - Wednesday)
Johannesburg, South Africa

Ralph W. "Pete" Peters

- International Trainer, Author, Engineer and Consultant with over 35 years of experience
- Founder/President of The Maintenance Excellence Institute (TMEI), USA

Key Course Benefits

Upon completing this 3-day Masterclass, you will be able to:

- Assess your present Preventive (PM) & Predictive Maintenance (PdM) needs and improve current performance
- Apply Reliability-Centered Maintenance (RCM) & Total Productive Maintenance (TPM) principles to your maintenance strategy for PM and PdM
- Define your critical asset repair or replacement problems via life cycle costing
- Develop the optimum strategic maintenance program for your physical assets
- Communicate and obtain management buy-in for maintenance programs by justifying with costs versus benefits
- Develop a phased installation or improvement plan for successful implementation
- Measure and validate your resulting benefits by benchmarking against best practices

BOOK NOW! Save up to USD600 off the regular price

About Your Expert Trainer:

Ralph W. "Pete" Peters is a highly recognized author-trainer and leader around the world in the areas of implementing maintenance best practices, developing effective productivity measurement and initiating long term operational improvement processes, within both the public and private sectors.

Clients who have benefitted from Ralph Peters' expertise include:

- **SIDERA Steel**
- **British Petroleum**
- **Boeing**
- **Honda**
- **Lafarge Corporation**
- **Nigeria Liquid Natural Gas**
- **Caterpillar**
- **Polaroid**
- **Campbell Soup**
- **Wyeth-Ayerst**
- **Ford**
- **Heinz**

Why Attend This Masterclass?

Maintenance's key objective is to increase uptime without over-doing maintenance and the challenge lies in how to determine the right mix of Preventive Maintenance and Predictive Maintenance. Many organizations are also facing key decisions on whether to repair or to replace aging physical assets. By utilizing life cycle costing and value engineering concepts, companies can fully capitalize on existing assets and save on unnecessary expenses.

Salvo's 3-day intensive Masterclass "Effective Preventive, Predictive & Condition-Based Maintenance" is a practical "How-to-Do-it Guide" for implementing, measuring results and successfully applying today's best practices for Preventive (PM) and Predictive Maintenance (PdM), covering essential maintenance operations that range from equipment selection and maintenance interval planning to condition-based monitoring techniques and lifecycle costing. In addition, delegates will be introduced to strategies that will enhance and improve PM & PdM – Reliability-Centred Maintenance (RCM), Total Productive Maintenance (TPM), and Risk-Based Maintenance (RBM).

EXCLUSIVE TAKE-HOME MATERIALS ON CD!

Best Practice Benchmarking Tools in Excel Format

- The Scorecard for Maintenance Excellence helps you define where you are with your current maintenance practices against 27 best practice categories and over 300 best practice items. It is today's most comprehensive benchmarking tool
- The Computerized Maintenance Management System Benchmarking System allows you to rank your current CMMS installation, identify specific improvement needs, and continuously monitor results after the course
- The Reliable Maintenance Excellence Index provides complete procedures to develop your own world-class methodology to measure maintenance performance including the benefits from PM, PdM, RCM and other best practices

Complimentary E-Book

- Each delegate receives a complete, full-colour and unabridged E-book version of Pete's McGraw Hill's book *"Maintenance Benchmarking and Best Practices: A Profit and Customer-Centered Approach"*
- Your organization receives internal reproduction rights for all materials

Reference Materials

- These include all Powerpoints used, class exercises, case studies, TMEI articles and references such as "The TMEI Maintenance and MRO Materials Management Glossary" (a comprehensive glossary of maintenance and spare parts management terms) collected over many years of experience

Complimentary Follow-Up Support

- Even after the course is completed, the trainer provides complimentary follow-up support via phone, e-mail or GoToMeeting virtual sessions when needed

More About Your Expert Course Leader

Ralph W. "Pete" Peters is a highly recognized author-trainer and leader around the world in the areas of implementing maintenance best practices, developing effective productivity measurement and initiating long term operational improvement processes, within both the public and private sectors. His value as a consultant has been enhanced through his direct leadership and profit and loss responsibilities within large maintenance and manufacturing plant operations prior to focusing upon consulting. He has been Managing Director at two large manufacturing plants and is the author of major books and handbook chapters with 200 articles and publications, including *Maintenance Benchmarking and Best Practices: A Profit and Customer-Centered Approach*. As a frequent speaker, he has delivered speeches and seminars on maintenance-related topics worldwide in over 40 countries.

Pete has helped many notable organizations achieve success and strong returns on physical asset investment, including:

- Marathon Oil Corporation
- NC Department of Transportation
- Polaroid
- Sheetz Inc
- UNC-Chapel Hill
- Lucent Technologies
- BigLots Stores
- Caterpillar
- Ford
- General Foods
- Great River Energy
- Heinz
- Honda of America
- Lafarge Corporation
- SIDERA Steel
- Air Combat Command
- Anderson Packaging Inc.
- Atomic Energy Canada Ltd
- Boeing Commercial Airplane Group
- British Petroleum
- Campbell Soup
- Nigeria Liquid Natural Gas
- Carolinas Medical Center
- Cooper Industries

He received both his BS Industrial Engineering and Masters of Industrial Engineering focused upon management information systems from North Carolina State University.

Who Should Attend?

- **Maintenance Superintendents**
- **Maintenance Managers**
- **PM/PdM Coordinators**
- **Maintenance Supervisors**
- **Maintenance Engineers**
- **Maintenance Foremen**
- **Maintenance Planners**
- **Physical Asset Managers**
- **Reliability Managers**
- **Reliability Engineers**
- **Engineering Managers**
- **Operations Managers**
- **Facility Managers**
- **Plant Directors**
- **Plant Engineers**

From industries including but not limited to: **Mining, Oil & Gas, Utilities, Petrochemicals, Pharmaceutical & Healthcare, Government, Construction, Food & Beverages, Manufacturing, Automotive, Chemicals etc.** All other industries that see physical asset management as a factor to business success such as facilities management and healthcare facilities management operations.

Course Outline for Day 1 : Monday, 28TH November 2011

08.30 ***Coffee & Registration***

09.00 **Introduction**

- Participants Review Top 5 Areas for Improvement
- Today's Maintenance Challenge
- Maintenance Around the World
- Proactive vs. Reactive Maintenance
- How to Ensure Other Best Practices are in Place
- Developing Your Maintenance Excellence Strategy

Case Studies	Boeing Commercial Airplane Group- World's Largest Assessment Process
Activity	Using The Scoreboard for Maintenance Excellence to Define "Where You Are Now"

10.30 ***Coffee Break***

10.45 **The Maintenance and Equipment Audit: Key Step Before Starting PM/PdM**

- Differentiating between Maintainability, Reliability, Availability
- Key Drivers in making Equipment Selection Decisions
- How to determine your current craft labor productivity
- Establish your current equipment condition and equipment performance (baseline)
- Determine the need for PM/PdM and Condition Based Maintenance
- Calculate costs and benefits of PM/PdM

12.30 ***Networking Lunch***

13.30 **Determining the Right Maintenance Strategy for Your Type Maintenance Operation**

- An Overview of Reliability-Centred Maintenance (RCM)
- Key Elements of Value Engineering
- Lifecycle Costing – Optimizing Repair/ Replacement Decisions
- Different types of maintenance strategies and tasks:
  - Preventive Maintenance
  - Predictive Maintenance and Continuous Monitoring
  - Overhaul/Rebuild
  - Remove and Replace
  - Run to Failure
- PM organization and staffing

Case Studies	Reliability-Centred Maintenance

15.00 ***Coffee Break***

15.15 **PM Techniques Supported By the Operators**

- Strategies for Total Productive Maintenance (TPM)
- Involve Operators in Basic PM Tasks
- How to determine PM requirements for your equipment operators
- Equipment cleaning and lubrication
- Equipment inspections, adjustments and servicing

Case Studies	TPM Implementation

17.00 ***End of Day 1***

Course Method

This course is designed as an interactive mix of lectures, case studies, discussions, class exercises and templates. Delegates will develop a personalized action plan for their Top 5 Improvement Areas to bring back for implementation within their respective organizations. **Each delegate is required to bring along a laptop to be used during class exercises.**

Course Outline for Day 2: Tuesday, 29TH November 2011

08.30 ***Coffee & Registration***

09.00 **How to Develop and Install a Good PM System**

- The 6-step PM installation program
  - *Phase I* Management Awareness
  - *Phase II* Management Commitment
  - *Phase III* Pilot Program Design
  - *Phase IV* Evaluate Pilot Program
  - *Phase V* Expand and Operate the Total Program
  - *Phase VI* Continuous Improvement and Evaluation of Total Program
- Keeping an effective and useful equipment history

Case Studies
- PM work orders/PM checklists/PM reports
- Review Delegate Examples

10.30 ***Coffee Break***

10.45 **How to Plan and Schedule PM and Measure Results**

- Determining PM intervals and frequencies
- What is the best method to schedule PM
- Time-based or usage-based scheduling
- How to measure PM effectiveness and results
- Measuring and analyzing downtime and downtime trends

Activity Using the Reliable Maintenance Excellence Index

12.30 ***Networking Lunch***

13.30 **Predictive Maintenance Techniques, Applications, and Instrumentation**

- Predicting potential equipment breakdowns and expensive repairs
- The Mechanical Elements of PdM
- The Electrical Elements of PdM

Case Studies Examples of Continuous Monitoring Systems with Multiple PdM Being Used

15.00 ***Coffee Break***

15.15 **Specific PdM Techniques and Applications**

- Overview of PdM Technologies Now Available
- Vibration analysis/monitoring
- Shock pulse method
- Spectrographic oil analysis
- Ferrographic particle analysis
- Thermography/temperature measurement
- Non-destructive testing (NDT)
- Ultrasonic testing, and more

17.00 ***End of Day 2***

Course Customisation to Your Priorities

A pre-course questionnaire will be issued to delegates immediately upon registration. This important pre-course work allows each delegate to identify and address their Top 5 specific improvement needs and concerns, which the trainer will review and discuss during the course.

Certificate of Completion

A Certificate of Completion will be issued to all delegates completing minimum of 90% of the total hours of the course.

Outcome of the Master Class

By the end of this 3-day intensive Masterclass, delegates will be able to bring back with them a comprehensive and enhanced understanding of Maintenance tools and concepts, such as Reliability-Centred Maintenance (RCM), Total Productive Maintenance (TPM), Risk-Based Maintenance (RBM) etc. In addition, delegates will receive practical hands-on experience in terms of defining the optimal mix of Preventive and Predictive Maintenance, and make informed choices regarding Condition-Based Monitoring techniques that are appropriate for their equipment. To wrap up the course, delegates will draw up specific action plans to implement when they go back to their organizations. Furthermore, even after the workshop is over, complimentary follow-up support is provided via phone, e-mail or GoToMeeting virtual sessions when needed.

Course Outline for Day 3 : Wednesday, 30TH November 2011

08.30 **Coffee & Registration**

09.00 **Getting Organized for PdM**
- Planning for PdM; the preparatory steps
- Starting with a PdM pilot program
- Scheduling PdM
- Combining PdM with PM for greatest overall effect and least cost
- Organizational requirements

10.30 ***Coffee Break***

10.45 **Measuring Results of PdM**
- PdM database/data collection
- Costs of PdM (equipment/instruments, labor, and services)
- How to determine PdM benefits and return on investment (ROI)
- Decision factors for in-house vs. contracted PdM
- Components of a Well-Organized PM/PdM Program
- Equipment inventory/numbering system
- Spare parts inventory/forecast
- Developing and planning optimum sequence of tasks for PM and PdM routes

Activity	Using the Reliable Maintenance Excellence Index to Validate Your Bottom Line Results

12.30 ***Networking Lunch***

13.30 **Combining Planned Maintenance, PM, PdM and TPM for Best Overall Results at the Least Costs**
- Custom-making your maintenance strategies and system based on your equipment, plant location(s), and plant size
- How to sell your solution to management and getting the budget and management commitment
- Phased installation for guaranteed results
- Equipment and maintenance key performance indicators (KPIs) and trends

15.00 ***Coffee Break***

15.15 **Other Important Maintenance Best Practices**
- Continuous Reliability Improvement (CRI)
- Using Risk-Based Maintenance as a Risk Management Tool
- Maximize the Value of Your CMMS

Case Studies	SAP vs. MAXIMO
Activity	Using the CMMS Benchmarking System to Improve Your CMMS

16.30 ***Team Presentations and Closing Remarks***
17.00 ***End of Course***

Why Not Bring This Training Internally?

This training can be customised into an In-house training program just for your organisation. To find out more, please contact **Gale** at:
Tel: **+65 6293 8355** or
E-mail: **internaltraining@salvoglobal.com**