

A New 2 Day Seminar Coming to Your Area

Predictive Maintenance & Condition Monitoring



For a schedule of open enrollment classes or to bring this training to your plant or facility, contact us @

Save Time & Money by Replacing Ineffective Time Based Maintenance with Condition Directed Tasks!

1-877-97-TRAIN

www.AmericanTrainco.com

LEARN:

- Which PdM Technologies & Services You Need
- Why PdM Works
- Hidden Benefits of PdM
- Which Equipment to Monitor
- How to Implement a PdM Program
- How to Measure and Set Benchmarks for PdM
- PdM Best Practices from Other World Class Companies



“Good Networking & Practical Experiences.”

Dan Houghton – Project Engineer - BASF Corp

- **Reserve Your Space Now! CALL 1-877-97-TRAIN**
- **This seminar can be presented at your facility for larger groups**
- **Check us out online at www.AmericanTrainco.com for a complete listing of all seminars coming to your area**

Predictive Maintenance & Condition Monitoring

▶ *"Enjoyed it all."*

Helen Fewer – Maintenance Manager - Albion Sands Energy Inc.

▶ *"Learned the importance of PdM & how to justify it."*

Daniel Arno – Maintenance Planner - Worthington Steel Co.

PURPOSE OF SEMINAR

With ever increasing demands from top management to do more work and decrease costs, investing in predictive maintenance and condition monitoring makes more sense today than ever. While many organizations still rely heavily on time based maintenance, it's a proven fact that condition monitoring maintenance requires less personnel and saves money and downtime.

This course provides the fundamentals of PdM and condition monitoring applicable to plants, facilities and manufacturing lines. Predictive Maintenance & Condition Monitoring will provide students with a framework to make the right decisions on what equipment needs condition monitoring, what technologies to use to meet their needs and how to measure the effectiveness of their decisions. In addition to exposing students to the principles and options for a program, they will learn about real world applications that have benefited other successful maintenance programs.

By the end of this seminar, students will be able to go back to their facility and immediately apply what they learned to help make their maintenance process more efficient and less expensive. Training like this never costs – *it pays!*

LEARNING OBJECTIVES

Upon completion of this course students will receive a personalized American Trainco Certificate of Completion and 1.4 CEU's (Continuing Education Credits) approved by the Maintenance Training Association of the Americas indicating that he or she has learned how to:

- Identify Why Time Based Maintenance Doesn't Work
- Describe the Benefits of a PdM & Condition Monitoring Program
- Identify What Equipment to Monitor
- Understand Different PdM Technologies
- Predict What Maintenance Needs to be Done and When
- How to Choose the right PdM Technologies for You
- Measure the Effectiveness of Maintenance Decisions
- Communicate the Condition Monitoring Program through the Facility
- How to Choose a PdM Service Provider
- How to Implement a PdM Program

ABOUT OUR INSTRUCTORS

All American Trainco instructors are required to have a formal education and real world work experience. They need to be leaders in their field. We don't hire field people without teaching experience, and we don't hire teachers without field experience. They must have both. And since attendees critique the instructor at the end of each class, a positive and enjoyable learning experience is virtually guaranteed.

UNAFFILIATED & NON-COMMERCIAL

Unlike some training experiences, you won't get a sales presentation at an American Trainco seminar – all you get is an honest, commercially unbiased education. We do not endorse or engage in the sale and promotion of any other supplier's products, so you know that by attending one of our seminars, your time and money is well spent.

WHO SHOULD ATTEND

This seminar is a must for anyone who is involved with maintenance at industrial plants, utilities or commercial and private building facilities. Attendees come from a wide variety of industries, skill-levels, company sizes, and job titles, so if you're not sure you'll fit in or will benefit from the class, don't worry – you will! People who will benefit from attending this seminar include...

Maintenance, Operations & Purchasing Managers & Personnel in:

Manufacturing Plants
Commercial Buildings
Utilities
Hospitals
Waste Water Facilities
Schools
Government Buildings
Shopping Centers
Office & Apt Buildings

Including:

Maintenance Personnel
Maintenance Managers
Purchasing Agents
Operations Managers
Plant Managers
Manufacturing Managers
Production Managers

HIGH QUALITY PRESENTATIONS

From the start we've demanded that all our presentations would be lively, attractive, crisp and clear. Our instructors use state-of-the-art computers, projection equipment and software to bring you a high quality visual experience.

TEACHING PHILOSOPHY

"Real World Training...for Real World Needs", is not just our slogan, but also our mission statement. At American Trainco, we approach our students as if they were our own employees. We instruct and guide them in practical knowledge that allows them to immediately go back to their workplace and apply what they have learned. Our instructors are seasoned veterans with years of real world experience, and the students who attend our seminars often get more from a few days of training than an entire year of reading textbooks or watching videos. How do we know? They tell us.

Anyone can teach theory, but there simply is no substitution for experience. What sets American Trainco apart is our ability to communicate that experience to our students. As one attendee told us at the end of his two-day training course, "I think I can go back to work now and teach the veterans a thing or two."

OTHER SEMINARS

American Trainco presents a variety of maintenance training seminars throughout the country on a regular basis. Some of the other training topics we can bring to your site include:

- Basic Electricity for the Non-Electrician™
- Electrical Troubleshooting
- Air Conditioning & Refrigeration
- Boiler Operation, Maintenance & Safety™
- Arc Flash Protection & Electrical Safety™
- 2011 National Electrical Code®

And 20+ other courses in the following areas:

- Electrical / Electrical Controls
- HVAC/R
- Mechanical
- Facility & Plant Management
- Fluid Power
- Pumps / Piping

C O U R S E O V E R V I E W

PdM or condition based maintenance attempts to evaluate the condition of equipment by performing periodic inspections while the equipment is still in service. The ultimate goal of PdM is to perform maintenance "just in time", before the equipment fails in service. This two-day course is for maintenance personnel, operators and managers who desire to understand how condition monitoring can increase the efficiency of their maintenance program while reducing costs. This course will teach you what equipment to monitor, what technologies to monitor it with and how to measure your success. Students will gain an understanding of real world applications to help them implement a PdM program at their facility.

AGENDA

Predictive Maintenance Program Types

- Predictive Maintenance Program Types
- Break down
- Preventive
- Predictive

Failure Rate vs Time

- Bath tub Curve
- Definition: Weibull Distribution Curve of Failure Rate vs. Time

Sixteen PdM Program Benefits

- How to Develop a PdM Program Worksheet with Microsoft Excel

Four Foundations for Improving Reliability

- Developing and Fostering the Culture of Reliability
- Product Mission
- Reliability Specifications
- Defining Universal Failures

Comparing Maintenance Strategies based on Cost and Availability with "Large Truck Case History"

- Run to Failure
- Scheduled Repair/Replacement
- On-Condition Inspections
- Case History

Basic Concepts of FMEA (Failure Modes and Effects Analysis) and FMECA (Failure Modes and Effects with Cause Analysis)

- Ten Basic FMEA Steps

Techniques for Identifying Probability and Costs of Equipment Failure

- Recovering CMMS Data
- FMEA Data - Failure Modes and Effects Analysis
- IEEE 493 Standards of Electric Motors

Using Maintenance Log Data

- Times-To-Failure
- Suspension Time
- Times-To-Repair
- MTBF - Mean Time Between Failures

Root Cause Analysis for Beginners

- What Happened? How? Why?
- How to do Cause Charting for Root Causes Possible Causes
- Recommendations
- Implementation Action Steps

Interactive Exercise - 1.5 Hours

Most students who attend our seminars are interested in a well-rounded general education. But many others have unique issues they face at work, and so they want specific answers to specific questions. Therefore, at the beginning of each seminar students are given the opportunity to briefly write down their reasons for coming to the seminar and/or what they hope to specifically learn while in attendance. Using this information, the instructor may change or vary the course information listed above depending on the needs and interests of the students.

How to Sell Root Cause Analysis to Management

- Preserving Evaluation Data
- Building the Analysis Team
- Analyzing the Data
- Communication of Findings and Recommendations
- Tracking Cost Savings
- Calculating Bottom Line Results
- Case History: How to Set Up a Seal Failure Analysis Program
- Four Step Process used by Predictive Maintenance Services Inc.

The Role of Reliability Centered Maintenance

- NASA's Guiding Principles of RCM
- Five RCM Strategies
- Review of FMECA
- Review of RCFA-Root Cause Failure Analysis

PdM for Manufacturing Plant Operators

The Relationship between Availability and Reliability

- Relationship Chart
- Profit benefits of Operational Availability
- How to Calculate Up-time Value in Profit Dollars

Down-Time Analysis

- F.R.E.D. Reporting - Failure Reporting, Evaluation and Display Reporting

A Review of PdM Technologies - Four Hour Presentation

- Bearing Failure Analysis with Case History
- Vibration Analysis
- Preventive
- Predictive

How PdM Technologies Integrate with RCM-Reliability Centered Maintenance

How to Write a PdM Return On Investment Report *Interactive Exercise - 1.5 hours*

On-Line Monitoring for Instant Machine Condition Diagnostics

- Monitoring Machine Conditions
- How to Make Recommendations for Repair

The Future of Predictive Maintenance

Miscellaneous: How to Use Conformance Testing for Contractor Suppliers

- Case History by Predictive Maintenance Services Inc.

SEMINAR AGENDA

7:30 am	Registration
8:00 am	Class Begins
12:00 - 1:00 pm	Lunch (on your own)
4:30 pm	Class Ends

SEMINAR FEE

\$990 Both Days

NO RISK REGISTRATION & MONEY BACK GUARANTEE

If you're not sure you'll be able to attend this seminar, you can still make a reservation to hold your space in class. While payment is due prior to the start of the seminar, you may choose a full refund or credit for cancellations made at least 24 hours in advance. Student substitutions can also be freely made at any time prior to the start of the seminar. Refunds will not be issued for registered attendees who fail to show up and have not given a notice of cancellation. In the rare event that you do not receive the expected value after attending our seminar, simply notify us in writing of your reasons and your money will be promptly refunded.

IN-HOUSE TRAINING

You can bring this or any other maintenance training program directly to your facility. Simply give us a call, tell us what you're looking for, and we'll provide you a quote. We also provide custom training for courses not listed in this brochure.

Call: 1-877-97-TRAIN

Email: Sales@AmericanTrainco.com

Or visit us on the web at: www.AmericanTrainco.com

CONSULTING

American Trainco offers complete consulting services for maintenance, reliability and maintenance management programs including assessments, training, implementation and change management. In addition to the consulting, we offer complete maintenance and manufacturing training programs to predict, assess, train and certify for all of your facility and maintenance needs.

Reserve Your Space Now!

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REGISTRATION

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www.AmericanTrainco.com



"Learned lots of knowledge & tools to use."

Preston Cole
Maintenance Manager
Joslyn Sunbank

Predictive Maintenance & Condition Monitoring

SEMINAR FEE
Both Days: \$990

FIVE EASY WAYS TO REGISTER

- 1) **Internet** www.AmericanTrainco.com
- 2) **Fax** (303) 531-4565
- 3) **Phone** Toll Free 1-877-978-7246 or (303) 531-4560
- 4) **Mail** American Trainco, Inc. P.O. Box 3397 Englewood, CO 80155
- 5) **E-mail** Information from this form to: Sales@AmericanTrainco.com

Primary Contact / Authorizing Supervisor: Name _____
 Title _____ Company Name _____
 Address _____
 City _____ State _____ Zip _____
 Phone _____ Fax _____ Email _____

Seminar Attendees:	Name	Title	E-Mail	Seminar City

Billing Information: (Please fill out this section only if the "Bill To" name and address is different than the Authorizing Person's name and address above.)

Individual's Name _____ Title _____ Company Name _____
 Address _____ City _____ State _____ Zip _____
 Phone _____ Fax _____ Email _____

GOT A LARGE GROUP?

BLOCK PURCHASING PROGRAM

Buy your training in bulk and save up to 25%! This program can be used to register any person for any seminar, at any location and for any date.

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X05

