SPRINGFIELD RESOURCES
maintenance management training and consulting

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Skype: joeldlevitt
www.MaintenanceTraining.com

founded in 1980

World Class Maintenance Management Training

Available in your facility, on your schedule, to your people, customized with the topics you need

Benefits from sponsoring courses in-house:

Our promise for these programs is that your staff will have a new and deeper understanding of how to effectively manage maintenance. With this understanding will come increased ability to manage the activity of the training.

In-house courses also have significant advantages over traveling to take training:

1. Save money if you need to train 6 people or more
2. Save time since students do not have to lose a day or two in transit to and from the training venue.
3. 100% of the course can pertain to your industry and your maintenance situation.
4. Can be adapted to your maintenance language and forms to be easily understandable.
5. Manuals can incorporate your forms as examples to further enhance the training
6. Special issues can be discussed on a confidential basis with the instructor.
7. Schedule to be convenient to your business cycle. Unusual schedules can be accommodated such as night or evening training,½ day training for 2 alternating crews
8. Great as a team building experience.
9. Help create a shared a common language and vision for maintenance.

Testimonial

I would just like to take the opportunity to congratulate you on a very well-run workshop. The content was applicable and understandable. I have already used some of your knowledge to "assist" our maintenance department. The highlight of the presentation for me was the way in which the course was delivered. You certainly know how to get the message across and make the attendees comfortable. Once again my congratulations and thanks. John Russell, Peabody Energy Australia Coal

Listing of Seminars Available in your facility from Springfield Resources

Title	Page	Short Description
Maintenance Management	3-5	Introduction to maintenance management concepts including metrics, TPM, economic modeling, PM, RCM, planning. Can be customized
PPM (Preventive and Predictive Maintenance	6-8	Complete discussion on all aspects about PM. Longer courses adds depth and adds case studies from your plant.
Maintenance Planning and Scheduling	9-11	Complete course and hands-on workshop on planning. Includes all steps in planning and scheduling work
Maintenance Shut down and turn around planning	12-15	Complete course and hands-on workshop in planning and managing large maintenance projects and shutdowns.
Maintenance Leadership and Shutdown Leadership	16-17	Several courses covering topics for leaders including time management, decision making, motivation, communication…
Lean Maintenance	18-20	This is a workshop that introduces cost reduction and carries it out. This is a course for maintenance craftspeople or Lean facilitators.
Maintenance Management for Factories	21-23	Complete course to manage maintenance in factories, refineries, batch plants.
Maintenance Management for Buildings and Facilities	24-26	Complete course to manage maintenance buildings, airports, venues, stadiums, office buildings, etc.
The Basics of Fleet Maintenance	27-29	Complete course to manage truck, car, train maintenance. Does not duplicate Maintenance Management
TPM	30-31	Introduction to TPM in a factory environment.
Optimizing the Maintenance Inventory	32-33	Review of all the issues surrounding running an effective inventory including theory, economics, EOQ, capital spares

All courses include a work book and many include a printed text book.

Training can be delivered to small groups to very large groups. Here we are in a beautiful lodge in Hamilton, New Zealand.

Addressing 250 people at the national forum on Maintenance planning and scheduling

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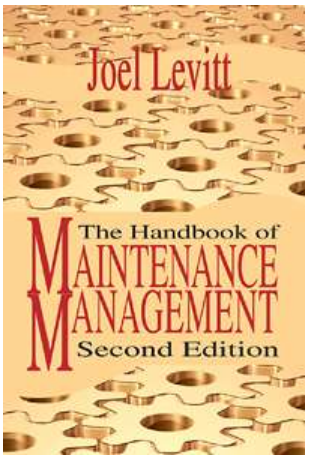
Maintenance Management Seminar

Who: This program is designed for all types of maintenance environments. Attendees could include Directors responsible for maintenance, maintenance managers, supervisors, lead hands, CMMS managers, planners, engineers and people who are in training for these positions. There is also an advantage to having representatives from operations, production control and stockroom for their perspective and input.

What: Two-day class includes a 35 page spiral bound work book and is based on the text *Handbook of Maintenance Management* Second edition by Joel Levitt



Why: This is a jam-packed course with you being able to answer: When to outsource. How and when to in-source. How to get TPM running in a few months. How to ensure uptime. How to build a reengineering road map. Choosing and using contractors (as a competitive advantage). Maximizing benefits from your CMMS. Ways to reengineer maintenance that do not compromise safety, environmental security, or uptime. How to put together a proposal using the financial modeling of top management. How maintenance uses the Internet Introduction. Basics of RCM. How to use high technology to make an impact.

There is lot more:

- Ways to cut the cost of your repairs by teaching 5 planning techniques to your trades people
- How to insure uptime with Reliability Centered Maintenance and how to use work sheets
- How to use 3 TLC techniques to slash breakdown
- Specific techniques for Lean Maintenance for the 21st Century
- 16 reasons to outsource. Choosing and using contractors (as a competitive advantage)
- In-sourcing and TPM: what is it, how and when to do it, and who to do it with
- How to use the CMMS to help manage operator centered maintenance activity
- Maintenance budgeting and effective financial modeling
- When outside contracts are indicated and how to select them
- How to compute the optimum intervals for component replacements and other preventive/predictive maintenance efforts

Exercises and Case Studies: Different people are different types of learners. This seminar features many different training modalities. This course has several kinds of exercises and case studies to help enhance the training experience and to teach specific skills of maintenance management

Agenda for 2-day version -Maintenance Management Seminar

Day 1

Blue case studies, Red exercises

1. Strategic Assessment of Maintenance Operations
- How to examine your current state of maintenance operations?
- 3 case studies in patterns in maintenance. These are organizations that have different problems and see how these problems impact their necessary approaches to maintenance.
- How to find dominant maintenance operations patterns?
- What are the tools for evaluating the importance and consequence of maintenance patterns?
- Exercise in determining your pattern by talking through the different elements of your current operation.
- How do assets deteriorate?

2. Improving Maintenance Reliability -the keystone to maintenance excellence
- How to improve maintenance reliability through Reliability Centered Maintenance (RCM) techniques?
- Case study in RCM. Look at RCM from the point of view of how you would do a study and what you would do with the results. An actual simple study is generated.
- What is the step-by-step approach to RCM?

At the Mercedes Benz Training Facility in Vance, AL after a certificate program class

3. Preventive Maintenance
- What is preventive maintenance – really?
- How to install and run a preventive maintenance system that meets your requirements and improves overall reliability?
- How to configure preventive maintenance to be the most effective in high uptime and lowest cost?
- Exercise how and where to use TLC (Tighten, Lubricate, and Clean) to minimize breakdowns (75% of breakdowns are from defects in these areas)?

4. Predictive Maintenance, Conditioned-Based Maintenance Techniques
- What are the four major predictive maintenance techniques?
- How does predictive maintenance and technology “foresee” future maintenance requirements?
- Case studies in Predictive Maintenance. Actual examples of scans, reports from live users of different technologies
- How to use predictive maintenance to minimize usage of resources?
- What are the practical predictive maintenance tools and how to use them?
- How to use statistics to improve maintenance operations?

Maintenance Management Seminar Day 2

5. Maintenance Insourcing
- How to identify your best partners for maintenance innovation and management?
- *How, why, when* and *where* to build internal partnerships with other departments?
- Exercise: How to apply the state-of-the-art "Total Productive Maintenance (TPM)" strategies and techniques?

6. Working with Vendors
- How to apply common sense strategies for working together with vendors (*contracting, stock room, vendor partnership and buying maintenance parts)?*
- What are the strategies for building "win-win" long-term relationships?
- Exercise: How to analyze and evaluate suppliers across several categories?
- What are the new maintenance MRO tools (or how to cut 50% from your cost of acquisition)?
- Exercise in new MRO tools. Use of the Internet to source spares

7. Maintenance Economic analysis and Quality Improvement
- How to evaluate your quality improvements?
- How to apply *Deming's* quality improvement concepts to maintenance?
- How to align maintenance quality improvement with overall organizational quality goals and objectives?
- Exercise: How to analyze maintenance alternatives using economics modeling. Modeling is a powerful tool to evaluate alternatives.

8. Computer Maintenance Management Systems (CMMS)
- How to leverage on technology to make maintenance more responsive and effective?
- Case studies: What are the popular CMMS systems and how to pick the best one for you? Review of what elements are important and how to look at systems
- How to make the CMMS work for you instead of you working for it!
- How to implement a competent, performance improving computer maintenance management system?

9. Maintenance Planning Coordination and Scheduling
- Why is planning for maintenance operations so important?
- Case study: How to add 50% to the size of your crew without hiring anyone using planning and scheduling techniques.
- How to incorporate proper planning into your maintenance function?
- What are the step-by-step guidelines for integrating maintenance planning and scheduling with building's usage, fleet schedules and production schedules?

10. Lean Maintenance
- How to apply tried and proven concepts of Lean to maintenance?
- Case studies: Lean Maintenance has saved companies millions. Here are some examples
- What are the specific *formulas, performance measures* and *techniques* for Lean maintenance?
- Exercise: Design a Lean project. Actually set through the Lean waste identification system developed by the instructor

11. **Putting it All to Work**

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PPM (Preventive and Predictive Maintenance)

Who: This program is designed for all types of maintenance environments. Attendees could include maintenance managers, maintenance engineers, RCM and PM specialists, PdM leaders, supervisors, lead hands, CMMS managers, and people who are in training for these positions. There is also an advantage to having representatives from operations, production control and stockroom for their perspective and input.

What: 1, 2, 3 or 5 day class includes a spiral bound work book and is based on the text *The Complete Guide to Preventive and Predictive Maintenance* Second edition by Joel Levitt

Why: PM has always been the best method of preserving assets. Whether you maintain process plants, factories, buildings or a fleet the PM system can be the core of the proactive effort.

There is much to know to design effective PMs for different types of equipment. This course will, in a short time, bring an entire department to a deeper understanding of how to make PM and PdM more effective. This course offers a basic foundation for any organization wanting to improve or set-up a PM system.

Some of the specific things you will learn include:

- ✓ How to reduce waste in PM activity
- ✓ What changes to make to improve reliability
- ✓ What changes to improve repeatability
- ✓ How to gain productivity through a small change in thinking
- ✓ How to plan and schedule PM
- ✓ Developing task lists for different equipment
- ✓ How to evaluate existing task lists
- ✓ How things fail and its impact on PM
- ✓ Who makes the best PM Person?
- ✓ How can we adopt Planned Component Replacement?
- ✓ What are the basics of predictive maintenance?
- ✓ How can we use the P-F curve to choose inspection frequencies

Exercises and Case Studies: Different people are different types of learners. This seminar features many different training modalities. This course has several kinds of exercises and case studies to help enhance the training experience and to teach specific skills of PM and PdM.

Agenda for 2-day version of Preventive and Predictive Maintenance

Day 1

Blue case studies, Red exercises

1. Specifically how Safety and reliability are interrelated.
   - How PM avoids accidents
2. Groundwork
   - The goal of Maintenance
   - PM, PdM Defined
   - PrM defined as a breakthrough in viewing maintenance
   - PM Report Card and 10 Questions exercise introduction to the issues
   - How much is enough?
   - Iatrogenic failure an essential mechanism to understand PM
   - PM as a percentage of hours a diagnostic exercise
3. PM Basics
   - Task lists
   - Common PM Tasks
   - Other aspects of the PM system or program
   - Mandatory versus Discretionary
   - A special kind of failure: Hidden Failures
   - How things fail and the kind of PM needed for each failure style
4. PM Details for effectiveness
   - Different types of task lists
   - Where to get the original Task List
   - PM frequency
   - PM clocks in use
5. Task List development
   - How to develop task lists, what to avoid
6. Task list analysis –analysis to avoid wasting money and precious time
7. Advanced Concepts- P-F Curve
8. Reliability Enhancement Programs
   - RCM
   - PMO

Day 2 Preventive and Predictive Maintenance

Items in blue are case studies red are exercises

1. Review of Day 1 and questions
2. Analysis of a task list of a machine (major exercise). The result is a substantially improved task list for your use
3. TLC (Tighten, Lubricate, Clean)
   - How to make all task lists more repeatable
4. P/PM Economics
   - Consequences
   - Past Sins
   - Breakdown costs (this is what we are avoiding) determine costs
   - Basic Economic modeling: Alternatives with Cost justifications
5. Selling PPM to management: Battle for a share of the mind
   - What to say when selling PM to management (identify priorities)
6. Predictive Maintenance
   - Questions before you start
   - Chemical and particle Analysis Predictive tasks
   - Vibration
   - Temperature
   - Visual techniques
7. Management of PM activity
   - Planning and Scheduling PM activity
   - Access to Equipment
   - Interruptive maintenance and non-interruptive maintenance
   - Metrics
   - Outsourcing PM
   - CMMS approaches to PM and PdM
   - Short Repairs and high productivity develop a strategy for your facility
8. People issues
   - Staffing the PM Effort
   - What kind of personality to look for in a PM inspector
   - How to insure that PMs are done as designed
9. Create an action plan to cut costs, cut waste and improve reliability

This class is available in 1, 2, 3 and 5 day versions
This course can be given as a practical workshop on your shop floor.

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Maintenance Planning and Scheduling

Who: Designed for intensive (and generally larger) maintenance environments including utilities, large factories, refineries, smelters, chemical and process plants, large facilities, etc. People who would benefit include maintenance planners, supervisors, schedulers, material coordinators and people who have to manage the planning function. Senior maintenance workers that get involved in creating job plans would benefit also.

In addition anyone tasked with starting up planning and scheduling including managers, maintenance engineers. There is also an advantage to having representatives from operations and stores for their perspective and input.

What: 1, 2, or 3 day class includes a spiral bound work book and is based on the text *Managing Maintenance Planning, Coordination and Scheduling* Second edition by Don Nyman and Joel Levitt

Why:

Well-planned, properly scheduled and effectively coordinated jobs can be accomplished

- more efficiently
- at lower cost
- with fewer disturbances to operations
- with higher quality (reduce variability in your process),
- greater safety
- improved morale (by providing greater job satisfaction),
- increased longevity of equipment.

Also a few extras like reduce parts usage and higher organizational morale (in production departments) are also direct benefits. Effective planning and scheduling also helps increase the professionalism of the maintenance effort. In short, more work is completed more promptly, thereby increasing customer service. It's simple; you reduce wasted resources and save money.

Exercises and Case Studies: Different people are different types of learners. This seminar features many different training modalities. This course has several kinds of exercises and case studies to help enhance the training experience and to teach specific skills of maintenance planning and scheduling

Agenda for 2-day version of Maintenance Planning and Scheduling

Day 1

Blue case studies, Red exercises

- The Truth about Productivity
- What is maintenance planning?
  - Why is the planning essential for smooth operations?
  - What are the advantages of planning for?
  - How to Sell Planning & Scheduling to your management and operations?
  - Specifically where does the ROI (Return on Investment) come from?
- Where does Planning fit Into Good Maintenance Practices?
  - Understanding the Nature of Maintenance Activities.
- Work order systems
  - Auditing work orders and
  - Training in completing work order preparation.
  - Short discussion of the work flow with a job control function.
- Complete description of the planner's job.
- What are the conditions necessary for effective planning? This section includes a discussion of the institutional systems necessary for successful planning and scheduling. Specific areas include storerooms, PM programs, planner Libraries, supervision and high level sign-off.
- How to plan maintenance work
  - What are the steps in effective planning?
  - The complete planning process.
  - Estimating, Crew Size & Manpower Requirements.
  - What are the contents of a complete planned job package?
  - Plan a job exercise
- Complete Planning questionnaire so that participants can evaluate their own current planning operation against competent and world class organizations.
- Evaluate the gap between what is going on and what would serve the long term interests of the organization.

Maintenance Planning and Scheduling class held for Jordan Aviation in Amman, Jordan

Day 2 Course Agenda Maintenance Planning and Scheduling

- How and why to prepare the Maintenance Calendar
- Calculating available hours from maintenance workers. Includes work sheets and an exercise.
- The coordination meeting between operations and maintenance
    - Discussions and deliverable from meeting
    - Agenda example
    - Job loading until available hours is used up.
- Scheduling
    - Calculating available hours for maintenance workers.
    - Coordination with Operations and Coordination meeting.
    - Choose jobs based on need and available resources
    - Create a credible schedule that takes all the constraints into account.
    - Schedule a shop exercise

- How to use CMMS to Aid Planning and Scheduling.
- Job execution and feedback with job closeout and follow up
- Metrics and Benchmarking Planning and Scheduling
- Complete scheduling and coordination questionnaire so that participants can evaluate their own current planning operation against competent and world class organizations.

This class is available in 1, 2 and 3 day versions

Maintenance Planning and Scheduling in Port of Spain, Trinidad

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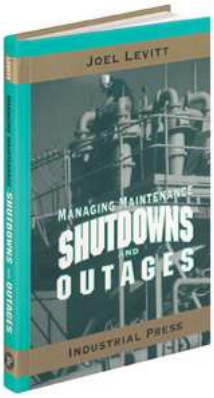
Managing Shutdowns, Turnarounds and Outages

Who: This course is designed for heavy maintenance environments including refineries, power plants, chemical plants, mines, large factories, and other large facilities. It was designed specifically for the project teams that might consist of project managers, outage planners, planners, maintenance managers, project engineers, supervisors, maintenance engineers, and people who are in training for these positions. This course is also designed for contractors who manage entire or parts of client shutdowns.

Prior background in Project Management would be useful but not essential. The best use of this course would be for an organization planning a shutdown or outage in the near future.



What: The 3-day course includes a spiral bound work book and is based on the text Managing Maintenance Shutdowns and Outages

Why: The Master Check List series of exercises (one list for each phase) is unique for this course. Each student will receive and review a master check list developed over the last 20 years of items that have actually caused problems on past shutdowns. The check lists are updated as new people take the course and contribute their experiences.

The Report card is used to evaluate their own shutdown program and see where there is room for improvement.

In the exercise on meetings the student can look at the meeting rules they follow and pick some areas where extra attention would enhance the shutdown effort

Preparing a Typical Time line exercise is designed to show the student the benefit to managing the shutdown intensively from conception to close out

Estimating Exercise takes a typical shutdown job and shows the students how to micro-plan a job.

Do you have enough time to properly plan and schedule the shutdown? The Planning lead times Exercise will show that and show how many people will be needed if you don't

The Critical Path Method (CPM) Exercise really tests the student's new knowledge of shutdown activity scheduling. It starts with a work list and has the students develop a CPM network diagram highlighting the critical path and the duration of the shutdown.

A few things you will learn:

- ✓ Giant- checklists of everything to consider before the shutdown and when to consider it.
- ✓ How to prepare your own customized checklist so everything is remembered.
- ✓ When to say **no** to added work
- ✓ Know when and how to use Gantt, CPM and PERT charts

- ✓ What documents to save and how to organize them
- ✓ Know how to break a job into activities
- ✓ How to set up the shutdown team
- ✓ How to account for everything that goes into an outage or shutdown
- ✓ Where to look for help on estimates
- ✓ Find out what shifts structures to use and how much they really cost.
- ✓ Checklist of specific safety risks to protect your workers
- ✓ How to control a shutdown
- ✓ How to pick project management software
- ✓ How to insure lessons learned are really learned
- ✓ What to do if a shutdown has gotten into trouble
- ✓ How to calculate the critical path even if you don't have software.
- ✓ How to know which work orders you should work on first.
- ✓ How to evaluate the effectiveness of your current shutdown effort.
- ✓ Where to find some great Internet based resources.
- ✓ Be able to effectively budget your next shutdown, turnaround or outage
- ✓ Know how to manage risk on any project
- ✓ How to learn from your mistakes and institutionalize lessons learned
- ✓ How to get the most from your existing Project Management software
- ✓ Where to find free and low cost software for shutdowns.
- ✓ How to set-up safety program for your shutdowns
- ✓ How to do a JSA for individual jobs

Agenda for 3-day Managing Shutdowns, Turnarounds and Outages - Day 1 Planning the Shutdown

1. Mastering the Basics of Shutdowns, Turnarounds and Outages
   - Language definitions
   - Size of events matter
   - Basic Skill –Meetings Exercise and discussion to make your meetings more effective
   - KPIs for a shutdown
   - Comparing and contrasting project management verses typical shutdown
   - Defining Constraints
   - Cover-up
   - Communications and presentations
2. Group activity: Quick report card- **Exercise to analyze your own shutdown from a variety of aspects and discuss with partner.**
3. Putting the whole Shutdown into time -Phases of a shutdown
   - Scheduled Audits
   - Preparing a Typical Time line -**exercise**
   - Instituting a long term shutdown policy
4. Shutdown Organization
   - Insuring great communications
   - Shutdown team titles
   - Roles and responsibilities
   - Accountability tip
5. Master Checklist for Phase 1 Initiation Exercise

Begin training about Phase 2 (planning and scheduling) of the shutdown

Scope of work **-**Inputs into the Shutdown

- Examining the Sources of work
- List of sources to check before closing the work list
- Checklists for Infrared and Vibration inspection before shutdown

- Work Validation (get rid of duplication, subsets, and other non-essential work)
- Packaging of work for bidding
- Prioritization of work

6. Shutdown Planning- Individual job planning
   - Planning Thought Process
   - Essential elements of job planning
   - Special requirements of Large jobs
   - Planned Job package
7. Planning lead times **Exercise**
8. Planning and Estimating **Exercise**
9. Risk, safety and health
   - Threat matrix
   - How to run a Safer shutdown
   - Safe work process
   - Safety risk list
   - How to do JSA for planning exercise
   - Managing other risks

Day 2 Managing Shutdowns, Turnarounds and Outages
Scheduling the Shutdown

1. Scheduling (Project Management Techniques)
   - History of Project Management
   - Software available
2. Critical Path Method (CPM)
   - Key concepts for all PM techniques
   - Project management techniques
   - Gannt Charts, CPM charts
     - Display and Milestones
     - Dependencies
     - Float
     - Crashing
     - Exercise in Planning and scheduling an acid line shutdown
3. Resources
4. Logistics
   - Site plan
   - Managing the logistics' challenges in a shutdown
   - Effectively managing your personnel and material resources
   - Site set down plans
   - Questions to be able to answer
   - **Strategic sourcing for parts, materials and supplies**
5. Contracting and Contract management
   - Legal framework
   - Tools of contracting: types, uses, important concepts
   - Legal Relationships
   - Avoiding problems
   - Example of a legal case study in shutdowns

Day 3 Managing Shutdowns, Turnarounds and Outages Executing, reporting on and Accounting for the Shutdown

1. Master Checklist for Phase 2 Planning, Scheduling Exercise

Begin training about Phase 3 (planning and scheduling) of the shutdown

2. Quality
    - The core of attaining quality (and safety too!)
    - Insure quality
    - Hold points
    - Shift schedules
3. Managing Execution
    - Shutdown the plant and Start-up the plant
    - Daily schedule and feedback
    - Shutdown review meeting agenda
    - Project leader failure techniques Exercise
    - Daily routine
4. Phase 3 Execution Master Checklist Exercise

Begin training about Phases 4, 5 of the shutdown

5. Shutdown essentials
    - Accounting, costs and budgets
    - Completion
    - Reporting
    - Lessons learned
    - Files to keep and review
6. Phase 4 Completion of work Master Check list Exercise
7. Phase 5 Completion of project Master Check list Exercise
8. Wrap-Up Session
    - The final session reviews the topics that have been covered over the last two days,
    - Questions and discussion
    - Each student chooses an area to work in for their next shutdown event

This class is available in 1, 2, 3 and 5 day versions

Shutdown and Outage class held in Mumbai, India

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Management Skills for Maintenance Supervisors, Team Leaders and Managers level 1

Who: This course is designed for people who supervise or manage maintenance work. Its focus is on the necessary management and people skills needed to foster maximum productivity, high quality and good morale. Ideal candidates either supervise maintenance workers or manage maintenance through supervisors.

This course is also recommended for people being considered for advancement. A third group would be Supervisors from other departments that work with maintenance because they could learn both about supervision and about basic maintenance management.

What: This course series is available in level 1 and level 2. Each level can be 2 or 3 days. There is also a related class for the Shutdown Leadership team which is 2 or 3 days. All versions have spiral bound work books.

Why: Many topics are covered to aid the supervisor in their effectiveness: How to increase the amount of work you get done through introductory time management techniques. Learn to effectively deal with difficult people. Learn basics of planning and scheduling, How to know the strengths and weaknesses of your workgroup. How to set-up a work schedule that adds to the productive day, reduces confusion and helps get your users rooting for you. How to supervise friends and older employees successfully and sensitively. Identify the great PM inspector within you crew. How to take seminars and retain more information. Specific techniques to help you react well and make the right decisions in high stress situations. In addition some of the things you will learn:

- Proven methods for handling problems with difficult employees, vendors, and coworkers
- Specific ways to make the change from technician to supervisor quickly and effectively
- How to communicate with management to get them to implement your suggestions
- Easy-to-implement techniques to improve your workers' productivity
- How to use preventative maintenance to better control breakdowns
- Guidelines for assessing your existing PM system to identify areas that can be improved
- How you should prioritize your PM task list and what tasks you can eliminate
- How to deal with the special challenges of supervising friends and older employees successfully and sensitively
- How to recognize the signs that an employee is about to quit
- Tried and true guidelines for hiring and retaining the best employees
- Up-to-date information on low-cost, high-technology predictive maintenance techniques
- How to optimize your particular strengths and minimize your weaknesses
- Proven techniques to teach you how to control your reactions in high-stress situations and to help you make the best decisions at those critical moments
- The three basic rules of managing employees so that you motivate your workforce to perform at the highest level possible
- The best way to present what you have learned at this seminar so that management will see it (and you) in a positive light
- What every supervisor should know about computerized maintenance management

2-day Management Skills for Maintenance Supervisors, Team Leaders and Managers Level 1

Agenda Day 1

Red are interactive exercises of various types

1. Attributes of a great maintenance supervisor: Effectiveness as a supervisor requires a balance of good many capabilities. Techniques are introduced to improve learning for all seminars.
2. Exercise in motivating maintenance workers. Determine what motivates maintenance workers.
3. Maintenance Planning and scheduling: Course features a very quick complete overview of maintenance planning and scheduling. Maintenance job planning exercise.
4. Supervisor evaluation clinic: Every supervisor brings something unique to the supervisory relationship. The participants will be shown how they are as supervisors, where they need development and where they have weaknesses that can be exploited by their subordinates, peers or bosses. Exercise to determine your supervisory style.
5. Coping with difficult people: Successful dealing with difficult people and situations is a key skill for supervisors. Exercise in coping with a difficult situation or person.

Day 2

1. The complete PM (Preventive Maintenance) cycle: The Complete PM Cycle introduces the concept of using a PM model of organizing all maintenance. Checklist is included to install new PM system or revise existing one.
2. Computerization of Maintenance for supervisors. How to understand the CMMS and make it work.
3. Condition based maintenance: This chapter discusses each major inspection mode (vibration, infrared, ultrasonics, etc.) and gives guidelines for getting involved. Presentation and discussions about PdM experiences
4. Special Problems of the maintenance supervisor: Maintenance supervisors face tough problems. Issues include dealing with discipline, supervising older and younger employees, supervising friends, drug and alcohol abuse. Exercise and presentations in local special issues
5. Supervisor Productivity Enhancement: Introduction to time management. The text provides a reading list and resource list for further study. The course ends with the writing and committing to an Action Plan. Exercises in time management and setting priorities

Testimonials

- "Outstanding! Very easy to understand. Gets the point across nicely." – R. Scott, SCM Chemicals
- "Innovative ideas, good examples." – D. Morrison, Seagate Technology
- "Wish I had this 10 years ago when I first became a supervisor." – J. Hart, Dir of Prop Ops, Hilton Hotels

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Lean Maintenance

Who: This course is designed for all levels of maintenance personnel particularly maintenance workers. Supervisors, planners, managers, and maintenance engineers can also take it. The course works best when people from different levels, jobs or when people from different plants take it together. A diversity of opinions and experiences is desired.

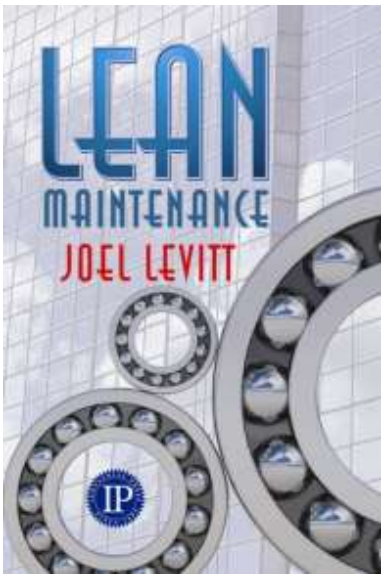
What: Available in 1, 2 and 3 day versions. Course materials include spiral bound work book and the text *Lean Maintenance* by Joel Levitt

Why: This course teaches specific techniques for locating and attacking waste, and reducing costs of operation. The outcome of the session is a series of Lean projects ready for execution. The projects will be designed, prioritized and justified.

- Save money immediately
- Save resources
- Increase uptime

Some of the specific benefits of this Lean Maintenance course include:

- How to uncover real waste in your operation
- How to solve problems and make the solutions stick
- Know which project is the winner among all the waste uncovered.
- Find the low hanging fruit (just waiting for you to pick it!)
- How to design a project from the beginning to the end
- How to present your ideas to management
- Execute project and get credit
- Prove the Returns on Investment
- Change the perception of maintenance



One day Lean class during PEMAC meeting in Toronto

Agenda for 2 day Lean Maintenance course:

Day 1

1. Lean maintenance and where it fits in, problem solving
2. History of Lean Maintenance
3. Techniques for continuous improvement including inputs to maintenance.
    - Looking at the inputs to maintenance for areas to make more efficient
    - Looking at the outputs to optimize the use of the resource
4. How Lean Maintenance is related to Lean Manufacturing?
    - Lean maintenance provides a Lean service to operations
5. Many of the tools can be brought over (types of observation, 8 losses, etc.)
    - How to see waste in your operation
    - The role of Lean Maintenance
6. Be Lean to survive global competition
    - Be Lean to be a preferred employer
    - Have faster reaction times to shifts in the marketplace
    - Specific Lean Strategies
7. Lean TPM
    - What is it?
    - How can we take advantage of it?
    - Design Lean tasks
8. Lean Work Orders
    - Better machine histories
    - Training for mechanics, operations and planners
    - Examples of Lean and Fat work orders
    - Specific techniques to reduce fat from your use of work orders
9. How to use your CMMS in a Lean way
    - Take advantage of your data
    - Where to get data to support cost saving plans.
    - Exercise in developing a Lean CMMS protocol
10. Recreating your PM system to be Lean
    - Where is the waste in PM
    - Exercise in PM and Lean maintenance
11. Using technology for PdM inspection and for Lean Maintenance
12. How to plan and schedule maintenance jobs for Lean execution
13. Exercise in Lean Planning
14. Attack fat in the maintenance warehouse
    - Techniques to cut costs of acquisition
    - Techniques to cut costs of ownership
    - Exercise in Lean Inventory approaches
15. Is safety Lean?
16. The goal: a Lean worker

Conferences and training by Joel Levitt on Lean Maintenance

2008 speech and training Lean Maintenance, IMC Bonita Springs, FL, USA
2008 speech and panel discussion Lean Maintenance PEMAC Toronto, Canada
2009 speech Lean Maintenance ACEIM Bogota, Columbia
2009 training Lean Maintenance Trainmar Port of Spain, Trinidad
2009 Training session Lean Maintenance Saudi Engineering Council Dammam, Saudi Arabia
2009 keynote and training MARTS Chicago, IL, USA
2009 3-day intensive course in Kuala Lumpur Malaysia
2010 1-day training in Chicago, IL New Standard Institute
2010 1-day training in Orlando, FL New Standard Institute
2011 2-day class in Orlando Florida New Standard Institute

Day 2 Lean Maintenance- Finding waste and the development of the Lean Project

1. Brainstorming sessions specifically designed to uncover waste.
2. Where to focus initial attention
    - Use this Priority system to insure actionable projects.
    - Where to look for the 'low hanging fruit'.
3. Massive Lean Maintenance Project development
    - Groups set priority for each idea based on proprietary measures.
    - Groups develop list of projects in priority order
    - Forms are offered to help groups refine and write-up one idea
    - Rigorous formats are employed to insure projects are thought through, and different aspects are reviewed.
4. How to conduct a cost analysis on a money saving project.
5. How to get these projects done in the real world.
    - Assign management mentor that will provide:
        - Money that was budgeted,
        - Run interference,
        - Get supplies, help, faith, access to asset and resources, whatever else is needed
6. Present a Lean Project
7. How to write success stories. Pass stories on to management

Lean Projects in a school system

Gold **Effect on A/C electric consumption of increasing the set point of a school from 75.5 to 77 F.** The school wide set point in the Jupiter school was raised from 75.5 to 77. No complaints were registered. The electricity usage dropped by 10% resulting in a $7000 year savings per school with an immediate total approaching $315,000 (45 schools on DDC controls) for the district. Additional recommendations for savings from new thermostats in modular units. Gold star because there is little investment, large potential savings, and immediate returns.

Silver **Impact of the use of stabilizer on the consumption of chlorine in the pools.** The team added $225 of stabilizer to a pool. They charted chlorine usage for 1 week before and 1 week after stabilizer was added. Chlorine usage in the test pool dropped by $80 per week. Potential savings is $4000 per year per pool. Silver star is awarded because investment is small while the payback is large and immediate. This technique can easily be applied to all district pools where stabilizer is not being used.

Bronze **Impact of Ever-pure filter system to prevent corrosion failure in kitchen boilers.** The manufacturer increases the warrantee from 1 to 7 years if an Ever-pure filter is installed. Installation parts and labor are about $550. Current failure rates of 1 liner every 2 years will result in a savings of about $2684 in 7 years for each unit. 14 proposed Viking units would yield $37,500 in avoided maintenance costs over the 7-year warrantee. In addition there are over 50 boilers of other makes and models with equally high failure rates. The filter might help generate an additional savings of $134,200. This project was chosen because of the ease of the savings (from a warrantee), the real reduction in labor and the high cost of parts. If the technology proves to be effective the project can also be expanded to all the boilers in the district.

Compare circulating pumps. Project compares an existing cast Iron circulating pump to a smaller and lighter stainless steel pump. The smaller pump has been in use in the district for 7 years. Analysis of replacement cost, reliability, energy usage, complexity of installation shows that the smaller stainless pump is clearly superior. It costs $150 less to purchase, is more reliable, and uses about $7/yr less electricity. Recommendation: replace all circulating pumps with the stainless one as they fail.

Impact of relamping and cleaning fixtures on light output and electric usage. In a classroom where there were lighting complaints (room 12, Croton) the team replaced the tubes (with efficient ones), ballasts (with magnetic ones) and cleaned the fixtures. The candlepower at desk level increased from 12.5 to 56.8 (standard is 60). The amp consumption at the breaker went from 14 to 8. Total cost was $305 including labor at $25/hr. Electric savings $220/year. Several ballasts were leaking and were hazardous. Recommendation: create an annual campaign where each school chooses its worst 2-3 rooms for lighting. Teams will then re-lamp, re-ballast, clean fixtures. Based on the other relamping project high efficiency ballasts and utility rebates should be looked into.

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Managing Factory and Process Industry Maintenance

Who: This program is designed for all types of Factories, process industries, refineries, batch plants.

Attendees include maintenance managers, supervisors, leads, CMMS managers, planners, engineers, non-maintenance people accountable for maintenance, and people who are in training for these positions. There is also an advantage to having representatives from operations and stockroom for their perspective and input.

What: This 2-day class includes a spiral work book and the text *Managing Factory Maintenance* Second Edition by Joel Levitt. We can tour the production facility for insight into maintenance issues

Why:

- Sure-fire ways to justify your maintenance expenditures
- To integrate maintenance management into your overall strategy to increase competitiveness
- Techniques for calculating the true cost of breakdowns
- How to position your maintenance department to respond quickly to user demands
- Specific methods to reduce downtime
- How to cut costs in the storeroom
- What questions to ask to improve customer service
- To improve the MTTR (Mean Time to Repair) through planning
- To calculate the true cost from a change to PM and proactive maintenance
- How to get operators involved and interested in maintenance issues
- How to cut costs buying parts
- To evaluate existing or prospective CMMS
- What RCM is and how it applies to maintenance management

Course Agenda for 2 day Managing Factory Maintenance course Day 1

1. Maintenance Fitness questionnaire
    - Initiation and authorization
    - Training, hiring and development
    - PM, predictive and condition based *
    - Planning, Scheduling
    - Guaranteed Maintainability
    - Purchasing, parts and stores*
    - CMMS
    - Budgeting maintenance needs
2. Spare Parts
    - Parts management
    - Parts types
    - Insurance policy parts
    - Stocking policy
    - Consignment stores
    - Re-engineering.
3. Quick plant or process shutdown primer
    a. KPIs
    b. Phases
    c. Sources of work
    d. Validation
    e. Planned Job package
    f. Risk
    g. Resources
    h. Execution
    i. Shift schedules
    j. Shut it down
    k. Track
    l. Meeting Agenda
    m. Start up
    n. Accurate accounting
    o. Completion
4. PM
    a. BOK (Body of knowledge) for Factories
    b. PMO basics
    c. TPM (Total Productive Maintenance)
        - Introduction to the use and implementation
        - Tips for effective task selection, task design and management

Course Agenda for 2 day Managing Factory Maintenance course

Day 2

5. CMMS Computerized Maintenance Management Systems
    a. Sample curriculum for a work order training class
    b. WO fill out Classes
6. Lean Maintenance –do the right thing and save money
    - Where to look
    - Create lists
    - Good lean project
    - Proposal
7. Case study in Job Planning
    a. Review of Planning-Coordination-Scheduling-Execution
    b. 13 essentials of job planning
    c. Adopt our planning model to save time and money on the shop floor
8. Safety in Maintenance
    a. Performing a JSA
9. Ideas for action when you get back

Joel receiving an award from the CEO of SABIC for his keynote address at their Environmental, Safety and Health awards day

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Facilities Management

Who: People concerned with the management of office buildings, apartment complexes (large and small scale), sports venues, large facilities, airports, etc. Maintenance managers, building managers, supervisors, non-maintenance directors accountable for maintenance, leads, maintenance support people and people who are in training for these positions.

What: This 2-day class is available in longer formats. Training materials include a spiral bound work book and a new (2012) text book *Facilities Management* by Joel Levitt. We can tour the training venue for insight into building maintenance.

Why: Our promise for this program is that you and your staff will have a new and deeper understanding of how to effectively manage building maintenance. This understanding will translate into reduced costs of operation and higher levels of user/tenant satisfaction.

- Lean Maintenance for buildings
- To determine where you are and what changes are needed
- How to set up a work order system
- Understanding contracts
- How to set up a PM system
- Saving energy
- Motivation tips and tricks
- Samples of actual PM task lists
- How to estimate custodial work
- How to conduct craft training
- To increase efficiency for small jobs

Taking a break in KL, Malaysia

2-day Facility Management Agenda

Day 1

1. What does it take to manage building and facilities?
2. What is the appropriate level of maintenance?
3. Lean maintenance strategies.
   - Ideas to save money.
   - How to cut energy costs.
   - Action exercise: Develop money saving project
4. Dealing with contracts.
   - Types of contracts.
   - Housekeeping contracts.
   - Bidding and bid packages.
   - Action exercise: Decide which party is right in mock contract dispute.
5. Contractors
   - Steps of contracting.
   - Tips to avoid claims.
   - Getting the work done with contractors.
   - Choosing contractors.
6. Do work in-house.
   - Training.
   - Route maintenance.
7. Purchasing and stocking materials,
   - Stocking and Purchasing Custodial supplies & materials.

2-day Facility Management Agenda

Day 2

1. Computerization,
    - Discussions of how systems work,
    - How get more benefit from CMMS
2. Budgeting for Maintenance and housekeeping
3. Action exercise: Maintenance fitness questionnaire
4. Get Maintenance Organized,
    - Maintenance work order,
    - Auditing existing systems.
5. Management of Housekeeping
    - Estimating housekeeping
    - Quality inspection process.
    - Action exercise: estimate housekeeping for a school,
    - Doing quality inspections in hotel
6. PM Preventive Maintenance

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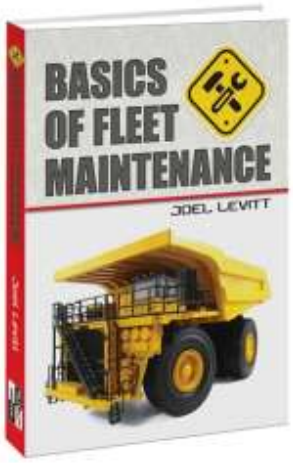
Basics of Fleet Maintenance Management

Who: This program is designed for Fleet managers of all kinds of fleets, Port equipment superintendents, shop managers and directors of transportation, supervisors, other executives or managers with fleet responsibilities and anyone being promoted into these jobs.

Fleets covered range from Port operation, taxicabs, mobile construction equipment, rental, transit and minibuses, municipal mixed fleets, common carriers, private carriers and mining equipment. This course is for any organization that owns or operates multiple pieces of mobile equipment.



What: The basics of Fleet Management is a 2 day class with a spiral bound work book and a text *The Basics of Fleet Maintenance* by Joel Levitt

Why: Running a fleet is managing thousands of details where any one of which could be critical. The focus of this 1-day class is how to distinguish the important from the unimportant and how to identify the critical vehicles, mechanics, vendors or operators that are costing you money.

This course will offer specific ideas to reduce road calls, reduce fuel consumption, trade units, how to slash paperwork, improve warrantee recovery, and help you understand what to manage to have an impact.

- What are the responsibilities of fleet management with an overview of responsibilities, benefits of effective management, alternatives to management, quality of life issues?
- How to conduct a fleet self-audit with how to measure a fleet operation,
- How to collect usable data for future analysis from the repair orders
- Identification of the 5 major cost areas
- VMRS (Vehicle Maintenance Reporting Standard), the use and misuse of the repair order.
- Pre-planning steps for change includes laying the ground work for changing your systems, how to prepare superiors and subordinates, 8 specific projects to get control, finding waste.
- Improving maintenance systems with PM, PdM, PCR, true cost analysis, avoiding crisis mode of operation.
- Attacking the major cost areas of labor and parts with methods of evaluating labor productivity, improved scheduling, how to manage the stockroom, reducing inventory levels.
- Where to attack ownership and operating costs
- When and how to trade, Improve warrantee recovery, loss prevention.
- Rules to improve your shop layout for efficiency

Basics of Fleet Maintenance Management 2-day course Agenda

Day 1

1. Issues of fleet
   - What is fleet management?
   - Why manage it?
   - Alternatives
2. Fleet Maintenance Fitness Questionnaire
   - Job assignment dissonance questionnaire
3. Pre planning projects
4. Selling Improvements to your Management
   - Life Cycle Cost
   - Return on Investment calculations
5. Goal: Longer life with less effort
6. Maintenance cost evaluation
   - True Cost of Labor
   - True Cost of a part
7. Breakdowns
8. PM strategies
   - Predictive maintenance
   - Setting up a PM system
9. MRO spares Inventory
10. Outsourcing

Heavy Haul Truck at Syncrude in Ft McMurry Canada

Basics of Fleet Maintenance Management 2-day course Agenda

Day 2

1. Fuel
2. Tires
3. Safety and insurance
4. Buying and selling vehicles
   - Vehicle specification
5. Alternative use
6. Fleet audit
7. Productivity
8. Staffing roles and number of people
9. Shop design
   - Tools and equipment
10. Shop scheduling and Work Standards
11. Repair Order
    - VMRS
    - CMMS
    - DVIR
12. Budgeting Maintenance
13. Measurement of Fleet Performance
14. New Technologies
15. 50 Notes to take with you
    - Build a better fleet system

A Fleet can have different equipment. Pictured is a farm implement at TADCO (very large farming operation) near Tabuk, Saudi Arabia

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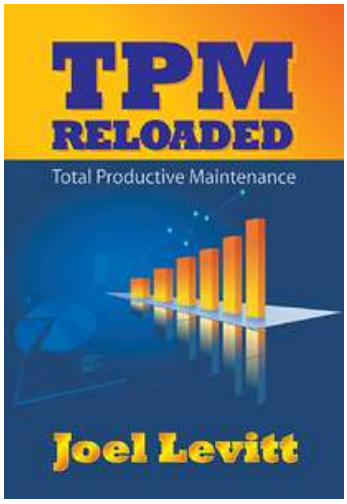
TPM (Total Productive Maintenance)

Who: Unlike almost any other maintenance strategy TPM is primarily housed within the operation group, so full participation from operations at all levels is essential.

The other unique aspect is that while TPM is driven from top management it is primarily an operations worker effort. The direct manufacturing workers need to be trained in their new roles. In addition, maintenance supervisors, managers, PM leads, PM workers should attend because they will serve as facilitators and trainers. In a large plant the shorter trainings can be conducted by your own in-house experts (after we train them and supply them with suitable training materials).

What: This course is offered in a variety of formats for different audiences. The student receives a spiral work book and the text Lean Maintenance by Joel Levitt



Why: TPM draws in the entire workforce and has a powerful impact on the complete output of the plant. The toughest lesson is how to keep TPM going after the initial roll-out. One of the keys, presented here is a complete understanding of what to do, why to do it and what's in it for the worker.

There is much to know to design effective TPM activity for different types of equipment. This course will, in a short time, bring an entire department to a deeper understanding of how to make TPM more effective.

Specific Benefits from this TPM training

- See TPM from the worker's position
- Are you ready for TPM?
- What steps to take to start TPM?
- Where does the return on Investment come from TPM?
- Learn everyone's roles in TPM
- How to design TPM tasks
- Answer the question what would it be like to work in a TPM shop?
- Provide agenda's for TPM team meetings
- How to use your CMMS with TPM
- How to teach TPM skills to operators
- What to teach operators
- How to manage TPM after the thrill wears off

This course is available in a long program (3-day as shown immediately below suitable for candidates wanting set-up TPM, to be TPM trainers or want to see the whole picture) and short program's for operations and maintenance personnel

Course Agenda for 1 day TPM class:

- Chapter 1 Introduction to TPM
  - Who is TPM for?
  - What Does TPM Do?
  - Why the results from TPM are urgent today
- Chapter 2 Talking About TPM
  - Total plant involvement
  - A Day in the Life of a TPM Shop
- Chapter 4 TPM basics
  - The intention of TPM is engagement
  - TPM: The Basic Idea
  - TPM is a TEAM Based Activity
  - Five Elements of TPM
- Chapter 5 Maintenance
  - The Basic Activity of TPM is PM
  - PM is…
- Chapter 6 OEE (Overall Equipment Effectiveness)
  - Measuring Equipment Effectiveness is an Essential Part of TPM.
  - OEE for a donut shop
  - Examples of OEE
- Chapter 7 TPM activities
  - Return to new conditions
  - Mini-manual for Operators
  - Tasks (Getting Down to the Nitty-Gritty)
  - Explicit versus Implicit tasks
  - Good TPM tasks have some things in common
  - Possible tasks for TPM trained operators
  - TLC (Tighten, Lubricate, Clean)
  - How to choose the best tasks
  - Team meetings
  - Typical team activity is conducting a 1-point lesson
- Chapter 8 Facts of Life
  - What Are We Trying to Do?
  - One Problem However – Past Sins
  - What are the Life Cycle Phases of Equipment?
- Chapter 9 CMMS
  - The CMMS Work Order
- Chapter 10 Visual Work Place
  - Benefits
  - Examples
  - When is too much too much
- Chapter 12 Training
  - For TPM to Work, You Better Be Great at Training.

My action Plan

Course is available in 1, 2, or 3 day configurations

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Optimizing Maintenance Inventories

Who: Senior and middle level executives from Operations & Maintenance, Materials and Finance. Storeroom managers, parts clerks, storeroom trainees, purchasing agents and buyers, and maintenance planners. There is also an advantage to having maintenance supervisors, maintenance engineers and representative from operations for their perspective and input

What: Every student gets a comprehensive spiral bound work book

Why: Our promise for this program is that your storeroom personnel will be conversant with effective Maintenance storeroom management and inventory control. They will be able to cut the number of SKUs, reduce the number of stock outs and reduce the overall inventory level

In maintenance of factories, fleets and buildings the parts and materials consume 40-70% of the budgeted dollar. Maintenance inventories can run millions of dollars. More so than the issue of paying for the inventory is the possibility of downtime and lost production from having the wrong inventory.

This course will help organizations cut their stock levels, cut the number of items on the shelf while simultaneously reducing the number of stock outs. Techniques will be demonstrated to use the actual parts as pointers to areas ripe for cost reduction. Students will come away with an excellent overview of the issues of managing a maintenance storeroom and up-to-date techniques for dealing with these issues.

A few of the things you will learn:

- How to explain critical parts
- What a great stock room looks like
- What parts to carry and why
- How to reduce your inventory level and increase your service level
- How to calculate safety stock
- How maintenance strategy impacts stocking decisions
- Improve stockroom layout and improve picking speed
- How to apply Lean Maintenance to Stockrooms
- Rules of using the CMMS for storeroom

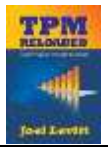
Optimizing Maintenance Inventories 1-day course Agenda

Day 1

1. Vision for maintenance and the stockroom- why are we doing this
2. A slew of definitions (the stockroom world has special language)
    - Common comments about Good and Bad stockrooms
    - Benchmarking
3. Storeroom Management
   Computerization
4. Computerization assessment
5. Reports
    - Parts Catalog
    - Rules of a computer aided maintenance stockroom
    - How Computerized Inventory Control can reduce stock-out and obsolete parts
6. Storeroom business process review
7. The Physical Stockroom
    - Functions of the physical storeroom
    - Sizing the storeroom
    - Ideas for layout of the storeroom
    - How to conduct a physical inventory
8. The Economic Stockroom\
    - Choose 10 parts that meet these descriptions
9. Economic analysis
    - What is the true cost of an item in your inventory?
    - How to reduce your maintenance inventory level and increase your efficient use of capital
    - Big-ticket analysis
    - Procurement costs
    - How much is enough? Types of demand
10. Dealing with the Part itself
    - Some quickies
    - Know Your ABC's
    - Steps to Take Advantage of the ABC Inventory Technique of Analysis
11. Helping purchasing save money, give them your conclusions on these issues:
    - Ideas to improve the purchasing maintenance relationship
    - Have you considered different vendor relationships?
12. Managing rebuildables

Wrap-up and action plan

Popular maintenance book titles by Joel Levitt form the basis of the classes available in your facility.

The Complete Handbook of Preventive and Predictive Maintenance SE: A culmination of years of research, teaching and consulting, this book shares the best practices, mistakes, victories, and essential steps gleaned from working with organizations around the world. Gives true emphasize to the four aspects of success in preventive maintenance systems: engineering, management, economic, and psychological. www.Industrialpress.com		**$44.95 2011**
Basics of Fleet Maintenance is a comprehensive look at the management necessary to run a fleet in todays enviornment. It includes audits, work sheets, ideas for all aspects of fleet maintenance. Topics include life cycle costing, storeroom management, shop layout, supervision, CMMS, budgeting, PM, and other essential topics. Written for new managers and people in training for that position as well as directors responsible for fleets wanting to increase their knowledge. www.MRO-Zone.com		**$49.95 2010**
TPM Reloaded: This is a new look at implementing Total Productive Maintenance (TPM) The book takes into account the economic upheavals of recent years and demonstrates that TPM is less about moving maintenance tasks to operations than moving accountability for aggregate output of the plant to operators. Effective TPM requires a radical difference in management's view of the worker and a radical change in the way workers view their own role. www.Industrialpress.com		**$39.95 2010**
Maintenance Planning, Scheduling and Coordination: Well-planned, properly scheduled jobs accomplish more work, more efficiently, and at a lower cost. This handy reference focuses on the groundwork that leads to the most effective utilization of maintenance resources. A vital training document for planners, an educational document for management, and a valuable guide for those who interface with the planning and scheduling function and depend on the many contributions of planning and scheduling operations. www.Industrialpress.com		**$47.95 2010**
Handbook of Maintenance Management: Now in its second edition, this comprehensive and easy-to-understand resource reviews all the major discussions going on regarding the management of maintenance. It's the perfect reference for maintenance professionals, providing quick updates on every specific maintenance management subject. www.Industrialpress.com		**$64.95 2009**
Lean Maintenance: Written for leaders in maintenance, storeroom or production. A practical book, Lean Maintenance takes the reader on a journey, uncovering sources of waste, designing projects to address inefficiencies, selling projects to management and delivering project results. Every area in maintenance is covered, including your TPM effort, storeroom, PM tasking, work orders and computer systems. Readers put these ideas to work right away, saving money, energy, and time immediately! www.Industrialpress.com		**$44.95 2008**
Managing Factory Maintenance: This new edition of a classic educates readers about the globalization of production and the changing of the guard of maintenance leadership, providing practical solutions to aid in these areas. Comprehensive discussions of potential problems and new opportunities, what bosses really want, specifics for improvement of maintenance and production, world-class maintenance management practices, quality improvement, process aids, interfaces and strategies, personal and personnel development strategies. www.Industrialpress.com		**$47.95 2004**
Managing Maintenance Shutdowns and Outages: This work organizes the details of a maintenance shutdown into manageable segments by introducing the steps needed for success. Loaded with examples from many industries, this book provides useful and practical guidance for maintenance managers, project engineers, supervisors, maintenance engineers, and planners working in any heavy maintenance environment. www.Industrialpress.com		**$44.95 2004**

NEW: Facilities Management to be published 2012 will sell for $99.95

JDL@Maintrainer.com for questions. All books are available from their publishers or signed copies can be purchased from www.MaintenanceTraining.com .

People Trained by Joel Levitt: Public sessions: 15,000 from over 3000 organizations in 21 countries in 500+ sessions. **98% rated them very good or excellent.** **Private training location of pictures in bold red**

Mining: Iron Ore of Canada, Imetal, Blue Circle, Clark Elkhorn Coal, **South Deep (South Africa),** Usibelli Coal, Windalco

Oil and Gas: Citgo, **Syncrude (Canada),** Esso Canada, Conoco Phillips, Emirati Oil (Dubai), ADCO (Abu Dhabi Oil Company), BP (Port Newark), Atlantic Liquefied Natural Gas, Valero

Food and pharmaceutical: Pepsi, Abbotts Labs, Wyeth, Merck, Con Agra, Fleur du Lait, **Tadco (Saudi Arabia)**

Primary manufacturing: Alcoa, Prince George Pulp and paper, Reynolds Metals, USX, Simpson Timber, Holcim Cement**, Arawak Cement (Barbados)**

City, Airport, University: Seattle Airport, Philadelphia International Airport, **St Maartin Airport,** Portland International Airport, Jefferson University Hospital, University of Texas, MD Anderson Cancer Center, Univ. of Alabama, City of Edmonton, Dominica

Manufacturing: Lego, Cisco, GE, Philip Morris, Sony, MECCO, Harley Davidson Motorcycle, Saturn (GM), Volvo, Degussa, Montel, MPI, Worthington Steel Algoma, Toray Plastics, Hood Industries, **Mercedes Benz**

Government and contractors: US Army Corps of Engineers, Raytheon, US Coast Guard, US National Security Agency, Defense Logistics, Lockheed, US Navy, US Army, Ft Meade, KRS**, 3DRO (Kwajalein Atoll-Marshall Islands)**, H.B. Zachary

Also Utilities: New Foundland Hydro, (Scottish Power) PacifiCorp, American Water Works, Derry Township Sewer Treatment, MidAmerican **Transportation:** Washington D.C. Metro Area Transit, Dallas Area Rapid Transit, CSX Railroad, NJ Transit, Loram

JDL@Maintrainer.com for questions

Springfield Resources' President Joel Levitt has provided training in the management of maintenance for 23 years. He has trained over 15,000 maintenance professionals in 525+ classes in 21 countries. 98% rated the course very good or excellent. Some of the organizations for which he provided training in public settings include:

SABIC (PM training), ADCO Oil (Supervisor training, main mgmt.), Toronto Peterson Airport, Emirate Oil (many classes), TADCO (planning), Cisco, Newcrest Mining (planning, supervisor), Valero Oil (planning), CUF (Shutdown), Syncrude (shutdowns), Holcim Cement, Atlantic LNG (Planning), Blue Circle, Ft Meade, BP (Port Newark), SAP, Pepsi, Saturn (GM), New Foundland Hydro, Placer Dome, Rayonier Fiber, Volvo, Con Agra, Esso Canada, US Army Corps of Engineers (Dam on the Red River), Southdeep Gold Mine (CMMS project), Iron Ore of Canada (planning), Salt River Project (Planning), Washington D.C. Metro Area Transit, NJ Transit, US National Security Agency, Lockheed, Blue Circle Aggregates, Usibelli Coal, GE Plastics (management), Wyeth (Planning), Toray Plastics, Abbotts Labs, Imetal, Merck, Prince George Pulp and paper, USX, Jefferson University Hospital, Clark Elkhorn Coal, Defense Logistics, Philip Morris, Sony, CSX Railroad, Harley Davidson Motorcycle, Sappi Fine Paper, US Navy, H.B. Zachary… more

What organizations say about Joel Levitt's Maintenance training.

"I have found Joel Levitt to be the most realistic and practical trainer I know. He can relate with the whole facility from the shop floor to the boardroom."
Steve Lindborg, Holcim (US) Inc. GM Theodore Plant

Dear Joel;
I have attended many courses in maintenance training, but non made the maintenance concepts so easy to understand and quite possible to adopt. We had a great time enjoying the way you delivered the message. I hearty wish you all the best.
Chief Operation Officer Ali O M Adam TADCO Saudi Arabia

Follow up note Ali O M Adam:
Lots of thanks for this effort. This will help a lot in the implementation process. Already we formed a follow up committee for the training concepts implementation. The points you highlighted will be given enough attention to grant smooth implementation.

I appreciate your great assistance that spotted a light towards many dark areas in our maintenance activities. Showing others how to do things right in a friendly way is a great value that is rare to find in today's world.
BEST REGARDS. Ali O M Adam

"My entire Maintenance department has changed for the better because of what I have taken from these classes."
John Mullinax, Maintenance Manager, AXSYS Technologies, Inc.

"Extremely experienced & Knowledgeable Facilitator. Real life pertinent examples. "
Nicole Kalloo of Nealco Properties Trinidad

"THANKS TO JOEL LEVITT" from REUBEN PARIAG *see below:*
Dear Mr. Pariag,
I am pleased to inform you that you have passed the Planning and Scheduling examination taken on 27th November 2009 at the University of the West Indies St. Augustine Campus scoring a total of 92%...

"The program makes you a better Maintenance person. "
Henri Gau–Gau of Maritime Authority Trinidad

"Instructor obviously very knowledgeable in the field and communicates effectively. "
Kayode Martin of T&TEC Trinidad

Good content very practical applicable to our maintenance practices.
Raffie Musaib Ali of Powergen Trinidad

"It was interesting to hear Joel basically reinforce what Grahame Adams and I had worked out here at Queensland News. We have introduced a couple his tools in our planning function. To be able to sit with other planners doing similar jobs was of a benefit, as the cross pollination of ideas is always advantageous. Thanks for the opportunity to be a part of the workshop.
John Kluver, Engineering Supervisor, Queensland News, Australia