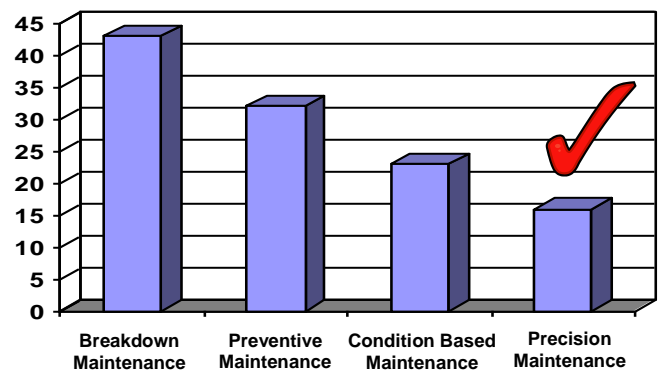


Operations Managers, Production Managers, Maintenance Managers, and Superintendents who want more reliable plant and equipment...
Introduction to Precision Maintenance Reliability
 Discover and introduce the highest equipment reliability and lowest maintenance cost strategy of them all into your operation!

A 1-day seminar introducing precision maintenance and how to implement it on a shoe string budget and with a lack of resources

Realizing remarkable machinery reliability through precision maintenance is not new; progressive, proactive organisations have practiced it since the mid-1980s; achieving both outstanding production performance and the best maintenance cost reductions of all maintenance strategies. Maintenance, Operations and Production Managers acknowledge that it is a great concept and totally valid – but few implement it! **In this 1-day seminar you will solve the stumbling blocks and remove the difficulties so you can get Precision Maintenance reliability from your operation.** You learn the essential ingredients for success, and discover the new, easy, low-cost Accuracy Controlled Enterprise method of implanting precision maintenance habits into your organisation.



Saved Maintenance Cost \$/kW/Year

Precision Maintenance is a matter of systematically ensuring the important things for equipment and machinery health are done right and done accurately, as this comment from a user confirms - "Big improvements come from small details." Smith says, "A big point in overall precision maintenance is being more precise in what you do. If you replace a bearing, put it on correctly. Torque the fasteners properly so they don't come loose or you don't strip the threads. Studies show that maintenance creates a sizeable percentage of its own problems. We want to take steps so we aren't creating problems; we're solving them."

Paul V. Arnold, Editor of Reliable Plant Magazine, *Machine maintenance and reliability at Clopay Corp.*, Copyright 2007, Society of Manufacturing Engineers

Annual machinery maintenance costs drop 70% - 80%, and you get failure-free, no-problems production equipment year after year

The table below show results of an equipment vibration survey in a large industrial facility. Vibration levels of equipment in the operation were measured and the maintenance costs for the same items of plant were collected. The maintenance costs for equipment with low vibration levels was 70% - 80% of that for machines that ran rough. Precision definitely pays well. (By the way, this is how maintenance makes a profit – you make machines run better, your costs fall, you keep them as profits.)

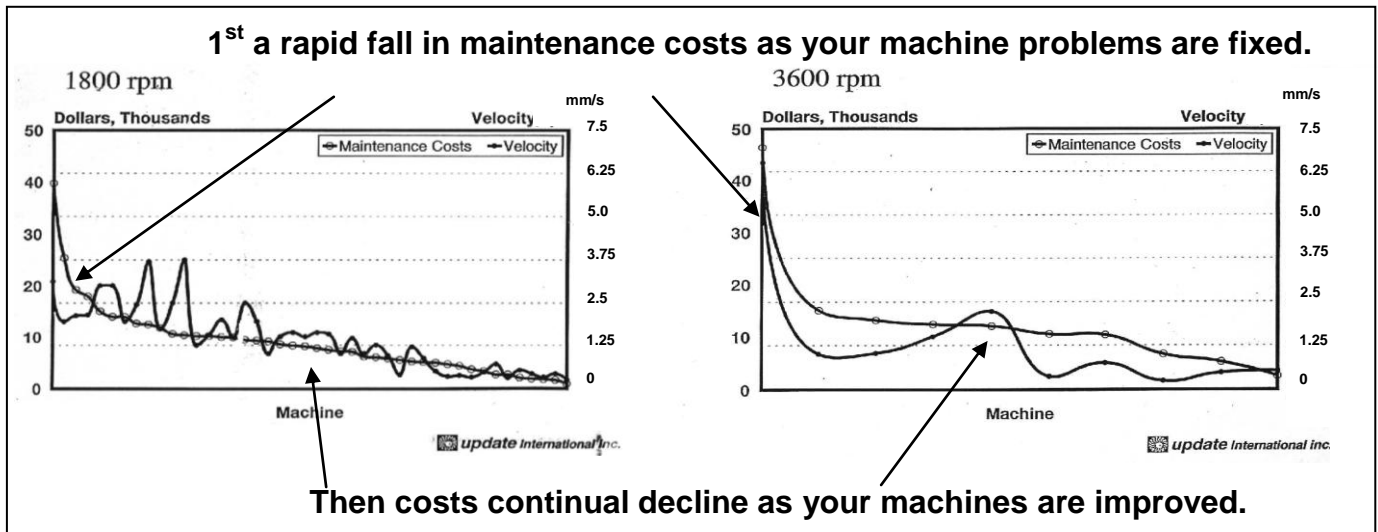
Machine Vibration to Maintenance Cost					
Machine Type	Highest Velocity mm/s	Dollars Spent Last Year	Lowest Velocity mm/s	Dollars Spent Last Year	Savings with Precision
Single Stage Pumps	5.6	\$3,200	2.0	\$650	80%
Multi Stage Pumps	4.8	\$6,100	1.5	\$1,100	82%
Major Fans & Blowers	9.0	\$900	2.8	0	100%
Single Stage Turbines	3.8	\$8,200	1.0	\$2,000	76%
Other Machines	7.8	\$11,850	3.0	\$3,700	69%

More proof of the value of Precision Maintenance to your operation

The two graphs below tell a remarkable story – when machine vibration levels fall, so do the maintenance costs; dramatically at first, then gradually and continually, as precision practices and their use improves. That means that your machinery does not breakdown. It runs brilliantly for longer. Plant availability,



throughput and productivity are maximised. And, naturally, you get more time to make more product, at less cost, to sell for more operating profit using fewer people.



Discover all you need to know to start a precision maintenance reliability revolution in your operation

There is no mystery why precision maintenance lets you make more, ship more, sell more and profit more, while doing it all at less cost!

The fact is that Precision Maintenance improves your machinery. Quite literally, your people make your machines run better.

Precision Maintenance saves amazing amounts of money for the companies that use it because:

- their machines and equipment are built not to fail
- they reduce the need to use subcontract maintenance people
- they maximise quality production and stop scrap
- they have vastly fewer stoppages and slowdowns
- fewer spares are used since machines don't need them
- plant availability and productivity is totally maximised

The great problem for industry is that there are extremely few ways guaranteed to work for making the necessary changes to working practices so that the maintenance and operating routines and methods of precision maintenance become the natural way work is done. That has now been overcome with new procedural tools and change management methods that let you use your own people to introduce Precision Maintenance into your operation.

During the seminar you learn:

- the full extent of what is precision maintenance,
- the structured and controlled change management method that wins your peoples' support, and
- the fundamental and critical procedural tools that must be in-place and put to use,
- the expert guidance available to you.

New Accuracy Controlled Enterprise method of introducing precision maintenance that automatically improves production performance

During the seminar you will see exactly how to safely and surely implement precision maintenance procedures using the Accuracy Controlled Enterprise (ACE) method. ACE introduces statistical quality control into maintenance work. It concentrates on failure prevention and defect elimination in every task performed by your maintenance people. With this method you have the tool to drive amazing and reliable equipment performance and production results in your operation. With ACE in place you start solving equipment



performance problems forever. And, more importantly, it lets you make Precision Maintenance a habit throughout your operation.

The Precision Maintenance ‘secret’ to ultra-reliable equipment, smaller maintenance crews, lower maintenance costs & the most plant output ever

There is a ‘secret’ as to why Precision Maintenance does or does not work in an organisation.

The international benchmarking group Solomon Associates discovered it some years ago - “Maintenance success is (ultimately) determined by decisions of craftsmen and supervisors.” *Solomon Associates Maintenance Practice Analyses*. The Solomon Associates survey found that in the end what matters most in achieving maintenance and operations success is the skills and knowledge of the shopfloor people doing maintenance on your plant and equipment.

If you want precision maintenance reliability you will need to bring your peoples’ machinery skills and knowledge right-up to the level where they can deliver world-class machinery performance. This is what the ACE procedural tool does for you.

As one site found out: “By using this technique recently ... equipment availability increased from a low 80% to a high 98% in two weeks. There is no substitute for old-fashioned common sense when you know how to apply it. It takes someone to show the way; but when people master the technique, a sense of pride and ownership pervades. This shows in an improvement in equipment reliability and a reduction in overall operational costs. The savings that can be achieved can adequately fund future training needs for a progressive company.”

John C. Robertson, Maintenance Reliability Specialist, Copyright 2000 TWI Press, Inc.

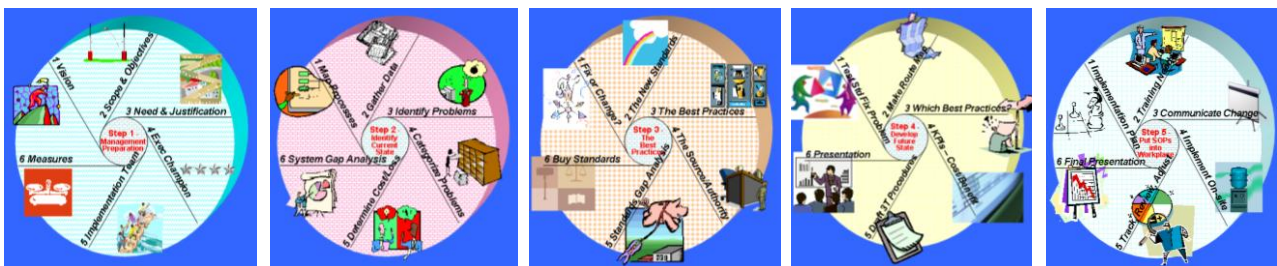
For Precision Maintenance to work it needs your shopfloor people to want it and to learn the necessary new skills, it requires the right engineering know-how and knowledge in the workforce, it requires procedures to be used in a very specific way to provide statistical quality control of maintenance work. When it is done properly you will make maximum production, in less time, and at less cost.

This seminar teaches you exactly how to change your organisation to achieve Precision Maintenance success and gives you the tools to do it

Though your shopfloor people deliver Precision Maintenance, it is Maintenance and Operations Managers that need to start the change, sustain it and keep improving it.

The journey to Precision Maintenance success needs a sound, safe and encouraging method to change the way people work. Complete understandings of the work quality requirements, the skills you need for Precision Maintenance, the change management tools that get people willingly involved, and the procedural method to make Precision Maintenance work for you and your operation, are all available at this 1-day seminar.

Starting Precision Maintenance requires a well thought-out and structured change management process that gets your people to want to introduce, and work to, new higher-skilled precision practices. This is done by using the ‘Change to Win’ 100-day change management team process.



The 5 Wheels of Change in the ‘Change to Win’ 100-Days Program

In the seminar you see how to use the team-based ‘Change to Win’ method of managing the change and producing the improvements you need in 100 days. 100-days are important because you need to prove the worth of Precision Maintenance in your own operation with a trail project. You will need to show people just how



good it is, because they will not accept change without evidence. Once the ‘experimental’ project is a success you have real evidence from within your own business that Precision Maintenance works. That proof is critically important. And 100 days is short enough for people to wait for evidence, yet long enough to do the project very, very well. Then you keep rolling-out more 100-day projects until Precision Maintenance is used by everyone on all your operating plant and equipment.

In the seminar you will discover how to get your people involved in implementing and using defect-eliminating Precision Maintenance successfully; all at low cost and with the least resources. Instead of risking that your Precision Maintenance project becomes another failed management fad, you will see how to have your people to buy into it ‘head, heart and soul’!

The simple, low-cost strategy you will learn at the seminar gets your tradespeople to **introduce precision maintenance into your operation in 100 days**. Precision Maintenance prevents equipment problems starting, it solves the equipment problems you have, and that lets you get more production, for less cost, with fewer people. Savings from precision maintenance come automatically because your plant and equipment run exactly as they were designed.

Introduction to Precision Maintenance Reliability <u>1-Day Training Seminar Content</u>	
Journey to World Class Asset Management	<i>Developing 3T ACE Shopfloor Procedures</i>
<i>Evolution of Maintenance and Reliability</i>	<i>Systematise Precision with a Quality Management System</i>
<i>Strategies to Reduce Maintenance Cost</i>	Activity 2 – Workshop – A Vehicle for Precision
<i>History of Precision Maintenance</i>	Introducing Precision Maintenance
<i>The Key Players are your Craftsmen and Supervisors</i>	<i>A Powerful Business Case</i>
<i>Asset Management Vision and the Precision Domain</i>	<i>Convincing Senior Management</i>
Activity 1 – Case Study – Precision Skills and CAPS	<i>The Accuracy Controlled Enterprise Program</i>
Precision in the Equipment Life Cycle	<i>Establishing Champions and Site Lead Teams</i>
<i>Engineering, Procurement, Construction Standards</i>	<i>Assessment Audits and Gap Analysis</i>
<i>Precision Assembly and Installation</i>	<i>Identifying Necessary Resources</i>
<i>Defect Detection and Failure Analysis and Removal</i>	<i>Making and Supporting Change</i>
Winning Hearts and Minds	Activity 3 – Workshop – Barriers
<i>Mindset, Attitudes & Culture of Precision</i>	<i>Change Management Process</i>
<i>The ‘Old Ways’ Can’t Produce the Results Needed Today</i>	<ul style="list-style-type: none"> • Planning
<i>Role and Influence of Supervisors</i>	<ul style="list-style-type: none"> • Preparation
<i>Internalising Precision Skills and Values</i>	<ul style="list-style-type: none"> • Authorising its Introduction
Vehicle for Precision: Accuracy Controlled Enterprise	<ul style="list-style-type: none"> • Implementing
<i>The Link to Asset Management</i>	<ul style="list-style-type: none"> • Pilot Scheme
<i>Achieving Outstanding Equipment Reliability</i>	<ul style="list-style-type: none"> • Full Roll-out
<i>A Precision Maintenance Program</i>	<ul style="list-style-type: none"> • Monitoring
<ul style="list-style-type: none"> • Defining Precision 	<i>Continuity into the Future</i>
<ul style="list-style-type: none"> • Setting Precision Standards 	Asset Management Vision with the Precision Domain
<ul style="list-style-type: none"> • Tolerance - Distortion - Looseness 	<i>Why do so Few Reach the Vision?</i>
<ul style="list-style-type: none"> • Lubrication 	<i>Link to Corporate and Personal Success</i>
<ul style="list-style-type: none"> • Shaft Alignment - Balancing - Vibration 	<i>Organisation-Wide Education Process</i>
<ul style="list-style-type: none"> • Installation Quality - Accuracy in Assembly 	<i>Developing Precision Skills and Values</i>
<ul style="list-style-type: none"> • Identify Root Causes - Root Cause Elimination 	<ul style="list-style-type: none"> • In-house Precision Skills Development
<ul style="list-style-type: none"> • Condition Monitoring to Confirm Standards 	<ul style="list-style-type: none"> • Third-Party Training Providers
<ul style="list-style-type: none"> • Precision Hand Tools and Equipment 	<ul style="list-style-type: none"> • Centre of Excellence – The Precision Room
<ul style="list-style-type: none"> • Records of Accuracy 	Activity 4 – Change Strategy To Implement Precision
<i>3Ts of Failure Prevention – Target, Tolerance, Test</i>	Seminar Wrap-up

