

Operations Excellence

through an Australasian Organic approach to

TPM & Lean / CI

17 March 2015

The challenges of enhancing Maintenance Capability to support Operator Equipment Care



Presentation by:
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President CTPM





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Outline of Presentation

The challenges of enhancing Maintenance Capability to support Operator Equipment Care

1. Why do it
2. What is required
3. Using Time Lost as the initial 'driver' to engage
4. Establishing a defect management system
5. Pitfalls to watch out for

1. Why do it?

People before Tools

What is Operator Equipment Care?

1. Using equipment cleaning as a means to identify defects
2. Ensuring Basic Equipment Conditions of no looseness, no contamination and perfect lubrication
3. Finding equipment defects / problems at the earliest possible time using their own inspection checklists
4. Minimising unnecessary wear and deterioration to the equipment caused by poor operation
5. Ensuring equipment conditions do not lead to quality problems

1. Why do it?

People before Tools

Toyota's Learning about TPM

In the early 70's when Toyota was developing TPM, which is based on Operator Equipment Care (or Autonomous Maintenance), they faced 3 Challenges:

1. How do we train the operators to know what to look for
2. How do we change the equipment so it easy for operators to find the problems
3. How do we create a maintenance support capability that can respond to small problems and issues identified by the operators

They also realised the 3 challenges were integrated and had to be progressively addressed together

2. What is required?

People before Tools

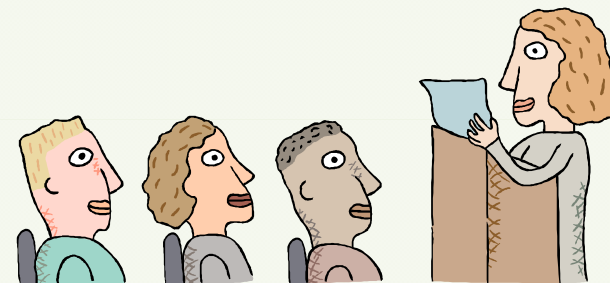
Need to engage Maintenance

However, the Challenges we may face could include:

- We are too busy because there is not enough of us for the work required – and management won't give us any more resources
- Production won't give us access to the equipment, then it breaks and the pressure is on us to fix it rapidly (hence we keep chasing our tails)
- Production keep cancelling our planned maintenance days
- Operators aren't properly trained so they keep stuffing up the equipment – and we get the blame for the breakdowns
- Management have cut back on overtime for short term savings, but it will come back to us to correct the mess when things fall apart



Ask the Audience



2. What is required?

People before Tools

Pathway to engage Maintenance support

1. Ensure Maintenance and Production rosters are aligned or supportive
2. Get maintenance people working with production in Cross-functional improvement teams focused on improving OEE
3. Use Time Lost as a driver for initiating Maintenance on-going Continuous Improvement activities to free up their time
4. Establish a defect management system so that minor defects don't have to go through the work order system
5. Get maintenance people involved in the Clean for Inspection activities so they can work along side the operators and assist them in understanding what a defect is.

3. Using Time Lost as the initial 'driver'

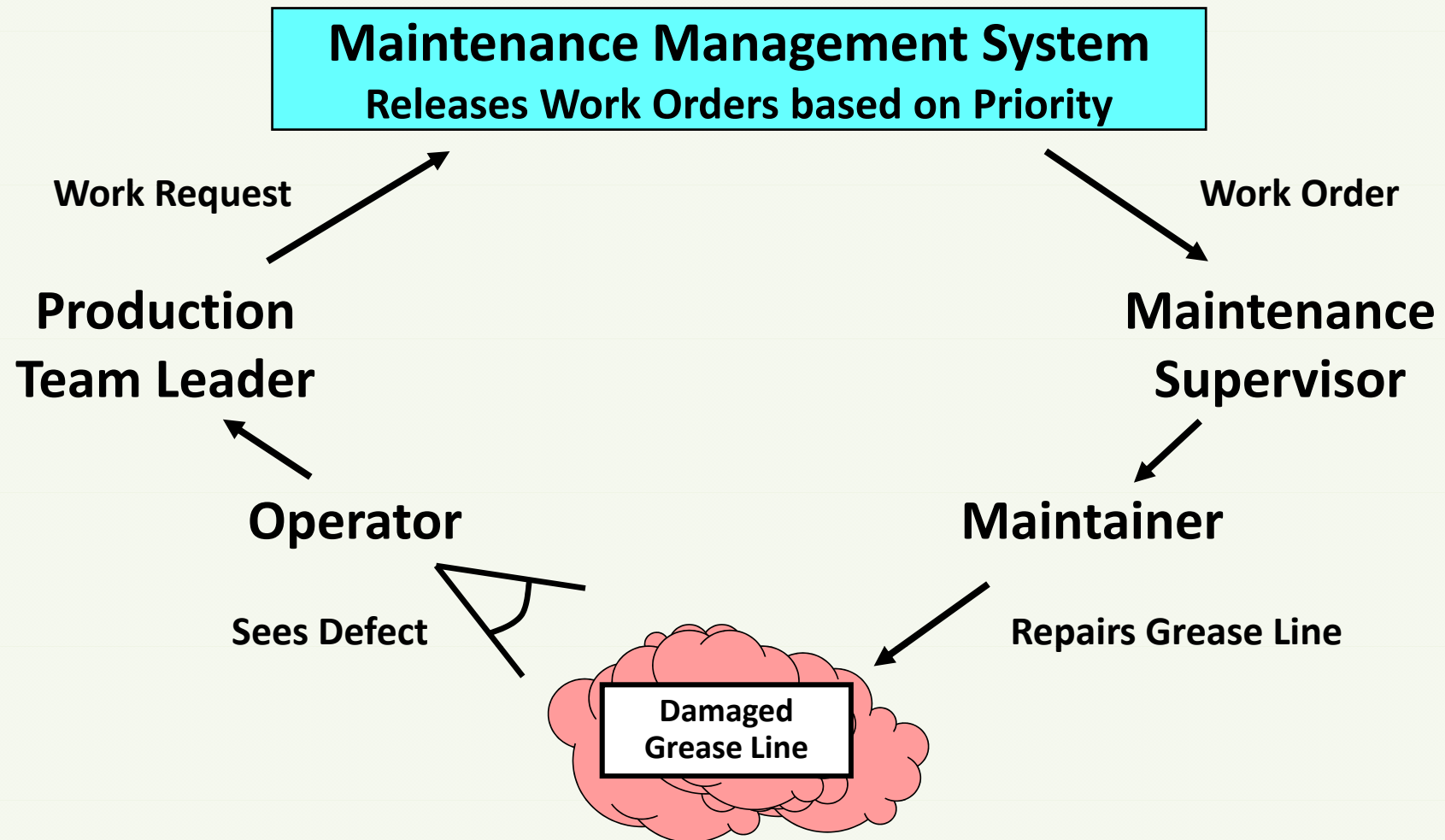
People before Tools

#	Possible Causes for Time Lost
1	Not being given a clear explanation of what has happened when called to a job
2	Tools not being immediately available when required
3	Technical information not readily available when required
4	Spare parts not immediately available or easy to access
5	Maintenance consumables not immediately available or easy to access
6	Not being given a clear explanation of what is required when allocated a job
7	Waiting for work permits or approval to proceed
8	Slow retrieval of information from computer system or manual records
9	Slow entering of information into computer system or manual records
10	Any other issues

Average Time Lost = 35%

4. Establishing a defect management system

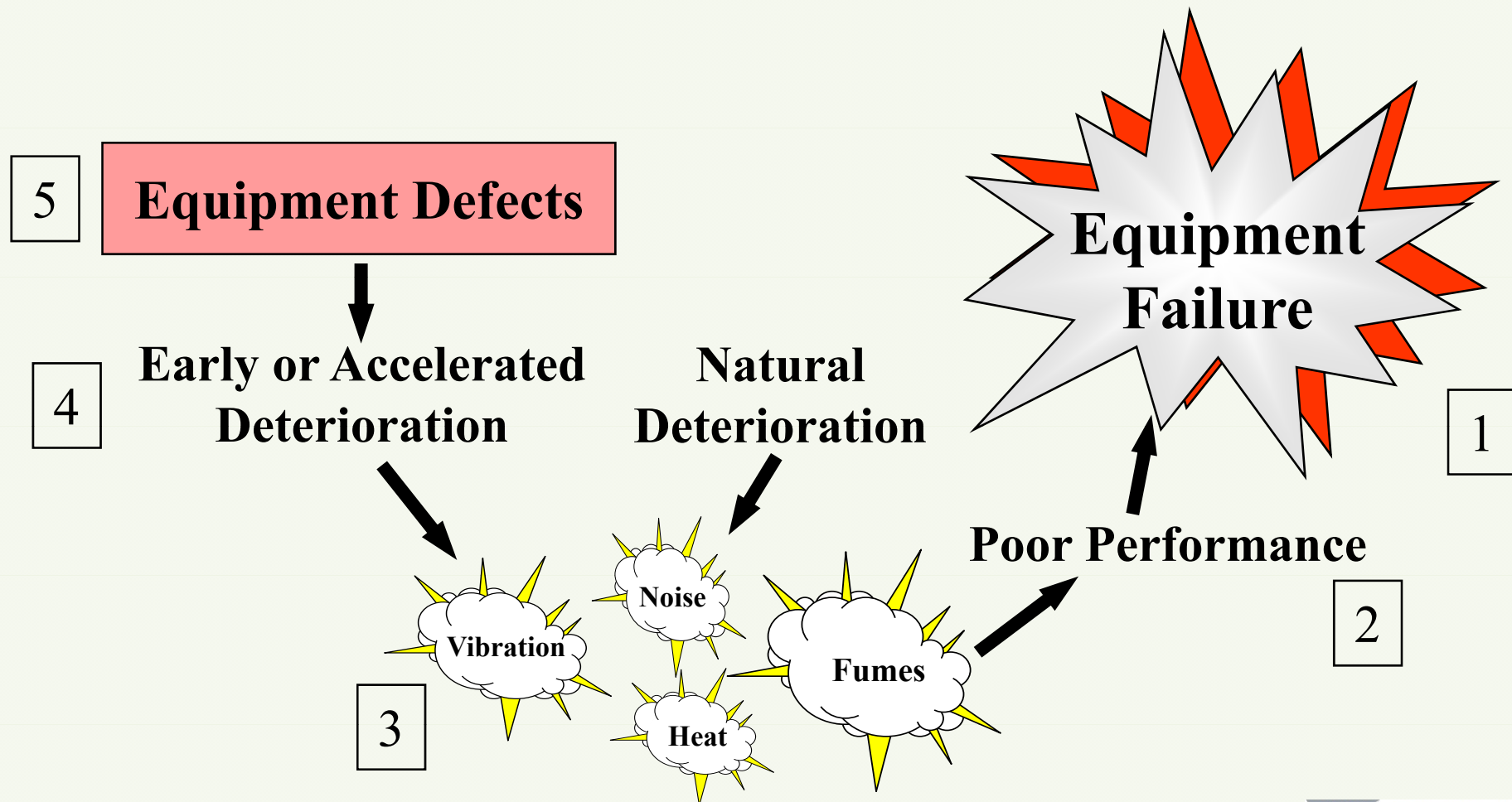
Traditional Work Order System to initiate Work



4. Establishing a defect management system

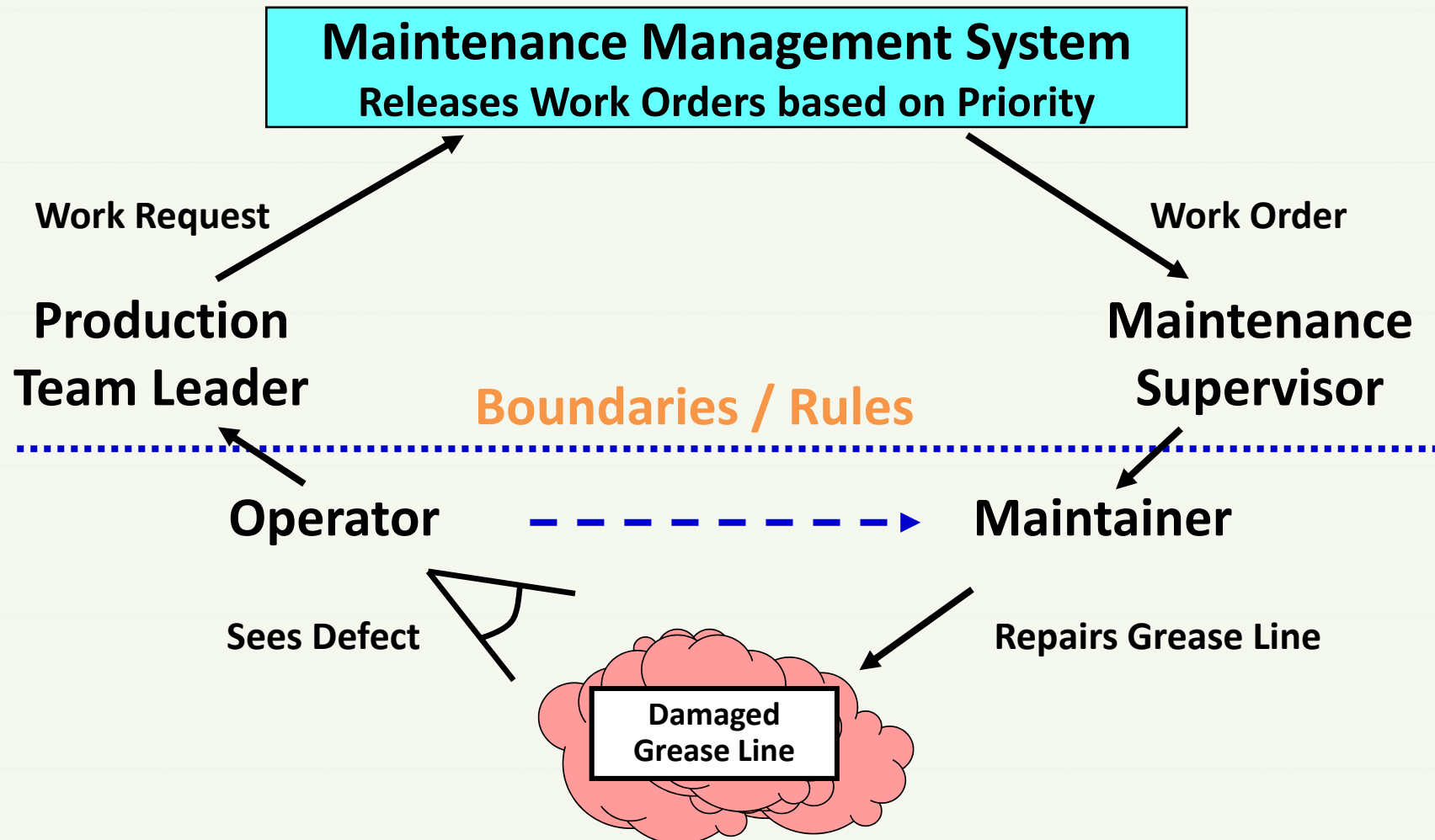
Typical Priority for Work Orders

(excluding urgent safety work which is always #1)



4. Establishing a defect management system

Dual System to initiate Maintenance Work



5. Pitfall to watch out for

People before Tools

1. Not having the maintenance roster aligned to the production roster so at least 1 dedicated maintenance person can be allocated to each production crew involved
2. Not having a Stable Production Plan so we can ensure regular (weekly) Clean for Inspections to develop Operator Skills and allow Maintenance to fix the defects
3. Not freeing up Maintenance Time before starting Operator Equipment Care activities
4. Putting all the defects through the Maintenance Work Order System because Maintenance insist on having a detailed history of all the work carried out
5. Not managing the defect list so realistic expectations can be communicated to all involved

Final Word

***Operator Equipment Care should be a
journey of development for your
operators, maintainers, and support staff***



Zero Breakdowns

Zero Quality Problems

Zero Accidents or Incidents

Achieving the target OEE and reducing Maintenance Costs by 50%

How can we help you develop your in-house capability?



Preparation for Production Area Based Teams & Work Area Management / 5S

Edition 18

Many sites introduce 5S into their Production areas only to be disappointed as improvements do not sustain. CTPM has addressed this issue by first establishing Area Based Teams with good ownership to their workplace then through an inductive process of emotive questioning mapped out an engagement approach to 5S we call Work Area Management. This approach not only results with a sustained neat and tidy workplace with a 'place for everything and everything in its place' but more importantly a workplace where standards are agreed and respected across all shifts.

This approach also provides a very solid foundation for going forward with Operator Equipment Management so as to achieve a failure-free (zero breakdowns); trouble-free (zero quality problems); and safe workplace (zero accidents & incidents).



Preparation for OEM-1

Activities for CI Co-ordinators and CI Production & Maintenance Champions

Edition 8

Operator Equipment Management Step 1 is the start of the 7 step journey to achieving Zero Breakdowns, Zero Quality Problems and Zero Accidents or Incidents.

Typically a 2-3 year structured development process involving 10-12 cycles of education, demonstration, doing and reflection so as to achieve set outcomes.

Each cycle spans 2-4 months commencing with a half-day kick-off workshop and concluding with a team presentation.

Mid-way through the cycle the team puts forward its improvement plan to allow the Leadership Team to review progress and, if necessary, adjust the boundaries to ensure the team will be successful.

The Operator Equipment Management 7 Step process is supported throughout by People & Leadership Development activities

Suggested Pre-reading:

Preparation for Area Based Teams & Work Area Management

Review past webinars on YouTube or via our webpage: www.ctpm.org.au

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How can we help you develop your in-house capability?

OPERATIONS EXCELLENCE - PEOPLE BEFORE TOOLS

1-day Interactive Workshop

Do you need to:

- Improve reliability of your plant and equipment?
- Stabilise component life to enhance your Preventive and Predictive Maintenance activities?
- Improve the performance of your plant, line, and equipment?



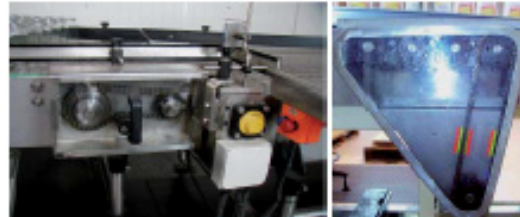
By the end of this workshop you will learn:

- The Impact of the Tyranny of Time in addressing equipment problems
- How to apply Prevention at Source to equipment and stop small problems from becoming big problems
- How to establish a system to ensure equipment defects identified by Operators are addressed promptly to ensure they are motivated to keep finding more

CREATE OPERATOR EQUIPMENT CARE

by engaging your operators to understand and care for their equipment

- Recognise the most effective sequence to revitalise your plant and equipment
- Define a pathway to develop the skills of your Operators
- Establish a means to get equipment defects addressed rapidly



This 1-day Workshop will assist you to develop the capability to prevent equipment defects from occurring at your site using tools such as Defect Tags; Clean, Inspection and Lubrication Checklists; and Visual Controls.

During the workshop you will be involved in defect identification activities.

Next Public Workshop:
Melbourne VIC - 26 March 2015

Venue: TBA

For Host or In-house workshops contact CTPM
Head Office on +61 2 4226 6184 or
visit www.ctpm.org.au

This outstanding workshop is designed for all levels of production who is interested in improving their operator capability to support Operations Excellence



OPERATIONS EXCELLENCE - PEOPLE BEFORE TOOLS

1-day Interactive Workshop

Do you need to:

- Create an environment where Maintenance are keen to assist Operators to understand more about their equipment?
- Develop your Maintenance personnel so they can train and support Operators in equipment care and inspection activities?
- Have Maintenance and Production work in harmony to enhance the performance of your plant and equipment?



By the end of this workshop you will learn:

- The Importance of a new direction for maintenance to enhance equipment reliability to support Operational Excellence
- The activities that Maintenance will need to support, and the Implication on Maintenance Resources
- The Impact of training Operators to carry out detailed equipment Inspections

ENHANCE MAINTENANCE CAPABILITY

to support Operator Equipment Care

- Understand the Impact Operators have on reliability
- Recognise the role of looseness, contamination and lubrication has on the variability of component life
- Discover the most effective way to train operators to identify equipment defects at the earliest possible time



This 1-day Workshop focuses on how maintenance needs to work in harmony with Production to enhance plant performance.

During the workshop you will be involved in a hands-on simulation to demonstrate how best to train operators in understanding the functioning of their equipment.

Next Public Workshop:
Melbourne VIC - 27 March 2015

Venue: TBA

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Question Time



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You mention that you start by getting maintenance people involved in cross-functional improvement teams focusing on OEE improvement.

How should you pick the maintenance people who should be on these cross-functional teams