

Outline of Presentation

Innovative Framework for TPM & Lean

10 Integrated Activities

#1 Safety & Environment Management

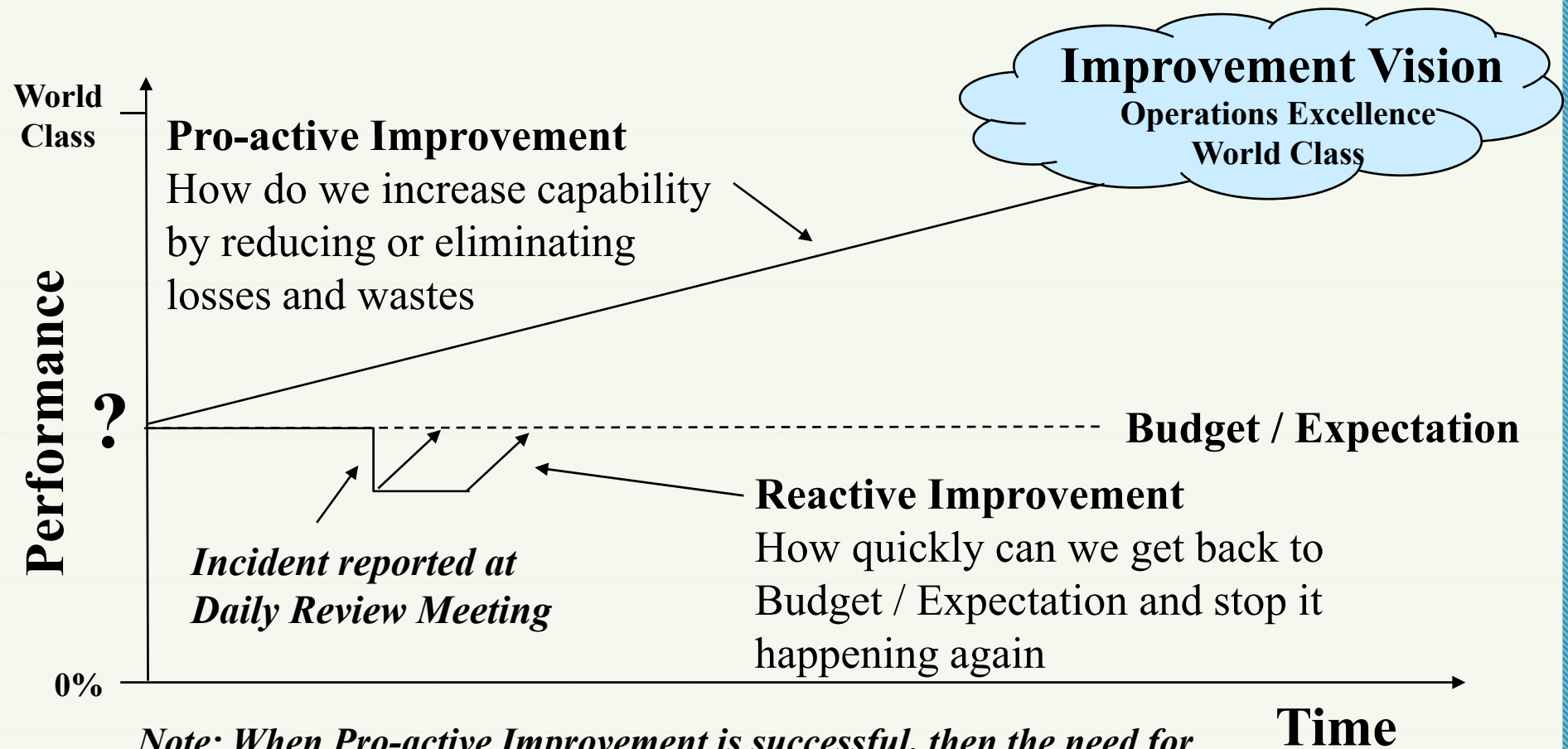
1. Why 10 integrated Improvement Activities?
2. Why the Lean Burge Conceptual Model?
3. Why Safety & Environmental Management as #1 when it is the consequence of all the other activities?
4. How do we achieve Zero Accidents & Incidents?

Background

2 Types of Improvement

Reactive – ensure you achieve Budget / Expectation

Pro-active – take you above current Budget / Expectation



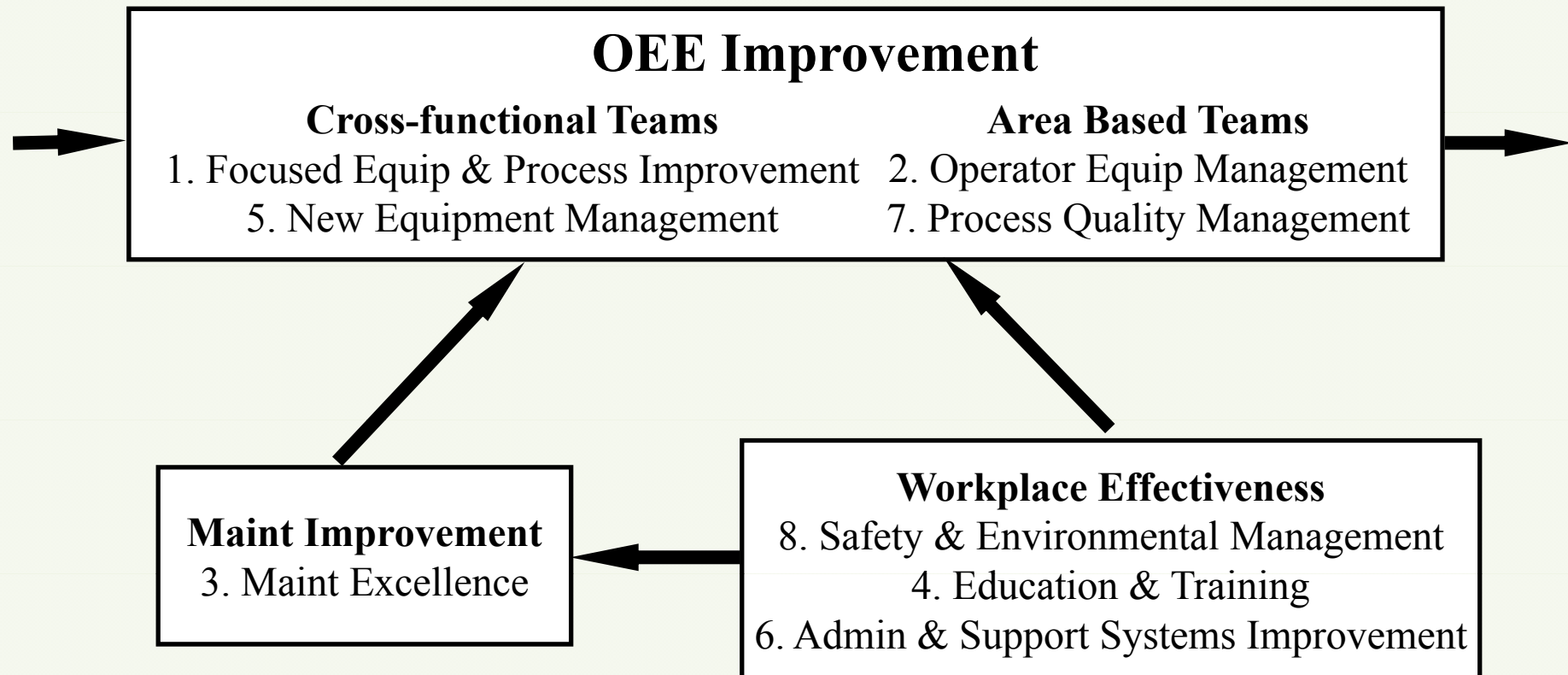
Note: When Pro-active Improvement is successful, then the need for Reactive Improvement should significantly reduce

Development of the TPM Pillars

1st Generation TPM (Equipment Focus)	2nd Generation TPM (Prod Process Focus)	3rd Generation TPM (Company Focus)
<ol style="list-style-type: none"> 1. Improving Equipment Effectiveness (6 Big Losses) 2. Autonomous Maintenance by Operators 3. Planned Maintenance 4. Training to improve Operating and Maint skills 5. Early Equip Management 	<ol style="list-style-type: none"> 1. Improving Equipment Effectiveness (6 Big Losses) 2. Autonomous Maintenance by Operators 3. Planned Maintenance 4. Training to improve Operating and Maint Skills 5. Early Equip Management 6. Support Department Improvement - Prod Planning 	<ol style="list-style-type: none"> 1. Focused Improvement (16 Major Losses) 2. Autonomous Maintenance 3. Planned Maintenance 4. Education & Training 5. Early Management 6. TPM in Administration & Support Department 7. Quality Maintenance 8. Safety & Environmental Management
Source: TPM Development Program S Nakajima 1982/1989	Source: New Directions in TPM T Suzuki 1989/1992	Source: TPM in Process Industries T Suzuki 1992/1994

March 1998

Applying the 8 Pillars of TPM³ through the 3 Areas of Activity



February 2001

Development of the 10 Pillars of TPM³

**JIPM 3rd Generation TPM
(Company Focus)**

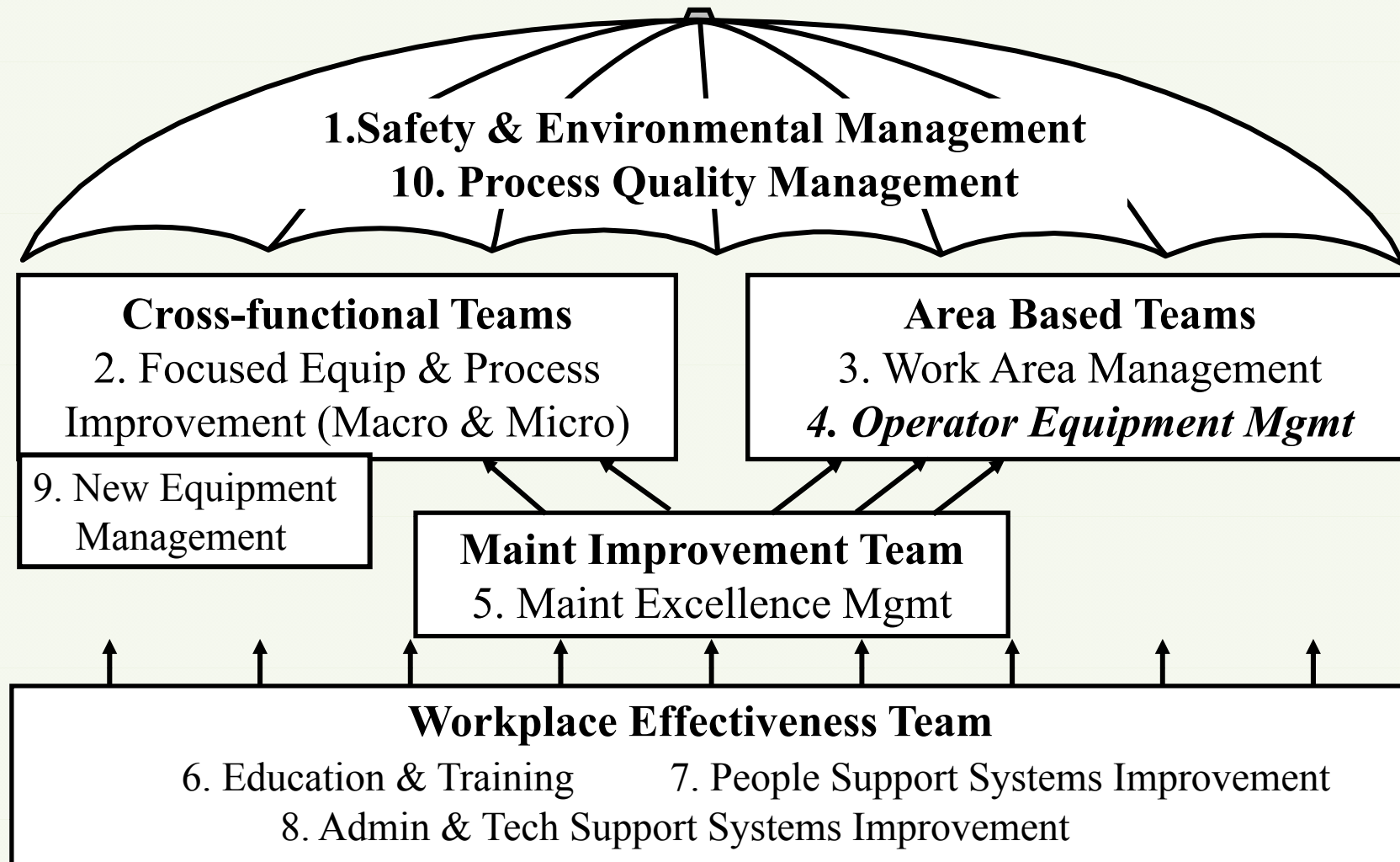
**10 Pillars of TPM³ Activity
(Company Focus)**

8. Safety & Environmental Management	1. Safety & Environmental Management
1. Focused Improvement	2. Focused Equip & Process Improvement
	3. Work Area Management
2. Autonomous Maintenance	4. Operator Equipment Management
3. Planned Maintenance	5. Maintenance Excellence Management
4. Education & Training	6. Education & Training
	7. People Support Systems
6. TPM in Admin & Support Departs	8. Admin & Tech Support Systems
5. Early Equipment Management	9. New Equipment Management
7. Quality Maintenance	10. Process Quality Management

February 2001

Key Areas of TPM³ Activity

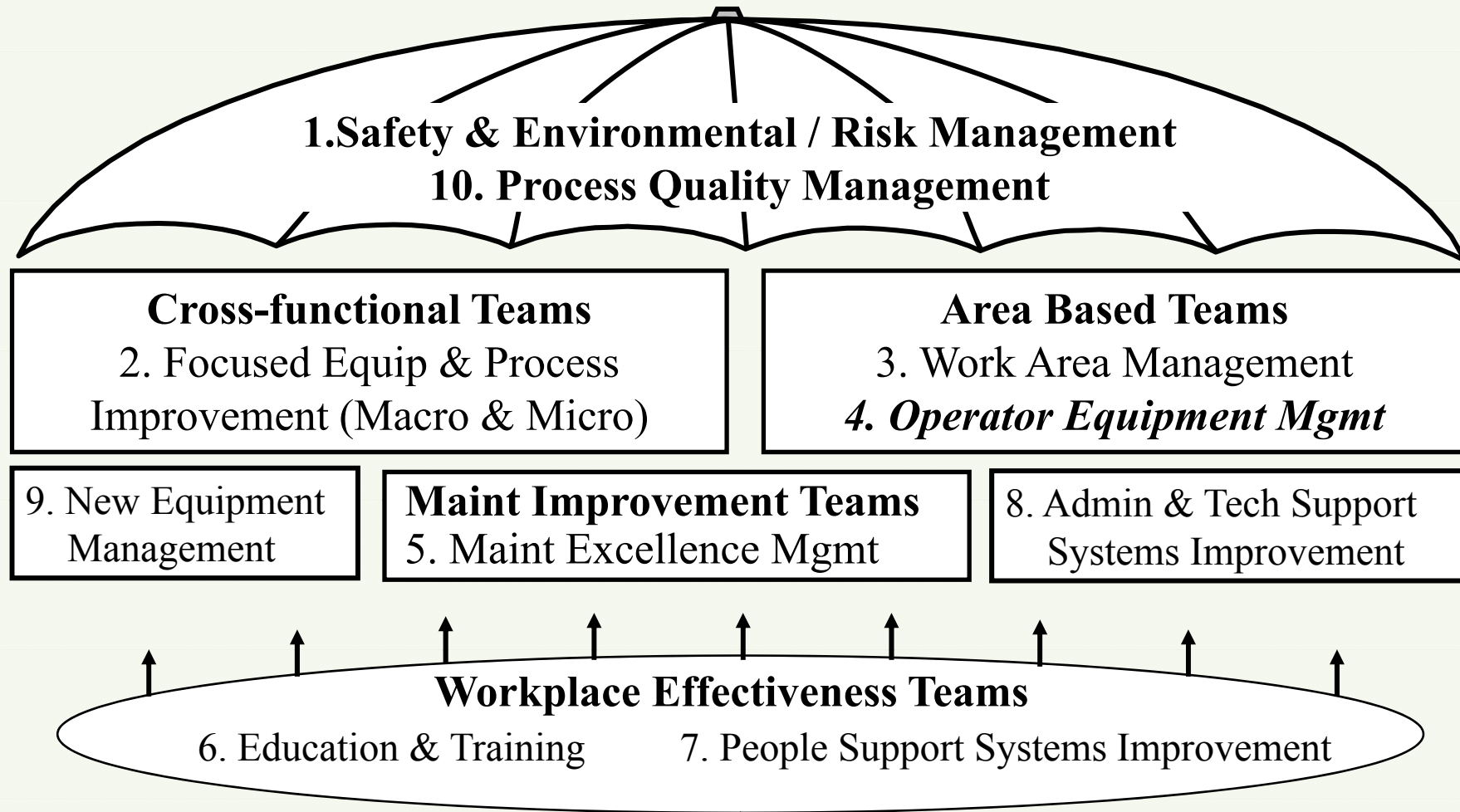
incorporating the 10 Pillars



June 2002

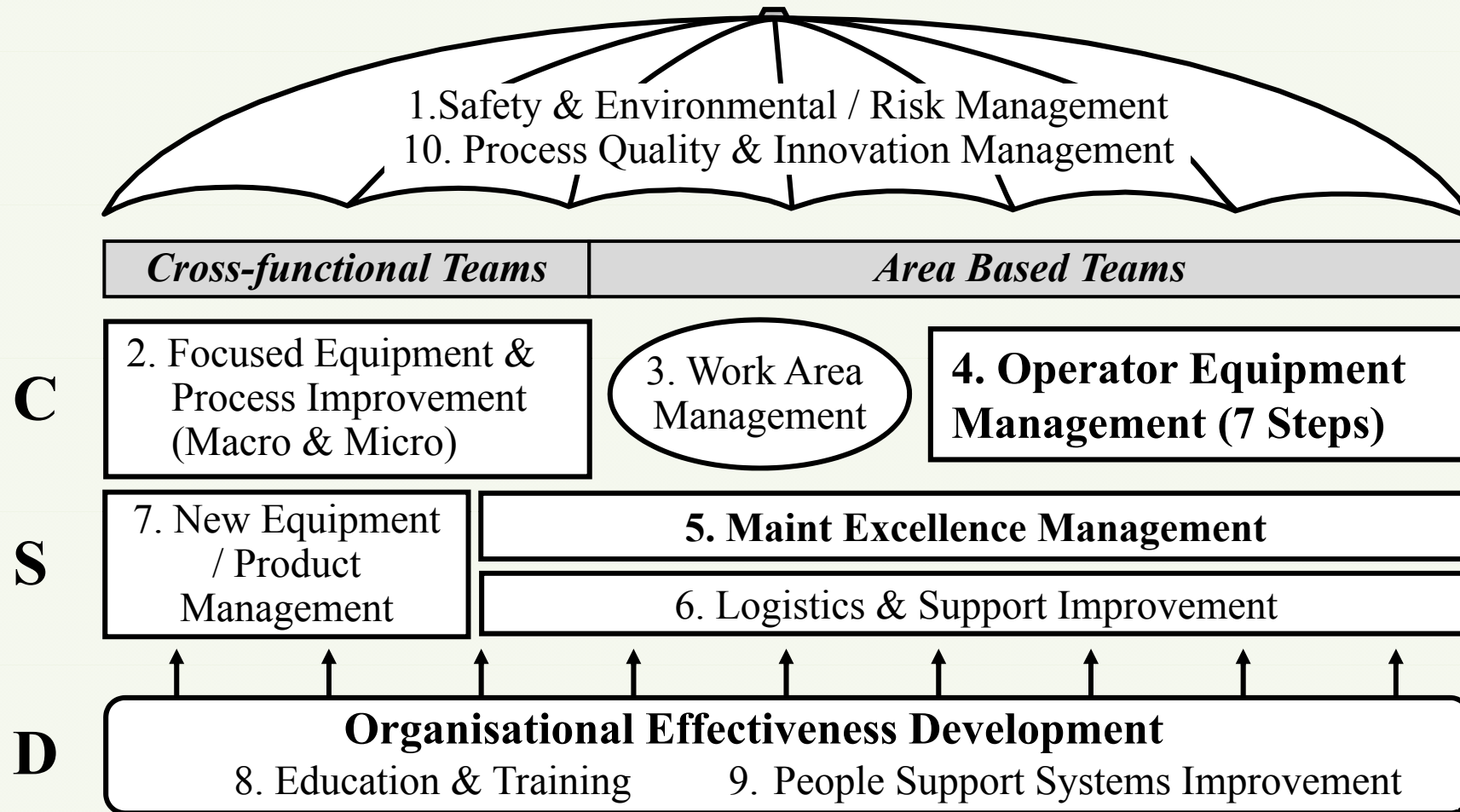
Key Areas of TPM³ Activity

incorporating the 10 Pillars



A Conceptual Model of the TPM³ Journey

incorporating the 10 Pillars



C = Core Pillars S = Support Pillars D = Development Pillars

Questions from our public Workshops

What is a Core Pillar?

Why do the Pillars lay on their side?

Why does it look like a Hamburger?

Key Learning: *Keep the language simple as possible*

January 2008

Development of the 10 Improvement Activities of TPM & Lean (TPM³)

**JIPM 3rd Generation TPM
(Company Focus)**

**10 Improvement Activities of TPM³
(Supply Chain Focus)**

8. Safety & Environmental Management	1. Safety & Environmental Management
1. Focused Improvement	2. Focused Equip & Process Improvement
	3. Work Area Management
2. Autonomous Maintenance	4. Operator Equipment Management
3. Planned Maintenance	5. Maintenance Excellence Mgmt
5. Early Equipment Management	6. New Equip / Area / Product Mgmt
6. TPM in Admin & Support Departs	7. Support Depart Excellence Management
	8. Value Stream Management
4. Education & Training	9. People & Leadership Development
7. Quality Maintenance	10. Process Quality Management

January 2008

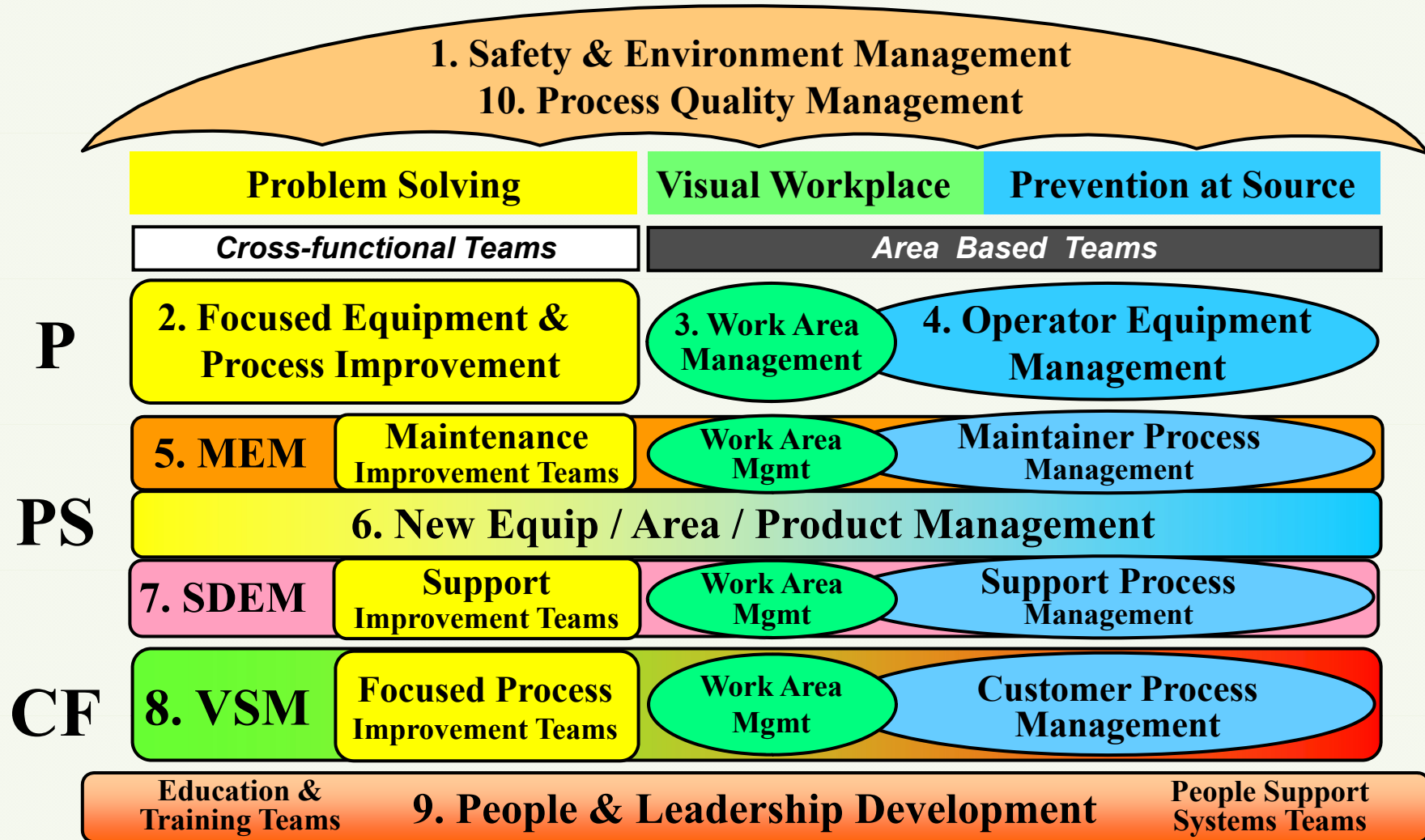
TPM³ Framework for TPM & Lean

incorporating 10 Improvement Activities



P = Production Activities; PS = Production Support Activities
CF = Customer Focus Activities

Activities within the TPM³ Framework



P = Production Activities; PS = Production Support Activities
CF = Customer Focus Activities

Activities within the TPM³ Framework

On-going Improvement focused on developing all people to enhance their Practices & Behaviours

so as to identify and address Problems in the Workplace at the earliest possible time

On-going Improvement involving Everyone

Cross-functional Teams	Area Based Teams
5%	5%
Problem Solving	Prevention at Source
Visual Workplace	

Where 5% = approx 2 hrs / week

TPM³ Framework for TPM & Lean

incorporating 10 Improvement Activities supported by the Leadership Base

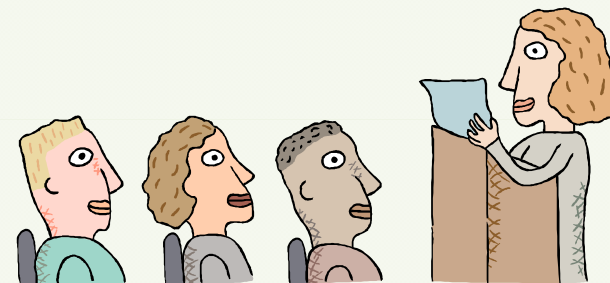
1. Safety & Environment Management
10. Process Quality Management



P = Production; PS = Production Support; CF = Customer Focus



Ask the Audience



1. Safety & Environment Management

How do we achieve Zero Accidents & Incidents?

3 Key Goals of TPM are:

Zero Breakdowns

(Failure Free workplace)

Zero Quality Problems

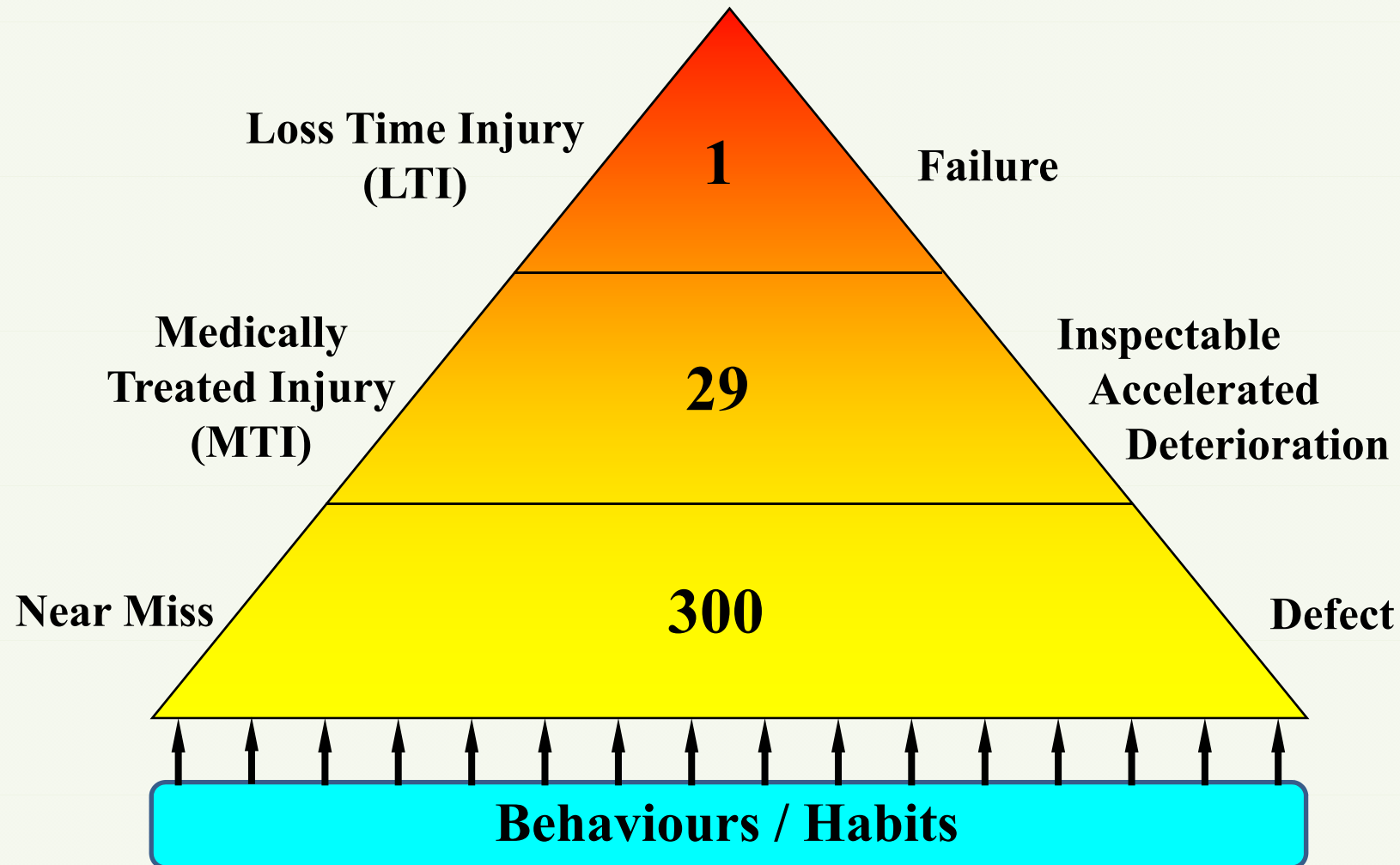
(Trouble Free workplace)

Zero Accidents & Incidents

(Safe & Environmentally Sound workplace)

How do we achieve Zero Accidents & Incidents?

Safety and TPM



The 4 Stages and 7 Steps of Operator Equipment Management

7 Step Process typically spanning 2-3 years involving some 9 cycles of up to 12 weeks duration

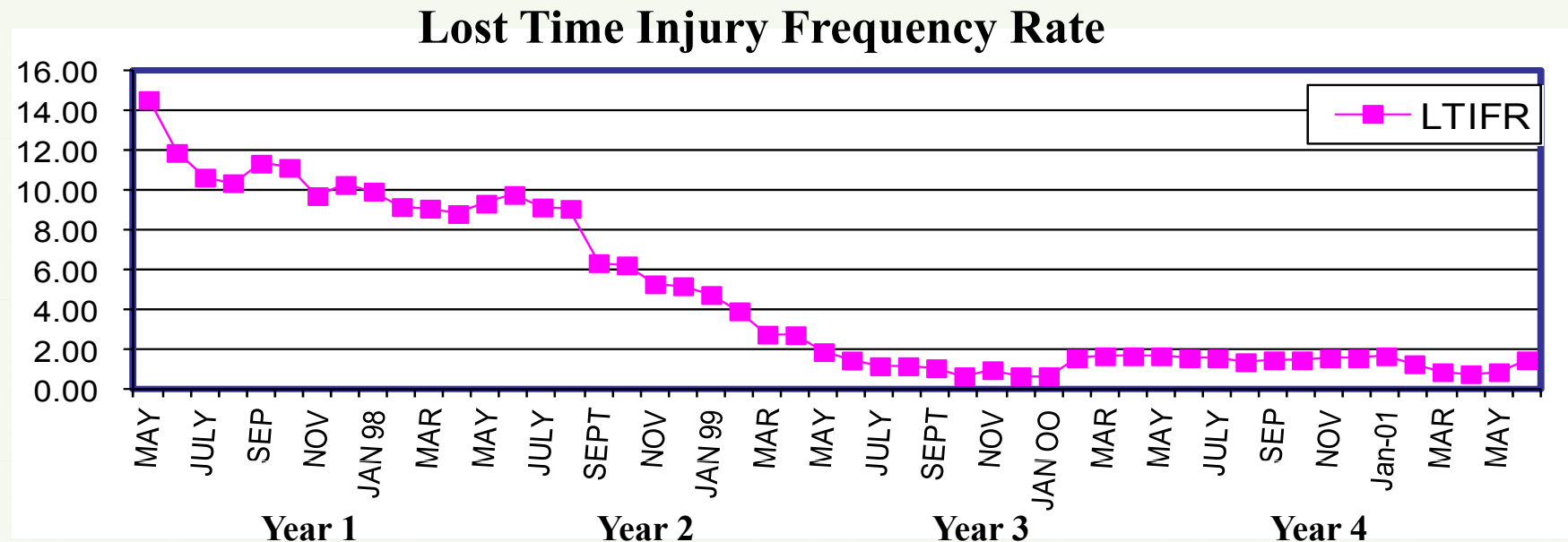
Stage	Objective	Step	Description
1	Cleaning for Inspection* Activities Learn how to recognise, rectify and prevent equipment defects so as to achieve and maintain Basic Equipment Conditions and thus reduce variation in Equipment Component Life (to allow Maint to enhance their PMs / PdMs) while improving Safety and Quality. Note: PM = Preventive Maint PdM = Predictive Maint	1	Identify & Rectify Equipment Defects
		2	Address Sources of Contamination and Difficult to Access Areas
		3	Establish Perfect Lubrication and Clean for Inspection Standards & Procedures
2	Training for Inspection* Activities Learn how equipment functions so as to diagnose equipment, quality and safety problems at the earliest possible time, be able to identify and contribute to improving Design Weaknesses and contribute to achieving a workplace that has Zero Breakdowns while improving Safety and Quality.	4	Understand Equipment Functioning (by each inspection category or module)
		5	Finalise Inspection Standards & Procedures for Equipment Care
3	Consolidate Quality Assurance Activities Develop a deeper understanding of the relationships between Quality and Equipment Conditions so as to create a workplace that has Zero Quality Problems while improving Safety.	6	Understand Quality and Equipment Relationships
4	Consolidate On-going Improvement Activities Manage own Workplace as a successful Mini Business (eg mature synergistic Area Based Team) so as to always achieve the Production Plan with Zero Breakdowns, Zero Quality Problems and Zero Accidents or Incidents.	7	Manage own Workplace

* To find Equipment Defects

1. Safety & Environment Management

Addressing Accidents through TPM³

Uncle Tobys Smithfield Site Experience



Improved OEE from Cross-functional and Area Based Teams
Neat & Tidy Work Area from Work Area Management
Safe Habits / Behaviours from Operator Equip Management

Source: TPM³ Action Forum

Supporting Safety & Environment during all TPM³ Activities

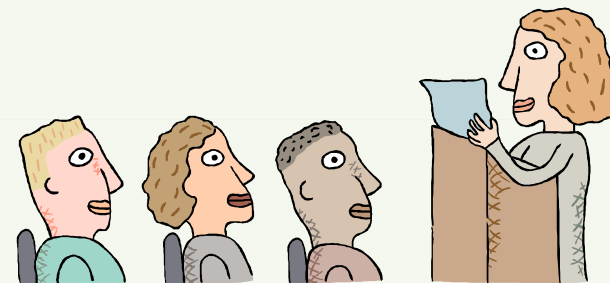
- Safety & Environmental standards and procedures are in place, fully understood and followed during all TPM³ activity;
- Visual Controls are used to indicate risks and help promote correct behaviours;
- TPM³ Improvement Sheets are used to record Safety and Environmental improvements where appropriate;
- Impact on Safety and Environment is considered in all TPM³ activities and improvements;
- Impact on Safety and Environment is evaluated by all TPM³ Teams in their decision making process; and
- Safety and Environment issues are addressed properly and with a sense of urgency

Supporting Safety during Production Operator Equipment Management Activities

- Safety Behaviour Analysis is effectively used to identify and address safety risks;
- A Safety Behaviour Observation System is used to monitor and address any unsafe conditions or behaviours;
- Suitable charting, such as radar charts, are effectively used to monitor progress on developing Safe Behaviours within the workplace; and
- Safety Behaviour Observation performance is displayed on each Production Area Based Team's Scoreboard once OEM activities have commenced.



Ask the Audience



How can we help?



www.ctpm.org.au



Question Time



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