

Outline of Presentation

Operator Equipment Care

What does it really mean?

1. Cleaning for Inspection Activities and Outcomes
2. Training for Inspection Activities and Outcomes
3. Consolidating Quality Assurance Activities
4. Consolidating On-going Improvement Activities

Operator Equipment Care

What other names does it go by?

TPM

(Total Productive Maintenance)

Autonomous Maintenance

Operator Equipment Management

(follows from Work Area Management)

We tried TPM but it didn't work!

“We tried TPM by getting the operators to do some inspections and lubrication, but they wouldn't do it”

“We were told to do TPM so we got some of our best operators to do all the lubrication so we could get rid of the greaser and save some money, however the maintenance people keep complaining that they don't do it properly”

“We got the maintenance people to prepare all these really good inspections that the Operators could do however we found out after some expensive breakdowns that they were just ticking the sheets while having coffee in the crib room”

What is the purpose of Operator Equipment Care?

To find problems with the equipment at the earliest possible time and address them rapidly before more damage is done

Develop the Problem Solving, Visual Management and Prevention at Source skills of our Operators and Team Leaders

80% of problems associated with early deterioration of equipment components begin with:

- Looseness
- Contamination
- Poor or Lack of Lubrication

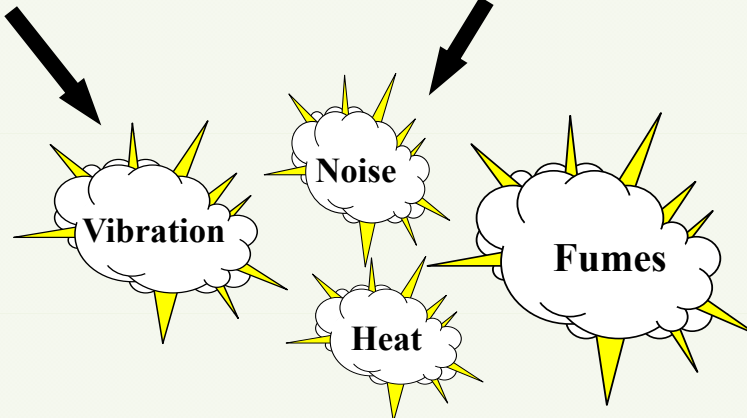
Recognising and Eliminating Equipment Defects & Equipment Defect Generators

**Lack of Understanding or
Lack of Desire to Care**
(design, procure, install, operate, maintain)

Equipment Defects
(the hidden cause of failure)

②
**Early or Accelerated
Deterioration**

①
**Natural
Deterioration**



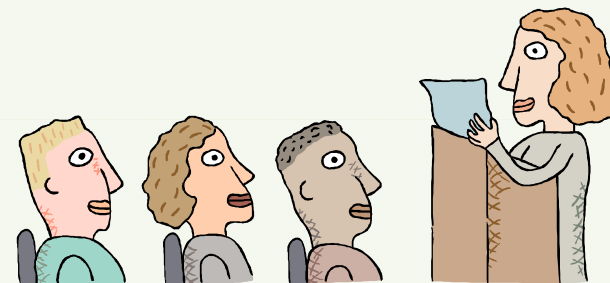
Poor Performance

Entry Table Rolls for a Single Stand Reversing Mill

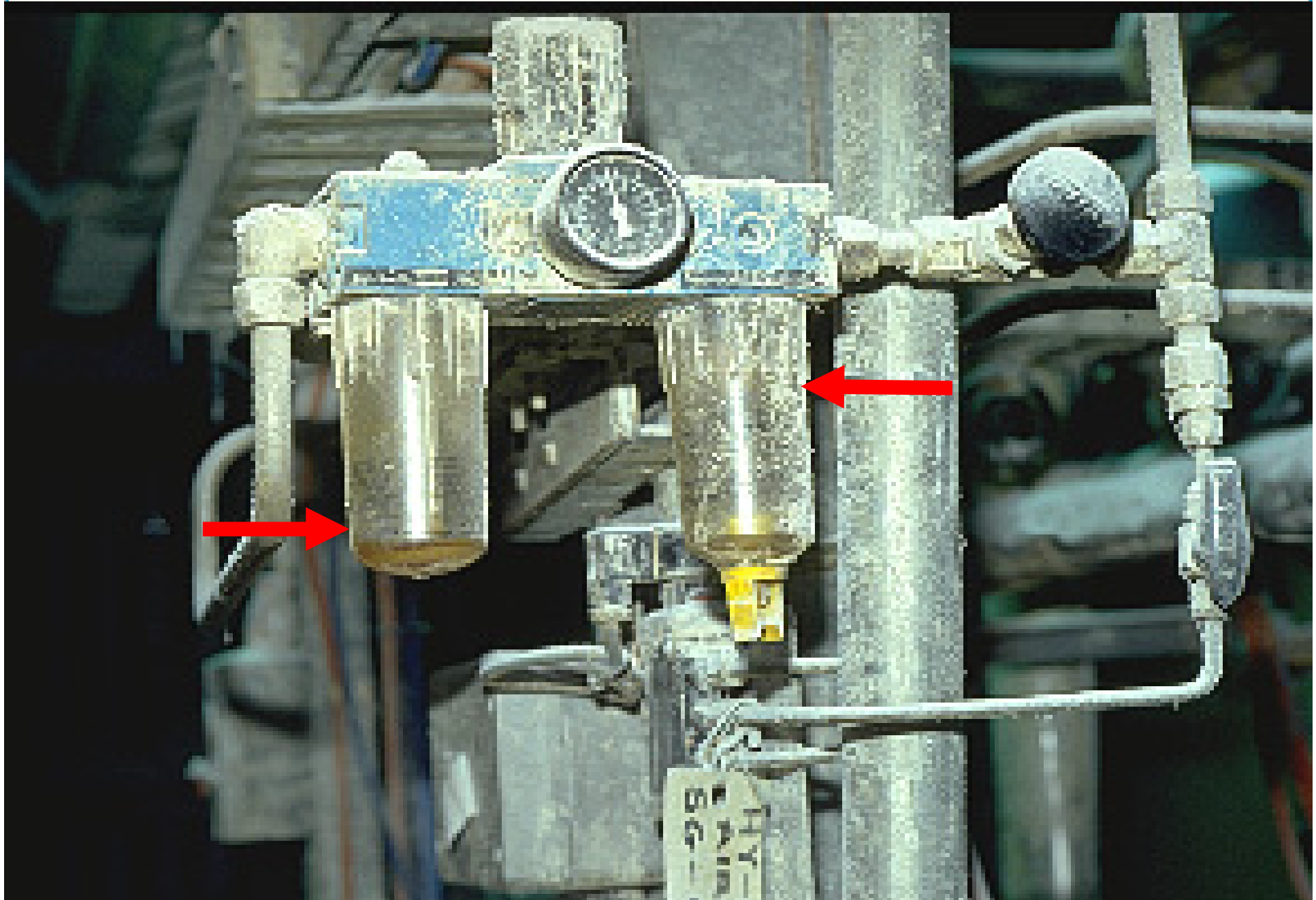
**Large Hot
Aluminium
Blocks are
loaded onto
table then
rolled back
and forth in
the mill until
worked down
to about 20mm
strip**



Ask the Audience



Defect Example: Air Service Unit



How do we develop the skills and habits of our people to find equipment defects at the earliest possible time?



Habit = 21 repeats with at least 5 sleeps in between!

Learning:

If we do weekly Clean for Inspections under the guidance of someone who knows what to look for, we should start to develop the habits to see equipment defects at the earliest possible time after about 6 months!

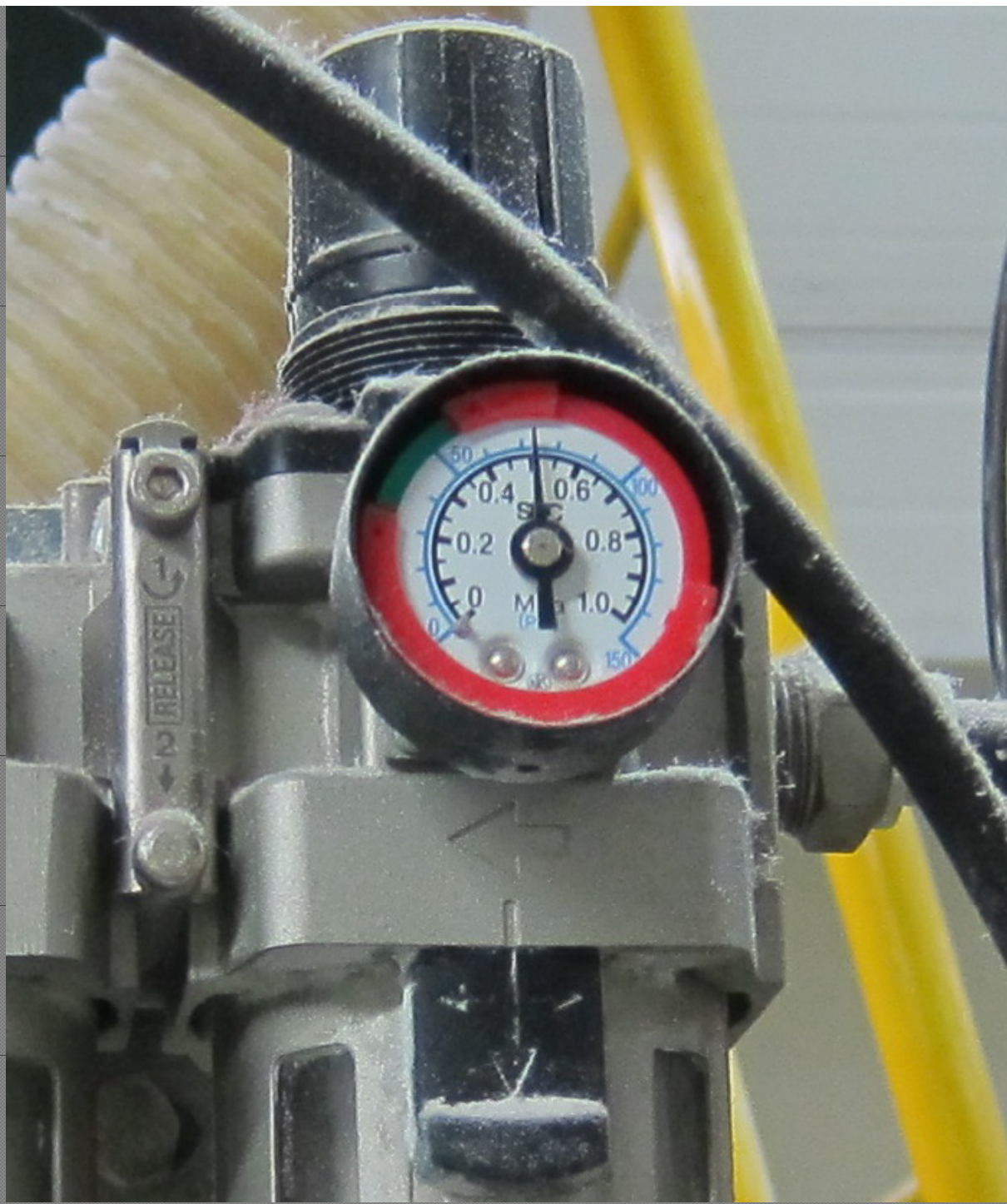
If we want to be serious about developing Operator Equipment Care capability, we need to invest the time and make it a regular activity

The next question then becomes – why bother?

What results have we seen:

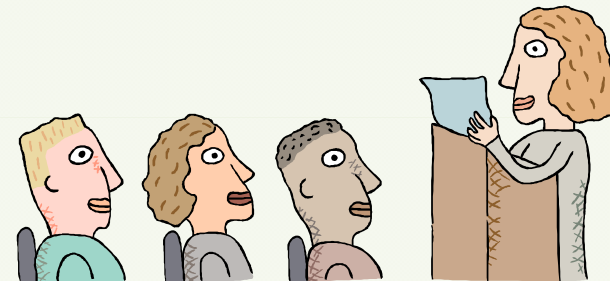
Maintenance Costs:	Down 30% - 50% by extending life of components
Capacity (OEE):	Up 25% - 50%
Quality:	Scrap & Rework eliminated
Safety:	Zero Accidents or Incidents







Ask the Audience



Preparation for Operator Equipment Care

Have we got the time to do it?

Have we got Production Area Based Teams with good ownership to their equipment?

Have we got an effective Defect Tagging System to ensure all defects are responded to at the earliest possible time?

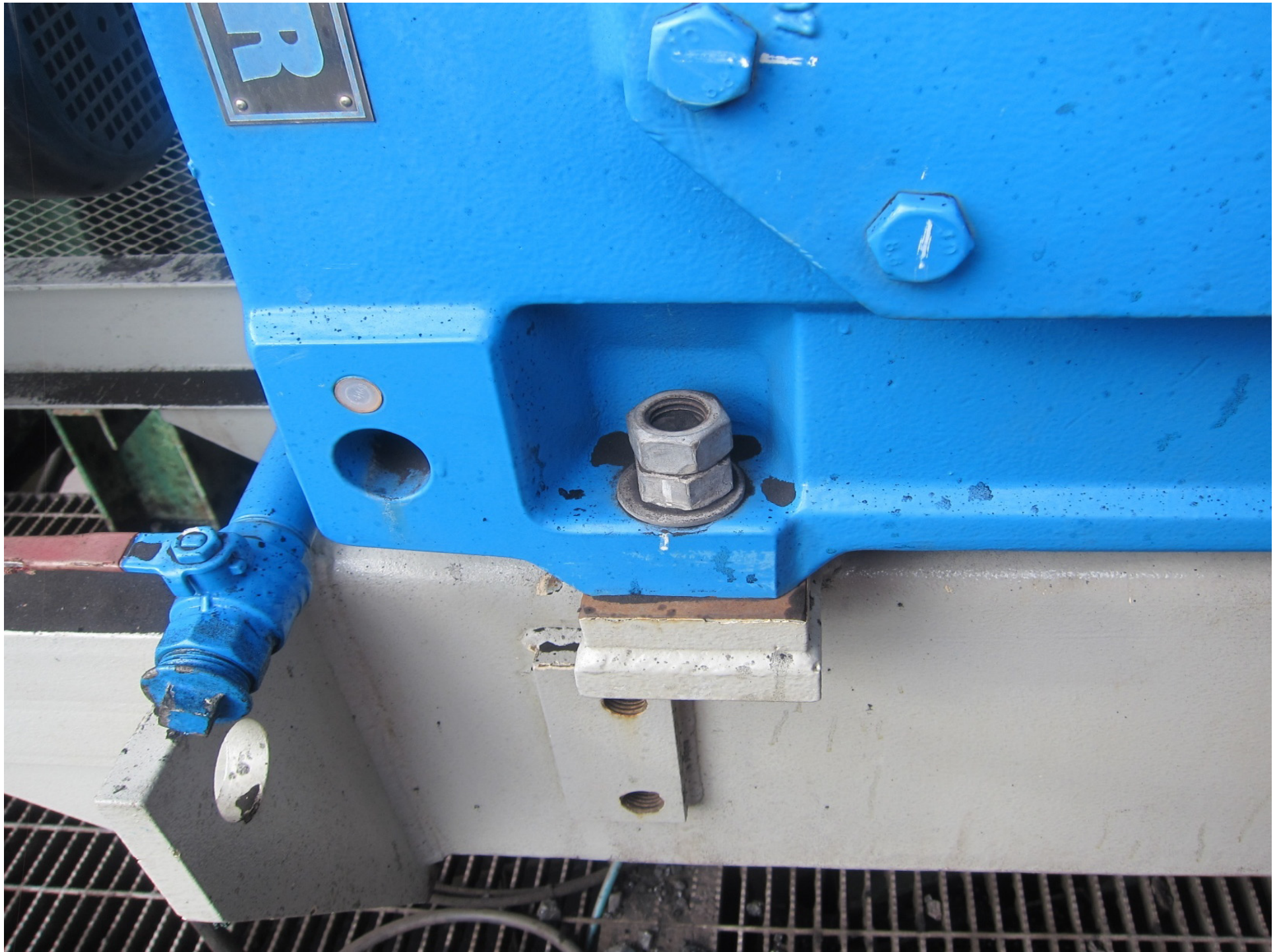
Then we need a structured process to follow

4 Stages and 7 Steps of Operator Equipment Care / Management

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

Stage	Step	Description	Objective
1	1	Identify & Rectify Equipment Defects	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 Maintenance PdM = Predictive Maintenance
	2	Address Sources of Contamination and Difficult to Access Areas	
	3	Establish Perfect Lubrication and Clean for Inspection Standards & Procedures	
2	4	Understand Equipment Functioning (by each inspection category or module)	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.
	5	Finalise Inspection Standards & Procedures for Equipment Care	
3	6	Understand Quality and Equipment Relationships	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.
4	7	Manage own Workplace	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.

* To find Equipment Defects





Selecting the Right Approach

Deductive

Problem Solving



Best Solution



PUSH
Implementation

Inductive

Visual Workplace

Prevention At Source



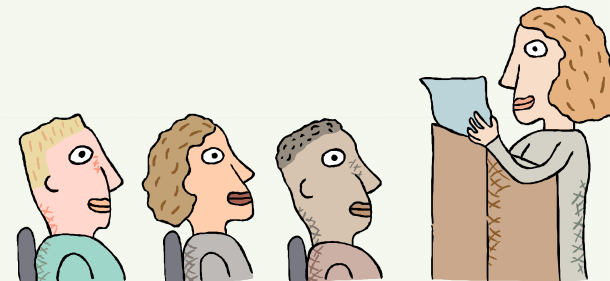
Many Solutions



PULL
Culture Change



Ask the Audience



Key Learnings



- 1. If necessary create regular weekly time for Operator Equipment Care through Cross-functional Team improvement activity**
- 2. Establish ownership in the workplace with properly structured Production Area Based Teams**
- 3. Use a structured stepped process spanning 12-14 week cycles**

Question Time