

Lean, TPM, and DATA

What, Who, Why and How



What's Lean...

Transport - Moving people, products, information

Inventory - Storing things, supplies, documentation, information

Motion - Bending, turning, reaching, lifting, avoidable repetitive motion

Waiting - For work, information, instructions, approvals

Over production - Making more than is immediately required

Over processing – Ineffective processes, doing unnecessary work

Defects – Errors, incomplete information, scrap and rework

Skills - Under utilizing capabilities, under-developed problem solving skill



What's TPM...

*“TPM is a plant improvement methodology which enables continuous and rapid improvement through use of employee involvement, employee empowerment, and **closed-loop measurement of results.**”*

Seiichi Nakajima

TPM Development Program:

Implementing Total Productive Maintenance

Productivity Press, 1989



Definition(s)

So what does maintenance mean...

Maintenance = The act of maintaining

Maintain = To keep in a state of order. To keep in due (rightful, proper, fitting) condition, operation, or force; keep unimpaired.



What's missing...

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Definition(s) cont...

Fix and Repair ~~=~~ Maintenance

HOZEN (Maintenance in Japanese) = Maintaining and preserving perfection through Asset Management

Fix/Repair...The 9th waste!!!!



Why TPM

“It’s the “life blood” of a Lean Organization. You CANNOT become lean or sustain your lean gains WITHOUT reliable equipment/processes.”

“TPM to a Lean Organization is viewed as an investment (not a cost)...It’s the BEDROCK (ENABLER) you build your Lean organization on!”

Ellis New, Productivity, Inc.



“You don’t implement LEAN, it’s
what you BECOME...TPM is the
ENABLER to lean!”



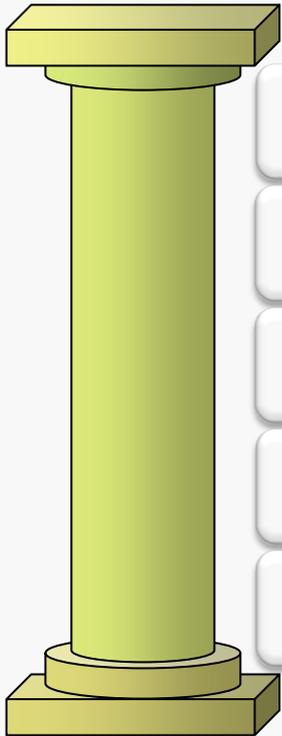
TPM Goals

- Zero accidents
- Zero unplanned downtime
- Minimum life cycle cost
- Zero speed losses
- Zero defects



Productivity's TPM Pillars

Nakajima Five + Three



Autonomous
Maintenance

Maintenance
Improvement

Training and Skill
Development

Focused
Improvement

Early Equipment
Management



Quality Maintenance

Environment, Health
and Safety

Office TPM



Characteristics of TPM

- Optimum relationships between people and equipment/process
- Involvement of everyone, from top leadership to shop floor workers
- A cross-functional approach, involving all departments
- Implementation through small group teamwork
- **DATA DRIVEN!!!**



Focused Improvement

Includes all activities that maximize the overall effectiveness of equipment, processes, and plants through uncompromising elimination of losses and improvement of performance.

Note: The basic point to remember about FI is that if an organization is already making all possible improvements in the course of routine work and small-group activities, FI may not be necessary.



FI Should NEVER...

...replace/displace Small-Group improvement activity.

Managers and staff must be careful not to become so engrossed in focused improvement that they neglect to support small-group activities at the line and shop floor level, since this may have the opposite effect and actually damage the overall TPM process. It is, therefore vital to give people a sense of achievement by actively encouraging the improvement aspect of the *TPM-Autonomous Maintenance* process and carefully nurturing ideas that evolve there. This kind of activity permeates the organization with great energy and enthusiasm.

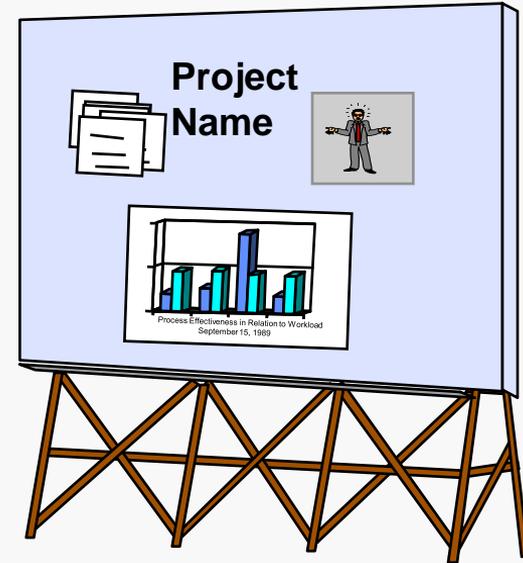


If you are not going to use data,
don't collect it!



Using Data Appropriately

- To keep management and shop floor personnel informed of progress
- To drive and fine-tune improvement activities
- To educate the plant community



Seeing Is Believing

- The way we report and display data affects how we think about it
- Effective analysis depends on effective reporting



Effective Reporting/Analysis

- Involve users in measurement
- Provide results to people who can act on them
- Present results in the appropriate form for your audience
- Visually link results with specific improvement initiatives
- Report data in a timely manner



Good data is...

- directly related to strategy
- primarily non-financial measures
- could vary between locations
- changes over time
- simple and easy to use
- provides fast feedback
- fosters improvement



The checklist...

- ✓ What needs to be measured
- ✓ Who is the audience/user
- ✓ How to keep track of details
- ✓ How often to take the data
- ✓ Who will do the tracking
- ✓ How to display it
- ✓ Where to locate the display



Thank You!
any??????

