

# Total Productive Maintenance

## OVERVIEW

# Aims and Objectives

## **Target Audience :**

Senior Management

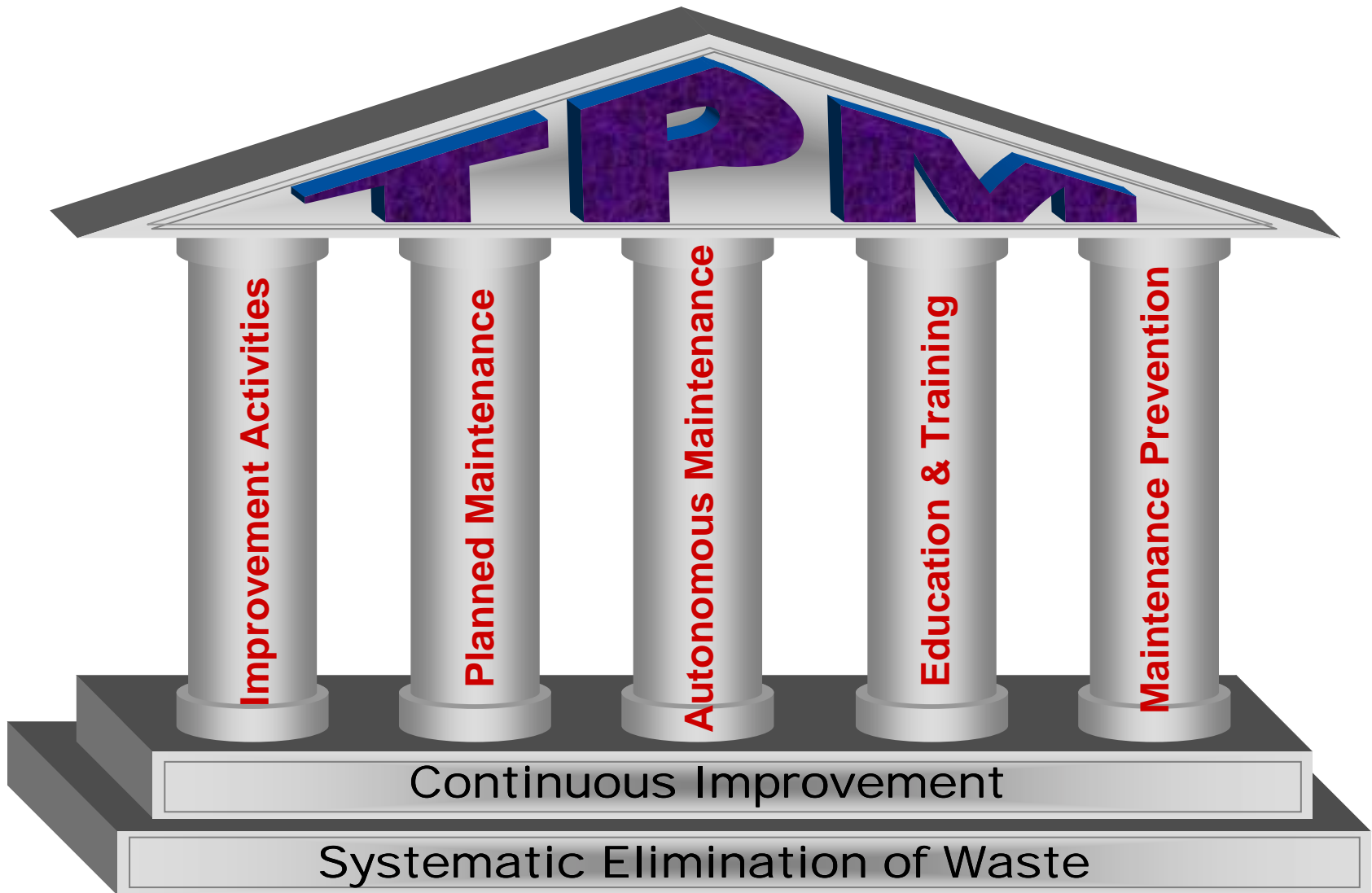
## **Purpose of Module :**

To understand the need for TPM and the commitment required to achieve an effective system..

## **Aims & Objectives :**

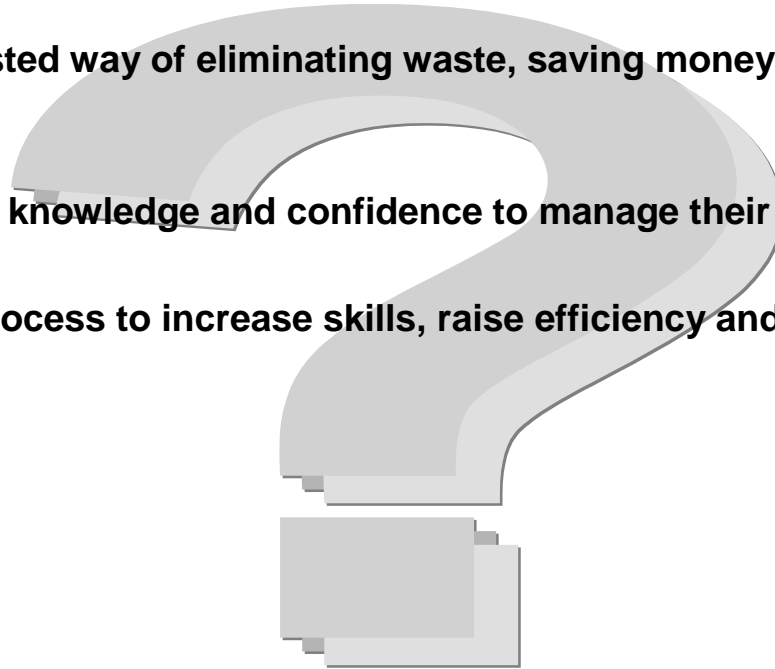
- Explain TPM
- Outline Effective Maintenance
- Outline Autonomous Maintenance
- Q, C, D, P of TPM

# What is Total Productive Maintenance (TPM)?



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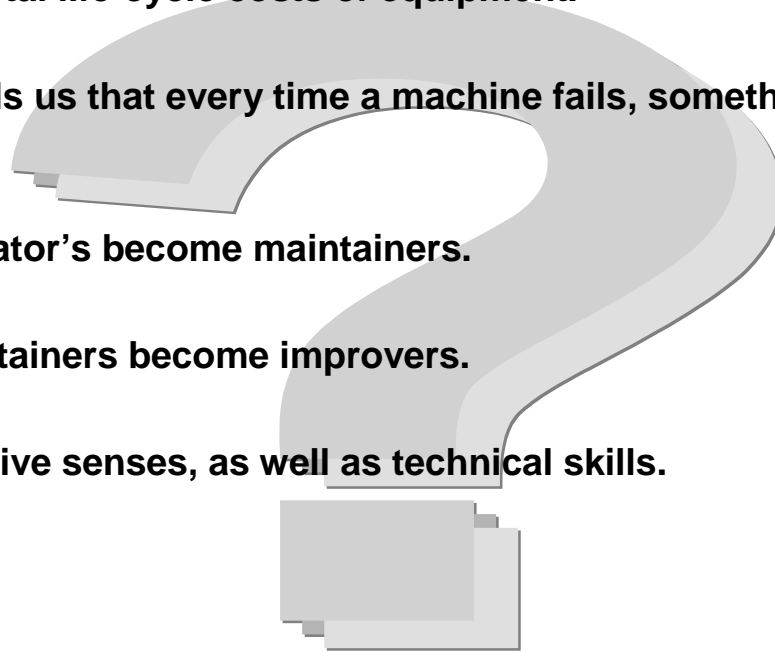
- **A system of maintenance covering the entire life of the equipment and the total human resource.**
- **TPM is a tried and tested way of eliminating waste, saving money and making factories better places to work.**
- **It gives operators the knowledge and confidence to manage their own machines.**
- **TPM is a long term process to increase skills, raise efficiency and achieve zero losses.**



**Maintenance of normal conditions / Early discovery of abnormalities / Prompt response**

# What are the benefits of TPM?

- **TPM refuses to accept that machine inevitably fail.**
- **TPM reduces the total life-cycle costs of equipment.**
- **TPM simply reminds us that every time a machine fails, something could have been done to prevent it.**
- **Gradually the operator's become maintainers.**
- **Gradually the maintainers become improvers.**
- **TPM develops the five senses, as well as technical skills.**

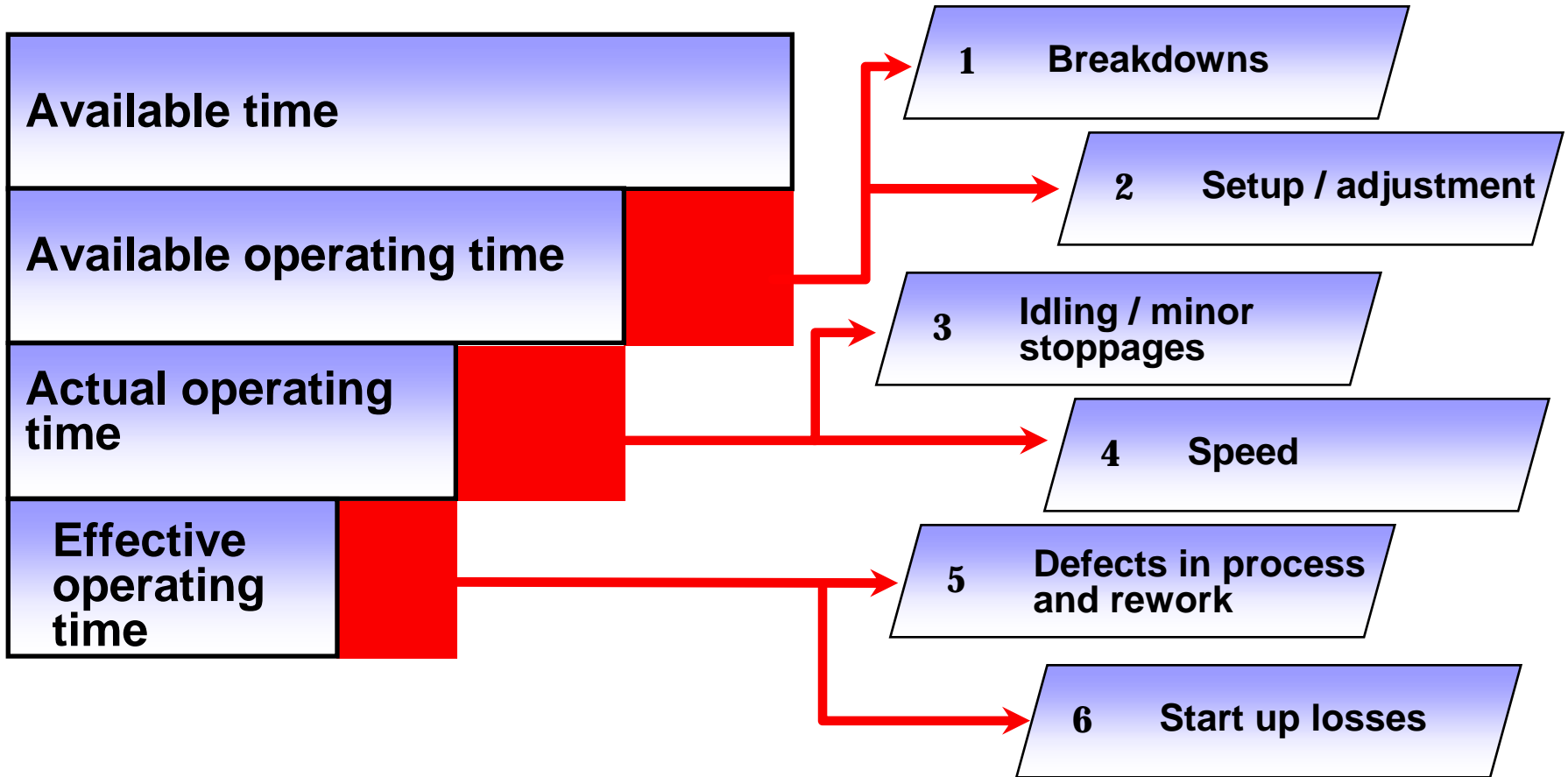


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# Loss Elimination through TPM?

## Equipment

## Six Big Losses



# What is Effective Maintenance?

- **PLANNED MAINTENANCE**

“ The scheduling of maintenance activities on a time based or usage basis regardless of the current performance levels of the equipment”

- **PREVENTATIVE MAINTENANCE**

“ A systematic approach to eliminate catastrophic failure/breakdowns through regular care and attention, early diagnosis and rectification”

- **PREDICTIVE MAINTENANCE**

“ A systematic approach utilising history and equipment condition monitoring to predict and prevent catastrophic failure/breakdowns ”

**Maintenance of normal conditions / Early discovery of abnormalities / Prompt response**

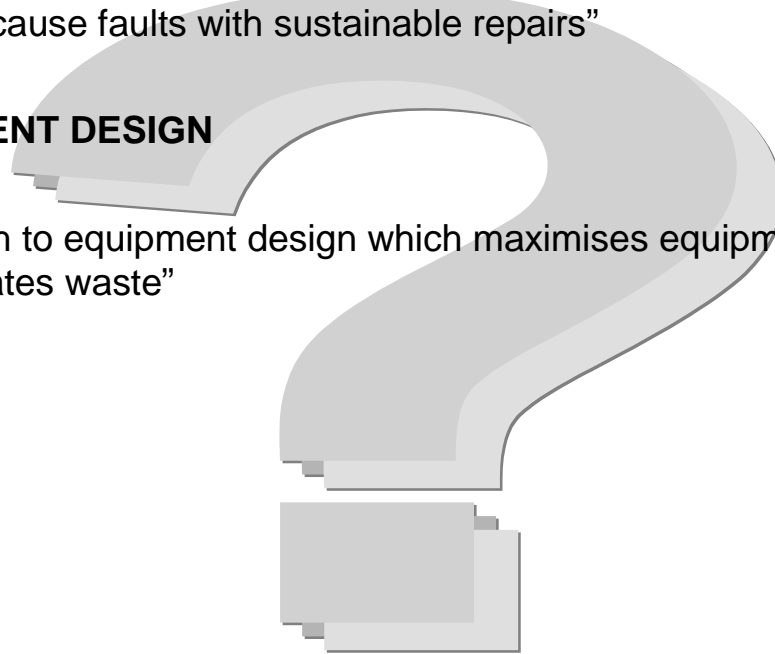
# What is Effective Maintenance?

- **BREAKDOWN MAINTENANCE**

“ When all else fails ensuring that equipment availability is achieved in the shortest possible time whilst eliminating root cause faults with sustainable repairs”

- **EFFECTIVE EQUIPMENT DESIGN**

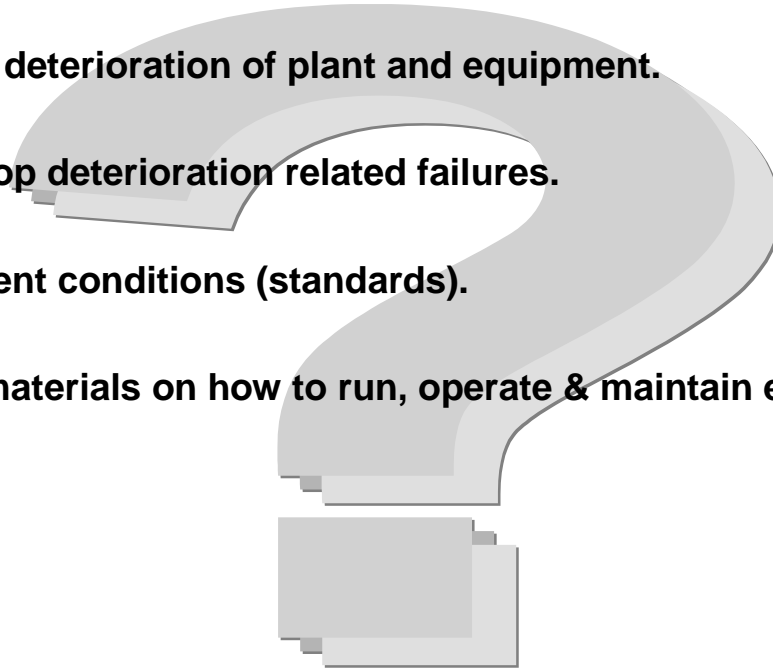
“ A systematic approach to equipment design which maximises equipment availability, minimises life cycle costs and eliminates waste”



**Maintenance of normal conditions / Early discovery of abnormalities / Prompt response**

# What is Autonomous Maintenance?

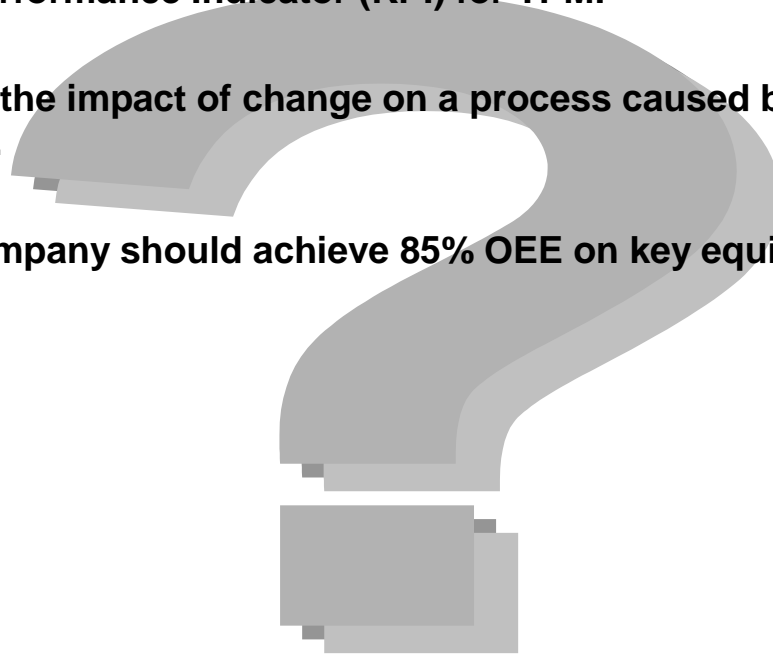
- An operator skills development programme.
- Allows problems to be identified and solved quickly.
- Stops accelerated deterioration of plant and equipment.
- An approach to stop deterioration related failures.
- Stabilises equipment conditions (standards).
- Develop training materials on how to run, operate & maintain equipment.



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# What is Overall Equipment Effectiveness (OEE)?

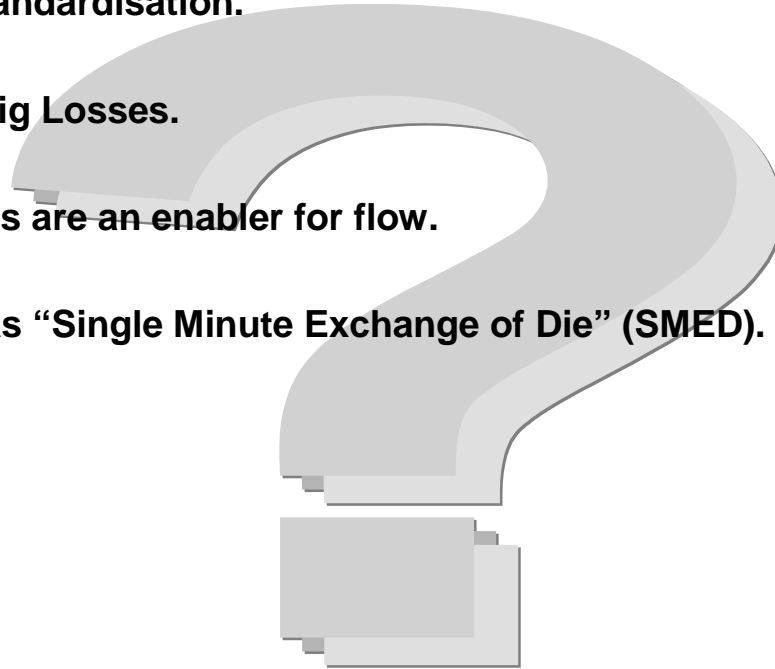
- Overall Equipment Effectiveness (OEE) is a total measure of performance that relates the availability of the process to the productivity and quality.
- OEE is the Key Performance Indicator (KPI) for TPM.
- OEE will measure the impact of change on a process caused by eliminating process, or equipment losses.
- A World Class Company should achieve 85% OEE on key equipment



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# What is Quick Changeover?

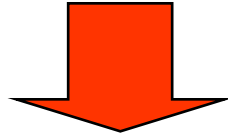
- Quick Changeover is a method of analysing and reducing the time needed to change a process from producing one good part to producing the next good part part.
- It is a driver for standardisation.
- It is one of the 6 Big Losses.
- Quick changeovers are an enabler for flow.
- Often referred to as “Single Minute Exchange of Die” (SMED).



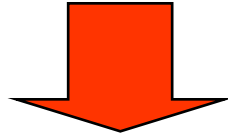
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# What will TPM do for our business?

IMPROVE HUMAN RESOURCES



IMPROVE PLANT AND EQUIPMENT



IMPROVE CORPORATE CULTURE