

# Tool Box Talk – World Class Maintenance



## “The Journey”

### Attributes of a World Class Maintenance Operation

World Class Maintenance Operations require all maintenance and reliability processes to be optimized, repeatable, and effective.

1. PM/PdM program is effective.  
PM/PdM is where the Proactive Maintenance Process begins; without it you cannot plan or schedule proactively.
  - PM/PdM is focused on identification or prevention of specific “Failure Modes” or regulatory compliance
  - PM/PdM effectiveness measured using Mean Time Between Failure (MTBF) by:
    - Site
    - Area
    - Asset
    - Equipment/Component

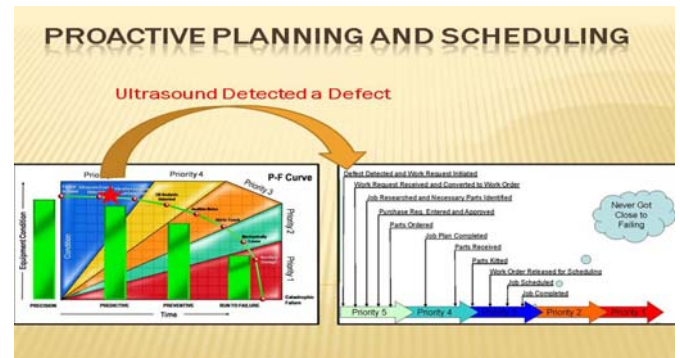


2. Planning Process is effective.  
Measure by:
  - 15% Work is PM
  - 15% Work from PM results
  - 15% Work is PdM
  - 35% Work from PdM Results
  - 90% Planned Work

Definition: Percent of Planned Work; at the minimum, the following is required for a job to be defined as “Planned”:

- Repeatable procedure with specifications and standards
- Estimated labor hours by craft
- Estimated time for work order execution
- Parts Required
- Potential parts identified and reserved
- Parts kitted/staged (Planner is watching parts)

3. Emergency/Urgent Labor Hours account for 2% of total labor hours
4. Maintenance Scheduling is effective
  - Maintenance Scheduling requires maintenance, operations, engineers, etc. to agree on the Maintenance Schedule, by work order, at least one week
  - Scheduling Compliance at least 85%, measured by labor hours
  - Scheduled Compliance is given to work completed on the day scheduled if it has been scheduled at least one week out



5. Work Execution is effective
  - Measured by percent of Rework

This process requires the following:

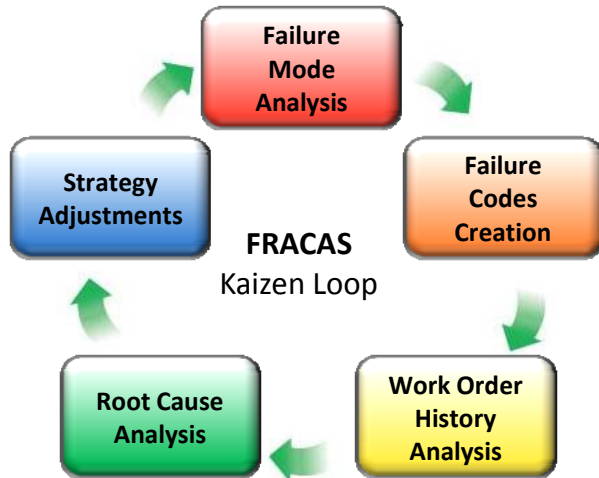
  - Job to be planned and scheduled
  - Repeatable procedures
  - Parts kitted/staged
  - Wrench time above 55%
  - Time estimated +/- 10%
6. Work Order Close Out is effective
  - Over 100% of work orders are closed out to 100% of standard
  - Standard: Required Data Fields identified by Reliability Engineering and Maintenance Management
  - Data fields are identified based on Metrics, Key Performance Indicators (KPI), and failure reporting required to manage a World Class Operation

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- 7. Failure Reporting, Analysis, and Corrective Action System (FRACAS) is functional and effective



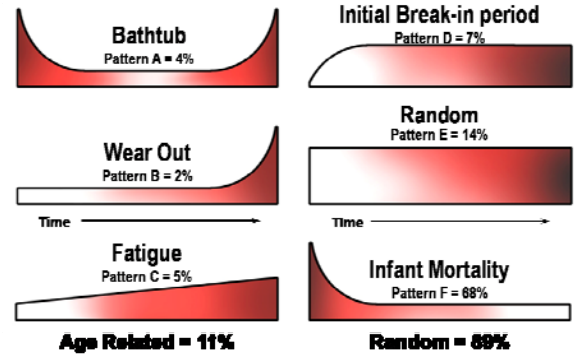
This is the Continuous Improvement Process for Maintenance and Reliability, where decisions are made based on data in order to change a maintenance strategy, operating procedures, or

Reports are generated and acted upon based on specific criteria defined by Maintenance, Operations, and Reliability Management in order to mitigate or eliminate equipment failures.

At a minimum, the following reports are required:

- MTBF down to the component or part level
- Mean Time Between Repairs (MTBR)

- Top 6 Dominant Failure Patterns for site, area, system



- Ensure that the corrective maintenance strategy and approach is applied
- Verify that outages are needed and, if so, which equipment has a failure pattern that is age related and not random
- Dominant Failure Threads – which component/part fails the most as a result of the same cause across a site, line, asset  
Example: Part – Bearings (123 failures)  
Cause: Lack of Lubrication (92% of the time) = Dominant Failure Thread



## Conclusion

The journey to World Class begins with a plan which has been defined. The rewards are great and amazing. If you need assistance developing this plan send me an email at