Impact of Effective Maintenance Management on Mechanical systems

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Mechanical Maintenance purpose

- To increase reliability of equipment and thus availability and productivity
- To achieve optimal cost levels
- To guarantee safety and quality
- To protect health and environment

Maintenance Experience and training

to understand the maintenance function , philosophy

And its tools , one should be exposed ,engaged or have gained most of the following valuable experience at a sound maintenance establishment.

- Responsible for the maintenance function at section level, including the planning, supervising, and engineering staffs
- Responsibility is to assist supervisors in overseeing that other employees carry out facility maintenance tasks and responsibilities in an effective and quality way.
- To Make sure right type of maintenance on equipment and factory machines are made safely with excellent tracking and recording methods.
- Make sure workshop and workplace is within compliance guidelines for government and international agencies that monitor safety, fire protection, quality and environment.
- Coordinates closely with counterparts in other in-house organizations, to ensure that Maintenance & company objectives are being met.
- responsibility for delegating assignments to the appropriate personnel

Maintenance Enhancement by learning and training

Examples of applied Training made at APC

- Conditions of contract for business & projects (FIDIC)
- Project Management Professional (PMP)
- Project planner primavera P3
- Reliability Centered Management (R.C.M)
- Maintenance planning & control
- Supervision systems
- Effective communications
- Tetralogy- metal and machine protection methods
- Radiographic (NDT) to ASME codes
- DOS, WINDOW, WINWORD, EXECL
- Hydraulic sys ▪Measurement sys▪ Industrial oils greases grading

Maintenance leader

Any maintenance leader should have the well and mean to delver most of the following qualities:

- Getting along very well with others
- Manpower at all level is known to him
- Always take good care of the work force and how he is perceived by others
- Always seek and work towards healthy Industrial relationship built in trust.
- The ability to understand what every job requires and how to apply prober work study
- The ability to identifies each individual competence level and to use situational leadership were and when appropriate
- The ability make sure people knows what to do, how to do it and are held accountable for doing it.

Typical Greatest strength of Maintenance

- Strong emphasis imposed on safety, health and having clean environment
- Human factor. Most technical manpower should be Well educated and had good training.
- Unique experience gained at each particular site
- Adequate resources ,workshops ,rest place and premises made available for work purposes
- Manpower located at short distance to work Ares
- Always seeking good work conditions
- Having smooth good relation with other departments

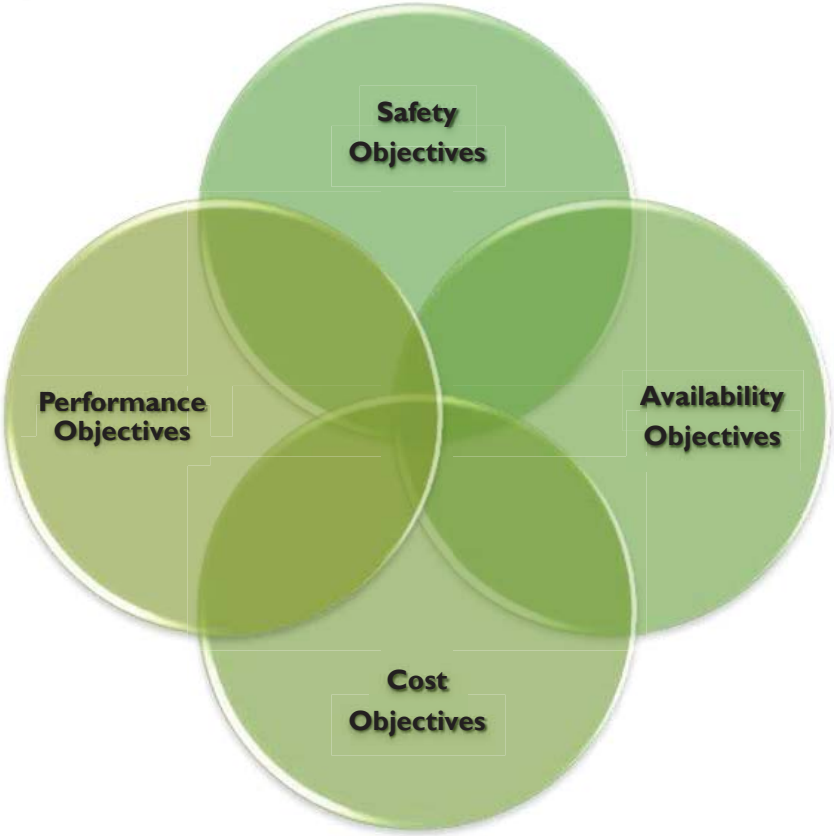
Tools for effective Maintenances

Mechanical Maintenance Management has to be based on:

- Defined objectives
- Defined philosophy
- Defined procedures
- Adequate Organizational structure and strategy

Maintenance management to integrates efforts and procedures for total maintenance performance aiming to provides simple and efficient control over plant equipment availability as well as reliability. To enhances operations, inspection and material control.

Mechanical Maintenance Major Objective



Mechanical Maintenance Philosophy

Maintain and restore what is needed, when it is needed, with a minimum amount of materials, equipment, labor and space using the prober type of maintenance

- Reactive Maintenance
- Corrective Maintenance
- Preventive Maintenance
- Predictive Maintenance
- Maintenance Prevention

objectives for a Mechanical maintenance organization strategy

- Maximum production at the lowest cost, the highest quality, and within optimum safety standards
- Identify and implement cost reductions
- Provide accurate equipment maintenance records
- Collect necessary maintenance cost information
- Optimize maintenance resources
- Optimize capital equipment life
- Minimize energy usage
- Minimize inventory on hand

Mechanical Maintenance procedures to achieve objectives

a) Promote productivity
b) Reduce cost
c) Measure performance
d) Measure work load
e) Measure manpower required by craft
f) Control every hour of manpower and mobile equipment
g) Provide information for cost control
h) Promote communication

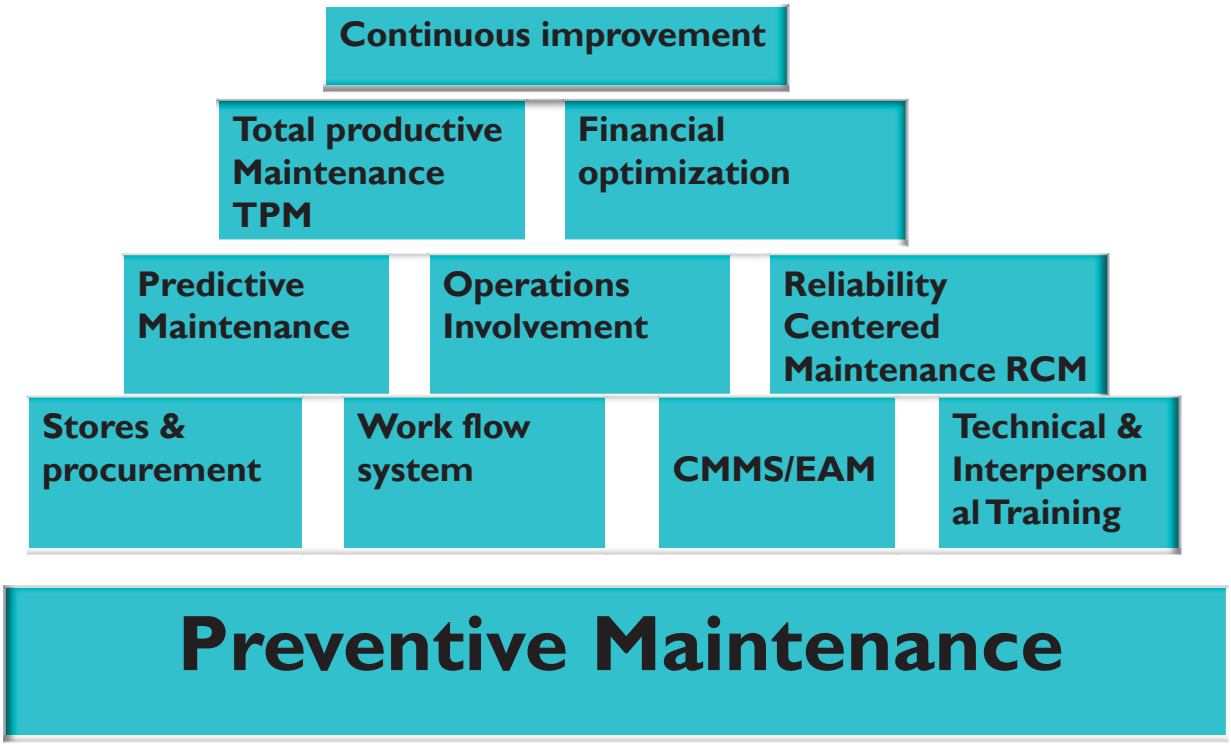
Current challenges and areas of improvements

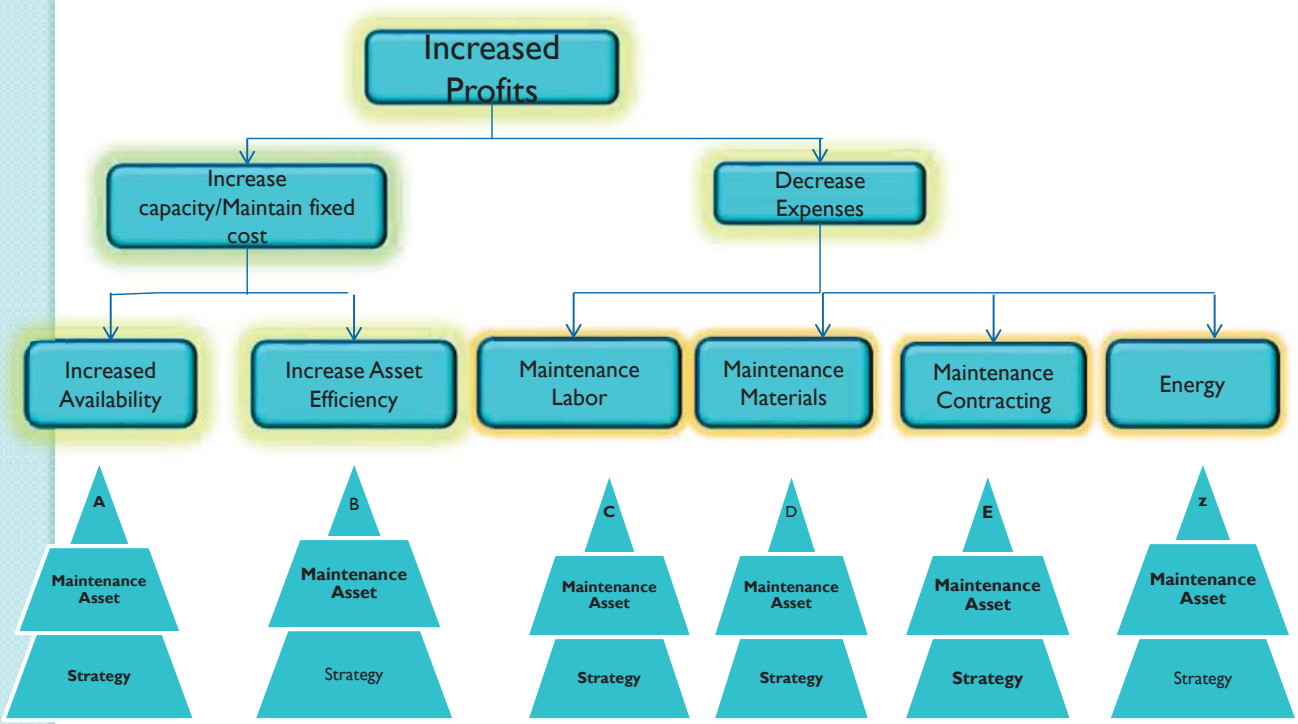
- High percentage of the maintenance team time is spent fire fighting the daily problems versus performing planned or scheduled maintenance? Is the ratio anywhere near an ideal 80% planned and 20% reactive (80/20) that well run maintenance organizations achieve ?
- What performance measurements are in place? Do you know if your team is working efficiently? How long does it take to process a work request or what is the average time to repair a broken valve etc.?
- How many maintenance strategies can we employ? Shall we rely on predictive technologies, condition based principals, preventive maintenance, RCM when do you use each one and why?
- How much of equipment maintenance is dependent on the knowledge of one or two people? Is a key player getting ready to retire?
- How much downtime do we have? Why?
- knowing what is our energy costs are per asset? And understanding the relationship between preventive maintenance and energy efficiency?
- knowing where all assets and equipment are, what condition they are in, their maintenance history etc.?

Adequate Organizational structure and strategy TO Meet maintenance challenges

The goals and objectives of the mechanical maintenance organization determine the type of maintenance organization that is established. If the goals and objectives are progressive and the maintenance organization is recognized as a contributor to the corporate bottom line, variations on some of the more conventional organizational structures can be used

Maintenance /Asset strategy





Thank you

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