Equipment Maintenance Best Practices
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The Maintenance Management Function

Introduction

Facts

• Since 1979, maintenance costs have risen between 10% to 15% per year
• In the majority of maintenance organizations, craftsmen spend as low as 2 hours per day performing hands-on maintenance
• Only 1/3 of all organizations employ a job planner
• The majority of all maintenance organizations are either dissatisfied with their work order system or do not have them
• Of the 1/3 of all companies that have a work order system, only 1/3 track (10% of all companies) track backlog
Facts

• Only about 10% of all organizations have some form of performance monitoring
• About 10% of all companies perform failure analysis
• Overtime averages about 14.1%, 3 times higher than what it should be
• Preventive maintenance satisfies the needs of about 22% of companies surveyed
• The cost of lost production may range from 2 to 15 times the cost of maintenance repair

Maintenance Strategy
Determination
Maintenance Types

- Emergency Maintenance - Unplanned
- Preventive Maintenance
- Routine Maintenance
- Predictive Maintenance
- Corrective Maintenance
SCHEDULING FLOW CHART

- Predictive Maintenance
- Equipment History
- Preventive Maintenance
- Work Order
- Contracting
- Labor
- Stores
- Rebuilds
- Purchasing
Performance Measurement

You can’t manage what you don’t measure

• Maintenance is often organized and performed without proper measures to determine its impact on the business’s success

• You need:
  - consistent and reliable data
  - high quality analysis
  - clear presentation of the information
Performance Measurement

**Equipment**

- Overall Equipment Effectiveness
- Reliability
- Maintainability
- Mean Time Between Failure - MTBF
- Costs for each asset center
- Return on investment - ROI
Computer Maintenance Management System

What are your real needs?

- Most companies don’t have the resources and the commitment to implement the system
- Requires training
- It must be maintained daily
- Poor utilization of the system is quite the norm.
- Only 5 to 30% utilization
Good Maintenance Management

**Principles**

- Maintenance is recognized by management as an integrated part of production
- Preventive Maintenance (PM) is the key to any attempt to improve the maintenance process
- Continuous improvement programs are in place
Good Maintenance Management

**Principles**

- There is a commitment to improve the ratio of planned versus unplanned work
- There is an emphasis on training
- Operators are involved in the maintenance of their own equipment
Good Maintenance Management

**Principles**

- **People**
  - more efficient operation
  - balance of workloads
  - reduce overtime
  - increase cooperation between production and maintenance departments

- **Spare parts**
  - lower inventory levels
  - lower usage
Good Maintenance Management

**Principles**

- Continuous improvement programs are in place:
  - performance is evaluated
  - reasons for downtime are analyzed
  - corrective actions are taken
  - progress is measured
Good Maintenance Management

Benefits

• Equipment:
  - downtime reduction
  - smoother running
  - reduced waste
  - higher return on investment (ROI)
  - increased equipment life
  - repair history available
Good Maintenance Management

Best Practices

• Preventive Maintenance
• Inventory and Procurement
• Work Flow and Controls
• Computer Maintenance Management System
• Technical and Interpersonal Training
• Operational Involvement
• Predictive Maintenance
• Reliability Centered Maintenance
• Total Productive Maintenance
• Financial Optimization
• Continuous Improvement