## iPM.

# Improving Margins Through Preventive Maintenance

The importance of a strategic and wellstructured preventive maintenance program is undeniable. Besides making planned maintenance more efficient, it improves predictability by maximizing equipment reliability and preventing downtime from break-fix scenarios. An effective program optimizes resources and helps ensure a safe working environment. And it improves margins by reducing waste, improving product quality consistency, and enabling higher throughput.

Often overlooked, improved equipment reliability reduces operator frustration and fatigue, allowing greater attention to operational duties and safety. Planned and improved maintenance procedures also reduce both operator and maintenance overtime expenses, especially when capacity is approaching full utilization.

Manufacturing operations and maintenance leaders best improve their equipment and facilities' programs by building a culture of quality founded on clearly established foundational standards and performance expectations, supported by continuous training, helpful tools, and technology, and focused on advancing capabilities and maturity over time. **Elements of a Solid Foundation** 

#### **Committed leadership**:

Production and maintenance managers must be willing to establish and enforce high quality standards, regardless of what was or wasn't done in the past. This is the beginning of a required cultural change that may be a major challenge in some organizations. An effective maintenance program requires a strong collaborative effort with production and mutual accountability to deliver results that support production forecasts and business goals.

#### **Standardized processes:**

Housekeeping, order, and organization matter. They establish baseline expectations for quality. From clean, well-organized maintenance and production areas to clear work-order management, checklists, parts-tracking, and inspection procedures, defined and enforced standards change behaviors. Robust daily plans reinforce safety, quality, and production requirements and inform and leverage technicians and operators.

#### **Collaborative teams:**

Maintenance and production should participate in each other's daily huddles and collaborate on root cause analysis and continuous improvement. Maintenance staff need to understand production schedules and output goals. And operators must be required to clean, lubricate, or adjust equipment to maintain operating specifications.

#### **Performance monitoring:**

Set and regularly monitor KPIs. Track mean time between repairs (MTBR), mean time to repair (MTTR), and work order completion rates. To align maintenance with operational requirements, also look at metrics like overall equipment effectiveness (OEE). Data provides visibility and points to areas of improvement.

#### **Maintenance strategy:**

Develop a maintenance strategy for each piece of equipment, based on its criticality in the production forecast. The overall result will be a mix of preventive, predictive, autonomous, cycle-based, and break-in maintenance.

## Training, Tools, & Technology



#### **Skills development:**

It is nearly impossible to begin a maintenance improvement journey without first assessing the craft skills required to service the equipment and the current level of technician proficiency. Understanding this gap is necessary to determine and prioritize training needs and options, and even headcount.

### Training, Tools, & Technology cont.

#### **Effective tools:**

A similar assessment is necessary to determine what tools are required to support the maintenance function. Having the right tools and knowledge to use them properly are time savers, guality enhancers, and morale boosters.

#### **Digital management:**

Technology can automate best practices and provide efficiencies that enable more wrench time and less admin time. A computerized maintenance management system (CMMS) can track work orders, parts, and maintenance history and schedules. The software makes it easy to collect accurate information for data-driven decision-making. An enterprise asset management (EAM) tool is broader. It covers procurement, use, maintenance, and disposal. Keep in mind that if you digitize inefficient processes, you automate inefficiency. So, work on foundational elements first.

## **Increase Maturity**

#### **Input metrics**:

Building the right KPIs will establish the right behaviors. Move beyond output measures like MTTR and MTBR and include input measures like preventive maintenance optimization (PMO2) compliance and defects found and fixed.

#### **Advanced analytics:**

Shift from preventive maintenance to condition-based maintenance using realtime data from IoT sensors or Al-driven analytics. You may be able to avoid overmaintaining noncritical assets.



#### **Continuous Improvement**

Apply what you've learned to foundational elements and continue the cycle. Companies with a culture of quality recognize that improvement is an ongoing journey, not a destination.





For further information on how IPM can help you assess and evolve your maintenance department and practices, contact **Scott Grzesiak at sgrzesiak@ipmcinc.com**