

# TOOL-BOX TALK: PREVENTIVE MAINTENANCE 101

BY: **RICKY SMITH,  
CMRP, CMRT, CRL**



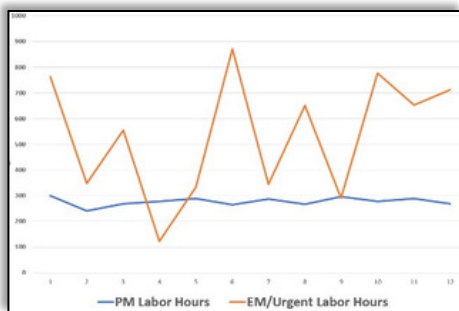
# Tool-Box Talk

## Preventive Maintenance 101

Preventive Maintenance- Actions performed on a time- or machine-run-based schedule that detect, preclude, or mitigate degradation of a component or system with the aim of sustaining or extending its useful life through controlling degradation to an acceptable level. (Definition Source: SMRP Best Practices)

### Fundamentals of PM

1. All Equipment PMs are focused on specific "Failure Modes"
2. All PM Procedures should have the following:
  - Step by Step Instructions (initial each step)
  - Specifications
  - Space available for extra information Condition as found
  - Condition as left
  - Recommendation to changes to Procedure
3. When a PM Work Order is given to Maintenance Techs the following should be attached:
  - Equipment Failure history since last PM Executed
  - If a piece of critical equipment fails between PM cycles an RCA should be initiated
4. Post the following metric in Maintenance Shop on a line graph  
PM Labor Hours vs EM/Urgent Labor Hours



### Steps to take if PMs are not Effective or meeting expectations

**Step 1:** Acknowledge you have a problem with your PM Program not meeting expectations

*"you cannot solve a problem without admitting you have a problem"*

**Step 2:** Assemble a team of Maintenance Techs, Maintenance Supervisor and operators


**Step 3:** The PM Optimization Team establishes their Vision, Mission, and Guiding Principles approved by Maintenance, Production and Plant Leadership and meet weekly for 30 minutes max (**FOCUS**)

**Step 4:** Identify the equipment experiencing the most losses, ie. OEE, Production loss, EM/Urgent Labor hrs., etc.

**Step 5:** Post a Dashboard to measure progress and effectiveness of the Program



**Step 6:** Create a PM Problem/Solutions Board using the A3 Approach to problem solving

<p><b>Problem:</b></p> <p>Line 3 - Gearbox Failure (Asset Criticality - High)</p> <ul style="list-style-type: none"> <li>• Production Losses - 330 Unit</li> <li>• 4 Hours downtime (\$7450)</li> </ul> 	<p><b>Resolution:</b></p> <ol style="list-style-type: none"> <li>1. Replaced Gearbox to specifications</li> <li>2. Sent gearbox out for rebuild and forensics "ID Root Cause", why it failed, replaced parts returned for view by all Maintenance Techs</li> <li>3. Review all PM frequencies on gearbox</li> <li>4. Review past oil sample results</li> <li>5. Cost of Gearbox Replacement, Labor \$200, Gearbox \$800</li> </ol> <p>Asset Number: AP-3214</p>
<p><b>Root Cause:</b></p> <p>The Facts -</p> <ol style="list-style-type: none"> <li>1. Known gearbox noise</li> <li>2. Reported on daily check list for 2 weeks</li> <li>3. Production needed to run, could not take downtime to replace gearbox</li> </ol>	<p><b>Measurement /Sustainment:</b></p> <ol style="list-style-type: none"> <li>1. PM Compliance +/- 10% of time frequency on critical assets</li> <li>2. Oil Sample Time from Sample taken;                     <ul style="list-style-type: none"> <li>• To Results Received and Review Measured</li> <li>• If resample - require 3 days to resample</li> <li>• If out of specs found, CM WO written, Replacement Planned and Scheduled</li> </ul> </li> </ol>

It is critical to manage Preventive Maintenance as a continuous improvement process which results in optimal equipment reliability if managed effectively.

# #1 Software for Maintenance & Reliability Teams

UpKeep is a service-first company that builds software designed to make maintenance easier for technicians and managers everywhere. Reduce downtime up to 18% by switching over to a preventative maintenance solution!

[www.upkeep.com](http://www.upkeep.com)

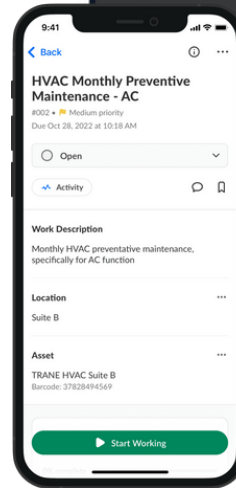
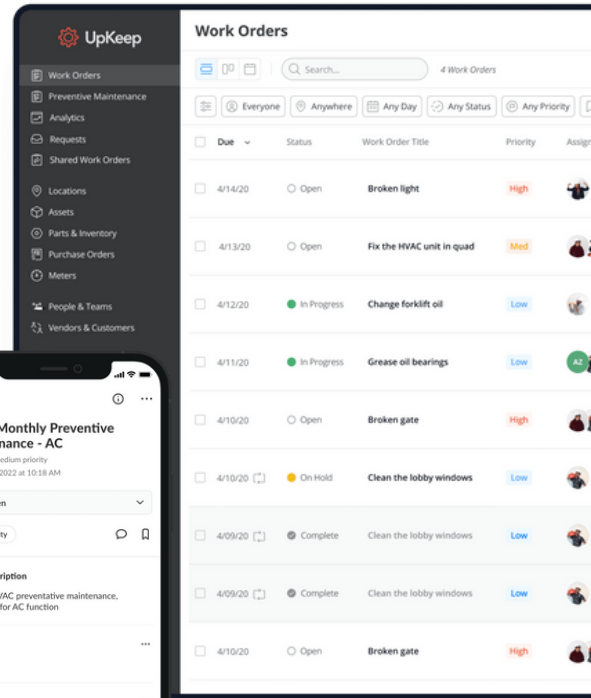
## Our Products



**Mobile-first maintenance management and collaboration across all location, assets, and teams**

With nearly 340 different machines in our work environment, it's an impossible task to manually assign and track PM's. **With UpKeep we can schedule regular maintenance without overlapping tasks with other critical jobs."**

★★★★★ Paul D, Health and Safety Coordinator



**An end-to-end solution for remote condition-based monitoring**

Connected and secure IoT sensors for real-time remote condition asset monitoring



**Integrated & Centralized Data Ecosystem for World Class Asset Operations**

The only purpose built Asset Data Platform. Asset Focused ELT Solution for advanced analytics and integrated, real-time asset data.

**The Maintenance Community Coalition was founded on the belief that working together will benefit everyone within our community**

Committed to helping each other thrive in our individual professional journeys by sharing resources and expertise, granting scholarships, hosting events, and unlocking knowledge – always at no cost.

