

SINGLE POINT LESSON- PREVENTIVE MAINTENANCE FUNDAMENTALS

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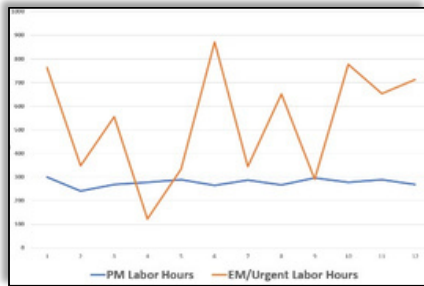
Single Point Lesson - Preventive Maintenance Fundamentals

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

- All Equipment PMs are focused on specific "Failure Modes"
- 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
- 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
- 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: Create a PM Optimization Team - Assemble a team of Maintenance Techs, Maintenance Supervisor and operators for the team.

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: Implement PM Optimization Process on the first asset or area. (review Tool Box Talk – 103 PM Optimization)

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

Problem:	Resolution:
<p>Line 3 - Gearbox Failure (Asset Criticality - High)</p> <ul style="list-style-type: none"> Production Losses - 330 Clock Hours Expended (\$ 450) 	<ol style="list-style-type: none"> Replaced Gearbox to specifications Get gearbox out for rebuild and forward "Root Cause", why it failed, replaced parts returned for view by all Maintenance Techs Review all PM frequencies on gearbox Review post oil sample results Cost of Gearbox Replacement, Labor \$300, Gearbox \$100
<p>Root Cause:</p> <p>The Facts:</p> <ol style="list-style-type: none"> Known gearbox noise Reported on daily check list for 2 weeks Production needed for run, could not take downtime to replace gearbox 	<p>Measurement/Sustainment:</p> <ol style="list-style-type: none"> PM Compliance - 100% of time frequency on critical assets Oil Sample Time from Sample taken: <ul style="list-style-type: none"> To Results Received and Review Measured If necessary - require 3 steps to re-sample If out of specs Repair, CIP/WO written, Replacement Planned and Scheduled

If you have questions send me an email at: smith@worldclassmaintenance.org

#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!

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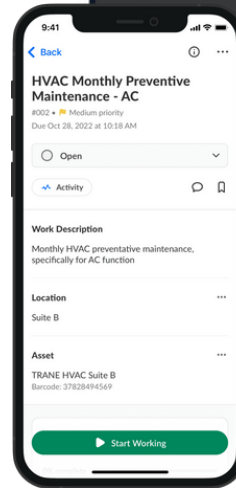
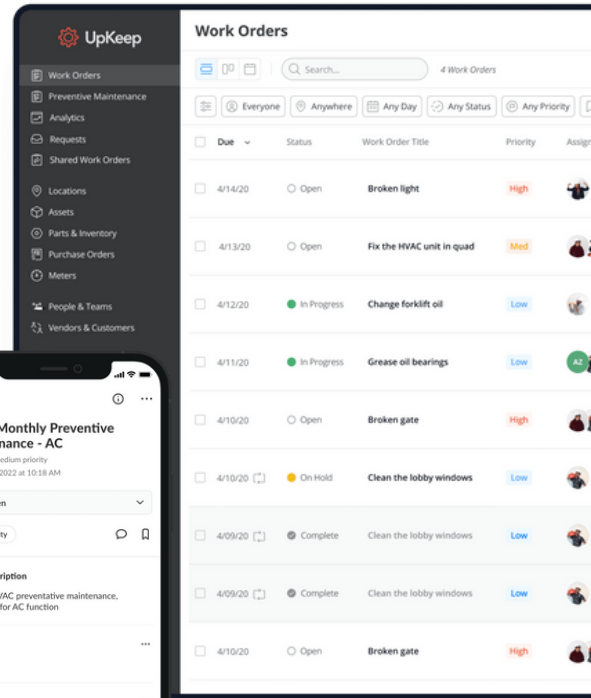
Our Products



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.

