14 STEPS OF A PREVENTIVE MAINTENANCE OPTIMIZATION PROCESS (PMO)

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UpKeep

WORLD CLASS MAINTENANCE

GIVING BACK TO MOVE MAINTENANCE FORWARD
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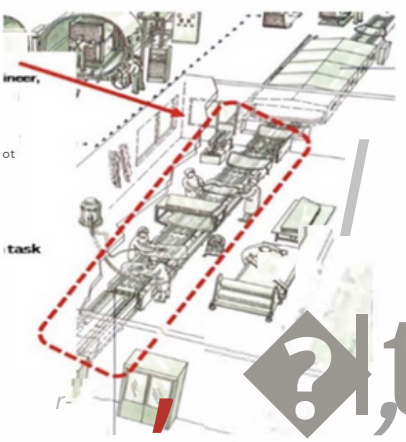
Step 1: Establish a baseline using current metrics or data from maintenance and production/operations.

Asset	PM Compliance "20% Rule"	Schedule Compliance	EM/Urgent Labor Hrs.	Maintenance Rework	Less than 6 Minute Stops
Chipper	56%	56%	232	32	14
Extruder	67%	75%	321	8	22
Septet	25%	34%	98	45	38
Crimper	88%	88%	74	12	23
Baler	45%	34%	129	38	18
Strapper	100%	100%	13	7	2

1,999

Step 2: Identify which asset/functional area the PM Optimization will be executed.



Step 3: Identifying a cross-functional team (Operator. 2 Maintenance Tech, Reliability Engineer. Maintenance Planner. etc.).

Step 4: Establish expectations from everyone engaged in this process.

Step 5: Define the end goal of this process.

Step 6: Define roles and responsibilities for all members of the PMO Team.

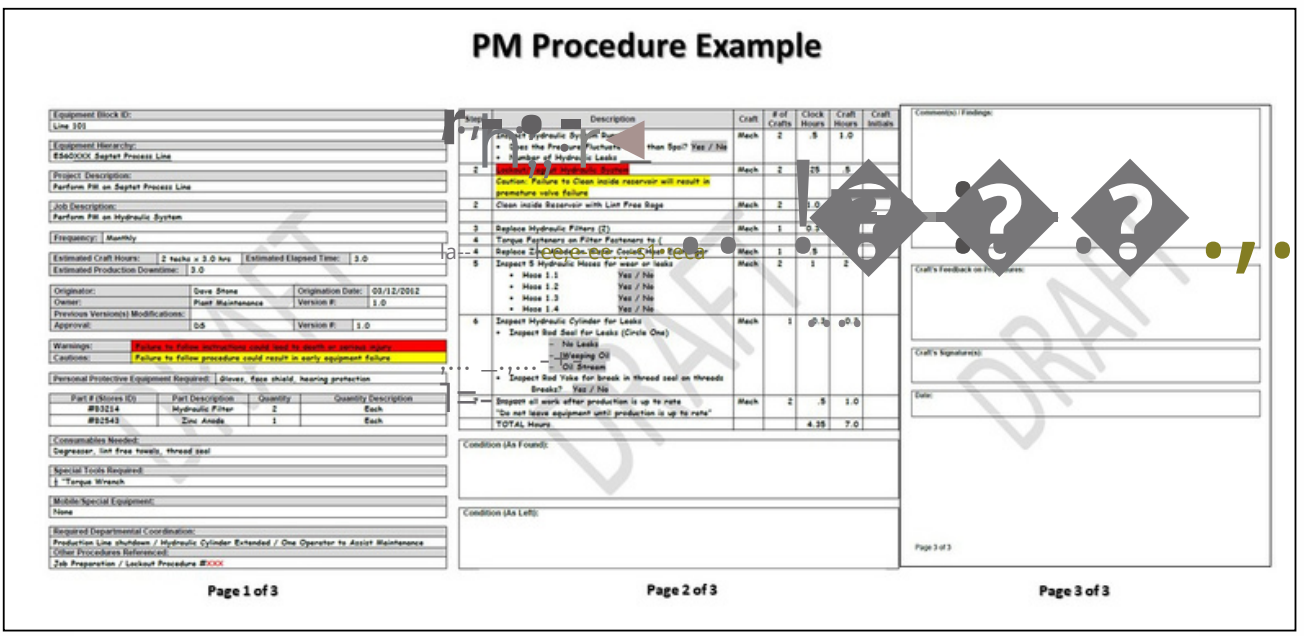
Preventive Maintenance
"Roles and Responsibilities"

Task ⬇ Position ➡	Maint Mgr.	Rel Engr.	Maint Sup.	Maint Techs	Maint Planner	Prod Mgr.	Plant Mgr.
Create / Manage Asset Criticality	C	R	C	I	I	C	A
ID all Components	A	C	R	C	C	R	I
ID how each Component will Fail	A	C	R	C	R	C	
Write Repeatable PM Procedures	A	C	R	C	C	C	
Measure / Monitor PM Effectiveness	A	R	C	C	R	C	I
Modify PMs	A	C	R	C	R	C	I
Manage Maintenance Dashboard (Leading / Lagging KPIs)	A	C	R	I	C	I	I

Responsibilit	"the Doer"	(could be more than one)
Accountable	"the Buck stops here"	(One person only)
Consulted	"two-way communication"	(in the Loop)
Informed	"one-way communication"	(kept in the picture)

Step 7: Define how you'll measure if the PM Optimization process has been effective or not.

Step 8: Present copies of PMs to all parties.



Step 9: Review equipment history for the past 30. 60. and 180 days. This includes:

- Root Causes of critical breakdowns
- PM Labor Hours vs. EM/Urgent Labor Hours. PM
- Compliance vs OEE
- Rework

Step 10: Review current PMs and PdMs for these reasons:

•PM procedure may need to be rewritten
•Training may be required
•PM frequency may be inaccurate and need adjustment
•Checking if equipment is in "maintainable condition"

Step 11: Rewrite PMs or write new PMs (ensure they are repeatable) Step 12:

Monitor and measure to ensure new PMs are effective and adjust as needed.

Step 13: Post results for all to see.

Reliability Dashboard by Asset - Gypsy Paper

Line Assets	# Failures	Production Losses	EM/Urgent Labor Hrs.	PM Compliance Using 10% Rule
Board Infeed	12	32	47	100%
Press Unit	0	0	14	100%
Total	12	31	61	100%

Maintenance Scorecard			
	Best practice	10/12/2020	YTD
Maintenance Schedule Performance	>70%	62%	67%
Maintenance Break In Work	<15%	38%	33%
PM/PDM Work Scheduled	> 30%	18%	35%
PM/PDM Compliance	>80%	36%	67%
Notification Entered from PM/PdM find	1 for every 6 inspections	2	3
Equipment Not Available	Weekly	0	1.45
P1 Notifications	Weekly	12	11.43
Core Shift Mechanic	Weekly	4	3.95
Polymer Shift Mechanic	Weekly	9	6.22
No Information P1's (Still open)	Weekly	0	1.55
		Shift & Core worked on 1 P1 together	

Step 14: Once concept has been proven move to the next asset/area.

PM Optimization Results Example:

PM Task Action Recommendation	# of Tasks	% of Tasks	Man-Hours Represented
Non-Value Added (Delete)	1,640	8.2%	6,661
Reassign to Operator Care	1,380	6.9%	5,605
Reassign to Lube Route	2,856	14.3%	11,600
Replace with PdM	6,437	32.2%	28,222
Reengineer	5,200	26.0%	26,221
No Modifications Required	2,487	12.4%	8,987
Totals	20,000	100.0%	87,296

Join me May 17-19, 2022 for "Maintenance Excellence for Maintenance Excellence for Maintenance Supervisors LIVE in Asheville, NC
(PM Optimization is taught in this workshop)

Interested? Send your request to rsmith@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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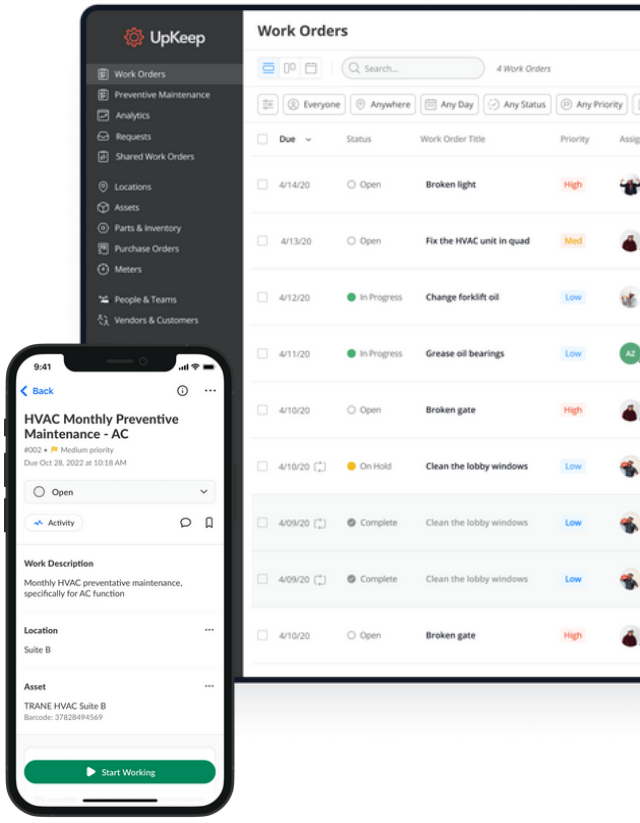

Our Products

UpKeep

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**

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DATAHUB UpKeep

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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.

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