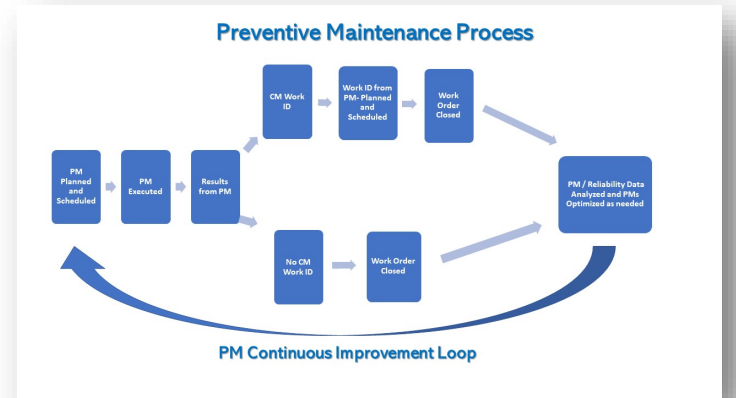
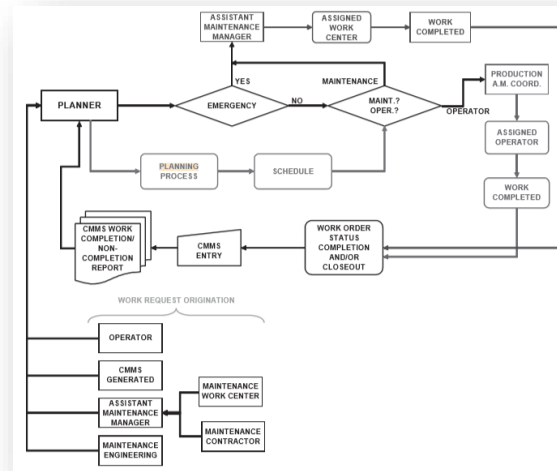
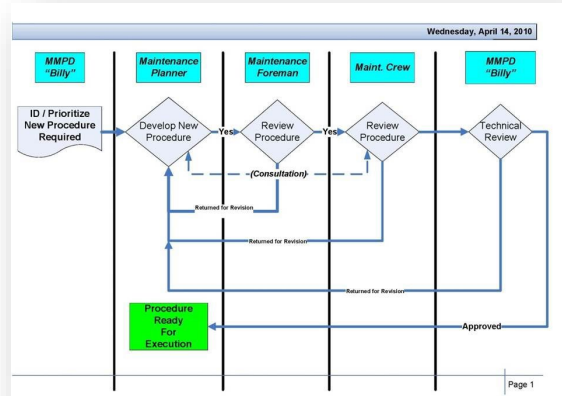


Maintenance Process Mapping

By Ricky Smith CMRP and UpKeep



“Without Effective Maintenance Process Maps an Organization will never achieve stable maintenance processes and thus continuous improvement is not be achievable”

- Ricky Smith CMRP

Questions?

1. Does your organization have Maintenance Process Maps, yes or no?
2. If you have Maintenance Process Maps does everyone in Maintenance know they exist, yes or no?
3. If you have Maintenance Process Maps are they followed?
4. Are your Maintenance Process Maps mapped to Leading and Lagging KPIs?
5. If you have Maintenance Process Maps, do they have RACI charts with aligned with them to align everyone's thinking and actions?

Preventive Maintenance RACI Chart / Scorecard

Task / Position	Maintenance Planner	Maintenance Supervisor	Maintenance Manager	Reliability Engineer	Maintenance Technician	Plant Mgr.
PM Program Design	I	C	A	R	C	I
PM Procedure Effectiveness	C	R	A	R	R	
PM Execution	I	R	A	C	R	
PM Leading and Lagging KPIs	R	C	A	C	I	I
PM Optimization	C	C	A	R	R	I
PM Procedure Creation	I	C	A	C	R	

Preventive Maintenance Scorecard

100% PM Compliance	16 Breaks to Schedule	↑ Maintenance Cost	↑ Emer/Urgent Labor_Hrs	0 PMs Evaluated
-----------------------	--------------------------	-----------------------	----------------------------	--------------------

Responsibility: "the Doer"
Accountable: "the Buck stops here"
Consulted: "in the Loop"
Informed: "kept in the picture"

If a Step in a Process is Skipped or Performed at Substandard Level it Creates Defects Known as Failures, the output of a Proactive Maintenance Process is Optimal Asset Reliability at Optimal Cost

Ron Thomas, former Reliability Manager
at Dofasco Steel

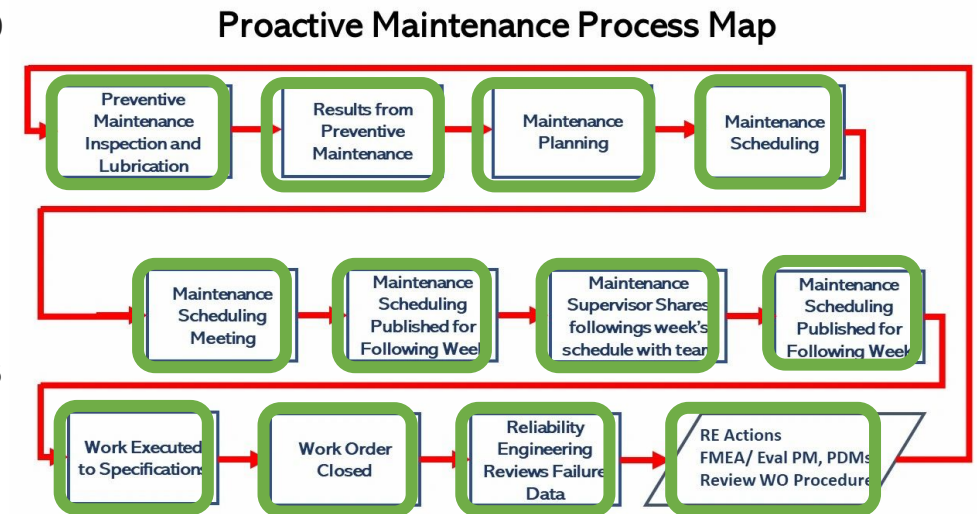
Top 6 Reasons Organizations Do Not Use Process Maps

- 1. Never seen the value in them**
- 2. Tried using them once but no one seemed to follow them**
- 3. Did not know how to use a Process Map**
- 4. Thought Process Mapping was only used for Production**
- 5. Never heard of Process Mapping for Maintenance**
- 6. You did not know, what you did not know**



What is Process Mapping?

- Process Mapping is the technique of using flowcharts to illustrate the flow of a process, proceeding from the most macro perspective to the level of detail required to identify opportunities for improvement.
- Process mapping focuses on the work rather than on job titles or hierarchy.
- The purpose of process mapping is for organizations to improve efficiency.
- Process maps provide insight into a process, help teams brainstorm ideas for process improvement, increase communication and provide process documentation.
- Process mapping will identify bottlenecks, repetition and delays.



Maintenance Process Map Examples

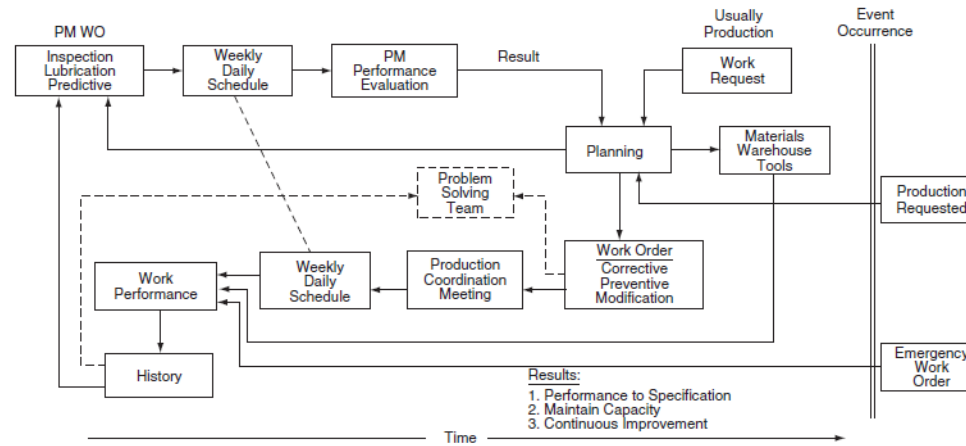
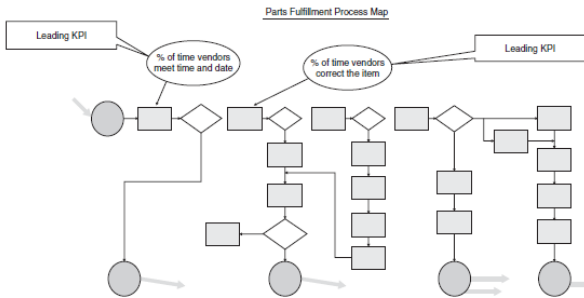
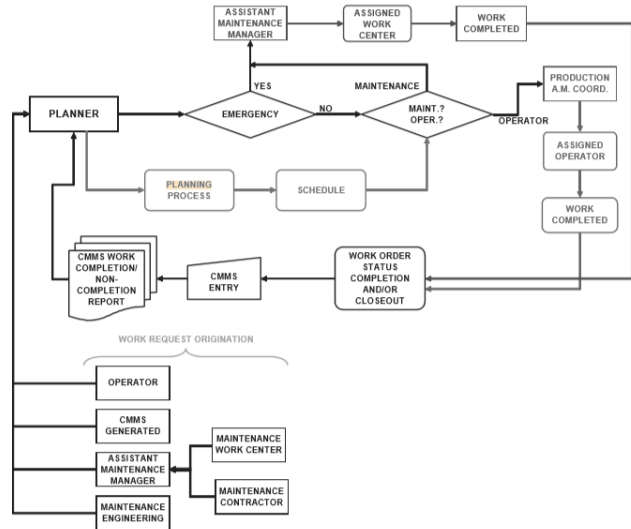


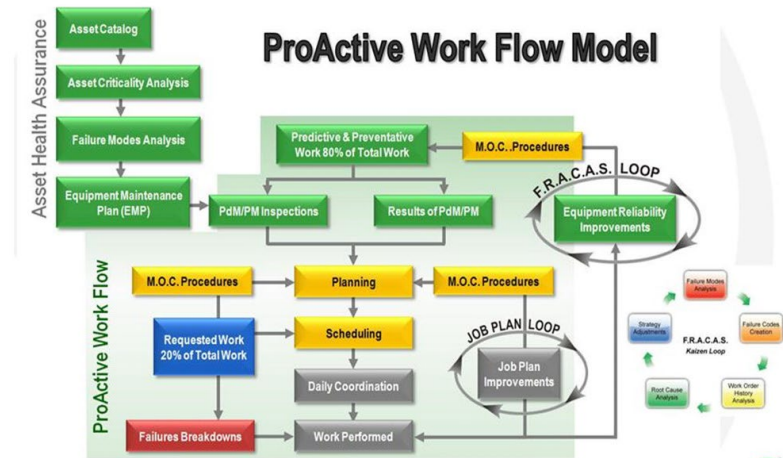
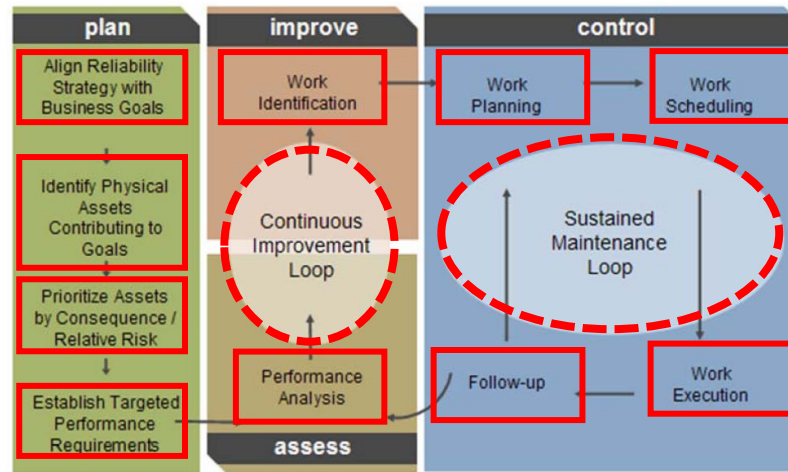
FIGURE 1.2. Mt. Holly's proactive maintenance model.

1978



2005

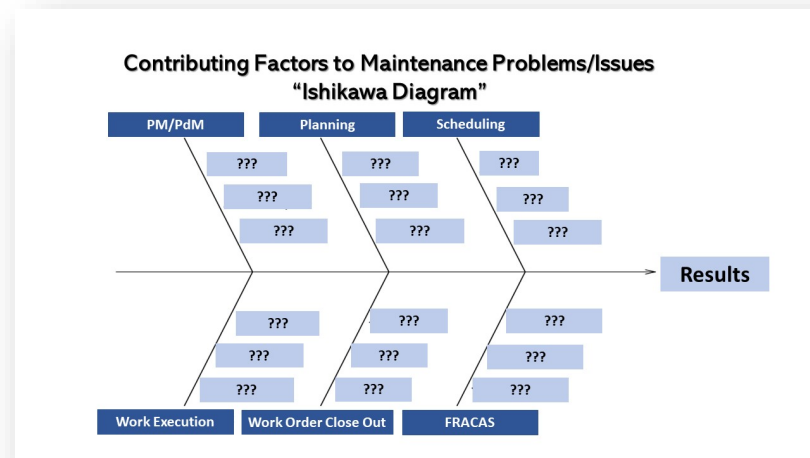
Lean Maintenance



Rules of Thumb for Maintenance and Reliability Engineers

Benefits of Mapping the Maintenance Process

1. Aligns everyone's vision in the value of the Maintenance Process to include the following positions:
 - Maintenance Manager
 - Maintenance Supervisor
 - Senior Maintenance Technician
 - Maintenance Planner / Scheduler
 - Stores Manager
 - Production Manager
2. Ensures everyone follows the same steps in Maintenance process, from:
“Work Identification to Work Order Close Out”
3. If you have your Maintenance Process Mapped and become having issues with Maintenance Metrics not aligning with what is happening on the floor, then an RCA can be conducted, and the problem is quickly resolved.

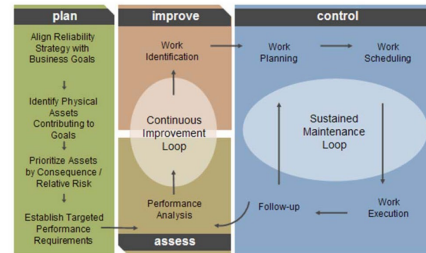


Recommended Steps when Mapping the Maintenance Process

Step 1: Determine your Maintenance Cost Trend (Labor, Materials, Parts) for the past 5 years and determine if everyone is satisfied with it. (no excuses – be positive)

Step 2: Create a Team of Key Stakeholders

- Facilitator (someone with no stake in the outcome, could be an outside resource)
- Maintenance Manager
- Maintenance Supervisor
- Senior Maintenance Technician
- Maintenance Planner / Scheduler
- Stores Manager
- Production Manager



RACI CHART FOR WORK PROCEDURES							
Tasks	Maintenance Supervisor	Maintenance Planner	Maintenance Technician	Maintenance Manager	Reliability Engineer	Maint support administrator	Plant engineering manager
DEFINE THE PROCESS	I	C	I	A	R	R	C
VERIFY EQUIPMENT CRITICALITY	C	I	I	A	R	R	I
MEASURE MTF/EMERGENCY UNPLANNED WORK	I	I	I	A	R	R	I
DEVELOP PROCEDURES	R	C	C	A	R	R	I
EXECUTE PROCEDURES	A	C	R	I	I	I	I
MEASURE AFFECT OF PROCEDURES	C	I	I	A	R	R	I
MANAGEMENT OF CHANGE	C	R	C	I	A	R	I

R – Responsible "the doer"
A – Accountable "the buck stops here"
C – Consulted "2 way communication"
I – Informed "1 way communication"

Step 3: Educate the Key Stakeholders in Maintenance Best Practices or World Class Maintenance

Step 4: Educate the team about the value of Mapping the Maintenance Process (use this presentation)

Step 5: Create a chart (RACI Chart) with Roles and Responsibilities defined

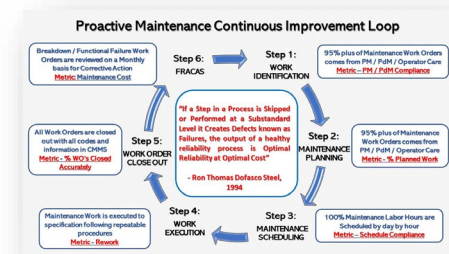
Step 6: Create a Plan using the crawl, walk, run methodology



Step 7: Identify or Create High Level Maintenance Process Maps from Start to Finish

Step 8: Identify Leading and Lagging KPIs for all Maintenance Process Step from Work Identification

Step 9: Team Meets for 10 minutes weekly (review progress, constraints, etc.)



Remember this Saying

If you think this is achievable in your organization? You are Correct.

If you think this NOT achievable in your organization? You are correct.

What do you think?



Questions or Comments

rsmith@worldclassmaintenance.org

Caitlyn@upkeep.com