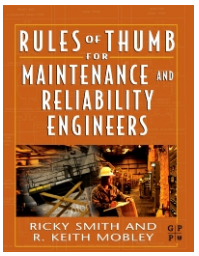
Single Point Lesson - Accurate Work Order Close Out

by Ricky Smith CMRP, CMRT



"Accurate Work Order Close Out is important for the continuous improvement of any Maintenance Organization and should closed out by the Maintenance Planner."

Why Maintenance Planner? Because they are the only person who is not involved in this week's work. They focus on Future Work Only.

The objective of accurate data collection is to assist management in making the right decisions at the right time and to empower workers to make decisions at the floor level.

Work Orders are NOT:

- **A method to track whether a Maintenance Technician is working or not (Maintenance Supervisor's responsibility)**
- **A waste of time (it takes less than 2 minutes to write a work order for any maintenance action required)**

Work Orders is used as a…

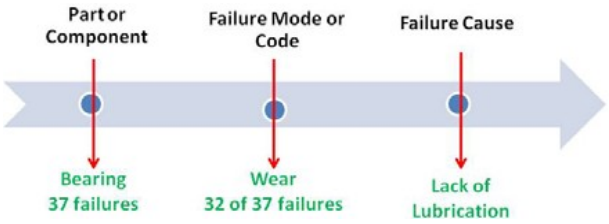
- **A method to identify repeat failures in equipment (typically "Bad Actors")**
- **A method to track maintenance repair and parts cost on specific assets to determine when action is required to restore equipment to a "Maintainable Condition."**
- **A method to track specific parts (ie. Bearings) are being consumed at an increased rate with the possible root cause could be identified to one of two causes.**

<u>General Rules of Work Orders:</u>

Work Orders should have at the minimum the correct code (breakdown (1), urgent (2), etc., the correct equipment number, at the right level, the maintenance person's accurate total work hours charged to this work order, the start time and complete time on the job, comments from the maintenance person as to what work was performed or any recommendation to changes to maintenance strategy or plan, any parts used whether from the storeroom or not.

- **Without the above information one cannot determine:**
  - **Actual maintenance cost for specific assets**
  - **Mean Time Between Failure (MTBF)**
  - **Mean Time To Repair (MTTR)**
  - **Mean Time Between Repairs (MTBR)**
  - **Rework**
  - **If a PM Procedure is effective**
  - **If a specific type of repair is effective**

1) **Repair or Corrective Work orders should have the information as stated above everything as stated above plus, component code, failure code, and cause code if an organization wants to mitigate unexpected failures.**
   - **Without the right information on work orders when closed one cannot determine.**
     - **<u>Dominant Failure Thread</u> – which component has the most specific failure modes with a specific cause across multiple assets**



     - **<u>Dominant Failure Pattern</u> – which failure pattern is the most dominant and what are the major causes of failures for this pattern. This allows one to develop strategies to eliminate unacceptable failures which impact the organization.**

2) **Establish the Criteria for WO Order Priority (all work orders are not equal)**

Priority	Description	Time to Respond	Consequence of Delaying Work	Likelihood of Failure
1	Emergency	Within 24 Hours	• Injury or Death • Major (Total) Production Loss • Regulatory/Environmental Violation	• Immediate Failure Certain
2	Urgent	This Business Week	• Significant Production Loss • Product Quality Issues • Significant (Avoidable) Repair Costs • Secondary Equipment Damage	• Immediate Failure Probable
3	Standard	Within Next 2 Weeks	• Loss of Production Rate – Slowed Production • Spurious Interruptions to Production Capability • Minor Product Quality Losses • All Proactive Work (PM and PdM)	• Immediate Failure Unlikely
4	Non-Critical	> 2 Weeks	• Strategic Improvement Work • Construction and Capital Projects • No Immediate Impact on Safety, Compliance, Production, or Costs	• Failure Not Likely

3) **Preventive Maintenance/Predictive Maintenance Work Orders should…**
   - **Become a method to track, prevent or predict known failure modes (failure mode – how something fails, example: Lack of Lubrication)**
   - **Attached the equipment history for the past 30-60 days to the PM and provide time on the schedule for techs (10 minutes max) to review before they execute the PM.**
   - **On a PM Procedure it should have specific steps and specifications on what is to be done to known best practices.**

     Example: Lubricate Bearing –

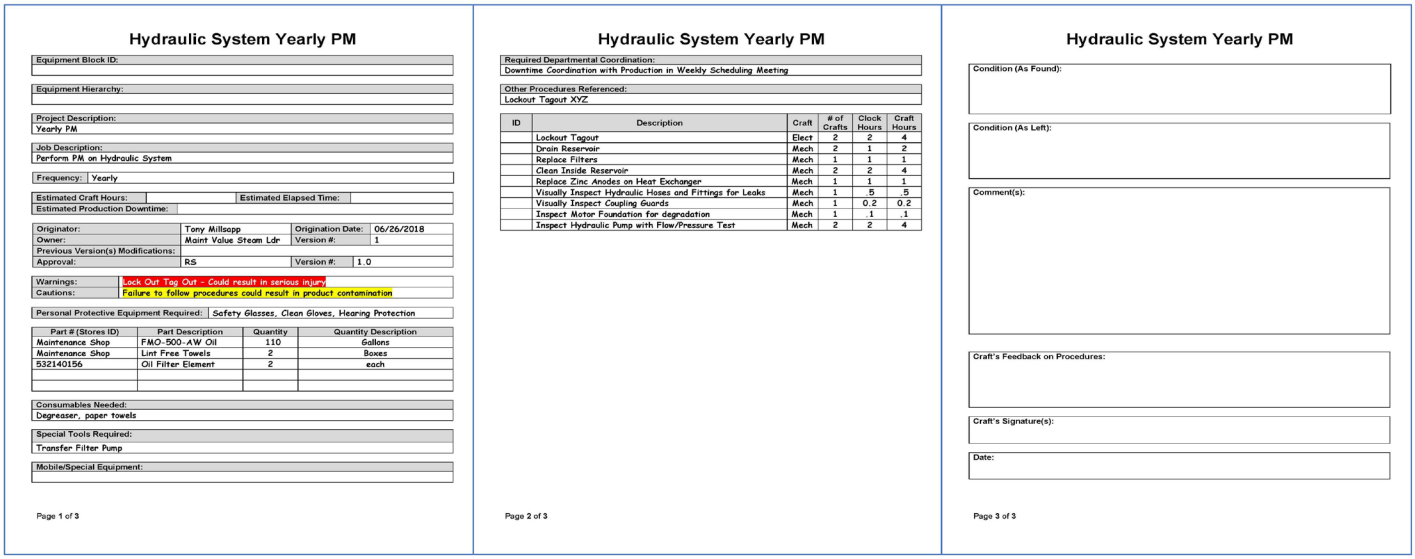
     Step 1: Clean the grease fitting.

     Step 2: Clean the end of the grease gun to ensure no contamination will be introduced into the bearing.

     Step 3: Insert 4 grams of lithium grease (two shots)

4) When closing all Work Orders the following items should be included:

- **Condition as Found.**
- **Condition as Left**
- **Recommendation to changes to procedure.**



Hydraulic System Yearly PM

Equipment Block ID:	
Equipment Hierarchy:	
Project Description:	Yearly PM
Job Description:	Perform PM on Hydraulic System
Frequency:	Yearly
Estimated Craft Hours:	Estimated Elapsed Time:
Estimated Production Downtime:	

Originator:	Tony Millsopp	Origination Date:	06/26/2018
Owner:	Maint Value Steam Ldr	Version #:	1
Previous Version(s) Modifications:			
Approval:	RS	Version #:	1.0

Warnings:	Lock Out Tag Out - Could result in serious injury
Cautions:	Failure to follow procedures could result in product contamination
Personal Protective Equipment Required:	Safety Glasses, Clean Gloves, Hearing Protection

Part # (Stores ID)	Part Description	Quantity	Quantity Description
Maintenance Shop	FMO-500-AW Oil	110	Gallons
Maintenance Shop	Lint Free Towels	2	Boxes
532140156	Oil Filter Element	2	each

Consumables Needed:
Degreaser, paper towels
Special Tools Required:
Transfer Filter Pump
Mobile/Special Equipment:

Page 1 of 3

Hydraulic System Yearly PM

Required Departmental Coordination:
Downtime Coordination with Production in Weekly Scheduling Meeting
Other Procedures Referenced:
Lockout Tagout XYZ

ID	Description	Craft	# of Crafts	Clock Hours	Craft Hours
	Lockout Tagout	Elect	2	2	4
	Drain Reservoir	Mech	2	1	2
	Replace Filters	Mech	1	1	1
	Clean Inside Reservoir	Mech	2	2	4
	Replace Zinc Anodes on Heat Exchanger	Mech	1	1	1
	Visually Inspect Hydraulic Hoses and Fittings for Leaks	Mech	1	.5	.5
	Visually Inspect Coupling Guards	Mech	1	0.2	0.2
	Inspect Motor Foundation for degradation	Mech	1	.1	.1
	Inspect Hydraulic Pump with Flow/Pressure Test	Mech	2	2	4

Page 2 of 3

Hydraulic System Yearly PM

Condition (As Found):

Condition (As Left):

Comment(s):

Craft's Feedback on Procedures:

Craft's Signature(s):

Date:

Page 3 of 3

5) Define Roles and Responsibilities for the effective use of Work Orders using the RACI Model.

- **Assemble a team of people involved in Maintenance Work Order Success (ex: planner, supervisor, technician, reliability engineer, production)**
- **Define the WO process/ tasks required for success.**
- **Educate the team in what an effective Work Orders looks like**
- **Prepare key people before you assemble the team.**
- **Facilitate the team through the RACI Process.**
- **Post the RACI Chart along Maintenance KPI Dashboard for all to see**
- **Perform RCA when WOs that do not meet expectations.**

Maintenance Work Order Roles and Responsibilities

"RACI"

Tasks (Decisions / Functions →)	Maintenance Supervisor	Maintenance Planner	Production Supervisor	Maintenance Manager	Production Manager	Technician
Create a Corrective Maintenance Work Order	R	C	R	I	A	R
Create an Emergency / Urgent Work Order	R		R	A		
Approve Work Order	R	R	C	A		
Parts charged to Asset via Work Order	R	A				R
Ensure WO Info Correct Before Closure	R	A				C
Close Out WO	C	R	C	A		C
Leading/Lagging KPIs Reported	I	R	I	A	I	I

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