WAREHOUSE TRANSFORMATION - A3 PROBLEM SOLVING

Facility CORE Linepipe   **Date :** 06/23/19   **Prepared by:** Jason Riley

TEAM SELECTION

Team:
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1. CLARIFY THE PROBLEM.   2. BREAK DOWN THE PROBLEM.   3. SET A TARGET

PROBLEM SUMMARY STATEMENT :

Core Linepipe does not have a robust documented rework process. ISO 9001 2015E under "8.7 Controlling non-conforming outs" calls for such a process. Core Linepipe has a strategic business objective to implement ISO 9001 2015E by December 31st, 2019. Under the new Quality Management System in the area of Material Management, CORE has not had a consistent monthly inventory accuracy that meets or exceeds the current target of 97%. This current state has resulted in significant inventory variances and subsequent write-offs. Note to the reader: We attempted to run KPI of 97% inventory accuracy based on dollar value. This makes CORE look good, and the problems aren't visible. Large total inventory values can hide mistakes (large denominator). Current state calculations are not accurate due to scrap items being reflected as an inventory imbalance. Even though we have issues, this calculation method incorrectly shows Supply Chain is performing well as most months are >97%.

Month	January	February	March	April	May
Working Days to Post	20	12	?	?	10
Total score, %	98.50%	98.20%	99.30%	98.10%	95.80%
Month end inventory, $Million	3.06	3.23	3.51	3.27	2.56
Accuracy Loss	$ 44,763	$ 59,464	$ 24,788	$ 61,702	$ 108,300

5. DEVELOP COUNTERMEASURES.   6. SEE COUNTERMEASURES THROUGH (*CONTAINMENT & CORRECTIVE ACTION*)

	Countermeasure	Owner	Start Date	Completion Date	Status
Visual Management	Implement Visual Management Plan (Yard ret tag area, Liner quarantine area, Rework Items, Signage Standard)	Colin	June 24th,2019	July 22nd, 2019	
	Storage/Packing Standard (Including non-standard materials, WIP, Red Tags)				
	Location for Communication and Training Centre				
	Standard for vendor shipping and packaging (crates sizes from TAK)				
	Layout for warehouse (improve accessibility, visual management, floor markings, signs)				
	Inventory routing evaluation, spaghetti diagrams, flow,				
	Physical inventory control standard (lock & key vs visual etc)				
Red Tag/Rework	Tagging Labeling standard (especially rework or red tag processes)	Dwayne	July 22nd, 2019	Sept. 30th, 2019	
	Standard for counting red tags (do we count the sum of parts or the assembly)				
	Standard for paperwork (red tags, do we use the Product Data Sheet or the MTR (Material Transfer Request)				
	Standard for red tag material movement (NAV vs reality, WIP location, 'recovery' of red tag materials, Traceability tracking, labeling, associated paperwork)				
	Standard for material transformations (cutting liner/steel, splitting liner/steel)				
	Planning traveller for rework				
	Control plans (initial focus on repairing red tags inline)				
	Evaluate single piece flow of information for rework items				
	Standard for steel/liner length in rework (do we cut all steel to one length, all liner to one length, business case required)				
	Process for Scrap disposition				
Material Movement	MTR Process: review roles & responsibilities, ALL transfers, timing requirements (how soon must they be done?)	Sean English	July 15th, 2019	Sept. 30th, 2019	
	NAV locations to represent reality (production staging, WIP, field staging w/ materials, receiving)				
	Policy for material returns (field, production, rework)				
	Inspection process evaluation and improve (does Wayne need to approve every inspection form? What if it is all green)				
	Procedure for prod/field material management				
	Workflow for how to do inventory counts in NAV (policy/procedure/work instruction)				
	Communication standard (inventory, non-routine…if you do something who do you need to tell?)				
	Standard for auditing and measuring how well we are doing				
Quality Management System	NCR System (non-conformity tracking being made universal, one location, one process)	Allan Castelo	Started	Dec. 31st, 2019	
	Standard for change management (document management, etc)				
	Document approval process (RACI)				
	Governance Standard (how often do we meet to review, report, KPIs, create actions etc)				
	Training Matrix Overall				
	Maturity Matrix for processes				
	Roles & Responsibilities				
Other	Standard for purchasing when GW issues a PO	Fely	Oct. 1st, 2019	Nov. 25th, 2019	
	Evaluate single piece flow of information (one piece of paper per stick) for production	Kevin	June 24th,2019	July 25th, 2019	
	Departmental OKR (Objectives and Key Results)	Suzanne	June 24th, 2019	Sept. 30th, 2019	

4. ANALYZE THE ROOT CAUSE - PROBLEM ANALYSIS (PARETO, CAUSE and EFFECT, *5 WHY, etc.*)

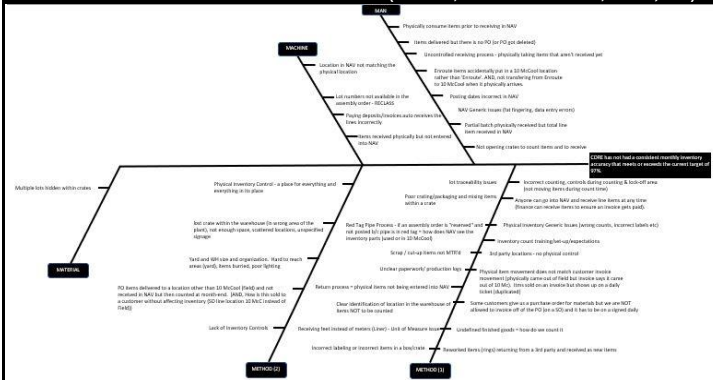|	Root Cause(s)		Action(s)	Owner	Due Date
1	Weak/Undefined Red Tag Pipe Process	1			
2	Weak/Undefined Rework Process	2			
3	Weak/Undefined Material Flow Process	3			
4	Weak/Undefined Transactional Workflow Process in NAV	4			
5	Weak/Undefined Roles and Responsibilities	5			

7. EVALUATE BOTH RESULTS AND PROCESSES (*MEASUREABLES, KPIs etc.*)

TOP LEVEL INVENTORY KPI - As of June 24th, Inventory Accurracy will be measured as a percentage. Formual is *Total Inventory* divided by the *Total Number Inventory Variances.*

MID LEVEL INVENTORY KPI's - TBD

INDIVIDUAL INVENTORY KPI's - TBD

8. STANDARDIZE SUCCESSFUL PROCESSES / FUTURE STEPS