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Standard Operating Procedures for MRO Storerooms

Lean and Reliable Practices

Part 2

Day-To-Day Operations

Frank Murphy, Founder and President Inventory Management Services Inc.

In Part 1 of this article, we examined the steps that need to be taken and the changes that need to be implemented in order to have a clean, well-organized, efficiently run, Lean and Reliable MRO (Maintenance Repair Operations/Overhaul) parts storeroom. In Part 2, we will examine the day-to-day practices and procedures that *must become routine practice* in order to keep the storeroom in a Lean and Reliable operating condition.

Unscheduled machine downtime has been replaced with CMMS-aided (Computerized Maintenance Management System) maintenance planning, predictive and preventive maintenance scheduling, Reliability Centered (RCM) and Total Productive Maintenance (TPM) practices, and manufacturing-friendly maintenance work. These Best Practice maintenance activities require that MRO-parts storerooms consistently maintain an efficient, highly organized, and automated environment to support them.

In order to do that, MRO storerooms need a working and structured system of practices. Their implementation can be phased in during the cleanup, consolidating and organizing project listed in Part 1. An MRO-parts storeroom should operate like a store: clean, organized, labeled, well stocked, and well run. There is a place for everything, and everything is in its place. The owner controls the cash flow.

Support from all levels of management is crucial. Good leadership, cooperation, and support among the various levels of plant management achieve remarkable results and improve profit margins. When this support is in place, it promotes an efficient, effective, and successful maintenance stores operation.

These daily operating procedures are discussed below.

A. Security

In order to maintain and ensure that parts are on hand and available when needed, they *must be controlled*. **Control** is the lynchpin that determines whether a storeroom operates on a stable platform, or on an unstable trap door that collapses unexpectedly.

Every retail business exercises some form of control over its goods. Nothing leaves the premises unaccounted for. Safeguards are in place to protect the owner's investment. Why then are storerooms that support maintenance activities, which support a plant's productive enterprises, which support any number of workers, considered any differently? In too many places, the MRO-parts storeroom operates like an unmanned convenience store. Does yours?

MRO-parts storerooms should be walled (or fenced) off from the areas around them. The walls should run to the ceiling, or be high enough to defeat entry by ladders or other means. Storerooms should have lockable gates and doors, and have entry *restricted to as few as possible*. Door locks can be programmed to use key cards that many companies provide their employees for access into the buildings and onto the grounds. When possible, plants should provide 24/7 coverage. The next best solution is to have dayshift coverage by a storeroom operator.

B. Accountability

No part leaves the storeroom, one of its satellites or a warehouse holding the larger, palletized parts without being accounted for. For the main storeroom, a bar-code-capable CMMS handles all transactions quickly and accurately. For the other locations, parts are removed using the same technology, if a scanner can be placed there securely. If this is not possible, each item can have extra label tags stored with each part. They are affixed to the work order as the parts are removed.

Bar-code technology updates the inventory database when the scanner is downloaded, so inventory quantities remain accurate. IMS has found that neither clipboards with sign-out sheets nor check-out chits work as well. In an emergency situation where parts must be located and installed ASAP, the inventory label, the box the part was in, a belt sleeve, or the replaced, broken part is left on the storeroom operator's desk with follow up to be made later.

C. Off-Shift Transactions

Shortly after arriving in the storeroom for his shift, the storeroom operator checks the parts transactions that have occurred during the off-shifts. If a bar-code scanner is used, the transactions are downloaded to the Inventory Module, which makes the appropriate parts adjustment. If the transactions are recorded on a sign-out sheet or with the check-out chits, the transactions must be made manually.

D. Parts-Issue Routine

Generally speaking, craft technicians secure the parts needed for their work shortly after their shift begins. The storeroom operator handles these transactions so the technicians can start their work. Most CMMS's generate "Pick Lists" so parts can be gathered, checked out to a work order, and prepared for pickup when the technician arrives at the storeroom.

Some plants have restricted hours (e.g., 0730 - 0900, 1600 -1700) for parts acquisition, except for emergencies. This allows the storeroom operator to attend to storeroom business uninterrupted for the remainder of the day.

E. Reorder Report/Purchase Requisitions

While attending to parts-issue routines, the storeroom operator produces the CMMS's "Parts Needing Reorder" report. Some CMMS's either print that report or generate and print Purchase Requisitions (PR) and/or Purchase Orders (PO) for those parts. Once examined for completeness, the storeroom operator approves the PR's/PO's and forwards them to the MRO Purchasing Buyer with any hand-written or CMMS-generated requisitions for items not in the database.

IMS strongly endorses the policy of providing the storeroom operator with the authority to approve all requisitions for normal stock items. For non-standard, non-stock, non-inventory items (lumber, building materials, general plumbing repair parts), an authorized limit of up to \$250 should be allocated. This prevents wasted time and delays in securing approvals from someone who may or may not be in the plant.

Once the PR's/PO's are delivered, the MRO-parts buyer handles all purchasing-related function regarding the items to be reordered. If EDI (Electronic Data Interchange) is used by the plant, the PR's/PO's are immediately transmitted to the vendor, via modem or internet, when generated.

F. Receiving and Restocking Parts

When parts are received at the storeroom from the Shipping/Receiving Department, the storeroom operator checks the package or part received against *both* the Packing Slip *and* the Purchase Order to ensure the correctness and completeness of the order. Once verified, the CMMS Purchasing Module is updated to show that a) all of the parts have been received, the PO is closed and posted to Purchasing History by the CMMS, or b) not all of the items ordered on the PO have been received, and the PO remains open until the remainder of the items arrive. The CMMS automatically adjusts the Quantity-On-Hand field in the Inventory Module according to the number of parts received or listed on the PO.

Some CMMS's generate an inventory text or bar-code part label when parts are received. When this is done, labels are applied directly to the part, to a manila tag that is secured to the part, or to the storage container (bin box, drawer divider, belt sleeve, etc.) if it doesn't already have one. The storeroom operator places the parts into their assigned storage location. The parts go to the rear of the storage container or location to maintain a FIFO (First-In-First-Out) inventory turnover practice. Empty shipping boxes and trash are discarded.

G. Spot Checks and Cycle Counts

Each morning, the storeroom operator visually checks all of the critical spares. These parts are usually segregated and stored in an area specifically designated for parts of that type. The nature of and on-hand need for these parts require a daily inspection and check.

Cycle counts accomplish two different goals: a) the physical inventory and verification of a specific type of part, or of a designated location of parts, and b) the negation of the need for either a semi-annual or annual

physical inventory, or both. Cycle counts require that the MRO-parts database be complete, accurate and up-to-date.

H. Parts Sent Out for Repair

The storeroom operator handles all parts-inventory- related matters: issues, returns, reordering, restocking, inventorying, and maintaining the storeroom. He also works closely with the maintenance planner to secure the repair and return-to-stock for the motors, gearboxes, pumps, air cylinders, gearmotors, electronic drives, and other parts and components not rebuilt in house. The procedure for this follows the same procedure as outlined above.

A Lean, Reliable, well-organized storeroom provides the maintenance department the support it needs to keep production machinery in the best possible operating condition. Parts are available, they are located quickly, and reordered in a timely manner. Repairs are made quickly and efficiently. Production equipment runs up to its design specification or beyond, and the company remains competitive and successful in the global economy.

Frank Murphy, CPMM, is the Founder and President of Inventory Management Services Inc., of Greenville, SC. IMS's "hands-dirty" consulting approach changes MRO-parts storerooms from a reactive practice to a proactive process.

IMS implements Best Practice and common-sense principles of storeroom design, storage fixture selection and setup, and parts consolidating and organizing. Drawing on 35 years of maintenance and storeroom experience, IMS provides all the "hands-dirty" services needed to set up a Lean and Reliable MRO parts storeroom: design, setup, relocation, consolidating and organizing, physical inventory, and bar-code labeling services for the implementation of Lean and Reliable MRO-parts storerooms and maintenance tool cribs.

Clients include Alcoa, Cognis, ConAgra, Domino Sugar, General Electric, Gillette, Kraft Foods, Miller Brewing, Pepsi, Proctor & Gamble, US Gypsum, and US Steel.

Frank is a Certified Plant Maintenance Manager (CPMM), has presented seminars at the NFMT & Lean Manufacturing Conferences, and has published articles for both trade journals and organizing websites.