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Standard Operating Procedures for MRO Storerooms

Lean and Reliable Practices

Purchasing

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In any plant or facility, the MRO (**M**aintenance **R**epair **O**perations/**O**verhaul) storeroom plays a crucial role. Parts need to be on hand, in the correct quantities, and easily located in order to increase maintenance effectiveness, manage costs, effect timely repairs and keep unnecessary production downtime to an absolute minimum.

In order to do this, the storeroom needs standard operating procedures that govern all aspects of MRO-parts purchasing. These procedures act as rails to keep the train of Best Practices purchasing on the track. When practiced diligently, they guide the day-to-day storeroom activities to ensure that the parts room runs like a store: clean, organized, and well stocked.

This article explains the Purchasing functions as they are used and applied in the MRO storeroom. This cyclic routine starts and ends at the same place each day. Although ordering and reordering parts is an essential part of business, many companies have no standards in place for maintenance parts purchasing. Costs sky rocket out of control.

In order for the MRO Purchasing function to work, standard storeroom elements must be in place to provide the essential groundwork for an efficient and effective parts ordering and replenishment system. That foundation includes the following elements:

A. There is a CMMS in place and operational. CMMS (Computerized Maintenance Management Systems) systems were introduced to desktop computers in the mid 1980's. A well-run and efficient maintenance department uses one. The CMMS has a bar-code-capable inventory module that handles and processes all the maintenance-related MRO-parts tracking functions. The module is populated, complete, and up to date.

Unscheduled machine downtime has been replaced with CMMS-aided maintenance planning, predictive and preventive maintenance scheduling, Reliability Centered (RCM) and Total Productive Maintenance (TPM) practices, and manufacturing-friendly maintenance work.

B. The storeroom is clean and well-organized. 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.

C. The storeroom is secured with restricted access. Management at all levels realizes that the parts in the storeroom keep plant machinery and facilities equipment operational and productive. Well-maintained machinery that operates up to and beyond its life cycle equals profit. Storeroom security ensures that parts required for maintenance are available when needed.

D. Parts accountability is practiced religiously. Nobody just walks in and walks out with the items that they need. Every part that comes into or goes out of the storeroom is accounted for and tracked.

E. The storeroom has an operator, clerk, or attendant. Many plants provide storeroom coverage, at least on the first shift. The operator takes ownership of the storeroom in the same way that an owner of a small hardware store does with his business. The operator manages all aspects of storeroom operations and interfaces well with the Purchasing and Maintenance Departments.

Operating on this foundation, the MRO-parts Purchasing system functions well. To illustrate how this purchasing process works, we'll start in the MRO storeroom when a part is removed.

1. Accountability – The First Step

Once the correct part is located in the storeroom, the first step in the Purchasing procedure is *accountability*. Nothing leaves the storeroom unaccounted for. Period. When the part is checked out, the CMMS assigns it to a work order, a piece of equipment, a cost center, a production line or manufacturing process, an employee or contractor, or some other department. This tracks the cost of the part so it can be back-charged to the proper account.

A good CMMS produces a report showing the part costs that are accumulated by the various entities using the storeroom. These areas are charged (via internal accounting procedures) for the storeroom items they consumed. Only the user pays.

2. Quantity-On-Hand Adjustment – Once the part is assigned to a charge-back code, the CMMS automatically tracks all aspects of the transaction. This part tracking is an essential element when calculating equipment life-cycle costs. The CMMS automatically reduces the quantity on hand by the number of parts checked out.

3. Purchase Requisition Generation - When the part reaches or falls below the minimum-on-hand quantity, most CMMS's produce a report indicating the parts that require reorder. Some generate a Purchase Requisition (PR), grouping the parts by vendor. The Requisition contains all the necessary part and vendor information that is taken from the part database. Included is substitute part information (as needed). The Requisition is

approved and forwarded to the Purchasing Department. Some CMMS's generate Purchase Orders directly from these Requisitions.

Note : Storeroom operators should have approval authority for the reordering of all critical part and standard storeroom stock items. Unnecessary and potentially costly delays are caused when requisitions sit on a desk waiting for approval or make the rounds for signatures.

Some CMMS's have EDI (Electronic Data Interface) capability, which instantly transmits a requisition to the vendor. Purchasing agreements with maximum spending limits must be in place for this to happen.

4. Purchase Order Generation – How often Purchase Requisitions are delivered to the MRO purchasing agent varies. Companies deliver them daily, twice a week, 3 times a week, or only on Friday for the parts used during the previous week. The frequency is determined by parts-database accuracy, lead times, Purchasing Department loads, etc. Each company determines what is best for them. Until the storeroom and its purchasing functions are well established and stock levels are stable, Requisitions should be delivered daily.

Based on criticality or need, the MRO-parts purchasing agent either places the order or consolidates the purchase with other orders for the same vendor. Since part delivery and lead times have been established during the parts inventory database setup, emergency air freight and overnight deliveries are eliminated for normally stocked items.

5. Shipping and Receiving – The vendor fills the order and ships or delivers the part(s) to the plant. The shipping/receiving clerk compares the packing slip with the purchase order to determine if what is being received is exactly what has been ordered or an acceptable substitute. If everything matches, the part, the packing slip, and a copy of the PO are delivered to the storeroom operator.

Shipping and receiving processes their paperwork in accordance with Purchasing Department procedures. Discrepancies, shortages, or damages are handled by the shipping/receiving and purchasing departments and not by the storeroom.

Parts for the storeroom can be received and accumulated for delivery to the storeroom in bulk lots. The deliveries are made on a daily basis. Usually, deliveries to the plant arrive before noon and can be delivered just after lunch. This is a good practice for both departments since mornings are generally their busiest times.

6. Part Restocking – Once the part arrives at the storeroom, the operator double-checks the packing slip with the Purchase Order *and* the part to ensure correctness and completeness of the order. If the part requires a text or bar-code label, the operator generates and applies them. Some CMMS's produce these labels when the part is received to the CMMS's Purchase Order.

The part is then stored to the rear of its usual storage location. This follows the FIFO (First-In, First-Out) procedure and ensures proper stock rotation. The CMMS's Purchase Order is updated to show that the parts have been received and that the PO is complete. The CMMS automatically adjusts the Quantity-On-Hand field in the Inventory Module to reflect the additional parts just received. The CMMS closes the PO, and it becomes part of the Purchasing History.

The PO remains open if items are on backorder or if there is a partial shipment. The storeroom operator retains a copy of the Packing Slip and Purchase Order in a desk file folder to serve as a reminder to check on the arrival of the delayed parts.

The Lean and Reliable Result

These six steps, operating on the basic foundation that preceded them, will produce a successful MRO storeroom. This Purchasing procedure also works for parts requiring off-site rebuilding. Whether it's a motor, gearbox, pump, air or hydraulic cylinder, circuit board, electronic drive, or some other part of that nature, the procedure for getting it repaired is as simple, practical, and efficient as ordering any other part.

Once these Purchasing functions are implemented and become operational, the plant begins to realize an increase in production uptime due to a reduction in parts-related equipment downtime. The storeroom is a Lean operation: overall operating and purchasing-related costs are lowered, and the inventory parts/supplies' dollar value decreases. The storeroom is Reliable because it has the right parts in the right quantities when needed. Its stability, efficiency and effectiveness provide the essential support the Maintenance Department needs.

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.