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The Dough Is In MRO

Optimizing the MRO Storeroom

by Tracy Smith

Are you tired of maintenance having to do the “crib crawl” to find the parts they need? Are you searching for ways to reduce maintenance material costs while improving asset performance? Is your storeroom looking more like a war zone than a place for conducting business? Look no further, the answer to these challenges lies in MRO Storeroom Best Practices.

A key component in supporting effective and efficient asset management activities is the MRO Inventory Storeroom.



Figure 1 - Storeroom before Optimization

The Storeroom’s primary roles are to secure, store and properly manage high usage and production critical materials. An effective MRO Storeroom Operation helps get the right material, in the right quantity, in the right condition, to the right place, at the right time while minimizing total inventory cost. The Storeroom plays a critical and value added role in helping to increase productivity, improve asset performance and reduce overall MRO materials costs. As the saying goes “the dough is in MRO.” More specifically, an effective and efficient MRO storeroom operation can...

- Increase maintenance productivity by 12 to 15%
- Reduce MRO material costs by 20 to 30%
- Reduce equipment downtime by 3 to 7%

Applying these ranges to your own values will show you just how significant these improvements can be. Maintenance, Operations, Purchasing and Stores are all beneficiaries of a properly run MRO Storeroom Operation. The key to unlocking this value lies in MRO Storeroom Best Practices.

What are MRO Storeroom Best Practices?

Best Practices are the backbone of an efficient and effective MRO Storeroom Operation. However, too many times MRO storerooms are neglected, improperly designed, poorly operated, lacking documented processes,

not staffed appropriately and working with corrupted data. Historically, MRO inventories are one of the most inefficiently and ineffectively managed units of an organization.

This has a significant impact on productivity and reliability. A 1970’s article in Duns’ Review entitled “The High Cost of Bad Maintenance” identified the single biggest reason of high maintenance costs as problems related to MRO materials management. On average, a maintenance technician will spend 1½ to 2½ hours per day trying to find the parts they need to get their work done. If the right materials had been available, this time could have been reallocated to improving asset uptime and reliability.

To be fair, it is not always the storeroom’s fault. If maintenance does not respect Stores’ policies and/or submit “timely” and “accurate” job plans identifying material requirements, then it can be difficult for Stores and Purchasing to adequately service, in a cost effective manner, every maintenance material need.

MRO Storeroom Best Practices are defined as the most efficient and effective means to managing, storing and handling MRO inventory materials. For example, clean, standardized and enriched MRO inventory data, separation of receiving and buying activities, inventory cycle counting, trained and skilled storeroom personnel, clean and well organized storeroom, automated requisitioning, reorder point optimization and key performance indicators are just a few of the critical MRO Storeroom Best Practices that create value and support asset reliability efforts and operational needs.

How do we improve MRO Storeroom Operations?

The first place to start the MRO improvement process is in the storeroom itself. Once stable storeroom operations have been established, maintenance and operations can work to improve their pre-planning efforts. At first glance, this appears to be a daunting task. Trying to organize, store, identify and properly manage thou-

sands of disparate inventory items, with different and seemingly unpredictable demand patterns, creates an environment in which it is difficult to succeed.

Creating an implementation strategy that is simple, straight forward and thorough, is critical to a successful MRO Storeroom Operation. There are seven key elements to implementing MRO Storeroom Best Practices.

Analyze The first step in this implementation process is to perform an assessment of the existing (or non-existent) storeroom operation. The purpose is to identify gaps between the current environment and the best practice environment. An output of this assessment process is the development of a Project Implementation Plan that guides the facility and Stores operation from its present state towards its future or “model” state.

This initial assessment should address all elements of storeroom operation and its integration to its partners. And those partners, maintenance, operations and purchasing, must be included in the analysis and re-design efforts. The assessment should be designed to answer questions such as:

- How are materials stored?
- What does the inventory data look like?
- Is the storeroom adequately designed?
- How is the storeroom staffed?
- What kind of savings can be expected by implementing MRO Storeroom Best Practices?

Once the assessment is complete, a formal presentation to management should follow. This will help expedite the “buy-in” process and serve to excite and educate management on the opportunities that are available by controlling and properly managing MRO inventory materials.

Design Improving MRO Storeroom Operations begins with understanding exactly what items will be maintained in the Storeroom. A physical inventory will identify not only obsolete and unusable parts, but also highlight any duplication of items. Once the universe of parts to be stored is identified, the physical redesign may proceed.

MRO items must be properly sheltered, organized, identified, and labeled in order to be effectively and efficiently managed. Addition-

ally, a professional-looking storeroom fosters organizational respect and discipline, something that many MRO storerooms sorely need. The design of a storeroom should include:

- Definition of material storage and square footage requirements
- Identification of storage media requirements and suggested layouts
- Development of an inventory location scheme
- Identification of office, issue, receipt, kitting, and staging areas
- Recommendations on material handling equipment

Mobilize Once the storeroom has been designed and built, it must be properly setup. Storage media must be moved in, parts relocated, databases developed and/or updated. There are two key steps to mobilization: Data Setup and Storeroom Setup.

Data Setup — Developing and maintaining a clean, standardized and enhanced inventory database is the “brick and mortar” of an EAM (Enterprise Asset Management) inventory module and every MRO Storeroom Excellence Initiative. Poor descriptive information can reduce maintenance productivity and decrease asset uptime.

Data integrity is a must. Integrity requires that the data is clean, consistent, complete, and accurate. Data must be attribute-rich, classified, and satisfy all inventory record field requirements.

Developing rich and meaningful MRO inventory source data speeds up part sourcing and retrieval activities and facilitates detail reporting and analysis.

Item numbers should be sequential and non-intelligent. Leave the intelligence for the other fields in the database. Item descriptions should be developed in a noun, modifier, attribute and value format utilizing a Standard Modifier Dictionary (SMD) approach.

Storeroom Setup — Correctly organizing, binning, and labeling inventory materials and locations is critical to easily finding and sourcing inventory items. Additionally, properly storing MRO inventories can extend parts life. Materials should be organized by usage and available cubic space, (with high usage items near issue points) and not by commodity.

Operate Operating an effective and efficient MRO storeroom operation is comprised of two parts. First, standard operating procedures in the form of a Best Practice Model must be developed to guide implementation and process activities. Second, personnel must be trained and coached on Model practices and procedures.

MRO Materials Model Development

The MRO Materials Model forms the basis for how the Storeroom is going to operate and conduct business with its partners: maintenance, operations, and purchasing. An MRO Materials Model establishes the ideal or best practice state for all storeroom materials management activities, and should contain information such as:

- Key performance indicators
- Detailed procedures, process flow charts
- Storeroom roles and responsibilities;

A corporate-wide MRO Materials Model establishes the business rules and sets the “World Class” standards throughout the corporation. You can then move on to storeroom start-up.

MRO Materials Model Training

Once the storeroom and database are properly setup and “Best Practices” have been defined and documented, the next steps are to provide new training, have the “ribbon cutting” ceremony and go-live!!

Training should focus around both the tactical and strategic aspects of operating a storeroom.

Training for Storeroom Personnel – Training for storeroom personnel is tailored to those performing the day-to-day activities of managing the inventory. These individuals are primarily responsible for managing the movement of materials, processing system transactions, and performing housekeeping activities. Some of the suggested training topics are listed below:

- Performing receiving activities (opening boxes, checking packing slips, noting discrepancies, etc.);
- Stocking inventories (storeroom returns, receipts, and new items);
- Managing outgoing shipments (vendor returns and repairable spares);
- Performing parts picking, issuing, kitting,

- staging and delivery activities;
- Performing cycle counting;
- Preparing materials for maintenance equipment shutdowns;
- Maintaining target service levels.

Training for Storeroom Supervisor – Training is also tailored to the Storeroom Supervisor, who has the primary authority and responsibility for overseeing the management of storeroom inventories. Some of the suggested training topics are listed below:

- Storeroom operations
- Key Performance Measurement
- Leading MRO materials team
- ABC Analysis
- Min / Max Modeling
- Maintenance and Operations Coordination

Once training is complete, it's time to celebrate and go-live!! Have a cookout. Don't forget to involve your "customers" (maintenance and operations) and your partners (purchasing).

Measure Once the new storeroom is up and running, the focus should be on delivering and measuring performance.



Figure 2 - Storeroom after Optimization

The implementation of a storeroom performance management program helps ensure the practices are tied to the organization's objectives and are achieving the intended results. Performance measurement involves tracking specific performance criteria:

- Comparing results to benchmarks and historical values
- Identifying needed improvements and potential solutions to the problem.

There are several possible performance measures for MRO Storeroom Operations. The following are the most useful:

- Storeroom service levels

- Internal lead times
- Inventory accuracy

A hierarchy of indicators is utilized to prevent small problems from becoming larger ones. Performance measures must also carry some clout. There must be accountability and consequences for poor performance as well as recognition and praise for good performance. As an old football coach once said, "If you aren't keeping score, you are just practicing."

Optimize After sound processes are in place and we are generating good historical data, it is time to optimize inventory levels. This is where the rubber meets the road. The right level of inventory minimizes the total cost of inventory. What is desired is the optimal level of inventory to maintain.

Right sizing the inventory is just that. It is the process of analyzing operational risk and materials management transactional data and identifying the optimal reorder points and maximum level of inventory to maintain.

The optimization process helps to achieve



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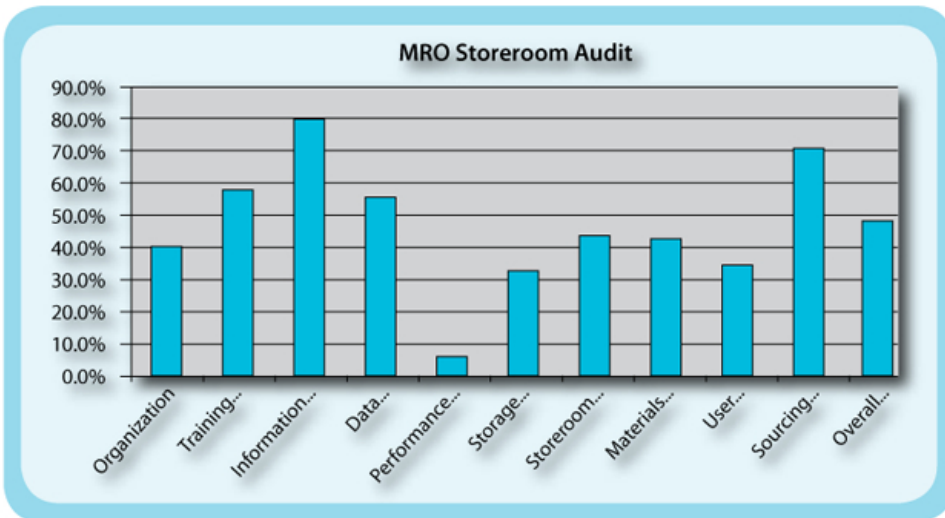


Figure 3 - Example of Results from Storeroom Audit

Summary

Implementing MRO Storeroom Best Practices is critical to optimizing MRO spend and inventory investment while supporting asset reliability needs.

What is equally as important is how these philosophies and measurement programs are implemented. The identification of best practices coupled with a simple but thorough implementation methodology shortens implementation time, accelerates organizational buy-in and facilitates the realization of long term and significant value within the plant and across the organization.

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the correct balance between costs and accessibility.

Sustain Staying on track, sustaining progress and continuing to improve can be a challenge. There will be a point where the shine might wear off. The key is to stick to the fundamentals and established standards and not wander off course even in times of revolt.

A good way to stay on the straight and narrow is to implement periodic MRO Storeroom "Best Practice" Sustainability Audits to ensure all plant implementation teams are on track and continuing to close Best Practice gaps. A formal ranking system based on the implementation of best practices will allow internal benchmarks to be established and progress to be measured.

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