



IT'S TIME TO REIN IN MRO SPENDING

7 TACTICS FOR REDUCING MRO INVENTORY COSTS



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- Mary Cenedese

Because it's scattered and dispersed across departments, budgets and locations, the total costs of maintenance, repair, and operations (MRO) inventory is often overlooked. But when purchasing managers perform a thorough and comprehensive analysis, they may find that MRO inventory accounts for as much as 40 percent of a company's annual procurement budget.¹ Replacement parts alone can account for up to 15 percent of operating expenses, according to the ARC Advisory Group, especially in asset-intensive industries like power generation.²

Despite its financial significance, MRO spending is rarely managed as attentively as production inventory. But it's clearly worthy of executive attention at both the site and enterprise level. In addition to inventory cost savings, better MRO management can support quantifiable operational advantages. According to industry research firm Aberdeen Group, best-in-class MRO performers report superior operating margins, lower maintenance costs, better return on assets, and less unscheduled downtime (2 percent vs. 5 percent) when compared to the industry average.³

Uncovering Cost Saving Opportunities

In addition to scattered spending, there are a number of other reasons why operations managers overlook opportunities to improve indirect material management. In many plants MRO inventory is literally hidden. It's hidden in cabinets, shelves and toolboxes, just in case the need for that particular part or supply arises someday. When employees leave or move on to new assignments, it's quickly forgotten



¹ The Case for Managing MRO Inventory, Supply Chain Management Review, 2013.

² MRO Inventory Rationalization and Optimization, ARC Advisory Group, 2010.

³ Maintenance, Repair, and Operations (MRO) in Asset Intensive Industries, Aberdeen Group, 2013.





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MRO By Definition

Maintenance, Repair and Operations (MRO) encompasses all of the maintenance and repair activity and supplies that keep a factory running. It includes safety equipment and devices, replacement parts and components, fasteners, cutting fluids, lubricants, tooling, office supplies, cleaning products, light fixtures and electrical supplies, plumbing supplies, and consumables that are not part of the end product.

but is still tucked away somewhere, gathering dust. Parts and materials are hidden in the first place because employees aren't confident—based on past experience—about purchasing practices or that what's kept in storerooms will be available when they need it.⁴

Another cause of poor MRO inventory management is conflicting departmental priorities. Maintenance wants plenty of backup parts to ensure uptime. Purchasing buys material at volume discounts to minimize prices. Accounting doesn't want to reduce net income or equity by writing off and disposing of obsolete inventory. The performance measures for each of these departments sub-optimizes overall indirect inventory management.

Poorly applied performance metrics and benchmarks can have a negative impact in other ways as well. Take premium freight, for example. A common benchmark for excessive expedited shipments is if they account for more than two percent of shipments. What's more important is the frequency of expedites, whether or not they were really necessary, and the total costs, which could really add up well before they hit the two percent of shipments threshold.⁵

The common management view that inventory is a "necessary evil," or an uncontrollable cost of doing business, plays a role in how MRO supplies are managed as well. Absent leadership attention, purchasing and inventory management practices will be far from optimal. Unanticipated stockouts will trigger expensive spot buys with no root cause analysis of the supply failure. Material tracking systems will be sporadically updated and inaccurate. Highly paid maintenance staff will spend too much time paging through catalogs or negotiating with vendors. And inventory turnover, if it's measured at all, will be less than one turn per year. 1

Those are some of the causes and opportunities for improvement. The most significant being management's belief that such inventory can be managed more cost effectively, and willingness to invest the time to figure out how. Below are seven tactics, from defining metrics to establishing supplier partnerships, that plant managers can adopt that will improve the MRO inventory management practices in their organizations.

Establish Metrics

Improving performance in any area starts with identifying and defining core metrics, or key performance indicators. Improving MRO inventory management is no different, although tracking it across different areas and departments can be a challenge.



⁴ Show me the money: an MRO inventory analysis, Reliable Plant.

 $^{^{\}rm 5}$ Expediting Costs: How Much is Too Much?, RxToday, 2014.





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Measuring performance establishes a baseline for management to evaluate the impact of any process changes or investments. It also sends a message to employees that MRO inventory is important and management is paying attention to it. As the adage goes, "What gets measured gets done."

Standard metrics to consider include days of inventory on-hand, number of stockouts, ratio of expedites to routine replenishment orders, and parts obsolescence. These should be reported to management on a monthly or quarterly basis.¹

"Best-in-class companies are over twice as likely as their competitors to link corporate and asset performance," according to Aberdeen Group.³ "This allows maintenance and reliability personnel to think about their jobs in financial terms." And it provides an additional incentive to maximize asset reliability and minimize downtime.

Track Performance

Once key metrics have been identified and defined, they must be tracked and reported. This can be done manually or via various types of management systems. Tracking the cost of expedites, for example, could be as simple as recording the cost whenever a rush ordered is authorized. Analyzing part numbers and usage for expedites can then determine if such costs were unavoidable, or if they could have been prevented through better maintenance practices.⁵

Top performers are more likely to invest in so-called master data management (MDM) systems, according to Aberdeen Group.³ These software solutions eliminate duplicate data and standardize information, making it easier for manufacturers to schedule and execute predictive and preventive maintenance.

Centralize Storage and Control
The primary purpose of having a central MRO
storeroom is to maximize efficiencies while minimizing costs.
But just having a tool crib or stockroom for MRO parts



and supplies isn't enough. It has to be effectively managed for control and accuracy AND properly stocked to avoid workarounds that spring up when employees don't trust it to have what they need when they need it.

Central purchasing and storage of such parts and supplies must be complemented by standard put-away practices and computer tracking systems so items can be located quickly and easily. Tracking systems also allow inventory analysis that can optimize stocking levels, and standardize maintenance practices by documenting supplies needed for routine tasks and scheduled maintenance.

Centralized inventory management also makes it easier to partner with outside suppliers, who can help drive down costs with replenishment agreements and volume discounts.¹

Develop Skilled Inventory Managers
Effectively managing the storeroom and indirect
inventory is not a core competency for manufacturing
operations. Hence the low level of management interest
in optimizing performance. In one sense the MRO stock
areas need to be managed like a retail store with finicky
internal customers, perishable products and zero price
markups to cover costs.







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Managing such inventory requires a unique skillset that combines purchasing, supply chain management, inventory control, routine maintenance procedures and customer service. Training and continuing education can fill in some skills gaps. Supply chain education in particular can increase awareness and application of best practices.¹

The maintenance of complex spare parts like motors is an often overlooked element of the MRO inventory manager's job. The failure to perform such maintenance can lead to premature failure. "The care and preventive maintenance practices of the storeroom inventory," writes Wally Wilson of Life Cycle Engineering, "is an essential practice for rotating spares like motors, gearboxes, pumps and some actuator valves to ensure these units will operate at full capacity and for the expected service life.⁶

Establish and Enforce Inventory Stocking Policies

There are a number of segmentation and stocking strategies for MRO parts and suppliers. At a high level MRO inventory can be divided into two usage patterns. The first are planned consumable items that are used in the production process. This includes plant equipment parts that become worn with regular use. Unless the equipment is brand new, these items will have a well-documented replacement history. They can be managed with min/max order triggers, or vendor-managed inventory (VMI).²

The second type is the critical parts and materials that need to be kept on premises to manage risk and sustain production in the event of an unplanned equipment failure or loss. "For critical spares, organizations use a combination of theory of constraints and reliability centered maintenance to identify the critical equipment and associated critical spare parts to stock," writes ARC's Ralph Rio.

The companies that manage MRO best are more likely to have stocking strategies for both types of inventory, and have real-time visibility into that inventory, according to Aberdeen Group. These manufacturers have assessed and defined stocking strategies based on predictive analysis for critical parts inventory. They've also established agreements with key suppliers to quickly ship out costly replacement parts on an as needed basis.³

More cost effective MRO inventory management starts with data cleansing. Part numbers and descriptions need to be rationalized so employees can identify and locate needed parts. 2 Duplicate items, which can range as high as 25 percent, 4 can then be consolidated.



 $^{^{\}rm 6}$ Care for Your Spares, Reliabilityweb.com.





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"The opportunity for savings predominantly comes through the elimination of duplicate items and the rationalization of excess active and slow-moving inventory," writes Mary Cenedese in Reliable Plant. "These items can be used down through attrition, sold back to the supplier for credit, or sold to a third party for cash. Obsolete items may also offer some opportunity for generating cash."

Optimize Procurement Practices
The last thing you want are highly paid maintenance employees spending a significant amount of time looking at catalogs and ordering ad hoc supplies from vendors with little consideration for long-term supply priorities.¹
Streamlining and standardizing MRO procurement processes will improve productivity, minimize the time spent placing orders, and reduce overall purchasing costs. Supplier websites are an excellent way to leverage systems and automation when fine-tuning processes.

In addition to the ordering process itself, improving MRO procurement practices requires the consolidation of product types to minimize SKUs, and the consolidation of vendors to minimize purchase orders and invoice payments. For low volume items, it is often more cost effective to work with MRO distributors that order and stock larger quantity levels. It can be better to order higher volume items directly from the manufacturer.

After MRO spending is consolidated, scorecards can be used to rank the relative performance of larger suppliers, to monitor quality, and for leverage during contract negotiations.

Outsource MRO Management
Many of the cost-saving tactics outlined above require special projects, managers with higher skill levels, and new information systems, all of which can require additional resources and investment. Even if those investments pay off in the near term, it may make more sense from a financial

perspective to outsource some or all MRO inventory management to an MRO supplier.

Benefits include reduced paperwork and staffing costs, higher reliability, better inventory accuracy and, ultimately, higher uptime. A straightforward arrangement with a supplier to monitor and replenish high volume materials, like fasteners, and invoice on a monthly basis, can eliminate a multitude of purchase orders and associated administrative work.¹

When outsourcing, look for firms whose expertise aligns with the needs of your business, whether it is storeroom management or enterprise-wide spending consolidation.⁸ In addition to better demand visibility, which can lead to volume discounts, having supplier personnel on-site completely frees up a manufacturers' employees to focus on their core functions.¹ Alternatively, automated tool cribs or vending machines, can provide usage visibility and rapid replenishment with minimal direct labor costs.

Some Final Words of Advice

Over time, equipment operating costs—which include all equipment maintenance activities, spare parts and consumables—can easily exceed the cost of the initial investment. How well MRO is managed plays a significant role in the effectiveness of maintenance activities, how close the initial ROI calculations are to the actual operating costs, and whether the payback estimates are realized.

As detailed above, to better control MRO costs and improve availability, manufacturers should establish and track performance metrics, centralize storage, develop professional inventory managers, set stocking strategies, optimize procurement, and consider some level of outsourcing. But perhaps the biggest step that managers can take when deciding to optimize MRO inventory management, is the belief that it can and should be managed much more effectively.



⁷ Modern MRO Management, Industrial Distribution, 2013.

 $^{^{\}rm 8}$ MRO: The Last Bastion of Uncontrolled Expense, Supply & Demand Chain Executive, 2011.