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This article is the fourth in a series dealing with some of the basic "hows" of the Maintenance profession.

Ouch! Holding on to Excess, often unwanted and obsolete parts really eats into your bottom line.

A storeroom is, by definition, a waste of capital. It is a bucket of money set aside for contingencies associated with the unpredictable nature of the manufacturing process.

In a perfect world, storerooms would not even be necessary. Your world-class preventive maintenance efforts would ensure that machinery seldom wore out. Parts would arrive from suppliers 10 minutes before they were scheduled for replacement based on recommendations from the predictive maintenance side of the house. Since there would be no emergencies, the need for a selection of replacement components to be kept on site would be eliminated.

In the real world, production facilities don't operate in ideal settings; some level of spare parts availability must be maintained. Each maintenance organization must determine the minimum number of extra components necessary to sustain production and then strive to reduce excess supply with a minimum of waste.

Changing the scenario

Sometimes, storerooms seem to be stocked with the philosophy that the plant should be completely rebuildable from parts on hand. That philosophy might have merit if holding costs associated with the yearly maintenance of parts inventories did not range from 18 to 30% of the inventory's value. On a million-dollar storeroom inventory, this translates into between $180,000 and $300,000 per year. As a result, the cost of your parts supply doubles every three to five years.

Pretty shocking, isn't it. This is real money, too—not just an on-paper figure that the accounting department has circulated. The components of this expense include the opportunity cost of not spending the money on something else, interest, the cost of the storage facility, handling, spoilage, taxes, employees and loss.

If this picture describes your maintenance stores reality and you wish to change the scenario, you must first determine the scope of the problem. Your CMMS will be one of your most useful tools as you undertake this task, because it will allow you to identify slow-moving and non-moving inventory, overstocks and components that have become obsolete due to a change in your process. Once these superfluous parts have been identified, a systematic program of reduction and elimination must be undertaken.

Each maintenance manager must look at the available personnel in the department and assign a single person to spearhead the campaign to reduce surplus stores. The planner or storeroom coordinator would be excellent candidates for this role if some of their current duties could be shifted to free up the hour or two per day—every day—that this project will require. The designated individual should then be assigned the task of reducing inventory via the following methodology:

- Analyze suggested spare parts and stocking levels for any new equipment that is being purchased. There is a reason that this action is first. The use of suggested stocking levels provided by the manufacturers of the equipment in your plant is one of the reasons that your storeroom inventory is at unacceptable levels.

From the machine manufacturer's point of view, promoting a healthy spare parts list has the benefit of increasing their bottom line, as well as the secondary benefit of keeping breakdown times shorter. If they can convince you to purchase what amounts to most of a spare machine, they have, in effect, sold you two, and the one out on the plant floor can be repaired more quickly if it breaks down.

- Work with your machine suppliers during the design stage of new equipment so that you can take advantage of existing stocks of spare parts. This is called standardization—and it is one of the most important and cost-effective steps you can take to control storeroom inventory.

If you have 17 machine centers on your manufacturing line and each is powered by a small- to medium-horsepower motor just slightly different in some manner from each of the others, you will have to stock 17 replacement motors in the storeroom. But, if some care and thought is put into standardization during the design stages, you may be able to stock only a few—and might even be able to lower the inventory to one.

- Most CMMS programs allow for automatic reordering of parts after a stores issue has occurred. This function is based on minimum and maximum inventory parameters that have been pre-programmed into the system. These reorder points and stocking levels are generally based on the manufacturer's suggestions and should be analyzed for validity. Since the best time to reduce inventory levels is before you purchase the new part, these reorders must be scrutinized by an individual with the authority to override the system.

As an example, if you have a bearing come up for reorder because one was issued the previous

day, several factors must be considered before the requisition is transmitted to your supplier. How many identical bearings are still in stock? Has a cross-reference been run to determine if any other in-stock bearings will work in the application? When was the last time one of these bearings failed? Why did this one fail? Was the issued part actually used? What is the delivery time on a new bearing? What is the criticality of the affected machine? If you normally stock two of these bearings, but you have only used one in the last three years, and the re-order time is two days, then most likely you do not need to re-order this component at present. If it turns out that temporary loss of the machine's functionality will not cause an interruption in production, then you do not need to reorder next time, either.

It is very important to remember that reorder points and stocking levels must be formally changed in your CMMS or stores program if you decide that you can operate your process with lower levels of spares. Otherwise, the orders will just keep on coming.

- Depending on the nature of your business and geographic proximity to your suppliers, it may be possible to negotiate the staging of larger, more expensive replacements such as motors, gearboxes and pumps at the supplier's regional sourcing areas for quick dispatch to the plant site. As an example, assume that your process includes several of a certain model speed reducer, and that it takes three hours to replace one if it fails. If your supplier is only an hour away and will agree to keep one of the gearboxes on hand, then there is no need for you to duplicate the action.
- Another method to reduce inventory costs is to share between plants on big-ticket items when such an option is geographically practical. These spares can be centrally housed and their expense shared among the locations.
- If you have a situation in which you are using a predictable quantity of a certain component in your process, this is a good candidate for consignment from your supplier. A consignment arrangement is merely an agreement to pay for an item when it is issued from the storeroom rather that when it is placed into the storeroom. Most vendors are agreeable to these types of arrangements on components that tend to move quickly. Typically, the plant must buy the parts from the supplier if they have not been used within a year.
- The actions discussed so far have dealt with delaying the procurement of spares or reducing the size of the purchase. But what should you do about the excess inventory you already own? Very simply, you must get rid of it as quickly as possible.

The most preferable way to do this is to sell the parts back to the supplier you bought them from in the first place. Most vendors are agreeable to this idea provided that the part is in its original wrapping or package and not obsolete. Sometimes there may be a restocking fee assessed, but rarely will it be higher than the 18 to 30% "holding cost fee" you already are paying.

To your supplier, your surplus part is an item of commerce, and if you don't need it, one of their other customers might. Additionally, if you have held the item in inventory for several years and sell it back for its original purchase price, it often is a bargain for the supplier—who may be

paying a good deal more to the manufacturers due to the impact of inflation over time.

- If your supplier does not want to repurchase, there are other avenues you can try. If your company has multiple plants, chances are that one of them may need the part you don't need. Another option might be to offer the excess to other manufacturers and competitors in your area. Depending on your company's policies, sales to the public or to employees also might be considered. In light of liability concerns, however, you MUST be certain to check with your legal department regarding all outside sales or disposals of excess inventory.
- The Internet can be a great resource in reducing storeroom inventories, particularly for electronic or electrical components that are easily shipped. Internet auction sites such as eBay are a possibility, as are surplus and salvage dealers who specialize in the reduction of storeroom inventories. Charitable donations to trade schools and technical colleges are yet another option to explore. Again, due to liability concerns, check with your legal department before proceeding.
- Once you have sold as much excess inventory as you can—and adjusted all of your stocking levels and reordering intervals to reflect your actual needs—you still will be left with merchandise that nobody seems to want. At this point, your choices have become limited. On the one hand, there is that very real holding cost if you keep the inventory—and it is a penalty that re-assesses every year. On the other hand, if you write off the inventory and dispose of it, the company, in effect, has spent money but received no value.

A better approach might be to use these excess—unwanted—parts as tools in your maintenance training program. If you are stuck with obsolete bearings, you have an opportunity for all of your millwrights to practice bearing installation. If you have an obsolete motor, all of your multicrafts can practice wiring the motor to a switch or a breaker.

Getting it done

Keep in mind that your storeroom inventory level did not get where it is overnight. It climbed slowly but steadily over time. Consequently, its reduction also must proceed at a measured pace—if you want to avoid unnecessary waste while eliminating undesirable surplus materials.

One of the key elements in painless storeroom inventory reduction is to have one person responsible for the process, and to have that individual work at the project on a daily basis. Even if he/she can spare only an hour per day for the task of inventory reduction, the time will be well spent. **TF**

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