

## **Warehouse Coach**

*Improving warehouse performance*

### **Improving Space Utilization within storage aids**

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In my last column I described a variety of ways in which we can see a problem and how each of us might consider a different solution ([Thinking differently about Problem Solving](#)). In that column, I presented several approaches to solving the problem of a lack of space in a warehouse. And, assuming that is your problem and you have not yet committed to one of the options I described, in this column I will describe a few of the methods I have discovered that can help you improve the utilization of your existing storage capacity, without investing money, using your own resources and the participation of others in your company.

Pallet Rack – Usually pallet rack and shelving are installed with a standard vertical opening. That is, that the load beams or shelves are set at a consistent height through a rack row or perhaps throughout the entire installation. And while that arrangement provides a neat and orderly appearance, often that placement does not match the requirements of your inventory. Usually there is little planning in this for placement of the load beams, and no communication between buyers and inventory control or the equipment installers, so the pallet heights and the beam heights/openings look nice for the acceptance inspection but the result is that you might not be using the space well. You can notice this situation easily as you look down an aisle of reserve inventory and while the locations may be occupied; there is a significant amount of unused space between the tops of the loads in each position and the next higher beam set.

There are probably several approaches that will work with this situation. The one I suggest is to determine the best rack opening for the inventory you hold. Then work with your buying staff to establish a recommended pallet quantity for each SKU to guide their buying decisions, so that each purchase is in appropriate pallet load quantities rather than in multiples of 10 or 12, which is common. Your vendor has typically figured what the conventional customer wants and has created loads appropriately. If the majority of the merchandise arrives in those amounts, both the space use will improve and the amount of labor to handle and put away receipts should decrease

As we have gotten into this work we have occasionally developed a refinement of this process, when there are sufficient numbers of SKUs in the inventory, we have recognized that the package size and average inventory level suggest there be two or more storage rack groups. For hardware distributors we have set up the

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warehouse with an area to hold standard full size pallets, another area with ½ pallet size opening, a third for taller pallets and a fourth using what we call hand stack rack to hold receipts of less than one tier on a pallet. Occasionally we can obtain a better utilization of the clear height of the building when we stack these different pallet openings within a bay and increase the number of pick positions in an aisle when two shorter locations are stacked one above the other.

The primary objective is to minimize the “head space” between the top of the load and the beam to provide just the space necessary to make it easy for the forklift operator to place the load into the rack for the initial put-away. Looking down an aisle of reserve inventory and seeing that every location that is occupied is actually full can make a difference.

Flow Rack and Shelving – You can achieve an improvement in storage space utilization in shelving by matching the opening to the merchandise, starting with product height or case height, etc. I have also seen facilities where the SKUs have been grouped on a shelf - short, medium, and tall, (and the shelving openings adjusted accordingly) to make picking and packing directly into shipping cartons easier and improve space use. This organization can begin to conflict with efforts to optimize productivity, but then all of my suggestions have a tradeoff. The question then becomes what is most important at this time.

Replenishment of Flow Rack and Shelving - I have found even greater improvement in total storage space use by reviewing the Flow Rack and Shelving location replenishment process. Often when I hear that there is a space problem in a warehouse, I notice that the primary indicator is that there are pallet loads of merchandise in the aisles and the pallet rack positions are fully occupied. The first step in my process is to look to find unused storage space, and the first place I find unused space is almost always the flow rack and shelving areas. Usually, I find these areas less than half full. In these situations I also discover that the process for replenishment is primarily driven to support order filling (demand) and not to keep the rack or shelving locations full (inventory). Consequently there is inventory in the pallet rack that could be in the shelving, or there is a significant investment in shelving and flow rack that is used to store dust and air only. Changing the replenishment process to be driven based on the inventory in the location and replenish quantities to fill the locations will improve the storage capacity of the facility, without any additional labor cost.

There are many additional methods to improve both the storage capacity of a building and the storage capacity of the storage aids. If you would like to explore

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other options, call me at 503-296-7249, or send a note to [coach@warehousecoach.com](mailto:coach@warehousecoach.com). My goal is to help you be successful.