

A C K E R M A N
**WAREHOUSING
FORUM**

The industry publication dedicated to helping warehouse managers and their bosses improve productivity and manage more profitably with tips, comments and articles written by practicing professionals.

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Using What We Have Now

Editor's Note: This writing was inspired by "Tools, Toys and an Apology" an excellent article by our friend Art Van Bodegraven that appeared in the winter issue of "Progress Report", a publication of The Progress Group in Roswell, GA. The original article included observations by J. M. Apple Jr., a member of the same consulting group. We have enjoyed a cordial association with both of these people, and we could not resist enhancing the original article. KBA

A management consultant was enraged when an inexperienced journalist asked: "What are the next application areas for technology in the warehouse?" Another adviser was astounded by the news that an e-commerce company had spent \$80 million to install conveyors for a single warehouse. Both reacted in a similar fashion: *before we spend excessive time and money committing to high-tech applications, why don't we find ways to better use the things that we have right now?*

The Fundamentals

A first step in accomplishing this is to consider the fundamentals of warehousing. Second, we should define our goals. Third, before making any changes we need to quantify our current situation.

The process of warehousing is essentially a management of space and time. We improve this process by optimizing the use of available space, and then developing ways to handle more material in less time. Other features can also be valuable, including improvement of house-keeping, reduction of damage, and an enhancement of accuracy in shipping and receiving. However, space and time management remain the fundamental starting points.

Defining Your Goals

Why change anything? "If it ain't broke, don't fix it" has been a favorite quotation attributed to Bert Lance, a key advisor to President Jimmy Carter. Some people waste time and money tuning engines that still run adequately or taking medicines to cure imaginary ailments. When managers want to "fix" a warehouse, it is usually because they are running out of space. Others feel that cost of operating has escalated unreasonably. Others may perceive an erosion of quality, signaled by increased damage or complaints of errors. If you are contemplating a change in your warehouse, start by defining your goals. What can you reasonably expect to achieve when the changes you plan are fully implemented?

Where Are We Now?

Unless you have an accurate benchmark of your current warehousing costs, how can you possibly know whether the changes you contemplate are worth doing? If you do not know where you are now, the road to nearly anywhere might seem attractive.

Third-party warehouse operators track their costs on a per unit basis in order to develop prices for their services based on a cost per case, pallet or hundredweight. There are a few private warehouse operators who have emulated third-party costing systems to create their own internal prices. The methodology for creating a per unit cost is complex but not mysterious. Anybody could learn it, but relatively few warehouse operators have done so.

If you know the current storage cost for each pallet of product in your warehouse, you can then figure out whether an investment in a push-back racking system can be justified. If you also know the handling cost for that pallet, you could determine whether there is a reasonable payback on an investment in a new conveying system. The best vendors of warehousing equipment are trained to demonstrate the payback potential of the product that they seek to sell. But it is useless to consider payback without an accurate per unit measurement of today's costs.

Improving Use Of Space

A large distributor of wearing apparel has attracted worldwide attention for unconventional and successful logistics applications. In the warehouse a favorite space saving tool is self-supporting pallet rack. A leading manufacturer of this product ran an advertisement a few years ago with a small caption pointing out that this advertisement had originally appeared in 1938. The product has existed without design changes for many decades, and because it is plain and simple, it is easy to overlook. Yet self-supporting pallet racking has some significant advantages. It can be used with products whose shape or fragility make conventional warehouse racking impossible. In situations where the fire regulators have requested in-rack sprinklers, this product is used without question. Because the product is extremely flexible, it accommodates the need for frequent layout changes.

Other equally basic uses of storage rack are frequently overlooked. One is gravity flow rack, now available as an attachment that installs into standard pallet rack. Flow rack allows a large number of items to be retrieved in a

compact space, thus saving travel time. By concentrating the fastest movers in a flow rack aisle in one warehouse, travel time for order pickers is dramatically reduced.

The 80/20 rule (Pareto analysis) should be used to discover how to employ flow rack effectively. When the velocity of any SKU is extreme, it is better to put the item on a pallet rather than in a flow rack lane because the item moves so fast that the lane must be replenished every few hours.

Some of our oldest warehouses are multistory buildings, and we have seen a few of these structures that have been well maintained and are in excellent condition. However, one user spent over \$1 million to rebuild several freight elevators without investigating the much lower cost option of using vertical conveyors. Because vertical conveyors are designed to handle only freight and not people, they are not subject to the same stringent design and regulation used for conventional elevators.

Many users of high bay warehouses are not able to utilize the available high stacking space. In some cases, they have refurbishing or packaging operations that simply do not need high clearance. One answer is the use of mezzanines, but again the vertical conveying of product to the upper-level must be considered.

The simplest way to enhance space utilization is to avoid storing items that should not be in the warehouse in the first place. Yet many managers are reluctant to address the issue of liquidating inactive product. One chemical company retained obsolescent items that had failed quality tests or had been returned by a customer. In a few cases, this dead storage remained in the warehouse for as much as five years because no one was willing to authorize the destruction of this useless product.

One answer to the dead storage challenge is to outsource the warehousing of the inactive items, either in leased space or in a third-party warehouse. The cost of this outsourcing should be passed along to those managers who have refused to authorize liquidation of obsolete product. For those who believe that warehousing is “free,” establishing a cost center for storage of obsolete items may provide an incentive to take action.

Shortage of Docks

A chronic complaint of warehouse operators is that there are insufficient dock doors to allow efficient unloading and loading with today’s increased volume. In many cases, physical limitations of the building make it impractical or impossible to provide additional dock doors.

In some cases, the real problem is ineffective usage of the doors that exist rather than an actual shortage of doors. Here are a few examples. Many warehouses dedicate one loading door to the placement of a trash hopper, even though it is possible to have a waste disposal system which does not require the use of a dock door. Others reserve certain doors for specific carriers, and the door stands idle when a carrier is not being used. Many dock doors are unusable because loaded or empty trailers have not been pulled away when the loading or unloading process is completed.

There are at least three ways to get more work done with the same number of doors. One is to utilize unitized

handling or automatic loading/unloading systems to reduce the time spent in handling each trailer. Another is to initiate “drop and hook” arrangements in which truckers leave trailers in a storage yard. The transfer from yard to dock door is handled by a shuttle tractor. In this way, doors are never blocked by an idle trailer. A third answer is to increase the hours devoted to loading and unloading so that doors are in use for up to 24 hours per day.

Handling More Product

The simplest way to move more product through the same warehouse is to increase hours of utilization. Yet many have deep concern about the risk of eroding quality with a second and third work shift. Unconventional shift schedules, such as 4/10 or 3/12, seem to be popular with workers as well as managers.

Making the manual handling job easier will always enhance materials handling efficiency, but the most obvious ways to do it are sometimes overlooked. You start with a Pareto analysis to identify the fastest movers. Next, be certain that the most popular items are stored in the “golden zone”, those rack or shelf positions that can be reached without stretching or stooping.

Because the popularity of items can change over time or even from one season to another, the 80/20 rule should be repeated at frequent intervals.

A proven way to increase productivity is to eliminate the number of times that each carton is handled. Whenever you see product being staged, ask if staging is really necessary.

Better use of information technology allows warehouse workers to improve their effectiveness. Use of scanners eliminates the need to read and write complex product codes. Utilization of task interleaving (described in our February feature story) allows a lift truck operator to carry a load in both directions. Locator systems eliminate or at least reduce waste involved in searching for misplaced items.

Perhaps the greatest missed opportunity to handle more product in less time is the simple act of measurement. Too many people equate time study with discipline, even though it is preferable to use measurement for reward rather than punishment. The standards need not be complicated. Sharing measurement results with workers and supervisors is always desirable. Everyone likes to be a winner, and the whole team will work to improve the results when they realize that their company is dedicated to continuous improvement.

“Where’s the beef?”

A 1980s ad campaign for Wendy’s made this saying famous, but the application for warehousing is obvious. When a vendor or someone on your management team urges the purchase of new “high-tech” equipment, ask the question just the way the little old lady did in the television advertisement. When new equipment is considered, start by demanding to see a payback calculation that will readily justify the purchase. Do you *really need* a completely new storage or handling system, or could you receive similar results through better utilization of the things that are already in your warehouse, or by acquisition of practical tools rather than fancy toys.

KEN'S COMMENTS

Is The Wall Street View Valid?



We had the chance to hear some excellent profiles of the third-party logistics industry by representatives of two New York investment banking firms. It is always valuable for those who are close to the industry to get an outsider's view. At the same time, the view from outside may not always be totally accurate.

Our biggest problem with the Wall Street view is a tendency to place every company in the industry into pigeonholes, and there are four of these that are commonly listed. The comparison is made between asset-based and infor-

mation based companies. Similar distinctions are made between project oriented and transaction oriented firms. Some then create a grid with four boxes, and various companies are placed in each. In my opinion, many of the best firms in this industry have substantial strength in more than one of these pigeonholes. In fact there is no reason why a strong and versatile organization could not develop significant strengths in all four areas.

On the other hand, some of the conclusions from these analysts provide valuable insights, and here are a few that are worth noting:

- The dividing lines between transport modes and warehouses will continue to blur
- Third-party logistics consolidation will accelerate
- Outsourcing of logistics services will increase
- Reaching global coverage will remain a challenge
- Supply chain efficiency focus will intensify

An outsider's view is always useful, but we should never assume that it will be 100 percent accurate.

WAREHOUSING TIPS

Diversity and the 24/7 Schedule

At a time when an increasing number of warehouses are being required to operate around the clock and every day of the year, there is one condition which can be helpful. That is the growing diversity of our workforce. Consider these examples:

While a certain number of fundamentalist Christians may object to a schedule that requires working on Sunday, a growing number of employees of other faiths would be pleased to work on Sunday in exchange for having time off on other days of the week. While most people would have a problem with an assignment that requires working on Christmas Day, there are a few who would be willing to work on that day in exchange for time off on some other day that is important to them.

Some call this a "floating holiday" program. If your customers are demanding that your warehouse stay open on days when most people would like time off, search your workforce for people who would be willing to work those days in exchange for other days off.



3PL Predictions Are Right On Target

Early in the last decade, consultant Robert V. Delaney wrote an article on third-party services for this publication. At that time, he estimated the market size of the third-party logistics industry at \$10 billion, and he predicted that it could reach \$50 billion by the year 2000. Delaney's latest economic reporting, published in January 2001, indicates that the industry probably passed that number during the year 2000. Not many industries have increased fivefold in less than 10 years.

A Checklist For Buying Storage Rack

Editor's Note: This list was inspired by a presentation given by Daniel Clapp of Frazier Industrial Co.

- Determine the size and type of pallet or unit load to be placed in the storage rack
- 2 way pallet
- 4 way pallet
- Skid
- Slave pallet
- Box
- Unit load handled with clamps
- Unit load handled with Basiloid attachment
- Determine load weights for every item to be placed in the rack
- Determine necessary clearances, including overhanging load on pallets
- Describe types of handling equipment that will be used to load and unload storage racks
- Calculate the column size and spacing in both directions
- Consider any obstructions hanging from ceilings
- Find locations for fire hose drops and sprinkler shut off valves – Access to these must be maintained
- Find locations for gas and electric utility access points
- Consider seismic design requirements
- Verify that building permits are not required (they seldom are)
- Investigate relative merits of hot-rolled vs. cold-formed steel
- Compare vendor specifications to those published by ANSI (American National Standards Institute: www.ansi.org) and RMI (Rack Manufacturers Institute: www.mhia.org)

Warehousing Law, 2nd edition

By William H. Towle, copyright 2001 by International Warehouse Logistics Association, 433 pages, available from IWLA at their website.

This update of a work originally developed in 1988 is a welcome addition to warehousing literature. The author has served as general counsel to the Association for 25 years. He has compiled a unique and carefully researched summary of the legal aspects of third-party warehousing.

The new edition is longer than the old one. It includes one new chapter titled "Who is a Warehouseman?" that provides some useful definitions at a time when the role of the third-party warehouse has been blurred by new developments in supply chain and e-commerce.

Much of the new material is updating of case law. Since litigation between third-party operators and users is not diminishing, we continue to consider this book to be a unique and indispensable tool for those who need an authoritative legal reference.



Inventory Replenishment

By Pamela J. Davey, *Operations & Fulfillment*, March 2001, pg. 37.

The forgotten subject of inventory replacement is well handled in this article. When fast movers are grouped together in a forward pick area, each slot must be replenished when stock is running low. The simplest way to trigger replenishment is for the picker to tell his supervisor that the location is empty.

Although simple, this emergency replenishment method is reactive and inefficient. A better time for replenishment is when the inventory level falls below a preset minimum. This strategy is called min/max replenishment. The next challenge is to set up the SKUs and locations so that replacement strategies will work efficiently. Effective drawings and plain English make this article a very effective contribution to the field of warehousing.



Inventory Strategies For An e-Commerce World

Inventory Reduction Report, January 2001, pg. 1.

Based on proceedings at the international conference of American Production and Inventory Control Society, the article describes several strategies outlined by lecturers at this conference. The most valuable of these was the concept of Inventory Quality Ratio. Under this logic, inventory is divided into three groups:

- A: Items with future requirements
- B: Items with no future requirements but recent past usage
- C: Items with neither.

There is a serious effort to liquidate the C items.

Article 7 Needs Revision

By Ann Christopher, *Warehousing Management*, June 2000, pg. 19.

Of all the articles of the Uniform Commercial Code, which is law in 49 of our 50 states, the only one that has not undergone revision since its initial draft in the 1940s is Article 7. Yet that is the portion of the UCC that is most critical in defining liability for third-party warehouse operators. This year, a task force of the American Bar Association agreed that a thorough review of this article is needed.

One of many problems involves issues regarding e-commerce. For example, legal liability may be void if a physical receipt has not been issued. The depositor may claim that it was not aware of the applicability of liability limitations listed in section 7-204 of the UCC. The task force has identified approximately 20 issues under Article 7 that merit attention.

State legislatures in Ohio and Minnesota have already approved legislation expanding the definition of the warehouse receipt to include documents that are issued electronically.



Keeping The D's Out Of The ABC's

By Alan L. Milliken, *APICS – The Performance Advantage*, March 2001, pg. 57.

Most warehouse managers are familiar with "ABC" methodology, sometimes referred to as the 80/20 rule or Pareto's law. However, this frequently neglects attention to the "D" items. The author says that D stands for dysfunctional, and that these items should be removed before applying ABC analysis. He groups the D items into these categories:

- Inactive or obsolete
- Active but very slow-moving
- Less than prime quality

The obsolete products should be highlighted in an inventory report that lists these items in descending order in terms of days since the last sale and should include reference to the last customer who purchased the product. A report on slow-moving items should include the number of customers taking the product, which can help in assessing the risks of carrying these items. Less than prime quality products may be available for special users, or they may be scrapped.



Battle of Bugs Goes Global

By Clyde E. Witt, *Material Handling Management*, March 2001, pg. 26.

A bacterial infestation of wood pallets is causing worldwide concern. Known as the pinewood nematode, the infestation lives in wood and is spread by a beetle. The infestation occurs not only in pallets, but also the crates, spools or any other wood structures made of coniferous material.