

GROCERY HEADQUARTERS

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Lighten the load: fast turnaround of merchandise, safety and energy savings are the driving forces behind changes on the loading dock.

By William Epmeier

THE LOADING DOCK IS ONE OF THOSE AREAS OF SUPERMARKET OPERATIONS THAT FLIES UNDER THE RADAR WHEN THINGS ARE WORKING PERFECTLY but can throw the supply chain into complete chaos when things break down. As a result, retailers are always on the prowl for ways to keep the goods flowing to the shelves while controlling transportation and labor costs.

“Everyone wants something now,” explains J.B. Mayes, manager of target marketing for Yale Materials Handling, based in Greenville, N.C. The drive to reduce the amount of time it takes to move product from the manufacturer to the store shelf is particularly intense at the loading dock, he says. Today, more and more warehouses are flow-through, meaning that most merchandise is moved in one side and out the other, rather than being stored. Often, this happens in the same shift. Within this short time frame, merchandise received from the manufacturer has to be sorted, put away, picked and then consolidated on the opposite side of the distribution center, where it is finally loaded onto trailers and sent out to stores.

One result of all this frenetic activity is that loading docks have grown in size. It used to be that docks were 30 to 40 feet wide (from the door in), but today, many docks are up to 60 feet in width, explains Ed Hess, national marketing principal for distribution centers for Jacobs Carter Burgess, a design, engineering and consulting firm. The reason for the growth in size: to accommodate the amount of merchandise that is staged on loading docks, not for put-away, but for immediate transfer across the center to the outbound docks. This cross docking volume has increased tremendously, as chains push to handle merchandise as few times as possible and also to reduce inventory hold time.

With the increased emphasis on speed at distribution centers in recent years, the opportunity for injuries and accidents has also grown. As a result, retailers have been emphasizing safety prevention and ergonomics, to reduce repetitive stress injuries to workers. More recently, with

energy prices rising, efforts to reduce overall warehouse building costs have grown in importance. Vendors have responded with a variety of new equipment and technologies.

Here is a look at some of the recent advances in various areas:

* Fork lifts: As the workhorse of the distribution center, fork lifts have been the focus of incremental changes in recent years. Alternating current electrical vehicles have taken over the market from direct-current and LPG-powered internal combustion engines, mainly because they provide better operational performance and require less maintenance. Joy-sticks and push buttons have replaced steering wheels and hydraulic levers to reduce worker fatigue. Better seat suspension and cushioned floor plates for stand-up models make for more comfort and fewer stress injuries to drivers.

Mayes of Yale says his company has been attentive to making small changes that make it easier for fork-lift operators to be more productive. For example, because so much of the work on loading docks involve driving in reverse, Yale has developed driver seats that swivel and a handle that steadies the driver as he looks over his shoulder. The handle also has a built-in push-button horn. Yale has also made changes to its transmission to prevent wheel spinning, which increases tire wear, when fork lifts accelerate.

* Dock openings: Openings have gotten taller to allow trucks to back up and open doors directly into the loading area. Before, drivers had to stop short of the dock and open trailer doors because there was not enough clearance on the dock to open doors. Also, the top level of pallets inside a trailer often had to be unloaded by hand because fork lifts did not have clearance to move the pallet through the opening. Today, explains Walter Swietlik, customer service manager for Rite Hite Corp., a Milwaukee, Wis.-based manufacturer of material handling equipment, doors on dry

loading docks will roll up as high as 10 feet.

* Dock doors: Roll-up dock doors are subject to frequent damage if they are bumped. The result is that door manufacturers, such as 4 Front Engineered Solutions, developed "impactable" doors with panels that pop out when hit with any force. This prevents damage to the panels or to the tracks they roll on. Rite Hite sells a similar low-maintenance door that will flex up to 12 inches if it is hit by a fork lift. Another company, DL Manufacturing, based in North Syracuse, N.Y., has developed a door that runs in tracks, not on rollers, but on plastic brushes. If the door is hit, says Joe Markert, vice-president of operations, the brushes pop out of the tracks, but are easily put back in. Another advantage to the impactable door panel systems is that if a panel is damaged, just the panel, not the whole door, can be replaced.

* Control package: Various activities on the loading dock, until recently, were wired and operated independently. The trend is to push-button control packages that combine the various activities into a single control panel. Steve Sprunger, vice president for sales and marketing at Carrollton, Texas-based 4 Front, explains that his firm's push-button system requires operators to follow a rigid sequence that locks a mechanical arm around the bumper of the trailer to restrain it; opens the overhead door; deploys the dock leveler; inflates the dock seal around the door opening; and activates the dock lights.

Once the truck restraint is in place, the outside lights turn red to warn the driver not to pull away. The inside lights, meanwhile, flash red to alert dock workers when the truck restraint is not in place and green when the trailer is available to enter. Sequencing these activities in a single control panel reduces damage to equipment and injury, Sprunger says. For example, workers who drive a fork lift into a trailer before it is restrained risk injury, because the trailer can separate from the loading dock and cause the forklift to fall into the gap.

* Dock levelers: Traditional dock levelers are anchored in a pit that is built on the end of the loading dock and is open to the outside. When the dock leveler is not in use a metal lip hangs over the side of the dock and closes off the pit from the outside. When the leveler is activated, the lip is inserted into the open trailer and the ramp is leveled to allow passage of a fork lift into the trailer to pick up or drop off pallets of merchandise. More recently, vertical dock levelers have been gaining favor. These units require only a 10-to 12-inch deep shelf at the front of the dock for anchoring. The vertical levelers store upright, inside the dock door, so they provide a safety barrier to prevent fork lifts from driving through the doors and off the end of the loading dock.

The vertical levelers also provide a better energy seal, because the dock door can close all the way down to the shelf. Because there is no real pit, there are also fewer

problems with rodents, which are attracted by food that falls under a pit-style dock leveler. Levelers have also been redesigned to reduce gaps and drops so that fork lift operators are not jarred when they drive over the levelers.

* Dock seals: As energy costs have increased, more attention is being given to dock seals and door insulations. Newer materials are being used and manufacturers are offering inflatable seals that deploy around openings once the trailer is secured. Most dock seals are for the top and sides, but some firms have introduced seals underneath pit-style dock levelers. Insulating this area, which is open to the outside when levelers are deployed, can save up to \$1,000 annually in energy on a refrigerated dock, according to Markert of DL Manufacturing. Also gaining in popularity are canopies that sit over the tops of trailers and redirect rain run-off that can cause slippery conditions on the loading dock.

Shifting Configurations

In recent years, chains and wholesalers have settled on a distribution center model with two sets of loading docks to support cross-docking strategies that call for product to flow through the warehouse and out to the stores quickly, often during the same shift.

According to Frank Dell, president of Dellmart & Co, a Stamford, Conn.-based consulting company, this model has just about run its course and chains need to consider moving outside their comfort zone.

For one thing, there is still too much labor cost bound up in supermarket warehouse operations, Dell says and most companies still lag behind Wal-mart in productivity. For example, merchandise is touched up to five times in a grocery warehouse, compared to just twice at Wal-mart distribution centers.

As full-pallet cross-docked items and picked items accumulate on the out-bound loading dock, the chance for loading errors rises, Dell says.

Wal-mart takes a different approach. Wal-mart distribution centers are highly mechanized, using conveyors and automated sorting to reduce labor. Full-pallet shipments are cross docked from receiving directly into the trailer heading to a particular store.

Unlike the typical supermarket warehouse, Wal-mart dedicates shipping docks to individual stores. This means that merchandise does not need to accumulate on a loading dock for later loading into trailers; it is loaded directly into the truck as it is received, thus eliminating two labor steps.

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