Perspectives in Productivity
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GROSS & ASSOCIATES
FOR MANUFACTURING, WAREHOUSING, & DISTRIBUTION PROFESSIONALS

RFID Gaining Critical Mass

Critical mass is defined as a mass slightly greater than that necessary to sustain a chain reaction. With Wal-Mart and the Department of Defense requiring their vendors to comply with RFID tagging requirements, the technology will finally gain enough users generating enough transactions to generate a "supply chain reaction."

The combination of mass market chains and DOD requirements for bar codes on vendor shipments in the late '80's and early '90's lead to their universal use and lowered their costs. This same private and public combination will drive RFID technology applications and lead to economies of scale.

Other signs that RFID technology and the related infrastructure are becoming integral to general commerce include:

- WMS vendors are preparing "bolt-ons" to their systems to enable RFID compliance
- Virginia Tech's Center for Unit load design is partnering with an RFID technology developer to research and test the use of radio tags on pallets
- Auto ID user groups are meeting to collaborate on how to adapt the new technology
- Uses of the technology outside the supply chain such as McCarren International Airport's five year contract to purchase 100 million RFID tags for baggage security process tracking and validation
- The widespread use of the technology for vehicle identification and access control
- The cost of tags has come down from a high of $5 three years ago, to a range of $0.50 to $1.00 (some mass produced, limited function tags are less)
- McKinsey and the Harvard Business School are starting to project who the ultimate winners and losers will be in the process of implementing the technology

Wal-Mart plans to test the RFID technology in January of 2005 in its three distribution centers and 150 stores in Texas. The chain plans to bring about 100 additional distribution centers and 3,000 stores on line by the end of 2005. Wal-Mart has asked its top 100 suppliers to present plans for compliance by February of 2004.

The Department of Defense will require all suppliers to comply with their RFID tag requirements by January of 2005. Pilot projects will be started in January 2004. A final version of the requirements will be issued in July 2004.

The "forced" fast track implementation and the lack of universally accepted standards will inevitably lead to companies spending significant time, effort and money trying to comply with an imposed requirement. There is a high probability that requirements will change rapidly. Many companies will guess wrong on parts of their RFID compliance strategies and pay significant costs to recover.

Given the acceleration curve for the implementation of the technology, companies need to start planning for when and how they will implement RFID. Do not get caught short on this requirement because your competition is already planning to take your business away when you can't comply.

Fourteen Hours Of Service Rule For Drivers Will Impact For Hire Carriers And Private Fleets

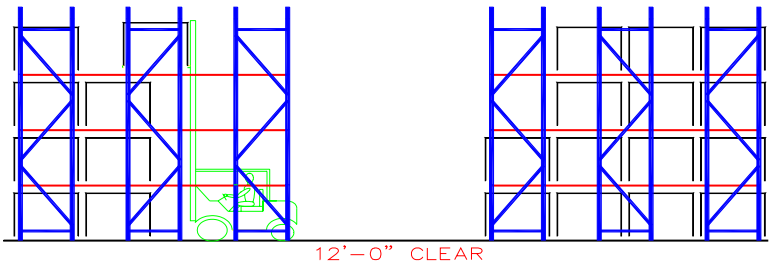
Starting January 4, 2004, new hours of service rules go into effect. These rules state that the clock starts when a driver starts working and limits the number of hours to 14. The driver must then break for 10 hours before starting to drive again. The intent of this rule is to improve highway safety by forcing tired truck operators to get out from behind the wheel.

Fleets that encounter significant time loading/unloading; waiting time; and traffic delays will be affected the most. This new rule will probably encourage more drop trailer programs.

Companies will have to review their driver compensation programs. Drivers that are compensated by the mile will have their earnings reduced, further discouraging qualified people from wanting to be drivers.

ABCs of Warehousing – Second In A Series Drive-In And Drive-Thru Rack

When greater density than that offered by double deep is called for but floor stacks don't work because the product is not stackable, drive-in and drive-thru rack may be alternatives. Structurally, drive-in and drive-thru rack are similar. They consist of uprights that run the depth of a storage lane.



The uprights support angle bars that horizontally run the depth of the storage lane. The angle bars and uprights are spaced at a distance that allows the lift truck to drive between the angle bars but close enough so that the outside edges of the pallet rests on the bars. Usually the bottom level is on the floor, not supported by the uprights. With drive-thru racks, the uprights are tied together at the top, above the top of the load height, to provide the necessary structural stability. Drive-in rack have additional structural support provided by a framework that runs perpendicular to the uprights at an appropriate lane depth. The framework of drive-in rack makes that design a stronger structure. The only other difference in usage between drive-in and drive-thru is that drive-in has a fixed depth because to the framework, drive-thru allows some flexibility in the dividing line between lanes that are accessible from the aisle on each side of the rack when they are used as drive-in racks. As with all rack types, drive-in and drive-thru racks have advantages and limitations. The characteristics of the two are:

- Non-stackable pallets can be stored densely. The ability to store as high as the building allows may provide a significantly greater density then can be achieved with floor stackable material that has a stacking height limitation due to bottom crushing.

- The cost of storage per pallet is higher than with either selective or double deep racking. Depending on the weight of the product stored, quantity of rack ordered and structural design factors, drive-in rack cost will range between $45 and $90 per pallet. The supports for drive-thru rack are above the top of the load, and therefore require more steel and the cost per pallet will be $5 to $10 higher than drive-in rack.

- All clearances need to be checked particularly for outrigger widths on reach trucks and overhead guards on counterbalanced trucks.

Limitations that result from the rack design are important:

- Because a right angle turn into the storage lane is required, only conventional lift trucks are appropriate.

- High pallets per SKU inventories are required. The design of the system means that only the front pallet stack is accessible. Therefore it is a practical requirement that only one SKU be stored in a lane.

- The upright structure usually increases the center-to-center pallet spacing vs. floor stacks.

- Good pallets are necessary. The pallets are supported only on the outside stringers. The weight of the load is actually supported by the cross member of the pallet, not the heavier stringers.

- It is a LIFO (last in, first out) system. The last pallet placed in the lane must be the first pallet removed.

Gross & Associates Staff News

Bob Silverman and Geoff Sisko presented a two day seminar for WERC titled "Maximizing Warehouse Space: The Key to Productivity on November 5th and 6th in Cleveland, Ohio. Their next presentation of this seminar will be on March 10th and 11th near St. Louis. Visit www.werc.org for more information.

Bob Silverman served as the program chair and Don Derewecki spoke at the 2003 Council of Logistics Management Annual Conference in Chicago.

Don Derewecki and Emile Lemay of Lantis Eyewear collaborated on a case study published in a supply chain book released 8/29/03 by St. Lucie Press titled *Supply Chain Project Management: A Structured Collaborative and Measurable Approach.*

Bob Silverman spoke at the National Association of Industrial and Office Properties (naiop) Annual Conference in Boston on October 15th, 2003. Bob's topic was Trends in Material Handling and Distribution Operations.

Jeff and Bonnie Brown's daughter Caelen was born August 11th, 2003.