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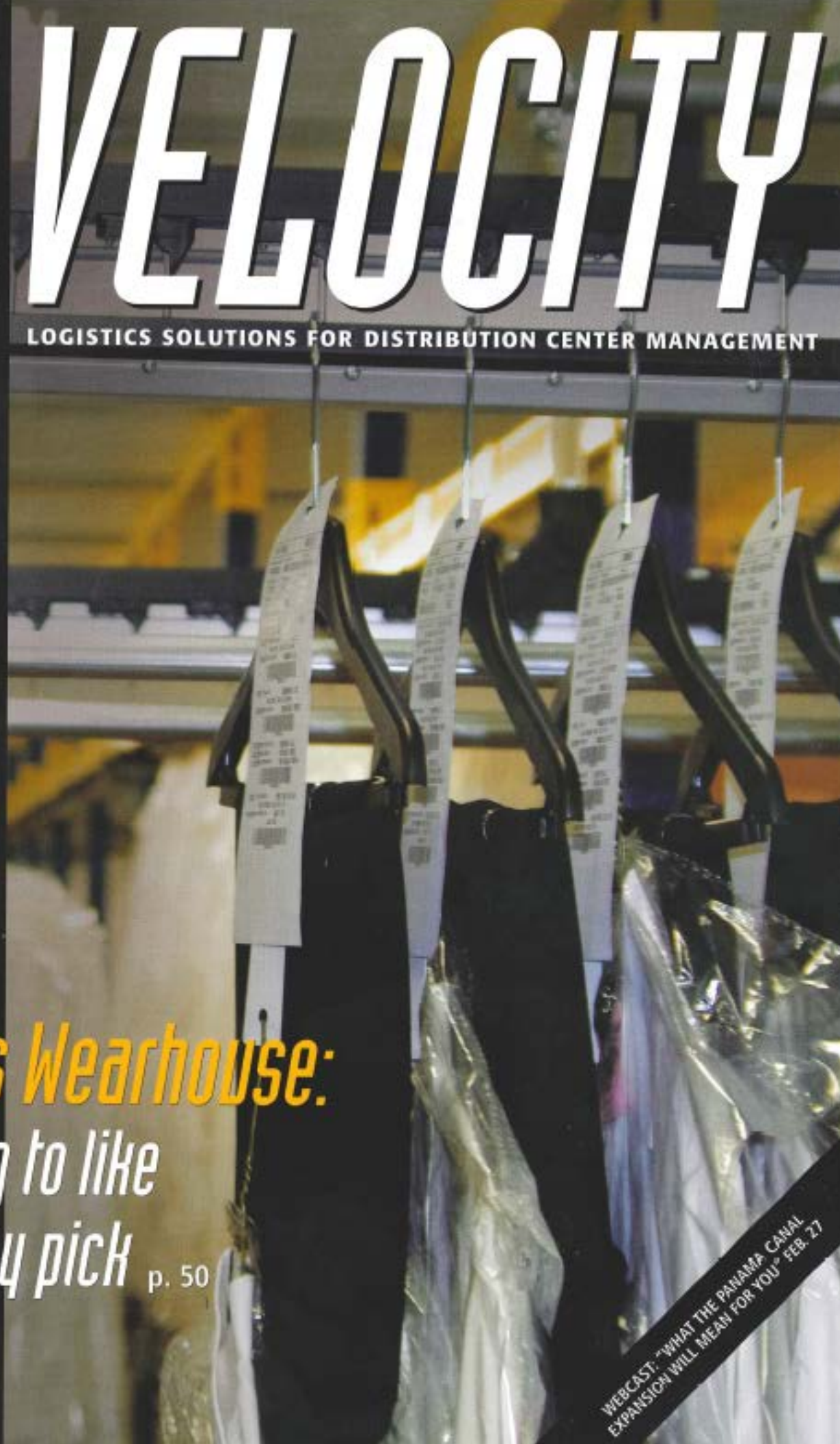

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BY DAVID MALONEY, SENIOR EDITOR

CONVEYORS

You're going to like the way they pick

In the tuxedo rental business, there's no room for error. At The Men's Wearhouse, an array of specialized conveyors ensure order fulfillment is fast and accurate.

HOW DO YOU COPE WITH THE CHALLENGE OF ASSEMbling up to 50,000 customized tuxedo rental orders a week? That was the question facing managers at a DC run by The Men's Wearhouse in Pittston, Pa. During peak season, the facility, which serves 193 stores in the Northeast and Midwest, processes a flood of returned garments, which all have to be cleaned, inspected, and stored, while workers simultaneously assemble thousands of new customer orders. And, of course, all of this has to be done quickly and without any errors.

Founded in 1973, The Men's Wearhouse is one of the nation's largest men's apparel retailers, selling brand name and private-label suits, sport coats, shirts, and accessories. The company also is a leading renter of formal wear. Orders for the company's 1,200-plus retail stores are primarily filled from a facility in Houston, while six other buildings, including the Pittston facility, handle rentals. Those six buildings receive returned rental tuxes from the stores. They then clean and prepare the garments for picking into tux assemblies to fill new customer orders—or what The Men's Wearhouse calls "reservations." The rental business experiences its peak demand in the spring, when it provides tuxedos for proms and weddings.

For the Pittston DC, the answer to keeping up with the workload during peak season lay in an automated system that features an array of specialized conveyors. The system installed in the 296,000-square-foot facility was designed by W&H Systems, a Carlstadt, N.J.-based warehouse design and engineering consulting firm. Most of the conveyors are designed to transport garments on hangers, known in the trade as "GOH." The mix includes screw units, hanging conveyors, and monorails, along with some flatbed belt and roller conveyors.

SMOOTH-FLOWING RETURNS

The process begins with stores returning their rented tuxes in Gaylord boxes, pallet-sized corrugated cartons used to transport bulk items. Upon the boxes' receipt at the Pittston facility, workers

remove the garments from the boxes and separate them by type—pants, coats, shirts, vests, and so on. The workers then place the loose garments onto a belt conveyor supplied by FKI (now Intelligrated). The conveyor transports the garments to a receiving station, where an operator removes each item and scans the permanent bar code sewn onto the garment. This logs the garment back in as a receipt.

After they're logged in, garments are deposited into hampers that are wheeled to the facility's in-house dry cleaning department. Pants, vests, and coats are dry cleaned, while shirts are wet washed. The cleaned garments are pressed and hung on hangers. Plastic bags are placed over shirts and white tuxedos to keep them clean as they make their way through the warehouse. From the cleaning area, the hanging garments are transported to a collection point via a screw conveyor, which resembles a large shaft with grooves like a screw. The hangers ride down the spiral grooves as the shaft turns.

Once the garments arrive in the collection area, they're placed onto trolleys that are wheeled to scan, measure, and label stations. At these stations, an operator removes each garment and scans its bar code. As the code is scanned, information about the garment pops up on a computer screen. The associate then measures the garment to see if the store made any alterations, such as hemming the pants, and compares the measurements with the information on the screen. Any changes are noted. Next, a large label is printed that contains size specifications and other information about the garment. This is attached to the hanger so that workers can easily identify the article later.

The garments are next placed onto a hanging garment sorter supplied by SDI Group, a manufacturer of sorting and conveying systems. This device, which can handle 5,600 garments an hour, sorts the garments to 44 hanging destinations, according to garment type and putaway aisle. Once the items have been sorted, an operator hangs the garments onto trolleys, which are then picked up by a Daifuku/Jervis B. Webb-manufactured Unibilt monorail conveyor. The monorail carries each trolley through a three-level module (the hanging garment sorter is located on the module's bottom level) to a predetermined putaway location. The trolley is taken off and rolled into a position for putaway. The garments are stored in the module by type, with pants in one area, shirts in another, and so forth.

A PERFECT FIT

In the meantime, other workers are busy assembling incoming orders. Customers are measured for tuxedos at The Men's Wearhouse stores. The rental order information is then fed to the DC for fulfillment, where it becomes a reservation. The orders in Pittston are accumulated and processed in waves using pick tickets that specify the size, color, and style of each item in a reservation. Articles are added to the order as it travels through a three-story tower, or picking module, until the complete package is assembled.

The pants, located on the third level, are picked first. There, a worker selects the proper garment from the storage racks and places the pick ticket on its hanger. The pants are then placed onto a powered hanging conveyor manufactured by Pep Conveyor Systems for transport through the pants area. From there, they are transferred to another Unibilt monorail that takes them down to the second level. On arrival, they transfer to a Pep conveyor to travel through that level, where employees read the pick tickets and add shirts and then vests to the order.

At the end of the module, orders go back on the Unibilt monorail for transport to the bottom level. There, the reservation is hung on a rail and slid along through coat selection. A garment bag is added to the hanger, and shoes are placed into a pocket on the garment bag.

At this point, the fully assembled tux is ready to leave the picking module. It is then slid on the rail to a quality control station, where a worker verifies the order and scans the bar code on each item to "assign" it to the finished tuxedo. A shipping label is printed and placed into the clear pocket of the garment bag. All of the items are then put into the bag, which is zipped closed.

TUXEDO JUNCTION

About 20 percent of the garments processed at Pittston are rush orders that require expedited handling. These tuxes are slid manually on a rail from the quality control area to the small-parcel area for packing. At packing stations, six tuxedos at a time are placed into a flat carton, which is sealed and deposited onto roller and belt conveyors that feed a small push sorter. The sorter diverts the cartons to four ship stations designated for parcel pickup.

The remaining 80 percent of the garments are hung onto trolleys that are wheeled from quality control to a staging area, where the tuxes are sorted by store. The tuxes are then placed onto a shipping trolley designated for that store and the paper reservation for that tux is added to the trolley. The trolley is pushed to a door for loading onto 53-foot trailers. The trailers, which are part of the Men's Wearhouse fleet, have rails built into the trailer beds to allow the trolleys to be wheeled directly onboard. Trailers are sent to consolidation hubs, where the trolleys are removed, routed, and wheeled onto 26-foot company-owned delivery trucks for store delivery.

So how has the new conveyor system worked out? Quite well, by all accounts. Since moving to an automated system for processing tuxedo rentals, The Men's Wearhouse has been assembling its tux orders more efficiently and with a high degree of accuracy. "The big thing was defining the criteria. W&H did a very good job of that," says Andrew White, senior director of engineering at The Men's Wearhouse. "There were no surprises once we got to implementing the system."

You might say these systems are well suited to the retailer's needs. □