

# PRODUCTIVITY ACHIEVEMENT AWARDS

**M**odern's annual Productivity Achievement Awards honor three companies that have made outstanding strides in improving their operations through materials handling and related information systems. This year's winners were chosen from more than 20 candidates by Modern's Editorial Advisory Board. They were judged for their ability to deliver top-level customer service, respond rapidly to changing conditions, deliver orders that meet customer requirements, and improve their operations. This year's winners are:



## **MANUFACTURING**

Cummins Engine Co.  
Jamestown, N.Y.

## **WAREHOUSING**

Intertape Polymer Group  
Danville, Va.

## **DISTRIBUTION**

Elizabeth Arden Inc.  
Roanoke, Va.

PHOTO BY DAVE BRADLEY



**MODERN**  
special section

**WAREHOUSING**

# Intertape: Less is more

The packaging products supplier raised inventory accuracy to 99.996% and tripled throughput without increasing labor.

**N**OT LONG AGO, packaging products supplier Intertape was clearly at a crossroads.

Business was good and getting better. But it was also changing. Traditionally, the \$650 million a year manufacturer sold its tape, plastic packaging and woven materials primarily to industrial distributors. Then it started to count retailers, including Wal-Mart, among its customers.

That meant shipments from Intertape's five regional distribution centers were quite different. Full pallet loads and truckload shipments once dominated. But as retail orders increased, so did the variety and frequency of shipments as order sizes declined.

That new mix required Intertape to rethink not only its distribution network but also how orders are processed in a DC.

Today, the company has a new 200,000 square foot DC just across the parking lot from its largest manufacturing plant in Danville, Va. This facility replaces a smaller DC that was in Danville, as well as regional centers in Chicago and Atlanta. And the achievements just six months after startup are impressive, says Jim Jackson, chief information officer.

To begin, throughput has tripled to 30–50 truckloads a day without an increase in head count in Danville. Only 32 people work the two-shift, seven-day-a-week operation. Overall inventory levels have decreased with the consolidation. Meanwhile, inventory accuracy has increased from a low of 70% five years ago to 99.996% today. All of which earned the facility *Modern Materials Handling's* Productivity Achievement Award for Warehousing.

**" All of our gains are from tight control of resources, activities, orders and inventory with WMS."**

— Jim Jackson, chief information officer

## WAREHOUSING

### productivity award

#### WMS creates efficiencies

Beyond the efficiencies gained from DC consolidation, Jackson attributes all of the operational improvements to the warehouse management system (WMS) at Danville. "All of our gains are from tight control of resources, activities, orders and inventory with the WMS," he says.



Under the direction of the WMS, a lift truck driver picks a pallet load from storage.

The WMS manages warehouse activities as well as inventory and order processing. Advanced shipment notices (ASNs) let the WMS know what will arrive and when. Receipts are processed through 13 dock doors.

All inventory carries bar code labels from receipt through to final shipment. Wireless terminals convey information rapidly to workers throughout the DC. Load movement is with a fleet of lift trucks from pallet jacks to turret trucks and orderpickers.

Inventory storage is determined by movement velocity: the fastest movers for case picking are located in pallet flow rack (with push-back rack above for reserve storage); highest volume pallets store full boxes in pallet floor storage area; and the

balance of pallet loads are stored in pallet rack.

In its first year of operation, the Danville DC is expected to ship between 175 and 200 million pounds of product that comes from 10 Intertape manufacturing sites around the country. But the majority of product is from the manufacturing facility across the parking lot.

Inventory management at Danville begins at the manufacturing site. As product comes off the extrusion lines and is packed in cases and palletized, a bar code label identifies the load. That data is then included in the ASN sent to the DC. After receipts are reconciled against the ASN, the WMS is updated and the inventory made available to fill orders immediately if necessary. Most of the time, however, inventory is moved to storage.

Throughout each shift, the WMS manages activities in the DC based on the shipment schedule it receives from Intertape's order management system. The majority of orders are shipped the same day as received, with most others shipped out through the facility's 17 dock doors by the next day. The WMS creates picking waves and sets priorities by wave and by pick ticket within a wave. It also coordinates order consolidation in lanes by the shipping docks.

"We've gotten much better at consolidating loads within the DC to customer timetables," says Ed Nugent, warehouse director.

#### Balancing workloads

The WMS also balances workloads, allowing the company to utilize lift trucks with wireless terminals. Now

drivers receive instructions directly from the WMS immediately after completing a task and without returning to a home base. "The time that lift trucks are moving with loads rather than empty has increased significantly," says Nugent.

That workload balancing is going to become increasingly important, says Jackson, as the company sees its case picks increase for its retail customers. Right now, he says, it's a 50/50 mix of case/pallet picks.

Case picks are made from flow rack. Intertape also deals with increasing case picks with what the company calls pallet strips. When multiple orders in a wave require the same stock keeping unit (SKU), lift truck drivers are instructed by the WMS to pick a full pallet and bring it to the consolidation area. There, workers manually strip off individual cases for specific orders staged in the lanes.

Jackson and Nugent expect the DC will continually show performance improvements as use of the systems becomes more refined. But so far, they are most pleased with the facility's ability to handle higher throughput as it improves customer responsiveness.

### System Snapshot

#### WAREHOUSE MANAGEMENT SYSTEM:

Foxfire Technologies, 678-445-7763,  
www.foxfiretechnologies.com

#### TURRET TRUCKS AND RIDER PALLET

JACKS: Crown, 419-629-2311,  
www.crown.com

#### COUNTERBALANCED TRUCKS:

Yale, 800-233-9253, www.yale.com

#### PALLET RACK, CASE FLOW RACK, PUSHBACK RACK: Material Handling

Technologies, 800-779-2475,  
www.materialhandlingtech.com

#### WIRELESS TERMINALS AND

SCANNERS: Intermec, 800-347-2636,  
www.intermec.com

#### AUTOMATIC STRETCH WRAP MACHINES:

Wulftec, 770-421-9020, www.wulftec.com

#### SYSTEM DESIGN: Garvey & Associates/

SIMS, 732-605-1651