



American Eagle reinvents retail

The retailer's multi-use DC outfits store and direct-to-consumer deliveries for three clothing brands.

By Bob Trebilcock, Editor at Large

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AMERICAN EAGLE OUTFITTERS HAS LONG BEEN A FASHION TRENDSETTER. With a new 552,000 square foot multi-use distribution center, opened last May adjacent to an existing 400,000 square foot facility in Ottawa, Kan., American Eagle is something of a distribution trendsetter as well.

That's because American Eagle is taking back control of processes in the new DC that it once outsourced to a third-party logistics provider (3PL), including American Eagle Direct, the retailer's direct-to-consumer catalog

and Web business.

In fact, the new facility represents a model solution to one of the challenges facing many retailers: How to best stock and replenish retail stores, including cross-

PHOTOGRAPHY BY SCOTT HEPLER



Michael Fostyk, senior vice president of logistics, American Eagle Outfitters.

dock operations, and service consumers who are making purchases through multiple sales channels, including catalog and the Web.

The challenges increase exponentially for a retailer like American Eagle, which has multiple store brands in its portfolio. In addition to filling American Eagle orders, for instance, the Ottawa DC also manages

store replenishment and direct-to-consumer orders for Martin + Osa, a sportswear concept targeting 25- to 40-year-olds, and Aerie, a collection of clothing for girls currently sold in American Eagle stores that is going out on its own.

American Eagle found a way to balance those competing interests in a facility that can handle 15,000 stock keeping units (SKUs) and up to 100,000 items daily.

Three components work together to make this possible under one roof.

1) High-speed receiving and shipping sortation systems, (Dematic, 877-725-7500, www.dematic.us), including sliding shoe, cross-belt and tilt tray sorters, connect 7 miles of conveyor and route cartons, totes and pieces to the right pallet-building, packaging and shipping areas. A conveyor bridge connects the new DC to the adjacent DC, allowing the two facilities to share inventory, and even workers, if needed.

2) Multiple picking methodologies, including RF-directed, voice-directed and pick-to-light picking technologies, are used in pick modules.

3) Integrated warehouse management and warehouse control software systems were designed to manage orders and inventory, control the automated materials handling systems and balance the workload throughout the building. "If you have three items for an order coming from different areas, the system synchronizes the delivery so that all three items arrive at the packing station at the same time," says Michael Fostyk, senior vice president of logistics.

The new distribution center is not only flexible, it is designed to grow with the brands. Or, as American Eagle tries out new concepts. "We have the wherewithal to push out the walls in the future," says Fostyk.

Supporting growth

Over the past 30 years, American Eagle has become one of the best-known brands servicing the 15- to 25-year-old consumer, with 900 stores and annual sales in excess of \$2.7 billion. In addition to the Ottawa facilities, the company operates distribution centers in Warrendale, Pa., as well as Mississauga, Ontario, to handle Canadian stores.

Like many of its competitors, American Eagle originally outsourced its direct-to-consumer business to a 3PL. But as the company considered new concepts for retail stores, it made more sense strategically to bring

all its processes under one roof.

“When you’re working with a 3PL, they’re trying to engineer down to a generic solution that works for all of their customers,” Fostyk explains. “We wanted the option to do special things as our portfolio of brands grows. Since distribution is one of our core competencies, we believe that’s done best if we do it ourselves.”

Systems and solutions

Developing a multi-use facility required a different mindset. “We wanted to leverage receiving, shipping and inventory storage with three different materials handling processes for three different retail concepts,” says Fostyk. “In addition, we wanted the ability to cross-dock directly to stores and the option of leveraging some of the transportation being done in the other building.”

For example, multi-level, rack-supported pick modules were set up for each of the business units. Each module



Individual cartons are automatically delivered for putaway in one of the high bay storage areas.

has a conveyor running down the middle. While handheld and ring-scanning RF units are being used throughout the facility, voice-directed picking is being

used in the American Eagle and Aerie modules. Pick-to-light is being used in other areas of the facility, including the Martin + Osa area.

“We chose the picking technology based on the working environment,” Fostyk explains. “Voice, which is new to us, works well when you’re dealing with smaller areas and in a confined environment. That made it ideal for the Aerie solution, which is still a growing business for us. We’re using traditional RF scanning in our direct-to-consumer business.”

One of the big challenges was how to balance the workload across three different concepts. “One of the things you find is that peak functions don’t coincide across the three areas at the same time,” says Fostyk. “There are times during the day, and during the season, when one brand is busier than the other.”

For that reason, American Eagle took a different approach to how it integrates warehouse management (WMS) and warehouse control (WCS) functions.

In many facilities, the WMS not only manages inventory, it also directs operators on the floor. In this instance, the WMS manages inventory and the WCS



Piece picking is directed by pick-to-light, voice, or, in this case, to an associate using a ring scanner that enables hands-free picking.

We have created the first waveless dynamic picking system in a direct-to-consumer operation.

manages order picking. The system not only manages the automated materials handling equipment, it also monitors picking and sortation activities. That allows the system to dynamically reallocate labor from one area of the facility to another according to labor needs.

“One of the unique features is that we believe we have created the first waveless dynamic picking system in a direct-to-consumer operation for a specialty retailer,” says Fostyk. “Instead of queuing up orders into a wave based on what was received overnight, we’re able to prioritize orders in the picking pool based on delivery dates in real-time as those orders are received over the Internet.”



Some cartons are automatically crossdocked from the receiving dock to the shipping dock for store replenishment.



A high reach lift truck is used to put away pallets in one of the high bay storage areas.

Continual improvement

To make that possible, American Eagle required a flexible workforce. For that reason, one of the challenges to bringing the new facility online was hiring and training 300 new people who could work in all areas of the facility, including the voice-directed picking areas.

“Training has been a key to this,” says Fostyk. “It gives us the flexibility in a pinch to move people from one area to another, even between buildings.”

While all three operations are now up and running, the system is not complete. In the coming months, American Eagle plans to install a carousel for voice-directed storage and order picking for jewelry. What’s more, Fostyk adds, American Eagle will continue to look for ways to improve operations across its distribution network.

“We’re still trying new strategies to find out what works best,” says Fostyk. “That’s an art, not a science.”

Three distribution centers in one

In American Eagle's new distribution center, software and automation systems manage inventory and picking across three different retail brands.

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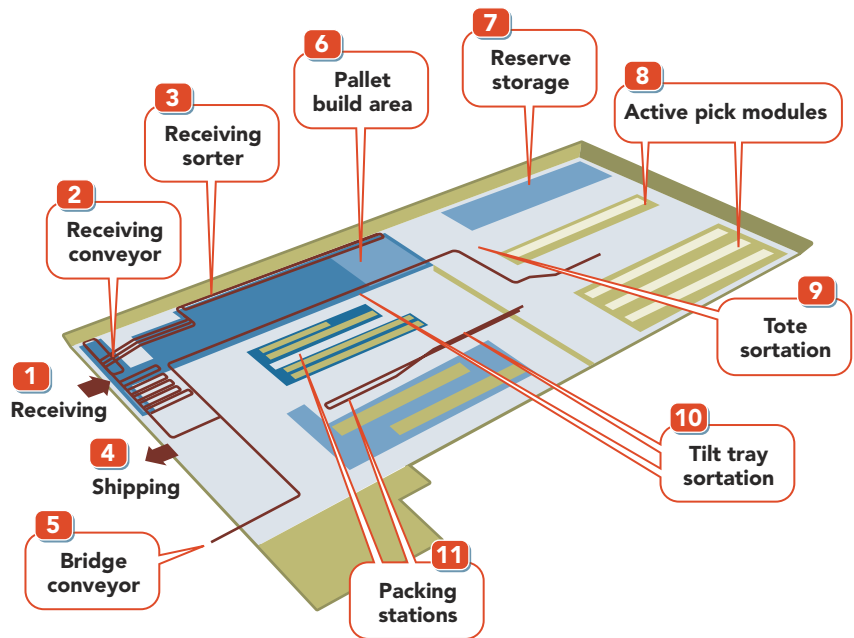
Successfully managing multiple brands and multiple processes under one roof begins before inventory even arrives at the distribution center. American Eagle receives an advanced shipping notice (ASN) from its suppliers detailing all of the cases in a shipment before any product is received. That allows the system to pre-allocate how the inventory will be handled and stored prior to arrival.

Merchandise for all three store brands (American Eagle, Martin + Osa, Aerie) arrives at a common receiving area 1. Operators place floor-loaded cases onto a receiving conveyor 2 that then travels overhead to the receiving sorter 3. Bar codes are automatically scanned to determine how the cartons will be sorted.

Crossdock and putaway

Approximately 70% of the product received at the DC goes directly to a store. Depending on the store location, those cartons are crossdocked to a shipping area 4 shared by all three brands; cartons destined for stores in Kansas travel across the bridge conveyor 5 into the adjacent building where they are combined with other orders. Crossdocked material can be shipped out in as little as an hour.

The remaining cartons are sorted to a pallet-build area 6. There, operators scan carton labels and build pallets by brand for putaway in reserve storage 7 and in the high-bay active picking areas 8. Pallets are delivered to



American Eagle Outfitters Ottawa, Kansas

FACILITY SIZE: 552,000 square feet
EMPLOYEES: 300 (1.5 shifts, 5 days)
SKUs: American Eagle—11,000
 Aerie—4,000 to 5,000
 Martin + Osa—4,000 to 5,000
ORDER VOLUME: 250,000 customer orders per week

pallet racks by lift truck. In storage areas, operators, rather than the WMS, determine the storage location based on which racks are empty.

Picking

Once an operator scans a storage location, the inventory is available for picking, which is directed by the warehouse control system. Each business unit has a 600-foot multi-level, rack-supported pick module **8** for its products. Depending on the business unit, orders

are delivered to the operator on an RF scanning device; over a voice headset; or via digital displays in front of picking bins in the pick-to-light areas.

Totes are delivered to the picking modules by an empty tote sortation system **9**. In the pick-to-light area, the operator scans a bar-coded address

label attached to a product, carton or tote box. Digital displays in front of each pick bin tell the operator what to pick and in what quantity.

Operators using voice-directed terminals receive instructions via their headset on what to pick.

Operators using handheld or ring-scan RF devices are directed to a location via their terminal where they scan a bar code to confirm the location and then again to confirm the pick.

In all cases, items are picked to totes. The totes travel down the center conveyor to the next zone where an item will be picked. In total, there are 13 pick zones in the DC.

Packing and shipping

Once a tote is full, it is routed by conveyor to one of several induction areas for the tilt tray sortation system **10**. There, operators manually unload the totes and position items on a belt so the bar code can be automatically read in a scan tunnel. Items are then inducted onto a tilt tray sortation system that delivers them to a packing station **11**. There, they are prepared for delivery to the customer.

Packaged orders are placed on a conveyor that delivers them to the shipping sorter. The shipping sorter includes a combination of cross-belt, shoe and tilt tray sorters. Packages are sorted to the right chute, where the product is collected in large Gaylord boxes for shipment **5**. **M**



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