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## Making holiday wishes come true

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### Santa has his elves. Sears Wish Book has its 3PL.

*By David Maloney, Associate Editor – Modern Materials Handling, 12/1/2000*

Success in distribution is often measured in a facility's ability to be flexible. That certainly is the case for third-party logistics providers (3PLs). On any given day, 3PLs may find themselves distributing Barbie dolls in one area, precision hand tools in another, and cookies in yet a third part of the distribution center. That certainly is an odd product mix, but exactly matches a typical day's output at Dart Warehouse in Naperville, Ill. This 3PL serves a number of clients, most notably Sears Wish Book, Sears.com, Keebler, and Canter and Associates.

Dart's new DC was built to handle such diverse products efficiently while maintaining high fulfillment accuracy. The company prides itself on quality order processing, topped off by a superb packaging system. The facility also features crossdocking capability, a highly flexible pick module design, and plenty of room to grow.

'We have been in the Chicago area since 1978. We had been leasing several facilities and wanted to consolidate the business into a single, more functional and operationally-efficient facility,' explains general manager Herb Duggan. 'The layout of the new building and the systems that we have allow us to do high-velocity items, as well as the onesies and twosies of direct customer fulfillment. So we are set up to do both.'

The Naperville facility came on line last year. California-based Dart also operates about 35 other facilities nationwide and has trucking and real estate divisions.

Sears is the largest customer at Naperville, especially now during the holiday quarter of the year when the facility does 80% of its annual distribution business. Sears has been using Dart for distribution services since it began Wish Book in 1995. Some 8.5 million consumers receive the holiday catalog each Fall. Five call centers process orders and then rely on Dart for fulfillment.

'They have experience in direct fulfillment and high-quality customer care,' says Dave Shepherd, director of catalog operations for Sears. 'We are excited about the new facility. It is designed for direct-to-customer processing. They learned from what they had done previously for us and put that knowledge into the new design. They built a lot of flexibility into the facility to keep service high, but also economical.'

The majority of items distributed for Sears Wish Book are toys and gifts. These require precise handling, as no customer wants to receive a damaged product that they intend to give as a holiday present.

The same direct-to-customer strengths that bring success in catalog fulfillment have prompted Sears to also use Dart for its online orders. Sears.com sells hand and power tools, lawn and garden products, home electronics, baby items, and small appliances.

Additionally, Sears contracts with Dart to distribute trim-a-tree holiday decorating merchandise to its retail stores.

In a completely different product vein, Keebler utilizes the Dart DC to distribute cookies and ice cream cones produced at Midwestern bakeries. Goods are received in full cases, re-palletized, and sent to Keebler-owned distribution centers nationwide. From there they will be distributed to grocery stores.

Other clients use Dart for distribution of educational products, videos, and product promotional kits sent to expectant mothers.

'The advantage of our new system is that it is flexible enough to handle whatever we need,' says Duggan.

#### Taking the wraps off

Advance ship notices alert Dart of incoming merchandise. The facility has 116 docks, of which only 10 are dedicated. The remaining 106 can be flexibly assigned to either receipt or shipping. Upon receipt, a pallet label is printed, attached, and scanned along with a product UPC. At this point the merchandise is considered available to fill orders.

'We have the parameter set on our system to make product available for sale from the time it is received. This avoids putaway,' says Rich Vitek, director of operations.

This crossdocking capability was an important addition to the new facility. Any receipts that contain backordered items or merchandise requests downloaded from the call centers may immediately bypass storage and be sent directly to the packing areas.

Other receipts are placed in bulk storage until needed. A radio frequency system directs lift drivers in putaway with locations indicated on the operator's handheld terminals.

Keebler's products, and those of other clients that will be shipped as pallet loads, are taken to floor level storage in a large open area that encompasses about two-thirds of the storage area of the facility.

Order fulfillment for each 3PL client varies, particularly the cutoff times that are the basis for the processing schedule. Sears Wish Book, for example, has a cutoff time of 2:00 p.m. for next day shipments.

'We are driven by the seasonality of the merchandise,' adds Vitek. 'We use that cut-off so we can have time to print all of the orders, analyze how much volume we will have, and order our temporary labor for the next day.'

Orders at non-peak times typically ship same day.

Assignments are dropped by type, with hot (priority) orders first, followed by second-day shippers, backorders that will be crossdocked, single item orders, and multi-line orders which are those containing more than one item.

Once the order drops are determined, the warehouse management system (WMS) immediately decides what stock is needed and creates a replenishment report. Items needed for hot orders are replenished into the five pick modules of flow rack immediately, while replenishment for later waves is performed throughout the day.

The number of flow lanes in the modules is flexible and can be changed from 7,200 to 15,000 as product changes. Two of the modules are double level while the other three are single. All are designed to expand to three levels.

'The pick modules are set up so that they can be changed quickly from bin to flow to pallet as needed,' adds Vitek.

Each module holds unique items with space allocated according to client. Sears Wish Book and Sears.com occupy two modules each.

Conveyors link the modules; with a total of 10,000 linear ft. in the building (*Automation, Inc.*, [www.automationconveyors.com](http://www.automationconveyors.com)). A pick and pass strategy is used so that the picking cartons only pass into zones with items needed for the order. Each module contains approximately 30 zones.

Pick tickets are centrally printed for each zone and are delivered manually to the modules. Each ticket contains picking information, bar codes, and a shipping label. It also identifies which of the 13 sizes of cartons will be used for the order. Such a wide variety of cartons, from padded envelopes to the largest size accepted by UPS, allows Dart to optimize packing while saving on protective dunnage.

Picking begins in a selected zone that contains an item needed for the order. Cartons staged within the zones are pulled for the order, the label is attached, and the pick is selected directly into it. Once all picks from that zone are made, the conveyor passes the carton to other zones. The last picker pushes the carton off onto a takeaway conveyor.

Hot items are picked near the start of the process so that once completed, they can move immediately to packing. Items that face potential packaging damage, such as collector dolls, are stored in the final zones of the modules so that they are picked last and have less conveyor distance to travel.

Most picks are selected from flow racks, though some items, such as tool products, are stored in bin shelving. Additional items are pulled from the handful of pallet rack locations found at the end of each pick module.

Completed cartons are conveyor-routed to six verification and packing stations. Here each item is removed from the carton and compared to the pick ticket. This thorough verification provides an order accuracy of over 99.9%.

The cartons are repacked, filled with foam peanut void, and sealed. Cartons then travel by conveyor through an inline scanner and scale to a ten-lane shipping sorter. Each drop off lane is selected according to carrier and service level, such as first or second-day delivery. Extenders at the end of the sortation lanes assist loading of outbound trucks.

Orders for oversize items that cannot be conveyed are filled in a single-ship lane located near the docks. Most of these larger items ship in their original containers, which could cause a problem for the customer. In most cases, Wish Book items are ordered as gifts. If these cartons are not concealed, children could easily recognize the gift when they see the carton upon delivery. To keep from ruining these holiday surprises, Dart camouflages the carton with a wrapping of black plastic that is heat shrunk.

Crossdocked items, typically back orders and those products needed immediately for order fulfillment, are transported in pallet loads to a packing station. Here, they are broken into orders and labeled.

The overall design of the building and the equipment within it has given Dart the flexibility to handle just about any type of client and merchandise.

'We really thought long and hard about how we wanted the facility laid out,' says Duggan. 'We tried to optimize our doors and conveyors. We are very pleased. It has been extremely functional.'

### **Benefits at a glance**

- Flexible handling
- Able to do both retail and direct-to-customer fulfillment
- Versatile docks can be assigned to receive or ship
- Pick modules easily adapted for a wide product mix
- Well-designed packing stations protect shipped goods

### **System Snapshot**

**Dart Warehouse, Naperville, Ill.**

#### **FACILITY FACTS:**

Warehouse size: 721,000 sq. ft.

Stock keeping units: 12,500

Throughput: 50,000 orders/day peak

Employees: 60 full time, 350 seasonal

Fulfillment accuracy: 99.9%

**SYSTEM SUPPLIERS:**

**CONVEYORS AND SORTERS:**

Automotion, 708-229-3700, [www.automotionconveyors.com](http://www.automotionconveyors.com)

**PALLET AND FLOW RACKS:**

Warehouse Equipment, Inc., 847-595-9400, [www.weinet.com](http://www.weinet.com)

**WAREHOUSE MANAGEMENT SYSTEM:**

Integrated Warehouse Solutions, 630-932-4300, [www.iws-irms.com](http://www.iws-irms.com)

**LIFT TRUCKS:**

Mitsubishi Forklift Trucks, 713-365-1000, [www.mit-lift.com](http://www.mit-lift.com)

**HIGH REACH TRUCKS:**

Raymond Corp., 800-235-7200, [www.raymondcorp.com](http://www.raymondcorp.com)

**HAND SCANNERS:**

Teklogix, 905-812-6305, [www.teklogix.com](http://www.teklogix.com)

**FIXED SCANNERS:**

Accu-Sort Systems, 215-723-0981, [www.accusort.com](http://www.accusort.com)

**CARTON SEALER:**

3M Packaging Systems Division, 800-722-5463, [www.mmm.com/packaging](http://www.mmm.com/packaging)

**IN-LINE SCALE:**

Ramsey Technology, 612-783-2500, [www.ramseytsr.com](http://www.ramseytsr.com)

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