



An automated handling system makes its cold-storage debut

In the high-cost world of cold storage, maximizing cube use is vital. That's why when Liberty Freezers decided to revamp the racking in its London, Ontario warehouse, they looked to a high-density mechanized solution. **Richard Rix** bundles up to find out how they did it. With files from **Deborah Aarts**.

It is one thing to see a prototype pallet-handling and retrieval system being put through its paces at the developer's facility. It is quite something else to see it at work in a real-life warehousing environment. When that environment is a freezer—and the loads are heavy food products stacked on their original shipping pallets—it becomes something very “cool”.

The device in question is the Pallet Runner high-density storage system. One is now fully operational at the Liberty Freezers 3PL (third-party logistics) facility in London, Ontario, where it shunts full pallet-loads into and out of deep racking in cold storage.

Pallet Runner uses self-propelled carts that operate under radio-frequency control. They run along channels built into racking. At Liberty, the Pallet Runner module is three levels high, 66 pickfaces long and 15 pallet positions deep, for a total of 2,970 palletloads in a footprint of approximately 1,675sqm (18,000sqf).

Overall, the Liberty facility occupies 14,400sqm (155,000sqf), with

storage capacity of 125,000 cubic metres (4.4 million cubic feet). The facility is a combination of freezer space (50 percent), cooler (15 percent) and ambient storage (35 percent). All its clients are in the food and beverage industry and include such names as General Mills and Labatt Breweries.

The facility—which has long served the food industry—services all points nationally as well as the eastern US. Today, it ships into distributor facilities and distribution centres, which are essentially hubs for such companies as Loblaws, Sobeys, Metro Foods and Wal-Mart. It handles an average of 175 to 250 tractor-trailer loads a week, and activity is brisk around the 26 temperature-controlled dock doors. But until a few years ago, it was ham-

pered by less-than-ideal operating conditions.

The facility faced three main problems. The first was space. In the freezer environment—where the power and temperature control costs push cube price to a premium—every cubic inch counts. “There’s a very high price to space in a freezer, so our ability to maximize the cubic footage of our freezer is critical,” says Liberty president John Diduck.

The second problem was finding a way to maintain a first-in/first-out storage system that could handle the high volume of Liberty’s business. The third issue was to manage the amount of labour being used for put-away and retrieval.

To solve these problems, in 2003 the company decided to give the London site a makeover. Vaughan, Ontario-based Redirack Warehouse Systems was recruited for the job. Soon after, the facility was fitted with coolers and the existing frozen section was expanded. The renovation also included the installation of a completely new storage system. One of Redirack’s senior systems design teams, headed up by David Weatherseed, applied its technical expertise in working with Liberty Freezers to solve the company’s logistical challenges and meet a tight operational deadline. And at the core of the solution was the Pallet Runner.

Brisk business

Starting Liberty Freezers in 2002, Diduck says he aimed to fill a niche that matched his expertise, adding that he has been “servicing it like mad” ever since. The fact that he is able to inspire, innovate and delegate has allowed the enterprise to expand quickly. There are now three other Liberty facilities: two in southern Ontario (in Newmarket and Chatham) and a brand-new one in Montreal.

Diduck attributes this success to what he calls “considerable growth” in the frozen food industry over the past ten years. Supermarkets are now filled with a greater variety of home-meal replacement and microwaveable foods, thanks to more advanced freezing techniques. Safety concerns have resulted in a higher level of confidence in frozen foods vis-à-vis fresh foods. Finally, the advent of chain restaurants has led to a standardization of products and quality control standards.

“The Tim Hortons doughnut you eat in Burlington (Ontario) tastes exactly the same as the one in Vancouver. Ingredients are prepared, pre-packaged and frozen,” Diduck says.

Liberty operates what Diduck calls a “boutique” third-party temperature-controlled logistics service that offers personalized service for clients. Though it flies in the face of extra earnings

through growth, Diduck has decided to restrict the size of his company’s facilities and client base so that no one gets neglected.

“Controlled growth is incredibly important for this business, and we will control it to ensure our clients’ success,” Diduck says. “If the client base grows too large and diverse, you can run into scheduling problems.

“In the food business, the spikes all seem to come at the same time, placing a heavy demand on logistics. So who’s the priority? Who gets serviced first? By limiting the size of the operation, your priorities are very clear and very manageable. It also means grouping like clients in the same building, and not overburdening it with too many of them.”

A system built for growth

Self-imposed limitations can be tricky. If a client’s business soars, how can a warehouse keep up? The answer is to design and lay out a facility with the right mix of equipment to assure flexibility.

“We need to be very flexible in the way we operate and do everything we can to assist the customer,” Diduck says. “This is as much their facility as ours, which makes a lot of sense, since we don’t actually own product.

“For example, we do not insist on scheduling inbound loads from the manufacturing plants, such as vegetable processors, plus we offer dedicated doors for unloading.”

The facility staffs 50 employees on the warehouse floor (65 in total), operating two 12-hour shifts a day, seven days a week. It is run using a highly sophisticated WMS (warehouse management system) that Liberty built itself—with a Microsoft Access reporting platform—to meet its own demands and its customers’ needs.

“We developed it in-house and have pushed it well beyond the scope of many packaged systems,” Diduck says. “We began with the largest platform we could find and developed on it. We built wide on a wide base, which is a different philosophy than with most systems, which seem to expand outward from a narrow base.

“We hired a small group of programmers and taught them our business and key metrics, such as receiving, functionality, putaway, recall, lot control,



A palletload of frozen product is placed upon the Pallet Runner cart, to be taken into storage deep within the structural steel storage module.