

The pushback racking slopes away from the picking aisle and is serviced from the rear, allowing reach trucks to be segregated from the order-pickers.

"By having opposite flows in the pushback and the pallet-flow racking, we are able to avoid conflict between pallet putaway on one side of the racking and case picking on the other side, with virtually no loss of productive space," Diduck says.

A real freezer pleaser

The star of the freezer show, however, is the Pallet Runner, which handles the main storage block. This automated system is configured for pallet flow-through, to achieve FIFO functionality. Loads are stored and retrieved for full-pallet order assembly or to replenish the pick lines.

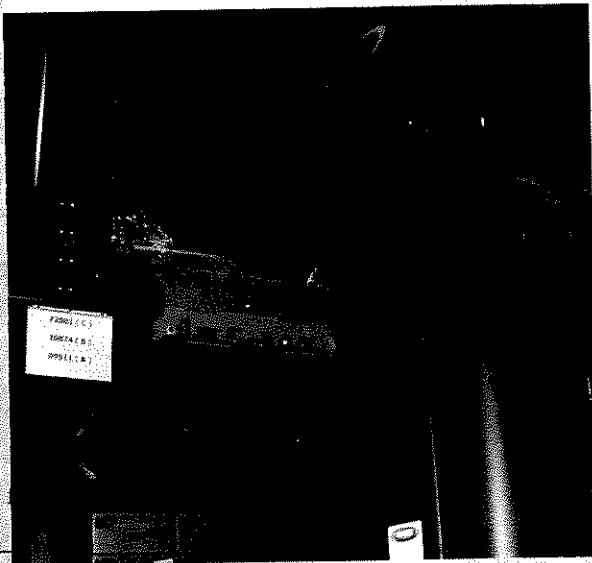
The system hinges on automated carts that move through warehouse racking using RF technology. After a pallet load is scanned with handheld readers and deposited at the pick face, the cart will move it as far back as warranted.

Redirack's Weatherseed explains the put-away process. "The pallets are stored on a rail in their position, but instead of using an 'L'-shaped rail, we use a 'Z'-shaped rail. The pallets sit on the top part of the Z and the cart runs on the bottom part. The wheels on the cart drive with their own PC, and the cart moves up and down hydraulically."

The Liberty setup uses two carts to guarantee that there is always one available when needed. Each cart weighs 210kg (462lb), plus a 24-volt battery. Four 150 by 40mm (5.9 by 1.6in) wheels ensure smooth travel along the channels built into each storage lane.

"We can switch back and forth with Pallet Runner, with picking and put-away on the same side or use it as a flow-through system," Diduck says. "The carts operate fully independently in the storage lanes because they sense the proximity of other loads, so know when to pick up or deposit a load, and return to the

The self-propelled cart begins to move into storage, where it will deposit its load and return to the pickface.



The cold facts:

Liberty Freezers's London, Ontario warehouse

Size: 14,400sqm (155,000sqf)

Storage capacity: 125,000 cubic metres (4.4 million cubic feet)

Use: Freezer (50 percent), ambient storage (35 percent) and cooler (15 percent)

Product: Food and beverage

Dock doors: 26

Traffic: 175-250 trailers per week

Staff: 65 (50 cross-functional warehouse employees, 15 in management)

Shifts: Two 12-hour shifts per day, seven days a week

Operating system: Custom-designed in-house

Forklifts: 15 (Linde counterbalances and walkies, Crown reach trucks from Ryder)

Racking: Redirack

Pallet handling/retrieval system: Pallet Runner from Redirack

peratures and the Pallet Runner itself had to be conditioned to perform optimally.

He did have some initial questions about its ability to perform under chilly circumstances, and he acknowledges that there was a steep learning curve, but Diduck was very pleased once the system was up and running.

"The only real concern I had related to batteries in a cold environment, and it's simply not an issue. The system will easily perform for a full shift, even in a freezer. In any case, Pallet Runner will never hang up because the cart will always return to the face of the module when it detects a low energy level, for removal and recharge."

Furthermore, Diduck says the system has fixed the problems Liberty faced before the renovation. The system operates on a principle comparable to pallet-flow, but with no incline and no chance of lighter pallets getting stuck on the tracks. This allows the company to make better use of the valuable freezer cube while keeping smooth FIFO operations. And, since the Pallet Runner is powered automatically through RF, the company is able to operate a multi-deep environment without adding workers.

Diduck estimates that the system has saved him from having to add 20,000 to 25,000sqf to the London facility, plus at least three new pieces of equipment. He will likely use the design and layout of the building for a future warehouse.

Diduck feels that construction of another Ontario facility will happen soon. He also believes there are opportunities for growth in western Canada, perhaps even in the US. "The Pallet Runner certainly has applications outside of London for us."

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