Genco ATC: The sky’s the limit 18

INFORMATION MANAGEMENT
Is it time to reslot your warehouse? 24

BEST PRACTICES
Food and beverage industry trends to watch 30

EQUIPMENT 101 SERIES: SORTATION
Automated systems reduce labor and increase efficiency 36
STOP WASTED TIME AND LABELING ERRORS.

Repeated trips to the printer mean distractions, errors and wasted time. To improve quality assurance and efficiency in the warehouse, start with a Zebra mobile label printer. Our easy-to-integrate printers—like the P4T™ and RP4T™—let your workers create high-quality bar code and RFID labels absolutely anywhere. Explore our eBook and learn how a Zebra mobile printing solution can ramp up productivity in your facility.

Switch to a Zebra mobile printer.

Repeated trips to the printer mean distractions, errors and wasted time. To improve quality assurance and efficiency in the warehouse, start with a Zebra mobile label printer. Our easy-to-integrate printers—like the P4T™ and RP4T™—let your workers create high-quality bar code and RFID labels absolutely anywhere. Explore our eBook and learn how a Zebra mobile printing solution can ramp up productivity in your facility.

Discover the Easy Way to Improve Efficiency and Accuracy in the Warehouse
GET ACCESS TO OUR INTERACTIVE eBook NOW.
RapidPick is the new high capacity goods-to-person order fulfillment system from Dematic. Delivering split case items to an operator, RapidPick allows pick rates of up to 1,000 line items per operator per hour. RapidPick consists of a highly engineered operator workstation that quickly rotates SKUs into and out of the station, enabling the operator to efficiently pick items – offering a smarter, faster, ergonomic order fulfillment solution.

- **Smarter** because the operator stays in one place while items are delivered to the pick station in precise sequence . . . heavy items first, fragile items last, by family group or in whatever sequence your business requires.

- **Faster** because product for picking flows into the RapidPick station smoothly and consistently, allowing your staff to be highly utilized. Operator travel time to a dedicated SKU pick face in the warehouse and the need for slotting and re-slotting are omitted.

- **Ergonomic** because the workstation is designed for sustained productivity and employee comfort: no bending or reaching. Loads are automatically delivered to and removed from the workstation, eliminating the need for operators to lift or push cartons and totes.

*Experience the Dematic Difference. Visit [www.dematic.us](http://www.dematic.us) or email USInfo@dematic.com for more information.*
New book on unit handling conveyors

THE CONVEYOR EQUIPMENT Manufacturers Association (CEMA) has released its “CEMA Application Guide for Unit Handling Conveyors.” According to the association, the publication is the only in-depth guide for design details and application guidance for unit handling conveyors in the world. The reference book contains information on all unit handling conveyors, pallets, cartons, totes, monorails and more.

CEMA developed the book in collaboration with the most established and respected companies in the conveying industry. It was designed to be a useful technical reference tool similar to the CEMA manual “Belt Conveyors for Bulk Materials,” now in its sixth edition. Purchase the book at CEMA’s website at www.cemastore.com/shop.

Mitsubishi Caterpillar Forklift America announces new president

EFFECTIVE APRIL 1, Hiroshi Nagai is the new president of Houston-based Mitsubishi Caterpillar Forklift America Inc. (MCFA).

Nagai had served as senior general manager of the general machinery and special vehicle headquarters at Mitsubishi Heavy Industries in Sagamihara, Japan. He has been with MHI and affiliated companies since 1979 and has more than 23 years of experience in the forklift industry. Nagai previously served as general manager for MCFA’s manufacturing department from 2001 to 2004. He also served as an executive engineer for MHI Forklift America Inc., predecessor of MCFA, from 1988 to 1992. In Modern’s annual ranking of Top 20 Lift Truck Suppliers, Mitsubishi Caterpillar Forklift ranks No. 6 in revenue.

Daifuku announces new U.S. holding company

DAIFUKU CO., LTD. ANNOUNCED that it officially has formed Daifuku Webb Holding Company to oversee all of its U.S. subsidiaries including Jervis B. Webb Co. and Daifuku America Corp. The new holding company began operating on Jan. 1, 2011.

Daifuku’s managing director Takashi Hiramoto serves as chairman and co-CEO of Daifuku Webb Holding Co.; Brian Stewart serves as president and co-CEO of the holding company, in addition to serving as president and co-CEO of Jervis B. Webb. Nobo Morita continues to serve as president of Daifuku America Corp., in addition to serving as a board member of Daifuku Webb Holding Co.

“We established Daifuku Webb Holding Company to improve coordination efforts among our North American businesses,” said Masaki Hojo, president and co-CEO of Daifuku Co., Ltd. “By increasing the exchange of ideas, products and resources, we will achieve greater success and better service to our customers.”

Second Crown facility achieves zero landfill status

CROWN EQUIPMENT CORP. ANNOUNCED that its electronics manufacturing plant in New Bremen, Ohio, has achieved zero landfill status. It is the second Crown facility to reuse or recycle all of its waste. The achievement comes at the same time as the company releases its 2010 Crown ecologic report. The report communicates the company’s commitment to sustainable design and business operations.

“Crown ecologic represents the synergies that exist between environmental responsibility and sound business management,” said Crown president Jim Dicke III. “When you select a Crown lift truck, you can be confident you have selected a truck that is manufactured with minimal waste and has been designed for exceptional energy efficiency and long life.”

Sealed Air moves closer to zero percent waste-to-landfill goal

SEALED AIR ANNOUNCED that it has achieved another milestone in its SmartLife sustainability commitments by having 60% of its global manufacturing facilities attain “zero waste-to-landfill” for plastic raw material usage in 2010.

“More than 95% of our plastic raw materials are used to produce saleable products. Much of our success in moving toward zero waste is the result of several programs we have implemented across our global manufacturing supply chain that improve yields and identify beneficial uses for our scrap material,” said Vince Herran, global recycling director for Sealed Air.

According to Herran, these programs have allowed the company to reuse its own products, recycle into other useful products, or use for energy recovery a large majority of its plastic waste throughout all of its operations.
Who knows what lies around that corner up ahead? Whatever it is, you’ve got 30 dedicated engineers, no fewer than 126 patents and 14 years of proven stability on your side. That’s Toyota’s industry exclusive SAS™ technology. The world’s first, and only, active stability system that dynamically helps protect the driver as it maximizes productivity. A system so incredibly effective, it can save lives by reducing the likelihood of tipovers and catastrophic accidents. And most recently, led to Peerless Research’s recognition of Toyota as the safest manufacturer of lift trucks in the business. It’s one tough world out there as we all know. But if anything can tame it, it’s Toyota’s SAS. Do yourself, your loads and your drivers a favor and check it out at toyotaforklift.com.
COVER STORY

SYSTEM REPORT

18 The sky’s the limit
A unique optical RTLS system has led to dramatic productivity improvements at Genco ATC’s returns center.

22 Putting RTLS technology to work to handle returns
The real-time locating system (RTLS) is an integral part of receiving, putaway and picking operations.

FEATURES

INFORMATION MANAGEMENT

24 Resolve to reslot your warehouse
Slotting systems can deliver big results, but are they right for your operation?

BEST PRACTICES: FOOD & BEVERAGE

30 An appetite for savings
Competition in the food and beverage sector is intense and profit margins are wafer thin. Here’s a look at how technology and materials handling equipment can keep your operation healthy and competitive.

EQUIPMENT 101 SERIES: SORTATION

36 Sorting out materials handling
From simple pushers to sophisticated crossbelt sorters, automated sortation systems reduce labor and increase efficiency and throughput in today’s warehouses and distribution centers.

PRODUCTIVITY SOLUTION

42 A heavy responsibility
Foresighted information destruction equipment supplier adds lift tables to make equipment more ergonomic.

DEPARTMENTS & COLUMNS

3/ Upfront
7/ This Month in Modern
14/ Lift Truck Tips: Battery management
43/ Supplement: Warehouses & DCs
50/ Focus On: Data collection
54/ Product showcase
58/ 60 seconds with...

NEWS

9/ Propane credit deadline looms
10/ ProMat 2011 exceeds expectations
12/ Pallet report from ProMat

Modern Materials Handling ® (ISSN 0026-8038) is published monthly by Peerless Media, LLC, a Division of EH Publishing, Inc., 111 Speen St, Suite 200, Framingham, MA 01701. Annual subscription rates for non-qualified subscribers: USA $119, Canada $159, Other International $249. Single copies are available for $20.00. Send all subscription inquiries to Modern Materials Handling, 111 Speen Street, Suite 200, Framingham, MA 01701 USA. Periodicals postage paid at Framingham, MA and additional mailing offices. POSTMASTER: Send address changes to: Modern Materials Handling, PO Box 1496 Framingham MA 01701-1496. Reproduction of this magazine in whole or part without written permission of the publisher is prohibited. All rights reserved. © 2011 Peerless Media, LLC.
For food and pharmaceutical firms, closed-loop pallet pools seem to be your safer solution.

But within any supply chain system you need risk-avoidable carriers that help you maintain product integrity and ease your contamination fears. Earth-favorable Firma® carriers from Sonoco Transport Packaging offer you several innovative shipping options.

Heavy-duty, stiff-rackable FirmaMax® plastic carriers and dense-nestable export pallets contain no decabromine and are made from 100% recycled plastic. Or, you may prefer light-shippable FirmaDeck® corrugated carriers—an economical choice when pallet return is not expected. Both pallet lines are splinter- and nail-free as well as 100% recyclable.

Learn more about how these truly remarkable, food-friendly, product-protecting carriers also help you achieve your sustainability goals. Visit sonoco.com/pallets or call 888/875-8754.

Sonoco Transport Packaging.
Reusable. Recyclable. Remarkable.
Keep your mind open

I’ve often found that some of the most innovative ideas present themselves when you’re not actually looking for them. That certainly was the case for reverse logistics giant Genco ATC when its strategic solutions team was walking the show floor at ProMat back in 2007.

At the time, the team had just piloted a real-time locating system in its McDonough, Ga., returns center that used a combination of active and passive RFID tags to track pallet and lift truck locations inside the facility. The goal was to capture putaway locations and finally eliminate their paper-based check system on the way to improving the number of pallets moved per hour and streamlining overall inventory operations.

They found that the RFID system did a pretty good job of scanning tags on pallets, but could not accurately read the active tags due to the metal in the lift trucks and pallet racks—and they could only track the lift truck within 8 feet of the appropriate aisle, thus falling short of the accuracy they needed.

While strolling the floor at ProMat that year, the team bumped into a company called Sky-Trax. The technology provider was showcasing a solution that could track lift trucks inside facilities, and do so by employing specialized cameras mounted on lift trucks that read 2D position markers mounted in the ceiling—an interface that could track the trucks within inches.

“They weren’t marketing it as an inventory system,” Cary Cameron, Genco ATC’s senior vice president of strategic solutions, tells Bob Trebilcock in this month’s System Report. “But while we were watching the demonstration, a light bulb went off. We realized that with a little tweaking, their solution could do exactly what we were trying to do.”

Fast-forward three years and Genco ATC’s inspiring innovation story unfolds on page 18. In fact, it’s the kind of System Report I wish we could tell more often. First, Cameron and her team had taken the time to descend on ProMat en masse, charged with keeping their eyes and minds wide open for new ideas.

Second, they were able to understand a technology and quickly configure it so it would apply to their own specific needs—a move that the vendor loved. But most importantly, Cameron and her team found ways to continue to innovate and draw value out of the real-time tracking implementation, even after they met—and exceeded—their original goals.

For example, the team then used the tracking data to redesign their operational practices to reduce driver operator travel time and improve overall productivity by some pretty significant numbers. It’s worked so well that similar systems are being rolled out in several of the companies’ other locations.

“I loved this story,” says Trebilcock, “because it illustrates the innovation that’s at work in the supply chain today. With this implementation, Genco found a way to create value with a fairly new technology. And if you keep your eyes and mind open, you’ll find a number of innovative solutions in the market that have reached a price point that delivers an ROI.”
Innovative.

Innovative Where It Counts: At Intelligrated, innovative means dedication to a continuous improvement process that transforms ideas, research, design and engineering into customer success. Our industry-leading material handling solutions maximize the value and productivity of your business. Engineering for a better ROI. That’s the Intelligrated way.

“Innovative Where It Counts: We innovate for customer success, not for the next-generation widget.”

THE DEADLINE FOR A VALUABLE propane tax credit is looming, and Brian Feehan, vice president of the Propane Education & Research Council, doesn’t want anyone to miss out.

“I dread the day after August 1 that someone says they didn’t get in,” Feehan recently told Modern.

Effective retroactively for all of 2011 and 2010, the tax credit could allow propane users to recoup 50 cents of each dollar spent on propane each year—provided the paperwork is submitted by Aug. 1, 2011.

The credit is one of the many propane legislative initiatives backed by the National Propane Gas Association, the national trade association representing the U.S. propane industry.

Feehan was careful to note that his organization, PERC, cannot be seen to influence the outcome of any legislative decision, but did offer that, “We were pleased to see it pass.” The initiative was approved as part of the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010. The act also included incentives for natural gas, bio-diesel and ethanol, which join propane in the “alternative fuels” classification.

The new credit is modeled after a three-year credit that was approved in 2005, and was effective for a three-year period beginning in 2006. That original credit was intended to be renewed annually, but was left to expire at the end of 2009. As the materials handling industry works to lift itself from the
record lows of that year, Feehan said he is pleased the propane credit could once again be renewed.

“The materials handling industry is very important to the propane industry,” said Feehan, noting that materials handling creates steady demand as opposed to the seasonal fluctuations of other key propane markets. “We recognize the importance of that market and support it every way we can.”

An act of congress created PERC in 1996 and mandated that four tenths of a percent of odorized propane sales go to PERC. Twenty percent of that money is in turn disbursed to state PERC programs and the remaining 80% goes toward research and development in propane safety, residential and commercial applications, agricultural propane use, and other areas.

“Propane is well-supported and well-positioned, as evidenced by the growth in the industry over the past decade or more,” said Feehan, who said that as the materials handling industry regains strength, he looked forward to corresponding growth in propane use spurred by continuous advances in propane technology such as hybrids and reduced emissions.

“There’s cautious optimism and going forward we expect propane to be part of that optimism.”

Trade Shows

ProMat 2011 exceeds expectations

As an indicator of the continued economic recovery of the materials handling, supply chain and logistics industry, U.S. and international attendees registered in record numbers for ProMat 2011—the industry’s premier North American trade event. The Material Handling Industry of America (MHIA) sponsors the show and conference.

Nearly 32,000 key decision makers in virtually all manufacturing, logistics, distribution and supply chain industries participated in ProMat 2011, according to MHIA. Reflecting the growing global nature of the event, attendees from outside the United States at this year’s ProMat represented 110 countries and six continents. They were welcomed by ProMat’s International Visitors Center. ProMat 2011 was held in Chicago’s McCormick Place from March 21 to 24.

“By all accounts, ProMat 2011 met,
and in many cases exceeded, exhibitors’ and attendees’ expectations. Attendees were engaged and exhibitors expressed satisfaction with the quantity and quality of attendees,” said John Nofsinger, CEO of MHIA. According to Nofsinger, “manufacturing and supply chain professionals were greeted with a remarkable display of traditional, new and emerging equipment and technology solutions that are key to their productivity and profitability.”

The show featured 677 exhibitors covering 270,000 net square feet. These exhibitors saw a 33% increase in attendee leads over ProMat 2009, indicating not only an increase in attendee quantity, but also in quality and intention to engage with exhibitors and their solutions. “Participants came with very specific objectives and with buying plans totaling $75 billion over the next 18 months. They know that investing in the latest equipment and technology is the key to building and maintaining their competitive edge,” added Nofsinger.

Other ProMat 2011 highlights
Along with the healthy foot traffic on the show floor, other highlights of ProMat 2011 included the educational conference that accompanied the ProMat exhibition. This included two keynotes featuring former Homeland

Protect Your Bulk Ingredients
With Buckhorn Intermediate Bulk Containers
Buckhorn reusable plastic IBCs, made from FDA-approved materials, are the ideal choice to protect your bulk liquid or powder products. Perfect for a variety of industries to reduce transport costs, maintain quality and increase productivity, Buckhorn IBCs are:

- Hygienic
- Stackable & Collapsible
- Durable
- RFID Traceable
- Recyclable

Call Buckhorn at 1.800.543.4454 or visit www.buckhornibcs.com to get the facts and request a FREE on-site packaging assessment.
Security Secretary Tom Ridge and Robonaut 2, two educational tracks on sustainability and the people side of the supply chain and show floor educational sessions on a variety of topics. More than 7,000 attended ProMat 2011 educational conference sessions. Webinars of ProMat 2011 educational seminars are now available online at www.promatshow.com/seminars.

The ProMat 2011 Classroom Day introduced students and educators to career opportunities in material handling, supply chain and logistics through hands-on learning and networking with industry professionals. This year’s Classroom Day combined an interactive educational session with a guided tour of the show.

The next MHIA-sponsored trade event will be Modex 2012, February 6-9, 2012 in Atlanta’s Georgia World Congress Center.

PACKAGING

Pallet report from ProMat

PROMAT IS A SHOWCASE for the latest materials handling innovations. The recent 2011 show was no exception, including new products from the pallet industry. Here’s a rundown of some of the pallet products on display in Chicago in March.

Sonoco Products was exhibiting its line of corrugated pallets, designed for one-way shipments of relatively light loads such as cookies and crackers, tissues and pharmaceuticals. Yes, they’re more expensive than a comparable one-way wooden pallet, but they are also lighter than wood, don’t have to be treated for insect infestation and can be shipped knocked down to save space during transportation. That makes them cost-effective for export shipments. They are best with uniform loads. They can be floor stacked or stored in supported rack.

Orbis unveiled a new 40 x 48-inch rackable and stackable pallet designed to store, ship and handle products throughout the food, consumer goods, agricultural and pharmaceutical supply chains. The pallet was created as a cost-competitive pallet for food grade applications. “It fills a product gap in our line, between very low-cost pallets and higher-priced permanent pallets,” an Orbis representative explained.

CHEP was not showing off a new pallet design. Rather, the wood pallet-pooling provider was demonstrating its materials handling simulator. The new system was installed in CHEP’s lab in Orlando, Fla., and includes an...
impact loop and software that allows CHEP to simulate and analyze real world handling conditions in the supply chain to test the durability of new pallet designs.

Rehrig Pacific was highlighting two new products. The first was a one-way plastic slip sheet designed for humid or damp working and shipping environments where a corrugated slip sheet may not work, especially the export of products like seeds, feeds, flour and pharmaceuticals. They company also has a buyback program for the recyclable sheets. The other was a new plastic pallet delivery system designed for direct store deliveries. The system includes a pallet and lift that can be easily loaded into a traditional delivery trailer rather than a gondola truck.

iGPS held a joint press conference with Egemin Automation to describe how customers with automated facilities were using the RFID tag in an iGPS pallet in conjunction with RFID readers on automatic guided vehicles to track pallets within a manufacturing or distribution environment. The plastic pallet pooling provider also discussed installing a GPS tag on its pallets that would have the ability to send an alert if a pallet in the supply chain crossed into a boundary where it should not be or to easily identify and locate materials that may need to be recalled.

Litco displayed its INCA pallet. Molded under high pressure and heat from wood waste and byproducts, the nestable INCA pallet does not have to be chemically or heat-treated for export shipment.

Cabka, a manufacturer of plastic pallets made from recycled materials, introduced a new shuttle pallet. Made from plastic and aluminum, the shuttle is designed to be a precision permanent pallet for use on conveyor and automated storage and retrieval systems (AS/RS) that require consistent and reliable pallets. It accepts wooden or plastic pallets or other shipping platforms, regardless of the quality, size or type, and transports them safely through an automated conveying and storage system.

Buckhorn showed a new collapsible pallet and container system designed to ship and store light-duty dry goods, with loads of up to 1,000 pounds. Made from 100% recyclable plastic, it can be easily assembled or broken down by an employee for use or storage.

Polymer Solutions featured a one-piece 40x48-inch hygienic plastic pallet for the food a pharmaceutical industries. The pallet features heavy-duty blocks that are thicker and more durable than conventional plastic pallet blocks and is rackable to 2,200 pounds.

AL Pallet introduced a new aluminum pallet that features a patented design that provides weight carrying capacities similar to wood pallets in a much lighter, customizable pallet. The technology was designed to compete directly with wood pallets and is especially suitable for closed-loop systems or the one-way air logistics market where the weight of the pallet has a significant impact on shipping costs.
Waste can be too much or too little

Battery management protects equipment, hastens workers and optimizes inventory.

By Josh Bond, Contributing Editor

FOR MOST experienced battery room and lift truck operators, the battery swap process is a cinch. Sure, it can be a pain to take that trip to the far side of the DC, but once there, the process of changing a battery is almost instinctive. Unfortunately, according to Joe Posusney, engineering manager for Philadelphia Scientific, the speed of a battery change is rarely the most important factor, and those instincts are likely a major detriment to equipment health and a serious drain on productivity.

“One customer told me his battery room operators retrieve the battery that feels the hottest, reasoning that it must have the most juice,” says Posusney. “Of course that’s the exact opposite of what you want to do. It’s an old wives’ tale that has no basis in fact. Or they’ll pick the newest battery, whether it’s fully charged or not, expecting better performance from newer equipment. Other times, they just go for the closest battery.”

The result is a battery room where the batteries closest to the front are over-used, a few batteries in the middle are used at roughly ideal intervals and the back half are underused. Battery management software and hardware can eliminate the guesswork by monitoring the state of charge of each battery and directing the battery room operator the optimum battery for each change.

“There is a right battery to take,” says Posusney.

He cited a study of battery performance three months before and three months after the installation of the battery management system. Afterward, batteries produced an average of 30 minutes more operating time per charge. Supplementing this increased productivity is a free, Web-based software that tracks the usage of each battery and can generate a variety of reports in an instant.

Combined with hardware that can help identify whether a battery is connected in the first place or whether the charger cable is even functional, such systems allow an organization to right-size their
battery inventory.

“Waste can be too many batteries or too few,” says Posusney. “You always want to optimize. This system keeps assets in play.”

Fast-charge or opportunity charge setups would benefit little from this sort of battery management, says Posusney, but depending on the scale of an operation and the customized blend of software and hardware, battery management systems can generate returns in as little as seven months.

Fuel cell round up from ProMat

Educated customers explore reality of hydrogen fuel cells at ProMat 2011.

By Josh Bond, Contributing Editor

RIDING THE WAVE of renewed industry optimism, fuel cell technology enjoyed a warm reception at ProMat 2011. In 2009, many lift truck dealers and customers approached the technology as a far-off experiment or had no real knowledge of the function and benefits of a hydrogen fuel cell. At this show, many of the people visiting the booths of fuel cell leaders Nuvera and Plug Power understood the basics and were asking instead about the next step.

“As opposed to, ‘How do you charge it? How does it work?’, we’re hearing, ‘How much will this cost me?’ It’s more of a buying discussion than an education,” said Teal Vivacqua, marketing communications manager for Plug Power.

Two years ago, fuel cell manufacturers could claim to have big customers in the pipeline, said Vivacqua, but now those trials have produced data and, often, installations.

“Customers have heard that BMW and Wal-Mart have tried it, so now they want to know how it might fit in their own operation,” she said.

For Nuvera, ProMat 2011 was the company’s first solo show, after having partnered with Deka Batteries for past expo appearances. Gus Block, director of marketing for Nuvera, said he was very pleasantly surprised by the volume and sentiments of his booth’s visitors.

“We didn’t necessarily know what to expect, but the response is better than anything we could have expected,” said Block, who noted forklift dealers and battery service companies expressed particular interest. “They are realizing it’s something they need to pay attention to and can make money on.”

Block said that while the economic downturn did not serve the burgeoning fuel cell market two years ago, it has since helped potential customers look at the technology from a new perspective.

“The pendulum is swinging the other way,” said Block. “There’s pent up demand. As people buy, they are saying, ‘Well, we can get batteries or we can get this new technology that has just emerged.’ It’s very exciting. The timing is there.”

In previous years, Plug Power could expect 300 leads from an appearance at ProMat, said Vivacqua.

“We had that in the first two days, and they were quality leads,” she said, noting that her total stood at 460 on the morning of the last day of exhibition. “The understanding of the commercial viability is there. With any new technology there are hurdles to conquer and ques-
Lift truck sales, and spirits, picking up

Eager to forget 2009, lift truck manufacturers look to brighter future.

By Josh Bond, Contributing Editor

TWO YEARS AGO, the economy was particularly bleak and some of the most drastic downsizing had yet to hit the materials handling industry. When combined with January weather perfectly suited to the mood, ProMat 2009 was well-attended, but less than jubilant.

The North American lift truck market was particularly hard-hit, with a stunning 40% plunge in 2009 sales that neared 30-year lows. Since then, lift trucks mounted an equally shocking rebound of 40% growth in 2010, serving in both cases as a barometer for the state of the industry. At this year’s ProMat, manufacturers of lift trucks and lift truck accessories reported a marked change in the atmosphere.

“There is definitely exponentially more confidence today than there was at the height of the panic,” David Furman, vice president of marketing for Raymond, told Modern at ProMat 2011. “There’s more confidence, but there isn’t a cavalier quality to it.”

Companies are no longer adding capacity in anticipation of unending growth, said Furman. Instead, companies are trying to leverage the assets and real estate they have, and are looking to lift truck manufacturers for more than just trucks.

“It’s a different discussion,” said Furman. “They’re telling us all their problems, from storage to racks to order-picking, data management and sustainability.”

Raymond had in-house engineering and optimization specialists in the past, but those resources are being deployed more than ever as customers seek full-spectrum services from their OEMs.

“ProMat allowed us to showcase that we’re well-positioned for that demand,” said Furman. “We had three times as many booth visits as in 2009.”

According to Melinda Beckett-Maines, national marketing manager for Toyota Material Handling, the weather during ProMat 2011 played no small part in the event’s success.

“No one can argue that March is a better time to visit Chicago than January,” she said. “It was nice to see the shift in timing did not dissuade people from attending the show. ProMat brings together people from all facets of materials handling, making it a great meeting place. From Toyota’s perspective, and those we spoke to, it appears the industry is cautiously optimistic about the materials handling industry in 2011.”

Jeanette Robinson, marketing and advertising manager for SMH, echoed this sentiment, reporting plentiful, qualified leads at her company’s booth.

“We were very pleased,” she said. “Almost all our customers said business is picking up. We’re not just at the beginning of the recovery, we’re in the middle of it.” And, as far as Robinson could tell, the recession was not without its silver lining.

“The downturn made our customers look into other markets, and that’s what we did as well,” she said. “You can’t do the traditional thing and make the same money.”

Accessory providers like SMH benefited from industry-wide efforts to bring older trucks and rental fleets out of storage. These small steps toward growth are timid when compared to new fleet purchases, which are increasingly structured as short-term leases, another sign of cautiousness. That said, if the industry can grow as projected while buyers are still pulling punches, increased confidence could lead to knockout lift truck sales, and that’s good news for everyone.

Josh Bond is a contributing editor to Modern and can be reached at josh.d.bond@gmail.com.
WHEN YOUR PALLET JACKS AREN’T WORKING, YOUR OPERATORS AREN’T EITHER. THAT DOESN’T WORK FOR YOUR SCHEDULE. OR YOUR CUSTOMERS.

INTRODUCING THE NEW, RELIABLE, HARDWORKING PALLET JACKS THAT WON’T LET YOU DOWN.

PROBLEM SOLVED.

We pushed our heavy-duty pallet jacks to the limit—1000+ hours in an extreme cold storage application test, emptying 1,300 trailers, moving 50,000 pallets and transporting 105,000,000 lbs. of freight—without lubrication or service. Just the dependability that you’d expect from a world-class manufacturer like Yale. Of course, we don’t recommend you treat your trucks this way. Always follow recommended maintenance intervals.

Find out more at Yale.com.
The sky’s

Cary Cameron, senior vice president, strategic solutions
You usually don’t find third-party logistics providers, or 3PLs, on the bleeding edge when it comes to the adoption of new materials handling technologies. Profit margins are thin and customers rarely commit to the kind of long-term contracts that justify an investment in technology.

Instead, they stick to proven solutions like lift trucks, pallet racks and floor storage with a dash of bar code scanning, labor management and warehouse management thrown in for good measure.

Genco ATC, the second largest 3PL in North America, has added a new variable to the conventional formula at a 223,000-square-foot return center it operates for a major retailer in McDonough, Ga. There, Genco ATC has installed a unique, patented optically based real-time locating system (RTLS; Sky-Trax, www.sky-trax.com) to track the movement of lift trucks, drivers and pallets in the facility as well as the final putaway location of each pallet in storage. The system has also eliminated hand scanning of pallet bar code labels and pallet location IDs.

While most RTLS systems rely on RFID technology, Genco ATC’s uses 2D bar code location markers suspended from the ceiling, 2D bar codes applied to the pallets, and a camera-based imaging system mounted on the top and front of each lift truck. The top-mounted camera takes multiple images per second of the overhead location markers to calculate the real-time location of each lift truck as well as its direction and speed. The front-mounted camera reads the pallet bar code label that is on the lift truck forks and tracks its movement throughout the warehouse to its exact putaway location (see page 21). The system is accurate to within an inch, says Cary Cameron, Genco ATC’s senior vice president of strategic solutions.

The result has been a 47% productivity gain in pallets moved per hour since the system was installed a few years ago, Cameron says, adding, “We’re confident there’s still room for improvement.”

In fact, the system is so accurate that Genco ATC is now using an optical RTLS as the navigation system with automatic guided vehicles in another facility.

Improving productivity
Genco ATC is the industry’s leading provider of reverse logistics and returns processing for major retailers. It had operated a returns facility in downtown Atlanta for one leading retailer for years. That facility was relocated to McDonough, Ga., in 1996, when the Olympics came to Atlanta.

Back then, Genco ATC tracked pallets in its warehouse management system (WMS) with RF-based bar code scanning. The process required scanning a bar code on a pallet followed by a scan of the location bar code on the pallet rack. Too often, the operators didn’t complete the transaction: They either didn’t scan the putaway location, or if a system-directed location was already full, they...
didn’t scan their alternative choice.

As a result, Genco ATC added a paper-based system as a backup to the RF-driven system. That improved accuracy, but did little to improve productivity since it required additional steps. Lift truck drivers had to take time to fill out the paper logs. Those logs had to be audited, which also took time. If the information on the logs didn’t match the information in the WMS, the auditors had to search for the pallet to correct the system.

“If the pallets we needed to pick weren’t where they were supposed to be, someone had to go find them,” says Cameron. “We were losing a lot of productivity.”

In 2004, Genco ATC launched an initiative to improve productivity. “Our goal was a 100% improvement over a five-year period,” says Cameron.

Over the next several years, Genco ATC piloted a real-time locating system that used a combination of active and passive RFID tags. The active RFID tag was used to track the lift truck while the passive RFID tag was used to track the pallet. With those two pieces of information, Genco ATC would be able to track where the lift truck was or had been and where the pallet had been dropped.

If successful, the system would automate the process of capturing putaway locations and eliminate the need for a paper-based quality check while improving accuracy. In practice, the RFID solution fell short. The system did an adequate job of scanning the tag on the pallet, but the combination of metal on the lift truck and steel in the pallet racks interfered with read rates on the active tags. Moreover, Cameron says, the system could only track the lift truck to within 8 feet in the aisle and couldn’t tell in what direction it was facing. “I didn’t know if it was on the right or left side of the aisle,” she says.

By the end of 2006, it was clear an RFID solution wouldn’t work in this application.

Exit RFID, enter camera-based imaging

In January 2007, Cameron and a team from Genco ATC came across a new booth at the ProMat show in Chicago. The technology provider was demonstrating a solution to precisely track lift trucks in buildings.

Specialized cameras were mounted on the top of lift trucks looking up to read large, 2D bar code position markers installed in the ceiling. Processing the images on the ceiling in real time enables the solution to track the location of lift trucks and the direction of travel to within inches anywhere in the building. One application showed that two trucks headed toward a collision could set off an alert, like a flashing warning light at the end of an aisle, that would signal the operators to slow down and be cautious. That information could be displayed on a screen for supervisors.

“They weren’t marketing it as an inventory management system,” says Cameron. “But while we were watching the demonstration, a light bulb went off. We realized that with a little tweaking, their solution could do exactly what we were trying to do.”

The optical recognition system at Genco ATC’s McDonough returns processing facility has led to a 47% gain in pallets moved per hour since the system went live.
Soon after ProMat, Genco ATC launched a pilot of the technology with a few lift trucks. Late that fall, the system was rolled out to a total of 10 lift trucks. The results were almost immediate. “We got the accuracy we needed and within two days of implementation we saw an 18% gain in our pallets moved per hour,” says Cameron.

Operators adapted easily to the system. “All a teammate has to do is pick up a pallet and drive it to the location indicated on the screen,” says Cameron. “If a teammate already knows how to drive a lift truck, they can be productive in about 10 minutes.”

In addition to eliminating the need to scan pallets and putaway locations and maintain a paper log, Genco ATC used the visual tracking capabilities of the system in the early stages to rethink its processes.

“One of the reporting capabilities of the system allows you to review the path of the lift truck during a specific time frame,” says Cameron. “We used that to see where a specific lift truck traveled during a 10-hour shift.” Genco ATC used that information to redesign operational practices to reduce operator travel time and further improve productivity. “We no longer need to use that tool every day,” says Cameron, “but we can very easily turn it on to see how the facility or individual operators are performing.” That creates an opportunity for further process changes or further operator training.

Continual improvement
Total productivity improvements over the last several years have increased by 47%. But the benefits of the system haven’t been limited just to worker productivity. The system has led to additional savings in operational costs in several key areas.

For instance, because the system provides 100% real-time accuracy of pallet IDs and locations, Genco ATC is realizing indirect labor savings associated with auditing paper logs, cycle counting and searching for pallets that weren’t
where they were supposed to be. “When you included all of the functional areas affected by this change, our total labor savings were 61%,” Cameron says.

While the cost of the cameras were comparable to the cost of RFID readers, there have been ongoing operational savings from printing 2D bar code labels versus the purchase price of the passive RFID tags used to track pallets. “We were paying 18 cents per RFID tag, that cost adds up over time,” says Cameron.

Likewise, Genco ATC no longer has the maintenance, repair and replacement costs associated with RF units since operators are no longer scanning pallets.

The improvement in productivity allowed Genco ATC to use just four to six lift trucks per shift for putaway and picking operations, compared to 10 in the old system. Fewer lift trucks translates into reduced maintenance and replacement costs.

Team satisfaction has also improved. “Morale is harder to measure, but the teammates love working with the system,” says Cameron. “You know you’re on to something if the team is upset when he have to take the system down to reboot the server. That tells me we hit a home run.”

Putting RTLS technology to work to handle returns

The real-time locating system (RTLS) is an integral part of receiving, putaway and picking operations.

Receiving: Everything arrives on pallets from the retailer’s stores through common carriers. Those pallets include a mix of any of the products sold by the retailer.

Newly arrived pallets are received into the warehouse management system (WMS) and staged temporarily on the dock. The contents in the cartons won’t be identified until the cartons are depalletized and conveyed to a workstation, where the cartons are opened and the individual item contents are scanned into the WMS system.

Based on the item scan, the WMS identifies the product that will be processed, determines a disposition for that product and prints a license plate bar code to identify the item. Genco ATC personnel can override the system based on a visual inspection. For instance, an item that is broken or may raise a safety concern can be disposed of or delivered to another zone for additional handling.

Once the items have been identified and processed, they are put on the takeaway conveyor and sorted into various categories based on final ship to points. Full pallets are stretch wrapped, labeled with the 2D bar code used by Sky-Trax, and scanned into the WMS system for putaway.

Putaway: Based on the location of the stretch wrapping station, the WMS determines a putaway location for that pallet based on the best available storage location and notifies a lift truck operator that a pallet is ready for putaway. The WMS system calculates the best available location based on horizontal and vertical travel of the forklift; horizontal travel is quicker than the vertical travel of the mast. The system visually confirms to the operator if they are at the proper put-away location or not. The operator has the flexibility to override the WMS’s recommendation based on certain criteria, such as if the location is blocked by another larger pallet. Once the operator places the pallet into the location, the optical real-time location system updates the exact put-away location in the WMS. That pallet is now available for shipment.

Picking: When Genco ATC receives authorization to release returns that have been processed, the system directs an operator to a storage location to retrieve a pallet. Once the camera-imaging system validates that the 2D bar code on the pallet belongs to the shipment being picked, it is taken to the dock for staging and shipping. This validation prevents incorrect pallets from being picked.

Shipping: During the shipping process, the forward-looking camera verifies that the right pallet is being loaded while the upward facing camera reads the overhead location markers to confirm that the pallet is being loaded into the right trailer. Once the trailer is full, the load is ready for shipment.
GO TO THE FRONT OF THE PRODUCTION LINE.

Running your operation smoothly can be like managing a million moving parts. Literally. Your most effective asset is instant, mobile information. With a supply-chain automation solution enabled by Verizon, you can coordinate global suppliers, and view purchasing and operations activities from the road—so you can optimize your logistics and reduce costs. The largest high-speed wireless network in America gives you more control. And you can never have too much of that.

VERIZONWIRELESS.COM/MANUFACTURING          1.800.VZW.4BIZ
Resolve to reslot

Slotting systems can deliver big results, but are they right for your operation?

By Bob Trebilcock, Executive Editor
Slotting your warehouse is much like a New Year’s resolution. It’s a great idea on paper, but few warehouse managers actually follow through on that resolution in a disciplined way.

“The majority of customers will tell us they know they should do slotting,” says Ron Grove, vice president of supply chain consulting for TZA Consulting. “But in most cases, what they have is someone in inventory control who gets a report on what’s coming into the warehouse and decides where to put it.”

“Slotting is a thankless job,” adds Jeff Wetherell, vice president of systems integration for SI Systems. “People talk about it, but no one really wants to do it.”

The payback for effective slotting, however, can be significant, especially for end users with large facilities and lots of stock keeping units (SKUs). “We have one customer that saved $500,000 a year by keeping their system strategically slotted,” says Wetherell.

Those savings come from improved worker productivity that allows you to schedule fewer workers in a manual picking area or to reduce the number of shifts you operate. While not everyone will see a $500,000-a-year savings, averages of an 8% to 15% improvement in picking and replenishment labor are common.

“You may also see a reduction in damage, an uptick in accuracy and some savings in the palletizing area,” says Grove. “But, those benefits are harder to quantify.”

As companies become more sophisticated in distribution practices and tie what happens in the warehouse to the store, slotting may also deliver cost savings across the supply chain.

Dynamic slotting allows facilities with high SKU counts and frequent turnover to fine tune the slotting in piece-picking areas on a frequent basis.
Some discount retailers, for instance, slot their warehouses to build aisle- and department-ready pallets that reduce the labor in the stores. “When we did the cost benefit analysis, slotting increased the cost of palletizing in the warehouse, but that was offset by labor savings in the store,” says Peter Schnorbach, senior director of product management for Manhattan Associates.

How slotting works
What is slotting? Think of it as both a process and a tool.

The process of slotting, or reslotting, is based on the old premise every thing in its place and a place for everything. Slotting determines the best place to store each stock keeping unit in a facility based on a variety of factors. “The objective is to reduce travel time, increase picking accuracy, eliminate injuries and increase the asset utilization of both labor and warehouse space,” says Schnorbach.

A slotting tool is a supply chain execution software application that uses algorithms to create a slotting plan based on a variety of factors.

Slotting software can be licensed as part of a warehouse management system (WMS) provider or as a standalone application. It can also be offered as a service. In that model, the end user provides data and a consultant performs the analysis and makes the recommendations.

“In a service arrangement, you work with the customer to define their system, their inventory, their order information and the rules that govern their facility,” says Wetherell. “Then, the consultant performs the analysis, makes recommendations on where and why they should move certain products and shows the expected savings.”

Regardless of the model, the tool takes into account a variety of factors.

The starting point is travel times associated with picking the order based on how often that particular SKU is picked. “The more often an item is picked, the closer you want it to the front of the warehouse,” says Schnorbach. In addition, you want items that are picked often close to one another; those items should be in the most convenient levels for picking in the rack. “You want a popular item at eye level,” he says. “You don’t want it on the fourth level of the rack and you don’t want heavy items that can cause a back or shoulder strain up high,” says Schnorbach.

Picking frequency is the starting point. But slotting systems can consider other product characteristics or picking strategies, such as:

Unit and slot characteristics: Some items can only be slotted in certain areas of the facility based on the height and weight of the item.

Replenishment requirements: The system can determine the amount of space—or the number or size of the slots—allocated to an SKU to minimize how often that item is replenished. You may only want to replenish a pick face once a shift or once a week, depending on the item.

Families of items: Items that are often ordered together, like fishing rods, reels and tackle, may be slotted next to one another to minimize travel.

Velocity of movement: Storing all of the fast movers in one aisle in a pick zone can create congestion. For that
Two-way radios are proven for affordable, durable and versatile voice and data communications throughout your facility. Kenwood solutions range from the durable, high performance ProTalk® portables to NEXEDGE®, designed to meet present and future needs with digital technology, including IP networking and the ability to tie into existing private or public communications assets.

Kenwood authorized dealers can help you assess your requirements and make cost-effective recommendations. They can also make sure you are ready for the 2013 FCC mandated transition to narrowband radio operation.
reason, a slotting plan may spread the fast movers throughout the warehouse to improve the flow of the pick line.

Storage capabilities: In addition to slotting based on the equipment already in a facility, the system may be able to recommend the racking and equipment that should be in the warehouse for optimum efficiency. For instance, based on changes in order patterns, a facility may need more carton or piece picking locations and fewer rack locations than are presently in the facility.

In addition, slotting plans may be created based on historical data or a forecast of demand. Or, a slotting plan may be created based on the orders on hand. “Holidays are very important to one of our food industry customers,” says Tom Kozenski, vice president of product strategy for RedPrairie. “They will slot their warehouse based on the history of what they sold last year.” Other customers with more predictable products may slot based on the orders they know they’re going to ship in the coming quarter.

In any of those models, the slotting tool also takes into account the labor associated with making those moves and only recommends moves that can be justified economically. “A good package won’t recommend a move that costs $4 but only saves $3 in picking labor,” says Grove.

Dynamic slotting
A slotting play can cover an entire facility, or it may focus on an area. “I may only want to reslot the appliance area or the electronics area, rather than the whole warehouse,” says Kozenski. “That way, I can take an incremental approach to optimizing the facility.”

And while slotting is typically done over a longer period of time, order fulfillment operations that fill direct-to-consumer orders or handle a rapidly changing inventory may need to reslot specific areas within their pick zones more frequently to keep up with changing demand. Those could include a pick-to-light or voice pick area in a mezzanine.

Real-time, or dynamic, slotting addresses that need. “The objective is to give supervisors the ability to optimize their pick face slotting in real time if need be,” says Lance Reese, technical solutions director for Intelligrated’s order fulfillment group.

There are two components to dynamic slotting. The first is the initial slotting when the pick zone is being set up, such as the start of a promotional period, the introduction of a new product line, a holiday season or a change from summer to fall merchandise. In the initial setup, the system will analyze the dimensions of each SKU that is inbound for the picking area and recommend the width of the slot that is optimal for that product or assign a slot location.

Once the system is in operation, the system monitors the activity in the pick zone and makes recommendations on what to move and where to move it to gain efficiencies. This can happen on a much more frequent basis than traditional slotting.

“Typically, the system will make recommendations on the five worst offenders on a daily basis,” says Reese. “That way, you’re not making massive moves, but simply fine-tuning the process.”

To slot or not to slot
How often then should a facility reslot? The answer depends on the type of facility. Companies with seasonal product changes may only need to slot when the seasons change. On the other hand, grocery chains or discount retailers that run weekly or monthly specials may have to reslot for each promotion. Food and beverage mixing centers that receive a number of brands and products may have to reslot several times during a shift based on what trucks are arriving at the dock and the products that need to be shipped.

“Their warehouses don’t grow in size just because they’re handling more products,” says Kozenski. “The only way to accommodate all of those products is to reslot.”

Regardless of how often a facility reslots, slotting software is often integrated with a warehouse management system and a labor management system to get the most out of the tool.

The labor management system can calculate the cost of the labor associated with the slotting plan based on the labor standards used for that facility. That process provides for an accurate cost/benefit analysis before deciding whether the gains from reslotting are worth the effort.

If a warehouse accepts the slotting plan, the warehouse management system executes the plan by interleaving the reslotting tasks with other putaway, picking and replenishment tasks that have to be performed during a shift.

And by reslotting in a disciplined way, it becomes part of the routine. “The key is to treat reslotting like any other task in the warehouse,” says Kozenski. “Then it becomes another system-directed task and the WMS will only issue the work when it knows it won’t disrupt picking.”

Companies mentioned in this article
Intelligrated: www.intelligrated.com
Manhattan Associates: www.manh.com
RedPrairie: www.redprairie.com
SI Systems: www.siingenuity.com
TZA Consulting: www.tzaconsulting.com
TECTON™ HANDHELD COMPUTER
PURPOSE-BUILT FOR THE WAREHOUSE

Smarter and Faster. Prepare to Move Mountains.

- PXA320 806MHz processor
- 55 or 32 key backlit keypads
- Natural handgrip ergonomics and removable pistol grip

www.lxe.com/tecton
Food & beverage

An appetite for savings
Competition in the food and beverage sector is intense and profit margins are wafer thin. Here’s a look at how technology and materials handling equipment can keep your operation healthy and competitive.

By Lorie King Rogers, Associate Editor

You know the old saying: Too many chefs in the kitchen spoil the broth. The same is true in the world of materials handling, especially in the food and beverage sector. You want to streamline the process and enhance the end product.

While operations try to manage a proliferation of SKUs, labor costs, space utilization and health and safety issues, managers must also find ways to increase performance and decrease costs to remain competitive and profitable. “The goal is to use the least amount of labor to get the best rate in a small space and spend the least amount of money,” says Paul Laman, vice president of W&H Systems.

That’s no easy feat in today’s marketplace. Today’s food and beverage industry is faced with fewer and larger distributors; SKU proliferation as manufacturers pump out more and more variations of a product; and a demand for smaller, more frequent store-friendly deliveries. Together, they add up to a challenging equation, says Laman.

Failure to deliver can mean stockouts, and that’s the worst thing that can happen to a retailer, says Albert Fong, corporate communications manager for RedPrairie. “If that happens, the consumer will just go someplace else and may not come back again.”

To keep retailers’ shelves stocked, food and beverage companies rely on the following best practices.

Building store-friendly pallets

The emphasis on smaller, store-friendly deliveries from the DC to the store means that each pallet must include a variety of product so clerks can not only replenish directly to the shelf, but also in alignment with the store layout. That makes their jobs easier, but it can make building a pallet harder.

“Worker injuries go up tremendously when building mixed SKU pallets,” says Brian Keiger, global technology sales leader for Kuka Systems. “This is because people are moving many different package types that aren’t handled the same way.”

Ergonomic stations: While there have been many advancements in automation, manual palletizing operations are still the norm in most food and beverage warehouses. In those situations, an ergonomic palletizing workstation can make building a mixed pallet safer.

“Worker injuries go up tremendously when building mixed SKU pallets,” says Paul Laman, vice president of W&H Systems.

Warehouse automation can putaway, store and retrieve product in order to satisfy the demand for smaller, more frequent store-friendly deliveries.

Keeping the work area at a comfortable height with less lifting and bending translates into fewer injuries.

The demand for more frequent mixed case pallets is driving this technology in the food and beverage sector, but it’s a viable materials handling solution that works well across multiple markets, explains Ken Ruehrdantz, warehousing and distribution market manager for Dematic. “Semi-automated systems can accommodate throughput capacity at an investment level that many customers are comfortable with,” Ruehrdantz adds.

Robotics: A second way to ease the burden of building mixed SKU pallets is to use robots build the pallets. Robotic gantry systems are engineered to meet the food and beverage industries’ need for high SKU mixed product distribution while eliminating 100% of the labor involved with building a mixed SKU pallet. Today’s gantry systems can be half a football field long and accelerate to tremendous speeds. In one example, a multi-gantry system can pick 300 concurrent SKUs at more than 250,000 cases per day.

Another solution combines robotics and materials handling equipment to build mixed pallets a layer at a time. One layer picker uses a low-vacuum chamber principle to gently lift the layer. This type of picker can effectively lift 98% of the products in the retail sector, including diverse products with
varying surfaces like loose produce, six-packs of bottled beverages or smooth cartons.

**Using technology**

Regardless of who or what builds the pallet, product placement decisions are predetermined. In fact, few decisions in today’s DCs are left to chance; they’re left to the warehouse management system (WMS). “The WMS takes away the chance for bad choices,” says Bill Leber, who is responsible for business development at Swisslog. “The program tells you how to build the pallet, how to load it into the truck and doesn’t leave the decisions to workers. The more you plan and eliminate the source of a potential error, the better.”

*Let the WMS be your guide:* From receiving to shipping, decision-making responsibilities lie with the WMS. “Software controls the movement of inventory through the entire process and allows for complete visibility at any point in the supply chain,” explains RedPrairie’s Fong.

But software doesn’t get created in a year, it evolves over time and gains maturity and functionality to manage the processes well, says Dan Labell, president of Westfalia. The trick, he adds, isn’t just to have a database that can organize and release orders, but to have the ability to interface with automation to execute commands in a timely fashion.

The WMS begins the receiving process by capturing product data from variable fields like expiration dates and lot numbers then directs inventory to its next destination. In some cases product may be diverted to quality control, crossdocked for an emergency order, or putaway and stored. Putaway and storage in the food and beverage industry is crucial.

“By understanding the attributes and needs of a particular SKU, the system will direct it to the right temperature zone,” explains Fong. “This also ensures that products that shouldn’t be close (think rat poison and cereal) don’t end up next to each other.”

**Optimize the ice cube:** High-density automated storage and retrieval systems (AS/RS) with multiple deep designs can maximize the cube, which is especially important in refrigerated or freezer environments. “It costs more to cool than to heat,” says Swisslog’s Leber, “so it’s better to keep the facility footprint small and go up.”

Westfalia’s Labell concurs. The strategy is to use high-density AS/RS rack-supported systems within an existing structure to make better use of available space. For example, Labell says, an aisle in a high-density system is able to store 10 pallets deep.

This storage strategy will become even more important in the future because, according to Leber, “Freezer is growing everywhere because more people are eating at home and choosing frozen food over canned goods.”

**Going paperless**

It’s one thing to go the grocery store with a paper list, it’s quite another to go into a warehouse with one. Many DCs are scrapping the paper in the picking process and moving toward other solutions.

“There’s a lot to keep track of in the food and beverage sector. With all the variable captured product information in the system, the WMS can direct pickers based on rules defined by the trading partners and can ensure compliance. For example, explains Fong, “Many customers don’t want to receive a product with an expiration date that is ‘x’ days away. The system knows the expiration dates of all products and will ensure the picker doesn’t break these requirements.”

As with other materials handling solutions, pick-to-light and voice are good strategies that cross over vertical industries. Both of these hands- and eyes-free solutions work well for high-volume SKUs, but pick-to-light is faster than voice. Unfortunately, it’s also more expensive, so many operations are mixing the two and creating a hybrid solution, says Dematic’s Ruehrdanz.

**Pick-to-light:** A pick-to-light system with dynamic dual-shelf pick face and replenishment slotting capability works for dense flow rack picking and put

**New food bill on the table**

Signed into law on January 4, 2011 by President Obama, the new Food Safety Modernization Act (FSMA) is designed to protect and ensure the safety of our nation’s food supply. The new legislation is broad, but among other provisions, FSMA gives the Food & Drug Administration authorization to issue food recalls. It also means that handlers must have plans in place to deal with safety and security concerns.

To learn more about the FSMA, go to www.fda.gov/ForConsumers/ConsumerUpdates/ucm237758.htm

Using an articulated arm and end effector that performs a pick-and-place action, robotic layer palletizers are capable of building multiple pallets at one time.
Value rarely reveals itself all at once. Value comes from the patient and tenacious pursuit of excellence over the long haul. It comes from the systematic application of quality processes perfected through analytics. It comes from ABF, a comprehensive source for logistics solutions that yield competitive advantages for clients.

ABF is a trusted partner for the innovative solutions you need to expand your company into the new decade. Empowered by a vast network of over 350 service centers and warehouses, all connected with advanced inventory management systems, ABF enables you to take control of your supply chain as never before.

Total supply chain visibility is just a click away. Knowledgeable account managers serve as your logistical consultants, helping you to build a supply chain model that responds to your evolving needs. ABF—the perfect balance of assets and intellect optimized with your business in mind.

Are you ready to take control? Call 877-ABF-0000 or visit abf.com.
applications, or general merchandise operations that require dynamic slotting of a variety product sizes. A system like this provides end-to-end shelf coverage for a dynamic pick face, with the ability to slot product widths ranging from 1 inch to several feet. Dual-shelf configuration for independent upper- and lower-shelf slotting maximizes SKU density, decreases storage cost per SKU and increases picks per foot. To enable multiple order fillers per zone, multicolor hardware directs simultaneous filling of multiple orders.

Voice: Voice-directed systems in general are a proven and widely applied solution that allow real-time control of the warehouse, increase order and inventory accuracy, and have a positive effect on productivity, says Dematic’s Ruehrdanz.

Voice-directed picking is an especially good idea in cold environments. With refrigerator temperatures hovering between 35 and 40 degrees and freezers going as low as 30 degrees below zero, gloves are a must and finger dexterity is diminished, so voice-directed picking keeps the workers focused on the picking task at hand.

Moving materials
Beyond storage, material movement is important inside a food and beverage DC.

Laser-guided pallet truck: If a food distribution operation has an application for a voice picking solution, it may be enhanced with a laser-guided pallet truck system, says Dematic’s Ruehrdanz. A laser-guided pallet truck system can automatically move to the correct picking location and move the completed pallet to the shipping dock without the picker, allowing the order picker to continue picking operations. This prevents the picker from having to get in and out of the truck repeatedly, which saves time-consuming steps.

RFID technology: Also assisting the picking process is a semi-automated solution that combines RFID technology, a mapped route of the facility and the operator in the lift truck. Once an order from the WMS is accepted by the operator, the truck will automatically drive to location and lift the fork to the right height at the right time.

Grocery is not a high margin business, says Swisslog’s Leber, so when people are involved in the process every step is choreographed.

“We map out warehouse, identify areas of concern, program logic into the system, then rely on the truck, not the operator, to be aware of surroundings,” says Perry Ardito, general manager of the Jungheinrich Warehouse Product Group. “Not only does this prevent harm to the facility, the product, and the operator, it increases throughput. Productivity gains are realized because the truck knows the best path and operator decisions are taken out of equation. With the right WMS, it’s all managed behind the scenes. As long as operators follow steps everything should run smoothly.”

Think electrics: There is a movement toward electric trucks in the food and beverage sector because of concern for the environment and the health of workers, says Ardito. Even though food and beverage items are securely packaged and wrapped for transport, environmentally friendly thin plastic makes it easier for emissions to permeate packaging. However, emissions from electric lift trucks are cleaner, so they don’t pose a problem for people or product.

Track and trace
In food and beverage, managing recalls is an unfortunate must. The new Food Safety Modernization Act authorizes the U.S. Food and Drug Administration to issue food recalls. In the event of a recall, an operation has to put its hands on product quickly. “Without appropriate tracking in your WMS you don’t know where the recalled product is, if you have it, if you’ve shipped it, or who you shipped it to,” explains Chad Collins, vice president of marketing and strategy for HighJump Software.

The number of man hours dedicated to a product recall can be a nightmare.”

But even before the new law, product tracking and tracing was an industry focus. “Companies are realizing that any type of safety or security concern can be very damaging, and even one recall can hurt a company’s brand reputation,” says Collins.

It’s not a penalty to pay for traceability in your WMS, says Collins. It means you get the best of both worlds: better track and trace operations as well as operational efficiencies that pay for themselves through better space and labor utilization.

No matter where your operation invests in technology, it’s worthwhile says RedPrairie’s Fong, “You can only use the same equipment for so long without falling behind because the technology is constantly changing.”

Companies mentioned in this article
Dematic: www.dematic.us
HighJump Software: www.highjumpsoftware.com
Jungheinrich Warehouse Product Group: www.jungheinrich-lift.com
Kuka Systems: www.kuka.com
RedPrairie: www.redprairie.com
Swisslog: www.swisslog.com
Westfalia: www.westfaliausa.com
W&H Systems: www.whsystems.com
SINCE 1937

YOUR BUSINESS AND INDUSTRIAL EQUIPMENT SPECIALISTS

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>579901</td>
<td>16-Person Safety-View Plus Lockers</td>
<td>$833.00</td>
</tr>
<tr>
<td>5854101</td>
<td>2-Tier Galvanite™ Corrosion-Resistant Lockers</td>
<td>$556.00</td>
</tr>
<tr>
<td>4674729</td>
<td>Medium-Duty Collapsible Bulk Containers</td>
<td>$385.00</td>
</tr>
<tr>
<td>5702900</td>
<td>Stack &amp; Plastic Pallet</td>
<td>$90.20</td>
</tr>
<tr>
<td>5759602</td>
<td>Bulk Racks with Welded Upright Frames</td>
<td>$312.00</td>
</tr>
<tr>
<td>5906627</td>
<td>Economical Tray-Shelf Carts</td>
<td>$109.00</td>
</tr>
<tr>
<td>5249100</td>
<td>Ladder Carts</td>
<td>$421.00</td>
</tr>
<tr>
<td>7147900</td>
<td>Triple® Trolley Utility Trucks</td>
<td>$172.00</td>
</tr>
<tr>
<td>4180028</td>
<td>Steel Lifetime Cabinets</td>
<td>$107.60</td>
</tr>
<tr>
<td>5582209</td>
<td>96x36&quot; All-Welded 10,000-Lb. Capacity Workbenches</td>
<td>$2,418.00</td>
</tr>
<tr>
<td>282701</td>
<td>Fixed Pedestal-Mount High-Performance Air Circulators</td>
<td>$219.00</td>
</tr>
<tr>
<td>48524000</td>
<td>Van-Tuff™ High-Capacity Bin Cabinets</td>
<td>$1,582.00</td>
</tr>
<tr>
<td>7452100</td>
<td>Barrel Hawk™ Drum and Cylinder Handlers</td>
<td>$200.20</td>
</tr>
<tr>
<td>7720300</td>
<td>Expand-A-Gate Security Gates with casters</td>
<td>$279.00</td>
</tr>
<tr>
<td>7556100</td>
<td>Telescoping Trailer Jack</td>
<td>$176.00</td>
</tr>
<tr>
<td>5305601</td>
<td>10x11' Mezzanines</td>
<td>$397.20</td>
</tr>
<tr>
<td>7607006</td>
<td>Spring Loaded Safety Gates</td>
<td>$252.00</td>
</tr>
<tr>
<td>7041802</td>
<td>Mobile Electric Scissors Lift Tables (24&quot;Wx48&quot;D, 1000-lb. capacity)</td>
<td>$2,790.00</td>
</tr>
<tr>
<td>7178800</td>
<td>PowerStak™ 2200-Lb. Capacity Fully Powered Stackers</td>
<td>$603.00</td>
</tr>
</tbody>
</table>

Promotion: 11% off with code MMH0511V1. For details.

Prices listed are good through August 31, 2011. Sale ends at midnight.

Get your FREE CATALOG Call 1-866-460-7851 or go online at www.chdist.com/mmh
Sortation systems, like the tilt-tray one shown here, can handle the challenging throughput demands in today’s distribution centers where there is a variety of product and a need for accurate, high-speed sortation.

By Lorie King Rogers, Associate Editor
There are many ways to automatically sort products as they move through warehouses and distribution centers. Sortation solutions range from basic pushers and diverters that sort fewer than 30 cartons per minute to sophisticated high-speed sorters that handle as many as 450 items per minute. The right sortation solution depends on the product you’re moving and your need for speed.

Sortation systems automatically sort products as they move through a facility. They reduce the manual labor needed to prepare for palletizing, packing, shipping and other industrial operations. In addition, sortation systems can increase efficiency and provide more accurate fill rates, lower return rates and operating costs. All of these benefits add up to lower prices and faster delivery to the consumer.

So, which sortation solution is right for you? “Not all sortation technology is ideal for all types of items,” explains Tim Kraus, product manager for Intelligrated. Among the factors to consider, says Kraus, are the types of items to be sorted, the packaging, item diversity and predictability. Most sortation systems can handle a variety of product, but aspects such as size, weight, balance or shape of product may rule out certain sortation technologies, adds Kraus.

Here’s a look at some of the most common types of sortation systems.

**Slow-speed sortation**

Not every facility needs to move product at vision-blurring rates. In many cases, slow-speed sortation is enough to meet the requirements.

Slow-speed sortation systems, the cheapest and least expensive sorters, work in conjunction with standard belt or roller conveyor lines. These sorters typically handle fewer than 30 cartons or totes per minute.

One example of a slow-speed sorter is a deflector arm. In this design, an arm or paddle sits alongside a conveyor line, opposite a divert point. As a carton approaches, the arm swings out across the conveyor, catching the carton and channeling it off at an angle.

A generous amount of space is needed between cartons to avoid traffic jams behind a deflector arm sorter. These deflectors can be used in a “slug mode” with the arm staying in place to divert a string of cartons down the same divert point.

Another example of a slow-speed sorter is a pusher. A pusher is mounted at the side of a conveyor line, directly across from a divert point. When a product reaches the divert point, the pusher springs out across the conveyor, pushing the product off at a right angle.

Pushers are faster than deflector arms because they don’t require as much space between cartons. But fast pushers can pack too much of a punch, so they are not recommended for cartons with fragile contents.

**Medium-speed sortation**

Medium-speed sortation handles about 30 to 200 items per minute. There are a number of styles of sorters available for sorting cartons or totes at these moderate speeds. Among the most popular are pop-up sorters. These linear sorters usually move products down the line on belt conveyor. When the product reaches its divert location, wheels or rollers pop up under the product, lift it slightly above the conveyor surface, and power it off the conveyor, usually at a 30 to 45 degree angle.

A common style of pop-up wheel sorter uses a wide conveyor belt that ends at a divert point and begins again right after the divert point, creating a gap in the conveyor. The gap is filled with several rollers that extend the width of the conveyor. Between those rollers are powered, angled wheels that sit below the level of the conveyor.

When a carton reaches the gap in the conveyor, one of two things happen:

1. The angled wheels remain in place and the carton continues moving forward—across the rollers and onto the next section or conveyor, or
2. The angled wheels rise up under...
the product, lifting it slightly off the conveyor. The wheels then rotate, diverting the carton off the line.

An alternate style of pop-up sorter uses multiple narrow conveyor belts instead of one wide belt. At each divert point, angled wheels are positioned in the gaps between narrow belts. These wheels sit below the level of the conveyor until they’re needed to divert a carton. When a product reaches the divert point, the angled wheels rise up under the product and divert it.

Pop-up style sorters work best for sorting cartons or other items with firm, flat bottoms. Other items, like poly bags, that have inconsistent surfaces are better handled with sliding shoe sorters. Sliding shoe sorters are more expensive, but they are a better choice for fragile items and can be run at slower speeds if high throughput isn’t necessary.

**High-speed sortation**

When speed is of the essence, high-speed sorters can divert about 150 to 450 items or cartons per minute, or up to 27,000 cartons per hour. Products can be inducted to the sorter manually or automatically using induction conveyor.

When it comes to induction, the faster you go, the more exact you have to be with product placement onto the sorter, explains Kevin Thuet, director of systems development for TGW Systems. “If you don’t place that box exactly—or push that load exactly—it will spin and you could have an error and you won’t realize the desired rates.”

Higher speed means a higher level of technology and sophistication, but speed, without consideration of other factors such as gapping, gentle handling and accuracy, can actually be an inefficient use of the technology, says Intelligrated’s Kraus.

There are four common types of high-speed sorters. Tilt-tray, crossbelt and bomb bay sorters are typically used to sort individual items to workstations such as packing stations or returns processing stations. The fourth type of high-speed sorter, a sliding shoe sorter, usually handles larger cartons and totes.

**Item sortation**

Tilt tray, crossbelt and bomb bay sorters operate under similar principles, and each type of sorter has the same foundation: a looped track with individual carriages riding on the track.

In a tilt tray sorter, each carriage holds a wooden or plastic tray. Items arrive at the sorter and are released one at a time onto the trays. An item moves around the track until it reaches its

---

**Sortation equipment manufacturers**

<table>
<thead>
<tr>
<th>Company</th>
<th>Web site</th>
<th>Tilt tray</th>
<th>Crossbelt</th>
<th>Bomb bay</th>
<th>Sliding shoe</th>
<th>Pop-up</th>
<th>Deflector</th>
<th>Pusher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accu-Sort</td>
<td>accusort.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automation (a Wynright company)</td>
<td>automationconveyors.com</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Bastian Material Handling</td>
<td>bastiansolutions.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Beumer</td>
<td>beumer.com</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carter Control Systems</td>
<td>cartercontrols.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cornerstone Automation Systems</td>
<td>cornerstoneautosys.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Cinetic Sorting</td>
<td>sorting.com</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Daifuku</td>
<td>daifukuamerica.com</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Dematic</td>
<td>dematic.com</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Eurosort</td>
<td>eurosort.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GBI Data &amp; Sorting Systems</td>
<td>gbisorters.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Hytrol Conveyor Company</td>
<td>hytrol.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Innovative Picking Technologies</td>
<td>ipti.net</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intelligrated</td>
<td>intelligated.com</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Interroll Automation</td>
<td>interroll.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Knapp Logistics &amp; Automation</td>
<td>knapp.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Schaefer Systems International</td>
<td>ssi-schaefer.us</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>TGW Systems</td>
<td>tgw-group.com</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Vanderlande Industries</td>
<td>vanderlande.us</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

This table represents a sample of leading sortation equipment manufacturers.
SMASHINGLY DURABLE

Yellow Jacket is the new portable Big Ass Fan. It takes abuse and stays in use*, and because it’s a Big Ass Fan, it has everything you would expect, and more...

- Extraordinarily Durable Construction
- Amazingly Quiet Operation
- ELEVEN Adjustable Speeds
- Multiple Mounting Options
- Enormous Airflow Coverage Area
- Superior Maneuverability
- Up to 50% Less Energy Use

Yellow Jacket is so durable it will never need to be replaced. And we aren’t just saying that. We guarantee it for life.**

**Limited lifetime warranty; certain exclusions apply

Learn about the many benefits of Yellow Jacket.
WWW.BIGASSFANS.COM  |  (877) BIG FANS

* Scan to see documented attempts at Yellow Jacket destruction.
Or go to www.canyoudestroyit.com

Covered by one or more of the following U.S. Patents: 6,244,821; 6,589,016; 6,817,835; 6,939,108; 7,252,478; 7,284,960; D587,799; D607,988; 7,654,798 and other patents pending.©2011 Delta T Corporation dba the Big Ass Fan Company. All rights reserved.
intended divert location. Its tray then tilts to one side and gravity pulls the item off the tray. Items usually slide onto a chute or onto a takeaway conveyor positioned at the side of the sorter. The tray then rights itself and is ready to accept another item for sorting.

A crossbelt sorter works on the same basic principle, except instead of a tray, each carriage in the systems holds a 2- to 3-foot cell of belt conveyor powered by a small motor. When an item reaches the divert location, the motor moves the conveyor, discharging the item sideways off the sorter into a chute or onto a takeaway conveyor.

In a bomb bay sorter, each carriage on the track holds a flat tray that has a split down the middle. When an item reaches its intended location, the two sides of the tray swing down and apart, dropping the item into a chute or container positioned directly below the sorter.

Bomb bay sorters are generally less expensive than tilt tray or crossbelt sorters, but they also have the lowest throughput. And while tilt tray and crossbelt sorters can accommodate long items by allowing one item to span across two trays or two belts, bomb bay sorters are limited to small items. And, the items have to be able to tolerate the drop without being damaged.

Additionally, bomb bay sorters have unique benefits when there are space constraints in a facility. These sortation systems can fit into very narrow spaces because sort locations are positioned directly under the sorter track.

“We’re seeing more and more bomb bay sorters in use,” says Mike Hahn, vice president of Knapp Logistics & Automation. “In certain applications they are very good performers. In terms of cost, they provide a good value to customers. In terms of space, this type of equipment is very good because the chutes are underneath not on the side. Bomb bay sorters are very space efficient when limited space is available.”

While crossbelt sorters are the most expensive of these high-speed options, they also offer the most product control because they use their own power to divert products rather than relying on gravity. This means the sorter can go faster and the divert locations can be placed closer together.

A tilt tray sorter requires more space between divert locations than a crossbelt sorter, but it also has fewer moving parts, making it less expensive and easier to maintain.

Carton sortation
Sorting cartons at high speeds usually requires a sliding shoe sorter. Instead of being configured in a loop, a sliding shoe sorter is linear: products enter at the beginning of the line and are diverted before they reach the end of the line.

The bed of a sliding shoe sorter is essentially a length of metal slat conveyor with a small rubber clock (called a shoe) mounted on each slat. In most designs, the shoes line up along the side of the conveyor opposite the divert locations. The conveyor carries a carton along the line, and when the carton reaches its divert location, several shoes are activated. The shoes slide across the slats and push the carton off the side off the sorter, usually at a slight angle.

“The number of shoes activated depends on the size of the item being transferred,” says Joe O’Connor, director of marketing for Automotion, a Wynright company. The rule of thumb, says O’Connor, is for the whole carton to be impacted by the shoes, with a shoe out front and a shoe behind, sometimes even two out front and behind, to prevent the product from spinning. The idea is as the shoe slides across the conveyor, it’s guiding the carton and changing its orientation at the same time.

An alternate design places shoes down the center of the conveyor and pushes cartons in either direction.

A sliding shoe sorter usually sorts 200 to 300 cartons per minute, depending on the characteristics of the product and on how closely the induction system spaces the cartons.

System controls
A key component of most sortation systems is a fixed-position bar code scanner. The scanner identifies each carton or item on the conveyor and sends that information to the sortation system controls. The controls have been pre-programmed with the destination of each product and can activate the sortation mechanism when the product arrives at its designated divert point.

The smaller the item, the more scanners or sensors you need to ensure the item is seen, explains Mark Wolkenfeld, vice president of GBI Data & Sorting Systems. This is also the case with items like polybags because a sensor can go right through it, he adds.

Sensors and scanners can go a step further, says Wolkenfeld. If the product being sorted is particularly valuable, or if there’s a question about product movement, sensors can even be put in the chutes themselves to confirm that the item was accurately diverted.

As systems have been pushed to continually increase rates, sortation system suppliers have worked to increase throughput without increasing machine speed, explains IntelliGrated’s Kraus. This makes the machine control system much more critical on sliding shoe and pop-up wheel sorting technologies, and it reduces wear, energy usage and noise while extending equipment life.
The YGS Group is the authorized provider of custom reprint products from Modern Materials Handling magazine.

Develop greater brand awareness and showcase your featured editorial from this industry-respected publication.

Place your press directly in the hands of your customers and prospects with custom reprints from Modern Materials Handling magazine.

Event Collateral
Media Kits
Direct Mail
Online Marketing
Recruiting Packages
Presentations

800.290.5460 x136 | mmh@theYGSGlobal.com

The YGS Group is the authorized provider of custom reprint products from Modern Materials Handling magazine.
Foresighted information destruction equipment supplier adds lift tables to make equipment more ergonomic.

By Lorie King Rogers, Associate Editor

Handling proprietary information can be a heavy responsibility. Disposing of it can take a special—and heavy—piece of equipment.

Security Engineered Machinery (SEM), a leading supplier of information destruction equipment based in Westborough, Mass., makes shredders, disintegrators and degaussers. A degausser is used to permanently erase data from computer hard drives, making them unusable and ready for secure disposal by banks, hospitals and other organizations that need to protect confidential records.

But before bringing two new degaussers to market, SEM faced some weighty challenges. Because the automatic and manual models were each heavy (300 and 200 pounds, respectively) company executives were concerned that the weight of the machines would inhibit sales. How would a customer unpack the machine and safely move it to a sturdy table or countertop? How would they move it safely throughout the facility?

To address these questions, SEM’s management team partnered with a leading manufacturer of ergonomic materials handling equipment (Southworth Products, www.southworthproducts.com) to overcome the challenge of machine mobility and worker safety. The collaboration has resulted in each degausser being sold with its own vertical lift table. The end user can now accomplish safe, efficient relocation of a degausser without risk of strain or worker injury.

Each lift table is equipped with smoothly rolling casters and a platform that moves up and down to the most convenient, ergonomic working height. For the larger, automatic degausser, a powered vertical lift table is now standard equipment. For the smaller, manual model, the choice is a manual lift table, which is raised and lowered with a hydraulic foot pump. Mounting holes are drilled in every platform, and the lift and degausser are packaged and shipped together.
“One of the great things about our WMS is how we’ve been able to bolt on just about anything we need. The way the system is configured allows for a number of access points in the software; and we’ve never had an absolute ‘no’ in terms of what we needed to do.”

—Tom Boyle, project manager, GUESS
Established in 1981, GUESS has grown from its early beginnings of selling just jeans to a global brand with a full offering of apparel and accessories in more than 80 countries. In North America, this fashion-forward company remains an iconic leader in the apparel industry, shipping 30 million units annually to major department stores, over 400 specialty retail stores, and directly to consumers online.

The company has grown dramatically from a $6 million family business in 1982 to a global fashion empire with revenues of more than $2 billion in 2010. Such exponential growth over three decades is accomplished in part by a strong distribution system; but back in 1999—just about halfway through the company’s journey—this distribution system was showing clear signs of wear.

In fact, its Los Angeles distribution center (DC) was bursting at the seams. “We literally had goods in tents out in the parking lot because we had no room inside the DC,” recalls GUESS’ project manager Tom Boyle. Not only was the DC overflowing, but its distribution network was also grappling with issues of lengthy transit times to most of its customers. Merchandise had to be regularly transported from Los Angeles clear across the country to where 60% to 70%
"Our leading-edge distribution centre."

This DC is an industry first in Canada. We have truly set the new standard for the most effective and efficient means of distribution in our industry. While there are significant cost savings resulting from the leading-edge logistics technology, the greater benefit will be realized by customers at store level.

The Retail Support Centre RSC represents the future of our food retail logistics and underscores our focus on building and sustaining a healthy retail food business and supporting infrastructure for the long term. As we continue to become widely recognized as the best food retailer in the country, this facility positions us with capacity for growth and service leadership for years to come.

François Vimard
Chief Financial Officer CFO
Sobeys Inc., Canada

www.witron.com
Tel. 847 385 6000
of its wholesale business was located.

Systems-wise, the company was using an off-the-shelf, relatively manual, pick-pack system that didn’t interface well with any of their other software or hardware. “This old system was built for a much smaller business, and as we grew, the controls that we needed in order to ensure that our inventory was under control just didn’t exist,” adds Boyle.

So in early 1999, GUESS hired Kurt Salmon Associates (KSA), a global management consulting firm, to assist the retailer in achieving two goals: the selection of a site for a new DC to improve service times to customers east of the Mississippi; and the selection of a new, full-featured warehouse management system (WMS) that would help GUESS execute this new strategy.

Keeping the company’s business needs in mind, KSA conducted a full-scale site selection study. Lower labor rates, impressive tax breaks, and the opening of a few well-known carrier hubs were the principal reasons that had the team zeroing in on a brand new, 580,000-square-foot facility in Louisville, Ky.

Once the building selection was made, a very aggressive schedule was launched to search and install a best-of-breed, advanced WMS for this new facility. The team selected Manhattan Associates’ WMS (then called PkMS, now known as WM), and a two-phased roll-out schedule was initiated. In December 1999, GUESS’ new WMS went live with the inbound functions of receiving and putaway, followed closely in January 2000 by outbound functions of picking, packing and shipping.

But all this was just the beginning.

Over the next decade, the company transformed its distribution operation out of its Louisville site to meet various business challenges. And with each transformation, the WMS would be repeatedly tried and tested. Over the next few pages we’ll follow how this fashion giant’s WMS kept pace with a new enterprise resource planning (ERP) software solution and the installation of a whole slew of materials handling equipment in an effort to keep the company on top of the fickle fashion world.

TRANSFORMATION #1: NEW ERP
As part of its continuing quest to efficiently deliver uncompromising quality to its customers, the company’s first transformation occurred in 2003 when the company decided to implement a new ERP software solution called Jesta I. S. (formerly Essentus). “The overall project for this new ERP lasted a year, but the integration with the WMS took about four months, and that’s due to ‘mapping,’” says Boyle.

Bryan Feddersen, Manhattan Associates’ senior manager for its client services organization and the lead for the GUESS project, explains this mapping process: “It’s a very detailed and involved exercise to map all of the data elements flowing between a WMS and the host ERP system. In most cases, you do not have the same data structure and integrity requirements on the host that you do in the WMS.” He adds that data needs to be translated into a format that is valid and recognizable to the system receiving the data and also to the system sending the data. The data being mapped may range from inbound carton information at receiving to outbound order data and store distribution at shipping.

Fortunately, Jesta had integrated with Manhattan’s WMS many times in the past in similar projects with other supply chain organizations; thus, much of its mapping had already been pre-configured. “Host interface design is always complex, especially when it is the first time you’ve worked with a particular vendor’s software,” says Feddersen. “But with several hundred clients in our client base, we’ve been able to build a repository of knowledge and experience from working with a large number of different host systems.”

TRANSFORMATION #2: SEPARATING WHOLESALE AND RETAIL
After a couple of years, another major change further tested the flexibility of its WMS. For years, inventory for both wholesale and retail had always been combined, and wholesale sold to retail as if retail were a wholesale customer.

In 2005, GUESS decided to split its business into two separate entities with each owning their own inventory—but still running both out of one DC. Not only did the WMS have to be modified to reflect this split, but it now had to integrate with retail’s JDA ERP system.

“Dividing the inventory into retail and wholesale was not tremendously difficult,” recalls Manhattan’s Feddersen. “The complexity was in trying to decide when you made an adjustment whether you made an adjustment to retail’s or to wholesale’s inventory.”

Louisville’s distribution team successfully tested the concept over two weekends, both operationally and within the WMS, bringing in full crews
WAREHOUSE SIGNS
Solutions for all your bulk storage identification needs for indoor or outdoor applications.
- Long-range retro reflective
- Flat, bent or two-sided Z shaped sign fabrication
- Dock door
- Aisle
- BullsEye oval floor plates

RACK LABELS
Durable polyester rack labels help insure consistent bin location year after year. We produce and install over 5 million rack labels annually.
- Horizontal and vertical upright
- Magnetic
- Protective laminates standard
- Special adhesives — cover up and freezer applications
- Color coding for tier identification and directional arrow graphic images

PREPRINTED LPN LABELS
Preprinted barcode pallet id labels save significant time and money compared to print-on-demand thermal transfer.
- Run and hold inventory programs
- Same day shipping
- 2-D and linear barcodes
- Corner-wrap

NATIONAL INSTALLATION SERVICES
The most comprehensive installation services in the industry. With over 40 years of combined experience, our installation team provides nationwide coverage that delivers great value, guaranteed quality and on-time engineered solutions.
- Customized installation solutions
- Data file manipulation
- Fully bonded and insured

FREE samples available. Channel partner inquiries welcome.

salesmmh@idlabelinc.com
Toll-free: 800.541.8506 x100
www.idlabelinc.com

ID LABEL INC.
425 Park Avenue
Lake Villa, Illinois 60046

Positive feedback...Every time
to actually run a split of the inventory and to make sure that everything that was talked about on paper would actually work.

**TRANSFORMATION #3: NEW EQUIPMENT**

The DC’s pursuit of excellence did not stop there. Over the next few years, the fashion retailer invested in state-of-the-art materials handling equipment to automate and increase the throughput and accuracy of its order fulfillment process in Louisville.

In 2007, GUESS added a bomb bay unit sorter that automatically sorted individual units to its stores or to wholesale orders. From 2009 to 2010, a put-to-light system was implemented primarily for retail's quick response replenishment and for direct-to-consumer online orders. This year, the team is in the midst of installing a tilt tray sorter for more delicate handling of piece-pick items such as watches and jewelry.

With each new installation of a piece of materials handling equipment, interfaces with the different systems had to be built and tested, sometimes remotely at a vendor's facility. Overall, however, each integration went smoothly, lasting only two to three months depending upon the complexity of the equipment.

**HOW THE SYSTEM WORKS**

The GUESS WMS is continuously interfacing with various systems and equipment as it directs the paperless flow of inventory through its DC. It begins with advanced shipping notices (ASNs) that are transmitted from suppliers to Jesta for wholesale, and to JDA for retail. These ASNs are then electronically relayed to the WMS.

Even before the case physically arrives at the receiving dock, each case license plate number (LPN) already exists in the WMS from this ASN. As cases are unloaded onto conveyors and scanned, they are automatically received, inventory is automatically updated, and the warehouse control system (WCS) is automatically notified to direct the case coming down the pike for one of many destinations: an inbound quality check, a weighing/scaling station for dimensions, the put-away area for storage, or immediately to the picking area for shipping. At each destination, each case is scanned so that the WMS can be continually updated with its current location and status.

On the outbound side, the WMS performs an allocation to decide whether there's enough inventory for that order and where to get the inventory from within the DC for distribution into the sorters or the put-to-light. After cartons of orders are packed, they're inducted into the conveyor system labeled with a unique LPN.

Real-time interfaces between the WMS and WCS directs the scanned outbound carton to either go to value-added services for additional operations requested by customers, to an outbound quality check, or to an automated print-and-apply area where shipping labels are automatically applied. Each case then crosses a scale and a tape machine before being diverted to the appropriate shipping lane.

**A SYSTEM WITH BENEFITS**

It’s been over a decade since the initial WMS roll-out, and GUESS can’t stress enough the importance of the system’s flexibility and operation over the years. “With it, we know exactly where our inventory is, what state it’s in, and exactly what our capacity is on the floor,” says Boyle.

Because every unit is tracked in real time, the WMS ensures that the right goods ship to the right locations every time, causing accuracy to “go through the roof.” A physical inventory count now takes just 12 hours, down from three days.

Integrating the WMS with unit sorters and put-to-light systems significantly increased throughput allowing the shipment of 30% to 40% more inventory year over year. This shift to automation also realized hard savings of $1.3 million in 2009. Weekly store orders have been reduced from multiple shipments per week to just once per week with the consolidation of store orders.

More importantly, its WMS allowed the company to keep up with exponential demand and scale up to a brand new, larger DC. “It also provided the flexibility to handle all new interfaces such as the installation of new sorters and the implementation of new host systems for wholesale and retail,” adds Feddersen.

Boyle could not agree more: “One of the great things about our WMS is how we’ve been able to bolt on just about anything we need. The way the system is configured allows for a number of access points in the software; and we’ve never had an absolute ‘no’ in terms of what we needed to do.”

In fact, the Louisville DC’s WMS has been so successful that GUESS has rolled out the same system in its DCs in Montreal, Hong Kong and Shanghai.

Maida Napolitano is a contributing editor to Modern Materials Handling.
Image-based bar code reader

The DataMan 500 image-based bar code reader achieves higher read rates, improves on-line visualization and has higher reliability than laser scanners. With code reading software and liquid lens autofocus technology, the reader is capable of processing images at up to 1,000 frames per second. The device reads codes in any orientation, data matrix and QR 2D codes, and multiple codes in the same image. It also reads damaged, distorted, blurred, scratched, low-height and low-contrast 1D bar codes. Constructed with no moving parts for enhanced reliability, the reader allows users to see what it sees, either live on a monitor or archived images. The base unit supports both standard C-Mount lenses and variable focus options. Cognex, 508-650-3256, www.cognex.com.

Low-profile, multiprotocol RFID reader

The Mercury6 four-port, multiprotocol RFID reader measures 1.3 x 7.5 x 7 inches, enabling integration into low profile portals, read stations, displays and other indoor and outdoor structures and environments. The device has an IP52 rating, providing dust ingress protection and water resistance for industrial, outdoor and rugged service. For high tag read rates, the unit’s sensitive configuration delivers a read range up to 30 feet and an RFID tag read rate of 400 tags per second. Ease of installation and low total cost of ownership is ensured with power over Ethernet support, while integrated Wi-Fi network connectivity is available as needed. ThingMagic, 866-833-4069, www.thingmagic.com.

Sealed, stainless steel computer terminal

Ideal for meeting the hygienic standards of food processing, healthcare and pharmaceutical applications, the Everest S9000 rugged, stainless steel computer terminal is IP65/NEMA 4 sealed to accommodate caustic, daily wash down processes. The terminal features a smooth casing with a flush-mount resistive touch panel and sealed IO connectors, making it virtually waterproof. Powered by an INTEL Atom N270 1.6 GHz processor with a 2.5-inch SATA HDD, internal 802.11 a/b/g/n and dual internal antennas, the terminal is offered in 12 and 15 inch display sizes. It runs Windows XP and Windows 7 operating systems. Glacier Computer, 603-882-1560, www.glaciercomputer.com.
**Data capture device offered with laser scanner or 2D imager**

Offered in hand-held and pistol grip versions, the Falcon X3 mobile computer provides real-time data capture and communication with either a laser scanner or 2D imager. Both versions include good read feedback technology and are packaged with Windows CE or Windows Mobile 6.5 for seamless integration with WMS and ERP systems. A diversity antenna system enables the device’s Summit Wi-Fi 802.11 a/b/g radio to provide maximized coverage. Features include backlit numeric and alphanumeric keyboards, QVGA display that adjusts to dark indoor or extremely bright outdoor environments, IP64 sealing to protect from dust and liquids, and resistance to numerous drops from 6 feet.


**Four hand-held computing devices share single, common platform**

Comprised of four products sharing a single platform, the 70 series of ultra-rugged mobile computers helps businesses optimize resources to improve operational efficiency, support future growth and meet customer demands. The CN70 is ideal for field service, transportation and logistics use; the CN70e is intended for use in direct store deliveries and route accounting; the CK70 accommodates parcel delivery functions; and the CK71 is geared for manufacturing and warehousing applications. All feature Windows embedded hand-held operating systems and offer 1D/2D scan engines, 802.11n dual-band WLAN for reliable connectivity, and 6-foot drop specs across all temperatures. Intermec, 800-347-2636, www.intermec.com.

**Tablet screens for bright sunlight**

The voice-ready M8930 and M8940 rugged tablet computers offer display technology for use in bright sunlight. The M8930 has a full 7-inch touch screen, while the M8940 is equipped with a 6.2-inch touch screen and a 64-key QWERTY alpha-numeric keyboard. Ideal for indoor and outdoor use, the units tolerate exposure to extreme temperatures, direct impacts, chemical spills and scratches, and are dust- and water-sealed to IP-67 standards. They withstand multiple 4-foot drops and are backed by a 2-year manufacturer’s warranty. The tablets use Windows CE 6.0 and run on a Marvell PXA-300 624MHz processor with 128 MB SDRAM. Internal, dual LI/ION batteries power the units and can be hot-swapped as needed.

For more than 65 years, RIDG-U-RAK has been the innovative leader in storage rack design and production. Whether you need replacement beams or a storage system covering 30 acres of warehouse space, RIDG-U-RAK is the name to trust.

**New! Full Line Selection Guide**

**GPS-enabled Bluetooth bar code scanner**

The KDC250 linear bar code data collector with GPS capability collects location information, along with bar code data and time stamps, to enhance location based services, such as proof-of-delivery. A GPS bypass mode allows the unit to double as a Bluetooth receiver. Weighing 2 ounces and measuring 3.9 cubic inches in volume, the small unit also supports simultaneous soft keyboard and bar code scanning. Firmware for the supplier’s line of Bluetooth scanners supports Spec2.1+EDR and HID options, allowing use of both a smart phone’s soft keyboard and the scanner simultaneously. KoamTac, 609-734-4335, www.koamtc.com.

**Open platform software drives mobile computer**

The IP65 rated Omni XT10 device uses an open source, modular computing platform, making it re-configurable in the field to accommodate new technologies or to adapt to changing needs. The Omnii modular mobile computing platform allows the supplier, its resellers and developer partners to co-create solutions through an open, online community. Features include a 6.5-foot drop rating, Texas Instruments OMAP3 processor and superscalar architecture delivers parallel ARM instructions for better performance and better efficiency at lower MHz. A battery health grade monitor warns when the battery is nearing the end of its lifecycle. Psion, 800-322-3437, www.psion.com.

**Rugged hand-held computer**

The Ranger 3 series of rugged hand-held computers features a QWERTY alpha-numeric keypad, ultra-fast processor and autofocus camera. The computer includes a large, sunlight-readable VGA display and long-life battery. Carrying an IP67 rating against dust and water intrusion, the device meets military standards for temperature extremes, drops, vibration, humidity and altitude. Built-in capabilities for data collection and asset management include a GPS receiver, 5 megapixel camera, 1D laser bar code scanner, with connectivity via 3G WWAN, Wi-Fi and Bluetooth for data synchronization. Trimble Navigation, 408-481-8000, www.trimble.com.

**Ergonomic mobile computing**

Providing user-friendly ergonomics, the Dolphin 99EX mobile computer uses cutting-edge wireless technology with multi-functional data capture and rugged durability for use in indoor and outdoor environments. IP67-rated, the device withstands multiple, 6-foot drops to concrete. To enable on-the-fly switching between GSM and CDMA networks, the unit incorporates a software-definable radio for improved network coverage with lower provisioning and deployment costs. Integrated motion, light and proximity sensors conserve battery life and automatically adjust to the environment. To meet diverse data input needs, multiple keypad options are offered. The computer’s ultra-bright 3.7-inch display can be read in direct sunlight. Honeywell Scanning & Mobility, 800-582-4263, www.honeywell.com.
1D, 2D wireless hand-held bar code terminals

The BHT-700 series of 1D and 2D wireless hand-held bar code terminals feature a 624 MHz processor and 128 MB of RAM to speed up work. The terminals incorporate both Bluetooth and high-security WLAN (802.11a/b/g) wireless coverage, with up to 12 hours of continuous wireless communication from a single battery. Advanced image-scanning software ensures reliable reading of high-density or poorly printed bar codes, and a large depth of field and rapid-response scanning improves operator accuracy. Capable of withstanding a 5-foot drop, the device’s magnesium-alloy frame encases a 3.5-inch QVGA color LCD touch screen with high-speed graphic display. Denso ADC, 888-693-3676, www.denso-adc.com.

Modular mobile computer

The IP65-rated Tecton rugged hand-held computer accelerates real-time data capture with a PXA 320 806 MHz processor running Windows Mobile 6.5 or Windows CE 6.0. Capable of reading bar codes from 4 inches to 40 feet away, the same device accommodates receiving to full-pallet putaway activities. For scan-intensive picking, the unit can be modified with an easy-grip, removable handle with two-finger trigger. It also includes integrated voice technology and a scan vibration signal that verifies successful scans in noisy environments. An optional cold-storage configuration includes programmable touch screen and scan window defrosters, plus a cold-tolerant backup power source that holds a charge in temperatures to -22°F. LXE, 800-664-4593, www.lxe.com.

Lightweight tablet PC runs Windows OS

Weighing 2.5 pounds, the xTablet T7000 multi-functioning, rugged tablet PC supports mobile workers with notebook functionality, full tablet Windows OS and hand-held portability and data collection capabilities. The unit includes a built-in numeric keypad (QWERTY keyboard is an optional attachment) and a 7-inch, high-resolution touch screen display readable in light and dark environments. IP54 sealed against dust and water, the unit runs Windows 7, Vista, or XP Tablet PC edition on a 1.6 GHz Intel Atom processor with 2GB RAM in temperatures from -4°F to 120°F. MobileDemand, 319-363-4121, www.ruggedtabletpc.com.
Longer Lasting Belts

- Abuse Resistant Belts work where others fail.
- Super Strong Joints are virtually unbreakable.
- High Tension Belts move heavier loads.
- Super Red Belts double conveyor capacity.

**New Split Line-shaft Spools**

★ High precision. Reasonable price.
★ Easy to install. Zero downtime.
★ Can be locked to shaft. Eliminates need for keyed spools and shafts.

**Dura-Belt**

800-770-2358 614-777-0295  www.durabelt.com

**Turnkey RFID middleware eliminates returnable asset losses**

Tying together RFID and/or bar code browser-based technologies, eP360 Internet-based middleware automatically collects, assembles, integrates and delivers asset movement information to eliminate returnable asset leakage and provide visibility to the chain of custody for better accountability. The software captures data from readers on trucks, at docks doors and other choke points, making it ideal to manage reusable containers, item replenishment and warehouse item tracking, or to support multi-facility asset management, including tools, supplies and product. All data is centrally held in a SQL transaction database for easy retrieval. The scalable software may be integrated via client-hosted or ASP model, can operate as a standalone system, or can be integrated into a larger ERP solution. The Kennedy Group, 440-951-7660,  www.kennedygrp.com.

**Portable storage rack**

For easy storage, protection and inventory of heavy parts, a heavy-duty portable storage rack includes seven shelves that each hold up to 250 pounds, for a maximum capacity of 2,000 pounds. Shelves measure 29 x 68 inches and are equipped with spring-assisted hinges enabling them to be lifted up and out of the way for ergonomic loading and unloading. Easy to clean and store, the rack includes heat-dissipating lift handles and large industrial casters for easy mobility. A reinforced base permits fork truck handling. Palmer Manufacturing, 937-323-6339,  www.palmermfg.com.

**Automatic tipping of loads up to 2,000 pounds**

For space-saving materials handling in lean production areas, a pneumatic tipper works in combination with a conveyor system. Tipper models range from basic full-load dumpers to automated systems that fill containers by weight, volume or other means as specified. Features include accurate, continuous and automated operation; operational load handling up to 2,000 pounds; and heavy-duty construction from stainless steel for ambient, cooling or high-temperature applications. All systems are set up and tested at the supplier’s facility prior to shipping. Almac Industrial Systems, 800-265-3094,  www.almac.com.
System converts any forklift into driver-less vehicle

With KiSoft Automove, standard forklifts can be converted to automatic forklifts regardless of make. The system guides the vehicles by laser navigation, enabling them to move independently through the warehouse without fixed floor installations for multi-use routes. When picking, the vehicle accompanies the picker who has both hands free for picking to work more efficiently without needing to enter and exit the vehicle. Orders are transmitted in an optimized sequence to a mobile terminal, which directs the picker to take the required number of goods and place them on the automated truck with load carrier. Once the completion of the process is confirmed, the forklift proceeds to the next location. KNAPP Logistics Automation, 678-388-2880, www.knapp.com/us.

Software module optimizes driver work queue, interfaces

Capable of integrating with existing WMS and ERP applications, the Orchestrator software module is an add-on to the VisiblEdge RFID-enabled lift truck management system. The module streamlines the distribution and execution of work instructions to drivers, and provides tools for centralized lift truck management. Functions include simple work queue management for drivers, confirmation of load obtained, feedback on incorrectly picked loads and location capture of all loads moved. It eliminates bar code scanning of inventory and locations, while sharing real-time information on resource, truck, and inventory location, plus historical data of truck and resource usage. Rush Tracking Systems, 913-227-0922, www.rushtrackingsystems.com.

Double leg pallet resists damage from forklift impacts

To provide double the damage protection of conventional plastic pallets, the ProStack double leg ratchet pallet incorporates a top deck and base that interlock within the telescoping legs. This creates a 0.5-inch thick wall in each pallet leg to resist damage from forklift and pallet jack impacts. Formed in a gas-assisted molding process to produce a smooth finish, enhanced stiffness and dependable impact properties, each pallet is edge rackable up to 2,200 pounds. The FM-approved, fire-retardant pallets are easy to clean and hygienic, resisting bacteria and other contaminants. Polymer Solutions, 877-444-7225, www.prostackpallets.com.
Real-time software integrates yard, dock activities

The 4SIGHT yard and dock management system software integrates the monitoring, scheduling and communication of trailer movement, load assignment and loading dock status in a simple, easy-to-use interface. For improved trailer coordination and turn time, the system combines RFID, GPS and sensor technologies to provide real-time yard and loading dock visibility. Features include robust event-management, alert notifications to reduce labor, as well as full automation, visibility and optimization from vehicle arrival to departure. 4Front Engineered Solutions, 972-466-0707, www.4FrontES.com.

Heavy capacity truck scale

The Trident truck scale features a factory-poured, factory-cured, engineered concrete system with traceable compressive strength. The scale can be installed in one day and includes TensileCore engineered concrete. During the mix, pour, cure and finish, several ASTM-certified tests are performed on the concrete to guarantee the concrete and finish work is done with no errors. In addition to ensuring structural integrity and long life, the scale includes orthotropic (longitudinally oriented structural I-beams) with an open bottom to eliminate corrosion. Structural archways incorporated into the scale's construction distribute loads directly onto structural I-beams. Fairbanks Scales, 816-448-4288, www.fairbanks.com.

Built-to-length cart platform transports odd-sized loads

To accommodate manual transport of awkwardly sized, heavy crates, the Crate Cart maneuvers long, heavy and odd size containers through tight aisle ways and limited space storage areas. Ideal for large package transfer and support, the built-to-length system consists of plastic-coated steel pipe and join units. The flexibility of the cart's construction allows it to handle loads with commonality of width but with various lengths, or vice-versa. Features include simple construction with cross bracing throughout the length of the cart. To complement application requirements, optional hardware accessories include hinges, hangers, latches, stops, leveling feet and clamps. Creform, 800-839-8823, www.creform.com.
Hydraulic scissor lift and tilt includes conveyor

Combining a hydraulic scissor lift with a tilting conveyor, the EnKon lift system allows for loading and assembling components to an extruded aluminum frame before sliding to another assembly cell (via the conveyor) onto another table for further assembly. The system is powered by 220 volts and delivers up to 90 degrees of tilt angle with 100 inches of conveyor to accommodate the assembly process. Standard safety features include captured roller wheels to prevent tipping and stop arms to lock the lift in a raised position as needed. Capable of handling up to 1,500 pounds, the conveyor measures 42 x 8.6 inches and the table rises from 8 to 44 inches.


Monitoring device improves battery charging through analytics

For productive and profitable battery fleet powering, the Wi-iQ battery monitoring system collects a range of battery operating data, including amp hours charged and discharged, temperature voltage and electrolyte level. By uploading this data through a wireless communication to a computer containing the system’s analytical reporting software, the system provides quick-glance exception reporting and battery operation and condition reports. Features include universal DC cable sizing for all battery types, a temperature warning, and voltage imbalance notification to indicate possible cell trouble before battery failure occurs. The device captures and records up to 2,555 cycles of battery data and provides wireless data downloading to a personal computer within a range of 100 feet. EnerSys, 610-208-1991, www.enersys.com.
Russ Devilbiss

MHIA, Carter Controls

TITLE: Chair, Conveyor & Sortation Systems industry group, MHIA; Sales engineer, Carter Controls
LOCATION: Charlotte, N.C.
WEB: www.mhia.org/industrygroups/conv

Modern: This has been a good year for the materials handling industry in general. How has the conveyor and sortation industry performed?

Devibiss: Our market is coming back, but it has been slow, especially in the retail sector. We’re hoping this oil crisis doesn’t hurt demand.

Modern: What’s driving the demand for sorters today?

Devibiss: The drivers are different with every industry, but the common theme is that people continue to look for cost savings. They also want to implement systems that will give them an ROI today, but they are also asking if the system that meets their needs today will keep up with their demand in three to five years. They’re trying to plan for that growth.

Modern: Let’s talk about speed. Is the push for higher and higher speeds, or is there still growth in the slow-speed sortation market?

Devibiss: There is a lot of demand for sortation in retail fulfillment and retailers want the maximum throughput they can get. We’re seeing shoe sorters running at 600 feet per minute. The major players in our industry continue to come out with new products to make the U.S. more competitive.

Modern: When you look across the industry, what has been the most significant technological development in sortation in recent years?

Devibiss: I think we have to go back to the last answer, and say that the most impressive technological developments have been around higher speeds and higher throughputs. Software has allowed that to happen. So has the ability of cameras and scanners to read bar codes at faster and faster speeds. We have been able to bring together complimentary technologies like automatic weighing, labeling and bar code scanning to create total sortation solutions.
Critical Industry News at Your Fingertips!

Critical Topic areas help you develop strategies and expand your knowledge. Each topic provides you with the news, information, and resources you need — each day.

- Automation
- Conveyors & Sorters
- Inventory & Picking
- Loading Dock Equipment
- Mobile & Wireless
- Shipping Pallets
- Storage Systems
- Containers & Totes
- Energy & Sustainability
- Lift Truck & Fork Lift
- Handling & Warehouse Ergonomics
- Packaging
- Software & Technology

www.mmh.com/criticaltopics
In the end it is you who dictates the pace – not your warehouse.

Kardex Remstar is a One Stop Shop supplier for dynamic storage and material flow systems.

Offering Shuttle Vertical Lift Modules, Megamat Vertical Carousels and Horizontal Carousels, Kardex Remstar provides solutions that save you time, space and money!