

MODERN MATERIALS HANDLING®

mmh.com

June 2011

febi:

Automation success 16

German auto parts move faster than the speed of light with automated equipment at febi bilstein.

BIG PICTURE

What is an AGV? 22

EQUIPMENT 101 SERIES: PALLETIZING

Build strong, stable pallet loads 30

SPECIAL REPORT

Software reader survey 36

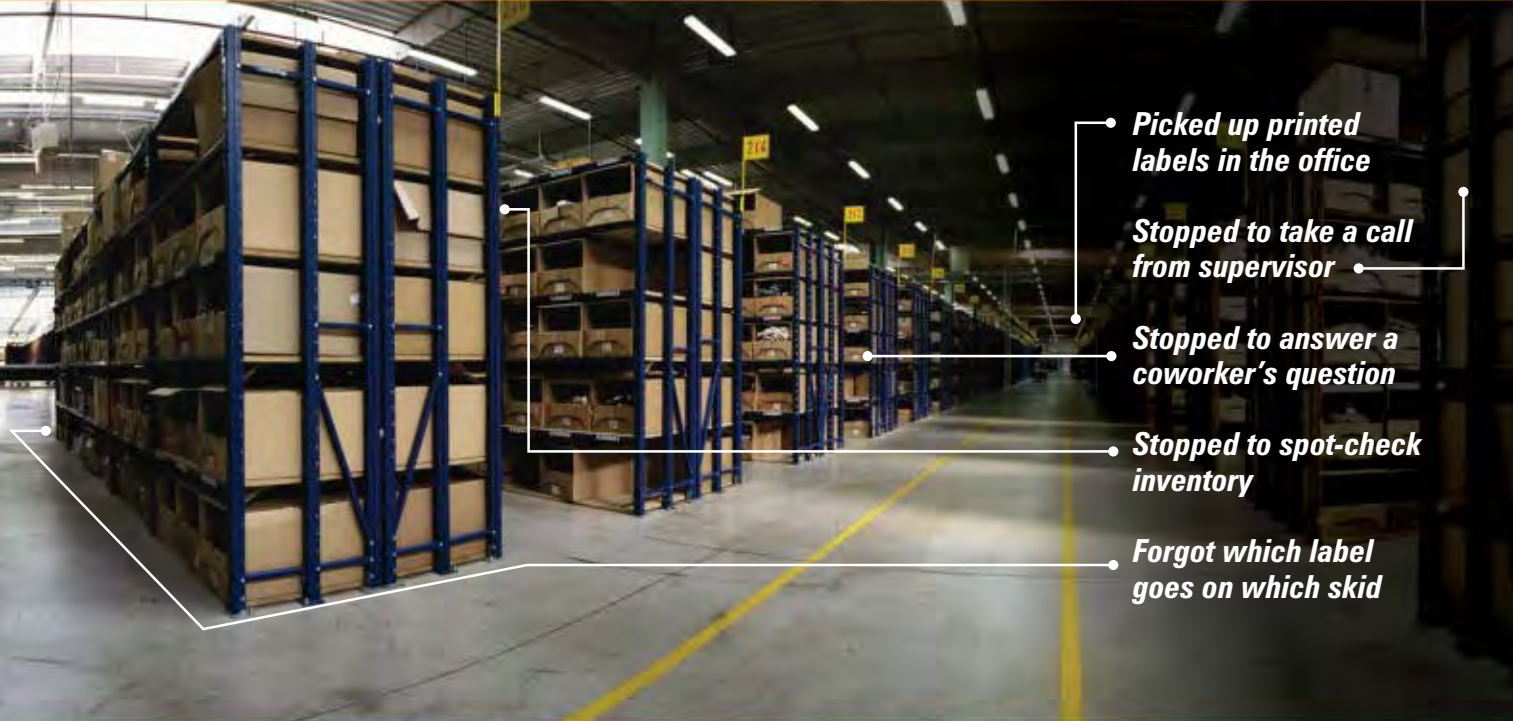
+ Exclusive Modern Webcast

Putting data to work in warehouse & distribution operations

Thursday, June 30 @ 2:00 p.m. ET

Register for free: mmh.com/2011softwareusage

STOP WASTED TIME AND LABELING ERRORS.



Picked up printed labels in the office

Stopped to take a call from supervisor

Stopped to answer a coworker's question

Stopped to spot-check inventory

Forgot which label goes on which skid

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.**



*Only Kenwood Gives You So Many Ways to **Save Money** and **Boost Efficiency**.*

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.



KENWOOD
Listen to the Future

1-800-950-5005



www.kenwoodusa.com

ADS#17511

Armstrong & Associates report says 3PL industry is growing

GROSS REVENUE FOR U.S. third-party logistics (3PL) providers is expected to be \$141.2 billion in 2011, a 10% increase from 2010, according to estimates released last month by Armstrong & Associates. U.S. 3PLs had gross revenues jump 18.9% in 2010 to \$127.3 billion, slightly exceeding the 2008 market result.

"The main takeaway here is that 3PLs are taking advantage of ongoing economic globalization," Armstrong & Associates chairman

Richard Armstrong told *Modern*.

Net revenue from 1995 through 2010 averaged annual increases of 12.7%—with 2009 the only negative growth year since the company began tracking the 3PL industry in 1995. From 2009 to 2010, the increase in 3PL net revenue was 4.7 times the rate of U.S. gross domestic product (GDP) growth. One driving factor of 3PL growth was world trade volumes, which increased 12.4% for 2010.



Kiva Systems opens new world headquarters

LAST MONTH, KIVA SYSTEMS, a developer of mobile-robotic solutions that automate e-commerce order fulfillment and warehouse operations, hosted an official ribbon-cutting ceremony for the company's new world headquarters in North Reading, Mass.

The location boasts more than 120,000 square feet of manufacturing, engineering and demonstration space as well as 40,000 square feet of office space. Development of Kiva's warehouse automation solution employs hardware and software engineers, professional services engineers and systems design consultants with expertise in fulfillment operations. The new location also serves as the primary manufacturing assembly site for the company's high-tech hardware, which includes robotic drive units, mobile shelves, workstations and chargers.



Kiva founder & CEO Mick Mountz with president & COO Amy Villeneuve

Toyota doubles parts warranty

TOYOTA MATERIAL HANDLING USA, a leading lift truck supplier, recently announced it has doubled the manufacturer's warranty on new Toyota Genuine Parts purchased through an authorized Toyota Industrial Equipment dealer from six months or 1,000 hours to 12 months or 2,000 hours—whichever occurs first from the date of sale. The warranty also applies on remanufactured Toyota replacement parts at no extra charge and includes labor. "This warranty is a testament to our confidence in Toyota Genuine Parts and our reputation for providing the highest level of quality and durability," said Terry Rains, vice president of aftermarket sales. "Toyota's industry-leading, one-year parts warranty including labor is designed to deliver to our customers Toyota parts and accessories that help their lift trucks run at optimal performance."

Dematic announces annual conference keynote speakers

DEMATIC, A LEADING systems supplier, recently announced **Dan Patrick** and **Marcus Luttrell** will serve as keynote speakers for its 26th annual Material Handling and Logistics Conference to be held Sept. 18-21 in Park City, Utah.

Patrick is one of America's legendary sports journalists and a revered member of the national media industry. Involved in the initial launch of ESPN, he will discuss his robust career as a sports anchor/reporter and comment on current sports news.

Luttrell, a former Navy SEAL and author of the book "Lone Survivor" will share the story of how he and three other SEALs journeyed into the border of Afghanistan and Pakistan on Operation Redwing. A motivational story of survival, his story is an incredible account of teamwork, fortitude and modern warfare.

The conference is a three-day educational event, offering more than 60 classes, interactive workshops, roundtables, and panel discussions addressing supply chain thought leadership, strategy, best practices and emerging technologies.



Dan Patrick



Marcus Luttrell

TAKE A LOOK UNDER THE HOOD



CUTS **4X** MORE
than a single-edge fixed blade

Smartly engineered, the new OLFA SK-10 Concealed Blade Safety Knife features an adjustable blade positioning design which allows for 4 cutting points on a single-edge utility blade. Developed to give you 4x more cuts on shrink wrap, plastic strapping, leather, sacks, bags and more, versus a single-edge fixed blade.

A perfect example of OLFA engineering at its best.

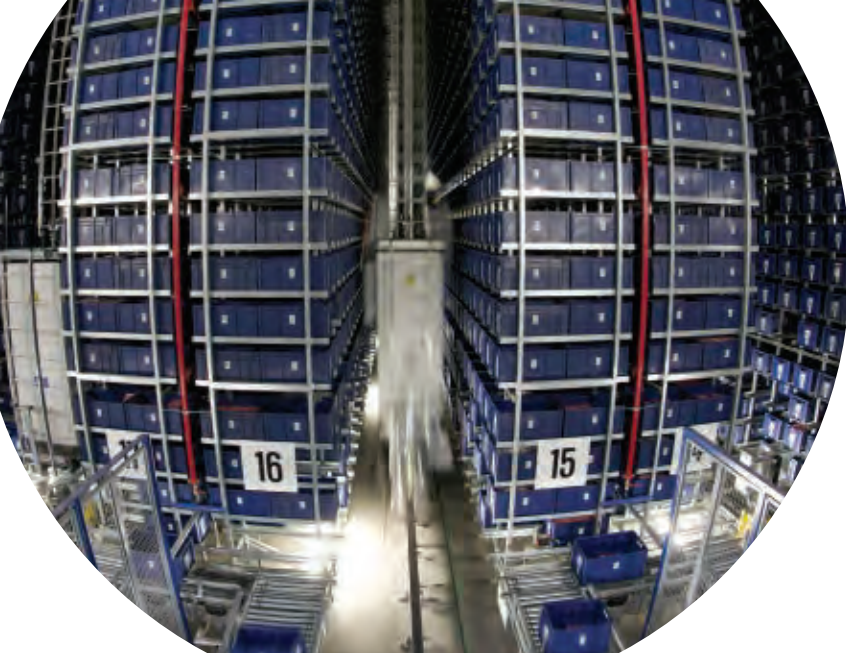


OLFA[®]

Call your OLFA rep today, or 800-962-OLFA (6532) to learn more about our trial program, and uncover the power of 4x more cuts.

MODERN MATERIALS HANDLING®

PRODUCTIVITY SOLUTIONS FOR DISTRIBUTION,
WAREHOUSING AND MANUFACTURING



German auto parts move faster than the speed of light with automated equipment at febi bilstein.

COVER STORY

SYSTEM REPORT

16 To automate or not to automate

German auto parts manufacturer febi bilstein is reaping big gains from automation. Here's what the company learned when it automated conventional distribution processes.

20 Automation in high gear

Febi's new distribution center uses unit- and tote-handling automated storage, conveyor and goods-to-person picking in an ergonomic work environment.

FEATURES

THE BIG PICTURE

22 What is an AGV?

If you think AGVs or automatic guided vehicles, are mature technology, think again. Since 2005, the industry has seen an unparalleled level of innovation.

EQUIPMENT 101 SERIES: PALLETIZING

30 Build strong, stable pallet loads

Forming a high-quality unit load is the goal of every type of palletizing process. Here's a look at how palletizing equipment puts the product into a neat palletized load so it arrives at its destination safe and sound.

SPECIAL REPORT/READER SURVEY

36 Materials handling software usage

WMS, SCMP, WCS, LMS and more—*Modern's* readers offer insights into their use of software, from (alphabet) soup to nuts.

SURVEY RESULTS WEBCAST: Thursday, June 30 @ 2:00 p.m. ET

Register: mmh.com/2011softwareusage

PRODUCTIVITY SOLUTION

35 No batteries, no downtime, no problem

Grocery co-op switches over to fuel-cell powered lift trucks to drive its fleet's uptime to 98%.



PHOTO: JEFF FUSCO/GETTY IMAGES

60 seconds with... Mark Longacre

DEPARTMENTS & COLUMNS

3/Upfront

7/This month in *Modern*

14/ Lift Truck Tips: Fleet management

40/ Supplement: Warehouses & DCs

46/ Special Section: ProMat wrapup

51/ Focus On: Overhead handling

58/ 60 seconds with...

NEWS

9/ ISM reports manufacturing cooling off

11/ MHIA meetings: Are good times ahead for materials handling?

11/ WERC announces 2011-2012 board of directors

13/ Doosan establishes new forklift business

13/ U.S. pallet demand to reach 1.3 billion units in 2015

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.

Peerless
MEDIA, LLC

Global Supply Chain Management



Manage global supply chain intricacies with holistic solutions from ABF®. Our proprietary technology and resource-rich infrastructure is a source for total end-to-end logistics control.

Ready?
to take
control.

Take Control with Global Connectivity.

ABF is a synchronized local, regional, and transcontinental motor carrier, a non vessel operator common carrier, and global logistics service provider.

ABF is a source for global real-time tracking of inventory, improved fulfillment decisions, reduced cycle times, simplified vendor management, direct distribution from the import container to your customer's home or business, including the proof-of-delivery, and EDI data transmission.

In short, ABF creates value for clients looking to maximize global logistical performance. Take control. Choose ABF.



Take Control.™

Are you ready to take control? Call **877-ABF-0000** or visit abf.com.



EDITORIAL OFFICES

111 Speen Street, Suite 200
Framingham, MA 01701-1496
(800) 375-8015

Michael Levans

GROUP EDITORIAL DIRECTOR
mlevans@ehpub.com

Bob Trebilcock

EXECUTIVE EDITOR
robert.trebilcock@myfairpoint.net

Noël P. Bodenburg

EXECUTIVE MANAGING EDITOR
nbodenburg@ehpub.com

Lorie King Rogers

ASSOCIATE EDITOR
lrogers@ehpub.com

Sara Pearson Specter

EDITOR AT LARGE
sara@moxiemarketingllc.com

Roberto Michel

EDITOR AT LARGE
robertomichel@new.rr.com

Jeff Berman

GROUP NEWS EDITOR
jberman@ehpub.com

Josh Bond

CONTRIBUTING EDITOR
turbobond@gmail.com

Mike Roach

CREATIVE DIRECTOR
mroach@ehpub.com

Wendy DelCampo

ART DIRECTOR
wdelcampo@ehpub.com

Daniel Guidera

ILLUSTRATION
daniel@danielguidera.com

Brian Ceraolo

GROUP PUBLISHER
bceraolo@ehpub.com

PEERLESS MEDIA, LLC

A DIVISION OF EH PUBLISHING, INC.

Kenneth Moyes

PRESIDENT AND CEO
EH PUBLISHING, INC.

Brian Ceraolo

PUBLISHER AND
EXECUTIVE VICE PRESIDENT
PEERLESS MEDIA, LLC

MAGAZINE SUBSCRIPTIONS

Start, renew or update your FREE
magazine subscription at
www.mmh.com/subscribe.

Contact customer service at:

Web: www.mmh.com/subscribe

Email: mmhsubs@ehpub.com

Phone: 1-800-315-1578

Mail: Peerless Media
P.O. Box 1496
Framingham, MA 01701

ENEWSLETTER SUBSCRIPTIONS

Sign up or manage your FREE
eNewsletter subscriptions at
www.mmh.com/newsletters.

MICHAEL LEVANS
GROUP EDITORIAL
DIRECTOR



Take time for the big picture

Today, we're consistently bombarded with little bits and pieces of information that, by nature, are only capable of telling a very small part of any story. We IM, Tweet, and chat, but lost in the noise is the broader context we seek to make true business decisions.

In an effort to help materials handling professionals cut through all this clutter and gain true insight, *Modern's* executive editor Bob Trebilcock has rolled out a series that we're calling The Big Picture. In this body of work, Trebilcock breaks out of the traditional "how-to" and "case study" mold to offer an objective, broad-sweeping look at how materials handling technologies and best practices are making an impact on overall business strategy.

Last fall, Trebilcock served up three terrific Big Picture stories: one that offered the market the closest look yet at how and why robotics are being applied inside the warehouse and DC; another that several technology analysts called the best examination of RFID's current and possible impact on the materials handling market; and in December, he took us inside the automation market to help managers make smart decisions and build a stronger ROI case—if, in fact, automation is the proper fit for your operations. (Go to mmh.com to read all of the Big Picture articles).

However, to take advantage of the results of this hard work, The Big Picture is going to force a *Modern* reader to sit back and sink into the pages. So, as you're making your way through this month's issue, I'm going to suggest you close your laptop and shut down your smart phone for about 25 minutes.

Starting on page 22, *Modern* dives into the evolving world of automated guided vehicles (AGVs), a market that's been evolving faster than most over the past six or seven years. In fact, both established and new players to the AGV market are wrestling with just how to define their products as they roll them out.

"We define an AGV as a computer-controlled mobile robot used to move materials around a facility," Mark Longacre, marketing manager for JBT Corp. and chair of the AGV product section at the Material Handling Industry of America, tells Trebilcock this month. "The way AGVs look and what they're capable of doing may have changed, but there's nothing in that definition that didn't apply 10 years ago."

Some in the market may take exception to Longacre's point; but Trebilcock contends that no matter what we call them, the new technology driving today's vehicles and the innovative partnerships being forged between the new guard and the established OEMs are putting AGVs on the brink transforming warehouse and DC operations in ways not dreamed of when they first hit the market.

"I think this is an iPad moment for AGVs, especially carts, mobile robots and hybrid lift truck/AGVs," Trebilcock told me. "Tablets were around for years and no one cared. Then Apple realized the time was right for something different. Likewise, some of these AGV solutions have been around for years; but, like the iPad, I think the focus on reducing overhead and grappling with labor issues means the time could be now for them to take a greater hold."

Member



Member of



Winner
Jesse H. Neal
Certificates of Merit
for Journalistic
Excellence

Official Publication of



Split Case Picking In Overdrive

Goods to Person

When the piece picking function is optimized, it impacts everything. From processing time, warehouse space, order accuracy to ergonomics and speed, it's an industrial engineering opportunity waiting for improvement. In addition, today's fulfillment operations are impacted by additional complexities: wide variance in order profiles, larger swings in daily volume, and seasonal/promotional peak periods that stress everything.

An industrial engineering solution that optimizes piece picking is the "goods to person" method. Goods to person order fulfillment is all about efficiently staging and then transferring SKUs to the order selector with speed and accuracy in a comfortable work environment. This method is smarter, faster, and more ergonomic than other piece pick systems.

Smarter

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 that makes the most sense. It's also, smarter because it allows ultra high pick accuracy. Typically, only one SKU is presented to the operator at a time so there is no opportunity to pick the wrong item. The pick station design allows the highest possible worker productivity. With a fast tote exchange, the operator doesn't have to wait for the next item to be picked.

Faster

Product for picking flows into the pick station smoothly and consistently- that's made possible by an automated inventory staging buffer. This is the "engine" that supports high picking rates. Furthermore, it is compact and typically uses 30 to 65 percent less floor space than other systems. There is no dedicated pick face. So slotting and re-slotting the warehouse is unnecessary, and so is the complex and ongoing churn of SKU velocity analysis.

Ergonomic

In addition to sustained productivity, the workstation is designed for employee comfort. The operator only picks in the "golden zone". There is no need to move hands above the shoulder or extend arms beyond a comfortable reach. The operator screen adjusts for height and angle to minimize neck strain. Since loads are automatically delivered to and removed from the workstation, operators never need to lift or push cartons and totes. The ergonomic design and simple, icon-driven operator touch screen allows the pick station to meet Universal Access guidelines.

Operational Flexibility

Staff can work in parallel, unaffected by each other's pace. Pick stations can be opened and closed according to volume on a particular shift. And, there's redundancy in this configuration since items can be processed at any location as the workstations are completely decoupled. The system is not affected by changes in order profile. For example, single item orders and multi item orders are accommodated with equal efficiency. This means that trends, like more orders with fewer order lines, don't compromise productivity.

It's a high performance solution that creates logistics results. Goods to person, the most productive way to provide high rate piece picking in a compact and ergonomic environment.



For more detailed information about piece picking visit www.dematic.us or call 1-877-725-7500.

ECONOMY

ISM reports manufacturing sector cooling off

AFTER FOUR STRAIGHT MONTHS OF RAPID GROWTH IN THE MANUFACTURING SECTOR TO KICK OFF 2011, THE INSTITUTE FOR SUPPLY MANAGEMENT (ISM) REPORTED THAT OVERALL ACTIVITY WAS DOWN SOMEWHAT IN MAY.

BY JEFF BERMAN, GROUP NEWS EDITOR

AFTER FOUR STRAIGHT MONTHS of rapid growth in the manufacturing sector to kick off 2011, the Institute for Supply Management (ISM) reported on June 1 that overall activity was down somewhat in May.

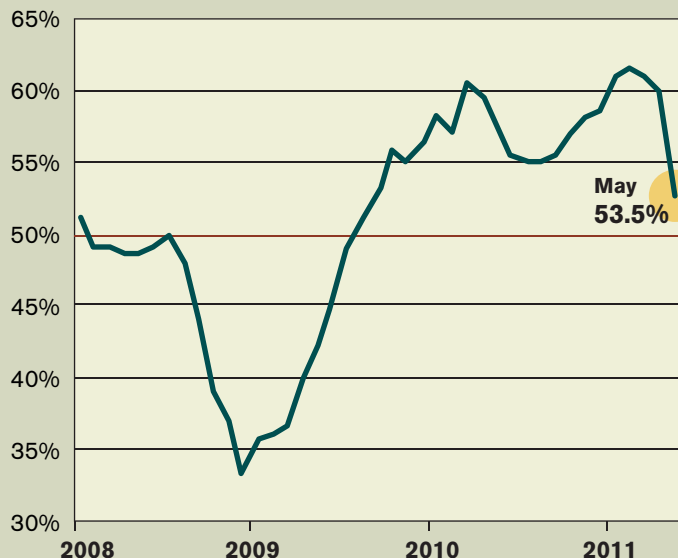
In its May Manufacturing Report on Business, the ISM reported that the index it uses to measure the manufacturing sector—known as the PMI—was 53.5% in May, down 6.9% from April, marking the first time in 2011 that the PMI did not crack 60.

Any PMI reading 50 or higher represents economic growth. And despite the sequential decline, May is the 24th consecutive month economic growth has occurred in the overall economy and the 22nd

consecutive month economic activity in the manufacturing sector has occurred, according to the report.



ISM manufacturing: PMI Composite Index
(Index, above 50% indicates growth)



Source: ISM and Peerless Media Research Group

"This month's index...[is] the lowest PMI reported for the last 12 months," said Bradley J. Holcomb, chair of the ISM Manufacturing Business Survey Committee, in a statement. "Slower growth in new orders and production are the primary contributors to this month's lower PMI reading. "Manufacturers continue to experience significant cost pressures from commodities

and other inputs.”

New orders were down 10.7% at 51.0, and production was off 9.8% at 54. Other notable readings include employment down 4.5% at 58.2, which Holcomb said reflects good momentum. And inventories and cus-

tomers inventories were down 4.9% and 1.0%, respectively at 48.7 and 39.5. Prices were down 9.0% at 76.5.

In an interview with *Modern*, Holcomb noted that while the rate of growth fell off in May, overall growth in the manufacturing sector has been

occurring for nearly two years.

“It is an interesting correction, although new orders and production are off the highs set from earlier in the year,” said Holcomb. “While we saw excellent numbers for the first four months of the year we are now inevitably seeing... companies taking the foot off of the accelerator.”

The silver lining

Even though the May data was down, Holcomb said there were continuing signs of cautious optimism occurring including a solid employment index that reached a 38-year collective high through the first four months of the year.

But the most influential factor in the May numbers was pricing as it relates to energy and commodities, he said.

“Pricing was down 9%,” said Holcomb. “There is some hope that if additional softening continues, especially on the energy side, we can see that translate into growth for the sector, as long as we see a continued slowing down in pricing,” he said.

Looking at inventories, Holcomb observed that at 48.7 in May they are down for the third time in the last four months and hovering around the 50 mark. This, he said, shows how companies are very carefully and thoughtfully matching their inventories according to the demand of new orders they have and are being very successful at it.

Although staying on top of inventories is often a difficult task, he said companies are not getting ahead of themselves and are doing a solid job of managing their inventories effectively. Customer inventories at 39.5 are considered too low and this reflects a good potential draw from the customer base, with room for more restocking with customers, and is a positive indicator in this mix, according to Holcomb.



Battery Watering Technologies

- Tubing Barbs** - Eliminates the need for clamps and angled to make installation easy in tight configurations
- Electrolyte Level Eye Indicator** - Visible from the top and side
- Clip-In Base** - Installation is fast and easy - No twisting to lock in place
- Low Profile Design** - Drastically reduces the risk of damage from battery cables
- Solid One Piece Float** - Acid, temperature and impact resistant; solid construction cannot absorb water
- Encapsulated Float** - Reinforced encapsulation protects the float and eliminates interference with the moss shield

Single Point Watering for Traction Batteries

Headquarters:
6645 Holder Road
Clemmons, NC 27012 USA
336-714-0448
International:
Maienstrasse 4 10787 Berlin
+49160 9498 1456

Faster.
Reduce filling time by 90%

Safer.
Keep battery area safe and clean

Better.
Improve battery life and performance

www.batterywatering.com

INDUSTRY OUTLOOK

MHIA meetings: Are good times ahead for materials handling?

BY BOB TREBILCOCK, EXECUTIVE EDITOR

UNLIKE PROMAT, which is a showcase for our industry, much of what goes on at the MHIA spring meetings focuses on the mundane, like annual

budgets and marketing campaigns for product sections.

At the MHIA meetings in Charlotte last month, I sat in on three discussions that were fascinating.

The first was an overview of the

economy and the state of the materials handling industry by Hal Vandiver. Now an executive consultant to MHIA, Vandiver has been studying the industry for years, calls it straight and gets it right. Vandiver acknowledged potential clouds on the horizon, but he's looking for 11% to 12% growth this year, and continued growth through 2013. Some good

WAREHOUSING

WERC announces 2011-2012 board of directors

THE WAREHOUSING Education and Research Council (WERC) named its board of directors for the 2011-2012 year recently at its 34th annual WERC Conference held in Orlando, Fla.

WERC is the only professional association focused exclusively on distribution and warehouse management and its role in the supply chain. Members are experts from all facets of the distribution industry who come together to share practical knowledge and professional expertise to improve individual and industry performance.

Board members include:

President: *Lawrence Dean Shemesh*, president, OPSdesign Consulting, Marlton, N.J.

Vice president: *Lawrence G. Corrigan II*, VP of operations, Medline Industries, Mundelein, Ill.

Secretary-treasurer: *Gregory J. Javor*, senior VP of supply chain operations global logistics, Starbucks Coffee Co., Seattle, Wash.

Past-president: *Catherine L. Cooper*, executive VP & CIO, OHL, Brentwood, Tenn.

Director, 2012 annual conference: *Sheila Benny*, executive VP, Optricity Corp., Research Triangle Park, N.C.

Director, 2013 annual conference: *Chad W. Autry*, PhD, associate professor of Logistics, University of Tennessee at Knoxville, Knoxville, Tenn.

Director of marketing membership: *Andrea Velasquez*, VP of business development, Epstein, Chicago, Ill.

Director of web services: *Sylvia Spore*, technology manager, RightSourceRx, Tempe, Ariz.

Director of industry relations: *Michael B. Wohlwend*, VP, SAP Americas, St. Charles, Ill.

Directors at large:

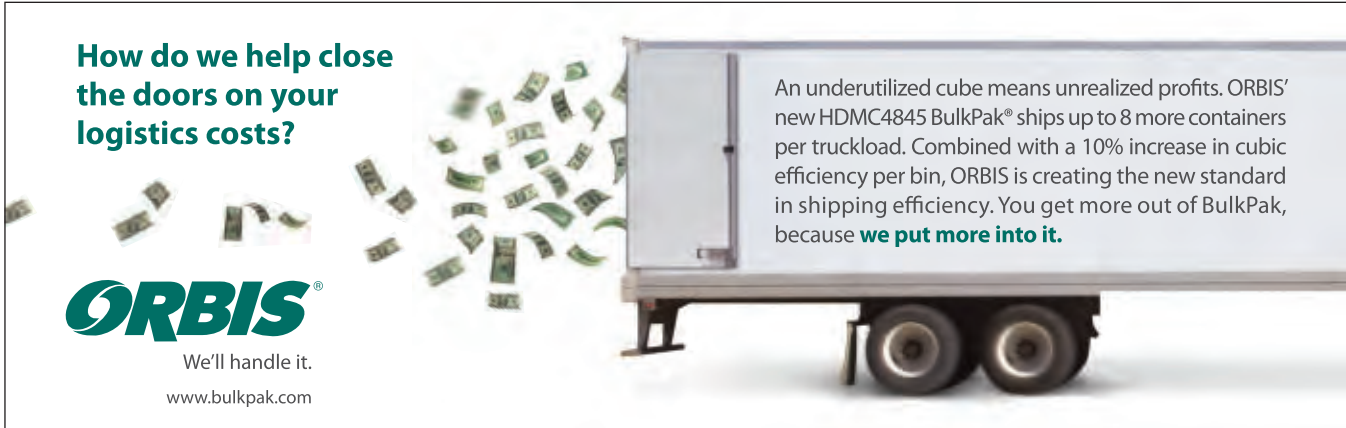
- *Paul M. Avampato*, VP, Catalyst, Kraft Foods, Northfield, Ill.
- *Stephen (Andy) Smith*, president & COO, Kenco Logistic Services, Chattanooga, Tenn.
- *J. Randolph (Randy) Lewis*, senior VP of supply chain and logistics, Walgreens Co., Deerfield, Ill.
- *Stan Danzig*, executive director, Cushman & Wakefield, East Rutherford, N.J.

Chief executive officer: *Michael J. Mikitka*, CAE, CMP, CEO, WERC, Oak Brook, Ill.

How do we help close the doors on your logistics costs?

ORBIS[®]

We'll handle it.
www.bulkpak.com



An underutilized cube means unrealized profits. ORBIS' new HDMC4845 BulkPak[®] ships up to 8 more containers per truckload. Combined with a 10% increase in cubic efficiency per bin, ORBIS is creating the new standard in shipping efficiency. You get more out of BulkPak, because **we put more into it.**

things are happening.

The second was the membership meeting of the group that represents systems integrators. During the product meetings, members fill out a sheet that addresses business conditions like their backlog of orders, their

pipeline of inquiries, whether they're hiring in manufacturing and engineering and whether wages are going up. No one shares actual figures. Rather they use a scale that ranges from -2 (business is bad) to 0 (business is flat) to +2 (business is good). Here's what

I noticed, with one or two exceptions, every member reported that their backlog of orders and inquiries was a +1 or a +2. Most companies were looking to add hourly and engineering staff. No one was popping the top on their Budweisers, but confirming Vandiver's outlook, the view from the ground ain't bad.



technology that moves the world

Efacec Products

- AS/RS Stacker Cranes (for pallets or rolls; single, double and multiple depth storage)
- AS/RS Miniloads (for totes and cartons)
- Aisle Switching for both Stacker Cranes and Miniloads
- Conveyors and Transfer Cars (for pallets, totes, cartons and rolls)
- Rail Guided Vehicles (RGV)
- Automated Guided Vehicle (AGV)
- Handling Control Systems
- Warehouse Management Systems



2755 Northwoods Parkway • Norcross, GA 30071
 Tel: 770.446.8854 • Email: usa.logistics@efacec.com
www.efacecusa.com

So, what's driving that growth?

In a sense, that was part of a roundtable discussion by the group that represents supply chain software. Here are some key takeaways:

We've gone global: Whether you chalk it up to a cheap dollar that makes exports more attractive or emerging markets embracing technology to mitigate rising wages, global markets are as important to our industry as domestic markets. One domestic provider of automation technology pointed out that more than half their business now comes from overseas.

It's all about China: But not in the way you think. Wages are going up in China, and that's leading our customers—the manufacturers who use materials handling solutions—to look elsewhere to locate their factories. While it's still unclear whether near-shoring is a point solution for some or a broad trend, some manufacturers are relocating to North America. If so, and it's still an if, that should be good news for materials handling automation and supply chain software as manufacturers and distributors look to mitigate their labor costs. As one participant put it: "No one wants to hire, and I hear that from everyone."

Rethinking just-in-time: The earthquakes and tsunami in Japan are causing some of our customers to rethink just-in-time strategies. There's a sense that we got way too lean during the recession. The question is: What role can materials handling and supply chain software systems play as manufacturers craft new strategies?

LIFT TRUCKS

Doosan establishes new forklift business

Doosan has announced the formation of a new affiliate company, tentatively named Doosan Industrial Vehicle Co., Ltd. The move effectively separates the forklift business from the construction, engines and machine tools operations.

The existing forklift management teams, dealership and sales networks currently structured within Doosan Infracore will be absorbed by the new company on July 1, 2011.

Managing director of the new company, Kun H Lee, said the move would also allow the business to react quickly to market requirements.

"As our business has matured, we believe that the challenges we have faced have also changed," he said. "And while we feel our approach is one of the most flexible and responsive around, we believe that by setting up a company focused solely on materials handling, we will be able to respond even more quickly."

RESEARCH STUDY

U.S. demand for pallets to reach 1.3 billion units in 2015

U.S. DEMAND FOR PALLETS is forecast to rise 6.1% per year to 1.3 billion units in 2015, valued at \$15 billion. The increase will be driven by a rebound in manufacturing output. That's the conclusion of "Pallets," a new study from The Freedonia Group, a Cleveland-based industry market research firm.

This pace will represent a dramatic turnaround from the 2005-2010 period, when demand fell to fewer than 1 billion pallets in response to a decline in manufacturing output between 2007 and 2009 and a partial rebound in 2010. Through 2015, demand gains will be driven by an expected advance in manufacturing from the low 2010 base.

Some key points of the study are:

- Manufacturing will continue to account for the largest share of pallet demand, totaling 75% of the market in 2015, according to Freedonia.
- Demand will be supported by continued recognition of the suitability of pallets as an inexpensive way of shipping and hauling goods while avoiding product damage.
- Providers of warehousing services will purchase new pallets and expand pallet refurbishing operations to add to their pallet stocks and more effectively serve existing customers.

- Pallet stock growth will be driven by the increase in manufacturing activity as the U.S. economy rebounds from the 2007-2009 recession.
- Growth in shipping activity will spur demand for pallets to transport and store goods.
- Plastic pallets will account for a larger share of the U.S. pallet stock in 2015. Plastic pallet demand is projected to advance at a double-digit pace through 2015, rising to 34.5 million units. Demand will be driven by consumer interest in the use of plastic pallets because of their performance qualities. Plastic pallets are also seen as being environmentally friendly, as they can be recycled.
- Plastic pallets will represent just 2.65% of the overall pallet market in 2015.

Despite an increase in the market for plastic pallets, pallets made from wood—primarily lumber—will continue to account for nearly 95% of the U.S. market. Demand will be driven by the new pallet market, as manufacturers' shipments rebound and more pallets are needed to ship and haul products. However, refurbished wood pallets, which accounted for 65% of the wood pallet market in 2010, will continue to lead the market in 2015.

**We put more
into it.**

ORBIS[®]

We'll handle it.
www.bulkpak.com



BULKPAK[®]

With industry leading expertise, innovation, high quality products and lowest total cost of ownership, it's easy to see why ORBIS BulkPak is the leading choice for bulk containers in the industry. You get more out of BulkPak, because **we put more into it.**

To schedule a supply chain analysis today, please visit www.bulkpak.com or call 888-217-0965.

Read the data, then act

Fleet management reveals sometimes startling realities in companies of all sizes.

By **Josh Bond**, Contributing Editor

It's easy to think of fleet management as something that should only concern companies with dozens of lift trucks at DCs across the country. But according to Jim Gaskell, director of Global Insite Products for Crown, that's just not true.

"Even if you have one truck, everybody benefits from fleet management," says Gaskell. "The guy with a few trucks has a small problem, and the guy with a lot of trucks has a bigger problem."

At a basic level, fleet management involves using data to modify operational and purchasing practices with an eye toward flexibility and efficiency. However, there's a difference between reading data and acting on the data, says Gaskell.

"It's two different skill sets," he says. "You either read data or you use it to change the architecture of an operation accordingly."

But for companies without detailed fleet management practices in place, simply reading the data can be enough to inspire significant changes. Even the most general utilization analysis can reveal stark differences between gut feelings and reality.

"I tell my customers, 'Don't be shocked if you find you are only using your trucks about 30% to 40% of the time,'" says Gaskell. "And they say, 'What do you mean? We don't have enough trucks!' Before they had the knowledge, they didn't know they had the problem."

With data in hand, what decisions come next? Fleet reductions or expansions? Is it possible to make labor more efficient? Are three shifts really necessary? Some simple changes can yield returns in utilization figures, says Gaskell, from 40% to 50%, for instance.

"The design of the warehouse or the user's business dynamics might create a ceiling that limits the customer from reaching a work cycle beyond 50%," he says. "And,



that's okay as long as you've optimized the utilization of your fleet given these circumstances."

Some of the most difficult changes have nothing to do with numbers. "People say, 'That's the way we've always done it,' or 'Our goal is this or that,'" says Gaskell. "I tell them to make a list of all these examples of traditional thinking and then title it 'Stinking Thinking.' Then ask yourself, after reviewing the data, whether you really want to keep thinking this way."

No piece of technology can help a company cross that bridge, says Gaskell, but the first step is to create an environment where constant change is expected.

"That's when you start the raindrop that starts the wave that changes the organization," he adds.

Josh Bond is a contributing editor to Modern and can be reached at josh.d.bond@gmail.com.



YOU NEED AN EFFICIENT TRUCK.

YOU'RE WORKING ON AN ULTRA-TIGHT BUDGET.

SACRIFICING QUALITY IS NOT AN OPTION.

BRING IT.

The S/H50CT was designed specifically for medium-duty needs. With a more efficient engine, it's a natural when it comes to lowering operating costs. And because it's a Hyster lift truck, you get the dependability you'd expect. It may not be in constant use, but every time you turn the key, the engine roars, bring it.



10HS12818



➡ #1 IN TOUGH APPS

➡ WORLD-CLASS SERVICE

➡ FULL PRODUCT LINE

➡ INDUSTRIAL GRADE PARTS

➡ PURPOSE-BUILT

➡ RETURN ON INVESTMENT

➡ PROVEN HERITAGE

➡ STRONG DEALER NETWORK

To automate or not to automate

German auto parts manufacturer febi bilstein is reaping big gains from automation. Here's what the company learned when it automated conventional distribution processes.

By Bob Trebilcock, Executive Editor

To automate or not to automate, that is the question.

With apologies to William Shakespeare, the decision to automate conventional materials handling processes may not be as profound as *Hamlet's* soliloquy on life's big questions, but for companies like Ferdinand Bilstein, which goes to market as febi bilstein, that decision was every bit as important.

"Logistics is a core competency for us," says Frank Boecker, logistics director for the German aftermarket auto parts manufacturer and distributor based in Ennepetal. "Our order fulfillment systems must be very fast. It is our competitive advantage."

To maintain that edge, febi invested nearly \$50 million in a new logistics center with a highly automated storage and order fulfillment system (Witron Integrated Logistics, www.witron.com). The new distribution center in Ennepetal consolidated two DCs separated by 35 miles into one 363,000-square-foot campus, which was opened at the end of October 2008 and has been fully

operational since March 2009.

The new system features high-bay automated storage and retrieval systems (AS/RS) featuring 21 stacker cranes, 40,000 pallet storage positions, and 136,000 tote storage positions along with a goods-to-person order fulfillment system. The system manages 24,000 stock keeping units (SKUs) and more than 100 million parts while processing 1,000 orders per day.

More importantly, the new system has allowed febi to increase throughput while simultaneously reducing head count from more than 400 employees to 350 in operations. Most of that savings was the result of operating two shifts per day instead of three shifts per day with the old system.

In all, febi saw a 20% increase in productivity in the first full year of operation, followed by an additional 20% increase in productivity in 2010. "Automation has been an unqualified success for us," says Boecker.

At the same time, like *Hamlet*, febi bilstein took time to consider the question of whether to automate or not to automate.

The new system at febi includes a mini-load AS/RS (shown) and a unit-load AS/RS. The units enable goods-to-person piece- and case-picking order fulfillment solutions.

A history of market leadership

A family-owned company, Ferdinand Bilstein has been in business since 1844. Today, the company is one of the world's leading manufacturers of after market car and truck parts, with subsidiaries in 11 countries and distribution capabilities in five of those countries.

A key selling point of febi's go-to-market strategy is a high availability of parts—the company stocks more than 100 million parts at all times—combined with market-leading delivery times and the ability to dispatch stock orders within one day. For instance, from the Ennepetal facility, febi delivers orders to customers in Germany within 24 hours, to Europe within three days and within five days to the rest of the world. The company can fill and pack a new order in as little as two hours.

Over the last decade, febi faced business challenges similar to many distribution operations in North America.

- **Business growth:** Despite a global recession, febi's business was growing by more than 10% per year in recent years.

- **Complex order fulfillment requirements:** As a global company, febi was confronted by increasing customer requirements, such as country-specific legal requirements that dictate special individual labels to goods in several markets. "This is a major prerequisite for breaking into new markets," says Boecker, "but without the capabilities of our automated system, it would have entailed a disproportionately high amount of money, labor and effort."

- **Smaller and more frequent deliveries:** Febi's customers no longer want to stock inventory. Instead, they



rely on febi to deliver smaller but frequent reorders. Compared with 2008, the company has seen a rise in small volume orders of almost 20%.

- **An aging workforce:** Febi was focused on increasing productivity so that it could retain jobs in a tough economy. At the same time, as with North America, febi was confronted by an aging workforce that could benefit from ergonomic solutions. "We needed productivity improve-

ments but we also knew that ergonomics was one of the solutions that would allow us to achieve productivity gains with changing demographics," says Boecker.

Finally, febi was running out of space in its existing conventional DCs. In 2005, the company was operating a 131,000-square-foot conventional distribution center in Ennepetal and a second facility about 35 miles away. "We had storage capacity for 20,000



Totes are delivered from the mini-load AS/RS to workstations. Febi employees played a role in the ergonomic design of their work areas.

pallets and we were shipping pallets from one logistics center to the other location,” says Boecker. “We determined that we would run out of logistics capacity in about two years and our chairman told us we needed to come up with a solution that would meet our needs until 2015.”

Automation implementation

At first glance, automation appeared to provide an answer for each of those challenges. However, febi did not leap directly from conventional warehouse processes into automation. Instead, the company made the move in two steps.

The first step was to implement a semi-automated order picking system—what febi refers to as an Order Picking System or OPS—in the existing facility in Ennepetal. This featured 38,000 tote storage positions and a four-aisle, goods-to-person order picking system.

“We knew that automation was going to be a big step and a big investment,” says Boecker. “Before taking that step, we wanted to understand what automation would mean to our

processes and how a larger, more automated system might work, so we began with the first investment.”

That first system included a goods-to-person picking solution. The system delivers totes from a mini-load AS/RS to an ergonomic workstation in the sequence that the associate will pick

the items. Today, that system is primarily used to aggregate slow moving parts.

But this wasn't just about swapping a manual order picking process for an automated system. Febi also realized that an effective change management strategy was critical for the system to gain acceptance by febi's workforce.

For instance, febi associates helped design the interfaces and displays on the screens that direct picking. Their input was also critical in the design of the workstations themselves to accommodate an aging workforce.

One of the changes was to install some 30 lift tables that allow the associate to adjust the height of their work space. “They really helped us design the area, and we have other initiatives to improve working conditions in the facility today,” Boecker adds.

When the system went live in 2005, febi trained key employees on the use of the system. Those employees, in turn, trained the rest of the staff.

“What we learned is that we were much more efficient and productive with automation, and we could turn orders much faster,” says Boecker.



Orders are prepared for delivery in the packaging area. Febi can assemble an order in as little as two hours.



The febi logistics center also handles over-sized items (left) and custom packs items in a value-added processing area (below).



Going live with automation

With the first system a success, febi began planning for the new distribution center.

The new facility was constructed next to the facility in Ennepetal at the end of October 2008 and has been fully operational since March 2009. After three and a half months of parallel operation, the new DC was linked up to the existing semi-automated pallet warehouse and four-aisle order picking system that was opened in 2005.

The new system includes a 10-aisle automated small parts warehouse with 98,000 tote spaces. In addition, a seven-aisle, high-bay warehouse includes some 40,000 pallet storage positions. The two systems combined cover the vast spectrum of febi's portfolio of spare parts.

With the new distribution center, febi is able to store more than 24,000 different articles with minimal space required. According to the output plan, the system can process more than 230,000 picks, which corresponds to 27,000 order lines per day.

The order picking system integrates an automated small parts warehouse with a distribution loop and upstream picking stations. The system stages the articles for a given order at the picking workstations in the correct sequence according to the goods-to-man principle. They are then picked and packaged

into the shipping carton. The optimal size of the shipping carton is determined using a prior volume calculation.

Heavy, voluminous and bulky articles are stored and picked with the pallet picking system, which is also a goods-to-person system. The warehouse control system directs all necessary pallet movements from the high bay warehouse and signals the stock removal quantities to employees with pick-to-light displays.

The dynamic picking front is generated for a given order by transfer cars. The order pallet is staged centrally at the picking front between the individual warehouse pallets. As a result, the paths that the employees have to take, as well as their lifting duties, are minimized and the work can be performed ergonomically despite an article range of many different sizes.

The two buildings are connected by a bridge. That allows the warehouse management system (WMS) to synchronize orders that are filled across the two systems. Consequently, the customer is always supplied with the ideal package size.

Adding automation has also allowed febi to redesign its picking process. In the past, one worker was in charge of filling an entire order for a customer, everything from picking the parts to printing out the labels and paperwork. Today, the components of an order are distributed among employees.

"One employee is tasked with picking parts of the boxes for an order, and another packs the parts and compiles the paperwork," says Boecker. "What's more, our employees are cross-trained on each step and rotate jobs so that they don't get bored—and make mistakes—doing the same job over and over." Cross-training also allows Febi to move staff between departments as demand shifts.

Finally, the old pallet and tote warehouses have been reintroduced into the total logistics concept to provide further storage capacity.

"With the capacity of the new facility we are ideally equipped for the future even as our business continues to grow," says Boecker.

Lessons learned

Febi has been working with the two systems for more than two years. Over that time, automation has delivered some significant improvements. In the first year that both systems were in operation, productivity improved by 20%. In 2010, febi experienced another 20% productivity improvement.

The company is now looking at whether to add automation to its warehouse operations in other countries as well. More importantly, febi believes it can meet its goal and maintain its market-leading logistics position well into 2015. "We now have an entirely future-proof logistics system that combines maximum effectiveness, cost efficiency and flexibility," says Boecker. "This further strengthens our service and cost leadership ambitions within the industry and provides us with a sustainable competitive advantage." □

Automation in high gear

Febi's new distribution center uses unit- and tote-handling automated storage, conveyor and goods-to-person picking in an ergonomic work environment.

By Bob Trebilcock, Executive Editor

A high-bay, unit-load automated storage and retrieval system (AS/RS) and tote-handling mini-load storage systems are the primary components of febi bilstein's logistics center in Ennepetal. The logistics center is comprised of two buildings completed in two phases. In Phase 1, febi converted its original conventional warehouse into an automated logistics center. Phase 2, which is connected to the original building by a bridge, was built later and is responsible for the majority of the order fulfillment.

The system uses sophisticated order fulfillment software to deliver pallets

and totes to order selectors in sequence with a goods-to-person order fulfillment scenario. The result is a system that can handle increased order volume, higher throughputs and improved customer service levels without adding labor.

Receiving: Inbound pallets are typically received (1) in the Phase 1 building. Pallets are staged in the receiving area and scanned into the warehouse management system (WMS) and checked by the quality assurance department. The WMS then determines a storage location.

Putaway: From the receiving area, slow-moving pallets are stored in a pal-

Ferdinand Bilstein, Ennepetal, Germany

SIZE: 130,850 square feet in existing building/231,425 square feet in new center for a total of 362,275 square feet

PRODUCTS: Car and truck parts for the independent aftermarket

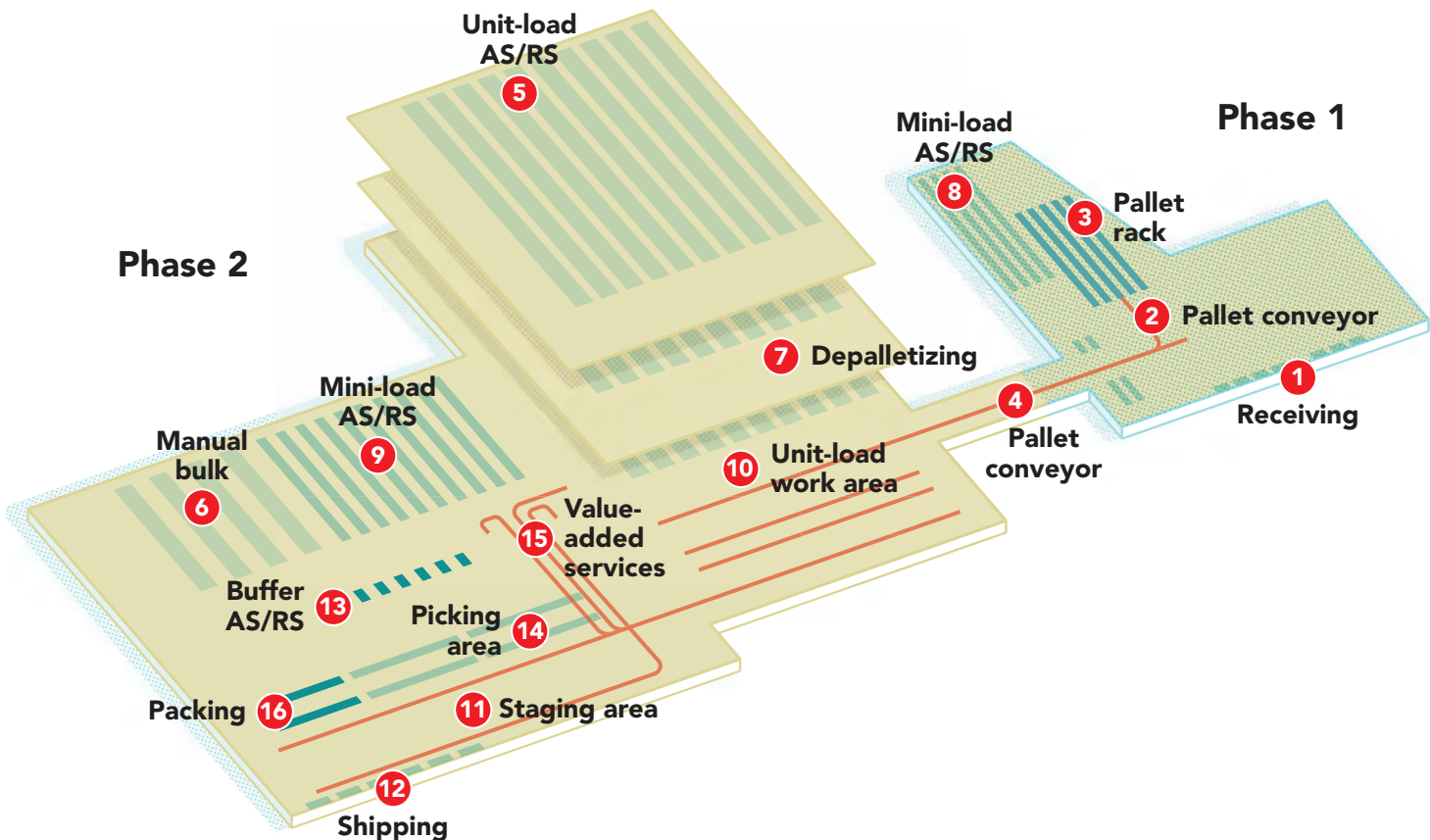
SKUS: 24,000

THROUGHPUT: 1,000 orders per day

SHIFTS: 2 shifts/5 days

EMPLOYEES: 350 to 400 in operations

let rack in the manual area in Phase 1. The remaining pallets are placed on a pallet handling conveyor (2). Pallets that remain in Phase 1 are inducted into the unit-load AS/RS (3). Pallets destined for the Phase 2 building travel by conveyor across a connecting bridge (4), where they are received and



inducted into the unit-load AS/RS (5).

Oversized pallets that may not fit in either AS/RS are stored in pallet rack in a manual bulk area (6). In either case, once pallets have been putaway into storage, they are available to promise.

Replenishment: Items that will be piece picked or placed in an inner pack are stored in one of two tote-handling mini-load AS/RS systems. To replenish the mini-load systems, pallets are delivered from the unit-load AS/RS (5) to a depalletizing area (7). There items are depalletized and placed into totes. Once complete, the totes are inducted into the mini-load AS/RS system in Phase 1 (8) or Phase 2 (9).

Picking: Orders may include full pallet or mixed pallet shipments. Either way, pallets are delivered by the AS/RS to a workstation (10). Full pallets are picked up and transported directly to a staging location in the shipping area. Otherwise, an order selector will be directed by the system to pull cases from the pallet and place them on a shipping pallet. Once the pallet is complete, it is delivered to a staging location (11) in the shipping area (12).

Totes required for piece picking are delivered from the mini-load AS/RS (9) to smaller mini-load systems (13) in the picking area (14). These are used as buffer storage and to deliver totes to the picking stations in the right sequence to fill orders. A display at the workstation tells order selectors which items to pick and in which totes to place them.

Packing: Once a tote is complete, it may be conveyed to a value-added service area (15) for kitting, for customer-required labeling or for any special packaging requirements. Once any value-added services are complete, the items are transported to the packing area (16). There, a cubing algorithm will determine the optimal shipping carton for that order. Once the carton is erected, the packer will place the item into the shipping container.

Shipping: In the staging area (11), parcels and pallets will be married together if they are part of an order. Then, they will be loaded onto an outbound truck in the shipping area (12). □

System suppliers

Systems integration, WMS and WCS: Witron, www.witron.com

Tote conveyor system: FAS Forderanlagen Systeme GmbH (division of Witron), www.fas-saarbruecken.de

Pallet conveyor system: Binder, www.binder-foerdertechnik.de

Mini-load AS/RS cranes: TGW Systems, www.tgw-group.com

Unit-load AS/RS pallet cranes: Dambach Lagersysteme, www.dambach-lagersysteme.de

Totes: Georg Utz, www.utzgroup.com/en/6

Pallet rack: SSI Schaefer, www.ssi-schaefer.us

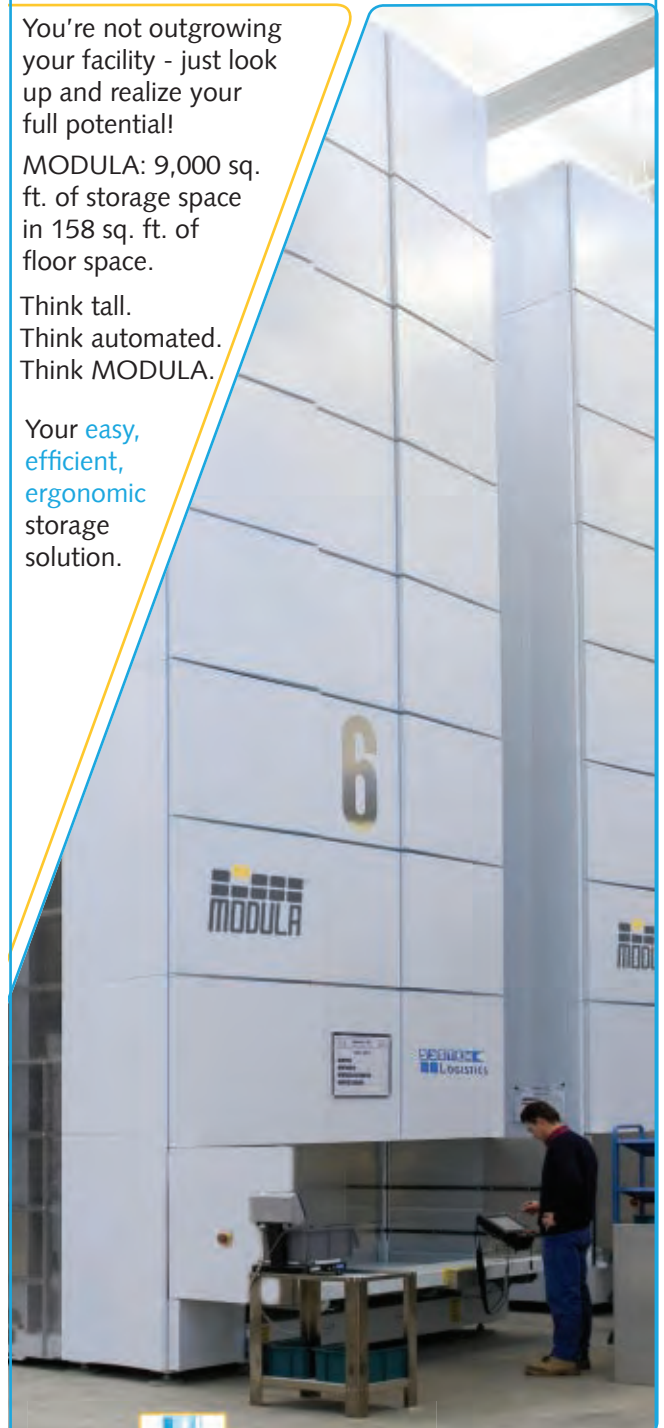


You're not outgrowing your facility - just look up and realize your full potential!

MODULA: 9,000 sq. ft. of storage space in 158 sq. ft. of floor space.

Think tall.
Think automated.
Think MODULA.

Your easy, efficient, ergonomic storage solution.



What is an AGV?

If you think AGVs, or automatic guided vehicles, are a mature technology, think again. Since 2005, the industry has seen an unparalleled level of innovation.

By Bob Trebilcock, Executive Editor

Recent ProMat and North American materials handling shows have seen the introduction of automatic guided carts (AGCs), mobile robots and, more recently, hybrid lift trucks to the AGV portfolio. What's more, new players have entered the market, such as Kiva Systems, RMT, Seegrid, SI Systems, INRO and Kollmorgen. Lift truck manufacturers are also getting into the game, including Toyota Material Handling USA, Crown, Mitsubishi Caterpillar Forklift America (MCFA) and The Raymond Corp.

All these new vehicles may have you wondering: Just what is an AGV? Look closer, however, and you find that each of these disparate vehicles shares something in common: They open up potential new opportunities for the market if end users embrace them. That last caveat is a big if.

In some respects, the definition of an AGV has not changed in years, argues Mark Longacre, marketing manager for JBT Corp. and chair of the

automatic guided vehicle product section at the Material Handling Industry of America (See 60 seconds with Mark Longacre, p. 58). "We define an AGV as a computer-controlled mobile robot used to move materials around a facility," Longacre says. "The way they look and what they can do has changed, but there's nothing in that definition that didn't apply 10 years ago."

In fact, Longacre contends that even the interest of lift truck manufacturers in the AGV space is a blast from the past: In the late 1990s, FMC Technologies, JBT's predecessor, teamed up with Hyster to develop the HyBot, an automated walkie pallet truck.

Longacre may have a point. Conventional AGV providers like Murata Machinery USA and Savant Automation are busier than ever: "There are still plenty of pallets around, and we're seeing plenty of demand for conventional fork-style AGVs that interface with our automated storage and retrieval systems (AS/RS)," says Tom Meyers, national sales manager for Murata's logistics and automotive division.

"There are a lot of great new developments out there from other companies," adds Garry Koff,





for the rise in the number of AGV units being produced every year. “A smart cart is now in the \$15,000 range,” says Stewart. “And, with production volumes rising, we’re getting to the point where we will be able to go into mass production mode, like a lift truck, and bring the price down to a point where you can’t ignore them in distribution environments.” That includes carts that can move loads of up to 5,000 pounds, Stewart adds. “Our goal is to have a world-class mass production line within the next seven to 10

years,” he says.

president of Savant Automation. “But in my world, most end users can’t justify them. They can justify an AGV that is user friendly, non-intimidating and easy to maintain.”

Still, these new developments are hard to ignore. It is a story told through the product introductions at the materials handling shows, going back to 2005.

ProMat 2005: Automatic guided carts

At the 2005 ProMat, Jervis B. Webb introduced a new type of vehicle to the broad market: the automatic guided cart or AGC. Webb had been toying with the design since 2002, according to Brian Stewart, president and co-CEO of the Daifuku Webb Holding Co., which now owns Webb. An AGC was basically an AGV stripped down to its core: A simple, light-duty platform designed to follow magnetic tape and deliver relatively light loads of around 1,200 pounds from point A to

point B. Where an AGV used a roller bed or forks to carry a load, a cart was designed to move a frame that held the product it was moving.

Carts didn’t make much of a splash at the show. Conventional AGV makers dismissed them as a novelty. But Webb believed there was a market. “We believed we had come up with a low-cost solution that reduced customers’ costs for getting into AGVs,” says Stewart.

Webb initially promoted them to the auto industry as an alternative to tuggers to deliver parts to the line. Over time, AGCs have evolved into flexible, moving production lines. “With the right kind of frame, the cart can move an assembly from one workstation to another without bolting conveyor to the floor,” says Stewart. “If your production needs change, it’s very easy to move the tape and create a new layout for the line.”

Today, carts are a significant reason

for the rise in the number of AGV units being produced every year.

NA 2006: Automatic truck loading

Webb was back with another innovation in 2006. Set up at its booth was a mini-warehouse, including a pallet pick up station, pallet rack for putaway and picking, and an enclosed space the width of a trailer with a dock plate. During the demonstration, the AGV automatically picked up a palletized load from the staging area and then loaded it into the pallet rack or onto the back of the trailer.

Two years of research and development with Anheuser-Busch led up to that moment. “There were conveyerized systems for automatically loading trailers, but the conveyor was bolted down and you needed to own your own fleet of customized trailers,” Stewart says. “Anheuser-Busch challenged us to come up with a vehicle that could replace fixed hard automation. We thought we



Lift truck manufacturers like Raymond and Toyota have plans to introduce hybrid lift trucks/AGVs aimed at the distribution market.

could do it, and they had some creative people who worked with us.”

Webb was not alone. At that same time, Egemin and Transbotics were also touting automatic trailer loading technology, or ATL as it’s now known, and JBT had vehicles in development.

Five years later, ATLs are still a niche vehicle, but customers are adopting them. JBT, for instance, has installed ATLs at three plants for one major soft drink bottler with plans to roll out five more plants.

What’s more, the capabilities have evolved beyond simply loading pallets one at a time. Egemin, for instance, can also unload trailers, work with pallets or slipsheets, and adapt to multiple sized pallets and loads on the same truck. In addition, one of Egemin’s customers is using an ATL to load pallets 20 deep in a pushback rack system. “That’s a direct result of ATL technology,” says Mark Stevens, vice president of business development for Egemin.

But what automatic truck loading has really done is expand the business case for AGVs.

“Truck loading is an enabler,” Stevens says. “Not the end game.”

ProMat 2007: Mobile robots

In 2007, RMT Robotics, Kiva Systems and Seegrid introduced mobile robots to the industry. They were to AGVs what go karts are to Formula 1 race cars: small vehicles designed to move small loads. But what really distinguished them is that they had unique guidance systems that didn’t require fixed paths, such as magnetic tape on the floor or reflectors and lasers, to find



Mobile robots, like this one from Kiva, are taking AGVs into new applications, like goods-to-person order fulfillment.

their way around the facility. Instead, they could learn to find their way to almost any spot in a facility.

Like ATLs before them, they were the buzz of the show, even if no one quite knew what to do with them.

Initially, at least, all three vendors resisted the term AGV, although each makes a vehicle that fits Longacre’s definition. Part of the reason is that they didn’t want to be identified with the baggage that went along with early AGV systems. “Back in the 1970s, AGVs were touted as a technology that would revolutionize the way materials handling was done,” says Bill Torrens, director of sales and marketing for RMT Robotics. “Many of those early vehicles never lived up to the hype and some early adopters had negative experiences.”

While each has taken a different path to the market, all three used their small size and navigation capabilities to their advantage. Kiva, for instance, doesn’t think of itself as a vehicle company at all, says Mitch Rosenberg, vice president of marketing and product management. Instead, “We are a warehouse control software company,” he says. “We’ve created a software platform for goods-to-person picking that happens to have these devices that are part of a broader



Automatic trailer loading AGVs, or ATLS, can now load and unload trailers and interface with deep-lane pushback rack systems.

order fulfillment solution.”

RMT, like Kiva, saw an opportunity for a low-cost, flexible vehicle that could do more than move a heavy pallet from point A to point B. “We saw the benefit of AGVs in promoting the lean direction of manufacturing,” says Torrens. “We developed a vehicle with a navigation system that lets the vehicle go anywhere it needs to go based on what it sees in real time. That lets us deliver what’s needed at the line, when it’s needed and in the quantity that’s needed in an expedited fashion.”

And while Seegrid began by carving a niche for itself by enabling case-picking solutions, the company is now licensing its vision-based navigation system to lift truck manufacturers, including Raymond and Linde, which will use the technology to transform lift trucks into automatic guided vehicles.

As an executive from Seegrid explained, “Supply chain professionals want the ability to integrate unmanned distribution activities with their warehouse management system (WMS). A vision-based guidance system gives you the flexibility to easily send the robot wherever you want it to go so that it can be interwoven with the WMS just like a lift truck operator. That’s where you add value.”

**ProMat 2009:
New players**

Think Toyota Material Handling USA and you probably think world’s largest lift truck manufacturer. Think SI Systems, and you probably think manufacturing systems, including tow line vehicles.

But if you attended ProMat 2009, you saw something different at both companies’ booths: automatic guided carts.

The technology was not new. However, the entrance of two new players not previously identified with AGVs or carts said something about how the market was evolving. And while different catalysts sparked the interest of these two companies in automatic vehicles, at the end of the day, both companies entered the field because the needs of their customers were evolving.

SI Systems, for instance, realized that in some assembly applications, a fleet of AGCs was more economical than a tow-line assembly system. “When you have a vehicle-intense system, few decision points and a lot of work in process, a tow line system makes a lot of sense,” says executive account manager Craig Sleep. “But in smaller assembly systems, we were losing business to carts.” What’s more, they began to see other compa-



WAREHOUSE



MANAGEMENT



SOFTWARE



nies installing carts for line-side delivery in plants where SI Systems was installing a towline. “We had never gotten into line-side delivery before, but we saw an opportunity to offer a more complete solution.” There were even opportunities to combine the two technologies, for instance, using a cart to pick up a fixture at the end of the towline and deliver it to a kitting area.

Toyota, meanwhile, had exhibited its first AGV at ProMat in 2007. The Toyota Tug-Cart Mouse AGV was already being used throughout Toyota manufacturing plants to take subassemblies from one part of the plant to the main assembly line. By 2009, Toyota had expanded the product line to include the L-Cart, a system that allows an end user to use a variety of components to create a cart that fits its needs, almost like an erector kit. Toyota devoted more floor space and offered AGV demonstrations at its booth in 2009, sending a message that it was serious about AGVs as it is about lift trucks.

In Toyota’s view, AGVs are a complement to its lift truck business, not competition. “We do not believe it’s enough



First introduced at ProMat 2005, automatic guided carts have proved themselves in lineside delivery of parts and as an alternative to fixed path assembly lines for many manufacturers.

to just be a lift truck salesperson,” says Martin Boyd, vice president of marketing and product planning. “We want to help you apply the Toyota Production System philosophy to your plant and see where you might benefit from automation. AGVs allow us to get our foot in the door to start that conversation.”

In 2009, Toyota also began working with AutoGuide Systems, which developed a plug-and-play kit that converts a Toyota Class III tugger vehicle into an AGV. At the end of the lease, the kit can be removed and installed on the next leased tugger. “We now have plans in motion to apply that technology to more models in our product line,” says Boyd.

“To say that we’re optimistic about this is an understatement,” Boyd adds. “We see big things on the horizon for lift trucks and AGVs.”

ProMat 2011: Turning lift trucks into AGVs

Toyota may have started the conversation about turning lift trucks into AGVs, but the discussion continues.

That was made clear at ProMat 2011, where the talk of the show was the new vehicles introduced by Dematic and Egemin. Both vehicles are aimed squarely at the distribution center.

Built in conjunction with Crown, Dematic took a solutions-based approach to case pick-



Carts have also attracted new providers into the market, like Toyota Material Handling and SI Systems. Both are now offering carts as an extension of their traditional product portfolios.

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

MODERN
MATERIALS HANDLING

www.mmh.com/criticaltopics

ing similar to what Kiva is doing with piece picking. The solution combines a pallet truck with voice recognition technology and order fulfillment software to automate the case-picking process: A voice-directed order selector picks cases to a pallet on the pallet truck; once the pallet is full, the pallet truck is automatically directed to the next step in the process, which could be another pick zone or a drop-off location in the shipping area.

Egemin, meanwhile, teamed up with MCFA to create a hybrid pallet-handling AGV. Turn the key one direction and it can be operated like a traditional lift truck. Turn the key in the other direction, and it operates as a fully automated, conventional AGV with trailer loading and unloading capabilities.

While they were designed for different purposes, the two vehicles share a common vision: The AGV OEMs are providing the navigation technology and automation software while the lift truck OEMs are bringing to bear the quality, reliability and economies of scale that come from mass production along with a nationwide dealer network that can service the mechanical systems of the lift truck.

“Flexibility is a selling point,” says Egemin’s Stevens. “But the value is the lower total cost of ownership that comes from a mass produced lift truck, using off-the-shelf parts that can be serviced by a local network of dealers.

Dematic sees this as an entrée into the distribution market. “We are all trying to move AGVs from manufacturing into distribution,” says Scott Hinke, vice president of product sales. “That’s where we believe there is a good return for our customers.”

While Dematic is beginning with case picking, it has plans to roll out other automated lift trucks as part of its “Automate



New navigation systems, like image-based navigation from Seegrid, are enabling flexible AGVs that can easily find their way to any spot in a plant or distribution center.

the Conventional” approach to warehousing. “We can focus on the controls, the smarts and the order fulfillment solutions while the lift truck manufacturer can lower the manufacturing and service cost,” says Hinke. “We think the customer will see this as less of a risk.”

If the market now consists of two classes of vehicles—conventional AGVs as well as carts and mobile robots represented by Seegrid, Kiva and RMT—some in the industry, like Claude Imbleau, chief financial officer for Transbotics, see the potential for a third class of hybrid vehicles. “There will always be a market for specialized vehicles that will be made by AGV manufacturers like Transbotics,” Imbleau says. “However, if we can provide the software and the lift truck manufacturers can deliver the quality that we need, it makes sense to have them make every day vehicles, like a fork vehicle.”

In fact, it seems as if nearly everyone in the AGV and lift truck industry has simultaneously had a similar idea.

Kollmorgen, a provider of navigation and automation software to AGV manufacturers now offers the technology to end users who can have the solution installed on their lift trucks at the factory or retrofit an existing fleet of lift trucks.

INRO, a New Zealand-based startup, is taking a similar approach, with software and technology to auto-

mate conventional lift trucks.

In May, Raymond signed a sales agreement with Seegrid to develop an automated lift truck powered by Seegrid’s navigation software in North America. At CeMat, Linde was promoting similar vehicles for Europe.

JBT’s Longacre is right when he points out that the two industries did this dance 10 years ago to no avail. At the same time, a number of computer manufacturers, including Microsoft, tried to introduce tablets a decade ago without success. Today, thanks to a confluence of events, including the iPad, tablets are the hottest piece of technology on the market.

Whether this is the AGV market’s iPad moment and these new vehicles will be embraced by the market is yet to be seen. But it’s clear that the evolution of the AGV market will not stop any time soon. □

Companies interviewed for this article

Crown, www.crown.com

Daifuku Webb Holding Co., www.daifukuwebb.com

Dematic, www.dematic.com

Egemin Automation, www.egeminautomation.com/en

JBT Corporation, www.jbtc-agv.com

Kiva Systems, www.kivasystems.com

Kollmorgen, www.pick-n-go.com

Mitsubishi Caterpillar Forklift America, www.mcfa.com

Murata Machinery USA, www.muratec-usa.com

RMT Robotics, www.adamrobot.com

The Raymond Corp., www.raymondcorp.com

Savant Automation, www.agvsystems.com

Seegrid, www.seegrid.com

SI Systems, www.sih.com

Toyota Material Handling USA, www.toyotaforklift.com

Transbotics, www.transbotics.com

SMASHINGLY DURABLE



Yellow Jacket®

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

 **BIG ASS FANS**
No Equal.

Build **STRONG,** **STABLE**



Forming a high-quality unit load is the goal of every type of palletizing process. Here's a look at how palletizing equipment puts product into a neat palletized load so it arrives at its destination safely and in good condition.

pallet loads

By Lorie King Rogers, Associate Editor

Strong, stable, secure. These are important qualities in a palletized load. While palletizing is the science of placing and securing units or containers on pallets, it can be somewhat of a materials handling art form.

"If product is going to move, it has to be in an easy to handle unit load," says Fred Hayes, director of technical services for the Packaging Machinery Manufacturers Institute (PMMI, www.pmmi.org). "If it's not on a pallet, it's not going to go very far," Hayes adds.

Of course, product is moving all the time and often has to go very far before reaching its destination. But getting it there is only half the battle; the other half is getting it to the final consumer in an appealing, salable condition. Enter palletizing equipment.

From basic assist equipment that works in manual operations to sophisticated robotic technology, here's a look at a few palletizing solutions.

MANUAL PALLETIZING

Manual palletizing can be done by people and without any mechanical assistance at all. However, there are simple solutions that can aid in the process.

Backboard: Since product placement on a pallet is important to the load's structure, a backboard can be used to guide the loading process. Typically about 4 feet long and 6 feet high, a backboard is made of steel and welded together in a 90 degree angle, explains Dan Johnson, product line manager for palletizing for Brenton, a division of Pro Mach. It's a simple alignment aid that means workers spend less time lining up the product as they build the load, he adds.

Lift assist and positioning: Manual palletizing can also be facilitated with assist devices like powered lift tables or work positioners that are specifically designed for palletizing functions.

Using calibrated springs or pneumatic devices, pallet positioners automatically adjust the height of the pallet load. Pallet positioners can be topped with turntables so that oper-

ators can stay in one place and rotate the load rather than waste time and steps walking around to build the pallet.

In some palletizing stations, when a pallet layer is complete, the operator lowers the work surface as required to maintain a comfortable working height.

Because positioners can hold up to 4,500 pounds, lift trucks are required for depositing and retrieving pallets.

SEMI-AUTOMATIC PALLETIZERS

There are physical and ergonomic challenges when you are palletizing manually. In addition, it's difficult to attract and retain enough labor to keep an operation moving smoothly. Semi-automatic or automatic palletizing, with machines or robots, can eliminate the risk of ergonomic injuries to workers and reduce operator error.

Semi-automatic palletizing equipment, which is popular in niche markets where products are heavy and difficult to palletize manually, can handle up to 20 bags or cases per minute. This equipment is well suited for low-speed operations that can't justify the cost of full automation but require a solution to help prevent worker injury.

In one style of a semi-automatic palletizer, a conveyor delivers product to an operator who arranges it into a layer on a plate. Then, with the press of a button, the plate surface retracts, allowing the layer of items to drop onto the pallet just below. The plate can be made of smooth metal, slippery polyethylene, rollers or even an air table for especially heavy products.

In another example, an operator receives product on a conveyor at an ergonomic workstation. A mixed-case pallet is built on a lift that the operator lowers as required to maintain a comfortable working height, explains Ken Ruehrdanz, warehousing and distribution market manager for Dematic.

AUTOMATIC PALLETIZERS

Fully automatic palletizing machines are the most ergonomic, fastest and most efficient type of palletizing equipment. They

are also the most expensive, with costs depending on the speed of the machine and the sophistication of the accumulators, conveyors, pallet dispensers and other ancillary machinery needed to perform the total palletizing process.

Two types of automatic palletizers are available: conventional and robotic.

Conventional

Conventional palletizers are a good choice for many operations, says Jason

Bennett, director of sales and marketing for vonGAL. That is because they cost less than a robotic machine and have a broader range of speeds, anywhere from 10 to 200 cases per minute.

There are several conventional palletizers on the market, including high- and low-level varieties, with the basic difference being where product is fed into the machine.

Low level: Low-level machines receive product from the floor level

and are usually put right in packaging area where product comes downstream from the case packing equipment and is ready to be palletized.

High level: High-level palletizers receive product that is already available at ceiling level or use incline or spiral conveyor to elevate product to the right height. The machine forms a layer of products on a plate, it positions the plate above the pallet, and then it retracts the plate, letting the layer

Palletizing equipment manufacturers

Company	Web site	Semi-automatic	Conventional High-speed	Mid-range	Robotic Gantry	Articulated arm	Hybrid
ABB	abb.com				x	x	
A-B-C Packaging Machine Corp.	abcpackaging.com	x	x	x			
Bastian Solutions	bastiansolutions.com	x		x			
Beumer	beumer.com		x	x			
Brenton Engineering	brentonengineering.com		x	x			
C&D Skilled Robotics	cdrobot.com				x	x	
Columbia	palletizing.com		x	x			
Dematic	dematic.com	x	x	x			
FANUC Robotics	fanurobotics.com				x	x	
FleetwoodGoldcoWyard	fgwa.com	x	x	x			
Fuji Robotics	fujirobotics.com					x	
Intelligrated	intelligrated.com		x	x			
KUKA	kukanao.com				x	x	
Lambert Material Handling	lambertpalletizers.com	x	x	x			
Möllers North America	mollersna.com		x	x		x	
Motoman	motoman.com					x	
Newcastle Co.	newcastleco.com	x		x			
Okura	okura-sing.com.sg		x	x		x	
Ouellette Machinery Systems	omsinc.net	x	x	x			
Powell Systems	powellsystems.com	x		x			
Schneider Packaging Equipment Co.	schneiderequip.com						x
T-TEK	t-tek.com	x	x	x			
Thiele Technologies	thieletech.com	x	x	x			
Top Tier	toptier.com	x	x	x			x
Uni-Pak Corp.	unipak.com	x		x			
vonGAL	vongal.com		x	x			
Westfalia Technologies	westfaliausa.com	x		x			
Whallon Machinery	whallon.com	x	x	x			

This table represents a sampling of leading palletizing equipment manufacturers.



Robotic or Conventional Palletizing?

Scan to download Intelligrated's white paper to decide, or visit: <http://bit.ly/intelligrated-palletizing>



Smart.

“ There isn't a challenge we haven't faced, and if there is, we'll meet it and outsmart it. ”

Outsmart Your Challenges: At Intelligrated, smart means meeting unique material handling challenges with proven technology tailored for your application. With the right combination of hardware, software, people and processes, Intelligrated keeps you ahead of the competition. Solving customer challenges. That's the Intelligrated way.

Integrity. Committed. Innovative. **Smart.** *The Intelligrated Way.*

Intelligrated®

866.936.7300
www.intelligrated.com/smart



Typically located in the packaging area of an operation, floor level palletizers range in speed from 10 to 200 cases per minute. This one is palletizing cases at the rate of 10 cases per minute.

descend onto the pallet. “It’s like the old tablecloth trick where you pull the cloth out and leave the dishes behind,” says Pat O’Connor, product manager for palletizing systems at Intelligated.

The machines repeat the cycle, sometimes changing the product placement pattern, until the load is complete. The varied patterned layers make a stronger unit load.

“Almost all conventional palletizers on market will come with a pattern utility or offer it as an option,” says O’Connor. “You can create new patterns right at the operator interface, which makes a conventional palletizer very flexible.”

Robotic

Robotic palletizing has been coming on strong in low- to medium-speed operations.

While the initial investment in equipment is higher, robotic palletizing solutions can save you money by reducing your labor costs and inventory

expenses, and increasing availability and throughput.

Robotic systems can also offer several advantages over conventional machines. Pick-and-place robotic palletizers often have a smaller footprint, and they can simultaneously build multiple pallets from multiple product lines.

Robotic speeds are measured according to how many cycles per minute they perform.

“The only way to accommodate the higher throughput rates is to pick multiple cases at a time,” says John Schwan, director of sales and marketing for QComp Technologies.

Articulated arm: Most robotic palletizing systems use a jointed, or articulated, arm to pick products from an infeed conveyor and

place them on a pallet. The arms are typically a four- or six-axis configuration, with each axis providing a point of movement. With this type, the machine stays still and the products move.

Gantry: With gantry style robotic palletizers, the opposite happens—products stay still while an overhead bridge crane moves back and forth, picks up product and places it in the designated location. Spanning about 150 feet, a multi-gantry system can pick 300 concurrent SKUs at more than 250,000 cases per day.

Robotic gantry systems eliminate 100% of the labor involved with building a mixed SKU pallet. “For safety reasons, you can’t have people in a robotic cell because of the unexpected motion of the robot,” explains Brian Keiger, technology sales leader of supply chain logistics at KUKA. “The motions are logical to robot, but not to the operator. The area is surrounded by an 8-foot fence with conveyor getting pallets in and full loads out without operator involvement.”

End effectors: Robot end-of-arm tools, or end effectors, that manipulate product can include heavy-duty claws for high-speed bag palletizing, vacuum grippers for light and medium weight cases, and clamp grippers for handling heavy cases.

In one example, an end-of-arm tool on the robot consists of fingers which support the product as well as a clamp mechanism which holds the product during the robot move. The fingers of the tool are inserted under the carton products and lifted then the clamp mechanism is activated to hold the products. When the layer is positioned over the placement location the fingers are pulled out from under the cartons and they drop slightly onto the stack. The clamp acts as a support while the fingers are stripped out from under the cartons.

In another end-of-arm tooling example, a head comes down and covers the entire area of the product, rollers inside the head engage the product at the bottom and use friction rollers to lift it up and move it. □

“Almost all conventional palletizers on market will come with a pattern utility or offer it as an option, you can create new patterns right at the operator interface, which makes a conventional palletizer very flexible.”

—Pat O’Connor, product manager for palletizing systems at Intelligated

NO BATTERIES, NO DOWNTIME, NO PROBLEM

Grocery co-op switches over to fuel-cell powered lift trucks to drive its fleet's uptime to 98%.



By Lorie King Rogers, Associate Editor

At Central Grocers in Joliet, Ill., it's all about power. Central Grocers, a member-owned cooperative wholesale food distributor, was spending too much time in its 970,000-square-foot DC on battery maintenance issues. So, the distributor, which supplies 200 independent retail grocery stores in Chicagoland and Northwest Indiana, joined a year-long trial of fuel cell-powered lift trucks.

"Manually changing batteries was quite an ordeal," says John Coari, Central Grocers' vice president of distribution, "and we were only getting about three to four years out of each battery."

Looking to decrease the time spent on non-valued added tasks and increase uptime, Central Grocers incorporated a fuel cell-powered fleet consisting of 234 vehicles. Throughout the year, the company used and tested 51 reach trucks, 38 stand-up counterbalanced units, five sit-down counterbalanced units and 140 center control pallet trucks (Yale Materials Handling Group, YES Equipment and Services, www.yeslifts.com). When

the year was over, the results showed that the fuel cell-powered lift trucks had an impressive uptime rate of 98%.

In addition to the uptime benefits that fuel cell-powered trucks provide, there's no decrease in power as a battery runs low. The fuel cell-powered units run at full capacity until they need to be refueled. And, with five hydrogen pumping stations located throughout the facility, there's plenty of opportunity to refuel.

Refueling takes between 2 and 3 minutes. Not only is it quick, it's clean and safe. Distilled water, which is the byproduct of the hydrogen fuel cell, is stored in fuel cell and emptied during the refueling process. Because there's no exhaust, fuel cell-powered vehicles are an environmentally friendly solution.

The results of the study were so good that Central Grocers will continue to operate a fuel cell-powered fleet, and Coari says the company has just purchased eight more fuel-cell powered lift trucks. □

READER SURVEY: Materials handling software usage

WMS, SCMP, WCS, LMS and more—*Modern's* readers offer insights into their use of software, from (alphabet) soup to nuts.

By Sara Pearson Specter, Editor at Large

Data, data everywhere! For companies in manufacturing, warehousing and distribution, there's no shortage of information available about products and processes throughout a facility. Indeed, it's widely accepted that the information about the movement of goods is every bit as important as the actual movement of those goods. The tricky part is harnessing that information to its fullest competitive advantage.

That's where software comes into play. Software implementations seek to address key challenges, including automation integration, labor optimization, billing, fleet management, accuracy improvement, inventory control and loss prevention, material synchronization, order prioritization and supply chain visibility.

Supply chain management and planning (SCMP), warehouse management systems (WMS), labor management software (LMS), warehouse control systems (WCS), asset tracking software, yard management software (YMS) and slotting optimization software all help users make sense of information collected by automatic data capture (ADC) technologies like bar code scanning, voice recognition and RFID.

In January, *Modern* readers were surveyed regarding their deployment of ADC technologies. As a companion to that study, we surveyed e-mail subscribers of *Modern* in May about their use of materials handling software. We received responses from 175

Modern Materials Handling Webcast

Results of *Modern's* 2011 Software Usage Survey

Putting data to work in warehouse and distribution operations

Thursday, June 30, 2011 @ 2:00 p.m. ET

Register: mmh.com/2011softwareusage

qualified readers—defined as someone personally involved in the use, evaluation or purchase of such software. Survey respondents represented 23 different industries, including industrial machinery, computers and electronics, chemicals and pharmaceuticals, and wholesale trade.

Nearly half (49%) of respondents described their companies as being cautious to embrace change when it comes to adoption of technology for materials handling procedures, with another 22% classifying their organizations as either innovators or early adopters. In light of the current economic climate, 37% are scrutinizing their current software investments and intend to spend with caution, while 30% are definitely investing in new software before the end of this year. Instead of buying new, 16% will upgrade existing systems while 20% are postponing their investment.

In the next 12 months, 54% indicate they'll spend less than \$100,000 on

software (including license, integration and training) and 39% plan to spend up to \$1 million.

Here's what we learned across each of the major software categories.

Warehouse management software

A warehouse management system (WMS) controls the movement and storage of materials within a facility and processes the related transactions, such as shipping, receiving, putaway and picking. Because it is so ubiquitous, our survey indicates that WMS is the most-used software in a facility, with 60% of respondents currently using a WMS; 36% plan to evaluate, purchase or upgrade that software in the next two years.

On average, a WMS has been in use for 6.5 years, with upgrades typically occurring every 2.5 years. As for value, readers say it takes an average of 12.3 months to get a return on their WMS investment.

Companies are planning to buy a WMS in the next two years for a variety

of reasons:

- 45% want to upgrade their existing package.
- 36% are seeking better labor management tools.
- 32% are looking for better inventory deployment.
- 30% want real-time control.

Supply chain management and planning

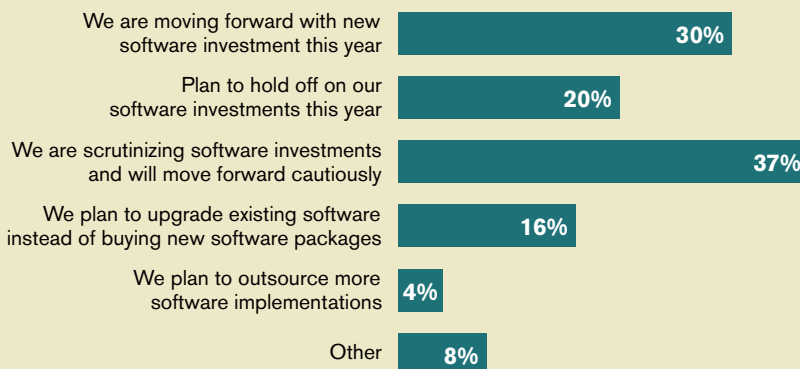
Supply chain management and planning (SCMP) software integrates supply chain transactions by managing relationships with both customers and suppliers while controlling related business processes. Functions managed include customer requirements, purchase orders, inventory, goods receipt, warehouse operations and supplier sourcing.

Just 34% of our survey respondents have SCMP software in place and 16% anticipate evaluating, purchasing or upgrading that software in the next 24 months. These users, on average, have had their SCMP system in place for 7.2 years and typically upgrade every 2.5 years. It takes a little more than 12 months to realize a return on investment in an SCMP system.

SCMP software is used for a variety of initiatives:

- Procurement, with 53% currently using SCMP and 26% planning to purchase or upgrade for that purpose.
- Inventory visibility, with 46% currently using SCMP and 33% planning to purchase or upgrade to better track their assets.
- Order management, with 46% currently using SCMP and 35% planning to purchase or upgrade to gain better control of orders.

How has the current economic climate changed your company's approach to adopting materials handling management software?



Source: Peerless Media Research Group

- Demand planning, with 37% currently using SCMP and 24% planning to purchase or upgrade as a means to better predict trends.
- Other top initiatives include: Collaboration with vendors/suppliers (35% currently use/33% anticipated use) and manufacturing (30% currently use/19% anticipated use).

Warehouse control systems

A warehouse control system (WCS)

handles real-time data management, while coordinating and directing the activity of a facility's multiple materials handling sub-systems (plus their monitoring, control and diagnostics). WCS is currently in 28% of respondents' facilities, with 19% planning to evaluate, purchase or upgrade such a system in the next two years. On average, WCS has been in use in our readers' facilities for 5.8 years, with upgrades occurring every two years. Most found it took 13 months to get the return on their WCS investment.

Of respondents' whose companies are planning to evaluate, upgrade or purchase a WCS, 68% will do so within the next year and 65% will be buying a brand new system. Notably, 59% indicate that their WCS purchase is an integral part of a larger automation initiative, while only 38% will implement a WCS as a stand-alone project. Most (62%) will be buying from a WCS software provider, as opposed to a systems integrator (14%) or an equipment manufacturer (10%).

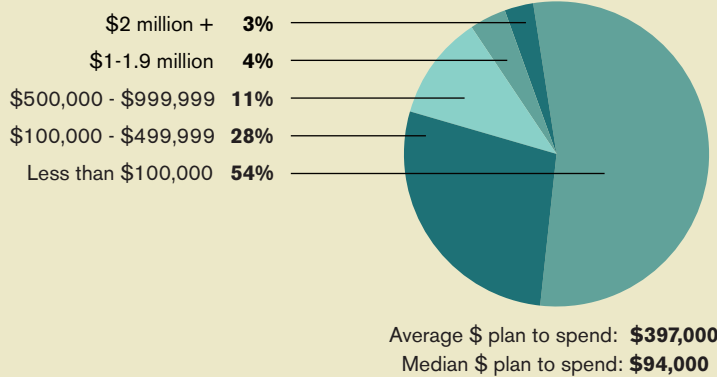
Other software

A little more than a quarter of respondents (26%) indicate they use asset tracking software to manage the assets used to move, store, secure, protect and control inventory both within their enterprise and throughout the supply chain. The software is relatively new in terms of use, with 80% of respondents having it in operation for 10 years or less. Asset tracking software had the fastest rate of return on investment, according to our readers—just 10 months.

Labor management software (LMS) is currently used by 23% of respondents to optimize workforce productivity through comparative reporting of direct and indirect labor use against both historic data and engineered standards. Most systems have been in place an average of six years, with upgrades occurring every 2.3 years. Users report a 10.8 month average return on investment time.

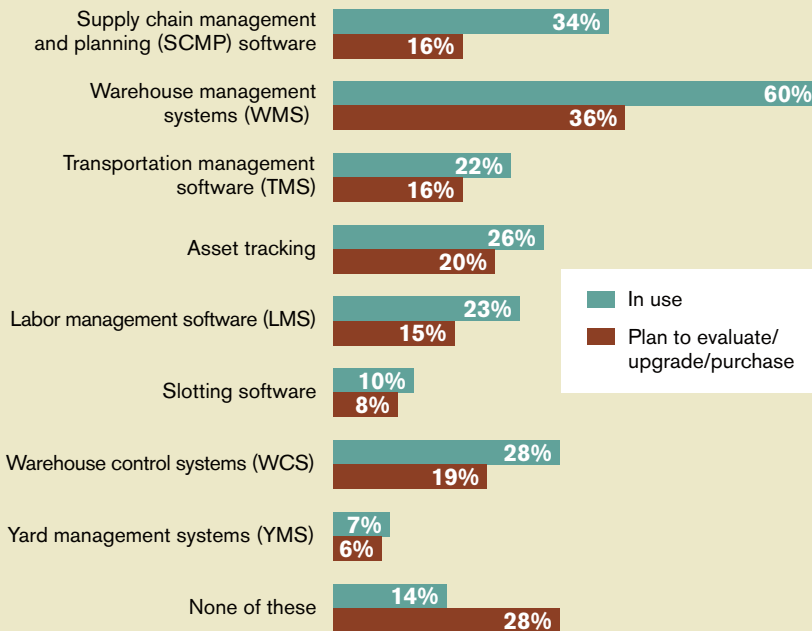
The majority of those who plan to implement a LMS expect to do so within the next 6 to 12 months (57%),

Approximately how much will your company spend on supply chain software for your operation including license, integration and training in the next 12 months?



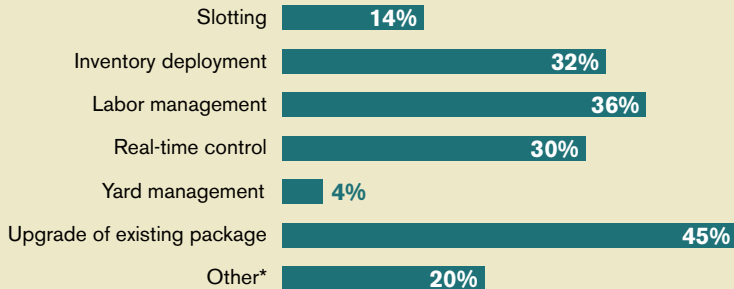
Source: Peerless Media Research Group

Which of the following software is in use in your facility and what are your plans to evaluate, purchase or upgrade in the next 24 months?



Source: Peerless Media Research Group

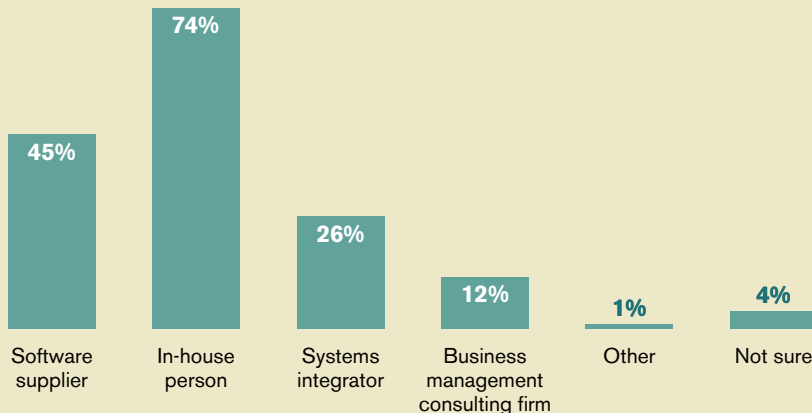
What are the key reasons your company is planning to consider or buy warehouse management systems (WMS) during the next 2 years?



* Mentions include: changes in warehouse design, replenishment management/e-commerce implementation implementing an ERP system, add features and functionality/current system not very robust, lot tracking and event billing purposes

Source: Peerless Media Research Group

When your company purchases software, who do you typically use to integrate the software installation?



Source: Peerless Media Research Group

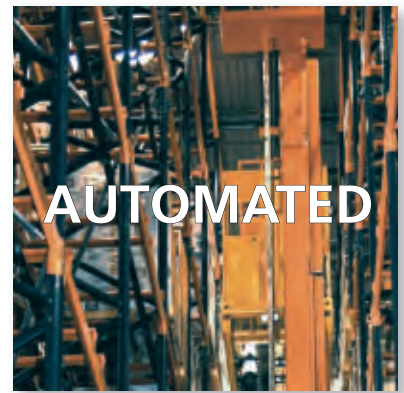
followed by another 39% who anticipate doing the same within the next 24 months. Engineered labor standards—established performance rates and productivity goals based on the unique characteristics and metrics of each work assignment—are currently in use by 27% of respondents with another 31% indicating an intent to implement the same. However, only 38% have adopted an employee payment program tied to productivity improvements.

The last two areas we examined, slotting optimization software and yard management systems (YMS), had far fewer respondents—corresponding to

their much lower rate of adoption.

Just 10% of respondents report the use of slotting optimization software to determine the best inventory storage medium, picking methodology and rotation frequency. Those who answered indicated that 36% reslot quarterly, 45% reslot every six months, and 18% reslot once a year.

Only 7% of respondents indicate that they currently use a YMS to streamline scheduling of inbound and outbound shipments through their yard and docks. Of those, 45% had only had their YMS in place for five years or less. □



Lift truck maintenance: Long-term planning considered

Tired of throwing good money after bad, fleet managers are turning to training, technology, and dealer support to better understand when to replace, repair or retire.

BY JOSH BOND, CONTRIBUTING EDITOR



FOR DECADES THE SAME CALL HAS RUNG out from lift truck maintenance bays around the world: “Get me the truck and I’ll fix it.” But as companies try to do more with less, lift trucks are too often compelled to stay on the warehouse floor as long as possible, where they can keep the product and the organization moving forward.

The historic tension between the needs of the truck and the demands of the business frequently result in maintenance patterns that lead to avoidable damage, over- or under-utilization, and wasted parts, time and money.

“It’s a sword that’s not only double-edged, it’s serrated,” says Jim Shephard, founder and president of Shephard’s Industrial Training Systems, which specializes in the development and implementation of operator training programs and has trained more than 1.5 million operators. “It’s something that every company with lift trucks wrestles with.”

However, Shephard argues, with careful planning, operational discipline, and perhaps the help of a dealer or other service provider, most businesses can establish a lift truck maintenance program that will increase productivity while optimizing fleet expenses.

But many companies have yet to take the first step.

“With many of the clients I’ve worked with over the past few years, I’ve seen no plan at all,” says Shephard. “They’re basically running reactive maintenance shops.”

Planned maintenance (PM), the routine oil and filter changes, might be as far as a company’s maintenance planning goes, says Shephard. Sometimes even PMs are a challenge. “Maintenance people are saying:



Technicians at a Toyota Material Handling dealership in Northern California bring training and expertise to fleet maintenance.

Warehouse Labels & Signs



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

FREE white paper
on the benefits of preprinted
labels VS. print-on-demand
CALL TODAY!



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

Warehousing & DC: Fleet Maintenance

"The truck's due for PM, now how do I beg, borrow or steal it?" says Shephard. "They usually only get the truck after a breakdown. Even then, they're forced to get it back onto the floor before the full service is done," he adds. "Before long, that fleet starts to show the attention you've put into it."

According to Shephard, an effective maintenance program starts with the lift truck operator, the person most immediately aware of the needs of any given truck.

"They are the first line of defense," says Shephard. "No one else in that operation is going to be as important as the operator. They are the key."

But although operators today are better trained than ever, says Shephard, skilled operators on bad equipment will revert from good habits to bad ones. Then equipment dollars are wasted,

training dollars are wasted, and companies end up with avoidable costs.

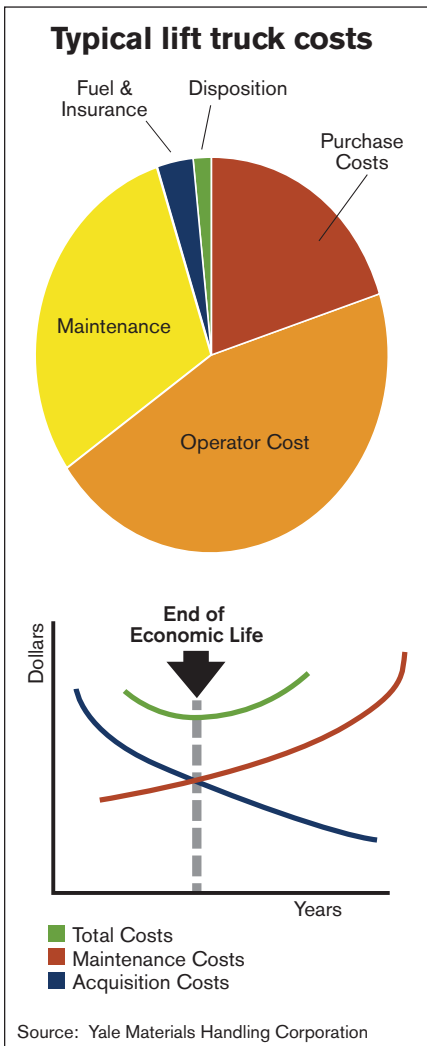
"You push one domino over, it will knock the rest over," says Shephard. "The funny thing is that most companies put so much emphasis on producing a quality product, from design to manufacture to packaging, then they go and handle their materials with shoddy equipment. It doesn't make sense to focus so much on the front end just to get shrinkage on the back end."

Shephard says maintenance is no longer a last resort for trucks pushed to the breaking point. Taking the long view allows businesses to control day-to-day expenses and operations while monitoring the performance and value of each piece of equipment. In this way, the life span of each truck is neither shortened nor needlessly extended.

"Before you cross that line, maintenance costs are an investment in your assets," says Shephard. "After you cross that line, you're just throwing money away."



In-house maintenance programs should include careful documentation of labor hours and parts costs.



a parts supply from a dealer. This is where the problems begin. "Companies must have the discipline to track hours of labor and parts costs so they can have an accurate sense of their maintenance costs," says Gaskell. "That's the piece they're most often missing."

It can be hard to isolate labor hours spent on trucks if maintenance workers are also performing other facility repairs. And parts management can quickly become a cost quagmire. An ideal practice might include a time card for maintenance workers where they could document X hours spent putting X parts on X truck.

"One customer had tool carts in a shop filled with \$50,000 in parts in a small area," says Terry Flanagan, manager of fleet sales for Yale Materials Handling Corp. "Someone was in the habit of taking parts out of the packaging before shelving them, and although the mechanic knew where the parts were, no one else did."

"Do you know how many techs are allowed to get their own parts at a dealership?" asked Gaskell. "Zero. When a

www.dehnco.com

IMPROVE PRODUCTIVITY WITH WORKSTATION SOLUTIONS

Organize Produce Flow

Maximize Floor Space

Increase Efficiency

Improve Productivity

Improve Ergonomics

Maximize ROI



think green Our Product is manufactured in an environmentally sound facility.



Dehnco

300 S. Lageschulte Street P.O. Box 866, Barrington, IL 60010
Phone: 847-382-1579 Fax: 847382-1615 E-Mail: info@dehnco.com

www.dehnco.com

LOW COST STORAGE & HANDLING SOLUTIONS FOR CARTONS/BOXES

Organize Produce Flow

Maximize Floor Space

Increase Efficiency

Improve Productivity

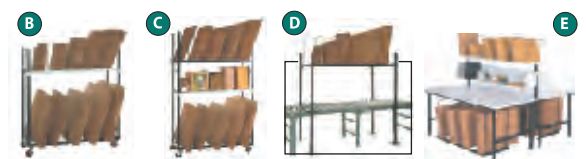
Improve Ergonomics

Maximize ROI



D-9060 - CARTON STAND

think green Our Product is manufactured in an environmentally sound facility.



Dehnco

300 S. Lageschulte Street P.O. Box 866, Barrington, IL 60010
Phone: 847-382-1579 Fax: 847382-1615 E-Mail: info@dehnco.com

SPACE SAVING

www.dehnco.com

OVER CONVEYOR STORAGE SOLUTIONS

Organize Produce Flow

Maximize Floor Space

Increase Efficiency

Improve Productivity

Improve Ergonomics

Maximize ROI



OC-1505 - OVER CONVEYOR
DOUBLE MANIFEST

think green Our Product is manufactured in an environmentally sound facility.



Dehnco

300 S. Lageschulte Street P.O. Box 866, Barrington, IL 60010
Phone: 847-382-1579 Fax: 847382-1615 E-Mail: info@dehnco.com

www.dehnco.com

EFFICIENT

STORAGE & HANDLING FOR ROLL MATERIALS

Organize Produce Flow

Maximize Floor Space

Increase Efficiency

Improve Productivity

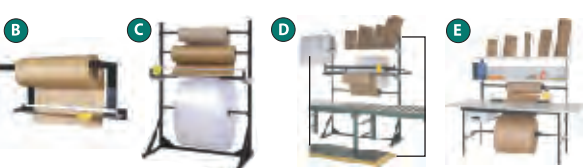
Improve Ergonomics

Maximize ROI



A SINGLE ROLL
STAND WITH CUTTER

think green Our Product is manufactured in an environmentally sound facility.



Dehnco

300 S. Lageschulte Street P.O. Box 866, Barrington, IL 60010
Phone: 847-382-1579 Fax: 847382-1615 E-Mail: info@dehnco.com

Warehousing & DC: Fleet Maintenance

user's in-house technicians are allowed to get their own parts, that's how customers end up with tens of thousands of dollars in parts they don't need and hundreds of thousands of dollars in parts they can't track."

In order to get things under control, a company must first perform a thorough asset survey, documenting costs and utilization. This simple first step can immediately reveal big problems, like whether a company is using the right trucks for the right job, whether trucks are over- or under-utilized, or whether there are other recurring problems with batteries, parts, operators, etc. With this basic data in hand, a company can begin to know whether to repair, replace or retire each truck.

For many companies, data captured manually can be helpful enough to begin making decisions and improvements. But technology can also help collect detailed information to help make long-term investments, develop programs, and improve day-to-day operations.

TECHNOLOGY'S ROLE

Gaskell shared a story about a manager who saw an unused lift truck parked in an odd corner of the warehouse. He fired it up, saw nothing immediately wrong, and drove the lift over to the loading bay only to find out it had

"In the end, a company might find that unnecessary fleet maintenance staff can be redirected to other areas of facility maintenance, resulting in optimized resources instead of layoffs."

— Michael McKean, fleet management sales and marketing manager, Toyota Material Handling

an oil leak, leaving an oil slick on the loading bay.

Truck-mounted technology can now allow managers to quickly assess which trucks are down and why, saving time that might have been wasted investigating on the warehouse floor. And while the fleet maintenance person might only be concerned with the status of the trucks, the same technology can enable operator tracking as well, providing further assurances that the right operator is using the right truck in the right way.

"If you find you're using one truck at 3,000 hours per year and another truck at 1,000 hours per year, you've got a problem," says Flanagan.

But while data can illustrate utilization and efficiency with more clarity, it must be coupled with action.

"Today's managers do not want more data," says Gaskell. "Instead they want information that is delivered in a simple format, that is easy to understand and that can be quickly acted upon. This way management can change operations before it's too late."

Data collection might lead managers on the path to make better use of their existing equipment, or reveal that they have been a bit too successful at right-sizing their fleet.

"A fleet that just barely meets utilization will not make it into the shop," says Shephard. "They'll need them on the floor. They're hamstrung to solve their maintenance problems."

Often, the picture that emerges is a need for improvements on an overwhelming scale. If the changes needed and

the resources available don't add up, a company might consider a maintenance agreement with a dealer or other service provider.

MAINTENANCE AGREEMENTS

Companies are increasingly relying on contracted maintenance services in an effort to control costs and make them more predictable. Unlike many dealers, in-house facilities often lack the ongoing training to keep mechanics up to date with rapidly changing lift truck technology, says Shephard. A company might also lack the perspective to know when a facility's maintenance costs are in a good place when compared to other sites or the industry average.

"Thirty years ago, each facility had its own security department, maintenance department, they did everything," says Michael McKean, fleet management sales and marketing manager for Toyota Material Handling. "Companies have since focused on core business and have outsourced all they can. It's driven the maintenance business back to where it should be, which is at the dealership."

In recent years, more and more companies are pursuing this option, says Shephard. There are plenty of choices for outsourced maintenance agreements, but dealers are frequently best prepared to offer a full range of services and reporting tools. One reason is simple, says Shephard: No one knows the trucks like the people who made them.

At one end of the maintenance agreement spectrum, the company need only grease the truck every so often and perform pre-shift inspections, with a dealer handling all other maintenance needs. The dealer might run a full-time, on-site maintenance bay, or make visits as needed. Somewhere in the middle of the spectrum, a dealer might handle major repairs only, and leave PMs and other routine maintenance to the company staff.

The key to fleet maintenance, says McKean, is the agreement between the



As lift truck technology rapidly changes, ongoing training for technicians is essential.

company and the maintenance service provider. "It's checks and balances," he says. "It can not only lock in business for the dealer, but it also results in predictable costs for the company."

Any good maintenance agreement requires good communication, he says, with a clear understanding of what the customer needs and what the dealer can offer. A good outsourced maintenance proposal, according to Flanagan, should aim for at least 15% reduction in maintenance costs.

Following an asset survey, says Flanagan, a dealer might confer with managers to identify an appropriate core fleet as well as a standby fleet. "So, if the truck is down, you aren't down," he adds. They might also identify a swing fleet suitable for use in two or more applications, says Flanagan. This avoids the likelihood of a dedicated fleet being over- or under-worked.

By becoming involved in all aspects of fleet maintenance, a dealer agreement can also allow a company to bridge the natural gap between fleet managers and staff managers. "Outsourcing in-house maintenance requires time to understand what is best for the company," says McKean. "In the end, a company might find that unnecessary fleet maintenance staff can be redirected to other areas of facility maintenance, resulting in optimized resources instead of layoffs."

And instead of parts languishing in a maintenance bay or disappearing onto the warehouse floor, the dealer can assume responsibility for tracking each and every item.

"They don't get paid unless they keep good records, whereas an in-house program might not have such an incentive," says Gaskell.

According to Gaskell, the most important thing to consider when selecting a service provider is uptime, not the cost of each repair.

"If I had 100% uptime, I'd gladly pay twice as much for the service," says Gaskell. "That said, you also need robust reporting to benchmark company costs against industry averages."

Flanagan agrees. For companies with sites across multiple states or countries, how do you know what's world class? How do you benchmark

costs internally from site to site? You might have a site that has a lower cost per hour than the others, so you decide to benchmark to that site. But what if that cost is still above industry average?

With a targeted goal and the support to reach it, companies can replace waste and reactive maintenance with

confidence and efficient resource management.

"That's long-term thinking," says McKean. "If you don't have that mentality, that's where a competitor will come in and get that contract." □

Josh Bond is the lift truck columnist for the Supply Chain Group

INNOVATIVE PRODUCTS

ONLY From Akro-Mils!

Dedicated to Our Distributor Network!

Products shown include: InSight™, Super-Size AkroBins™, Indicator™, ProCart™, AkroDrawers™ Stackable Cabinets, EarthSaver™, ShelfMax™, and System Bins™.

USA MADE

Discover how innovative products from Akro-Mils can add efficiency and organization to your material handling. Call us at **800.253.2467** or visit **www.akro-mils.com** for more information.

AKRO-MILS®

Everything You Need To Store, Organize & Transport

M
A Myers Industries Company

©2011 Akro-Mils/Myers Industries Inc. Form No. AKM27

Big Ass Fans

Yellow Jacket® by the Big Ass Fan Company® is the new portable (or mountable) fan that takes abuse and stays in use. After 5 years in development, Yellow Jacket's smashingly durable design, quiet and efficient operation, large coverage area, multiple mounting options, superior maneuverability and adjustable speed settings make it worthy of the Big Ass Fans name.

Yellow Jacket won't crumble after a forklift love tap. How do we know? Watch one of our engineers attempt to challenge Yellow Jacket's durability at www.bigassfans.com/yellowjacket.

Share your ideas for destruction here: www.canyoudestroyit.com.

Learn more:

877-244-3267

www.bigassfans.com/yellowjacket

info@bigassfans.com

 **BIG ASS FANS**®
WWW.BIGASSFANS.COM



Capitol Conveyors Inc.

Capitol Conveyors Inc., a full-service conveyor manufacturing company, offers engineering, equipment, installation, and commissioning for all your conveyor needs. The CCI Motorized DriveRoll Tower and Conveyor offers many benefits, including its plug-n-convey design, zero-pressure zone-controlled accumulation, reduced noise, low power consumption, operation without compressed air, and minimal cost for spare parts. The Tower comes with uphill, downhill and reversible modes, ships fully assembled, and can be pre-wired including the power supplies.

The unit is controlled by 24-volt DC motorized drive rollers with high torque drive rollers for uphill and brake drive rollers for downhill. Customized design is available. Each Tower is shipped from the factory as a self-standing unit and can easily be integrated with multiple types of equipment.



Capitol Conveyors, Inc.

28121 Scippo Creek Road, Circleville, OH 43113

Phone: 877-532-9070, Fax: 740-474-8068

www.CapitolConveyorsInc.com

 **Capitol Conveyors, Inc.**

Dematic

Smarter, Faster, Ergonomic Order Fulfillment

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. Faster because product for picking flows into the RapidPick station smoothly and consistently, allowing your staff to be highly utilized. Ergonomic because the workstation is designed for sustained productivity and employee comfort: no bending or reaching.



Experience the Dematic Difference.

Visit www.dematic.us or e-mail USInfo@dematic.com for more information.

Creating Logistics Results



Hyster

Introducing the completely redesigned Hyster® B60ZHD and B80ZHD 6,000-pound and 8,000-pound end riders. These trucks have been engineered to take on the most demanding, heavy-duty applications in a multitude of operating conditions. To prove what they are made of, we pushed these machines to the max, and the linkage survived 1,000+ hours without lubrication. The complete linkage system lifted a total of 310,000,000 pounds before requiring service of any kind and our bushing wear was more than three times better than that of the competition. We deliver durability, productivity, operator comfort and ease of maintenance that exceeds the industry's highest standards.



Hyster

Visit www.Hyster.com for more information.

ID Label Inc.

Man-up or Man-down...

Hands down ID Label has the best warehouse labeling and installation solutions.

- Plastic Signs
- Magnetic
- 1D or 2D Bar codes
- Color Coding for tier identification
- National Installation Services



Positive Feedback...Every Time

ID Label Inc.

Salesmmh@idlabelinc.com
Toll-free: 800-541-8506 x100
425 Park Avenue
Lake Villa, IL 60046



Intelligrated

Intelligrated Real Time Solutions® Trak3 xD™ and Trak3 xL™ Pick-to-Light

Real Time Solutions Trak3 xD and Trak3 xL is the first extended display pick-to-light system to offer dynamic dual-shelf pick face and replenishment slotting capability. Ideal for dense flow rack picking and put applications or general merchandise operations that require dynamic slotting of a wide variety of product sizes, Trak3 xD and xL systems provide maximum SKU density and replenishment accuracy.



Intelligrated

7901 Innovation Way
Mason, Ohio 45040
1-866-936-7300
www.intelligrated.com

Interlake Mecalux



We manufacture WAREHOUSE SOLUTIONS

Selective Pallet Rack • Drive-In/Drive Through • Wide Span • Structural Rack • Boltless Shelving • Push Back • Cantilever • Selecta-Flo • SpinBlock • Movirack • Clasimat • Clasimat Basic • Radio Shuttle • Unit-Load AS/RS • Mini-Load AS/RS • MT0 • Easy WMS



www.interlakemecalux.com

Interlake Mecalux

www.interlakemecalux.com

Kenwood U.S.A.

Reliable and affordable voice and data communications in the concrete and steel of manufacturing and distribution facilities can be a challenge. Kenwood two-way radios meet or exceed military standards for durability and offer a wide range of choices, from simple, on-site communications to complex systems requiring wide area coverage. The latest advantages of digital communications come with the Kenwood NEXEDGE® line of radios and custom systems, which can be integrated into IP networks, used to link multiple sites and offer advanced data capabilities. For site specific communications, affordable and tough ProTalk® radios are the high-performance choice. All Kenwood radios feature renowned Kenwood audio, voice and data features based on ever advancing R&D standards, and are built to offer high performance communications in any setting.



Kenwood U.S.A. Corporation Communication Sector

www.kenwoodusa.com
1-800-950-5005



Battery Watering Technologies

Battery Watering Technologies offers a quick and safe method for filling industrial and golf car batteries with water. Maintaining batteries with a single-point watering system eliminates the risk of battery acid and vapors harming workers or spilling over to damage floors and equipment. There is a growing awareness that extending the life of batteries makes not only good business sense, but environmental sense as well.



When batteries are maintained and properly watered, they should last five years or longer. We're providing a better quality product that takes what had been a 10-20 minute chore per industrial battery to something that can be done in 20-30 seconds. Our five-year warranty sets the standard for quality and performance with our innovative product line.

Battery Watering Technologies

6645 Holder Road
Clemmons, NC 27012
336-714-0448 or
877-522-5431
www.batterywatering.com

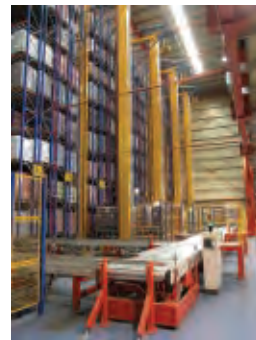


Battery Watering Technologies

The leader in battery watering technology™

Efacec

Efacec is a global corporation with 4,500 employees around the world. Our Material Handling Business Unit offers automated warehouse solutions including AS/RS, AGVs, turnkey conveyor systems, and also warehouse management software (WMS). AS/RS systems have been supplied to handle products such as plastic totes, cartons, pallets and even 13,000-pound rolls of paper.



With over 25 years of experience in material handling, EFACEC has the capability to design and manufacture products and systems to match our customer's needs.



Efacec USA, Inc.

2755 Northwoods Parkway
Norcross, GA 30071
770-446-8854
E-mail: usa.logistics@efacec.com
Website: www.efacecusa.com

ORBIS Corporation

At ProMat 2011, ORBIS Corporation, North America's leading manufacturer of sustainable reusable packaging and an expert in supply chain optimization, unveiled its newest reusable bulk containers, the HDMC4845 BulkPak, available in two heights: 27 and 34 inches. The HDMC4845 BulkPak is designed to safely and securely utilize less usable shipping space for containers, so companies are able to increase the amount of product they can ship. The containers have been engineered to allow greater utilization of available space and to stack in a way that frees up additional space in a standard 53-foot shipping trailer. In addition to helping companies reduce their overall environmental impact with reusable packaging, ORBIS tracks and measures its own resource utilization to continuously conserve natural resources and reduce waste.



ORBIS Corporation

1055 Corporate Center Drive
Oconomowoc, WI 53066
Toll Free: 800-999-8683
www.orbiscorporation.com

System Logistics

MODULA®. The Space Saving Automated Storage System

The MODULA® vertical lift module is the solution to manage your picking and rapid retrieval of parts, components, semi-finished and finished products while optimizing space utilization. When equipped with dual-level tray delivery, available with both internal and external picking bays, units can provide high picking speeds by eliminating operator wait time. Contact us today to learn more on how to increase productivity and reduce costs. MODULA®. Your easy, efficient and ergonomic solution.



System Logistics

888-233-6796
sales@systemlogistics.com
www.systemlogistics.com

Overhead power and free conveyors

A new line of 4-inch overhead Friendly Dog Magic power and free conveyors features a simpler design than comparable, standard models to reduce engineering and installation time. The units use standard air pusher assemblies at switches and chain transfers for accurate transfers that are easily incorporated into any layout. **Jervis B. Webb, a subsidiary of Daifuku, 248-553-1000, www.jervisbwebb.com.**



Hoist offers infinitely variable speed control

The DCS-Pro electric chain hoist allows operators to handle and precisely position critically sensitive loads with ease. Features include an infinitely variable speed control with soft starting speeds of 3.15 inches/minute, a 1:200 control ratio for gentle positioning and high-speed travel, and automatic switchover to low speed prior to reaching the upper/lower stop. To prevent load sway, the hoist has integrated acceleration and braking ramps. Offered standard for enhanced safety and reliability, the hoists have operating limit switches, a brake-coupling system to securely hold loads, and speed-monitored slipping clutch. Powered by a 24-volt control, the hoist's connections are simple to install. The gearbox, brake and slipping clutch are maintenance free for up to 10 years. **Demag Cranes & Components, 440-248-2400, www.demagcranes.us.**



WHAT ARE YOU GOING TO DO WITH YOUR EXCESS PACKAGING INVENTORY?

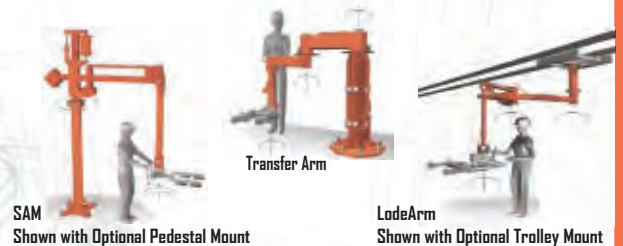


CALL McKernan
PACKAGING CLEARING HOUSE
Quality Obsolete Packaging

1-800-SURPLUS (800-787-7587 or 775-356-6111)

**WE BUY YOUR SURPLUS/
OBSOLETE PACKAGING!**

Precycle for Profit! Call Today for an Offer



Your Complete Lifting Solution



Your products are unique. Your manufacturing process is unique.
You deserve a lifting solution that fits.
Call **800.831.6026** today for a customized lifting solution.

Positech
CORPORATION

Visit **www.positech.com**

Lightweight gantry crane ideal for localized lifting

Made from lightweight, extruded aluminum for easy lifting, a new, portable gantry crane can be used for localized lifting anywhere in a facility. Cost-effective



for use in areas where lifting equipment is needed infrequently—including over machines, for maintenance or to pull product—the crane easily collapses down when not in use for compact storage. The unit lifts capacities from 250 pounds to 2

tons. Adjustable with standard spans up to 20 feet, the crane's height under the boom is adjustable from 7 to 12 feet.

Gorbel, 800-821-0086, www.gorbel.com.



Hoist can be configured for multiple uses

Offering longer lifts and greater horsepower, the Terminator T60 hoist reaches higher speeds. It lifts up to 50 tons and is powered by a 60-horsepower motor. The hoist can be combined in top running double girder, monorail or base mount styles and works in conjunction with the supplier's line of end trucks and custom controls. **Ace World Companies, 800-431-4223, www.aceworldcompanies.com.**



RIDER LIFTS FOR MEZZANINES & AUTOMATED MATERIAL LIFTS FOR MEZZANINES



- ▶ INCREASE MEZZANINE UTILITY
- ▶ SAFER LOADING & UNLOADING
- ▶ FASTER LOADING & UNLOADING
- ▶ COST EFFECTIVE

1-800-843-3625
www.advancelifts.com

Click and Get the Most Drum Handling Choices.
www.MORSEmmh.com




Over 100 Models
The Specialist in Drum Handling
MORSE 

315-437-8475, Fax 315-437-1029







Line of electric chain hoists lifts up to 10 tons

Offered in capacities from a half ton to 10 tons, a line of electric chain hoists can be specified with either single-speed or inverter control. The hoists include a dual braking system featuring a disc type motor brake that works with a mechanical load brake. Other features include upper and lower limit switches, overload alert, push-button control and chain container. **ACCO Material Handling Solutions, 800-967-7333, www.accolifting.com.**

Mobile straddle crane

Intended for indoor or outdoor use, the mobile, telescopic mast straddle crane carries loads up to 50,000 pounds—including gen-packs and 20-foot shipping containers—through a 12 x 12 foot overhead door opening. The crane straddles a flat bed or a semi truck and lifts the load up to 120 inches. Hydraulically operated, the crane features four synchronized telescopic masts for level, uni-



form lifting and positioning. The hydraulic cylinders, their plumbing and control valves are completely enclosed and protected for long life. Uniform level lifting is synchronized by precision-built hydraulic flow dividers that zero in automatically

each time the unit is fully lowered. The crane is electrically powered by a 440-volt, three-phase motor with a propane, gasoline or diesel engine offered as options. **Air Technical Industries, 440-951-5191, www.airtechnical.com.**

Need a Single Source Solutions Provider for Your Conveyor Needs?

Talk to one of our Sales Engineers and request a FREE quote for your next project!

Many conveyor manufacturers typically only make certain types of conveyors.

At **Capitol Conveyors, Inc.** we know one size doesn't fit all, that's why we're a **full service, custom manufacturer** of many different types of conveyors, **including specials.**

We also offer complete solutions that include systems engineering, equipment, installation and commissioning – all with **fast, flexible and efficient response times.**

- Motorized DriveRoller
- Lineshaft
- Belt Conveyors
- Belt Driven Live Roller
- Chain Driven Live Roller
- Gravity
- Towers
- In Motion Weighing
- Automated Print & Apply



For More Information, Call:
877-532-9070

Ci Capitol Conveyors, Inc.

www.CapitolConveyorsInc.com

28121 Scippo Creek Rd. • Circleville, OH 43113 • Phone: 877-532-9070 • Fax: 740-474-8068

Motorized lifter automatically transforms to handle coils or pallets

For lifting of eye-horizontal coils and palletized vertical coils, a motorized coil/pallet lifter includes fork assemblies and lifting saddles. The forks and lifting pads are motorized to permit on-the-fly changeover or for use with a cab-operated crane. When lifting coils on pallets, motorized coil restrictors lower to prevent shifting. Sensors detect the type of load to be lifted to prevent opening of the legs, while other sensors and indicator lights aid with load alignment. The lifter's capacity for palletized coils is 33,000 pounds and increases to 100,000 pounds for eye-horizontal coils. **Bushman AvonTec**, 800-338-7810, www.bushmanavontec.com.



Direct electric overhead traveling cranes with remote control

For safe, efficient control of electric overhead traveling cranes, the LRC-M1 remote control directs up to four motions with two ergonomic, multi-axis joystick controllers. The trolley/hoist selector, two aux push buttons and toggles are mounted on an impact-resistant housing. To minimize spares and transfer keys to other controllers—for increased safety, flexibility and streamlined workflow—the system uses a proprietary RFID configuration. Other remote-controlled cranes can be standardized to the same system for operational efficiency. **Cattron Group**, 724-962-3571, www.cattrongroup.com.



Controller for magnet crane operations

Providing precise operation of industrial lifting magnet cranes, the MagnePulse digital magnet control is a microprocessor-based, solid-state, DC-to-DC package. The system allows an operator to enable up to four unique magnets to match individual load requirements. This functionality reduces lifting current requirements while saving energy, lengthening magnet life and increasing average lift capacity. Ideal for retrofit applications, the crane uses existing operator controls and connections and is packaged with a customized control panel to match unique specifications. **Magnetek**, 800-288-8178, www.magnetekmh.com.

GORBEL
A CLASS ABOVE
www.gorbel.com

- ✓ Better
- ✓ Safer
- ✓ More Productive

WITH GORBEL WORK STATION CRANES, YOU CAN HAVE IT ALL.

- Easy installation
- Modular design
- Superior load positioning
- 5-year warranties

GORBEL, INC.
585.924.6262
info@gorbel.com

800.821.0086 • www.gorbel.com

Lift four drums at one time

The Parrot-Beak L4CB crane-hoist mounted unit provides an automatic, mechanical way to handle conventional rimmed steel, plastic and fiber drums. Capable of lifting up to 2,000 pounds per drum (for 8,000 pounds total capacity), the drum handler offers worker safety, drum protection, unitized handling and pallet change-out capabilities. The device can lift a group of four drums made of different materials at one time, provided the drum heights are within 1 inch of each other. Fork and carriage-mount models are also offered. **Liftomatic Material Handling, 800-837-6540, www.liftomatic.com.**



Overhead transport device delivers items between facility levels

Comprised of vehicles that travel overhead at speeds up to 722 feet per minute, the Sky RAV overhead hoist transport product line includes five models, including thin, lightweight and medium-load handlers. The hoists may be used for transport between processes, automatic restocking to a picking shelf, or sorting. The vehicles travel vertically at 45 degree angles to accommodate multi-level facilities, while keeping goods in a horizontal position. For further customization, the unit can be equipped with a roller conveyor or a gripper to accommodate various load sizes. **Murata Machinery, 704-394-6900, www.muratec-usa.com.**



RIDG-U-RAK®... *the name to trust!*

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.

Trust RIDG-U-RAK with your next project

- One of the largest rack manufacturers
- Capacity in excess of 60,000 tons per year
- Project management and installation services
- Full array of storage system solutions
- Unparalleled innovation, design and application experience



NEW!
**Full Line
Selection
Guide**

RIDG-U-RAK®
Toll Free: 866-479-7225
www.ridgurak.com



Selective Pallet Rack • Drive-In • Push Back • Flow
• Pick Modules • Cantilever • Stacker Cranes •
Roll-Out Shelving • Seismic Base Isolation

Pneumatic-powered air manipulator lifts 940 pounds

Using pneumatic power to provide responsiveness and enhanced maneuverability in handling loads up to 940 pounds, the Simple Air Manipulator's lift cylinder uses compressed air for vertical lifting and positioning. Its end-of-arm rotating axis has up to 18,000 inch-pounds of end-of-arm moment loading and 360-degree rotation, while pantograph operation allows for a rectangular working window. When fully side-loaded, the end-effector mounting surface deflects less than 2 degrees. Features include an operator-controlled pistol grip metering valve for vertical lift (ergonomic twist grip controller



optional), precision bearings that minimize movement resistance for enhanced ergonomics, and floor or ceiling mount capability that doesn't require arm disassembly. **Positech, 800-831-6026, www.positech.com.**

Magnetic plate handling systems include on-board battery power supply

Using patented, electrically controlled permanent lifting magnets, a series of magnetic plate handling systems are independently powered by a 24-volt DC wet cell battery, eliminating the need for a power supply cable reel to be located on the hoist/crane. For operator safety, the system includes indicator lights to show that each magnet has attached to the load at 100% strength. Radio controllable, the system will not drop a suspended load, even in the event of a control operation error. The magnet controls can be integrated with supporting crane radio controls and do not require a battery backup. **Permadur Industries, 800-392-0146, www.permadur.com.**

Are you looking for some

"less formal" storage options?

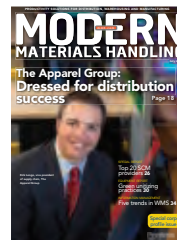
Consider portable stacking racks by Tier-Rack

- Portable, stackable, knock down.
- Variable aisles and dense storage options.
- Custom sizes built to your design.
- Modular use for seasonal storage, overflow storage, rapid deployment uses.
- We design and manufacture new racks.
- We buy and sell used racks.

TIER-RACK®

1-800-325-7869 / www.tier-rack.com

MODERN MATERIALS HANDLING



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

 the **YGS** group.

800.290.5460 x136
mmh@theYGSgroup.com

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.

Event Collateral
Media Kits
Direct Mail
Online Marketing
Recruiting Packages
Presentations

Portable aluminum gantry crane

Porta-Gantry portable, aluminum gantry style cranes feature durable construction in a lightweight, modular assembly to handle up to 5-ton loads. The device provides quick and easy setup and breakdown for movement between workstations. The crane



requires only four bolts for assembly, then collapses and packs flat for shipping and storage. For versatility, the crane includes locking caster wheels and manual height and width adjustments. Thern, 507-454-2996, www.thern.com.



classified/recruitment

Monitoring Device

KEYTROLLER 100

COLOR Access-Monitoring Device

- * RFID or code enabled--keyless keypad ignition
- * Automates daily checklist with flagged shut down
- * Wireless--WiFi, Bluetooth or Zigbee radios
- * Connects quickly to ANY make/model machine
- * IP67 enclosure for tough outdoor applications
- * Client server software programs/downloads
- * Impact + speed sensing make drivers accountable
- * Schedules maintenance by date or hour meter
- * Auto export usage hours--checklist by email



813-877-4500 www.KEYTROLLER.com



Label Holders

To advertise, or for more information please contact:
Jennifer Drevline,
 847-223-5225, ext. 11,
jenniferd@caseyreprs.com



AIGNER INDEX

LABEL HOLDERS

*Small Investment
BIG RETURN!*

800.242.3919
www.aignerindex.com
info@aignerindex.com



interlake
MECALUX

www.interlakemecalux.com

Mark Longacre

JBT Corp.

TITLE: Chair, AGVS industry group, MHIA; Marketing Manager, JBT Corp.

LOCATION: Chalfont, Pa.

EXPERIENCE: Eleven years in the materials handling industry. Chair of the AGVS industry group, 2+ years.

PRIMARY FOCUS: As chair of the AGVS industry group, encouraging new members, marketing the industry group and increasing awareness of AGVs in manufacturing and warehouse applications.

Modern: There have been a lot of changes in your industry. From your perspective, what is an automatic guided vehicle today?

Longacre: We define an AGV as a computer-controlled mobile robot used to move materials around a facility. Inherent in the definition is that it's unmanned. The way they look, what they can do, and how easy they are to use has changed, but the base definition has not changed as long as I have been in the industry. What is different about today's AGVs is that they are more scalable and more flexible than vehicles of the past.

Modern: What's driving the demand for AGVs?

Longacre: There is an entirely new set of markets and applications opening up for AGVs. The first adopters were the automotive industry and heavy manufacturing. Today, we're seeing strong adoption in other industries, such as food and beverage. More importantly, manufacturers that have already optimized their manufacturing processes are now looking at distribution applications for AGVs.



Jeff Fusco/Getty Images

Modern: Why distribution?

Longacre: It's the same justification as for manufacturing: a reduction of labor costs, reduction in damage and increased productivity. In distribution, AGVs can support goods-to-person distribution processes. They can support replenishment processes. They can deliver empty pallets to a pick zone or take away empty or full pallets. There are a number of potential applications and we've only scratched the surface.

Modern: What do you make of the lift truck suppliers developing AGVs?

Longacre: In some respects, this is history repeating itself. There were a number of lift truck OEMs who entered and then exited the business 10 or 15 years ago. At the same time, we may see the emergence of a new market. We may see a segment of end users that need very customized vehicle. That's the traditional AGV. And we may see a segment of the market that can use a much more standard product like what the lift truck manufacturers will offer. It's a very dynamic and exciting time for the industry. □

MODERN MATERIALS HANDLING



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.



800.290.5460 x136 | mmh@theYGSgroup.com

The YGS Group is the authorized provider of custom reprint products from *Modern Materials Handling* magazine.

Event Collateral
Media Kits
Direct Mail
Online Marketing
Recruiting Packages
Presentations

A Storage Rack That Provides Extraordinary Strength And Stability.



From A Company That Does The Same.

With Jarke EZ Glide™ by SPG, you don't have to sacrifice strength and stability for accessibility. Each of the shelves on the unit holds up to a full ton — even when fully extended — for the ultimate in ease and efficiency when loading and unloading heavy items. Plus, add-on units are available that share common uprights with existing units — to maximize both the structural integrity and economy of this innovative shelving solution.

This kind of innovative design is what defines SPG, a new company with a legacy of over a half-century of experience. SPG offers a broad selection of innovative material handling equipment that's innovatively designed to maximize storage space, protect stock, manage inventory, enhance material flow, increase accessibility, lower cost and drive efficiency.

Delivering more than what is expected is what you can always expect from SPG. Contact us today and we'll prove it to you.



EXPECT MORE

SPG

STORAGE PRODUCTS GROUP

(877) 503-4774 | spgusa.com



AMCO

ISS

GILLIS/JARKE

UNIVERSAL