Kalmar around the world

A GLOBAL BUSINESS MAGAZINE FROM KALMAR INDUSTRIES, NO.1/2008

Smartspot®, a terminal tractor positioning system designed to improve the productivity of STS and RTG cranes, is Kalmar's latest 'smart' tool. *Page 10.*

Local presence in Mexico

Kalmar recently established its first sales and service company in Mexico, reflecting the growing importance of Mexican ports and the development of the country's intermodal market. The Guadalajara-based office will offer expert support to Kalmar's already established dealer network.

www.kalmarind.com/newsroom

Launch of so-called one-over-one robot

The Kalmar Autoshuttle™ boasts major benefits as the industry's first one-over-one automated self-loading vehicle able to pick, place and transport containers between ship-to-shore and yard stacking cranes. *Continues on page 20.*

Kalmar partners with Södra

Södra, a Swedish forest-owners association, awarded Kalmar an order for 32 lift trucks—including forklifts with capacities ranging from 10 to 25 tonnes and logstackers with load ratings of up to 30 tonnes. Södra gave Kalmar the order because of its far-reaching service network and offers of good support.

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Cooperation is key

Rotterdam Shortsea Terminal in the Netherlands and MSC Home Terminal in Belgium repeat-ordered two Kalmar ship-to-shore cranes each, further demonstrating the importance of long-term relationships and excellent product reliability. *Continues on page 17.*

Gaining ground in Asia

Gateway Terminals India (pictured) took delivery of 29 E-Ones in 2006, boosting sales of Kalmar RTGs in Asia.

New orders from Singapore, South Korea and Vietnam cement Kalmar's ever-growing presence in Asia. Customers are garnering the benefits of Kalmar's assembly of rubber-tyred gantry cranes, terminal tractors and other container handlers at its production facility near Shanghai.

Vietnam heats up with RTG expansion

Kalmar will deliver more eco-friendly all-electric RTGs to the Southeast Asian country experiencing rapid container traffic growth. Vietnam International Container Terminal has ordered 17 Kalmar E-One+ RTGs to help maximise the efficiency and space of its operations.

Another order from the region will see 20 E-Ones delivered to Saigon Newport's new Ho Chi Minh City operations in 2008. *Continues on pages 4–5.*

South Korean shipping giant chooses an industry leader

Hanjin Shipping—South Korea's largest shipping company and a world leader in logistics-related business—turned to Kalmar for the supply of 96 terminal tractors. The 4x2 units will serve across four berths in phase two of its Pusan New Port terminal development opening in 2009. *Continues on page 3.*

Kalmar and Hanjin Shipping partner up.

World's busiest port supplements its terminal tractor fleet

PSA Singapore Terminals ordered more than 200 Kalmar terminal tractors less than a year after its initial order for 247 units. Kalmar's local assembly set-up acted as a deciding factor in gaining both orders, assuring PSA the terminal tractors would be built to their specifications and delivered in a timely manner.

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Deutsche Messe
Hannover, Germany
May 27-31. Hall 25, Stand D18

TOC Asia
Shanghai International Convention Centre
March 18-20. Stand B14

Kalmar

Kalmar is part of Cargotec Corporation

The real work starts now!

Kalmar's parent company, Cargotec Corporation—the world's leading provider of cargo handling solutions—has published its financial statement for 2007. In short, the previous year provided both successes and challenges for the market leading global company.

Looking closely at Kalmar's business, service accounted for 30 percent of sales in 2007 compared to 26 percent the year before—a significant growth made possible by acquisitions and more customer-focused solutions. Another positive development occurred in Asia—the fastest growing market for Kalmar's products—where our sales rose by more than 10 percent. However, good sales growth and healthy order intake in 2007 was not balanced by an equally boisterous profit.

As Kalmar's new leader at the helm, I was hired to meet challenges head on and find new ways of working that build upon existing strengths, such as our expertise and scale. Already we have started this year with confidence and persistent work, fortifying partnerships with key customers and gaining important orders spanning the globe. Most notably are requests from ports in Vietnam, Brazil, Turkey and South Africa for Kalmar's all-electric E-One+ rubber-tyred gantry cranes, which boast enhanced overall quality, easier maintenance and faster assembly on site.

Innovation remains paramount at Kalmar as more and more customers believe automation will solve issues such as limited space for expansion and lackluster productivity. The recently launched Kalmar Autoshuttle™ brings relief to terminals requiring a safer and more efficient operation. The new unit is an automated self-loading vehicle able to pick, place and transport containers between ship-to-shore and yard stacking cranes, offering obvious advantages over automated guided vehicles. Kalmar's growing portfolio of automated equipment positions it as the preferred—and strongest—supplier of container handling equipment and related automation technology.

But offering solutions is simply not enough. The real work must take place! Germany's Hamburger Hafen und Logistik AG (HHLA) has commissioned Kalmar for the supply of 24 automatic stacking cranes and their related technology in the conversion of Container Terminal Burchardkai (CTB) from a straddle carrier operation to a semi-automated handling system. The partnership is in its third year, with all 15 of the first phase's cranes on-site. Kalmar will also provide simulation equipment to CTB, ensuring the terminal's smooth transfer of a manual to semi-automated operation.

It is essential for even a reliable operation to have around-the-clock support. Kalmar, harboring the most extensive service network in the industry, can engage customers with total maintenance solutions. Already this year we have extended our reach by opening a new sales and service location in Guadalajara, Mexico. Our aim is to shift sales and service support closer to our customers' operating environments, a strategy that has been in place for quite some time and will remain decisively intact.

No more can the success of Kalmar's close-to-customer strategy be seen than in the accomplishments of the terminal tractor product. It is the only Kalmar machine assembled on three continents: Asia, Europe and North America. Thanks to the great efforts and planning of many colleagues, customers—operating globally or locally—can take advantage of Kalmar's market competitiveness. New orders from South Korea, the Middle East and Singapore are a testament to this achievement. I'm confident that we can implement this way of working across Kalmar's other product lines.

Kalmar continues to align its strategy with the changing needs of its customers all over the world. Emerging markets present opportunities for growth and more established countries continue to demand efficiency-enhancing solutions. Kalmar is positioned to serve a wide-range of customers needing value-added products and services. The real work at Kalmar *always* starts now!

Pekka Vauramo
President
Kalmar Industries

Cargotec posted the overall net sales figure of EUR 3.018 billion in 2007. Kalmar's net sales were EUR 1.343 billion in the same period, an 11 percent increase on the previous year.

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Kalmar around the world

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The two parties celebrated at a signing ceremony in Busan.

Plotting its course for success, Hanjin Shipping takes Kalmar onboard

South Korea's largest shipping company has awarded Kalmar an order for 96 terminal tractors. The units are intended for Hanjin Shipping's new container terminal operations at Pusan New Port.

The new port development in South Korea, earmarked as the country's principle deepwater port, is owned by a consortium, Pusan Newport Company Ltd. (PNC). Hanjin Shipping will further boost Pusan New Port's reputation as the gateway to Northeast Asia with its new container handling facility, which is scheduled to open early 2009 and bring an additional 1.8 million TEU capacity to the transshipment mega-hub.

Kalmar will begin deliveries of 4x2 terminal tractors starting in June 2008 with the last machines arriving in 2009.

Service and support seal the deal

The units will be deployed across Hanjin Shipping's four berths as a part of the second phase in the development of its Pusan New Port terminal operations. The customer has also signed a contract with Kalmar's local representative in South Korea covering the maintenance of the new units.

Mikael Rietz, General Manager, Kalmar Asia Pacific, comments on the order:

"Hanjin Shipping chose Kalmar as its partner because of our strong commitment to service and product support. Kalmar's dealer, Samjin Yard, has made an invaluable contribution with its commitment to Hanjin Shipping complemented by its industry knowledge and experience."

Kalmar already provides service to Hanjin Shipping in many ports across the globe where the shipping company operates its own terminals, in addition to a fleet of some 200 containerships, bulk and LNG carriers. Consequently, this order represents a further strengthening of the important relationship between the two companies.

Business diversification needs comprehensive handling solutions

Over the years, Kalmar has supplied many container handling machines—other than terminal tractors—to Hanjin Shipping. In the Asia region, Kalmar has delivered straddle carriers as well as loaded and unloaded container reachstackers to the logistics company, proving yet again the value of a reliable equipment supplier that can provide solutions for customers with diverse needs.

The business of Hanjin Shipping has also evolved to include all aspects of the supply chain with the goal of becoming "the premier total logistics service provider respected by the global community," as the company's President & CEO, J.W. Park, states on its web site. Hanjin Shipping has expanded beyond its core business of container and bulk shipping to include terminal operations, 3PL services and ship repair.

Today, the shipping company operates a total of 11 dedicated marine container terminal facilities with a collective handling volume of more than 6 million TEU. Its container terminals are strategically located at the crossroad of major ports of the world. Four more dedicated container terminals are scheduled to open in the near future: Rotterdam in 2008, Phase 2-1 of the Pusan New Port development in 2009, and Vietnam and Jacksonville in 2011.

Meeting the demand with innovative services

Pusan New Port was designed by PNC to be a state-of-the art container terminal in Northeast Asia. Its geographical location —between Japan and northeast China—is an ideal position for a mega-hub terminal from which a large and consistently growing cargo base already exists.

As part of the port project, PNC is constructing 3.2 km of continuous quay wall equalling nine berths at depths up to 17 metres. Advanced container handling equipment, automated gates and integrated terminal operating systems will help to ensure the efficiency and productivity of its vessel and terminal operations.

Mr Y B Choi, CEO, Hanjin Newport (right), shakes hands with Mikael Rietz, General Manager, Kalmar Asia Pacific.

Sales of market leading Kalmar RT

Less than a year after the re-launch of the industry's favourite green rubber-tyred gantry (RTG) crane, sales for Kalmar's E-One+ have taken off, with orders coming in from all corners of the globe. More and more requests for Kalmar's RTGs originate in emerging markets where ports are being built or expanded in preparation for higher cargo volumes, helping Kalmar claim position as the global RTG market leader outside China.

Launched mid-2007, the E-One+ features a number of design improvements over its predecessor—the E-One introduced to the market in 2005—which contribute to enhanced overall quality, easier maintenance and faster assembly on site. *Read more about the benefits of Kalmar's E-One+ RTG in a separate article on next page.*

SOUTH AFRICA

New port development near Elizabeth takes shape

The Port of Ngqura, situated at the mouth of the Coega River in Algoa Bay and 20 kilometres east of Port Elizabeth, is South Africa's latest deepwater port development. According to the Transnet National Ports Authority (NPA), custodian of the country's primary trading hubs, Ngqura was designed to accommodate the country's growing export and transshipment markets. Transnet Port Terminals (TPT), the NPA's dedicated port operator, has made an agreement with Kalmar for 22 E-One+ RTGs for its Port of Ngqura container facility.

The 7+1 wide and 1-over-5 high RTGs outfitted with Bromma spreaders, will come equipped with Kalmar's autosteering and container position verification technology, Smartrail®. Deliveries will commence in October of this year with the final cranes expected to arrive in April 2009. The new port is expected to be fully operational by mid 2009.

Developed to serve the expected volumes produced by manufacturers in a new industrial zone located nearby, Ngqura Port is being constructed initially to handle up to 3 million TEU, but capacity will likely grow to 4 million TEU.

The Port of Durban values productive equipment, service

TPT is no stranger to the many benefits of Kalmar's RTGs. Last year, the port operator took 18 E-Ones into operation at its new Pier 1 Container Terminal at the Port of Durban. The 6+1 wide and 1-over-5 high RTGs, also equipped with Kalmar's Smartrail®, were delivered in the second half of 2007.

Pier 1 was developed to handle the Port of Durban's substantial increase in the volume of cargo. Kalmar was recently awarded a maintenance contract by TPT for all of its rubber-tyred equipment operating at Pier 1, comprising 18 Kalmar E-One RTGs, two Kalmar reachstackers and a range of other-branded machinery. A dedicated maintenance team of approximately 20 Kalmar service technicians will work around-the-clock, 365 days a year to ensure that Pier 1 operates with the highest possible machine availability.

The Port of Durban handled 2.3 million TEUs in 2007 and expects a sizable increase in 2008.

VIETNAM

Eco-friendly and reliable equipment influences port development

Recent container traffic growth in Vietnam has flooded waterways, roadways and, of course, ports with no indication of slowing. Vietnam International Container Terminal (VICT) has made an agreement to purchase 17 Kalmar E-One+ rubber-tyred gantry (RTG) cranes for its Ho Chi Minh City facility after witnessing a sharp rise in its container traffic from the year before.

The 6+1 wide and 1-over-6 high units will offer VICT improved productivity and a more reliable operation, not to mention the intrinsic environmental benefits of Kalmar's green, productive and uncompromising all-electric E-One+ model.

The new units will replace some of the older RTGs of another make currently operating at the facility. The first RTGs will be delivered starting already this year with the last cranes arriving in 2010.

The new order further strengthens the two parties' relationship which was sparked last year when Kalmar delivered a reachstacker specifically engineered for container barge handling at VICT. Last year, the port operator handled more than 572,000 TEU.

A fleet of green RTGs for SNP

Kalmar RTGs have proven popular in Vietnam with major port operator Saigon Newport Company (SNP) also in line for E-Ones. SNP has ordered a total of 20 Kalmar RTGs—10 for its Tan Cang-Cat Lai Container Terminal and 10 for Phase I of its Tan Cang-Cai Mep Container Terminal, currently under construction on the Thi Vai River as part of a greenfield port development. Both facilities are just outside of Ho Chi Minh City.

Kalmar has secured a contract to maintain all of the rubber-tyred equipment operating at the Port of Durban's newest container facility, Pier 1 Container Terminal. This will require a team of 20 people working 24/7 to ensure minimum downtime.

TGs span the globe

The first cranes at SNP's Tan Cang-Cai Lai terminal are on their way up, with many more to follow suit.

The 6+1 wide and 1-over-5 high units will come equipped with Kalmar's Smartpath®. Delivery is scheduled to be completed in November 2008.

TURKEY

Charting new territory, E-One+ makes its debut

Gemport, strategically located on the South East Coast of the Marmara Sea in northwest Turkey, was one of the first customers to order the redesigned cranes from Kalmar.

The port will take delivery of five 7+1 wide, 1-over-5 high units, which will also come equipped with Kalmar's Smartrail® and Remote Machine Interface (RMI) for machine monitoring, maintenance tasking and reporting. Due for delivery by June 2008, the RTGs will have a 40 ton lifting capacity.

Already a Kalmar customer, Gemport operates with reach-stackers and forklifts at its Gemlik Port & Warehousing facility. The container facility comprises eight berths and has an annual handling capacity of 200,000 TEU.

BRAZIL

Dependable, efficient stacking schemes earn Kalmar more orders

South America's largest container terminal operator Santos Brasil S/A continues to flex its muscles by implementing more higher density stacking equipment at its Santos Port operations, helping to realise 1.2 million TEU handled in 2007—its best performance yet!

Kalmar will supply the port operator with twelve 7+1 wide and 1-over-6 high E-One RTGs equipped with Kalmar's Smartrail®, which will also be retrofitted to Santos Brasil's five other-branded RTGs. The order is in addition to the five conventional hydraulic Kalmar RTGs delivered early-2006 and 12 all-electric E-One machines delivered early-2008.

The port operator has again opted for RTGs featuring Kalmar's 16-wheel design. This model offers a reduction in ground load pressure over the traditional eight-wheel model, thus minimizing wear and tear on the terminal surface. Delivery of the units from the latest order will commence this year.

Furthermore, Santos Brasil has sought assistance with operator training in the 24-month rental of Kalmar's RTG simulator, helping to assure the terminal's safe and efficient operation.

PERU

Peruvian operator takes note

Another order from South America for Kalmar's green RTG has come from ENAPU in Peru. The port operator was also one of the first customers to order the redesigned E-One+ when it made an agreement for two 6+1 wide, 1-over-5 high RTGs for its Terminal Portuario Del Callao operations.

Due for delivery in October 2008, each crane will come equipped with Smartrail® and feature a 50 ton lifting capacity.

Kalmar's E-One+ receives positive improvements

With new features that improve its overall quality, make maintenance even easier and more accessible, and help to expedite the final assembly process, the improved rubber-tyred gantry (RTG) crane from Kalmar is proving to be the preferred solution among operators worldwide.

Maintenance ease

The relocation of key components in the E-One+ makes them more easily accessible for maintenance purposes. For example, the emergency hoist stop sensor and spreader cable connection box have been moved to the level of the trolley platform to enhance convenience. Moreover, technicians have access to the cabin and trolley via a system of stairs, making the trip less demanding and dangerous. The stairs have been designed at an angle of less than 45 degrees, also improving safety and ergonomics.

The E-One+ has also been engineered with maintenance-free propeller shafts, which do not require greasing, thereby decreasing maintenance costs.

Improved serviceability

Faster maintenance of the hoist ropes, which means better crane availability, is also made possible in the E-One+. The machine can be equipped with a small winch located on the trolley designed to help lift the ropes from ground to trolley level when they need to be serviced or replaced.

Faster on-site assembly

Many of the new E-One+ RTG's components have been adjusted and redesigned to facilitate easier, quicker connections during the erection process. This means that Kalmar's erection time at the terminal will be decreased to an absolute minimum, thus affording the customer greater flexibility in managing its operations.

Clinton Global Initiative seeks action

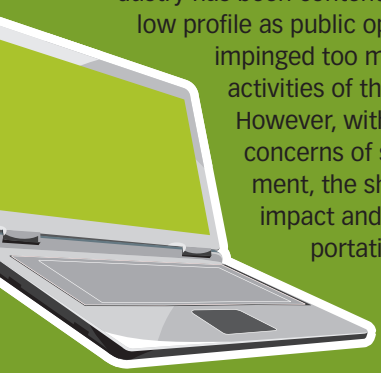

© Jose Gil | Dreamstime.com

Former US President Bill Clinton launched the Clinton Global Initiative (CGI) in 2005 as a non-partisan catalyst for action, bringing together a community of global leaders to devise and implement innovative solutions to some of the world's most pressing challenges. In 2008, the organization will concentrate on challenges and opportunities in four focus areas: education, energy & climate change, global health and poverty alleviation.

CGI members, which include current and former heads of state, top business executives, pre-eminent scholars and representatives of key non-governmental organisations, are encouraged to develop 'commitments to action', focusing on practical and effective problem-solving measures. Member commitments are expected to be comprehensive, formal plans of action with timetables for evaluating progress.

www.clintonglobalinitiative.org

The international container shipping industry launches a global public awareness campaign



Most people do not give the world of container shipping a second thought. Yet, without it, many aspects of modern life would not exist in the way we know it. Container shipping is responsible for providing many of the affordable, everyday products and foods that we often take for granted—from computers to clothing, bananas to beer and TVs to trainers. Quite simply, without containersation, we could not have globalisation.

For many years, the container industry has been content to accept this low profile as public opinion has not impinged too much on the activities of the carriers. However, with the raising concerns of security and the environment, the shipping industry must evaluate its impact and role as a key player within the transportation chain.

To address these developments, 24 of the world's leading container shipping companies have formed the Container Shipping Information Service. The group will provide information to the public, businesses and the media on this relatively unknown industry. It also plans to openly address some common areas of general concern, such as the environment, globalisation and security, with the creation of a public website: **www.shipsandboxes.com**.

Container Shipping Information Service

Kalmar cleaner a o

The twin pressures of rising fuel costs and the need to be more sensitive to environmental issues are driving port and terminal operators worldwide to seek improved technical solutions that will assist them in reaching set targets.

Kalmar is alive to these needs and has been steadily improving its products, enabling them to offer higher performance levels whilst simultaneously reducing emission and fuel consumption levels.

Ports and terminals around the world today have to comply with an increasing amount of environmental regulations. Pressure to minimize pollution and harmful vehicle emissions is being felt by the majority of terminal operators around the globe, and the need to reduce fuel consumption grows with rising oil prices.

In this connection, Kalmar's parent company, Cargotec Corporation, announced its commitment to reduce the fuel consumption of its customers by approximately one million barrels of oil at an annual meeting in New York City of the **Clinton Global Initiative** in September last year. Cargotec aims to reduce fuel consumption up to 10 percent from the total of about 2 billion litres of fuel its customers use in their cargo handling processes by increasing its R&D investments focusing on fuel conservation, investing in new technologies to find alternative power sources for these applications and selecting fuel efficient components for its equipment.

This consumption—besides being a sizeable cost issue for many of the company's customers—also increases the usage of fossil fuels, which in turn plays a likely role in climate change.

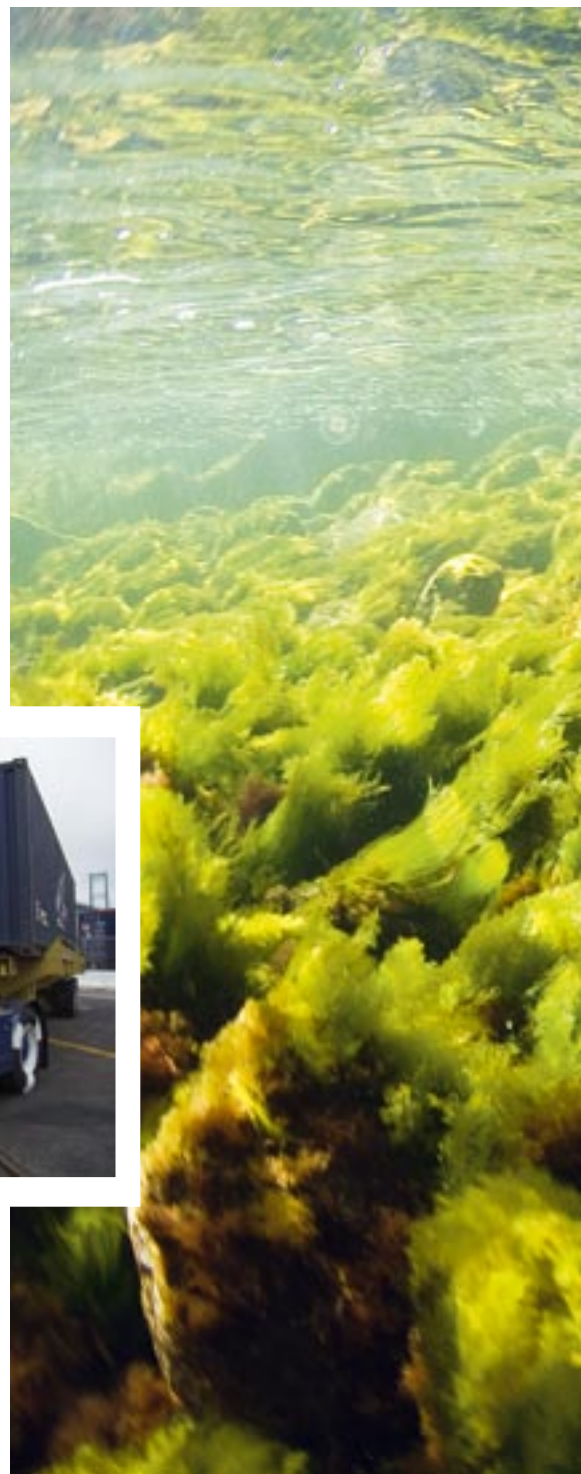
While more and more ports are 'going green' quayside by implementing initiatives such as alternative marine power (AMP) technology—sometimes known as cold ironing—whereby ships must shut down their engines and switch to shore-based electric power supplies while in port, the onus is also falling on yard operations and equipment. The equipment manufacturing industry is meeting these challenges head-on with a number of innovative approaches that meet the toughest environmental standards on pollution, emissions and noise without compromising productivity, reliability or cost efficiency.

US ports lead the way

Kalmar is at the forefront of US developments thanks to its involvement in **hybrid terminal tractor** projects in association with the Environmental Protection Agency (EPA). The ports of Los Ange-

Relaunched mid 2007, Kalmar's E-One+ RTG.

Kalmar offers CNG-, LNG- and LPG-fueled terminal tractors.



contributes to and greener port operations

les and Long Beach aim to reduce pollution in ports by building three prototype Kalmar terminal tractors featuring hybrid technology. The green hybrid equipment is expected to reduce air emissions by 93 per cent, which equates to 19 tons of nitrogen oxide and 200 pounds of particulate matter annually.

Crossing the country, the EPA—in cooperation with the Port Authority of New York and New Jersey, APM Terminals, Parker Hannifin Corporation and the Port of Rotterdam—announced mid-2007 its US East Coast project that will see two Kalmar terminal tractors use a diesel-hydraulic system that combines the cleanest available diesel engine technology with components that use hydraulic fluid compression to store energy. The hybrid technology is expected to improve the vehicles' fuel efficiency by 50 to 60 per cent, reduce or eliminate emissions during idling, and decrease brake wear.

While these are relatively recent initiatives, Kalmar's work aiming to reduce tractor emissions has been underway for almost two decades. The company offers machines that can run on **alternative fuels** such as **CNG (Compressed Natural Gas), LNG (Liquefied Natural Gas)** and **LPG (Liquid Petroleum Gas).**

Kalmar R&D focuses on environmental concerns

In recent years, Kalmar has modernized virtually its entire product portfolio with the environment in mind. Forklift truck customers now have the option of either **electric-, diesel- or LPG**-powered machines in the 5 to 9 tonne range. In the case of diesel, new generation engines with low emissions that meet the latest global environmental standards are consistently used.

Other cleaner, greener container handling equipment includes Kalmar's **zero-emission rubber-tyred gantry (RTG) crane**, which was joined in 2005 by **the world's first all-electric RTG, the E-One**—the first RTG of its kind without the need for hydraulics.

EDRIVE® straddle carrier.

This popular solution was re-launched mid-2007 as the E-One+ RTG after receiving various serviceability and performance improvements.

The **green, productive and uncompromising E-One+** features less maintenance points. The new design has been engineered with maintenance-free propeller shafts and a trolley drive chain. These components do not require greasing therefore relieving the service technicians—not to mention the environment—of this burden.

With no hydraulics and a low-emission diesel engine and electric trolley, wheel turning and spreader, the E-One+ offers fuel savings of up to 30 percent. Whereas conventional RTGs' hydraulics run constantly, the E-One+'s electrical power can be used only when needed.

Kalmar's eco-friendly RTGs have won orders from ports around the world—from South America to Asia—illustrating the global industry's growing environmental conscience.

Meanwhile, Kalmar's 7th generation **EDRIVE® straddle carrier**, which features an advanced AC drive system for lower emissions and improved performance, has also been a crowd pleaser, particularly with green-minded terminal operators in Northern Europe. Out of respect to the environment, these machines incorporate smaller hydraulic oil volumes, regenerative electrical braking as well as a generally lower noise level, while maintaining high performance levels.

The drive toward greener port operations is still in its infancy, which is why responsible equipment manufacturers such as Kalmar will continue to invest heavily in developing ever more advanced solutions.

Keeping roads s demands top pe

European road safety device manufacturer relies on Kalmar forklifts to handle its extensive range of products. Working in rough weather conditions and nearly around the clock during peak seasons, Volkmann & Rossbach's 13 Kalmar lift trucks meet the required performance under such tough demands.

Most people have probably never wondered how our roads are made safer, yet this is a vital consideration of any driver as most of us quickly navigate familiar streets and motorways. Germany's Volkmann & Rossbach—the European market leader in road safety devices such as guardrails—offers more than 1,000 products to decrease the risk of injury on motorways as well as test and race tracks.

Volkmann & Rossbach, headquartered in Montabaur, Rheinland-Pfalz, exports its products to 50 countries. At a 6-hectare central warehouse in Meudt, the company stores leased products for distribution. Handling valuable merchandise up to 12 metres long requires the appropriate forklift. Volkmann &

A Kalmar forklift is used to handle road restraint systems. On a daily basis, up to 60 trailer trucks are loaded with guardrails reaching 12 metres in length.

Leading innovators m

Kalmar's first delivery of electric and diesel drive engine forklifts to The Index Group and its subsidiary TRAUB Drehmaschinen GmbH & Co. KG was in 2005. The cooperation has improved the efficiency of several parts of the customer's CNC machine manufacturing operation. From the assembly line to the dispatch and delivery zones, a total of five Kalmar forklifts with payloads up to 15 tonnes handle Index-TRAUB's precious cargo with ease.

Baden-Württemberg is an area in Germany famous for producing goods with great precision, creativity and quality—not only in the manufacturing of automobiles, but also in high-precision products like CNC machines. Index-TRAUB is the leading global supplier of computerized milling technology with production sites in Esslingen, Deizisau and Reichenbach. As the need increases for this high-tech machinery, so do the requirements for the company's lift truck fleet handled by Logistics Manager Simon Jakob.

The company has replaced its older 8-tonne trucks with the latest Kalmar forklifts equipped with electric and diesel drives for loading and handling Index-TRAUB's products. All the forklifts are equipped with specially tempered 2,400-mm forks for secure lifting of the machine tools. The forklifts were sold and are currently maintained by Kalmar's contract dealer Stapler-Center Pieckert in Empfingen, Germany.

A better view

Index-TRAUB employs two larger forklifts at its facility, the biggest forklift being a new Kalmar DCE 150-12. It is equipped with a clear view Triplex mast with a 5,000-mm lifting height. Fork positioning and side shifting together with the highly comfortable lever-operated Spirit Delta cabin and the extra long forks are an operator's dream.

"Our most important requirement is sensitivity combined with optimum view because the machines to be lifted are of enormous value, weighing several tonnes and up to 3,000 mm long," says Jakob. "They must be positioned on the trailers precisely."

Apart from loading the finished goods, the red-and-white Kalmar forklifts move the machines in the course of the production process to be fitted with various pieces of special equipment, thus responsible for much of the internal transports at the plant.

For lower passage heights and for the service of the dispatch and delivery zones, the company employs a Kalmar electric forklift ECE 80-12.5. This truck, equipped with cushion tyres on the front axle, is only 4,075 mm long and 2,000 mm wide, and as such, one of the most compact electric forklifts of this payload size in the market. For this application the 80-V-DC forklift comes equipped with a 1,500 Ah battery. Complete for operation, this special forklift weighs less than 12 tonnes and, when loaded, reaches a maximum speed of 11 km/h.

It's electric

Other electric forklifts at Index-Traub include a Kalmar ECE 80-9

afe
rformance

Rossbach employs six Kalmar forklifts with capacities ranging from 7 to 12 tonnes at its Meudt location, and seven more units are working at other locations.

"The heaviest guard rail package weighs 2.5 tonnes," says Volkmann & Rossbach, Plant Director Klaus Nebgen, "which requires the biggest machines. We have the standard fittings across the line, but we need 200 mm wide and 2,000 mm long forks."

Hardwork is standard operation

The Kalmar-developed Spirit Delta cabin, lever operation, integrated side shift and fork positioning—all standard features —are just as equally important as the low-emission Step 3 Volvo engines.

Machine operators do not have fixed assignments. Everyone in the company has a forklift driver's license and can operate the well-cared-for machines fast and safely. This is necessary because at peak times they must load up to 60 truck trailers daily.

Road construction projects are seasonal business, and flexible safety systems are key elements that must be provided within the required timeframe.

The forklifts perform transfer jobs over ten years. In normal operation, the Kalmar machines work up to ten hours daily. Volkmann & Rossbach's forklifts work hard, especially when major motorway construction projects start across Europe. At this time, the forklifts work seven days a week and around the clock, even in rough weather. Apart from the transfer jobs in Meudt, one forklift will soon be assigned to work in a zinc coating plant, one of the group's companies.

Every forklift working at the Meudt facility must be outfitted with SE tyres, which ensure smooth operation up to 20 km/h on the factory grounds. Most of the work consists of warehouse and loading tasks. Safety systems which experienced "contact with the enemy" are unloaded with extra care and transported to workshops for straightening. Repairing damaged systems is routine work; however, compared to safety systems of concrete, the steel constructions of Volkmann & Rossbach are resilient, which clearly minimizes the risk of injury for car occupants.

A Kalmar DCE 120-6 forklift works in the yard at Volkmann & Rossbach's 6-hectare warehouse facility in Meudt, Germany.

Stress-free service

"We do not store spare parts," stresses Nebgen. "Kalmar provides service through a reliable, on-call partner which works out wonderfully. The boys know what they need and bring everything with them. Not much at all is broken and we really appreciate the maintenance system that includes inspections—according to the Accident Prevention & Insurance Association—and regular service checks. This takes little time thanks to Kalmar's easily accessible maintenance points, tilting cabins and spacious interiors. All this translates to high uptime."

ake strides together

A Kalmar ECE 80-9 forklift unloads machine casings manufactured by Index-TRAUB at a neighbourhood housing development.

and a Kalmar ECE 70-6 C. The machines were purchased only after intensive tests at the company's factory grounds. Karsten Pieckert, Managing Director of Stapler Center Pieckert, looks after his customers in person because, in addition to the purchased fleet, the company sometimes has an urgent need for rental equipment.

As all Kalmar forklifts, the electric compact forklifts are equipped with clear view Duplex lifts. The lift height of the ECE 70-6C is 3,500 mm. Acoustic reversing alarm, a rotating beacon and blinking reversing lamps are the results of long and intensive consultations. The drivers praise the machines. They were integrated in the selection process and seem to be happy with the clear view, working comfort, spacious cabins and good visibility at lifting. Daily check-ups can be managed in a matter of minutes since the inspection points are easily accessible. The cabin can be tilted 60 degrees which facilitates maintenance for service technicians.

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'Spotting'

Kalmar added Smartspot®—a new terminal tractor positioning system that optimises container handling between terminal tractors and ship-to-shore (STS) and rubber-tyred gantry (RTG) cranes—to its growing suite of automated products at the end of 2007.

Smartspot® replaces manual positioning with an automatic system that tells the tractor driver when the correct position for loading or unloading is reached. It uses patented frequency modulated continuous wave technology to transmit electromagnetic signals from the terminal tractor to echo units on STS and RTG cranes.

The system is automatically activated as the tractor approaches the crane area. It continuously measures the distance between the tractor / trailer and the spreader landing position. Information is displayed in the terminal tractor cab, where a series of LED indicators guide the driver to the correct position underneath the crane. The result is a significant reduction in the time taken to perform each container move, smoother container handling operations, improved safety and increased productivity.

A flexible system

Smartspot is easy to use, simple to install and can be retrofitted to all existing terminal tractor units. The new system is suitable for handling a wide

Containers n

Travelling the world on the high seas, over the road and on the rails can leave some containers in pretty bad shape. Hamburger Container- und Chassis-Reparatur-Gesellschaft mbH (HCCR) is an expert in container repair and maintenance. With more than 20 years of experience, HCCR is equipped to handle all types of units including standard box, flat, open top and reefer containers.

HCCR—a subsidiary of German port logistics group Hamburger Hafen und Logistik AG (HHLA)—has operations at five locations in the Port of Hamburg. Business is booming at the port, where container terminals are constantly being reconstructed and expanded. Andreas Göpfert, HCCR Marketing Director, comments that HCCR inspected 120,000 containers and performed 80,000 repairs last year.

With approximately 250 employees, HCCR—Kalmar's biggest customer worldwide for empty container reachstackers—is a market leader in Hamburg for container repair and the storage and provision of empty containers for all major shipping companies in the world. As a service provider, HCCR organises itself to better serve its global customer base. It therefore operates a diverse fleet of Kalmar container handling equipment consisting of special lift trucks with head spreaders for repairs, empty container reachstackers and empty container lift trucks with hook spreaders.

HCCR has operations at Container Terminal Burchardkai (CTB), Container Terminal Altenwerder (CTA), Container Terminal Tollerort (CTT) and Buss-Hansa-Terminal. It is also a majority shareholder in LZU (Leercontainerzentrum Unikai), which handles another 80,000 containers a year. About 38 Kalmar container handlers are currently in operation here, which mostly includes DCE100 empty container lift trucks and DRF100 empty container stackers.

Reliability yields another order

Towards the end of 2007, HCCR placed an order with Kalmar for 14 new empty stackers to replace some of the company's older units as well as keep up with the port's demand for new containers. All of the units ordered—two DCD 200-12 CS and two DCF 100-45 E7 empty container lift trucks and ten DRF 100-54 S6 empty container reachstackers—were delivered earlier this year. The new units are employed at the empty container and tank repair area and for handling reefer, flat and open top containers, with the empty reachstackers working exclusively with empty container handling.

The service company also employs Kalmar's DCD200-12 CS forklift trucks with a 20-tonne capacity for the transport of 20-foot and 40-foot containers to maintenance halls. Its oldest lift truck is a DC15-1200—a 15-tonne forklift from 1991—continues to serve the tank container repair bays at Altenwerder Damm (CTB).

"The HHLA Group records two-figure growth rates in container handling, which of course has an effect on our organisation, engineering technology and work teams," says Andreas Göpfert. "We are also developing new EDP systems for individual space management—already in place at CTA—to help us improve efficiency at all our sites."

Almost all of HCCR's locations operate in shift work. Its latest 120,000-sq m empty container terminal, established in May 2005 and located adjacent to HHLA's fully-automated CTA Superterminal, has a capacity of 15,000 TEUs and can handle 8,000 annual repairs. It employs 58 people for the reception, inspection, repair, delivery, storage and stacking of containers.

Comparing empty container reachstackers and empty container lift trucks at HCCR's CTA Terminal.

improved efficiency

variety of container combinations and all trailer types, and promises to significantly boost crane productivity.

Kalmar Product Engineer, Johanna Huttunen said: "With continued growth in container volumes, it's vital that cranes make as many moves per hour as possible. This is often impeded by the time lost waiting for terminal tractors to be manually positioned underneath the cranes for container loading and unloading. In response to growing customer demand for a solution to this problem, Kalmar developed Smartspot, which uses automation to provide faster and safer terminal tractor positioning, resulting in remarkable improvements in crane productivity."

Dedicated to expanding 'smart' fleet

Jorma Tirkkonen, President, Container Crane Systems, said: "Ports and terminals today are under growing pressure to increase productivity while at the same time complying with mounting environmental, safety and security responsibilities. This all needs to be managed without a significant increase in operating costs. At Kalmar we believe that 'smart' handling solutions which combine the latest technology with quality manufacturing can help them meet these challenges head on, hence our decision dedication to the development of such tools."

Smartspot joins Kalmar's growing range of automation tools, which now includes: Smartrail, an auto steering and container position verification system for RTGs; Smartpath, a real-time container position verification system for straddle carriers and RTGs; and Remote Machine Interface (RMI), a monitoring and maintenance system, and Fleetview, a fleet control system for managing straddle carriers, reachstackers, forklift trucks, terminal tractors and RTGs.

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eed care, too

Thanks to a longer neck, the DRF100 reachstacker can lift flats direct from the ground—an innovation developed together with HCCR.

Lifting to the max

The loads may not seem overwhelming—an empty 40-foot container weighs approximately 4 tonnes whereas a reefer container weighs almost 7 tonnes; however, when empties are stacked six high, the movement and pressure can affect the terminal surface tremendously, especially when two boxes are often moved at the same time. A 6.5-tonne flat also sets considerable requirements on Kalmar's DRF100 empty container reachstackers. Flats are becoming more and more heavy but able to transport loads up to 55 tonnes. Kalmar's DCD200-12 CS forklifts with a capacity of 20-tonnes can pick up containers at the head. They stack containers three high and can turn over a fourth unit on top of the three.

At CTA, the trucks and reachstackers operate in three shifts from Monday to Saturday morning, logging up to 4,000 annual hours. HCCR has a leasing agreement with its preferred supplier Kalmar for 36 to 48 months as required.

The need for Kalmar's empty container handling solutions is bound to increase at HCCR's five locations. The company's current trend is definitely towards leasing under full-service agreements. "We are more flexible, we can make exact calculations and we know that a mechanic will be around promptly," says Göpfert.

Leave it to the experts

Truck technology has undergone dramatic changes over the years. Electronic controls, CANBUS communication, special tyres, revolving head spreaders, hook spreaders and better driver comfort differentiates the current series of Kalmar's counterbalance range from that of the 1980s; however, the robustness remains.

But even all this is not enough. That is why senior terminal technicians, such as Uwe Jung from HCCR's container warehouse at CTA, were invited to be on an empty container handling expert team at the Kalmar factory in Lidhult, Sweden. Twice a year, experts from the Netherlands, Belgium and Germany meet with Kalmar's construction and sales teams to improve the features and functionality of the empty container handling machines.

One of the more important accomplishments of the task force was the design of the DRF100's new boom head. Thanks to the 1,200 mm longer neck, this new empty container reachstacker can lift up to 60 cm high flats direct from the ground even with its head walls folded down. This is a huge advantage because previously another truck was required to "hold out" the flat before the reachstacker could pick it up.

"Concepts like this," says Kalmar Sales Manager Ralf Gowin, "are ideally developed together with the customers to ensure that the solution is as effective as possible."

Kalmar's technicians have also devised many new developments such as ensuring lower fuel consumption with new engines, transmissions and axles combined with CANBUS technology. Manfred Rüdiger, HCCR Manager at CTA, says that the newest range of reachstackers have reduced their fuel consumption by about two litres per hour—and this is happy news for purchasers who pessimistically monitor the trend of fuel prices.

Empty container lift trucks verses empty container reachstackers – What's the difference?

Empty container lift trucks can stack a maximum of two empty 40-foot containers at the same time for a total weight of about 8 tonnes. In Europe, empty containers are stacked seven high, whereas in the Far East, two empty containers are often stacked on top of six loaded containers. Forklift trucks can only work in the first row, however, the stacks can be of any depth and they can transport the containers sideways. The working speeds of forklifts are faster than those of reachstackers.

Empty container reachstackers can stack a maximum of seven containers. When the containers are stacked in a stepped formation, they can lift containers from the first three rows. Thanks to the revolving spreader, empty reachstackers can transport containers lengthways. Empty container reachstackers are flexible workhorses, not least in rail loading and in the operative sector. They are particularly suited for mixed operations, storing and loading containers, and transporting containers to repair bays. Empty container reachstackers are only offered by three manufacturers and they are most popular in Germany, the Netherlands and Belgium.

Spanish logistics company Llinas is actively pushing Kalmar forklifts to the max and, in the meantime, trying to answer the "age-old" question: Is there anything a Kalmar forklift can't lift? So far, the question remains unanswered as Llinas deploys many Kalmar forklifts for a range of unique and demanding tasks.

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Testing the

Llinas has three different business segments: warehousing, transportation and rental. The Barcelona-based company rents forklift trucks not only for normal operations such as steel handling but for other special handling needs like, for example, construction work, loading an airplane and working on a dry dock.

Warehousing and transportation

For their warehousing purposes, Llinas has 28,000 sq m space in Barcelona, of which close to one-third is covered and where they store, among other things, imported motorcycles and generators. Llinas recently acquired an additional 20,000 sq m space near Barcelona's new port area. The new site will be used for storage as well as for loading and unloading containers on/off road trucks. Llinas' container handling business is concentrated more on the manipulation of specialised cargo like containers carrying merchandise.

The company's transportation segment currently utilizes 12 road trucks and 28 chassis. Llinas offers different solutions for special transportation needs like customised trailers for moving forklifts between different locations.

Machine and operator rental

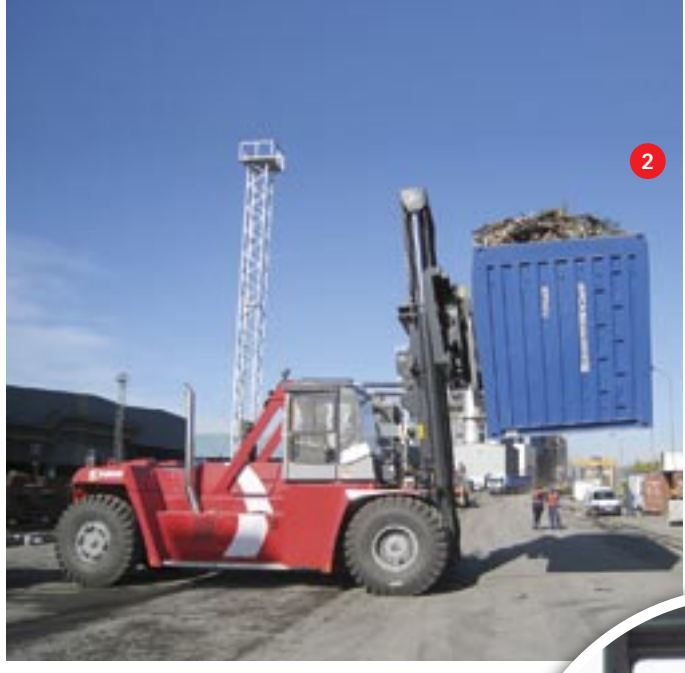
Llinas offers rental equipment all over the Spain and southern France, and depending on the customers' needs, they can provide the rental services with or without operators. Rental agreements vary from short-term to long-term rental lasting for several years.

In Spain, Llinas' rental fleet range is one of most extensive. Their rental machines include forklifts with capacities ranging from one to 42 tonnes, a reach-stacker, terminal tractors and side loaders. They are one of the only companies renting heavy-duty forklifts as well as a reach-stacker, which typically carries a heavy investment burden. Most companies shy away from renting equipment with high capital costs, however, Toni Llinas, CEO, Llinas, explains that his customers' needs come first. "For us, it is important to be able to serve our customer with a wide variety of equipment in as many ways as possible," says Mr Llinas. At this time, the company has more than 30 Kalmar machines in its rental fleet with more units under negotiation.

Handling steel at Celsa

Case in point regarding Llinas' unique offering and way of doing business is their relationship with Celsa in Barcelona. The steel mill has been renting their steel handling equipment as well as operators form Llinas since 2002. Currently, Llinas operates several machines at Celsa ranging from terminal tractors and side loaders to a variety of different capacity forklifts. Along with the machines, Llinas also dispatches approximately 150 operators to Celsa's factory.

Already this year, Llinas' fleet deployed at Celsa has grown with the delivery of a new 42-tonne forklift that has a special



1. Loading an airplane.

2. Newest Kalmar FLT with a special attachment for emptying the containers.

3. Building a parking hall.

Toni Llinas, CEO, Llinas

e limits

tilting lift attachment for emptying containers. Three smaller, fully electrical forklifts will be taken into operation this spring.

From the starting position of being just a machine and operator supplier, Llinas has built a strong partnership with Celsa. Mr Llinas explains that they do not only offer customers the machines and operators, but they also take an active role in developing their customers' operations.

"When we first started to operate at Celsa in 2002, they did not have any customised machines for their operation. Later, after our partnership was well established, we introduced different material handling attachments to the equipment helping their operations to run more smoothly," says Mr. Llinas He assures Celsa's satisfaction and high availability figures by keeping a few stand-by machines on-site.

Keep the operators satisfied and the environment clean

Because Llinas often provides the drivers with in their rental agreements, the company emphasises driver comfort in their machines. "It is important to us to be able to provide the drivers as comfortable working conditions as possible," says Mr Llinas. Kalmar's machines are well known for their driver comfort and ergonomics, which is one of the important qualities for Llinas when choosing equipment.

Besides driver safety and comfort, Llinas heavily weighs the environmental impact of its machines. "We want to make a contribution to keeping the environment clean, and, therefore, we emphasise the environmentally friendly machines in our decision making," Mr Llinas explains. One good example is replacing three of the older forklifts at Celsa with three new, fully electric units.

Thorough understanding of the equipment

Llinas is a family-owned company that was established in 1962 by Jose Llinas Mayol. The company was incorporated on 1988 when his children joined the company. At that time, Llinas purchased its first Kalmar forklift. With its long history of operating forklift trucks, Llinas has developed a thorough understanding of the machine's possibilities and limitations (if any).

Today, Llinas' expertise and know-how helps the company serve its customers by actively taking part in the development of their operations.

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Kalmar's 'Automation Days' gains interest

Terminal automation may still be gaining steam, but more and more port operators are interested in learning about its intrinsic safety, environmental and productivity advantages. As one of the preferred—and strongest—suppliers of container handling equipment and related automation technology, Kalmar recently exchanged information with customers contemplating the benefits of automation in a two-day seminar in Spain.

The growing popularity of automation in ports and terminals was obvious with the more than 30 customers from 21 different companies attending Kalmar's Automation Days seminar in Barcelona at the end of November 2007.

Kalmar's automation specialists offered advice on implementing smart solutions in everyday operations for improved productivity as well as practical know-how about current terminal automation projects like Kalmar's ongoing work with CTB in Hamburg. Most importantly, the event provided an ideal place for people from around the world to exchange views and thoughts on the current climate and development of automation in terminals around the world.

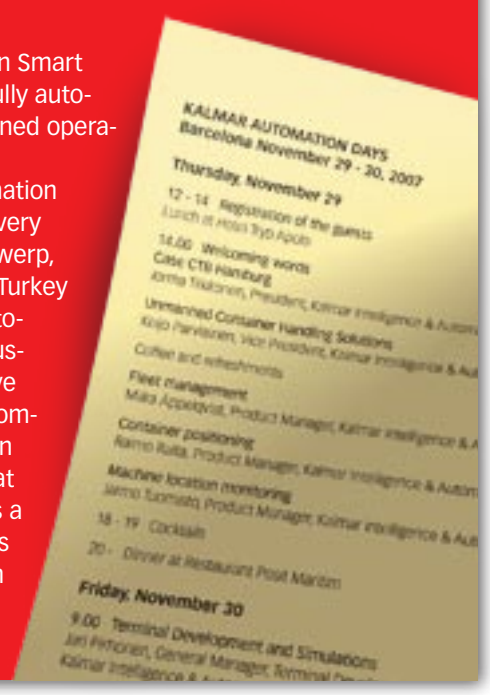
Jorma Tirkkonen, President, Container Crane System Division, says Kalmar has a long history of working with automation projects and developing advanced solutions.

"Kalmar's experience with automation stretches back to the early 1990s when we introduced Driver Assisting Features, our first automation solution for container handling equipment," explains Tirkkonen. "Since then, we have worked with more complex projects like automating the world's first AutoStrad terminal in Brisbane and converting HHLA's CTB to a semi-automated operation with automatic stacking cranes.

"Our portfolio of smart products has also been greatly expanded over the years, with Smartspot being the most recent addition. Our dedication to developing intelligent products which offer better machine and terminal performance as well as safety and environmental advantages is relentless."

Kalmar held its first Automation Days in Dublin, Ireland in 2000. The focus at that time was mainly on yard crane automation solutions such as Smartrail®. Today, the automation product range varies between Smart products and simulation to fully automated terminals with unmanned operations.

Kalmar's customer automation seminars have taken place every few years with events in Antwerp, Belgium (2002) and Istanbul, Turkey (2004). The growing interest towards automation in the industry combined with the positive feedback received from customers who attended the event in Spain has assured Kalmar that its Automation Days provides a valuable service to customers that will no doubt continue in the future.


KALMAR AUTOMATION DAYS
Barcelona November 29 - 30, 2007
Thursday, November 29
Friday, November 30

Progress Report:
Kalmar's Linggang production facility surpasses expectations

In January 2006, Kalmar opened an assembly plant in China, exceeding expectations and cementing an impact on Kalmar's product supply network. Production of Kalmar rubber-tyred gantry cranes, reachstackers, empty container handlers and terminal tractors at the Linggang Industrial Park facility outside Shanghai is booming. Jack Sawrey, Managing Director, Kalmar Industries (Shanghai) Co., Ltd., has moved to Shanghai from Kalmar's American assembly plant to lead the promising development of equipment production in the fastest growing region for many of Kalmar's products.

KAW: What sparked the decision to move some of Kalmar's production to China?
JS: In the mid 1980s, Kalmar initiated a CKD (complete knock down) program at its terminal tractor production facility in the US. The goal of the program was to introduce Kalmar's market-leading terminal tractor to Asian customers while maintaining competitiveness. The units were broken down at the US plant, put in containers and shipped to assembly crews in Asia. The program was a great success with many customers reaping the benefits of local assembly.

The potential for further expansion of Kalmar's local product supply convinced the company to invest in a brand new assembly plant in Shanghai's Linggang Industrial Park. The 7,000 sq m factory—located adjacent to Yang Shan Port, a 20 million TEU container terminal development project—opened January 2006.

Besides terminal tractors, Kalmar's rubber-tyred gantry (RTG) cranes, reachstackers and empty container handlers (ECH)—also in high demand in the Far East—are assembled at the Linggang facility. Previously, these products were only produced in Europe, but faced with a lack of capacity for production expansion, longer lead times and higher transport costs, Kalmar conceded that local assembly would solve these issues and also better serve Asian customers.

Currently, we are talking to other Kalmar product lines about assembling their products as the volume warrants.

KAW: Kalmar's Asian facility was designed strictly as an assembly plant. How did you

Delivery of the 100th ECH

Production levels continue to soar at Kalmar's newest factory in Shanghai's Linggang Industrial Park situated next to Yang Shan International Deep Water Port—a 20 million TEU container terminal development project.

In a ceremony commemorating the delivery of the 100th ECH assembled at Kalmar's Shanghai factory, Clement Ng, Kalmar Asia Pacific Ltd., General Manager, (left), presented a token of appreciation to the machine's receiver, Lin Hui Ming, General Manager of Shenzhen Greating Fortune, thanking him for his company's continued partnership.

In August 2007, the 100th empty container handler (ECH) rolled off Kalmar's Chinese assembly line. Long-standing customer Shenzhen Greating-Fortune Automatization Technology Co., Ltd. (Shenzhen Greating Fortune) received the unit marked as a milestone in an additional order for two DCE80-45E7 ECHs. The port operator first purchased two similar

coordinate engineering, quality and production between the product line expertise located in Europe/US and the Linggang plant?

JS: Kalmar is known in the marketplace as the preferred and most innovative supplier of equipment and services. This reputation wouldn't be possible without the brilliant, progressive work of Kalmar's support functions.

Our Process and IT people were instrumental in bringing the product lines based in Europe and the US together with the staff in Linggang. Their goal was to determine the most effective common process, define responsibilities and terminology, and create a strong assembly set up that would meet the product line's expectations. With complete and direct communication, we now have a clear process for providing machines to the local Asian market.

The Linggang operation can handle every phase of Kalmar's business, starting with the sales order all the way through the delivery process. We provide feedback to engineering and purchasing groups of the respective product lines, and I believe we are the only Kalmar production location assembling four complete products.

Assemblers at the Linggang facility put finishing touches on a Kalmar terminal tractor.

Jack Sawrey

I feel confident that in having defined this process, we have developed the necessary principles for introducing new product assembly to any one of Kalmar's production facilities.

KAW: What has been the Linggang facility's greatest achievement?

JS: Besides being able to offer our Asian customers close-to-market goods and services, our greatest achievement will take place spring 2008 when the 1,000th container handling unit is scheduled to come off the assembly line.

Generally speaking, the Linggang facility has also helped to relieve the burden on other locations in Kalmar's production network. Our global production operations are more efficient and flexible, benefits which have ultimately been passed down to the customer.

KAW: Currently, your production volume is very healthy. How will you accommodate continued growth?

JS: Our steep increase in RTG business has forced us to expand our production capacity to a temporary space about 20 minutes from the main plant. Recently, we were awarded another land use permit from the Chinese government and will be starting a new 6,000 sq m building on the new 28,000 sq m piece of property. This building will be designed to accommodate the assembly of Kalmar's entire product range. We are really excited about the future of Kalmar's Linggang operations!

KAW: What does the future hold?

JS: In 2008, production of just about all of the products assembled at the Linggang facility will increase significantly. The volume of Kalmar terminal tractors produced in Asia was very strong last year and will remain healthy through this year.

Our goals are to deliver on schedule to our customers and continue to upgrade our processes and procedures.

We have experienced constant growth over the last two years—currently employing more than 300 people—and now our facility is fully-functional. We are prepared to grow with the future and accept more products as the need arises.

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from China

units in 2005 for its growing container handling business.

Shenzhen Greating Fortune, owned by Greating Fortune Limited, owns and operates five container ports in China—four in Shenzhen and one in Nansha.

With a partnership spanning the last 10 years, Greating Fortune Limited employs Kalmar equipment at many of the company's port terminals. Lin Hui Ming, General Manager of Shenzhen Greating Fortune, has confidence in Kalmar machinery.

"Product quality as well as professional services are the keys to winning our clients and customers' loyalty," says Lin. He goes on to say that Shenzhen Greating Fortune will continue to operate with Kalmar products, citing Kalmar's local service organization as a major contributor to his company's ability to maintain productive operations.

The North and South unite

An important link is restored, and Kalmar played its part

It might only cover a distance of 25km but the new rail link between South and North Korea is easily the most important intermodal development so far this decade. Cross-border rail links were severed during the 1950-53 Korean War and stayed that way until the October 2007 summit between the South Korean President Roh Moo-hyun and North Korean leader Kim Jong-il. During this meeting, it was agreed to re-open the line, initially only for freight trains linking terminals on each side of the border.

The first train ran in December, carrying containers that were of course handled by a Kalmar reachstacker! Koreans on both sides of the border are now waiting for the first passenger trains to be given the green light while intermodalists look forward to through trains linking South Korea's deepsea container terminals with inland points in North Korea and, maybe one day, to trains linking South Korea with Europe.

As a Kalmar reachstacker worked quietly in the background, the focus of the day was on this train's monumental journey from South to North Korea, reconnecting the two countries for the first time in more than 50 years.

The second largest container handling port in Sweden is preparing to take on more growth with aggressive plans to redesign the layout of its container handling operations, add more personnel, improve truck access and resources, and acquire more container handling equipment—notably, Kalmar ship-to-shore (STS) cranes. Pleased with the handover of its first Panamax STS crane in October 2007, the port eagerly awaits the delivery of its second Kalmar crane this April.

The Port of Helsing in a class all its

"Probably the best port in the world!" exclaims Bengt Niklasson, Technical Manager of Helsingborgs Hamn AB.

His claim may not be easy to prove, but his enthusiasm is infectious, and after a few minutes of talking about the operations of Sweden's southern-most port, you want to believe he's right.

In recent years, the Port of Helsingborg has experienced a sharp increase in the volume of its containers. In 2002, 83,000 TEU were handled and, in 2006, the figure was 227,000 TEU. To be able to continue providing customers and partners with first class services, the Port devised an action plan to tackle issues such as minimizing truck waiting times, improving traffic flow, and creating more capacity for container storage. The plan is proceeding with one of the more obvious improvements towering above quay 904 in the West Harbor.

Close cooperation between Bengt Niklasson, Technical Manager of Helsignborgs Hamn AB (from left), Cock Angevaren, Kalmar STS Cranes Project Manager, and Owe Robertsson, Kalmar Sweden Sales Manager, was essential in the successful implementation of Helsingborg's first of two Kalmar STS cranes.

The Kalmar STS crane went straight to work almost directly after its commissioning.

When limitations produce good results

The Kalmar Panamax STS crane delivered to Helsingborg Hamn is a heavy-duty crane capable of handling Panamax containerships in single or twinlift mode with a working load under the spreader of 65 tonnes. The quay —250 metres in total length on which one STS crane is already in use—has a restriction of 40 tonnes per a metre

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own

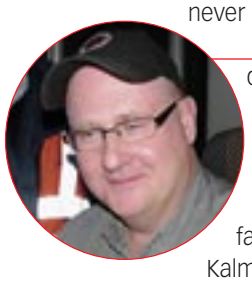
maximum exceptable weight on the rails, which Kalmar had to consider in designing the crane. The solution found incorporates Kalmar's groundbreaking semi-rope design which complies with the quayside rail load limits while retaining optimum lifting capacity.

"The semi-rope trolley is a very good construction. Ropes and sheeves are placed sideways from the boom and girder creating no obstacles and no problems during operation," says Niklasson. "The trolley—with a reduced weight—is more dynamic, maneuverable and comfortable for the driver. With electrical engines on the trolley, precise movements are made smooth. This combination that Kalmar achieved is a very good solution. The crane drivers are fond of it."

More moves are well-received

Greater productivity is also something the Port of Helsingborg is fond of. In comparison to the five-year-old STS crane of another make operating on the same quay, the Kalmar crane can unload the same vessel 40 percent faster. Kalmar's twinlift spreader is a main contributor in the crane's efficiency. Because the port receives some vessels with only empty containers, Helsingborg ordered three twinlift spreaders—one for each Kalmar crane and another to be fitted on its older STS crane.

The efficiency of a crane is based on many factors, but none more important than the competency of the operator. Helsingborg's Kalmar STS crane was the first quay crane deployed on a vessel during operator training. "Kalmar was comfortable and confident that the crane would work with good results and without interruptions," says Niklasson. "Other suppliers have never met this standard."



Ulf Johansson, a crane driver at the Port of Helsinborg with 28 years of operator experience, attests to the smooth handling and fast movements of the Kalmar STS crane. "There are no disadvantages with the Kalmar crane," says Johansson. To further assist the drivers, who sometimes rotate between different makes of cranes, Kalmar mirrored the position of the driver's controls and joystick to reflect that of the port's other three STS cranes.

Niklasson comments that the commissioning process also went smoothly:

"To deliver this type of equipment and see that it works 100 percent from the first time is not possible. But if you evaluate how close to 100 percent it's possible to get, I think Kalmar came as close as possible to that point. It was a fantastic performance on the commissioning. You can not do better!"

The art—or technology—of anticipation

Perfection is difficult to achieve and probably not likely in the continuous operation of mechanical equipment. Kalmar offers intelligent maintenance management solutions like RMI (Remote Machine Interface) to keep machine downtime to a minimum.

"If a problem occurs, it's most likely that we are unprepared for the situation—we need help," says Niklasson. "Usually the problems pertain to sensors, and it's easy to get help with these types of problems. It is cost efficient to do the monitoring remotely because it doesn't require an on-site field technician.

"For us as a customer, RMI is cheap insurance. We can solve lots of things by remote because it takes time and costs money to send a tech every time something happens. I think that most of the things can be solved with crane monitoring. It also saves time for us and money for the supplier."

The partnership continues

For more than 35 years, Kalmar has supplied Helsingborg Hamn with efficient and reliable container and material handling equipment. With one Kalmar STS crane and another on order, the terminal's yard operation includes two Kalmar reachstackers, 12 Kalmar forklifts with capacities ranging from 5 to 8 tonnes, and 17 Kalmar terminal tractors. The port also employs other-branded machinery consisting of three STS cranes and two mobile harbour cranes.

Container handling via quay increased during the first eight months of 2007 by 45 percent compared to the same period in 2006. The trend is the same for landborne goods. The volume (also counted in TEUs) increased by almost 30 percent in the first eight months of 2007. This rate of increase indicates that 2007's seaborne volume can reach 200,000 TEU while the landborne grows to 100,000 TEU.

The Port of Helsingborg boasts a combiterminal which supports the transport of goods by sea, rail and road. The demand for eco-friendly transport was the driving force behind the combiterminal's opening in August 2006.

"I'm very happy that we made an agreement with Kalmar," says Niklasson. "The first impression of Kalmar was one of good quality. This crane is the first, but not the last Kalmar crane, to operate at the Port of Helsingborg. If the conditions remain the same, our cooperation could be extended to the long-term, and maybe covering the backyard handling system, too."

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Twice is nice

Repeat orders aren't only reserved for terminals in Scandinavia. In the last half of 2007, Kalmar received orders from loyal ship-to-shore (STS) crane customers, Rotterdam Shortsea Terminal (RST) in the Netherlands and MSC Home Terminal, Antwerp, Belgium. Each terminal added two STSs to their growing collection of Kalmar cranes, further demonstrating the value of long-term relationships between terminal operators and equipment provider.

RST ordered two wide-span monobox design STS units, both for delivery late 2008, in response to its continued volume growth. As a regular Kalmar customer since the 1990s, RST has frequently enlisted Kalmar's services for a series of service and refurbishment work. The terminal operator already has four Kalmar STS cranes in operations, the first two of which were delivered in 1999 and the last two in 2002.

Commenting on RST's latest order, Dick Eichhorn, Sales Manager Ship-to-Shore Cranes, Kalmar Industries, says:

"RST is fully confident in Kalmar's ability to understand its specific requirements as a short sea terminal operation. They have been consistently happy with the performance and reliability of their four existing STS cranes, as well as the service levels provided by Kalmar from its nearby office in Rotterdam."

MSC Home Terminal has ordered a further two modular design, super post-Panamax STS cranes, both due for delivery in late 2008. The cranes will have an outreach of 24 containers, making them among the largest STS cranes in operation around the world today. The order brings the total number of STS cranes the terminal operator has ordered from Kalmar to 19.

"Short delivery time, very high reliability and availability figures, spare parts stock, and good technical support from Kalmar all contributed to MSC Home Terminal's decision to place a further STS order with Kalmar," explains Mr. Eichhorn.

"These orders are the proof that dedicated, long term partnerships with customers are the way to be successful in this business. It pays off to understand each others' needs and motivations," he says.

Four STS cranes for Vuosaari

Kalmar's reputation for building reliable cranes will continue to gain more momentum this year with the delivery of four post-Panamax STS cranes to the new Port of Vuosaari in Helsinki, Finland. The order from terminal operator Finnsteve Oy Ab promises to position Vuosaari as one of the most modern ports in the Baltic Sea when completed in 2009. The operating activities of the two existing smaller Helsinki ports will be moved there at the end of 2008.

Reaching towards the sky

Kalmar machines become taller, more productive

As cargo volumes continue to rise worldwide, more and more terminals are stretched thin to find more space for their operations, threatening productivity and profits. Some have opted to upgrade their existing container handling fleets with help from Kalmar Services Project Sales. These experts in modification deliver economical, reliable solutions for upgrading equipment.

Kalmar's container handling equipment can be modified to better meet the changing and varying needs of customers. One of the biggest problems today lies in the fact that world cargo traffic continues to increase exhausting the borders of ports more than ever. For many terminals, managing growth with an operator's existing equipment fleet is simply not an option anymore. The real challenge is in evaluating the possibilities in adjusting the space available. Upgrading the existing fleet is one of the most effective and economical solutions. As the space is limited horizontally, the upgrading solutions turn to the sky: the machines are modified higher to make operations more efficient.

Ari Koskinen, Project Manager, Kalmar Services Project Sales, Tampere (left), and Henri Verelst, Sevice Manager, Kalmar España (right), are discussing the details of the project in Barcelona. In total, 11 straddle carriers were modified to better suit the changing needs of TCB Barcelona's operations.

Customers reach higher

In Barcelona and Gdynia, the sky-reaching solutions are already reality. The equipment in both terminals could not handle the increases in cargo volumes. The only solution left was to reach towards the sky, therefore maximizing the operations and boosting the productivity of both terminals.

In Gdynia, eight rubber-tyred gantry (RTG) cranes were made two standard container sizes taller—from 3- to 5-high—to meet the customers changing stacking capacity needs. The project finished with a successful upgrading solution for the most active terminal in Poland.

In Barcelona, a total of 11 straddle carriers were modified to be one standard container size higher—from 3- to 4-high machines. This project served TCB Barcelona's needs so well that the initial agreement for two units ushered another order for five and finally four more additional upgrades in Barcelona. This gradual project, which started in 2003, was finally complete in November of last year.

"Upgrading our latest 3-high machines to 4-high was a good choice. It was really worth the project, and it allowed us to increase the yard capacity using our existing straddle carriers with a reasonable investment level," says Sergio Osete, Project Manager, TCB Barcelona.

The majority of the active machine fleets at the terminals of TCB Barcelona and BCT Gdynia are now operating higher than ever.

"These two projects are examples of the

RTGs at Gdynia grow.

Gdynia, Poland

The last Kalmar straddle carrier to be upgraded was handed over to TCB Barcelona on 16 November 2007. The majority of the machines operating at the customer's terminals are now stacking higher than ever. Pictured during the hand-over ceremony, from left: David Asensio, Chief Electrical Engineer (Mainteance Dept.), TCB Barcelona, Erkki Turkia, Area Manager, Kalmar Parts and Projects, Tampere, and Sergio Osete, Project Manager, TCB Barcelona.

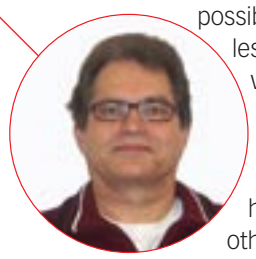
bigger height modification projects, but Kalmar has also the capability to work on smaller projects," says Ari Koskinen, Kalmar Services Project Manager. "We offer and deliver additional options, which the customer realizes later he needs. For example, additional equipment and features related to security and environmental issues can be delivered and installed efficiently. We are very flexible in our machine tailoring and thus we are able to trim the packages according to unique customer needs."

Upgrading – a sustainable solution

As with all areas of business today, responsibility towards the environment is essential. Upgrading is an environmentally friendly solution because the same modern technology for new machines is used in modification projects. Kalmar uses the latest materials, know-how and technology to stay ahead of the competition. Many of the components used in upgrading are made within the new machine parts, and hence the support and best practices of the new machine manufacturing is behind the modernisation projects. "All in all, Kalmar extends the product's life cycle. Upgrading is essentially material recycling, which helps to avoid problematic waste management," emphasises Seppo Laakkonen, Kalmar Service Area Manager.

In addition to being a real environmental and sustainable solution, upgrading equipment offers customers economical advantages as well as safety benefits. Upgraded machines can prove to be a more cost-effective solution compared to purchasing new units. Normally, the delivery of upgraded equipment is shorter than for new machines. "In addition, as a manufacturer, we are able to give CE-certificates for the upgraded works, in order to make sure that they follow the same rules as new machines. This considerably enhances the safety and reliability of the equipment. It is a priority for the Kalmar machines to meet the safety standards of today," says Laakkonen.

"Customers are becoming more and more aware of the concrete opportunities available to keep their machines in good shape and order," explains Erkki Turkia, Kalmar Services Area Sales Manager.



Meeting the customer needs

Everything begins with the customer's needs, which continue to evolve. Traffic conditions and space issues in different terminals have transformed, and as such, the whole operational model of the customer has in many cases changed.

Kalmar strives to satisfy its customers' needs and every stage of the project begins from these desires and wishes. Kalmar Project Sales will always usher full co-operation with the customer in order to find the best solution. Weekly meetings with partners and other contacts is considered essential to have mutual agreement and understanding of the project needs. As with all, Kalmar upgrading projects are always based on good engineering, manufacturing, installation, and operation practices as applicable to the equipment.

Clear future for upgrading

Further cargo traffic growth is expected in the future and the possibilities are hence limitless as the coasts of the world are filled with terminals facing this particular problem. "Especially the growth opportunities with height upgrading as well as other kinds of modification projects are vast and realistic," comments Ari Koskinen.

In general, the goals of the Kalmar Services Project Sales team are the same as the company's other business units: to help customers to concentrate on their core business. This Kalmar team essentially supports customers who have a variety of needs ranging from the scale of small supplementary equipment and change packages to large modification projects and renovations.

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Kalmar Autoshuttle™

As the world's container terminals become ever more congested, port operators are increasingly turning to automation to improve productivity. Early this year, Kalmar launched the industry's first automated shuttle carrier—a so-called one-over-one container handling machine—and its third fully automated solution to the market.

Introducing: Kalmar Autoshuttle™

The Kalmar Autoshuttle™ is a fully-robotised self-loading vehicle that picks, places and transports containers between STS cranes and yard stacking cranes. The automated one-over-one units offer much superior productivity—two or three Kalmar Autoshuttles could replace up to seven standard automatic guided vehicles.

The Kalmar Autoshuttle™ brings with it a whole range of productivity benefits: reduced traffic congestion, better space utilisation behind an STS crane, higher buffer capacity in front of yard stacks, and the elimination of a second STS trolley due to the buffer zone created on the quay.

Like its manually operated counterpart, the Kalmar Autoshuttle™ can handle 20ft and 40ft containers, as well as two 20ft boxes in twin lift operation with load ratings of 40 tonnes (single) and 50 tonnes (twin). Engineered with proven 7th generation Kalmar straddle and shuttle carrier technology, the Kalmar Autoshuttle™ also features an enhanced PLC diagnostics system.

Fulfilling a need for greater productivity

The onboard automation system controls the Kalmar Autoshuttle™ according to the routes specified by the Terminal Logistic System. The automated vehicle continuously measures the distance and direction travelled with odometric information like wheel revolutions and steering angles.

Jorma Tirkkonen, President, Container Crane Systems, is proud to unveil yet another Kalmar automated vehicle. He said: "In the 1990s, Kalmar designed the Shuttle Carrier to meet the handling needs of future mega-terminals which are today's reality. Requiring ever-faster turnaround times, higher productivity and better cost efficiency, Kalmar is again anticipating the needs of its customers by offering the Kalmar Autoshuttle as a faster and more flexible, productive solution."

The move positions Kalmar as the preferred—and strongest—supplier of container handling equipment and related automation technology.

Revolutionary positioning system

Navigation of the Kalmar Autoshuttle™ is based on patented Magnetic Measurement System (MMS) technology. The unit's position is determined by magnetic markers embedded in the terminal surface and MMS sensors located on the Kalmar Autoshuttle's side frames.

Carel van Heldingen, Vice President, Kalmar Unmanned Solutions, commented on the benefits of using this type of positioning system: "The passive, maintenance-free magnetic markers are an affordable, controllable and reliable alternative compared to more complicated solutions such as transponders."

Fine positioning of the spreader is achieved by intelligent sensor technology installed on the spreader. The unit can also be remotely controlled when required.

The Terminal Logistic System (TLS) provides simple and comprehensive interfaces to the Terminal Operating System, translating its orders and planning job assignments for the terminal's equipment fleet. TLS has a distributed network architecture, controlling equipment locally and so ensuring a robust system. The negotiation/contract protocol used for the assignment of equipment to jobs is the basis of its flexible operation. In combination with the distributed architecture, it accommodates the scalability and extendibility of the network and terminal operations.

Unmanned expertise

In 2005, Kalmar's AutoStrad®—an unmanned straddle carrier—showcased its full potential when the Brisbane Fisherman's Island facility opened for business as the world's first large-scale fully automated straddle carrier terminal. The Australian facility operates 24 hours a day, 365 days a year in nearly all weather conditions with 23 Kalmar EDRIVE® AutoStrads.

Kalmar's offering of unmanned equipment also includes automatic stacking cranes (ASC). Germany's Hamburger Hafen und Logistik AG has turned to Kalmar for the supply of 24 ASCs and related technology for phases one and two of the current conversion of Container Terminal Burchardkai to a semi-automated operation.

Kalmar and Patrick Technology & Systems (PTS) developed the motion control and navigation systems used to fully automate Brisbane's 23 EDRIVE® units. The PTS technology will be used to automate future Autostrad® terminals.

Productivity at the Autostrad® terminal continues to reach ever higher efficiency milestones. It expects to achieve 25 moves per hour in early 2008.

Kalmar

Kalmar is part of Cargotec Corporation