Turkey welcomes containerization

Kalmar recently assisted two Turkish ports with their major expansion plans. The country is increasingly investing in container transport. Kalmar helped each port to consider factors like capacity, budget and terminal layout when choosing operating equipment.

The two-year-old Evyapport container terminal will significantly increase its handling capacity in the next few years. Kalmar offered an overall cost comparison for both reachstacker and rubber tyred gantry operations.

Well known for its ancient history and fresh meze dishes, Turkey is also home to the world's largest soap production operation. Evyap Group, which has a capacity of 1,000 tons of soap per day at its Istanbul factory, recently expanded its business to include a port division to efficiently handle the importing and exporting of its own soap materials and products.

The Evyap Group is just one example of how Turkish companies are making large investments to improve domestic and international trade routes and operations. Historically, most goods moving in and out of Turkey were transported as bulk and general cargo, but within the last 10 years, Turkey's annual container throughput has increased by approximately 500 percent. Last year, the main Turkish ports handled almost 4 million TEU.

Evyap's booming port business prompts capacity expansion

Planning a new container terminal, or increasing its capacity, can be a daunting task. Seeking advice about layout and equipment options, Evyap Logistics, the port division of Evyap Group, contacted Kalmar and its local representative, Meltem Aydogus, for assistance.

Since its inception just three years ago, Evyapport began handling liquid bulk and general cargo. Today, the port includes a container and a car terminal. The Evyapport facility, located 85 km east of Bosphorus and accessible to approximately 60 percent of Turkey's industry, covers 135,000 sq m of land and utilizes a 600 m berthing length. It operates with two mobile harbor cranes, three Kalmar reachstackers and two Kalmar empty container handlers.

Evyap Logistics plans to double its TEU handling and capacity in 2007 and nearly triple that figure by 2009. To do this, Kalmar presented the new port business with various layout options. Kalmar also offered an overall cost comparison for both reachstacker and rubber tyred gantry (RTG) operations that would help Evyap Logistics use its container terminal area efficiently while keeping it on track to reach its capacity goals.

Bugra Bilginer, Evyap Logistics Project and Business Development Manager, is convinced that Turkey possesses a good potential for future containerization growth supported by the example of his own company's transport history.

"Logistics became so important for the company that we had to handle it ourselves. That was the beginning of our logistics adventure. Today only three percent of our capacity is used by our mother company" said Mr. Bilginer. "We contacted Kalmar to help us assess our equipment options based on our capacity and budget restrictions. Kalmar has a great experience in this field. It's nice to ask questions and get the correct answers."

(From left) Talat Yamac, Selin Ilgen and Bugra Bilginer of Evyap Logistics will use the help of Kalmar's equipment and layout analysis to determine expansion plans for the company's container terminal.

Turkey embraces hinterland development

Kalmar was also asked to conduct a layout and equipment study for another Turkish terminal belonging to MOSBAR Logistics Services Inc. – a joint venture between Barsan Global Logistics A.S. and the Manisa Organized Industrial Zone. With this new rail terminal, the loads which are being carried by road trucks today will be transported to Port of Izmir via a 65 km long railroad in the future.

In the final planning stages of the MOSBAR rail terminal, Huseyin Isteermis and Ahmet Akman, Railway Transportation Manager of MOSBAR Logistics Services Inc. receive guidance from Meltem Aydogus, Kalmar Sales Manager in Turkey, and Jari Pirhonen, Kalmar Terminal Development Manager. The new container terminal will be the first one in Turkey connected by rail.

When this 320,000 sqm facility is in full operation in April of next year, the MOSBAR Project expects to handle 70 percent export loads and 30 percent import loads. Currently, there are more than 400 trucks traveling daily via road between Port of Izmir and the Manisa industrial zone. The MOSBAR Project will help cut inland transportation costs by 40 percent. Other crucial benefits include less wear and congestion on roads, decreased pollution levels and less risk for road accidents.

Huseyin Isteermis, General Manager of MOSBAR Logistics Services Inc., is excited about the MOSBAR Project because it will be the largest rail terminal in Turkey and the first to be directly connected to a port. He hopes the project's success will influence others to build intermodal terminals.

"Because we have the support of Turkey's international transportation authorities, I hope that our project will serve as an example for similar projects in the future," Mr. Isteermis commented. "Not only will this project help organize Turkey's domestic and abroad transportation by the effective usage of railway, but it will cut costs for customers in our zone."

Kalmar Terminal Development

Kalmar Terminal Development, an advisory service, is available to assist customers and consultants when planning new terminals and when improving the efficiency of existing terminals. This service includes equipment recommendations, estimates of numbers of equipment needed, overall cost analyses, terminal layouts and operational simulation.

"By working closely with our customers already in the terminal design phase, it is possible to better understand their needs when it comes to equipment and operations," says Jari Pirhonen, General Manager of Kalmar Terminal Development service. "We are learning a lot in the process and believe our customers also benefit from our advice, which is based on practical experience from our worldwide customer base."

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Kalmar
Make things easy

Kalmar around the World

A GLOBAL BUSINESS MAGAZINE FROM KALMAR INDUSTRIES, NO.1/2007

1000th F-series reach stacker delivered

The 1,000th reachstacker from Kalmar's F-series was delivered October 2006 to German Gernsheimer Umschlags- und Terminalbetr iebsgesellschaft mbH & Co. KG. The keys were given to Velimir Krušlin, GUT mbH & Co. KG Managing Director (left) by Andreas Schumacher, VP Kalmar Germany.

Continues on page 18–19

Expanding distribution and service network

Kalmar has acquired its Belgian distributor Catracom. Catracom has a strong service set-up in the port of Antwerp as well as a healthy equipment rental business with port and heavy industry customers in Belgium.

Catracom's owner and Managing Director Ludwig Callens (left) with Juhani Lukumaa, President, Kalmar Container Handling.

Catracom employs approximately 100 people with net sales of approximately EUR 70 million in 2005.

Growing in South Africa

Kalmar has agreed with South African service partner African National Engineering (ANE) to merge the latter's Kalmar service business into Kalmar Industries South Africa (Pty) Ltd, the local subsidiary company established earlier this year in Durban. Thirteen people from ANE have joined Kalmar's staff of seven, bring the total number of employees to 20.

The merger secures Kalmar's commitment to South African Port Operations (SAPO) as a full service partner and also forms a solid basis for further business development in South Africa.

www.kalmarind.com / news room

Continues on page 4

Shanghai plant caters to pan-Asia demand

September 2006 saw the grand opening of Kalmar Industries (Shanghai) Co Ltd, the company's new USD10 million assembly plant in Shanghai's Lingang Industrial Park. The facility is now working at full speed manufacturing equipment to serve major port developments not only in China but across the wider Asia region, assembling terminal tractors, empty container lift trucks, rubber-tyred gantry cranes (RTGs) and reachstackers.

Continues on page 14–15

Kalmar
Make things easy

Growing in partnership

As we enter 2007, Kalmar's vision remains unchanged: We are dedicated to being the preferred partner to customers in container, trailer and heavy industrial handling equipment and services.

Our commitment to being the preferred partner begins well before and extends long after we deliver a machine. We continuously invest in our sales and service network to provide customers with a reliable, round-the-clock presence. We also intend to carry on expanding our market presence by setting up offices close to our customer locations. In 2006 we established our own operations in India and in South Africa. We have also strengthened our position in Benelux considerably by acquiring our long-term partner Catracom.

Our Shanghai assembly factory, which began operations 2006, increases the speed and flexibility with which we are able to serve the Asian market. Likewise, we have further expanded our forklift assembly in the US to serve our American customers better.

Our intention is to continue growing our business at the same sustainable rate as we have done over the last five years – with the same partnership principle in mind.

For more than a century, Kalmar has provided its customers with innovative, robust and reliable machinery. On top of that, we are committed to the ongoing development of a range of innovative services. Kalmar believes integrated intelligence and automation are the most efficient tools through which we can offer value to customers.

Product development remains at the top of our agenda and will receive even greater focus over the coming years. It is pivotal to our growth strategy that we maintain our position as a supplier of leading products and services. Our large automated crane project for HHLA in Hamburg is one example of a major investment in implementing new technology.

Kalmar continues to be very highly appreciated partner by its customers. I am convinced that our success is based on our high degree of customer focus, which is the driving force behind the way we conduct business.

Christer Granskog
President and CEO
Kalmar Industries

Kalmar around the world

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Equipment control made easy with Fleetview

With automated applications for container handling fast becoming the terminal operational tool for the future, Kalmar has announced the further expansion of its automation product range with the launch of a new fleet control system dubbed Fleetview.

Designed to monitor straddle carriers, reachstackers, forklift trucks, terminal tractors and RTGs, Fleetview joins Kalmar's growing range of automation tools, including Smartrail®, an auto steering and container position verification system, and Smartpath®, a real-time container position verification system.

The main benefit of Fleetview is that it allows control room staff to monitor the real-time positioning and efficient control of each machine, which means that container handling tasks can be assigned to the unit best suitable for the job, thus minimising unladen travelling distances and resulting in better productivity.

Fleetview allows significant improvements in operational quality and productivity as it enables control room operators to better manage and coordinate container handling equipment. It can accommodate a practically unlimited number of machines, regardless of their manufacturer.

Keijo Parviainen, VP of Kalmar Intelligence and Automation, comments:

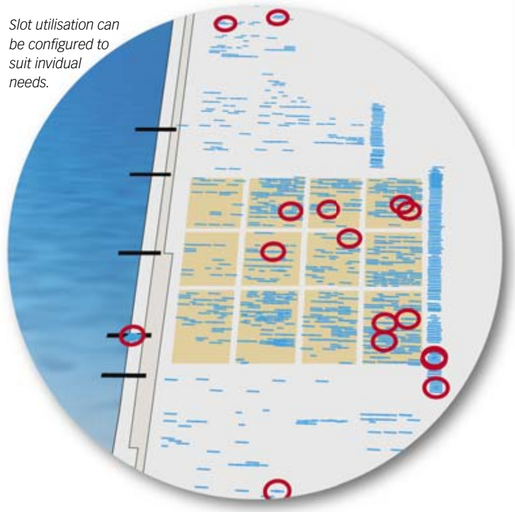
"Managing a fleet of machines and optimising fleet usage can be difficult if done manually. We have developed Fleetview to help our customers with the planning and coordination of their container handling machines. It can reduce unproductive container moves in the terminal to a minimum, resulting in greater efficiency and productivity."

Under the Fleetview system, the exact location of each container handling unit is transmitted to a GPS receiver and then fed via a wireless network to the Fleetview, yard management system (YMS) and terminal operator system (TOS) servers in the form of a map, which displays terminal layout and machine movement on the users screen. From here, the Fleetview user can monitor and manage equipment activity. It also allows YMS and TOS servers to communicate with each other to optimise machine utilisation.

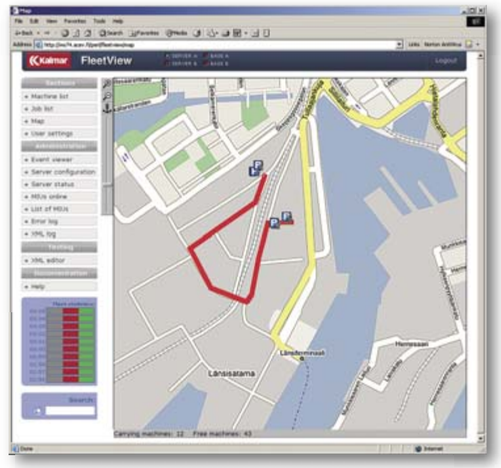
Fleetview can also be connected to a yard management system to monitor the actual container moves. Furthermore, if a machine has failed to perform the task that the terminal operating system has assigned to it, or if the task has been delayed or performed incorrectly, Fleetview notifies the control room operators of the discrepancy.

Other advantages of the system include a comprehensive route log, which is useful in determining the cause of an accident and in preventing similar events from occurring again.

Fleetview can also be used for training purposes, whereby instructors can teach correct working methods to new drivers with the help of the built-in map system.



Slot utilisation can be configured to suit invidual needs.



Trace function enables backtracking machine movements.

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Service contract with Gateway Terminals India

Kalmar has been awarded a service contract to include both maintenance and operations by Gateway Terminals India (GTI). The agreement between Kalmar and the Mumbai-based terminal operator will apply to 29 Kalmar E-One RTGs currently being delivered to the Nhava Sheva container terminal.

The five-year deal requires Kalmar to supply GTI, a joint venture between APM Terminals and Container Corporation of India (CONCOR), with preventative and breakdown maintenance, engineering support, daily inspections, equipment operators and spare parts supply. Kalmar plans to provide more than 100 maintenance specialists and operators trained to meet international standards to work three shifts per day.

In negotiating the service agreement, GTI made it clear to Kalmar that availability and productivity were their top priorities. In return, Kalmar promised to meet or exceed the required level of equipment availability while being on-call 24 hours a day, seven days a week.

The management of GTI felt confident Kalmar could meet such high demands based on the company's international maintenance contract references with other terminal operators.

"As a new terminal, we wanted a partner we could trust to help achieve our productivity goals. Kalmar's service experience and professionalism assured us that our required level of quality would be met."

Increasing business volumes and demand from local customers meant that establishing a sales company in India was a necessity for Kalmar. At the end of 2005 a subsidiary company was set up through the acquisition of 51 percent of Indlift, which had been the agent for Kalmar products in India since 2000.

Since the acquisition, Kalmar has been planning the expansion of the company's service offering in India by increasing its sales and service network to include port cities such as Chennai, Cochin and Kolkata and by employing additional technicians.

Prior to Kalmar's acquisition, Indlift employed 18 people at offices in Mumbai, New Delhi, Vizag and Bangalore. Today, staff numbers have increased considerably both in the offices and onsite. The total number of office-based employees now stands at almost 20 while there are also roughly 20 service engineers and a further 125 subcontracted engineers operating around the country.

www.kalmarind.com/news room

In order to improve its service offering to customers, Kalmar is rapidly investing in its service business and expanding its network. Kalmar aims to increase its service product offering for the world's biggest ports who are constantly seeking new ways to improve the efficiency of their operations.

I DO IT MYSELF **WE DO IT TOGETHER** **YOU DO IT FOR ME**

Check out Kalmar's new online service configurator!

Reference this web site for information about Kalmar's service products. This tool is easy to navigate and clearly presents each service option. If you need more information about an offering, just fill out a request form and it will be forwarded to the appropriate representative. Each customer requires something different from its service provider. Kalmar can offer you a range of service options from spare parts and training to pay per performance financing. Make an informated decision. Visit www.kalmarind.com/serviceconfigurator

Services thinks big

Kalmar Vice President of Services Rob van Hove:

''The risks and costs Kalmar is willing to take should not be underestimated. If a Kalmar customer wants to start paying per move, this customer will be saving millions in investments, he will have a lot fewer worries to contend with, and he can operate more flexibly."

"But all of these things will then be landing on Kalmar's plate. At the same time, this is also what the company's good at; something that puts Kalmar head and shoulders above its competitors," boasts van Hove. "And that's the important thing - the fact that you can offer something others can hardly handle, if at all!"

Van Hove says that Kalmar is striving to be more than just a machine supplier. "We offer a total concept that will relieve customers of problems involving equipment and maintenance so that they can devote more of their time – and especially money – to the further growth of their businesses," comments van Hove.

Realizing an "unbelievable" offering

According to van Hove, many big, global players have found Kalmar's service offering to be surprisingly large. "Customers are positively surprised to learn that they do not have to worry about buying, maintaining and replacing equipment nor hiring personnel," says van Hove.

He continues: "Kalmar can offer customers the choice of paying per working hour or per move. Kalmar can handle the rest including financing, people and the workplace."

Van Hove notes the example in which Kalmar built a workplace for a customer and is using it to carry out maintenance for various customers on equipment such as straddle carriers. "Kalmar is investing in people and resources to handle maintenance, and the customer pays a fixed-price per working hour for all maintenance services," adds van Hove.

However, service can be even more inclusive. In India, for example, Kalmar employs all the drivers at the terminal operated by its customer Gateway Terminals India (GTI) in Mumbai. "So GTI doesn't even have to worry about that anymore," comments van Hove.

To be succefull we have to stand out, says Rob van Hove.

Putting it into practice

The activities of Kalmar Services are generating interest throughout the industry. "By building up trust and references," says van Hove, "more and more terminals are considering outsourcing their service activities. What was inconceivable last year is now being discussed aloud.

When it comes to maintenance, Kalmar can take over entire terminals. Regardless of which machines they have in operation – brand a, b, or c – it doesn't matter." van Hove adds. A good example is Antwerp Gateway Terminal which has 's a full service contract with Kalmar for the provision of preventative and breakdown maintenance, engineering support and spare parts supply for the 20 ESC 7th generation straddle carriers operating in the terminal.

Glocal network and financing is essential to success

For Kalmar to be able to offer its customers such comprehensive service, it is important for the company to continue utilizing and expanding its local, well-established service network.

"We are expanding our distribution network as fast as a speeding bullet," says van Hove. During 2006, Kalmar acquired majority stakes of sales companies in India and South Africa. In September, Kalmar bought a distributor of Kalmar equipment and services in Belgium. Catracom has a strong service set-up in the port of Antwerp, a great port equipment rental business and customers in Belgium's heavy industry. Kalmar also boosted its port crane service and maintenance business in the US by acquiring East Coast Cranes and Electrical Contracting Inc. in March.

Being able to offer customers financing will also play a major role in the future of Kalmar Services. "Not only does Kalmar have the financial clout, but it also has the expertise, the innovative capacity, and the courage to get things done," emphasises van Hove.

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Photos: Piotr B. Starenczak

More legroom for Gdynia

The extension of container handling equipment is a popular option these days for terminals wanting to achieve extra capacity and productivity without the cost of replacing existing equipment with new models. But, as Kalmar's Casper Langeveld explains, some projects are a little more complicated than others.

Hutchison Port Holdings (HPH) recently relocated two ship-to-shore (STS) cranes from ECT Rotterdam Home Terminal to Gdynia Container Terminal, its dedicated terminal for the Baltic built on the site of a former shipyard in the Polish seaport of Gdynia. However, the cranes, which had previously been operating on a 15 metre railspan in Rotterdam, now needed to adapt to a 20 metre quayside railspan in their new home.

The cranes had already undergone a three-metre height extension by Kalmar a few years back in Rotterdam, so it seemed only natural that HPH should turn to Kalmar Services in Rotterdam once again to achieve the desirable railspan.

The practicalities

To achieve the desired railspan by bridging the extra five meters, new 20m portal beams were manufactured with exactly the same height as the previous extension pieces.

"This sounds easier than it is," explains Project Manager Mr Langeveld. "The new flanges had to fit the flange fittings from the previous job, which had not been designed to accommodate the railspan widening."

As the effects of any new mid-section retrofit had to be taken into account, none of the new hind-leg wideners were precisely the same. "None would have fitted in any other slot, not if you want the cranes to be perfectly flush," Mr Langeveld notes.

All in a day's work

The actual joining and assembly operation, all of which took place in Rotterdam, was also complicated, according to Mr Langeveld. "In a quiet corner of ECT's Home Terminal three sheerlegs lifted each crane while the previous height extension pieces in the hind legs were disconnected. A fourth sheerleg then moved the bottom beam and bogies of the crane onto a heavylift pontoon fitted with a new 'Gdynia-sized' rail track. The new width extension beams were then positioned over the bogies and the flanges were bolted. The crane's main structure with its upper legs still in place, was then lifted over the new hind section and secured, thus completing the conversion."

The fastening, securing and measurement precision needed to keep the disconnected bogie section well supported, both on the terminal's quayside and on the pontoon's deck, was tough work indeed. That said, the entire job was completed in one day.

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Jan Erkelens, Kalmar supervisor on site, Casper Langeveld and Kazimierz Kiczkowski, Technical Manager of GdyniaContainerTerminal S.A.

Casper Langeveld, Project Manager, Kalmar Services:

1. What structural upgrades can Kalmar provide for existing quayside gantry cranes?
In principle, Kalmar can provide any conceivable updates to existing quayside gantry cranes. Examples of projects from the recent past include extension of the fatigue lifetime of ship-to-shore (STS) cranes, elongation of STS crane booms, increase in the lifting height of existing cranes, the provision of new light-weight trolleys and the renewal of complete upper-assemblies, ties and booms. Kalmar has also increased the rail-span of existing cranes and heightened straddle carriers from three-high to four-high specification.

We have also been involved in projects where we have had to move cranes overseas or locally overland.

2. What improvements do upgrades make to existing equipment?
We sometimes deal with cranes that have design failures from the word go, meaning that we give these cranes 'a second life'. Other projects that involve, for example, heightening or boom elongation, allow the cranes to handle a bigger generation of containerships. It is also possible to successfully extend the fatigue lifetime of a crane. In other cases, upgrades are made to improve clients' productivity and capacity. You can imagine what a positive impact raising a three-high straddle carrier to a four-high unit will have on the stack-capacity of our clients.

3. What upgrades can Kalmar offer in regards to control systems?
Kalmar can undertake the refurbishment of electrical installations, varying from part renewal to complete overhaul. Inadequate spare parts availability for old (DC) installations is often the motivation behind a customer's decision to renovate.

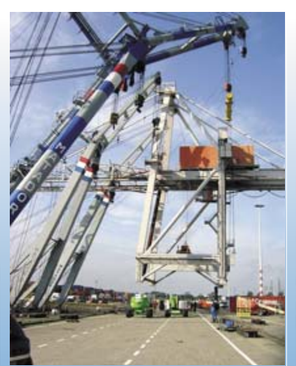
4. Within what timeframe would a customer expect to make a return if they were to undertake upgrading work?
This is completely dependent on the scope of upgrade the customer requires.

5. What are the main benefits of upgrading existing rather than buying new cranes?
In some cases we find that the delivery time of a refurbishment competes successfully with a newbuilding project. In addition, extending the economic lifetime of a crane can be more commercially attractive than the major investment required in buying a new crane.

Three sheerlegs connecting to the crane on the quay.

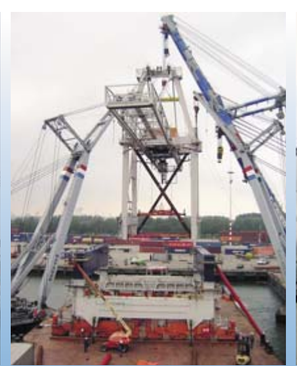
Lifting the crane. The 'splitting-point' of the legs is the lower part of the extension pieces.

Bringing the bogies to the pontoon with sheerleg number 4.



Here, the original extension pieces are removed from the crane.

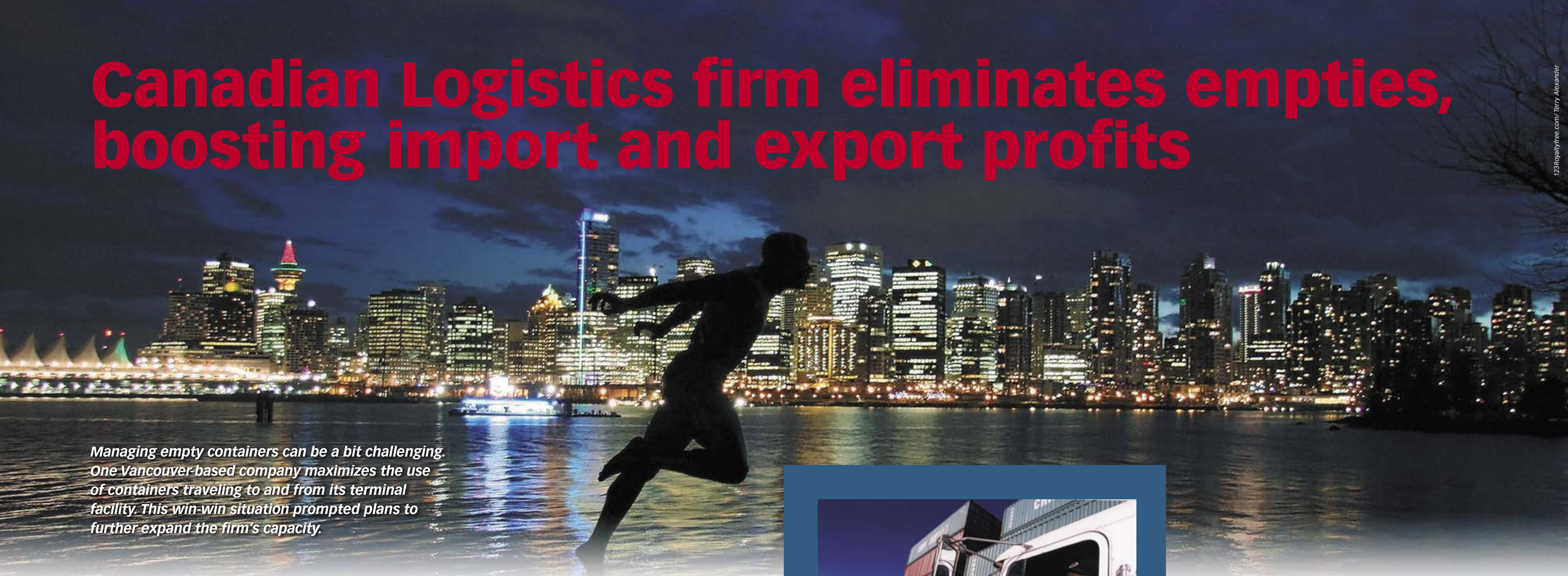
The three sheerlegs move the crane over the water and split up their positions so the pontoon can be positioned underneath the crane.



The pontoon is being manouvred underneath the crane. The bogies on rails on deck of the pontoon. The new blue portal beams that span 20m.

The result: a crane of the same height, but with a railspan of 20m instead of 15m.

Canadian Logistics firm eliminates empties, boosting import and export profits



123Royaltyfree.com/ Terry Alexander

Managing empty containers can be a bit challenging. One Vancouver-based company maximizes the use of containers traveling to and from its terminal facility. This win-win situation prompted plans to further expand the firm's capacity.

The operator of an innovative offdock container and logistics hub serving the Port of Vancouver on Canada's west coast, has eliminated an estimated 15,000 truck trips a year from city streets by providing a one-stop-shop for importers and exporters.

Coast 2000 Terminals Ltd., located on the historic Fraser River, south of Vancouver, is equidistant to the Vancouver Gateway's four major container terminals, which between them handle 2 million TEUs a year, a number that is projected to triple by 2020.

By taking empty containers used for transporting consumer goods from Asia and loading them with British Columbia forestry products, Coast 2000 Terminals Ltd. has cut costs for importers and exporters and reduced the number of empties causing congestion problems at deepsea terminals.

Currently handling 50,000 TEUs a year, Coast 2000 has tripled its storage capacity since it commenced operations two years ago and has plans for further expansion next year.

"The key to our operation is turnover – you don't make any money having cargo sit in a warehouse," says company president Kevin Ouellette. "The container yard has 15,000 TEU capacity stacked eight-high and our target is to turn it over 26 times a year.

Darrel Taylor (left) with Greg Crompton, Vice President Operations, Coast 2000 Terminals Ltd.

"What we have created is a synergy between import containers and the export of forest products, which provides an opportunity for both sides to reduce their logistics costs. At the same time, we are taking trucks off the road, reducing congestion and pollution."

Proven, reliable equipment initiated extensive partnership with Kalmar

It takes productive and reliable equipment to keep the boxes moving and both Mr. Ouellette, and vice-president operations Greg Crompton, credit Coast's relationship with Kalmar for maintaining high productivity levels.

"It's more than a relationship with Kalmar, it's a partnership," says Mr. Ouellette. "We have to have productive, reliable equipment based on the transactions we handle and they work with us to make sure we have what we need. Between the yard and the warehouse, we are pretty well all Kalmar. In our business we can't afford to have machinery down. From a reliability standpoint, they have been a good partner."

Mr. Crompton says he first tested Kalmar equipment in the early 90s when he was working for Fraser River Terminals which is now part of Coast 2000. "I can honestly say we have never looked back," he adds. "When you are handling pulp and paper, every lift is at maximum capacity. You are going full speed and stopping with a full load just about every move. If there is a weak point, I can tell you pretty quickly.

"We have gone through a few learning curves with minor things, but Kalmar has stood behind us and gone over and above warranty. The partnership has worked well."

Local Kalmar dealer plays a supportive, vital part

Taking good care of the customer – another crucial role – is Attica Equipment Ltd., of Coquitlam, B.C., one of the oldest and largest Kalmar dealers in North America. Attica has represented Kalmar since 1980 when there were no Kalmar products in western Canada. Today, Attica has a wide customer base and sales of over 500 units in the 15,000 lb to 95,000 lb (6.8–43 tonnes) capacity range.

"Kalmar is probably the best in the world," says Attica Equipment president Darrel Taylor. "I don't think there is much to dispute about that.

Darrel Taylor, President of Attica Equipment Ltd, (left) with Kevin Ouellette, President of Coast 2000 Terminals Ltd.

They are the Lexus, the Rolls Royce of the industry."

However, he adds, "There are issues with new equipment from time to time. I don't want them to think that everything is super sweet. But they are addressing those issues. Coast has a lot of money invested with us and we have a lot of equipment, money and time invested with them. It's a two-way street."

Mr. Ouellette says his company is more than satisfied with its investment to date. It operates eight Kalmar 15,000 lb (6.8 tonnes) forklifts, two eight-high empty lifts, two five-high loaded lifts, one three-high empty lift, and has two eight-highs on order as part of the company's $4 million expansion to add 9-acres (3.6 hectares) to the storage yard in 2007.

"When you are talking about stacking eight-high, you have got to have confidence in your equipment," he explains. "The machines are user-friendly so operators are able to train and be productive relatively quickly. The big thing is reliability,"

Backed by an experienced, professional stevedoring company

Coast 2000's parent company is Western Stevedoring, which was recently acquired by Seattle-based SSA Marine. Western Stevedoring is operator of Lynnterm in the Port of Vancouver as well as Port of Nanaimo, Cowichan Bay and Ogden Point, Victoria, through its subsidiary, Westcan Terminal. Western is the largest breakbulk handler on the west coast of North America with more than 100 lift trucks in the 30–35,000 lb (13.6–15.8 tonnes) category. Two thirds of these are Kalmar, handling steel shipments inbound and forestry products outbound.

"Kalmar has worked very closely with Western in the evolution of our 35,000 lb (15.8 tonnes) equipment and has implemented technological improvements and modifications to that fleet to meet our productivity, cargo quality and operating cost expectations," says Western Stevedoring president Tim Chapman. "This includes lift capability, driver comfort technology and durability of the machines."

He notes that Lynnterm handles 2.5 million tonnes of breakbulk cargo annually, serving the most modern carriers in the world.

"Serving their needs and products is of paramount importance to us," he adds. "Having the benefit of leading edge technology assists us in meeting the productivity, costs, and quality expectations of our customers."

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Performance in Stadtallendorf heats up

Since 1997, one of the biggest German iron foundries, Fritz Winter GmbH & Co. KG has been using Kalmar heavy-duty forklift trucks at its state-of-the art production plant in Stadtallendorf, where up to 400,000 tonnes of iron per year are cast into brakes, engine blocks, axle bodies and gearbox casings and sent to customers around Europe.

Year 2005, the number of Kalmar machines increased to 24 when three new DCE 80-6 units were delivered to the site.

The working environment takes its toll on the 23 DCD/E80-6 and one DCE 100 units that handle the foundry's entire internal iron transportation on the 45 hectare site. What makes this a truly challenging task for the machines is that they handle the charging of the cupola and induction crucible furnaces, moving molten masses of up to 1500° C.

This large-scale operation leaves its mark on the equipment. Only a few weeks after commissioning it is difficult to tell that they are fully functional high-tech machines. Still, the fact that despite their appearance they are in prime condition is a proof of the strength of the machines' design. They operate efficiently and meet the demands of the foundry that represents undoubtedly the toughest imaginable working environment. So far, the Stadtallendorf staff has been using the Kalmar forklift trucks for 54 months, during which time the machines have achieved about 22,000 operating hours on a triple-shift basis. Despite the conditions the machines are subjected to, they are still going strong.

The process of charging molten masses puts extreme pressure on the machine's lifting frame and add-on units.

There are 23 Kalmar DCD/E80-6 and one DCE 100 operating on a triple-shift basis at the foundry in Stadtallendorf.

Safety and efficiency hand-in-hand

To ensure that the stackers meet the demands that handling molten masses entail, Kalmar has designed these 24 machines specifically to be used in a foundry. The lifting frame of the machines with the capability to reach to heights of up to 2.7 m, has the ability to manage greater lateral forces, enabling the machines to empty the heavy crucibles safely and efficiently.

Drivers' safety has been an integral part of the machines' design process. Only those with a bespoke key card can activate the stackers, preventing unauthorised persons from driving them. Operating hours and tank quantities are also recorded. Since the molten masses represent a serious health hazard, Kalmar has made sure that the drivers are able to leave the machine quickly from either side in case of an emergency.

Another feature that makes these special forklift trucks true driver's machines, is that the swivel seats can be turned 30° to the right where a second set of pedals has been installed, making the constant reversing less of a chore. In addition, the double tyres on the front axle are equipped with obstacle clearers to prevent scrap particles from getting stuck between the tyres. Furthermore, a folding barrier protects the driver on the left and because the connections of the lifting frame are lower, the driver has access to a good view of the crucibles, making his job easier. The operating levers for the lifting frame and the add-on unit are also combined to form a space-saving unit on the console on the right side of the driver's seat.

In order for the forklift trucks to be able to endure working in such close proximity with hot molten metal, Kalmar has made a series of additional adjustments to them. The heatproof tubes that the machines' masts have been equipped with, as well as the fire-proof hydraulic tubes on the add-on units increase safety in the process where there is a constant risk of hot metal spilling and splashing. In addition, the two inclined cylinders are completely protected. The add-on unit, the lifting mast and the pivoted axle, as well as the mast joints are also regularly greased thanks to a completely automatic central lubrication unit. The cabin is also glazed with screwed lexane panels that can be easily replaced when the splashing metal has gotten the better of them. Also, as metal dust penetrates through every crack, the number of displays and other electric systems has been reduced to minimise the risk of electronic failure.

To prevent the forklift trucks from catching fire when operating in the burning-hot foundry, guard plates have been fitted underneath the machine. Heinrich Kraft, Kalmar sales specialist, who has taken part in the development process of the stackers, and whose job is to ensure that the machines correspond to the customer's expectations, commented:

"A number of precautions have been taken to prevent accidents from happening, but the fact that the trucks work with molten materials increases the risk of fire considerably. That is why Kalmar has made it possible to release the operating brakes from the outside, so that in case of an emergency a burning stacker can be pulled out of the danger zone as quickly as possible."

Full service

Although Fritz Winter GmbH has been using the forklift trucks since 1997, the company does not repair or even own them, as it has a full service contract with Kalmar. This means that the Kalmar mechanic Bernd Schmidt is permanently on site, devoting his working hours almost entirely to his 24 'heavy lads'. He commented:

"An integral part of my job is coming up with bespoke solutions that meet the needs of the customer in question, and during the past ten years that I've been responsible for maintenance of larger equipmetn at Kalmar, I've noticed that the smallest things often cause the most trouble.

"That is why here at Fritz Winter – one of the most demanding environments I've ever seen a forklift truck operate – I decided to swap the brass bushings for needle bearings. As a result, the machines' service life is now four times longer than it used to be. Here in Stadtallendorf that's quite something!"

As the forklift trucks are under constant pressure in the foundry, it is essential that specialist service and maintenance are available immediately when required. Mr Schmidt is in charge of monitoring the machines, deciding on the frequency of maintenance and repair, and coordinating fitting and maintenance of the add-on units – all of which is included in the full service agreement. Kalmar has also made sure that a variety of spare parts are available when required so that the operation of the plant will not be disrupted if a certain component of a stacker needs to be changed. Therefore, Fritz Winter can concentrate on the core business, knowing that the forklift trucks are always in good hands.

Kalmar DCE100-6 forklift trucks are used to transport scrap containers outside Fritz Winter's foundry.

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Bristol steps it up a gear

with a new post-Panamax crane

The Bristol Port Company is experiencing strong growth in the container sector and is also seeing its customers introducing larger ships that require faster handling rates. Consequently, it ordered a new state-of-the-art post-Panamax container crane from Kalmar and this was delivered in October 2006.

Bristol is one of the UK's oldest ports but being on the western side of England, it missed out on the early container boom. Now though, with excellent road and rail links, particularly to the Midlands, the heartland of UK industry, it is winning new business and even has plans for a brand-new deepsea container terminal.

The new crane is capable of handling ships carrying containers 17-wide on deck and will operate alongside two other ship-to-shore cranes on the existing deepsea terminal in Bristol's Royal Portbury Dock, which has a total quay length of 500 metres.

The Port of Bristol has been successful in attracting deepsea services including one from the South Africa Europe Container Service (SAECS) as well as a feeder service from MSC that is now employing 1500TEU vessels.

Simon Bird, Chief Executive Officer of the Bristol Port Company, explained why the order went to Kalmar:

"At Bristol Port Company we attach a great deal of importance to the costs of ownership, reliability and productivity of our cargo handling equipment and in this respect Kalmar cranes have an excellent reputation. Furthermore we are very satisfied with the performance of our existing Kalmar fleet and the product support we receive through Kalmar Limited, which helps us provide efficient and reliable services to our customers."

At the handover, David Fairweather, Managing Director, Kalmar Limited, said:

"Kalmar has been supplying cargo handling equipment and services to Bristol Port Company for some years now including reachstackers and light and medium lift-trucks. We were therefore delighted when the port chose Kalmar to supply its new ship-to-shore crane."

"Bristol Port Company has announced its intention to develop a tidal deepsea container terminal with an annual capacity of 1.5 million TEU. With its excellent track record, Kalmar Industries will be bidding strongly for this project. Furthermore, we intend to support Bristol Port Company with advice about designing an optimal terminal layout from Kalmar's Intelligence and Automation (KIA) business unit. One of the services Kalmar Terminal Development, a division of KIA, can offer is the terminal simulation product called Port-Optimizer®."

The main parameters of this ship to shore crane are:

Safe working load on the ropes / under spreader	53/40 tonnes
Safe working load under hook	60 tonnes
Outreach	45 metres
Railspan	20 metres
Backreach	16 metres
Hoisting height	36 metres
Hoisting depth	15 metres
Hoisting speed rated load / empty spreader	60/120 metres / minute
Trolley travelling speed	180 metres / minute
Gantry travelling speed	45 metres / minute

David Fairweather, Managing Director, Kalmar UK and Martin Downey, Director Bulk Terminal & Operational Engineering, Bristol Port Company.

Kalmar's reputation for building reliable cranes is gaining ground across Europe. Recent orders include one crane for the Port of Oslo's new Sjursøya Container Terminal which will begin to operate at the end of 2007, two super post-Panamax ship-to-shore (STS) cranes for MSC Home Terminal in Antwerp, on top of the 15 cranes already delivered to the terminal in 2004, and one Panamax STS container crane for Sweden's Helsingborgs Hamn AB.

The Helsingborg challenge

When Sweden's Helsingborgs Hamn AB identified the need for a new ship-to-shore crane this year, it realised its needs were somewhat unusual.

First of all, it needed a heavy-duty crane with a working load of 80 tonnes that was capable of handling Panamax containerships. But it also needed to comply with the limited permissible rail loads on its quayside, which meant that crane weight was something of an issue.

The answer was a crane that incorporated a semi-rope trolley system crane, designed to achieve higher working loads in single or twinlift mode but with a limited wheel load. Based on Kalmar's experience of the single box girder, semi-rope trolley concept, the crane ordered will be adapted to incorporate state-of-the-art twinlift container handling technology. The crane will also be supplied with the latest electronic anti-sway system, including semi-automatic features, and will be accessible from Kalmar's Remote Machine Interface (RMI) monitoring and maintenance system.

The ship-to-shore crane, which will be one of the largest cranes working in Swedish ports today, is destined for the existing terminal in Helsingborg, which has a total quay length of approximately 250 metres on which one ship-to-shore crane is already in use.

Bengt Niklasson, Technical Manager at Helsingborgs Hamn AB, comments:

"At Helsingborgs Hamn we attach a great deal of importance to the cost of ownership and the reliability and productivity of our cargo handling equipment. In this respect, Kalmar cranes have an excellent reputation. We are also very satisfied with the performance of our existing Kalmar terminal tractors and forklift trucks, as well as the product support we receive through Kalmar Sweden AB, which helps us provide an efficient and reliable service to our customers.

"On top of that, our requirements for twinlift capabilities and a working load of 80 tonnes while complying with the limited permissible rail loads on the quayside called for a semi-rope trolley system. Kalmar's design will allow us to achieve higher working loads with a limited wheel load."

Helsingborg offers an ice-free harbour with water depth of up to 13.5 metres. Located at the narrowest part of the Öresund strait and with well-developed infrastructure with good rail, road, air and sea connections, the port is ideally situated to serve the Baltic trades.

Rene Kleiss, Vice President, Container cranes, Kalmar Container Handling, added:

"The design of the crane incorporates a single box girder boom and semi-rope trolley. More than 30 units of this proven and reliable design are now in day-to-day operation.

"It is also worth mentioning that the crane has been supplied with a state-of-the-art electronic anti-sway system including semi-automatic features. Furthermore, the crane can be accessed through a Remote Machine Interface (RMI).

"Kalmar cranes have proven to be reliable, low-maintenance workhorses. Their exceptional quality and efficiency, combined with Kalmar's reputation for delivering quickly and within agreed time frames, has led to significant growth in the STS segment."

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Looking to the Orient

China is at present the focal point for exponential growth in trade and manufacturing in the Eastern hemisphere, but the phenomenon is emerging in other Asian countries as well. Consequently, there is an increasing need for efficient, reliable and state-of-the-art terminal technologies and services at many of the continent's busy ports. Being able to cater for these booming markets has been one of Kalmar's top priorities.

September 2006 saw the grand opening of Kalmar Industries (Shanghai) Co Ltd, the company's new USD10 million assembly plant in Shanghai's Lingang Industrial Park. The facility is now working at full speed manufacturing equipment to serve major port developments not only in China but across the wider Asia region, assembling terminal tractors, empty container lift trucks, rubber-tyred gantry cranes (RTGs) and reachstackers.

Speaking at the opening ceremony, Christer Granskog, President and CEO, Kalmar Industries, explained the company's commitment to the region: "We are here to improve Asian customer satisfaction with a wide range of products and faster delivery times. Not only does the Lingang factory give us shorter lead times, it also sends the strong message that not only China, but indeed Asia as a whole, are important markets in which we intend to stay and grow together with our customers."

Foreseeing further growth in Shanghai

Shanghai is the ideal location for the new plant. With 443 million tonnes of cargo handled in 2005, Shanghai is the world's largest cargo port, and in terms of container traffic, the third busiest port in the world. Moreover, it is home to the most important port area in China, with massive port expansion plans underway. These include the new 20 million TEU container terminal development Yang Shan Port facility, the first berths of which began operations in 2005. Only a stone's throw away from Kalmar's new plant in the Lingang economic industrial zone, this development project was born out of the need to cater to future growth in the Shanghai area and to cope with the demands of new mega container ships.

Yang Shan Port decided to order a considerable proportion of container handling equipment from Kalmar because of the company's reputation as a developer of efficient and reliable machines that make use of the latest green technologies. In addition, management at Yang Shan was impressed by the high-quality after-sales services that Kalmar provides to its customers.

Kalmar deliveries to Yang Shan Port Phase I included two reachstackers, eight empty container handlers and 68 terminal tractors, as well as three RTGs, six reachstackers, two empty container handlers and five terminal tractors to Yang Shan Logistic Park. In addition, as part of Yang Shan Port Phase II, two reachstackers, four empty container handlers and one 25 tonne forklift truck were later delivered to the terminal.

Leading the way with RTGs

Kalmar has had a strong presence in China since 1989 and is currently the number one supplier of reachstackers, terminal tractors and heavy container stackers to the country's ports and terminals. The Lingang facility is now also providing customers with other types of handling equipment. "Our recent success in the RTG market is clear evidence that Asian customers are looking for state-of-the art equipment that combines the latest in design with improved performance and high environmental standards," explains Mr Granskog. "Our introduction of the all-electric E-one RTG, for example, has helped boost Kalmar's presence in the Asian RTG market as more and more customers look for environmentally-friendly equipment that offers low operational costs with a good after-sales support service," he continues.

Recent RTG deliveries from the Lingang plant include three 1-over-5 high, 6+1 wide RTGs to Tongsheng Logistics Park in Shanghai and two of the same to Yangzhou Yuanyang International Ports Co Ltd – a COSCO terminal located in Yangzhou, a major port along China's Yangtze River.

Thriving Thailand

Outside China, Kalmar is the number one supplier of RTGs in Thailand, where the majority of the more than 20 units in operation are of the all-electric E-one design. The country's main port of Laem Chabang is growing steadily with the help of Kalmar cranes, with four of the terminals there choosing Kalmar RTGs as a result of good performance reports.

The most recent orders in Thailand include six units to LCMT Terminal, a joint venture between Maersk and Bangkok Modern Terminal that is still under construction, and five units to Evergreen Container Terminal (Thailand) Co Ltd. Delivery of these 6+1 wide, 1-over-6 high machines is scheduled for next year.

Green thinking goes global

According to Ken Loh, President, Kalmar Asia, sales in the region have been particularly strong this year, with a number of large orders coming not only from China and Thailand, but also from other countries such as India. He comments: "Thanks to the new assembly plant in Shanghai we are able to meet the increasing demands of this region." Mr Loh also believes that demand for Kalmar services looks set to increase as customers continue to outsource their maintenance activities. "Contracts such as those we have with ESCO mean that equipment is being used intensively, thus increasing the need for servicing and parts," he continues.

"ESCO's decision to purchase Kalmar's E-One has further boosted our global presence in the RTG market as more and more customers look for environmentally-friendly equipment that also offers low operational costs with good after-sales support service. Indeed, we are particularly proud that by using fewer mechanical components, our RTGs are less susceptible to mechanical failures and can operate for up to 1,000 hours before requiring any servicing at all – a service interval that is currently unmatched by other rival brands," he concludes.

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ESCO Terminal adds RTGs to boost yard productivity

Eastern Sea Laem Chabang Terminal Co. (ESCO), the operator of Laem Chabang's B3 terminal, has installed two new Kalmar Rubber-Tyred Gantry Cranes (RTGs) as part of their ongoing efforts to boost yard productivity.

Ms. Sukthida Pongpeomperk, ESCO's Operations Manager is confident the new RTGs will enhance the terminal's yard productivity.

Specifically designed with larger container terminals in mind, these RTGs can be used to stack containers higher and wider than other systems allow and are able to handle terminals' ever-increasing capacity requirements which are now approaching millions of TEUs annually.

The Kalmar design has proven particularly popular as it combines minimal maintenance with consistent reliability and long lifespan, as confirmed by Ms. Sukthida Pongpeomperk, ESCO's Operations Manager:

"These two cranes are the first RTGs at Laem Chabang to run entirely on an electric system instead of a hydraulic system. This allows them to operate more efficiently and economically because without any hydraulic components they will consume less energy. Also, a key factor to consider when choosing new equipment is the maintenance cost, and the cost for these RTGs is significantly lower than that for the cranes we already have in use here.

"The RTGs' ability to stack containers up to 6+1 high will allow us to optimize our cargo volumes as well as allow us to use our yard space more effectively," Sukthida continued. "We are very confident that our yard operations will now flow quicker and more efficiently, which ultimately can only benefit our customers.

"The introduction of electronic gantry cranes has boosted our global presence in the RTG market as more and more customers look for environmentally-friendly equipment that also offers low operational costs with a decent after-sales support service. Indeed we are particularly proud that by using fewer mechanical components, our RTGs are less susceptible to mechanical failures and can operate for up to 1,000 hours before requiring any servicing at all – a service interval that is currently unmatched by other rival brands.

"Yet despite requiring less maintenance, the demand for our services looks set to increase as customers continue to outsource their maintenance activities. Furthermore the growing volume of containers passing through the world's ports is also encouraging for the simple reason that the more equipment is being used the more servicing and spare parts it will require.

"Our sales in the Asia region have been particularly strong this year, with a number of large orders coming from India and China. Recognizing Asia as the fastest growing market we have now also launched an assembly unit in Shanghai to meet the increasing demands of this region.

"ESCO's decision to purchase Kalmar RTGs can only encourage this success and fuel recent figures which reveal that every fourth container or trailer transfer that takes place at terminals around the world is handled by a Kalmar machine."

Established in 1990 as one of the private sector terminal operators at Thailand's busy Laem Chabang deep sea port, ESCO operates the B3 terminal, is a major shareholder in the port's B1 terminal and also operates an Inland Container Depot (ICD) in Lad Krabang province, Thailand.

Importantly this union between ESCO and Kalmar looks set to benefit not only the two companies involved, but also the many shippers who choose to send their containers through the ESCO terminal at Laemchabang, for whom time really is money.

Virginia Port saves time and money with innovative use of Kalmar terminal tractors

2,200 gallon (8328 liters) fuel tank added to Kalmar chassis

Frank Bozza, lead mechanic with Virginia International Terminals, appreciates the ease of maintenance and reliability of the Kalmar terminal tractors used by the operation.

As one of the largest port operations in the country, Virginia International Terminals, Inc. (VIT) has many unique challenges and needs. One of the challenges is that their tall straddle carriers must be fueled regularly in order to operate.

Because of the straddle carrier height, the fueling point is set high requiring someone to climb on top of the fuel truck to deliver the fuel. The problem with using a conventional fuel truck is that it takes two people to complete the operation. One person must obtain the readings from the fuel tank and another person must go around the truck and perform the fueling operation. Also, it is difficult for operators to exit a conventional truck.

A pair of Kalmar terminal tractors has nicely solved the problem. Only one person is needed for the refueling; which saves time, money and helps increase productivity.

According to Harry Brittingham, equipment systems specialist at VIT, "We use two Kalmar terminal tractors for our Norfolk International Terminal straddle carrier refueling operation. And, as far as we know, this is not being done this way anywhere else."

"We specified our Kalmar trucks with an extended wheelbase and then we placed a 2,200 gallon fuel tank on the chassis. We also placed a fuel management system on the truck to collect data points and mileage that are downloaded to a maintenance system," he explained.

"The rear door of the cab and pivoting seat allows the operator to step out of the cab and proceed to the top of the fuel tank and easily refuel the straddle carrier without setting foot on the ground. This saves a lot of time and makes it convenient for the operator. Also, there is ample room on the cab to mount the fuel monitor system," Mr. Brittingham noted.

"Other things I like about Kalmar terminal tractors are their reliability and the fact that we can customize them at minimal cost."

VIT ranks among the most sophisticated terminals in the world. Established in 1982 as a result of the movement towards unification of the Ports of Hampton Roads, the company has grown into a major leader in the Hampton Roads, Va. area.

A uniquely outfitted Kalmar terminal tractor has been turned into a fuel truck and stands ready to refuel a straddle carrier at Norfolk International Terminals in Virginia. Harry Brittingham, equipment systems specialist at Virginia International Terminals, chats with Welder Tony Lunday, left, and M. Saclayan, fueler.

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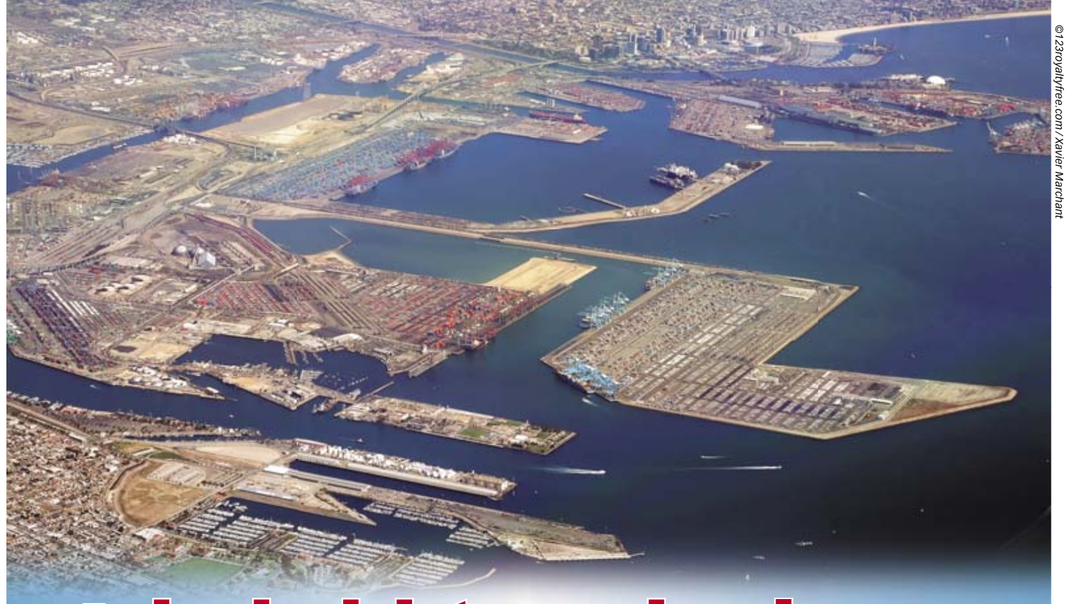


A hybrid terminal tractor for US West coast ports

Kalmar will contribute to a project that aims at reducing pollution in ports by integrating three of its terminal tractors with hybrid technology.

The two-year project will be undertaken in cooperation with the West Coast Collaborative of the US Environmental Protection Agency, and the ports of Los Angeles and Long Beach, where the terminal tractors will be operated and tested for six months. The green hybrid equipment is expected to reduce air emissions by 93 percent, which equates to 19 tons of nitrogen oxide and 200 pounds of particulate matter.

Kalmar's role in the US$1.2 million venture is to help with the selection of the hybrid system and to carry out the research and development associated with integrating the new system into the machines. The hybrid units will use either a hybrid-electric system to combine the cleanest available diesel engine technology with an electric motor, or a hybrid-hydraulic system that combines the cleanest available diesel engine technology with components that use hydraulic fluid compression to store energy.

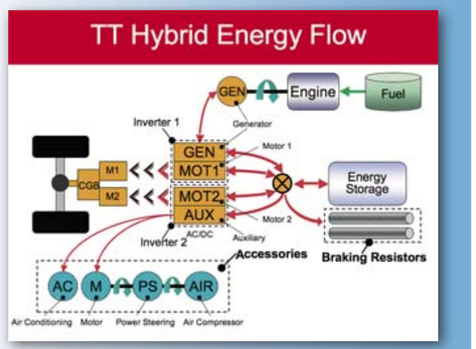
According to Stefan Johansson, Vice President of Trailer Handling Product Development, many port and distribution customers have recently shown interest in combining terminal tractors with a hybrid engine. He explains:

"The new technology helps reduce fuel consumption, exhaust emissions and maintenance intervals. Strategically, it's the right way to go. In the US, fuel is relatively cheap, but most people believe the cost will rise, therefore increasing the need and urgency for alternative methods."

The hybrid technology is expected to reduce or eliminate emissions during idling, which can represent more than 50 percent of the terminal tractor duty cycle. Mr Johansson adds:

"As it conserves the energy necessary for breaking, the hybrid system is ideal for a machine like the terminal tractor, which operates in a continuous stop-and-go fashion."

Another advantage of the hybrid technology is that it allows customers to keep their existing operations and maintenance infrastructure. The system runs with a diesel engine so the need for another type of fueling station is unnecessary.



Kalmar can today offer customers a range of environmentally friendly solutions for container handling. These include:

- Zero emission and all-electric E-One RTG
- All-electric straddle carriers, Edrive®
- Electrical and LPG-run forklift trucks between 5 and 9 tonnes
- Terminal tractors that run on CNG, LNG and LPG

Pat Lemons, Chief Safety Officer and Senior Vice President of Operations for Yellow Transportation received the keys to the unit from Leif Wallin, President of Kalmar in North America.

Kalmar builds its 40,000th terminal tractor in the US

Orders for terminal tractors from Kalmar's terminal tractor facility in Ottawa, Kansas continue to be strong as the 40,000th Ottawa-Kalmar unit rolled off the assembly line in June 2006.

The terminal tractor was sold to Yellow Transportation of U.S.-based YRC Worldwide and is one unit in a package of over 75 units purchased from Kalmar this year.

Less than two years ago, the Ottawa factory produced its 35,000th unit, again reinforcing the popularity of the machine and the development of the market to include more rental and fleet customers. The first terminal tractor was built in Ottawa, Kansas in 1958. It took 41 years to build the first 25,000 units and only seven years to build the next 15,000 units.

Kalmar is the market leader in terminal tractor sales worldwide, offering its customers the most comprehensive range of models for heavy industrial applications as well as ports and terminal operations.

Ottawa, Kansas is today Kalmar's center for excellence in the global development and coordination of Kalmar's 4x2 terminal tractors with manufacturing in U.S., Europe and Asia.

Expansion programme

To improve its product and service offering to customers in the U.S., the Ottawa facility began an extensive expansion programme in early 2005 to make room for the assembly of the Kalmar medium-duty (9–18 ton) forklift. The first forklift was assembled in April 2005. In addition, the parts distribution centre is being expanded to house additional staff and stock more inventory in order to provide the best support to dealers and customers.

In just over four years, the F-series has become the world's best-selling reachstacker

The total global market for reachstackers is expected to continue to grow due to an increase in demand from smaller port and terminal customers. Experts continue to predict a growth in container handling as many transoceanic ports in Europe, the USA and Asia become increasingly congested.

This expansion also places strain and new demands on the infrastructure from port to final destination with more and more freight being transported along roads, railways, rivers and coastlines. Several countries are trying out new solutions, often involving rivers and railways.

"The reachstacker is a flexible, cost-effective solution for quickly establishing or expanding loading terminals when streamlining infrastructure. Reachstackers will continue to enjoy solid growth for many years to come," says Per Rosengren, product line manager for reachstackers.

Advanced product development contributes to success

"When we began developing the platform for the new F generation we thought outside the box," says Kenneth Helgesson, head of development for heavy trucks.

All vital elements such as the boom and chassis underwent FEM (Finite Element Measurement) calculation during the development process, thus eliminating many teething problems at the drawing board stage. Thanks to comprehensive subsequent testing in live operation, the machine was assured uncommonly high reliability from the very first delivery.

Because the reachstacker has a redundant power and control system, exceptional dependability has been achieved. The sophisticated new hydraulic system ensures operational reliability and greater maneuverability, which in turn improves ergonomic conditions for the operator.

Ongoing product development

Ongoing product development means that any technical innovations can be introduced as they become ready for production. For instance, Kalmar has introduced RMI (Remote Machine Interface) for remote monitoring of the vehicle's operating status. RMI makes it easier to discover abnormal operating conditions dramatically increasing the potential to take remedial measures at an early stage, which can save the owner large sums.

"And of course it's vital that we can fully support the machine at the customer's site. The parts required for service are delivered in batches. This means that servicing times have now been reduced by roughly 50 percent compared to previous models. Moreover, the amount of hydraulic oil replaced in each service has decreased dramatically thanks to separate systems for brakes and load handling, thus reducing environmental impact. The reduced servicing requirement and short workshop time are major factors in the machine's popularity.

Expanding production capabilities

Kalmar's new factory in Shanghai will help to relieve the company's resources in Europe with the capacity to manufacture reachstackers and empty container handlers for the Asian market.

Excellent service

"The 1,000th reachstacker from Kalmar's F-series was delivered to German Gernsheimer Umschlags- und Terminalbetriebsgesellschaft mbH & Co. KG. "We have chosen Kalmar for its good technology, low fuel consumption of the Volvo engines and, most importantly, its excellent service," says Velimir Krušlin, Managing Director Director, GUT mbH & Co. KG.

Founded in 1993, Gernsheimer Umschlags- und Terminalbetriebsgesellschaft (GUT mbH & Co. KG) in Gernsheim am Rhein, 30 km south of Frankfurt, currently employs 20 people and serves the two major economic areas of Rhine-Main and Rhine-Neckar. The company began in an old, unused port area and has since grown its port business at terrific speed. From 5,000 TEU in 1994, the company's transshipments increased to 40,000 TEU in ten years. The expected figure for 2006 is 58,000 TEU, and the trend continues to rise.

The state-of-the-art terminal is currently able to handle up to 17.40-metre ships across a 155-metre quay at an hourly capacity of 20 TEU. Transshipment at the waterfront is handled by a double girder-level lifting crane fitted with a Bromma spreader. Starting mid-October, three Kalmar reachstackers will be operating on the land side.

Director Velimir Krušlin comments on the company's core business:

"We are a full-service provider with a container packing station, stowage and modern transshipment operation."

A specially designed EDP program ensures optimum container utilization and guarantees optimum stowage at loading. A comprehensive documentation of the stowage and loading process is a part of the operator's quality assurance.

Besides container loading and unloading, the company offers shipping to Rotterdam and Antwerp. Four its own vessels-capacities between 200 and 334 TEU-sail on Tuesdays and Fridays respectively. The company also owns twenty freight trains and can serve customers within a 70 km radius. The 24,000 square meter area can store up to 1,900 twenty foot containers.

A transshipment crane operates at the quay and two reachstackers were recently introduced to help with container stacking. Since 2005, Kalmar has been the sole supplier. The new reachstacker models are CVS F365.5 and DRS 45027 S 5. Another Kalmar reachstacker, DRF 450 60 S5, will be delivered in October 2006. So it will continue to be only Kalmar!

The container stowage employs two 16-tonne DCD 160-12 Kalmar forklifts

The following can be applied to heavy container transshipment machinery: "Machines are as good as their maintenance experts." And this company has found the right partner. Each piece of equipment works for approximately 2,000 hours a year. A full-service contract, which covers all work and parts, including tires, ensures maximum availability. This is very important for a smaller terminal that has little access to stand-by machines.

For a terminal that handles everything from pulp, paper, piece goods and heavy freight of up to 600 tonnes a universal solution is required. Enter Kalmar's unique range of counter balance equipment. BLG Logistic Group AG & Co KG has assigned 85 heavy forklift trucks, 70 of which are Kalmar machines, to handle the transhipment of around 3 million tonnes of various goods each year at the Bremen terminal in Germany. The terminal's continuous demand for lift trucks is evident as the amount of tonnes keeps encreasing.

A monthly average of 60 shipments requires a comprehensive fleet of 85 forklift trucks, 70 of which are manufactured by Kalmar.

BLG Cargo Logistics handles a variety of cargo with a large lift truck fleet

The BLG Logistic Group, comprised of subsidiaries Logistics Container, Logistics Automobile and Logistics Contract, reached a turnover in 2004 of 530 million Euro with an employment of over 4,600.

BLG Contract Logistics' workforce is powered by 230 employees and has been directed for several years by Reinhard Raab with Manfred Nesemann in charge of Terminal Operations. Nesemann says the Kalmar lift trucks are the backbone of the operation, working each year up to 3,000 hours in timber transfer and up to 2,000 hours in general round-the-clock deployment. He explains why he chose Kalmar as his main equipment supplier:

"The (Kalmar) machines cope with this uncomplaining; they work fast and noiselessly; we have a full-service contract which relieves us of all service and repair work. Kalmar takes care of their availability performance in an exemplary manner. Despite the high number of machines, we calculate closely and cannot afford spare machines. We require at least 95 percent availability and Kalmar has stuck to that without any problems."

The varying dimensions and weights of the consignments require a universal transshipment machine – the classic front-lift truck. It is fast and flexible, and with appropriate attachments, fully adjustable to any types of goods. Nesemann claims that for years its heavy-duty design, high performance values, fast operation and good driver satisfaction have tipped the scale in favour of the red-and-white "Swedish truck" from Kalmar, the leading supplier of heavy front-lift trucks.

The DC52-1200 is equipped with a magnet traverse for handling steel plates with a weight of 9 tons and a thickness of 19 mm.

A major product the terminal handles is building timber to North America, which accounts for around 1.3m tonnes a year and is increasing as European wood products are required for the reconstruction of New Orleans destroyed by hurricane Katrina and for the booming construction industry across the nation. The terminal also handles 800,000 tonnes steel pipes for pipeline projects in Russia, Norway, the Middle East, the U.S.

Around-the-clock deployment requires outstanding lift truck quality

Eleven 6-tonne, four 8-tonne, 39 9-tonne, six 12-tonne, 14 16-tonne, one 37-tonne and one 52-tonne machines of the DCD and DCE ranges are in use. All lift trucks are fitted with a quick replacement system for forks, paper roll clamps and coil rams for the transhipment of chipboards, pulp and paper rolls up to 4 tonnes. Special forks are used for the transfer of chipboards.

Manfred Nesemann speaks about the 85 front-lift trucks required to clear about 60 ships on a monthly basis:

"Of course, not all of them are in regular deployment, but we must be prepared for extreme fluctuations. The exact schedules of ships, with capacities up to 38,500 tonnes and maximum 10.5-metre draughts, are fixed just two days in advance, which requires a lot of planning and, given the intense competition among terminals, waits at the quay wall may be crucial for the next call."

Front-lift trucks are employed to receive the goods at the quay wall, to transport them to outdoor storage areas and the various sheds for paper, pulp, timber, etc., with a total area of 220,000 m², of which 28,000 m² belongs to the London Metal Exchange. The lift trucks are also used to unload road trucks and trains. Most of the wood products must be handled repeatedly. First, the packages sent from Germany, Austria and other countries are unloaded and put into transit storage in outdoor areas or sheds – this means covering distances of over 100 metres with the lift trucks. After storage, building products must be brought to the quay in batches. This is done with lift trucks as well as terminal tractors or roll trailers.

The load-carrying capacity of the Kalmar lift trucks ranges from 6 to 52 tonnes. Some of the trucks have been specified for special assignments; Mr. Nesemann has done this in close cooperation with Kalmar. For instance, the 52-tonne DC 52-1200 and the 37-tonne DB 37-1200, equipped with a magnetic traverse, are specified for 9-tonne steel sheets with a thickness of 19 mm. A rail shuttle with 26 wagons designed to transport steel sheets must be loaded in one shift because the wagons are scarce and the rail shuttles have a tight schedule. The magnetic traverse was equipped with a separate motor/generator and it is radio controlled from the lift truck cabin.

Wire rod is another major article for transhipment. It is primarily used in tyre manufacturing and it is so sensitive that the coil rams of the front-lift trucks must be protected with cardboard sleeves to pick up the cargo. Curved forks up to 350 mm wide were also developed to avoid damage to the bottom layers of wood when handling forestry products, such as chipboards and building timber. The cooperation of port operators, drivers and the supplier ensures permanent improvements of organization and technology. The next step is the introduction of digital professional mobile radio for optimum control of the lift trucks.

Customer requirements create the opportunity for new technical solutions

Oliver Kah, Senior Sales Manager at Kalmar Industrial Handling, is permanently located at the Bremen terminal because the technology requirements are continuously being refined in close dialogue with the customer. Currently, all lift trucks with torque converter transmission are equipped with self-regenerating particle filters for improved function in both indoor and outdoor operations. The fork lift trucks deployed in timber transfer are being fitted with 300 mm higher cabins to improve visibility. Since 2006, the machines have operated with the technology to centrally lubricate the mast, leading axle and core points. After several attempts, the lever control of the lifting gear and attachment has proven its worth and is now provided as a standard feature.

Silent and robust cabins are also important as ports are noisy places. Manfred Nesemann requires that all front lift trucks come equipped with the extra spacious, silent and air-conditioned Spirit Delta cabin – an exclusive feature of Kalmar's lift trucks. Nesemann comments:

"Driver satisfaction is very important to me. Hectic year-round work and sometimes poor visibility in the sheds or at the quay when the weather is bad count as the norm. If you are sitting comfortably with a cool head and see the load through large panorama windows, you simply work better and handle the machine more carefully."

Kalmar relies on proven components such as Volvo engines, gears from Dana and drive shafts from Axletech to keep its lift trucks in good shape to meet the particularly high requirements of port-working equipment. For instance, the lift trucks are regularly driven at the maximum speed and must pick up loads quickly. The electronic inching designed for the medium range fork lift with a capacity of up to 18 tonnes does a good job to efficiently pick or place these loads.

Nesemann believes that the Kalmar machines in his lift truck fleet do well to meet their lifetime potential. He says:

"They remain in the fleet for four to six years; then they are replaced by new machines. And everything indicates that Kalmar will take the lion's share of the millions of tons of heavy transshipments even in the years to come."

The DCD/DCE 90-6 forklift truck loading a ship with chipboard packages, each of which weighs approximately 2.4 tons.

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Keeping the water clean

France takes the lead in prosecuting ship owners and masters for water pollution violations in the country's coastal waters raising questions about jurisdiction.

The Fast Independence

Picture by Eric Houri.

On October 4, 2006, the owner and master of the vessel named Fast Independence was ordered to pay €500,000 for illegally discharging oil sludge off the French Atlantic coast. The district court of Brest, France sited the vessel for trailing an 18 kilometer-long slick of discoloured water within France's Exclusive Economic Zone (EEZ), an area covering 200 nautical miles. The EEZ falls under the MARPOL 73/78 provision, the International Maritime Organisation's Convention for the Prevention of Pollution from Ships.

The violation occurred May 22, 2005 as the ship was travelling from Rotterdam to Beirut with a cargo of construction equipment. The Fast Independence, a Maltese-flagged 9,983 gross tonne freighter, was escorted into the port of Brest where it underwent needed repairs. Its owners were ordered to pay a €400,000 bond as a condition of its release and return for trial.

On September 29, 2006, a French navy aircraft spotted the vessel named Al Farabi, a Moroccan-flagged chemical tanker, trailing a 19 kilometre-long and 50 metre-wide oil slick within the EEZ. It was escorted into Brest by a French navy patrol vessel where it was accused of illicit pollution and allowed to leave only after paying a €250,000 bond. The captain will appear before the court in April 2007.

These cases raise an important and controversial international jurisdiction issue. The United Nations Convention on the Law of the Sea (UNCLOS) also grants the ship's flag state the right to try the master and owner accused of pollution no matter where the offence was committed. Raising the question as to which entity should be responsible for prosecuting pollution violations.

France revolutionizes the anti-pollution court

The upcoming Al Farabi hearing and the Fast Independence case are not isolated incidents. The increasing severity of the court's fines continues to hit headlines. Brest district court chief prosecutor Mr. Xavier Tarabeux said that as of October 2006, the court has accepted 37 cases of illicit pollution since the French government granted it special maritime pollution jurisdiction four years ago. The court, a part of France's independent judicial system, has three judges trained in maritime matters and a president and chief prosecutor specialised in maritime law.

Mr Tarabeux, appointed chief prosecutor in June 2005, said the French government modified the country's environmental code to create special jurisdiction for maritime pollution to create a "stable and dissuasive case law" in this field. In May 2002, the courts at Brest, Le Havre, Marseilles and three French island territories were given these powers.

Most offences occur off the French Atlantic seaboard between Mont St. Michel in the northeast and Bayonne near the southern border. This is also the area protected by the Brest court. French navy and customs aircraft survey the area daily snapping photographs of ships trailing suspicious slick. They also question the master to see if the vessel is experiencing difficulty. The photographs are analysed by experts before examination by the prosecutor.

Steeper fines on the rise

The Brest court dealt with three cases in 2003, 24 in 2004, eight in 2005 and two, including the Al Farabi case, as of October 2006. The main violators involved are Panama (five cases), Malta and Italy (four cases each), and Greece and the Bahamas (three cases each). Cyprus, Saint Vincent and Grenadines, the Isle of Man, and France each have two cases.

Mr. Tarabeux agreed that the trend is moving towards harsher penalties. "Fines depend on the objective seriousness of the case, the extent of the pollution and the circumstances surrounding the incident," he said.

The biggest violation to date occurred on September 20, 2005 when the vessel named Maersk Barcelona, a 33,400 gross tonne container carrier, was caught trailing a 61 kilometer-long and 100 metre-wide oil slick. The owner and master of the ship was ordered to pay an €800,000 fine, the biggest penalty to date. The owner, who is required to pay 90 percent of the fine, and the master have lodged an appeal. Mr. Tarabeux said 90 percent of decisions are appealed but in most cases the original judgment is upheld.

French transport minister Dominique Perben.

Photo: Jeff Apter

Questioning jurisdiction

There is also a growing trend to defend the right of the ship's flag state to prosecute the master and owner by invoking UNCLOS jurisdiction. This legislation is also known as the Montego Bay Convention, named after the Jamaican city where it was opened for signatures in December 1982. It was put into force on November 16, 1994. The Brest court rejected a defence request to transfer the Maersk Barcelona to the Bahamas arguing that flag state was accusing the vessel of the same crime.

In the case of the Fast Independence, an international dispute involving the legislation of the Montego Bay Convention has broken out because Malta is claiming precedence over France in prosecuting the case. The Brest court, however, questioned why the Malta flag authorities had not mentioned the Montego Bay Contention in previous pollution cases in French waters.

Malta is following the example of the Norway-owned and registered vessel named Trans Arctic, a 6,810 gross tonne oil and chemical tanker, that France accused of a pollution violation in March 2005.

Norway argued that Article 228 of the Montego Bay Convention gave the country the right as the vessel's flag state to prosecute the case and that France, as the accusing state, must suspend proceedings. Consequently, in December 2005, a Norwegian court fined the Trans Arctic's owner €360,000, a sum in line with the Brest court's decisions. However, the French court still insists that, unless it chooses to transfer a case, it has jurisdiction.

Picture by Eric Houri.

Environmentalist protest fails to stop Blue Lady demolition

CITU, one of India's largest trade union bodies, Greenpeace and the Ban Asbestos Network have failed in their major campaign to prevent the 46,000 dwt Blue Lady from being dismantled at the Alang ship-breaking yard in Gujarat, North West India. According to Greenpeace, the Star Cruises-owned Blue Lady contains more than 900 tons of asbestos, PCBs, heavy metals and other cancerous substances.

The campaigners say that scrapping the asbestos-ridden ocean liner – formerly France's flagship, France, the last purpose-built ocean liner, and then SS Norway – would be harmful to yard workers and not in compliance with the Basle Convention's anti-pollution requirements. The daily newspaper Indian Express, quoting an expert's report, stated that one worker in six of the yard's 5,000 employees has some form of asbestos-related illness. But the Indian Supreme Court finally allowed the vessel, which was allowed to enter Indian territorial waters at the end of June, to be broken up as being in conformity with the regulations.

Unlike France's Clemenceau warship, which contains 70 tons of dangerous substances and which was due to be dismantled at the same yard but was earlier this year compelled to return to France, the Blue Lady was not properly inspected before quitting Bremerhaven in May before being anchored in Malaysia, the campaigners said. A further glimmer of hope emerged when Rashid Al Noori, a Dubai businessman, showed interest in taking over the 46-year-old ship as a floating hotel. But Haryana Shipbreakers, the purchaser who paid $10 million for the vessel and expects to get $30 million for her in scrap, won the day.

Government "remains firm"

France's belief that it has jurisdiction over its coastal waters was strengthened by French transport minister Dominique Perben. He inspired a 2004 law to raise the maximum penalties for illicit pollution from €600,000 to €1 million, up to the equivalent of the value of the ship, or four times the value of its cargo. Four to 10 years imprisonment, but not for foreign masters, can also be sentenced.

Recently, Mr. Perben confirmed that his government will "remain firm" in preventing the transfer of pollution cases away from France. Having already started proceedings, in June 2006 the Brest court stated that Trans Arctic's Norwegian fine was "administrative" and not "penal" and fined its owner Euro Trans and its master €400,000, with €350,000 suspended. The Norwegian owner has lodged an appeal to a higher French court.

Xavier Tarabeux believes the court's action is having a dissuasive effect on ships' voluntary pollution with the number of cases continuing to fall. The Al Farabi incident is the first since that of the Ocean Eagle in October 2005. But it cannot be excluded that some instances of voluntary pollution take place at night to avoid detection.