WorldCargo news
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Automation for Morocco and Virginia

This month, there have been two significant developments in port automation. APM Terminals has announced orders for 12 remote-controlled STS cranes and 32 ASCs for its new MedPort Tangier facility, now under construction.

The terminal will have an eventual capacity of 5M TEU, with up to 2 km of quay, designed to serve ULCVs up to 20,000 TEU.

"Our goal is to use proven technology to create high productivity for our clients on one of the world's most strategically important trade lanes on the Strait of Gibraltar," stated Dennis Olesen, managing director of APM Terminals MedPort Tangier.

The Künz ASCs use rounded girders to lower weight and wind/wheel loads

The STS cranes will be delivered by ZPMC at the end of 2017, and will feature a second trolley, OCR technology, and "full automation", with remote crane operators safely located in an office building near the quay.

Also due for delivery at the end of 2017, the 32 ASCs will be built by Austria-based Künz and will be deployed in 16 container yard blocks – each serviced by two ASCs.

The project will be Künz's third ASC terminal (after CTA in Hamburg and MVII in Rotterdam) and the first to feature its new generation ASC, where the main beams are designed with a rounded girder. "This aerodynamic main girder design results in a number of advantages for the operator. A lower wind attack area requires less drive power, which leads to lower energy consumption, and reduces dynamic forces on drive wheels, crane tracks and civil works" Künz said.

APMT confirmed to *WorldCargo News* that both the STS cranes and ASCs will have crane control and automation systems from Siemens. It also transpires that one of the new ZPMC cranes at ECT in Rotterdam was delivered with a Siemens full remote control system.

In the US, Konecranes has disclosed that it has received a "Notice of Intent to Award Contracts" from the Virginia Port Authority. The award covers the 86 ASCs reported last month (*WorldCargo News*, September 2016, p1), of which 60 are for the redevelopment of Norfolk International Terminals (NIT), and 26 are for the expansion of Virginia International Gateway (VIG). Industry sources indicate that the drives and automation part of the contract will go to TMEIC.

Valued at over €200M, "this will be the largest deal in the history of Konecranes" the company stated.

Maersk changes its course

The decision to split the energy and transport businesses of the AP Møller-Maersk Group into two – with the new AP Møller-Maersk A/S company combining the container shipping, port operating/management and logistics activities – is resulting in a series of strategic changes as each looks for revenue growth and sustainable levels of profitability.

Although details of the new business plan have not been revealed, comments made by several executives at AP Møller-Maersk A/S suggest that in the liner shipping division, the company's immediate future will be driven more by acquisitions than ordering new ships. Another key part of the strategy is an increased focus on digitalised and tailor-made customer solutions, as the group seeks a closer relationship with its clients and attempts to raise freight rates.

Michael Pram Rasmussen, chairman of the group, has said that the company was "done with ordering new steel" and that, if there was a need to grow, "it should be through acquisitions, so that we don't flood the market with more ships". In his view, the growth prospects for global trade do not support ordering new ships.

Since 2008, Maersk has operated all its business units on the 'arm's length' principle, including positioning APM Terminals as an independent terminal operator. The decision to manage and operate the business activities of its Transport and Logistics Group "in a more integrated manner", presents an important departure, and reflects Maersk's desire to fundamentally change its transport product offering. Like other lines, Maersk sees the future in "digital solutions" and a new product offering "based on the combined capabilities of Maersk Line, APM Terminals and Damco".

Maersk, however, does not want to go into the digital world without scale, and is keen to participate in what it expects to be a period of transition and consolidation in the liner shipping market, by using its fiscal strength to purchase companies that would either improve its position in some of its key markets and/or help to plug gaps where it has some weaknesses. The past few months have seen the Danish giant linked with several carriers, including Hanjin Shipping Co and Hyundai Merchant Marine, which has signed a Memorandum of Understanding to join the 2M alliance with MSC, K Line and possibly even Zim.

Emerson reefer deals

SEATRADE ORANGE making its first call at Antwerp this month

Emerson Climate Solutions has won two new contracts in the reefer monitoring market, an area where more carriers are expected to make major investments soon.

Seatrade, the world's largest reefer vessel operator, has outfitted its first newbuild container vessels on order for its specialised container service, with the Refcon system for power-line reefer monitoring. In addition, the 6,000 new reefers that Seatrade is leasing will be fitted with Emerson's RMM power-line remote monitoring modem.

In an order worth over US$55M, 4,000 of the new containers will be Star Cool Integrated reefers from Maersk Container Industry (MCI). "Looking to source the best-performing reefer, Seatrade live-tested every relevant refrigeration unit option before deciding on Star Cool Integrated," said MCI. "Closely monitored shipments were carried out with chilled banana loads from Ecuador to Germany, during which energy consumption and cargo condition were measured. The results confirmed Star Cool's higher performance, lower operating costs and CO_2 emission levels."

The other contract for Emerson is with Africa Express Line (AEL), which is installing its RMM+ modems, equipped with power-line and GPRS/UMTS/GPS communications, on 3,000 containers. AEL has recently time chartered SEATRADE ORANGE, the first of the Seatrade newbuilds, which operates using a combination of RMM, RMM+ modems and the Refcon 6 system.

Importantly, both contracts include Emerson's ProAct Transport software, which will be delivered on an SaaS platform, allowing Seatrade and AEL to migrate to a centralised reefer monitoring system (see pages 29-32).

Getting up to speed

Speaking at the TOC Americas conference in Cancun this month, Anthony Otto, president of Long Beach Container Terminal (LBCT), said the new automated terminal has made good progress since handling its first vessel in April this year, but he called on software suppliers to lift their game if automated terminals are to achieve their full potential.

With electric ASCs, battery powered AGVs and shore power at every berth, LBCT's environmental performance is "light years ahead of anyone else in the world" and, in terms of its stevedoring productivity, it is as productive as a manual terminal on the US west coast, said Otto.

However, concerning software suppliers, he said the industry should not to be satisfied with the performance automated terminals are delivering today, adding that a US$2B project like LBCT will not achieve ROI operating at the same pace as a manned operation. The industry needs "more skin in the game from software suppliers to push the limits of productivity", he added

At a highly automated terminal like LBCT, performance is largely controlled by software, and LBCT uses the Navis N4 3.0 TOS and the TEAMS equipment control software (ECS) from TBA, integrated with ABB's crane control system.

LBCT wants to do significantly better than the 25-30 moves per hour that manned terminals typically achieve today – 14,000+ TEU vessels demand sustained productivity levels never recorded in the US, added Otto.

IN THIS ISSUE

AUCOS gets rolling

AUCOS is the automatic tractor/trailer kingpin connection system developed and patented by Rüdiger Metternich, who is MD of Germany's RMM Metternich Mechatronik GmbH.

AUCOS enables a fifth-wheel tractor to hook up a trailer automatically, by connecting the tractor's compressed air and electrical supply to the trailer through the kingpin assembly, eliminating the need for a tractor driver to get in and out of the cab to 'hook up' hoses and cables.

Long Beach Container Terminal (LBCT) opted to install AUCOS on the terminal tractors at its new automated terminal. These are manned machines which transfer containers between the main yard and the intermodal cranes.

Speaking to *WorldCargo News*, LBCT president Anthony Otto endorsed AUCOS, saying the system is very fast and has improved both productivity and safety considerably. LBCT has also saved a significant amount of money on insurance costs, as the drivers not having to leave the cab lowers its risk profile for accident claims.

AUCOS is also being installed at GCT's Deltaport terminal in Vancouver, where it will be used with new Künz widespan cranes currently being installed, which will be operated by remote control.

AUCOS can be installed on any brand of tractor, usually without modifications, depending on the frame design – for Kalmar's new T2 tractor, one small hole has to be drilled in the bottom plate. At LBCT, the trailers (bomb carts) do not require brake lights, but the units for GCT Deltaport were specified for the complete system, including air, power and data connection.

For the Americas, RMM chose Magnum Trailer and Equipment Inc. from Abbotsford, Canada, as its strategic partner for trailers.

AUCOS enables the air brakes to be connected automatically on LBCT's tractors

Portek and Vahle link up in South East Asia

Singapore-based port engineering and operating company, Portek Systems & Equipment Pte Ltd, part of Mitsui & Co of Japan, has signed an agreement with Germany's Paul Vahle GmbH & Co KG, aimed at leveraging their knowhow and expertise to market Vahle products and systems in South East Asia.

Vahle is a world leader in the design, engineering, manufacturing and production of mobile electrification systems, with many applications in the container handling sector and general port industry.

Portek is now the sole representative of Vahle port technology products and systems for South East Asia, and for other regions, agreed case by case, to market, install, commission and provide after-sales services for mobile electrification projects in the container handling industry.

Tok Soon Chong, Portek's CEO, said: "We believe that this collaboration will deepen our relationship and also allow us to expand our crane electrification activities rapidly in this region."

Portek is an established port operator in medium-sized ports, with operations in several locations in Africa, Indonesia, Latvia and Malta. It also provides turnkey port engineering services to the global port industry and offers a wide spectrum of port equipment and comprehensive after-market port equipment engineering.

One area where the two companies could soon be working together is converting E-RTGs to remote control. A number of leading terminal operators in Asia are understood to be considering adding positioning and data communication systems to E-RTGs, before moving to remote-controlled machines.

Künz on the river

Nedcargo International has placed an order for a new Künz rail-mounted gantry crane for its inland terminal at Alphen aan den Rijn in the Netherlands. It will replace one of two existing cranes when it starts operating in September 2017.

Nedcargo is the parent company of Alpherium, and handles approximately 170,000 TEU per year at the terminal. The new crane will have a rail span of 60m, two 16m cantilevers, and a lift height sufficient to stack high cube containers up to four-high (1-over-4).

The contract was signed between Hans Künz GmbH and Nedcargo International at the Logistics & Distribution exhibition held in Brussels last month. Bert van Grieken, multimodal director at Nedcargo, said: "The new crane is faster, more silent, stronger, more energy efficient, and requires less maintenance than the existing cranes. Thanks to [its] higher handling speed, combined with greater reliability, we are increasing the capacity of the terminal, enabling us to handle more containers. We will also be making an important step in reducing CO_2 emissions by making less use of heavy terminal equipment. Instead, we will be handling more moves with a crane that will be powered by green electricity."

Thomas Zeh, sales manager Benelux at Künz, added: "In the near future, we expect that inland terminals in Benelux will take profit from ports congestion and container volume growth, mainly due to Maasvlakte II, another terminal operating with 48 Künz automated stacking cranes."

Vincent Pelletier, area sales manager at Künz, added: "We are delighted to deliver this new crane to Nedcargo. It features the Künz patented directional travelling unit for longer rail and wheel lifetime, as well as the aerodynamic single girder for less wind resistance and lower operation costs. After van Berkel in Veghel, Nedcargo is the second company in the Netherlands that puts confidence in Künz and its innovative crane design".

Fabrisem fronting up

Spain-based port and industrial trailer specialist Fabrisem SA has reported growing success with its range of port and heavy industrial trailers. In particular, the company noted that just 11 years after introducing disc brakes in 2005, 99% of its trailer output is equipped with them.

The reasons, said the company's product manager Carlos Ruiz, are outstanding performance and very low service and maintenance costs compared to traditional drum brakes, which still feature widely in off-road trailer markets. "Changing air disc brake times typically takes just a quarter of the time need to change 'S' cam drum brake linings, and this means cost savings," he said.

All chassis are provided with a five-year warranty, "which speaks for itself", he added. Fabrisem can boast a number of bespoke orders where difficult operating conditions apply. For example, over the years, trailers with special steel have been applied to port and inland terminal operators in north-west Russia, where winter temperatures can fall as low as -50 degC. A new customer is pulp and paper manufacturer Ilim Group, which has facilities in the Russian Baltic and Arctic regions.

Ruiz accepted that producing trailers in a eurozone country is not easy, but said that Fabrisem, from the very beginning 20 years ago, decided there was no point trying to compete on price. Instead, it focused on mechanical strength, simple operation and lowest possible maintenance costs.

The result is a trailer that provides safety for stevedores and peace of mind for owners, with a fast return on their investment. "We manufacture robust, reliable trailers, designed and built to last," concluded Ruiz.

Disc brakes are now fitted almost universally by Fabrisem on its trailers

C.RO Ports contract scooped by Kalmar

Cargotec-owned Kalmar is to deliver 34 of its latest 'G' (Gloria) generation reach stackers to European ro-ro terminal operator C.RO Ports SA, part of Belgium-based CLdN/Cobelfret shipping and logistics group. The order was booked in September, and deliveries will be made between December 2016 and December 2017.

The new units will replace existing equipment, and support C.RO Ports SA's and CLdN RoRo SA's growth plans over the next five years, which include deploying increasingly larger vessels. The machines join a fleet that already contains 19 Kalmar reach stackers.

Of the 34 reach stackers, 19 will be equipped with K-Motion drive train technology and Kalmar's SmartFleet remote monitoring and reporting system. As previously reported, the Kalmar K-Motion drive train incorporates the Dana Rexroth hydro-mechanical variable transmission. This allows a much smaller engine to be used, reducing fuel consumption and emissions by up to 40%, with less noise and higher uptimes.

The product was officially launched at TOC Europe in 2015, and it is not known how long Kalmar has exclusivity from Dana Rexroth in the heavy lift truck world.

Bart Van der Cruysse, general manager at Kalmar Belgium, commented: "We are pleased to support our customer's growth plans with our Gloria reach stackers. Kalmar K-Motion technology will drive further efficiencies in their operations resulting in substantial fuel savings and increased productivity. With Kalmar SmartFleet reporting statistics based on key performance indicators, our customer will have a clear and accurate picture of what's really going on in their terminal."

Liftking to Mi-Jack

Manitex International, Inc. has sold the Liftking line of rough terrain and military forklifts to Lanco, a division of Illinois-based Mi-Jack Manufacturing for US$14M. After transaction costs, the deal yielded US$13.3M in net cash proceeds, which Manitex will use to pay down its North American bank debt.

Based near Toronto, Canada, Liftking has been operating since 1968, with over 8,000 machines in operation. Over the last 12 months, revenue from the Liftking line for Manitex was approximately US$18M, and EBITDA was US$2M. Manitex has booked a profit on the sale of Liftking, having acquired it in 2006 for US$7.1M.

David J. Langevin, chairman and CEO of Manitex, commented, "The divestiture of Liftking is another important step forward in our corporate programme to focus our resources on our higher margin core lifting businesses, and to reduce the company's indebtedness, which remain our top corporate priorities this year and heading into 2017. Liftking is a solid strategic fit with Mi-Jack, and this transaction should be of substantial benefit to both parties. We are deeply appreciative of the efforts of the entire Liftking team and are confident that Mi-Jack will be an excellent owner and operator of this business."

"We are very excited to add the Liftking rough terrain forklift and military line to our family of companies, and look forward to building on the efforts that the previous ownership incorporated in making them one of the leading rough terrain forklift and material handling manufacturers in North America " said Mike Lanigan, an executive at Lanco.

"Liftking has a well-established network of dealers and customers who have been very satisfied with the reliability and quality of the Liftking products," he added.

Terex Gottwald cranes for Ultramar

Terex Port Solutions (TPS) has reported two orders for Terex Gottwald G HMK 8410 mobile harbour cranes in the two-rope variant from Chilean customers, both connected with Ultramar SA. One has just been delivered to Terminal Puerto Arica SA (TPA), mainly for container handling. Shortly, it will be followed by an identical G HMK 8410 crane for Compañia Portuaria Mejillones SA in Puerto Angamos.

Both cranes offer heavy-duty lifting capacity curves with a maximum lifting capacity of 100t, an outreach of up to 58m and lifting speeds of 90 m/min. They are supplied with particularly high towers, including correspondingly higher boom pivot points and tower cabs, with a crane operator eye level of 38m. This gives crane operators an excellent view of the vessel and the work area and can (un)load post-NPX container vessels up to 19-wide. Thanks to their geometry, they can also safely serve vessels that, for example due to the high proportion of empty containers, lie particularly high in the water.

Diego Bulnes Valdéz, general manager at TPA, explained: "More and more vessels with up to eight [high] containers stacked on deck are arriving at our terminal in Arica. With the new crane, we can serve these vessels quickly and cost-effectively." The G HMK 8410 crane is the third Gottwald crane in Arica, following deliveries in 2006 of two previous generation HMK 300 Es.

Mejillones is also a returning customer, as it has operated a G HMK 8410 crane since 2010, as well as having a previous generation HMK 280 E. The new crane also has a twin-lift spreader able to lift 2 x 30t 20fts. It will also work with a RAM Revolver 4121 for tipping ores from bulk containers shipped to the port from near-by mines into the holds of bulk ships.

For service, TPS works closely with its Chilean sales partner, Comercial Fesanco SA. In addition, both the new cranes are fitted with the Terex Gottwald Remote Crane Access feature for use by the TPS service team.

Terex Gottwald Model 8 mobile harbour crane in the G HMK 8410 two-rope variant

Mantsinen wins £6M ABP order


A Mantsinen 200M HybriLift at work in Antwerp

Following one of the largest tenders of its type, Associated British Ports (ABP) has ordered five ropeless hydraulic boom/stick cranes purpose-built by Mantsinen for port operations.

Ordered through Finland-based Mantsinen's sole British Isles representative, Cooper Specialised Handling, the cranes will be operated at ABP's Ipswich, King's Lynn, Teignmouth, Garston and Swansea facilities. Among the five cranes will be a Mantsinen 200M HybriLift – the name for Mantsinen's hybrid drive, fitted as standard on most of its models.

The 200M is touted as the world's largest ropeless hydraulic crane, and it will be operated at the Port of Garston. The crane, with a self-weight of 280t, will be the first 200M to be delivered to the UK. Up to now, the biggest Mantsinen crane in the UK is the 160M HybriLift supplied by Cooper SH to Belfast Harbour earlier this year (*WorldCargo News*, May 2016, p11).

A 90M HybriLift wheeled machine has been ordered for the Port of Teignmouth, and two near-identical 120M HybriLifts will be delivered to the ports of Swansea and King's Lynn. An order for a 95R tracked machine has been placed for the Port of Ipswich. In this last case, says David Cooper, some very unusual criteria led to the 95R being chosen.

Tony Rooney, managing director of Cooper SH, said: "This wasn't a single contract for five machines, but rather five individual contracts each involving the provision of one crane. The five ABP sites had complete freedom of choice in terms of their handling solution and each port selected Mantsinen as its preferred equipment." Cooper SH will begin delivering the cranes from this month onwards.

● Cooper SH has supplied a new Konecranes 32-1200 C FLT to the Port of Sunderland, to go with a previous generation 32-1200 B it supplied several years ago. An interesting aspect of this deal is that, for some time now, Impact Handling has been Konecranes Lift Trucks' official distributor in the UK. David Cooper explained that Cooper SH extended its arrangement with Konecranes to place orders with them until December last year, and this resulted in deliveries spilling into 2016. He said there are still some new Konecranes lift trucks to supply this year, including one order for four machines. Both the new truck and the existing machine at Sunderland will be serviced and maintained by Cooper's own ISO-accredited engineers.

BOXPORTER for Port of Koper

Konecranes has signed a deal with the Port of Koper in Slovenia for delivery next year of the first BOXPORTER RMG unit, to go into operation at the port's intermodal rail yard.

The BOXPORTER RMG is designed as an economical RMG with an advanced operating system that gives the crane operator an exceedingly clear view over every container move, and a cab-in position specially worked out for train (un)loading operations (*WorldCargo News*, June 2016, p4). The operating system incorporates innovations that have been field-proven by Konecranes in the remote operation of its automated stacking cranes.

"Konecranes has again showed how we can use the latest crane technology, this time to improve the crane driving experience, while respecting our environment and terminal characteristics," said Marko Babič, director at Luka Koper Container Terminal. "With the BOXPORTER RMG, our crane operators will get better visibility and ergonomics, and thus a better overall driving experience."

Luka Koper has been a key customer for Konecranes over a number of years. By the end of this year, it will operate a fleet of 20 Konecranes RTG cranes, an STS crane and two RMGs. The port's intermodal gateway status for parts of Central/Eastern Europe has been growing, and it is also touted as a cost-effective alternative to Rotterdam for Munich/Bavaria-Far East flows.

Crane upgrade for Catoosa port

The Tulsa Port of Catoosa in Oklahoma has completed an upgrade of a dual-hoist 200t fixed gantry crane as part of a wider redevelopment project. Catoosa is a multimodal port that handles around 2.7 Mtpa of freight, including intermodal containers.

The crane and the dock it sits on were refurbished as part of a plan to attract container traffic and breakbulk cargo carried by barge from the Port of New Orleans. With a lifting height of over 90ft, the crane has a 100ft span and two separate trolleys that each has a main and auxiliary hoist – one with a capacity of 100/50t and the other 100/40t.

The upgrade was completed by Whiting Services, and included taking down the crane completely, sandblasting and repainting the girder sections, and installing new components in the hoisting system. The crane is operated by Tuloma Stevedoring, Inc..

The crane has two trolleys mounted on a fixed frame


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Navis/ZPMC deal

ZPMC has announced that a "memorandum of strategic co-operation" was signed in Shanghai this month between Huang Qingfeng, president and deputy secretary of the Party Committee of ZPMC, and Benoit de la Tour, president of Navis.

"For ZPMC, the cooperation with Navis will enhance ZPMC's ability to provide complete systems for terminals, which provides more possibilities for ZPMC to seek more projects, especially general contract projects of full-automatic container terminals. For Navis, the cooperation can help Navis make use of ZPMC's global customer base to achieve the implementation of Navis's terminal operating system at more terminals around the world by matching with ZPMC's general contract projects of systems," said ZPMC.

Navis, a part of Cargotec, along with Kalmar, is undoubtedly looking at the automation pipeline and seeing that there are a number of projects in China expected to proceed. For the three automation projects currently underway in China (in Xiamen, Qingdao and Yangshan), ZPMC is supplying most of the cranes, whereas Navis is supplying the TOS for one of the terminals, Qingdao.

RAM awarded costs

RAM Spreaders' Australian subsidiary NSL Engineering PTE Ltd has been awarded its costs in the patent and unfair trading practices case it brought against Australian Mobile Mining Equipment, Systems & Accessories Pty. Ltd (AMMESA).

As reported last month (*WorldCargo News*, September 2016, p1) NSL won a judgement from the Australian Federal Court declaring that its Revolver container rotating system did not infringe AMMESA's patent. NSL has now been awarded its legal costs, with the exception of any costs incurred in connection with quantifying its damages, and its claim against AMMESA managing director Murray Bridle personally for unfair trading practices, which was unsuccessful.

Bridle was awarded costs for his defence against the unfair trading allegation, to the extent that any such costs can be identified separately from AMMESA's costs incurred in the general proceeding.

After it won the initial ruling on 17 June, NSL did not pursue its claim for damages. The Court ruling on costs indicated that NSL had earlier proposed damages in the order of A$50,000.

Ecoporto stands empty

The Ecoporto Santos box terminal has almost given up on handling container ships for the foreseeable future as two new terminals in the Brazilian port of Santos continue to increase their market share.

EcoRodovias bought the terminal (then called Tecondi) for Rs1.3B (US$416M) in 2012, and installed three STS cranes and six RTGs, all of which now stand idle, except for a handful of monthly breakbulk calls from operators such as BBC Chartering.

Ecoporto's market share was just 0.7%, for the period from 1 January to the end of August 2016. At the end of 2015, it had a 4% market share (out of 3.78M TEU overall for Santos). Back in 2010, Tecondi was over capacity, handling 520,000 TEU for a 13% share of the market.

Other struggling facilities in Santos are the two terminals operated by Libra Terminais, which have sunk to a 5% share in the case of T-35 and 0.02% for T-37, while the big three box terminals march ahead. In 2015, total throughput in Santos was 3.78M TEU, of which Tecon Santos handled 34.7%, Brasil Terminal Portuaria (BTP) 31.5%, and Embraport 15.9%. From January to August 2016, total port volume was 1.56M TEU, with Tecon handling 39.2%, BTP 36.8% and Embraport 18.2%.

Luiz Araujo, the CEO for Ecoporto Santos, said that all the box facilities had been caught up in a "perfect storm" since 2012, with more capacity coming on the market (BTP and Embraport) at the same time that shipping lines were cutting services and service strings.

After taking over Tecondi in 2012, EcoRodovias added three STS cranes

"The smaller shipping lines got squeezed, and so did the smaller terminal operators," he told *WorldCargo News*. "But we are still here for when the market picks up."

At the start of last year, Ecoporto Santos was employing just over 1,200 people at its downtown offices and Saboo terminal site, but that number has been cut to 600 via three waves of redundancies.

In the meantime, Ecoporto has turned to logistics, and Araujo said that the company is today the "number one in Santos for LCL" cargo. "While we wait for the international container business to pick up, and smaller carriers to leave the big alliances and find a niche terminal in Santos, we have been busy capturing more than 55% of the LCL import market and 80% of the export market in Santos."

The company is taking advantage of the EcoRodovias logistics networks, its warehousing space and expertise from the days when it was Tecondi and Termares (a sister company), to handle around 1,200 containers per month.

In April of this year, Ecoporto left the influential box terminal association Abratec after more than 15 years of membership. A source said this was to cut unnecessary costs and commitments, but it is still a member of ABTP, which covers all port operations, not just containers.

SAAM into Costa Rica

SAAM Puertos has signed a US$48.5M agreement to acquire a 51% stake in two concessions in Puerto Caldera in Costa Rica – Sociedad Portuaria de Caldera (SPC) and Sociedad Portuaria Granelera de Caldera (SPGC). The seller is Colombia's Sociedad Portuaria Regional de Buenaventura SA.

The transaction is subject to approval by Costa Rica's regulatory authorities. Assuming this is obtained, SAAM Puertos – part of the Chile-based multinational company SAAM, which provides port, towage and logistics services – will have a stake in 12 port terminals in seven countries in the Americas. SPC and SPGC handled an aggregate 4.9 Mt in 2015, and their combined revenues came to US$46.6M.

"This investment is a good reflection of the growth strategy that we are implementing in the region, and this is a very well managed enterprise, to which we can add value," stated Macario Valdés, CEO of SAAM. "In addition, it allows us to join forces with partners who have knowledge of and experience in the local market."

The local partners are Saret (21%) and Logística de Granos (19%), and the other shareholder is Colombian company Grupo Empresarial del Pacífico (9%).

Equipment at Puerto Caldera includes two Liebherr mobile harbour cranes

Terminal for LNG in Pori

The first LNG terminal in Finland has opened in the oil and chemicals harbour of the port of Pori on the country's west coast. The €80M project, financed by Skangas with the support of a €23M grant by the Finnish Ministry for Employment and the Economy, helps to diversify the country's energy market.

Ships can bunker LNG using a bunker vessel at the terminal or by ship-to-ship. Deliveries can also be made by truck, although industrial customers such as Huntsman Pigments and Additives, Porin Prosessivoima and Norilsk Nickel Harjavalta are supplied with vaporised gas fed through a local 12 km connecting pipeline.

LNG storage capacity is 30,000 m³ (15,000t) with a 42m diameter, 35m high tank. The terminal area includes loading docks, process units (compressor and vaporisers), a flare torch, three loading docks for road tankers, a transformer building, and a heat production unit.

Panamanian container ports decline

Containers handled at Panama's main ports fell by more than 13% in the first eight months of 2016 to nearly 4.1M TEU, compared with almost 4.7M TEU in the corresponding period of 2015. A slowdown in transhipment activity was the main reason for the slide, this itself reflecting lacklustre growth rates in the economies of many countries in the Caribbean basin and along the west coast of Central and South America.

Panama is a maritime and distribution hub for the area, and any significant change in regional trading conditions affects its cargo throughput immediately. In particular, this year has seen weakness in several core markets, including Venezuela and Ecuador, where the low price of oil has continued to depress trading volumes.

It also appears as if the conversion of breakbulk cargo to containers is slowing in the Latin America region, and, in some cases, ocean carriers are making more direct port calls with their ships, rather than using relay hubs. Partly, this is related to both the large-scale investments taking place in many ports, such that large container ships can be accommodated and to increase inter-port competition.

Lázaro Cardenas and Manzanillo in Mexico, and Cartagena and Buenaventura in Colombia are among ports in the region that are handling a larger number of big ships and some cargo previously shipped via Panama.

All of the country's container handling facilities struggled, with the biggest falls registered by PSA Panama International Terminal (PIT) and the Evergreen-controlled Colon Container Terminal (CCT).

Despite the slowdown and the fact that competition is intensifying as new terminals are planned/will open in Moin (Costa Rica), Puerto Antioquia (Colombia) and Posorja (Ecuador), there appears no lack of appetite to invest in new container handling facilities in Panama.

In the past six weeks, for instance, APM Terminals, Terminal Link, PSA International and Terminal Investment Limited have all pre-qualified for the 20-year concession to develop and operate the Corozal Container Terminal.

A project of the Panama Canal Authority, it will be built in two phases with the first stage comprising 1,350m of quayline and an envisaged annual throughput of 3M TEU. Phase 2 will involve the construction of another 731m of berth, and will raise the facility's capacity to 5M TEU a year.

Containers handled at Panama's main ports

Port	2014*	2015*	Change	2016*	Change
Balboa	2,078,305	2,094,410	0.8%	1,908,575	-8.9%
MIT	1,369,784	1,338,471	-2.3%	1,172,320	-12.4%
CCT	346,170	529,352	52.9%	400,131	-24.4%
Cristobal	504,036	554,233	10.0%	467,076	-15.7%
PSA - PIT	157,069	156,252	-0.5%	115,196	-26.3%
Others	12,124	14,658	20.9%	12,749	-13.0%
Total	4,467,488	4,687,376	4.9%	4,076,047	-13.0%

January-August figures only. Source: Autoridad Maritima de Panama

FESCO in Rusagro deal

FESCO Transportation Group has signed an agreement with Rusagro, one of Russia's largest food producers, to ship containerised grain and other farm commodities from a dedicated area of FESCO-run Vladivostok Commercial Sea Port (VMTP).

Rusagro already uses Vladivostok for exports to Asia-Pacific markets, but it has been expanding its land bank and improving productivity, said CEO Maksim Basov, and thus needs access to bigger facilities in the port.

For its part, VMTP is keen to increase and diversify its business. Its director, Valeriy Mestulov, said the operator is prepared to offer Rusagro "the most attractive terms" for handling its food exports via the port. Last year, Rusagro and FESCO signed a contract for handling bulk grain through VMTP, and the first shipments were made in January this year. VMTP is currently the only Russian Far East port handling grain exports.

Under the new agreement, the parties will first determine potential handling volumes, and then work towards optimising handling and processing procedures to ensure a smooth and cost-effective flow of traffic.

FESCO's other assets include rail operator Transgarant and a 50% stake in intermodal company Troika. It also operates around 36,000 containers, 19 vessels and four ice-breakers.

TICTS in the Dar spotlight

According to reports in Tanzania, President John Magufuli has ordered the Tanzania Ports Authority (TPA) to review Tanzania Internal Container Terminal Services' (TICTS) concession at Dar es Salaam, acting on the recommendation of Musa Assad, the controller and auditor general.

In his audit, which was published in April, Assad stated that "the government should review the TICTS lease agreement, with a view to ensuring that public interests are protected therein". President Magufuli has also asked the Ministry of Works, Transport and Communication to become involved in talks between the TPA and TICTS.

All this does not have to be bad news for TICTS. Magufuli could be suggesting that the TPA and the operator merely need to have a different relationship, or that a new deal needs to be agreed. However, TICTS, which is mainly owned by Hutchison Ports, has regularly come under attack from Tanzanian politicians. In the short term at least, it does add to the uncertainty over terminal operation, particularly with regards to the length of the concession.

The original concession was set at 10 years, but in 2005 it was controversially extended to 25 years. Assad argued: "The legal implication of the extension of the lease agreement before the first lease agreement had expired should be considered and the possibility of terminating the lease agreement should be evaluated."

If the government's concerns centre on performance, then the delivery by the end of this year of two new 41t SWL/45m outreach (15-wide) quayside gantry cranes from Terex Port Solutions may improve efficiency. TICTS has revealed that the two cranes will cost TZS39B (US$17.4M).

Inching forward in Port of Manta

The long and difficult concession process at the Port of Manta in Ecuador is continuing, despite becoming even more political, against the backdrop of a national election next year.

After two failed attempts to restart the concession process following Hutchison Port Holding's (HPH) withdrawal from Manta in 2009, the government is running a third bidding process to concession the port, based on the private initiative presented in January 2016 by Chilean stevedoring firm Agunsa.

Bids for the concession closed in early October, and Agunsa submitted the only bid, which now has to be considered by the government and the port authority as part of a "validation" process. There will then be a further negotiation process on technical details before a concession would be awarded, likely to be towards the end of this year.

It is understood that Agunsa has been fairly consistent in its approach throughout the three concession attempts. As previously reported, it has proposed an investment in the region of US$175M to develop multipurpose facilities, building on Manta's existing infrastructure, to support the local market.

However, in the previous two failed concession attempts, the port authority has been looking for a company willing to develop a much larger facility, only to end up finding that there is no interest in financing and building an over-dimensioned terminal.

The Terminales Internacionales de Ecuador (TIDE) facility that was to be built by HPH had a planned capacity of 1.6M TEU. One of the reasons that deal fell apart was the cost, the lack of cargo demand and uncertainty over developing transport links to connect such a large terminal to the cargo base, including a new highway from Manta to Guayaquil.

Though the state does not have the funds to finance the infrastructure to support a large port, there continues to be a belief in some circles that a private investor could be found by tapping Chinese sources in particular. With an election looming, the decision to proceed on a more modest scale with Agunsa has become a political football, but, at a time when growth in container traffic is slowing down, it remains the only firm proposal on the table.


In the current market, Manta might have to give up aspirations for a large container terminal

Indonesia moves on dwell time

Indonesia's Ministry of Transport is looking to further streamline pre-clearance regulations as it presses on with its plans to reduce dwell time at the country's ports.

"The remaining 14 regulations are being examined. We're aiming for the pre-clearance process to take only one day, while customs clearance and post-clearance processes will take only half a day and one day, respectively," transport minister Budi Karya Sumadi was quoted as saying in *The Jakarta Post*. Previously, the government had shifted 60 other pre-clearance regulations online.

Cutting dwell time to 2.5 days is a key aim of the government, and has strong political support, as it was instigated by the country's president, Joko Widodo.

State port operator PT Pelabuhan Indonesia (Pelindo) had previously managed to cut port dwell times from 5.7 days to 3.2 days, but the government is keen to break the 2.5-day barrier to boost competitiveness, said Budi.

According to ministry data, currently it takes 1.6 days to complete the pre-clearance process, while the customs clearance takes half a day, and post clearance takes 1.25 days.

Budi wants to streamline the procedure, "unless there are indications of dangerous goods or any goods containing malicious payloads like explosives", he said.

At this stage, the 2.5 days is applicable only at Jakarta. Other major ports such as Surabaya, Medan and Ujung Pandang have a target time of 3.5 days, the ministry said. To help them reach this, the ministry urged them to copy Jakarta and move to 24-hour operations with qualified staff.

Belawan in Medan has moved fast and built a 1-ha buffer zone to accommodate import containers that have a "Letter of Approval for Expenditures" (SPPB). Boxes will be moved to the buffer zone after one day.

Capacity for Manila port

Harbour Centre Port Terminal, Inc. (HCPTI) has taken various steps to expand its breakbulk operations in the port of Manila. The move follows rising cargo volumes and the deployment of larger ships by several of the company's customers.

To accommodate their needs, HCPTI has increased the facility's storage area threefold to 6,000t, repaved the yard area to both speed up cargo handling operations and allow better and safer access for trucks, and started to replace ageing cargo handling equipment. A conveyor belt system has, for instance, been completely refurbished.

In addition, HCPTI has rehabilitated sheet piles and erected a concrete wall to protect the western extremity of the terminal and allow barge and transfer operations to take place.

Longer term, the terminal management company wants to acquire more land to expand the operation further.

St Petersburg changes

St Petersburg-based forwarder Modul has acquired the Shushary logistics terminal from Eurosib, another locally based transport and logistics group. The Shushary industrial cluster is around 12 km from the Big Port of Saint Petersburg (BPSP), and Global Ports also has a facility there (Logistika Terminal).

The newly named Modul Yuzhny terminal joins Modul's existing facility near BPSP, Modul Pulkovsky. Modul also operates three terminals elsewhere in Russia. CEO Aleksandr Altschuller said that Modul Yuzhny will help to diversify the range of services and ensure optimal allocation of freight according to destination.

Modul Yuzhny is located close to the Shushary and Kupchinskaya rail stations and the St Petersburg ring road.

It occupies 15.6-ha, with a CY, an ambient warehouse of 9,446 m^2, a Class A heated warehouse of 20,386 m^2, and an office block. Its internal railway tracks have a total length of 3.1 km and it has up-to-date equipment, machinery and software.

Earlier this year, another St Petersburg-based logistics group, Admiral, announced plans to construct new transport and logistics facilities near the port by 2019. These would include 40,000 m^2 of Class A warehouses, a DC at Kronstadt, and warehouses at the Maryino industrial park.

Admiral's chairman Yuri Saulidi said the facilities are convenient for the Moby Dick container terminal and the new port at Bronka outer harbour. Admiral is planning to invest around US\$58M in the project, with an expected payback period of six years.

TraPac extending in Oakland

The Port of Oakland has concluded a deal with TraPac to allow it to expand into part of the Outer Harbor Terminal (OHT) left vacant when Ports America Outer Harbor Terminal filed for bankruptcy in February this year, leaving empty its two leaseholds covering berths 20-26. The port and TraPac have agreed terms that will allow TraPac to expand its footprint from 66 acres to approximately 123 acres, with an initial term of 14 years. The new lease covers some of berth 24, the majority of berths 25 and 26, and part of another area known as berth 33.

Under the agreement, TraPac will invest US\$27.3M in new equipment, and pay annual fixed rent (after deductions) of US\$7.2M in the first year, rising to US\$21.3M in the 14th year of the contract. The first 10 months of the lease on the expansion area is rent-free to allow construction. In addition TraPac will pay a per-TEU fee on every box above a certain threshold (estimated to be worth US\$4.4M over the life of the lease).

Port obligations include US\$4.6M in bollard and fender improvements, reimbursing TraPac up to US\$2.5M for "major maintenance on three port-owned cranes that was deferred by a prior tenant", and US\$0.5M on spot painting the upper portions of the three port-owned cranes.

TraPac has reached a deal to expand its terminal in Oakland

The agreement also includes giving TraPac the right of first negotiation for the rest of berth 24 and berths 20-23.

Lien Chieu proposal

Vietnam is considering building a new port near the currently overloaded Da Nang facility, according to Tediport, a ports and engineering consultancy firm.

Three construction phases up to 2050 will ultimately give the planned Lien Chieu Port an annual capacity of 46 Mt for a total price tag of VND32.861T (US\$ 1.4B).

Funds will come from ODA loans, and public-private partnership (PPP) deals weighted 2:1 to private capital, said Tediport in its final report on the pre-feasibility study for Da Nang officials.

Projected investment is VND7.378T to 2022 (of which 46% will be state capital, with private capital in the form of a PPP at 54%) to 2030 VND7.857T (27% state capital, 73% private capital) and the final phase to 2050 at VND17.626T (26% state capital, 74% private capital), according to Tediport.

The project has two components. Component A is a state investment, in order to build shared infrastructure for the terminal (dredging and backlands, jetty, breakwater, roads, etc) at an estimated total cost of VND10.209T (US\$ 459.38M), to be funded through government sources and ODA loans.

Component B is aimed at the private sector, but Tediport noted that government funds are also an option. It includes 12 berths, roads, container yards, buildings, equipment and berth dredging. The total investment for component B is VND22.652T (US\$1.02B) in own capital, bank loans, bond loans or ODA funding.

When phase one finishes in 2022, Lien Chieu will have capacity of 1.845 Mtpa. Phase two, ending in 2030, will raise that to 17.5 Mtpa, and then 46 Mtpa at full build out in 2050.

Warehouse for Eichholtz

Hamburg company Eichholtz, specialising in handling and storage of sensitive foodstuffs such as nuts, seeds, dried fruits and pulses, has opened what is touted as one of Europe's top-rated temperature-controlled warehouses in the port, with energy-saving cooling plant. In the process, it has doubled its local cool/cold storage capacity to 60,000 m^3.

The new warehouse caters for almonds, hazel and cashew nuts, pumpkin seeds from China, poppy, sunflower and chia seeds, all used, among other purposes, for bread roll baking mixtures. Ambient temperature is a constant 10-12 degC, with humidity at 65%, offering optimal conditions for guaranteeing quality and avoiding infestation by mould or insects.

Goods are stacked on mobile racks up to the ceiling height of 10m. Digital temperature management with precise humidity control is designed to ensure that the cooling/heating plant is especially energy-efficient.

Davao scaled back

Plans for a major redevelopment of Davao Sasa port in the Philippines are likely to be reduced, owing to concerns about costs and capacity, sources have told *WorldCargo News*.

It was planned to expand capacity to 3.1M TEU by 2040, but current thinking is that the port will be handling a much smaller 1.2M TEU by then, *WorldCargo News* understands.

Though there are still plans for a new quay, cranes and other equipment, there are also concerns about the cost of development, and doubts over the proposed market – fruit, especially bananas, for export. Cargo growth is now forecast to be less than the 6% annual growth originally planned.

One shipping industry source, told *WorldCargo News*: "The proposed amount of this project at PHP18.9B (US$391M) might be reduced as the new government of president Duterte is currently reviewing the capacity of Davao Sasa [to see if it is] enough and sufficient for this project. Accordingly, the cost needs to be manageable because of its direct impact in cargo-handling charges."

Government officials confirmed there were talks on the subject but declined to provide further details.

Transport undersecretary for the maritime sector Felipe Judan has been quoted in the local press as saying: "In the last meeting of the PPA [Philippine Ports Authority] board, I told them to take a look, re-evaluate it, and, if it's necessary, to modernise it on the basis of the previous PHP4B plan, then let's do it."

The downgrade could embarrass the Philippines. Davao was to be the first port modernised using a Public Private Partnership, and five consortia, a mix of local and overseas companies, had been shortlisted to run the port under a 30-year contract.

ICTSI is still following the project. "We continue to be interested, as long as it makes economical sense. We are just waiting for the government's decision on the new terms of reference," commented an ICTSI spokesperson.

Bilbao breakwater completed

Bilbao has plenty of long-term capacity for deepsea shipping

The Port Authority of Bilbao has completed the works on the Punta Sollana Breakwater extension, in the port's industrial zone in the Outer Abra. The works have taken four years and will boost solid and liquid bulk traffic, since the length of the dock has been increased from 350m to 680m with a minimum 20m depth, while the backland has been enlarged by 30,000 m^2. Two Capesize vessels can now berth simultaneously.

The EU contributed some €3.53M to the works as part of the TEN-T 2012 project, with the port authority (APB) financing the remainder of the already certified €40.11M total cost. The work was carried out by a consortium made up of Cyes Infraestructuras and Sacyr Construction.

The new breakwater features a number of technical and environment-friendly innovations. For example, the wave screen's high-performance concrete, which has a density of up to 2.65 t/m^3, incorporates recycled black slag, a by-product of the electric arc furnace steel plants in the Bay of Biscay. This enabled the overall budget to be reduced by €1M.

Bilbao's industrial Punta Sollana/Punta Ceballos/Punta Lucero zone is the port's main bulk traffic generator, accounting for 18.8 Mt in 2015, mostly liquid bulk.

As previously reported (*WorldCargo News*, July 2016, p12), APB has embarked on the final phase of the massive Outer Abra harbour expansion, to complete a project begun in 1992.

Southampton splashes out

The latest straddles en route from Poland

Just as it takes delivery of nine more straddle carriers from Kalmar, with eight more to follow as part of its fleet renewal and expansion programme, DP World Southampton has announced that it will purchase two more STS cranes, for delivery in 2018, able to stack up to 24 rows across. Previous deliveries to DPW Southampton have been Megamax cranes from Liebherr. The operator recently took over an extra 11.2 acres of land at the north-east edge of the terminal, creating extra ground space to store containers, and bringing the size of the terminal to almost 100-ha.

APM Terminals Quetzal damages

Terminal de Contenedores Quetzal in Guatemala

APM Terminals has agreed to pay the Guatemalan state a US$32.7M penalty raised against its Terminal de Contenedores Quetzal (TCQ) subsidiary.

This forms part of an agreed set of measures detailed in a Memorandum of Understanding signed with the government, which will ultimately involve the concessionaire making payments of US$43.2M, with the balance of US$10.5M being paid during the course of the concession. Deemed "an investment", this money will purportedly be ploughed into social development projects to improve health and education in communities near the terminal, which is located in Escuintla Department.

APMT acquired an 85% stake in TCQ when it bought the TCB Group this year. The other 15% is held by the International Finance Corporation, an arm of the World Bank. The concession, which was signed with Empresa Portuaria Quetzal (EPQ), is for 25 years, and covers an area of 340,000 m^2.

However, as reported in the June 2016 edition of *WorldCargo News* (p7), behind the concession award lay allegations of corruption involving former Guatemalan president Otto Perez Molina and former vice president Roxana Baldetti, who are said to have demanded a bribe of U$30M to enable TCB to scoop the concession in 2013. Of this, US$24.5M was earmarked for local and Argentine partners, and US$0.5M was set aside for "expenses".

● Xavier Soucheiron has "reached a mutual agreement" with APMT to step down from his post as managing director of Barcelona-based Grup Marítim TCB. No reasons have been disclosed.

Rail boost for Krishnapatnam

Krishnapatnam Port Company (KPCL) is hoping that the opening of a new on-dock rail terminal by Concor, the container transport arm of state-owned Indian Railways, will boost the port's transit trade.

The new portside rail yard offers additional capacity for loading/discharging trains, cuts out drayage times to the former off-port site, and generally reduces transport costs for its customers. It also ensures that users have access to the most secure and safe form of transport to key inland locations such as Bangalore.

In particular, the new terminal gives Krishnapatnam a competitive alternative to routings via Chennai, 180 km to the south and/or Jawaharlal Nehru Port (JNPT), which is located on India's western seaboard.

Anil Yendluri, CEO of KPCL, said: "As a new generation port, our objectives and efforts are focused on providing the best in class services to both our exporters as well as importers. With Concor on board, Krishnapatnam will now be able to ensure a new level of smooth processing, quick turnaround and easy throughput of cargo, thereby fostering trade, boosting industrial growth and aiding in the development of the region."

Currently, Concor runs a twice a week rail service between the port and the ICD at Bengaluru. According to Concor, the service offers faster transit times than trucks, and also allows shippers to move more cargo that cannot be moved on the highways because of weight restrictions.

Moreover, for traders doing business with Asia and using JNPT as their main gateway for Bangalore, a Krishnapatnam/Concor port/rail combination can save more than a week on transit times.

Meanwhile, plans are progressing for the development of a multimodal logistics park at the port. KPCL has acquired over 140 acres of land for the project and is near to finalising a deal to add a further 24 acres. Construction work on the park is expected to start later this year or early in 2017.

Malta Freeport set to expand

Malta Freeport is to take over a parcel of land currently occupied by the Distripark, which will increase its theoretical annual capacity to 4.5M TEU by 2020.

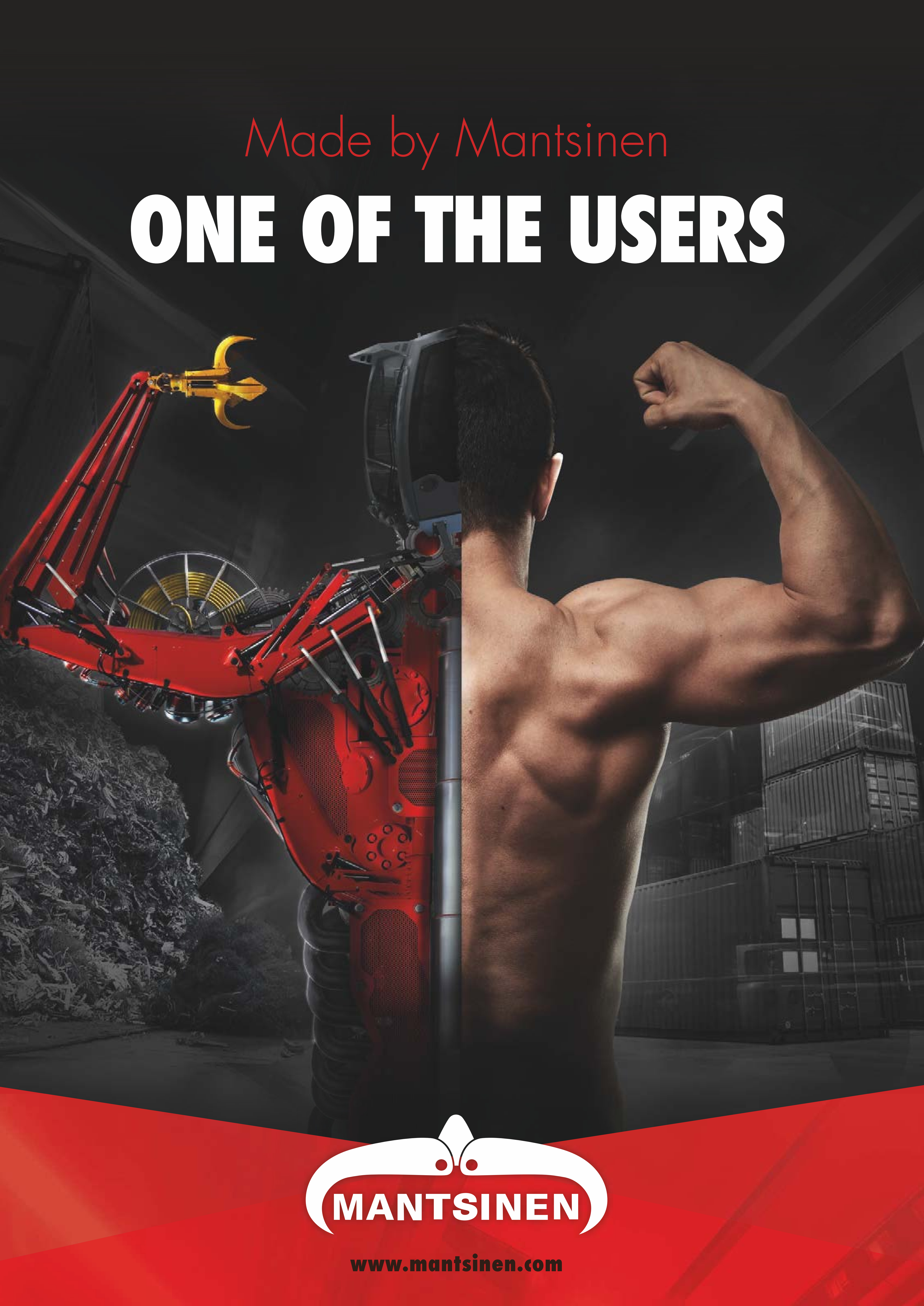
Throughput increased in 2015 by 6% to 3.06M TEU, and is forecast to grow another 10% to 3.3M TEU. By way of comparison, its nearest competitor in the transhipment business in the Western Mediterranean, MCT Gioia Tauro, handled 2.5M TEU last year.

Terminal 2 will soon receive two more giant cranes from ZPMC, similar to the four delivered last December (three for T1 and one for T2), representing an investment of €28M and bringing the STS crane fleet to 23. New crane rails along a length of 360m are being laid to accommodate the new cranes. All the berths have a depth alongside of 17m.

Malta Freeport is set to increase its capacity for the biggest ULCVs

In August, Malta Freeport handled its biggest vessel to date, the 400m-long 185,000 dwt, 19,000 TEU MSC SVEVA, topping the call last October by the 18,500 TEU CMA CGM BOUGAINVILLE.

Malta Freeport is currently linked by 17 weekly deepsea calls to more than 120 ports, including 60 in the Med and Black Sea. Customers include 2M, O3, Seago Line, Hapag-Lloyd, Hamburg Süd and Evergreen. The 77-ha CY is operated with 50 Konecranes RTGs, and the tractor fleet was enhanced last year with the purchase of 24 units from Belgium's MOL Cy NV.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Second box terminal for Damietta

Damietta Port Authority (DPA) in Egypt has entered into a Memorandum of Understanding with China Harbour Engineering Company for the development of a second container handling facility in the port. The deal, which was signed in early October, calls for construction work on the new 2,225m quay line and 700,000 m^2 of yard area to be completed in two years. The access channel and alongside berthing depths will be dredged 17m, with DPA keen for the new terminal to handle extra-regional transhipment cargo, rather than just pure gateway cargo.

An official statement issued by DPA read: "Our feasibility studies confirm the market and economic effectiveness of developing a new terminal and we see this as greatly enhancing the port's ability to accommodate the latest container ships in service and also improving the ranking of Damietta in the eastern Mediterranean."

DPA will now prepare and launch an international tender programme for the project, and must hope that it attracts a large global terminal operating company to invest in and manage the facility. The length of any operating concession has not been officially announced and, while interest is likely to be keen, there is a growing feeling among analysts that companies are less inclined to sink huge amounts of capital into terminals where transhipment cargo accounts for the largest proportion of the cargo base. This is because consolidation in the liner shipping industry makes container hubs much riskier investments these days.

Even for gateway cargo, competition is likely to be intense, as several new container terminals are either under development or planned in Egypt, including at East Port Said, as part of the Suez Canal logistics corridor, at Sokhna, and in the Alexandria/El Dekheila area, which, arguably, is the best suited gateway in the Mediterranean for the Cairo corridor.

In 2015, Damietta handled approximately 720,000 TEU, a third of which was transhipped.

China Harbour Engineering Company will build a second terminal at Damietta

Novorossiysk terminal

The Commercial Seaport of Novorossiysk (NMTP) Group, Russia's largest port operator, is planning to build a multipurpose terminal at Novorossiysk Ship Repair Yard (NSRZ), in which it now has an 85% stake. Ship repair work ceased at NSRZ in 2015.

Back in October 2014, NMTP signed a Letter of Intent (LoI) with Metalloinvest, Russia's leading iron ore producer, to construct a dedicated terminal for handling up to 10 Mtpa of iron ore and pig iron at the site.

Separately, earlier this year NMTP signed an LoI with Russia's Transport Ministry to invest in new cargo handling facilities at another Black Sea port, Taman (Strait of Kerch). This would enable it to be a concessionaire, although the ministry is also seeking other private investors for this 90 Mtpa port project, with US$1B required for the 46 Mtpa capacity phase 1 (2017-20). Taman would focus on dry and liquid bulk cargoes.

Taken in conjunction with Metalloinvest operating at NSRZ, a stake in Taman would allow NMTP to concentrate on grain, general cargo and containers in Novorossiysk.

Meanwhile, as reported by *WorldCargo News Online* on 12 October, state-owned oil giant Transneft wants to sell its 35.5% stake in NMTP, and it is rumoured that DP World could purchase it within the scope of its agreement signed at the beginning of this year with the Russian Direct Investment Fund (*WorldCargo News*, January 2016, p8).

DP World certainly wants to increase its influence in the Black Sea region, building on its existing base in Constantza. It has now signed a Memorandum of Understanding with the government of Ukraine to collaborate on matters of mutual interest, including the development of logistics capability in the country.

More for Murmansk

Russia's Norilsk Nickel (NN), the world's leading nickel and palladium producer, is set to open a second container berth at its Murmansk terminal in Q1 2017, practically doubling its shipping capacity from the port to 1.5 Mtpa. Its existing berth in the Barents Sea port can handle vessels with a draught of up to 6m, including its own ice-class container ships.

NN is about to shut its nickel smelter in Norilsk for good, so all converter matte will be transported from Siberia to its processing facilities on the Kola Peninsula (Murmansk region), and it therefore needs more capacity in Murmansk.

The new berth will be 310m long and able to simultaneously accommodate three vessels with a draught of up to 11.2m. The US$24M project (including dredging works) began in October last year.

NN completed construction of a new climate-proof warehouse for finished products in Murmansk last year. The US$2.5M facility occupies 5,000 m^2 and has a capacity of 8,000t, approximately the size of a shipload lot.


NORLED


CAVOTEC

China-Netherlands rail link

The first direct rail shuttle between China and the Netherlands was launched by the Chinese rail operator CDiRS in June, and, in a new statement, the Port of Rotterdam Authority (HbR) said that the Chengdu-Tilburg-Rotterdam-Express is now in full operation.

At the moment, said the port, it is a weekly service, but the goal of CDiRS and its Dutch partner, RailPortbrabant, part of the GVT Group, is to run the service five times a week as of late next year.

The new service, claimed the port, provides a "door-to-door" service in 15 days. There are two gauge breaks, at the Kazakh/Chinese border at Dostyk and the Belarus/Poland border at Brest.

The Chengdu hub offers railway connections to Chinese cities such as Shanghai, Ningbo, Wuhan, Yiwu, Xiamen, Shenzhen, Nanning and Kunming, as well as to Vietnam and South Korea. "Cargo from China is often shipped by sea, shortsea, from the Port of Rotterdam to the UK, Scandinavia and Portugal," said Roland Verbraak, intermodal director at GVT Transport and Logistics.

"This is a great development," said Allard Castelein, CEO of HbR. "By sea, Rotterdam is already the most important European destination of Chinese cargo. Thanks to this shuttle, we are now also adding a fast connection by land. We strongly believe in this concept, partly because a large part of Europe can efficiently be reached via the excellent shortsea connections over Rotterdam."

Although rail links between Europe and Asia and vice versa only account for a small slice of the trade, they are gaining in popularity, and more than a dozen links are now estimated to be operational, mainly between inland cities in Germany and China. The main users are shippers/consignees of automotive components, high-value machinery/electrical goods and perishable products, including pharmaceuticals.

The Chengdu-Tilburg-Rotterdam-Express is now in full operation

Gothenburg rail move

Gothenburg's rail freight terminal is to be relocated from the city centre to the Arken area, adjacent to the ro-ro terminal inside the port. The transfer should take place no later than the beginning of 2018, when the goods yard is due to be handed over to the city for redevelopment.

Arvid Guthed, vice president port development at Gothenburg Port Authority, said that around 70% of the rail freight handled relates to the port, Volvo or other activities near the port, so the new location will prove very advantageous. On a normal weekday, 12 trains and 200 trucks arrive at and depart from the terminal. Apart from domestic trains, there are also departures for various destinations in Europe.

Guthed continued: "The intermodal terminal at the port will have the same capacity as the current terminal. Relocation will also mean that heavy road traffic will be directed away from the city centre to the large roads leading to and from the port. Generally, a higher proportion of transport will take place by rail instead of road."

The intermodal terminal at the Port of Gothenburg will be coordinated with the closure of the present terminal, which is operated by Green Cargo. It has not yet been decided who will be the new operator following the move to the port.

Apart from intermodal, the rail freight terminal is used for cross-docking timber and paper shipments that arrive by rail. These operations will cease on 31 March 2017. "We have a number of cross-docking terminals for forest products in the port area," said Guthed. "We are working intensively to expand capacity at these terminals to ensure the same volumes can continue to be cross-docked."

Already around half of all containers moved over Gothenburg arrive or leave the port by rail, the highest intermodal rail share for any port in Europe. Guthed is confident that this share can be increased further. "With the intermodal terminal located in the heart of the port, new opportunities will be opened up to transport from road to rail, with substantial environmental gains as a result."

In particular, locating the facility next to the ro-ro terminal increases the opportunity for trailers to be transferred to rail for the inland leg. The existing terminal already transfers around 70,000 trailers/year, and the potential is much greater inside the port, since it cuts out a short road leg.

More RoLa in the Tyrol

Starting in November, controversial new restrictions on ≥7.5t road trucks ("sectoral driving bans") come into force in the Austrian Tyrol, in a bid to improve air quality in this sensitive High Alps environment. This presents Rail Cargo Operator - Austria GmbH (RCA), part of state rail company ÖBB, with the opportunity to provide more Rolling Road (RoLa) services.

Between Wörgl and Brennersee (for Italy/Austria flows), an extra eight RoLa trains will be operated daily, bringing the number of daily trains operated Mondays through Fridays to 38 (up 30%). In addition, four RoLa trains will operate daily (Mon-Fri) all the way between Wörgl and Trento in the Southern Tyrol in Italy, taking 770 accompanied trucks off the road. There will also be 29 RoLa trains on Saturdays and 21 on Sundays.

In terms of annual volume, the extra trains represent additional capacity of over 40,000 HGV spaces, bringing total annual capacity through the Tyrol to 217,000 HGV spaces – all at a lower environmental impact.

Eurotunnel quitting UK rail?

Eurotunnel Group (GET) has received a binding and irrevocable offer from Swedish private investor fund EQT Infrastructure II to acquire the whole of its subsidiary GB Railfreight (GBRf), the third largest rail freight operator in the UK.

The offer price has not been disclosed "by agreement between the parties". GET is a public listed company, but communications director Anne-Laure Desclèves in Paris said that, as the offer has not yet been accepted, there is no requirement to disclose it.

GET acquired GBRf in 2010 for £25M (at the then exchange rate of £1/€1.17). Since then, turnover has doubled, with around £125M forecast for this year, and profitability has risen. The Internal RoR for 2010 to 2016 is just above 28%.

GET's French rail freight activities, managed by Europorte, are not included in the offer received. "Europorte France will remain focused on its own development to deliver improved customer service, with the goal of becoming the foremost private rail freight operator in France," stated GET.

GBRf was founded in 1999 by CEO John Smith, and subsequently sold to Anglia Rail, which in turn sold it to GET. Currently, it operates over 1,000 trainloads a week, moving around 15% of UK's rail freight. GBRf has a fleet of over 130 locomotives and 1,100 wagons, transporting goods for customers including Drax, Network Rail, EDF Energy, Aggregate Industries and Tarmac, as well as container traffic over Felixstowe (mainly for MSC), where it has a 20% share of rail haulage.

However, the continued uncompetitiveness of through-tunnel rail freight vis-à-vis GET's freight shuttles, Dover Straits ferry services and unaccompanied North Sea-continental rail services over Rotterdam and Zeebrugge, means that the hoped-for synergies between GET, Europorte and GBRf never materialised. EQT has stated that the acquisition is an integral part of EQT Infrastructure II's strategy to create a leading independent pan-European rail freight operator.

EQT's other transport assets include a majority stake in Swedish rail freight operator Hector Rail AB, acquired two years ago from Norway's Höegh family. Earlier this year, it acquired DCLI, one of the biggest chassis providers to shipping lines in North America.

PSA goes inland in China

PSA International has invested in a Sino-Foreign joint venture, with a mandate from the Chinese government to develop and operate 18 rail container terminals.

PSA has taken a stake in China United International Rail Containers Co. Limited (CUIRC), through the acquisition of Hong Kong-based Luck Glory International Limited, which owns a 15.33% stake in CUIRC. "The investment makes PSA the only global terminal operator with a shareholding in CUIRC currently," PSA pointed out.

"The inland railway container terminals are strategically located at regional economic centres across the country to form the core of China's intermodal transportation network. There are currently 10 terminals in operation – in Kunming, Chongqing, Chengdu, Zhengzhou, Wuhan, Xi'an, Dalian, Qingdao, Ningbo and Tianjin," PSA said in a statement.

The deal is the PSA Group's first foray into China's intermodal rail facilities, and extends its network in China beyond its 11 coastal container terminals in Dalian, Fuzhou, Guangzhou, Tianjin, Dongguan, Lianyungang and Guangxi Beibuwan (Qinzhou).

Mr Tan Chong Meng, group CEO, said, "The CUIRC project is a game changer for PSA and fits into our overall strategy for China. With our current presence in major China gateway ports, PSA is well-positioned to develop synergies with CUIRC to grow integrated sea-rail intermodal operations across the world's second largest economy. I am confident that we will be able to forge strategic relationships with our partners, leveraging our complementary strengths to make the collaboration a success."

"China's railway container sector only carries about 2% to 3% of the country's seaport container volumes," noted PSA. The company believes that will change as further growth of China's railway container sector is supported by China's ongoing initiatives such as the One Belt, One Road and Western Region Development Program, together with progressive railway reforms.

Established in 2007, CUIRC is part of China Railway Corporation. Besides PSA, other joint venture partners include China Railway Container Transport Corp. Ltd, NWS Holdings Limited, China International Marine Containers (Group) Ltd, and Deutsche Bahn Mobility Logistics AG.

Mexico considers trailer ban

There is increasing pressure in Mexico for the government and regulatory agencies to do something about the appalling road safety record of its trucking industry. Mexico has a maximum allowable truck weight of 65t and permits trucks to pull double trailers (carrying two 40ft containers). It is widely reported that the maximum weight limit is regularly broken and enforcement is lax.

The National Action Party has identified that an average of 116 deaths per month so far this year have been caused by accidents involving double trailer trucks. On 30 September, 13 people were killed in a single accident involving a double trailer truck and a bus. The average age of a truck is now over 18 years, and safety and licensing standards are very low.

There are now five separate legislative proposals before the Mexican Congress to ban or restrict the use of double trailers. Proposals range from an outright ban to reduced weight and length limits that would effectively reduce the number of double trailer units allowed on the roads.

Banning the double trailers would almost halve the capacity of the trucking industry overnight. The trucking sector is already lacking capacity, so this is a major concern to the transport and industrial sectors.

This accident in 2015 involving a double trailer truck killed 11 people

Kögel multimodal steel trailer

Kögel is further extending its piggyback trailer range

Kögel has introduced its latest multimodal trailer for steel shipments, designated Kögel Cargo Coil Rail. This has a FlexiUse body with a large adjustment range, so can be used for various types of steel coils and split strips. Coils and split strips with a diameter from 900mm to 2,100mm and a maximum distributed load of 30t can be transported in the 7,200mm long standard coil trough. This allows a total rail weight of up to 45t, subject to special approval. The floor load-bearing capacity of the coil trough covers is designed to withstand FLT axle loads of up to 5,460 kg.

The trailer comes with double rail codification, as do all Kögel curtainsiders without drop sides. P385 clearance for a maximum internal height of 2,550mm and P400 clearance with a maximum internal height of 2,700mm are available, depending on the set body height. The trailer can thus be shipped on many continental rail lines.

Kögel Cargo Coil Rail is also available with heavy-duty ro-ro equipment for unaccompanied transport by ferry. This includes a diagonal reinforcement between the side member and external frame, a 1mm closed sliding plate, a 10mm fifth-wheel plate, two suction valves and four pairs of heavy-duty lashing rings with 12,000 kg of test force. One pair of the ro-ro lashing rings is positioned further to the left and right, on the front section of the frame in the area of the king pin.

Various pieces of equipment are optionally available, including the Kögel Coilfix load-securing system, consisting of a tension beam, four square pipe insertable stakes with heavy-duty hooks and receptacles for spacer tubes, two spacer tubes as well as three slings and lashing straps for diagonal tensioning. The flat contact of the tension beam and the stakes are designed to prevent damage to coils and split strips.

GE to invest in Nigeria rail networks

Boston (US)-based General Electric is close to signing a concession agreement with the Nigerian government that would entail the industrial conglomerate investing up to US$2B in Nigeria's rail system. The move would involve GE buying new rolling stock, and likely taking management control of some of the nation's rail lines, including the Port Harcourt-Maiduguri Line.

Nigeria is in the midst of upgrading several of its rail lines as it seeks a network that can take both freight and passenger traffic off the congested highways. The government has already concluded massive construction contracts, believed to be worth in excess of US$5B, with Chinese groups, including China Civil Engineering Construction Corp, to both modernise existing tracks and lay new ones.

Following 50 years of practically no investment in the Nigerian rail system, the past two years have seen solid progress, and this has been matched by rising passenger and freight levels, albeit from low bases.

Currently, a new standard gauge rail line is being built between Lagos and Kaduna, while the Lagos-Calabar line is scheduled to open imminently.

According to GE, its potential concession agreement is in the "final stages of the formal procurement process".

VertiModal stacks semi-trailers

After a three-year €0.5M project funded by the federal Ministry of Economic Affairs, DFL Duisport Facility Logistics GmbH and SGKV Studiengesellschaft für den KombiniertenVerkehr (Germany's renowned combined transport study group) have come up with a simple way of saving space in intermodal terminals, by stacking semi-trailers.

For some time in Germany, combined transport of semi-trailers (Scandinavia, Italy, Poland axes, for example) has been on the rise. Space availability in the terminals has become a serious constraint on operations as extra property for staging trailers is in short supply at inland ports and terminals, which tend to be located in built-up areas.

Measured over a whole terminal, the footprint required to stage each 13.6m long trailer is the equivalent of nine 20ft containers. To underscore the scale of the problem, according to SGKV, in 2005 just 150,000 trailers were dispatched to or from Germany using rail/road combined transport, but, by last year, the figure had increased to 832,000 units.

Tests on the new "VertiModal" indicate that it will provide a cost-effective and flexible system to mitigate the problem. VertiModal consists of a simple 9.145m-long steel frame with cross supports for the trailer wheels and landing legs, and ISO corner castings incorporated into the top rails at 20ft centres.

VertiModal adds to handling costs, but frees up much-needed terminal space

A road truck or terminal tractor is driven through the frame, the landing legs are lowered, and the trailer is unhitched. The frames are 3.4m wide and 4.285m high, to ensure plenty of clearance for the driver. Loaded (and empty) frames are lifted and stacked using the terminal's reach stackers or cranes. The frames have a tare weight of 5,400 kg and the allowable gross trailer weight is 38,000 kg, which corresponds to the allowable 44t all-up weight for the pre and post-road legs of a combined transport move.

The maximum stacking height for loaded frames is three-high. Again measured over a whole terminal, three-high stacking is equivalent to 6.8 TEU of containers.

So far, three prototypes have been built using high-grade S 235 and S 355 construction steels. Tests in Duisport are continuing. Duisport Board member Prof. Thomas Schlipköther said the port believes VertiModal has great potential, and it is working with DFL and SGKV to optimise the frame, which it wants to see in operation in all the port's rail combi-terminals. It is not clear whether the extra handling costs have been fully evaluated at this juncture.

Tazara chief seeks private funds

The managing director of the Tanzania-Zambia Railway Authority (Tazara), Bruno Ching'andu, has called on the private sector to support its massive capital needs. The executive said that the railroad needed US$250M in the short term, and more than US$1.2B in the long term, to modernise its track, acquire new equipment, including signalling, and the correctly designed rolling stock to efficiently handle its changing passenger and freight business.

Ching'andu said that these investments would enable Tazara to lift its carryings to 0.6 Mtpa, which he viewed as a break even figure, and then to 2 Mtpa, a level that would generate good profits.

He stressed that considerable progress had been made, particularly over the past six months, as Tazara had revamped its pricing policy, continued to reform and improve its customer service initiatives, engaged in closer consultation with key clients, and forged strategic alliances with the Tanzania Ports Authority (Dar es Salaam) and several logistics companies. Traffic has been attracted from the highways, and it appears as if several customers have committed to moving more of their freight by rail next year.

Tazara carried <100,000t of cargo in FY 2014/15, the latest period for which statistics were available.

Bimodal for South Africa

Boston (Mass), US-based RailRunner NA, Inc. has reported that in September its South Africa unit, RailRunner SA (RRSA), signed a 20-year agreement with Transnet Ltd to deploy bimodal trailer services on the Cape Corridor and, in future, other parts of Transnet's 20,000 km rail system. RailRunner technology allows intermodal trains to be assembled directly from the container-carrying RailRunner highway chassis, using compact specialized bogies.

RRSA is understood to be a joint venture of Rail Runner NA, a local shareholder group led by entrepreneur Mike Daniel and a BEE led by Thabiso Buku. Much of the equipment, including the crucial bogies (adapted from standard to narrower Cape gauge) and trailer bogie interface pieces, could be manufactured locally, as Transnet Engineering has pre-qualified for the engineering contract.

RRSA values the contract at US$400M in service revenues and equipment sales by licensed third parties. The first reported use of RailRunner technology will be on the 1,400 km Western Cape-Gauteng line, targeted for launch in 2018.

RailRunner NA said that RRSA is forming a joint venture with Transnet to implement the new technology, providing a door-to-door transport system spanning road and rail. It is not clear who will operate the trailers, or whether Transnet will make its pitch to forwarders or directly to shippers.

"RailRunner technology is a perfect match for the challenges and opportunities Transnet faces in South Africa," said Charles Foskett, CEO of RailRunner. "This will enable Transnet to offer a complete end-to-end transport solution for its customers, while reducing costs, harmful emissions and highway traffic."

Another South African subsidiary of RailRunner NA, called RNS, will manage network operations, in another example of Transnet using private sector companies to provide services. However, the parastatal has suggested that it may take a stake in the venture in the future.

RailRunner unit in testing in the US with domestic 53ft containers/trailers

Medlink Safe launched

The number of containers containing hazardous goods shipped by barge on the Rhône-Saône system is very low, which seems counterintuitive, as, statistically, waterways are a safer mode than road transport.

Medlink Ports, the grouping of Rhône-Saône port operators, has launched a new initiative, dubbed Medlink Safe. A first call is to ensure that chemicals shippers have confidence in the supply chain when they switch from all-road to road-barge transport.

In turn, this means that the ports must have accurate information about the goods being shipped, so they can ensure that specially trained personnel are involved in handling, allocating yard space and planning barge loading, according to the nature of the cargoes.

The main parties concerned are the Harbour Master's office at Marseille-Fos, Compagnie Nationale du Rhône, Voies Navigables de France, the Port de Lyon and Lyon-Terminal. The container barge operators Logirhône and Greenmodal are also involved.

To encourage Hazchem traffic, the Port of Lyon is offering one night's free storage for exports. The aim is to boost the inland waterway share of hazardous cargo shipments moved over Marseille-Fos from just 4% today to 20%.

More mega ships for PIL

Singapore-based Pacific International Lines (PIL) has placed orders for four more 11,800 TEU ships from Jiangsu New Yangzijiang in China. The new contract raises PIL's order book for this size of vessel at the yard to 16 units. Deliveries of the new tonnage, which will be the largest in the carrier's armada, are scheduled to commence in 2018.

The new ships will be super post-Panamax in design, featuring a length of 314.5m and beam of 48.2m. When fully laden, they will need channel/alongside berthing depths of at least 13m. They will be powered by Wärtsilä-designed 8X92 diesel engines.

PIL has not disclosed where the new vessels will be deployed, but its network of services, which largely focus on Asia's trades with emerging markets in Latin America, Africa and the Middle East/South Asia, are all showing increasing rates of containerisation. In addition, there are core ports in all of the regions that are able to accommodate vessels of this size.

Increasingly, PIL is working in joint services, having over the past few years entered ship and slot sharing agreements on various routes, including to/from Asia and South Africa, West Africa, east coast of South America and the Middle East. These deals make the deployment of bigger ships both more practical and economic.

Currently, PIL has a fleet of about 140 ships totalling 362,000 TEU. Its order book amounts to approximately 190,000 TEU.

Neptune starts intra-Middle East link

Ro-ro carrier Neptune Lines has started a new Middle East service linking ports located throughout the Gulf. The operation, which is centred on Jebel Ali and Khalifa (Abu Dhabi) carries mainly vehicles and some out-of-gauge project cargo, and is designed to offer shippers and consignees an efficient feeder type service for these cargoes.

"We are creating a sea bridge dedicated to the automotive trade, servicing the Emirati ports as well as the ports of Oman, Qatar, Saudi Arabia, Kuwait, Iraq and Iran," said Melina Travlos, Neptune's president and CEO.

A weekly schedule connects Jebel Ali, Khalifa, Shuwaikh (Kuwait), Umm Qasr (Iraq), Dammam (Saudi Arabia), Hamad (Qatar), Khalifa Bin Salman (Bahrain) Shahid Rajaee (Iran) and Sohar (Oman), but with other ports included on an inducement basis.

Neptune sees considerable long-term growth opportunities in Iran and Iraq, as they recover from their respective political turmoil, reconstruct and industrialise.

Neptune Lines has started a weekly service for the Middle East automotive market

Oman/Iran new link...

The governments of Iran and Oman continue to foster closer relationships with one another, and see trade as a sector with strong growth potential. Already this year, several new shipping links have been established, with the latest comprising a fast ferry service between Khasab and the Iranian ports of Qeshm Island and Shahid Bahonar (old port area of Bandar Abbas)

The new link, which is operated by Muscat-based National Ferries Company (NFC), offers the link in just two hours using high-speed catamarans, sailing four times a week. Depending on demand, a freight-only ship could be deployed on the route in the future.

Mojtaba Khosrotaj, head of Iran's Trade Promotion Organisation, said: "Iran sees Oman as a gateway to access other regional countries, while Oman sees our Hormozgan province as an entrance to Pakistan, Afghanistan and the Central Asian Republics. A major part of the cooperation between the two countries, therefore, is to lay the ground for the development of a north-south transit corridor."

The latest move follows initiatives taken earlier this year by the Oman Shipping Company and the Port of Salalah.

In the case of the latter, a joint agreement with Iran's state-controlled Port and Maritime Authority of Iran aims to encourage trade between Oman's largest box port and the Iranian ports of Shahid Rajaee and Chabahar. In addition, the Omani port, which is 30% owned by APM Terminals, will offer both technical advice and assistance with training programmes at the two Iranian ports.

...as Maersk Line returns

Maersk Line has announced that, after a five-year absence, it is to serve Iran again, and will fully integrate the country into its global liner shipping network. The carrier's decision follows the ending of most economic sanctions between the west and Iran and the return of most of Maersk's competitors, including MSC, CMA CGM and Evergreen Line, to the market.

"With a long and proud history in Iran that dates back 60 years, we are very pleased to be back," said Christian Juul-Nyholm, the carrier's regional managing director, based in the UAE. "It means that our customers can once again fully utilise our global network, large fleet of vessels, equipment and weekly departures."

He emphasised the huge potential that Iran has as a trading nation, given its 80M-plus population, its gateway role for the Central Asian Republics and its fast growing economy. Indeed, Maersk thinks the country's GDP could grow by 5.8% and 6.7% over the next two years, respectively, and provide a substantial boost to global trade.

Marcus Connolly, Maersk's head of sales at the UAE Cluster, explained: "After a period of relative isolation, access to this new market will present significant growth opportunities for Maersk Line in a market that today represents approximately 700,000 FEU but is expected to grow significantly in the coming years."

Flooring gets a SolidStart

US-Based Louisiana-Pacific Corporation (LP), the world's largest manufacturer of strand-based structural building materials, is making progress in the container flooring sector with its "LP SolidStart" Laminated Strand Lumber (LSL) container flooring product.

LSL flooring is not the same as an OSB (oriented strand board) product. OSB panels are laminated from small wooden pieces laid in two directions, whereas LSL uses much longer strands (around 240mm) laminated in one direction only. The panels must also be installed in one direction only and are much stronger than an OSB design.

Al Huber, international sales manager for engineered wood products at LP, explained that the company first got involved with container flooring when it was approached by Scotland's Smyth Composites to develop an alternative to OSB for the core of floor panels that were finished with a glass-fibre reinforced composite top layer. The first products were tested by Hamburg Süd alongside panels with birch and bamboo cores in dry container applications. The result, said Huber, was "the best container floor on the planet, but nobody could afford to buy it".

LP then went back to the drawing board and came up with LP SolidStart, an LSL product that can be used on its own, without bamboo or composite veneers for the top and bottom surfaces. Working with Hamburg Süd, LP developed and tested LP SolidStart to meet both the 5,460kg ISO 1496/1 and IICL 7,260kg Marine Container Load tests.

As an engineered product, LSL can be produced to different durability levels by varying the amount of material in its construction, and LP SolidStart is available in four different 'E' grades.

The material has PEFC and SFI certification for sustainability and traceability, and LP uses a zinc borate fungal protection system that meets the AS/NZS standard to treatment level H2. The first two test boxes have now been in service for one year without experiencing any problems.

LP is now looking for more customers to run commercial trials. As part of that process it went through a "Voice of Customer" (VOC) initiative, whereby it interviewed 36 industry representatives. Going into this process, said Huber, LP was particularly concerned about the product's visual appearance, as it looks similar to OSB. However it found that appearance was the lowest rating concern, and the biggest issue for the VOC group was performance. LP SolidStart panels are made in a press, which can be designed to any size up to 64ft long. The VOC group identified that the optimum panel length is 10ft, which would mean only four sheets would be needed for a 20ft box, and seven for a 40ft model. Container manufacturers identified the possibility to use bigger sheets to save material in the floor joist structure.

LP also believes it can help the container flooring industry take a significant move forward with quality and consistency. At the moment, said Huber, products vary far too much, frustrating container owners when different batches of what is supposedly the same product give very different performance in the field. LP believes it can make a vast improvement here with an engineered product, where the manufacturing process is designed to deliver a uniformly consistent product. Furthermore, LP SolidStart will be visibly branded, with full information that will identify the design criteria, and full information for traceability of the manufacture and the source materials.

Sustainability is also an important concern. LP uses rejuvenating wood grown from coppiced species, harvested as early as 10-15 years of age from trees that grow back without needing to be replanted. LP's operations are also sustainability managed, with waste product being used to generate energy to run its plants.


Load testing of LP's SolidStart LSL flooring

SpecOps tracks into Europe

USA-based SpecOps Group is launching its Intelceptor tracking device in Europe. Marketed as "the smallest GPS tracking device in the world", the Intelceptor measures just 4cm by 4cm. The device communicates via GSM and can delimit a geo-fenced zone, which, if breached, will send instant alert to a smartphone, tablet or PC.

SpecOps Group started in the security and surveillance industries, and now hopes to capture the attention of the transport market, including the container sector. It is open to selling hardware to container manufacturers and tracking service providers, and selling to shippers directly, where it offers a cloud-based customisable tracking service that can be accessed from anywhere and configured to meet the client's needs.

"The Intelceptor uses friendly and intuitive software that runs on every modern smartphone and can be customisable to meet the needs of every owner. An unlimited number of objects can be tracked with it, and many users can trace at the same time. The tracking history is kept safely and can be consulted up to one year later," the company said in a statement.

Cool airfreight deal

Cargolux Airlines and va-Q-tec have signed a global rental agreement for the use of va-Q-tec's advanced "passive containers" for pharmaceutical transport.

"We are very happy to add va-Q-tec to our service offerings, especially on our Puerto Rico cool chain flights," said Stavros Evangelakakis, manager global product management at Cargolux.

Va-Q-tec manufactures thermal containers (va-Q-tainers) that use passive refrigeration and vacuum insulation panels to maintain temperature without an external power source. The containers use Phase Change Materials (PCMs) that absorb and store thermal energy during a freezing or heating process to maintain the required product storage temperature during transport. Cargolux is now providing the passive containers to shippers directly, through a rental service.

Dominic Hyde, managing director of va-Q-tec Ltd, said: "The partnership with Cargolux gives our customers what they have been asking for: the possibility to book flight and the va-Q-tainer Serviced Rental in one go to over 90 Cargolux destinations within a one-way rental service. We are excited to partner with Cargolux and jointly grow our business together."

Passive refrigeration is also being promoted for shipping container logistics, including by Dutch company BoTemp, which has developed PCMs and systems for container applications. Most recently, Thermo King launched its own passive refrigeration system for a reefer container. Designed in conjunction with Unit45, the container features a eutectic charging system, instead of blown air, to maintain temperature without requiring an electrical connection for up to two weeks.

MCI energy consumption

The shipping line alliance concept "does not reward long-term thinking" when it comes to energy consumption and reefer purchasing, says Maersk Container Industry (MCI) chief commercial officer Soren Johannsen.

"Slot sharing agreements measure reefers in the same way as dry containers. For some container lines, this results in ordering the cheapest possible reefer equipment, even though it consumes large amounts of energy. This is based purely on the logic that their reefers will spend 50% of the time or more on other alliance partner vessels, where no credit is given for energy-efficient reefers," he said.

MCI calculates that the price premium for its energy-efficient reefer is US$600, which should be compared to energy savings of US$12,000 over 12 years in cost-savings from lower energy consumption, though, of course, this depends on the cost of energy.

Johannsen said more customers, though, are getting the message, and the "large number of existing and new customers who have voted in favour of this principle with their wallets during 2016 means that our market shares are as strong as ever". As noted on the front page of this edition of *WorldCargo News*, MCI has this month announced a new order for 4,000 reefers from Seatrade, and MCI will also supply a significant number of reefers to Maersk Line this year as part of its procurement of 14,600 new reefers in 2016.

At a time when orders for new reefers are at a low (see page 33), MCI said its Qingdao production lines for MCI Box and Star Cool machines are "now running on two shifts and we are ramping up production for the coming season in South America at our MCI San Antonio factory in Chile."

Calling time on top-down thinking?

The CTU Packing Code expressly rules out vertical loading of containers, yet the practice remains widespread

Standard dry van containers have long been used for the shipment of loose materials. With free-flowing bulk such as grain, containers are commonly tilted to anything between 45 deg and 70 deg and loaded with a chute or funnel that is gradually raised as the pile height inside the container increases, softening and controlling the impact.

However, with non free-flowing loose materials such as scrap metal, construction waste, rocks, stones and other loose materials, containers have both doors open and are often tipped to 90 deg to provide the maximum aperture for the grab crane for fast loading. This exposes containers to impact damage and load forces for which they are not designed, undermining their structural integrity and creating a risk for the whole supply chain.

Sharp heavy objects can punch holes in the container, leading to what one container expert calls the "cheese grater" effect. A container is subjected to huge forces by a 1-2t grab load of loose materials being dropped vertically from a height of 7m. Gravity constant is 9.8m/sec^2, so the forces rise exponentially if the container is a 40ft and the drop height is thus 13m.

Good practice when loading agri-bulks, white minerals, resins etc is informed by Shipping Australia Ltd's 2012 guidance notes on shipments of bulk grain in containers. The guide strongly recommends horizontal loading, but recognises tilt loading to 45 deg and vertical loading, provided – in the latter case – that a bulkhead is placed over the end wall. It is also recommended to place a bulkhead across the door end, and to close the left-hand door before loading. This reduces the risk of spillage when the container is lowered and also protects workers who have to open the doors at the destination.

Ban on 90 deg

The risks posed by overloaded and badly loaded containers led the IMO, ILO and UN-ECE to ban vertical tipping in their joint 2014 Code of Practice for Packing Cargo Units (CTU Code). Paragraph 5.3.5 of annex 7 states: "Depending on the internal friction and the angle of repose of the solid bulk cargo, the CTU may be inclined, to a certain degree, to facilitate the loading or unloading operation. However, it should always be ensured that the walls of the container are not overstressed by the filling operation. It is not acceptable to turn a CTU by 90 deg to an upright position for filling, unless the CTU is especially approved for this method of handling."

The CTU code was drafted by Bill Brassington of ETS Consulting. "Standing a container on its front wall and filling the container is forbidden by the CTU Code as it overstresses the front wall, which is also forbidden," he told *WorldCargo News*, adding "there are no containers that I am aware of that have been tested and approved for this type of filling operation. They would need a 1.8P strength, rather than the 0.4P that standard general-purpose containers are tested to.

"We tried to get a value included in the text to say how much it could be inclined, but had to settle for the wording 'may be inclined'. To prevent overstressing the front wall and the roof, that angle cannot be too great. Since the CTU Code does not specify a value, I cannot provide one myself, as there are too many variables that need to be considered. Packers would need to demonstrate that the forces caused during the filling operation did not result in overstressing the walls and roof."

Typical scrap loading operation with a Mi-Tilt machine from A-Ward. Mi-Tilts are in use all over the world

Banning 90 deg tipping does not necessarily make it harder to use grab cranes to load loose materials, as a skilled operator of a hydraulic jib crane can work with an angle of around 70 deg, despite the smaller opening for the grab. However, the volume/tonnage in the grab would have to be smaller, and there would be more of a 'sliding' effect on the container floor.

Overloading

A related point is that vertical loading makes it easier to overload containers, because grabs can be 'hammered' into the load by the crane to compact it and create more filling space. Brassington cites data from a UK port, showing that in 2013 only 0.01% of 20ft containers shipped and 0.13% of 40ft containers in a sample of 110,000 containers weighed >40t, but in 2014 – a year when the UK exported a large quantity of scrap – the figures increased to 1.94% and 10.35%, respectively.

A quick sample of 9,000 containers taken by ETS Consulting between May and August this year showed that 0.4% of the containers weighed >40t and 1.9% weighed >34t. "Going forward, we will have to see if the VGM or the pressure to minimise shipping costs is the greater driver," said Brassington.

Range of tippers

The most common tipping devices for loading and unloading containers are chassis trailers equipped with one or two lifting rams and locking underframes or end frames. Bespoke tipping systems include New Zealand-based A-Ward's Mi-Tilt tippers for 20ft and 40ft containers (*WorldCargo News*, July 2010, p32 and May 2012, p68), which are sold all over the world. Mi-Tilt can also be provided as a 20ft unloader. This is used, for example, to tilt the container 70 deg and unload loose bulk via a chute and grate into below-ground storage silos or piles. As a special option, the unloader can tip the 20ft to 90 deg. Both loaders and unloaders have a 30t SWL.

Straddle jobs

Australia-based Isoloader provides straddle carriers, RTGs and static gantry frames that can tilt containers 50 deg for loading or unloading, while Ireland-based Combilift has introduced an ingenious 90 deg 20ft tipper (70 deg for unloading) based on its Combi-SC straddle carrier.

As previously reported (*WorldCargo News*, July 2016, p29), the spreader is fitted with lifting pins that are inserted in the top corner castings of the container at the door end. As the spreader is raised, the empty container is lifted at the top of the door end and dragged along the bottom corner castings at the end wall end into the vertical position. To fill the container, the straddle carrier clearly has to move off, so the 20ft is free-standing.

This could be attractive for recyclers who want to load vertically since, as a straddle carrier, the SC-Tilter can also be used to load and unload trucks that call to collect or deliver containers, although Brassington also raises concerns about the loads and the direction of the stresses this lifting method places on the container.

Pro-active

Insurers want the CTU Code to be mandatory. This is unlikely to happen, but shippers should not be complacent about its 'voluntary' status.

Meanwhile, it is up to container owners and operators to be more pro-active. Hapag-Lloyd is known for its safety-driven approach, and a spokesman for the line told *WorldCargo News*: "We do not support vertical loading of containers. Most of the known procedures harm the container and are unsafe, representing a risk for anyone involved in the process of loading and in the following transport chain. Therefore Hapag-Lloyd reserves the right to carry out a case-by-case prior approval review."

APL's scrap metal guide states its clear preference for scrap to be bundled, pressed or palletised and that "non unitised loose scrap metals is discouraged, as this results in container damage when they are poured out of the container. If shippers insist, they must agree in writing to compensate APL for all costs related to the scrap metal damage". ❑

Loading scrap with a Vako tipping trailer. Dutch-based Vako can provide 95 deg tippers for 20fts and can also provide a horizontal sliding device. Once the filled container has been lowered back to the chassis, it can be slid back and forth in order to prevent axle load problems (photo: transportonline.nl)

Equipped for the Euro trades

Pallet-wide containers still occupy a small niche in the intra-European freight market, but their use appears to have picked up this year

Development of world pallet-wide and swap body container fleets (TEU)

End-year	Cellular pallet-wide	Non-cellular pallet-wide	Intermodal swap body*	Total pallet-wide	Global Fleet
2010	147,000	268,500	286,000	701,500	
2011	153,500	279,500	286,000	719,000	**31,070,000**
2012	156,000	279,000	292,500	727,500	**32,740,000**
2013	154,500	278,000	298,000	730,500	**34,180,000**
2014	158,500	286,000	302,500	747,000	**36,250,000**
2015	157,000	284,500	305,000	746,500	**37,620,000**

**Excluding swap tank. Major users of non-cellular pallet-wide containers include DFDS Logistics, Ferrymasters, MacAndrews, OPDR, Samskip, and Unifeeder. Source: Drewry Maritime Research*

In the pallet-wide container sector, the CMA CGM Group recently placed orders for its shortsea service providers OPDR and MacAndrews & Company, while several logistics companies, including Robert Kukla Internationale Spedition, have also been active.

Despite this, the global pool of pallet-wide containers has grown only slowly over the past six years. In the case of cellular pallet-wide containers, for instance, the sector's total inventory of more than 157,000 TEU at the end of 2015 was just 6.8% higher than it was in 2010. This compared with a 31% jump for the container fleet as a whole to 37.6M TEU (see table).

In terms of all pallet-wide sized equipment, including intermodal swap bodies, their share of the global fleet of containers has declined from 2.5% in 2010 to just below 2% in 2015. A slight improvement is expected this year.

Drewry Maritime Research, which publishes an annual census on the container market, attributed the slow growth in pallet-wide equipment to its close link with the European transport economy. The latter has been lacklustre since the global financial crisis of 2008/09.

Euro focus

Although most pallet-wide containers are used in intra-European trades, it is important to note that cellular 40ft pallet-wide boxes also feature in some deep-sea trades (mainly Asia/Europe).

The latter are designed to offer the same cubic capacity as trailers, and can accommodate five more euro-pallets than conventionally designed boxes. It puts container shipping companies in a much better position to compete with over-the-road truckers and ro-ro trailership/ferry operators.

The new 4,000 x 40ft containers being phased in by OPDR and MacAndrews are also high cube, with the companies claiming that they "offer customers superb conditions for transporting voluminous goods", by virtue of the precise and unitary arrangement of the euro-pallets, and avoiding open spaces that could result in cargo moving.

Both companies also have 45ft pallet-wide containers in their fleets. These can accommodate another three euro-pallets (up to 33 units), and they tend to be used in corridors where competition with intermodal (rail) and swap body services is intense.

OPDR's move into the Italian market, for instance, involves extensive use of this equipment, as does Ferrymasters' new service to/from Romania.

But it is not only about the size of containers used. The intra-European trades are extremely diverse, with the types of cargo moved between Scandinavia and the continent, mainland Europe and the UK, and Ireland and Iberia often very different. Beneficial cargo owners active in these various corridors require a range of equipment, and lo-lo container ship operators have to demonstrate that they can match, in particular, the proven versatility of ro-ro trailer services.

Mixed fleet

Iceland-based Samskip has been extremely active on the equipment front and continues to be one of the most innovative in the market when it comes to designs. Over the past 12 months, the carrier has phased into operation more than 150 new ventilated 45ft units, 35 x 40ft flat racks, featuring integrated A-frames that are specially designed for carrying slabs of marble, 100 x 45ft collapsible flat racks and a new generation of highly durable 45ft curtain-sided containers (see *WorldCargo News*, May 2016, p32 for details).

Its fleet of 45ft units, including reefers, numbers well over 9,500 units, approximately 20% of which are leased. Samskip has 1,200 x 45ft containers on order in China for delivery during 2017.

According to Samskip, 150 units of the new curtain-sided boxes have been placed in the pool this year, mainly as replacements for older equipment. Principally, they are used to carry paper reels and chemicals moved in octabins and on routes involving the UK, Ireland, Italy and Poland.

Kukla has focused its recent purchasing programme on 40ft cellular pallet-wide boxes, with 100 units added to the fleet this year. Principally, this has been related to the logistics company's strong presence in the trades linking Greece and the eastern Mediterranean with northern Europe.

A company statement said: "40ft pallet-wide containers are the better choice compared with 45ft pallet-wide units in the Levant region. Here, cargoes are relatively compact and heavy, and this means the additional capacity of 45ft containers cannot be used without exceeding the weight limits. Their use would mean wasted freight space and time spent securing cargo."

Operationally, it gives Kukla access to many more shipping services, as the boxes fit into conventional cell guides.

R-Rak goes wide

Another relevant development is the pallet-wide version of the R-Rak vehicle racking system from UK-based Trans-Rak International, which, as previously noted, can be used in ISO and pallet-wide containers (*WorldCargo News*, September 2016, p56).

"Overall, market reception has been positive," said Wesley Payne, the firm's marketing and design engineer. "In Europe, we have built some small batches of pallet-wide R-Raks, in order for logistics service providers and OEMs to conduct trials. To date, we have active non-disclosure agreements with a couple of car manufacturers and 3PLs."

One trial that he did refer to was with Italian manufacturer Fiat, where Trans-Rak equipment is being used to load six Fiat 500 vehicles into a 45ft high cube pallet-wide container.

"Of course, loading six vehicles into one container takes more time than loading three on the floor," explained Payne. "But the financial and environmental savings of halving the number of containers required to be shipped drastically outweigh this cost. Our R-Rak saves a large amount of time for loading and unloading compared with the alternative of actually building a wooden support structure inside the container." ❑

Samskip saves weight

Samskip is introducing containers with lower tare weights. Danny de Koning, Samskip's technical manager, explained: "We've been working with a steelmaker on tailor-made, rolled blank panels, and have been prototyping units where the mid-sections of the side and front walls, together with part of the roof, feature thicker panels than the ends. The design saves 160 kg and will bring our tare weight down to 4.1t and this will be even lower with minor further modifications."

It is believed the steelmaker involved is Mubea Tailor Rolled Blanks GmbH, a subsidiary of Germany's Muhr und Bender KG. As reported previously (*WorldCargo News*, October 2014, p14), Mubea has developed a rolling technique that uses variable roller clearances to customise the profile of rolled blank panels, allowing strength to be increased in critical areas, while saving weight in others.

Koning stressed that every kilogram saved is important. "Our experience proves that even when weight savings can be quite small, for every kilogram of cargo gained there is a competitive advantage," he said.

Using specially rolled steel panels can shave 160 kg off the weight of a 40ft container

Dry box output in the doldrums

Dry freight container builders are facing further difficulties this year, with production having declined to a seven-year low and finished prices remaining weak

The current year has so far proven tough for the global box building industry, as both demand and finished prices have weakened, and so brought additional pressure to bear on factory lines.

Dry freight output is expected to be down globally by at least a third for 2016 as a whole, when compared with the recent annual average, whilst margins have again been squeezed by a recent sharp fluctuation in the cost of materials (particularly Corten steel), which was not reflected by much of a change in the manufacturers' delivered ex-works prices.

The benchmark container price for a 20ft dry container has sunk to its lowest point in more than a decade. It started 2016 at a minimum of around US$1,350 and was little more than US$1,450 by the third quarter. Few plants have been able to secure a 20ft price greater than US$1,500 on any production carried out this year, which was well below the average seen in 2015.

The corresponding movement in the price of Corten steel has been altogether more dramatic, rising from a low of US$300 per tonne at the beginning of the current year to more than US$450 during May/June. It has since fallen back again to below US$400, which is comparable to its position early in 2015, prior to the initial downturn in the Chinese export economy and subsequent onset of weaker box demand.

Steel pricing is thus still showing some volatility, due to its supply being further constrained at some Chinese steel mills, whereas its ratio to the ex-works standard box price remains higher than at any time in recent years.

Crucially though, the plight of the dry freight box building sector has been made that much worse by the underlying poor state of container demand. This, as highlighted, deteriorated from the second half of 2015 onwards, and has since shown no sign of any imminent recovery. Indeed, the latest forecast to come from the World Trade Organisation (WTO) suggests a growth of just 1.7% for international trade in 2016, which will be at its lowest level since the recession of 2009.

The problem has, in recent weeks, been further compounded by the collapse of Hanjin Shipping, which has preoccupied much of the leasing industry due to it putting together a hasty programme of box recovery. This is likely to further cut rental investment during the final quarter, as the returns will only add to an already growing idle stock, comprising both new and used dry freight equipment.

Table 2: World dry freight container output by type (TEU)

Type	2012	2013	2014	2015	2016*
ISO dry freight standard**	2,485,000	2,375,000	3,020,000	2,435,000	1,150,000
ISO dry freight special***	140,000	125,000	140,000	140,000	75,000
US domestic****	60,000	60,000	60,000	70,000	45,000
Dry freight - total	**2,685,000**	**2,560,000**	**3,220,000**	**2,645,000**	**1,270,000**

**Jan-Sept only. **ISO standard/high cube. ***Open-top, flatrack, bulk, open-side, pallet-wide. ****53ft (=2.65 TEU) Source: Container manufacturing industry*

Table 1: World dry freight container* output and capacity (TEU)

Year	Output	End-year capacity**
2012	2,685,000	5,100,000
2013	2,560,000	5,150,000
2014	3,220,000	5,300,000
2015	2,645,000	5,300,000
2016***	1,270,000	5,300,000

**ISO dry freight standard/special, palletwide & domestic. **Twin-shift calculation. ***Output Jan-Sept only. Source: Container manufacturing industry*

Despite the fact that dry freight production was already in decline before the end of last year, the total for 2015 overall still amounted to a relatively healthy 2.65M TEU. It may have been down on the peak delivery (of more than 3M TEU) made in 2014, but was comparable to the totals for each of 2012 and 2013 – and so broadly fell into line with the longer-term trend.

The outlook for 2016 is significantly more downbeat, with a much reduced 1.7M TEU being predicted for the year as a whole. This is being projected from the dry freight delivery total already made through January-September, according to the latest data to be released by the box manufacturing industry. It assumes a slightly reduced rate of output for the final three months of 2016, compared to that achieved during each of the (more buoyant) third and second quarters, which is viewed as the most probable scenario.

The nine-month output figure comprised 1.27M TEU, and featured the usual 90% as standard boxes (1.15M TEU). The approximate 10% balance (120,000 TEU) is made up of various 'dry freight specials', including maritime open-top/flatrack/open-side, pallet-wide and North American domestic (53ft) containers. The latter accounted for just 3.5% of all dry freight TEU production carried out so far in 2016, leaving 6% as other (maritime special/pallet-wide) types. These respective shares are largely unchanged on past years and have always made up a small minority of the overall dry freight total.

The split for standard box equipment is similarly stable, with more than half of all production carried out so far in 2016 comprising 40ft high cube. A stable third was of 20ft length, leaving the remaining balance of a few percent as either 40ft (of 8ft 6in height) or 45ft. The world's dry freight manufacturing industry remains centred firmly in China, and is served predominantly by a small handful of (five) dominant groups, which between them operate around 30 separate factories at over 15 port locations.

Cash-strapped

Their deliveries made so far in 2016 have divided relatively evenly between leasing firms and transport operators (principally shipping companies), with lessors taking a slightly greater share overall. However, this marks a further change on recent years, when the leasing side had dominated more strongly. It initially lost ground in 2015, when some lessors cut back sharply on their dry freight procurement, and many have since opted to limit investment during the current year as well. This has come as a direct consequence of the latest downturn in standard container demand, which has hit the box leasing industry with particular severity in recent months.

Shipping lines, facing a sea of red ink due to record low freight rates and overcapacity, are holding back on purchasing this year, with numerous lines still opting to lease, in preference to buying. Many are also continuing to limit their replacement of older boxes with newbuilds, even if their fleet profile is steadily ageing.

The demand for new boxes has also been impacted by a renewed bout of fleet consolidation, which is affecting both the rental and line-owned fleets. Two big mergers, respectively involving Triton Container/TAL International and Florens Group/Dong Fang International, were completed during the opening half of 2016 – and have removed another two established names from the ranks of the top leasing firms.

These transactions followed on from Seaco Global's earlier purchase of Cronos during 2014-15. On the shipping side, CMA CGM is in the process of acquiring American President Lines (APL), whilst Hapag-Lloyd is taking over United Arab Shipping Company (UASC). These mergers, when taken together with the disappearance of Hanjin, will also thin the lines' top rank by three.

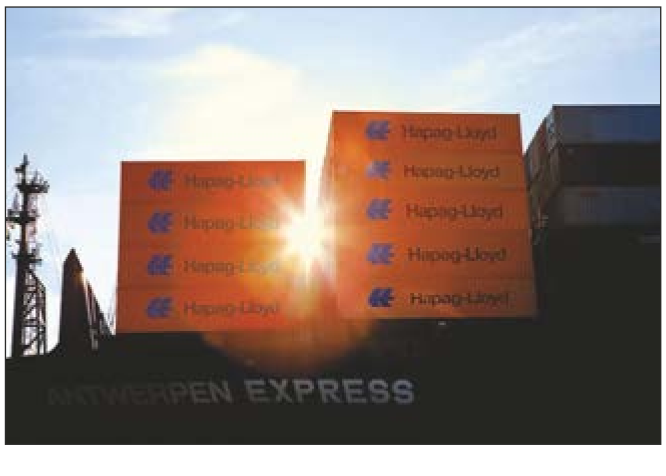
Shifting market

The merger antics of the past year have, perhaps inevitably, resulted in a more limited purchase by top-ranking names and a proportionally larger share than usual going to smaller firms further down the pecking order.

Only a handful of major shipping lines have so far committed to any volume dry freight purchasing in 2016, with just two taking quantities greater than 50,000 TEU between January and September.

The biggest single delivery (of around 85,000 TEU) had been made to OOCL, with 50,000 TEU going to Maersk Line. A further three (NYK Line, China's Zhonggu Shipping and the container transport arm of the state-

Many shipping lines are holding back on purchasing containers due to low freight rates and overcapacity, while Hapag-Lloyd's takeover of UASC may further reduce demand for new boxes



controlled China Railway Corporation) had purchased around 30,000 TEU each, leaving only five others from the top rank to individually buy more than 10,000 TEU.

These 10 companies purchased an aggregate total of 280,000 TEU during the nine-month period, which compared with more than 600,000 TEU delivered to shipping companies as a whole, and, thereby, accounted for less than half. The balance (of around 320,000 TEU) was to go to more than 100 smaller transport firms, many of which were buying containers in the hundreds (rather than thousands) to serve their altogether smaller fleets.

The profile for 2016 contrasts sharply with that of 2015, when a more substantial 75% of all dry freight production carried out for shipping companies went to 20 leading buyers, all of which took delivery of at least 10,000 TEU. Around a dozen acquired 50,000 TEU or more, with four (including Maersk Line, China Railway Corp, Hamburg Süd and MSC) each receiving over 100,000 TEU.

Less for lessors

The box leasing sector was similarly influenced, as significantly fewer firms have committed to large-scale investments in 2016, compared with the previous year. In 2015, over 85% of all dry freight output attributable to leasing firms went to the 10 largest names, with every one of them taking delivery of a minimum of 50,000 TEU. Four of their number – headed by Dong Fang International and TAL – were each to acquire over 100,000 TEU.

So far in 2016, just three companies (Textainer, Beacon and Seaco) have come close to matching these totals, as they had received around 150,000 TEU (or greater) apiece during January to September. This gave them an overall share of around two thirds of leasing company production accomplished so far this year. Their combined intake amounted to around 460,000 TEU, compared with 675,000 TEU delivered to the leasing sector overall.

Much of the balance (215,000 TEU) has gone to 20 other firms, both large and small, but with no other single buyer taking more than 30,000 TEU so far. Significantly, the two largest deliveries have been made, respectively, to the newly expanded Triton International Ltd and Florens Container Holdings, which have emerged from the recent mergers. Both were to acquire around 30,000 TEU as dry freight during the nine months from January to September 2016, with much of the total predictably being delivered in more recent months. Both are, accordingly, expected to stay active buyers in the run up to the end of the year. An additional 20,000 TEU had earlier gone to TAL, prior to its absorption into the newly enhanced Triton entity.

Managing excess

This more restrained purchasing activity had further resulted in a significantly lower rate of monthly output for 2016 compared with 2015 and earlier years. The delivery of almost 1.3M TEU as dry freight through January-September gives an average monthly output rate of almost 150,000 TEU, and this level has been more than sustained throughout much of the past six months.

The output figure rose briefly to top 200,000 TEU during June, when there was a brief revival in demand, but was significantly lower (at 125,000 TEU/month or less) during the opening quarter. Production dipped to almost zero in February when the majority of factories closed for an extended maintenance break.

The outlook for Q4 2016 is for production to stay close to 150,000 TEU per month, possibly amounting to 400,000-450,000 TEU. By comparison, the monthly average had exceeded 250,000 TEU throughout H1 2015, and went above 300,000 TEU during the busiest periods. However, it declined sharply from August onwards, to an average closer to 100,000 TEU/month, as demand weakened.

The factories' collective monthly output has thus been declining over the past two years, which has only heightened the mismatch already existing between actual demand and available capacity. Throughout the five years to the end of 2015, the world's dry freight producers were able to maintain a minimum daily one-shift operation (and often went higher), although this will not be managed in 2016. Instead, plant utilisation is expected to fall to its lowest level since 2009, when the vast majority of standard box factories were closed.

The world's current capacity base is calculated at 5.3M TEU per year, assuming maximum (double) shift working, which gives an annual single-shift capability of 2.65M TEU. The 1.7M TEU being forecast for this year will amount

Demand for new boxes is being impacted by a renewed bout of fleet consolidation. On the shipping line side, for instance, CMA CGM is in the process of acquiring APL

Table 3: World dry freight container* output by manufacturing group (TEU)

Company	2012	2013	2014	2015	2016**
CIMC Group	1,225,000	1,145,000	1,440,000	1,200,000	500,000
Singamas Holdings	555,000	500,000	610,000	470,000	320,000
CXIC Group	330,000	405,000	525,000	365,000	165,000
Dong Fang International	180,000	240,000	310,000	295,000	140,000
MCI-Dongguan	225,000	145,000	155,000	160,000	50,000
Pan Ocean Container	-	-	50,000	50,000	50,000
Other Chinese	65,000	50,000	55,000	30,000	15,000
Rest of the world	105,000	75,000	75,000	75,000	30,000
Total	**2,685,000**	**2,560,000**	**3,220,000**	**2,645,000**	**1,270,000**

**ISO standard/special, palletwide and domestic. **Jan-Sept only. Source: Container manufacturing industry*

to just 65% of this total, or equivalent to nearer a 'two thirds-shift' rate. In monthly terms, the global output rate should be running at well above 200,000 TEU in order to ensure a minimum industry-wide one-shift operation, although this figure has been approached only once so far during 2016. Unless the situation is to improve markedly into 2017 (and there is little evidence as yet to say that it will), the dry freight industry may yet be forced to contemplate further factory-line (or even whole plant) closures.

The current optimum requires a sustained daily working of between 1.0 and 1.5 shifts, as anything above that level tends to put pressure on factory lines. However, running at less than one shift reduces efficiency and brings the plant operation closer to breakeven. This has become increasingly critical in recent months, as new box prices have also remained low and have not generally kept pace with rises in the cost of steel and other materials, even if plant running expenses (associated with wages, capital and energy) are more stable. Profit margins have, consequently, been impacted more severely during 2016 than at any time since 2009 and some dry freight factories are thought to be barely operating in the black.

CIMC still investing

Despite this far from encouraging outlook, some new factory capacity is still being brought on stream, albeit increasingly in the form of 'replacement' facilities that are to supersede some existing factories. One such venture, planned by the world's top box builder, China International Marine Containers Group (CIMC), is located at Fenggang, close to the city of Dongguan, phase one of which is due to commence production from early in 2017.

Its eventual annual capacity could be as high as 750,000 TEU. Another new CIMC plant is being built within the Ningbo Yinzhou Economic Development Zone, and will also open in two phases, ultimately offering a capacity in excess of 400,000 TEU per year.

CIMC admits that the going has been tough for the opening half of 2016, with the group "actively shrinking its capacity by combining production bases, in order to improve plant utilisation and profit margin". The action was taken in the face of "weaker container demand and low capacity utilisation" caused, in turn, by the continued slowdown in Chinese exports and the poorer outlook for the world economy. Its established network of around a dozen dry freight factories presently offers a total twin-shift capacity equivalent to 2.4M TEU per year, which has been reduced slightly from its level of previous years.

However, the company's aggregate production amounted to approximately 500,000 TEU for January-September 2016, which compared with 1.2M TEU delivered during the whole of 2015. CIMC factories have thus accounted for a slightly reduced 40% of world dry freight output accomplished so far in 2016, as against nearer 45% of the 2015 total.

However, the company continues to contribute around 45% of the world's capacity total, which implies a slightly poorer utilisation for its factories in 2016, when compared to the industry average. In contrast to the one-shift operation averaged across its plant network during 2015, CIMC has barely been able to manage a daily rate equivalent to one-half of a shift throughout the current year.

CIMC's most recent financial data covers H1 2016, when it reported an even more meagre sale of just 238,300 TEU as dry freight standard (although the figure does exclude all specials). This production was down by two thirds on its level for H1 2015, which helped account for the 40% decline in revenues suffered by CIMC's box building business as a whole (including reefer and specials) during H1 2016. Turnover dropped to approximately US$750M for the period, and yielded a net loss of more than US$20M. The shift into deficit gives a clear indication of the way new box pricing has not been able to keep pace with the rising cost of materials. It has been further compromised by a steady depreciation in the value of the Chinese currency (RMB), against its US dollar exchange.

Singamas on the up

CIMC's established rival is Singamas Holdings, which runs a network of eight dry freight plants. These offer a combined multi-shift capacity equivalent to roughly 1M TEU, some of which is also being rationalised in the face of poorer demand and weaker pricing.

Nevertheless, production from Singamas has tended to hold up relatively well in 2016, with around 320,000 TEU delivered during the January-September period. The total compared with 470,000 TEU built during 2015 overall, with the group suffering less of a decline in production compared with CIMC. It has already contributed a significantly enhanced 25% of world production in 2016, compared with less than 20% last year.

This is greater than its share of global plant capacity, which is close to 20% of dry freight capacity, indicating that Singamas has been achieving a better-than-average rate of plant utilisation in recent months than its larger competitor. Even so, the company's average daily production rate still falls short of the single-shift optimum.

The group, in its interim review, reported a total output of 224,000 TEU (including dry freight, reefer and tank) for the opening half of 2016, together with an even higher sales volume of 236,400 TEU. These totals were down by more than 30% on the same period in 2015, although the company's revenue stream experienced an even greater fall, amounting to over 40%. It generated almost US$400M during first half 2016 and suffered a net loss of US$33M before taxation and non-controlling interest. This was attributed to the sharp fall in the average selling price applicable to standard box equipment, with the 20ft index reported at just US$1,415 H1 2016. It compared with US$1,880 for H1 2015.

Singamas similarly observed that the global economy had experienced a sustained slowdown during 2016, thereby continuing a trend that was already becoming acute late in 2015, and directly affecting world trade growth and new box demand. Much of the recent price erosion was attributable to the increased competitive pressures affecting the standard container manufacturing sector.

Specialising

In response, the group is looking to further rationalise its capacity base and focus to an even greater extent on more specialised manufacturing. To this end, Singamas has been increasing its production of 53ft domestic containers, with demand in 2016 at least expected to match that of last year. A sizeable order has also recently been worked on for China Railway Corp involving the construction of various types of standard and specialised container.

Most remaining dry freight manufacturing is carried out by three other large-scale firms, all based within China. The largest is CXIC, whose production amounted to 165,000 TEU for January-September 2016 period. This compared with 365,000 TEU constructed in 2015, and a record 525,000 TEU during 2014, also indicating a sharp decline for 2016. Its global production presently makes up 13% of the world total, although the company's capacity, at around 850,000 TEU per year, accounts for a slightly greater 15%. The group operates a total of six dry freight plants, which predominantly produce standard equipment.

Dong Fang International Container operates three standard box plants, providing a combined multi-shift capacity of around 400,000 TEU per year. These produced 140,000 TEU from January to September 2016, contributing a little over 10% of the global total. In 2015, the company delivered almost 300,000 TEU, thereby predicting a similar 40% drop in output for 2016, which is in line with that being experienced by most competitors.

Dong Fang's longstanding affiliation with China Shipping Group has now been ended, following the transfer of the group's shipping arm (China Shipping Container Lines) to Cosco Container Lines Group, and the takeover of Florens by the Dong Fang principal.

Maersk Container Industry (MCI) continues to operate a single dry freight factory, MCI-Dongguan, which had constructed 50,000 TEU during the opening nine months of 2016. It, too, has lost ground and, to a large extent, has been reliant on business from its Maersk Line affiliate.

Nevertheless, MCI-Dongguan attained another production record in 2015, when it built 160,000 TEU and achieved a global share of 6%. It offers a capacity equivalent to 200,000 TEU/year.

There remains only one other volume factory in China, operated by Pan Ocean Container Services (POCS), which had already constructed 50,000 TEU through January-September 2016. It is thus on course to be the only company in 2016 that is likely to surpass its manufacturing total of 2015. ❑

Charting a course in reefer monitoring

Lines are taking different paths on the journey to data-driven decision making in reefer container management

Back in October 2013, *WorldCargo News* confirmed and reported that Maersk was testing a wireless system to roll out on a global scale. Ever since then, the rest of the industry has been watching and waiting, but, so far, no other carrier has committed to remote reefer monitoring on a similar scale. CMA CGM and then MSC both invested in the French start-up Traxens, but neither has been willing to confirm the extent to which they are planning to roll out the system across their container fleets.

Marching on

Maersk, for its part, is pushing ahead with its remote container monitoring (RCM) project. The carrier has not disclosed any numbers, but sources suggest it has invested somewhere in the region of US$40M-50M in this project. The RCM system is now installed across virtually its entire fleet of over 270,000 reefers, and Maersk has been working on changing internal processes to leverage the data it generates.

Speaking at the Cool Logistics conference in Bremen last month, Shereen Zarkani, Maersk Line's head of reefer management, said "reefer visibility" only makes sense if applied to the entire fleet. "Since we launched RCM in 2015, we matured our internal processes and gained operational experience in handling the data. We have now entered the next stage, and will be ready to offer this enhanced data visibility to our customers in the coming year," said Zarkani, adding that key milestones before the launch in 2017 include a customer facing IT-platform, as well as customer pilots.

One of the key questions is how Maersk will monitor its boxes on alliance partner vessels, which do not have the Ericsson system for vessel-to-shore communication that Maersk uses. Responding to *WorldCargo News*, Maersk said its boxes are still monitored throughout the journey. "The only difference is it won't be in real time – in such cases, standard manual monitoring will continue as usual and the data will be shared as the vessel approaches shore, so we are able to provide reefer history data, and customers will know expected cargo status also for non-Maersk vessels, once they approach shore," the company said. It is currently reviewing "technological options" to extend coverage to non-Maersk vessels at sea.

Maersk declined to provide details on future value-added services, but stressed that "visibility will be provided to jointly improve cargo quality and improve the ability to react. There could be different models of presenting and packaging the data. We will further review – jointly with our customers – how RCM data can help eliminate unnecessary costs in the supply chain, and the value this brings".

A different approach

This month, *WorldCargo News* has learned that two smaller carriers are taking a different path to reefer monitoring. As reported on page 1, Seatrade, the world's largest reefer vessel operator, will outfit its first newbuild container vessels with the Emerson Refcon system for power-line reefer monitoring, and install 6,000 Emerson RMM power-line modems on its (leased) reefer containers.

Africa Express Line (AEL) has also opted for Emerson for its new reefer monitoring system. AEL is installing Emerson's RMM+ modems (which can send data over both a power-line connection using the ISO 10368 standard and wirelessly using GSM) on its fleet of 3,000 reefer containers. Both Seatrade and AEL will use Emerson's ProAct Transport software to manage the data that the modems generate.

AEL has been considering a remote monitoring system for some time, and container manager Mathew Shed explained that Emerson provided a package of hardware, cellular services and software that best meets its needs.

AEL is part of the Compagnie Fruitiere Group, a vertically integrated company that produces, transports and distributes its own fresh fruit and vegetables from West Africa to Europe. AEL operates a fleet of eight reefer ships and one container ship, the SEATRADE ORANGE.

AEL's focus in implementing reefer monitoring was to lower operating costs through performing tasks like monitoring, temperatures, gas atmosphere, critical fault alarms and performing pre-trip inspections remotely, as well as gaining the visibility to improve asset management in key areas like reefer utilisation, reducing M&R costs and claims control. The AEL business case for the Emerson system was firmly based on ROI by lowering existing costs.

As it does not have its own vessels, AEL looks to charter ships with the Refcon system installed, and can then monitor its containers through the vessel's communication system. However, the GSM

AEL is fitting Emerson RMM+ modems to its reefer fleet

functionality on RMM+ provides the necessary reporting flexibility, should any vessel not have Refcon installed. AEL did consider a satellite-based system that could allow it to monitor containers independently of vessel communications, but Mathew Shed had concerns about both the technology and the cost of sending cellular data.

When vessels are on the water, and reefers are connected to Refcon through a power-line connection, AEL generally requires an update every 12 hours from the vessel-based communications system, as well as notification of any special events or alarms. Alarms typically lead to direct communication between AEL and the vessel crew concerning what course of action to take. When the vessel is close enough to the shore to pick up a GSM connection, each reefer sends its full data history over the cellular network through the RMM+ modem. Mathew Shed added that AEL is able to achieve this level of "micro-management" because it has 3,000 reefers.

AEL has opted to single-source hardware, cellular services and the ProAct software. Mathew Shed stressed that "everyone will be different here", but for AEL the single-source approach enabled it to get up and running with remote monitoring relatively quickly.

Perhaps a bigger challenge than the hardware side of a system is developing a plan to change business processes to make use of the data. This is much more complicated and, regardless of the supplier, emphasised Mathew Shed, it really starts with a blank sheet of paper. By having open dialogue with Emerson, AEL was able to identify the most important data and develop processes to manage its reefers using that data.

He stressed that this is a joint effort – while AEL uses ProAct Transport on a SaaS basis, it also has its own IT resources working on the project to integrate remote monitoring into business applications and processes. These are focused initially on identifying and defining operational issues, before working on how to bring in operational data to improve outcomes.

As the project moves forward and rollout is completed across the entire container fleet, AEL expects to see benefits in improved asset management, as well as lower operating costs. AEL's relatively short sailing times enable it to generate annualised full reefer loads eight times a year, and Mathew Shed wants to leverage data to improve even further. AEL will also be able to make better decisions about which containers and vessels currently have the lowest operating costs.

Blazing a trail

While the scale is different, AEL, like Maersk, is at the forefront of the industry in implementing centralised remote monitoring. Commenting on the decision-making process, Mathew Shed remarked that it was difficult to pick a supplier when technology keeps evolving, and products are expected to have a shorter lifecycle than the 12-year average for a reefer container. Lines, he added, need to focus on the business case for smart reefers, rather than trying to insulate themselves from what will inevitably be a changing technology landscape.

For Emerson Climate Technologies, the Seatrade and AEL projects highlight that Maersk's route is not the only one to data-driven reefer management. Speaking to *WorldCargo News*, Brian Robertson, VP business development, Transportation Solutions at Emerson, said a lot of carriers are looking for a migration path to get them from the site level monitoring (i.e. on the vessel) that they do today, to an "enterprise" level system.

Two important points that often get lost in the debate over the merits of GSM and satellite communications, he stressed, are interoperability and the investments carriers have made in existing systems. These are particularly important in an industry where alliances and vessel sharing are commonplace.

While the big three alliances might be able to address these directly with their partners, the main alliances do not actually operate in most of the north/south

RTE at the terminal

For container terminals, remote reefer monitoring presents a difficult question: should a terminal invest in its own monitoring system if its customers are going to monitor their own containers remotely? New Jersey-based Refrigerated Transport Electronics (RTE) specialises in remote reefer monitoring, and sales manager Walter Vinson said there is certainly no slowdown in the market for terminal-based systems.

RTE has just had a record year, and has taken on additional staff, mostly in software development, as its customers look to integrate its monitoring systems with their own applications, including the TOS. Recent installations for RTE include MIT in Panama, the River Trade Terminal in Hong Kong, and Rotterdam World Gateway in the Netherlands.

Walter Vinson said RTE's terminal customers are well aware of carriers' steps with remote reefer monitoring, but none of these systems completely removes the terminal operator's need manage reefers in the terminal. There will always be a large percentage of reefers that are not managed remotely (including leased containers that are not supplied with a modem).

RTE's business growth is being driven by terminal operators looking to automate a manual aspect of their current operation, for both cost and safety reasons. For many terminals, added Walter Vinson, a reefer monitoring system has gone from something that was a "bit of a luxury" two years ago to a necessity.

In some locations, such as MIT Panama, the installation coincides with the introduction of automated stacking cranes, which place greater operating restrictions around the reefer zone. A terminal-owned monitoring system means there is less interruption to the cranes due to personnel needing to enter the reefer area to check reefers.

RTE is also moving ahead with its power monitoring system for metering electricity consumption. This was something RTE and ESL unveiled at TOC Americas in 2015, using meters that are integrated with ESL's plugs and RTE's GRASP software. Walter Vinson said RTE is now working on its first two pilot installations at undisclosed terminals. The terminals involved are looking for more visibility into connection periods and the power draw of containers immediately after they arrive, which can help identify hot boxes.

Terminals continue to invest in their own monitoring systems

reefer trades. Here, there is a far greater variety of vessel sharing arrangements, and lines need to consider how they will manage when their reefers are on a vessel that does not have the communications infrastructure to support their particular monitoring system.

As AEL's case shows, the wide use of Refcon on vessels, and its ability to communicate with any reefer through the power-line ISO 10368 standard, or via GSM, continues to deliver value, and lines and vessel owners want to leverage the investment they have made in vessel-based systems for the life of those assets.

Robertson also emphasised the importance of software, and Emerson's ability to deliver its ProAct application as a service. Reefer supply chains are very complex, and it is not always possible to physically manage the assets at every point in the supply chain. Sometimes, what is required is actually a balance of "right time and real time" data, said Robertson.

Mathew Shed agreed, adding that remote monitoring can push out so much data that it is easy for people to become blinded and miss key events. Much of the work AEL and Emerson are doing now is about developing processes so the right person gets the right data at the right time, automatically.

Pay as you monitor

IDENTEC Solutions, a supplier of terminal-based monitoring, has floated the idea of terminals paying for its CTAS reefer monitoring system on per-use basis. Speaking at this month's TOC Americas conference in Cancun, Stephan Piworus, VP global sales, ports and terminals, said many terminals recognise the benefit of remote reefer monitoring, but are reluctant to invest at a time when the carrier and alliance landscape is changing so rapidly around them.

Terminals are also wary of the time and resources it takes to implement a remote monitoring system, and are concerned that whatever technology they implement today might quickly be superseded or become obsolete.

Piworus said traditional rental and leasing models are inflexible, and IDENTEC is willing to talk to terminals about a "pay per-use" model where they pay only for the actual time each device is monitoring a reefer container, and not on a standard weekly or monthly basis. He gave the example of a terminal with 1,000 reefer plugs, and said an arrangement could be worked out where the terminal guarantees a minimum usage of 10% over 3-5 years, and the daily rate to monitor a reefer container could be as low as US$1.

This, Piworus continued, would lower the capital and investment risk considerably, require no upfront investment from the terminal, and payments would come from the positive cash flow generated by providing actual reefer monitoring services. IDENTEC would know when the devices were connected and monitoring a container, so the system would be very transparent, and invoicing very simple.

As has been noted before in *WorldCargo News*, Emerson has raised the issue of extending the standards-based approach embodied in ISO 10368 to cover other methods of communicating with a reefer container, but this has received a lukewarm response from other players in the market. In the longer term, however, it may be in everyone's best interest to have some standards for "connecting" to reefer and dry containers.

Asked to comment on the issue of a standard, Maersk Line said: "In the past years, we have pioneered this area and gained the needed experience in generating, processing and handling these vast amounts of data. While it is early days and any international standard is still very far away, we acknowledge the relevance of a future global standard for connected containers."

More to come

Nobody wants to say much or give names at the moment, but it is fairly clear that there are a number of other carriers in the process of making a decision on reefer monitoring. Marc Eisenberg, CEO of Orbcomm, recently referred to eight different projects his firm is working on that are in either pilot stage, coming towards the end of competitive bidding or in final contract negotiations. "There are hundreds of thousands of units that we are bidding on that we think that we are likely to win. I can't say that we are going to win every one, but I think that we are likely to win some," he predicted confidently.

Analysts following Orbcomm have been watching to see if one of these is a large deal with Orbcomm's partner in China, container manufacturing giant CIMC. Eisenberg clarified that he thinks Orbcomm's business with CIMC "is going to be in the low tens of thousands of units in the next couple of years, and I think it's going to grow from there".

Many tracking and monitoring companies line up at CIMC's door, looking to partner with the world's largest container manufacturer, but Orbcomm's strategy is wider. CIMC is 22.75% owned by the Cosco Group, and Eisenberg noted that CIMC "have got a customer there", and the inside line on the Chinese market. "They [CIMC] have gotten further in terms of getting Orbcomm's license in China than anyone has ever gone before," he said. CIMC will be Orbcomm's partner on all deployments inside China.

As the supplier of the reefer communication system to Maersk, Orbcomm currently leads the market in terms of number of systems deployed, but that could soon change, depending on how and to what extent CMA CGM and MSC (and perhaps others) roll out the Traxens system. The two lines have invested in Traxens, which is targeting both reefer and dry box monitoring, and they have representation on its board.

Speaking with *WorldCargo News*, Tim Baker, marketing director at Traxens, said the company has a different market model than Orbcomm, one which enables lines to implement a reefer monitoring system for a much lower cost. Without providing all the details, Baker said Traxens is offering lines and container owners a monitoring system "at a lower price than they can ever do it themselves", in return for the "right to sell and use the data".

Shipping lines, he continued, are very interested in data services, but they operate legacy systems that are only capable of sending out data, and are not in a position to integrate container tracking and monitoring data with other applications in a way that adds value. Carriers' first priority is to use data to understand what is going on in their own operation. Traxens, on the other hand, "lives and dies by the value it can give to the data", and, as such, has been specifically set up to deliver data services.

This includes addressing how the data collection and transmission process will be affected by the changing landscape in the telecoms sector. Traxens, he added, has the backing of two major shipping lines that understand the challenges of trying to set up and maintain a system themselves, and he is confident Traxens will win further business.

Finding partners

For reefer equipment manufacturers and container leasing companies, the remote monitoring landscape is a tricky one to navigate. Reefer manufacturers, in particular, can see advantages in selling units that can receive software updates and conduct diagnostics remotely, but, as one equipment OEM explained to *WorldCargo News*, it is a delicate balance to offer a system and not get between the customer and its choice of monitoring system.

According to Orbcomm, Carrier Transicold is now piloting its system with key customers, with a view to offering it as an option on new Carrier machinery. Being able to offer pre-integrated telematics, said Eisenberg, "gives them [Carrier] an advantage in this business", and Orbcomm, through its acquisition of WAM Technology, has the ability to write directly to Carrier reefer controllers.

The reefer OEMs business is separate to Orbcomm's sales channel to container owners, and Eisenberg explained that the Carrier Transicold product is one "that we built specifically for Carrier", complete with its logo. "It's hosted in a different centre [and] is in no way tied to the Orbcomm product," he added.

For its part, Maersk Container Industry (MCI) is taking a hardware-agnostic approach to reefer monitoring, and its Star Cool machinery (including the Star Care CA version) feeds a wide range of data to any "standard monitoring system". Clarifying to *WorldCargo News*, MCI said a "standard" system is one that has the necessary infrastructure (Modem, GSM, power-line, WLAN) available for different brands of reefer machines.

To get the most value out of any system, however, two-way communication is required, and this means the monitoring system must have access to the reefer supplier's data protocols. This makes it possible to react to the data received from the reefer machine by changing the set point and other parameters remotely, initiating defrosts and updating software. Star Cool even allows this to be done without the reefer being connected to power.

Reefer OEMs are being approached by multiple companies to get access to their protocols, but, as far as is known, suppliers are mostly (or only) working with those that have an actual agreement with a reefer owner. MCI explained: "The owner of the container also owns the data stored inside the container, if no special agreements have been made. It should, therefore, be the owner's decision to mount a modem, and to define who should have access to the retrieved data. The same goes for controlling the machine via an on-site operator or remotely via a modem." ❑

Reefer container builders take a hit

Impacted by weak demand, reefer output has plummeted by 50% in 2016, while prices continue to be depressed and there is fierce competition between suppliers

Reefer container manufacturers are experiencing a very difficult year in 2016. The total delivery figure over the period January to September (according to the latest data to be released by the box manufacturing industry) amounted to just 95,000 TEU. This was less than half its level during the corresponding period of 2015.

Even given the probability of a stronger uptake for the final 'peak season' quarter, reefer box production is not expected to go much above 150,000 TEU for the current year overall. The annual figure reached 275,000 TEU in 2015, and has not been below 200,000 TEU since the market upheavals of 2009-10.

The total for 2016 has, to date, comprised around 3,000 x 20ft and 45,000 x 40ft high cube, plus a few hundred 'specials'. It compared with 5,000 x 20ft and 95,000 x 40ft high cube built during the same nine-month period in 2015.

Erratic output

Throughout 2015, the monthly production rate held relatively steady, at between 20,000 and 25,000 TEU for the majority of the year, apart from a brief surge in January (when more than 30,000 TEU was produced) and drop in the weaker months of June/July (to nearer 15,000 TEU/month).

In 2016, the monthly output has been more erratic, as well as lower, with the highest rate (exceeding 15,000 TEU/month) achieved during the most recent (third) quarter. Output was hard pushed to match 10,000 TEU/month earlier in the year, and fell well short of this figure in February/March and June. It declined to practically nothing in May.

Reefer pricing has remained depressed, even if material (and factory running) costs have tended to hold steady over the past year. Prices have been held down by raw materials costs (the average price per tonne for stainless steel has been below US$2,000 for the high grades this year) and an increase in production capacity, following the start-up of Maersk Container Industry's (MCI) new factory in San Antonio, Chile. This has further heightened competition between the three main box building groups – CIMC, Singamas and MCI – and at a time when demand was generally falling.

The headline price being paid for a delivered 40ft high cube reefer (of average specification, and including machinery) has held close to US$15,000, with the box manufacturing cost in the US$8,000-8,500 range, depending on build quality. Reefer machine prices are similarly depressed, due to the intense competitive pressures that already exist within this manufacturing sector.

The world's reefer box building industry currently operates an annual capacity of 375,000 TEU, based on maximum twin-shift operation. A stable 190,000 TEU/year is being provided by CIMC's two factories, each of which is relatively new. Singamas offers a single plant – also a recent start-up – rated to 60,000 TEU per year. MCI's main site in Qingdao operates at 85,000 TEU/year, while its San Antonio plant can supply 40,000 TEU/year. Although the latter plant is still being geared up towards volume manufacture, and so has yet to attain its installed maximum, the potential extra capacity already exists. In 2017, Singamas plans to bring one further site on stream at Qingdao, although its capacity rating has still to be made known.

Idle capacity

The recent global production rate has thus fallen short of single-shift working, which effectively idles production capacity. CIMC factories, based in Qingdao/Taicang, had built around 45,000 TEU in the nine months from January-September 2016, with half of that total constructed since July. Over 60% came from the larger Qingdao site, leaving 40% for Taicang. By comparison, the company's two factories had already supplied 125,000 TEU throughout the same nine-month period in 2015, and then went on to reach 180,000 TEU for the year as a whole.

The Singamas plant in Qidong produced 14,000 TEU from January to September 2016, compared with 25,000 TEU for the same period in the preceding year. Its total output surpassed 30,000 TEU in 2015, with a balance of 5,000 TEU delivered earlier in that year by the older Shanghai Reeferco plant, which was subsequently closed.

MCI factories managed a total exceeding 35,000 TEU, much of which was still produced at Qingdao. That factory had already supplied more than 40,000 TEU during the corresponding nine months of 2015, and topped almost 60,000 TEU for the year overall. However, it was then being heavily supported by affiliate Maersk Line, which took delivery of more than 25,000 x 40ft high cubes during 2015 – and so accounted for big share of the factory's overall output.

Trial production

Maersk also received some trial production from MCI's new factory in Chile later in 2015. However, MCI-Qingdao had to rely on some significant third-party business earlier in 2016, due to Maersk Line initially slowing its reefer procurement, in order to absorb the substantial deliveries received in 2015.

Maersk Line's intake from MCI-Qingdao had amounted to a little more than 5,000 x 40ft high cubes for the opening nine months of 2016, which made up just a third of the factory's entire output. Nevertheless, Maersk Line intends to purchase a significantly larger number before the year-end, with a total of 14,800 units ordered by the end of September. Their production will be split between MCI-Qingdao and MCI-San Antonio, and could also come from other suppliers. All will feature built-in Remote Container Management (RCM) technology, and will fuel fleet expansion, as well as replacing older equipment.

Reefer demand has proven generally weaker in 2016, due to a slowdown in trade growth and the financial state of most major shipping lines. Shipping companies have accounted for only a quarter of all reefer output so far in 2016, with the dominant balance instead being met by leasing firms. By contrast, the split was nearer 50:50 for 2015.

Some lines have since switched their balance back to leasing during 2016, whilst the majority are continuing to hold off from replacing older stock in order to conserve funds. This practice has already aged the line-owned reefer fleet in recent years, to the point where it has a significantly older profile than leased equipment.

Maersk may have so far committed to a smaller purchase of reefer equipment in 2016, but it still heads up the shipping line sector by a sizeable margin. It alone accounted for over 50% of all shipping company deliveries made from January to September. Other significant buyers include the more regionally focused Matson Transport and Eimskip Group (of Iceland), which contributed another 10%.

This contrasts with 2015, when lines buying reefers in large quantities included CMA CGM, Hamburg Süd, Hapag-Lloyd, UASC, K Line, OOCL and Evergreen. Shipping line purchases over the first nine months of 2015 were almost four times as high as the same period in 2016, and the sector went on to purchase 135,000 TEU over the full year 2015.

Lessor scale-back

The leasing sector has scaled back even further, with purchasing in the first nine month of 2015 running 60% higher than the same period this year. Seaco and Textainer have led purchasing from the leasing sector, each receiving around 20,000 TEU. Other important buyers amongst leasing firms were Beacon, SeaCube and CAI International, plus TAL/Triton and Florens/Dong Fang. The leasing sector purchased a total of 140,000 TEU of reefer boxes last year, but the final figure for 2016 will be much lower. ❑

Table 1: Reefer container production and capacity

Year	Output (units)	Output (TEU)	End-year capacity*
2012	120,000	230,000	280,000
2013	108,000	205,000	340,000
2014	122,500	225,000	340,000
2015	140,000	275,000	350,000
2016**	49,000	95,000	375,000

*Maximum annual twin-shift capacity (TEU). **January-September only.
Source: Container manufacturing industry*

Table 2: Reefer container production by manufacturing group (TEU)

Company	2013	2014	2015	2016*	End-year capacity**
CIMC Group	130,000	134,000	180,000	45,000	190,000
MCI Group	45,000	45,000	60,000	36,000	125,000
Singamas Group	30,000	46,000	35,000	14,000	60,000
Total	**205,000**	**225,000**	**275,000**	**95,000**	**375,000**

*January-September only. **Maximum annual twin-shift capacity (TEU).
Source: Container manufacturing industry*

Market gets tanked up

The latest ITCO survey shows growth in the global tank container fleet, but fewer new units were built last year

The International Tank Container Organisation (ITCO) recently published its *4th Annual Tank Container Fleet Survey*. Based on detailed research of tank container operators, leasing companies and other owners, the survey provides what ITCO describes as "a qualified estimate" that there were some 458,200 tank containers in operation worldwide as of January 2016. This headline figure represents an increase of 7.2% compared with the 427,560 units recorded for January 2015.

According to the survey, a total of 43,780 tank containers were manufactured in 2015 (January 2016 data), down from 48,200 in 2014.

The accompanying table shows the estimated global number of tanks by industry sector (some estimates and assumptions are made). The survey gives details of 205 operators of tank containers worldwide for 2016. The operator figure of 329,080 units (up from 305,700 in 2015) is numerically dominated by the top 10 global tank container operators. These represent some 54% (178,000 tanks) of the total fleet.

The top 10 operators were Stolt Tank Containers (11%), Hoyer Group (10%), Bulkhaul (6%), Den Hartogh Logistics (6%), Newport (5%), Bertschi Group (5%), China Rail Logistics (5%), VTG Tanktainer (2%), Interflow (2%) and Suttons (2%), with the remaining 46% divided among other operators.

Lease fleet

A total of 36 leasing companies, with a fleet size of 201,750 units (up from 195,000 in the previous year) are listed in the survey. The top 10 lessors account for 85% (172,000 units) of the total lease fleet, with the top three companies accounting for 58% of the total. These comprised EXSIF (22%), Seaco Global (21%), Eurotainer (15%), Trifleet (6%), TAL (5%), NRS (4%), Raffles (3%), IEL (3%), TWS (3%) and Multistar (3%), with the remaining 15% divided among smaller leasing firms.

ITCO's global fleet total does not include leasing company tanks, except idle units, as the rest of the lease fleet is counted in the figures for operators and shippers/others in the table.

Tanks might be idle because they are in the process of preparation, such as maintenance and testing, or in the process of being repositioned to a demand area or remaining as newly manufactured stock. Typically, says ITCO, this represents 10% of the leased fleet. In the current economic environment the average idle number might be higher, but for reporting consistency, at estimate of 10% has been maintained.

Global tank container development by year

	2013	2014	2015	2016
Operators	**116**	**176**	**194**	**205**
Owned	140,460	161,300	194,160	211,055
Leased	88,000	103,250	111,540	118,025
Total	228,460	265,550	305,700	329,080
Leasing firms	**27**	**34**	**33**	**36**
Idle	15,000	17,650	23,400	20,175
Leased to operators	88,000	103,250	111,540	118,025
Leased to shippers/others	47,400	55,600	60,060	63,550
Total	150,400	176,500	195,000	201,750
Shippers and others				
Owned	47,400	55,600	60,060	47,400
Leased	47,400	55,600	60,060	63,550
Total	94,800	111,200	120,120	110,950
Estimated manufacture	**39,700**	**42,620**	**48,200**	**43,780**
Estimated disposals*	**-**	**-1,000**	**-5,000**	**-2,000**
Grand total	**338,260**	**385,200**	**427,560**	**458,200**
Growth**	**-**	**13.9%**	**11%**	**7%**

*Notes: Data as of January in respective years. Various assumptions/estimates made in accordance with the survey methodology (available via www.itco.org). *Not easily verified. **Growth for the year compared with preceding survey. Source: ITCO 2016 Tank Container Fleet Survey*

The shipper fleet shown in the table – also referred to as producers or consignors – comprises tanks operated by chemical or food/beverage companies. These units are mostly special tanks manufactured or modified to meet a specific need, and include tanks designed to transport liquefied and refrigerated gases.

The "other" tank users include the many units operated by entities such as military, shipping and barge lines, rail, oil and mining industries, Chinese domestic and companies that use tanks for storage or special transport operations such as bitumen. Some of the tanks disposed from operator and lessor fleets might be modified and utilised within this category.

ITCO says its methodology for calculating the number of shipper/others fleet has been adjusted to align with the estimated static growth of the owned part of the fleet.

Growth in the tank container industry is reflected by the number of new units built. The survey gives details of 18 tank container manufacturers, which produced the 43,780 new tank containers in 2015 (shown in the 2016 column, as survey data relates to January). Compared to 2014, when 48,200 new tank containers were manufactured, this represents a decrease of 9.2%.

Manufacturing is concentrated in China, with the only other large volume manufacturer (Welfit Oddy) based in South Africa. A total of 18 manufacturers are listed in the survey, but the top five represent 90% of global manufacturing – CIMC (46%) Welfit Oddy (14%), Singamas (13%), Nantong Tank NTT (12%) and CXIC (5%). The majority of manufacturing is of the industry standard tank range but, nevertheless, there is a very active and growing specialised tank sector, says ITCO.

The accompanying table also summarises the ITCO surveys completed since 2013. The estimated 2016 growth, compared with the 2015 survey, is around 7.2%. Shipper-owned fleets are not considered to be growing, due to the trend to outsource logistics to operators. The 2014 and 2015 shipper/others owned fleet has been adjusted by ITCO, to reflect a static position, but the leased part of the fleet shows a percentage increase.

Pending more precise data, a nominal figure of 2,000 has been included in the survey for disposals – a figure that ITCO says is likely to increase in future years, reflecting the economics of the comparative reduced price of new manufacture versus the increased cost to repair older tanks.

ITCO states that figures for disposals are not easily verified, and there is difficulty estimating them, since respondents tend not to reveal details of their fleets.

Tank containers are typically depreciated over a residual life of 20 years, but often remain in service for a longer period. The service life of the tank might be extended by refurbishment. Disposals result from repair costs exceeding the economic value of the tank and/or the age profile required by some users. Prevailing low materials prices, exchange rates and interest rates have lowered the cost of new tanks. This reflects on the decision whether a heavily damaged unit is economic to repair or remanufacture.

Some disposals are purchased by others and modified for continued use outside of the mainstream sector, and so may be accounted in the survey's "others" category.

Gassing up

One area highlighted by this year's survey for the first time is the gas tank fleet, but ITCO says this sector is difficult to estimate as few respondents detail their fleet by type. Nevertheless, assumptions were made on the basis of the responses received. The total fleet is estimated at 37,000 units. Especially high growth is taking place in cryogenic tanks for refrigerated liquefied gases. According to ITCO, seven manufacturers specialise in gas tanks, and these alone manufactured 1,740 units during 2015. Furthermore, Chinese manufacturers include a quantity of gas tanks in their total number, and, together with other manufacturers not listed, cryogenics manufacture probably amounts to about 2,500 units, says ITCO.

Another area detailed for the first time in this year's survey is the swap tank fleet. Swap tanks are mainly (99%) used by tank operators in Europe to benefit from the economics of the rail tariff and the generally higher permitted maximum gross mass. ITCO says that China and other areas are also potential growth markets, although 40ft configurations might prove to be better suited. The association believes there is likely to be continued growth in this sector.

"The tank container industry continues to grow, both in terms of the volume of cargo transported and the number of tank containers in the global fleet," said Heike Clausen, ITCO president. "This growth reflects the accepted recognition of the tank container as a safe, reliable, economic and sustainable means of transport.

"Continuing investment in the industry reflects considerable confidence in the long-term opportunities, with international operators expanding their deepsea services, while niche regional operators are opening up and developing new, regional markets."

The complete survey, including the methodology used, can be downloaded from *www.itco.org*. ❑

Getting to grips with flexitanks

Not everyone is convinced by them, but the use of flexitanks continues to grow

The industry continues to see flexitank systems increasing their market share, at the expense of tank containers, IBCs and other methods of liquid transport. At the same time, there are concerns around the quality of flexitank products themselves and their potential to damage the sides of dry freight containers.

These are certainly not new issues, and the Container Owners Association (COA) formed its Flexitank Division back in 2010 to tackle these matters. One of the results was the COA Flexitank Code of Practice, which sets out recommended procedures for selecting containers and operating flexitank systems.

ISO for BeFlexi

Flexitank specialist BeFlexi has embraced the COA Code of Practice and has put in place a system to ensure its products can be operated in accordance with its requirements. On 30 August, BeFlexi announced it had completed an "intermediary audit" on compliance with COA Code of Practice as a flexitank operator. "The certificate issued by NQA, the accredited global ISO certification body, confirms that BeFlexi management systems applicable to flexitank, dry liner operations, logistical and financial services comply with the COA Code of Practice for single-use flexitank systems and meets the BS ISO 9001:2008 Standard," the company stated.

Speaking with *WorldCargo News*, BeFlexi business development director Yan Chizhevskiy said the company took this initiative in part because it recognised that most of the problems with flexitanks are due to operational issues, not manufacturing defects in the products themselves. COA statistics, he added, show that the percentage of shipments that have a leakage problem is just 0.02%, and 98% of those are caused by installation problems, and not the flexitank itself.

Though these numbers are low, BeFlexi was encountering potential customers who had a bad experience previously and were reluctant to try the system again, even if their past experience was a long time ago. Taking the initiative, BeFlexi signed an agreement with SGS Inspection Services for it to provide flexitank installation services for its products globally. BeFlexi trained several SGS personnel directly in all aspects of the COA Code, and SGS then trained its own wider network, which has 1,800 locations worldwide.

Chizhevskiy emphasised that this was not a simple process. SGS, he said, are "true engineers" and have a lot of experience in working with, inspecting and classifying cargo. He added that it took a lot of time, money and effort to implement a standard set of procedures globally. BeFlexi ultimately hopes its move will raise the bar for the flexitank industry, and shippers will choose to do business with companies that can match their product with installation services that meet the COA standard.

Leaks and bulges

BeFlexi believes that COA compliance will give the market more confidence in its product. When installed through the SGS network, said Chizhevskiy, BeFlexi has "basically zero leakage statistics". Addressing the other major concern about flexitanks – that they cause bulging of the container walls – is, however, a more problematic issue.

Chizhevskiy acknowledged that the container inspection process is not perfect, and "sometimes not even a visual inspection can 100% guarantee that there will be no bulging". When it happens, the correct procedure is to tranship the cargo into another flexitank and container, a process, he adds, that does not take much time if personnel are trained.

Rejecting containers also requires an element of commercial discipline, as the issue of who pays to return a rejected container has to be addressed.

At the moment, the market for flexitanks is difficult, reflecting the downturn in shipping and trade in general. There are, however, some bright spots, and Chizhevskiy said one of the best is the CIS region, and Ukraine in particular, where BeFlexi is seeing market growth of over 200%.

Not all of the growth is coming at the expense of tank containers – some of the cargo is actually switching from bulk tanker shipping. The economics of bulk vessels, said Chizhevskiy, are difficult for shippers with less than 3,000t shipments. Cargo has to be accumulated and stored, and bulk vessels are not as well scheduled or as reliable as container services. The end result is that the cargo owner has money tied up for several months, just in the shipping process, before they are finally paid.

Today, an increasing number of shippers prefer to ship 200t of product per week on 30-day payment terms, instead of using large bulk shipments. Container availability is an issue, but there has also been some progress establishing two-way trade links, using the same containers to import products like palm oil, and then exporting lubricants or sunflower oil from Russia, for example.

Chizhevskiy is confident the market for flexitanks will continue to grow, and he notes that a steady stream of tank container operators from the Benelux region are now contacting the company. "If you give a call to a tank container company that really thinks about the future, they will have a person dedicated to flexitanks," he added.

As the market continues to develop, the concept of reusable flexitanks has been suggested, which is actually an old idea coming round again, as the very first flexitanks were reusable. Though it is an interesting idea, said Chizhevskiy, he does not really see a need in the market for a reusable product, from the shipper's perspective. It could, however, have the benefit of saving taxes and import duties.❑

SGS personnel installing a BeFlexi flexitank

Harnessing hidden potential

A raft of EU/national government measures and private sector initiatives aims to address the underutilisation of Europe's inland waterways

There is little doubt that European waterways are not fulfilling their potential and that considerably more freight could be moved by inland vessels and barges on rivers, such as the Danube, Elbe, Seine and Rhone-Soane.

Even the Rhine can be used to move substantially more cargo than its current tonnage of approximately 330 Mtpa, including over 15.4 Mt (over 3M TEU) of containerised cargo. In all, the Rhine is believed to account for about 60% of all cargo (550 Mt) moved by inland waterway in the European Union. For container traffic, the river is even more dominant.

The Danube is hugely underutilised, with only about 38 Mt of cargo transported on the artery in 2015. In H2 2015, traffic volumes declined as a consequence of generally low water levels, which meant vessels/barges could not be fully loaded on various stretches of the river.

Five-year plan

A key part of the Central Commission for the Navigation of the Rhine's (CCNR) Vision 2018 strategy is to achieve traffic growth on the waterway and provide the framework for cargo to shift from other transport modes. The five-year plan puts in place a number of ecological, social and economic programmes that it believes will support the sustainable development of the waterway. However, given the difficult trading conditions that currently persist and the poor state of the EU economy, Vision 2018 is not ignoring the fiscal challenges involved.

At the European Commission level, a new action plan has been launched for the region's inland waterways. Branded "Naiades II - Towards quality inland waterway transport", its aim is to "create the proper framework and conditions for inland waterways transport to be well-governed, efficient, safe, integrated into the intermodal chain, with quality jobs occupied by a skilled workforce, and adhering to high environmental standards".

Research demonstrates that there is huge potential for Europe's inland waterways and ports. In an analysis of truck journeys of more than 150 km between regions connected by inland waterways or within 100 km of an inland waterway network, over 261 Mt of cargo could potentially be containerised and moved by inland river vessel and/or barge (see table). It could be worth over 26M TEU a year of additional traffic to the network.

Huge schemes are afoot including the more than €1B plan to build a canal linking the Seine with the Scheldt – due to be completed in 2019/20.

Volume of cargo that potentially can be shifted from truck to inland waterways

Antwerp/Rotterdam - Middle Danube	70,840,054
Antwerp/Rotterdam - Czech Republic*	31,599,014
Koblenz/Rotterdam - Moselle	27,053,125
Antwerp/Rotterdam - Poland	12,318,482
Rhone - Saone Bassin	16,049,483
Antwerp/Rotterdam - Basel**	14,645,963
Antwerp/Rotterdam - Neckar	13,102,238
North-West France - Ruhr Area	25,883,996
Ruhr Area - Bremen	6,213,355
Antwerp - Rotterdam - Northern Netherlands	5,506,347
Middle Danube - Lower Danube	2,844,048
Ruhr Area - Northern Netherlands	2,722,914
Ruhr Area - Hamburg	2,086,098
Po River	2,052,215
Seine River Bassin	1,671,564

*Notes: All statistics in tonnes. *Including Saale stretch to Halle, 6,705,086t. **Excluding transit from other regions through Antwerp and Rotterdam; including this transit, the total potential would be 67,587,370t. Source: Panteia; Platina 2; D 1.6; 2015, quoted in EU report D 1.9 "Inland waterway market transfer roadmap" 6 April 2016*

River navigation is never easy, though, with rising and falling water levels often causing considerable disruption.

The past few months have seen several new services started, quite often in joint ventures, as individual transport companies have looked at:

- Extending the number of ports served.
- Deploying bigger barges.
- Reducing their impact on the environment.
- Offering their customers greater choice.

On 1 July, H&S Container Line, Danser Containerline and Ultra-Brag started a new operation linking Antwerp and Rotterdam with upper Rhine ports, including Basel, Weil, Ottmarsheim, Neubreisach, Strasbourg and Kehl. Additionally, the group offers a faster rail link between Kehl and Strasbourg and the Benelux ports of Rotterdam, Antwerp and Zeebrugge.

"Our primary aim is to achieve a better concentration of volumes of traffic on the Upper Rhine and optimise calls at the seaports," explained Thomas Knopf, CEO of partner Ultra-Brag. "It allows all three of us to improve our services and to achieve greater levels of efficiency."

Basel-based Ultra-Brag is a fully vertically integrated company, when it comes to its Rhine waterway and logistics services. Knopf stressed the significance of the group's ownership of barges (12 units in the 204 to 336 TEU size range), train connections and trimodal terminals, which include CSA Andernach and ETK Kehl.

"We have built sites at strategic points, in order to support customers directly and to keep land routes as short as possible," he said. "We also offer seamless and single-source administration and procedures, which keeps everything simple for the customer."

Contargo, which is one of the largest companies engaged in the river Rhine barge and freight logistics sectors, with cargo volumes in excess of 2.3M TEU a year, continues to expand its operations. Its network includes 25 terminals capable of handling containers at locations throughout Belgium, the Netherlands, Germany, France, Switzerland and the Czech Republic.

Rail enhancements

The focus this year has been on enhancing its rail activities, its services to/from upper Rhine ports and on the French river system.

A new company called Contargo Rail Services (CRS) has been set up, with its headquarters in Mannheim.

Andreas Mager, who co-manages

Duisburg looks to smooth traffic flows

In 2015, the port of Duisburg handled about 129 Mt of cargo, including a record 3.6M TEU. The latter was up almost 6% on the previous year, although total tonnage declined by 1.5%.

The port now has eight terminals that are able to handle containers, and a multitude of freight processing and logistics centres that companies are keen to use, given the port's extensive road (direct links on the A40 and A59 motorways), rail and inland waterway connections.

Recently, the Goodman Group, which is one of the world's largest owners, developers and managers of industrial real estate, announced plans to spend €28M on two new logistics facilities. The first warehouse, which features about 23,000 m² of space, will be leased to automotive parts supplier NGK Spark Plug Europe, and the second, smaller 10,500 m² unit is unassigned at the moment.

"We are pleased to have attracted another strong company from the automotive industry," said Erich Staake, chairman of the Board of Duisburger Hafen AG. "Our full service approach, in combination with transport networks that are perfectly coordinated for the flow of goods, has, once again, demonstrated how attractive Duisburg's logistics hub is. With 400 trains per week to over 80 direct destinations in Europe and Asia, the port offers NGK an ideal starting position to supply vehicle manufacturers and the after-sales market all over Europe."

Staake also believes in innovative ideas and the use of new technologies. For the past 18 months, the port and Siemens have been collaborating on the use of intelligent traffic management systems as a means of preventing congestion and providing truckers with the quickest and easiest routes into/out of the port.

"Our strategic cooperation with Siemens provides us with an opportunity to eliminate future bottlenecks and create new capacities," said Staake.

CRS with Michael Lückenbach, a veteran of Europe's rail freight industry who used to work for the Deutsche Bahn group, explained: "We want to make the new company an efficient operator in multimodal combined road/rail transport, and to expand the range of services we offer to/from third party terminals."

Since September, the Dutch group has been scheduling three additional rail services a week between Rotterdam and the upper Rhine ports of Basel and Weil am Rhein.

"This expansion makes us more flexible, and enables us to meet the needs of our customers even more effectively," said Holger Bochow, managing director of Contargo AG Basel. "We now run six times a week by rail to Rotterdam and three to Antwerp."

The company has also expanded container handling capacities at several ports, including Frankfurt Osthafen. Several grain silos have been demolished, and an additional 6,000 m^2 of storage space has been created for containers.

In general, port authorities, stevedores and terminal managers active on the Rhine have strong investment programmes in place, as they seek to:

- Modernise their facilities.
- Raise productivity levels.
- Ensure they have the right equipment and capacity in place for the market's changing cargo mixes and customers' requirements.
- Meet increasingly tougher environmental regulations being imposed by the EU.
- Enhance their connectivity with other transport modes.
- Offer enhanced logistics and freight processing services.

At the German port of Duisburg, the largest container handling complex on the Rhine with a throughput of close to 3.5M TEU a year, considerable efforts are being made to streamline traffic flows to/from the port (see box story, p36)

The huge Gateway Nord Basel trimodal port project, in which the partners have just submitted their funding application, is also about improving connectivity, particularly for cargo moving north/south via the Rhine waterway and Mediterranean ports. At full build-out, the facility will be capable of processing approximately 400,000 TEU a year (see p38-39).

At the Belgian port of Liège, which is located on the river Meuse, the focus is on adding new equipment as a means of handling its rising cargo volumes more efficiently. This year has seen Terex Port Solutions deliver a diesel-electric Gottwald Model 2 MHC and a Terex Stackace empty handling unit to Liège Container Terminal (LCT). While the MHC has a maximum lifting capacity of 80t, the empty container handling machine can reach one container over six.

Both pieces of equipment offer LCT additional operating flexibility. The MHC's higher lifting capacity and longer outreach, compared with the facility's existing gantry crane, for instance, allows containers to be switched between adjacently moored barges/inland waterway vessels, thus enabling the operator to offer transhipment activities.

Nicolas Limbioul, general manager of LCT, explained that the catalyst for its growth had been the port's strategic location between southern Belgium, northern France, western Germany and the North Sea ports of Rotterdam, Antwerp and Zeebrugge, and its range of trimodal facilities.

"In the past year, our volumes have increased to 40,000 TEU, and, since we are anticipating as many as 70,000 TEU on the waterway and 45,000 TEU by rail for 2016, we decided to order new handling equipment," he said. "This new investment will put us in a good position to meet our long-term challenges."

Outside of the Rhine waterway, opportunities are opening up, especially on the Seine and Rhone Soane rivers in France, the Elbe in Germany and the multi-national Danube river systems. In all cases, considerable sums of money are being committed to improving navigation, improving wharves and cargo handling facilities, and transforming some of the larger ports into fully fledged logistics and trimodal transport centres.

Polish artery

Elsewhere too, projects are underway, and the decision of the Szczecin and Świnoujście Seaports Authority (SSSA) to join the European Federation of Inland Ports (EFIP), suggests that Poland's river Oder could become a more important freight artery. The two ports are among the largest in the Baltic region, handling mainly dry bulk, general cargo, such as forest products and steel, ro-ro and agri-commodities.

Both ports are investing heavily in upgrading their berths and dredging alongside depths so that larger vessels can be handled. Plans are also afoot to substantially raise their container traffic and to assist in the development of the inland river network for all types of cargo. In particular, opportunities exist in using barges to move containerised cargo to/from German cities such as Berlin and Brandenburg.

"The Szczecin-Świnoujście port complex is the only one in Poland to have access to an inland waterway network, and, as this is regarded by the European Union as the most environment-friendly form of transport, this is an undeniable asset for us," explained Dariusz Słaboszewski, CEO of SSSA. "We hope that as a member of EFIP we can better promote the huge potential of the shipping capacity of the Oder River which is going to be improved as well." ❑

Contargo goes for third tier

Earlier this year, Contargo increased the carrying capacity of its river Escaut (northern France)/Antwerp/Rotterdam service by loading three tiers of containers on its barge CENTURION. Regularly, Contargo now moves 84 TEU on the service, which calls at the Escaut Valenciennes Terminal at Bruay-sur-l'Escaut and the ports of Antwerp and Rotterdam. This compares with 72 TEU previously when the barge was stowed with two tiers of boxes.

"Whenever loading conditions and navigation conditions permit, we will use the third tier to increase our transport capacity," explained Gilbert Bredel, managing director of Contargo North France. "Theoretically, our barges could load up to 117 TEU per trip, or 50% more again than with the two tiers of boxes, but there is insufficient clearance under the lowest bridges on the river."

In addition to carrying more boxes on each voyage, the company has increased the frequency of its sailings with Antwerp, Rotterdam and Dunkirk, connected six, five and two times a week, respectively.

The past 12 months have seen strong growth in the Escaut river trade, as an increasing number of importers and exporters have opted to use barge services for their shipments. Contargo's moves not only help it accommodate this additional traffic, but also allow it to utilise its assets more effectively.

Transmontane echoes get louder

Contship Italia is aiming to attract more Switzerland-Asia traffic flows to the port of La Spezia

During last month's World Port Days event in Rotterdam, the Port of Rotterdam (HbR), the Port of Switzerland (SRH) and Basel Logistics Cluster Region (LRB) renewed and updated their Memorandum of Understanding (MoU), committing to increasing inland waterway container traffic. Associated with this, the MoU looks to promote LNG and GTL (gas-to-liquids) as a fuel for inland waterway vessels and as a commodity along the Rhine axis.

LNG is indeed set to become much more important as fuel for inland waterway vessels, as it is a "darling of both Rotterdam and Basel and is backed by the EU", according to Ben Maelissa, managing director of Dutch-based Rhine axis multimodal logistics services specialist operator Danser Group.

Danser Containerline's EIGER-NORDWAND is claimed to be the world's first retrofitted LNG-driven container vessel. The dual-fuel motor and push barge combination is deployed in the Rotterdam-Upper Rhine trade. There are nine Upper Rhine ports. From north to south they are Ludwighafen (D), Mannheim (D), Karlsruhe (D), Strasbourg (F), Kehl (D), Colmar/Neuf-Brisach (F) and finally the southernmost cluster of Mulhouse/Ottmarsheim (F), Weil-am-Rhein (D) and Basel (CH).

Ben Maelissa also notes a growing use of tailor-made IT to integrate inland container shipping in the entire logistical chain and thus provide seamless linkages. A new Rotterdam port community registration system for container barges is being tested with SRH Basel, Mulhouse and Weil. Experience gained by HbR in registering container traffic electronically is used as input for the inland waterways registration system.

HbR, SRH and LRB have been cooperating closely for 3-4 years, and have regular contact at managerial and technical levels. The new MoU goes one stage further, in that it focuses on the expansion of trimodal infrastructure along what it describes as Europe's most important goods traffic corridor – the Rotterdam-Basel-Genoa corridor – so it now has transalpine ambitions.

Capacity at La Spezia is due to be increased to 2M TEU/year by 2020

They see the opening of the new Gotthard Base Tunnel (GBT), slated for this December, as a major opportunity to channel Italian o/d cargo on the Rhine axis, and recognise that more trimodal infrastructure is essential if modal shift targets are to be met. SRH's planned new trimodal Gateway Basel Nord (GBN), which on build-out would have an installed capacity of 390,000 TEU/year, is thus seen as vital.

The GBN "is a key project along the Rotterdam-Basel-Genoa corridor", remarked Emile Hoogsteden, HbR's director containers, breakbulk and logistics, who signed the MoU, along with SRH's Hans-Peter Hadorn and LRB's Martin Dätwyler. Hoogsteden added: "We depend on high-capacity terminal infrastructure and highly efficient cargo handling, particularly in light of the anticipated increase in container traffic."

Crucial phase

GBN requires construction of a third dock basin (DB3), and the project has reached a crucial phase, as, in August, SRH submitted a funding application for DB3 to the Swiss Federal Ministry of Transport. The problem is that the federal government and the Swiss inland shipping, intermodal and logistics sector are sharply divided, with some preferring to see a new terminal built just a few km downstream in Weil-am-Rhein, in Germany (*WorldCargo News*, August 2014, p14, March 2015, p16 and July 2015, p13).

Coming on top of GBT, the cost of DB3 is a major constraint for the federation. GBN's road/rail infrastructure costs (subject to a previous funding application) are estimated at CHF73M (€66.7M). The amount of the DB3 funding application is not clear, but DB3 is required to have a 55m-wide entrance and a 330m-long quay, allowing two push barge combinations to berth at the same time.

The Container Terminal Weil (CTW) project is backed by Danser and Swiss terminal operators, and transport companies Swissterminal and Ultra-Brag. Their official line is that CTW is not really a competitor to GBN, but is complementary, as demand in the Basel region is set to increase. In addition, Swissterminal will have to give up its operations in Basel (Westquai terminal) by 2029 at the latest. GBN's backers say that Basel's existing capacity will be fully utilised by 2019, and without GBN traffic will be forced back onto the road.

Danser accounts for around 1M TEU/year of container traffic between Rotterdam/Antwerp and Upper Rhine ports, by barge and rail. It has just introduced a five days/week rail shuttle between Antwerp and Strasbourg/Kehl. Including its existing Rotterdam rail shuttle and four weekly barge calls, Danser is serving the Strasbourg/Kehl area 13 times a week.

The 342 TEU dual-fuel EIGER-NORDWAND *motor/push barge combination (photo: Danser Group)*

Its motor/push barge combinations serving the Upper Rhine are equipped with reefer plugs. This was originally to meet the requirements of the Swiss pharmaceuticals industry, but the system has been extended to cater for cargoes that need only intermittent cooling or less cooling according to ambient conditions.

Southerly aspect

While Rotterdam wants to pull more Swiss and Italian traffic north, Italian ports naturally see things differently. Ports in northern Italy are around half Rotterdam's distance to Switzerland. Taking into account the shorter sea distance, Swiss supermarket chain Migros estimates that the overall supply chain saving for India-origin traffic is around 4,000 km if the containers are imported via Italy rather than Rotterdam or Antwerp. The volume of Swiss o/d traffic moving over Italian ports is still relatively small, but it has been growing.

GBT, which will cater for 750m-long trains with P400 gauge, together with the Ceneri Base Tunnel (expected to open in December 2019) and ongoing rail infrastructure improvements in Italy (*WorldCargo News*, April 2016, p18), therefore present Italian ports with an opportunity, as well as a challenge.

Drewry recently reported that Koper in Slovenia is a good alternative to Rotterdam for Munich/Bavaria-Asia flows. Can Italian ports step up to the plate for Swiss-Asian traffic? Contship Italia (CI) is one port operator that thinks it can. It has published the results of an analysis it carried out in May, comparing the port-to-rail ramp cost of a 40ft dry van to Basel from La Spezia with the Rotterdam-Basel cost. La Spezia, it claims, is 10% cheaper – Rotterdam 1.0, La Spezia 0.9. On top of this, the average voyage time from Shanghai to La Spezia is 28 days, whereas for Rotterdam it is 32 days.

The CI analysis contains common elements for Rotterdam and La Spezia. The biggest element is rail haulage – calculated to be 65% of La Spezia 0.9 and around 76% of Rotterdam 1.0. Both figures include the cost of train formation and marshalling costs (in CI's case at Milan-Melzo). Rotterdam sources say the average rail cost for Rotterdam-Basel is around €400/20ft southbound and €300/20ft northbound, both varying according to container weight. Transit time is Day A-B each way.

Daniele Testi, CI's VP, marketing, says that 10% of all imports are moved out of La Spezia Container Terminal (LSCT) by road and rail within 24 hours of being discharged; if only rail dispatch is considered, the figure is 14%. In general, he adds, 50% of imports are processed through LSCT and dispatched within three days of unloading from the vessel.

The rail costs are based on present conditions. Once the GBT is opened and, subject to demand, longer trains are introduced, CI's southern gateway product "will become even more competitive," says Testi.

Double-edged

However, the GBT is a double-edged sword. Will more Italy o/d shipping traffic drain north to the Rhine sea ports, or will Swiss and South German o/d shipping traffic drain south to the Ligurian/Tuscan seaboard? Let's also consider that Swiss-based rail intermodal operator Hupac, which has a powerful presence in Italy, is a major stakeholder in GBN, both directly and through SBB Cargo. (The other stakeholder is leading Rhine barge operator Contargo).

Reverting to the Rotterdam/La Spezia comparables, the ISPS fees are assumed by CI to be about the same for both sea ports. Inspection fees are higher in La Spezia, but are still only 4-5% of La Spezia 0.9. Interestingly, the THC are given as around 16% of La Spezia 0.9 and around 18% of Rotterdam 1.0, which means that the THC are 3.6% lower in La Spezia, at least as regards rail dispatch.

In addition, Rotterdam entails EU 'T' costs – the legal fee required to enable goods to travel in transit from the first EU port of entry to a different EU country (for this purpose, Switzerland is counted as an EU member). However, the cost does not apply in the case of LSCT, says Testi, because CI is certified to produce the T form "in house" via Hannibal, CI/Eurogate's intermodal rail arm. This is estimated to save between €20 and €50 on an EU-wide basis, so the Rotterdam T cost is somewhere in between.

On the other hand, there is a "merchant haulage fee" in the La Spezia cost that is not in the Rotterdam cost. Testi says that the experience of LSCT suggests that the charge is supposed to cover an element of cost that is not recovered from carrier haulage THCs. It is not possible to generalise, but the inclusion reflects the position when the analysis was made in May.

HbR figures show that the Rotterdam-Switzerland container market totalled 156,668 TEU in 2014 (2013: 122,851 TEU), of which 95,126 TEU (79,897 TEU) southbound and 61,542 TEU (42,954 TEU) northbound. This is all-Switzerland traffic, but is mostly moved over SRH installations. All-road had just a 2% market share in 2014, down dramatically from 11% in 2013.

Water works

Clearly there is a sizeable market for CI to go for, and, as LSCT is a busy import/export port, attracting more discretionary intermodal cargo is essentially very plausible. The rail share of inland distribution over LSCT has risen to 35%, and CI's Rail Hub Milano (Melzo) is already linked with Basel with six weekly train pairs, although the split between Italo-Swiss loads and international shipping loads is not known.

LSCT is the most intensively utilised container terminal in Europe, in terms of TEU/m² of space. It already handles several ULCV calls and is now equipped to handle ≥18,000 TEU vessels. With expansion finally now possible at the Ravano terminal, annual capacity will be increased from 1.2M TEU to 2M TEU by 2020.

The difficulty, however, becomes more apparent when one takes into account the Rotterdam-Switzerland modal split – 53% barge (2013: 56%), 45% rail (34%), and road 2% (11%). The accompanying table shows the detailed breakdown. This is a natural waterways market, and it would appear that time is not of the essence as, depending on the number of wayports, the sailing time between Rotterdam and Basel is 4-5 days downstream and 5-6 days upstream. LSCT can compete with just one mode, but Rotterdam competes with two. ❑

Rotterdam-Switzerland - market size and modal split in TEU

	2014	2013	2014 %
Northbound			
Barge	28,177	23,301	45%
Rail	31,993	17,833	52%
Road	1,372	1,820	3%
Subtotal	61,542	42,954	100%
Southbound			
Barge	54,747	45,184	58%
Rail	38,399	23,591	40%
Road	1,980	11,122	2%
Subtotal	95,126	79,897	100%
Both directions			
Barge	82,924	68,486	53%
Rail	70,392	41,424	45%
Road	3,352	12,942	2%
Grand total	***156,668***	***122,851***	***100%***

Source: Port of Rotterdam Authority

Another Alpine base tunnel under way

As previously reported, a new high-capacity rail link between Lyon and Torino requiring the construction of a flat 57 km base tunnel under Mont Cenis (Monte Cenisio) was approved by the governments of France and Italy in February last year. The agreement has now been ratified into law in Italy, and track work is under way on both sides of the tunnel.

The cross-border tunnel costs are estimated at €8.6B – about the same as the Gotthard Base tunnel, which is also 57 km-long. The costs are to be co-financed by France (34%), Italy (26%) and the EU (40%). To date, around €1B has been spent on reconnaissance and sample bores. Brexit has thrown up a cloud of uncertainty over the EU's future finances, while neither France nor Italy have firmed up budgets for their share of the costs. The basis exists in both countries' motorway tolls, but increasing them to shift traffic to rail is politically risky – France has already had to abandon an automated Ecotax scheme based on truck mileage. There are also environmental objections as the sample rocks have been found to contain asbestos and even uranium deposits.

At the same time, there is a groundswell of support for the project, as one might expect, from infrastructure and construction firms, utilities, steel makers, etc, as well as trade unions, and the huge employment opportunities will generate major tax revenues. In addition, on both sides of the border, TELT, the bilateral project management company, is trying to get SMEs involved in the project, in order to spread the wealth.

In July, TELT stated that preliminary tunnel works will commence in H2 2017, with the main works starting in 2018. In all, there will be 160 km of tunnel excavations – 2 x 57.5 km for the twin tubes and 2 km for the safety crosslink tunnels at set intervals. The new link will cater for 750m-long freight trains with P400 gauge – just like the GBT – and TGV passenger services. It has the potential to transform Italo-French traffic.

France is already taking smaller steps to prevent more modal shift from rail to road. The French rail network includes 3,000 km of branch lines linked to the national network and dedicated to use by companies with private sidings (ITE). This trackage amounts to 10% of the national network by length and accounts for 20% of all rail freight shipments.

However, these so-called "capillary" lines are under constant threat of closure due to their marginal economic case, which has contributed strongly to the debts of SNCF and, furthermore, by reason of this, many are in a poor state of repair. However, closing the lines will force companies to close their ITE, costing SNCF substantial freight volume and forcing more traffic onto the roads.

In December 2014, Paris embarked on a safeguard plan, as part of the overall mission to 're-launch' rail freight. As a first step, new committees were formed to investigate the lines on a regional basis, charged with working out their future on the basis of their specific freight profiles.

In addition, under a new law on "territorial organisation", stakeholders have the possibility to manage the lines directly and even take over their ownership. Their revenue threshold is lower than it is for SNCF, due to lower train driver (non-cheminot rates) and other costs.

To stimulate the plan, Paris is injecting €30M; due to multiplier effects, this investment package is worth around €100M. The first tangible results can now be seen, as around 600 km of trackage has been modernised for around €53M.

For example, the Bec d'Ambes-Bassens line in the Bordeaux region has been brought up to scratch for around €20M, and, since July, has been used regularly by 10 or more industrial companies that collectively move more than 300,000 tpa by rail.

The line is now managed by the Port of Bordeaux (GPM de Bordeaux), so, in effect, the new arrangements are an important extension of the previous measures that devolved responsibility for rail infrastructure inside port property from SNCF to the ports themselves.

Maximising carrying capacity

MacGregor has introduced two initiatives to help close the gap between a box ship's nominal capacity and the actual number of containers that can be loaded

According to Janne Suominen, cargo system development manager at MacGregor, some of the investments that lines are making in bigger ships are being wasted, due to underperformance of the cargo systems on those very same vessels. At a time when lines are looking to lower their average slot cost, the gap between nominal vessel capacity and actual achievable loading rates is, in fact, growing.

MacGregor expressed this view at the Navis World conference in 2015, but the company is still surprised that the issue is not widely appreciated or debated, especially as the problem is getting worse as larger vessels come on stream, as depicted in the accompanying graph.

MacGregor believes the reasons for the growing gap can be roughly divided into two categories: mechanical waste and usability waste.

Mechanical waste

MacGregor explained that mechanical waste "means that the cargo system design and hardware does not meet the current requirements set by the cargoes and routes. The system may not have the flexibility required to carry the variety of container weights and sizes typical for the route". In other words, lines are still using global averages for important aspects like maximum weight of deck containers, which are, in many cases, based on weather extremes in the North Atlantic – even if the vessels will never be deployed there.

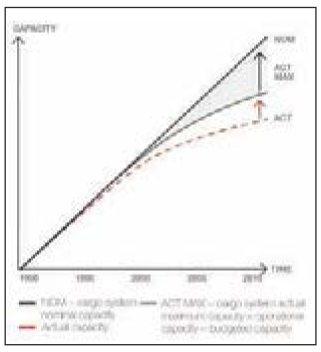
MacGregor is increasingly being involved at an early stage in the shipbuilding process, in developing a "cargo and route-specific analysis" for new vessels, which includes the design and selection of hatch covers, lashing bridges, loose and fixed container fittings for decks and holds, container stanchions and Lashmate calculation software to optimise the cargo system.

For existing ships, MacGregor offers a service called Cargo Boost, where it "rethinks" the cargo system for a specific route and cargoes. This involves reconsidering areas including cargo securing manuals, calculations based on route-specific rules, stack weight limits, lashing arrangements, mixed stowage opportunities, and adaptations to lashing bridges.

Improvements can involve recalculating rules and limits (such as new maximum stack weights according to the latest rules) and/or hardware changes, such as switching from internal to external lashing. A key point is that all the cargo systems must not only be technically compatible, they should work together in an optimal way. This includes the lashing software, and MacGregor emphasises that having software and hardware from one single supplier can deliver a significantly better performance than disparate systems.

MacGregor stresses that Cargo Boost uses data, rather than general assumptions about specific routes and cargo. This includes actual cargo data from BAPLIE files and other operational data. The analysis presents different options for the customer to assess and review, and can be refined by additional vessel data over time.

The gap between nominal vessel capacity and actual loading capacity is increasing as vessels get bigger (source: MacGregor)



MacGregor believes that better loading capacities can be achieved, in part by converting a ship's internal lashing to an external lashing arrangement

Usability waste

The second category currently reducing actual vessel capacity is what MacGregor calls "usability waste". This, the company explains, "has its origins in the use of outdated cargo system practices or other obsolete processes in the value chain, typically relating to a lack of collaboration and transparency or unusable, historic or inaccessible data".

Through its Productivity Care programme, MacGregor addresses usability waste by examining the whole planning process, including loading and unloading and the "overall utilisation of the cargo system". This initiative ties in with the XVELA service that is being managed by Navis, another Cargotec company, which is developing a cloud-based platform for vessel planning, with the ultimate goal of improving efficiency through collaborative planning using a single data set.

Impact on ports

Many of the factors identified by MacGregor have an impact on ports and port planning processes. Henri Paukku, operation support manager in MacGregor's Cargo Handling division, said some of the mechanical changes that Cargo Boost might recommend, such as switching from an internal to an external lashing system, require that terminals familiarise themselves with the new lashing system and the specific instructions on board the vessel.

Fundamentally, however, external lashing does not require any more skill or manpower to operate versus traditional (i.e. internal) lashing. The equipment, number of pieces and their operation is very similar.

Of more concern for terminal operators is the trend to try and close the gap between nominal and actual vessel capacity by stacking containers higher on deck. This is not just an issue for new vessels and 11-high deck stows (or 10-high with high cube containers), as lines are today looking to go higher on much smaller vessels, particularly after stack weights have been reconsidered.

This seems to be a point of conflict between lines and terminals, in some cases. One terminal manager, speaking anonymously to *WorldCargo News*, said his terminal is handling one particular service where vessels are now presenting with one tier more on deck than previously. To get over the top tier, a person must manually override a system on the crane that limits the hoist height of the spreader to protect the trolley. While this can be done, it is time consuming, slows the crane cycle time dramatically and, on occasion, has resulted in the terminal missing contracted productivity guarantees.

When this happens, he stressed, the terminal cannot deliver the performance that is built into the carrier's own planning process. The consequences, such as late sailing or rolled containers, are ultimately not in the carrier or the shipper's best interest. What is particularly frustrating is that some of the need to hoist containers over the high stacks could be eliminated at the vessel planning stage, he considers.

Paukku said MacGregor's Productivity Care programme can consider terminal limitations when it knows a vessel's planned route. There does not appear, however, to be a lot of collaboration in this area. Paukku said that while MacGregor has a "fair understanding" of air draught limitations, terminals are actually reluctant to give this information out directly, and calculations have to be made from observing vessel call data. He added that crane height issues are quite fluid at the moment, with crane raising projects currently underway in many terminals. ❑

Cargo Boost case study

A recent MacGregor Cargo Boost project on board three vessels has delivered an additional payload capacity of 300 high cube FEU (670 TEU) per vessel and improved operational flexibility.

This was achieved by converting the internal lashings to an external lashing arrangement, which delivered a much better loading profile. The vessels were slightly modified by installing lashing bridge extensions (known as mouse ears), behind the accommodation block, in areas where there were no visibility restrictions. Capacity was recalculated using route-specific rules, and MacGregor's Lashmate lashing calculation software was used to maximise the vessels' cargo system utilisation capacity.

A melting pot for carriers

The intra-European general cargo sector is hugely complex, where ocean carriers with very different business strategies and ship types vie for market share

Since the global financial crisis of 2008/9 and with generally weak performances in the eurozone economies, intra-European general cargo volumes have increased relatively slowly, particularly within the northern European sector of the market.

For the region as a whole, which includes the faster-growing Mediterranean basin, cargo volumes have risen from about 6M TEU in 2011 to 6.8M TEU in 2015, a five-year rise of just over 13%. Last year, the market was extremely sluggish and, while the first seven months of 2016 have posted some sort of recovery, the 2.7% increase in volumes is extremely modest (see table, p43).

Following the cargo

The Irish Sea trades have performed better, with recent data published by the Irish Maritime Development Office (IMDO) showing robust quarter-on-quarter performances for both lo-lo container and ro-ro cargo ships for more than four years.

IMDO's Q2 2016 figures revealed that, while ro-ro cargo to/from Eire grew by 7%, containerised traffic rose by 4% to 178,183 TEU. By also taking into account the trades linking Northern Ireland, IMDO's data revealed that ro-ro traffic was up 8% in the second quarter of 2016, and lo-lo traffic by 2%.

Both lo-lo containership and ro-ro operators have responded to the improving market conditions by adding capacity. One of the latest carriers to do this has been Heysham-based Seatruck Ferries, which has replaced the smaller and slower vessel CLIPPER RANGER with CLIPPER POINT (105 trailers). It adds 25,000 trailer spaces a year to the carrier's operation between England's northwest port of Heysham and Dublin.

According to Alistair Eagles, CEO of Seatruck, deployment of the more powerful vessel offers the company many operational benefits, and its customers a range of service improvements, including faster transit times and better schedule reliability.

"The ship also gives us greater trailer free height and faster turnaround times in port, as the ship benefits from a ramp interface to the lower hold instead of a lift," he said. "For drivers, the single berth cabins and comfortable lounge area will be appreciated."

Eagles is convinced that the larger vessel will attract more cargo, and that the timing of the move is important, given the changes that he sees taking place in the Irish Sea freight market.

"We specialise in the shipment of unaccompanied freight trailers, which is more efficient for the operators and makes better use of their HGV drivers, which continue to be in short supply," he explained. "Historically, HGV freight to Ireland has predominantly moved through Scotland or Wales on a driver accompanied basis, but the market is shifting significantly."

Seatruck, which earlier this year started a new service between Bristol and Dublin, appears to be taking the right decisions, with Eagles referring to its cargo


Eimskip has forged a strategic alliance with Greenland-based Royal Arctic Line

Brexit fears

Most traders involved in the intra-European freight markets believe it is too early to make a call on what the impact of the UK's departure from the European Union will be on trading volumes. However, the majority of service providers and cargo owners contacted by *WorldCargo News* see some fall-off in cargo volumes, the scale of which will be determined by the deal negotiated with the other members of the EU after the UK triggers Article 50 of the Lisbon Treaty.

An earlier statement issued by Maersk Line summed up most executives' feelings. It read: "Maersk has business in the UK to attend to, regardless of the outcome of the referendum. Having said that, we would consider it a loss to both Europe and the UK, should the UK decide to leave the EU, as it would reduce the size of the internal market and, over time, make trading more complicated. This would be a disadvantage to EU and UK growth opportunities and ambitions."

Eva Rademaker-de Leeuw, Samskip's manager for marketing and communications, referred to the considerable uncertainty about the whole Brexit affair. "While we expect that the transport industry will be affected by the UK's decision to leave the EU, we are still unsure to what degree this will be," she said. "Right after the referendum, we did notice that some of our UK business partners put contract discussions on hold, awaiting further actions from UK Government. For instance, we are very strong in transporting building materials from the Continent into the UK using our flatrack equipment, specifically designed for this industry, and it remains to be seen whether the UK will continue to source these materials abroad, or whether they will be sourced locally."

But she confirmed that, since the referendum and up to the end of September, Samskip's trade with the UK "remained strong".

volumes this year as growing at three times the rate of the market.

In addition to the relatively sluggish growth in the market, there have been notable operational challenges too. The imposition of the Sulphur Emissions Control Area (SECA) in the Baltic, North Sea and English Channel sectors on 1 January 2015 means carriers have to use bunkers with only 0.1% sulphur content. This has raised their voyage costs considerably.

The migrant crisis of the past two years has also had a significant impact on costs and service levels, with the reliability of many through-transport operations severely affected, as some emergency border checks have been introduced. This year, for instance, saw Austria impose additional security checks along its eastern border.

Any further escalation of the migrant crisis that could lead to the abolition of the EU's Schengen Agreement or the imposition of controls on free-border movements would be catastrophic for the freight industry and intra-European trade in general.

To date, it has been users of ro-ro vessels and rail services through the Channel Tunnel that have been worst affected by this issue and, to some degree, by traffic congestion, too, particularly during holiday periods. The resultant long queues in both France and the UK have caused widespread disruption and led to some carriers diverting cargo to ships deployed on other corridors. Ports in Humberside, such as Immingham and Killingholme, and further north appear to have benefited the most from these decisions.

Interestingly, there are ro-ro operators that believe longer northern routes will prove more popular and provide significant growth opportunities in the future. This appears to have strengthened since the UK voted on 23 June to leave the EU. Brexit, it seems, could result in southern British ports having less of a pull when it comes to future cargo flows and the UK's reduced reliance on Europe as a trading partner.

Investment decisions

This potential structural change and the fact that competition with lo-lo container operators is more intense in the North Sea than in the English Channel is affecting several ro-ro carriers' investment decisions. In addition, there is a general requirement for carriers to replace ageing fleets with more cost-effective ships, purpose-built for operating in the SECA areas.

The clear trend is to order bigger tonnage, and the first to commit has been Luxembourg-based CLdN RoRo SA, part of Cobelfret. The group has ordered two ships with 8,000 lane metres from Hyundai Heavy Industries in South Korea, and two ships of a slightly smaller 5,400 lane metres from the Uljanik Shipyard in Croatia. The latter deal includes four units of a similar design. The first of the carrier's new vessels will be delivered towards the end of 2017.

CLdN's terminal arm, which includes ownership of the port of Killingholme in the UK, will invest in excess of €100M in infrastructure and equipment to accommodate the new series of ships.

CLdN describes its new vessels as "game changers", given their highly innovative and flexible deck designs, which allow a full range of trailers, containers, high and heavy cargoes, cars, vans and trucks to be loaded. In particular, the new ships will enable the carrier to expand its operations and offer a wider range of what it refers to as value-added logistics services. One of its goals is to improve its services to Europe's car manufacturing industry.

Moreover, recent weeks have seen CLdN start a new intermodal service via its hub in Zeebrugge to Lyon (see box story below), and significantly upgrade its operation between northern Europe and Iberia. A third ro-ro vessel has been added to its Iberian network, and this has allowed the carrier to also call at the northern Spanish port of Santander. It means that CLdN is now offering two sailings a week between Rotterdam and Santander, and three sailings a week to/from Leixões, up from two sailings a week previously. CLdN is one of the biggest ro-ro operators in the trade, moving in excess of 1M trailers and 1M vehicles a year.

Meanwhile, Copenhagen-based DFDS has ordered two ro-ro vessels of 6,700 lane metres (450 trailers) capacity, with options for four more, from Chinese shipyard CSC Jinling. The ships, which will feature scrubbers for removing sulphur from emissions and modern ballast water treatment systems, represent an investment of approximately DKR1B (US$146M) on the part of the Danish company.

Trailers to containers

The problems encountered in the English Channel have also resulted in some cargo owners switching their business from trailers to containers, although Europe-wide this is a trend that has been taking place for several years.

While container services are slower than ro-ro operations, especially those where drivers accompany the freight trailers, they tend to be more flexible and are definitely cheaper. Above all, it is reliability that is the most important factor, and lo-lo services have improved and can offer highly effective just-in-time solutions in the shortsea sector. Furthermore, the use of 45ft pallet-wide containers has meant similar payloads can be moved as in trailers (see page 25).

Samskip thinks containers will also increase their share of the market, because they are truly multimodal and can be better integrated into more environmentally friendly intermodal service offerings, which fit more neatly with the EU's transport policies.

Eva Rademaker-de Leeuw, manager of marketing and communications at Samskip, explained: "We have noticed that in recent years, more and more clients are seriously considering converting their freight from trailers to containers, and we expect container and multimodal shortsea transport services to become increasingly important.

"We see a major driver of this conversion being the European Commission's white paper *Roadmap to a Single, European Transport Area*, published in 2011. It shows that the EU wants to create a single European Transport Area and dramatically reduce Europe's dependence on oil. The key goal is to have established a 30% shift of medium distance passenger and freight journeys from road to rail and waterborne transport by 2030, further increasing to 50% by 2050."

However, it is not all plain sailing for shortsea container specialists. They often face stiff competition from their mainline/deepsea (MLOs) counterparts, which load cargo on an opportunistic and selective basis between European ports, as a way of boosting

Multimodal ro-ro

To dovetail with its new and larger vessels acquisition programme, coupled with the enhancement and expansion of terminal facilities, CLdN RoRo is set to offer new intermodal services, starting with a Zeebrugge-Lyon connection.

In its first phase, as part of a larger and ambitious intermodal strategy, CLdN RoRo will launch a direct rail service from its terminal on Brittanniadok in Zeebrugge to Port Edouard Herriot in Lyon.

The initiative reflects the market's demand for environmental, cost-efficient and reliable hinterland services, says CLdN, and, at the same time, CLdN enhances its own efforts to help customers reduce their road miles, with the benefit of higher load limits (up to 44t all-up for the road leg of intermodal trunk haul) and attractive lead times.

Initially, CLdN will provide a 630m long (100 TEU) train on a three pairs/week basis between Zeebrugge and Lyon, and vice versa. Trailing weight capability is 1,800t, and the services will cater for trailers, swap bodies, swap tanks and 20ft-45ft containers including tank containers. It is not clear at this juncture if slots are available to other logistic service providers.

The rail service partner is Luxembourg's CFL Multimodal.

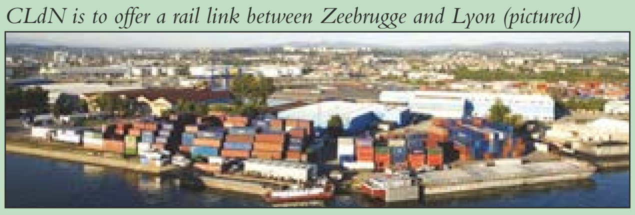
A spokesperson for CLdN commented: "This new rail link is a very positive development for the port of Zeebrugge, adding another strong hinterland connection to its existing service network, allowing the port's customers and operators to move their units in a fast and efficient way. In parallel, CLdN is also actively exploring further opportunities, in order to extend its intermodal services in the near future.

"Both the terminals in Zeebrugge and Lyon have modern rail infrastructure, operated by dedicated and experienced staff. In addition, IT systems will be enhanced to offer our customers an integrated 'one-stop-shop' booking [combining ferry and rail] from/to any of our terminals."

Southbound departures will be on Tuesday, Thursday and Saturday mornings, and northbound departures on Wednesday and Friday mornings and Saturday afternoons. Transit time is 22 hours in each direction. The service is expected to start at the end of October.

Zeebrugge is a key hub for CLdN, with links to Leixões, Santander, Dublin, Killingholme Humber, Purfleet London, Esbjerg, Hirtshals and Gothenburg.

CLdN is to offer a rail link between Zeebrugge and Lyon (pictured)



their load factors. Their actions are particularly noticeable on the longer-distance corridors, such as those between Scandinavia and Iberia, the Continent and Italy and/or the UK to Turkey.

It is also important to distinguish between those ocean carriers whose main business is intra-regional cargo and those that rely on feeder boxes from MLOs. The relationships have become increasingly blurred in recent years, as traditional common-user feeder companies, such as Unifeeder and Team Lines, now carry cargo from both camps. Only X-Press Container Line is wholly committed to common-user feeder operations and carries no local cargo.

By contrast, the Iceland-domiciled carriers Samskip and Eimskip, which compete aggressively with each other, are focused on European imports and exports, reefer cargoes and the provision of value-added logistics services. Their networks have been progressively expanded through a mix of organic growth and mergers/acquisitions, and this year has been no different.

While Samskip has strengthened its operations in Norway by acquiring Euro Container Line and the reefer ship and cold chain logistics specialist Silver Sea (previously Silver Green), Eimskip has forged a strategic alliance with Greenland-based Royal Arctic Line and announced the purchase of a 90% interest in Rotterdam-based Extraco Internationale Expeditie. The latter deal will boost Eimskip's share of the reefer logistics market in the Netherlands.

Extraco provides transport services to importers of chilled and frozen products in the Netherlands, and also offers import services, including handling, warehousing, customs brokerage, and distribution for bulk, chilled and frozen goods in the region.

Seago and Maersk

Seago Line is something of a hybrid, as the Copenhagen-headquartered operator was established in 2011 with the specific objective of running Maersk Line's intra-European services and its affiliates' feeder links in the region. While Seago still moves the bulk of Maersk's European relay volumes, it has to compete for this cargo.

In starting new services, Seago has to carefully evaluate the benefits that will accrue to each sector of its business, as conflicts of interest can arise and/or customers' demands can easily be compromised, given the different operating disciplines of running feeder and local cargo services.

The provision of dedicated (or at least streamlined) shuttle loops is the most straightforward way of dealing with these challenges. This approach was perfectly illustrated by the launch of the Algeciras, Dublin and Liverpool service earlier this year.

First, the use of the Spanish port as a relay hub, rather than Rotterdam, has improved Maersk's transit times for Irish imports from/exports to Asia. Second, by using Algeciras as a hub, it has meant Seago providing its Irish customers trading with North Africa and the Mediterranean basin, in particular, with much quicker transits and more reliable connections.

Brian Godsafe, managing director of Maersk Line UK & Ireland, said: "This development represents a major change for our Irish customers, who will now receive a faster and direct call service to better meet their import and export needs."

Robert Clegg, general manager for UK & Ireland at Seago, was equally enthusiastic about the new operation and the opportunities it would give the carrier. "This service means we are well placed to serve customers looking for new opportunities through a Mediterranean connection, thanks to our competitive transit times and convenient berthing windows. We are also able to offer our customers in Liverpool's hinterland access to south European and north African markets."

Seago is actively investing in its network, and a series of 3,600 TEU ships ordered by sister company Maersk Line in 2015 from the Cosco Shipyard Co in Zhoushan, China, are scheduled to enter the carrier's North Sea and Baltic Sea regional operations next year.

The seven ships, which will be powered by marine gas oil, will be delivered between April and November, and will replace tonnage half their size or less, giving Seago significantly improved operating economies of scale.

Eyeing breakbulk

Seago believes that containerships will continue to increase their share of the intra-European trades, especially at the expense of breakbulk services and particularly in the Scandinavia/Baltic Sea region. "Our general advantage is that we provide stable and reliable services on fixed schedules, and this gives us a lower cost base in general," said a spokesperson for Seago. "We do not believe that the conversion from traditional breakbulk carriers to container shipping lines has stopped, and we see, for example, liner companies increasing their share of the project cargo market."

Elsewhere, the intra-European trading specialist Containerships is also modernising and expanding its fleet. Despite some significant fiscal challenges in the past couple of years, and a decision to change the shipyard contracted to build its pioneering dual-fuel LNG-propelled tonnage, the recently publicly listed company expects to take delivery of the first four units in a series of six ships in 2018.

Each vessel will be able to load 1,400 TEU, but could accommodate a full complement of 639 x 45ft containers if required. The new ships will be owned by GNS Shipping/Nordic Hamburg, and Arkon Shipping will be the commercial manager and charter broker.

The varied operating strategies and

Intra-European container trades (2011-16)

Year	Volumes (TEU)	Change	Price index	Change
2011	5,959,700	-	77.6	-
2012	6,010,300	0.8%	84.3	8.6%
2013	6,263,900	4.2%	82	-2.7%
2014	6,734,400	7.5%	79.1	-3.5%
2015	6,764,200	0.4%	71	-10.2%
Jan-Aug 2015	4,504,600	-	70.9	-
Jan-Aug 2016	4,627,000	2.7%	66.6	-6.1%

Source: Container Trades Statistics

intense competition has meant that rates in the intra-European trades are among the most competitive in the world, and they have been falling in most years since 2011. According to Container Trade Statistics' pricing index, which is calculated on the basis of average rates recorded in the trade in 2008, a continuous slide in freight rates has taken place since 2012, with the rate of decline posted last year the steepest of all (see table above).

The situation emphasises the need for carriers to be vigilant on their costs but, at the same time, proactive and innovative when it comes to investing in assets and services. The European trades will remain a melting pot, full of challenges for the foreseeable future. ❑

Oversupply in the Americas

Port capacity is too far ahead of economic growth and landside infrastructure in several Latin and South American countries

There was not a lot of good news for the port sector at the TOC Americas conference in Cancun this month. The conference kicked off with Mario Cordero, chairman of the US Federal Maritime Commission, talking up the potential of intra-American trade as being transformational for countries, and creating opportunities for ports such as Mobile, Alabama, to become new hubs for north/south trades.

However, speakers from the Latin American ports sector in particular, were far more pessimistic, and the consistent theme to emerge was slowing growth versus growing capacity. Mario Veraldo, Maersk Line's MD for Mexico and Middle Americas, said container traffic across Mexico's ports grew by just 1.4% in H1 2016, and the forecast for the full year is 2%, just as new terminals in Tuxpan and Lázaro Cardenas are coming on stream.

This clearly surprised some, as the automotive industry, the engine of Mexico's economic growth, continues to expand, but most of the business is ro-ro traffic. On the container side, Veraldo urged Mexico to diversify its markets, grow its reefer exports and position itself as a "regional hub".

To achieve this, Mexico needs better road and rail links to existing production areas, many of which are not located near the coast. Keynote speaker Pedro Bermúdez, director general of merchant marine at Mexico's Secretariat of Communications and Transport, said the government is working to build better corridors between its ports and the industrial areas that generate 70% of its GDP, but this is not going to happen overnight. The security situation also weighs heavily on shippers.

Other speakers mentioned a shortage of truck capacity across the industry, and alluded to the situation being potentially about to get worse if double trailers are banned in Mexico (see "Mexico considers trailer ban", p18). Julian Palacio, director general at trade association Latinports, said logistics costs in Latin America range between 16% and 25% of GDP, compared to the 9% average for OECD countries.

Charles Baker of TC Mariel SA, speaking at TOC Americas

TOC Americas delegates heard that several new Latin and South American port facilities, such as TecPlata in Buenos Aires, were "idle"

Too many terminals

Palacio criticised the increasing number of "white elephant" ports in Latin America. Many, he added, were planned when throughput growth was over 10%, but are coming on stream when that figure has fallen to 1% or lower.

He was particularly critical of terminals built to compete in already well-established port areas, and singled Tuxpan (Mexico), Barranquilla (Colombia), Posorja (Ecuador) and new terminals in Santos (Brazil) and Buenos Aires (Argentina) as developments that will end up cannibalising an established market and creating "favela" terminals in the process.

Giovanni Benedetti, commercial director at Sociedad Portuaria Regional de Cartagena (SPRC) also said Latin and South America have too many "idle" terminals currently. He singled out facilities at La Unión (Colombia), Ponce (Puerto Rico), TecPlata in Buenos Aires (Argentina), Barranquilla (Colombia), and Tuxpan (Mexico) as among those not handling any container business.

Ponce, for example, opened its Port of the Americas in 2014, primarily as a transhipment facility, but, with just two STS cranes and all the restrictions of operating under the Jones Act, the facility was not able to compete for transhipment business.

La Unión in Colombia is another case of a terminal that does not suit the needs of the market. Its 340m container berth and 35-ha yard were built at a cost of US$200M, and opened in 2010. The project was financed by the Japanese Bank for International Cooperation and the government, and was intended to be a hub port for Central America.

With a depth alongside of 15m, the infrastructure was built to handle a 6,500TEU vessel, but the terminal has no STS cranes and just four RTGs, and its access channel has suffered from a lack of maintenance dredging. Two attempts, before the terminal opened, to find an operator through a concession failed, and a third in 2015 also produced no result. Benedetti said ports are "following the carriers' mistakes with capacity" and have created an oversupplied market. He warned against overly ambitious projects, and said the idea of "build it and they will come" is "gone forever". Furthermore, the market has yet to really see much in the way of terminal consolidation driven by larger vessels making fewer port calls, as many had predicted. Instead, added Benedetti, "everyone is down 10%".

In today's market, lines are looking for infrastructure to support bigger ships, and Benedetti said ports really need a partner to justify the investment. Picking the right one, however, is difficult in a constantly changing alliance landscape, and investors must be prepared to wait longer for a return on their capital. Terminals also need to diversify their business and look further into the logistics chain to find new ways of adding value. At the moment, the terminal business is such that "there are no winners, but some are losing more than others" he concluded.

TOC Americas delegates heard that the expanded Panama Canal is not yet seeing the number of vessels it planned for, and has not yet altered transhipment patterns to any measurable extent, though it has been open for less than six months. The canal authority (ACP) has created slots for a total of 12 transits per day for container vessels, but less than a third of that is being used at present, according to Matthias Dietrich, Hamburg Süd's SVP for the Caribbean and Latin America West Coast region.

"Bookings for the neo-Panamax [up to 14,000TEU] vessels have been slow to come – last month, there were a few days that saw four vessel transits, but on most days it has been two or three transits," he said.

"There is still a lot of room," he continued, adding that this means it is unlikely the ACP would increase transit fees in the short term.

The larger locks have, indeed, led to Panama winning back considerable volumes from Suez – but this increase in volume is being carried on fewer ships. Hernan Salazar, MSC's west coast South America planning manager, told delegates that, prior to the expansion, there were 16 weekly service strings through the Panama Canal, which has subsequently been reduced to 13.

MSC itself has reduced the number of its vessels transiting the waterway from 18 per week to nine, while the average size of vessels transiting has increased to 6,400 TEU. "And that will continue to increase," he said. "There has been a 13% increase in capacity altogether on services through Panama – there is a lot of room for more."

Shuffling the pack

With regard to changes in services and port calls in response to the canal expansion, Dietrich said there have been remarkably few so far. "There's some reshuffling of service patterns possibly still to take place, but the main Asia-US East Coast, South America West Coast-Europe and Asia-South America East Coast services will likely remain as they are.

"There is a theoretical opportunity for vessel upsizing on the route from Asia to northern Brazil, but that is unlikely while the ports of northern Brazil are not able to handle ships of that size – so it won't happen anytime soon," he said.

With the new alliances not scheduled to start until 2017, the transhipment picture is still very unclear. Charles Baker, director general from TC Mariel SA in Cuba noted that some lines are still calling at four different Caribbean transhipment hubs. Decisions about where to rationalise services will not be made until the new alliances are ready, and the transhipment market is "hamstrung" in the meantime, he added. Baker believes Mariel is well positioned to offer carriers the opportunity to consolidate some existing services, but Cuba needs to see key regulatory changes from the US (including addressing the 180-day rule) before it can begin handling US cargo, and relations between the two countries "have not come as fast as was hoped".

Hurricane Matthew could also be a factor in changing some transhipment services. It tore through the Caribbean early this month and extensively damaged one of the main hubs, Hutchinson's Freeport Bahamas facility. Two cranes were blown over while others suffered extensive water damage to electric systems after they lost machinery and electrical house roofs. In late October the terminal was still closed and without power. ❑

Port of Colombo's hub plan


Last month, the 19,224 TEU MSC MAYA became the largest container ship to call at the port of Colombo

Sri Lanka's Colombo looks set to emerge as the transhipment centre for South Asia, as the country's government gets behind plans to make the Indian Ocean island a major trading hub

For a long time, Sri Lanka has eyed Singapore's success as a maritime hub. Consequently, Sri Lanka's plan for the port of Colombo recognises the need to match cargo handling facilities with the services and regulatory environment needed to support the business of shipping, as well as the actual handling of cargo.

With this in mind, Sri Lanka's plan for Colombo is to create a regional business platform in the form of an offshore city within the city of Colombo.

"We are providing the logistics hub with a financial hub for the Indian Ocean, filling in the vacuum between Singapore and Dubai," Ranil Wickramasinghe, prime minister of Sri Lanka, told delegates at the second annual Colombo International Maritime (CIM) Conference last month.

Serious intentions

In an important indicator of how serious the government is about transforming Colombo into a true hub port, both the prime minister and the finance minister, Ravi Karunanayake, attended the conference, and both stressed the intention to separate the new Port City from Sri Lanka's existing legal and regulatory environment. The finance minister said that the new Colombo International Finance Centre, which the government is planning to build downtown, will not be Sri Lankan in how it operates. Wickramasinghe added: "It is going to be a financial city, with its own separate jurisdiction. English laws will be applied."

The new Finance Centre will support a very ambitious plan, presented by the Sri Lanka Ports Authority (SLPA), to transform Colombo into one of the largest hub ports in the world.

Currently, capacity at Colombo stands at 7.1M TEU, and its throughput last year was 5.2M TEU. The long-term goal is to grow throughput to 35M TEU by 2040, although officials admitted that this is "conceptual". Capacity will be added in phases, and the SLPA's plan at this stage is to increase capacity to 11.1M TEU in 2020, 14.3M in 2023 and 17.3M in 2026.

The first stage of development includes the new East Container Terminal, on which bidding for the BOT concession closed late last month. A consortium comprising APM Terminals, Maersk Line, John Keells Group and Container Corporation of India (Concor) is reported to have made a bid for the concession.

Eyeing transhipment

Colombo has its eyes on growing transhipment volume, and serving a wider range of markets, including Africa. There are a number of factors in its favour, including the fact that it is a natural deepwater port, it is able to handle ULCVs, and it has a good geographical location.

In mid-September, the 19,224 TEU-capacity MSC MAYA berthed in Colombo without incident, "exactly because of this deep water", said Zeeshan Mukhi, Maersk Line's country manager for Sri Lanka. The ULCV called at the CICT-managed Colombo South Terminal, setting a new record for the size of a vessel calling at the port.

Also helping Colombo, some 50% of global trade passes within hours of the Island, and there are 33 calls from direct westbound mainline services, as well as 29 eastbound services. A key part of this is trade from neighbouring India, whose container traffic to Sri Lanka grew by 11% during the first six months of this year, four times more than global growth.

"That's phenomenal growth," Mukhi told CIM conference delegates, to comparative silence. In fact, the growth figures presented at the conference often seemed to come as a surprise to the audience, suggesting that Sri Lanka's strong performance has flown under the radar for a lot of people.

Indian cargo

Colombo already taps the Indian market, and the SLPA plans grow this business significantly, aided by limited draught, capacity and low productivity at Indian ports.

Maersk Line's Mukhi drew attention to these issues. Colombo is a 24-hour port with "fairly good productivity", he said, unlike other facilities in the region, sometimes major ones, which are hobbled by an old-school bureaucratic mindset that keeps strict government office hours and days.

In another CIM conference session, Dr Jonathan Beard, head of transportation and logistics at Arcadis, spelled out that the "failure to develop Mumbai in a timely fashion [had] helped Colombo".

While Colombo has benefitted from India's problems, there were also some comments that not all of this potential will be fulfilled, due to a changing market. Colombo knows that the demand for direct services is growing, and there are some worries that its role as a transhipment centre won't last forever. "This is something that causes some concern," said Mukhi.

Also expressed were worries about the

Volume at Colombo's CICT grew by 33% to 902,000TEU in the first six months of 2016

low growth of Sri Lankan exports and its future differentiation strategy. At the moment, however, these issues seem far off, as India, even under its new more vigorously pro-business government, might take some considerable time to get where Colombo is now.

Still further behind are other countries in the region, such as Bangladesh and Pakistan, which are too far away from major shipping routes to be natural transhipment centres – although Pakistan has transhipment aspirations for Karachi's new South Asia Pakistan Terminal.

Potential players

The CIM conference also covered the potential of two other major port areas in Sri Lanka that have long been talked about, Trincomalee and Hambantota, both of which are staking claims to different market segments.

Trincomalee, situated on Sri Lanka's northeast coast, has significant natural advantages. One of the largest natural harbours in the world, with a water area covering 400 acres, it also boasts very deep water, with a draught of 20m at the inner anchorage and 30m at the outer anchorage.

Geographically, Trincomalee faces a large and well-populated semi-circle covering India's east coast, Bangladesh, Myanmar, Malaysia and Indonesia – which together have a population of 1.9B people, pointed out Mahesh Kurukulasuriya, managing director of GAC Group Sri Lanka. "[That is] literally 25% of the world's population," he said.

Prime hinterland

The hinterland behind Trincomalee, which suffers from high unemployment, is considered a prime site for low-cost labour activities in special economic zones. However, none of these is set up currently, and the more immediate focus is bulk transhipment. "Already there are a lot of enquiries about this," Kurukulasuriya told the CIM conference.

Another short-term market he flagged up was locally produced phosphates, while for the longer-term, he suggested the port does have a role as a gateway for southern India and as an oil and gas hub.

Trincomalee has been held back up to now by a lack of capital, something the Sri Lankan government is working to address. "We are also talking with Indians and the Japanese about how to develop this as a major port," said prime minister Wickramasinghe.

Sri Lankan prime minister Ranil Wickramasinghe, speaking at last month's Colombo International Maritime Conference

By contrast, Hambantota, located on the island's southern coast, is a better known development, but it has been fraught with difficulties. The prime minister has previously referred to it, light heartedly, as "the biggest swimming pool in the world", because there was so little traffic and because of a dispute with Chinese entities over its development.

Moving forward, the port now has its first private-sector investment by LAUGFS Gas PLC, an LPG import, storage and re-export firm that is developing a terminal at Hambantota. "Through this terminal, we will be expecting US$1.3B in exporting energy," said W. K. H. Wegapitiya, chairman of LAUGFS Gas. "Sri Lanka will become a leading energy re-exporter and energy hub in Asia." Of the 45,000 ships passing south of Sri Lanka, some 25% are linked to trading in hydrocarbons.

Wegapitiya stressed that Hambantota is an all-weather port, meaning it is not impacted by disruptive monsoons, and has a draught of 19m. This allows it to take VLGCs (very large gas carriers), but also means it can take ULCVs, he added. More importantly still, it has brand new berthing facilities, as well as free port status. "This is a strategic advantage," said Wegapitiya.

The prime minister is keen to see facilities at Hambantota, including an airport, developed on a private-public partnership (PPP) basis, and other potential investors include the automotive industry. At a press conference this month, Sri Lanka's international trade minister Sujeewa Senasinghe said talks are underway with Chrysler, BMW and Mercedes Benz over using Hambantota as a transhipment hub.

Indian growth

Whilst the Colombo International Maritime Conference was about the emergence of Sri Lanka as a hub, India, the source of a lot of its transhipment cargoes, still casts a long shadow over its plans.

Given the scale of its economy and the changes that India's current government is pushing – which aim to raise growth from the current 7.5% to over 10% – the transport industry is watching India with a mix of excitement and trepidation. Growth is always welcome, but it could overwhelm India's existing transport network if not matched with reforms.

Indian government reforms are led by plans to change the tax system and reform infrastructure. Progress is being made, in particular with India's parliament voting to adopt a GST (goods and services tax). This is being hailed as one of the biggest reforms since Indian independence, effectively creating a national tax system that, once implemented, will be significantly beneficial to the movement of goods.

Michael Pinto, a former Indian shipping secretary, cited one very revealing statistic to CIM conference delegates – that Indian trucks spend 16% of their time waiting in toll queues. "That's a huge waste of time," he said. Once GST is in place, moving goods is expected to become much easier. "I expect there will be a huge increase in traffic," Pinto added.

The other key reform concerns infrastructure, under the India government's so-called Sagar Mala project, which treats India's ports and their transport infrastructure holistically, rather than as individual projects in isolation. Linking infrastructure improves connectivity across all of India, something that will be aided by plans for six mega-ports in India's coastal states.

Sagar Mala spans ports, their rail and road connections, coastal shipping and inland waterways, and connections between transport infrastructure and India's industry, making it "a very nice package," according to Vinita Venkatesh, director of Krishnapatnam Port Container Terminal.

Confidence

India has seen initiatives like this in the past, but the level of government support this time, together with what Venkatesh referred to at the CIM conference as "a robust administrative network" to monitor and examine implementation, give her confidence in the initiative.

"Things are actually moving forward," she said, referring, by way of an example, to the ongoing reform of coastal shipping rules and procedures (even though that process is itself not a totally smooth one).

"At least it's a beginning where the government is recognising the need to lift some of the cabotage restrictions," said Venkatesh. However, the current issue is for the government to be more practical, as its most recent suggestion, to give a preferred status to ports with a 50% transhipment threshold, was founded on an unrealistic time scale, she explained.

"We are still in the process of representing to the government [that] it's a wonderful initiative, but is not very practical," she said.

TAMP reform

The other "positive development" that Venkatesh noted concerned the Tariff Authority for Major Ports (TAMP), which has been reformed to put government ports on a level playing field with smaller, but more competitive, "minor ports", as they are known (see *WorldCargo News*, August 2016, p9).

"The government has now realised that, perhaps, there is no need to control the tariffs of the major ports," she said, describing the situation as "better".

One enduring problem though is Indian customs procedures. The basic issue – the same as is found in other parts of the world – is that the value of consignments is assessed differently in different ports. This creates problems, not just of goods being unnecessarily moved to go through more favourable ports, but issues of cross-country cargo movements.

A rule limiting storage to one month was also raised, but the chief concern was the power that Indian customs has to allow or block shipments – something Venkatesh was clear needs to be addressed. "There is a great opportunity for us in India to be a trading hub. This is an opportunity that, again, we are losing completely… because of Indian customs," she said.

Not lost on the CIM conference was the fact that India's Sagar Mala and its reforms could be a massive disruptor for Sri Lanka, especially in its role as a transhipment port for India. In this respect, Sri Lanka clearly has more to gain if it can be included in India's planning. Arguing that his country has a complementary role to India, Sri Lanka's prime minister went as far as to suggest that it could join the Sagar Mala project. "We can be a port for India," he said hopefully. ❑

Mixing the old and the new

Industry consolidation and the increasing size and stack heights on ULCVs mean more STS cranes are being placed on the second-hand market

It has long been the case that some of the world's STS crane population consists of underutilised cranes at ports that have seen a market change, or a competitor, take business away. In other cases, cranes have been built for overly ambitious port projects that have failed to attract business.

Eventually, a lot of these cranes find their way to the secondary market, but relocating cranes has always been a tricky business. Even if an exact 'fit' in terms of rail gauge, power supply and wheel load requirements can be found, the move itself can be very expensive.

Today, however, it seems there are so many used cranes on the market that the chances of finding a suitable unit are a lot higher than in the past. And it is not just older Panamax cranes on a 50ft rail gauge that are being offered. Singapore-based Rodson currently has over 50 STS cranes listed for sale, including four six-year old ZPMC units with a 65m outreach, another of the same vintage with a 62.5m outreach, and one eight-year old crane with a 60m outreach and 37m lift height.

Other cranes listed with Rodson include a 2002 Kocks post-Panamax Boxer crane, which is believed to be one of the units at the Tan Cang Cai Mep International Terminal (TCIT) in Ho Chi Minh, Vietnam. Also available are nine cranes built in 2001-2002 by Pan United Shipyard in Singapore using a design licensed from what was then Ansaldo of Italy. These have an 18-row outreach and are located at Jurong Port. Jurong recently launched a new Combi Terminal to cater for mixed container and breakbulk vessels, clearly a change of course from when it was trying to provide an alternative option to PSA's main container terminals.

There are also a number of cranes moving around in the Americas as US east coast terminals upgrade to bigger units to handle the new neo-Panamax class of ships that are starting to transit the expanded Panama Canal.

Georgia Ports Authority has been selling off some of its smaller cranes, and three were recently moved to Puerto

HAPPY SKY delivering two cranes to Vigo

SAP for ZPMC

ZPMC has taken a major step forward in its mission to build a new future based on 'Industry 4.0' by signing a contract with SAP to implement its SAP MDG (Master Data Governance) system, and appointing Deloitte to manage the implementation.

ZPMC is aiming to build a master data management system, as part of a wider ERP (Enterprise Resource Planning) project. This internal project will establish coding specifications and data management procedures to enable ZPMC to better manage materials, components, personnel and other resources in a more integrated manner, the company said.

This could be particularly helpful to ZPMC crane owners. One of the difficulties of ZPMC's rapid growth has been its reliance on paper documentation of crane components and specifications, in particular, and this has created difficulties matching new spare parts to cranes as they age. ZPMC wants to address this, as well as implementing new PLM (Product Lifecycle Management) and MES (Manufacturing Execution System) processes to improve its operations.

Projects like this are difficult to implement, and ZPMC management at the highest level has urged the whole company to get behind the initiative. Huang Qingfeng, president and deputy secretary of the Party Committee of ZPMC has set out three key requirements for the project to succeed:

- All business units need to take a united approach and place high importance on the project, while giving it unconditional support. Unit and department heads are to be personally involved and make the initiative a "top leadership project".
- All business units need to accord the project a high priority and meet implementation deadlines.
- The project team, including external consultants, must be supported and resourced appropriately.

The project is expected to have major implications, not just for ZPMC's internal operations, but on how it selects components, purchasing procedures and generally doing business with ZPMC for the wide range of companies that supply it.

Two idle container cranes at the port of Hambantota in Sri Lanka - as far as is known, the cranes are not being used and the terminal is now handling ro-ro traffic

Rico. That move was undertaken by US-based Industrial Crane and Service (ICS), which cut, lowered, moved and reassembled the cranes in San Juan, for Tote Maritime. Before that, two older Kocks units were relocated to Tampa, Florida.

More recently, South Carolina Ports Authority has sold two cranes to DP World. Charleston is soon to take delivery of new ZPMC cranes, and this created the opportunity to sell and relocate the two older cranes to Saint John, New Brunswick, Canada, where DP World will take up a concession after Logistec's lease expires on 1 December. It is not known what will happen to the two cranes currently at the terminal, which are owned by Logistec. The crane relocation work for DP World will be undertaken by ZPMC Crane Services, the US-based wholly owned ZPMC subsidiary.

Rotterdam to Vigo

In Spain, BigLift Shipping's heavy lift ship HAPPY SKY has completed the delivery of two post-Panamax STS container cranes to Vigo. Until last year, the Nelcon container cranes worked for many years at ECT Home Terminal in Rotterdam. They were sold by ECT to Altius SA, part of Spain's Davila Group, and will be operated at the Termavi container terminal in Vigo.

ECT closed Home Terminal in the Waalhaven last year, and much of the equipment park has been sold off. These particular cranes have a total boom length of 86m and a rail span of 15.25m. Shipping them fully erect aboard HAPPY SKY with the booms braced in their lowered position resulted in a port side overhang of 40m and a starboard side overhang of 18m. Each crane weighs around 800t, and the height to the top of the A-frame is more than 60m.

The load planning, bracings and voyage planning across the Bay of Biscay were meticulously prepared by engineers of BigLift and Altius. The former Nelcon fabricated its cranes in Rotterdam, and its output for leading customer ECT was never designed to be transported by sea. A total of 80t of steel bracings and lashings were fitted to enable them to withstand the pitching and rolling accelerations.

The two Huisman mast cranes aboard HAPPY SKY, due to their 900t (each) capacity and high lift height, are well-suited to cope with the STS cranes' high centre of gravity, while the vessel's stability enables loading and discharge operations to be achieved without the need for stability pontoons.

In order to spread the forces on the vessel's deck, load spreaders were positioned on the weather deck. After lifting the first container crane on board, it was skidded over pre-installed rails to its stowage position aft. The vessel's cranes then positioned the second container crane directly in its stowage position.

Termavi, also part of the Davila Group, has bought the cranes to improve the service it offers to feeder vessel operators. Much faster than its existing cranes, the Nelcon units can handle 74t on the ropes, and come with twin 20 spreaders, while the existing cranes have an SWL of 40t, so cannot be used for twin 20 operations. Hence Termavi can reasonably expect to virtually double its productivity when handling 20fts.

Its oldest crane will be retired once the new arrivals are fully operational – which is expected to take a month – and the terminal will thus have a complement of five STS gantry cranes. The cranes were inspected by Termavi's engineers prior to shipment from Rotterdam.

Galician gateway

Vigo's neighbour, the Port of Marín, is also getting a used crane to compete for the local Galician traffic. Pérez Torres Marítima, which operates the container terminal, has announced it is to acquire its first post-Panamax gantry crane, in response "to the growing size of container vessels now found on routes in Europe".

In April, Marín persuaded Maersk Line to move from Termavi, resulting in much existing container traffic moving to Marín, where costs are currently lower. Container traffic at Marín has risen by 46%, with 2,000 additional containers moved in July compared to the same month in 2015.

The crane, which will join two existing units at Marín, is being shipped from the Italian port of La Spezia and is due to arrive this month and become operational in November. It is not known how it will be shipped, but STS cranes sold in the past to northern Spain by Italian operators were shipped fully erect by tug and pontoon (Augustea/AMT).

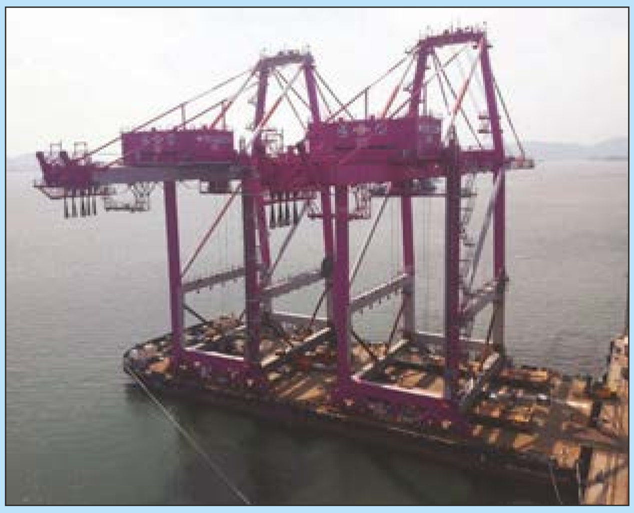
Going plus size

The first of two gigantic new Portainers, dubbed "Malaccamax" by Paceco España, is due to be put into service by APM Terminals Valencia (formerly Grup TCB's TCV operation) this month, following a series of trials. Both cranes will be deployed at the terminal's Levante Quay, with the second slated for delivery in February 2017.

This facility is one of many that are installing a new crane rail to support much larger cranes. In this case, a new landside rail has been installed, as the rail span is double that of the terminal's existing 15m-span rail. The Portainer's twin girder boom has an outreach of 66m, which enables it to work a deck stow up to 25 rows across, while the lift height is 51m, so they are capable of working ≥18,000 TEU vessels. SWL is 65t in twin 20 mode. The cranes are fitted with Siemens Sinamics AC controls, a Merford cabin and LED lighting.

In classic Paceco España mode, the cranes were fabricated in northern Spain and shipped in pieces to Valencia. Assembly of the cranes is taking place away from the quayside, so a corridor has to be cleared through the terminal to the berthing area where the crane will be mounted. ❑

Corrigenda - Crane count updated



New cranes from Hanjin Heavy Industries being unloaded in Incheon

WorldCargo News has become aware of an error in our 2016 July STS container crane market survey and an omission from the equivalent survey in 2015.

For 2016, due to a simple back-counting error, we understated the number of STS cranes due for delivery, at the time of the survey, in calendar year 2017.

The correct figure was around the 240 mark, including: ZPMC, 177; Mitsui E&S, 26; and Liebherr, 18. The balance for 2017 is from JFE Engineering, Kocks Krane, Konecranes, Paceco España, Sany and Terex Port Solutions.

The corrected figure means that ZPMC's share of 2017 bookings was around 74%, and not 84% as stated in July.

While *WorldCargo News* makes every effort to contact all crane manufacturers, there are regularly some that do not respond, or rejoin the market after a long period of absence. Hanjin Heavy Industries in South Korea falls into the latter category, and it transpires that Hanjin last month delivered two cranes to the Port of Incheon in South Korea, an order that should have been recorded in the *WorldCargo News* 2015 market survey.

The cranes were built for Incheon's Sun Kwang Newport Container Terminal (SNCT), which is instantly recognisable due to the distinctive pink colour it paints its equipment. The new cranes are SNCT's sixth and seventh units, and are described by the port authority as "mid to large" sized cranes, with a 51m outreach for an 18-row stow.

With a double box girder boom, the cranes weigh 985t and were delivered by barge. Unloading was completed in two days. As far as is known, these are the first cranes Hanjin Heavy Industries has built since it delivered several units to Gwangyang in 2004.

Discussions move off stage

Will the rigours of Euromot Stage V emission limits encourage a switch from diesel to alternative fuels?

The new Stage IV ro-ro tractor from MOL Cy NV

The upcoming EU Stage V emissions limits will, for the first time, require diesel-powered NRMM in Europe to be fitted with DPFs – soot traps – because of the particle number count requirement similar to Euro VI. Certainly, this is a major change for the port industry, as a leading part of the off-road sector – up to now, only one OEM, Hyster, has fitted DPFs, and this was on its previous generation (Stage IIIB/Tier 4 Interim) heavy FLTs and reach stackers.

Numerically and in terms of duty cycles, terminal tractors will be particularly affected by Stage V and the problems with which (some Euro IV and all Euro V and later) road truck operators are all too familiar. If ambient temperatures are very low and/or the run lengths are fairly short, with stop/start queuing and waiting at container handover interfaces, the exhaust temperatures may not be high enough for automatic passive regeneration of the DPF to take place.

Compensation

Active regeneration is supposed to compensate for this, but it adds to fuel consumption and, even then, may not complete if run times are too short or 'cold', so the engines will need to be kept running after the shift has finished. In any event, DPFs need to be taken away every five years for professional cleaning, so ready replacements need to be available. Port operators will have to live with the extra costs and hassle as long as they operate diesel plant.

Although there has been widespread flouting of the law in the trucking industry due to lack of enforcement (much harder to get away with since annual tests were tightened), it is hard to envision many port operators dismantling after-treatment systems and wiping fault codes from the ECU.

Their equipment is captive to a defined location and it is easy for regulators to inspect it physically and monitor local air quality. It would also be impossible to 'keep a secret' among the workshop and driver workforce.

Stage V comes into effect in 2019 so, in practice, OEMs have got just over two years left to get their equipment ready, and they are working hard on this, having in some cases just finished converting all their products to Stage IV.

A different path

Stage V is a logical next step, given prevailing poor air quality and, if one considers the huge shift in RTGs to fully electric power, it seems incongruous that internal transport vehicles are still polluters. Meanwhile, however, the question is whether the complexities of Stage V will stimulate new interest in alternative, cleaner fuels.

Electric terminal tractors are available in Europe from Terberg and MOL Cy. These originally had Balqon drivelines, but they are now thoroughly Europeanised machines, and both companies have niche customers, but, for the general market, the problem is that they are up to three times more expensive than the latest diesel plant.

The obvious alternative is natural gas. In the USA, Kalmar Ottawa, Capacity Trucks, TICO and Autocar all offer natural gas tractors as standard options, alongside their main diesel line-ups. Low LNG prices (shale gas) are one point, but, in addition, the customer base is much more diverse than it is in Europe, with trailer spotters for shipper and 3PL DCs accounting for a much larger part of overall demand than in Europe. Furthermore, the port industry is known for its conservatism.

Good results

After the EU-backed Greencranes trial in Valencia two years ago comparing a Terberg tractor equipped with a Euro V LNG truck engine and a Stage IV tractor, Noatum Valencia confirmed that the LNG tractor performed as reliably and with the same performance

Change at the top

At the end of this year, George Terberg, who has been with Netherlands-based Terberg Benschop BV for 39 years, will retire as the company's CEO and move to the holding company, Terberg Group in IJsselstein. Rob van Hove, who was formerly CEO of Kuiken Groep in Emmeloord and before that with Kalmar, worldwide after-sales, has been appointed as his successor. They will jointly lead Terberg Benschop until the end of the year. (For more information see *worldcargonews.com* – people archive under 'T').

TICO on expansion path

US-based terminal/yard tractor specialist TICO Manufacturing has announced a significant expansion to its dealer network as it targets key markets in the Americas. Five new dealer groups and multiple authorised locations have been added:

- Thermo King of Central California in Fresno, CA, with branch locations in Turlock, CA and Bakersfield, CA.
- Outsource Fleet Services in Bedford Park, IL.
- NITCO Northland Industrial Truck Co in Wilmington, MA, with branch locations in Shrewsbury, MA; Middleboro, MA; Lewiston, ME; Concord, NH and Wallingford, CT.
- Kenworth of South Florida in Fort Lauderdale, FL, with branch locations in Riviera Beach and Fort Pierce.
- Madisa Caterpillar will serve the whole of Mexico from numerous locations.

TICO's dealer sales manager, Doug Queen, told *WorldCargo News* that the new dealers are all in areas where TICO did not have representation previously, and will open up new opportunities. Mexico, in particular, is a high growth market as its automotive industry is expanding and maturing fast.

Queen said auto production in Mexico is replicating that of the US and Canada, where the use of specialist subcontractors requires considerable supply chain logistics involving trailer handling. Mexico, he added, is where the US was 15-20 years ago, with many trailers marshalled by road trucks initially, before switching to specialist terminal tractors as volumes grew. TICO already has machines in Mexico (including in the port sector), but, as Madisa has over 60 locations countrywide, the opportunity for TICO "is huge", stressed Queen.

In California, working with Thermo King is another good fit. Thermo King's engineers are already calling on container parks to service equipment, and often this is where leasing and short-term rental opportunities are found.

All the new dealers will offer a full range of servicing, financing and rental options. This is particularly important around the Chicago area, where the Class I railroads prefer to contract yard tractor services on a short-term basis. Contractors tendering for this business might get just a month's notice before they start a contract, so having a fleet that can be accessed very quickly is a significant advantage.

A TICO Pro-Spotter in action at an IKEA distribution centre

as the diesel tractor in 1,000h of testing carried out over two months, with significant reductions in emissions and noise levels.

Frank Oerlemans, Terberg's export manager, says that the LNG tractor can cope with the high GCWs and high torque demands in a port environment, as long as the driveline is properly selected and the gear ratios are right. Terberg has experience with a number of machines in this respect, using different LNG engines, such as Volvo and Mercedes.

A Terberg DT223 low entry cab tractor at work in Italy

Turkish case

Frank Oerlemans also draws attention to AsyaPort in Turkey, which operates a fleet of 40 Terberg LNG YT222 terminal tractors. The fuel consumption there is actually lower than it was at Valencia, measured on a per-machine basis.

He points out that there is an LNG fuel station near the AsyaPort terminal, whereas Valencia filled up from a tank trailer standing in the yard for the duration of the tests, so transmission losses could have been a factor. In any event, a fleet of 40 units gives a much more accurate result compared to one machine in test conditions.

Onboard storage should not be a problem, continues Frank Oerlemans. A 300-litre LNG tank offers a similar range to a 200-litre diesel tank, and can be accommodated with a slight increase in wheelbase, from 3,300mm to 3,500mm. With CNG, however, an 800-litre tank is needed for the same range, and this is not practical for terminal tractors, although Terberg has done it twice with special-purpose 5,500mm wheelbase tractors used to pick up and transport 20ft open top containers with a hooklift system.

As yet, Terberg has not carried out any development work on LNG as fuel for a 4x4 ro-ro tractor, which requires more power and torque. Again, much depends on the selection of the driveline. Of note, the LNG 4x2 tractor trialled by Noatum Valencia was fitted with a 250 hp engine, whereas Terberg's diesel 4x2 tractors normally have a 180 hp engine, although there was practically no difference in the torque. The YT222s at AsyaPort are fitted with 228 hp (170 kW) Mercedes engines. Similar decisions could be made for ro-ro, although operators might be concerned about using gas-powered tractors in the confines of a ro-ro ship.

Terberg makes the point that LNG has been in use for many years, and it sees no lack of clarity in the rules or regulations governing its use, or anything else that conflicts with its constant drive for product excellence. So, while it is now working on Stage V, the LNG tractor is there if customers want it.

Not so sure

Both MOL and Mafi are more sceptical about LNG. As yet, MOL has not built any natural gas tractors and the company does not see much scope for it, says sales manager Marc Vandenberghe. Mafi's managing director Gino Cherradi says that there are some countries, such as Spain and perhaps France, where LNG is a possibility. "In Spain everyone is used to LNG and there is a gas pump in most filling stations," he said. Gas companies such as Fenosa have invested heavily in the network. Prices are attractive, too, so allowing for the 2:3 range ratio, LNG works out around 35-50% cheaper than diesel, which is obviously attractive.

However, continues Cherradi, generally opex is not the main issue with LNG. He says Mafi has prepared LNG/CNG platforms based on what customers were telling it they wanted, but, when push comes to shove, the problem is the cost of the infrastructure and storage.

In this sense, he believes, AsyaPort is the exception that proves the rule. The driving force at AsyaPort was essentially political, and the task of MSC/Soyuer Group was to make it the "greenest port in Turkey". The 14,000 m² Karbonsan/Cryostar plant next to the port actually opened before the container terminal, providing 'ready-made' infrastructure.

Port operators themselves are not going to make these investments, although there could, over time, be some spin-off from LNG bunker stations as ships increasingly have to switch from HFO.

Market not bad

On the general business side, the market has been fairly active. Vandenberghe says that MOL has had many orders in Europe and for export outside the EU. The company's new ro-ro tractor with a Stage IV engine and reworked chassis and cabin "has been a big success", he notes. "In order to meet the demand for terminal tractors, we are extending our factory, and a new assembly hall will be ready before the end of this year."

Recent deliveries by Mafi include 33 T230s with a Stage IIIb Cummins engine and Allison gearbox to DCT Gdansk for its Terminal 2 extension. These have a GCW of 90t, and DCT specified a fixed fifth wheel. So far more than 35 R332 ro-ro tractors with Stage IIIa engines have been delivered to Tunisian port operator STAM under the latest three-year rolling contract. In addition, 23 T230s with Stage IV engines have been delivered to Hanjin in Busan. Korea is not at Stage IV level, but Hanjin/Korean Air want to promote a 'green' approach to investments, explains Cherradi. The sale was completed before the Hanjin Shipping bankruptcy.

Terberg says that production of its DT low entry cab tractor, aimed at DCs/trailer depots, is now in full swing, with recent sales in Italy, as well as the UK. On the ports side, recent Terberg deliveries include, through Terberg DTS UK, 33 YT222s and matching 70t Seacom trailers.

Transnet deal

In September, 14 Terberg terminal tractors were delivered to Durban Container Terminal Pier 1, as part of Transnet Kwazulu-Natal's R385M investment in new cargo handling equipment at the facility.

The new machines, ordered through Terberg Middle East, cost R23.4M (€1.47M) and they will replace 14 Mafi MT 25 YT machines that date from 2009, when Mafi secured a Transnet order for a total of 59 tractors for various South African ports (*WorldCargo News*, March 2009, p1). Both the old and new

Capacity to offer Volvo Penta

US-based terminal tractor manufacturer Capacity Trucks has entered into an agreement with Volvo Penta to offer the EPA Tier 4 Final engine across the Capacity line-up. Capacity, part of REV, is currently testing Volvo Penta's TAD570-572VE (5-litre, in-line 4-cylinder) engines in both the 173 hp and 214 hp ratings.

Capacity expects to offer the engines as an option across its full line of Sabre yard/terminal tractors starting in early 2017. Capacity launched its latest-generation Sabre design last year (*WorldCargo News*, February 2015, p1).

The first Sabre truck with the 173 hp (129 kW) engine made its debut at the Capacity dealer meeting in June and it will be deployed at several different warehouse/DCs for evaluation, while the Sabre with the 214 hp (160 kW) engine will be customer-tested at the ports of Long Beach and Los Angeles.

The Volvo Penta offering will be exclusive to Capacity in the North American yard tractor field for one year. Capacity will continue to offer the T4F Cummins engine in 164 hp or 200 hp variants, as well as a CNG engine or an LNG option.

"We were looking to give our customers a choice in power sources," explained Andy Cooper, director of engineering for Capacity Trucks. "After evaluating several players in the industry, we selected Volvo Penta as the engine that will provide our customers with the best ROI. The Volvo name is well-known in the industry, and their engines have a reputation for quality and reliability that meet our own rigorous standards."

Darren Tasker, vice president of industrial sales for Volvo Penta of the Americas, said: "This agreement with Capacity Trucks is an important validation of our solutions. We will work closely with the Capacity team to give the initial two units thorough testing before we roll out the Volvo Penta-powered models in 2017."

Cooper continued: "We were impressed with the outstanding support from the Volvo Penta team. They alleviated any engineering challenges as the team was highly knowledgeable and accessible and made the process as seamless as possible. We also like the torque performance of these engines, which provide high torque even at low RPMs and give excellent fuel efficiency."

Capacity has announced it will offer a four-cylinder Volvo Penta engine as an option on its Sabre range

Vesconite for axles

The Port of Singapore Authority (PSA), which operates a number of its tractor/trailer sets as double trailer rigs to provide 4 x 20ft/2 x 40ft capacity, uses Vesconite bushings on its Ottawa terminal tractor axles.

The loads that the tractors are hauling and the forces that their axles are exposed to are considerable, comments Vesco Plastics Singapore director Emily Heng, who acts as the distributor of Vesconite Singapore.

PSA has been a repeat customer for tractor axle bushings since 1998, when the Vesconite axle bushings replaced bronze bushings. The latter, says Vesconite Singapore, were found to be inferior to hard-wearing and lubrication-free Vesconite polymer bushings.

Heng believes that the market for Vesconite terminal tractor axle bushings could be considerable, given the number of machines employed globally.

tractors (known locally as haulers) have RH drive.

Features of the new Terberg machines include lumbar-supported seats for enhanced driver comfort, and various environmental measures. For example, the climate control automatically switches off when the door is opened, and the engine cuts out if the operator leaves the seat for more than five minutes. They are equipped with Mercedes OM906LA Stage IIIa engines, while the Mafi machines have Stage IIIa Cummins engines. TPT Kwazulu-Natal plans to commission 30 more haulers and 18 RTGs for Durban Pier 1 over the period 2017-19.

T2 on the go

Kalmar is enjoying some success with the Europeanised version of its new T2 terminal tractor. This was launched in the UK last year following the successful roll-out of the Kalmar Ottawa T2 in the US in 2014. For the first time, Kalmar set up a dedicated tractor team in Tampere to support its affiliates and dealers in EMEA.

In June, Kalmar reported an order for 14 T2s from Abu Dhabi Terminals (ADT) for delivery this month to Khalifa Port Container Terminal. Just now, it has reported an order from Gulftainer Lebanon SAL for six T2s and one DCF80-45E7 ECH, for operation in Tripoli, Lebanon. One machine is being supplied shortly, and the rest will be delivered during the Q1 2017.

An order for two T2s along with five DCG160-12 FLTs has come in from HeavyMovement SL based in Barcelona. This company provides outsourced operations services such as warehouse management and handling of iron and steel products to the metal industry, and already has a fleet of over 30 Kalmar heavy FLTs, 20 terminal tractors and three reach stackers. Its T2 deliveries are slated for December this year.

The T2s are specified with a GCW of 95t, and will be the first T2s to be deployed in the Iberian Peninsula. The new FLTs have a 180-deg rotating seat for improved visibility and safety on site, and are equipped with Kalmar SmartFleet remote monitoring and reporting.

Kalmar emphasises that the T2s for ADT, HeavyMovement and Gulftainer are all coming from its assembly plant in Poland. The ADT and Gulftainer machines have Stage IIIA Cummins engines, while HeavyMovement's will be fitted with Stage IV Cummins engines. The drivelines in all cases are as per customer specifications.

Market entrant

In a surprise move, earlier this year Terex Port Solutions (TPS) rounded off its product portfolio with the acquisition of the CVS Ferrari terminal/ro-ro tractor product line-up, with production to be transferred from CVS in Roveleto di Cadeo, just up the road from TPS's Italian plant in Lentigione. TPS immediately introduced the brand name Transace, to go with its Stackace ECH mast trucks (also built in Lentigione) and Liftace reach stackers.

If TPS is on schedule, the first of its new Transace tractors should be leaving Lentigione this month. "The transfer of all required documents and the required inventories from CVS Ferrari is completely on schedule," said Cristiano Giacomello, site manager in Lentigione, in June. "Here in Lentigione, we also have excellent general conditions to establish manufacturing of the new product line."

After TPS consolidated all its European reach stacker production in France, Lentigione was left with heavy mast trucks and FLTs. Looking ahead to the takeover of Terex MHPS by Konecranes, the plant could be exposed and terminal tractors could provide a new lifeline, as they are new not only to TPS but also to Konecranes.

TPS has been quick to offer machines with Tier 4 Final and Stage IV engines for the US and EU markets, respectively. Tier 3/Stage IIIa products are also available. The Transace 4x2 YF 230 is available with a fixed fifth wheel coupling, as well as an elevating fifth wheel, and engine outputs are up to 172 kW. The 4x4 Transace RL 270 machine with elevating fifth wheel is aimed at ro-ro and heavy industrial operations. Engine output is up to 194 kW and maximum GCW is up to 150t. ❑

The Terex Port Solutions Transace YL 230 tractor is also available with a fixed fifth wheel