Terminal automation takes a turn

As the edition of World Cargo News was going to press, it was announced that K Line, Minmi (OK Lines) and NYK Line had missed their deadline for establishing their new joint-venture Oceanic Container Work Express (ONE), as they move to merge their container shipping operations.

Despite this and other setbacks, officials at the carriers insist that the merger remains on target. In a joint statement, the three carriers said: “The new company has received all necessary approvals from the competition authorities of local competition law in regions and countries where competition is required and progress is being made towards completing the establishment of the new integrated container shipping business.”

With this decision comes less than two weeks after South Africa’s Competition Commission ruled against the merger. It is understood that the new structure of coordination in the container market and in the adjacent car-carrying sector, was not in the public interest of cargo owners and the industry.”

A spokesman added: “Our enquiry into the planned merger strategy is now developing a rival transhipment hub at Kuala.”
11t ECH from Hyster

The design comes with a re- 
unboxed mast with even better 
visibility, said Hyster, and a new 
double handling attachment from 
Elmet. This has CAN bus control 
and “reer correction” 
sideloading as standard, as well as a 
choice of several container engagement systems. Lost load 
centre has been reduced, ensu-
bling virtually the same coun-
term weight to be fitted, thus en-
suring there are no steer 
overloads.
The cabin includes a digital 
operator display that logs, inter-
alia, fuel use per container(s) 
moved. Optionally, the rear-
mounted caben can be raised 
by 1m to provide an opera-
tor eye level of 4.57m above 
the ground, and/or tilted 
hook by up to 10 degrees to reduce 
neck strain when lift height 
exceeds three-high. An automatic 
estend-extract feature allows the 
driver to adjust the spreader to 
200 or 400 at the touch of a 
button. Camera systems can also be fitted.

Within the past 3-6 weeks (at 
the time of writing), some big 
deals in the handling equipment 
sector have been announced by 
suppliers and/or their customers. 
All have been reported by World-
Cargo News Online, but this arti-
cle provides a summary.

Kalmor reported a deal worth 
€15M from the Port of 
Virginia for 16 hybrid shuttle 
carriers, for operation at Virginia 
International Gateway (VIG) 
container terminal, with an op-
tion for up to 40 additional units. 
VIG has been operating three 
Kalmar hybrid shuttle carriers 
since August 2015. According to 
Kalmar, testing by it and VIG on 
those machines demonstrated a 
significantly improved RoI com-
pared to conventional diesel-
electric machines. The hybrid 
shuttle carriers have consumed 
about 40% less fuel than com-
parable diesel-electric machines, 
and have cut CO₂ by around 
50% per year per machine.

Meanwhile, Konaresa re-
ported the biggest ever single-or-
der for Gottwald mobile harbour 
cranes in the Asia-Pacific region. 
Over the next few months and 
until early 2018, Java-based port 
operator PT BMCI will order eight 
more GHCs, from the medium capacity Mod-
el D and Model 5 “GG” range. For 
eco-efficient operation, the new 
cranes will be equipped with an 
external power supply to hook up 
to the terminal’s mains elec-
tricity, thus helping PT BMCI to 
meet its sustainability objectives.

Konecranes is also supply-
ing French and Italian-built lift 
trucks to Napien Port in New 
Zealand. Following the recent 
delivery of two Larcie FDC 480 
LCH mast trucks, the port has 
ordered two more of these 
machines, along with two Larcie 
R6-41 reach stackers and two 
FDC 25 K7 DB ECH mast trucks.

In the US, meanwhile, the 
West North Sea Port Alliance 
(NWSA) – comprising the Pa-
cific Northwest ports of Seattle 
and Tacoma – approved a sole 
source. “With A-STRAD 
Solutions, Konecranes is emphasising 
their business, while investing in 
a sustainable future.”

Kalmor has upgraded its 
K-Motion power-split drivetrain 
system for Gloria reach stack-
ers to version 2.0. This features 
new load-sensing functionalities 
for the hydraulics and upgraded 
software so that the drive adapts 
quickly to different driving styles 
and fuel savings. The new sys-
tem is available not only with Stage 
IV container handlers, but also 
with Tier 3 intermodal and in-
dustrial reach stackers.

As previously reported, 
K-Motion uses the Bosch Rexroth 
HVT (hydromechanical vari-
able transmission) that splits 
the power sources according to 
where the machine is in the duty 
cycle: Hydrostatic drive is used 
at slow speed, while the mechanical 
high-speed drive activates auto-
matically when additional power 
is needed. Similarly, more power 
is transferred in the lift as the ma-
chine approaches the stack and 
down.

This drive split enabled Kalmor 
to fit an unusually small engine 
for a Laden container handler, the 
Volvo D9. Peak torque is 1,230 
Nm at 1,000rpm for a rated 
torque of 1,260 and 1,600 rpm, with maxi-
imum 1,700 rpm.

So far, over 70 K-Motion reach 
stackers have been deliver-
ed to 19 ports. According to 
Emilia, was established by former 
operators and supply the TEAMS 
solutions for handling bigger con-
tainers, and/or tilted 
back to 

MAJOR EQUIPMENT DEALS

Revanp in Trieste

Kalmor K-Motion 2.0

Kalmor, supplying 27 A-STRAD units 
for its automation project, which 
will see manual straddle carriers 
serving the STS cranes interface, 
with A-STRAD’s handling the 
yard stacking and serving road 
trucks. Konecranes will also up-
grade 21 existing manual straddle 
carriers and supply the TEAMS 
equipment control systems, which 
will be integrated with the termi-
nal’s Navis N4 TOS.

WorldCargo News understand-
other straddle carrier terminaux in 
the Australasian market are look-

light & quick for heavy weights

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CARGO HANDLING NEWS

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June 2017

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K-Motion 2.0 is available with Tier 3 intermodal and industrial machines.
TKHD heavy-duty cable carrier

Energy chain specialist Tsubaki Kabelschlepp has introduced a new heavy-duty carrier series for demanding and exposed bulk industry applications with long travel lengths, designated the TKHD series.

To ensure the highest robustness and solidity, the design incorporates an encapsulated smoke system, a dimensioned outer contour and a reinforced bolted connection along with a unique flexibly adjustable fork and tab design for the sidebands.

Quiet running is ensured by an integrated brake and integrated noise dampening, whereby the latter works continuously in the chain radius, as well as in the straight length. The pitch of 90mm and the polygon-optimised outer contour support the quiet running of the cable carrier. “Plastic cable carriers of this size with a smaller pitch were previously not available, so we are filling a gap in the market,” said Peter Sebastian Pütz, head of Crane Business at Tsubaki Kabelschlepp.

With an inner height of 87mm, the width of the TKHD series can be precisely adapted to the available space, thanks to aluminium stays in 1mm increments, the company added. The vertical inner distribution can also be changed flexibly thanks to flexible dividers. Users benefit from fast installation, as the cable carriers can be quickly opened forwards and backwards for the installation of cables and hoses. The TKHD series is designed so that it can be used in gliding, rolling and unsupported configurations. If the cable carriers are used in gliding configuration, the glide shoes can easily be replaced to ensure extended service life of the system.

Similarly aimed at port cranes, bulk handling equipment and other rugged applications, Tsubaki Kabelschlepp has introduced a Floating Moving Device that creates a flexible connection between the cable carrier and the driver arm of a system. “For long travel lengths which are not absolutely straight, the connection has to ensure a relative motion between the connection of the cable carrier and the system driver, to compensate for any inaccuracies and to minimise wear on the cable carrier guidance,” said Pütz. “This also compensates for the concurrent error between system and cable carrier.”

To compensate for inaccuracies or wear on particularly long travel lengths, Tsubaki Kabelschlepp offers the Floating Moving Device as a flexible driver connection.
Confirmation of Noatum sale

Durban gets smart

Tracking, sensors, video cameras beginning to take shape (World-Transnet’s digitisation strategy is Noatum Ports has been sold to "tours have said that a 51% stake in 6 June WorldCargo News Online confirms ever louder mar-

agement includes the container terminals in Valencia and Bilbao, as well as the dry ports of Ma-

tened and relevant regulatory ap-

provals being achieved. Noatum Ports stated that all the assets being sold will continue to op-

erate under conditions of strict neutrality, and in accordance with concession terms and con-

tract commitments.

Douglas Schultz, CEO of Noatum Ports and Maritime, stated: “With this agreement, Noatum Ports commences a new phase of development with Cosco Shipping Ports Limited, a strategic partner, which is a ref-

erence in port operations and an important investor in port termin-

als worldwide: The new part-

ership enhances our capacity to increase cargo volumes, and reinforces the ports of Valencia and Bilbao, as well as improving service levels to customers.”

The partnership seeks to max-

imise the capacity of the contain-

ers terminals, by implementing the group’s long-term strategic plans to optimise the structure and effi-

ciency of the group’s business, and to promote synergies and quality in the services provided to cus-

tomers. In addition, the partner-

ship will support improvements in the railway terminals of Zarago-

za and Central in Madrid. In an unusual twist, Jose Llor-

ca, president of Spain’s national ports agency, Puertos del Es-

trado, has categorically denied re-

ports that he had anything to do with lobbying JP Morgan to sell Noatum. Naucher, the Barcelona-

based maritime information ser-

vice, which originally suggested this, published a letter from Llor-

ca denying the report, and noted that it “welcomed observations on its storia,” but did not con-

cede that it had got it wrong.

The deal is strategic for CSP, which hereby broadens its exten-

sive Mediterranean interests into the Western Med for the first time. It owns the Port of Piraeus outright, has a 40% stake in (the coming) APMT Terminal Vado fa-


cility, a 40% stake in Suez Canal Container Terminal, and a 20% stake in Koper’s Ljubljana in Turkey.

The document envisages a new

stream. The SAPPVANAX-1 has been equipped with special installations for the purpose of demonstrating the sea system's efficiency to

for similar services in comparable

operations in the port. T-

systems and its partners were offer-

ing a solution that would bring all data into one single control
center.” Minute Lentle, CEO of

TNP, adds: “We’re able to

be much more capable with

accuracy, planning everyone the same information, and allowing us to predict and create alerts whenever there are any disrup-
tions in the value chain.”

While T-Systems is the main contractor, China’s Huawei is providing the wireless commu-
nication network infrastructure, and LOT’SY Projects is supply-

ing the drones and telematics

technology. T-Systems’ manag-

ing director, Gert Schoonbee-

en, commented: “Numerous tech-

nologies are combined, creat-

ing a tailor-made solution that
dramatically enhances the op-

erations at South Africa’s busiest

port.” Phase 1 will be imple-

mented between now and the

end of the year (2016-2017), and

hopes that this implementation

will be used to monitor the port

area, improve communication

between vessels and the port, as-
in bringing ships into the harbour, and checking the posi-

tion of buoys.

The system uses LTE wireless high-speed telecommunications to provide real-time monitor-

The completion of the trans-

lation is subject to shareholder

authorisation, certain conditions pre-

duce that it had got it wrong.

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sive Mediterranean interests into the Western Med for the first time. It owns the Port of Piraeus outright, has a 40% stake in (the coming) APMT Terminal Vado fa-


cility, a 40% stake in Suez Canal Container Terminal, and a 20% stake in Koper’s Ljubljana in Turkey.
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North West Seaport Alliance speeds up scanning process... 

The North West Seaport Alliance (NWSA) has come up with a way to increase the speed of container scanning with the straddle carrier system used at the Pierce County Terminal (PCT) intermodal yard in Tacoma.

PCT was never designed with the requirement for radiation portal scanning of import containers in mind. US Customs and Border Protection (CBP) uses a mobile scanner, and PCT had to dedicate 15 acres of land and half its current rail tracks to create an area where containers could be grounded to allow the mobile scanner to pass over containers.

Grounding containers for the mobile scanner, and then moving them again to be loaded onto trains, resulted in double handling, increasing PCT’s operational costs significantly. According to the NWSA, it has also been a handicap for terminal operator Everport, “causing them to reevaluate and change their cargo mix moving through PCT.”

The new scanning equipment will allow rail containers to be scanned efficiently while under a straddle carrier, improving efficiency and freeing up several acres of terminal land. Designed by CBP, the Domestic Nuclear Detection Office (DNDO) and Pacific Northwest National Laboratory (PNNL), the system uses seven 40ft containers, with scanning equipment built into two of the top containers in two three-high stacks, and with one container placed on a slightly raised frame between the two stacks.

When the straddle carrier drives over the middle container, the subject container is scanned from both sides and below. The scanning system costs over US$20m, and is being purchased by DNDO and CBP.

Smiths Detection is working on a new product that can more than double the rate at which containers are scanned. The new scanner is being developed for the CORCE (Consistently Optimised Resilient Secure Global Supply-Chains) European Research Project.

“Smiths Detection is designing both hardware and software for the next generation of container scanners, which will speed up throughput and improve detection. The aim is to verify as quickly and accurately as possible, whether a container holds only its declared legal cargo, and is not harbouring contraband, weapons, explosives, drugs, or toxic, materials,” stated Smiths.

The company plans the project could more than double the hourly scanning rate from 100-150 containers per hour to between 300 and 500, with new software that let operators perform faster, more accurate searches of images to prevent backlogs. The system will include “operator-assist features” including automatic detection of certain substances, and the highlighting of suspicious areas within a container.

Towards the end of this year, Smiths will be demonstrating the new system in the field, in collaboration with Dutch Customs.

...double speed for Smiths Detection

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The new terminals would supplement facilities at Lagos.

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DP World and Nigerian Ports Authority in talks

DP World has announced that it is in talks with the Nigerian Ports Authority (NPA) over the construction of new container and bulk terminals near Lagos, although the exact location does not yet seem to have been chosen.

Statements from officials in Nigeria indicate that the project would involve the expansion of existing facilities, apparently the bulk terminal, as well as construction of a greenfield site. The NPA said: “The plan is to develop a DP World terminal in the Lagos area, and a suitable location so badly needed in Lagos State and in Nigeria as a whole. However, as previously reported, ICTSI pulled out of the project after years of delay. The NPA has now revealed that China Harbour Engineering Company has been in talks with Morocco’s Tanger Med over the development of a new port terminal and wider logistics operations in Nigeria. It had been hoped that the new port of Lekki, which lies about 60 km east of Lagos, would provide the additional capacity so badly needed in Lagos State and in Nigeria as a whole. However, as previously reported, ICTSI pulled out of the project after years of delay. The NPA has now revealed that China Harbour Engineering Company has been in talks with Morocco’s Tanger Med over the development of a new port terminal and wider logistics operations in Nigeria. It had been hoped that the new port of Lekki, which lies about 60 km east of Lagos, would provide the additional capacity so badly needed in Lagos State and in Nigeria as a whole. However, as previously reported, ICTSI pulled out of the project after years of delay. The NPA has now revealed that China Harbour Engineering Company has been in talks with Morocco’s Tanger Med over the development of a new port terminal and wider logistics operations in Nigeria. It had been hoped that the new port of Lekki, which lies about 60 km east of Lagos, would provide the additional capacity so badly needed in Lagos State and in Nigeria as a whole. However, as previously reported, ICTSI pulled out of the project after years of delay. The NPA has now revealed that China Harbour Engineering Company has been in talks with Morocco’s Tanger Med over the development of a new port terminal and wider logistics operations in Nigeria. It had been hoped that the new port of Lekki, which lies about 60 km east of Lagos, would provide the additional capacity so badly needed in Lagos State and in Nigeria as a whole.
Adani on target in Kerala

This month Adani Ports and Special Economic Zone Ltd (APSEZ), India’s largest port developer and part of the Adani Group, announced it had begun construction of the first berth at India’s first transhipment project in Vizhinjam, Kerala.

The plan for a transhipment hub in Kerala has been around for a long time, and APSEZ laid the foundation stone for a terminal in December 2013. However, at that stage, the Indian Government had not gone ahead with reforms to India’s cabotage system, which carriers have long said were needed to make transhipment viable in the Indian market.

Last year, India’s Ministry of Shipping announced that international liner shipping companies would be able to offer feeder coastal services between Indian ports with foreign-flagged ships, provided that over 50% of the cargo processed at the main port in a yearly period comprises transhipment cargo. The Indian Private Ports and Terminals Association (IPPTA) has claimed that the reforms do not go far enough to make transhipment viable, and it has been lobbying the Shipping Ministry to drop the quantum requirement on transhipment volume. Meanwhile, APSEZ has been moving ahead at Kerala.

This month’s ceremony marked the start of berth construction. The terminal will have 800m of berth in the first phase, with a draught of 20.5m. “The project is moving at a pre-schedule, reaching the half-way milestone post, the successful land reclamation stage, and is well on course to be completed within the stipulated time period of four years,” stated Adani.

Karan Adani, CEO of APSEZ, believes the project could be transformational for India. “We are happy with the progress made so far in developing India’s first ever transhipment port at Vizhinjam,” he said. “We are overwhelmed with the support bestowed on us by the people of Kerala and the Government of Kerala to develop this deepwater multi-cargo port in the country. The port is very strategically located for access to prominent international waterways, and this project will enable India to be strategically positioned as a global transhipment hub. It will also help us in accelerating our journey towards achieving our vision.”

At Kerala, Adani is going after the second most important port in the country, but is currently much smaller than Abidjan. However, it handles most of the exports for the world’s biggest producer of cocoa. Total investment is put at CFA300B (US$500M), of which MSC will invest CFA130B.

MSC’s partners on the concession are the Bilal Group and the Port of San Pedro. The terminal will have the capacity to handle vessels up to 14,000 TEU, making it the latest port in West Africa to be greatly expanded. As with other upgrades in the region, San Pedro is to be developed to handle transhipment trade.

MSC Ivory Coast has operated in the country for 15 years. The port was closed for two days in May during an army mutiny. Despite recent unrest, Côte d’Ivoire is one of the fastest growing economies in the world, with GDP increasing by an average of 8% a year over the past five years. Diego Aponte president and CEO of MSC, said: “This agreement will further strengthen the strong links between MSC and the Government of Côte d’Ivoire. It also confirms our long-term engagement to contribute to national efforts in supporting the country’s growing position on the international scene.

“Our structural investment and operations will allow San Pedro to become a state-of-the-art terminal, increase trade relationships with new and traditional business partners, as well as enhancing competitiveness at both the national and global levels. We are also extremely proud to generate inclusive growth through job creation and vocational training, as the terminal is expected to employ hundreds of people directly and a larger number of people indirectly.” The agreement was signed just weeks after MSC celebrated its 15th anniversary in Côte d’Ivoire.

Ivory Coast concession for MSC

A consortium led by Mediterranean Shipping Company (MSC) has signed a 35-year concession to expand and operate the container terminal at the Port of San Pedro in Côte d’Ivoire. San Pedro is the second most important port in the country, but is currently much smaller than Abidjan. However, it handles most of the exports for the world’s biggest producer of cocoa. Total investment is put at CFA300B (US$500M), of which MSC will invest CFA130B.

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Canada ports could fetch C$5.2B

A new report from Canada’s C.D. Howe Institute recommends that the federal government “harvest some of the value of its equity stake” in Canada’s main ports, which it said would likely be worth C$2.6B to C$3.4B, but could generate as much as C$5.2B, depending on the value of leases with terminal operators.

Canada’s main ports include Vancouver, Montreal, Halifax, and Prince Rupert, which collectively handle 98% of the country’s container traffic (5.5M TEL in 2015) and 36% of its total tonnage. While growth has slowed considerably at Halifax and Montreal, Vancouver and Prince Rupert have been steadily increasing their share of the Pacific North West market for some years now.

Shippers, of course, are concerned about the potential for the government’s plan for “involving” private capital at the Canada Port Authorities (CPA) level to push up costs. In the report, Casting off: How Ottawa Can Maximize the Value of Canada’s Major Ports and Benefit Taxpayers, author Steven Robins calculated that CPA costs make up just 2% of the cost of shipping in Canada (assuming an intermodal rail journey), and terminal operators charges 11%. Furthermore, he noted that competition is such that opportunities to raise prices significantly are very limited, and he cited Prince Rupert’s rise as evidence that shippers are willing to change ports.

The competition that exists, said Robins, “reduces the need for public ownership of the ports to ensure fair pricing”. At the same time, the federal government receives very little in the way of a return from its port assets, with the revenue paid to Ottawa in 2014 amounting to just C$194M – 28% of gross profits, and less than 5% of overall CPA revenues.

Under the system, set up in 1998, CPAs retain most of their profits for investing in their respective ports. The C.D. Howe Institute takes the view that “rents” on port lands are a federal asset, and “should be returned to the federal government’s consolidated revenue fund and then allocated to our most pressing needs.”

This risks starving ports of capital for future development, but port authorities do not always make the best decisions in this regard. Robins noted that, at the end of 2016, Vancouver had committed C$863M towards its Terminal 2 expansion (estimated to cost C$32B) but the exorbitant costs of terminal operators argue that a new terminal is not required in the medium term. The Institute believes that “investment in a new terminal should be ‘the litmus test’ of whether a project is viable, rather than relying on a CPA decision.”

A partial or full privatisation of the CPAs will require transferring their permitting powers to a government agency. The value of the four container ports depends on how risk is shared between the terminals and the CPAs in lease agreements, which is not known. The C$3.4B to C$3.8B range is quite conservative, but, if rents are mostly fixed, an investor may be willing to pay up to 22x EBITDA, adding C$1.8B and pushing the value to C$5.2B, noted Robins.

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Zeeland/Ghent merger?

After lengthy talks, Zeeland Seaports (ZSP – Vlissingen and Terneuzen) and the Port of Ghent have told their own- ers (Zeeland Province and local Dutch municipalities, on the one hand, and the City of Ghent, East Flanders Province and two municipalities on the Belgian side) that a merger on an equal basis (50/50%) is possible, and that solutions are available for all merger issues (strategy, governance, legal and fiscal). It is now up to the shareholders and the employee representatives of both port authorities to get to work with the results.

Previous talks about a possible merger failed, but recent research by McKinsey, the management consultants, showed that a merger could be advantageous to all parties, and the financial valuation has indicated that a 50/50 merger is possible, an important principle for both port authorities.

The cross-border merged port would take the form of a European company as a holding company for the two existing port authorities. These three entities would have unitary governance and management responsibilities. A new supervisory body of limited size, and with four Dutch and four Flemish representatives, would replace the existing supervisory board of ZSP and the executive board of the Port of Ghent. The structure presented to the shareholders would be led jointly by the two existing CEOs. With a ‘fair wind’, it is estimated that the merger process could be completed by the end of this year.

However, this could be overly optimistic. As reported by WorldCargo News Online, the whole process could be delayed by the cost of cleaning up the former Thermphos estate in the port of Vlissingen, which would allow it to pass through Kuurna. Within the region, it has been suggested that Kuurna could be the terminus of the SGR.

James Macharia, Kenya’s transport secretary, commented: “The decision has not been reached, but we have a number of options at our disposal. We can decide to end the SGR at Naivasha or Kisumu, but it will still be a viable venture due to the presence of Lake Victoria.” However, that seems a less likely option given the Ugandan government’s enthusiasm for extending the railway on to its territory.

Moves on Lake Victoria

Uganda, Tanzania and Kenya are to rebuild their ports on Lake Victoria in order to take advantage of the construction of the new standard gauge railway (SGR) from Mombasa, Tanzania and Uganda alone. A recent survey has led to the SGR being extended to 480km, with two STS cranes (60m outreach, 46m lift height) expected to be added. The footprint has been expanded comparatively to add the option of the former Trinipuerto facility.

“We are concluding an important process for our terminal and for Guayaquil,” said TPG’s president, Enrique Brito. “We can double our container handling capacity, and enter the bulk cargo market, positioning us as one of the country’s main ports.”

Development in the Elbe dredging saga

The Port of Hamburg has stated that both the Hamburg and Federal authorities have found, on investigation, that Billwerder Island is a suitable site to protect a rare plant, hemlock water dropwort, which is threatened by the Elbe deepening programme. Earlier this year, the Administrative Court in Leipzig ruled that protecting this plant was a necessary condition to allow the dredging to proceed. (WorldCargo News, February 2017, p.1)

Last month, the court delivered its written judgement to its decision of 9 February. The written judgement contains some clarifications, making the work of meeting its requirements easier. In its judgement, the court rejected the compensation area originally foreseen for the dropwort, since it was legal- ly seen as a question of area management that had to be dealt with, in any event. This was the Kreuzzand cohesion-protection measure, in line with European conservation law for the loss of the hemlock water dropwort caused by dredging. Instead, the Billwerder Island area has proved to be especially well-suited. There is a number of old, unused sedimentation tanks belonging to Hamburg waterworks should be kept to the effluents of the tide. The old storage tanks will be designed with rail tracks, pads and islands, providing the hemlock water dropwort with a good habitat for the future.

Expansion at Guayaquil

In Chile, meanwhile, through its subsidiaries SAAM Puerto and SAAM Inversiones, SAAM has acquired the 15% stake held by the Urdena family’s Grupo de Empresas Navares (GEN) in Terminal Portuario Guayaquil (TPG), to double capacity. The berth is being extended to 480m, and two STS cranes (60m outreach, 46m lift height) from ZPMC are being added. The footprint has been expanded considerably to accommodate the addition of the former Trinipuerto facility.

“We are concluding an important process for our terminal and for Guayaquil,” said TPG’s president, Enrique Brito. “We can double our container handling capacity, and enter the bulk cargo market, positioning us as one of the country’s main ports.”

The Port of Vlissingen, part of Zeeland Seaports

Abraham van den Bos, Director of the Port of Vlissingen, part of Zeeland Seaports

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June 2017
Canada launches corridor initiative

Canada’s minister of transport, Marc Garneau, has announced C$2.1 billion in funding for the government’s Trade and Transportation Corridors Initiative (TTCI), which aims to build more efficient routes to international markets for Canadian products.

Most of the funds will be allocated over 11 years through the merit-based National Trade Corridors Fund (NTCF). The fund is designed to “urgent capacity constraints” and “the interconnectivity between them.” Proponents have been invited to submit expressions of interest for funding to support projects that address “urgent capacity constraints.” The ports of Montreal and Vancouver are leaders in North America, in terms of the percentage of their gateway traffic that is handled by intermodal rail, and both ports would be expected to apply for funding to support improvements in road and rail connections.

The two proposed new container terminals in Nova Scotia – Melport International Terminals and Novapore – could also apply for funding. Novapore, in particular, has identified that the 30 km short line to the port, which is owned by Genesee & Wyoming, but is no longer in use, needs at least C$30 million to bring it up to double stack standards.

As well as infrastructure, the Canadian government has recognised that the country’s very long supply chains need to be planned with better data. It has set aside C$850 million over 11 years to launch a Trade and Transport Information System, managed by a new Canadian Centre on Transportation Data, which will be a partnership between Transport Canada and Statistics Canada.

“It will make high quality, timely and accessible data and analysis available to users,” the Ministry of Transport announced. “This will enable private stakeholders in the transportation sector, for example, to support innovations that will move goods more efficiently across supply and distribution chains, getting them from the manufacturer and into the hands of consumers more quickly, affordably and sustainably.”

BPA calls for port focus in road plans

For the first time ever, the British government is to hypothecate road vehicle tax (RVT) to a highways improvement budget from 2020-21, as part of a £1 billion per year plan for local councils to improve roads and cut road congestion. RVT is currently worth £3.5 billion per year, forecast to rise to £6.8 billion by 2020-21 based on forecast new vehicle registrations. The government plans to allocate £1 billion to “secondary” A-roads outside the strategic motorway and major A-road network, and this idea is of direct interest to the country’s scattered ports.

Commenting on the plan, Richard Ballantyne, CEO of the British Ports Association (BPA), called for ports to be prioritised in regional and national projects.

“The focus on easing congestion is very welcome, argues the BPA, but this must ensure freight is able to compete and flourish across the UK.” The Strategy mentions the UK’s key national corridors and investments must be inclusive of freight concerns,” said Ballantyne. “Focus needs to be on delivery.”

The government’s current Port Connectivity Study in England is being led by an independent chairman, Sir John Randall. “This is a welcome initiative,” said Ballantyne. “We hope it will help to ensure that ports are on the radar and feature in future national transport strategies. Moving forward, we would like to see local authorities formally recognising this and other freight priorities in their own strategies.”

Crane move with Terex

Trier, Germany-based Steil has used its Terex CC 3800-1 crawler-mounted lattice boom crane (formerly branded Superlift 3800) to ship a barge-to-shore crane girder on behalf of Kranwerke Mannheim from Speyer Port to the destination port, the Port of Mannheim. Kranwerke Mannheim had subcontracted the boom girder of one of two cranes it was supplying to the Port of Mannheim to Tobies, which is based in Speyer.

Steil used the CC 3800-1 to load the 78m long crane girder weighing 105 tonnes onto a pontoon at Speyer Port, as the required radius could increase by up to 3m if the load were lifted from the low loader and onto the pontoon at low tide. In contrast to a mobile crane with an 80 metric tonne counterweight, increasing the CC 3800-1 counterweight and radius would enable it to take care of the 3800 metric tonnes onto a pontoon at Speyer Port, as the required radius could increase by up to 3m if the load were lifted from the low loader and onto the pontoon at low tide. In contrast to a mobile crane with an 80 metric tonne counterweight, increasing the CC 3800-1 counterweight and radius would enable it to take care of the load. As the required radius could increase by up to 3m if the load were lifted from the low loader and onto the pontoon at low tide. In contrast to a mobile crane with an 80 metric tonne counterweight, increasing the CC 3800-1 counterweight and radius would enable it to take care of the load.

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Maersk offers Nepal route

Further to our story last month (Intermodal/Logistics News, May 2017, p8) on the launch of a new rail option between Visakhapatnam and Nepal. It is focused on Asian exporters trading with the landlocked country, and is scheduled to start-up in June 2017. It will run initially at weekly intervals and will be extended to almost double its handling capacity to 1M TEU a year. The new rail operation, which is run in conjunction with Concor, an affiliate of Indian Railways, in conjunction with the Biningburg inland container depot in Nepal. This facility is the only rail-linked container terminal in the country. According to Maersk, the intermodal rail service offers clients a more secure, cost-competitive transport option, with journeys completed in just seven days. This compares with previous routings that were centred on the heavily congested port of Kolkata, involved truck transfers, and could take 14 days. Moreover, with Maersk acting at the single point of contact for the new service, it means documentation, transport, billing and customs clearance also run more smoothly and more efficiently.

In addition, there is more scope for expansion, as DP World and the JM Baxi Group, which operate Visakhapatnam’s box terminal, are investing US$100M to almost double its handling capacity to 1M TEU a year.

Maersk Line has started offering its customers a new rail option between Visakhapatnam and Nepal. It is focused on Asian exporters trading with the landlocked country, and is scheduled to start-up in June 2017. It will run initially at weekly intervals and will be extended to almost double its handling capacity to 1M TEU a year. The new rail operation, which is run in conjunction with Concor, an affiliate of Indian Railways, in conjunction with the Biningburg inland container depot in Nepal. This facility is the only rail-linked container terminal in the country. According to Maersk, the intermodal rail service offers clients a more secure, cost-competitive transport option, with journeys completed in just seven days. This compares with previous routings that were centred on the heavily congested port of Kolkata, involved truck transfers, and could take 14 days. Moreover, with Maersk acting at the single point of contact for the new service, it means documentation, transport, billing and customs clearance also run more smoothly and more efficiently.

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Iran plans inland port network

Iran is planning to develop as many as six inland ports by the end of 2022, as the country forge ahead with its international growth strategies of handling more transit cargo for Central Asia, leveraging opportunities from China’s ‘One Belt, One Road’ projects and expanding its own role as a trading nation.

A mix of public and private funds will be used for the facilities, each of which is expected to need between US$10M and US$27M in investment, depending on size and equipment. Comprehensive studies are already underway, with several locations having been identified for the ports, said Amir Amini, Iran’s deputy minister for roads and urban development. These are thought to include cities such as Mashhad, Tehran and, of course, Tabriz.

In the latter city, sites near Imam Khomeni International Airport and the Aprin train station – located about 20 km from the city, and a key interchange between north/south and east/west train routes – are being carefully evaluated.

In fast, developments have already started at Aprin following the conclusion of a US$250M deal between Islamic Republic of Iran Railways and Switzerland-based TransInvest Group.

Over the next two years, warehousing and logistics infrastructure will be developed, along with customs inspection facilities and equipment. Iran is keen to sign traffic agreements with landlocked nations in Central Asia, such as Kazakhstan, Turkmenistan and Uzbekistan, and for the network of inland ports to act as freight clearing, processing and cargo consolidation centres.

Meanwhile, modernisation programmes are either underway or planned at the nation’s main seaports, including Shahid Rajaee, Chabahar and Imam Khomeni, with the creation of rail corridors a key component of several projects.

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Philly Shipyard (formerly Aker Philadelphia Shipyard) is in negotiations with an unidentified Jones Act ship operator regarding four new container ships for use in the USWCH-Hawaii trade, for delivery in 2020 and 2021. Currently, this trade is operated by two shipping lines, Matson and Pasha, but the yard is promoting the formation of a new freight carrier to compete in the trade. Terms for a bareboat charter through a maritime leasing company have been indicated to finance the vessels.

“We are excited to get started on building a new fleet of container ships for a new carrier in the Hawaii trade, and are pleased to have received such positive feedback from well-known US marine players and financing sources,” remarked Steiner Norbekov, Philly Shipyard’s president and CEO.

“Philly Shipyard has a strong record of building quality vessels for this trade, and we believe local communities can benefit greatly from the safe and reliable service provided by our modern, efficient and environment-friendly ships.”

The new vessels will be the direct continuation of the series of two similar 3,600 TEU Aloha class container ships on which Philly Shipyard has begun work for Matson, for deployment in the USWC-Hawaii trade.

The yard believes that the operational benefits offered by series production of container vessels, coupled with an historical access to vessel financing, places it in a good position to build vessels for a new cargo liner service.
Big ships come a-calling at NY/NJ

The Port of New York and New Jersey is reaping immediate benefits from the raising of the Bayonne Bridge to provide vessels with an air draught clearance of 215 ft. This month, the 10,062 TEU ZIM ANTWERP passed under the raised Bayonne Bridge on its way to Maher Terminals in Port Elizabeth.

The ZIM ANTWERP arrived in New York after an all-water route through the Panama Canal from China, calling at Savannah, Charleston, Norfolk, New York/New Jersey and Halifax, before turning back for Asia.

Zim Line is battling to stay in the market as an independent carrier, focusing on trade routes where it has competitive advantages. George Goldman, president of Zim USA, said: “Zim is a significant player in this trade, and one of the leading carriers serving the Asia-East Coast trade, which is expected to continue to grow following the expansion of the Panama Canal. The trade is also served by another major Zim service, the Zim Seven Star Express (Z7S), along with additional complementary lines.”

 Maher Terminals’ president and CEO, Gary Cross, said: “Zim Integrated Shipping Services has been a loyal container customer of Maher Terminals dating back to the opening of our first terminal in the early 1970s. Now, nearly 50 years later, we are privileged to share in the momentous occasion of the 10,062 TEU ZIM ANTWERP calling in the Port of NY/NJ at our facility under the newly raised roadway of the Bayonne Bridge. This event adds to the list of important milestones we share together in our long relationship. We applaud Zim for their continuing success, and look forward to handling many more of their mega vessels at Maher Terminals for many more years to come.”

Also celebrating this month were APM Terminals and CMA CGM. APMT Port Elizabeth welcomed the 8,700 TEU CMA CGM ANGANC, marking the first call of the weekly Ocean Alliance US East Coast Loop 3 Service, which provides a direct service to the US East Coast from ports in China and Southeast Asia.

“The CMA CGM ANGANC arrived and departed on schedule with a berth productivity of 129.2 moves per hour (MPH) for the 4,393 container moves at the terminal, for 30.1 gross MPH and average dwell for rail-destined containers of less than one day,” APMT said in a statement.

The CMA CGM ANGANC is not particularly big by today’s standards, but APMT noted that, until recently, most vessels calling the Port of New York/New Jersey were mainly in the 5,000-8,000 TEU range – and the current record for the largest vessel call at APMT Port Elizabeth is 9,600 TEU.

That record is not expected to last. Vessels of up to 14,000 TEU capacity can now transit the widened Panama Canal locks and APMT is spending US$200M upgrading its Port Elizabeth terminal, including raising cranes and purchasing new ones. Now that bigger vessels can sail under the Bayonne Bridge, APMT expects an increase in overall size, and noted that with a 215 ft air draught and 80 ft channel, ships of up to 18,000 TEU can now enter Newark Bay.

Crane/vessel collisions

There has been a succession of collisions between vessels and cranes at African ports, including two at Durban, causing vast amounts of damage. The incidents took place on 5 April and 22 May in Durban, and on 18 May in Albidjan. The Ivorian accident occurred when the Cosco bulkier DA ZHI struck a container gantry crane, which then collapsed. As it fell, it severely damaged a number of containers. It is not clear whether the crane involved was one of the four new gantry cranes commissioned at Albidjan in April.

In the first Durban incident, a vessel named JULIO struck the port’s dry bulk cargo terminal. Bulk Connections, striking a giant shiploader. The loader was knocked over onto a conveyor gallery, inflicting an estimated R180M (US$7.8M) worth of damage on both pieces of equipment. A Transnet National Ports Authority pilot is reported to have been on the vessel at the time. Durban port manager Moshe Motlohi said that an investigation into the incident was underway. Then, on 23 May, the bridge wing of the 13,000 TEU-capacity MSC BENEDETTA hit an STS gantry crane at Durban Container Terminal.

It is possible that these particular accidents have come to light because of greater interest in such collisions following the high-profile incident on 4 May, when the bow of the CMA CGM container ship CENTAURUS struck two STS cranes at DP World’s Jebel Ali Terminal, causing one crane to collapse. Ten people were injured.

The aftermath of the crane collapse in May at Jebel Ali, caused when the bow of a vessel struck two STS cranes.
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• DMP Goal: logistics platform for East African business communities
• Total size: 690 Hectares

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Uncertainty in the Middle East

Recent announcements by US President Donald Trump to backtrack on the easing of sanctions with Iran, and the decisions by Bahrain, the UAE, Saudi Arabia and Egypt to sever diplomatic and trading ties with Qatar are already affecting trade in the Middle East.

Effectively, Qatar has been isolated because of its government’s alleged support of terrorist groups, such as the Muslim Brotherhood, al-Qaeda and ISIS/Daesh, and its close links with Iran. For a country that relies on Saudi Arabia and Bahrain for an estimated 40% of its food imports, and those countries’ ports, such as Jeddah Al and Dammam, as maritime gateways for most of its containerised imports and exports, an immediate crisis has developed.

Qatari Government figures demonstrate the seriousness of the situation, as, out of the nation’s US$25B of imports in 2016, just over 17% came from the blockading countries, with over 9% from the UAE alone.

Qatari authorities and those companies engaged in trade with the world’s richest country (on a per capita basis) have responded quickly to the difficulties. Increasing volumes of food are now being imported from Turkey and Iran, while cargo not moving directly into Qatari ports is being transferred over countries not party to the blockade. In terms of container and general cargo, this is mainly ports in Oman.

Re-routing
Domestically controlled Mada’a transport group and Qatar Ports Management Company (Mwani Qatar) have been instrumental in starting several new shuttle links that avoid calls at ports in countries supporting the embargoes. New services linking Hamad with Sohar and Salalah in Oman and with the Indian ports of Mundra and Nhava Sheva are already in place, or have been announced, with sailings starting at the end of June/early July.

While the Inka Qatar Express service will mainly carry import/export cargo between the countries, it also intends using Mundra as a relay point for Oman cargo moving to/from South East Asia, China, South Korea and other nations in the Far East. Two ships, HANSA MAGDEBURG and HANSA DUBURG, are being deployed in the weekly operation.

Of the global shipping lines, Maersk has started a new shuttle connecting Salalah and Hamad. It offers sailings every 10 days. Nonetheless, there has been considerable disruption. At the time of writing, ocean carriers, such as China Cosco Shipping Corp, Evergreen Line and OOCL, were still working on plans to serve Qatar, while several common carrier feeder companies, including X-Press Feeders, had cancelled calls at Hamad Port.

In addition, tonnes of general cargo scheduled to move from Fujairah (UAE) had been suspended, and vessel time charters cancelled as a consequence. Capt. Abdul Aziz al-Yafei, director of Hamad Port, explained: “In light of the recent developments in the region, we and our partners are ensuring the business continuity of our ports and shipping operation, and mitigating the impact that any action will have on imports and exports to and from Qatar.”

“Mwani Qatar assures that business is progressing at all of our ports as before, and that, with our partners’ new services, our regional and global trade will be boosted.”

Silver linings
Ironically, the embargo could be good news for the new port of Hamad. In particular, significantly more cargo is likely to be moved through the port on direct call mainline and feeder services from Oman than over Dammam. From Dammam, for instance, cargo was trucked over the Saudi border, which is now closed. In the case of feeder/intra-regional services, Hamad will now handle 12 services a month to/from the port of Sohar.

Meanwhile, in a clear sign of resilience and determination, Qatar’s Ministry of Transport and Communications has announced that contracts have been awarded for the start of the second stage of Hamad Port’s phase one expansion programme. The various deals are believed to be worth about QAR2B (US$550M).

Air freight operators have benefited from the situation, as imports of food have used this mode to cover immediate shortfalls, and this in a period of high demand, given the Ramadan religious festival.

Omani ports and global terminal operating companies, such as APM Terminals, have responded quickly to the difficulties. At the time of writing, Salalah and Hamad. It offers sailings starting at the end of June/early July.

As several of Qatar’s neighbours sever diplomatic and trading ties, the country has announced that contracts have been awarded for the start of the second stage of Hamad Port’s phase one expansion programme (artist’s impression).

political decisions can have a major bearing on economic development, investment and trade, and events in the Middle East over the past year illustrate this perfectly

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The Middle East is home to several ambitiously minded international terminal operating companies (ITOs), including DP World, Abu Dhabi Ports Co (ADP) and Gulftainer. While these ITOs continue to invest in their flagship operations – Jebel Ali, Khalifa and Sharjah/Khorfakkan, respectively – they are also building a greater regional presence.

Branding itself as an “enabler of regional DP World is particularly keen on exploiting opportunities associated with China’s One Belt, One Road initiative and in Central Asia. Recently, the group signed two Memoranda of Understanding (MoU) to develop a Port Community System (PCS) in Kazakhstan. The MoU are with:

- Kazakhstan Temir Zholy (KTZ), the national railway company. This involves setting up a joint-venture company to implement and manage the new system and create a Eurasian Transcontinental Railway System.
- KTZ, and the Committee of State Revenues of the Ministry of Finance of the Republic of Kazakhstan (customs) to ensure the integration of customs processes into the KTZ online portal.

“We have experience of delivering this at our flagship operation in Jebel Ali, where the Dubal Logistics Corridor (DLC), a road and rail infrastructure development, connects to the port through the Dubal Trade Portal, with more than 50,000 transactions conducted each day,” said Sultan Ahmed bin Sulayem, chairman and CEO of DP World. Meanwhile, ADP has signed a 35-year concession agreement to manage the Port of Fujairah, and will develop an additional 1 km of deep-draft (14.5 m) quay line and build 250,000 square meter storage platforms. Currently, ADP manages full and half containers handling equipment, terminal management systems and IT networks will be introduced on a cost-recovery basis largely on ADP’s experience at Khalifa.

A new entity called Fujairah Terminals has been established to work closely with ADP to manage the new operation.

The deal gives ADP exclusive rights to develop facilities for handling a range of cargo and containers for the sustainable growth of the port. With containers likely to figure heavily in the plans, it is highly significant that ADP has secured the contract to handle containers across the whole emirate. Signing with the Port of Fujairah marks a major milestone for Abu Dhabi Ports, which will extend its reach across the Gulf and Africa, in addition to receiving general cargo shipments from the northern emirates.

ADP will start development work in the overall framework and yard areas in 2018, with new generation cargo handling equipment becoming operational in 2021. By 2030, ADP hopes to increase Fujairah’s handling capacity to 1.5 million TEU of containers and 1.5 million TEU of general cargo.

Local heavyweights home in on new home

The Dubai Logistics Corridor (DLC) making a similar move.
North Africa looks to scale up

In Morocco, Tanger Med, which is set to have four container terminals, handled 2.96M TEU last year. The two existing terminals are operated by APMT's automated MedPort Tanger, a trans-shipment terminal that will turn Tanger Med into by far the biggest container port on the African continent.

The terminal will have the capacity to handle 5M TEU/year, taking total port capacity up to 9M TEU/year, with an option to add another 1M TEU/year at a later date. Total development costs are put at €785m, including the supply of 12 STS cranes from ZPMC and 32 ASCs from Künz.

Tanger Med Special Agency (TMSA), which is the port's landlord, awarded APMT its 30-year concession in March last year. In December, the latter awarded Hill International the contract to manage and supervise the construction of MedPort Tanger, with the task of ensuring that the terminal is operational by the end of 2019.

Morocco has traditionally focused its economic policy on trade with Europe, but persistently low levels of economic growth in Europe have persuaded the government to turn towards sub-Saharan Africa. It has joined the African Union, 33 years after it withdrew from its predecessor, the Organisation of African Unity (OAU), over the OAU's support for Western Sahara independence. Morocco still trades more with the European Union than with the rest of the world put together, although Tanger Med could act as a transshipment port for the whole of West Africa.

Algerian rival

The government of Algeria has agreed to develop a new port at El Hamdania, apparently in response to the success of Tanger Med. Plans for the project were completed in December, and construction work began in March. The port, which is located 65 km west of Algiers, is to be built in stages, with the first phase scheduled for completion in 2021. A total of 23 container berths are envisaged, collectively providing 3.6M TEU/year in handling capacity. The African Development Bank has provided a US$900m loan, which is to be repaid over 20 years starting in 2022.

Morocco and Algeria are great rivals, and they also follow broadly different economic models. While Morocco has developed a bread-and-butter economy centred on foreign investment and manufacturing exports, Algeria is the archetypal oil and gas producer. The country relies on hydrocarbon exports to generate 93% of its export revenues, and many sections of the economy are heavily state controlled. There are also strong limitations on foreign investment. All this poses challenges for El Hamdania. The government hopes to attract billions of dollars of investment in the 2,000-ha of industrial zones associated with the port. It is banking on the provision of a modern port and other infrastructure to attract tenants, but this is only one half of the equation. It also needs to improve the terms of investment and reduce red tape, including the requirement that foreign investors can only hold minority stakes in Algerian projects.

The port is to be developed by China Harbour Engineering Company and China State Construction Engineering Corporation, which have a joint 49% stake in the venture, with the Algerian Port Authority holding the remaining 51%. If it proves difficult to attract export-oriented businesses, the project will rely on transshipment business.

While Tanger Med has managed to win transshipment business from Algeciras and other Southern European ports, there is only so much trade to go around. Another project on this scale may struggle to compete, although China Cosco Shipping has already suggested that it could make El Hamdania its hub in the Western Mediterranean.

El Hamdania will have one advantage over Tanger Med, as the highway from Algeria through Niger to Nigeria is being upgraded. While the Algerian port could attract feeder services supplying West Africa, containers could also be transported by road. If and when further road connections are added, this could allow El Hamdania to compete with Abidjan and Tema in servicing the landlocked countries of the West African Sahel.

The government’s enthusiasm for economic reform tends to fluctuate in line with oil and gas prices. When prices are low and government finances are under strain, Algiers begins to countenance loosening its grip over the economy, but plans are usually shelved when prices recover. Hydrocarbon prices, though, have now been low for three years, and the market is showing no sign of a genuine recovery. However, Jean-François Duplan, the head of the IMF team that visited the country in March, seems to believe that change is on the way. “Efforts to adjust to the oil price shock are underway,” he said. “The authorities made progress improving the business environment, and are working on a long-term strategy to reshape the country’s growth model to foster greater private-sector

While ports in Morocco and Egypt continue to plan expansions, a rival in Algeria also has designs on the transshipment market

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activity and economic diversification.” At the opposite end of North Africa, Egypt’s role in international shipping can be summed up as one of historical importance, future potential but contemporary problems. Investors are likely to be attracted to develop new terminals at the heart of sea lanes connecting Europe and Asia, while trade between Europe and East Africa is also growing. However, the investment regime and local security situation need to be improved, and overcapacity is already a problem.

The Egyptian government is currently finalising legislative changes to improve in terms of foreign investment. President Abdel-Fattah El-Sisi has made attracting foreign investment a central plank of both his economic and political policy. He views it as the best means of promoting economic growth and job creation, which in turn will help to calm political tensions in a country that is still shakier after the events of the Arab Spring. The government envisages that there will be six ports in the Suez Canal Economic Zone by 2045, serving a wide range of manufacturing, processing and industrial enterprises.

Port investment could increase now that Cairo has finally allowed the national currency to float, under pressure from the IMF. The value of the Egyptian pound has fallen from roughly EG£11 to the US dollar in June 2016 to about EG£18 currently. Given that a large proportion of construction materials and workers on any port project will come from within Egypt, this dramatic depreciation should greatly reduce the cost of any projects.

Sokhna expanding

DP World is in talks with Egypt’s General Authority for Investment and Free Zones to expand the Port of Sokhna, which lies on the Red Sea, near the entrance to the Suez Canal. The port, which handled 14 Mt of cargo last year, is located closer to Cairo than any other Egyptian port. The company plans to develop a second basin at the port, although the timing of its construction has not yet been set by the Suez Canal Economic Zone (SC EZ). A new logistics centre and general cargo terminal are also planned, as well as the launch of ro-ro services.

The construction of the second basin has been held up by an unspecified disagreement over the development of the third basin, which will serve a planned bulk liquid terminal. However, Mohamed Mamish, who is both head of the SC EZ and chairman of the Suez Canal Authority (SCA), announced in early July that the problem had been resolved and both projects should now be free to proceed. DP World says that it has invested US$1.2 billion in Sokhna over the past decade.

Overcapacity

The Egyptian port sector as a whole handled just 5.5 Mt TEU in 2016 out of installed capacity of 11 Mt TEU. This is partly because of weakness in the domestic economy, but much more because of lower than anticipated transhipment turnover. The country has not developed as much transhipment business as quickly as the government had hoped. While Sokhna focuses on handling Egyptian trade, East Port Said at the southern end of the Suez Canal generates more of its business from transhipment.

Operated by Suez Canal Container Terminal (SCCT), it handled just 1.9 Mt TEU last year out of total handling capacity of 5.5 Mt TEU. While Tanger Med is now the biggest container port in Africa in terms of turnover, East Port Said is still ahead in installed capacity. Having dredged its side channel and port basin to 18.5 m, SCCT is “big ship ready”, but faces stiff competition from Piraeus in Greece.

The government wants to see the construction of a new container terminal at East Port Said with a 28 m draft, and has been in talks for at least 20 months with Singapore’s PSA International over developing the project. In the most recent official statement on the project in March, Mamish said: “We are awaiting a final master plan of a new port at East Port Said port from Singapore’s PSA. PSA is currently undertaking technical and commercial feasibility studies. The company already operates the Port of Dammanah on Saudi Arabia’s east coast, as well as Mersin in Turkey, but nothing in between Suez transits

Shipping is more intimately connected with the Egyptian economy than with almost any other country because the Suez Canal is one of the country’s main sources of foreign income. The number of vessels transiting the Canal fell from 17,500 in 2015 to 16,800 in 2016, due to a combination of political instability, falling oil prices and lower economic growth. The SCA has offered a number of discounts to container vessels and bulkers, and numbers have rebounded to some extent. According to the latest available figures, 2,973 vessels passed through the Canal in March and April, with annual turnover for the year to the end of April 4% up on the figure at the end of March. It is interesting that container tonnage was 9% higher in April than in the same month last year, reflecting the growing size of vessels.

East-West rail

There is relatively little trade between North African states at present, but Egypt and Morocco are keen to oversee the construction of a railway line between their respective ports. Egypt’s economic difficulties actually make such a venture more rather than less likely as its government is driving a number of mega projects, in order to create employment and boost growth. Apart from the railway and the expansion of the Suez Canal, it is also embarking on the construction of a new capital city to the east of Cairo.

Progress on the railway is unlikely until the security situation improves in Libya and a single unitary Libyan government is in place. It has been suggested in the Egyptian press that Saudi Arabia could help finance the scheme if the railway were extended into its territory, as it could be used to carry pilgrims during the Hajj. There have even been suggestions that the line could connect with the new Chinese-Iranian rail services, to carry cargo from China to Moroccan ports for onwards transport to North America.

Express the progress.
Heading for the next stage

EU Stage V emission limits for non-road mobile machinery (NRMM) come into force in 2019 and 2020, according to engine size. The NOx limits for engines between 56 kW and 560 kW are unchanged from Stage IV but the mass-based PM limit for more powerful engines is lowered from 0.025 to 0.015 g/kWh, and, for the first time, there will be a limit for particle number (PN) emissions, obliterating the use of a diesel particulate filter (DPF). Stage V brings NRMM to within a hair’s breadth of Euro VI for highway trucks. In addition, emissions from very large diesel engines P > 560 kW are being caught by the EU for the first time (see accompanying table for details). Machines from 56 to 560 kW cover most NRMM in the ports sector (e.g. lift trucks, forklifts, marine engines, etc.). In hardware terms, the biggest change will be the new Tier V DPFs. Most port OEMs have avoided up to and including Stage IV/Tier 4 Final. For NRMM engine makers such as Volvo Penta, Scania, Cummins and MAN, Tier V was announced as the launch of their Stage V line-ups some time ago, but most port OEMs are sticking to Tier IV. Options To the knowledge of WorldCargo News, only Kalmar, among the leading non-road mobile machinery manufacturers, has indicated a Tier V preference, so it is appropriate to focus on what Kalmar and its selected partner for a range of its machines, Volvo Penta, are doing. Kalmar has been one of Volvo Penta’s biggest customers for many years, and the company is now testing Stage V engines in its reach stackers, ECHs, FRTs and forklifts. "We have a close collaboration for many years, with good support in the development of our powertrains, from Volvo Penta," says Jan-Willem van den Brand, Hyster-Yale’s director, Big Truck Strategy. "Operators want similar performance to their truck fleets, but they will also want similar performance to their diesel-powered machines. This is an ambitious project, since a lift truck needs much more peak power than a transporter such as an ATV, even a Lift-ATV." Hyster is taking a "stepped" approach to its proposed solutions, taking into account the customer’s duty cycle, in order to understand how much power is needed. As a first step it will be testing a big truck with 250 kW of installed power from a large lithium-ion battery pack. Build it up Jan-Willem van den Brand, Hyster-Yale’s director, Big Truck Strategy, argues that this could be suitable for low-intensity usage – for example, a barge terminal where the lift truck is needed for stack truck (un)loading duties associated with a barge, so it could work for 3 hours and then be recharged with a conventional charging station during the next 2 hours. Under the second step, the autonomy of a truck with the same or smaller battery pack could be extended to 6-8 hours by equipping it for "opportunity charging", either inductively or with quick-charge (dis)connect plug-in. This requires more infrastructure investment by the operator, such as primary and reduction coils at intervals on travel paths in the terminal, interfacing with secondary coils on the underside of the truck. In the third and final step, which Hyster wants to apply up to 4x52XM-16CH (4x1136HP CH in North America), the company aims to leverage the hydrogen fuel cell technology of Hyster-Yale affiliate Nuvera to develop a hybrid fuel cell electric truck. Explaining this, van den Brand said that it is not possible to provide the same level of autonomy to a pure electric truck as with a diesel truck with an 800-litre fuel tank. At 9.7 kW/h, this totals 7,760 kW/h, or up to 72 hours of autonomy (the whole weekend), for which the equivalent Li-Ion battery pack would occupy 57 m³ and weigh a massive 90 t. On top of this, pure electric drive is impractical for large fleet operators. Say, for example, 20 x 200 kW trucks need to be re-charged at the same time, that’s 4 MW of power drain, enough for 3,000 homes in the US. Now imagine a large cruise ship – a floating hotel – has just berthed and has to ‘cold iron’, while a large container ship has just unloaded 1,000 reefer containers, and has to ‘cold iron’, while a large container ship has just unloaded 1,000 reefer containers, and has to ‘cold iron’, while a large container ship has just unloaded 1,000 reefer containers.

A powerful partnersHP

Stage V NRMM diesel emission limits (selected power classes)

<table>
<thead>
<tr>
<th>Net power kW</th>
<th>Date</th>
<th>CO g/kWh</th>
<th>HC</th>
<th>NOx g/kWh</th>
<th>PM g/kWh</th>
<th>PN 1/kWh</th>
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<td>3.5</td>
<td>0.19</td>
<td>0.045</td>
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<td>6 x 10^10</td>
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<td>750-1,300</td>
<td>2019</td>
<td>3.5</td>
<td>0.19</td>
<td>0.015</td>
<td>0.015</td>
<td>1 x 10^12</td>
</tr>
</tbody>
</table>

A Volvo Penta D11 Stage V engine and exhaust after-treatment system

Demand for lower emissions is stimulating development of new power systems for mobile plant

A POWERFUL PARTNERSHIP

With an eye on “zero emissions” goals, set out by the San Pedro Bay ports, Hyster argues that operators will be expected to be able to electrify their big fleet trucks, but they will also want similar performance to their diesel-powered machines. This is an ambitious project, since a lift truck needs much more peak power than a transporter such as an ATV, even a Lift-ATV.

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that need to go into the reefer stack. The fuel cell-electric hybrid truck again needs to be optimised to the customer’s duty cycles to achieve the lowest emissions completely with hydraulics for traction and lifting. The mast is positioned in line with the front wheels, so the truck can be built lighter, saving materials.

- The truck is driven electrically, and has an electric winch rope hoist. High pressure hydraulics are totally eliminated, saving 400-450 litres of hydraulic oil in the ECH thus far developed.

In investing €5M in R&D to develop Hy-Lift, BP CVS clearly have an eye on the laden container handling market, and this will be the next step. Clearly the power pack will have to be bigger, but so will be the absolute fuel-savings. CVS believes its approach will result in a lower overall environmental impact compared to a equivalent diesel truck but the amount of ‘consumables’ and their associated environmental impact is also considerably reduced.

As noted, the design requires much less hydraulics and maintenance-intensive high-pressure hydraulics, doing away with frequent oil changes, valves, seals, hose replacements, etc. This translates directly into higher uptime (so perhaps fewer machines are needed) and, in essence, the risk of ‘hydraulic fires’ is eliminated. Lifting chains are replaced by ropes that require less greasing, last longer, and are less expensive to source. The weight-saving allows smaller tyres to be used within ERTRO speed/load tolerances, so, again, less material is being consumed.

Hybrid for Duisport

Duisburg Port operator Duisburg Infradeal Terminals (DIT), an affiliate of Duisport Group and Contargo, recently took delivery of a hybrid Konecranes SMV 8531 TCS reach stacker. This is believed to be the first Konecranes hybrid reach stacker to be supplied outside Sweden (Helsingborg). Fuel-savings of up to 30% are claimed for the machine, with annual CO2E savings of 20t (from 100t to 80t) based on 4,000 running hours. The hybrid design features a hybrid diesel/electric driveline, an electrified hydraulic lifting system, and super capacitors for energy storage. Maintenance-intensive components such as transmission and variable displacement pumps have been eliminated. Controllers and inverters are placed in easily replaceable modular boxes, to simplify spare parts supply and increase uptime.

After two months of service, DIT’s managing director, Berald Petersen, said that even his high expectations have been exceeded, adding that, in some operations, fuel-savings of up to 50% have been observed, although no information is available about the comparator machine(s). All test results will be collected and will be used for DIT’s future procurement of handling equipment.
Shanghai Zhenhua Heavy Industries Co., Ltd (ZPMC) is a famous heavy-duty equipment manufacturer which has a fine track record of supplying first-class Ship-to-Shore Container Cranes, RTGs, RMGs, Portal Cranes and Bulk Equipment for turnkey Bulk Terminal operations.

ZPMC also uses its port-machinery production capabilities and expertise, adapting it for the production of Mining Equipment and supply of components.

ZPMC now offers a full range of automated solutions, for both new and existing equipment. Our range includes automated stacking cranes, retrofit automated control options for RMGs and RTGs and a full turnkey automated yard system with ZPMC’s own AGVs and Equipment Control System.
Reefer box production stays weak

Reefer box production fell sharply during 2016, resulting in a delivery of just 160,000 TEU for the year as a whole. It was more than 40% down on the 275,000 TEU produced in 2015, and ended a run of several years when reefer output had been on the rise again.

The total for 2016 (see Table 1) was, in fact, lower than at any time since 2009 (or, prior to that year, as far back as 2014), and was a reflection of weaker reefer demand and a much reduced appetite for investment. Although much of the reduction in 2016 was due to a cutback in shipping line expenditure, for want of ready capital, the leasing industry’s reefer purchasing was also at a five-year low.

Rental firms took delivery of around 100,000 TEU as reefer containers in 2016, compared to 60,000 TEU purchased directly by shipping lines and other transport operators. This marked a 30% reduction for the lessors, compared to 2015, but it represented a much greater 55% drop for the lines.

Approaching 50:50

The lessors’ intake may have slowed during 2016, but it still accounted for over 60% of the global figure. This fuelled yet another gain for the already fast-expanding reefer leasing sector, but more ground was lost by shipping lines, in terms of their share of ownership. By the end of 2016, leasing companies were in control of almost 80% of the entire global reefer fleet, which was proportionally higher than at any time in the past. Prior to 2009, the leased share had rarely strayed above 30%.

Nevertheless, both the shipping and rental sides were to be impacted by the bankruptcy of Hanjin Shipping Company later in 2016, with shipping lines finding themselves even less able to secure funding in its aftermath. Their (already limited) reefer investment was thus brought to a virtual halt, and the situation was not helped by the timing of the Korean company’s failure, which occurred right at the start of the ‘peak’ reefer season, when demand was usually at its strongest.

In Hanjin’s wake

By contrast, the leasing industry has been more preoccupied with the practicalities of box recovery, although this, too, was to draw its focus away from newbuild purchasing. Top most leasing firms had some significant exposure to Hanjin, with many thousands of reefer containers (both leased and owned) being impounded in the aftermath of the company’s collapse. It took several months for the majority to be released, with the final units not being returned until June 2017.

Consequently, the leasing industry was not only intent on recovery, in much of its own equipment as possible, but has also benefited from a sizeable intake of used reefer containers formerly owned by (or on futures to) Hanjin.

This added to the lessors’ available container fleet of 30,000 or so, derived from reacquired leasing equipment from other shipping companies, which had been traded through sale and leaseback, in order to raise funds. It was to further cut new reefer demand in 2016, as did the conclusion of two sizeable to 15,000 TEU mergers earlier in the year. These have since yielded some further operating synergies, as well as removing two major shipping companies (TAL International and Dong Fang Leasing), and so reduced in a smaller net requirement for extra equipment.

More consolidation

Similar transactions are also occurring within the container shipping sector, following the takeover of APL by CMA CGM earlier in 2016, and subsequent mergers involving Hanag-Lloyd/ UASC, and Maersk/Hamburg Sud (both of which are due for completion in 2017). These are, likewise, reducing the overall net requirement for all box equipment (and particularly reefer), as further efficiencies are being achieved.

As a result, the line-owned reefer fleet underwent no real change in size during 2016, whereas the global lessor managed a growth rate of just 2.2% to attain its present size of approximately 2.7M TEU. In more recent months, reefer procurement has been paused incrementally on the backburner because of a stronger reefer demand in the European market, and the lessors have encouraged a proportionally greater dry freight investment.

Unsurprisingly, the fallout from these recent upheavals is continuing to be felt into 2017, as the outlook for reefer demand has, so far, again proved to be relatively downbeat for the year overall.

Although output is forecast to rise in 2017 (on 2016), it is not expected to go much above 200,000 TEU, and will remain below the annual average of recent years. Up to 80,000 TEU was delivered for the opening six months of 2017, which would compare with nearer 40,000 TEU produced during the same period in 2016, but 140,000 TEU one year before that (through January-June 2016). The only lower of recent significance is Maersk Line, with the Danish carrier accounting for 73% of the newbuild in 2016, and 82% in 2017, as it reported its best first half 2017 with likely comprise about 37,500 + 40,000 high cube reefer containers, plus 2,500 x 20ft and 1,000 special

(REEFER INDUSTRY)
units of special containers per year. Looking at the more established players, MCI operates two factories – Qingdao, plus another under construction at Qingdao. CIMC has two main production sites, at Qingdao and Taicang, as well as a subsidiary line devoted to production of specials (also in Qingdao). All these factories, with the exception of MCI-Qingdao, are relatively new, having been brought on-stream within the past four years.

**Underutilised capacity**

Much of the present capacity has been operational since the production peak of 2015, which further implies that most (if not all) factories have been hard-pressed to maintain a single daily shift throughout the past 18 months. This is not viable for the longer term, given that reefer factories have traditionally been worked more intensely than their dry freight counterparts, in order to achieve a higher rate of productivity. Throughout the past five years, the majority of dry freight plants have been operated at single-shift, although most reefer factories (prior to the downturn of 2016) were working closer to twin-shift. Little wonder, therefore, that some of the earlier – and more ambitious – expansion plans, which might have seen the global reefer capacity figure rise to more than 500,000 TEU/year, are now on hold for the time being.

The increasingly pressured box-building sector has been aided, in part, by the relatively stable state of reefer pricing. The latter has yet to experience the same degree of volatility as that affecting the recent dry freight sector. Finished reefer prices are largely underpinned by the cost of stainless steel, as well as Chinese labour.

The fluctuation in Corten Steel price has had an impact on reefer costs than for dry boxes, because of the proportionally smaller use of this material in reefer box construction. In addition, reefer machinery prices have been kept down – and relatively stable – by the intense competition that has long existed within this largely exclusive manufacturing sector, whilst the burgeoning overcapacity of the reefer box-building sector, similarly, held down the price of container body construction.

The average price paid per commissioned 40’ reefer has, consequently, held largely static for the past two years, at approximately US$15,000-16,000.

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**Samskip loses weight**

Samskip has announced that it has received another 51 of its new light-weight 458 reefer containers.

The containers were built in China and delivered to Rotterdam Shortsea Terminals (RST). They feature the same innovative flat composite inner lining first used by Samskip in 2014. The enhanced design, said Samskip, results in containers that are lighter, stronger and easier to clean than conventional reefer units, while allowing for a smoother (un)loading process.

The containers’ tare weight has been reduced from 5,990 kg to 5,760 kg, in turn increasing payload capacity.

“These new reefer are also 5 cm wider inside than a normal 458 reefer, allowing wider pallets and packaging,” said Johan Vogelaar, Samskip manager, Multimodal Services, Reefer Trade. “This is an especially significant advantage for fruit and vegetable shippers.”

Each unit includes a high-performance Thermo King Magnum Plus generator set, designed to hold frozen, chilled or heated cargo in a temperature range of -30 degC to +30 degC. The containers will be fitted with a tracking and monitoring system, enabling Samskip to manage remotely the containers on shortsea, rail, barge and road services throughout Europe, as well as during terminal storage.

“The new reefer further enable an expanded network, while offering a more sustainable and cost-effective solution, with enhanced quality assurance for the customers’ temperature-controlled goods and perishables,” said Vogelaar.

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**Introducing NaturalINE** – The world’s first natural refrigerant container technology.

The first and only technology of its kind, the NaturalINE reefer unit incorporates CO2 in place of conventional synthetic refrigerants to deliver sustainability and efficiency equal to our best-selling unit.

This natural refrigerant-based solution is the most environmentally sustainable alternative for refrigerated marine transport. It's the future of container refrigeration – brought to you by the Natural Leaders at Carrier.

www.carrier.com/naturaline

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**Reefers play a starring role in NZ**

It was fitting that it was a reefer container that had the honour of being the one millionth container loaded at the Port of Tauranga in New Zealand this month as the port celebrated becoming the first in the country to handle 1M TEU in a financial (or calendar) year.

The container, carrying Zespri kiwifruit, was loaded to Hamburg on the MS SANTIS狯a, a 5,438 TEU vessel with 1,680 reefer plugs.

Tauranga’s container business is set to grow further as reefer containers increasingly displace reefer vessels in the New Zealand fruit trades. Earlier this year, Stevedore started deploying its new Colour Class vessel on a Mediterranean service linking the NZ fruit growing regions around the ports of Nelson, Napier and Tauranga with export markets through Philadelphia, Zeelitz, Tilbury and Rotterdam.

In the future, Tauranga’s port will become the European gateway for Zespri’s kiwifruit exports, which began arriving on Scarlett vessels in December last year.

The four vessels in the Colour Class have a capacity of 2,259 TEU (3,540 TEU loaded at 1,680 TEU per plug).

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**In making history, we’ve created the future.**
Safe and smart power plug for both truck and vessel

When transferring the reefers between truck and vessel simply use a screwdriver to turn the plug between 3H and 6H – safe, easy and fast.

Available from WorldCargonews.com

“Container Terminal Planning - A Theoretical Approach”
A major study by Dr Itisuro Watanabe (Container System Technology)

This comprehensive 245-page study is an in-depth analysis of capacity constraints, productivity, selectivity and flexibility of different container handling systems in terms of different types and sizes; communications or dedicated, hub centre (transhipment and/or relay) or import/export; vocation, gateway or feeder port; intermodal rail or truck distribution inland; with or without CFS, etc. Profusely illustrated with charts, and flexibility of different container handling systems in terminals of different types and sizes: common-users

Fax or e-mail this form to: +44 1372 370111

Hot-rolled stainless steel* price per tonne

<table>
<thead>
<tr>
<th>Year</th>
<th>2015-Q2</th>
<th>2015-Q3</th>
<th>2015-Q4</th>
<th>2016-Q1</th>
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<td>8,400</td>
<td>8,500</td>
<td>8,700</td>
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</tbody>
</table>

FOWA reefers entered the market in 2016

Maersk in front

The much reduced rental activity has resulted in a significantly ended purchase by shipping companies, although here, too, the picture is far from clear cut. The majority of recent shipping line production has gone to the global market leader, Maersk Line, with this one company acquiring up to 20,000 x 40ft high cubes through January to May 2017. It made up 75% of the global total, plus an even greater 85% of that going direct to transport operators.

Much of the remainder of equipment purchased by transport firms (as opposed to lines) has gone to Evergreen Line and the fast-expanding Chinese shipping operator Antong (Qianzhao An Sheng Shipping Co). Evergreen had taken delivery of 2,000 x 40ft high cube reefers by May, with 600 destined for Antong. The balance, amounting to 5,000 TEUs for the January-May period, went to smaller transport companies, the majority of which are buying in small batches (ranging from a few dozen to several hundred). One example is China-based Sinotchem, which recently acquired several hundred 20ft reefers for internal lease to the Chinese operator SITC.

Maersk had earlier dominated in 2016 as well, when it accounted for more than 30% of all reefers delivered to shipping companies during that year, and 15% of the global total. However, several other major lines had been active in 2016, including CMA CGM, Hapag-Lloyd, Maersk Navigation and Antong, which collectively received with the same total as Maersk did on its own. The tally of purchasers had been greater still in 2015, when the lines’ combined intake had topped 135,000 TEU, compared with almost 140,000 TEU going to leasing firms.

Slowing down

2015 was the last time the three established reefer box building names were able to run a multi-shift operation. The (then) newly opened CIMC facilities had achieved close to double-shift working for much of that year, as they were to construct 180,000 TEU on their newly enhanced (two-shift) capability of almost 260,000 TEU/year. MCG-Qingdao had managed nearer 1.5 shifts per day on average, which was equivalent to 60,000TEU built, on a stable and longstanding) annual capacity of 85,000 TEU. The latter, too, was calculated on a two-shift basis.

![Image](image.png)

**Table 3: Averaged quarterly steel and 40ft container price (US$)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2015-Q2</th>
<th>2015-Q3</th>
<th>2015-Q4</th>
<th>2016-Q1</th>
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<td>8,400</td>
<td>8,500</td>
<td>8,700</td>
<td>8,500</td>
</tr>
</tbody>
</table>

*High-grade SSUS 304 (mudder grades are approximately half this price).

**Excluding machinery. Sources: MEPS and manufacturers’ own data**
Singamas production was also to run at about one-shift for the whole of 2017, when 35,000 TEU had been built on an annualised rate of roughly 56,000 TEU. 

Decline in 2016

By contrast, output and productivity were to decline for all factories during 2016, largely due to the same factors that had been further exacerbated by the opening of the MCI-San Antonio and FUWA sites, which brought yet more capacity on stream. CIMC plants built just 80,000 TEU on their own accord during 2016, with a slightly improved capacity rating (of 202,000 TEU per year).

Singamas managed 20,000 TEU, despite delivering the full capacity of its Qidong facility to its full twin-shift potential of 60,000 TEU per year. MCI achieved an output of close to 60,000 TEU. Even though the total was little different to that achieved in 2015, the start-up of manufacturing in Chile was to further expand the company’s overall capacity to more 100,000 TEU per year.

The situation is better in 2017, even if most factories are continuing to operate at well below their design capabilities. CIMC was on track to deliver 35,000 TEU during the opening six months, which is actually below its average for 2016 (calculated on a pro rata basis). Its capacity split remains the same, with more than 100,000 TEU per year offered by the Qingdao site, and the balance (of close to 100,000 TEU per year) controlled at Taizhou.

MCI is forecasting a production of at least 40,000 TEU during the first half of 2017, with a rising 20% coming from Chile. It is naturally benefitting from most (but not all) of the reefer business placed this year by Maersk Line, and the company’s annual capacity is currently estimated at close to 120,000 TEU overall.

Singamas, after a slow start, has supplied a few thousand reefer boxes so far in 2017—and only recently surpassed the total delivered by the far smaller FUWA plant.

CIMC’s involvement in reefer building has declined in recent years, although it has suffered to a lesser extent than Singamas, whose decrease has been even more drastic. The latter company has yet to announce any capacity details, or even a likely opening date, for its planned site at Qingdao, although this facility is expected to focus heavily on more specialised work of the type carried out by CIMC at its dedicated Qingdao facility.

Mainstream plants

CIMC’s two mainstream reefer plants had constructed around 13,000 TEU apiece during the opening five months of 2017, from January-May 2017, with a further 2,500 TEU of specials coming from the more specialised line at Qingdao. The Singamas Qingdao plant had barely managed 1,800 TEU throughout the same five-month period, compared with 1,700 TEU from FUWA.

The vast majority of all recent production was ‘standard’ 40 ft high cube, with 208 output amounting to just 1,800 units. The total for specials (consisting mainly of 45 ft and 53 ft units) numbered around 1,000 units.

By comparison, the two main CIMC reefer plants delivered 45,000 TEU (from Qingdao) and 30,000 TEU (Taizhou) during the whole of 2016, with a balance of around 5,000 TEU comprising specials. The ‘standard’ reefer production at CIMC factories featured around 5,000 x 20 ft and 35,000 x 40 ft high cube. The Singamas Qingdao factory, as mentioned, produced close to 20,000 TEU in 2016, dividing as 1,500 x 20 ft and more than 9,000 x 40 ft.

MCI-Qingdao, fa ced in large part by competition from the Maersk Line move ment, was to deliver more than 26,000 TEU through January-May 2017, just about all of which were 40 ft high cube. This compared with a total of 48,000 TEU built by MCI-Qingdao during the whole of 2016, which was further augmented by 10,000 TEU from the newly started facility in Chile.

By May 2017, the MCI-San Antonio plant had already produced close to this figure, and the total MCI order book (covering both factories) amounted, at

<table>
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<tr>
<th>Manufacturer</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017*</th>
<th>Capacity**</th>
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<tr>
<td>CIMC Group</td>
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<td>5,000</td>
<td></td>
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</tr>
<tr>
<td>Total</td>
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<td>276,000</td>
<td>160,000</td>
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</table>

*Half year projection. **Annual average for current year (assuming continuous 40 ft high cube production). Source: Manufacturers own data.
The use of data from container-based sensors, and now more powerful monitoring equipment, in the reefer industry is growing quickly. High-value cargo and the need to maintain temperature and atmospheric conditions mean systems that capture sensor data on reefer containers can deliver both a return on investment and commercial advantage.

Another factor that is driving the use of Internet of Things (IoT) technology in reefer transport is the use of data to meet the new requirements of cold chain regulatory schemes, such as the Food Safety Modernization Act (FSMA) in the US, Chinese regulations regarding the cold chain for fresh meat imports, and the Good Distribution Practice (GDP) guidelines for pharmaceutical products transport.

Eye on Pharma

Shipping lines see taking market share from air freight as a big opportunity, and have their eyes firmly on the pharmaceutical supply chain. In a recent interview with Reuters, Maersk’s head of reefer, Annie Sophie Zelsang, said the sector had the potential to reach 100,000 containers a year. “We’re definitely looking to make the container market bigger by RCM,” said Zelsang, referring to Maersk’s plan to use its Remote Container Monitoring system to meet the market’s data requirements.

Data seems to be part of the package that shippers want. In its new Cold Chain Logistics 2017 report (available via www.wisconsinsight.com), UK-based research institute Transport Intelligence (Ti) concluded that improving reefer container technology is helping shipping lines win market share from air freight. “There are numerous anecdotal reports of cargo switching to ocean freight from air cargo, including certain pharmaceutical products, flowers and fruit,” stated Ti. The report noted that carrier executives are still cautious about some very high-value cargos, such as pharmaceuticals, but technology is helping reefer containers in other markets. “Meanwhile, the recent improvements to reefer container technology, and particularly controlled-atmosphere and tracking technology, is prompting increasing volumes – and more varieties – of perishable foods to be transported via ocean freight, and at greater distances than ever before,” noted Ti.

Speaking with World Cargo News, report author and Ti quantitative analyst Andrew Ralls, said it is “possibly too early to tell whether remote monitoring systems are encouraging this switch, but it certainly seems to be something that shippers would like to see.” Furthermore, he added: “The investments being made by larger carriers into new technologies suggest they are excited about the new innovations, and are confident that it will pay in the long run.”

The ability to monitor the cargo right throughout the journey seems to be resonating with shippers, but viability can be a double-edged sword. “One cautionary note to consider is that the new technology will bring high expectations and so those producing it really need to nail it,” said Ralls. “The technology may need to be near perfect to work. Giving shippers the visibility they seem to desire may make them slightly fainthearted. You could worry about a small dip in temperature, which wouldn’t actually make a difference to the shelf-life of the product. There’s certainly a real risk of disappointed customers.”

Getting Data

Shipping lines that are still on the fence, pondering whether reefer technology monitoring delivers a return on investment, now also need to consider that their customers have more control over their own data. Costs for remote monitoring technology and data download costs have fallen to the point where one-stop temperature loggers that can send data over cellular services are now viable.

US-based DeltaTrak recently introduced a new FlashLink Real-Time Monitoring Solution that sends data via a 24/7 cloud service. “The logger records temperature, humidity, shock, light and location, and sends data via GSM cellular network to a web account,” the company said. “Reliable up-to-the-minute information is accessed with a standard web browser using a PC or any internet-ready device.”

DeltaTrak offers two logger configurations: a domestic model with a 25-day logging duration and data uploaded every 15 minutes, and an export model with a 100-day logging duration and data uploaded every hour. “Shippers can customise high/low alarm settings, and alarms are automatically sent when out-of-range conditions occur,” said DeltaTrak. “The logger also measures shock, which indicates rough handling of a load, and a light sensor indicates door openings, which either means a shipment arrived and is being received, or it can reveal security issues if this occurs while the shipment is still in transit.”

Speaking with World Cargo News, DeltaTrak’s marketing program manager, Michelle Albino, said the data loggers have been designed as single-use, and have a life of 300 days, with no extra charges for data. Rebates are also available for returned units.

For a reefer container, DeltaTrak recommends two loggers be used, one of its FlashLink Real-Time Loggers, or one Real-Time logger and a low expense secondary unit, such as the company’s FlashLink USB PDF Temperature Logger, which only monitors temperature, and has to be downloaded to a PC or tablet.

Hamburg Süd has announced that it has worked with Carrier Transicold to make sure its reefer equipment meets GDP requirements for pharmaceutical cargo. These include the need to make sure the climate conditions inside the container are “checked, monitored and recorded” and that the equipment used to monitor conditions is “calibrated at regular intervals.”

With a software upgrade from Carrier, Hamburg Süd “is able to upgrade its reefer container fleet accordingly, at short notice and on demand, as part of the annual inspection,” the company said. Effective, the upgrade enables the line to “calibrate the reefer equipment as part of the PHT.”

Hamburg Süd is one of the leading reefer container carriers on the Mersey, a member of the Executive Board of the German shipping line. “With our new PHT system, we can respond even better to the complex requirements of our customers, and provide a high-grade and significantly cheaper alternative to air freight. At the same time, we are positioning ourselves in a strategically im-
its Star Cool refrigerated containers are now fitted with a new embedded digital feature that offers "visibility and precise knowledge of actual energy consumption.

In a statement, MCI said: "To provide transparency into actual energy consumption throughout the transportation window, over land and sea, Maersk Container Industry is introducing an energy meter feature integrated into all new Star Cool refrigerated containers. Maersk Line, the world’s largest container shipping company and part of Maersk’s Transport & Logistics division, became the first of MCI’s customers to take delivery of the new Star Cool reefers at the start of the year.

There are different ways to 'measure' power consumption, and there is some debate about just how accurate some methods are. MCI has confirmed to WorldCargon News that it is taking the power consumption from a meter device that measures power draw across all three phases of the reefer container, and not extrapolating power consumption from other parameters. It declined to give an accuracy figure, but noted that the meter is as accurate as a household meter used for billing.

Valuable data
Power consumption data has a lot of value. For some time now, container lines have been frustrated that investments in new reefers with much lower energy consumption have not, by and large, been recognized by marine container terminals with lower charges for energy.

In fact, for shipping lines in particular, power consumption data is as useful as temperature data, and, therefore, it is a logical next step for Maersk Line’s Remote Container Management (RCM) system to include power consumption.

"Taking our 270,000 reefer container online has provided significant operational cost-savings, and will give our customers unprecedented visibility into their cargo during transport, enabling better planning across their supply chains," said Carina Hørsted Ramsven, head of Equipment Excellence at Maersk Line. "Being able to consistently track the energy consumption of individual Star Cool reefer containers is a valuable add-on for us. It means that we can monitor actual energy consumption from point-to-point for different commodities, which supports not only cost-optimisation, but also our sustainability goals."

Metering is available across the whole Star Cool range, including controlled atmosphere containers. retrofitting to pre-Q1 2017 containers will be possible, but this option is not available yet. Power consumption is reported by adding a kWh counter at each data line in the data log. In the normal case the reefer would record kWh count once an hour (with the time and date). "The operator can then evaluate the power consumption at the different stages of the supply chain, or the full average," explained MCI. Consumption data can be broken down and tailored, depending on individual requirements.

The data can be used in sustainability reporting, reefer management and maintenance, and getting transparency into costs, among other purposes. MCI noted that the amount of power used to transport a particular commodity, and how those costs vary by reefer box is "something that is not currently measured. Without remote monitoring, getting power data requires a cumbersome set up of separate energy meters that must be manually checked and read, which is why it is very seldom performed.

As with temperature data, data ownership will be an issue. MCI stated that the data is part of the data log, and MCI itself does not have access to the data log without the agreement of the customer.

RTE Logs on
Other suppliers are also getting onboard. At TOC Europe in Amsterdam this month, HENTEC SOLUTIONS displayed its power monitoring solutions, which it is developing to measure consumption across all the main brands of reefer container.

New York-based RTE is further ahead, and has its power metering system in use at terminals today, although details of the installations are not available at this stage. The company offers its RRCE-PM Power Monitoring Platform, which features a revenue-grade three-phase power meter permanently installed at the reefer rack.

RTE president Donald Vinson said the system has been designed so that each meter is individual and addressable. When used with RTE’s GRASP software, RRCE-PM can provide full visibility of power consumption and temperature data at the individual container level from the moment the container is connected.

RRCE-PM measures the main electrical parameters, including voltage, line voltage, amps, watts, power factor, total connection time, power usage and average peak and off-peak costs. The system is configurable, and users can set parameters, such as over-current limits, if required.

Vinson said interest in power metering at container terminals continues to grow, for a variety of reasons. Pressure from lines to lower power costs and provide transparency is undoubtedly one factor, but terminals can also use the data to better manage their own operations. With real data on power consumption, terminals can identify which containers and cargoes draw the most power, and when, for example: It is well known that some shippers bring ‘hot’ product to a terminal and use its power to draw down a reefer to temperature, which has a big impact on the terminal’s overall power consumption.

In other cases, terminals have issues managing their overall power demand at peak periods, and reefer containers can, in some cases, be the single biggest power draw at a terminal.
Gaussin/DIDRIVERS launch APM

Gaussin and DIDRIVERS, a subsidiary of the DigiRobotics group, launched the first model in a new range of autonomous vehicles at TOC Europe this month. The Autonomous Prime Mover (APM) displayed at TOC (photographed) is based on Gaussin’s Automated Trailer Mover design, with four wheels with solid tyres, and a fully electric drive system.

Like Terberg and Konecranes, Gaussin and DIDRIVERS are targeting the estimated 70% of the world’s terminals that use RTGs and tractor/trailer sets, as well as greenfield opportunities. Both companies are claiming that the “natural navigation” systems necessary to control a fleet of APMs at a terminal, DigiRobotics has already demonstrated this on a Terberg machine in Dubai.

However, the APM is Gaussin’s own machine. The version displayed at TOC was powered by 2 x 60 kW motors, had a speed of 20 km/h, and had a maximum payload of 38 t. Three figures are well below the standard requirements for a terminal tractor Gaussin displayed images of models with a more conventional tractor chasis with a dual-tyre rear axle, pneumatic tyres and a larger fifth wheel, indicating a higher capacity machine, both with and without a cab.

With regard to the software and systems necessary to control a fleet of APMs at a terminal, DigiRobotics founder and “Believer” Dr Rafiq Swash said ports are a similar logistics challenge to airports and other industries where it is developing autonomous vehicles. The work to undertake is known in advance, and what is required is a fleet management system. Scheduling software can be incorporated through a standard API, and business intelligence applications can optimize the whole system. As well as full automation, DigiRobotics has developed remote control that can be used when manual intervention is required. Separately, Gaussin unveiled its “AGV Performance”, a new AGV design for the company, which will shortly be delivered to PSA Singapore: In June 2016, World-Cargo News reported that PSA’s order for 22 AGVs included two machines from Gaussin. Gaussin itself said these were its AIV design (with interchangeable power pack), but PSA advised World-Cargo News that it had ordered Gaussin “AGV”, which Gaussin at that point did not offer.

The picture has now been clarified with Gaussin’s announcement that it will be delivering two “AGV Performance” vehicles to PSA Singapore.

The machines will be a fully electric design with a new Lithium Titanate battery pack. Gaussin said there was a power of 160 kW, a run time of 5.65 hours, and can be charged in just 12 minutes. This enables dynamic charging on the terminal and eliminates the need for a battery exchange station and associated extra power packs.

Further to the story on page 1, automation is a new direction for Terberg, and, speaking with World-Cargo News, MD Rob van Heer said there is enormous potential for AutoTUG, as around 700 terminals globally use an RTG system.

Terberg has a road map for developing the AutoTUG, whereby the system is developed first for operations in “isolation” in automated terminals, and then, towards the end of 2018, for a “managed operation” at brownfield terminals. Finally, at the beginning of 2020, it plans for AutoTUG to be available for “mixed mode driving” at brownfield terminals, where the AutoTUG could run in manual or automated mode, and operate around other manned vehicles.

Based on the news that DP World is due to tender for automated tractors for Jebel Ali this year, plus confirmation from an executive at another global terminal operator that it, too, has been asking for an automated terminal tractor, the immediate market requirement seems to be for a cheaper alternative to AGV. AutoTUG certainly fits the bill – it has a much lower price point, and other advantages including using smaller standard site tyres, and lower operating wheel loads. The AutoTUG also has the huge advantage of familiarity and scale, being based on Terberg’s VT manned machines.

Service and maintenance requirements are well known, and Terberg has included the Groeneveld OnePlus automatic lubrication system on the AutoTUG to minimize a key service point.

For Konecranes, the partnership gives it access to a relatively low-cost automated quay-stack transfer vehicle, based on the ubiquitous terminal tractor/trailer system. However, it is also likely that Konecranes will work with Terberg to develop an electric ATT option. At the partnership announcement, Konecranes displayed a graphic of a battery ATT. Terberg does not (at this stage) offer a battery AutoTUG, but it is believed that this is a requirement for some upcoming automation projects. Konecranes is now offering its AGVs with Li-ion batteries, and this system could be applied to ATTs.