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Tankcontainer

MAGAZINE

Volume 2 | Issue 3 | September 2015

Product Manager Juha Kela reveals
Outokumpu's new 'family' of
stainless steels

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Publisher
Duvel Media
www.tankcontainermedia.com

Editor
Leslie McCune
leslie@tankcontainermedia.com

Advertising
Ed Andrews
ed@tankcontainermedia.com

Production Editor
David Badger
david@tankcontainermedia.com

Design
ginko design
hellostudio@ginkodesign.co.uk

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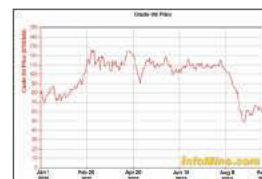
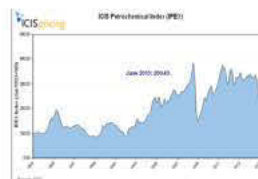
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The Asian Tank Container Organisation was formed to help promote the safe use of intermodal tank containers in the Asian market

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China's involvement in tank containers to grow

This issue of *Tank Container Magazine* focuses on Asia. Inevitably, the biggest opportunities for tank containers lie in China but so too do many of the most significant challenges. But, according to the ancient Chinese saying: "Better a diamond with a flaw than a pebble without one".

China has for some time been a vitally important contributor to global economic growth. In April, China's National Bureau of Statistics reported that growth in the world's second largest economy had slowed to 7% - the slowest for six years but still representing very substantial demand growth in absolute terms. Global growth is forecast to be 3.8%.

The pattern of growth in China is changing with growth based more on increased capital than labour. Where the economy has been primarily export-driven, it is now becoming consumer-driven. Although still the world's most populous country, it has a declining number of people of working age. Labour shortages are becoming more evident, wages are rising higher than productivity and the flow of migrant labour from inland provinces has slowed. Will China grow old before it grows rich?

More prosaically, the substitution of capital for labour is fundamentally good for tank containers since it supports the essential infrastructure required for their use and accelerates the trend away from drums and flexitanks. While imports in July - down 8.3% year-on-year - fell for the ninth month in succession, exports were stimulated by a weaker yuan against the US dollar. The recently devalued yuan will further strengthen export competitiveness.

The services sector is now the main driver of China growth, with the Caixin China services Purchasing Managers' Index (PMI) outpacing the manufacturing PMI. July's services PMI was the highest for almost a year, so China may yet meet its year-end target of 7% growth.

Chemical industry activity continued to be strong, with a 'value add' increase of over 10% in 2014 compared with under 7% for the manufacturing sector. Importantly, new regulations have been put in place for the safe transport of chemicals along the Yangtze river, a critical artery of chemical flows in China. The production, storage, loading and disposal of chemicals will be better supervised.

Tank container trade restrictions in China have been streamlined - China Authority AQSIQ has modified a regulation to enable tank containers to be used for import into, and export out of, China without the inspection and approvals required of domestic tanks (provided the design, construction, inspection and testing provisions adhere to the IMDG Code).

China Railways Tielong remains by far the largest operator, with a fleet of 10,640 tank containers. Safetrans and Sinochem

International Logistics have an estimated fleet of 1,750. The stakes of Sinochem International Logistics and Sinotrans in NewPort and Interbulk respectively are well-known, but expect further stake-building in the industry by Chinese companies.

Service consistency remains an issue, with relatively few logistics service providers in the highly fragmented sector having the universally-high safety standards and expertise expected by multinational chemical companies. The recent explosion at Rui Hai International Logistics, Tianjin Dongjiang port highlights the tragic consequences of poorly-managed dangerous goods storage. A government inspection in late 2013 reported that five of the more than 4,300 containers on site were improperly encased.

Dow Chemical adopts a metric-driven approach with its service providers and invests in collaborative supply chain programmes such as its S⁴TAR. It recommends its tank container suppliers to only use depots that have been audited and approved by @tco, the Asian Tank Container Organisation.

Despite highly-respected Welfit Oddy in South Africa, and the specialists of Van Hool, WEW and UBH in Europe, Asia dominates tank container manufacturing. 2014 output was over 39,100 units - over 80% of world output. MCC Tank (part of Metallurgical Corporation of China) is the latest entrant, joining manufacturing giant CIMC and Changzhou Chemical, CXIC, Kingtank, NT Tank, Singamas and ZZTC Suretank.

New China-specific designs are being introduced. Eurotainer, for instance, has recently received new swap body tank containers that have been specifically designed for domestic operations in China. The lower tare weight of the new 31,000 litre units will allow higher payloads and will be immediately leased to clients in China. It will be the first time Eurotainer's swap bodies have been used outside Europe.

Other China-specific designs include the 36-tonne ellipsoidal tanks manufactured by CIMC for China Railways Tielong, which typically require special strengthening to handle the robust treatment of tank containers on China's rail network. More innovative designs will appear in China in the next six months. Some may feature new grades of stainless steel and in this issue of *Tank Container Magazine* we explore Outokumpu's new developments.

So, how do we summarise the market opportunities for tank containers in China? The answer is to end as this editorial began - with a Chinese saying: "The best time to plant a tree was 20 years ago. The second best time is now."

Leslie McCune, Editor



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Eurotainer gets technical in PA



On June 3rd, 2015 in Philadelphia, Pennsylvania USA, Eurotainer US, Inc. held their first "Technical Day" for invited clients.

The event was held at the Wells Fargo Center, home of Philadelphia's professional hockey and basketball teams.

An unforgettable half day event for customers to be able to see, touch, operate, and explore the different tank containers that Eurotainer leases worldwide. The focus was on hands-on and interactive sessions that are not commonly and readily available.

Our clients came from the Philadelphia/New Jersey area but also as far as North Carolina for the event. They had the extraordinary opportunity to meet many members of our global Eurotainer team, which included key Technical personnel representing all our different offices in Asia, Europe, and the Americas. Our team members flew in from China, Japan, Singapore, Australia, The Netherlands, Russia and France, and Brazil in addition to our team from the United States to participate in this event.

Key tank container components and parts suppliers were also

in attendance and were an integral part of the sessions and were available to answer any and all questions.

A diverse collection of tank containers were on site for review and operational instruction:

- Cryogenic tank containers for carriage of air gases like argon, nitrogen, oxygen, LNG and other gases.

- Refrigerated tanks for the transport of temperature sensitive products

- Gas tank containers for the transport and storage of liquefied gases

- T22 type tanks used for the delivery of corrosive, highly hazardous, PIH/TIH products

- A special lined tank for the viewing and inspection of a wide variety of linings.

In addition a number of sessions were held with Eurotainer personnel and vendors:

- CAD (Computer Aided Design) videos – our clients watched Eurotainer representatives utilize this technology to demonstrate loading techniques on a tank container and learn more about this tool that Eurotainer

uses to manage modification projects on our equipment.

- Introduction and demonstration of various valve types and tank container components. Industry experts talked about and demonstrated the latest innovations in valving including pneumatic valves, thermometers, level gauges, bursting discs, fire safe valves and other new products. Key suppliers representatives from Fort Vale and Perolo delivered valued information to our clients on these subjects.

- Temperature controlled systems and representatives from the Klinge Corporation, an OEM for refrigeration and heating systems on tank containers and other assets.

- Gaskets and sealing - Representatives of Virginia Sealing Products (VSP) discussed the importance of having the right match between product, tank and gasket. Our clients learned about the latest product developments in gaskets and the importance of proper bolt torque.

- Linings – In addition to a tank with a variety of linings displayed, Carboline Company discussed their offering and the levels of chemical resistance the various linings provide.

Van Hool delivers prototype 45ft tank container to BASF



Van Hool, a manufacturer of buses, coaches and industrial vehicles has developed a new 45 ft tank container for rail transport, especially for and in cooperation with BASF. This tank container combined with a container wagon offers many advantages in comparison to the classic rail tank car.

The 20 to 30 ft tank containers currently used for combined transport (rail, water and road) are the basis for this development. The aim was to create a new system that could make conventional

rail transport as flexible and fast as combined transport without compromising on the advantages offered by the existing, high-load capacity of conventional rail transport.

With 63 cu m capacity and a maximal allowable weight of 75 tons, the 45 ft tank container has a loading capacity that is the double of a usual tank container and comparable to that of a rail tank car.

The new optimized-for-rail tank container uses the same techniques as the 20 to 30 foot tank containers. The 45 ft tank containers can

be used for rail transport, inland waterways and (when empty) also for road transport. Furthermore they can go into container depots for storage. They are also equipped with modern insulation techniques and heating systems. The 45 ft tank container has a higher loading capacity in relation to its own weight compared to the rail tank car.

Thanks to its properties of being removable from the container wagon and stackable, the 45 ft tank container requires less infrastructure and offers more flexibility for loading and unloading.



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DP World signs up with Dow Chemical

DP World, UAE Region, the regional leading marine terminal operator has reached an agreement with an affiliate of The Dow Chemical Company based in Jebel Ali ("Dow") to support the distribution of Dow's products.

The contract was signed recently by Mohammed Al Muallem, Senior Vice President and Managing Director of DP World, UAE Region, and Moosa Al-Moosa, President of Dow UAE in Jebel Ali in the presence of senior officials from both organizations.

Under the agreement, DP World will provide Dow with value-added services such as Jebel Ali Port's storage facilities and shipping to its customers globally.

HE Sultan Ahmed bin Sulayem, Chairman of DP World, said: "Jebel Ali will enable Dow to benefit from value-adding, efficient handling services, unparalleled sea connectivity and modern technology which supports the supply chain with gate automation systems and paperless processing of cargo documentation through a single electronic window."

Moosa Al-Moosa, President of Dow UAE said: "This partnership will help Dow extend its geographical reach and product distribution globally, ensuring we have the right logistics and supply chain in place. Such an agreement with DP World will accelerate Dow's continued growth in the region and beyond. Not only will DP World provide a strong centre of excellence for Dow in terms of supply chain and logistics, they will also form an ideal partner to enhance Dow's goals and ambitions in Responsible Care® and sustainability by providing innovative solutions to existing challenges. Together, we hope to create value for our customers and stakeholders

Crowley adds 16 ISO tanks to LNG fleet



In response to high customer demand, Crowley Maritime Corp. has acquired 16 additional ISO tanks for its Carib Energy group that will be used to supply, transport and distribute U.S.-sourced liquefied natural gas (LNG) to customers in Puerto Rico, the Caribbean and Central America.

The 40-foot tanks, which each hold 10,700 gallons of LNG, now feature technological improvements that increase the offload rate, allowing for faster

fuel transfers to customers.

"Adding ISO tanks to our equipment fleet for our established business not only allows us to meet heightened customer demand, but also to continue delivering an uninterrupted supply of LNG to these regions," explained Crowley Vice President Greg Buffington. "And the improved offloading performance reduces the amount of time required to transfer the fuel from tank to the storage unit, adding to overall efficiency."

by emphasizing the need for a reliable, best-in-class and most importantly safe supply chain."

Gröninger Cleaning Systems on the move

Gröninger Cleaning systems has moved to a new location in Rotterdam

The engineering and manufacturing operations of the company's (high pressure and low pressure) cleaning systems and the supply of professional cleaning equipment is operating from a new, state of the art, facility located at Overschiebeweg 111, 3044 EH.

It is an essential change for Gröninger's 40+ head office staff who welcomed the the move with enthusiasm. The new facility is situated in a prime location for

both customers and suppliers in Rotterdam's industrial area Spaanse Polder near the junction of highways A20 and A13. The location also can be easily accessed from the nearby airports of Rotterdam and Amsterdam and all modes of public and private transport. In addition there is plenty of on-site parking.

The new plant has double the space of the previous location and offers extra showroom and office facilities, adding new dimensions to the display of Gröninger's service operations and equipment ranges.

For customers and suppliers Gröninger remains the same: a reliable manufacturer of high quality cleaning systems and a preferred supplier of cleaning equipment for numerous business partners, both regional and global.

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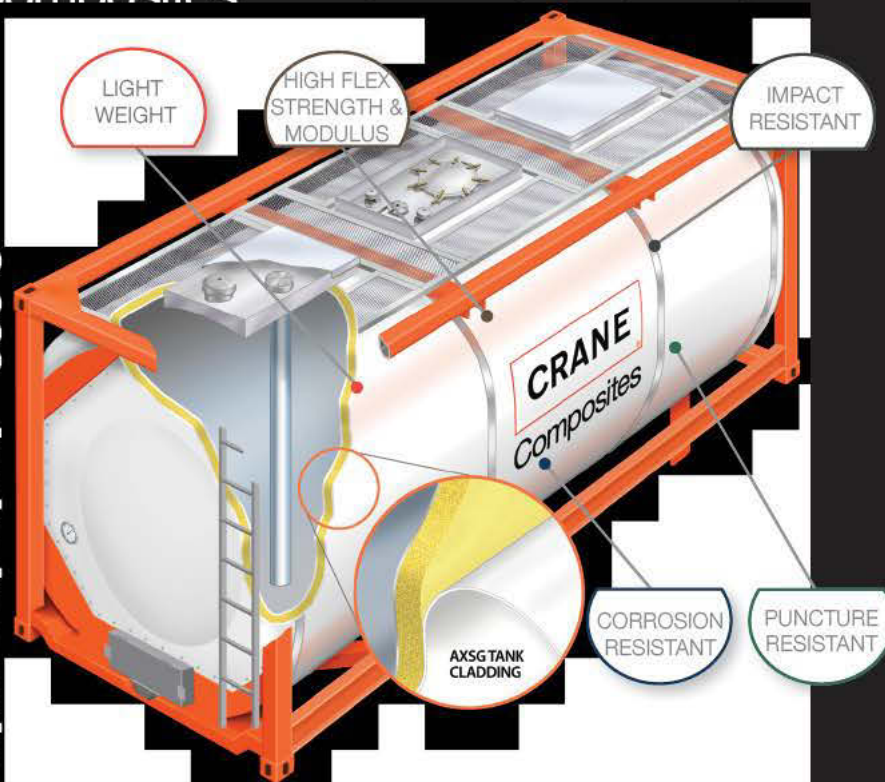
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Suttons strengthens UK leadership team



Greg Lofts has been appointed business development director at logistics and supply chain specialist Suttons Tankers, as the company looks to further strengthen its UK leadership team and expand the products and services it provides to customers.

Greg's remit includes the strategic development of the division's new business opportunities and existing accounts in the bulk chemicals, gases, fuels and food sectors, with a focus on relationship management and customer service.

Greg joins Suttons with an impressive track record in business development and account management, most recently at Wincanton.

Michael Cundy, Suttons Tankers managing director said:

"Greg's experience and proven ability to lead teams and deliver solutions tailored to individual customers, rather than applying a one size fits all model, is key to the development of our business and an ideal fit with Suttons.

"He is a supply chain specialist whose consultative approach supports Suttons' ability to provide customers with the service that is right for them and their business."

Hoyer adds new pressure tank

HOYER is offering a new pressure tank version for the transportation of hazardous goods.

By adding these containers of the type UN T 22 to its repertoire, Hoyer is augmenting its own intermediate-bulk-container fleet with a variant that makes high operating pressure levels of up to 6.67 bar possible and thereby corresponds to the maximum safety requirements.

Thanks to their holding capacity of 1,100 litres, the containers are ideal for the storage and transportation of smaller product volumes under conditions of overpressure.

"With these new mini tanks, we have again succeeded in expanding our utilisation spectrum", says Uwe Bartels, European Sales Manager IBC Logistics at Hoyer. "They will further enhance our worldwide commitment in the transportation of hazardous goods, for example toxic substances of the class 6.1."

The pressure tanks can be equipped individually in line with customers' requirements.

Weaker euro impacts Interbulk's first half

In its interim results for the six months ended 31 March 2015, released on 30 June 2015, InterBulk Group announced that revenues in the first half had been 11% lower than in the same period of the previous financial year, but profit before tax (before intangible amortisation and exceptional items) was £1.3 million ahead of the comparable prior year period.

It was noted that, while market conditions remained challenging, the Group expected to deliver continued improvement in operating results in the second half of the year with the objective of meeting market expectations for the year to 30 September 2015.

Since then, the anticipated pick-up in activity in Europe has not materialised and this has affected both the Group's liquid and dry bulk businesses. However, there has been some encouraging growth in the Americas and China. Given the substantial proportion of Euro denominated business transacted by the Group, the continuing weakness of the Euro continues to have a negative impact on our results.

The reduced activity levels and the resulting pressure on pricing as competitors seek to maintain equipment utilisation, mean that the Board expects that operating profit for the year ending 30 September 2015 will be slightly lower than reported for the year ended 30 September 2014.

However, as a result of interest savings, the Board now believes that the profit before tax (before intangible amortisation and exceptional items) for the year ending 30 September 2015 will be below market expectations and in line with that reported last year.

The Group's cost base in Europe is under constant review and further savings are being identified to ensure that cost leadership can be achieved in this market. The Group retains strong market share in the UK and Northern Europe which gives it a solid base to build on for the future. In addition, the global reach of the Group's tank container activities via our global network enables us to capture a share of the chemical sector expansion in Asia and the Americas. Success has been achieved in this area and we continue to invest in our network in these regions.

Loek Kullberg, Chief Executive of InterBulk, said:

"There is no doubt that trading conditions, especially in the European market are tough, but our strong focus on customer service levels and cost leadership enable us to maintain our strong market share. We are working

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RSA-Talke breaks new ground in Dubai

The chemical logistics joint venture RSA-TALKE has broken ground for its new integrated chemicals facility. The multi-service site is designed for the handling of liquid chemicals, with ISO tank containers as the central element and will have a capacity of 1,800 TEU. It is located in Jebel Ali Free Zone, close to Dubai World Central where the company already operates two specialised warehouses for hazardous and non-hazardous chemical and petrochemical products.

The full-service facility specialises in the storage and handling of liquid chemicals in ISO tank containers. It is designed for both non-hazardous products and dangerous goods classes 3, 4, 5, 6, 8 and 9 and complies with the highest safety, environmental protection and quality standards.

In addition, RSA-TALKE offers the filling and re-filling of these products into IBCs or drums. The range of services also includes cleaning, inspection and approval of ISO tank containers.

The facility also entails additional warehouses, bringing RSA-TALKE's total capacity for the storage of packed non-hazardous and hazardous chemical products to around 39,000 pallet spaces. The construction of this ISO tank facility completes the company's portfolio of chemicals logistics in the region.

Staying on track and cable-free with Hunter

Hunter Global Tracking Ltd introduces the cable-free Bulldog Mini, a new compact GPS + Cell-ID tracker giving up to 1000 events; primary batteries changeable by user or rechargeable through induction. The Bulldog Mini can track objects for 2-3 years at 1 position per day or for several months in

Suttons wins SCMcontract in Singapore

Chemical logistics and supply chain company Suttons has been awarded a supply chain management contract by well-known polystyrene resin producer TPSC Asia Pte Ltd (TPSC).

Based in Singapore, TPSC is one of the largest producers of high quality general purpose polystyrene (GPPS) and high impact polystyrene (HIPS) in South East Asia. Their product is distributed to more than 30 countries worldwide and Suttons has been given the responsibility to oversee all aspects of the supply chain from TPSC's manufacturing site for all inbound and outbound logistics.

Suttons will take control of the management of all logistics activities including on-site logistics, movements in and out of TPSC facilities, together with tactical and strategic optimisation of their logistics network.

Supply chain visibility is the key enabler for Suttons to drive benefits and unlock value in the supply chain. To achieve this Suttons has implemented a centralised control tower model. The control tower is a central hub with the required technology, organisation and processes to capture and use supply chain data to support decision making and provide more control of the supply chain and optimise all operations.

Mr Ng Chye Ming, TSPC's Head of Supply Chain said: "We selected Suttons based on their innovative contractual terms, flexibility, significant experience and success they have demonstrated in understanding our chemical logistics requirements. We used to manage a number of logistics providers all working to different contracts and targets and we didn't have the level of visibility of our logistics activities that we felt was necessary to support our growing business.

"Through Suttons' innovations, we can confidently achieve a cost saving of more than 10% in our current financial year, this certainly has a significant impact on our bottom line! We now have one point of contact for all transport and logistics activities, a clear target driven strategy that ultimately improves the service

case of multiple positions. It can also monitor temperatures.

The Bulldog Mini comes in a reinforced waterproof (IP68) box measuring 11 x 7 x 2 cms and only weighs 105g (without battery). It can be attached to a mobile asset with magnets, screws, Velcro or even cable-ties. It is the little brother of the Bulldog only 3 times smaller but similarly cable-free, versatile and equally robust, reliable and powerful.

The Bulldog Mini is the ideal compact tracker for outside use; the perfect small anti-theft cable-free device which can also easily be hidden. It is designed for tracking/monitoring containers,

IBCs, ULDs, pallets, crates, boxes and a host of other mobile assets such as vehicles (trucks, vans, cars, trailers, swap-bodies, construction and agricultural plant).

Customers can ascertain the exact whereabouts of their assets with past history in tables and maps and a dashboard giving the status of the different parameters chosen as well as geo-fencing options.

They can remotely set their own parameters from any Internet access point and see the results on a smart phone (frequency of geo-localisation, usual tracking data and geo-fencing functions as well as results of sensor/interface readings and eventual alerts).

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Stainless steals a march

Leslie McCune: What are today's 'big issues' in the global stainless steel market?

Juha Kela: Global megatrends such as population growth and urbanisation, increasing mobility, climate change, scarcity of resources and energy are all big issues in the stainless steel market today and need to be developed sustainably.

Sustainability development can be directly linked into stainless steel. The material is fully recyclable and does not lose its properties in the recycling process. Sustainability is also key to Outokumpu's long-term prosperity and growth and is embedded in our own vision of building "A world that lasts forever".

We continuously develop our operations as well. Outokumpu produces stainless steel from recycled steel - the recycled content of our steel is above 85% on average, against the industry average of 50%. We have also reduced our direct per ton CO₂ emissions by 25% over the last decade. The target is to achieve a further 20% reduction by 2020. Our aim is to make stainless steel with zero waste.

Outokumpu stainless steel has a lower environmental footprint than average stainless steel due to the high content of recycled steel, technology and efficient processes, high level of integration, energy efficiency and low-carbon electricity mix.

The company is industry leader



Editor Leslie McCune discusses Outokumpu's new 'family' of stainless steels with Product Manager Juha Kela

when it comes to carbon footprint and has won sustainability awards from the International Stainless Steel Forum in 2011 and 2014.

Customer needs, like the material's technical performance, and price volatility are the driving forces for the continuous development of new grades and surfaces. Materials need to last longer in use and structures need to be lighter - and need less maintenance - during their life-cycle. Customers are also seeking materials with less price volatility to make cost forecasting easier.

LM: How do the 'big issues' impact tank container manufacturers?

JK: Global megatrends and sustainability affect all of us. Firstly, tank containers need to be more durable to last longer in use. At the same time, environmental impact is important and, by choosing

stainless steel with a low carbon profile, tank containers can improve their sustainability profile. Tank container manufacturers and their customers could gain extra benefits by utilising all the technical benefits from newer stainless steel grades such as better corrosion resistance and thickness reduction.

Tank container manufacturers can help their customers to be more sustainable - improving their competitiveness in the process. For example, when the higher strength and higher corrosion potential is fully utilised, tank container walls could be made using thinner gauges. Thinner gauges mean material savings (and potential material purchasing cost reductions) and an increase in tank container capacity and/or volume for the same outer dimensions. With this extra capacity, transportation movements are decreased,



CASE STUDY:

Finnish Langh Group Cargo Solutions selected Outokumpu's new high-chromium austenitic steel grade Supra 316plus as the main building material for their new T11, ADR-approved tank container.

The steel grade was chosen because of the combination of its technical properties and attractive price. 316plus has a higher strength compared to the 316(L), allowing thinner walls. That, in turn, results in lighter weight and increases the payload.

along with fuel consumption and emissions. As a result, the overall carbon footprint would be smaller.

LM: What are the critical success factors for stainless steel suppliers to the tank container market?

JK: Outokumpu has a wide stainless steel portfolio and product know-how that has been gained over a hundred years. We can therefore serve tank container customers with all stainless steel alternatives. We have classic austenitic, ferritic, duplex and martensitic stainless steel grades and we are continuously developing new materials according to customer needs to boost their competitiveness and environmental goals.

The latest stainless steel grade innovations: austenitic Supra 316plus (UNS S31655, EN 1.4420), and high-chromium (21% Cr) ferritic Core 4622 are just examples

of our customer orientation. Some years ago, we introduced formable duplex grades Forta FDX 25 and Forta FDX 27.

To maximise the benefit of stainless steel, we want to work closely with the tank container manufacturers to share knowledge about what steel grade would be the best alternative for each particular case. Different cargoes might require different grades.

LM: What are the stainless steel development trends for the tank container sector?

JK: Stainless steel development trends in the tank container sector focus on materials with higher strengths and higher corrosion resistance with cost effectiveness and less price volatility. It is also important the materials can be easily manufactured, welded and machined etc. using conventional methods.

LM: What is the difference between 304, the stainless steel market's benchmark, and the 316L most often used for tank container manufacturing?

JK: The most well-known austenitic stainless steels are 304 and 316. The 304 has typically 18% chromium (Cr) and 8% nickel (Ni) while 316 is made acid-proof by the addition of 2% molybdenum. The low carbon versions of these grades are marked by L-letter (304L/316L). The 316L is mostly used in tank containers, due to its higher corrosion performance in aggressive environments. Low carbon grades (L) are easier to weld.

LM: How does Outokumpu identify the stainless steel 'needs' of tank containers users i.e. tank container operators (and the clients of leasing companies)?

JK: We discuss these with the



CASE STUDY:

Experienced Italian road tanker fabricators have used austenitic 304 stainless steel grade to make road tankers for bitumen, fuel oils and liquid waste. They were looking for a way to make the tankers lighter and more cost effective. Forta LDX 2101 was the answer as it provides even stronger and lighter road tanker. The high strength allows for considerable reductions in material thickness from 8 mm to 6 mm in tanker heads and from 6 mm to 5mm in tanker shells.

customers. Cooperation is key since choosing the right stainless can be an intricate process. We try to make it as easy as possible for our customers to find the best solution for their needs. One example is Outokumpu's new way of categorising its products, which was launched in May 2015.

Grades are categorised into nine product ranges according to performance characteristics such as strength, heat-resistance, corrosion resistance, hardness etc. rather than their chemical composition.

The ranges are Moda, Core, Supra, Forta, Ultra, Dura, Therma, Prodec and Deco. Moda, Core and Supra ranges (also called the Outokumpu Classic family) cover a wide range of applications in mildly to highly corrosive environments and include the most typically used grades such as 304 and 316.

The remaining ranges include the so-called Outokumpu Pro family. Here, we have grouped products that offer additional features on top of the required corrosion resistance. For example, Forta (high strength), Ultra (possibility to stand extreme corrosive environments), high hardness (Dura), suitability for temperatures exceeding 550°C (Therma), grades optimised for improved machinability (Prodec), special surface finishes (Deco).

The new approach helps customers identify and compare different product options, even if they are not experts on stainless steel, and so find the best product for their specific performance and cost-efficiency needs.

LM: How is Outokumpu's austenitic steel grade Supra 316plus different?

JK: Supra 316plus is one of the latest product developments by Outokumpu. It was launched about two years ago and its use is spreading globally.

The austenitic Supra 316plus is an enhanced version of austenitic



Juha Kela is a Product Manager at Outokumpu in Tornio, Finland. Since joining the company in 2005, he has been involved with the research & development of several stainless steel grades, including the new Core 4622 and Supra 316plus grades. He holds a Master of Science degree in Technology from the University of Oulu, Finland.

316L. It has higher strength, higher corrosion resistance and a more stable price when compared to 316L – you could say it offers “value for money”. When the material is temper rolled, it has an even higher strength level (this product is called Forta 316plus). This property was utilised with a special Lanh Group Cargo Solutions transportation container.

Supra 316plus is a registered trademark of Outokumpu (EN 1.4420; ASTM/ASME designation UNS S31655). Supra 316plus was accepted into the ASTM A240 standard in March 2015. ASME and EN standardisation is on-going.

Supra 316plus has a higher chromium and nitrogen content than 316L, conferring better corrosion resistance. It also has higher strength – due to its higher nitrogen content – and it has a competitive and more stable price due to lower nickel and molybdenum content. The usage temperature of Supra 316plus is

the same as that for 316L. Hence, Supra 316plus is a potential solution for arctic, cryogenic and LNG (liquefied natural gas) solutions due to its higher strength and low temperature properties down to -196°C. Supra 316plus could therefore be used for LNG tank containers.

By utilising all the benefits of Supra 316plus, tank containers could be more competitive and lighter, leading to increased transport loads, reduced fuel consumption, decreased emissions and a lower carbon footprint.

Lighter structures are of interest to every transport company. When the containers are produced from Supra 316plus the gauge can be thinner because of the excellent strength of Supra 316plus.

LM: What are the benefits of cold-rolled and hot-rolled stainless steel?

JK: Typically, cold-rolled materials have smoother surfaces and tighter thickness tolerances. There is more work involved in cold worked steel, which increases the cost.

LM: How have nickel prices changed over the past 10 years?

JK: Higher Ni-alloyed grades are more volatile than lower/ no Ni-alloyed grades. Stainless steel prices with lower Ni content are easier to forecast in the long-term, which is important for tank manufacturers.

LM: What role do duplex stainless steels have in the tank container market?

JK: Outokumpu groups the duplex grades under the Forta range, which is characterised by their excellent combination of high strength and corrosion resistance. The customer has the choice to select from various duplex grades that cover the whole range of corrosion resistance requirements



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from rather mild conditions - where a 304 type grade from our Core range could stand the environment - up to very aggressive environments such as seawater applications. The strength of a duplex grade is generally twice as high as the strength of austenitic stainless steels. This offers engineers the chance to design lighter constructions.

Forta duplex grades have been replacing carbon steel and aluminium in road tanker chassis where the main benefit has been a more streamlined and leaner production chain avoiding additional fabrication steps such as shot-blasting, priming, painting and thereby shortening the production lead times.

Forta duplex and lean duplex grades are also used for the tank container itself with thickness reduction potentials from 15% on the shells up to 25% on the end caps. These applications gained popularity during the past 10-15 years.

The highest saving potential for duplex is naturally to be found in high pressure tank

applications, where the strength levels of duplexes can be used in the most efficient way.

The majority of transportation tanks are low pressure tanks, where the ADR design criteria favours austenitic grades. As a result, the possibilities to benefit from duplex properties are somewhat limited.

However, for these applications, our latest Forta duplex development may be used. The Forta FDX grades offer improved fracture elongation (similar to those of austenitic grades) and open up new possibilities for low pressure tank container constructions - as does Supra 316plus. The energy absorption capability of the new Forta FDX grades is roughly 15% higher than that of 316L, the most common grade for tank container construction.

Forta FDX grades are a new alternative for lightweight low pressure tank containers as long as the service temperature stays within the suitable temperature range for duplex grades (-40 to +250°C).

LM: Can nickel-free, ferritic stainless steels be used for

tank container manufacture?

JK: The practical rule is that materials that are in direct contact with aggressive media need higher alloyed material. Therefore 316L is traditionally used in liquid tank containers. Most importantly, in order to choose the right material and grade for a container, you need to have a clear understanding of the operating environment.

It is important to know which tank container part is being considered. For example, is it container facade, frame or structure that is in direct contact to the loaded material? What material will the container carry (e.g. water, juice, acids, LNG, etc.)? Where will the container operate (e.g. stationary on the land, sea, railway, or on the road). Each imposes different requirements on the needed material.

Typically, container frames are built from painted carbon steel. These structures could be made for example from Core 4003 (12% Cr) structural ferritic stainless steel grade that has good weldability and impact toughness. High-chromium Core 4622 (21% Cr) could be used in container facades.



CASE STUDY:

Finnish Lanh Group Cargo Solutions chose Outokumpu's new high-chromium austenitic steel grade 316plus in cold worked condition for their special transportation containers.

The containers were previously built with wear-resistant carbon steels but the combination of corrosion and wear-resistance of 316plus is better. The grade also offered better material performance than 316(L), at a lower price. Handling and welding of the 316plus is similar to standard grades and therefore familiar tools and welding techniques could be used.

The container's floor and walls are made of Outokumpu stainless steel due to strict requirement for wear and corrosion resistance. The properties of 316plus allow thinner wall thickness resulting in lower overall weight of the container.

Running a temperature

Dutch telematics specialist IMT has developed a new temperature gauge with Hoyer, reports Wendy Pascoe

As the cargoes carried by tank containers become more complex, the importance of ensuring they are being moved in optimum conditions becomes ever more critical. A few degrees shift in temperature can, for example, turn pure MDI from a liquid to a 'frozen' non-liquid.

A digital thermometer is coming onto the market which, say the developers, contains a gauge which never needs to be recalibrated, has a ten-year battery life and logs, records and keeps all content temperatures for more than three years. The information can be accessed from an online portal.

Tailor-made

Intermodal Telematics (IMT), based in Breda in the Netherlands, situated strategically between the great ports of Rotterdam and Antwerp, develops and produces hardware and software for the online monitoring of tank containers and railway wagons. It developed the thermometer in association with tank container operator, Hoyer.

Dethmer Drenth, IMT's Technical Manager, claims: "It is important for many cargoes that temperatures are held at certain levels. For example, containers being transported between Northern Europe and Turkey are going to experience very different ambient temperatures.

"If the tank container operators are aware of the content temperature changes, they can

ensure the tank containers are reheated at the right locations. They know exactly where their cargoes are being reheated, when, at what point in transit, for how long and at what temperature."

Drenth says an intermodal operator could be instructed by a client about the maximum temperature range the contents of a tank has to remain at before heating action is needed. Alerts would then be triggered automatically when these ranges are exceeded. It is data which is vital for safe handling when you consider that products such as ethylene oxide can explode if not controlled.

No calibration

Drenth adds that, until now, most thermometers need an annual recalibration. As a result, a global industry has grown up to service this recalibration need.

Drenth says: "It isn't in these companies' interests that our digital thermometer has been developed but it is in the interests of the tank container operator. Because our gauge doesn't need recalibrating, there is no annual recurring cost. That means there is no business for them. The recalibration sector doesn't want to change anything."

It took IMT only eight months to develop the digital thermometer for Hoyer. Drenth says this was achieved so quickly because IMT is a small company of only 12 people which means they can react quickly and to demand

changes in the market.

The R&D, electronics, firmware, housing, production and assembly are carried out in the Netherlands. He said Hoyer asked them to develop the product, at that point exclusively for them.

Drenth says: "Everything is created in-house with our own hardware and software team, on customer demand. That is exactly what we did for Hoyer, a customer of IMT for more than two years.

"We developed a completely new digital thermometer for them, a Gauge 2.0, with all the latest technology built-in. Based on the experience and knowledge of Hoyer, we were able to develop a complete new gauge with a lot of good functionalities. The main reasons Hoyer wanted to start the R&D of a new gauge was based on its online fleet monitoring strategy and the inaccurate reading of existing gauges."

0.3°C accuracy

IMT says its WT15 gauge is accurate to less than 0.3°C variation. It says existing gauges in the market claim an accuracy of 1°C, which is usually assessed before they leave the factory.

Until now these gauges have always needed annual recalibration. IMT said that tests showed that non-calibrated units were misreading temperatures by 3-4°C after a few years of usage.

So how has IMT managed to achieve what no-one else has – a 'miracle' thermometer that never needs recalibrating and with a battery life of a decade?

Drenth explains that IMT developed 'direct sensor conversion technology', which means no components are



needed between the reading of the PT1000 probe and the processor. IMT has been able to get rid of certain elements which created the need to recalibrate.

IMT believes everyone in the gauge market will eventually follow their technology, once they get out of the habit of assuming that the annual re-calibration is needed. The accuracy, lifespan, radio frequency and wireless capabilities make it just too tempting.

Three-year log

It claims a battery life of at least ten years, unseen in the market. Theoretically, said IMT, the battery life is 32 years.

The net result is the generation of an astonishing amount of data. The gauge logs every temperature measured. It can identify the temperature of a tank container at any location.

Using its immense 3mb memory, the measured temperatures

are logged for three years and can be read out at any time using an infrared tool or using the online platform.

A clear view is possible of every temperature measured during loading, transport, heating or unloading. In transit, it transmits its temperature every minute via radio frequency to the optional online monitoring unit.

If the product has been burnt by reheating, it will be clear where and when it happened and, most likely, who was responsible at the time.

Temperature online

If a tank container is also installed with IMT's communication and location terminal, the content temperature is also captured and sent to the server. In that way the user can not only see the exact location of the tank container immediately, but also the (historical) content temperature of the tank container anywhere in the world.

IMT stresses the Gauge 2.0 does not depend on a tracking device. These could be added at any time in the future, if the customer decides it is a business requirement. It would take only five minutes to add in all the usual functions, including geofencing, periodic staging and geographic alerts.

It does not have to be accessed via an online portal or platform. But, cost permitting, why wouldn't any client want real time information at their fingertips from anywhere on the planet?

October launch

Drenth is proud of the fact that IMT was able to build the unit for approximately the same price as a regular digital thermometer, along with the ability to become a full online sensor which would send temperature readings to the IMT monitoring unit.

Drenth says: "The gauge costs €185 in total, a good value mid range price for such a high-end digital thermometer which compared to the value of cargoes is nothing! Within three or five years, every customer will want one. They don't yet, but I know eventually they will get the picture.

"Until there is that customer demand, then most tank container operators won't offer this. Hoyer is different though."

It is widely believed that some thermometers are never calibrated; other are calibrated annually. This October, IMT's Gauge 2.0 is available to the open market for the first time. Assuming the gauge delivers what it promises, tank container operators will then have the opportunity to buy a reliable and almost maintenance-free device which will provide them with tank container data 24 hours a day from anywhere on the planet.

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That's the spirit

With a splash of soda, or perhaps alone on the rocks, whisky is served to the consumer in a glass. An ISO tank container helps get it there, James Graham discovers

Whisky is a commodity moved in food grade IM-102 portable tanks (International IMO Type 2). These tanks transport materials such as whisky and alcohols, some corrosives, pesticides, insecticides, resins, industrial solvents and flammables with flash points ranging from 327°F (164°C) to 1407°F (607°C). These containers are also commonly used for the transport of non-regulated materials such as food-grade commodities.

Capacities are normally in the range of 5,000 to 6,300 gallons/ 22,730 to 28,640 litres. They are built to withstand lower maximum allowable working pressures ranging from 14.5psig (1.0 bar) to 24.4 psig (1.75bar). Exporters favour 20ft ISO tank containers because

of the heavy nature of the cargo.

ISO tank containers containing whisky must make use of heavy gauge wire seals and approved padlocks to restrict access to discharge valves. Some distillers require dedicated tanks to ensure that only one spirit type is filled into certain tanks. For example, a tank used to transport a 'peated' whisky might affect the flavour of a 'non-peated' whisky.

By law, Scotch whisky must be distilled and matured for a minimum of three years, although in reality maturation periods often exceed that. Because of this long production process, the importance of maintaining spirit character and quality during bulk transport must be fully understood and respected

by supply chain operators.

Whisky, or whiskey, is produced in over 20 countries apart from Scotland. The second largest producer is the US; the third is Japan while Ireland is in fourth place. India, Canada and Australia are also developing.

In general, this will translate into major tradelanes from Scotland, Ireland and the southern US for ISO tanks. Whisky is moved by tank from distillery to warehouses and third-party bottling halls. Bottled whisky is palletised and moved in cases in intermodal containers.

Bulk spirits, such as whisky, are transported and traded as litres of alcohol. Very few spirits are bottled at the strength at which they are aged – their cask strength. Instead, most are diluted to bottle strength, typically around 40%. Spirits lose a small amount of their alcoholic strength as they are aged. As a result, fewer bottles of 20-year-old whisky need be filled than a three-year-old one due to the youngster's lower alcoholic strength.

Strength is important when pricing spirits, as a stronger spirit is worth more than a weaker one because more bottles can be filled using the stronger spirit. Because this dilution is a simple process – achieved by simply adding the correct amount of water – spirits are usually shipped at cask strength to avoid needlessly transporting the water used to dilute the spirit.

During the transport of whisky, the main danger is flammability. Whisky can contain more than 20% alcohol by volume (ABV). According to the IMDG Code, alcoholic beverages containing less than 24% alcohol are not dangerous while those containing more than 24%, but less than 70%, are not



considered as dangerous provided they are packed in packages containing 250 litres or less.

Scotch whisky accounts for around a quarter of UK food and drink exports by value. Some 99 million cases 12 70-centilitre bottles at 40% ABV) are exported worldwide annually. Irish whiskey exports amounted to some 6.5 million 9-litre cases. In the US, most of the growth in exports in recent years has been due to growing demand for US whiskey, particularly Bourbon and Tennessee whiskey.

In 2013, a one-year trial was launched to deliver Scotch whisky by train from the distilleries to central Scotland in a bid to cut road journeys and emissions. Previously, all bulk Scotch whisky and spirit was being moved by road from Speyside to warehouses and bottling halls across central Scotland.

The 'Lifting the Spirit' project, part-funded by HITRANS (the Highlands and Islands Transport Partnership), Highlands and Islands Enterprise (HIE) and Moray Council, was designed to reduce truck movements on busy roads on the 300km journey through Aberdeen to Grangemouth. Several Scotch whisky producers joined the trial, including Roseisle (Diageo); Longmorn, Glen Keith, Glenburgie and Keith Bond No2 (Chivas Brothers); Aultmore and Craigellachie (John Dewar & Sons); Whyte & Mackay and Glen Turner (La Martiniquaise). Around 85% of all Scotch malt whisky is produced at the 77 malt distilleries which lie in the HITRANS area. The exercise was planned to be cost-neutral to the distillers.

Trains were planned to run twice a week carrying 16-20 ISO tank containers from Elgin to Grangemouth. Prior to the trial there had been considerable interest in using 33,000 litre containers and these were provided for the start of the trial. However, those tank containers



could only be filled to 30,000 litres and hence 26,000 litre tank containers proved more suitable and became the standard unit for the later part of the trial.

A HITRANS report on the trial acknowledged that some trains were cancelled due to insufficient loads. Some 10-14 tanks per train had been forecast. However, the number was fewer because the maximum insurance provision allowed for no more than three tanks per company. These short notice cancellations were a major issue for some distillers. In total, nine trains ran.

In order to support the trial, significant investment was made in handling hardware and track infrastructure. £25,000 of track improvements were made to Elgin Yard goods yard; a detailed train plan with DB Schenker was drawn up; a pool of 26,000 litre and 33,000 litre tank containers was created; and a reach stacker was procured for container lifting. At a number of distilleries, modifications were required to ease access and the loading of ISO tanks was tested

Julie Hesketh-Laird, Scotch Whisky Association (SWA), deputy chief executive and director of operational and technical affairs, says: "Health and Safety is a priority for distillers. SWA members have committed voluntarily to 'bottom-loading' tankers by 2024, removing the need for staff and contractors

to work at height. Our hauliers have been quick to respond to the challenge with big investments in new tankers. I'm optimistic that the rail industry could do likewise and that intermodal bulk tanks can also meet our bottom-loading requirements."

A unique feature of the transport of spirit is the requirement for it to travel under bond. This means that security and strong revenue control of high-value excise goods are essential, not just to avoid theft but also the significant fines that come from spirit travelling with the wrong electronic 'paperwork' or inappropriate insurance cover.

The sensitivity of transporting such a desirable and valuable product is illustrated by discussions with a forwarder involved in the traffic. For commercial reasons it is better not to identify the executive.

"We handle very large amounts of loadings in Scotland and deliver all over the world; we have friendly competitors, and some not so friendly, who do likewise. But the business is never discussed outside of the clients."

Litre-by-litre, whisky must be one of the most valuable commodities moved by tank containers. An explosive product, it is liable to be the target of theft or diversion, which means it must be moved in plain tanks.

It is enough to drive a logistics manager to drink.

Longer-lasting finish

A link-up between a Finnish cargo specialist and steelmaker focuses on container durability. Jerry Frank reports

Finnish group Lanh Cargo Solutions has built strong links in recent decades with compatriot industrialist Outokumpu Oyj, developing specialist containers for the world's largest producer of stainless steel and its high-specification requirements for the transport of heavy materials.

Lanh Cargo Solutions manufactures special portable containers for cargoes in ships, trucks or on trains that can help customers speed up loading and unloading times, optimise vessel stability and keep products undamaged during transport and loading.

When the Finnish cargo solutions company ventured into the tank container market earlier this decade, it was not a surprise that it turned to the expertise of the Espoo-based stainless steel manufacturer to help develop its new system for the transport of bulk liquid products.

Product planners at Lanh Cargo Solutions opted for a high chromium and austenitic Supra 316plus stainless steel from Outokumpu and chose to build the new tank and special cargo containers completely in this strengthened material.

Markku Yli-Kahri, product manager at Lanh Cargo Solutions, says the group's ambition for the tank container sector since entry in 2013 has been to focus on providing customers with its core expertise rather than trying to compete for the

largest share of the market.

"Our intention is to stay in what we know best – offering specialist solutions for customer-specific transport needs," says Yli-Kahri.

The development of new steel grades has been instrumental in developing technically-specific products. For example, with the increased industry emphasis on environmental safety, Yli-Kahri highlights that a product like 316plus has the capacity to be further toughened, or 'tempered', to meet these requirements.

The stainless steel grade is "excellent" for tank containers, according to Yli-Kahri, a master mariner who has headed the Lanh division's product team for 15 years.

"It endures corrosive materials and friction, and has a long enough life cycle to recoup the extra costs of building a

specialist container," he adds.

The use of less nickel and molybdenum content than its precursor, 316L, allows for higher corrosion resistance and thinner container walls. The lighter weight of the material has also allowed an increase in the load that the tank is able to carry.

The lower content of highly price-volatile nickel and molybdenum also means that the price of the new grade is more stable and easier to forecast.

"So even the price of 316plus is quite competitive compared to 316L," adds Yli-Kahri.

The enhanced properties of the 316plus material have allowed the Finnish cargo specialist to explore new systems using vacuum tank containers. Liquids that may contain sharp particles and corrosive materials are sucked into a hook-lift tank container that can be lifted rapidly on to a truck and transported.

"This gives very high efficiency to the operation," adds Yli-Kahri. "As the containers are made of



Outokumpu's Ferritic Core 4622 needs no surface finishing, sand blasting or painting

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Supra 316plus, the expected life cycle is impressive."

Langh has also used Outokumpo's Ferritic Core 4622, which needs no surface finishing, sand blasting or painting. This easy-to-use, corrosion-resistant ferritic steel has been employed to develop drainage basins, known as 'spill boxes', that are required in harbours that operate tank containers.

"Our spill box is covered with a load-bearing roof, which means that neither heavy rain nor snowfall is a problem," explains Yli-Kahri. "The cover ensures that the drainage basin is always ready for use if a tank container has a leakage. The spill box can also be used for oil spill prevention."

"These new materials help us to create sustainable products and increase the effectiveness of the solutions through thickness



reduction, higher strength, endurance and less maintenance requirements," continues Yli-Kahri. "We also have good experience in producing Duplex containers."

During the construction of the 316plus containers, the new steel grade had to secure standard acceptance and official T11 and ADR approval was needed for the container.

After passing tests carried out by Lloyd's Register, the 316plus steel was accepted in March as UNS S31655 into the AST, A240 standard.

Langhs will monitor the new tank containers using 316plus steel, with Yli-Kahri and his team looking for a longer life cycle. This would make the units more cost efficient for both its producer and customers.



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PTO blazing a trail

Pakistan's first dedicated tank container cleaning facility is a big success, with business more than doubling over the last financial year. Clive Woodbridge reports

Pakistan's economy is developing at a steady pace, with the IMF forecasting growth rates of around 2 and 3 per cent respectively in 2015 and 2016. The chemicals and petroleum products sectors are considered to be amongst the parts of the economy that have the greatest scope for growth, as the country tries to realise its undoubted potential. Logistics businesses have an opportunity to expand by taking advantage of Pakistan's strategic location.

Pakistan Terminal Operators (PTO), established in 2013 as a joint venture between e2e and Freight Connection, aims to capitalise on both trends by offering a comprehensive logistics service to the chemical and downstream petrochemical industries, with a focus on the transportation of hazardous and non-hazardous cargoes in tank containers. The company was established to offer professionally-run, tailored services, including cleaning, storage and repairs, for ISO tank containers.

Before PTO was set up, there was an obvious gap in the local market. Tank containers were often used on a single trip basis only, as the country lacked dedicated cleaning and washing facilities. "There was a clear need for a specialised tank container cleaning operation to remove sources of odour and contamination so that tank containers could be reused for transportation," says Khurram Niazi, chief operating officer, Freight Connection Group. "This

was necessary to reduce overall shipment costs by achieving higher levels of utilisation and avoiding the need to transport empty tank containers outside of Pakistan for cleaning."

PTO opened the first ever certified tank container cleaning station in Pakistan in September 2013. This has changed the dynamics of the liquids transportation sector in the country by allowing laden ISO tank containers to be moved in both inbound and outbound directions.

The PTO depot covers an area of 8000 m² and includes a washing bay, re-pair shop, office area and storage yard. Solid fencing around the depot provides a high level of security and the depot is fitted with external lighting and CCTV surveillance. Armed guards are stationed at the depot gate and the entrance to the building.

Considerable investment has been made to ensure the PTO tank cleaning facility in Port Qasim, just outside of Karachi, is capable of offering world-class services. The high pressure cleaning machines, which can operate at up to 120 bar, were imported from the well-known manufacturer, Weidner in Germany. The plant is fully automated, with an automation system from Schneidmacker, and features two drive-through bays. One of the bays is dedicated for tanks transporting foodstuffs and offers both interior steam and regular cleaning, as well as exterior cleaning.

"Our cleaning operations comply

with ITCO standards," Niazi points out. "We are also a member of the Asian Tank Container Organisation (ATCO) and are currently in the process of becoming certified as an Approved Cleaning Station and Repair Depot."

PTO's philosophy is to follow leading industry standards such as those set by The Federation of Oils, Seeds and Fats Associations (FOSFA) for contamination-free cleaning.

Environmental standards are also important to PTO. All waste water generated from the cleaning process is stored in septic tanks which have a capacity of up to 7,000 gallons. PTO has also signed a contract with a local waste management company which will treat the waste at its waste water treatment plant on weekly basis. "At PTO we care for the environment and will always adhere to the most environmentally sound waste water procedures," confirms Niazi.

The company aims to take an innovative approach to meeting customer requirements. "We are continuously striving to serve our clients better and our R&D department is actively involved in generating in gate/out gate reports, as well as storage reports, while EIR/damage reports are generated by our systems and sent to customers on a regular basis," says Niazi.

Business has been boomed at PTO over the past 12 months, indicating the demand for such a facility in the area. In 2013-14, the company received 801 tank containers; in 2014-15 the number more than doubled to 1,780.

The increase in volume has been driven by a number of

factors, including the granting of export licences for ethanol by Pakistan's Excise and Taxation Department. Food grade ethanol is one of few commodities being exported from Pakistan in tank containers so this decision has had a positive impact on the market creating opportunities for return cargoes for tank containers bringing in imported goods.

PTO's biggest customer for tank cleaning is Eagletainer, but currently there are 21 tanker container operators using the facility. These include Stolt, Fourcee, Baytanx, e2e, Bertschi, Hoyer and Bulkhaul. In addition, there are service contracts with Bolt Tank and Cargo Plan. PTO has also started working with India-based Exodus Line recently.

These customers have been attracted by PTO's 'one-stop shop' approach. According to Niazi, "We are currently offering our customers a complete package, including cleaning, repairs if required, and transportation from the port. We are also offering better quality services, and prices, than companies in India, where most companies are cleaning manually or using locally assembled cleaning plants, and are performing better than tank container facilities in Jebel Ai, which are struggling from overload. As a result a number of customers are sending their tanks to us in Pakistan for cleaning and repairs as an alternative to India and the UAE."

PTO is keen to expand the range of services it offers. Recently it has started carrying out periodic tank container testing in collaboration with Bureau Veritas (BV) and has also started offering small-scale repair services, including repairs to the outer shell and corner posts and castings, with training similarly being provided by BV.

"We have decided to invest around US\$200,000 in developing a one acre site to expand our repair activities for ISO tank containers,



PTO's depot has two drive-through cleaning bays which are heavily automated

making us the only dedicated repair company working directly with tank container operators in the region," adds Niazi. "We believe we will be able to provide repair services to operators around 20% cheaper than the competition in India and the UAE."

While extending the scope of its operations into tank container repair, PTO's core service is, and will remain, tank cleaning. "We have significantly improved the quality of our cleaning services since we started up two years ago," claims Niazi. "We have achieved a zero rejection and contamination rate over the past 12 months as a result."

To enhance service quality still further, PTO has also invested recently in a reverse osmosis plant, with 0% chlorine, for tank container washing, to avoid any potential contamination claims. The company has furthermore started using a high-quality detergent, specially prepared for

the cleaning of ISO tank containers.

Training is a key focus for the company to maintain and improve its standards. A number of staff members have been sent overseas for ITCO and other training courses. "We take safety very seriously and will soon be applying for ISO certification," says Niazi

PTO has two shareholders, which gives the business a strong foundation. E2e is claimed to be one of the fastest growing companies in Pakistan, and is the preferred agent of Geodis Wilson. The company provides a range of transportation and logistics services through a branch network comprising 14 offices across Pakistan and Afghanistan. Freight Connections Pakistan is a subsidiary of Rais Hassan Saadi, one of the top logistics groups in the UAE. Freight Connections provides a range of shipping services, freight forwarding, logistics and other related freight transport activities to clients across Pakistan.

Clean sweep for GCS

As the Asian tank container industry has grown, associated tank container cleaning services have become increasingly important on the region's logistics sector. Katerina Kerr reports

"We believe Asia is the market of the future," says Joost Kasbergen, Business Development Manager at Gröninger Cleaning Systems (GCS), a leading designer and manufacturer of high- and low-pressure cleaning systems.

When GCS was established in the late 1940s, it specialised in the trade and transport of minerals and ores. In the late 1950s it shifted its focus onto technology and the company traded in machinery for the concrete industry and agriculture, as well as in steam generators, air heaters and steam jet cleaners.

GCS developed its first high-pressure cleaner in 1963 and approximately five years ago, following decades of success, GCS saw a noticeable increase in demand for its systems from the Asia market.

In 2011, Gröninger Asia Pte. was opened in Singapore and is now responsible for its business in the region.

As business ethics and economics vary from country to country, a local office could prove invaluable in offering expertise and knowledge to broaden opportunities.

GCS knew it was essential to understand the new market conditions and in September 2013, appointed Farhad Cooper from Amfco Agencies as its Indian Subcontinent agent. It is now looking to appoint an agent

or open an office in China.

"We were getting requests from China, Singapore, Malaysia, Thailand, Vietnam and particularly India," explains Kasbergen.

"We know that we can't just enter a market, sell a system and that's it," says Kasbergen. GCS invested in its local presence in Asia with a long-term, project-based business strategy.

"Our operations in Asia are project-based, so we can work on a project one year and the next two or three years we don't have any. In the first couple of years we didn't sell anything. Instead, we focused on establishing customer relationships and contacts."

GCS has constructed about 125 cleaning facilities, of which seven have been in Asia, including India. In 2013, it built a cleaning facility for Saigon Newport Corporation at Cat Lai Port in Ho Chi Minh City, Vietnam.

The facility was specially designed to clean tank containers and has a cleaning capacity of approximately 20 tank containers per day. It is also able to discharge wastewater according to local regulations with an in-house wastewater treatment system.

Its equipment list includes a steam boiler for water heating and tank container heating, high-pressure low volume pumps that allow short cleaning cycles and a low water and energy consumption.

The facility uses Programmable Logic Controllers (PLC) and there is remote access to service the software from Rotterdam.

All equipment was built into containers to allow easy transport and quick commissioning.

Due to the success of this facility, a second station will be opened in Cat Lai by the end of 2015/early 2016 and an additional facility on a second location in Hai Phong will become operational three months before.

The tank container and logistics industries are thriving in Asia and cleaning is becoming an integral part of the business as intercontinental trade continues to grow.

The main driver for GCS's expansion is the chemical industry. "The market is 95 per cent logistics in the region and, of that, 90-95% is driven by chemical trade and so most of the cleaning stations are built for intermodal transport," says Kasbergen.

GCS notes that the tank container industry is growing worldwide and as the European 'Top 5' operators expand their reach into Asia, they are looking for cleaning solutions in the region.

"As our European customers begin operating more and more in Asia, they ask us to create cleaning solutions similar to the systems they use in Europe."

While, it is a relatively streamlined process to create a cleaning system or station for a pre-existing European customer in Asia, GCS has a lot of customers in the region that are completely new to the cleaning industry.

"Many of our customers build greenfield projects and so they



don't just need the system installed, they also need a lot of advice regarding the set up of the cleaning systems, onsite logistics, cleaning procedures and which chemicals to use," says Kasbergen.

"It is not just the implementation of the system itself, it is a lot more than that. The 'advice' area of our service is much larger in Asia than in Europe due to the growing number of greenfield projects."

When it comes to installing facilities at a greenfield site, GCS offers not only the equipment but also the installation and local commissioning. It brings together parties, assists in permit requests, runs the overall project management and ensures the final implementation of the project.

The first step, however, consists of advisory sessions. "We look into the request in more depth and help the customer to decide on a system that is most appropriate for them," says Kasbergen.

"We focus on three main areas: How many cleanings are needed? What equipment is needed? What is the company philosophy?"

"Based on that information, we design a system and then we help the customer to design the

depot itself. The equipment is then produced, shipped and installed onsite and the staff are trained."

On customer request or to comply with local regulations, GCS's turnkey installations include associated system components such as water treatment, air purification and drying plus hot water supply systems, all mounted on integrated platforms.

"We provide PLC programmes and a set of standard cleaning procedures that are already activated in the system. Following this - if the depot has any service issues, needs a software change or it requires an additional cleaning programme - it can all be undertaken from Rotterdam."

Kasbergen adds that it is becoming more evident that the speed of cleanings will increase in Asia in the coming years.

"In Europe, we have a lot of 'drive-through' cleaning, much like a standard carwash operation. The turnaround time of a cleaning in Asia is much lower than Europe."

"However, it is apparent that the increasing cost of labour virtually everywhere in Asia is prompting the need to speed up the cleaning process."

Growing expertise in cleaning methods is also influencing the market. "We see the use of kerosene to clean tanks very often, sometimes even food tanks," notes Kasbergen.

"Gröninger systems work with high pressure and water-based chemicals that are more environmentally friendly than kerosene. The use of such methods is gradually becoming common in the cleaning industry."

As a market matures, standard operating procedures are required. This is not yet the case for the cleaning industry in Asia and the Indian Subcontinent.

In many regions, transport companies are bound by stringent requirements when it comes to the cleaning of their vehicles and loading units.

The European Federation of Tank Cleaning Organisations ensures a certain level of transparency with the implementation of an obligatory and standardised cleaning document which is issued to all cleaning stations.

The interior of closed vehicles must be clean for hygiene and food safety purposes, thereby preventing cross-contamination, damage or contamination of products. The European Cleaning Document (ECD) helps factories and logistics companies to recognise exactly what has been carried in a particular tank and the parameters of its latest cleaning.

"A document such as the ECD in Asia would greatly help the cleaning stations," explains Kasbergen. "If it were issued from a cleaning station in Asia - and the tank container is transported to another country - it would make the entire market more transparent."

"Sometimes the documents are handwritten or are completely different from one cleaning station to another, which can contribute to a lack of traceability and compromise quality systems."



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Leslie McCune, Chemical Management Resources Limited

lm@chemicalmanagement.co.uk +44 7783042664 www.chemicalmanagement.co.uk



Suttons' growth engine just keeps motoring on

Asia has been Suttons' growth engine over recent years, powered by a series of acquisitions and investments. What's forecast? More of the same, EMEA Director David Kerr tells Felicity Landon

The opening of Suttons' new hazardous goods warehousing and drumming facility at the state-of-the-art Cogent Logistics Hub in Singapore this year was yet another waypoint in Suttons Group's significant expansion in the region. It was swiftly followed by the announcement of a new supply chain management contract with Singapore-based polystyrene resin producer TPSC Asia Pte Ltd (TPSC), in which Suttons will take control of the management of all logistics activities and movements in and out of TPSC's facilities. This will work towards 'tactical and strategic optimisation' of the company's logistics network.

It's an example of the direction Suttons Asia is taking and the very specific demands in the region, according to EMEA Director David Kerr, who says: "Asia Pacific has been our growth engine within the business since we went into China back in 1997. Over the past 18 months or so, we have seen a series of important acquisitions and developments.

"What we have found in Asia is that the business is evolving differently to other parts of the world. The requirement from customers for added value services,

for our own assets on the ground and for us to do more than just the physical tank container movement is probably greater. Those requirements have grown at a faster pace than elsewhere as our clients tend to be more involved in the start of new flows and the start of new customers and markets. As a result, there is more demand for these services than you would find from more established markets in Europe and North America, for example."

In many cases, companies in the region are setting up new plants and new supply chains relatively quickly, he says, which often leads to the logistics arrangements becoming time constrained and pressurised.

"Historically, a lot of the developments within Asia are where the chemical companies have poured products into the region. Increasingly, they have invested in manufacturing capability to service in-region customers in Asia – as well as exporting product back into legacy markets, although it's important to emphasise that most of the growth has been in terms of Asia domestic demand," says Kerr. "For example, there are products moving within China, where we



Sutton's David Kerr

have a large domestic business, but movements can also be inter-Asia – north to south, or vice versa.

"These factors have driven most of our development over the past 18 months in terms of both acquisitions and organic growth. We believe there will be more of that over the next two to three years as our customers look for our support. Compared to the European/North American markets, where logistics services are more established, Asia is very fragmented and sometimes the specialisms – particularly in the highly hazardous chemicals – aren't as strong. That means they need new providers with new ideas; it's where Europe was, in that position, 20 years ago."

Having said that, he adds that Asia is 'definitely ahead' in terms of investment, with

numerous investment plans and new plants being announced.

Suttons Asia has its headquarters in Singapore and offices in China, Japan, Malaysia and Thailand. The offices are strategically located close to chemical manufacturing zones. The company offers a large range of logistics services, including the import and export of bulk liquids and gases in its own tank containers, freight forwarding and fleet management services for customer-owned tanks and containers, and tailored supply chain management solutions.

Kerr says that the Singapore operations at the Cogent site will mature into a 'great hub' for Suttons, in parallel with the group's Shanghai hub, which provides tank container cleaning, maintenance and repair facilities on an 8,000 square metre site in Jinshan, close to the Shanghai Chemical Industry Park.

"If you look at our activity traditionally in Singapore, it was within the traditional tank container, freight forwarding environment," he says. "With the Cogent Logistics Hub, we now not only have the capability to store hazardous chemicals in packed form, but we also have the ability to move from bulk to packed, with drumming as well as packing within the different variants, including IBCs and smaller packaging as well."

"What that means is our focus is not only on bulk. The TPSC contract was a good example of where the customer had a number of different challenges within their supply chain. Initially, we were looking at TPSC as a potential bulk customer but because of our other developments in Singapore, it became clear we could find different ways to organise inbound as well as outbound chemicals. That is likely to be the trend we see going forward."

A busy two years for Suttons Asia in terms of key developments started with the acquisition of the

The depot at Shanghai



Chinese transport company Han Chi Logistics in October 2013 – a move made to support the further development of its operational footprint in China and the range of services it offers customers.

In April 2014, Suttons Transport Group was awarded an integrated logistics services contract from Bayer MaterialScience (China), to provide a wide range of traditional and value-added bulk chemical logistics and supply chain services. This contract was reported as a 'significant win' for Suttons and its multi-service offering and dedicated account management approach.

In October 2014, Suttons acquired IS Logistics Group (ISLG) in Singapore. Operating from three locations in Singapore, ISLG provides supply chain and logistics services to the chemical manufacturing industry, including road transport through its own fleet of vehicles, warehousing with drumming facilities and additional value-adding supply chain activities to large multinational chemical manufacturers. The acquisition was described by Suttons Group CEO John Sutton as 'an ideal fit' for Suttons. "Combining the services offered by each company will enable us to provide a truly exceptional customer experience that is focused on added value, innovation and service," he said.

This year has seen the opening of a new sales office in Thailand, followed by the

Cogent hub opening and the TPSE contract announcement.

Where will the next few years take Suttons, and the Asia market? David Kerr says the provision of infrastructure – the on-the-ground aspect – will be increasingly important.

"I think increasingly the tank container industry is relying upon a large amount of subcontracting – not just in Asia but also in other established markets such as Europe," he says. "Hence, we must focus on addressing what are the most effective means of meeting this need. Clearly in Europe and North America you have driver shortages for HGVs in both markets, and the ability to subcontract isn't as strong as it was previously. So having your own infrastructure on the ground in terms of trucks and drivers is a critical underpinning. That is something we have expanded within markets such as the UK – but we are also building that capability in Singapore, Shanghai and the Middle East."

Asia does not present the same difficulties as Europe when it comes to sourcing of labour, he says – but the difficulty here is making sure that the labour is trained and knowledgeable on hazardous goods and understands the safety culture at the heart of businesses such as Suttons.

"That means, of course, that you have to invest in training and

auditing, because the natural pool of experienced talent in the marketplace is smaller in hazardous chemicals than it would be in established marketplaces. Conversely, in Europe and North America the problem is that HGV driving has become a less attractive prospect. The workforce is ageing and that labour pool needs to be replaced – and that is putting pressure on supply, as well as costs.”

Another key area of focus in Asia and elsewhere will be reducing waste, he says, and he splits that into two specific areas of waste.

“First, there is waste in terms of inefficiency, in terms of planning, forecasting and therefore asset utilisation. That occurs when you have a product within the supply chain that is not serving a particular purpose and is either a cash strain in terms of investment or it isn’t available upon demand for the customer who needs it.

“The second aspect comes in with the chemicals themselves – how are they processed and transported; how are inbound and outbound supply chains managed? Often there is waste regarding the management of the resources and the processing of chemicals through sites. It is a little bit like the automotive industry, which recognised that inbound and outbound supply chains are often

not aligned and there are often synergies not being exploited. That’s because inbound tends to be governed by the procurement team and outbound is governed by logistics and distribution.”

Reducing waste and improving efficiency are a question of analysing the embedded processes and activities that happen today and then looking at what the potential process could be in the future, he says. “And critically – because building the plan is the easy part – it is about executing the plan that takes us from ‘As-is, today’ to the ‘To-be, tomorrow’ process. That means making sure the different stakeholders, internal and external, fully engage and participate in that and also see the benefits from the deliverables.”

He is not a fan of huge supply chain studies and implementing dramatic, sweeping changes. “You can do a big supply chain study like some, but those tend to be difficult to implement, and implementable over a long period of time,” he says. “I believe it is often a case of building confidence with small projects, and using that success to move to the next stage. Often a lot of smaller projects can be implemented very quickly and start to deliver results – and that builds confidence. It is about change management; most people will buy into change management if

they believe it, understand it and are part of it. With larger projects, it can be difficult to take a larger group of people from a standing start to a sprint finish very quickly. But if you do it in bite-size chunks, it is easier to drive cultural change.”

In May 2014, Suttons Group put a four-year strategy in motion and part of that is continuing to look at acquisition opportunities, not only in Asia but on a global basis. “We expect as part of that strategy to make further investments in assets and capability and infrastructure,” says Kerr. There is nothing specific that’s imminent, he says, ‘but it is an ongoing process for us’.

Is he worried about China’s exponential growth slowing down and a possible knock-on effect of that?

All things are relative, he says. “Some of the specific manufacturers of assets, including tank containers, have started to slow down. And I think leasing companies, and probably some of the operators, have looked at the returns being generated and have seen that returns are not increasing and may even be declining. They are probably proceeding with more caution than they have done in the past three years.

“At the same time, however, there is still growth in demand. There is a shortage of land-based storage tanks, which means that tank containers come into play – because they can move and also solve the problem of temporary storage, to feed the customer/manufacturer’s process.

“This is still very much a growth market and, as I said before, demand from the customers is for very complex services in that they buy more services as a package, because the market is fragmented. Perhaps growth in China is less than it was three years ago but definitely logistics growth of 5-10% a year is achievable over the next few years.”



Market clarity? A mirage

Jaap Huigen looks at the tank container leasing sector and wonders what are the knowns, known unknowns and unknown unknowns of its business cycle

What is that we know, that we know we don't know and what Donald Rumsfeld described as 'unknown unknowns' about the tank container leasing market?

What is it that we know? Firstly, we know conditions in the tank container leasing market are fundamentally unfavourable. The current surplus lease fleet is estimated to be up to 20,000 new units – even a cursory look at the slow-turnaround, 5-high tank container stacks at manufacturers' depots in China and in the tank container depots in Asia, Europe and the America's would indicate a large surplus.

We also know that, as in the shipping sector, tank container manufacturers may find it difficult to change the damaging cyclical build patterns of the past. Over the past three years, tank container manufacturing has grown robustly with some suggesting it has outstripped market demand. ITCO, the International Tank Container Organisation, estimates that global factory output was 48,200 tank containers in 2014 with @tco – the Asian tank container organisation - citing similar global numbers. If true, this would represent 13% increase on the 42,620 units manufactured globally in 2013, which itself was up 7% on the 39,700 units manufactured in 2012.

Tank container leasing firms are said to be the largest purchasers,

despite continuing soft demand in the global economy. Why?

Firstly, prices have been exceptionally low – the price of a 25,000 litre, T11 tank container fell to as low as US\$16,000.

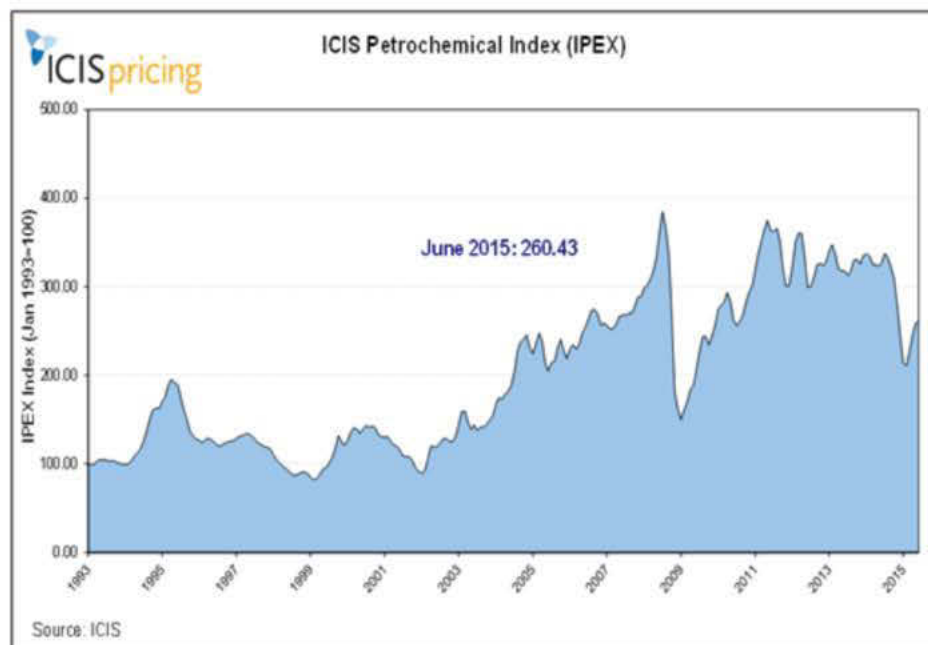
Secondly, the ready availability of 'cheap money' has made it a good time to buy (although interest rates are expected to increase in the next 12 months). Any increase in the US dollar would further depress the currencies of emerging markets, potentially stifling market demand. And the recent surprise devaluation of the Chinese yuan will increase export competitiveness.

So what is the industry's upside? The tank container sector is now a mature market and, having

weathered previous troughs and peaks, is more resilient to the vicissitudes of economic cycles. This resilience is supported by tank containers becoming the packaging-of-choice for small lot size intermediate bulk parcels.

The industry structure has also developed. The leasing sector has – unsurprisingly and rationally – consolidated while the top five European tank container operators continue their hegemony over the operators' sector, despite only having a combined market share of 36% in the still-fragmented market.

Global economic power is inexorably shifting from the US and Europe to Asia, a pattern mirrored by the tank container industry. The tank container industry's fortunes remain strongly linked to its principal customers - the energy and petrochemical producers. Fuels, lubricants, lube oil additives and aromatic solvents are said to account for nearly 50% of the bulk liquids transported worldwide.



Encouragingly for the global chemical industry, and for those in the tank container sector, the prospects are for sustained growth. Global chemical volumes are forecast to more than double over the next 20 years, equivalent to a compound annual growth rate of 3.5%.

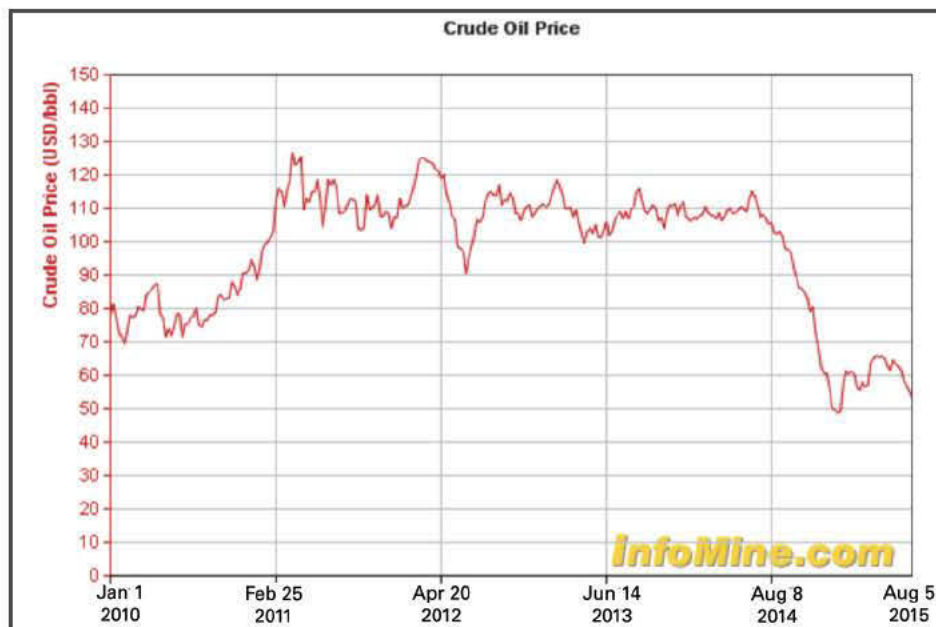
Inevitably, the recent collapse of the crude oil price has impacted demand for tank containers and, with the dramatic fall in bunker costs, marine ocean freight costs have similarly fallen. The reasons for the crude oil price collapse are well-known: weak demand from Asia and a low-growth Europe, combined with record crude oil production from the US and OPEC (most notably, Saudi Arabia).

The net result – accentuated by weak market demand – is reflected in the lower share valuations of most oil and petrochemical companies. The future price of oil obviously falls into the ‘known unknown’ category.

US and Middle East chemical production competitiveness have clearly been greater than Europe and Asia, although less so recently. The growing availability of abundant and low cost natural gas, recovered in the US from shale formations, has stimulated the rapid expansion of US chemical production and exports.

US energy costs have also been reduced – US electricity prices are approximately \$0.05 per KWh compared with \$0.20 in Europe. It is estimated that operating a similar petrochemical plant in the US costs \$125m a year less than in Europe. Producing a tonne of ethylene in the Middle East costs \$250 – half that of Europe.

Does the obvious congestion in the global tank depots indicate a fundamental problem? John Bannister, the Singapore-based head of Seaco Global, says: “There does appear to be inventory on the ground but there is still growth



in the market, so, over time, this will get utilised. The market is cyclical so there are ups and downs, as with any industry.”

There is anecdotal evidence that operators have swapped 6- to 7-year-old equipment on long-term lease for new units. This could create additional problems for leasing companies but Bannister says: “The average age of our tank fleet is relatively young, but so far, we have not had any issues leasing our older units out.”

Addressing the challenge of attracting and retaining talent in what has become a more commoditised industry, Bannister says: “Seaco Global’s view is that the industry is still appealing for many reasons. For example, the interaction with colleagues, customers and suppliers around the globe as well as being part of an international business. The company continues to attract people who are excited to be joining a great company with a great brand and great products and services.”

In terms of ‘known unknowns’, a view was sought on the move of companies – and individuals – away from low margin freight forwarding into higher margin

tank container operating activities, where Stolt Tank Containers – the market leader – achieves a operating profit of 14%.

“As with any business, there will always be new entrants into a market place if they see good opportunities. This probably has the result of raising the game of the players that are already operating in that space. From our perspective we have a lot of history and experience in tanks and in leasing, which gives us a good advantage”, says Bannister.

“Over the next five to 10 years, there will continue to be a shift from other modes of liquid transportation to ISO tank containers, either because people see the benefits of intermodal transport – or because of legislative changes – and an increased focus on safety and environmental issues. Overall, the tank container market will therefore continue to grow.

“In turn, the ancillary services that support the industry, such as repair and cleaning facilities, will need to develop to meet the market needs in term of safety, quality and value added services.”

As for the industry’s ‘unknown unknowns’, who knows? Not even Mr Rumsfeld.

Diversity is the key for

Growth in the global tank container market has driven software company iInterchange to increase its product offering, reports Katerina Kerr

Chennai-based iInterchange was launched in 2004 when its founders recognised the need for the container shipping and logistics industry to receive IT support.

Jointly owned by VS&B India and Cronos Containers, iInterchange has maintained its container industry focus, but has extended its reach over the years.

The company has diversified its product line and now offers solutions for the rapidly growing tank container industry – iTankDepo and iTankOPS.

The Middle East market for tank containers is developing rapidly,

driven by the ends of the chemical, oil and refining sectors. Many tank container operators have become established in region – these, and the supporting current and new depots - are requesting software to support their expansions.

KTS, a large tank depot in Saudi Arabia, has been using iTankDepo since inception and has given iInterchange excellent feedback on the software.

Most recently, Shareej has signed up for iTankDepo for its multi-location tank depots in Saudi Arabia.

IT is being used more often to

create a competitive edge for tank container operators and depots. Tank container depots can use the software to monitor gate moves, tank maintenance, repair and activity scheduling.

The current iTankDepo software is claimed to meet 75-80% of the generic needs of a tank container depot and can be customised to cater for other supporting businesses.

The specialised software provides real time tracking reports of tank containers and tank inventory and simultaneously creates billing and other documentation.

iInterchanges' programmes store all the repair data, including component codes, condition codes, damage incurred, materials, measures, responsibility, damage location and repair status.

iInterchange is developing a new software - iTankOPS. It is



ilInterchange



The ilInterchange management team also includes Managing Director, Bijoy Paulose; Vice President, Syed Farhad Ali; Head of Delivery, Balaji Varadharajan and Business Analysis Head, Dinesh Kumar

currently being constructed for Goodrich, India, a large strategic player in the region. The software will be made available to the tank container market upon completion.

New players are also entering the tank container sector. The Management team at ilInterchange has seen a number of NVOCCs and short haul carriers beginning to operate in the industry.

Furthermore, an increasing number of regional operators have established themselves in the business in recent years.

Based on data provided by 194 tank container owners worldwide, a survey conducted by the International Tank Container Organisation (ITCO) reveals that global tank container operator fleet was 305,700 units in 2014 although only 194,160 units were owned by operators – the remaining 111,540 units were leased in.

The number of new tank containers built reflects the underlying demand growth trend of the tank container industry. The survey polled 18 manufacturers and found they produced over 48,200 new units in 2014 with an estimated value of US\$960

million and up 12% year-on-year.

Members of the ilInterchange Management team cite a “significant shift of products from bulk to tank containers” in recent years and a “big jump year-on-year in the number of tank containers in the market”.

“There are also many more players in tank operations and tank leasing than a few years ago,” says the team.

They note that, as a result, the demand for tank container-specific software is increasing globally. In response, ilInterchange is currently developing iTankOPS, its second tank container-specific solution.

iTankOPS is a comprehensive, integrated ERP software programme that is built exclusively for tank container operators. The web-based application has been designed to fulfil the commercial and operational working requirements faced by tank container owners and lessors.

If requested the software is able to be adapted to specific user requirements. It can be installed as a perpetual licence installed in the company’s domain, as a perpetual

licence hosted by ilInterchange or as an SAAS (Software-As-A-Service) model where multiple users pay per use for the functionality offered.

Operators can be provided with schedule and slot management, operations information, import and export documentation, and can respond rapidly to complex job order management, contracts, tariffs and equipment controls.

ilInterchange management explain: “Recently, there has been a fall of about 25% in tank container prices and a major fall in lease rentals and tank rates. This has put a lot of pressure on profit margins for more established players, which have large amount of assets at high prices.”

iTankDepo and iTankOPS are aimed at helping to increase operational efficiencies in order to improve margins.

iTankOPS enables the user to easily transact with tank container agents and customers from anywhere in the world. Agents are able to access the data directly in the system without have to wait for a transmission. Duplication of work and human error is minimised while standard and optimal workflows are configurable.

Features include a Breaker (cost calculator) that enables the user to derive a cost basis from various parameters such as transit time, lease rental, slot costs and handling costs.

Once one of ilInterchanges’ software solutions is implemented, a support team then takes over, offering customer 24/7 support. The company now serves over 900 depots and many shipping companies worldwide.

Meera Kumar, Head of Business Development, and the rest of the team are optimistic about the future of the tank container industry.

“Our next focus could be in terms of the other IT needs of the tank industry for tank certification, maintenance, among others.”

@tco finds its Asian niche

The Singapore-based Asian Tank Container Organisation was formed to help promote the safe use of intermodal tank containers in the rapidly developing Asian market. Mike Wackett reports on its latest moves

The mission of @tco's co-founders, Reg Lee (its President) and Graham Wood (Director and Technical Secretary), still is to encourage the use of tank containers in Asia in an environmentally friendly and safe manner.

Notwithstanding the many reasons for using tank containers, it is the cost element that is one of the most compelling selling points; but many Asian shippers need the economics to be clarified.

The cost incentive, says @tco, is that over 37% more product can be carried in a tank container than in drums in a 20ft container.

@tco is a not-for-profit organisation which added Michael Loscalzo, Hoyer Global's deepsea business unit director, to its 10-strong board of industry professionals in May. Other board member companies include Stolt Tank Containers, Exsif Worldwide, TAL International, Sinochem International Logistics and CIMC.

Loscalzo and his @tco colleagues are keen to highlight the advantages of tank containers, but @tco has a big challenge: drums are still the favoured method of transporting chemicals and other hazardous liquids in many parts of Asia, not least due to the lack of tank container infrastructure in emerging markets such as Vietnam and India.

The number of tank containers in operation worldwide has seen double-digit percentage growth

in the past few years with the total fleet now estimated to be 444,220 units, but only a quarter of those are operated in Asia.

A cornerstone of @tco's strategy is to build up the approved tank container depot infrastructure in Asia to ensure that standards are met, thereby ensuring that operations are carried out safely.

According to maritime insurer TT Club, data compiled over the past 10 years shows that contamination is by far the biggest cause of incidents involving tank containers. The TT Club's regional director for the Asia-Pacific sector, Phillip Emmanuel, told @tco's General Meeting in Shanghai that contamination could result from a number of factors, but the incompatibility of a tank with its cargo was the most common cause.

"Often the result of insufficient cleaning, following the carriage of previous cargo," he said.

Indeed, problems can usually be traced back to the handling depot, and it was not long after the establishment of @tco that its founders launched a depot audit programme across the major trading nations of Asia.

There are various levels of accreditation, from the basic cleaning station chemical status to major repair facility.

According to @tco, depot approval gives clients assurance that the facility has been independently audited. And the use of a grading

system identifies the levels of maintenance and repairs available right up to complete refurbishment.

One accredited client said that having their depot accredited "aids a culture of awareness and confidence" in the safe handling of tank containers in the supply chain.

Meanwhile, there have been calls in the industry for ITCO, established in 1998 to represent the entire global tank container industry, to reach out to @tco in an effort to find common ground to work together on industry-wide issues. @tco is referred to by many as ITCO's 'prodigal son'.

ITCO has often been criticised for being "too Euro-centric" in its business model. One of its members, David Jenkins, Chairman of Multistar Group, has observed that of the 12 people on ITCO's board, 11 are from Europe (the other being an American). He has asked members to consider whether they are satisfied with ITCO being a "cosy, self-appointed European industry club".

Some within the ITCO membership warn that other regions may make the same initiative as @tco and set up strong, vibrant regional tank container organisations that concentrate on regional issues and interests, rather than be a passive player in ITCO's self-interested focus.

Lee's reason for establishing Asian-focused @tco four years ago was reported to have been driven by this single issue. Others in the industry allude to personal antipathies becoming a major catalyst of change.

At the time of @tco's formation, Lee said that ITCO "did not pay adequate attention to either the needs of its members with interests in Asia, or the promotion of tank container use in the Asian marketplace".



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