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Tankcontainer MAGAZINE

Volume 4 | Issue 2 | June 2017

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Middle East mirage turns real

There is an ancient Arabic expression: *Bukra fil mish-mish*. The literal translation is: "Tomorrow, when the apricots bloom", but, loosely translated, it means: "I'll believe it when I see it". It is a phrase that has been very useful to the many tank container players now operating in the Middle East, not least when they have returned to their corporate headquarters in Europe or the US with news of a further delay in their planning approval, the start up of a new plant, or an outstanding payment.

Of course, if little or no investment was made in evaluating the region's tank container market demand, competitive intensity and culture, the sceptical and frustrated board at headquarters has only itself to blame. As one US executive said of the Middle East: "Culture eats strategy for breakfast, any day."

But those tank container executives are beginning to have some good news to share with their boards as, at last, some of the larger tank container opportunities materialise.

This issue of *Tankcontainer Magazine* focuses on the Middle East or, more specifically, the Gulf Cooperation Council member states of Saudi Arabia, Qatar, Kuwait, Oman, Bahrain and UAE. It maps out some of the opportunities for tank container operators.

We look at the broader context and pressures affecting GCC petrochemical producers, distill the different tank container opportunities offered by commodity petrochemical producers and specialty chemical producers, and review the region's tank container depot and cleaning station infrastructure.

We also note the major users of tank containers in Saudi Arabia – the key GCC market – and share the planned tank container demand for the giant Sadara project, the $20 billion Saudi Aramco/Dow Chemical joint venture in Jubail.

Sadara includes 26 production plants, making it the largest petrochemical project in the world. Many of the 26 production units will be producing specialty chemicals and many of these are dependent on tank containers for export and local demand. So far, tank containers have mainly been used to import Sadara's raw materials, such as polyethylene co-monomers and hydrogen peroxide. Demand will increase as plants dispose of their initial off-spec first foots production, followed by demand build-up as on-spec production becomes established.

MDI production, the first in the region, is said to be imminent at Sadara, with tank container demand starting in Q3. Elsewhere in Saudi Arabia, the huge Petro Rabigh II expansion (half the size of Sadara) is gradually starting the production of new specialty chemical products, such as MMA.

The region's tank container depot and cleaning infrastructure has had a very substantial growth spurt in the past 12 months and we review the players investing in this essential tank container support service.

We also touch on the delicate topic of the effectiveness of the Royal Commission for Jubail and Yanbu (RCJY). As the de facto landlord at Jubail, the RCJY has a critical enabling role to play on behalf of its tenants but, paradoxically, is under pressure to maximise revenues from them.

An independent report talks of a very low ease-of-doing-business for small companies, poor third-party logistics facilties and poor facilities for consolidating cargoes. The conclusion appears to be that RCJY has simply not been fit for purpose to deal with smaller companies looking to invest in logistics facilities.

More positively, Saudi Arabiaís new Vision 2030 has brought a new determination to improve the performance of state-owned institutions like the RCJY, many of which will be wholly or partly privatised.

May's GPCA Supply Chain conference in Abu Dhabi focused on the role of technology in creating the agile and efficient supply chains necessary to respond today's heightened economic volatility. Central to this is digitalisation, a key development among tank container players as they seek to capture efficiency gains and provide genuine end-to-end visibility for their customers.

How then to summarise the tank container opportunity in the GCC? It is focused on Saudi Arabia. It is dependent on having the right local partner. The existing cohort of customers is well-known and very price-sensitive. Sadara is the biggest new opportunity, but if you're not engaged with it already, it is too late. Beware of the traders behind the occasional high-volume refinery streams that are exported in tank containers for delivery to the UAE or India.

Fundamentally, where there is change and growth, there is opportunity. "Change" and "growth" are the two words that most accurately define the GCC petrochemical market.

Leslie McCune, Editor

Hoyer closes anniversary year with turnover growth

Transport and logistics services provider HOYER announces slight turnover growth in the fiscal year 2016 just ended. The turnover of EUR 1,189m was 0.3 per cent above the previous year's turnover (EUR 1,185m). Thus the Hamburg family-owned company continues its sustained positive business trend in the 70th year of its existence.

The earnings before tax amounted to EUR 40.4m, representing the second-highest pre-tax result in the company's history (previous year: EUR 43.2m). Return on sales was 3.4 per cent (previous year: 3.7 per cent). The equity ratio of 42.2 per cent was somewhat higher than in 2015 (41.8 per cent). The number of staff employed by HOYER rose above 6,000 for the first time. This means a total of 6,079 employees worked for the company in the anniversary year 2016.

The HOYER Group's investment volume remains high, amounting to EUR 102.2m in the 2016 fiscal year (previous year: EUR 112.7m). In this respect, current low transport equipment procurement costs were utilised to rejuvenate and modernise the tank container fleet. HOYER Group shareholder and Chairman of the Advisory Board Thomas Hoyer said: "The size of our annual investments is astonishingly high compared to other family businesses in the logistics market, as well as in manufacturing or consumer goods industries. People often talk to me about this, but it is a particular feature of bulk transport and its special requirements. These major investments will prove to be good decisions in the medium and long term." In the context of digitisation, HOYER has started equipping containers with smart technology and is investing in high-performance, secure IT systems that guarantee connectivity to the various customer's systems.

The Hamburg logistics specialist has a worldwide presence, and in addition to transport services for the chemical industry, it also offers gas logistics services, foodstuffs transport and fuel deliveries to service stations, airports and industrial plants. The HOYER Group is increasingly involved in the area of Supply Chain Solutions (SCS). This business line generated considerable turnover growth of 18 per cent in 2016 compared to the previous year. Accordingly, the overarching Chemilog business unit again contributed the largest proportion (31 per cent) of HOYER's overall turnover. The volume of transport was maintained at the previous year's level both in this business unit and in the Deep Sea business unit (overseas activities), although with slight turnover decreases due to the sustained margin and price erosion in the market. The Gaslog business unit held its ground in this challenging environment, and confirmed the previous year's good figures. The Petrolog business unit recorded turnover growth of 9 per cent, comprising mainly supplies to service stations. The HOYER Group has combined its asset management processes in the newly-created Netlog business unit since 2016.

In the bottom line, HOYER closes the fiscal year with above-plan earnings despite difficult economic framework conditions and market uncertainties in view of political developments in Europe and the USA. In the service station supply and SCS area, for example, the trend in the order situation is good. Long-term forecasts for chemicals production are also positive and consequently the company sees itself as well positioned for the future, and plans to expand further its market position as one of the leading worldwide suppliers of logistics solutions for the transport of liquids in the coming years.

82 Bertschi tank containers hit the Silk Road

On May 26, a train loaded with 82 Bertschi ISO-tankcontainers began its long journey from Korla in Western China to Europe. The route, on which a distance of 8.000 kilometers and 7 countries are passed, is part of the project "One Belt, One Road" initiated by China.

The key parameters of this transport are extraordinary: A train with a total length of 800 meters and a weight of 3.000 tons carries 82 Bertschi ISO-tankcontainers to Europe. In total 18 days will be needed to move the high value chemical products from the production plants in China over the New Silk Road to their destinations in Germany and France. Considering the geographic location of Korla - the seaports of China are located 4.000 kilometers further East - the transport on rail is a reasonable and time-saving alternative.

The term "One Belt, One Road" stands for the development of the transport route between China and Europe and - driven by its location along the historic trade routes - it is also known as the "New Silk Road". The large-scale project was initiated by China and will require investments of approximately 1.000 billion US dollars. This includes the construction of rail lines, roads, ports and power plants.

Bertschi already pioneered on the same route two years ago with the first block train loaded with chemical tank containers.

The further development of the infrastructure along the New Silk Road will enhance the attractiveness of rail transport between China and Europe. Therefore the 82 Bertschi containers of the currently running train will most probably be followed by many more finding their way to Europe via the Silk Road.

Den Hartogh acquires Bulkcon Transport

The Boards of Directors of Den Hartogh Holding B.V. and Bulkcon Transport AB have announced that, as of 2 May 2017, Den Hartogh has acquired Bulkcon.

In recent years, Den Hartogh Logistics has expanded remarkably to facilitate customer demand with its worldwide presence and closely-knit European network.

Joining forces with Bulkcon extends this European network in the Nordics and means that Den Hartogh can benefit from the company's extensive knowledge and experience of operating in the Nordics and internationally.

"We consider Den Hartogh's acquisition of Bulkcon to be a very good step in continuing to satisfy our customers' transport needs in both the European and Global markets," said Thomas Nordbeck, Chairman of the Board, Bulkcon Transport AB.

"It has been a pleasure doing business with Bulkcon trough the years.

"After many years of successful collaboration with this Swedish partner, we will continue to enhance our activities from the existing Den Hartogh office in Gothenburg.

"Our combined team is convinced that we can further develop our footprint in the Nordics and increase overall customer satisfaction," said Group Managing Director Pieter Den Hartogh.


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Nexiot sensors monitor dangerous loads for Bertschi

Nexiot AG is customising its zero-maintenance smart sensor system for Bertschi Group's tank containers, to monitor the temperature of dangerous goods and help ensure safe delivery of consignments.

The data is then sent to a control system, enabling Bertschi Group to monitor the temperature of the product in the tank, as well as the steam pipes which are used to heat the cargo, in real time.

Nexiot's smart sensors harvest energy from the environment, which makes them self-sustaining, and enables them to update the control system with messages down to every five minutes.

Bertschi is a global logistics service provider for the chemical industry, specialising in both liquids and dry bulk products, and transports hazardous cargo, some of which need to travel within a specific temperature band.

"Any means by which we can further raise the bar regarding safety gets priority at Bertschi, and having continuous and detailed information about the containers allows us to be certain that everything is well within safe operating conditions," said Markus Berner, Head of Digital Logistics, Bertschi Group.

"Automated alerts on deviations provide us with one more layer of safety on top of all the existing procedures and mechanisms.

"The very same measurements are also invaluable for guaranteeing that the cargo, which often includes delicate chemical compounds, reaches its destination within the optimal temperature band and in perfect condition.

"We have very tough requirements for the capabilities, ruggedness, cost, and maintainability of devices in the field. In my opinion, particularly regarding energy autonomy and frequency

The modules relay updates including location, impact events, border crossings, mileage, and more

of updates, the technology of Nexiot speaks for itself."

Nexiot's Director Marketing and Sales Daniel MacGregor said the sensor system, which is also being installed across the entire fleet of rail wagons for wagon hire giant VTG, was ideal for mobile assets with no native power sources.

"Connecting rail wagon and tank container fleets to extract critical data brings similar challenges and opportunities, as both asset types are non-powered," he said.

"Our self-sustaining technology has overcome the battery problems which were a major barrier to monitoring these sorts of mobile assets and made critical data available in real time, so that our customers can make informed business decisions and ensure their cargo arrives safely and on time."

Nexiot is trialling a new system of self-sufficient sensors, mounted onto the tank containers, communicating temperature data wirelessly to its Machine to Machine (M2M) communication devices, also installed on the tank containers.

Berner said that Bertschi is seeing increased demand from customers for real-time updates and estimates, who use the data to optimise their own logistics chain.

"Nexiot provides a full-featured but specialised platform which can be integrated with sector-specific software," he said.

"This is in line with our digitisation strategy – more data all by itself is of limited use; it is the links and connections that bring real value."

Nexiot last month announced it is equipping the entire European fleet of VTG Aktiengesellschaft (VTG AG) wagons with its smart sensors.

Patent owners win 'fake container' case

Patent owners represented by Columbiana Boiler Company, LLC (CBC), including China International Marine Containers (Group) Ltd (CIMC), have won a US court battle against Jiangxi Oxygen Plant Co., Ltd (JOPM) after the latter made counterfeit copies of CIMC's gas tanks.

The permanent injunction was awarded against JOPM after it started manufacturing and distributing fake copies of the Chinese company's T50 containers and exporting them to the US, thereby infringing patent '598.

Subsequently, the US district court in Texas ruled lawfully in favour of the patent owners' claims and prohibited JOPM and all connected persons from any further acts of infringement, including contributory infringement or inducing others to infringe the patent.

Other prohibited actions as dictated by the permanent injunction include JOPM directly or indirectly exporting, contributing to the export of, selling or importing any freight container or similar products to the US that infringe the '598 patent.

The patent was originally developed by CBC and then jointly owned later by CBC, GLI and CIMC. The assignments to CIMC took effect in January 2007. The Chinese corporation produces more than one thousand tanks per year from its facility in the North Pacific rim country

and exports them globally.

CIMC's T50 containers, which are designed according to the patent, have a capacity of 24,600 litres and a tare weight of 7,400kg – 18% lighter than regular tanks without the patent. The tanks are also zinc-lined to avoid contamination to contents.

Representatives from CBC explained that this victory will "motivate manufacturers to invest on new technology and research and development (R&D), and respect the intellectual property in the market. Patent owners retain the right to prosecution on purchasing and using these fake tanks and permanent injunctions help to regulate market behaviour and protect the interests of legitimate manufacturers.

Crowley sends more LNG to Puerto Rico

Crowley Maritime Corp.'s liquefied natural gas (LNG) services group has been awarded a multi-year contract to supply additional volumes of containerized, U.S.-sourced LNG to a major pharmaceutical company's manufacturing plants in Puerto Rico.

The contract, executed through Crowley's Carib Energy LLC subsidiary, extends a 2014 contract awarded to Crowley for LNG supply for the facilities by expanding LNG services to additional plants.

The contract includes the fuel supply and transportation of LNG, which helps the customer yield substantially lowered emissions and provides an alternative to their current fuel source, diesel.

Other benefits include an uninterrupted fuel supply due to the abundance and availability of U.S.-sourced LNG.

The transportation of LNG from U.S.-based liquefaction facilities to the pharmaceutical company's plants will be managed by

Richter unveils PFA lined tank bottom valve

Richter Chemie-Technik GmbH, a global leader in PFA lined pump and valve solutions, is introducing a newly designed Tank bottom valve system.

The first to market ball-valve technology based PFA lined foot valve completed with the NKS-T lined butterfly valve and a new to market PFA lined 3" BSP outlet flange has been first displayed at the Transport Logistic exhibition 2017 in Munich.

Based on Richter's proven technology, the Tank bottom valve system reduces total cost of ownership while increasing safety and efficiency for operators of Tank Containers.

Richter's ball-valve technology eliminates the possibility of damaging the internal coating with opening and closing of the valve which eventually leads to corrosion. Furthermore, the TE/F valve is equipped with up to 7 times thicker PFA coating, a material which delivers better performance on typical chemical resistance compared to current ECTFE solutions. Richter's ball and butterfly valves have proven to last up to more than a decade in the most extreme conditions. Real world examples of over 900,000 opening and closing cycles of our PFA/PTFE lined NK series butterfly valves are not uncommon.

The typical 'emergency closing mechanism' (steel wire) offers no option for the operators to open the 'last line of defense' outside the danger zone. With the safety of the operator in mind, Richter has replaced this 'remote control' with a robust stainless steel bar system for closing AND opening at a safe distance to ensure the operator will not be in harm's way with either of these two procedures. The TE/F valve features Richter's Labyrinth seal and ENVIPACK technology, which adds to the total concept of a robust design combined with great performance. The NKS-T Butterfly valve which is based on the successful NKS series of butterfly valves was developed to fit perfectly with the TE/F tank bottom valve. To complete the offering a new-to-market PFA lined 3" BSP flange with end cap was developed to assure total integrity of the system.

"The TE/F was developed out of a direct operator need across the Tank Container industry to reduce operating costs," said Keshwar Anroedh, Director Marketing & Product Management at Richter Chemie-Technik GmbH.

Richter's TE/F Tank bottom valve and NKS-T Butterfly valve are available in DN80 (3") and are well-suited for lined tank containers transporting corrosive or high purity media.

Crowley's domestic logistics team, which will coordinate over-the-road transportation of 40-foot intermodal ISO tanks authorized by the U.S. Department of Transportation to each carry approximately 10,000 gallons of LNG to the company's Jacksonville, Fla., shipping terminal.

Once in Jacksonville, the tanks will be loaded onto company-owned vessels departing for Puerto Rico. Upon arrival on the island, Crowley's Puerto Rico-based logistics team will manage delivery of the LNG to the customer's facilities. There the LNG will be re-gasified into pipeline natural gas for boiler consumption.

"We are thrilled to enhance our relationship by growing our LNG services and volumes with this critical customer in Puerto Rico," said Greg Buffington, Crowley vice president.

"Crowley will continue to provide an uninterrupted supply chain of natural gas to the customer's site, just as we have done since 2014, helping them utilize a safe, reliable and environmentally friendly fuel for their operations."

In 2013, Crowley entered the LNG market by acquiring Florida-based Carib Energy LLC. Founded in 2011, the Crowley company was the first to receive a small scale, 25-year, LNG export license from the U.S. Department of Energy (DOE) for LNG transportation from the U.S. into Free Trade Agreement (FTA) countries.

Shortly thereafter, a Crowley LNG services group was formed to begin offering supply, transportation, and distribution of LNG services via the ISO tanks, and the company was additionally granted the first small-scale license for supply, transportation and distribution of LNG into Non-Free Trade Agreement (NTFA) countries in the Caribbean, Central and South America.

Crowley has since successfully delivered more than 5 million gallons of U.S.-sourced LNG to its customers.

Trifleet's 2017 photographic contest:and the winner is...

Trifleet Leasing, the world's largest owner-managed tank container leasing company, is pleased to announce the winners of the Trifleet Photo Contest 2017. First prize has been awarded to Anand Singh from EFC Logistics India Pvt Ltd, and second prize has gone to Douglas Tadeau Aby Saber from Deposit of Tank Containers Cesari Ltda, Brazil. This is the second time that Trifleet has organized this popular competition, and for this edition the company asked for original photos of Trifleet tank containers that reflected the theme: "Excellent Tanks Need Committed People".

The winning photo – with a cash prize of 2,000 EUR– was shot by Anand Singh of EFC Logistics India Pvt Ltd., and shows a depot worker cleaning a Trifleet tank at sunset. As runner-up, Douglas Tadeu Aby Saber from Deposit of Tank Containers Cesari Ltda. wins a cash prize of 1,000 EUR with his photo depicting depot workers inspecting several Trifleet tank containers, which are reflected in a body of water.

The Trifleet Photo Contest Jury selected the two photos from a total of ten that had made it into the final. These top ten had been chosen by Trifleet LinkedIn followers on www.linkedin.com/company/trifleet-leasing, where a pre-selection of all entries had been posted, and can still be viewed.

"The winning shot from India is a truly stunning, yet still very natural photo that provides a realistic impression of working at a depot," explains Emma Ardley-Batt, one of the Trifleet Photo Contest Jury, and Marketing & Content Director at Tank News International. "The second-prize winner from Brazil delivered a very professional, artistic photo and an impressive view of numerous Trifleet tank containers, perfectly fitting the theme 'Excellent Tanks Need Committed People'," adds Philip van Rooijen, Trifleet Photo Contest Jury member, and Managing Director of Trifleet Leasing.

Peacock proud of its lightweight composite tank containers

Tank container leasing group Peacock Container announces the purchase of 10-off 31.000 litre tank containers made of Composite. Peacock is the first leasing company offering these innovative light weight tanks manufactured by Tankwell in The Netherlands.

The composite swap body tanks are 25% to 40% lighter compared to conventional stainless steel tanks. The tare weight of a 31.000 litre tank container is only 2.250 kg. This results in an increased payload and less movements. Composite also provides decreased heat conductivity and gives a 40% better insulation performance. Therefore, the need for additional heating during transport or re-heating of the product can also be reduced remarkably. Furthermore the method of manufacture gives a seamless inner vessel which bears an improved clean ability of the tanks.

"In line with market developments the tanks are equipped with stainless steel valves and all the latest safety features like full walkways, a handrail and a ground operated airline. These composite swap bodies fit very well in our strategy to offer a wide assortment of (specialized) ISO tanks to our customers. And to be specific, we also see in our market the search for CO2 reduction. Peacock strategically aims to take a progressive role and tank containers made of composite answer this development" says Jesse Vermeijden, Managing Director of Peacock.

"The composite Tankwell tank containers have undergone various impact and static tests and are certified to European regulations of safe transport (ADR/RID/CSC/IMO-4). In addition, due to the chosen resin (Aliancys/DSM) the tanks are compliant with EU Food regulation, which makes them suitable to load a wide range of chemicals and food grade products. From various European clients we have already got positive feed back about this extension of our range of products, concludes Jesse Vermeijden.

Boasso acquires Den Hartogh European depots and tank cleaning

Boasso Global, a wholly-owned subsidiary of Quality Distribution, has acquired Den Hartogh's European depot and tank cleaning services business, known as Den Hartogh Cleaning.

Over time Den Hartogh Cleaning will transition to the Boasso Global brand.

"We are pleased to add the Den Hartogh Cleaning business to Boasso Global's expanding network of best in class terminals in Europe," commented Tony Morsovillo, President of Boasso. "This high quality, state-of-the-art tank cleaning, repair and depot services business, is a perfect fit with the culture of customer-centric excellence that Boasso is known for in the U.S. and the U.K. This acquisition, in concert with Isotank Group UK, provides the ideal international platform for the continued expansion of our global footprint to meet the needs of our customers and the growing ISO tank industry."

Den Hartogh Cleaning, headquartered in the Netherlands, provides tank cleaning, repair and other depot services from four locations strategically located in the Netherlands, Spain, and France, addressing some of the primary chemical markets in Western Europe.

The acquisition further expands Boasso's footprint into continental Europe to complement its recent acquisition of Isotank Group U.K.

"Den Hartogh is proud of what it, together with its employees and customers, has achieved with Den Hartogh Cleaning. However, we are convinced that the new ownership will provide the opportunity to grow the cleaning and repair business. We wish Boasso and the former employees of Den Hartogh Cleaning every success in this new endeavor," commented Pieter Den Hartogh (Group Managing Director Den Hartogh).

TaCon expands its fleet of specialised tank containers

The growing demand for specialised tank containers has induced TaCon to continually expand the container fleet with T20 and T22 units to meet the requirements of their customers.

Due to a change in the dangerous goods regulation, these specialised containers are presently in the centre of attraction. TaCon's T22 tank containers offer the customers an internationally recognized state-of-the-art equipment.

In addition, another order was placed for 35,000 swap body tank containers, ground operated and equipped with baffles, full walkways and hand rails.

Besides the tank containers TaCon invested in a pool of stainless steel intermediate bulk containers (IBC) with a volume of 1,000 litres to close the gap between drums and tank containers. They are available with or without electrical heating system for temperature sensitive products.

Stainless steel IBC are an environmental alternative to drums and one-way plastic IBC.

TaCon was founded in Hamburg in 1988 and has established itself over many years as an owner-managed company in the sector of tank container and IBC leasing in the market.

New management duo take over at HOYER Schkopau

Hamburg-based logistics specialist HOYER has appointed new management for its Kombi Terminal Schkopau (KTSK) in Saxony-Anhalt. Felix Bossmeyer together with Tom Krützfeldt took on the task with effect from 1 March 2017.

By appointing its new management duo, the company shows its confidence in two proven HOYER managers with many years of experience in management positions.

Felix Bossmeyer can build on more than twenty years of experience with the logistics specialist, for which he has already worked at the Hamburg, São Paulo and Rotterdam locations. He has held the position of Director Supply Chain Solutions (SCS) Europe since 2016.

Tom Krützfeldt started his career with HOYER in 2003, and has worked in various functions in the transport area since then. He has been Head of Operations Europe at SCS since 2012. Bossmeyer and Krützfeldt took over the management from Ulrich Grätz, Global Director Supply Chain Solutions, in the context of a planned succession.

The KTSK, situated on an area of 54,000 m2 between Leipzig and Halle, was brought into operation by HOYER 2005 and considerably enlarged in 2016. It guarantees rail and road links between the Port of Rotterdam and Germany's major seaports and inland ports, and handles traffic throughout Europe. It can process up to 110,000 cargo-handling operations per year as a result of the rail track lengthening and installation of a second container portal crane last year.

RMI Chemicals wins Eastman safety award

RMI Chemical Logistics has received the Safety Award 2016 from Eastman Chemical, in recognition of its "outstanding safety performance".

"The management team of RMI is very proud that the RMI Team has achieved this high level of safety awareness and we would like to thank all our staff," says the company. "RMI will continue their efforts to increase the safety level inside and outside the organisation."

United Wagon sets up new transport company

Research and production corporation United Wagon Company, the market leader in innovative railcar building in the 1520 mm gauge area, has established UNICON 1520, a transport company to provide tank container and container shipments.

The railway operator, UNICON 1520, will specialise in the arrangement of transport services and multimodal logistics of bulk, including hazardous cargoes.

Tank-containers for chemical, petrochemical freights and liquefied hydrocarbonic gases, as well as container flat cars with increased load capacity, including those manufactured by railway holding RPC UWC, will form the core of the new company's fleet.

UNICON 1520 will render shipping services both inside and outside Russia, in the CIS countries, Southeast Asia and the Middle East.

Dmitry Bovykin, First Deputy CEO for General Management at United Wagon Company, said, "We see a high potential of growth in container shipment, including transportation of bulk cargoes by tank-containers.

"The creation of a specialised operator will only further promote flat cars with increased load capacity."

Victor Ivanov, Executive Director at UNICON 1520, added, "If a freight owner chooses container shipment, they are offered a customized logistics solution and can fully benefit from additional competitive advantages by saving the transhipment costs (these are zero), while having their cargoes reliably protected from contamination and the delivery terms respected."

Market experts forecast a stable trend towards more containerisation of cargoes in segments with high write-off rates of tank cars within the next five years. Unlike a freight car, a tank-container is more practical in terms of the range of cargoes that can be shipped. Therefore, tank-containers could be used to carry some 4.5 million tons of petrochemical freight annually, currently shipped otherwise.

Eurotainer's new logo

Eurotainer has chosen a new symbol for the company.

It said: "This new brand image stands for technical superiority, global service and the most extensive variety of equipment for lease in the industry.

"It is a symbol of our goal to continuously evolve to serve the needs of our clients and to deliver new products and services to meet ever-changing market demands.

CS Leasing announces new shareholder as Maas Capital buys in

CS Leasing, a leading specialised container leasing company, announced today that Maas Capital had acquired a significant minority shareholding in the company.

Maas Capital has acquired all of the shares that were previously held in the company by CARU Containers and also made an additional capital investment to support future growth.

CS Leasing management and founding shareholders have successfully established the Company as a key supplier in the specialised container leasing market.

Maas Capital has now joined the partnership of TCG (Transportation Capital Group) and the Company management team, providing CS Leasing with a strengthened long-term platform for future growth.

Formed in September 2015, CS Leasing focuses on leasing a wide variety of specialised containers and providing extensive product expertise and high service levels required by operators of specialised equipment.

The company has grown rapidly since inception and has ambitious plans to further solidify its position as a major global player .

management team has, on average, over 25 years of container leasing experience, including specialised container leasing.

Rigtank opts for RAM Intermodal tank operating software

Rigtank, a recent tank operator start up based in Panama City, has selected specialist software from RAM Intermodal to help streamline operations and ensure that industry best practice is followed.

Its current spreadsheet system will be replaced following the growth of its fleet which has tripled in size during the first two years in business.

Established in 2016 and with agents in Brazil, Belgium, South Korea and the USA, Rigtank is focused entirely on providing customers with tailor-made tank transport and managing the whole chain of supply, along with stock levels and forecasts.

In 2017, it plans to start operations in Houston, Texas and to grow the fleet further.

"RAM Intermodal's software will allow us to standardise our procedures and take the business to the next level," explained Rubens Martins, CEO at Rigtank.

"The difference between it and spreadsheets is severe. We will have more control over the fleet and will be able to focus on strategy rather than administrative tasks.

"One of the most significant time savings will come from automatic billing."

"It's fantastic to see new customers coming from regions outside of Europe and North America," declared Richard Shaw, sales director at RAM Intermodal Software.

"Our new business has originated from those areas traditionally, but there has been a steady increase in enquiries from Asia, Africa, South America and Australasia and now over 20% of our customer base is headquartered across those continents."

Rigtank acts as the logistics department for its customers and provides a cost effective service by implementing a smart chain of supply, optimising all available resources and thinking of long term sustainable solutions.

"In order to meet our objectives," concluded Martins. "RAM's software will give us better control over costs and enable us to allocate the fleet more efficiently."

Univar appoints David Jukes Presidemt and COO

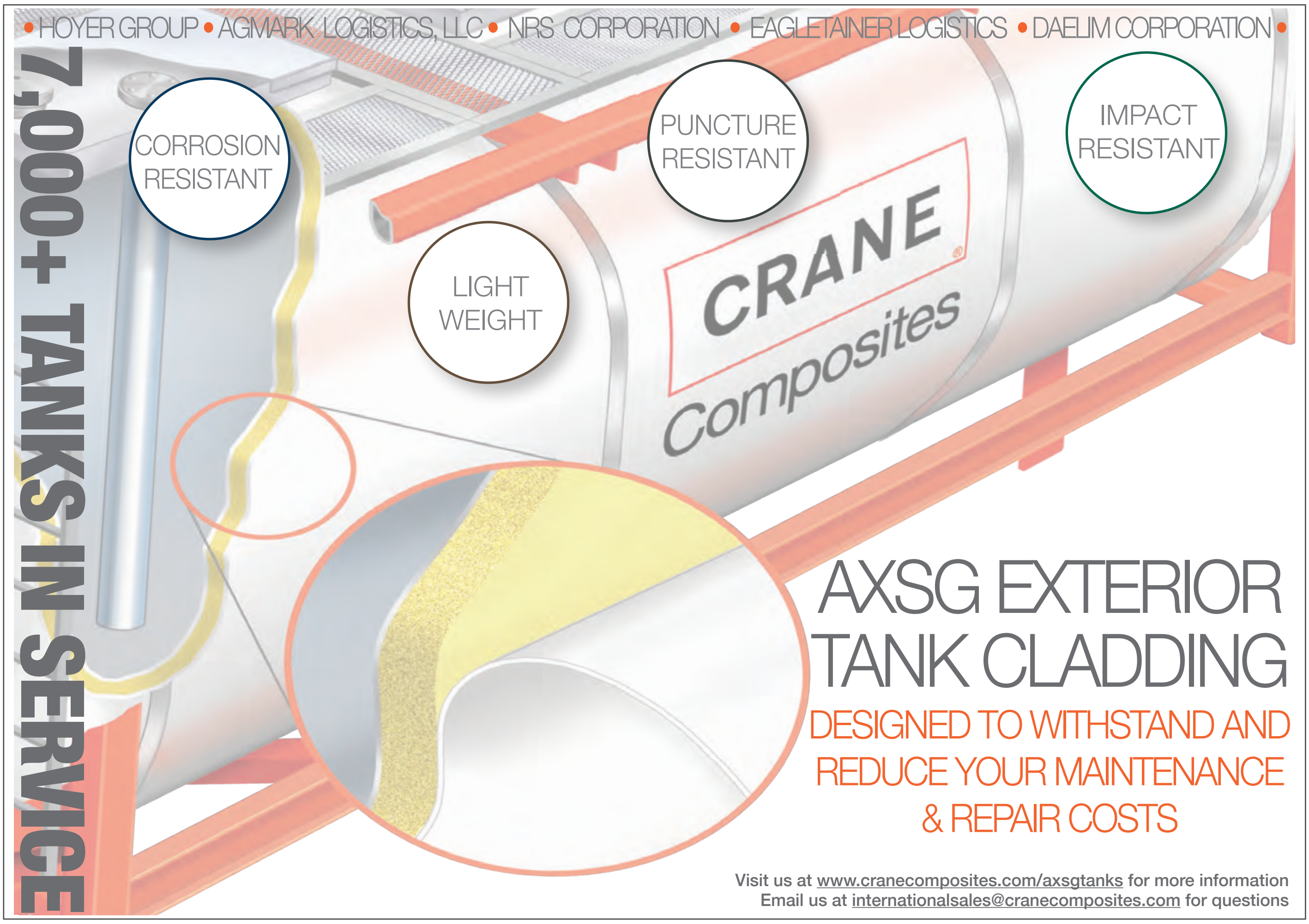
Univar Inc, a global chemical and ingredients distributor and provider of value-added services, has appointed David C. Jukes as president & chief operating officer, effective May 4, 2017. He will continue to report to Stephen D. Newlin, chairman and chief executive officer.

Jukes is a seasoned executive with more than 35 years in the chemical and plastics distribution arena. As a 14-year Univar veteran, he most recently served as executive vice president and president, USA & Latin America. In his new role, Jukes will oversee day-to-day operations of all of Univar's business segments, including Canada, EMEA and Rest of World, and he will maintain direct responsibility for the USA and its transformation. He will also be instrumental to the ongoing development of the company's strategic plan and ensure the global execution of Univar's three strategic priorities: Commercial Greatness, Operational Excellence and One Univar.

"David is the ideal partner to help me accelerate our profitability growth globally through his transformative leadership, commercial mindset and strategic thinking," said Newlin. "He is a growth champion who has led most of our global businesses and is the architect of our USA transformation, which is well under way."

"It is an exciting time in Univar's history," stated Jukes. "Our business is uniquely positioned to create enormous value for our shareholders. We have a highly talented pool of dedicated employees who are focused on growth and being our customers' and suppliers' partner of choice."

Since joining Univar in 2002, Jukes has held various roles with increasing responsibility. This included leading the reorganization of Univar's EMEA business, resulting in a doubling of the segment's EBITDA margin and positioning it for future growth. Prior to Univar, Jukes was senior vice president of global sales, marketing and industry relations for Omnexus, a plastics industry e-commerce platform. He is a graduate of the London Business School.



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Driving up standards

Editor Leslie McCune reviews the GCC's tank container market and HSSEQ status with industry expert Mark Appleyard

LM: What are your main responsibilities at RSA-TALKE in Dubai?

MA: As Health Safety Security Environment and Quality (HSSEQ) Manager and Business Advisor, my objective is to streamline and strengthen the local HSSEQ team and to develop strategies for operations and new services.

At the moment, the focus is on post-commissioning work at the new chemicals hub (CHEMHUB) in Jebel Ali and working to ensure the hub's operations and HSSEQ culture are consistent with the overall business.

LM: How would you describe your advisory role with the GPCA?

MA: To lead the task force promoting the GCC-wide adoption of dangerous goods road transport regulations.

I am also on the Gulf SQAS (Sustainability Quality Assessment) Committee and subject matter expert on the Responsible Care Distribution Code. This fulfils a personal passion - to have a positive impact on the GCC's HSSE performance in relation to dangerous goods logistics.

LM: In your GPCA role, what are the main challenges?

MA: Gathering information on current GCC regulations has been a challenge. Although government websites contain references to regulations their implementation and enforcement status is often unclear.

We are now reaching out to GCC regulators to convince them of the need for dangerous goods road transport regulations, and recommending an ADR solution (ADR is the highly respected convention

on the International Carriage of Dangerous Goods by Road). Demonstrating how the regulations can be implemented, maintained and enforced is essential.

LM: ..... and the main achievements so far?

MA: Bringing together a GCC-wide multinational group representing government, manufacturing and the logistics sector to forge agreement on ADR benefits and implementation.

Various governments and industry groups have looked into ADR before but selected only small areas for use within national regulations. We will soon be publishing position papers and guidelines to explain ADR and its implementation as best practice for GPCA members.

LM: What more Gulf SQAS work is being planned by the GPCA?

MA: Gulf SQAS modules for Transport (road), Warehousing and Tank Container Cleaning have been successfully launched. Weaknesses highlighted in the assessments are being addressed by the Gulf SQAS Committee - one example is the recent Human Factors event in Abu Dhabi and the Qamus Al-Emdad initiative, which translates common industry and safety-related terms to help communications with non-English speaking employees (particularly drivers).

The Gulf SQAS Committee has developed a Strategic Three Year Plan covering three GPCA Pillars; effective networking; thought leadership and advocacy. These include:

- Doubling the number of annual assessments to 80
- Increasing the number of regional assessors
- Having 80% of LSP's undertaking Gulf SQAS assessments
- Mandatory use by members - and their LSP's - of a Dangerous Goods Safety Advisor
- 20 LSP's to commit to Responsible Care principals
- Engendering a culture of sharing incident details and sharing learning
- Implementing GCC Dangerous Goods Road Transport Regulations.

LM: How do you see the GCC chemical logistics market?

MA: The market is still attractive and is becoming much more receptive to innovation and differentiated services. Customers see the benefits of longer term relationships and some are now selecting LSP partners more on value, rather than price.

Standards are increasing and more specialists are entering the market, making it more competitive - good news for the producers.

That said, there is still a great deal of inefficiency caused by inconsistent customs practices and differing dangerous goods road transport regulations. These inevitably hinder trade.

The gradual movement from drums to IBCs and tank containers continues, driven by improved safety, lower costs and reduced packaging waste.

Many logistics professionals have been distracted by the arrival of rail and the planned GCC network. The postponement of a number of rail projects has led to a focus on the current infrastructure, while building in a response capability to rail whenever it arrives.

LM: What assets and capabilities does RSA-TALKE have in the GCC?

MA: In Dubai South, close to Maktoum airport, RSA-TALKE has a state-of-the-art dangerous goods warehouse constructed to NFPA standards with ATEX-certified electrical equipment, secondary spill containment with external holding tanks; flame detectors and 2-hour fire-rated walls and doors.

There are 19,000 pallet spaces over seven temperature-controlled and ambient chambers. All Dangerous Goods classes can be stored, except Class 1 (Explosives) and Class 7 (Radioactive). There is also a 10,000 sq m warehouse for polymers.

In Jebel Ali Free Zone, RSA-TALKE has the only tank container facility in Dubai licensed to store all classes of dangerous goods other than Class 1 (Explosives) and Class 7 (Radioactive). With a 1,800 TEU capacity, it has fully segregated storage zones.

A state-of-the-art high pressure, drive-through tank container cleaning facility includes a higher pressure latex cleaning system that significantly reduces cleaning times and the need for tank entry, and a waste water treatment plant that recycles water. Any excess water is used for irrigation.

An automatic, temperature-controlled steam coil heating facility ensures that tank containers can be heated to the temperature required for onward delivery. A chilled water cooling facility maintains product below ambient temperature.

The site also includes a purpose-built tank container workshop for operational and periodic testing and repairs in conjunction with nominated or RSA-TALKE's independent certification bodies.

Construction on a 10,000 sq m dangerous goods warehouse will start at the Jebel Ali site later this year. This will replicate the standards of the warehouse in Dubai South and will feature a drumming facility.

TALKE has specialist chemical logistics facilities and operations throughout the GCC. These include its own multi-user facilities, those dedicated to customers or those that are customer-owned but operated by TALKE on their behalf.

LM: How likely is Jebel Ali to grow as a chemical distribution hub?

MA: Jebel Ali is serviced by most major shipping lanes, is close to major chemical production centres and is at a strategic location between Asia and the West. Jebel Ali port can therefore be a major chemical distribution hub, becoming 'the Rotterdam of the Middle East'.

Jebel Ali Free Zone Authority (JAFZA) see this potential and, although historically being very cautious regarding safety standards relating to chemical storage permits, the increase in quality investment in international-standard infrastructure is giving them greater confidence to issue such permits.

With high quality warehousing, container storage facilities in CHEMHUB, in-port bulk storage and many other ancillary services, Jebel Ali offers has all the services offered by other major chemical distribution hubs.

LM: How will the development of major logistics infrastructure further up the Gulf in Jubail affect Jebel Ali?

MA: Saudi Arabia has publicly stated that it intends to establish itself as "a logistics hub of global importance" although other GCC states are developing competing gateway hubs.

However, Jebel Ali clearly leads and continues to reinvest in its value proposition to maintain its lead in terms of business facilitation, access to international shipping lanes and the ability to attract and retain technical expertise.

The current Saudi government strategy of liberalisation and attracting private investment may erode Jebel Ali's position as the major import/export hub for Saudi goods but Jebel Ali will continue to be the dominant Middle East hub for freight for years to come, with a rapidly growing chemical capacity.

LM: What has been your tank container experience?

MA: As an operator, I was responsible for specialist temperature-controlled movements in Northern Europe, which were quite challenging in winter. This led to me providing road transport and tank cleaning services to various tank container operators.

As a DGSA consultant for

a number of major chemical companies I ensured consignments were transported safely and in accordance with relevant regulations. These responsibilities included accident investigation.

In my current role with RSA-TALKE, I support the development of the new storage, tank cleaning, heating and workshop operations at the CHEMHUB in JAFZA, which I regard as the premium facility in the region.

LM: What are the major opportunities in the GCC for tank containers?

MA: Downstream manufacturing in the region will be fed by efficient lower cost manufacturing units with commodity and specialist chemicals being used to produce consumer goods. A significant portion of goods will be exported in tank containers.

The move from drums and IBC's to tank containers will continue, driven by increased safety needs, reduced packaging cost and reduced waste.

The GCC is leveraging its location between Asian and Western markets for storage. Tank containers can be easily stored, thereby allowing producers to keep optimum stock levels without taking on the larger commitment of hiring bulk liquid storage. Tank containers offer the extra versatility of being dispatched or repackaged. Storage and handling costs are also more cost competitive compared with packed goods.

When the rail network is completed, tank container use will increase at the expense of road tankers, for both domestic and intra-GCC traffic. This will remove vehicles from the road with road transport being limited to the proverbial 'first-and-last mile'.

LM: What are the major challenges for the GCC tank container market?

MA: Balancing flows to minimise repositioning, particularly as the portfolio of products produced in the GCC increases.

The delay in the development of the rail network - which is an ideal mode for tank container transport - means there will be a continued dependence on the statistically high accident road network (Gulf SQAS benefits will improve safety but will inevitably take time to filter down to the sub-container sector).

A concern of the GPCA Dangerous Goods Road Transport Task Force is the potential evolution of two tank container standards due to the absence of a unified regulatory framework in the GCC governing the design, construction and testing of tank containers. This could lead to tank containers that are not going to be transported by sea being taken out of the 2½ and 5-year testing protocol. This, in turn, could lead to tank containers being on the road that are not subject to regular testing.

LM: What are the unique characteristics of the GCC tank container market?

MA: There are a number of truly unique characteristics. Firstly, the difficulty road transport companies face when entering certain countries (especially Saudi Arabia). Entering and leaving with different tank containers can incur duty on the container as you are perceived as importing it. This prevents tank containers being used interchangeably, which is one of a tank container's greatest attributes.

Secondly, unlike in other major chemical-producing regions, the GCC is not the home market for any major tank container operator - all are headquartered elsewhere and service the GCC through satellite operations or through local agents.

Mark Appleyard C.V.

Mark Appleyard has spent 40 years in the chemical supply chain sector, 30 years of which were in 3PL and 4PL logistics companies. He had global responsibility for HSSEQ with Agility Chemicals and is a Dangerous Goods Safety Advisor (DGSA) for major global chemical and fuel producers.

Mark has worked in the GCC for seven years as Business Director at Agility Chemicals, with Tristar and as a supply chain consultant with Camelot Management Consultants. He worked closely with MODON (the Saudi Industrial Property Authority) where he led a number of logistics projects.

He is now Health Safety Security Environment and Quality (HSSEQ) Manager at RSA-TALKE in Dubai, UAE and is a key advisor to the Dubai-based Gulf Petrochemicals and Chemicals Association (GPCA).

Lastly, the current low level - and inconsistent - domestic dangerous goods transport regulations across the GCC creates issues but also allows some latitude when things go wrong.

LM: What is the standard of GCC tank container depots?

MA: As in other regions, the GCC has tank container depots at both ends of the spectrum. Some are basically a piece of land with minimal groundwork and hard standing with no containment, fire-fighting capability or segregation.

Middle East tank container review

Tankcontainer Magazine highlights the tank container opportunities at a time of eroding GCC competitiveness

Today's investor does not profit from yesterday's growth. While this investment advice might be true for Warren Buffet it does not apply to Middle East petrochemical logistics, where tank container players are benefiting from the market opportunity created by "yesterday's growth" in petrochemicals and, more recently, specialty chemicals.

But how substantial is that growth? First, the superlatives. The GCC (Saudi Arabia, UAE, Oman, Bahrain, Kuwait, Qatar) has undoubtedly been a petrochemical success story. Its share of global annual capacity grew from 3% to 7% from 2000 to 2016 and is now 150 million tonnes. The compound annual growth rate of close to 9% is high - the second highest after China and double that of the global industry.

Saudi Arabia accounts for two thirds of the GCC petrochemical production. After oil, the Kingdom's most exported commodities are urea, ethylene glycol and MTBE but at current extraction rates, and given today's proven reserves, Saudi Arabia runs out of oil in 61 years. Saudis born today, and the large proportion of the population that is now under 20 years of age, will live in a Saudi Arabia that has no oil income. Oil income accounted for 90% of the Kingdom's total income in 2014.

In 2016, petrochemical projects worth $13 billion were announced in the region, to come online between 2020 as 2024, adding 8 million tonnes of annual production capacity.

Specialty chemicals fatten profits

All well and good in terms of the macro-economics but demand for the services of tank container operators and lessors is driven more by micro-opportunities at petrochemical producers, not macro-economics. For tank container players, specialty chemicals matter; commodity chemicals matter less. Large commodity-based production volumes flatter global rankings; lower production volumes of specialty chemicals fatten the profits of tank container operators.

So, on the dimensions that matter to tank container operators, how does the GCC measure up?

In terms of specialty chemical production and tank container demand, Saudi Arabia accounts for 85% of demand.

The top ten commodity petrochemicals account for 70% of GCC capacity, presenting interesting opportunities for the import in tank containers of raw materials such as polyethylene co-monomers, naphthalene-based products and hydrogen peroxide but few significant opportunities for finished products, which are typically shipped in chemical product or parcel tankers.

The rate of GCC petrochemical production capacity growth has fallen from 5% in 2015 due to feedstock constraints and global economic uncertainty. Gas feedstock is no longer widely available, has increased in price and - if margins were to be maximised - would be used for polymer production instead of liquid specialty chemical production (of the sort dependent on tank containers).

Liquid specialty chemicals, in general, come from naphtha cracking, where the GCC has no competitive advantage (naphtha is a global commodity whose price is strongly correlated to the crude oil price). Unsurprisingly, there is only one naphtha cracker in the GCC and there are no more crackers of any kind scheduled for completion in the near future.

Why produce in the Middle East?

With no advantaged feedstock, why then produce in the GCC? McKinsey, the highly respected leading global management consultancy says: "If feedstock advantage is discounted, the Middle East is not an ideal place for chemical production. Local consumption is small, so - unlike other regions - products must be exported at additional transportation and tariff cost. The GCC has struggled to achieve operational or capital expenditure excellence and is reliant on outside technology and licensing."

Large scale specialty chemical production in the GCC usually makes no economic sense. According to Deutsche Bank, any naphtha-based feedstock cost advantage (from which specialties are derived) is lost after the third conversion step. Naphtha feedstock is therefore uncompetitive, gas feedstock is limited and plants cost 20% more to build than in the US Gulf Coast (the international benchmark for petrochemical plant construction).

Other regions are now more cost competitive - the US, for example, has leveraged shale resources, China has leveraged its huge coal reserves and the price of feedstocks in the GCC (where available) has risen. Major gas-based petrochemical projects in Qatar have been cancelled.

Lastly, in terms of project planning processes and approvals, there is strong cultural overlay that is often under-estimated. As one US executive said: "Culture eats strategy for breakfast, any day."

Tank container rewards .... for some

The GCC does however offer rewarding opportunities for most, but not all, tank container operators. Those that are positioning themselves well include Stolt, Hoyer, NewPort, Den Hartogh and Bertschi.

Saudi Arabia's new Vision 2030, and the associated National Transformation Plan, includes greater economic diversification and a clear intent to better leverage the Kingdom's position between Asia and Europe as a hub for manufacturing and logistics.

More specifically, opportunities for tank container operators focus on the giant $20 billion Sadara project (the world's largest petrochemical project with 26 production units, many of which will produce specialties); the long-standing demand of specialty producers such as SABIC, Chemanol, Nama,Tasnee, Farabi, Aminat and Sipchem; occasional but substantial refinery streams that are often exported for re-processing by traders; and other smaller scale activities involving specialty chemicals such as acrylic acetate and vinyl acetate polymers, oil drilling chemicals and water treatment chemicals.

Sadara, the giant $20 billion 65:35 Saudi Aramco/Dow Chemical joint-venture in Jubail, Saudi Arabia nominally started production in December 2015. 450 tank containers were said to be dedicated to deliveries of hydrogen peroxide, a propylene oxide raw material.

MDI isocyanate has started and Sadara is expected to start with tank containers in Q3. Its MDI and TDI production will be the first in region and annual capacity will be 600,000 tonnes. At the time of writing, Sadara is stabilising its ethylene oxide levels in its new butyl glycol ether (BGE) unit, implying a need for tank containers to move off-spec BGE.

Saudi Aramco may eventually reduce its stake in Sadara, via an IPO, by 35% to match that of Dow.

Other new specialty chemicals - dependent on distribution via tank containers - are coming on stream. Petro Rabigh's phenol/acetone plant, for example, is scheduled for completion by mid-2017 (subject to further possible delays in its aromatics plant) with Sipchem being a possible customer of its acetone. MMA production - also dependent on tank containers - will follow.

Infrastructure build-out

The GCC's overall petrochemical logistics infrastructure is building-out. SABIC's shared-facility Portside Logistics Facility (PLF) in Jubail is becoming increasingly effective and now has five shipping lines - UASC, CMA, APL, MSK, MSC and WHL - calling on a weekly basis. Evergreen, NYK, MOL and K-Line should also have started calling in May.

The development of the huge SABIC-owned PLF has reconfigured the supply chain options for several producers, most significantly for the five main local SABIC subsidiaries. SABIC could eventually sell the PLF.

An independent survey suggests that, in terms of supporting smaller companies like logistics providers, the Royal Commission for Jubail and Yanbu (RCJY) in Jubail is not fit-for-purpose. According to the report, there was a very low ease-of-doing-business for small companies in Jubail, poor third party logistics facilities and poor facilities for consolidating cargoes (warehousing, lay-down areas, etc). Planning approvals are lengthy and inconsistent.

The RCJY views European logistics standards as among the highest in the world. TALKE, Suttons Arabia, Sahreej, TAD Logistics and Agility have all been allocated land in the RCJY Logistics Area beside Road 274 in Jubail.

There has been a wave of investment in tank cleaning stations in the most important hubs - Dammam and Jubail in Saudi Arabia's Eastern Province and in Jebel Ali, Dubai. These provide the vital infrastructure on which tank containers depend. Relatively small-scale, simple cleaning stations have been built in both Dubai and Eastern Province while higher investment, more complex depot and cleaning stations – destined for Jubail and backed by leading European tank operators - have been delayed due to permit problems and changes in strategic commitment caused by unexpected cash-calls from recent Asian acquisitions.

Sahreej, partly owned by tank container market leader Stolt, has its Eastern Province depots in Dammam and Jubail. It has broken ground on a new 100,000 sq m facility in Jubail, with potential access to the rail line, MDI cleaning capability and an overall capacity of over 1,000 tank containers a month. Its new Dammam facility will be on the existing site and another cleaning facility will be redeveloped in Jeddah in 2018.

Al Muhaidib Land Transport has recently opened two cleaning stations in Eastern Province and others are planned - Tank Cleaning Europoort, for example, is working with the Hizam Group in Dammam to build and run a cleaning facility with depot and repair unit which would be ready by the end of 2017.

GPCA conference 2017

Tankcontainer Magazine **looks at the context surrounding the Middle East's premier petrochemical supply chain event**

The much-anticipated Gulf Petrochemicals & Chemicals Association (GPCA) Supply Chain conference was held in Abu Dhabi on 2-4 May, with the conference theme being: 'Agile and Efficient GCC Supply Chains - The Role of Technology'.

The GPCA voices the common interests of more than 240 member companies which together account for over 95% of chemical output in the GCC (Saudi Arabia, Qatar, UAE, Kuwait, Oman and Bahrain). The petrochemicals industry is the second largest manufacturing sector in the region with annual sales of $108 billion.

Unlike other major petrochemical producing regions, the GCC is heavily reliant on extended export (and import) supply chains to connect it with its main markets in Asia and Europe. The region has undoubtedly been a production growth success story – in 2016, 150 million tonnes of chemicals were produced in the Arabian Gulf, up 3.7% from 2015 and nearly double the global growth rate of 2.2%. Production is dominated by Saudi Arabia, which accounted for 99.1 million tonnes of capacity.

The rate of production capacity growth has dropped off from 5% in 2015 due to feedstock constraints, global economic uncertainty and lower volume, higher value specialty chemical capacity coming on-stream (rather than the more usual high volume commodity production).

Capacity has quadrupled

Capacity quadrupled between 2000 and 2016, equivalent to a compound annual growth rate of 8.8%. This is the second highest growth rate after China and was double that of the global industry.

The region's share of global capacity has grown from 3% to 7% with the top ten commodities accounting for 70% of capacity in 2015. After oil, Saudi Arabia's most exported commodities are urea, ethylene glycol and MTBE.

In 2016, projects worth $13 billion

were announced in the region which, when they come online between 2020 as 2024, will add 8 million tonnes of production a year.

The region's utilisation is high – over 90% for the past five years, compared with a global industry average of 78% in 2016.

The GPCA Supply Chain conference's agility theme addressed global concerns that supply operations often struggle to keep pace with economic volatility – many are not sufficiently agile to capture fleeting upside opportunities or nimble enough to mitigate fast moving risks. Research suggests that companies with more agile supply chains have service levels that are 7% higher and inventory levels that are 23 days lower than less agile peers.

Get digitalised

This year's conference highlighted efficiency improvements as one of the top priorities. The tank container sector, like the logistics sector in general, is becoming increasingly digitalised. This, in turn, offers huge scope for efficiency gains, genuine end-to-end visibility and fundamentally different ways of thinking. Hoyer's announcement that it will be using IMT's telematics on its entire global fleet of nearly 40,000 tank containers sets a new benchmark for the industry.

Opening the conference, Mohammad Husain, Equate's President and CEO, and Ziad Labban, CEO of Sadara, gave keynote addresses on the importance of the GCC petrochemical sector having an agile and efficient supply chain to respond to complex and changing markets.

Hosnia Hashim, PIC's Deputy Chief Executive Officer Olefins and Aromatics, stressed that the surplus of containers in GCC ports could be reduced by streamlining shipping.

SABIC's shared-facility Portside Logistics Facility (PLF) in Jubail, Saudi Arabia is becoming increasingly effective and now has five shipping lines – UASC, CMA, APL, MSK, MSC and WHL – calling on a weekly basis. Evergreen, NYK, MOL and K-Line also started calling in May.

The development of the huge SABIC-owned PLF has reconfigured the supply chain options for several producers, most significantly for SABIC subsidiaries. The five subsidiaries (Saudi Kayan, Kemya, Petrokemya, Sharq and Ibn Zahr) have their exports transported to the Talke-managed PLF by Almajdouie, Globe and Crescent. These are consolidated, after which Crescent transports containers to nearby Jubail Commercial Port. It is reasonable to expect that SABIC will sell the PLF at some stage.

Almajdouie Logistics redesigned its container operations to deliver empty containers from Dammam directly to the PLF, without each container having to pass through the operational choke point of Jubail terminal. The company saw a need to re-design their operations workflow, filter basic requirements, eliminate choke points, cut costs and improve productivity. This streamlined and simplified operations.

Several speakers offered insights into improving the agility and efficiency of supply chains with a special focus on 'next generation sales and operations planning' and 'network optimisation'. These key topics were discussed against the backdrop of global technology trends that have enabled significant improvements over the past decade.

Sadara's tank demand

As we report elsewhere in this issue, liquid specialty production at the $20 billion Saudi Aramco/Dow Chemical Sadara project – the world's largest petrochemical project – has been delayed, although submissions for the second round of the Request-For-Proposal (RFP) had to be submitted by the end of last December. This was of acute interest to tank container operators, several of whom have made

substantial investments to position themselves for the business.

The much-delayed RFP detailed a need for over 5,000 tank containers in 2017, to be deployed in 113 Product Marketing & Lifting Agreements (PMLAs). These define the terms and conditions under which Dow Chemical will take in product from its Sadara joint-venture and sell it in the market place.

Saudi Aramco may well dilute its stake in Sadara from 65% to that of Dow (35%) via an IPO, which could take place after the IPO of nearly 5% of Saudi Aramco in 2018. The latter will be the world's largest IPO.

Challenges, such as the logistics infrastructure, overly-elaborate procedures and the increased tensions in the region, were raised.

Although not a topic of the conference, the related role of the Royal Commission for Jubail and Yanbu (RCJY) is critical to the logistics efficiencies in Jubail, where the commission is the *de facto* landlord.

The pressure on the royal commission to maximise revenues from tenants does not fit with its role as a landlord and service provider. Recent increases in land costs and service costs have caused friction with tenants, discouraging future tenants who might reasonably anticipate that further increases could follow.

A transactional and confrontational culture was said to exist between the RCJY and tenants, and the RCJY was said to be 'defensive and risk-

averse, not open and service-oriented'.

There was also a very low ease-of-doing-business for small companies in Jubail, not least because the commission is designed for large companies and large projects, and set up to manage risks over long periods. Jubail was also said to have poor third-party logistics facilties and poor facilities for consolidating cargoes (warehousing, lay-down areas, etc).

Independent advisors say the RCJY has not helped smaller logistics companies to become established in Jubail and current companies receive very poor support. Port operations were said to involve delay and costly demurrage.

SQAS developing strongly

An update was given on the GPCA's Gulf SQAS programme and dangerous goods transport regulations.

The GPCA has launched a new tankcontainer cleaning module, the third such module after the 'Transport Services' and 'Warehouse' modules. The Transport Services module was successfully launched in 2014 and the Warehouse module in 2015. These led to improvements in the quality of road transport and warehousing operations, particularly those relating to dangerous goods.

Several new tank cleaning stations have recently opened, or are planned, and seven regional assessors have been trained. The cleaning module includes: advice on preserving product quality by ensuring effective tank cleaning when changing use (thereby eliminating the risk of contamination or reactions); ensuring a safe working environment for employees and drivers; minimising the use of valuable natural resources such as water and fuels;, minimising waste production; ensuring safe handling and storage of loaded and empty tanks; and improving facilities for the effective maintenance of tanks.

Owners or operators of a tank container cleaning station can now undertake an assessment by contacting the GPCA's partnering certification bodies, which would help them develop a report on their operations, establish an improvement action plan and, ultimately, improve their EHSS&Q standards.

But supply chain challenges remain – the GCC has the longest and most complex (and therefore the most costly) supply chain. Due its low petrochemical raw material costs, freight makes up a higher percentage of variable costs than in any other region.

In Saudi Arabia, the supply chain infrastructure has not kept pace with the rapid growth in petrochemical production, port congestion can still be chronic, clearance procedures are lengthy, customs documentation is complicated and there is a lack of specialised supply chain professionals.

The winners of the Supply Chain Excellence Awards were announced. Talke won in the Land category, while Bahri Chemicals was recognised for its contributions to the marine sector. Bahri Chemicals, the national shipping company of Saudi Arabia, is a leading IMO II chemical tanker owner and operator, and the largest in the Middle East. DP World UAE Region won in the Ports category.

How to keep tabs on hazardous loads

The ability to remotely monitor the temperature of dangerous goods in transit helps ensure safe delivery, writes James Graham

The Internet of Things (IoT) is fast becoming a fixture in many industrial sectors. IoT is the inter-networking of "connected devices" and "smart devices" which rely on embedded electronics, software, sensors, actuators, and network connectivity to collect and exchange data.

In terms of the operation of tank containers - especially those used in the supply chain for the safe movement of dangerous goods - the IoT is used for the remote monitoring of critical temperatures and conditions throughout the shipment.

That was the impetus behind the development by Zurich-based technology developer Nexiot AG of its smart sensor system, in collaboration with Bertschi Group.

Bertschi is a global logistics service provider for the chemical industry, specialising in both liquids and dry bulk products, and transports hazardous cargo, some of which need to travel within a specific temperature band. Nexiot's new monitor will be used to monitor temperature of dangerous goods in Bertschi's tank containers. Data on temperature and conditions is sent to a control system, enabling Bertschi to monitor the real-time product temperature in the tank container, and the temperature in the steam pipes used to heat the cargo.

Nexiot's smart sensors harvest energy from the environment, making them self-sustaining and enabling them to update the control system every five minutes.

"Any means by which we can further raise the bar regarding safety gets priority at Bertschi, and having continuous and detailed information about the containers allows us to be certain that everything is well within safe operating conditions," said Markus Berner, head of digital logistics, Bertschi Group.

"The same measurements are also invaluable for guaranteeing that the cargo, which often includes sensitive chemicals, reaches its destination within the optimal temperature band and in perfect condition."

Nexiot's Marketing and Sales Director Daniel MacGregor said the sensor system, which is also being installed across the entire fleet of rail wagons for wagon hire giant VTG, was ideal for mobile assets with no native power sources.

"Connecting rail wagon and tank container fleets to extract critical data brings similar challenges and opportunities, as both asset types are non-powered," he said.

The sensor equipment can be retro-fitted or incorporated in newbuild equipment, notes MacGregor. In either situation, installation and on-boarding of the sensors only takes around just three minutes.

Installation can be carried out by Bertschi staff, although the Nexiot team is in constant support.

"Our self-sustaining technology has overcome the battery problems which were a major barrier to monitoring these sorts of mobile assets and made critical data available in real-time, so that our customers can make informed business decisions while ensuring their cargo arrives safely and on time," MacGregor said.

The new system of self-sufficient sensors, mounted onto tank containers, communicates temperature data wirelessly to its machine to machine (M2M) communication devices, which are installed on the tank containers.

Berner said Bertschi is seeing increased demand from customers for real-time updates, who use the data to optimise their own logistics chain. "Nexiot provides a full-featured but specialised platform which can be integrated with sector-specific software," he said. "This is in line with our digitisation strategy – more data all by itself is of limited use; it is the links and connections that bring real value."

MacGregor reveals that the system has been in development since Nexiot's recent founding in 2015. The company's technology comes from over 10 years of research at ETH Zurich, one of the world's top technical universities. Nexiot is a spin-off company from ETH Zürich and was built on research on complex systems, big data algorithms and ultra low-power embedded technology.

Its background and technical heritage has given Nexiot a head-start on rivals who compete in this sophisticated and complex technical product arena. "There are several companies trying to enter this space but there are barriers which must first be surmounted," he said.

Nexiot showcased its sensor technology at the transport logistic exhibition in Munich in May 2017.

On the rails

At the same time, Nexiot is equipping the entire European fleet of VTG rail wagons with zero-maintenance smart sensors, which will regularly communicate important information and business-critical events to enterprise control centres.

The modules relay updates on location, impact events and border crossings. Geographical and

MacGregor: Self-sustaining technology has overcome battery problems

historical information is combined with raw sensor data, so the customer can see the wider context of their assets, including estimated times of arrival, detection of cargo loading or recognition of intermodal changes.

This data is processed in the Nexiot Cloud Engine so that VTG and other rail customers can use it to add value to their business. The data provides an accurate mileage reading for each wagon and significant cost savings can be made through condition-based maintenance.

In addition, customised geofencing will enable VTG customers to be alerted whenever wagons enter or leave a defined area, such as a terminal, station, port or border region. Integrated sensors also supply other important data like shock or impact events.

The customer can manage the setup of event notifications so they are informed only when something important takes place. This is vital when managing a large fleet.

VTG leases and manages a wide range of rail tank cars that carry dangerous goods cargoes such as mineral oil, chemicals, LPG, ammonia, gases and cryogenic material.

"The modules are equipped with integrated energy-harvesting and ultra-low-power embedded technology, developed over ten years by scientists at the ETH university in Zurich, Switzerland," said MacGregor.

"Nexiot's wider expertise in complex systems and big data algorithms makes us much more than a hardware provider. Our company focuses on providing full asset visibility to enable customers to make informed decisions."

The smart sensors are designed to be fitted to each wagon in less than five minutes and are paired to a data centre using a smartphone. No specialist knowledge is needed and asset downtime is minimised.

"We are a young company, but we are taking the market by storm because we provide cutting-edge technology and an innovative business model, which brings the entry barriers right down," said MacGregor.

"Increasing demand for supply chain visibility from end customers and the need to compete with road-based transport are both important drivers."

VTG Connect launched

VTG AG is installing the smart sensors as part of its new VTG Connect service and Nexiot's products are a key plank in the new service. VTG Connect provides tracking and tracing, shock monitoring and environmental temperature measurement for all VTG wagons. For custom-specific applications, VTG Connect can also be connected to individual hardware solutions that add extra functions such as weight measurement and lock monitoring.

"This pan-European telematics system and the resultant services will create the transparency that rail freight transportation so desperately needs," said Dr Heiko Fischer, CEO of Hamburg, Germany-based VTG AG.

"Essentially, we are offering the entire industry the chance to realise further effective improvements. We are also strengthening rail freight's position as the backbone of smart and sustainable logistical solutions."

Tank Container Village ‘busier than ever’

ITCO members exhibiting at the recent Tank Container Village at transport logistic 2017, report that the show was “busier than ever”. With 64 exhibition stands and some 65 members participating, it was the largest Village organised so far by ITCO, attracting a wide range of customers and industry partners throughout the four days of the event

Jonathan Parker and Andrew Bishop

Sonny Sun and Andy Standon

Armin Herzig, Martin Kilroe,
Peter Huni and Alexa Huni

Arnaud Claes

Brian Sparg

Karen Ohls

Dennis de Vriend

Lars de Wit and Remco Verhaegen

Echo Xu

Robin Pol

Grant Thorpe, Richard Shaw
and Nicola Byers

Allan Klinge

Katja Barthel and Melanie Brohan

John Bannister and Nils Meyer


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eurotainer


PAULANER
MÜNCHEN

Keeping tank containers on the move

ISO tank containers safely carry all types of products. Their own safety depends on regular maintenance and cleaning. This is where ITT-Europoort comes in, discovers James Graham

Industry observers suggest there are some 450,000 20' ISO tank containers in operation at any one time globally. Few are scrapped each year - a mere 1,000 in a typical year while older tank containers are re-engineered or updated for alternative traffics.

Throughout their lifecycle, from manufacture to end-of-life disposal, tank containers may face many knocks and potentially damaging situations. They may set off from the assembly hall all bright and shiny but immediately start their revenue-earning task.

Over its life, a tank container can be filled with a range of food grade liquids, non-hazardous and hazardous liquids, including corrosives, flammables, toxics and explosives. In turn, it will be loaded and unloaded from ships and transport platforms.

Once discharged, the tank container is usually taken to a recognised cleaning station, cleaned thoroughly according to its last cargo and then made ready for its next load.

One of the key service support companies for maintenance, repair and cleaning of tank containers lies in the middle of the busy Rotterdam port area. ITT-Europoort offers 130,000 sq m of transport services that work to keep its clients' tank containers on the move and in revenue-earning activity.

ITT-Europoort (In 't Veen Total Maintenance Tank en silo) has developed into one of the biggest players in Europe in the field of tank transport, storage, cleaning, maintenance and testing. The location offers a unique 'one-stop-shop' opportunity for tank container servicing.

"Optimal mutual collaboration on the site has resulted in a bundling of knowledge and skill, from which the transport sector can benefit. ITT is known as a reliable partner, thanks to its good housekeeping, decisiveness, innovation and passion," said Kees in 't Veen of Kees in 't Veen Tanktransporten at ITT-Europoort.

On the road

Kees in 't Veen Tanktransporten is a key player at ITT-Europoort. Its tank trailers and tank container trucks despatch cargoes around the Netherlands and throughout Europe. Its equipment moves foodstuffs, chemicals and gases, including coolant gases. The company's vehicle fleet consists of a large number of tractor units, trailers, tank trailers and container chassis, with a wide range of facilities such as pumps for chemicals and foodstuffs plus compressors.

A unique aspect of the company's operation is in 't Veen's preference for employing Dutch drivers. He said: "The training and education level for drivers [in the Netherlands], especially ADR (International Carriage of Dangerous Goods by Road) drivers is at a high level. Besides the standard driving requirements, there are a lot of product-dedicated training undertaken."

He said that it is very common for his drivers to multi-lingual, speaking English and German as well as their native Dutch. This can make his drivers the best paid in Europe.

"Working with Eastern Europe drivers is very popular in our area but we try to work only with Dutch drivers to guarantee our service and quality. This is very difficult in a market with tenders and spreadsheet managers."

Hazardous and non-hazardous substances moved by Kees in 't Veen Tanktransporten are split between the company's own equipment and third-party equipment.

Forty per cent of products are moved in dedicated tank trailers.

These movements are all ADR products. The remainder is moved by a number of different tank container operators. Half of this volume is ADR products.

Long distance

Despite being based in Northwest Europe, Kees in 't Veen Tanktransporten serves a wide distance from Rotterdam. Seventy per cent of single trips are up to 300 km from the city. The remainder involve longer trips to France, Italy, Poland and the Scandinavian region. These longer routes will often be made with special equipment such as pumps and special chassis.

Storage of containers for Kees in 't Veen Tanktransporten is provided by Container Terminal Europoort, a company on the ITT site.

"We can store in total 3,500 tank containers on our site, this is including 736 loaded tank containers ADR and non-ADR containers," said in 't Veen.

Kees in 't Veen Tanktransporten owns around 50 of its own containers to use for client services. These are rented out with a spill box for temporary storage.

"Almost everything is done for third parties. We serve all operators with cleaning, heating, storage, repair; everything is possible for tank containers. We are neutral supplier of these services, with unique service and location and a lot of benefits for our clients," said in 't Veen.

Within two years, Britain will no longer be in the EU but it is too soon for in 't Veen to worry about Brexit. "I hope and expect that at the end nothing is changed, but we will get more administration work," he said.

Expansion is taking place at Kees in 't Veen Tanktransporten. Last year the company acquired 10,000 sq m of space in Moerdijk harbour. This is just 40 km outside of Rotterdam.

"We will make our Moerdijk office a work and repair shop for tank trailer and tank containers. There will be capacity to store 400 tank containers,

including 90 loaded ADR and non-ADR containers.

"Moerdijk will be our hub to serve our existing clients in that area and to serve our client, Stolt Tank Containers, which is already settled in Moerdijk. Lying between Rotterdam and Antwerp is a key selling point for us," said in 't Veen.

ITT-Europoort is more than the sum of its parts for tank container operators and owners. Its range of complementary companies looks after all the aspects of tank container ownership and use. The ITT-Europoort tank transport service centre houses a range of mutually-complementary companies that individually provide technical and equipment services.

The current occupants of Europoort are: Kees in 't Veen Tanktransporten, which supplies international tank transport of chemicals and food; Tank Cleaning Europoort; Container Terminal Europoort, storage for laden and empty tanks; Flaxfield Europe, container sales and engineering; Tankwell, developing and manufacturing light weight composite tank containers; Aspenal, the repair, testing, modifying and refurbishment of tank containers; Tank Service Europoort, maintenance of vehicle fleets and installations; and, Profile DBS Tyrecenter, a tyre service. Also on the site is Best Trucks Europoort, a dealership selling and maintains trucks and trailers.

According to in 't Veen, there is scope to expand the site. He said: "Probably with some support from the Port of Rotterdam, we can expand parallel at our site in an eastern direction."

Container repair and testing company Aspenal has a 2,500 sq m workshop that offers specialist engineering work such as modification, refurbishment, cooling and heating, GPS systems, lining and other special projects.

The company works with OEM parts from reputable brands, avoiding pattern parts and budget brands. Aspenal works with Flaxfield when engineering is required, especially where specifications, 3D drawings and certifying engineering projects are vital. Aspenal's workshop performs two-and-a-half and five-year tests on all types of tank containers. These tests are all carried out in co-operation with reputable and relevant classification bodies.

Cleaning up

Tank Cleaning Europoort completely separates its cleaning bays for foodstuffs and chemical products in different buildings. These cleaning locations are entirely self-sufficient as far as steam, energy, cleaning agents and pumps are concerned. According to the company, this guarantees quality and food safety. This means that there is absolutely no risk of contamination, which is essential in the food safety chain. It also heats, transfers from - and purges - tank trailers and tank containers.

Only extra-filtered drinking water is used for cleaning. During foodstuffs cleaning, the company continuously monitors the entire cleaning process using the SGF-accredited CleanGuard system. Data on flushing time, type and dosing of the cleaning agent, water temperature and pressure are presented in a detailed report.

Attention to quality, safety, health and the environment (QHSE) is a high priority for the company. Its QHSE department supports the operational departments of the various other ITT companies.

Tank Cleaning Europoort is also working with the Hizam Group in Dammam, Saudi Arabia to build and run a tank cleaning facility with depot and repair unit to European standards. This will be ready by the end of 2017.

Working with the other ITT companies, Container Terminal Europoort handles and stores both loaded and empty tank containers. The site is designed such that unnecessary tank container movements are minimised.

"Our empty handlers and reach stacker comply with the latest environmental requirements and are equipped with on-board computers which our employees can use to communicate easily and efficiently with other departments on the ITT site," said the company. All handlers are fitted with a patented double lock system, which makes it possible to simultaneously handle two empty tank containers safely.

Loaded ASR containers are stored in an area with a fixed fire extinguishing system. An underground disaster drain ensures that in the event of a leak the product will be collected and cannot enter the surface water drainage system.

Container Terminal Europoort is both a bonded warehouse and an entrepôt, making it possible for containers that are under suspension of excise duties to be stored while they are waiting for heating or further transport. Customs formalities can also be taken care of by company officials.

Point of sale

Flaxfield - Tank Container Solutions on the ITT site sells new, used and storage tank containers. Flaxfield's team also oversees tank container sales, engineering, R&D, marketing, innovation and custom solutions.

A partner of Chinese manufacturers Singamas and JOPM, Flaxfield is co-founder of Tankwell lightweight composite tank containers. Singamas provides and produces stainless steel T1-T22 tank containers while JOPM manufactures T50 carbon steel gas tanks and T75 cryogenic/LNG tanks. The Aspenal workshop is used for carrying out custom work and specific modifications.

As a worldwide partner of Singamas and JOPM, Flaxfield is the bridge for international clients to the Asian manufacturers. However, contracts are concluded directly between the client and the manufacturer as Flaxfield is neither an agency nor an intermediary.

Working with Aspenal allows tank containers bought from Signamas and JOPM to be supplied ex-works Europoort.

In a further collaboration, Flaxfield developed Tankwell, the innovative composite tank container, in collaboration with Dutch partner CPT. The composite tank container is 25 to 40 percent lighter than conventional stainless steel tank containers. A 31,000-litre Tankwell tank container, for example, weighs about 2.25 tonnes; a stainless steel tank container of the same capacity weighs 3.5 tonnes.

Composite's insulation properties are better and the product it carries cools down less quickly. Tankwell tank containers are ADR/RID/CSC/IMO-4 certified.

When pumps and compressors fail, a tank container is severely compromised. Tank Service Europoort is the service point at Europoort for various brands of pumps and compressors with staff assembling, maintaining and repairing new and existing pumps, compressors and appendages. They also inspect and repair tank coating, various hydro systems and offer a range of welding work.

Tank container cleaning glut?

Tankcontainer Magazine analyses the dramatic growth in tank cleaning stations in Saudi Arabia and the UAE

Tank container depots are an essential part of the tank container infrastructure in the GCC (Gulf Cooperation Council - Saudi Arabia, Qatar, Oman, UAE, Kuwait, Bahrain). All those in the region have cleaning capabilities and all can store unladen tank containers. Often, but not always, these tank cleaning and storage capabilities are combined with a number of other liquid handling services such as drumming, blending, the storage of laden tanks, maintenance & repair (M&R) and the direct filling/discharging of tank containers into drums.

The depot capability required by tank container operators is, however, quite different to that required by tankcontainer leasing companies. Operators tend to need only in-service M&R work and periodic testing, whereas lessors need the expertise and a higher level of competence available to accurately and authoritatively estimate off-hire repair costs while having the local technical capability available to bring off-hired tanks to the standard required for re-leasing. Poor quality off-hire inevitably leads to poor quality re-hire.

To service leased tanks, depots therefore need authoritative damage assessors, the capability to undertake major structural repairs and the ability to remove shell damage such as pitting by grinding and polishing the tank container's shell interior.

Due to the lack of GCC facilities, off-hired leased tank containers have to be repositioned empty to either Singapore or Europe for major structural repairs, and for grinding and polishing work. The repositioning cost materially affects the lessor's profitability over the tank's economic life cycle.

For years, the petrochemical and logistics hubs of Jubail and Dammam in Eastern Province, Saudi Arabia and Jebel Ali in the UAE were quietly served by a handful of tank container depots and cleaning stations. Standards were variable - JTS in Jebel Ali, Dubai is among those meeting international standards (unsurprising, given its part-ownership by the market leader, Stolt) while some petrochemical producers in Jubail refused to accept tank containers that had been cleaned by one particular local depot.

New depots springing up

All that has changed. Saudi Arabia's Eastern Province is one of the world's largest petrochemical production hubs - by far the

Photographs supplied by Groninger Cleaning Systems

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largest in the Middle East - and is now served by a number of tank depots and cleaning stations in Jubail and Dammam. As a result of Saudi Arabia's move downstream into specialty chemicals, new specialty chemical plants in Jubail are starting to produce chemicals that have never before been produced in the region. Many of these specialty chemicals are hazardous and must therefore be moved in tank containers, and these need to be cleaned before loading.

Prior to April 2016, there were only three tank cleaning stations in the Jubail/Dammam area and one in Dubai, UAE. Today, there are three tank cleaning stations in Dubai and five in Jubail/ Dammam. Others will follow.

The three cleaning stations in Dubai are recently-opened Tristar, RSA-TALKE (opened in May 2016) and JTS, which was established in 1998.

In Jubail/Dammam, two new tank cleaning stations have been recently opened by Al Muhaidib. Others are planned - Tank Cleaning Europoort, for example, is working with the Hizam Group in Dammam to build and run a tank cleaning and depot facility which would be ready by the end of 2017.

Sahreej, the Stolt joint venture with Kanoo, has depots in both Dammam and Jubail. It has broken ground on a new 100,000 sq m greenfield site in the Royal Commission for Jubail and Yanbu (RCJY) Logistics Area in Jubail with potential access to the rail line. The site includes fully covered cleaning, inspection, repair and testing facilities for both empty and laden tanks. The cleaning capability will include MDI/TDI and latex. Tank container rotators will be included in the repair bays and there will be steam heating, a nitrogen generator, a reefer facility and storage. The capacity will be a minimum of 1,000 tank containers a month.

Work has also started on a new facility on Sahreej's existing Dammam site. This will feature similar facilties to the new Jubail

facility, although capacity will only be 500 tank containers a month.

Both of Sahreej's new facilties will be completed in 2018. Redevelopment of the Jeddah depot - which could conceivably be a new home for the equipment in the current Jubail depot - will start in 2018.

Hoyer's approach to investments in GCC tank cleaning stations is different and summarised by the idiom: "Why buy a cow when milk is freely available at the supermarket". Instead, Hoyer's thoughts are said to be more focused on potentially offering higher value drumming and blending facilities.

Capacity has ramped up

Overall, there may well be seven tank cleaning stations in Jubail/ Dammam in 12 months' time. As a result, cleaning capacity in Jubail and Dammam would more than double between from Q1 2016 to 2018, assuming that two other European tank container operators continue with their plans to build depots in Eastern Province. Both, however, are experiencing problems which have affected the scale and timing of their planned depots.

The current demand for cleaning is estimated to be 30,000 washes a year, implying that tank cleaning utilisation in Jubail/Dammam has fallen to 75% from effectively 100% in 2015. This is consistent with the long delays for tank cleaning in Jubail/Dammam prior to April 2016 - when the two new cleaning stations in Jubail began operating - and the easier access to tank cleaning more recently.

The capacity of each of the GCC's tank container cleaning stations is determined by the number of shifts, bays and heads; the type of tank (baffled tanks take longer to clean than standard tank containers because the multiple man-lids reduce the cleaning time); the length of wash cycle (which depends on the last cargo) and the cleaning station's water treatment capacity (i.e. the amount of hot water and effluent that the facility can handle).

Due to the proximity of the King Abdul Aziz port, through which empty tanks are imported, Dammam is the favoured location for storing empty tanks before they are cleaned for loading in Jubail.

Imported empty tanks are surveyed on arrival for evidence of contamination and condensation; laden tanks that are not dedicated are cleaned immediately after discharge. Storage space for tank containers in depots

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remains a general problem.

Tank container cleaning operators in Jubail naturally encourage tank container operators to have their tank containers cleaned in Jubail although tank container operators are reluctant to pay to have their equipment moved up from Dammam to Jubail for cleaning.

In Jubail, the RCJY views European logistics standards as being among the best. Suttons Arabia, TALKE Sahree, TAD Logistics and Agility have all been allocated land in the RCJY Logistics Area beside Road 274 in Jubail, although some would have hoped the land would have been levelled and utilities installed by now. Fencing costs can be up to $2 million for a 200,000 sq m plot and some sites need bridges built to get from the allocated site to the road.

Cleaning difficult products

While the GCC's cleaning facilities are technically adequate for 'Straightforward' and 'Not Straightforward' chemicals, they are not currently capable of meeting 'Difficult' products such as MDI, TDI and specialty latexes. These, together with dimethyl sulphate and some corrosive products, are among the most difficult products to clean.

MDI, for example, is not miscible in water and reacts with water in a polymerisation reaction which forms a hard crust. Cleaning requires an 800-bar high pressure cleaning unit with its own generator and specialised cleaning head. Rotterdam-based Gröninger is a leading provider of MDI cleaning equipment which typically costs $225,000-$280,000. Sufficient demand for this specialist cleaning is therefore imperative.

Dow Chemical Sadara demand

In the GCC, isocyanates are imported by global producers such as Covestro, BASF, Dow Chemical and Mitsui but there is not yet any GCC production. This situation will change later this year when Sadara, the giant $20 billion Dow Chemical/Saudi Aramco joint venture, starts producing MDI and TDI, marking the Middle East's first production. Isocyanate capacity will be 600,000 tonnes p.a. and Sadara is expected to start with tank containers in Q3.

The much-delayed Request-For-Proposal detailed a total requirement for over 5,000 tank containers in 2017, to be deployed in 113 Product Marketing & Lifting Agreements (PMLA). PMLAs define the terms and conditions under Dow Chemical will take in product from their Sadara joint venture and sell it in the market place.

MDI tank containers are often dedicated as the product is highly temperature-sensitive and therefore needs sophisticated temperature control.

However, the tank cleaning opportunity for isocyanates at Sadara is smaller than many initially thought because MDI tank containers need not be cleaned after every discharge. It is usual for more than six MDI movements to be made before cleaning. This, then, reduces the demand for MDI tank cleaning.

Many corrosive chemicals are difficult to clean. Those containing chlorides, for example, react with water to form hydrochloric acid. However, T12 hydrochloric acid tank containers are rarely washed because they are usually dedicated and lined with rubber and fibreglass-reinforced polyester (FRP). Lining materials can be sensitive to heat so only cold water rinses tend to be used.

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